

Junos® OS

Chassis-Level User Guide

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Junos® OS Chassis-Level User Guide

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About This Guide

Use this guide to configure several properties of a router at the **[edit chassis]** hierarchy level. You can also configure support for chassis-level alarms, power management, and other features at the chassis level. Some of these features are platform-specific, while others are common across all routers.

1

CHAPTER

Overview

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Chassis-Level Features Overview

The Junos Software enables you to configure several properties of the router and many PIC-level features at the **[edit chassis]** hierarchy level. Some of the features are specific to M Series, MX Series, J Series, or T Series routers, while some others are common across all routers.

NOTE: Statements at the **[edit chassis redundancy]** hierarchy level are described in the *JUNOS High Availability Configuration Guide*.

NOTE: The configuration statements at the **[edit chassis lcc]** hierarchy level apply only to a routing matrix based on a TX Matrix router or a TX Matrix Plus router. For information about a routing matrix composed of a TX Matrix router and T640 routers, see [TX Matrix Router and T640 Router Configuration Overview](#) and the *TX Matrix Router Hardware Guide*. For information about a routing matrix composed of a TX Matrix Plus router and T1600 or T4000 routers, see [TX Matrix Plus Router Configuration Overview](#) and the *TX Matrix Plus Router Hardware Guide*.

NOTE: The **sanity-poll** configuration statements at the **[edit chassis fpc slot-number]** hierarchy level apply only to T Series routers. You can also configure **sanity-poll** for routing matrix based on a TX Matrix router or TX Matrix Plus router at the hierarchy level **[edit chassis lcc number fpc number]**.

2

CHAPTER

MPC-specific

[Upgrading or Downgrading MPCs \(MPC8E and JNP10K-LC2101\) | 4](#)

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Upgrading or Downgrading MPCs (MPC8E and JNP10K-LC2101)

IN THIS SECTION

- [Upgrading MPC8E to Provide Increased Bandwidth | 4](#)
- [Downgrading JNP10K-LC2101 to Provide Decreased Bandwidth | 5](#)

You can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps). Similarly, you can downgrade the JNP10K-LC2101 MPC to provide a decreased bandwidth of 1.44Tbps.

Upgrading MPC8E to Provide Increased Bandwidth

In Junos OS Release 15.1F5 and later, MX2020 and MX2010 routers support *MPC8E* (model number: MX2K-MPC8E), a new Modular Port Concentrator (MPC) with two Modular Interface Card (MIC) slots that provide a maximum bandwidth of 960 Gbps. . Each MIC slot on MPC8E supports a 12-port rate selectable MIC (MIC-MRATE). MPC8E has four Packet Forwarding Engines, each providing a maximum bandwidth of 240 Gbps.

In Junos OS Release 16.1R1 and later, you can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps) by using an add-on license. After you purchase the license and perform the upgrade, MPC8E provides a bandwidth of 1.6 Tbps, which is equivalent to the bandwidth that MPC9E provides. However, the MPC continues to be identified as MPC8E.

NOTE: After you upgrade MPC8E to provide a bandwidth of 1.6 Tbps, the power consumption by MPC8E increases and is equivalent to the power that MPC9E consumes. See *MPC8E* for more information.

After you purchase the add-on license, you upgrade the bandwidth by using the `set chassis fpc slot bandwidth 1.6T` command. You can disable this feature by using the `delete chassis fpc slot bandwidth 1.6T` command.

NOTE: When you modify the bandwidth of MPC8E and commit the configuration, the MPC automatically reboots. For instance, if you upgrade MPC8E to provide a bandwidth of 1.6 Tbps and commit the configuration, the MPC automatically reboots. Also, if you disable the feature on MPC8E (to provide a bandwidth of 960 Gbps) and commit the configuration, the MPC automatically reboots.

Downgrading JNP10K-LC2101 to Provide Decreased Bandwidth

In Junos OS Release 18.2R1 and later, MX10008 routers support the JNP10K-LC2101 line card. The JNP10K-LC2101 is a fixed-configuration MPC that provides increased port density and performance to the MX10008 routers. JNP10K-LC2101 does not contain separate slots for Modular Interface Cards (MICs). MX10008 routers support eight JNP10K-LC2101 MPCs. By default, each JNP10K-LC2101 MPC provides a maximum bandwidth of 2.4Tbps. JNP10K-LC2101 has six Packet Forwarding Engines, each providing a maximum bandwidth of up to 400 Gbps, which cannot be oversubscribed.

You can downgrade the JNP10K-LC2101 MPC to provide a decreased bandwidth of 1.44Tbps. After you perform the downgrade, JNP10K-LC2101 provides a bandwidth of 1.44Tbps. Each of the six Packet Forwarding Engines now provide a maximum bandwidth of up to 240 Gbps, which cannot be oversubscribed.

You can downgrade the bandwidth by using the **set chassis fpc slot bandwidth 1.44T** command. You can disable this feature by using the **delete chassis fpc slot bandwidth 1.44T** command.

NOTE: When you modify the bandwidth of JNP10K-LC2101 and commit the configuration, the MPC automatically reboots. For instance, if you downgrade JNP10K-LC2101 to provide a bandwidth of 1.44 Tbps and commit the configuration, the MPC automatically reboots. Also, if you disable the feature on JNP10K-LC2101 (to provide a bandwidth of 2.4Tbps) and commit the configuration, the MPC automatically reboots.

RELATED DOCUMENTATION

MPC8E

[Line card \(MX10K-LC2101\)](#)

Configuring Line Card Interoperability

IN THIS SECTION

- [Interoperability of Type 3 FPCs and Type 4 FPCs with Type 5 FPCs | 6](#)
- [Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs \(PD-1CE-CFP-FPC4\) Using SA Multicast Mode | 7](#)
- [Interoperability Between MPC4E \(MPC4E-3D-2CGE-8XGE\) and 100-Gigabit Ethernet PICs on Type 4 FPC | 9](#)
- [Configuring MPC4E \(MPC4E-3D-2CGE-8XGE\) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode | 10](#)
- [Interoperability Between MPC7E-MRATE and 100-Gigabit Ethernet PICs on Type 4 FPC | 12](#)
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- [Interoperability Between MPC8E \(MX2K-MPC8E\) and 100-Gigabit Ethernet PICs on Type 4 FPC | 15](#)
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- [Interoperability Between MPC9E \(MX2K-MPC9E\) and 100-Gigabit Ethernet PICs on Type 4 FPC | 17](#)
- [Configuring MPC9E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode | 18](#)

Interoperability of Type 3 FPCs and Type 4 FPCs with Type 5 FPCs

Support for interoperability of Type 3 FPCs, Type 4 FPCs, and T640-FPC4-1P-ES with Type 5 FPCs is now possible with fabric notification translation. This feature is supported on T4000 routers.

Basic packet forwarding, IPv4, IPv6, MPLS, and multicast (dataplane) are currently supported through this feature.

Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs (PD-1CE-CFP-FPC4) Using SA Multicast Mode

To configure a 100-Gigabit Ethernet MIC (MIC3-3D-1X100GE-CFP) to interoperate with Juniper Networks Type 4 100-Gigabit Ethernet PICs (model number PD-1CE-CFP-FPC4), you can use the **forwarding-mode** statement with the **sa-multicast** option at the `[edit chassis fpc slot pic slot]` hierarchy level.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the 100-Gigabit Ethernet MIC. The egress packet flow is the traffic flowing from the 100-Gigabit Ethernet MIC to the 100-Gigabit Ethernet PIC. Since no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet PIC looks at the bit and forwards the packets to either Packet Forwarding Engine 0 or 1. The ingress packet flow is the traffic flowing from a 100-Gigabit Ethernet PIC to a 100-Gigabit Ethernet MIC. When the 100-Gigabit Ethernet PIC is sending out a packet, the multicast bit is set based on the Packet Forwarding Engine packet received. The multicast bit is then transmitted and the MPC3E sees the multicast bit on ingress.

NOTE: The SA multicast bit is ignored by MPC3E while learning the source MAC addresses.

Configuring 100-Gigabit Ethernet MICs

The interoperability mode between the 100-Gigabit Ethernet MIC and the 100-Gigabit Ethernet PIC is configured on a PIC basis. The MPC3E has two MIC slots. A 100-Gigabit Ethernet MIC installed in slot 0 corresponds to **pic 0**, and the MIC installed in slot 1 corresponds to **pic 2**.

NOTE: The configuration is valid only on PIC 0 and PIC 2.

To configure SA multicast mode on a Juniper Networks 100-Gigabit Ethernet MIC in MPC 0, PIC 0 for interconnection with another Juniper Networks 100-Gigabit Ethernet PIC, use the **set chassis fpc slot pic slot forwarding-mode sa-multicast** command, as follows:

```
[edit chassis fpc slot pic slot]
forwarding-mode {
  sa-multicast;
}
```

You can use the **show forwarding-mode** command to view the resulting configuration, as follows:

```
[edit chassis fpc slot pic slot]
user@host# show forwarding-mode
```

Configuring 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4)

The default packet steering mode for the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) is SA multicast bit mode. There is no SA multicast configuration required on the 100-Gigabit Ethernet PIC to enable this mode.

NOTE: SA multicast mode can be configured, but it is not necessary.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50 Gbps Packet Forwarding Engines to achieve 100 Gbps throughput. The 50 Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is installed. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC should be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit aggregated interface is visible on the link connecting to the 100-Gigabit Ethernet MIC instead of two independent 50 Gbps interfaces.

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one AE physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces **et-*fpc/pic*/0:0** and **et-*fpc/pic*/0:1** where *fpc* is the FPC slot number and *pic* is the PIC slot number. The example shows how to configure two physical interfaces for PIC 0 in FPC 5:

```
chassis {
  aggregated-devices {
    ethernet {
      device-count 1;
    }
  }
}
interfaces {
  et-5/0/0:0 {
    gigether-options {
      802.3ad ae0;
    }
  }
  et-5/0/0:1 {
```



```

gigether-options {
    802.3ad ae0;
}
}
}

```

Interoperability Between MPC4E (MPC4E-3D-2CGE-8XGE) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC4E (MPC4E-3D-2CGE-8XGE) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC4E.
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC4E. The egress packet flow is the traffic flowing from the MPC4E to the 100-Gigabit Ethernet PIC. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet PIC checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet PIC to the MPC4E. When the 100-Gigabit Ethernet PIC sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC4E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC4E instead of two independent 50-Gbps interfaces.

Configuring MPC4E (MPC4E-3D-2CGE-8XGE) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC4E | 10](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 11](#)

You can enable interoperability between the MPC4E and the 100-Gigabit Ethernet PIC by performing the following tasks:

Configuring SA Multicast Bit Steering Mode on MPC4E

The interoperability mode between the MPC4E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC4E-3D-2CGE-8XGE is a fixed-configuration MPC and does not contain separate slots for Modular Interfaces Cards (MICs). MPC4E contains two Packet Forwarding Engines—**PFE 0** hosts **PIC 0** and **PIC 1** and **PFE 1** hosts **PIC 2** and **PIC 3**.

NOTE: This configuration is valid only on **PIC 1** and **PIC 3**.

To configure SA multicast mode on **PIC 1** of an MX480 router with MPC4E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 3 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis fpc 3 pic 1]
user@host # show forwarding-mode
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces et-x/y/0:0 and et-x/y/0:1 where *x* is the FPC slot number and *y* is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.

NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
    gigether-options {
        802.3ad ae0;
    }
}
et-4/3/0:1 {
    gigether-options {
        802.3ad ae0;
```

```
}  
}
```

Interoperability Between MPC7E-MRATE and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC7E
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC7E. The egress packet flow is the traffic flowing from the MPC to the 100-Gigabit Ethernet interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet interface to the MPC7E. When the 100-Gigabit Ethernet interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC7E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC7E instead of two independent 50-Gbps interfaces.

Configuring MPC7E-MRATE to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC7E | 13](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 13](#)

You can enable interoperability between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC by performing the following tasks:

Configuring SA Multicast Bit Steering Mode on MPC7E

The interoperability mode between the MPC7E (MPC7E-MRATE) and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC7E is a fixed-configuration MPC and does not contain separate slots for Modular Interface Cards (MICs). MPC7E contains two Packet Forwarding Engines—**PFE 0** hosts **PIC 0** and **PFE 1** hosts **PIC 1**.

To configure SA multicast mode on **FPC13,PIC 1** of MPC7E-MRATE for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 13 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis fpc 13 pic 1]
user@host # show forwarding-mode
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two

physical interfaces, it creates the physical interfaces et-x/y/0:0 and et-x/y/0:1 where *x* is the FPC slot number and *y* is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.

NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
    gigether-options {
        802.3ad ae0;
    }
}
et-4/3/0:1 {
    gigether-options {
        802.3ad ae0;
    }
}
```

Interoperability Between MPC8E (MX2K-MPC8E) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC8E (MX2K-MPC8E) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC8E.
- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC8E. The egress packet flow is the traffic flowing from the MPC to the 100-Gigabit Ethernet Interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet Interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet Interface to the MPC8E. When the 100-Gigabit Ethernet Interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC8E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC8E instead of two independent 50-Gbps interfaces.

Configuring MPC8E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC8E | 16](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 16](#)

You can enable interoperability between the MPC8E (MX2K-MPC8E) and the 100-Gigabit Ethernet PIC by performing the following tasks:

Configuring SA Multicast Bit Steering Mode on MPC8E

The interoperability mode between the MPC8E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC8E (MX2K-MPC8E) is a modular MPC that contains two slots for Modular Interfaces Cards (MICs). MPC8E contains four Packet Forwarding Engines—PIC 0 hosts PFE 0 and PFE 1. PIC 1 hosts PFE 2 and PFE 3.

To configure SA multicast mode on FPC 7, PIC 1 of MPC8E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 7 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis]
user@host # show fpc 7 pic 1 forwarding-mode
```

```
sa-multicast;
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces et-x/y/0:0 and et-x/y/0:1 where *x* is the FPC slot number and *y* is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.

NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 gigether-options 802.3ad ae0
user@host # set et-4/3/0:1 gigether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
    gigether-options {
        802.3ad ae0;
    }
}
et-4/3/0:1 {
    gigether-options {
        802.3ad ae0;
    }
}
```

Interoperability Between MPC9E (MX2K-MPC9E) and 100-Gigabit Ethernet PICs on Type 4 FPC

You can enable interoperability between the MPC9E (MX2K-MPC9E) and the 100-Gigabit Ethernet PIC (PD-1CE-CFP-FPC4) by:

- Enabling source address (SA) multicast bit steering mode on the MPC9E.

- Configuring the two 50-Gigabit Ethernet physical interfaces on the 100-Gigabit Ethernet PIC PD-1CE-CFP-FPC4 as one aggregated Ethernet physical interface.

SA multicast mode uses the multicast bit in the source MAC address for packet steering. By default, the SA multicast bit is set to 0 for all packets sent by the MPC9E. The egress packet flow is the traffic flowing from the MPC9E to the 100-Gigabit Ethernet Interface. Because no VLAN tags are available, the SA multicast bit is sent on the outgoing packets. At the other end, the 100-Gigabit Ethernet Interface checks the multicast bit and forwards the packets to either Packet Forwarding Engine 0 or Packet Forwarding Engine 1. The ingress packet flow is the traffic flowing from the 100-Gigabit Ethernet Interface to the MPC9E. When the 100-Gigabit Ethernet interface sends out a packet, the multicast bit is set based on the packet received from the Packet Forwarding Engine. The multicast bit is then transmitted and the MPC9E checks the multicast bit on ingress.

The 100-Gigabit Ethernet PIC uses a Type 4 FPC and two 50-Gbps Packet Forwarding Engines to achieve a throughput of 100 Gbps. The 50-Gbps physical interfaces are created when the 100-Gigabit Ethernet PIC is plugged in. The two physical interfaces are visible and configuration is allowed on both physical interfaces. The physical interfaces on the 100-Gigabit Ethernet PIC must be configured in static LAG mode without enabling Link Aggregation Control Protocol (LACP). This ensures that a single 100-Gigabit Ethernet aggregated interface is visible on the link connecting to the MPC9E instead of two independent 50-Gbps interfaces.

Configuring MPC9E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC9E | 18](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 19](#)

You can enable interoperability between the MPC9E (MX2K-MPC9E) and the 100-Gigabit Ethernet PIC by performing the following tasks:

Configuring SA Multicast Bit Steering Mode on MPC9E

The interoperability mode between the MPC9E and the 100-Gigabit Ethernet PIC is configured on a PIC basis. MPC9E (MX2K-MPC9E) is a modular MPC that contains two slots for Modular Interfaces Cards

(MICs). MPC9E contains four Packet Forwarding Engines—**PIC 0** hosts **PFE 0** and **PFE 1**. **PIC 1** hosts **PFE 2** and **PFE 3**.

To configure SA multicast mode on **FPC 19, PIC 1** of MPC9E for interconnection with the 100-Gigabit Ethernet PIC:

1. To specify the forwarding mode as **sa-multicast**, include the **forwarding-mode** statement at the **[edit chassis fpc slot pic slot]** hierarchy level.

```
[edit chassis]
user@host # set fpc 19 pic 1 forwarding-mode sa-multicast
```

2. To verify that the forwarding mode is set to **sa-multicast**, issue the following command:

```
[edit chassis]
user@host # show fpc 19 pic 1 forwarding-mode
```

```
sa-multicast;
```

Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface

When the PIC is in aggregated Ethernet mode, the two physical interfaces on the same PIC are aggregated into one aggregated Ethernet physical interface. When the PIC is configured with two physical interfaces, it creates the physical interfaces `et-x/y/0:0` and `et-x/y/0:1` where *x* is the FPC slot number and *y* is the PIC slot number.

The default packet steering mode for the 100-Gigabit Ethernet PIC is SA multicast bit mode. No SA multicast configuration is required on the 100-Gigabit Ethernet PIC to enable this mode.

NOTE: SA multicast mode can be configured, but it is not necessary.

1. To specify the number of aggregated Ethernet interfaces to be created:

```
[edit chassis aggregated-devices ethernet]
user@host # set device-count 2
```

2. To specify the members to be included within the aggregated Ethernet bundle:

```
[edit interfaces]
user@host # set et-4/3/0:0 ggether-options 802.3ad ae0
user@host # set et-4/3/0:1 ggether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

```
[edit]
user@host # show interfaces
```

```
..
et-4/3/0:0 {
    ggether-options {
        802.3ad ae0;
    }
}
et-4/3/0:1 {
    ggether-options {
        802.3ad ae0;
    }
}
```

RELATED DOCUMENTATION

[T4000 FPCs Supported](#)

[T4000 PICs Supported](#)

forwarding-mode (100-Gigabit Ethernet)

sa-multicast (100-Gigabit Ethernet)

Configuring the Number of Active Ports on 16x10GE 3D MPC

You can disable a sub-set of the physical ports available on the Packet Forwarding Engines of the 16x10GE 3D MPC, and for PICs installed in MPC3, MPC4, MPC5, and MPC6.

Two of the most common reasons for disabling ports are explained below.

- **Ensure guaranteed bandwidth by preventing oversubscription**—The 16x10GE 3D MPC supports one 10-Gigabit Ethernet tunnel interface for each Packet Forwarding Engine. The effective line-rate bandwidth of the MPC is 12 ports because of an oversubscription ratio of 4:3. Therefore, configuring a tunnel interface might further result in the Packet Forwarding Engines being oversubscribed. To prevent such oversubscription and to ensure a guaranteed bandwidth, include the **number-of-ports** configuration statement to disable one or two ports per Packet Forwarding Engine.
- **Enable Switch Control Board (SCB) redundancy**—For maximum bandwidth capabilities (12-port line-rate bandwidth), the 16x10GE 3D MPC uses all the available SCBs (three SCBs for an MX960 router, two SCBs for an MX480 or MX240 router) actively in the chassis.

If SCB redundancy (2+1 SCBs on an MX960 router or 1+1 SCB on an MX480 or MX240 router) is required, ports on the line card can be disabled by setting the number of usable ports per line card to 8. In such a case, the third and fourth ports (ports 0/2-3, 1/2-3, 2/2-3, 3/2-3) on every Packet Forwarding Engine are disabled.

To configure the number of active ports on the 16x10GE 3D MPC, include the **number-of-ports** *active-ports* configuration statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis fpc slot-number]
number-of-ports (8 | 12);
```

To configure the number of active ports on a PIC in an MPC3, MPC4, MPC5, or MPC6, include the **number-of-ports** *active-ports* configuration statement at the **[edit chassis fpc slot-number pic pic-number]** hierarchy level:

```
[edit chassis fpc slot-number pic pic-number]
number-of-ports (8 | 12);
```

Specify either 8 or 12 ports using this statement. When eight active ports are configured, two ports per Packet Forwarding Engine are disabled, and the LEDs on the MPC are set to **yellow**. When you specify 12 active ports, one port per Packet Forwarding Engine is disabled and the corresponding LED is set to

yellow. When you do not include this statement in the configuration, all 16 default ports on the MPC are active.

NOTE:

- Committing the configuration after including the **number-of-ports** *active-ports* configuration statement brings down the Ethernet interfaces for all the ports on the MPC before the ports configuration becomes active.
- A minimum of one high-capacity fan tray is necessary for meeting the cooling requirements of the MPC. The Junos OS generates a chassis **yellow** alarm recommending fan tray upgrade for optimal performance, if the MX router chassis contains an old fan tray.

For more information about the 16x10GE 3D MPC, see the [MX Series Interface Module Reference](#).

RELATED DOCUMENTATION

| [MPC-3D-16XGE-SFPP](#)

Guidelines for Identifying Active PICs on MPC5E-40G10G

MPC5E contains two Packet Forwarding Engines (PFEs) and 4 fixed port PICs. On MPC5E-100G10G, the **PFE0** hosts **PIC0** and **PIC1** while **PFE1** hosts **PIC2** and **PIC3**. All the PICs can be powered on and used.

On the MPC5E-40G10G, the **PFE0** hosts **PIC0** and **PIC2** while **PFE1** hosts **PIC1** and **PIC3**. Only a maximum of two PICs (**PIC0** or **PIC2** and **PIC1** or **PIC3**) can be powered on. The remaining PICs are required to be kept powered off.

This topic describes the guidelines to consider while identifying active PICs on the MPC5E (MPC5E-40G10G):

- By default, (i.e. without any CLI configuration), **PIC0 (12x10GE)** and **PIC1 (12x10GE)** are powered ON while **PIC2 (3x40GE)** and **PIC3 (3x40GE)** shall be powered OFF.
- At least one PIC on every PFE should be configured in power OFF state. **PIC0** and **PIC2** belong to **PFE0** and **PIC1** and **PIC3** belong to **PFE1** .

- If you configure an invalid PIC combination, the default PICs (**PIC0** and **PIC1**) will be powered ON. Also, a syslog message is displayed to indicate the invalid PIC combination selected. When you configure an invalid PIC combination, and commit the change, the commit succeeds and a commit failure message is not displayed.

[Table 1 on page 23](#) lists the active PICs on MPC5E-40G10G based on the configuration.

Table 1: MPC5E-40G10G Active PICs

CLI Configuration	PIC Selection
Default (i.e no CLI configuration)	Online: PIC0 and PIC1 Offline: PIC2 and PIC3
PIC1 , PIC2 , and PIC3 powered off	Online: PIC0 Offline: PIC1 , PIC2 , and PIC3
PIC0 , PIC2 , and PIC3 powered off	Online: PIC1 Offline: PIC0 , PIC2 , and PIC3
PIC0 , PIC1 , and PIC3 powered off	Online: PIC2 Offline: PIC0 , PIC1 , and PIC3
PIC0 , PIC1 , and PIC2 powered off	Online: PIC3 Offline: PIC0 , PIC1 , and PIC2
PIC2 and PIC3 powered off	Online: PIC0 and PIC1 Offline: PIC2 and PIC3
PIC1 and PIC2 powered off	Online: PIC0 and PIC3 Offline: PIC1 and PIC2

Table 1: MPC5E-40G10G Active PICs (Continued)

CLI Configuration	PIC Selection
PIC0 and PIC3 powered off	Online: PIC1 and PIC2 Offline: PIC0 and PIC3
PIC0 and PIC1 powered off	Online: PIC2 and PIC3 Offline: PIC0 and PIC1
Invalid PIC Configuration (All other combinations of PICs powered off)	Online: PIC0 and PIC1 Offline: PIC2 and PIC3 NOTE: Default PIC configuration is selected for all invalid PIC configurations.

RELATED DOCUMENTATION

[6x40GE + 24x10GE MPC5E](#)

3

CHAPTER

Fabric Management

Fabric Resiliency | 26

Fabric Plane Management | 51

Fabric Grant Bypass | 62

Smooth Upgrade from SFB to SFB2 | 66

Fabric Resiliency

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- [MX Series Routers Fabric Resiliency | 28](#)
- [Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers | 31](#)
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Fabric Resiliency and Degradation

IN THIS SECTION

- [Packet Forwarding Engine Errors and Recovery on PTX Series Routers | 27](#)
- [Packet Forwarding Engine Errors and Recovery on T640, T1600 or TX Matrix Routers | 27](#)

Juniper routers and switches have built in resiliency to tackle failures and error conditions encountered during normal operation. Immediate action is taken by JUNOS software to remedy the failure conditions to minimize traffic loss. No manual intervention is needed. Fabric degradation could be one of the reasons leading to such error conditions. The following sections explain how the PFEs recover in a resilient manner from these failures.

Packet Forwarding Engine Errors and Recovery on PTX Series Routers

Packet Forwarding Engine destinations can become unreachable on PTX Series routers for the following reasons:

- The fabric Switch Interface Boards (SIBs) are offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the control board because of high temperature conditions.
- Voltage or polled I/O errors in the SIBs are detected by the control board.
- Unexpected link-training errors occur on all connected planes.
- Two Packet Forwarding Engines can reach the fabric but not each other.
- Link errors occur where two Packet Forwarding Engines have connectivity with the fabric but not through a common plane.

Starting with Junos OS Release 13.3, you can use PTX Series routers to configure Packet Forwarding Engine (PFE)-related error levels and the actions to perform when a specified threshold is reached.

If error levels are not defined, a PTX Series router begins the following phases in the recovery process:

1. SIB restart phase: The router attempts to resolve the issue by restarting the SIBs one by one. This phase does not start if the SIBs are functioning properly and a single line card is facing an issue.
2. SIB and line card restart phase: The router restarts both the SIBs and the line card. If there are line cards that are unable to initiate high-speed links to the fabric after reboot, it is not relevant to loss of live traffic as no interfaces are created for these line cards, preventing the system from issues.
3. Line Card offline phase: Because previous attempts at recovery failed, line cards and interfaces are turned off and the system avoids issues and error conditions.

Packet Forwarding Engine Errors and Recovery on T640, T1600 or TX Matrix Routers

Packet Forwarding Engine destinations can become unreachable on T640, T1600 or TX Matrix routers for the following reasons:

- The fabric Switch Interface Boards (SIBs) are offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the Switch Processor Mezzanine Board (SPMB) because of high temperature conditions.
- Voltage or polled I/O errors in the SIBs are detected by the SPMB.

- All Packet Forwarding Engines receive destination errors on all planes from remote Packet Forwarding Engines, even when the SIBs are online.
- Complete fabric loss is caused by destination timeouts, even when the SIBs are online.

The recovery process consists of the following phases:

1. The router restarts the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and a single line card has issues.
2. Fabric plane and Line Card restart phase: The router restarts both the SIBs and the line cards. If there are line cards that are unable to initiate high-speed links to the fabric after reboot, it is not relevant to loss of live traffic as no interfaces are created for these line cards, preventing the system from issues.
3. Line card offline phase: Because previous attempts at recovery failed, line cards and interfaces are turned off and the system avoids issues and error conditions leading to serious consequences.

NOTE: Starting in Junos OS Release 14.2R6, if a SIB becomes offline because of extreme conditions such as high voltage or high temperature, then as part of the recovery process, the router does not restart the fabric plane for that SIB.

The phased recovery mechanism mentioned above is exhaustive unless there are other errors which could be correlated to these issues.

Starting in Junos OS Release 14.2R6, you can manage fabric degradation in single-chassis systems better by incorporating fabric self-ping and Packet Forwarding Engine liveness mechanisms. Fabric self-ping is a mechanism to detect issues in the fabric data path. Using the fabric self-ping mechanism, every Packet Forwarding Engine ascertains that a packet destined to itself is reaching it when the packet is sent over the fabric path. Packet Forwarding Engine liveness is a mechanism to detect whether a Packet Forwarding Engine is reachable on the fabric plane. To verify that it is reachable, the Packet Forwarding Engine sends a self-destined packet over the fabric plane periodically. If any error is detected by these two mechanisms, the fabric manager raises a *fabric degraded alarm* and initiates recovery by restarting the line card.

MX Series Routers Fabric Resiliency

IN THIS SECTION

- [Fabric Connectivity Restoration | 29](#)

- [Line Cards with Degraded Fabric | 30](#)
- [Connectivity Loss Towards a Single Destination Only | 31](#)
- [Redundancy Fabric Mode on Active Control Boards | 31](#)

MX routers provide intelligent mechanisms to reduce packet loss in hardware failures scenarios.

This topic contains the following sections that describe fabric resiliency options, failure detection methods used, and corrective actions:

- ["Fabric Connectivity Restoration" on page 29](#)
- ["Line Cards with Degraded Fabric" on page 30](#)
- ["Connectivity Loss Towards a Single Destination Only" on page 31](#)
- ["Redundancy Fabric Mode on Active Control Boards" on page 31](#)

Fabric Connectivity Restoration

Packet Forwarding Engine destinations can become unreachable for the following reasons:

- The control boards go offline as a result of a CLI command or a pressed physical button.
- The fabric control boards are turned offline because of high temperature.
- Voltage or polled I/O errors in the fabric.
- All Packet Forwarding Engines receive destination errors on all planes from remote Packet Forwarding Engines, even when the fabrics are online.
- Complete fabric loss caused by destination timeouts, even when the fabrics are online.

When the system detects any unreachable Packet Forwarding Engine destinations, fabric connectivity restoration is attempted. If restoration fails, the system turns off the interfaces to trigger local protection action or traffic re-route on the adjacent routers.

The recovery process consists of the following phases:

1. **Fabric plane restart phase:** Restoration is attempted by restarting the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and an error is reported by one line card only. An error message is generated to specify that a connectivity loss is the reason for the fabric plane being turned offline. This phase is performed for fabric plane errors only.

2. Fabric plane and line card restart phase: The system waits for the first phase to be completed before examining the system state again. If the connectivity is not restored after the first phase is performed or if the problem occurs again within a duration of 10 minutes, connectivity restoration is attempted by restarting both the fabric planes and the line cards. If you configure the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level to disable restart of the line cards when a recovery is attempted, an alarm is triggered to indicate that connectivity loss has occurred. In this second phase, three steps are taken:
 - a. All the line cards that have destination errors on a PFE are turned offline.
 - b. The fabric planes are turned offline and brought back online, one by one, starting with the spare plane.
 - c. The line cards that were turned offline are brought back online.
3. Line card offline phase: The system waits for the second phase to be completed before examining the system state again. Connectivity loss is limited by turning the line cards offline and by turning off interfaces because previous attempts at recovery have failed. If the problem is not resolved by restarting the line cards or if the problem recurs within 10 minutes after restarting the line cards, this phase is performed.

The three phases are controlled by timers. During these phases, if an event (such as offlining/onlining line cards or fabric planes) times out, then the phase skips that event and proceeds to the next event. The timer control has a timeout value of 10 minutes. If the first fabric error occurs in a system with two or more line cards, the fabric planes are restarted. If another fabric error occurs within the next 10 minutes, the fabric planes and line cards are restarted. However, if the second fabric error occurs outside of the timeout period of 10 minutes, then the first phase is performed, which is the restart of only the fabric planes.

In cases where all the destination timeouts are traced to a certain line card, for example, one source line card or one destination line card, only that line card is turned offline and online. The fabric planes are not turned offline and online. If another fabric fault occurs within the period of 10 minutes, the line card is turned offline.

By default, the system limits connectivity loss time by detecting severely degraded fabric. No user interaction is necessary.

Line Cards with Degraded Fabric

You can configure a line card with degraded fabric to be moved to the offline state. On an MX960, MX480, or MX240 router, you can configure link errors or bad fabric planes. This configuration is particularly useful in partial connectivity loss scenarios where bringing the line card offline results in faster re-routing. To configure this option on a line card, use the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level. For more information, see *Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers*.

Connectivity Loss Towards a Single Destination Only

In certain deployments, a line card indicates a complete connectivity loss towards a single destination only, but it functions properly for other destinations. Such cases are identified and the affected line card is recovered. Consider a sample scenario in which the active planes are 0,1,2,3 and the spare planes are 4,5,6,7 in the connection between line card 0 and line card 1. If line card 0 has single link failures for planes 0 and 1 and if line card 1 has single link failures for planes 2 and 3, a complete connectivity loss occurs between the two line cards. Both line card 0 and line card 1 undergo a phased mode of recovery and fabric healing takes place.

Redundancy Fabric Mode on Active Control Boards

You can configure the active control board to be in redundancy mode or in increased fabric bandwidth mode. To configure redundancy mode for the active control board, use the **redundancy-mode redundant** statement at the **[edit chassis fabric]** hierarchy level. For more information, see *Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers*.

Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers

IN THIS SECTION

- [Fabric-Failure Detection Methods on MX Series Routers | 33](#)

Connectivity loss in a router occurs when the router is unable to transmit data packets to other neighboring routers, although the interfaces on that router continue to be in the active state. As a result, the other neighboring routers continue to forward traffic to the impacted router, which drops the arriving packets without sending a notification to the other routers.

When a Packet Forwarding Engine in a router is unable to send traffic to other Packet Forwarding Engines over the data plane within the same router, the router is unable to transmit any packets to a neighboring router, although the interfaces are advertised as active on the control plane. Fabric failure can be one of the reasons for the loss of connectivity.

The following fabric failure scenarios can occur:

- Removal of the control board

- High-speed link 2 (HSL2) training failures
- Single link failure on a line card
- Multiple link failures on the same line card or the same fabric plane
- Multiple link failures randomly on a line card or a fabric plane
- Intermittent cyclic redundancy check (CRC) errors
- A complete loss of connectivity for only one destination and not to other destinations

When a line card does not forward traffic due to a certain reason to other line cards within the device, the control protocol on the Routing Engine is unable to detect this condition. The traffic transmission is not diverted to the functional, active line cards and, instead, the packets are continued to be sent to the affected line card and are dropped at that point. The following might be the causes for a line card being unable to forward traffic:

- All the planes in the system are in the **Offline** or **Fault** state.
- All the Packet Forwarding Engines on the line card might have disabled the fabric streams due to destination errors.

If all the Switch Control Boards (SCBs) lose connectivity to the line cards, then all the interfaces are brought down. If a Packet Forwarding Engine of a line card loses complete connectivity to or from the fabric, then that line card is brought down.

System hardware failures can be of the following types:

- A single occurrence or a rare failure for a brief period (such as environmental spikes). This failure is effectively healed without manual intervention by restarting the fabric plane and restarting the line cards and the fabric plane, if necessary.
- Repeated failures that occur frequently.
- A permanent failure.

A recovery from any case of reduced throughput, such as multiple Packet Forwarding Engine destination timeouts on multiple planes is not attempted. Restoration of connectivity is attempted only when all the planes are in the **Offline** or **Fault** state or when the destinations are unreachable on all active planes.

If connectivity loss occurs because of a certain line card, which is either a common source or common destination of the destination timeout, and if you have configured the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level, no recovery action is taken. The **show chassis fabric reachability** command output can be used to verify the status of the fabric and the line card. An alarm is triggered to indicate that the particular line card is causing the connectivity loss.

Fabric-Failure Detection Methods on MX Series Routers

The chassis daemon (chassisd) process detects the removal of a control board. The removal of the control board causes all the active planes that reside on that board to be disabled and a switchover is performed. If the active Routing Engine is also unplugged along with the control board, the detection of the control board removal is delayed until the switchover of the Routing Engine occurs and the reconnection in the primary, backup Routing Engine pair occurs. If the control board is turned offline by specifying the **request chassis cb slot *slot-number* offline** or a pressed physical button to cause a graceful shutdown, a fabric failure does not occur, even if the control board is moved to the offline state.

If you remove the control board on the primary Routing Engine, resulting in removal of active fabric planes, the line card takes the local action of disabling the removed planes. If spare planes are available, the line card initiates switchover to spare planes. If an active control board on a backup Routing Engines is removed, the primary Routing Engine disables the removed planes and performs the switchover to spare planes, if available. The software attempts to optimize the duration of connectivity loss by disabling all removed planes. The spare planes are transitioned to the online state one by one.

Fabric self-ping is a mechanism to detect any issues in the fabric data path. Each Packet Forwarding Engine forwards fabric data cells that are destined to itself over all active fabric planes. To transmit the data cell, the Packet Forwarding Engine fabric sends the request cells over an active plane and waits for a grant packet. The destination Packet Forwarding Engine sends a grant packet over the same plane on which the request cell is received. When the grant cell is received, the source Packet Forwarding Engine sends the data cell.

The Packet Forwarding Engine fabric contains the capability to detect grant delays. If grants are not received within a certain period of time, a destination timeout is declared. Destination timeout on a certain plane by a Packet Forwarding Engine on two or more line cards is considered as an indication for plane failures. Even if one Packet Forwarding Engine on a line card flashes an error, the line card is considered to be in error. Destination timeouts are noticed when the Packet Forwarding Engine sends traffic actively because requests are sent only for valid data cells. The software takes an appropriate action based on the destination timeout. For self-ping, a data cell is destined to the source Packet Forwarding Engine only.

Fabric ping failure messages are sent to the fabric manager on the Routing Engine, which collates all of the errors reported by all the line cards and takes a corrective action. For example, a ping failure for all links of the same line card might indicate a problem on the line card. Ping failure for multiple line cards for the same fabric plane might indicate a problem with the fabric.

If the Routing Engine determines that a fabric plane is down, based on the information on errors it receives from the line cards or the Packet Forwarding Engines, over a period of 5 seconds, it indicates a fabric failure. The duration of 5 seconds is the period for which the Routing Engine collates the errors from all of the line cards.

Fabric self-ping packets are periodically sent to check the sanity of the fabric links. Self pings are sent at interval of 500 ms. The destination timeout is also checked in intervals of 500 ms. If two timeouts occur

successively, self ping failure is detected. When a destination timeout is received, the Packet Forwarding Engine fabric stops the sending of packets to the fabric. To examine the link condition again, the software resets the credits to ensure that new requests are sent again. When a self-ping failure occurs, the line card removes the affected plane from sending data to all destinations. This method ensures that self-ping is not attempted to be sent again on the defective plane.

The following guidelines apply to the self-ping capability:

- By default, self pings are not sent on spare fabric planes because spare planes do not carry traffic.
- The size of self-ping packets is large enough to enable the cells to be loaded over all the active fabric planes (maximum of 8 for MX Series routers).
- A detection of received self-ping packets is not performed.
- High priority queue is used to enable self-ping to be sent for oversubscription cases.

Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers

You can configure a line card with degraded fabric to be moved to the offline state on an MX960, MX480, or MX240 router. Configuring this feature does not affect the system. You can configure this feature without restarting the line card or restarting the system.

The following scenarios can occur when you configure the feature to disable line cards with degraded fabric:

- If a line card has degraded fabric bandwidth and if you configure this capability to turn off such a line card after it has been operating with degraded fabric for some time, the corrective action is still taken.
- If a line card has been brought offline because of fabric errors and this functionality to move the line card to offline state is disabled, the line card is transitioned to the online state automatically.
- If a line card has been brought offline because of fabric errors and this functionality to move the line card to offline state is disabled or configured for some other line card, the line card that was turned offline is transitioned to the online state automatically.
- All the line cards that were brought offline because of degraded fabric, when you configured this setting, are brought back online when you commit any configuration under the **[edit chassis]** hierarchy level. Similarly, a restart of the chassis daemon or the *Graceful Routing Engine switchover* (GRES) operation also causes the line card that is disabled because of degraded fabric to be moved to the online state.

Degraded fabric indicates that a line card is operating with less than the required number of active fabric planes. If an line card is operating with less than four planes, it is considered to be degraded. This rule applies to all types of line cards and fabric. Degraded condition denotes that good fabric traffic exists at a reduced bandwidth.

The following conditions can result in degradation of fabric:

- The fabric control boards go offline as a result of an unintentional, abrupt power shutdown.
- An application-specific integrated circuit (ASIC) error, which causes a plane of a control board to be automatically turned offline.
- Manually bringing the fabric plane or the control board to the offline state.
- Removal of the control board
- Self-ping failure on any plane.
- HSL2 training failure for active plane.
- If a spare fabric plane has CRC errors, and this spare plane is made online, the link with the CRC error is disabled. This mechanism might cause a degradation in fabric in one direction and might cause a null route in the other direction.
- When a self-ping or HSL2 training failure occurs, the fabric plane is disabled for a particular line card and it is online for other line cards. This condition can also cause a null route.

If you need to remove the control board or move a fabric plane to the offline state during a system maintenance, you must enable the functionality to turn the line cards with degraded bandwidth to the offline state (by using the **offline-on-fabric-bandwidth-reduction** statement at the `[edit chassis fpc slot-number]` hierarchy level).

The following corrective actions are performed when a null route or fabric degradation occurs:

- Regardless of whether a spare control board is available or not, self-ping state for each line card is monitored at intervals of 5 seconds at the Routing Engine. Fabric manager uses the following rule to determine the presence of a spare control board:
 - MX960 routers with I-chip or I-chip and Trio-chip-based line cards that contain three control boards
 - MX240 or MX480 routers with I-chip or I-chip and Trio-chip-based line cards that contain two control boards
 - MX960, MX480, or MX240 routers that contain only Trio-based line cards are not considered to contain a spare control board

If during any such interval of 5 seconds, two line cards indicate a failure for the same plane, a switchover to the spare control board. In this case, the control board that reported errors is turned offline and the spare control board is turned online.

- If a spare control board is available, and if you configure the functionality to disable line cards with degraded fabric, self-ping state for each line card is monitored at intervals of 5 seconds at the Routing Engine. The following conditions can occur:
 - During any 5-second interval, if only one line card indicates a failure for a plane, the fabric Manager waits for the next interval. During the subsequent interval, if no other line card indicates a failure for the same plane, switchover of the control board is performed.
 - During any 5-second interval, if multiple line cards show failures for multiple control boards, the fabric manager waits for the next interval. During the subsequent interval, if the same condition remains, all the failing line cards are turned offline even if the spare control board is present.
 - During any 5-second interval, if any line card shows a failure for multiple planes on multiple control boards, the fabric manager waits for the next interval. During the subsequent interval, if the same condition persists, the line card is turned offline even if the spare control board is present.
- If spare planes are not available, the line card is turned offline when it displays a failure for a single plane or multiple planes. The line card is brought offline only if you previously configured the **offline-on-fabric-bandwidth-reduction** statement at the `[edit chassis fpc slot-number]` hierarchy level.

Understanding Fabric Fault Handling on T4000 Router

The T4000 router consists of a Switch Interface Board (SIB) with fabric bandwidth double the capacity of the T1600 router. The fabric fault management functionality is similar to that in T1600 routers. This topic describes the fabric fault handling functionality on T4000 routers.

The fabric fault management functionality involves monitoring all high-speed links connected to the fabric and the ones within the fabric core for link failures and link errors.

Action is taken based on the fault and its location. The actions include:

- Reporting link errors in system log files and sending this information to the Routing Engine.
- Reporting link failures at the Flexible Port Concentrator (FPC) or at the SIB and sending this information to the Routing Engine.
- Marking a SIB in **Check** state.
- Moving a SIB into **Fault** state.

The SIB in T4000 routers forms the core of the fabric with 4:1 redundancy—the redundant SIB becomes active when the active SIB becomes nonfunctional, is deactivated, or is removed. The following are the high-level indications of fabric faults that are monitored by Junos OS:

- An SNMP trap is generated whenever a SIB is reported as **Check** or **Fault**.
- **show chassis alarms**—Indicates that a SIB is in **Check** or **Fault** state.
- **show chassis sibs**—Indicates that a SIB is in **Check** or **Fault** state or that a SIB is in **Offline** state when the SIB initializes (this occurs when the SIB does not power on fully).
- **show chassis fabric fpcs**—Indicates whether any fabric links are in error on the FPCs' side.
- **show chassis fabric sibs**—Indicates whether any fabric links are in error on the SIBs' side.
- The `/var/log/messages` system log messages file at the Routing Engine has error messages with the prefix **CHASSISD_FM_ERROR**.
- The SIBs display the **FAIL LED**.

NOTE: The fabric planes in the chassis determine whether the chassis is a T640 router, a T1600 router, or a T4000 router. Power entry modules (PEMs), FPCs, or fan trays do not determine chassis personality. Alarms are raised if the old PEMs or fan trays are present in a T4000 chassis. You can identify a router based on its fabric planes:

- If all planes present are F16-based SIBs, the chassis is a T640 chassis.
- If all planes present are SF-based SIBs, the chassis is a T1600 chassis.
- If all planes present are XF-based SIBs, the chassis is a T4000 chassis.

Note that mixing of fabric planes is not a supported configuration except during upgrade. You can change the personality of a chassis without a reboot by changing all the fabric planes and by issuing the **set chassis fabric upgrade-mode** CLI command to check the personality. If you do not issue the **set chassis fabric upgrade-mode** CLI command, the personality does not change until the next boot.

In T4000 routers, you come across the following faults:

- **Board-level faults**—These faults occur during initialization or during runtime. Power failure during board initialization, high-speed links transmit error, and polled I/O error during runtime are some examples of board-level faults.
- **Link-level faults**—These faults occur during initialization or during runtime. Link training failure at initialization time (failure of the data plane links between an FPC and a SIB to be trained when the FPC or SIB is initialized), error detected on the channel between the SIB and a Packet Forwarding

Engine, cyclic redundancy check (CRC) errors detected at runtime, and Packet Forwarding Engine destination errors are types of link-level faults.

- Faults based on environmental conditions—These faults occur during runtime. Sudden removal of an FPC or a SIB might result in an operator error. When a SIB becomes too hot or when SIB voltages are beyond thresholds, the errors generated are classified into environmental errors.

You can implement one of the following options to handle the faults:

- Log the error and raise an alarm.
- Switch over to the spare plane, if available.
- Continue with a reduced number of parts of a plane.
- Continue with a reduced number of usable planes.
- Use polling-based fault handling.
- Monitor high-speed link errors and manually bring the link down to a suitable threshold.

The polled I/O errors and the link errors are monitored every 500 milliseconds, and the board exhaust temperature and board voltages are monitored every 10 seconds.

Understanding Fabric Fault Handling on PTX5000 Packet Transport Router

IN THIS SECTION

- [SIB-Level Faults | 40](#)
- [FPC-Level Faults | 41](#)

Starting with Junos OS Release 14.1, the PTX5000 Packet Transport Router supports nine Switch Interface Boards (SIBs). Each FPC2-PTX-P1A FPC supports 1Tb per slot capacity, thereby resulting in a fabric bandwidth of 16 terabits per second (Tbps), full-duplex (8 Tbps of any-to-any, nonblocking, half-duplex) switching.

The fabric fault management functionality involves monitoring all high-speed links connected to the fabric and the ones within the fabric core for link failures and link errors.

The faults that occur in a PTX5000 can be broadly categorized into:

- Board faults—Faults that arise in a SIB or in an Flexible Port Concentrator (FPC) during initialization or during runtime, including issues that arise when a router component is accessing the SIB or FPC or issues that arise out of midplane failures.
- Link faults—Faults that occur on high-level links in a router during initialization or during runtime.
- Faults due to environmental conditions—Faults that occur because of overvoltage or over-temperature; faults that occur because of an operator mishandling a SIB or an FPC, and so on.

The router takes action on the basis of the fault category and the fault location. The actions include:

- Reporting link errors in system log files and sending this information to the Routing Engine.
- Displaying the link errors when you run one of the operational commands listed in [Table 2 on page 39](#):

Table 2: List of Operational Mode Commands

Operational mode command	Description
show chassis sibs	Displays Switch Interface Boards (SIBs) status information.
show chassis fabric fpcs <slot number>	Displays the fabric state of the specified FPC slot. If no slot number is provided, it displays the status of all FPCs.
show chassis fabric sibs <slot number>	Displays the state of the electrical switch fabric link between the SIBs and the FPCs.
show chassis fabric reachability <detail>	Displays the current state of fabric destination reachability.
show chassis fabric unreachable-destinations	Displays the list of destinations that have transitioned from a reachable state to an unreachable state.
show pfe statistics error	Displays Packet Forwarding Engine error statistics.
show chassis fabric topology <sib_slot>	Displays the input-output link topology.

Table 2: List of Operational Mode Commands (Continued)

Operational mode command	Description
show chassis fabric summary	Displays the state of all fabric planes and the elapsed uptime.

- Reporting link failures at the FPC level or at the SIB level and sending this information to the Routing Engine.
- Reporting link error information in the **show chassis alarms** operational command.
- Moving a SIB into *fault* state.

The following sections explain fabric fault handling functionality on the PTX5000:

SIB-Level Faults

The following sections give a brief overview on the types of faults that occur on a SIB and how to handle them:

Types of Faults That Occur on a SIB

Board faults and link faults occur on a SIB during initialization and during runtime. Some faults occur because of environmental conditions such as overvoltage or over-temperature, or when an operator mishandles the SIB.

NOTE: Run the operational mode commands listed in [Table 2 on page 39](#) to detect faults.

During SIB initialization and runtime, the following faults might occur:

- Board faults, such as failure of SIBs to power up, ASICs reset failure, Switch Processor Mezzanine Board (SPMB) polled I/O access failure to ASICs, board component failures such as PIC failures, or router component access failures.
- Link faults such as high-level link errors that occur during *link training*.
- Faults that occur because of environmental conditions or because of mishandling of the SIB by the operator.

Handling SIB-Level Faults

The following list illustrates how the router handles a fault that occurs on a SIB during initialization, during runtime, because of environmental conditions, and because of mishandling of the SIB by the operator:

- To handle a board fault on a SIB during initialization, the chassis daemon (*chassisd*) marks the SIB to be in *fault* state. After the SIB is marked as faulty, no operation occurs on this SIB.
- To handle a board fault on a SIB during runtime, *chassisd* logs an error in the system log file, raises an alarm indication error type, and marks the SIB as faulty. After the SIB is marked as faulty, no operation occurs on this SIB.
- To handle a link fault on a SIB during runtime, when a link error comes up during link training, *chassisd* informs the FPC corresponding to the link on which the error occurred to disable the links to the affected SIB. The *chassisd* then sends an error message to all the other FPCs in the router to stop using the failed SIB link and a link error alarm is generated. Note that when more than one FPC report errors for a given SIB, the SIB is disabled for all FPCs and no traffic is sent by the Packet Forwarding Engine through the affected SIB.
- To handle a link fault on a SIB during runtime, *chassisd* marks the SIB as faulty and specifies a reason for the error, and the SIB is disabled.
- In case of an environmental fault—overvoltage or over-temperature—the SIB is immediately taken offline. Note that an error is logged periodically as the temperature or voltage rises, and the SIB is taken offline when it crosses a certain threshold voltage or temperature.
- When a SIB is abruptly removed or dislodged, all the affected Packet Forwarding Engines stop using that plane to reach other Packet Forwarding Engines in the router.

FPC-Level Faults

The following sections give a brief overview of the types of faults that occur on an FPC and how to handle them:

Types of Faults That Occur on an FPC

Board faults and link faults occur on an FPC during initialization and during runtime. Some faults also occur because of environmental conditions such as overvoltage, over-temperature, or when the operator mishandles the FPC.

NOTE: Run the operational commands listed in [Table 2 on page 39](#) to detect faults.

During FPC initialization and runtime, the following faults might occur:

- Board faults such as failure of FPCs to power up, failure of ASICs to come out of reset phase, PMB polled I/O access failure to ASICs, board component failures such as PIC failure, or router component access failures.
- Link faults such as high-level link errors that occur during link training.
- Faults that occur because of environmental conditions or because of mishandling of an FPC by the operator.

Handling FPC-Level Faults

The following list illustrates how the router handles a fault that occurs on an FPC during initialization, during runtime, because of environmental conditions, and because of mishandling of the FPC by the operator:

- To handle a board fault on an FPC during initialization, chassisd marks the FPC to be in *fault* state. After the SIB is marked as faulty, no operation occurs on this FPC.
- To handle a board fault on an FPC during runtime, chassisd logs an error in the system log file, raises an alarm indication error type, and marks the FPC as faulty. After the FPC is marked as faulty, no operation occurs on this FPC.
- To handle onboard link errors on an FPC during initialization or during runtime, the FPC is taken down and all the affected Packet Forwarding Engines stop using that plane to reach other Packet Forwarding Engines in the router.

NOTE: No planes are taken down during initialization because the link training process for the fabric is not yet complete.

Onboard link errors during runtime are resolved on the basis of current configuration; either the FPC is rebooted or the error is logged and the FPC continues with initialization.

- In case of an environmental fault—over voltage or over-temperature—the FPC is immediately taken offline. Note that an error is logged periodically as the temperature or voltage rises, and the FPC is taken offline when it crosses a certain threshold voltage or temperature.
- When an FPC is abruptly removed or dislodged, all the other Packet Forwarding Engines stop sending traffic to the Packet Forwarding Engines in this FPC.

Understanding Fabric Fault Handling on Enhanced Switch Fabric Board (SFB2)

The MX2000 line of routers support Switch Fabric Boards (SFBs) and enhanced SFBs (SFB2s) but not both at the same time. The SFB and SFB2 host three fabric planes each. So, the chassis supports a total of 24 planes. Junos OS Release 15.1F6 and 16.1R1 support fabric fault handling for each plane in both SFB and SFB2. In earlier releases, fabric fault handling is supported for each SFB, not for each plane.

Table 3 on page 43 lists the differences between fabric fault handling per plane and per SFB.

Table 3: SFB Versus SFB2 Fabric Fault Handling

SFB Level (SFB)	Plane Level (SFB and SFB2)
Cyclic redundancy check(CRC) errors on any link on the SFB are indicated on the SFB.	CRC errors on any link on the SFB or SFB2 are indicated on the plane.
On encountering destination errors, the line card isolates the SFB (all 3 planes).	On encountering destination errors, the line card isolates the corresponding plane. Other planes continue to operate.

Fabric fault handling per-plane provides the following benefits:

- Increased granularity, which helps identify, isolate, and repair faults.
- Alarms and log messages provide fault information per plane instead of per SFB, which makes debugging easier.
- If an SFB has a single faulty plane, the other two planes can continue to operate. There is no need to take the entire SFB offline.
- In case of transient errors, while repairing you can isolate a single plane instead of isolating the bouncing the SFB.

To view fabric fault handling information for all 24 planes, use the **extended** option with the existing fabric commands.

Managing Bandwidth Degradation

Certain errors result in packets being dropped by a system without notification. Other connected systems continue to forward traffic to the affected system, impacting network performance. A severely degraded fabric plane can be one of the reasons here.

By default, Juniper Networks routers attempt to start healing from such situations when the system detects issues with Packet Forwarding Engines. If the healing fails, the system turns off the interfaces, thereby preventing further escalations.

On Junos OS, you can use the configuration statement **bandwidth-degradation** at the `[edit chassis fpc slot-numberfabric]` hierarchy to detect and respond to fabric plane degradation in ways you deem fit. You can configure the router to specify which healing actions the router should take once such a condition is detected. You can also use the optional statement **blackhole-action** to determine how the line card responds to a 100 percent fabric degradation scenario. This command is optional and overrides the default fabric hardening procedures.

NOTE: The **bandwidth-degradation** command and the **offline-on-fabric-bandwidth-reduction** statements are mutually exclusive. If both commands are configured, an error is issued during the commit check.

The **bandwidth-degradation** statement is configured with a percentage and an action. The **percent-age** value can range from 1 to 99, and it represents the percentage of fabric degradation needed to trigger a response from the line card. The **action** attribute determines the type of response the line card performs once fabric degradation reaches the configured percentage.

The statement is only configured with an **action** attribute, which triggers when the percentage of fabric degradation reaches 100 percent.

The following actions can be applied to either configuration statement:

- **log-only:** A message gets logged in the chassisd and message files when the fabric degradation threshold is reached. No other actions are taken.
- **restart:** The line card with a degraded fabric plane is restarted once the threshold is reached.
- **offline:** The line card with a degraded fabric plane is taken offline once the threshold is reached. The line card requires manual intervention to be brought back online. This is the default action if no action attribute configured.
- **restart-then-offline:** The line card with a degraded fabric plane is restarted once the threshold is reached, and if fabric plane degradation is detected again within 10 minutes, the line card is taken offline. The line card requires manual intervention to be brought back online.

NOTE: This feature is available in the Junos OS Release 15.1R1.

Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions

You can disable line card restarts to limit recovery actions from a degraded fabric condition. On T640 and T1600 routers, only the fabric plane is restarted. On PTX Series routers, only the Switch Interface Boards (SIBs) are restarted. To disable the restarting of line cards, use the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level:

```
[edit chassis fabric]
degraded
```

Whenever a line card restart is disabled, an alarm is raised when there are unreachable destinations present in the router, and you must restart the line cards manually.

To ensure that both the fabric planes (T640 and T1600 routers) or the SIBs (PTX Series routers) and the line cards are restarted during the recovery process, do not configure the **action-fpc-restart-disable** statement at the **[edit chassis fabric degraded]** hierarchy level.

Disabling an FPC with Degraded Fabric Bandwidth

You can bring an FPC with degraded fabric bandwidth offline to avoid causing a null route in the chassis for an extended time. To configure the option to disable an FPC with degraded bandwidth, use the **offline-on-fabric-bandwidth-reduction** statement at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis]
fpc slot-number {
    offline-on-fabric-bandwidth-reduction;
}
```

The fabric manager checks the number of current active planes periodically. If the number of active planes is lower than the required number of active planes for a particular router, the system waits 10

seconds before it takes any corrective action. If the reduced bandwidth condition persists for an FPC and if this feature has been configured for the FPC, the system brings the FPC offline.

Error Handling by Fabric OAM

Fabric Operation, Administration, Maintenance (OAM) feature helps in detecting failures in fabric paths. Fabric OAM validates the fabric connectivity before sending traffic on a fabric plane whenever a new fabric path is brought up for a PFE. If a failure is detected, the software reports the fault and avoids using that fabric plane for that PFE. This feature works by sending a very low packets per second (PPS) self-destined OAM traffic over each of the available fabric planes and detecting any loss of traffic at the end points (fabric self-ping check).

NOTE: The feature is enabled by default. You can disable the feature by using the CLI command **set chassis fabric oam detection-disable**

The Fabric OAM checks are done at boot time. The failed paths are disabled. The system does not do any recovery action by itself. However, you can try to recover the affected fabric planes by restarting the SIBs. The recovery steps depend on the nature of the failure.

When the same fabric planes fail on a single or multiple FPCs, restart the SIB containing the failed planes, using the following commands:

```
user@host> request chassis sib slot slot-number offline
```

```
user@host> request chassis sib slot slot-number online
```

When random fabric planes fail on multiple FPCs, the fault cannot be isolated to a specific FPC or SIB. However, you can try to recover the planes by restarting the SIBs that contain the affected planes in a sequential manner.

For each error detected by the fabric OAM feature, a syslog is generated. The following is an example:

```
Oct 29 23:02:46 router-dvi resiliencyd[12921]: Error: /fpc/0/fabspoked-
pfe/0/cm/0/pfe/0/fabric_link_foam_fault (0x410009), scope: board, category:
internal, severity: major, module: fab-pfe@0, type: fabric link foam fault
```

The following syslog message indicates that a fabric OAM-related error was cleared.

```
Oct 29 23:25:14 router-dvi resiliencyd[12921]: Performing action clear-cmalarm
for error /fpc/0/fabspoked-pfe/0/cm/0/pfe/0/fabric_link_foam_fault (0x410009) in
module: fab-pfe@0 with scope: board category: internal level: major
```

Also, you can use the CLI commands **show system errors active detail** and **show system alarms** to view the Fabric OAM-related errors.

```
user@router> show system alarms
```

```
20 alarms currently active
```

Alarm time	Class	Description
2020-08-20 10:32:02 UTC	Major	FPC 0 Ideeprom read failure
2020-08-20 10:58:07 UTC	Major	FPC 0 Self_FOAM fault detected

[...Output truncated...]

The following output shows details for both single fabric plane failure (on Packet Forwarding Engine 0) and all fabric planes failure (on Packet Forwarding Engine 1).

```
user@router> show system errors active detail
```

```
System Active Errors Detail Information
```

```
FPC 0
```

```
-----
Error Name           : fabric_down_condition_on_pfe
Identifier           : /fpc/0/fabricHub/0/cm/0/fabrichub/1/
fabric_down_condition_on_pfe
Description          : fabric_down_condition_on_pfe
State                : enabled
Scope                : pfe
Category             : functional
Level                : major
Threshold            : 1
Error limit          : 0
Occur count          : 3
Clear count          : 2
Last occurred(ms ago) : 103158
```

```
System Active Errors Detail Information
```

```
FPC 0
```

```
-----
Error Name           : fabric_link_foam_fault
```

```

Identifier      : /fpc/0/fabspoked-pfe/0/cm/0/pfe/0/fabric_link_foam_fault
Description     : fabric link foam fault
State          : enabled
Scope         : board
Category       : internal
Level         : major
Threshold      : 1
Error limit    : 100
Occur count    : 2
Clear count    : 0
Last occurred(ms ago) : 113277
System Active Errors Detail Information
FPC 0
-----
Error Name      : fabric_link_foam_fault
Identifier      : /fpc/0/fabspoked-pfe/0/cm/0/pfe/1/fabric_link_foam_fault
Description     : fabric link foam fault
State          : enabled
Scope         : board
Category       : internal
Level         : major
Threshold      : 1
Error limit    : 100
Occur count    : 12
Clear count    : 0
Last occurred(ms ago) : 103267
System Active Errors Detail Information
RE 0
-----
Error Name      : fpga_min_supported_fw_ver_mismatch
Identifier      : /re/0/hwdre/0/cm/0/fpga_fw_events/UBAM FPGA/
fpga_min_supported_fw_ver_mismatch
Description     : firmware_version_lower_than_minimum_expected
State          : enabled
Scope         : board
Category       : functional
Level         : minor
Threshold      : 10
Error limit    : 1
Occur count    : 1
Clear count    : 0
Last occurred(ms ago) : 68886367

```


You can use the CLI command **show chassis fabric fpcs** to view the fabric OAM self-ping state of each fabric plane.

```

user@router> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic0_Fcore0 (plane 0) Plane Disabled, Links ok Fabric OAM failed
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok Fabric OAM success
  PFE #1
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok Fabric OAM success

```

The **show chassis fabric fpcs** command displays the following output when the fabric OAM feature is disabled:

```

user@router> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok

```

```

SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
PFE #1
SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
PFE #2
SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
PFE #3

```

Release History Table

Release	Description
14.2R6	Starting in Junos OS Release 14.2R6, if a SIB becomes offline because of extreme conditions such as high voltage or high temperature, then as part of the recovery process, the router does not restart the fabric plane for that SIB.
14.2R6	Starting in Junos OS Release 14.2R6, you can manage fabric degradation in single-chassis systems better by incorporating fabric self-ping and Packet Forwarding Engine liveness mechanisms.
14.1	Starting with Junos OS Release 14.1, the PTX5000 Packet Transport Router supports nine Switch Interface Boards (SIBs).

13.3

Starting with Junos OS Release 13.3, you can use PTX Series routers to configure Packet Forwarding Engine (PFE)-related error levels and the actions to perform when a specified threshold is reached.

RELATED DOCUMENTATION

[Fabric Grant Bypass | 62](#)[Fabric Plane Management | 51](#)[Troubleshooting the T4000 SIBs](#)[Troubleshooting the T4000 FPCs](#)[show chassis alarms | 481](#)[show chassis fabric fpcs | 1089](#)[show chassis fabric destinations | 1048](#)[show chassis fabric sibs | 1210](#)[show chassis sibs | 1573](#)[PTX5000 Description](#)[FPCs Supported on the PTX5000](#)[PTX5000 Switch Interface Board Description](#)

Fabric Plane Management

IN THIS SECTION

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- [Fabric Plane Management on AS MLC Modular Carrier Card | 56](#)
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Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers

An MX960 router can support three Enhanced Switch Control Boards (SCBE2s or SCBEs)—two planes on each SCB and make up a total of six fabric planes. MX240 and MX480 routers can support up to two SCBE2s or SCBEs—four fabric planes on each SCBE make up a total of eight planes. However, the MX240 and MX480 routers have only six active planes. The remaining two are redundant. MX2020 routers can support eight Switch Fabric Boards (SFBs) or 24 fabric planes.

NOTE: The MPC7E-MRATE and MPC7E-10G MPCs are supported only on MX-SCBE2.

You can configure the active control board to be in redundancy mode or in increased fabric bandwidth mode. You can enable increased fabric bandwidth of active control boards for optimal and efficient performance and traffic handling by configuring the active control boards to be in redundancy mode. To configure redundancy mode for the active control board, use the **redundancy-mode redundant** statement at the **[edit chassis fabric]** hierarchy level:

When you configure this option, all the FPCs use 4 fabric planes as active planes, regardless of the type of the FPC.

To configure increased bandwidth mode for the active control board, use the **redundancy-mode increased-bandwidth** statement at the **[edit chassis fabric]** hierarchy level:

In increased fabric bandwidth mode, MX Series routers will use 6 active planes. MX240 and MX480 routers will also use 2 spare planes in addition to the 6 active planes.

Increased fabric bandwidth mode is enabled by default on MX routers with Switch Control Board (SCB). On MX routers with Enhanced SCB—SCBE, regardless of the type of MPC or DPC installed on it, redundancy mode is enabled by default.

Configuring this feature does not affect the system. You can configure this feature without restarting the FPC or restarting the system.

See also: [MX-Series Switch Control Board \(SCB\) Description](#)

Example: Configuring Fabric Redundancy Mode

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- [Requirements for Configuration of the Fabric Redundancy Mode | 53](#)
- [Overview | 53](#)
- [Configuring Increased Bandwidth Mode | 53](#)
- [Verification | 55](#)

Requirements for Configuration of the Fabric Redundancy Mode

This example uses the following hardware and software components:

- Junos OS Release 12.3 R2 or later for MX Series routers
- A single MX480 router with MPC4E

Overview

This example provides information about configuring the fabric redundancy mode on an MX480 router with MPC4E. You can configure the MPC4E to function in redundant fabric mode or increased bandwidth mode. If you do not configure the mode, the MPC4E, by default, functions in redundant fabric mode. In redundant fabric mode, the number of active fabric planes is 4. If you configure the MPC4E to function in increased bandwidth mode, the number of active fabric planes increases to 6.

See also: [32x10GE MPC4E](#) and [2x100GE + 8x10GE MPC4E](#).

Configuring Increased Bandwidth Mode

IN THIS SECTION

- [Procedure | 54](#)

Procedure

Step-by-Step Procedure

In this example, you configure increased bandwidth mode on an MX480 router with MPC4E. The existing fabric mode on the MX480 router is redundant fabric mode. To configure the fabric mode, perform the following tasks:

1. Verify the existing fabric mode of the router by using the **show chassis fabric mode** command.

```
user@host > show chassis fabric mode
Fabric Operating Mode :
    Redundant Fabric
```

2. View the number of active fabric planes by using the **show chassis fabric summary** command.

```
user@host > show chassis fabric summary
Plane   State   Uptime
0       Online  2 hours, 58 minutes, 22 seconds
1       Online  6 seconds
2       Online  32 seconds
3       Online  2 hours, 58 minutes, 23 seconds
4       Spare   31 seconds
5       Spare   21 seconds
6       Spare   18 seconds
7       Spare   9 seconds
```

For FPC slots with MPC Type 4, Type 5, or MCC:

Fabric planes 1 and 5, 3 and 7 use shared physical links.

Those slots may run in a reduced bandwidth in case both plane 1 and 5, or both 3 and 7 are active.

Type 4 and Type 5 MPCs refer to MPC 4 and MPC5 line cards, respectively.

3. In configuration mode, go to the **[edit chassis]** hierarchy level and set the fabric mode to **increased-bandwidth** as follows:

```
[edit chassis]
user@ host #set fabric redundancy-mode increased-bandwidth
```

Results

In **redundant fabric** mode, the number of active fabric planes is 4 while the number of spare planes is also 4. In **increased-bandwidth** mode, the number of active planes is 6 while the number of spare planes is 2.

NOTE: Fabric planes 1 and 5 and fabric planes 3 and 7 use shared physical links. So, among fabric planes 1 and 5, only one plane can be active. Similarly, among fabric planes 3 and 7, only one plane can be active.

Verification

IN THIS SECTION

- [Verifying the Fabric Redundancy Mode of the Router | 55](#)
- [Verifying the Number of Active Fabric Planes | 56](#)

To verify that the fabric mode of the MX480 router with MPC4E, perform the following tasks:

Verifying the Fabric Redundancy Mode of the Router

Purpose

To verify that the fabric redundancy mode of the MX480 router with MPC4E has been modified to **increased-bandwidth**.

Action

To view the fabric mode of the router, use the **show chassis fabric mode** command.

```
user@host > show chassis fabric mode
Fabric redundancy mode: Increased Bandwidth
```

Meaning

The MX480 router with MPC4E is functioning in increased bandwidth mode.

Verifying the Number of Active Fabric Planes

Purpose

To verify that the number of active fabric planes is 6.

Action

To view the number of active fabric planes, use the **show chassis fabric summary** command.

```
user@host > show chassis fabric summary
Plane   State   Uptime
0       Online  2 hours, 55 minutes, 49 seconds
1       Online  2 hours, 55 minutes, 25 seconds
2       Online  2 hours, 58 minutes, 48 seconds
3       Online  2 hours, 55 minutes, 50 seconds
4       Online  2 hours, 55 minutes, 48 seconds
5       Spare   2 hours, 55 minutes, 40 seconds
6       Online  2 hours, 55 minutes, 37 seconds
7       Spare   2 hours, 55 minutes, 29 seconds
```

For FPC slots with MPC Type 4, Type 5, or MCC:
 Fabric planes 1 and 5, 3 and 7 use shared physical links.
 Those slots may run in a reduced bandwidth in case both
 plane 1 and 5, or both 3 and 7 are active.

Type 4 and Type 5 MPCs refer to MPC 4 and MPC5 line cards, respectively.

Meaning

Number of active planes on the MX480 router with MPC4E is 6 (0, 1, 2, 3, 4, and 6) while the number of spare planes is 2.

Fabric Plane Management on AS MLC Modular Carrier Card

The Application Services Modular Line Card (AS MLC) provides high application throughput and storage space, and is designed to run services on the MX240, MX480, and MX960 routers. The AS MLC consists of the following components:

- Application Services Modular Carrier Card (AS MCC)

- Application Services Modular Processing Card (AS MXC)
- Application Services Modular Storage Card (AS MSC)

The AS MCC plugs into the chassis and provides the fabric interface.

An MX960 router can support three Switch Control Boards (SCBs) or six fabric planes. The AS MCC supports six fabric planes. An MX240 or MX480 router can support upto two SCBs or two fabric planes. The AS MCC at any time can provide connectivity to only six of the eight fabric planes. Fabric planes 1 and 5, and 3 and 7 use shared physical links. So between fabric planes 1 and 5 only one plane can be active. Similarly between fabric planes 3 and 7, only one plane can be active.

This behavior impacts the output of fabric-related monitoring commands on MX240 and MX480 routers with AS MCCs.

The **show chassis fpc pic-status** command displays the output for an MX480 router with an AS MCC:

```
user@host>show chassis fpc pic-status
Slot 2   Online      MPC Type 1 3D Q
  Slot 1   Online      AS-MCC
  PIC 0   Online      AS-MSC
  PIC 2   Online      AS-MXC
Slot 4   Offline     MPC 3D 16x 10GE
Slot 5   Offline     AS-MCC
```

In the **show chassis fpc pic-status** command output, **Slot 1 and 5** are AS MCC, **PIC 0** is the AS MSC, and **PIC 2** is the AS MXC.

The **show chassis fabric fpcs** command displays the output on an MX480 router with an AS MCC.

```
user@hostshow chassis fabric fpcs
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
```

```

Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused

```

In the **show chassis fabric fpcs** command output, **FPC 5** is the AS MCC.

The **show chassis fabric plane** command displays the output on an MX480 router with an AS MCC.

```

user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE
FPC 2
PFE 0 :Links ok
FPC 4
PFE 0 :Links ok
PFE 2 :Links ok
FPC 5
PFE 0 :Links ok

```

```
Plane 1
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
    FPC 5
      PFE 0 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4
      PFE 0 :Links ok
      PFE 2 :Links ok
```

```

    FPC 5
        PFE 0 :Unused
Plane 6
    Plane state: ACTIVE
        FPC 2
            PFE 0 :Links ok
        FPC 4
            PFE 0 :Links ok
            PFE 2 :Links ok
        FPC 5
            PFE 0 :Links ok
Plane 7
    Plane state: ACTIVE
        FPC 2
            PFE 0 :Links ok
        FPC 4
            PFE 0 :Links ok
            PFE 2 :Links ok
        FPC 5
            PFE 0 :Unused

```

In the **show chassis fabric plane** output, **FPC 5** is the AS MCC.

The term **Unused** in the output for the **show chassis fabric fpcs** and **show chassis fabric plane** command indicates that one fabric plane from each pair that share physical links (1 and 5, and 3 and 7) is inactive.

See *Junos OS System Basics and Services Command Reference* for more information.

Fabric Plane Management on JNP10K-LC2101

JNP10K-LC2101 is a fixed-configuration MPC that provides increased port density and performance to MX10008 routers. JNP10K-LC2101 plugs into the chassis and provides the fabric interface.

An MX10008 router has six Switch Fabric Boards (SFBs). JNP10K-LC2101 has six Packet Forwarding Engines, each having 24 connections to the fabric (24 planes, or 4 connections per SFB). MX10008 routers with JNP10K-LC2101 will have 24 planes active when all the six SFBs are populated. However, in case of a failure of one SFB, the line rate can be achieved with 20 planes. The fabric supports a link speed of 25 Gbps.

The MX10008 SFB also supports fabric hardening. Fabric hardening is the process of controlling bandwidth degradation to prevent null route. The following key CLI commands are available for fabric hardening:

- **set chassis fpc *slot-number* fabric bandwidth-degradation percentage**—Configures the FPC to take a specific action once bandwidth degradation reaches a certain percentage to avoid causing a null route in the chassis.
- **set chassis fabric degraded detection-enable**—Enables detection of an FPC with degraded fabric.
- **set chassis fabric degraded action-fpc-restart-disable**—Disables line card restarts to limit recovery actions from a degraded fabric condition.

In MX10008 SFBs, fabric fault handling is supported per plane. Fabric fault handling per plane results in increased granularity, which helps identify, isolate, and repair faults. If an SFB has a single faulty plane, the other three planes can continue to operate. There is no need to take the entire SFB offline. For example, if a plane encounters a training failure error, the line card isolates that faulty plane; while the other planes continue to operate. Also, any cyclic redundancy check (CRC) errors on any link on the SFB are indicated on the plane, not on SFB.

Signaling Neighboring Routers of Fabric Down on T640 and T1600 Routers

In JUNOS OS Release 10.4 and later, T640 and T1600 routers signal neighboring routers if they are unable to carry traffic due to all fabric planes being taken offline for one of the following reasons:

- CLI or button press initiated offline state.
- Automatically taken offline by the SPMB due to high temperature.
- PIO errors or voltage errors detected by the SPMB CPU to the SIBs.

The following scenarios are not supported:

- All PFEs get destination errors on all planes to all destinations, even with the Switch Interface Boards (SIBs) staying online.
- Complete fabric loss caused by destination timeouts, with the SIBs still online.

When `chassisd` detects all fabric planes are down, the router reboots all the FPCs in the system. When the FPCs come back up, the interfaces will not be created again, since all the fabric planes are down.

Once the user diagnoses and fixes the cause of all fabric planes going down, the user must then online the SIBs. The SIB online process brings up the interfaces.

Fabric down signaling to neighboring routers offers the following benefits:

- FPCs reboot when the control plane connection to the RE times out.

- Extends a simple approach to reboot FPCs when the dataplane blacks out.

When the router transitions from a state where SIBs are online or spare to a state where there are no SIBs in online state, then all the FPCs in the system are rebooted.

An ERRMSG indicates if all fabric planes are down and the FPCs will be rebooted if any fabric planes do not come up in 2 minutes.

An ERRMSG indicates the reason for FPC reboot on fabric connectivity loss.

The chassisd daemon traces when an FPC comes online, but PIC attach is not done due to no fabric plane present.

A warning is issued in the CLI when the last fabric plane is taken offline, that FPCs will reboot. You will need to online the SIBs after fixing the cause of the SIBs not being online. When the first SIB goes online, and link training with the FPCs completes, the interfaces will be created.

Fabric down signaling to neighboring routers functionality is available by default, and no user configuration required to enable it.

No CLI commands or alarms are required for this feature. Alarms indicate an SIBs offline system state to the user.

RELATED DOCUMENTATION

[Fabric Grant Bypass | 62](#)

[Fabric Resiliency | 26](#)

Fabric Grant Bypass

IN THIS SECTION

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Understanding Fabric Grant Bypass

Modular Port Concentrators (MPCs) contain one, two, or four Packet Forwarding Engines. Each Packet Forwarding Engine handles its forwarding decisions independently. Also, each Packet Forwarding Engine implements fabric queuing and flow control features required to communicate with other Packet Forwarding Engines on the same chassis. Transmitting a packet from a Packet Forwarding Engine to another involves a fabric request and grant process. As per this, the ingress Packet Forwarding Engine first sends a fabric request to the egress Packet Forwarding Engine across an active fabric plane. And when it receives the fabric grant in response, it sends the packets to the egress Packet Forwarding Engine.

However, the MX2010 and 2020 routers in some configurations are set to bypass the fabric request and grant process by default. The fabric grant bypass configuration is required to support MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFPP) on MX2020 and MX2010 platforms. On the MX Series routers with the fabric grant bypass enabled, the switch fabric takes in the fabric requests from the ingress Packet Forwarding Engine and provides fabric grants; and the ingress Packet Forwarding Engine sends the packet to the egress Packet Forwarding Engine. In this case, the switch fabric forwards the fabric request to the egress Packet Forwarding Engine, but discards the fabric grants it receives from the egress Packet Forwarding Engine.

[Table 4 on page 63](#) describes the fabric grant bypass behavior on MX2010 and MX2020 routers.

Table 4: Fabric Grant Bypass Behavior on MX2010 and MX2020 Routers

MX Series Routers	Switch Control Board	Switch Fabric Board	Default Fabric Grant Bypass Behavior
MX2010 and MX2020	-	SFB	Enabled for all MPCs.
MX2010 and MX2020	-	SFB2	Enabled for MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFPP). Disabled for all other MPCs.

Disabling Fabric Grant Bypass to Control Congestion and Improve Performance

You can disable fabric grant bypass on the MX2020 and MX2010 routers with SFBs. Disabling the default fabric grant bypass behavior controls congestion and thus improves system behavior and performance on MX2010 and MX2020 routers. After disabling fabric grant bypass, you must reboot the router for the changes to take effect.

NOTE: After you disable fabric grant bypass and reboot the router, the existing MPCs on the router where fabric grant bypass is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP)—do not power on.

To disable fabric grant bypass to control congestion and improve system behavior and performance:

1. Disable fabric grant bypass by including the **fabric disable-grant-bypass** statement at the **[edit chassis]** hierarchy level.

```
[edit chassis]
user@host# set fabric disable-grant-bypass
```

2. After disabling fabric grant bypass, commit the configuration.

```
[edit chassis]
user@host# commit
```

NOTE: After you disable fabric grant bypass and commit the configuration, the router displays the following warning message:

```
[edit] 'chassis' WARNING: Chassis configuration for fabric grant bypass has been changed. A system reboot is mandatory. Please reboot the system NOW. Continuing without a reboot might result in unexpected system behavior. commit complete
```

3. Reboot the router for the configuration to take effect.

```
user@host> request system reboot
```


Re-Enabling Fabric Grant Bypass

After you disable fabric grant bypass, you can re-enable it on the MX2020 and MX2010 routers with SFBs.

NOTE:

- By default, fabric grant bypass is enabled on the MX2010 and MX2020 routers.
- After you enable fabric grant bypass feature and reboot the router, the existing MPCs on the router where fabric grant bypass is enabled by default—such as MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFPP)—power on.

To re-enable fabric grant bypass:

1. Use the **delete** statement with the **fabric disable-grant-bypass** statement at the **[edit chassis]** hierarchy level to enable fabric grant bypass.

```
[edit chassis]
user@host# delete fabric disable-grant-bypass
```

2. After enabling fabric grant bypass, commit the configuration.

```
[edit chassis]
user@host# commit
```

NOTE: After you enable fabric grant bypass and commit the configuration, the router displays the following warning message:

```
[edit] 'chassis' WARNING: Chassis configuration for fabric grant bypass has been changed. A system reboot is mandatory. Please reboot the system NOW. Continuing without a reboot might result in unexpected system behavior. commit complete
```

3. Reboot the router for the configuration to take effect.

```
user@host> request system reboot
```

RELATED DOCUMENTATION

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[Fabric Resiliency](#) | 26

Smooth Upgrade from SFB to SFB2

IN THIS SECTION

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- [Before you Begin the Smooth Upgrade Process](#) | 68
- [Performing a Smooth Upgrade to Enhanced Switch Fabric Board \(SFB2\) with Minimal Impact on Traffic](#) | 81

Understanding the Smooth Upgrade Process

The MX2000 line of routers support Switch Fabric Board (SFB; model number: MX2000-SFB) and the enhanced Switch Fabric Board (SFB2; model number: MX2000-SFB-S). SFB2 is designed to support higher bandwidth than that provided by SFB on the MX2000 line of routers. For instance, the MX2000 line of routers with SFB support fabric bandwidth of 800 Gbps. However, the MX2000 line of routers with SFB2 can support fabric bandwidth of 1.92 Tbps. A smooth upgrade enables you to upgrade from SFB to SFB2 with minimal traffic impact on the MX2000 line of routers.

NOTE: If you have installed the Junos Continuity software package, you cannot perform a smooth upgrade from Switch Fabric Board (SFB) to Enhanced Switch Fabric Board (SFB2) on MX2010 and MX2020 routers.

This topic explains the smooth upgrade process that takes place when you upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2) on MX2000 line of routers.

NOTE: The MX2000 line of routers support either SFB or SFB2 only. The MX2000 line of routers do not support SFB and SFB2 at the same time. However, during an upgrade from SFB to SFB2, the MX2000 line of routers support both SFB and SFB2 at the same time for the duration of the upgrade. But, you must upgrade all 8 SFBs to 8 SFB2s. You cannot replace 4 SFBs with 4SFB2s and retain the other SFBs.

The process of smooth upgrade from SFB and SFB2 includes the following steps:

1. Initiating the smooth upgrade process. When you initiate smooth upgrade, the router can support both SFB and SFB2 at the same time.
2. Performing the smooth upgrade. This step consists of replacing all SFBs with SFB2s.
3. Terminating the smooth upgrade. When you terminate the smooth upgrade process, the router stops supporting SFB and SFB2 at the same time.

A smooth upgrade provides the following benefits:

- The smooth upgrade eliminates network downtime during the smooth upgrade window because of 7+1 fabric redundancy. When one SFB is being upgraded to SFB2, the other seven SFBs are available to handle the traffic.

NOTE: If multiple SFBs are upgraded at the same time, multiple fabric planes are down at any specified time and so traffic is impacted.

- When multiple fabric boards and planes come online at the same time, you can batch them together and train. This reduces the booting up time and the time taken for the plane to come online.
- On MX2000 line of routers with SFB, fabric grant bypass is enabled by default. Disabling fabric grant bypass helps control congestion and improves performance. On MX2000 line of routers with SFB, you can disable fabric grant bypass by By default, fabric grant bypass is disabled for all MPCs on MX2000 line of routers when they connect to SFB2. Fabric grant bypass is enabled by default on MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16xGE-SFPP). When fabric grant bypass is enabled by default, when those MPCs connect to SFB2, fabric grant bypass continues to be enabled and cannot be disabled.

To quickly access the information you need, click the links in [Table 5 on page 68](#).

Table 5: Locating the Information You Need to Work on Smooth Upgrade Process

Task You Need to Perform	Where The Information Is Located
Before You begin	"Before you Begin the Smooth Upgrade Process" on page 68
Perform a Smooth Upgrade	"Performing a Smooth Upgrade to Enhanced Switch Fabric Board (SFB2) with Minimal Impact on Traffic" on page 81

Before you Begin the Smooth Upgrade Process

Before you begin the smooth upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2), complete the following tasks:

NOTE: If you have installed the Junos Continuity software package, you cannot perform a smooth upgrade from Switch Fabric Board (SFB) to Enhanced Switch Fabric Board (SFB2) on MX2010 and MX2020 routers.

- Prepare the router and install the version of Junos OS Release (16.1R1 or later) that supports the smooth upgrade process. For more information about how to install or upgrade the version of Junos OS Release, see *Installing the Software Package on a Device with Redundant Routing Engines*.
- Verify that the Switch Fabric Boards and fabric planes are online and operational. At this time, the line cards are connected to SFB.

1. To verify that all the switch fabric boards (SFBs) are online and operational, issue the following command:

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E0A50AFJ  MX2020
Midplane      REV 01   711-032387   abcd1111      Lower Backplane
Midplane 1    REV 04   711-032386   ABAB9191      Upper Backplane
PMP 1        REV 05   711-032428   ACAJ1526      Upper Power Midplane
PMP 0        REV 04   711-032426   ACAJ1585      Lower Power Midplane
```

FPM Board	REV 06	760-040242	ABBT8836	Front Panel Display
PSM 0 Module	REV 01	740-050037	1EDB32101E3	DC 52V Power Supply
PSM 1 Module	REV 01	740-033727	1E012130107	DC 52V Power Supply
PSM 2 Module	REV 01	740-050037	1EDB3210162	DC 52V Power Supply
PSM 3 Module	REV 01	740-050037	1EDB32000R6	DC 52V Power Supply
PSM 4 Module	REV 01	740-050037	1EDB313005M	DC 52V Power Supply
PSM 5 Module	REV 01	740-050037	1EDB321016G	DC 52V Power Supply
PSM 6 Module	REV 01	740-050037	1EDB313005F	DC 52V Power Supply
PSM 7 Module	REV 01	740-050037	1EDB313009X	DC 52V Power Supply
PSM 8 Module	REV 01	740-050037	1EDB3130082	DC 52V Power Supply
PSM 9 Module	REV 01	740-050037	1EDB32101HH	DC 52V Power Supply
PSM 10 Module	REV 01	740-050037	1EDB321015G	DC 52V Power Supply
PSM 11 Module	REV 01	740-050037	1EDB32101JW	DC 52V Power Supply
PSM 12 Module	REV 01	740-045050	1E02224000N	DC 52V Power Supply
PSM 13 Module	REV 01	740-050037	1EDB321015C	DC 52V Power Supply
PSM 14 Module	REV 01	740-050037	1EDB321015J	DC 52V Power Supply
PSM 15 Module	REV 01	740-045050	1E022240015	DC 52V Power Supply
PSM 16 Module	REV 01	740-045050	1E02224000L	DC 52V Power Supply
PSM 17 Module	REV 01	740-050037	1EDB32101EP	DC 52V Power Supply
PDM 1	REV 03	740-045234	1EFA3230588	DC Power Dist Module
PDM 2	REV 03	740-045234	1EFA3230508	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009115214	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009099720	RE-S-1800x4
CB 0	REV 23	750-040257	CAAR5968	Control Board
CB 1	REV 12	750-040257	CAAD9498	Control Board

SPMB 0	REV 02	711-041855	ABCC1066	PMB Board
SPMB 1	REV	711-041855	ABBS1488	PMB Board
SFB 0	REV 06	711-044466	ABCD4944	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD4938	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCD5175	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD5160	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4997	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCD5013	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5267	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD4968	Switch Fabric Board
FPC 0	REV 23	750-054901	CAEH6678	MPC3E NG HQoS
CPU	REV 11	711-045719	CAEA4592	RMPC PMB
MIC 0	REV 26	750-028392	ZM0999	3D 20x 1GE(LAN) SFP
PIC 0		BUILTTIN	BUILTTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031469	17T446600017	SFP-LX10
Xcvr 1	REV 01	740-031469	17T446600120	SFP-LX10
Xcvr 2	REV 01	740-031469	19T446600010	SFP-LX10
Xcvr 3	REV 01	740-031469	0ZT446600018	SFP-LX10
Xcvr 4	REV 01	740-031469	19T446600007	SFP-LX10
Xcvr 5	REV 01	740-031469	18T446600081	SFP-LX10
Xcvr 6	REV 01	740-031469	18T446600088	SFP-LX10
Xcvr 7	REV 01	740-031469	18T446600049	SFP-LX10 Xcvr 8
REV 01	740-031469	18T446600002	SFP-LX10	
Xcvr 9	REV 01	740-031469	19T446600008	SFP-LX10
PIC 1		BUILTTIN	BUILTTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031469	18T446600032	SFP-LX10
Xcvr 1	REV 01	740-031469	09T446600025	SFP-LX10
Xcvr 2	REV 01	740-031469	19T446600004	SFP-LX10
Xcvr 3	REV 01	740-031469	18T446600084	SFP-LX10
Xcvr 4	REV 01	740-031469	18T446600060	SFP-LX10
Xcvr 5	REV 01	740-031469	17T446600085	SFP-LX10
Xcvr 6	REV 01	740-031469	17T446600014	SFP-LX10
Xcvr 7	REV 01	740-031469	17T446600315	SFP-LX10
Xcvr 8	REV 01	740-031469	18T446600043	SFP-LX10
Xcvr 9	REV 01	740-031469	0ZT446600017	SFP-LX10
MIC 1	REV 19	750-033199	CAAJ1818	1X100GE CFP
PIC 2		BUILTTIN	BUILTTIN	1X100GE CFP
FPC 1	REV 32	750-028467	ZR1986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZT7025	AMPC PMB
PIC 0		BUILTTIN	BUILTTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AMH0285	SFP+-10G-SR
PIC 1		BUILTTIN	BUILTTIN	4x 10GE(LAN) SFP+
Xcvr 1	REV 01	740-031980	AHK011H	SFP+-10G-SR

PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	APK0569	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
FPC 2	REV 04	750-044444	ZA7865	MPCE Type 2 3D P
CPU	REV 02	711-038484	ZB2728	MPCE PMB 2G
MIC 0	REV 07	750-028390	XY2158	3D 40x 1GE(LAN) RJ45
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) RJ45
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) RJ45
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) RJ45
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) RJ45
MIC 1				
QXM 0	REV 05	711-028408	ZC3420	MPC QXM
QXM 1	REV 05	711-028408	ZC3350	MPC QXM
FPC 3	REV 22	750-054564	CADG6972	MPC5E 3D 2CGE+4XGE
CPU	REV 11	711-045719	CADC7599	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	193363A00483	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101829	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-052505	XUF0GPX	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
FPC 6	REV 11	750-045372	CABT0840	MPCE Type 3 3D
CPU	REV 08	711-035209	CABL0889	HMPC PMB 2G
MIC 0	REV 27	750-028392	CABR4723	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	P9229UM	SFP-SX
Xcvr 1	REV 01	740-011782	P9P0X6V	SFP-SX
Xcvr 2	REV 01	740-011613	PCE01W5	SFP-SX
Xcvr 4	REV 01	740-011613	PD63DEN	SFP-SX
Xcvr 5	REV 02	740-011613	PG12FSF	SFP-SX
Xcvr 7	REV 01	740-011782	PCL3UDY	SFP-SX
Xcvr 8	REV 01	740-011613	PE713Z9	SFP-SX
Xcvr 9	REV 01	740-011613	AM0846SAQA5	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011613	P9F16KE	SFP-SX
Xcvr 1	REV 01	740-031851	AM1045SU91U	SFP-SX
Xcvr 4	REV 01	740-011613	PAJ4SY8	SFP-SX
Xcvr 5	REV 01	740-011782	P9228K7	SFP-SX
MIC 1	REV 27	750-028392	CABT5724	3D 20x 1GE(LAN) SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 02	740-011613	AM0925SBG5T	SFP-SX
Xcvr 1		NON-JNPR	P7K1PUX	SFP-SX

Xcvr 2	REV 01	740-011613	PPF2DHH	SFP-SX
Xcvr 4	REV 01	740-011613	PD63DF2	SFP-SX
Xcvr 5	REV 02	740-011613	AM1033SH3DH	SFP-SX
Xcvr 6	REV 01	740-011613	PE70W8W	SFP-SX
Xcvr 9	REV 01	740-011613	PD62W9W	SFP-SX
PIC 3		BUILTTIN	BUILTTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 02	740-013111	9154876	SFP-T
Xcvr 2	REV 01	740-011613	AM0846SAQ9H	SFP-SX
Xcvr 5	REV 01	740-011613	AM0820S9T2C	SFP-SX
Xcvr 9	REV 01	740-011613	AM0805S8LGQ	SFP-SX
FPC 7	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPC PMB 2G
MIC 0	REV 04	750-028392	JR6231	3D 20x 1GE(LAN) SFP
PIC 0		BUILTTIN	BUILTTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-031851	AM1045SU93A	SFP-SX
PIC 1		BUILTTIN	BUILTTIN	10x 1GE(LAN) SFP
Xcvr 4	REV 01	740-011782	P9P1050	SFP-SX
Xcvr 9	REV 01	740-011613	PPF2K74	SFP-SX
MIC 1	REV 19	750-033199	CAAF0016	1X100GE CFP
PIC 2		BUILTTIN	BUILTTIN	1X100GE CFP
FPC 11	REV 16	750-037358	CAAL1014	MPC4E 3D 32XGE
CPU	REV 08	711-035209	CAAS2637	HMPC PMB 2G
PIC 0				
PIC 1				
PIC 2				
PIC 3			FPC 12	REV 29
750-031090	ZA1887		MPC Type 2 3D EQ	
CPU	REV 06	711-030884	YR6876	MPC PMB 2G
FPC 13	REV 36	750-056519	CAFW4205	MPC7E 3D
MRATE-12xQSFP-XGE-XLGE-CGE				
CPU	REV 16	750-057177	CAFY5688	SMPC PMB
PIC 0		BUILTTIN	BUILTTIN	MRATE-6xQSFP-XGE-
XLGE-CGE				
Xcvr 0	REV 01	740-054053	QF3208FT	QSFP+-4X10G-SR
Xcvr 3	REV 01	740-032986	QB171000	QSFP+-40G-SR4
Xcvr 5	REV 01	740-058732	1CJQA10700C	QSFP-100GBASE-LR4
PIC 1		BUILTTIN	BUILTTIN	MRATE-6xQSFP-XGE-
XLGE-CGE				
Xcvr 0	REV 01	740-054053	QF3208G2	QSFP+-4X10G-SR
Xcvr 1	REV 01	740-054053	QF3208G3	QSFP+-4X10G-SR
Xcvr 2		NON-JNPR	F2M2010439	QSFP-100GBASE-LR4
Xcvr 3	REV 01	740-046565	QF3300ZQ	QSFP+-40G-SR4
Xcvr 5	REV 01	740-058734	1ACQ104202U	QSFP-100GBASE-SR4

FPC 14	REV 68	750-044130	ABDC2916	MPC6E 3D
CPU	REV 12	711-045719	ABDC2710	RMPC PMB
FPC 16	REV 22	750-037355	CABW1289	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CABR9796	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 17	REV 23	750-037355	CACL2280	MPC4E 3D 2CGE+8XGE
CPU	REV 10	711-035209	CACK9073	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 18	REV 23	750-054901	CAEV3700	MPC3E NG HQoS
CPU	REV 12	711-045719	CAFK4017	RMPC PMB
MIC 0	REV 19	750-033199	CAAJ9717	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
MIC 1	REV 15	750-033199	ZP6432	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 19	REV 29	750-063414	CAEJ2194	MPC9E 3D
CPU	REV 02	750-057177	CACN2561	SMPC PMB
MIC 0	REV 01	750-055992	CADV4595	MRATE-12xQSFPP-XGE-
XLGE-CGE				
PIC 0		BUILTIN	BUILTIN	MRATE-12xQSFPP-XGE-
XLGE-CGE				
Xcvr 0	REV 01	740-046565	QF3300ZG	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QF330122	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QF33011P	QSFP+-40G-SR4
Xcvr 3	REV 01	740-046565	QF3300ZU	QSFP+-40G-SR4
Xcvr 4	REV 01	740-046565	QF3300ZS	QSFP+-40G-SR4
Xcvr 5	REV 01	740-046565	QF3300ZN	QSFP+-40G-SR4
Xcvr 6	REV 01	740-046565	QF3300ZP	QSFP+-40G-SR4
Xcvr 7	REV 01	740-046565	QF3300ZT	QSFP+-40G-SR4
Xcvr 8	REV 01	740-046565	QF3300ZM	QSFP+-40G-SR4
Xcvr 9	REV 01	740-046565	QF3300ZR	QSFP+-40G-SR4
Xcvr 10	REV 01	740-046565	QF330105	QSFP+-40G-SR4
Xcvr 11	REV 01	740-046565	QF3300ZK	QSFP+-40G-SR4
MIC 1	REV 08	750-055992	CAEX1421	MRATE-12xQSFPP-XGE-
XLGE-CGE				
PIC 1		BUILTIN	BUILTIN	MRATE-12xQSFPP-XGE-
XLGE-CGE				
Xcvr 6	REV 01	740-046565	QF330100	QSFP+-40G-SR4

ADC 0	REV 19	750-043596	ABCK6658	Adapter Card
ADC 1	REV 17	750-043596	ABCB7201	Adapter Card
ADC 2	REV 05	750-043596	CAAC2076	Adapter Card
ADC 3	REV 13	750-043596	ABBX5549	Adapter Card
ADC 6	REV 17	750-043596	ABCB7226	Adapter Card
ADC 7	REV 01	750-043596	ZV4079	Adapter Card
ADC 11	REV 17	750-043596	ABCD5472	Adapter Card
ADC 12	REV 17	750-043596	ABCB7147	Adapter Card
ADC 13	REV 17	750-043596	ABCD5410	Adapter Card
ADC 16	REV 17	750-043596	ABCB7047	Adapter Card
ADC 17	REV 17	750-043596	ABCD5525	Adapter Card
ADC 18	REV 17	750-043596	ABCD5391	Adapter Card
Fan Tray 0	REV 01	760-042349	ACAY4801	FanTray v2
Fan Tray 1	REV 01	760-042349	ACAY4802	FanTray v2
Fan Tray 2	REV 01	760-042349	ACAY4803	FanTray v2
Fan Tray 3	REV 01	760-042349	ACAY4800	FanTray v2

2. To verify that all the fabric planes are available and operational, issue the following command:

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
    FPC 2
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 3
      PFE 0 :Links ok
      PFE 1 :Links ok
    FPC 6
      PFE 0 :Links ok
    FPC 7
      PFE 0 :Links ok
    FPC 11
      PFE 0 :Links ok

```

```
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 16
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 17
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
Plane 1
Plane state: ACTIVE
    FPC 0
        PFE 0 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
        PFE 3 :Links ok
    FPC 2
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 3
        PFE 0 :Links ok
        PFE 1 :Links ok
    FPC 6
        PFE 0 :Links ok
    FPC 7
```

```
    PFE 0 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 16
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 17
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
...
```

Plane 7

```
Plane state: ACTIVE
FPC 0
    PFE 0 :Links ok
FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 2
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 3
```

```
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 6
    PFE 0 :Links ok
FPC 7
    PFE 0 :Links ok
FPC 11
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 12
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 13
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 14
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
FPC 16
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 17
    PFE 0 :Links ok
    PFE 1 :Links ok
FPC 18
    PFE 0 :Links ok
FPC 19
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
```

3. To verify that the state of the electrical switch fabric links between the Flexible PIC Concentrators (FPCs) and the Switch Fabric Boards (SFBs) are eligible for carrying traffic, issue the following command:

```
user@host>show chassis fabric fpcs
Fabric management FPC state:
FPC 0
    PFE #0
```

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
```

```
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  ...
FPC 19
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #2
    Plane 0: Plane enabled
```

```
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
```

4. To verify the state of all fabric planes and the elapsed time, issue the following command:

```
user@host> show chassis fabric summary
Plane  State      Uptime
0       Online    11 hours, 13 minutes, 27 seconds
1       Online    11 hours, 13 minutes, 6 seconds
2       Online    11 hours, 12 minutes, 45 seconds
3       Online    11 hours, 12 minutes, 24 seconds
4       Online    11 hours, 12 minutes, 2 seconds
5       Online    11 hours, 11 minutes, 41 seconds
6       Online    11 hours, 11 minutes, 20 seconds
7       Online    11 hours, 10 minutes, 59 seconds
```

Note: For extended summary, use
show chassis fabric summary extended

Performing a Smooth Upgrade to Enhanced Switch Fabric Board (SFB2) with Minimal Impact on Traffic

IN THIS SECTION

- Requirements | 81
- Overview | 82
- Configuration | 82
- Verification | 85

This example shows how to perform a smooth upgrade from the Switch Fabric Board (SFB) to the enhanced Switch Fabric Board (SFB2) on the MX2000 line of routers. A smooth upgrade helps reduce network downtime because of 7+1 fabric redundancy. When one SFB is being upgraded to SFB2, the other 7 SFBs are available to handle the traffic.

NOTE: On MX2010 and MX2020 routers, if you have installed the Junos Continuity software package or if the router is not configured to allow multiple versions of the SFBs to coexist, you cannot perform a smooth upgrade from SFB to SFB2.

When not using a smooth upgrade, use one of the following methods to upgrade to SFB2:

- Power off the router, replace the SFB with SFB2, and then power on the router.
- Take both the Routing Engines offline, replace the SFB with SFB2, and then bring both the Routing Engines online.

Requirements

This example uses the following hardware and software components:

- MX2020 router with dual Routing Engines
- 8 Switch Fabric Boards (SFBs)
- 8 enhanced Switch Fabric Boards (SFB2s)
- Junos OS Release 16.1R1 or later release

Before you begin the smooth upgrade, ensure that you:

- Prepare the router and install the version of Junos OS Release that supports the enhanced Switch Fabric Board (SFB2).
- Verify that the existing SFBs are online and operational and also check the status of the fabric planes.

For more information about what you must do before you commence smooth upgrade, see ["Before you Begin the Smooth Upgrade Process"](#) on page 68.

Overview

IN THIS SECTION

- [Topology | 82](#)

The smooth upgrade process is used to upgrade from Switch Fabric Board (SFB) to enhanced Switch Fabric Board (SFB2) with minimal traffic impact. The existing SFBs are replaced one by one, in any order, by the new SFB2s. Because you are replacing a single SFB at a time, the remaining SFBs handle the traffic and so there is minimal impact to traffic. SFB2 is supported only on MX2020 and MX2010 routers.

Topology

This example shows how to perform a smooth upgrade on an MX2020 router that has eight SFBs. The 8 SFBs are replaced with 8 enhanced switch fabric boards (SFB2). First, initiate the smooth upgrade process and then take a single SFB offline. Replace the SFB with an SFB2, and then bring the SFB2 online. You can then repeat the steps for the other seven SFBs.

After you upgrade all the SFBs to SFB2s, the fabric bandwidth per slot of MPC8E and MPC9E on the MX2020 router is increased from 11 Gbps to 25 Gbps. However, the upgrade does not impact the fabric bandwidth per slot of MPC7.

Configuration

IN THIS SECTION

- [Initiating the Smooth Upgrade Process | 83](#)
- [Performing the Smooth Upgrade | 83](#)
- [Terminating the Smooth Upgrade Process | 85](#)

To upgrade from SFB to SFB2, perform the following tasks:

Initiating the Smooth Upgrade Process

Step-by-Step Procedure

By default, the MX2000 line of routers do not support both SFB and SFB2 at the same time. However, when you initiate the smooth upgrade process, the router can support both SFB and SFB2 at the same time. So, before you replace an SFB with an SFB2, you must initiate the smooth upgrade process.

1. In configuration mode, at the **[edit]** hierarchy level, Initiate the smooth upgrade process for the SFBs.

```
[edit]
user@host# set chassis state sfb-upgrade on
```

2. Commit the changes by using the **commit** statement and exit the configuration mode.

```
[edit]
user@host# commit
```

3. In operational mode, verify that you have initiated the smooth upgrade process.

```
user@host> show configuration chassis
state {
  sfb-upgrade on;
}
```

Performing the Smooth Upgrade

Step-by-Step Procedure

1. In operational mode, take the SFBs offline. There is no specific order that needs to be maintained. In this example, you start with the SFB in slot 7 first.

```
user@host> request chassis sfb slot 7 offline
```

2. Verify that the SFB is offline.

```
user@host> show chassis sfb
```

Slot	State	Uptime
0	Online	1 day, 12 hours, 6 minutes, 59 seconds
1	Online	1 day, 12 hours, 6 minutes, 37 seconds
2	Online	1 day, 12 hours, 6 minutes, 16 seconds
3	Online	1 day, 12 hours, 5 minutes, 55 seconds
4	Online	1 day, 12 hours, 5 minutes, 33 seconds
5	Online	1 day, 12 hours, 5 minutes, 12 seconds
6	Online	1 day, 12 hours, 4 minutes, 51 seconds
7	Offline	--- Offlined by cli command ---

3. Replace the SFB that is offline with the enhanced SFB (SFB2). Minimal traffic loss is expected as only a single SFB is replaced and other seven SFBs are operational and handle the traffic.

4. In operational mode, bring the SFB2 online.

```
user@host> request chassis sfb slot 7 online
```

5. Verify that the SFB2 is online.

```
user@host> show chassis sfb
```

Slot	State	Uptime
0	Online	1 day, 12 hours, 16 minutes, 38 seconds
1	Online	1 day, 12 hours, 16 minutes, 16 seconds
2	Online	1 day, 12 hours, 15 minutes, 55 seconds
3	Online	1 day, 12 hours, 15 minutes, 34 seconds
4	Online	1 day, 12 hours, 15 minutes, 12 seconds
5	Online	1 day, 12 hours, 14 minutes, 51 seconds
6	Online	1 day, 12 hours, 14 minutes, 30 seconds
7	Online	38 seconds

6. Repeat Step 3 through Step 5 for upgrading the other SFBs. We recommend that you upgrade fabric boards one at a time for minimal traffic impact.

Terminating the Smooth Upgrade Process

Step-by-Step Procedure

After all the SFBs are upgraded to the enhanced SFB (SFB2), you can terminate the smooth upgrade process. When the smooth upgrade process is initiated, SFB and SFB2 can coexist on the same router. When you terminate the smooth upgrade process, the router can have only SFB or SFB2 and not both at the same time.

1. In configuration mode, at the **[edit]** hierarchy level, terminate the smooth upgrade process.

NOTE: You can also use the **delete chassis state sfb-upgrade** command to terminate the smooth upgrade process.

```
[edit]
user@host# set chassis state sfb-upgrade off
```

2. Commit the changes by using the **commit** statement and exit configuration mode.

```
[edit]
user@host# commit
```

3. In operational mode, verify that you have initiated the smooth upgrade process.

```
user@host> show configuration chassis
state {
  sfb-upgrade off;
}
```

Verification

IN THIS SECTION

- [Verifying That the Switch Fabric Board \(SFB\) is Offline | 86](#)
- [Verifying That the Enhanced Switch Fabric Board \(SFB2\) is Online | 89](#)

To confirm that you have upgraded SFB to SFB2 on the MX2020 router, perform these tasks:

Verifying That the Switch Fabric Board (SFB) is Offline

Purpose

To verify that the SFB on a particular slot, for instance slot 1, is offline.

Action

From operational mode, enter the **show chassis fabric fpcs** command.

```
user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane disabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane disabled >>>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane disabled >>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
```

```
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 6
PFE #0
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
```

```

Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane disabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled

```

From operational mode, enter the **show chassis fabric summary** command.

```

user@host> show chassis fabric summary
Plane   State      Uptime
0       Online    3 minutes, 14 seconds
1       Offline
2       Online    1 hour, 56 minutes, 53 seconds
3       Online    1 hour, 56 minutes, 39 seconds

```



```

4      Online    1 hour, 56 minutes, 25 seconds
5      Online    1 hour, 56 minutes, 11 seconds
6      Online    1 hour, 55 minutes, 56 seconds
7      Online    1 hour, 42 minutes, 28 seconds

```

Note: For extended summary, use
 show chassis fabric summary extended

Meaning

The SFB in Slot 1 has been taken offline.

Verifying That the Enhanced Switch Fabric Board (SFB2) is Online

Purpose

To verify that the enhanced switch fabric board (SFB2) inserted in the same slot (slot 1) is online.

Action

From operational mode, enter the **show chassis fabric fpcs** command.

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled >>>>>
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled

```

```
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>>
Plane 2: Plane enabled
    Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 6
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>>
```

```
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
FPC 7
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled >>>>>
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
```

```
Plane 7: Plane enabled
```

From operational mode, enter the **show chassis fabric summary** command.

```
user@host> show chassis fabric summary
Plane   State   Uptime
0       Online  6 minutes, 38 seconds
1       Online  2 minutes, 12 seconds >>>>
2       Online  2 hours, 17 seconds
3       Online  2 hours, 3 seconds
4       Online  1 hour, 59 minutes, 49 seconds
5       Online  1 hour, 59 minutes, 35 seconds
6       Online  1 hour, 59 minutes, 20 seconds
7       Online  1 hour, 45 minutes, 52 seconds
```

Meaning

The SFB2 that replaced the SFB on slot 1 is online and operational.

RELATED DOCUMENTATION

[Understanding Fabric Grant Bypass | 63](#)

[Disabling Fabric Grant Bypass to Control Congestion and Improve Performance | 64](#)

4

CHAPTER

Power Management

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Managing Power

IN THIS SECTION

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- [Understanding Power Management on the PTX5000 | 95](#)
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Understanding How Dynamic Power Management Enables Better Utilization of Power

You can use the dynamic power management feature to better utilize the power available in the power entry module (PEM). Whether or not a new hardware component is powered on depends on the availability of power in the PEM. A component is not powered on if the PEM cannot meet the worst-case power requirement for that component. Starting in Junos OS Release 15.1R1, MX Series routers support dynamic power management. Starting in Junos OS Release 17.2R1, EX9200 switches support dynamic power management.

The maximum power that each type of MIC consumes is maintained in a static database. The chassis daemon process (**chassisd**), which manages power budgeting for all line cards, uses this data when budgeting power for MICs. MICs are brought online only after the chassis daemon verifies that the worst-case power required for the MICs and the power required for all the online FRUs are available in the PEM.

In Junos OS Release 15.1R1, for MX Series routers, dynamic power management for MICs is disabled by default. You can enable the feature by enabling the **mic-aware-power-management** statement at the **[edit chassis]** hierarchy level. When dynamic power management is disabled, the chassis daemon checks for the worst-case power requirement of the MPC and the MICs before allocating power for the MPC. Whereas, when **mic-aware-power-management** statement is enabled, the chassis daemon considers the

power requirement of only the MPCs. The worst-case power consumption by the MICs is not considered while the chassis daemon budgets power for the MPC. Power budgeting for MICs is done only after the MPC is powered on and the MICs come online. Every time you disable or enable dynamic power management, you must restart the chassis or the MPC for the changes to take effect.

In Junos OS Release 17.2R1, for EX9200 switches, dynamic power management for MICs is enabled by default.

Starting from Junos OS Release 17.3R1, for MX10003 routers, mic-aware dynamic power management is enabled by default.

Starting from Junos OS Release 18.2R1, for JNP10K-LC2101 MPC on MX10008 routers, dynamic power management is enabled by default. However, dynamic power management for MICs is not supported on JNP10K-LC2101 because JNP10K-LC2101 is a fixed configuration MPC and supports only built-in PICs.

After you enable the dynamic power management feature, use the **set chassis** `preserve-fpc-poweron-sequence` configuration mode command to preserve the sequence in which MPCs are powered on. This configuration is required to maintain the order in which the MPCs come online after a router or switch restart.

NOTE: In Junos OS Release 15.1F5 and later, dynamic power management is enabled by default on several MPCs. Models include MPC3E-3D-NG, MPC3E-3D-NG-Q, MPC2E-3D-NG, MPC2E-3D-NG-Q, MPC6E, MPC7E-MRATE, and MPC7E-10G on MX240, MX480, MX960, MX2010, and MX2020 and on MPC8E and MPC9E on MX2010, and MX2020 Universal Routing Platforms.

Understanding Power Management on the PTX5000

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- [Power Priority of FPCs | 96](#)
- [Power Zones | 98](#)
- [Power Supply Redundancy | 98](#)

Starting in Junos OS Release 14.1, the power management feature for PTX5000 routers ensures that at any time, the chassis power requirements do not exceed the available chassis power. The PTX5000 has two PDUs to meet the power requirements of the chassis. Each PDU is capable of providing power to the chassis on its own. In case the power requirement exceeds the individual capacity of a PDU, the required power is provided by both the PDUs and the **No redundant power supply** alarm is triggered. If the system cannot provide power for all the installed FPCs or PICs, the system brings down FPCs or PICs that in can no longer provide power for and the **Insufficient Power - FRU(s) went offline** alarm is raised.

The power management feature provides the following functionality:

- Power management ensures that high-priority FPCs continue to receive power when the system does not have sufficient power to keep all the FPCs online.
- Power management ensures that if a power supply fails, the router can continue to operate normally by keeping high-priority FPCs online and taking low-priority FPCs offline.
- If power supply failure requires power management to power down some components, power management does so by gracefully powering down lower-priority FPCs.

Power management manages power to router components by employing a power budget policy. In its power budget policy, power management:

- Budgets power for each installed router component that requires power. The amount that power management budgets for each component is the maximum power that component might consume under worst-case operating conditions. For example, for the fan tray, power management budgets the amount of power required to run the fans at their maximum speed setting, even if the current fan speed is much lower.
- Manages the router for *N+N* power redundancy, which ensures uninterrupted system operation if one power supply fails.
- Provides power to host subsystem components, such as the Routing Engines, before it provides power to the FPCs.
- Manages the priority of individual FPCs. By assigning different priorities to the FPCs, you can determine which FPCs are more likely to receive power in the event of insufficient power.

Power Priority of FPCs

The power priority of FPCs determines:

- The order in which FPCs are allocated power.
- How power is reallocated if there is a change in power availability or demand in an operating router.

This section covers:

How an FPC's Power Priority Is Determined

Using the CLI, you can assign an explicit power priority to an FPC slot. The power priority is determined by the slot number, with the lowest-numbered slots receiving power first. Thus, if you do not explicitly assign priorities to slots, power priority is determined by slot number, with slot 0 having the highest priority. See *Configuring Power-On Sequence to Redistribute the Available Power*.

FPC Priority and FPC Power Allocation

When a PTX5000 is powered on, power management allocates power to components according to its power budget policy. After power management has allocated power to the host subsystem components, it allocates the remaining available power to the FPCs. It powers on the FPCs in the configured order of priority until all FPCs are powered on or the available power provided by both the PDUs is exhausted. Thus if available power is exhausted before all FPCs receive power, higher-priority FPCs are powered on while lower-priority FPCs remain powered off.

FPCs that have been taken offline are not allocated power.

NOTE: Because power management does not allocate power to an FPC that has been taken offline, that FPC is brought online only when you commit a configuration. You must explicitly use the **request chassis fpc slot *slot-number* online** command to bring an FPC online that was taken offline previously.

If an FPC with a high priority in the priority sequence also has high-power requirement, and if the system does not have the required power available, then the lower priority FPCs with lower power requirements are also not powered on. This is to maintain consistency and also avoid powering off of the lower priority FPC when extra power is available. For example, if an FPC that requires 450 W has a higher priority than an FPC that requires 330 W, then the FPC with the lower power requirement (330 W) is also not powered on if the system does not have the required power to power the FPC that requires 450 W.

FPC Priority and Changes in the Power Budget

In an operating router, power management dynamically reallocates power in response to changes in power availability or demand or changes in FPC priority. Power management uses the configured priority on FPC slots to determine how to reallocate power in response to the following events:

- When a new power supply is brought online, FPCs that were powered off because of insufficient power are powered on in the order of priority.
- When a user changes the assigned power priority of one or more FPCs when power is insufficient to meet the power budget, power management reruns the current power budget policy and powers

FPCs on or off based on their priority. As a result, FPCs receive power strictly by the order of priority and previously operating FPCs might no longer receive power.

- When an FPC is installed, Junos OS does not automatically power on and bring the FPC online. This FPC stays in the offline state until the user brings it online through the CLI or by pushing the online button, and only if the available chassis power is more than the budgeted power for this FPC, the FPC becomes operational.

Power Zones

In a PTX5000 equipped with high capacity PDUs and PSMs, there is one common zone that provides power to all FRUs and all FPCs. A high-capacity PDU can support up to eight PSMs and it does not support power zoning, unlike a normal-capacity PDU. All available PDU power is considered as a part of single zone. All PSMs provide power to the common zone. The PSM LEDs on the craft interface are interpreted as described in [PTX5000 Craft Interface LEDs](#). After the PDU upgrade from the normal-capacity PDUs to High-Capacity PDUs, the power management converges all power zones into a single common zone. All FRU power is distributed based on the power available in the common zone.

NOTE: Presence of both normal-capacity PDUs and high-capacity PDUs is referred to as mixed-mode of operation and is supported only during the PDU upgrade.

To cater for the increase in the PIC power consumption, the power manager is enhanced to account for the PIC power separately from the FPC. The priority sequence for the PICs follows the priority sequence for the FPCs. That is, PICs installed in high-priority FPCs are given preference over PICs installed in low-priority FPCs. All PICs on an FPC have the same priority.

NOTE: You cannot mix existing PDUs with the High Capacity DC PDU.

Power Supply Redundancy

By default, power management in PTX5000 routers is configured to manage the power supplies for $N+N$ redundancy, by which power supplies are held in reserve for backup if the other power supplies are removed or fail.

When power is insufficient to meet the budgeted power requirements, power management raises alarms as follows:

- With power supply redundancy, when one PSM fails, it does not cause FPCs to go offline. Only the **No redundant power supply alarm** is raised. However, with no redundancy, FPCs can go offline depending on the total chassis power available at that time. When an FPC or PIC goes offline due to

insufficient power, which is indicated by **No power** in the output of the **show chassis fpc** command, then the **Insufficient Power - FRU(s) went offline** alarm is raised. The alarm gets cleared when there is sufficient power to bring up all the FPCs and PICs. The **Insufficient Power - FRU(s) went offline** alarm is raised when PSMs fail, when PSMs are powered off manually, or any time there is insufficient power for the system to power all the FPCs or PICs in the system.

- When power fails or when a PSM is removed, power management:
 - Calculates the total chassis power available from the remaining PSMs for the FPCs.
 - Powers off the FPCs based on the priority depending on the power budget for the FPCs and the FRUs and their configured power-on sequence.

NOTE: In the scenario where the available power is more than the budgeted power required by the FPC but less than its maximum power, the FPC is taken offline and then brought online, but one or more PICs in that FPC are not online.

- When a new PSM is inserted, power management:
 - Checks the power-on sequence of the FPCs and the PICs and brings any offline PICs online when power is available.
 - Powers on the FPCs based on the FPC's budgeted power and its power-on sequence depending on its priority.
 - Maintains the power for high-priority FPCs and their PICs by taking the low-priority FPCs offline when all the FPCs are brought online, depending on the available power.

Power management clears all alarms when sufficient power is available to meet normal operating and reserved power requirements.

T4000 Power Management Overview

Starting with Junos OS Release 12.3, the power management feature is enabled on a Juniper Networks T4000 Core Router. This feature enables you to limit the overall chassis output power consumption. That is, this feature enables you to limit the router from powering on a Flexible PIC Concentrator (FPC) when sufficient output power is not available to power on the FPC during booting or normal operation.

The power management feature is enabled only when six input feeds with 40 amperes (A) each or four input feeds with 60 A each is configured on the router. The power management feature is *not* enabled for any other input feed--current combination. When the power management feature is *not* enabled, Junos OS tries to power on all the FPCs connected to the router.



CAUTION: : If you do not configure the power management feature and the maximum power draw is exceeded by the router during booting or normal operation, FPCs' states might change from Online to Offline or Present, some traffic might drop, or the interfaces might flap.

TIP: Interface flapping occurs when a router alternately announces the state of the interface to be as *up* and *down* in quick sequence.

After you connect the input feeds to the router, you must configure the number of input feeds connected to the router and the amount of current received at the input feeds. Use the **feeds** statement and the **input current** statement at the [edit chassis pem] hierarchy level to configure the number of input feeds and the amount of current received at each input feeds, respectively.

NOTE: You can connect three 80 A DC power cables to the six-input DC power supply by using terminal jumpers. When you do this, ensure that you configure the **feeds** statement to have the value **6** and the **input current** statement to have the value **40**. If these configurations are not set, the power management feature is *not* enabled and, therefore, Junos OS tries to power on all the FPCs connected to the router.

When the power management feature is enabled, FPCs connected to the router are powered on based on the power received by the router. If the router receives sufficient power to power on all the FPCs connected to the router, all the FPCs are powered on. If sufficient power is not available, Junos OS limits the number of FPCs brought online. That is, Junos OS uses the total available chassis output power as a factor to decide whether or not to power on an FPC connected to the router.

Of all the supported FPCs of a T4000 router, the T1600 Enhanced Scaling FPC4 (model number: T1600-FPC4-ES) has the greatest power requirement. [Table 6 on page 101](#) compares the FPC connection limits between a six-input feed 40 A connection and a four-input feed 60 A connection when power management is enabled and T1600-FPC4-ES is connected to router.

Table 6: FPC Connection Limit Comparison

Six Input Feeds with 40 A Connection	Four Input Feeds with 60 A Connection
<p>When T1600-FPC4-ES is <i>not</i> connected:</p> <ul style="list-style-type: none"> All eight FPC slots can be brought online. 	<p>When T1600-FPC4-ES is <i>not</i> connected:</p> <ul style="list-style-type: none"> A maximum of seven other FPCs can be brought online. That is, only seven slots out of the eight FPC slots can be brought online.
<p>When only one T1600-FPC4-ES is connected:</p> <ul style="list-style-type: none"> A maximum of seven other FPCs can be brought online. That is, only seven slots out of the eight FPC slots can be brought online. 	<p>When only one T1600-FPC4-ES is connected:</p> <ul style="list-style-type: none"> A maximum of six other FPCs can be brought online. That is, only six slots out of the eight FPC slots can be brought online.
<p>When only T1600-FPC4-ES FPCs are connected:</p> <ul style="list-style-type: none"> A maximum of six T1600-FPC4-ES FPCs can be brought online. 	<p>More than one T1600-FPC4-ES <i>cannot</i> be brought online.</p>

NOTE:

- When the power management feature is enabled, FPC power-on consistency is not maintained across router reboots. That is, the same set of FPCs that were powered on before a reboot might not be powered on after the reboot. Before the router reboot, the FPCs are powered on according to their insertion order in the chassis. After the reboot, the FPCs are powered on according to the FRU power-on sequence configured in the **fru-poweron-sequence** statement at the **[edit chassis]** hierarchy level. If the FRU power-on sequence is not configured, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.
- Removal of any online FPC from the chassis does not change the state of any other FPC and does not trigger the power management feature to power on the FPCs that were not powered on initially because of the lack of sufficient power. When any online FPC is removed from the chassis, if you need to trigger the power management feature to re-evaluate the situation, you need to reboot or restart the chassis. Alternatively, you can make a

configuration change at the **[edit chassis]** hierarchy level and then issue the **commit** command to commit the changes made at the **[edit chassis]** hierarchy level. The power management feature re-evaluates the situation when a configuration change is committed at the **[edit chassis]** hierarchy level.

Configuring the Six-Input DC Power Supply on T Series Routers

IN THIS SECTION

- [Configuring the Six-Input DC Power Supply on an LCC Router in a Routing Matrix | 103](#)
- [Configuring the Six-Input DC Power Supply on T640 and T1600 Routers | 103](#)
- [Configuring the Six-Input DC Power Supply on T4000 Routers | 104](#)

By default, the six-input DC power supply is configured to have all the six input feeds connected. You can also choose to provide four or five input feeds to the six-input DC power supply. When providing four or five input feeds on standalone routers, you need to configure the **feeds** statement at the **[edit chassis pem]** hierarchy level. When providing four or five input feeds to an LCC router in a routing matrix, you need to configure the **feeds** statement at the **[edit chassis lcc lcc-number pem]** hierarchy level.

Starting with Junos OS Release 12.3, the power management feature is enabled on T4000 routers with six-input DC power supply. The power management feature is enabled only when six input feeds with 40 amperes (A) each or four input feeds with 60 A each is configured on the router. To do this, you need to configure the **feeds** and **input-current** statements at the **[edit chassis pem]** hierarchy level.

NOTE:

- Before configuring input feeds for your router, see the *T640 Core Router Hardware Guide*, *T1600 Core Router Hardware Guide*, or *T4000 Core Router Hardware Guide* for special considerations and for the number of input feeds supported by the router.
- The value assigned to the **feeds** statement must be equal to the number of input feeds provided to the power supply. Else, an alarm message is generated to indicate the mismatch.

The following procedures describe how to configure the six-input DC power supply on different routers:

Configuring the Six-Input DC Power Supply on an LCC Router in a Routing Matrix

To configure the six-input DC power supply on an LCC router in a routing matrix:

1. At the `[edit chassis lcc lcc-number pem]` hierarchy level, configure the `feeds` statement with the number of input feeds provided to the power supply.

```
[edit chassis lcc lcc-number pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis lcc 1 pem]
user@host# set feeds 5
```

NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Verify the configuration by using the `show` command at the `[edit chassis]` hierarchy level:

```
[edit chassis lcc 1 pem]
user@host# show
pem {
    feeds 5;
}
```

Configuring the Six-Input DC Power Supply on T640 and T1600 Routers

To configure the six-input DC power supply on a standalone T640 or T1600 router:

1. At the `[edit chassis pem]` hierarchy level, configure the `feeds` statement with the number of input feeds provided to the power supply.

```
[edit chassis pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis pem]
user@host# set feeds 5
```

NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis]
user@host# show
pem {
    feeds 5;
}
```

Configuring the Six-Input DC Power Supply on T4000 Routers

To configure the six-input DC power supply on a T4000 router:

1. At the **[edit chassis pem]** hierarchy level, configure the **feeds** statement with the number of input feeds provided to the power supply.

```
[edit chassis pem]
user@host# set feeds number-of-input-feeds
```

For example:

```
[edit chassis pem]
user@host# set feeds 4
```

NOTE: All power supplies in the router must use the same number of inputs feeds.

2. Configure the input current received by the router.

```
[edit chassis pem]
user@host# set input-current amps-in-each-feed
```

For example, if the router receives 60 A of input current:

```
[edit chassis pem]
user@host# set input-current 60
```

NOTE: You can connect three 80 A DC power cables to six-input DC power supply by using terminal jumpers. When you do this, ensure that you set the value of the **feeds** statement to **6** and that of the **input current** statement to **40**. If these configurations are not set, the power management feature is *not* enabled. For more information about the power management feature, see *T4000 Power Management Overview*.

3. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis]
user@host# show
pem {
    feeds 4;
    input-current 60;
}
```

Redistributing the Available Power by Configuring Power-On Sequence

Routers running on Junos OS Release 10.0 and later support an enhanced AC Power Entry Module (PEM) to provide the necessary power infrastructure to support up to twelve higher-capacity DPCs with higher port density and slot capacity. To support the cooling requirements for the enhanced AC PEMs, the routers support enhanced fan trays and fans.

The default behavior for MPC power-on sequence is slot number based, that is, slot 0 is brought online first followed by slot 1, slot 2 up to slot 11. For the scenarios, where it is running a mix of high capacity line cards (for core facing), and low capacity line cards (for access facing) in their system, you can use the *fru-poweron-sequence* option to manually set the MPC power on sequence and hence ensure that the

more important core facing line cards are brought online first irrespective of which slots these are in. This approach provides fine control over deterministically bringing up MPCs, however, it is heavy on configuration and entails to follow the discipline in slot to MPC mapping across all the systems.

The Junos OS enables you to configure the power-on sequence for the DPCs on an MX Series router chassis containing the new AC PEM. This enables you to redistribute the available power to the DPCs based on your requirements and the calculated power consumption of the DPCs. To configure the power-on sequence, refer to *Configuring Power-On Sequence to Redistribute the Available Power*.

Configuring Power-On Sequence to Redistribute the Available Power

You can configure the power-on sequence for the Flexible PIC Concentrators (FPCs) on MX, PTX, and T routers. This configuration enables you to redistribute the available power to the FPCs on the basis of your requirements and the calculated power consumption of the FPCs.

To configure the power-on sequence:

1. At the **[edit chassis]** hierarchy level, configure the **fru-poweron-sequence** statement indicating the order in which the FPCs need to be powered on.

```
[edit chassis]
user@host# set fru-poweron-sequence fru-poweron-sequence
```

For example:

```
[edit chassis]
user@host# set fru-poweron-sequence "0 2 1"
```

2. Verify the configuration by using the **show** command at the **[edit chassis]** hierarchy level:

```
[edit chassis]
user@host# run show chassis power sequence
fru-poweron-sequence "0 2 1";
```

NOTE:

- If the configured sequence contains invalid numbers, Junos OS considers only the valid numbers in the sequence. The invalid numbers are silently discarded.
- If the power-on sequence is not configured by including the **fru-poweron-sequence** statement, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.
- Issue the *show chassis power* command to view power limits and usage details for the FPCs.

SEE ALSO

| *fru-poweron-sequence*

Configuring Voltage Level Monitoring of FPCs

IN THIS SECTION

- [Enabling Voltage Failure Errors on the FPC | 107](#)
- [Disabling Voltage Failure Errors on the FPC | 108](#)

You can monitor the voltage on the flexible PIC concentrator (FPC) at regular intervals. When the voltage falls below 10%, the FPC is offlined.

The faulty FPC is monitored at 500ms intervals. The output of the **show chassis fpc** command shows **Power Failure** for the faulty FPC. The FPC remains in powered down state until the voltage level is normal again.

Enabling Voltage Failure Errors on the FPC

fpc-nmi-volt-fail-knob controls the behavior of the FPC after detecting voltage failure, and to online or offline the FPC based on the voltage level. To enable monitoring the voltage level on the FPC:

1. Navigate to the **[edit chassis]** hierarchy level.

2. Include the **set chassis fpc-nmi-volt-fail-knob enable** statement to enable voltage monitoring on the FPC.

```
[edit chassis]
{
    fpc-nmi-volt-fail-knob enable;
}
```

Disabling Voltage Failure Errors on the FPC

To disable monitoring the voltage level on the FPC:

1. Navigate to the **[edit chassis]** hierarchy level.
2. Include the **set chassis fpc-nmi-volt-fail-knob disable** statement to disable voltage monitoring on the FPC.

```
[edit chassis]
{
    fpc-nmi-volt-fail-knob disable;
}
```

Overriding the Default Maximum Power (Junos OS Evolved)

IN THIS SECTION

- [Overriding the Default Maximum Power \(PTX10001-36MR\) | 109](#)
- [Overriding the Default Maximum Power \(PTX10008\) | 110](#)

On the PTX10001-36MR router, you can override the maximum power value of the power supply module (PSM) by specifying a lesser power value. Similarly, on the PTX10008 router, you can override the default power budget allocated to the line card by specifying a power value.

Overriding the Default Maximum Power (PTX10001-36MR)

You can override the maximum power value of a power supply module (PSM), if you need to deploy the PTX10001-36MR router in an environment that does not require the maximum power capacity (3000 W) of the PSM. You can use the command **set chassis psm max-power** to override the maximum power capacity of the PSM. Using this configuration, you can specify a value that is less than the maximum capacity of the PSM, and then monitor the real-time power consumption against the configured power value.

See the following example to know how to override the default power in PTX10001-36MR:

```
user@router# set chassis psm max-power 1600
user@router# commit
```

If the above configuration is set, the system power capacity is shown as 1600W. See the following **show chassis power detail** output:

```
user@router# show chassis power detail

Chassis Power      Voltage (V)      Power (W)

Total Input Power          937
  PSM 0
    Input 1                229            391
    Output                 12.03          305.44
    Capacity               1600 W (maximum 3000 W)
  PSM 1
    Input 1                 0             546
    Output                 12.04          515.08
    Capacity               1600 W (maximum 3000 W)

Item                Used(W)
  Routing Engine 0    25
  CB 0                5

System:
  Zone 0:
    Capacity:         3200 W (maximum 6000 W)
    Actual usage:     937 W
  Total system capacity: 3200 W (maximum 6000 W)
```

NOTE: If the power consumption of the PTX10001-36MR router exceeds the threshold you configured using the **set chassis psm max-power** command, the software does not take any corrective action against the breach; and the router might still encounter a power failure.

If the power consumption exceeds the configured threshold, the system raises a chassis alarm, as shown in the following example:

```
user@router# show system alarms

Mar 15 12:51:30
2 alarms currently active
Alarm time          Class  Description
2020-03-15 12:50:52 UTC  Minor  Power consumption is critical
```

Overriding the Default Maximum Power (PTX10008)

On the PTX10008 router, during the system startup, the power management software by default takes the maximum power mentioned for each field replaceable unit (FRU) and makes the power calculations based on this number. However, you can override the default power budget allocated to the line card by specifying a power value (in watts). You can use the command **set chassis fpc fpc-slot max-power watts** to override the default power. You can use the command **show chassis fpc detail** to view the maximum power consumption by a line card.

You can also disable the power management on PTX10008 by using the command **set chassis no-power-budget**. If you disable the power management on PTX10008, the system does not move any of the FRUs to offline state in case of insufficient power. Instead, the system keeps all the FRUs powered on by default. However, in case of a power shortage, a power redundancy alarm is raised as shown in the following example.

```
user@router> show system alarms

1 alarm currently active

Alarm time Class Description
2019-07-25 21:16:25 UTC Major chassis No Redundant Powe
```

SEE ALSO

| [maximum-power](#)

Powering Off Packet Forwarding Engines

You can power on or power off the Packet Forwarding Engines in a running system, or keep a Packet Forwarding Engine powered off when the FPC comes online. The following are a couple of scenarios in which this feature is used.

- When the Packet Forwarding Engine ASIC is malfunctioning.
- To conserve power in case the deployment does not require the full capacity of the system.

To power off a Packet Forwarding Engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power on
```

```
user@host# commit
```

You need to apply this configuration to both the Packet Forwarding Engines in an ASIC to be able to commit the configuration.

NOTE: On MX series routers with MPC10E-15C-MRATE, you can power off or power on only the Packet Forwarding Engine 2. The Packet Forwarding Engines 0 and 1 do not support this command. On the MPC10E-15C-MRATE, operating the Packet Forwarding Engine 2 requires the Packet Forwarding Engines 0 and 1 to be functional. You can use the command **show chassis fpc fpc-slot detail** to view the Packet Forwarding Engine power ON/OFF status and bandwidth for the individual Packet Forwarding Engines in the MPC10E-15C-MRATE.

You can use the `show chassis fpc fpc-slot detail` command to view the Packet Forwarding Engine power on/off configuration status. See an example below:

```
user@router> show chassis fpc 0 detail
```

Slot 0 information:

State	Online
Temperature	41 degrees C / 105 degrees F (PFE_24-HBM)
Temperature	44 degrees C / 111 degrees F (PFE_25-HBM)
Temperature	43 degrees C / 109 degrees F (PFE_26-HBM)
Temperature	41 degrees C / 105 degrees F (PFE_27-HBM)
Temperature	40 degrees C / 104 degrees F (PFE_28-HBM)

Temperature 40 degrees C / 104 degrees F (PFE_29-HBM)
 Temperature 38 degrees C / 100 degrees F (PFE_30-HBM)
 Temperature 39 degrees C / 102 degrees F (PFE_31-HBM)
 Start time 2020-10-28 00:46:17 PDT
 Uptime 1 day, 1 hour, 34 minutes, 48 seconds
 Max power consumption 825 Watts

PFE Information:

PFE	Power ON/OFF	Bandwidth	SLC
0	On	500	
1	On	500	
2	On	500	
3	On	500	
4	On	500	
5	On	500	
6	On	500	
7	On	500	

Release History Table

Release	Description
18.2R1	Starting from Junos OS Release 18.2R1, for JNP10K-LC2101 MPC on MX10008 routers, dynamic power management is enabled by default.
17.3R1	Starting from Junos OS Release 17.3R1, for MX10003 routers, mic-aware dynamic power management is enabled by default.
17.2R1	Starting in Junos OS Release 17.2R1, EX9200 switches support dynamic power management.
17.2R1	In Junos OS Release 17.2R1, for EX9200 switches, dynamic power management for MICs is enabled by default.
15.1R1	Starting in Junos OS Release 15.1R1, MX Series routers support dynamic power management.
15.1R1	In Junos OS Release 15.1R1, for MX Series routers, dynamic power management for MICs is disabled by default.
15.1F5	In Junos OS Release 15.1F5 and later, dynamic power management is enabled by default on several MPCs.

- 14.1 Starting in Junos OS Release 14.1, the power management feature for PTX5000 routers ensures that at any time, the chassis power requirements do not exceed the available chassis power.
-

RELATED DOCUMENTATION

[Configuring Ambient Temperature | 113](#)

[fru-poweron-sequence | 315](#)

Configuring Ambient Temperature

IN THIS SECTION

- [Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization | 113](#)
- [Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature | 114](#)
- [Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration | 118](#)

Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization

The key to managing power in network infrastructure is the efficient utilization of provisioned power. Provisioned power is the minimum power that is required to bring a router or a switch online. Junos OS determines the minimum required power by considering the worst-case power requirement for all the FRUs installed in the device. One of the methods to optimize the provisioned power on MX Series routers or EX9200 switches is to configure the device to operate at a cooler temperature. You can enable a device to operate at a lower operating temperature by configuring a lower ambient temperature.

Ambient temperature is the maximum operating temperature for a device. By configuring an ambient temperature, you can optimize power provisioned for the cooling system and the line cards. The maximum speed at which fans operate depends on the configured ambient temperature. As the fan speed increases, the power consumed by the fans increases. As a result, the device consumes more

power when the temperature is high because the fans run faster to maintain the operating temperature of the chassis within the configured limits.

When a router or a switch restarts, the system adjusts the power allocation or the provisioned power for the line cards on the basis of the configured ambient temperature. If enough power is not available, a minor chassis alarm is raised. However, the chassis continues to run with the configured ambient temperature. You can configure a new higher ambient temperature only after you make more power available by adding new power supply modules or by taking a few line cards offline. By using the provisioned power that is saved by configuring a lower ambient temperature, you can bring more hardware components online.

A specific ambient temperature value might not be applicable to a different geographical location, for example, in a colder region. For devices operating in colder regions, you can configure a lower ambient temperature, which helps reduce provisioned power significantly. However, in a region of higher temperature, you might need to configure a higher ambient temperature to ensure smooth functioning of the device. For example, if the router or switch operates in a colder region, you can set the ambient temperature to 25°C, which reduces the maximum fan speed, thereby reducing the maximum power consumption. Thus, by configuring an appropriate ambient temperature, you can reduce the provisioned power and save cost on network power infrastructure.

You can configure ambient temperature by using the **set chassis ambient-temperature (25C|40C|55C)** statement at the **[edit chassis]** hierarchy level. The default ambient temperature for MX Series routers and EX9200 switches is 40°C.

Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature

You can configure the ambient temperature of the PTX5000 chassis to manage power allocated to the FPCs. You can set the ambient temperature of the chassis at 25° C, or 40° C. On system initialization, the power manager reads the ambient temperature and allocates power to the FPCs according to the power budget policy at that temperature.

1. To configure the ambient temperature, include the **set chassis ambient-temperature 25|40|55** statement at the **[edit]** hierarchy level in the configuration mode:

```
[edit]
```

```
user@host# set chassis ambient-temperature 25|40
```

- To verify the ambient temperature of the chassis, use the **show chassis ambient-temperature** command at the **[edit]** hierarchy level in the operational mode:

```
[edit]
user@host> show chassis ambient-temperature
```

Ambient Temperature: 25C

To verify the power consumption of the FPCs, use the following statements:

- Use the **show chassis power detail | grep "FPC"** statement at the **[edit]** hierarchy level to view the power consumption of the FPCs.

```
user@host> show chassis power detail |
grep "FPC"
```

```

      FPC 0                448
FPC 1                419
FPC 2                373
FPC 3                 0
FPC 4                 0
FPC 5                 0
FPC 6                 0
FPC 7                 0
```

Alternatively use the SNMP MIB command, **show snmp mib walk jnxOperatingFRUPower | grep "\.7\."** to view the power consumption of each FPC:

```
user@host> show snmp mib walk jnxOperatingFRUPower
| grep "\.7\."

jnxOperatingFRUPower.4.1.7.0 = 0
jnxOperatingFRUPower.7.1.0.0 = 457      < -----   For FPC 0
jnxOperatingFRUPower.7.2.0.0 = 428      < -----   For FPC 1
jnxOperatingFRUPower.7.3.0.0 = 381      < -----   For FPC 2
jnxOperatingFRUPower.15.7.0.0 = 0
```

2. Use the **show chassis alarms** statement to view the alarms generated for any of the FPCs:

```

user@host> show chassis alarms

Alarm time           Class  Description
2007-04-08 05:51:12 UTC  Minor  FPC 1, Consumption > 90percent of allocated
Budget
2007-04-08 05:51:12 UTC  Minor  FPC 0, Consumption > 90percent of allocated
Budget
2007-04-08 05:50:26 UTC  Minor  FPC 0 SIB Link Error
2007-04-08 05:49:34 UTC  Minor  SIB 0 FPC Link Error
2007-04-08 05:48:02 UTC  Minor  No Redundant Power for FPC 0-7
2007-04-08 05:48:01 UTC  Minor  No Redundant Power for Rear Chassis
2007-04-08 05:48:01 UTC  Minor  No Redundant Power for Fan 0-2

```

If an FPC consumes more than 90% of the allocated power budget, the **Consumption > 90percent of allocated Budget** alarm is raised. FPC power consumption is measured at intervals of 65 seconds.

NOTE: Starting in Junos OS Release 18.4R1, the PTX5000 routers do not raise a chassis alarm in the following events:

- Power consumption by an FPC exceeds 90% of the allocated power budget.
- Power consumption by an FPC exceeds 100% of the allocated power budget (in this case, a system log is registered).

NOTE: If the PTX5000 chassis has redundant power supply modules, and if one PSM fails, the FPCs can still be online. Only the **No redundant power supply** alarm is raised.

If the PTX5000 chassis does not have redundant power supply modules, failure of one PSM can cause the FPCs to go offline, depending on the total chassis power available at that time.

3. When the power consumption of an FPC is more than the allocated budget for three consecutive intervals, the **Consumption > 90percent of allocated Budget** is cleared and **PWR Range Overshoot** alarms is raised for that particular FPC and the ambient temperature is set to the next higher setting.

```

user@host> show chassis alarms

9 alarms currently active
Alarm time           Class  Description

```

```

2007-04-08 05:56:38 UTC Minor FPC 2, Consumption > 90percent of allocated
Budget
2007-04-08 05:55:33 UTC Minor FPC 1, PWR Range Overshoot
2007-04-08 05:53:22 UTC Minor FPC 0, PWR Range Overshoot
2007-04-08 05:50:26 UTC Minor FPC 0 SIB Link Error
2007-04-08 05:49:34 UTC Minor SIB 0 FPC Link Error
2007-04-08 05:48:02 UTC Minor No Redundant Power for FPC 0-7
2007-04-08 05:48:01 UTC Minor No Redundant Power for Rear Chassis
2007-04-08 05:48:01 UTC Minor No Redundant Power for Fan 0-2

```

NOTE: Consumption > 90percent of allocated Budget alarms are updated according to the new ambient temperature setting but the chassis ambient temperature is not changed.

```

user@host> show chassis alarms
5 alarms currently active
Alarm time           Class  Description
2007-04-01 04:36:53 UTC Minor  No Redundant Power for FPC 0-7
2007-04-01 04:36:52 UTC Minor  No Redundant Power for Rear Chassis
2007-04-01 04:36:51 UTC Minor  No Redundant Power for Fan 0-2
2007-04-01 04:36:47 UTC Minor  PDU 1 Absent

```

- a. You can verify the temperature by using the **show chassis ambient-temperature** command.

```

user@host> show chassis ambient-temperature
Ambient Temperature: 25C

```

- b. Enter the configuration mode and check the configured ambient temperature. Use the **show chassis ambient temperature** operational mode command.

```

user@host# show chassis ambient temperature
Ambient Temperature: 25C

```

This is set to the last configured value.

- c. To clear the temperature set for the overshooting condition, use the **request chassis power-manager reset ambient-config** command.

```
user@host> request chassis power-manager
reset ambient-config
```

Verify the ambient temperature after the reset.

```
show chassis ambient-temperature
Ambient Temperature: 25C
```

4. Verify the active alarms in the chassis by using the **show chassis alarms** command.

```
user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2007-04-01 04:36:53 UTC  Minor  No Redundant Power for FPC 0-7
2007-04-01 04:36:52 UTC  Minor  No Redundant Power for Rear Chassis
2007-04-01 04:36:51 UTC  Minor  No Redundant Power for Fan 0-2
2007-04-01 04:36:47 UTC  Minor  PDU 1 Absent
```

Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration

The power management feature of the PTX5000 Packet Transport Router is enhanced to manage the power supplied to the FPCs on the router by configuring the ambient temperature of the chassis. You can set the ambient temperature of the chassis at 25° C, or 40° C. On system initialization, the power manager reads the ambient temperature and allocates power to the FPC according to the power budget policy at that temperature. If the actual power consumption of any FPC exceeds the configured value for more than three minutes, the power manager overrides the configured ambient temperature setting of that FPC, and resets its ambient temperature to the next higher level and reallocates power according to the new temperature setting. All the overshooting FPCs remain in the dynamic ambient temperature mode until the next reboot, or until you override it with a CLI command. The power manager then resets the power budget of the FRUs according to the configured ambient temperature setting.

NOTE: If the ambient temperature is not set, then, 55° C is considered as the default ambient-temperature and FPCs are assigned power according to the default ambient temperature.

For example, if the chassis ambient temperature is set to 25° C, the power manager allocates power to the FPCs according to the power budget policy at 25 ° C. If an FPC consumes more than 90% of the allocated power, an alarm—**Consumption > 90percent of allocated Budget**—is raised. If the FPC power consumption exceeds the allocated power for more than three minutes, the **PWR Range Overshoot** alarm is raised and the power manager reallocates power to that FPC according to the next higher temperature setting, that is, 40° C .

NOTE: During the **PWR Range Overshoot** alarm condition, you cannot reconfigure or delete the ambient temperature setting. You can reset the ambient temperature to the earlier setting after clearing the alarm condition by using the **request chassis power-manager reset ambient-config** command.

NOTE: If the PTX5000 chassis has redundant power supply modules, and if one PSM fails, the FPCs can still be online. Only the **No redundant power supply** alarm is raised. If the PTX5000 chassis does not have redundant power supply modules, failure of one PSM can cause the FPCs to go offline, depending on the total chassis power available at that time.

RELATED DOCUMENTATION

[ambient-temperature | 270](#)

[show chassis temperature-thresholds | 1616](#)

[Understanding How Dynamic Power Management Enables Better Utilization of Power | 94](#)

5

CHAPTER

Managing Errors and Alarms

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[Managing Errors | 212](#)

[Craft Interface | 230](#)

Understanding Chassis Alarms

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Chassis Alarms

[Table 7 on page 121](#) and [Table 8 on page 128](#) list the chassis-related alarms that are displayed when you execute the **show chassis alarms** operational mode command on PTX Series or MX series routers.

Table 7: Chassis Alarms for PTX5000 series routers

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Mix of PDUs	Appears when AC PDUs and DC PDUs are installed. Also appears when zoning and non- zoning PDUs are installed.	Minor	Install same type of PDUs in all slots.

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Power Manager Non Operational)	Appears when zoning and non- zoning PDUs are installed.	Minor	Install same type of PDUs in all slots.
No Redundant Power	When backup PDUs are absent or down	Minor	Install backup PDU.
PDU 0/1 Converter Failed	Appears when one or more 36V booster converter fails in PDU (PDU2-PTX-DC).	Major	Check PDU and replace if required.
No redundant power for system	Appears when there is no backup PDUs in the router	Minor	Install backup PDU.
No Power for System	Appears when the router is powered on with only one PSM.	Major	Install backup PDU.
SIB 1 FPC Link Error	Appears when the indicated SIB is down.	Minor	Replace faulty SIB.
SIB 1 Absent	Appears when the indicated SIB is absent.	Major	Replace faulty SIB.
PDU 1 PSM 1 Not OK	Appears when the PSM in the displayed PDU is down.	Major	Replace faulty PSM.

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Host x disk drive y smart error	<p>Appears when there is an issue with the internal state of the disk such as, the disk life remaining is below the threshold.</p> <ul style="list-style-type: none"> • x-0 for Host 0 (RE0) and 1 for Host 1 (RE1) • y-1 for disk 1 and 2 for disk 2 	Minor	Replace the disk.
VMHost x Boot from alternate set	Appears when the Routing Engine is booted from the alternate set.	Minor	Verify logs. As required, recover the Routing Engine by using the command request vmhost snapshot
VMHost RE x host application failed	Appears when one of the vmhost daemon has failed.	Minor	Manual primary-role switchover followed by reboot using the command request vmhost reboot .
VMHost Boot from alternate disk	Appears when the primary disk is corrupted and unable to launch the guest.	Minor	Recover the disk by using the command request vmhost snapshot recovery .

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Host 0/1 CPU Temperature Warm	Appears when the Routing Engine CPU temperature is above the TCONTROL threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Minor	No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system, thereby reducing the temperature.
Host 0/1 CPU Temperature Hot	Appears when the Routing Engine CPU temperature is above the PROCHOT threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Minor	No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system, thereby reducing the temperature.
Host 0/1 ECC single bit parity error	Appears when single bit ECC error is above the threshold value. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Major	No recovery action required from the user. The count gets reset after 24 hours.
Host 0 ECC 53 parity error	Appears when multiple bit Error Checking and Correction (ECC) error is above the threshold value.	Major	Reboot the router.

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
VMHost RE x Disk y Missing	<p>Appears when the disk in the Routing Engine is missing.</p> <ul style="list-style-type: none"> • $x=0$ for RE0 and 1 for RE1 • $y=1$ for disk 1 and 2 for disk 2 	Minor	<p>Check if there is missing or a defective disk. Insert healthy disk. Take a snapshot and recover the disk by using the command request vmhost snapshot.</p> <p><i>See Disk Recovery Using the VM Host Snapshot in Installing, Upgrading, Backing Up, and Recovery of VM Host</i></p>
VMHost RE x Disk y Label Missing	<p>Appears when the labels on the disk in the Routing Engine is missing.</p> <ul style="list-style-type: none"> • $x=0$ for RE0 and 1 for RE1 • $y=1$ for disk 1 and 2 for disk 2 	Minor	<p>Reboot the Routing-Engine from healthy disk and recover the impacted disk using the command request vmhost snapshot.</p>

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
VMHost RE x Disk y Wrong Slot	<p>Appears when there is disk swap or pre-labelled disk inserted in wrong slot.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	If both the disks are in wrong slot, swap the disks and reboot. If only one disk is in wrong slot, recover the disk via snapshot after booting from healthy disk.
VMHost RE x Disk y File System Errors	<p>Appears when there is a file system error.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Boot the Routing-engine from healthy disk and recover the impacted disk using the command request vmhost snapshot .
VMHost RE x Disk y Write Rate Threshold Cross	<p>Appears if write rate threshold is crossed.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Identify the application that is generating excessive writes and apply configuration changes to prevent excessive writes.

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
VMHost RE x Disk y Size Incorrect	<p>Appears if the size of the disk is not appropriate for the platform.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Insert an disk of the right size and reboot the Routing Engine.
VMHost RE x Disk y Usage Is Above Threshold	<p>Appears when the usage of the disk partition is above the threshold limit.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Cleanup the disks using request vmhost cleanup command.
VMHost RE x Secure Boot Disabled	Appears when Secure Boot is not enforced in the BIOS.	Medium	Enable Secure Boot in the BIOS.
VMHost RE x Secure BIOS Version Mismatch	Appears when current BIOS version is older than the Last Known good BIOS version.	Medium	Upgrade the BIOS using the request system firmware command.

Table 7: Chassis Alarms for PTX5000 series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
RE x Mismatch in total memory detected	Appears when total memory for the pair of Routing Engines does not match, possibly because a memory module has failed.	Medium	Check the available RAM size using show vmhost hardware command. If the RAM size for the pair of Routing Engines does not match, contact JTAC.

Table 8: Chassis Alarms for PTX10008 and PTX10016 routers

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
FPC x need bounce	Appears when port speed configuration needs an FPC reboot for the new speed configuration to take effect. <ul style="list-style-type: none"> • x-FPC slot number. 	Minor	Do one of the following to clear the alarm. <ul style="list-style-type: none"> • Manually reboot the FPC for the new port speed configuration to take effect. • Delete the new port speed configuration that has triggered the alarm. In this case, the new port speed configuration will not take effect.

Table 8: Chassis Alarms for PTX10008 and PTX10016 routers (*Continued*)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
PEM pem-slot No Power	Appears when both power supplies are not connected and the enable switch is not set correctly.	Major	Check power supply input connection and the enable switch setting. See the dip switch and enable switch settings for your specific power supply model, Removing and Installing MX10000 Power System Components .
PEM pem-slot feed feed-slot no input	Appears when both power supplies are not connected but the enable switch is set to on.	Major	
PEM pem-slot feed feed-slot Switch Cfg Wrong	Appears when either both power supplies are connected or one of the power supplies is connected but the enable switch is not set correctly.	Major	
Mix of AC & DC Supplies	Mix of AC and DC power supplies.	Major	Ensure that the router has the same type of power supplies.

Table 9 on page 130 lists the chassis-related alarms that are displayed when you execute the **show chassis alarms** operational mode command on MX Series routers

Table 9: Chassis Alarms for MX series routers

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Host x disk drive y smart error	<p>Appears when there is an issue with the internal state of the disk such as, the disk life remaining is below the threshold.</p> <ul style="list-style-type: none"> • $x=0$ for Host 0 (RE0) and 1 for Host 1 (RE1) • $y=1$ for disk 1 and 2 for disk 2 	Minor	Replace the disk.
VMHost x Boot from alternate set	Appears when the Routing Engine is booted from the alternate set.	Minor	Verify logs. As required, recover the Routing Engine by using the command request vmhost snapshot
VMHost RE x host application failed	Appears when one of the vmhost daemon has failed.	Minor	Manual primary-role switchover followed by reboot using the command primary-role switchover followed by reboot using the command request vmhost reboot
VMHost Boot from alternate disk	Appears when the primary disk is corrupted and unable to launch the guest.	Minor	Recover the disk by using the command request vmhost snapshot recovery .

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Host 0/1 CPU Temperature Warm	Appears when the Routing Engine CPU temperature is above the TCONTROL threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Minor	No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system thereby reducing the temperature
Host 0/1 CPU Temperature Hot	Appears when the Routing Engine CPU temperature is above the PROCHOT threshold. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Minor	No recovery action required from the user. Based on the temperature, the fan speed is changed to cool the system thereby reducing the temperature
Host 0/1 ECC single bit parity error	Appears when single bit ECC error is above the threshold value. 0 for Host 0 (RE0) and 1 for Host 1 (RE1)	Major	No recovery action required from the user. The count gets reset after 24 hours.
Host 0 ECC 53 parity error	Appears when multiple bit ECC error is above the threshold value.	Major	Reboot the router.

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Mixed Master and Backup RE types	Appears when dissimilar Routing Engines are present on the chassis.	Major	Both Routing Engines must be of the same model number. Replace one of the Routing Engines.
VMHost RE x Disk y Missing	Appears when the disk in the Routing Engine is missing. <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Check if there is missing or a defective disk. Insert healthy disk. Take a snapshot and recover the disk by using the command request vmhost snapshot . <i>See Disk Recovery Using the VM Host Snapshot in Installing, Upgrading, Backing Up, and Recovery of VM Host</i>
VMHost RE x Disk y Label Missing	Appears when the labels on the disk in the Routing Engine is missing. <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Reboot the Routing-Engine from healthy disk and recover the impacted disk using the command request vmhost snapshot .

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
VMHost RE x Disk y Wrong Slot	<p>Appears when there is disk swap or pre-labelled disk inserted in wrong slot.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	If both the disks are in wrong slot, swap the disks and reboot. If only one disk is in wrong slot, recover the disk via snapshot after booting from healthy disk.
VMHost RE x Disk y File System Errors	<p>Appears when there is a file system error.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Boot the Routing-engine from healthy disk and recover the impacted disk using the command request vmhost snapshot .
VMHost RE x Disk y Write Rate Threshold Cross	<p>Appears if write rate threshold is crossed.</p> <ul style="list-style-type: none"> • $x-0$ for RE0 and 1 for RE1 • $y-1$ for disk 1 and 2 for disk 2 	Minor	Identify the application that is generating excessive writes and apply configuration changes to prevent the excessive writes.

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
VMHost RE x Disk y Size Incorrect	<p>Appears if the size of the disk is not appropriate for the platform.</p> <ul style="list-style-type: none"> • $x=0$ for RE0 and 1 for RE1 • $y=1$ for disk 1 and 2 for disk 2 	Minor	Insert an disk of the right size and reboot the Routing Engine.
VMHost RE x Disk y Usage Is Above Threshold	<p>Appears when the usage of the disk partition is above the threshold limit.</p> <ul style="list-style-type: none"> • $x=0$ for RE0 and 1 for RE1 • $y=1$ for disk 1 and 2 for disk 2 	Minor	Cleanup the disks using request vmhost cleanup command.
VMHost RE x Secure Boot Disabled	Appears when Secure Boot is not enforced in the BIOS.	Medium	Enable Secure Boot in the BIOS.
VMHost RE x Secure BIOS Version Mismatch	Appears when current BIOS version is older than the Last Known good BIOS version.	Medium	Upgrade the BIOS using the request system firmware command.

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
RE x Mismatch in total memory detected	Appears when total memory for the pair of Routing Engines does not match, possibly because a memory module has failed.	Medium	Check the available RAM size using show vmhost hardware command. If the RAM size for the pair of Routing Engines does not match, contact JTAC.
Mix of PDM types	Appears when the new high-voltage second-generation universal PDM is used along with older PDM variants.	Minor	Replace the old PDMs with the new universal PDMs.
Mix of PSM types	Appears if the new high-voltage second-generation universal PSM is used along with other AC/DC or DC/DC PSMs.	Minor	Install the same type of PSMs in all the slots.

Table 9: Chassis Alarms for MX series routers (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Mix of PEMs	<p>Applicable to the MX960 routers with high-voltage second-generation universal power supply module (PSM).</p> <p>This alarm appears if the 5100 W power supply is used along with older power supplies in the MX960.</p>	Minor	Install the same type of power supplies in all the slots.

Table 10: Chassis Alarms (PTP-Specific) for ACX710 Router

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
PTP No Foreign Master	Raised if the external Precision Time Protocol (PTP) primary clock does not send announce packets.	Major	Ensure that the PTP configuration is correct. Also, ensure that external primary clock is working fine. This alarm gets cleared when the system recovers from the error state.
PTP Sync Fail	Raised if the PTP lock-status is not in Phase Aligned state.	Major	Ensure that the PTP configuration is correct. This alarm gets cleared when the PTP lock status moves to Phase Aligned state. Use the CLI 'show ptp lock-status' to view the PTP lock status.

Table 10: Chassis Alarms (PTP-Specific) for ACX710 Router (Continued)

Message displayed in the output of show chassis alarms Command	Description	Class	Solution
Chassis Loss of all Equipment Clock Synch References	Raised if both the primary and secondary SyncE references fail and the chassis PLL is in holdover.	Major	Use the show chassis synchronization command to view the ineligibility reason, and to debug further. This alarm gets cleared when the system recovers from the error state.
Chassis Loss of Equipment Clock Synch Reference 1	Raised if the primary SyncE reference fails and no secondary SyncE reference is configured or present.	Major	Use the show chassis synchronization command to view the ineligibility reason, and to debug further.
Chassis Loss of Equipment Clock Synch Reference 2	Raised if you have configured at least two or more SyncE sources and the secondary SyncE source has failed.	Major	Use the show chassis synchronization command to view the ineligibility reason, and to debug further.

SEE ALSO

| *show chassis alarms*

Chassis Conditions That Trigger Alarms

IN THIS SECTION

- [Chassis Component Alarm Conditions on M5 and M10 Routers | 139](#)
- [Chassis Component Alarm Conditions on M7i and M10i Routers | 143](#)

- [Chassis Component Alarm Conditions on M20 Routers | 148](#)
- [Chassis Component Alarm Conditions on M40 Routers | 153](#)
- [Chassis Component Alarm Conditions on M40e and M160 Routers | 160](#)
- [Chassis Component Alarm Conditions on M120 Routers | 166](#)
- [Chassis Component Alarm Conditions on M320 Routers | 174](#)
- [Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms | 180](#)
- [Backup Routing Engine Alarms | 188](#)
- [Chassis Component Alarm Conditions for Guest Network Functions \(GNFs\) | 191](#)
- [Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices | 193](#)

Various conditions related to the chassis components trigger yellow and red alarms. You cannot configure these conditions.

- ["Backup Routing Engine Alarms" on page 188](#)
- ["Chassis Component Alarm Conditions on M5 and M10 Routers" on page 139](#)
- ["Chassis Component Alarm Conditions on M7i and M10i Routers" on page 143](#)
- ["Chassis Component Alarm Conditions on M20 Routers" on page 148](#)
- ["Chassis Component Alarm Conditions on M40 Routers" on page 153](#)
- ["Chassis Component Alarm Conditions on M40e and M160 Routers" on page 160](#)
- ["Chassis Component Alarm Conditions on M120 Routers" on page 166](#)
- ["Chassis Component Alarm Conditions on M320 Routers" on page 174](#)
- ["Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms" on page 180](#)
- ["Chassis Component Alarm Conditions for Guest Network Functions \(GNFs\)" on page 191](#)
- ["Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices" on page 193](#)
- For PTX5000 Packet Transport Router chassis component alarm conditions, see the [PTX5000 Packet Transport Router Hardware Guide](#)
- For T320 Core Router chassis component alarm conditions, see the [T320 Core Router Hardware Guide](#)

- For T640 Core Router chassis component alarm conditions, see the [T640 Core Router Hardware Guide](#)
- For T1600 Core Router chassis component alarm conditions, see the [T1600 Core Router Hardware Guide](#)
- For T4000 Core Router chassis component alarm conditions, see the [T4000 Core Router Hardware Guide](#)
- For TX Matrix chassis component alarm conditions, see the [TX Matrix Router Hardware Guide](#)
- For TX Matrix Plus chassis component alarm conditions, see the [TX Matrix Plus Router Hardware Guide](#)

Chassis Component Alarm Conditions on M5 and M10 Routers

Table 11 on page 139 lists the alarms that the chassis components can generate on M5 and M10 routers.

Table 11: Chassis Component Alarm Conditions on M5 and M10 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at www.juniper.net/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow

Table 11: Chassis Component Alarm Conditions on M5 and M10 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or is spinning below required speed.	Replace failed fan tray.	Red
Forwarding Engine Board (FEB)	The control board has failed. If this occurs, the board attempts to reboot.	Replace failed FEB.	Red
Flexible PIC Concentrator (FPC)	An FPC has failed. If this occurs, the FPC attempts to reboot. If the FEB sees that an FPC is rebooting too often, it shuts down the FPC.	Replace failed FPC.	Red
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Routing Engine	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow

Table 11: Chassis Component Alarm Conditions on M5 and M10 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
Power supplies	A power supply has been removed from the chassis.	Install missing power supply.	Yellow
	A power supply has failed.	Replace failed power supply.	Red

Table 11: Chassis Component Alarm Conditions on M5 and M10 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 11: Chassis Component Alarm Conditions on M5 and M10 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	<p>Open a support case using the Case Manager link at www.juniper.net/</p> <p>or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).</p>	Red

Chassis Component Alarm Conditions on M7i and M10i Routers

Table 12 on page 144 lists the alarms that the chassis components can generate on M7i and M10i routers.

Table 12: Chassis Component Alarm Conditions on M7i and M10i Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Compact FEB (CFEB)	For an M7i router, CFEB has failed. If this occurs, the board attempts to reboot.	Replace failed CFEB.	Red
	For an M10i router, both control boards have been removed or have failed.	Replace failed or missing CFEB.	Red
	Too many hard errors in CFEB memory.	Replace failed CFEB.	Red
	Too many soft errors in CFEB memory.	Replace failed CFEB.	Red
	A CFEB microcode download has failed.	Replace failed CFEB.	Red
Fan trays	A fan has failed.	Replace failed fan tray.	Red
	For an M7i router, a fan tray has been removed from the chassis.	Install missing fan tray.	Red

Table 12: Chassis Component Alarm Conditions on M7i and M10i Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	For an M10i router, both fan trays are absent from the chassis.	Install missing fan tray.	Red
	For a TX Matrix Plus router, fan tray is not matching the ST-SIB-Ls SIB.	Install a Rev.3 fan tray.	Red
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's midplane from the front is broken.	Replace failed component.	Red
Power supplies	A power supply has been removed.	Insert missing power supply.	Yellow
	A power supply has failed.	Replace failed power supply.	Red
	For an M10i router, only one power supply is operating.	Insert or replace secondary power supply.	Red

Table 12: Chassis Component Alarm Conditions on M7i and M10i Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device.	Replace the serial cable connected to the device. If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk. This alarm only applies, if you have an optional CompactFlash card.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red

Table 12: Chassis Component Alarm Conditions on M7i and M10i Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow

Table 12: Chassis Component Alarm Conditions on M7i and M10i Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on M20 Routers

Table 13 on page 149 lists the alarms that the chassis components can generate on M20 routers.

Table 13: Chassis Component Alarm Conditions on M20 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or is spinning below requires speed.	Replace fan tray.	Red
FPC	An FPC has failed. If this occurs, the FPC attempts to reboot. If the System and Switch Board (SSB) sees that an FPC is rebooting too often, it shuts down the FPC.	Replace failed FPC.	Red

Table 13: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs in to the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Routing Engine	Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device.	Replace the serial cable connected to the device. If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow

Table 13: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red

Table 13: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply has failed.	Replace failed power supply.	Red
SSB	The control board has failed. If this occurs, the board attempts to reboot.	Replace failed control board.	Red
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 13: Chassis Component Alarm Conditions on M20 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on M40 Routers

Table 14 on page 153 lists the alarms that the chassis components can generate on M40 routers.

Table 14: Chassis Component Alarm Conditions on M40 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Air filter	Change air filter.	Change air filter.	Yellow

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or is spinning below required speed.	Replace fan tray.	Red
FPC	An FPC has an out of range or invalid temperature reading.	Replace failed FPC.	Yellow
	An FPC microcode download has failed.	Replace failed FPC.	Red

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	An FPC has failed. If this occurs, the FPC attempts to reboot. If the SCB sees that an FPC is rebooting too often, it shuts down the FPC.	Replace failed FPC.	Red
	Too many hard errors in FPC memory.	Replace failed FPC.	Red
	Too many soft errors in FPC memory.	Replace failed FPC.	Red
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply temperature sensor has failed.	Replace failed power supply or power entry module.	Yellow
	A power supply fan has failed.	Replace failed power supply fan.	Yellow
	A power supply has high temperature.	Replace failed power supply or power entry module.	Red

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	A 5-V power supply has failed.	Replace failed power supply or power entry module.	Red
	A 3.3-V power supply has failed.	Replace failed power supply or power entry module.	Red
	A 2.5-V power supply has failed.	Replace failed power supply or power entry module.	Red
	A power supply input has failed.	Check power supply input connection.	Red
	A power supply has failed.	Replace failed power supply or power entry module.	Red
Routing Engine	<p>Excessive framing errors on console port.</p> <p>An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded.</p> <p>This might be caused by a faulty serial console port cable connected to the device.</p>	<p>Replace the serial cable connected to the device.</p> <p>If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.</p>	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
SCB	The System Control Board (SCB) has failed. If this occurs, the board attempts to reboot.	Replace failed SCB.	Red
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 14: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on M40e and M160 Routers

Table 15 on page 160 lists the alarms that the chassis components can generate on M40e and M160 routers.

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Air filter	Change air filter.	Change air filter.	Yellow
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Connector Interface Panel (CIP)	A CIP is missing.	Insert CIP into empty slot.	Red

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or spinning below required speed.	Replace fan tray.	Red
FPC	An FPC has an out of range or invalid temperature reading.	Replace failed FPC.	Yellow
	An FPC microcode download has failed.	Replace failed FPC.	Red
	An FPC has failed. If this occurs, the FPC attempts to reboot. If the MCS sees that an FPC is rebooting too often, it shuts down the FPC.	Replace failed FPC.	Red
	Too many hard errors in FPC memory.	Replace failed FPC.	Red
	Too many soft errors in FPC memory.	Replace failed FPC.	Red

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Miscellaneous Control Subsystem (MCS)	An MCS has an out of range or invalid temperature reading.	Replace failed MCS.	Yellow
	MCS0 has been removed.	Reinstall MCS0.	Yellow
	An MCS has failed.	Replace failed MCS.	Red
Packet Forwarding Engine Clock Generator (PCG)	A backup PCG is offline.	Set backup PCG online.	Yellow
	A PCG has an out of range or invalid temperature reading.	Replace failed PCG.	Yellow
	A PCG has been removed.	Insert PCG into empty slot.	Yellow
	A PCG has failed to come online.	Replace failed PCG.	Red

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device.	Replace the serial cable connected to the device. If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply has failed.	Replace failed power supply.	Red
Switching and Forwarding Module (SFM)	An SFM has an out of range or invalid temperature reading on SPP.	Replace failed SFM.	Yellow

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	An SFM has an out of range or invalid temperature reading on SPR.	Replace failed SFM.	Yellow
	An SFM is offline.	Set SFM online.	Yellow
	An SFM has failed.	Replace failed SFM.	Red
	An SFM has been removed from the chassis.	Insert SFM into empty slot.	Red
	All SFMs are offline or missing from the chassis.	Insert SFMs into empty slots or set all SFMs online.	Red
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow

Table 15: Chassis Component Alarm Conditions on M40e and M160 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on M120 Routers

Table 16 on page 167 lists the alarms that the chassis components can generate on M120 routers.

Table 16: Chassis Component Alarm Conditions on M120 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Air filters	Change air filter.	Change air filter.	Yellow
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Control Board (CB)	A CB Ethernet switch has failed.	Replace failed CB.	Yellow
	A CB has been removed.	Insert CB into empty slot.	Red
	A CB has failed.	Replace failed CB.	Red
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow

Table 16: Chassis Component Alarm Conditions on M120 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or is spinning below required speed.	Replace fan tray.	Red
Forwarding Engine Boards (FEBs)	A spare FEB has failed.	Replace failed FEB.	Yellow
	A spare FEB has been removed.	Insert FEB into empty slot.	Yellow
	A FEB is offline.	Check FEB. Remove and reinsert the FEB. If this fails, replace failed FEB.	Yellow
	A FEB has failed.	Replace failed FEB.	Red
	A FEB has been removed.	Insert FEB into empty slot.	Red
Host subsystem	A host subsystem has failed.	Replace the host subsystem.	Yellow
	A host subsystem has been removed.	Insert host subsystem into empty slot.	Red

Table 16: Chassis Component Alarm Conditions on M120 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply has a high temperature.	Replace failed power supply or power entry module.	Red
	A power supply input has failed.	Check power supply input connection.	Red
	A power supply output has failed.	Check power supply output connection.	Red
	A power supply has failed.	Replace failed power supply.	Red

Table 16: Chassis Component Alarm Conditions on M120 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	<p>Excessive framing errors on console port.</p> <p>An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded.</p> <p>This might be caused by a faulty serial console port cable connected to the device.</p>	<p>Replace the serial cable connected to the device.</p> <p>If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.</p>	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow

Table 16: Chassis Component Alarm Conditions on M120 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red

Table 16: Chassis Component Alarm Conditions on M120 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	<p>The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.</p>	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
Temperature	<p>The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.</p>	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow

Table 16: Chassis Component Alarm Conditions on M120 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 16: Chassis Component Alarm Conditions on M120 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on M320 Routers

Table 17 on page 174 lists the alarms that the chassis components can generate on M320 routers.

Table 17: Chassis Component Alarm Conditions on M320 Routers

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Air filters	Change air filter.	Change air filter.	Yellow
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Control Board (CB)	A CB has been removed.	Insert CB into empty slot.	Yellow

Table 17: Chassis Component Alarm Conditions on M320 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	A CB temperature sensor alarm has failed.	Replace failed CB.	Yellow
	A CB has failed.	Replace failed CB.	Red
CIP	A CIP is missing.	Insert CIP into empty slot.	Red
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Fan trays	One fan tray has been removed from the chassis.	Install missing fan tray.	Yellow
	Two or more fan trays have been removed from the chassis.	Install missing fan trays.	Red
	One fan in the chassis is not spinning or is spinning below required speed.	Replace fan tray.	Red
FPC	An FPC has an out of range or invalid temperature reading.	Replace failed FPC.	Yellow
	An FPC microcode download has failed.	Replace failed FPC.	Red
	An FPC has failed. If this occurs, the FPC attempts to reboot. If the CB sees that an FPC is rebooting too often, it shuts down the FPC.	Replace failed FPC.	Red

Table 17: Chassis Component Alarm Conditions on M320 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Too many hard errors in FPC memory.	Replace failed FPC.	Red
	Too many soft errors in FPC memory.	Replace failed FPC.	Red
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply has failed.	Replace failed power supply.	Red
Routing Engine	<p>Excessive framing errors on console port.</p> <p>An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded.</p> <p>This might be caused by a faulty serial console port cable connected to the device.</p>	<p>Replace the serial cable connected to the device.</p> <p>If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.</p>	Yellow

Table 17: Chassis Component Alarm Conditions on M320 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red
	A spare SIB is missing.	Insert spare SIB in to empty slot.	Yellow

Table 17: Chassis Component Alarm Conditions on M320 Routers (*Continued*)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
Switch Interface Board (SIB)	A SIB has failed.	Replace failed SIB.	Yellow
	A spare SIB has failed.	Replace failed SIB.	Yellow
	A SIB has an out of range or invalid temperature reading.	Replace failed SIB.	Yellow
	A SIB is missing.	Insert SIB into empty slot.	Red
	A SIB has failed.	Replace failed SIB.	Red

Table 17: Chassis Component Alarm Conditions on M320 Routers *(Continued)*

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
Temperature	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 17: Chassis Component Alarm Conditions on M320 Routers (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms

Table 18 on page 180 lists the alarms that the chassis components can generate on MX Series 5G Universal Routing Platforms.

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Air filters	Change air filter.	Change air filter.	Yellow

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The router boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Craft interface	The craft interface has failed.	Replace failed craft interface.	Red
Dense Port Concentrators (DPC)s	A DPC is offline.	Check DPC. Remove and reinsert the DPC. If this fails, replace failed DPC.	Yellow
	A DPC has failed.	Replace failed DPC.	Red
	A DPC has been removed.	Insert DPC into empty slot.	Red
Fan trays	A fan tray has been removed from the chassis.	Install missing fan tray.	Red
	One fan in the chassis is not spinning or is spinning below required speed.	Replace fan tray.	Red
	A higher-cooling capacity fan tray is required when an MPC is installed on the chassis.	Upgrade to a high-capacity fan tray.	Yellow

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Host subsystem	A host subsystem has been removed.	Insert host subsystem into empty slot.	Yellow
	A host subsystem has failed.	Replace failed host subsystem.	Red
Hot swapping	Too many hot-swap interrupts are occurring. This message generally indicates that a hardware component that plugs into the router's backplane from the front (generally, an FPC) is broken.	Replace failed component.	Red
Power supplies	A power supply has been removed from the chassis.	Insert power supply into empty slot.	Yellow
	A power supply has a high temperature.	Replace failed power supply or power entry module.	Red
	A power supply input has failed.	Check power supply input connection.	Red
	A power supply output has failed.	Check power supply output connection.	Red
	A power supply has failed.	Replace failed power supply.	Red

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Invalid AC power supply configuration.	When two AC power supplies are installed, insert one power supply into an odd-numbered slot and the other power supply into an even-numbered slot.	Red
	Invalid DC power supply configuration.	When two DC power supplies are installed, insert one power supply into an odd-numbered slot and the other power supply into an even-numbered slot.	Red
	Mix of AC and DC power supplies.	Do not mix AC and DC power supplies. For DC power, remove the AC power supply. For AC power, remove the DC power supply.	Red
	Not enough power supplies.	Install an additional power supply.	Red

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device.	Replace the serial cable connected to the device. If the cable is replaced and no excessive framing errors are detected within 5 minutes from the last detected framing error, the alarm is cleared automatically.	Yellow
	Error in reading or writing hard disk.	Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	Error in reading or writing CompactFlash card.	Reformat CompactFlash card and install bootable image. If this fails, replace failed Routing Engine.	Yellow
	System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition.	Install bootable image on default primary Routing Engine. If this fails, replace failed Routing Engine.	Yellow

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	System booted from hard disk.	Install bootable image on CompactFlash card. If this fails, replace failed Routing Engine.	Yellow
	CompactFlash card missing in boot list.	Replace failed Routing Engine.	Red
	Hard disk missing in boot list.	Replace failed Routing Engine.	Red
	Routing Engine failed to boot.	Replace failed Routing Engine.	Red
	The Ethernet management interface (fxp0 or em0) on the Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Red
System Control Board (SCB)	An SCB has been removed.	Insert SCB into empty slot.	Yellow

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	An SCB temperature sensor alarm has failed.	Replace failed SCB.	Yellow
	An SCB has failed.	Replace failed SCB.	Red
Temperature	The chassis temperature has exceeded 55 degrees C (131 degrees F), the fans have been turned on to full speed, and one or more fans have failed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and the fans have been turned on to full speed.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Yellow
	The chassis temperature has exceeded 65 degrees C (149 degrees F), and a fan has failed. If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
	Chassis temperature has exceeded 75 degrees C (167 degrees F). If this condition persists for more than 4 minutes, the router shuts down.	<ul style="list-style-type: none"> • Check room temperature. • Check air filter and replace it. • Check airflow. • Check fan. 	Red
	The temperature sensor has failed.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Table 18: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Flexible PIC Concentrator (FPC)	<p>FPC <slot number> Major Errors</p> <p>On MX Series routers with MPC1 and MPC2 line cards, a major chassis alarm is raised when the following transient hardware errors occur</p> <ul style="list-style-type: none"> • CPQ Sram parity error • CPQ RLDRAM double bit ECC error <p>By default, these errors result in the Packet Forwarding Engine interfaces on the FPC being disabled. You can use the show chassis fpc errors command to view the default or user-configured action that resulted from the error.</p> <p>You can check the syslog messages to know more about the errors.</p>	To resolve the error, restart the line card. If the error is still not resolved, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Red

Backup Routing Engine Alarms

For routers with primary and backup Routing Engines, a primary Routing Engine can generate alarms for events that occur on a backup Routing Engine. [Table 19 on page 189](#) lists chassis alarms generated for a backup Routing Engine.

NOTE: Because the failure occurs on the backup Routing Engine, alarm severity for some events (such as Ethernet interface failures) is yellow instead of red.

NOTE: For information about configuring redundant Routing Engines, see the [Junos OS High Availability Library for Routing Devices](#).

Table 19: Backup Routing Engine Alarms

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Alternative media	The backup Routing Engine boots from an alternate boot device, the hard disk. The CompactFlash card is typically the primary boot device. The Routing Engine boots from the hard disk when the primary boot device fails.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Boot Device	The boot device (CompactFlash or hard disk) is missing in boot list on the backup Routing Engine.	Replace failed backup Routing Engine.	Red

Table 19: Backup Routing Engine Alarms (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Ethernet	The Ethernet management interface (fxp0 or em0) on the backup Routing Engine is down.	<ul style="list-style-type: none"> • Check the interface cable connection. • Reboot the system. • If the alarm recurs, open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Yellow
FRU Offline	The backup Routing Engine has stopped communicating with the master Routing Engine.	Open a support case using the Case Manager link at https://www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).	Yellow
Hard Disk	Error in reading or writing hard disk on the backup Routing Engine.	Reformat hard disk and install bootable image. If this fails, replace failed backup Routing Engine.	Yellow

Table 19: Backup Routing Engine Alarms (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Multibit Memory ECC	The backup Routing Engine reports a multibit ECC error.	<ul style="list-style-type: none"> • Reboot the system with the board reset button on the backup Routing Engine. • If the alarm recurs, open a support case using the Case Manager link at www.juniper.net/support/ or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States) 	Yellow

Chassis Component Alarm Conditions for Guest Network Functions (GNFs)

[Table 20 on page 192](#) lists the Chassis conditions that trigger alarms on guest network functions (GNFs).

Read more about GNFs in [this Junos Node Slicing article](#).

Table 20: GNF Alarms

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	<p>Mixed Master and Backup RE types</p> <p>This alarm is raised when the GNF primary Routing Engine and GNF Backup Routing Engine have been assigned either mismatching frequencies (with difference above 100 MHz), mismatching numbers of cores, or DRAM.</p>	Correct the differences and then relaunch the corrected GNF Routing Engine.	Yellow
Routing Engine	<p>System Incompatibility with BSYS</p> <p>The alarm is shown when any incompatibilities between BSYS and GNF software versions cause the GNF to go offline.</p>	Make the required changes to the BSYS or GNF software through upgrade.	Red

Table 20: GNF Alarms (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Routing Engine	<p>Feature Incompatibility with BSYS</p> <p>Indicates a minor incompatibility between BSYS and GNF software versions. This could result in a:</p> <ul style="list-style-type: none"> • A warning error for the GNF. • A FRU going offline. <p>NOTE: Minor incompatibilities do not cause the GNF to go offline.</p>	Make the required changes to the BSYS or GNF software through upgrade.	Yellow

Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices

Table 21 on page 193 lists the alarms that the chassis components can generate on SRX1500, SRX4100, SRX4200 and SRX4600 devices. Execute **show chassis alarms** operational mode command on SRX1500, SRX4100, SRX4200 and SRX4600 devices to view the alarm.

Table 21: Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Power supply unit (PSU)	Appears when one among the two PSU is not available or not energized for SRX1500, SRX4100, and SRX4200.	Install the missing PSU or refer <i>pem-absence</i>	Red

Table 21: Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices (Continued)

Chassis Component	Alarm Condition	Remedy	Alarm Severity
Power supply unit (PSU)	Appears when one among the two PSU is not available or not energized for SRX4600.	Install the missing PSU or refer <i>pem-absence</i>	Yellow

MX204 LED Scheme Overview

LEDs on the interface cards display the status of the ports. In MX204 router, there are four port LEDs per port. Each port provides an individual status LED with four states signaled by the color/LED state: OFF, GREEN, AMBER, RED.

The following port LED display modes are defined:

- Normal—Represents the normal working mode of the LED. By default, the port status display mode is Normal.
- Port location—The port location mode is ON when a remote operator initiates a port location command for a port or a group of ports.

The following factors trigger a change in the port LED color:

- Change in the port state. For example, loss of signal (LOS) to no LOS, remote fault, or local fault
- Pluggable insertion or removal
- Change in configuration
- Activation or deactivation of port location feature

[Table 22 on page 195](#) summarizes the state and color rules for the port LEDs. These rules help in determining the port LED color. When port location mode is activated, the port LED state or color can be determined from the Port Location ON column.

NOTE: In MX204 router, there are four port LEDs per port. On PIC 0, if the port operates at the speed of 40-Gbps or 100-Gbps, then the first LED of PIC 1 will be ON and the other three LEDs will be OFF. And, if the port operates at the speed of 10-Gbps, then all the LEDs will be ON.

Table 22: Port LED State and Color Rules

Pluggable Inserted	Explicitly Disabled	Port State	Normal	Port Location ON
Yes	No	Up	Green	Blinking green
Yes	No	Down; loss of signal (LOS) detected	Off	Blinking green
Yes	No	Down; transceiver hardware failure	Red	Blinking red
Yes	No	Down; any other fault other than LOS and transceiver hardware failure	Amber	Blinking amber
ANY	Yes	Port disabled by CLI	Amber	Blinking amber
No	No	Anything except disabled port; however, transceiver not present	Off	Blinking green

MPC and MIC Lane LED Scheme Overview

LEDs on the interface cards display the status of the ports. On some MICs and MPC that have multiple ports and supports multiple port speed, it is not feasible to have an individual LED display for each port on an interface card. Hence, a shared LED display is introduced—the lane LEDs.

The MX10003 MPC includes this new LED lane display. The Multi-Rate 12xQFSP28 MIC and the fixed-port PIC (6xQFSP) have separate lane LEDs.

The lane LEDs of the MIC are located on the MIC itself, whereas the lane LEDs of the PIC are located on the MPC.

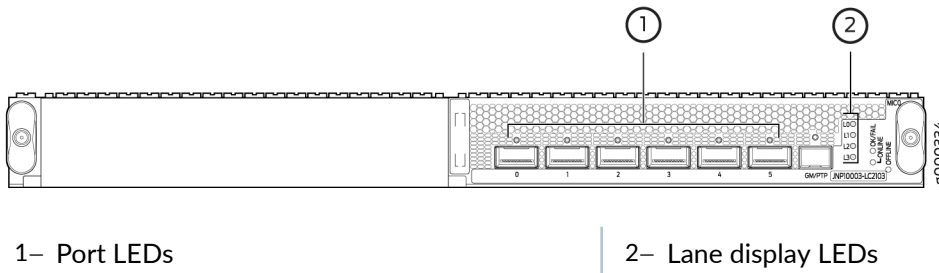
The following interface cards support lane LEDs:

- [MX10003 MPC \(Multi-Rate\)](#)
- [Line card \(MX10K-LC2101\)](#)
- [Multi-Rate Ethernet MIC](#)

You can select a port operating in a breakout mode for an individual lane display, either periodically or when the **request chassis port-led** command is executed. Similar to the port status LEDs, the lane LED supports 4 states defined by the color or the LED status—OFF, GREEN, AMBER, and RED.

[Figure 1 on page 196](#) illustrates the port LED and lane LED displays on the MPC.

Figure 1: Port LED and Lane LED display on the MPC



[Figure 2 on page 196](#) illustrates the port LED and lane LED displays for the MPC.

Figure 2: Port LED and Lane LED display on the JNP10K-LC2101 MPC

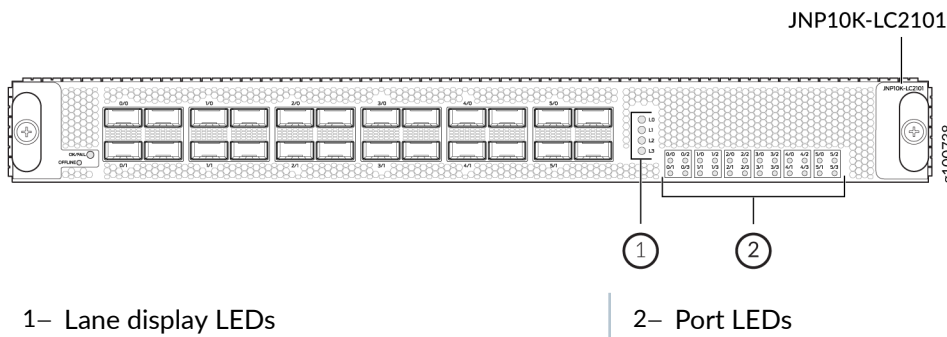
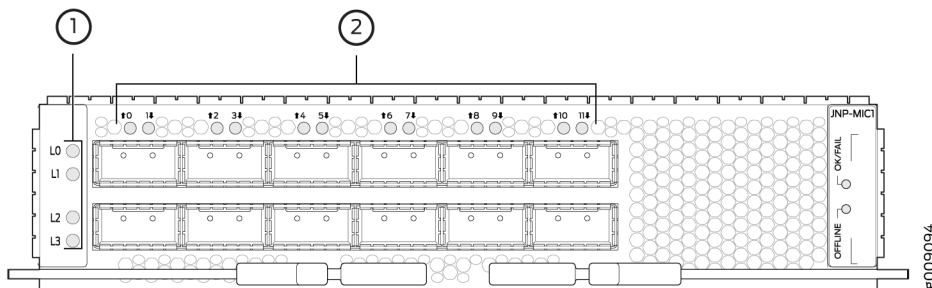


Figure 3 on page 197 illustrates the port LED and lane LED displays for the MIC.

Figure 3: Port LED and Lane LED display on the MIC



1– Lane display LEDs

2– Port LEDs

The following port LED display modes are defined:

- Normal—The port status LED represents port state or a breakout port state. By default, the port status display mode is Normal.
- Lane display—An array of lane status LEDs displays the status of each individual lane for the selected port. The lane display is ON when the software cycles through ports for lane status display. One port is selected at a time, and the display mode for that particular port switches to lane display mode. The other ports remain in normal display mode.
- Port location—The port location mode is ON when a remote operator initiates a port location command for a port or a group of ports. The **request chassis port-led** command temporarily overrides periodic software port selection for the lane display; all ports on an interface card that are not selected for port location switch to Normal mode, and selected ports switch to port location mode. If only one port is selected for port location, then the corresponding lane LEDs are applicable. However, if the selected port is in breakout mode, then all lane LEDs are applicable. If not in breakout mode, only lane 0 LED displays the port status. If more than one port is selected for port location, then the lane LEDs are disabled.

The following factors trigger a change in the port LED color:

- Change in the port state. For example, loss of signal (LOS) to no LOS, remote fault, or local fault
- Pluggable insertion or removal
- Change in configuration
- Activation or deactivation of port location feature
- Selection of breakout port for lane display

NOTE: Ports with all individual links in *Up* state are skipped and are not considered for lane display, thereby reducing the time needed to cycle through all the ports.

Table 23 on page 198 summarizes the state and color rules for the port LEDs. These rules help in determining the port LED color. When port location mode is activated, the port LED state or color can be determined from the Port Location ON column. If the breakout port is selected for the lane status display, then port LED state or color can be determined from the Lane Display column.

Table 23: Port LED State and Color Rules

Pluggable Inserted	Breakout Configuration State	Explicitly Disabled	Port State	Normal	Port Location ON	Lane Display
Yes	No breakout	No	Up	Green	Blinking green	-
Yes	No breakout	No	Down; loss of signal (LOS) detected	Off	Blinking green	-
Yes	No breakout	No	Down; transceiver hardware failure	Red	Blinking red	-
Yes	No breakout	No	Down; any other fault other than LOS and transceiver hardware failure	Amber	Blinking amber	-
ANY	No breakout	Yes	Port disabled by CLI	Amber	Blinking amber	-

Table 23: Port LED State and Color Rules (Continued)

Pluggable Inserted	Breakout Configuration State	Explicitly Disabled	Port State	Normal	Port Location ON	Lane Display
No	Any	No	Anything except disabled port; however, transceiver not present	Off	Blinking green	-
Yes	Breakout	No	All breakout ports are UP	Green	Blinking green	Blinking green
Yes	Breakout	No	All breakout ports are down with LOS	Off	Blinking green	Blinking green
Yes	Breakout	No	Hardware failure; transceiver initialization error at the port level (not individual lane)	Red	Blinking red	Blinking red
Yes	Breakout	Any	In all other cases the port LED color is amber	Amber	Blinking amber	Blinking amber

The following factors trigger a change in the lane LED color:

- A breakout port is selected for a lane display.
- Port location mode is activated for a port on a given interface card.

[Table 24 on page 200](#) summarizes the state and color rules for the lane LEDs.

Table 24: Lane LED Color Rules

Pluggable Inserted	Breakout Configuration State	Explicitly Disabled	Port State	Order	LED Color
Yes	Breakout	No	Up	1	Green
Yes	Breakout	No	Down; loss of signal (LOS) detected	2	Off
Yes	Breakout	No	Down; transceiver hardware failure	3	Red
Yes	Breakout	No	Down; fault other than LOS and transceiver hardware failure	4	Amber
Yes	Breakout	Yes	Breakout port is disabled in the CLI	5	Amber

Configuring Slow Packet Forwarding Engine Alarm

IN THIS SECTION

- [Enabling Slow Packet Forwarding Engine Alarm | 201](#)
- [Disabling Slow Packet Forwarding Engine Alarm | 201](#)
- [Verifying That the Alarm Output and System Log Messages are Updated | 202](#)

On an M Series, an MX Series, a T Series, or an SRX Series device, the Packet Forwarding Engine might not send a resource acknowledgment message to the Routing Engine within a predetermined time of 360 seconds. This delay in receiving resource acknowledgment could be due to a slow or stuck Packet

Forwarding Engine on the M Series, MX Series, T Series, or SRX Series device, or on one of the LCCs connected to a TX Matrix, TX Matrix Plus, or TX Matrix Plus router with 3D SIBs.

Starting with Junos OS Release 13.2R1 (also applicable in Junos OS Releases 12.1R6, 12.2R5, 12.3R3, 13.1R2 and later), to display the issue as an alarm in the **show chassis alarms** command output and to append the alarm to the system log messages file, you must enable the slow Packet Forwarding Engine alarm on the router.

The following sections provide more information about the slow Packet Forwarding Engine alarm:

Enabling Slow Packet Forwarding Engine Alarm

To enable the slow Packet Forwarding Engine alarm, perform the following steps:

NOTE: By default, the slow Packet Forwarding Engine alarm is disabled.

1. In configuration mode, go to the **[edit chassis]** hierarchy level:

```
[edit]
user@host# edit chassis
```

2. Enable the slow Packet Forwarding Engine alarm by configuring the **slow-pfe-alarm** statement.

```
[edit chassis]
user@host# set slow-pfe-alarm
```

Disabling Slow Packet Forwarding Engine Alarm

To disable the slow Packet Forwarding Engine alarm, perform the following steps:

1. In configuration mode, go to the **[edit chassis]** hierarchy level:

```
[edit]
user@host# edit chassis
```

2. Disable the slow Packet Forwarding Engine alarm by deleting the **slow-pfe-alarm** statement.

```
[edit chassis]
user@host# delete slow-pfe-alarm
```

Verifying That the Alarm Output and System Log Messages are Updated

IN THIS SECTION

- Purpose | 202
- Action | 202
- Meaning | 204

Purpose

To verify that the output of the **show chassis alarms** operational mode command and the system log messages file are updated with the slow Packet Forwarding Engine alarm when:

- The **slow-pfe-alarm** statement is enabled in the **[edit chassis]** hierarchy.
- The Packet Forwarding Engine resource acknowledgment is not received by the Routing Engine within a predetermined time of 360 seconds.

Action

To check the output on an M Series, MX Series, T Series, or an SRX Series device:

1. Verify that the alarm is displayed in the output of the **show chassis alarms** operational mode command.

show chassis alarms

```
user@host> show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2013-02-05 01:12:33 PST  Minor  Potential slow peers are: XDPC2
```

For field descriptions, see *show chassis alarms*.

2. Verify that the alarm is appended to the system log messages file.

```
/var/log/messages -
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
```

```
are: XDPC2
... Minor alarm set, Potential slow peers are: XDPC2
```

To check the output on a TX Matrix, TX Matrix Plus, or a TX Matrix Plus with 3D SIBs router:

1. Verify that the alarm is displayed in the output of the **show chassis alarms** operational mode command.

show chassis alarms

```
user@scc> show chassis alarms
scc-re0:
-----
9 alarms currently active
Alarm time          Class  Description
2013-02-06 00:45:46 PST  Minor  Potential slow peers are: LCC1
LCC0
...
lcc0-re0:
-----
4 alarms currently active
Alarm time          Class  Description
2013-02-06 00:44:51 PST  Minor  Potential slow peers are: GFPC4 GFPC3
...
lcc1-re0:
-----
4 alarms currently active
Alarm time          Class  Description
2013-02-06 00:45:44 PST  Minor  Potential slow peers are: GFPC10
...
lcc2-re0:
-----
No alarms currently active
lcc3-re0:
-----
No alarms currently active
```

For field descriptions, see *show chassis alarms*.

2. Verify that the alarm is appended to the system log messages file.

```
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: LCC0 LCC1
... Minor alarm set, Potential slow peers are: LCC0
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: GFPC4 GFPC3
... Minor alarm set, Potential slow peers are: GFPC4 GFPC3
... Alarm set: RE color=YELLOW, class=CHASSIS, reason=Potential slow peers
are: GFPC10
... Minor alarm set, Potential slow peers are: GFPC10
```

Meaning

The output of **show chassis alarms** operational mode command and the system log messages file are updated as expected when the slow Packet Forwarding Engine alarm is enabled and when the Packet Forwarding Engine resource acknowledgment is not received by the Routing engine within a predetermined time of 360 seconds.

User-Defined Alarm Relay Overview

IN THIS SECTION

- Alarm Contact Port | 205
- Alarm Input | 205
- Alarm Output | 205

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities.

NOTE: Alarm contact port is not applicable on ACX5048 and ACX5096 routers.

Alarm Contact Port

The ACX Series router alarm contact port is a 15-pin D-type dry contact connector for alarms. The alarm contact port is used to generate LED alarms on the router and to turn external devices on or off. You can connect up to four input alarms and two output alarms. The alarm setting is open or closed.

Alarm Input

Alarm input provides dry contacts to connect to security sensors such as door or window monitors. The alarm input—open or closed—is sensed and reported to the management software. You can configure up to four alarm input relay ports (0 through 3) to operate as normally open or normally closed, and to trigger a red alarm condition or a yellow alarm condition or to ignore alarm conditions.

Alarm Output

Alarm output provides dry contacts to connect to external equipment, such as an audible or visual alarm that switches on or off—for example, a bell or a light. The four alarm output relay ports—0 through 3—are set up as follows:

- Ports 0 and 1—These ports can be configured to trigger an alarm when the system temperature goes to the red alarm status and when an alarm input port is triggered.
- Ports 2 and 3—These ports are *not* configured. They are used to indicate system major and minor alarms and are normally open. When a condition triggers an alarm, an alarm message is displayed.

To view the alarm input and output relay information, issue the **show chassis craft-interface** command from the Junos OS command line interface.

SEE ALSO

Configuring Chassis Alarm Relays

Configuring Chassis Alarm Input

Configuring Chassis Alarm Output

[relay \(Chassis Alarm\)](#)

Configuring Chassis Alarm Relays

On ACX Series routers, you can configure alarm relays that can trigger alarms and turn external devices on or off. For example, if the router heats up to more than the critical temperature, the output port is activated and a device connected to the output port—such as a fan—is turned on.

To configure conditions that trigger alarms, include the **relay** statement with the **input** and **output** options at the **[edit chassis alarm]** hierarchy level.

```
[edit chassis alarm]
relay
  input {
    port port-number {
      mode (close | open);
      trigger (ignore | red | yellow);
    }
  }
  output {
    port port-number {
      input-relay input-relay;
      mode (close | open);
      temperature;
    }
  }
}
```

The following output shows an example configuration of a chassis relay alarm:

```
[edit chassis alarm]
user@host# show
relay {
  input {
    port 1 {
      mode close;
      trigger red;
    }
  }
  output {
    port 0 {
      temperature;
    }
  }
}
```

```
}
}
```

Configuring Chassis Alarm Input

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities. You can configure up to four alarm input ports (0 through 3) to operate as normally open or normally closed, and to trigger a red alarm condition or a yellow alarm condition or to ignore alarm conditions.

To configure an input alarm:

1. Configure the input port:

```
[edit chassis alarm relay input port port-number]
```

For example, to configure input port zero (0):

```
user@host# edit chassis alarm relay input port 0
```

2. Configure the mode in which the input alarm is not active:

```
[edit chassis alarm relay input port port-number mode (close | open)]
```

For example, to configure open mode:

```
[edit chassis alarm relay input port 0]
user@host# set mode open
```

3. Configure the trigger to set off the alarm:

```
[edit chassis alarm relay input port port-number trigger (ignore | red |
yellow)]
```

For example, to set off the yellow alarm:

```
[edit chassis alarm relay input port 0]
user@host# set trigger yellow
```

4. Verify the configuration with the **show** command:

```
[edit chassis alarm relay input port 0]
user@host# show
mode open;
trigger yellow;
```

5. Commit the configuration with the **commit** command.

To view the alarm input relay information, issue the **show chassis alarms** or **show chassis craft-interface** commands from the Junos OS command line interface.

Configuring Chassis Alarm Output

The ACX Series router alarm contact port—labeled ALARM on the front panel—allows you to manage sensors and external devices connected to the router in remote unstaffed facilities. You can configure up to two alarm output relay ports (0 and 1) to operate as normally open or normally closed, and to trigger an alarm when the system temperature goes to the red alarm status and when an alarm input port is triggered.

NOTE: Ports 2 and 3 are *not* configured. They are used to indicate system major and minor alarms and are normally open. When a condition triggers an alarm, an alarm message is displayed, and the corresponding LED turns on.

To configure an output alarm:

1. Configure the output port:

```
[edit chassis alarm relay output port port-number]
```


For example, to configure output port zero (0):

```
user@host# edit chassis alarm relay output port 0
```

2. Configure the trigger to set off the alarm:

```
[edit chassis alarm relay output port port-number (input-relay | mode |
temperature)]
```

For example, to set off the alarm when the system temperature goes into the red status:

```
[edit chassis alarm relay output port 0]
user@host# set temperature
```

3. Verify the configuration with the **show** command:

```
[edit chassis alarm relay output port 0]
user@host# show
temperature;
```

4. Commit the configuration with the **commit** command.

To view the alarm output relay information, issue the **show chassis alarms** or **show chassis craft-interface** command from the Junos OS command line interface.

Configuring Chassis Alarm Input and Output (ACX710 Routers)

The alarm interface port, an RJ45 port on the front panel of the ACX710 router, provides user-configurable input and output signals. You can configure the alarm input to receive alarm inputs from the external devices (such as sensors) connected to the router through the alarm port. You can configure the alarm output to relay the alarms in the router to external alarm devices (for example, bells and bulbs) connected to the router through the alarm port. You can configure up to three alarm inputs and one alarm output.

The router supports configuration of up to three alarm inputs and one alarm output, using the command **alarm-port** at the `[edit chassis]` hierarchy. You can configure the alarm input signals independent of the alarm output signal, and vice versa.

Table 25: Alarm Port Pin-out Information

Pin Number of the Connector on the Device	Signal Definition	IN/OUT	CLI Mapping
1	ALARM_IN0_Sig	IN	port 1
2	ALARM_IN0_Return	IN	port 1
3	ALARM_IN1_Sig	IN	port 2
4	ALARM_IN2_Sig	IN	port 3
5	ALARM_IN1_Return	IN	port 2
6	ALARM_IN2_Return	IN	port 3
7	ALARM_OUT_Sig	OUT	port 1
8	ALARM_OUT_Return	OUT	port 1

To configure an alarm input:

1. Specify the input port number by using the command **set chassis alarm-port input port *port-number***. The router supports three input ports (1 to 3).

```
user@host# set chassis alarm-port input port 1
```

2. Configure a signal polarity for the alarm input based on the user environment.

```
user@host# set chassis alarm-port input port 1 active low
```

3. Set the administrative state of the alarm input as enabled.

```
user@host# set chassis alarm-port input port 1 admin-state enabled
```

4. Provide a description to the alarm input. For example, FAN.

```
user@host# set chassis alarm-port input port 1 description FAN
```

5. Specify an alarm severity. The following are the available options: critical, major, minor, and warning.

```
user@host# set chassis alarm-port input port 1 severity major
```

6. Commit the configuration with the **commit** command.

To view the input alarms, by using the **show chassis alarms** command.

To configure an alarm output:

1. Specify the output port number by using the command **set chassis alarm-port output port *port-number***. The router supports only one output port (port number: 1).

```
user@host# set chassis alarm-port output port 1
```

2. Set the administrative state of the alarm output as enabled.

```
user@host# set chassis alarm-port output port 1 admin-state enabled
```

3. Provide a description to the alarm input.

```
user@host# set chassis alarm-port input port 1 description alarm-output-description
```

4. Commit the configuration with the **commit** command.

For more information, see ["alarm-port" on page 265](#).

You can use the command **show chassis craft-interface** to view the alarm port configuration details.

```
user@router> show chassis craft-interface
```

```
System LED's on front panel:
```

```
-----
```

```
Fault LED :           On
Status LED :          Off
Operational LED :     On
```

```

Fan LED :                Off

Alarm-port on front panel:
-----

Input port :             1
  Active signal :        LOW
  Description :
  Admin state :          DISABLED
  Severity :             CRITICAL

Input port :             2
  Active signal :        LOW
  Description :
  Admin state :          DISABLED
  Severity :             CRITICAL

Input port :             3
  Active signal :        LOW
  Description :
  Admin state :          DISABLED
  Severity :             CRITICAL

Output port :            1
  Description :
  Admin state :          DISABLED

```

RELATED DOCUMENTATION

| [Silencing External Devices Connected to Alarm Relay Contacts](#) | 230

Managing Errors

IN THIS SECTION

● [Configuring FPC Error Levels and Actions](#) | 213

- [Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers | 215](#)
- [Managing FPC Errors | 219](#)
- [Powering Off Packet Forwarding Engines | 221](#)
- [Configuring Sanity Polling | 222](#)
- [Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline | 225](#)
- [Configuring an SFM to Stay Offline | 226](#)
- [Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)
- [Enabling a Routing Engine to Reboot on Hard Disk Errors | 227](#)
- [Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog | 228](#)

Configuring FPC Error Levels and Actions

Starting with Junos OS Release 13.3 or Release 14.2 for M320 routers, you can use MX Series, PTX Series, and T Series routers to configure Packet Forwarding Engine (PFE)-related error levels on FPCs and the actions to perform when a specified threshold is reached. In Junos OS Release 13.2 and earlier, Packet Forwarding Engine errors would disable the FPC. When you use the **error** command, Packet Forwarding Engine errors can be isolated, which reduces the need for a field replacement. Using the **error** command, you can classify errors according to severity, set an automatic recovery action for each severity, and configure the actions to perform when a specified threshold is reached. This command is available at the `[edit chassis fpc slot-number]` and `[edit chassis]` hierarchies.

To configure Packet Forwarding Engine error levels and actions for an FPC:

- (Optional) Configure the fatal error level threshold and action. A fatal error is an error that results in blockage of considerable amount of traffic across modules.

```
[edit chassis fpc fpc-number error]
user@host# set fatal action action
user@host# set fatal threshold threshold-level
```

If the severity level of the error is fatal, the action is carried out when the total number of errors reaches the threshold value. After the threshold value is crossed, for every occurrence of the error, an action is carried out.

- (Optional) Configure the major error level threshold and action. A major error is an error that results in continuing loss of packet traffic but does not affect other modules.

```
[edit chassis fpc fpc-number error]
user@host# set major action action
user@host# set major threshold threshold-level
```

If the severity level of the error is major, the action is carried out when the total number of errors reaches the threshold value. After the threshold value is crossed, for every occurrence of the error, an action is carried out.

- (Optional) Configure the minor error level threshold and action. A minor error is an error that results in the loss of a single packet but is fully recoverable.

```
[edit chassis fpc fpc-number error]
user@host# set minor action action
user@host# set minor threshold threshold-level
```

If the severity level is minor, the action is carried out only once when the total number of errors reaches the threshold value

Starting with Junos OS Release 18.1R3, MX Series routers support configuration of error thresholds and actions at the error scope and error category levels. Use the command **set chassis fpc *fpc-slot* error scope *error-scope* category *category* (fatal | major | minor) threshold *error-threshold* action (alarm | disable-pfe | get-state | offline | log | reset)** to configure a threshold and action for a particular error scope and category at the FPC level. You can also configure these features at the chassis level (at the [edit chassis] hierarchy). However, threshold and action configured at the [edit chassis fpc] hierarchy overrides the same configuration at the [edit chassis] hierarchy.

You can use the command **show chassis fpc errors** to view the error information at the error scope and category level.

For Junos OS Evolved, you can use the following **show** commands to view the error information:

- **show system errors count**—Displays system-wide errors and its count.
- **show system errors active**—Displays current active errors in the system.
- **show system errors active fpc <slot number>** —Displays active errors for the specified FPC.
- **show system errors fru detail**—Displays detailed FRU-specific error.
- **show system errors fru detail fpc <slot number>**—Displays information about detected errors based on the FRU.

If you have configured the action **log** against a particular error threshold, the system logs the event when the error count breaches the set threshold. The following sample syslog messages indicate an error threshold breach and the resultant action being taken:

```
Sep 17 23:12:10 sw-s3-u8-03 fpc0 Error: /fpc/0/pfe/0/cm/0/PE_Chip/1/
PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR (0x21078b), scope: pfe, category:
functional, severity: minor, module: PE Chip, type: Description for
PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR
Sep 17 23:12:10 sw-s3-u8-03 fpc0 Performing action log for
error /fpc/0/pfe/0/cm/0/PE_Chip/1/PECHIP_CMERROR_OQB_INT_REG_RD_ADDR_ERR
(0x21078b) in module: PE Chip with scope: pfe category: functional level: minor
```

Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers

IN THIS SECTION

- [Requirements | 215](#)
- [Overview | 216](#)
- [Configuration | 216](#)
- [Verification | 218](#)

This example shows how to configure error detection and self-healing on a Juniper Networks T Series Core Router with Type 5 FPC.

Requirements

This example uses the following hardware and software components:

- Juniper Networks T4000 Core Router with Type 5 FPCs.
- Junos OS Release 13.3 or later.

Before you proceed, ensure that the required connections are complete and the interfaces are functional.

Overview

FPC error detection and self-healing involves configuring a set of actions to be performed on each FPC, when the number of errors for a particular severity increases beyond a user-configured threshold. The error severity is categorized into fatal, major, and minor. Recovery actions include raising an alarm, generating log entries, getting the current state of the FPC, restarting the FPC, taking the FPC offline, and resetting the FPC. For a particular FPC and error severity, you can configure the error threshold to any value within the allowed limits and map the threshold to an action. In this example, you will set these errors on FPC 0 in Juniper Networks T4000 Core Router.

Configuration

IN THIS SECTION

- [CLI Quick Configuration | 216](#)
- [Configuring the Error Detection and Self-Healing | 216](#)
- [Results | 218](#)

To configure the error detection and self-healing, you need to set the error severity, threshold values corresponding to each error severity, and actions to be performed when the threshold value is crossed.

CLI Quick Configuration

To quickly configure this example, copy the following commands, paste them into a text file, remove any line breaks, change any details necessary to match your network configuration, and then copy and paste the commands into the CLI at the [edit interfaces] hierarchy level.

```
set chassis fpc 0 fatal threshold 1 action resetset chassis fpc 0 major  
threshold 1 action alarmset chassis fpc 0 minor threshold 10 action log
```

Configuring the Error Detection and Self-Healing

Step-by-Step Procedure

The following example requires you to navigate various levels in the configuration hierarchy. For information about navigating the CLI, see *Using the CLI Editor in Configuration Mode* and the [CLI User Guide](#).

- Configure the threshold value and associated action for fatal errors.
 1. Set the error severity to fatal.
[edit interfaces]
user@host# set chassis fpc 0 error fatal
 2. Set the threshold value for fatal errors.
[edit interfaces]
user@host# set chassis fpc 0 error fatal threshold 1
 3. Set the associated action for fatal errors.
[edit interfaces]
user@host# set chassis fpc 0 error fatal threshold 1 action reset
- Configure the threshold value and associated action for major errors.
 1. Set the error severity to major.
[edit interfaces]
user@host# set chassis fpc 0 error major
 2. Set the threshold value for major errors.
[edit interfaces]
user@host# set chassis fpc 0 error major threshold 1
 3. Set the associated action for major errors.
[edit interfaces]
user@host# set chassis fpc 0 error major threshold 1 action alarm
- Configure the threshold value and associated action for minor errors.
 1. Set the error severity to minor.
[edit interfaces]
[edit interfaces]
user@host# set chassis fpc 0 error minor
 2. Set the threshold value for minor errors.
[edit interfaces]

```
user@host# set chassis fpc 0 error minor threshold 10
```

3. Set the associated action for minor errors.

```
[edit interfaces]
```

```
user@host# set chassis fpc 0 error minor threshold 10 action log
```

Results

The following is the result of the configuration for the fatal severity level.

```
user@host# set chassis fpc 0 error ?
Possible completions:
+ apply-groups          Groups from which to inherit configuration data
+ apply-groups-except  Don't inherit configuration data from these groups
> fatal                FPC Fatal errors (default threshold = 1)
> major                FPC Major Level errors (default threshold = 1)
> minor                FPC Minor Level errors (default threshold = 10)user@host#
set chassis fpc 0 error fatal action ?
Possible completions:
alarm                  Raise FPC alarm
get-state              Retrieve FPC state for debugging
log                   Log occurrence to system log file
offline               Offline FPC
offline-pic            Offline PICs associated with PFE on FPC
reset                  Reset FPCuser@host# set chassis fpc 0 error fatal action
resetuser@host# set chassis fpc 0 error fatal threshold ?
Possible completions:
<threshold>          Error count at which to take the action
(0..4294967295)user@host# set chassis fpc 0 error fatal threshold 1
```

If you are done configuring the devices, enter **commit** from configuration mode.

Verification

IN THIS SECTION

- [Verifying the Configured Actions Related to Fatal Severity of FPC Error | 219](#)

To verify that the configuration is successful and the router is configured with the correct action, use the `show chassis fpc errors` command.

Verifying the Configured Actions Related to Fatal Severity of FPC Error

Purpose

Make sure that the threshold value and the associated action are set for fatal errors.

Action

```
user@host> show chassis fpc errors
FPC  Level Occurred Cleared Threshold Action-Taken Action
0    Fatal      0      0      1      RESET
      Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
      | pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
```

Meaning

The sample output shows **Fatal** error at FPC **0** with **0** error **Occurred** (no previous occurrences), **0** error **Cleared** (no previous occurrences) with **Threshold** value set to **1** and **Action-Taken** set to **RESET**.

Managing FPC Errors

IN THIS SECTION

- [Modifying Severity of an Error | 220](#)
- [Disabling an Error | 220](#)

On the PTX10001 routers, you can disable an FPC error or modify the severity of the error at the error-id level. The error-id, which uniquely identifies an FPC error, is represented in the uniform resource identifier (URI) format and is composed of a module identifier and an error identifier. If an error occurs, you can find the error-id in the system log messages.

Modifying Severity of an Error

Though you cannot configure a new error severity, you can modify the existing severity of an error. For example, if you do not want to treat a particular error (identified by an error-id) as fatal anymore, you can modify its severity to major or minor as required.

NOTE: You cannot modify the error severity at a group (for example, category) level.

To modify the severity of an error, use the following command:

```
user@host# set chassis fpc fpc-slot error error-id severity new-severity
```

See the following example:

```
user@host# set chassis fpc 3 error "/cpu/0/memory/0/ECC_CORRECTED_ERROR"  
severity minor
```

In the above example, you modified the severity of the error ID `"/cpu/0/memory/0/memory-uncorrected-error"` in FPC 3 to `minor`.

Disabling an Error

To configure the system to stop reporting an error, identify the error-id and disable it. You can find the error-id in the system log messages. To disable an error, use the following command:

```
user@host# set chassis fpc fpc-slot error error-id state disable
```

See the following example:

```
user@host# set chassis fpc 3 error "/cpu/0/memory/0/ECC_CORRECTED_ERROR"  
state disable
```

In the above example, you disabled the error `"/cpu/0/memory/0/memory-uncorrected-error"` in FPC 3.

Powering Off Packet Forwarding Engines

You can power on or power off the Packet Forwarding Engines in a running system, or keep a Packet Forwarding Engine powered off when the FPC comes online. The following are a couple of scenarios in which this feature is used.

- When the Packet Forwarding Engine ASIC is malfunctioning.
- To conserve power in case the deployment does not require the full capacity of the system.

To power off a Packet Forwarding Engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power off
user@host# commit
```

To power on a packet forwarding engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power on
user@host# commit
```

NOTE: You need to apply this configuration to both the Packet Forwarding Engines in an ASIC to be able to commit the configuration.

NOTE: On MX series routers with MPC10E-15C-MRATE, you can power off or power on only the Packet Forwarding Engine 2. The Packet Forwarding Engines 0 and 1 do not support this command. On the MPC10E-15C-MRATE, operating the Packet Forwarding Engine 2 requires the Packet Forwarding Engines 0 and 1 to be functional. You can use the command **show chassis fpc fpc-slot detail** to view the Packet Forwarding Engine power ON/OFF status and bandwidth for the individual Packet Forwarding Engines in the MPC10E-15C-MRATE.

You can use the **show chassis fpc fpc-slot detail** command to view the Packet Forwarding Engine power on/off configuration status. See an example below:

```
user@router> show chassis fpc 0 detail

Slot 0 information:
  State                               Online
```

```

Temperature          41 degrees C / 105 degrees F (PFE_24-HBM)
Temperature          44 degrees C / 111 degrees F (PFE_25-HBM)
Temperature          43 degrees C / 109 degrees F (PFE_26-HBM)
Temperature          41 degrees C / 105 degrees F (PFE_27-HBM)
Temperature          40 degrees C / 104 degrees F (PFE_28-HBM)
Temperature          40 degrees C / 104 degrees F (PFE_29-HBM)
Temperature          38 degrees C / 100 degrees F (PFE_30-HBM)
Temperature          39 degrees C / 102 degrees F (PFE_31-HBM)
Start time           2020-10-28 00:46:17 PDT
Uptime               1 day, 1 hour, 34 minutes, 48 seconds
Max power consumption 825 Watts

```

PFE Information:

PFE	Power ON/OFF	Bandwidth	SLC
0	On	500	
1	On	500	
2	On	500	
3	On	500	
4	On	500	
5	On	500	
6	On	500	
7	On	500	

Configuring Sanity Polling

You can configure the **sanity-poll** statement for a particular FPC or FEB or CFEB to start a periodic sanity check for that FPC or FEB or CFEB. The periodic sanity check includes checking for error conditions such as “register sanity issues,” “high temperature,” “hardware failure,” and so on. If you do not configure the **sanity-poll** statement, then sanity polling is disabled.

NOTE: Currently, periodic sanity check is performed only on the routing chip register.

Sanity polling periodically checks for an error condition in an FPC or FEB or CFEB and performs the appropriate actions in case of an error.

- To configure sanity polling for an FPC on T Series routers and M320 routers, include the **sanity-poll** statement and its substatements at the **[edit chassis fpc slot-number]** hierarchy level:

```
[edit chassis]
fpc slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
      write-coredump;
    }
  }
}
```

- To configure sanity polling for a FEB on the M120 router, include the **sanity-poll** statement and its substatements at the **[edit chassis feb slot-number]** hierarchy level:

```
[edit chassis]
feb slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
      write-coredump;
    }
  }
}
```

- To configure sanity polling for a CFEB on M7i and M10 routers, include the **sanity-poll** statement and its substatements at the **[edit chassis cfeb slot-number]** hierarchy level:

```
[edit chassis]
cfeb slot-number {
  sanity-poll {
    retry-count number;
    on-error {
      raise-alarm;
      power (cycle | off);
    }
  }
}
```

```

        write-core-dump;
    }
}
}

```

NOTE: On a TX Matrix or TX Matrix Plus router, you can configure the **sanity-poll** statement at the `[edit chassis lcc number fpc number]` hierarchy level.

The **sanity-poll** statement comprises the following substatements:

- The **retry-count** statement specifies the number of rechecks to be performed after the occurrence of a particular error condition. If an error exists in all the periodic checks, then sanity polling reports an error and proceeds to perform the appropriate actions (described as options of the **on-error** statement).

For example, if the periodic sanity check detects an error in the FPC or FEB or CFEB and if you configure the **retry count *number*** to 15, sanity polling does not report the error immediately. Sanity polling checks 15 times for the same error condition. If an error persists in all 15 rechecks, then it reports an error and takes the appropriate actions.

If you do not configure the **retry-count** statement, then by default, the **sanity-poll** statement rechecks the detected error 10 times before reporting an error condition.

- If sanity polling detects an error condition, the **on-error** statement performs the appropriate actions to eliminate the error.

The following actions are common to all kinds of error conditions:

- To generate a chassis alarm, configure the **raise-alarm** statement. The chassis alarm is displayed in the front panel of the chassis.
- To reboot the FPC or FEB or CFEB after generating a core file, configure the **power cycle** statement. This statement is useful for temporary software errors that are eliminated after reboot.
- To halt the FPC or FEB or CFEB, configure the **power off** statement. This statement is useful in case of permanent hardware failure.



CAUTION: The **power off** statement halts the FPC. Ensure that you have backup paths through a different FPC or FEB or CFEB to avoid service outage.

NOTE: The **power cycle** and **power off** statements are mutually exclusive: You can configure either the **power cycle** or the **power off** action for an error.

- To trigger the core file, configure the **write-coredump** statement.

You can configure multiple actions for a given FPC or FEB or CFEB. If you do not configure any actions, the **sanity-poll** statement generates only FPC or FEB or CFEB system log messages.

Configuring the Junos OS to Make a Flexible PIC Concentrator Stay Offline

By default, a Flexible PIC Concentrator (FPC) is configured to restart after a system reboot. You can use the `request chassis fpc` operational mode command to take an FPC offline, but on Junos OS the FPC attempts to restart when you enter a **commit** CLI command. To configure an FPC to stay offline and prevent it from restarting, include the **power off** statement at the `[edit chassis fpc slot-number]` hierarchy level:

```
[edit chassis fpc slot-number]
power off;
```

To bring an FPC online that is configured to stay offline and configure it to stay online, include the **power on** statement at the `[edit chassis fpc slot-number]` hierarchy level:

```
[edit chassis fpc slot-number]
power on;
```

SEE ALSO

Configuring an SFM to Stay Offline
request chassis fpc

Configuring an SFM to Stay Offline

By default, if you use the **request chassis sfm** CLI command to take a Switching and Forwarding Module (SFM) offline, the SFM attempts to restart when you enter a **commit** CLI command. To prevent a restart, you can configure an SFM to stay offline. This feature is useful for repair situations.

To configure an SFM to stay offline, include the **sfm** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
sfm slot-number {
    power off;
}
```

- **slot number**—Slot number in which the SFM is installed.
- **power off**—Take the SFM offline and configure it to remain offline.

For example, the following statement takes an SFM in slot 3 offline:

```
[edit chassis]
sfm 3 power off;
```

Use the **show chassis sfm** CLI command to confirm the offline status:

```
user@host# show chassis sfm
```

Slot	State	Temp (C)	CPU Utilization (%)		Memory Utilization (%)		
			Total	Interrupt	DRAM (MB)	Heap	Buffer
0	Online	34	2	0	64	16	47
1	Online	38	2	0	64	16	47
2	Online	42	2	0	64	16	47
3	Offline	--- Configured power off ---					

To bring the SFM back online, delete the **edit chassis sfm** statement and then commit the configuration.

Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online

On M320, T320, T640, T1600, T4000, TX Matrix, and TX Matrix Plus routers, when you bring a Flexible PIC Concentrator (FPC) online, the sequence number on the FPC may not be synchronized with the other active FPCs in the router, which may result in the loss of a small amount of initial traffic.

To avoid any traffic loss, include the **fpc-resync** statement at the **[edit chassis]** hierarchy level. This ensures that the sequence numbers of the FPC that is brought online is resynchronized with the other active FPCs in the router.

```
[edit chassis]
fpc-resync;
```

NOTE: In order to prevent null-route filtering, the **fpc-resync** command will have no effect if a single LMNR based FPC and one or more I-chip FPCs exist in the same chassis.

Enabling a Routing Engine to Reboot on Hard Disk Errors

When a hard disk error occurs, a Routing Engine might enter a state in which it responds to local pings and interfaces remain up, but no other processes are responding.

To recover from this situation, you can configure a single Routing Engine to reboot automatically when a hard disk error occurs. To enable this feature, include the **on-disk-failure reboot** statement at the **[edit chassis routing-engine]** hierarchy level.

```
[edit chassis routing-engine]
on-disk-failure {
    disk-failure-action (halt | reboot);
}
```

For dual Routing Engine environments, you can configure a backup Routing Engine to assume primary role automatically, if it detects a hard disk error on the primary Routing Engine. To enable this feature, include the **on-disk-failure** statement at the **[edit chassis redundancy failover]** hierarchy level. For information about this statement, see the [Junos OS High Availability User Guide](#).

You can configure the Routing Engine to halt (instead of rebooting) when the hard disk fails on the Routing Engine. To configure this feature, include the **disk-failure-action (halt | reboot)** statement at the **[edit chassis routing-engine on-disk-failure]** hierarchy level:

```
[edit chassis routing-engine]
on-disk-failure {
    disk-failure-action (halt | reboot);
}
```

Use the **halt** option to configure the Routing Engine to halt when the hard disk fails. Use the **reboot** option to configure the Routing Engine to reboot when the hard disk fails.

Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog

You can use the thermal health check feature to configure an action to be taken on detection of a thermal health event such as power leakage. The thermal check feature monitors the power supply module (PSM) power output and FRU power consumption and if it detects that the PSM power output exceeds the FRU power consumption by a user-defined threshold, it assumes that there is a thermal health event, and takes an action based on user configuration. You can configure actions such as auto shutdown or alarms to be initiated on detection of a thermal health event. An example of the configuration is as follows: **set chassis thermal-health-check action-onfail auto-shutdown shutdown-timer 10 power-threshold 700**. This example configuration enables the software to detect a thermal health event if the power leak exceeds 700W, and shuts down the system 10 seconds after the thermal health failure is detected.

The thermal health check feature works only if:

- The router has the high capacity AC or DC power distribution units (PDU) installed in both the slots, and each PDU has equal number of PSMs. Both AC PSM and DC PSM are supported.

The supported PSMs and PDUs are listed below:

- High Capacity AC PSM (model: PSM2-PTX-AC; firmware: 0210 or later; hardware revision: 06 or later)
- High Capacity 60A DC PSM (model: PSM2-PTX-DC; firmware: 0315 or later; hardware revision: 09 or later)
- High Capacity 60A DC PDU (model: PDU2-PTX-DC; use the firmware version 0404 or later with hardware revision 07; use the firmware version 0503 or later with hardware revision 08)

- High Capacity AC Delta PDU (model: PDU2-PTX-AC-D; firmware: 0305 or later; hardware revision: 04 or later)
- High Capacity AC Wye PDU (model: PDU2-PTX-AC-W; firmware: 0305 or later; hardware revision: 03 or later)
- High Capacity Single Phase AC PDU (model: PDU2-PTX-AC-SP; firmware: 0102 or later; hardware revision: 03 or later)
- Each PDU has at least three PSMs that are online, and each online PSM is consuming above 60A current (in case of an AC PSM) or above 100A current (in case of a DC PSM).
- None of the FRUs (RE, SIB, and FPC) is in the 'Present' state.

On the router, you can also configure the PSM watchdog feature at the [edit chassis] hierarchy. If a thermal health event causes Junos to go down, the PSM watchdog feature detects it and shuts down the router. In the watchdog configuration, you can specify the watchdog timer in seconds. After the specified duration, the watchdog expires. You can also specify the frequency (in minutes) at which Junos resets the watchdog counter. If the watchdog counter doesn't get reset because of reasons such as Routing Engine crash, the PSM turns off the output power on watchdog timer expiry and thereby shuts down the router. An example configuration is as follows: **set chassis psm watchdog timeout 600 pat-frequency 2**. This command enables PSM watchdog with the watchdog timer set to 600 seconds and the counter is set to be reset every 2 minutes.

NOTE: The PSM watchdog feature works only if all the online PSMs in the router support this feature.

In short, if the Routing Engine software is running when a thermal event occurs, the thermal health check feature detects the thermal event and takes an action. However, if the Routing Engine software goes down in a thermal health event, it is the PSM watchdog timer that detects this issue and brings down the system.

Release History Table

Release	Description
13.3	Starting with Junos OS Release 13.3 or Release 14.2 for M320 routers, you can use MX Series, PTX Series, and T Series routers to configure Packet Forwarding Engine (PFE)-related error levels on FPCs and the actions to perform when a specified threshold is reached.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation](#) | 26

Configuring Automatic Mirroring of the CompactFlash Card on the Hard Drive

[thermal-health-check](#) | 383

[watchdog \(PSM\)](#) | 390

Craft Interface

IN THIS SECTION

- [Silencing External Devices Connected to Alarm Relay Contacts](#) | 230
- [Configuring the Junos OS to Disable the Physical Operation of the Craft Interface](#) | 230
- [Remote Port Identification using LEDs for Cabling Assistance](#) | 231
- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#) | 232

Silencing External Devices Connected to Alarm Relay Contacts

You can manually silence external devices connected to alarm relay contacts. To silence an external devices, press the alarm cutoff button located on the craft interface front panel of the device.

Silencing the device does not remove the alarm messages from the display (if present on the router or switch) or extinguish the alarm LEDs. In addition, new alarms that occur after an external device is silenced reactivate the external device.

Configuring the Junos OS to Disable the Physical Operation of the Craft Interface

You can disable the physical operation of the craft interface front panel on the router. When you disable the operation of the craft interface, the buttons on the front panel, such as the alarm cutoff button, no

longer function. To disable the craft interface operation, include the **craft-lockout** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
craft-lockout;
```

SEE ALSO

Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types

Silencing External Devices Connected to Alarm Relay Contacts

Remote Port Identification using LEDs for Cabling Assistance

With new and higher-density Modular Interface Cards (MICs) and Modular Port Concentrators (MPCs), cabling is complex and can result in wiring mistakes. Remote port identification reduces the complexity by providing an easy way of identifying the ports that must be connected to the cables. Starting in Junos OS Release 16.1, the remote port identification feature is supported on MPC7E-10G, MPC7E-MRATE, MX2K-MPC8E, and MX2K-MPC9E.

Starting in Junos OS Release 18.2, the remote port identification feature is supported on JNP10K-LC2101 on MX10008 routers.

LEDs, used to display the status of the port, can be configured to blink for a small duration of time to identify the port and provide cabling assistance. Depending on the port identification required, you can configure the LED of a specific port, LEDs of all ports, LED of a specific type of port to blink. For instance, on MX2020 routers with MPC8E, you can identify the active ports that support port speeds of 100 Gbps by configuring the LEDs of the specific port to blink. Similarly, you can identify active ports that support port speeds of 10 Gbps and 40 Gbps. You can configure the LED of, for example, active port 9 on the MX2020 router with MPC9E and MIC-MRATE. You can also make the LEDs of all the ports blink, if required.

You can specify the duration of time that a LED blinks. The default duration is 5 minutes (300 seconds). You can also stop the LED from blinking before the duration expires, if required.

To enable port identification on the enhanced MPCs, you can make the LED corresponding to the ports to blink using the **request chassis port-led** command.

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

IN THIS SECTION

- [Disabling or Enabling Menus and Menu Options on the LCD Panel | 232](#)
- [Configuring a Custom Display Message | 233](#)

This topic applies to hardware devices in the EX Series product family, which includes switches and the XRE200 External Routing Engine, that support the LCD panel interface.

The LCD panel on the front panel of EX Series switches displays a variety of information about the switch in the Status menu and provides the Maintenance menu to enable you to perform basic operations such as initial setup and reboot. You can disable these menus or individual menu options if you do not want switch users to use them. You can also set a custom message that will be displayed on the panel.

Disabling or Enabling Menus and Menu Options on the LCD Panel

By default, the Maintenance menu, the Status menu, and the options in those menus in the LCD panel are enabled. Users can configure and troubleshoot the switch by using the Maintenance menu and view certain details about the switch by using the Status menu.

If you do not want users to be able to use those menus or some of the menu options, you can disable the menus or individual menu options. You can reenable the menus or menu options.

Issue the **show chassis lcd menu** operational mode command to see the menus or menu options that are currently enabled.

NOTE: On some platforms, you must specify an FPC slot number in these commands. See the [lcd-menu](#) statement for details.

To disable a menu:

```
[edit]  
user@switch# set chassis lcd-menu menu-item menu-name disable
```


To enable a menu:

```
[edit]
user@switch# delete chassis lcd-menu menu-item menu-name disable
```

To disable a menu option:

```
[edit]
user@switch# set chassis lcd-menu menu-item menu-option disable
```

To enable a menu option:

```
[edit]
user@switch# delete chassis lcd-menu menu-item menu-option disable
```

Configuring a Custom Display Message

You can configure the second line of the LCD to display a custom message temporarily for 5 minutes or permanently.

To display a custom message temporarily:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch except EX4300-48MP and EX4300-48MP-S switches, a standalone EX4500 switch, a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

```
user@switch> set chassis display message message
```

- On an EX3300, EX4200, EX4300, EX4500, or EX4550 switch in a Virtual Chassis configuration:

```
user@switch> set chassis display message message fpc-slot slot-number
```

To display a custom message permanently:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch except EX4300-48MP and EX4300-48MP-S switches, a standalone EX4500 switch,

a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

```
user@switch> set chassis display message message permanent
```

- On an EX3300, EX4200, EX4300 except EX4300-48MP and EX4300-48MP-S, EX4500, or EX4550 switch in a Virtual Chassis configuration:

```
user@switch> set chassis display message message fpc-slot slot-number
permanent
```

NOTE: The buttons on the LCD panel are disabled when the LCD is configured to display a custom message.

To disable the display of the custom message:

```
user@switch> clear
chassis display message
```

You can view the custom message by issuing the `show chassis lcd` command.

Release History Table

Release	Description
18.2	Starting in Junos OS Release 18.2, the remote port identification feature is supported on JNP10K-LC2101 on MX10008 routers.
16.1	Starting in Junos OS Release 16.1, the remote port identification feature is supported on MPC7E-10G, MPC7E-MRATE, MX2K-MPC8E, and MX2K-MPC9E.

RELATED DOCUMENTATION

Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types

[request chassis port-led](#) | 449

6

CHAPTER

Network Services Mode

[Configuring Network Services Mode | 236](#)

Configuring Network Services Mode

IN THIS SECTION

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- [Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers | 241](#)
- [Feature Restrictions on MX Series Routers Running in Ethernet Network Services Mode or Enhanced Ethernet Network Services Mode | 241](#)
- [Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode | 243](#)

Network Services Mode Overview

IN THIS SECTION

- [Network Services on SCBE2 | 240](#)

A network services mode defines how the router chassis recognizes and uses certain modules. You can configure network services modes on MX Series 5G Universal Routing Platforms and on T4000 Core Routers with Type 5 FPCs.

On MX Series 5G Universal Routing Platforms, you can configure IP Network Services mode, Enhanced IP Network Services mode, Ethernet Network Services mode, or Enhanced Ethernet Network Services mode.

You can use either Enhanced IP Network Services mode or Enhanced Ethernet Network Services mode to improve the scaling and performance specific to filters in a subscriber access network that uses statically configured subscriber interfaces. For more information about using enhanced network services modes with firewall filters, see *Firewall Filters and Enhanced Network Services Mode Overview*.

On MX240, MX480, and MX960 routers, the MPC5E and MPC7E line cards power on only if the configured network services mode is **enhanced-ip** or **enhanced-ethernet**. All other MPCs work with any of the network services modes. MX2010 and MX2020 support only **enhanced-ip** and **enhanced-ethernet** network services modes.

NOTE: If Dense Port Concentrators (DPCs) in Ethernet Network Services mode or Enhanced Ethernet Network Services mode are up and running, you cannot configure the system for IP Network Services mode. You must first disable any Ethernet Network Services mode DPCs before switching to IP Network Services mode.

NOTE: When a chassis starts without any functioning FPCs, the Network Services mode defaults to IP Network Services. When the first FPC comes online, the configured Networks Services mode is applied.

NOTE: Starting from Junos OS Release 13.3, you can configure the Enhanced IP Network Services mode and Enhanced Ethernet Network Services mode on MX240, MX480 and MX960 routers with an SCBE2. Specify the **enhanced-ip** option or the **enhanced-ethernet** option at the **[edit chassis network-services]** hierarchy level.

You can configure T4000 Core Routers with Type 5 FPCs to run in Enhanced Network Services mode to enable improved virtual private LAN service (VPLS) MAC address learning. For more information, see *enhanced-mode*.

[Table 26 on page 238](#) explains how different modules function when the MX Series 5G Universal Routing Platform chassis is configured to run in different network services modes.

Table 26: Network Services Mode Functions

Configuration Upon Boot or Configuration Change	Module Function
IP Network Services mode (default; upon boot)	<p>All modules except DPCE-X and DPCE-X-Q are powered on.</p> <p>Starting with Junos OS Release 15.1, you can limit the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode. To do this, include the limited-ifl-scaling option with the network-services enhanced-ip statement at the [edit chassis] hierarchy level. Using the limited-ifl-scaling option prevents any collision of logical interface indices that can occur in a scenario in which you enable the Enhanced IP Network Services mode on the router which also contains an MS-DPC.</p>
Ethernet Network Services mode (upon boot)	<p>All modules are powered on. However, operating in Ethernet Network Services mode restricts certain BGP protocol functions and does not support Layer 3 VPN, unicast RPF, and source and destination class usage (SCU and DCU) functions. In addition, the number of externally configured filter terms is restricted to 64K.</p> <p>Ethernet Network Services mode provides support for only Layer 2.5 functions.</p>
Enhanced IP Network Services mode (upon boot)	<p>Only MPCs, MS-MPCs, and MS-DPCs are powered on.</p> <p>NOTE: Only Multiservices DPCs (MS-DPCs) and MS-MPCs are powered on with the enhanced network services mode options. No other DPCs function with the enhanced network services mode options.</p>

Table 26: Network Services Mode Functions (Continued)

Configuration Upon Boot or Configuration Change	Module Function
Enhanced Ethernet Network Services mode (upon boot)	<p>Only MPCs, MS-MPCs, and MS-DPCs are powered on. All restrictions for operating in Ethernet Network Services mode apply.</p> <p>NOTE: Only Multiservices DPCs (MS-DPCs) and MS-MPCs are powered on with the enhanced network services mode options. No other DPCs function with the enhanced network services mode options.</p>
Change from IP Network Services mode to Ethernet Network Services mode	DPCE-X and DPCE-X-Q modules are powered on. No reboot is required. No impact to MPCs or MS-DPCs.
Change from Ethernet Network Services mode to IP Network Services mode	Invalid modification. No commit occurs. A warning message indicates if any FPCs (along with their slot location) must be offline before switching to other network services. No impact to MPCs or MS-DPCs.
Change from Enhanced Ethernet Network Services mode to Enhanced IP Network Services mode.	Reboot is required.
Change from Enhanced IP Network Services mode to Enhanced Ethernet Network Services mode	Reboot is required.
Change from IP Network Services mode to Enhanced IP Network Services mode	System reboot is required (PFE/FPCs)
Change from Ethernet Network Services mode to Enhanced Ethernet Network Services mode	Reboot is required.

For details on the Layer 2.5 support for Ethernet Network Services mode, see *Restricted Software Features in Ethernet Network Services Mode*.

Network Services on SCBE2

The following scenarios are to be noted when you use an MX Series router with an SCBE2:

- You must configure the **set chassis network-services (enhanced-ip | enhanced-ethernet)** configuration command and reboot the router to bring up the FPCs on the router. However, after the router reboots, the MS DPC, the MX FPC, and the ADPC are powered off.
- All the FPCs and DPCs in the router are powered off when you reboot the router without configuring either the enhanced-ip option or the enhanced-ethernet option at the **[edit chassis network-services]** hierarchy level.
- You must reboot the router when you configure or delete the enhanced-ip option or the enhanced-ethernet option at the **[edit chassis network-services]** hierarchy level. The following warning message, which prompts you to reboot the router, is displayed when you configure or delete the enhanced-ip or the enhanced-ethernet configuration statement at the **[edit chassis network-services]** hierarchy level.

```
'chassis'
WARNING: Chassis configuration for network services has been changed. A
system reboot is mandatory. Please reboot the system NOW. Continuing without
a reboot might result in unexpected system behavior.
commit complete
```

- Starting with Junos OS Release 14.2, you must perform a commit synchronization of the settings between dual Routing Engines under some specific conditions. If you configure or remove the **enhanced-ip** or the **enhanced-ethernet** option at the **[edit chassis network-services]** hierarchy level on one of the Routing Engines on a router that contains dual Routing Engines, perform commit synchronization of the settings between the two Routing Engines by entering the **commit synchronize** command at the **[edit system]** hierarchy level. In addition, you must reboot all of the Routing Engines simultaneously (using the CLI command **request system reboot both-routing-engines**) when the enhanced IP network services mode is changed. The reboot is performed to prevent any unexpected system behavior.

NOTE: Dynamic multicast replication mode is supported on SCBE2. Static multicast replication mode is not supported on SCBE2.

NOTE: If a route's next hop is a unicast next hop through integrated routing and bridging (IRB) and the corresponding MAC address is learned over a label-switched interface (LSI), the IRB derives the Layer 2 information from the indirect next hop for the LSI. If you configure the **load-balance per-packet** policy statement, the indirect next hop of the LSI points to a unilist, which has all the member links to load balance the packets toward the MPLS cloud. You should configure the **enhanced-ip** option to enable the unicast next hop for IRB to use the unilist as the Layer 2 forwards next hop and load balance the packets.

Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers

You can configure MX Series 5G Universal Routing Platforms to run in different network services modes. Each network services mode defines how the chassis recognizes and uses certain modules.

To configure the network services mode of an MX Series router:

1. Access the chassis hierarchy.

```
[edit]
user@host# edit chassis
```

2. Specify the network services mode that you want the router to use.

```
[edit chassis]
user@host# set network-services service
```

Feature Restrictions on MX Series Routers Running in Ethernet Network Services Mode or Enhanced Ethernet Network Services Mode

[Table 27 on page 242](#) lists Junos OS feature restrictions when running in Ethernet Network Services mode or Enhanced Ethernet Network Services mode.

Table 27: Restricted Software Features in Ethernet Network Services Mode

Software Feature	Restriction in Ethernet Network Services Mode
BGP	<ul style="list-style-type: none"> • Data plane support applies only to Ethernet and MPLS. • BGP only supports the following address families: inet labeled-unicast, inet unicast, inet-vpn unicast, l2vpn, and route-target.
L3VPN	<p>Layer 3 VPNs are supported. You can only include loopback interfaces in the Virtual Routing and Forwarding (VRF) instance. A maximum of two VRFs are supported. Each VRF can handle up to 10,000 routes.</p> <p>The <code>ping mpls l3vpn operational mode</code> command is also supported.</p>
Unicast RPF	Unicast reverse-path forwarding is disabled.
Source and destination class usage (SCU and DCU)	Source and Destination Class Usage is disabled.
Filter terms	The number of externally configured filter terms is restricted to 64 KB.
Prefixes	The number of supported prefixes is restricted to 32 K.

NOTE: MX Series routers supporting Layer 2.5 functions work as full-scale routers and they support interior gateway protocol (IGP), multicast routing protocols, and other routing features. The restrictions applicable on these routers are that the number of routes is limited and you cannot use BGP.

Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode

Starting in Junos OS Release 15.1, you can impose a limitation on the maximum number of logical interfaces on MX Series routers with MS-DPCs to be 64,000 for enhanced IP network services mode. To impose that limit, include the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement at the **[edit chassis]** hierarchy level. When network-services is configured as enhanced IP mode, the kernel increases the total number of logical interfaces to 256,000. However, MS-DPC line cards are not capable of handling more than 64,000 logical interfaces globally on a router. Using the **limited-ifl-scaling** option prevents the problem of a collision of logical interface indices that can occur in a scenario in which you enable enhanced IP services mode and an MS-DPC is also present in the same chassis. To support MS-DPCs with enhanced IP mode on the chassis, you must limit the maximum logical interfaces as 64,000, which is performed with the **limited-ifl-scaling** option.

To define the maximum number of logical interfaces on MX Series routers with MS-DPCs as 64,000, include the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement at the **[edit chassis]** hierarchy level.

```
[edit chassis]
network-services enhanced-ip limited-ifl-scaling;
```

When the default network services mode on a router is IP services mode (by using the **network-services ip** statement), the maximum logical interfaces is set as 64,000. When you change the network services mode as enhanced IP, the chassis process sets a general configuration (GENCFG) script to the kernel that increases the maximum logical interfaces as 256,000. When you configure the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement, the chassis process does not generate a message to the kernel to increase the number of logical interfaces. As a result, the kernel retains the maximum number of logical interfaces as 64,000.

If your router chassis is previously configured with enhanced IP services mode and without the **limited-ifl-scaling** option set, and if you later configure the setting to limit the logical interfaces for MS-DPCs, the number of logical interfaces remains as 256,000 and it is not reduced. A cold reboot of the router must be performed in such a case to reduce the logical interfaces after you set the **limited-ifl-scaling** option with the **network-services enhanced-ip** statement. When you enter the **limited-ifl-scaling** option, none of the MPCs are moved to the offline state. All the optimization and scaling capabilities supported with enhanced IP mode apply to enhanced IP mode with the limitation of IFL scaling functionality.

Release History Table

Release	Description
15.1	Starting with Junos OS Release 15.1, you can limit the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode.
15.1	Starting in Junos OS Release 15.1, you can impose a limitation on the maximum number of logical interfaces on MX Series routers with MS-DPCs to be 64,000 for enhanced IP network services mode.
14.2	Starting with Junos OS Release 14.2, you must perform a commit synchronization of the settings between dual Routing Engines under some specific conditions.
13.3	Starting from Junos OS Release 13.3, you can configure the Enhanced IP Network Services mode and Enhanced Ethernet Network Services mode on MX240, MX480 and MX960 routers with an SCBE2.

RELATED DOCUMENTATION

Firewall Filters and Enhanced Network Services Mode Overview

[Junos OS Subscriber Management and Services Library](#)

Configuring Enhanced IP Network Services for a Virtual Chassis

[enhanced-mode \(Network Services\) | 286](#)

[network-services | 336](#)

7

CHAPTER

Packet Scheduling Mode

[Enabling an M160 Router to Operate in Packet Scheduling Mode](#) | 246

Enabling an M160 Router to Operate in Packet Scheduling Mode

By default, packet scheduling is disabled on M160 Routers. To configure a router to operate in packet-scheduling mode, include the **packet-scheduling** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
packet-scheduling;
```

To explicitly disable the **packet-scheduling** statement, include the **no-packet-scheduling** statement at the **[edit chassis]** hierarchy level:

```
[edit chassis]
no-packet-scheduling;
```

When you enable packet-scheduling mode, the Packet Director application-specific integrated circuit (ASIC) schedules packet dispatches to compensate for transport delay differences. This preserves the interpacket gaps as the packets are distributed from the Packet Director ASIC to the Packet Forwarding Engine.

Whenever you change the configuration for packet-scheduling, the system stops all SFMs and FPCs and restarts them in the new mode.

NOTE: Packet scheduling is available for M160 routers only.

RELATED DOCUMENTATION

| *Configuring the Junos OS to Support Eight Queues on IQ Interfaces for T Series and M320 Routers*

8

CHAPTER

OSS Mapping

[Configuring OSS Mapping](#) | 248

Configuring OSS Mapping

IN THIS SECTION

- [Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis | 248](#)
- [Example: Configuring a T4000 Chassis to Represent a T640 Chassis | 250](#)

Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis

IN THIS SECTION

- [Configuring T4000 Chassis as a T1600 Chassis | 248](#)
- [Configuring T4000 Chassis as a T640 Chassis | 249](#)
- [Disabling the OSS Mapping Feature | 249](#)

You can configure the operations support systems (OSS) mapping feature to represent a T4000 chassis as a T1600 chassis or a T640 chassis. This topic includes the following tasks:

Configuring T4000 Chassis as a T1600 Chassis

To configure a T4000 chassis as a T1600 chassis:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]  
user@T4000# edit chassis
```


2. Configure the OSS mapping feature to map the T4000 chassis to a T1600 chassis.

```
[edit chassis]
user@T4000# set oss-map model-name t1600
```

Configuring T4000 Chassis as a T640 Chassis

To configure a T4000 chassis as a T640 chassis:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Configure the OSS mapping feature to map the T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# set oss-map model-name t640
```

NOTE: By default, the OSS mapping feature is disabled.

Disabling the OSS Mapping Feature

To disable the OSS mapping feature:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Disable the OSS mapping feature that maps a T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# delete oss-map model-name t640
```

3. Disable the OSS mapping feature that maps a T4000 chassis to a T1600 chassis.

```
[edit chassis]
user@T4000# delete oss-map model-name t1600
```

NOTE:

- The **set chassis oss-map model-name t640 | t1600** command is applicable only on T4000 routers. You must explicitly set this command when a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis.
- You can execute the **set chassis oss-map model-name t640** command or the **set chassis oss-map model-name t1600** command if the OSS is compatible with either the T640 chassis or the T1600 chassis, respectively.

Example: Configuring a T4000 Chassis to Represent a T640 Chassis

IN THIS SECTION

- [Requirements | 250](#)
- [Overview | 251](#)
- [Configuring the T4000 Chassis to Represent a T640 Chassis | 251](#)
- [Verification | 252](#)

This example shows how to configure OSS mapping feature to represent a T4000 chassis as a T640 chassis. You can extend this concept to configure a T4000 chassis to represent as a T1600 chassis as well.

Requirements

This example uses the following hardware and software components:

- One T4000 router
- Junos OS Release 12.3R3, 13.1R2, 13.2R1, or later

Overview

Operations support systems (OSS) is used by service providers to maintain their networks. When a new router is added or removed from the network, the OSS must be updated to reflect the changes. This process is tedious and time-consuming.

When a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis, the OSS identifies the new chassis as a new networking element and follows a tedious process of qualifying it for the customer's network. The *OSS mapping feature* helps avoid this scenario.

Using the OSS mapping feature, you can map a T4000 chassis to a T1600 chassis or to a T640 chassis with the **set chassis oss-map model-name t640|t1600** configuration command. This configuration command overrides the chassis model name, so that the OSS recognizes the chassis as a known chassis and proceeds without any requalification.

NOTE:

- The **set chassis oss-map model-name t640 | t1600** command is applicable only on T4000 routers. You must explicitly set this command when a T1600 chassis or a T640 chassis is upgraded to a T4000 chassis.
- You can execute the **set chassis oss-map model-name t640** command or the **set chassis oss-map model-name t1600** command, if the OSS is compatible with either the T640 chassis or the T1600 chassis, respectively.

Configuring the T4000 Chassis to Represent a T640 Chassis

IN THIS SECTION

- [Procedure | 251](#)

Procedure

Step-by-Step Procedure

To configure the T4000 chassis to represent a T640 chassis by using the OSS mapping feature:

1. In configuration mode, go to the **[edit chassis]** hierarchy level.

```
[edit]
user@T4000# edit chassis
```

2. Configure the OSS mapping feature to map the T4000 chassis to a T640 chassis.

```
[edit chassis]
user@T4000# set oss-map model-name t640
```

Verification

IN THIS SECTION

- [Verifying the OSS Mapping Feature | 252](#)
- [Verifying the OSS Mapping Feature on SNMP MIBs | 254](#)

Verifying the OSS Mapping Feature

Purpose

To verify that the OSS mapping feature is working on a T4000 router.

Action

Run the `show chassis operational` command and verify that the configured known chassis name is displayed when the T4000 chassis is mapped to a T640 chassis.

- Run the **show chassis hardware** operational command:

show chassis hardware

```
user@T4000> show chassis hardware
Hardware inventory:
Item           Version  Part number  Serial number  Description
Chassis                REV 01   710-027486   RC9848        T-series Backplane
```

FPM GBUS	REV 13	710-002901	BBAG5143	T640 FPM Board
FPM Display	REV 04	710-021387	BBAL2705	T1600 FPM Display
CIP	REV 06	710-002895	BBAL3705	T-series CIP
PEM 1	REV 03	740-036442	VJ00054	Power Entry Module
6x60				
SCG 0	REV 18	710-003423	BBAJ0727	T640 Sonet Clock Gen.
SCG 1	REV 18	710-003423	BBAE3887	T640 Sonet Clock Gen.
Routing Engine 0	REV 06	740-026941	P737F-002705	RE-DUO-1800
Routing Engine 1	REV 06	740-026941	P737F-002675	RE-DUO-1800
CB 0	REV 09	710-022597	EF7371	LCC Control Board
....				

- Run the **show chassis hardware detail** operational command:

show chassis hardware detail

```

user@T4000> show chassis hardware detail
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           REV 01   710-027486  RC9848        T-series Backplane
FPM GBUS          REV 13   710-002901  BBAG5143      T640 FPM Board
FPM Display       REV 04   710-021387  BBAL2705      T1600 FPM Display
CIP               REV 06   710-002895  BBAL3705      T-series CIP
PEM 1            REV 03   740-036442  VJ00054       Power Entry Module
6x60
SCG 0            REV 18   710-003423  BBAJ0727      T640 Sonet Clock Gen.
SCG 1            REV 18   710-003423  BBAE3887      T640 Sonet Clock Gen.
Routing Engine 0 REV 06   740-026941  P737F-002705  RE-DUO-1800
  ad0    3823 MB  SMART CF           201101050335CCFACCF A Compact Flash
  ad1    62720 MB SMART Lite SATA Drive 2011021700D8789F789F Disk 1
Routing Engine 1 REV 06   740-026941  P737F-002675  RE-DUO-1800
  ad0    3823 MB  SMART CF           201011150208AF59AF59 Compact Flash
  ad1    62720 MB  SMART Lite SATA Drive 2010122700A160026002 Disk 1
CB 0              REV 09   710-022597  EF7371        LCC Control Board
....

```

- Run the **show chassis hardware extensive** operational command:

show chassis hardware extensive

```

user@T4000> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11B3892AHA  T640
Jedec Code:   0x7fb0          EEPROM Version: 0x02
              S/N:              JN11B3892AHA
Assembly ID:  0x0507          Assembly Version: 00.00
Date:         00-00-0000    Assembly Flags:  0x00
.....

```

Verifying the OSS Mapping Feature on SNMP MIBs

Purpose

To verify that the SNMP MIBs are updated with the configured known chassis name.

Action

Run the **show snmp mib** operational commands and verify that the configured known chassis name is displayed in SNMP MIBs when the T4000 chassis is mapped to a T640 chassis:

- Run the **show snmp mib walk system** operational command:

show snmp mib walk system

```

user@T4000> show snmp mib walk system
sysDescr.0    = Juniper Networks, Inc. t640 internet router, kernel JUNOS
12.3-...Juniper Networks, Inc.
sysObjectID.0 = jnxProductNameT640
...

```

- Run the **show snmp mib walk jnxBoxAnatomy** operational command:

show snmp mib walk jnxBoxAnatomy

```

user@T4000> show snmp mib walk jnxBoxAnatomy
jnxBoxClass.0 = jnxProductLineT640.0
jnxBoxDescr.0 = Juniper t640 Internet Backbone Router

```

```
jnxBoxSerialNo.0 = JN11B3892AHA  
jnxBoxRevision.0  
....
```

Meaning

On configuring the OSS mapping feature, the OSS maps the T4000 chassis to a T640 chassis, thereby preventing requalification of the new chassis.

RELATED DOCUMENTATION

[oss-map](#) | [345](#)

[show chassis oss-map](#) | [1442](#)

9

CHAPTER

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action

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Syntax

```
action {  
    alarm;  
    disable-pfe;  
    get-state;  
    log;  
    offline;  
    reset;  
}
```

Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number*"error " on page 289 "fatal" on page 296]

[edit chassis "fpc" on page 300 *slot-number*"error " on page 289 "major" on page 330]

[edit chassis "fpc" on page 300 *slot-number*"error " on page 289 "minor" on page 334]

[edit chassis "error " on page 289 "fatal" on page 296]

[edit chassis "error " on page 289 "major" on page 330]

[edit chassis "error " on page 289 "minor" on page 334]

Description

Depending on the severity level of an error, you can configure one or more actions for the router to perform. For example, if the severity level of an error is major, you can configure the system to raise an alarm and restart the FPC.

NOTE: You cannot configure **disable-pfe** and **offline** actions at the same time.

Options

alarm	Raise an FPC alarm.
disable-pfe	(PTX routers) Disable Packet Forwarding Engine interfaces on an FPC. (MX240, MX480, MX960, MX2020 routers) Disables the interface associated with the ASIC that raised the error. On MX Series routers, an MPC can have multiple ASICs handled by a single PFE. Disabling the PFE in such cases, is not the optimal way to handle the error.
get-state	The system starts collecting statistics counters and other data from the affected FPC. The data is written and saved to a file under /var on the routing engine.
offline	The system shuts down the affected FPC, thus allowing traffic to be re-routed through interfaces on other FPC in the device.
reset	The system restarts the affected FPC.
log	Log occurrences to the system log file.

Required Privilege Level

interface	To view this statement in the configuration.
interface-control	To add this statement to the configuration.

Release Information

Statement introduced for PTX Series routers in Junos OS Release 13.3.

Statement introduced for MX240, MX480, MX960 routers in Junos OS Release 14.2.

RELATED DOCUMENTATION

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[show chassis fpc errors | 1391](#)

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aggregated-devices

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- [Syntax | 261](#)
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- [Description | 262](#)
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Syntax

```
aggregated-devices {  
  ethernet {  
    device-count number;  
    lacp {  
      link-protection {  
        non-revertive;  
      }  
    }  
  }  
}
```

```

        system-priority;
    }
}
sonet {
    device-count number;
}
maximum-links maximum-links-limit;
}

```

Hierarchy Level

```
[edit chassis]
```

Description

Configure properties for aggregated devices on the router. Aggregate Ethernet links are logical interfaces defined on the device that bundle together multiple physical interfaces into a single interface for the use of redundancy and bandwidth aggregation. When interconnecting devices you can create aggregate ethernet interfaces to bundle together multiple physical ethernet links to increase bandwidth and redundancy between devices.

Link aggregation enables you to group Ethernet interfaces to form a single link layer interface. Link Aggregation Control Protocol (LACP) is supported in chassis cluster deployments, where aggregated Ethernet interfaces and redundant Ethernet interfaces are supported simultaneously.

You must first configure the system to enable configuring the Aggregated Ethernet (ae) Interfaces. By default, Juniper devices do not have any aggregated ethernet interfaces created. To configure the device to support a given number of ae interfaces, you must define it on a per chassis basis using the **set chassis aggregated-devices devices {1-32}** in configuration mode. The number of devices you define will be the number of aggregated ethernet interfaces that the system will create which can be configured just like any other ethernet interface. Also you can view the interfaces created by using the **show interface terse** command. Once you have defined the number of aggregated ethernet devices on the chassis you can then continue to configure the LAG members on a per ethernet interface basis.

Options

The remaining statements are explained separately.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

Support for LACP link protection and system priority introduced in Junos OS Release 9.3.

RELATED DOCUMENTATION

[Configuring Junos OS for Supporting Aggregated Devices](#)

alarm (chassis)

IN THIS SECTION

- [Syntax | 264](#)
- [Hierarchy Level | 264](#)
- [Description | 264](#)
- [Options | 264](#)
- [Required Privilege Level | 265](#)
- [Release Information | 265](#)

Syntax

```
alarm {  
    interface-type {  
        alarm-name (ignore | red | yellow);  
    }  
}
```

Hierarchy Level

```
[edit chassis],  
[edit chassis interconnect-device name],  
[edit chassis node-group name]
```

Description

Configure the chassis alarms and whether they trigger a red or yellow alarm, or whether they are ignored. Red alarm conditions light the **RED ALARM** LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the contact on the craft interface or LCD screen. Yellow alarm conditions light the **YELLOW ALARM** LED on either the router's craft interface or the switch's LCD screen and trigger an audible alarm if one is connected to the craft interface or LCD screen.

To configure more than one alarm, include multiple *alarm-name* lines.

Options

alarm-name—Alarm condition. For a list of conditions, see *Configurable PIC Alarm Conditions*.

ignore—The specified alarm condition does not set off any alarm.

interface-type—Type of interface on which you are configuring the alarm: **atm**, **ethernet**, **sonet**, or **t3**.

red—The specified alarm condition sets off a red alarm.

yellow—The specified alarm condition sets off a yellow alarm.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

Alarm Types and Severity Levels

[Chassis Conditions That Trigger Alarms](#)

Chassis Alarm Messages on a QFX3500 Device

Interface Alarm Messages

alarm-port

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- [Hierarchy Level | 266](#)
- [Description | 266](#)
- [Options | 267](#)
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- [Release Information | 268](#)

Syntax

```
alarm-port {
  input port port-number {
    active {
      (high | low);
    }
    admin-state {
      (disabled | enabled);
    }
    description description;
  }
  severity {
    (critical | major | minor | warning)
  }
  output port port-number {
    admin-state {
      (disabled | enabled);
    }
    description description;
  }
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure an alarm input or output on the dedicated alarm port on the router. You can use the alarm input configuration to receive alarm inputs from the external devices such as sensors. You can use the alarm output configuration to relay the alarms in the router to external alarm devices. You can configure up to three alarm inputs and one alarm output.

Options

- port-number*** Specify the port number for the alarm input or output. The system supports up to three alarm input ports (port number: 1 to 3). The system supports only one alarm output port (port number: 1)
- active** Applicable only to alarm inputs.
- Configure a signal polarity for the alarm input based on the user environment. The alarm relay becomes operational when the input signal polarity is high or low based on this configuration. The following options are available.
- high
 - low
 - **Default:** low
- admin-state** Specify the administrative state of the alarms.
- disabled—Disable the alarm configuration. If you choose this option, the router will not trigger the alarm configured on this port. Disabling an alarm configuration does not delete the alarm. You can enable it when required.
 - enabled—Enable the alarm configuration.
 - **Default:** disabled
- description**
description Provide a description for the alarm input or output. For example, you can provide a description to identify the device connected to the alarm port.
- severity** Applicable only to alarm inputs.
- Configure an alarm severity. The system supports the following alarm severities.
- critical
 - major
 - minor
 - warning

NOTE: The system considers the alarm inputs configured with the critical or major severity as major alarms. The alarm inputs configured with the minor or warning severity are considered minor alarms.

- **Default:** critical

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 20.2R1.

RELATED DOCUMENTATION

| [Configuring Chassis Alarm Input and Output \(ACX710 Routers\)](#) | 209

allow-sram-parity-errors

IN THIS SECTION

- [Syntax](#) | 269
- [Hierarchy Level](#) | 269
- [Description](#) | 269
- [Required Privilege Level](#) | 269

Syntax

```
allow-sram-parity-errors;
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

(T Series routers only) Allow SRAM parity errors to occur without restarting the FPC.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 8.0.

ambient-temperature

IN THIS SECTION

- [Syntax | 270](#)
- [Hierarchy Level | 270](#)
- [Description | 270](#)
- [Default | 271](#)
- [Options | 271](#)
- [Required Privilege Level | 272](#)
- [Release Information | 272](#)

Syntax

```
chassis ambient-temperature (25C|40C|55C);
```

Hierarchy Level

[edit chassis]

Description

Set the chassis ambient temperature and instruct the power manager to allocate power to the line cards according to the ambient temperature value.

On system initialization in a PTX Series router, the power manager reads the ambient temperature and allocates power to the line cards according to the power budget policy at that temperature. If the actual power consumption of any line card exceeds the configured value for more than three minutes, the power manager overrides the configured ambient temperature setting of that line card, and resets its ambient temperature to the next higher level and reallocates power according to the new temperature

setting. All the overshooting line cards remain in the dynamic ambient temperature mode until the next reboot, or until you override the configured ambient temperature with a CLI command. The power manager then resets the power budget of the FRUs according to the configured ambient temperature setting.

When an MX Series router or an EX9200 switch restarts, the system adjusts the power allocation or the provisioned power for the line cards on the basis of the configured ambient temperature. If enough power is not available, a minor chassis alarm is raised. However, the chassis continues to run with the configured ambient temperature. You can configure a new higher ambient temperature only after you make more power available by adding new power supply modules or by taking a few line cards offline. By using the provisioned power that is saved by configuring a lower ambient temperature, you can bring more hardware components online.

For MX960 Universal Routing Platform and the MX2000 line of routers, a maximum operating temperature of 40°C is recommended at an altitude of up to 6000 feet above sea level. The router can operate up to a maximum temperature of 46°C at sea level and can be set accordingly.

NOTE: If ambient temperature is not set, then the line cards are allocated power according to the default ambient temperature.

Default

- MX Series routers—40°C
- PTX Series routers—40°C
- EX9200 switches—40°C
- EX9251 switches—40°C
- EX9253 switches—40°C

Options

- 25C** Set the ambient temperature of the chassis to 25°C
- 40C** Set the ambient temperature of the chassis to 40°C
- 55C** Set the ambient temperature of the chassis to 55°C

NOTE: Starting in Junos OS Evolved Release 19.1R1, the PTX10003-80C routers do not support configuration of the ambient temperature value **55C**.

Required Privilege Level

chassis—To view this statement in the configuration.

chassis-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 14.1.

RELATED DOCUMENTATION

[Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration | 118](#)

[Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature | 114](#)

[Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization | 113](#)

bandwidth (MPC Bandwidth)

IN THIS SECTION

- [Syntax | 273](#)
- [Hierarchy Level | 273](#)
- [Description | 273](#)

- [Options | 274](#)
- [Required Privilege Level | 274](#)
- [Release Information | 274](#)

Syntax

bandwidth *bandwidth*;

Hierarchy Level

[edit chassis fpc *slot*]

Description

Configure the MPC bandwidth.

By default, MPC8E provides a maximum bandwidth of 960 Gbps. You can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps) by using an add-on license. After you purchase the license and configure the **bandwidth 1.6T** statement, MPC8E provides an increased bandwidth of 1.6 Tbps.

After you upgrade the MPC, you can use the **show chassis fpc *slot* detail** command to verify the status as shown in the following example:

```
[edit]
user@router# run show chassis fpc 3 detail
Slot 3 information:
  State                               Online
  Temperature                          29
  Total CPU DRAM                       3200 MB
  ...

  Max Power Consumption                1150 Watts
  Configured Bandwidth                 1600 G
  Operating Bandwidth                  1600 G
```

```
[edit]  
user@router#
```

Options

bandwidth Configure the MPC to operate at a specified bandwidth. You can specify **1.6T** as the value to configure the MPC to operate at a bandwidth of 1.6 Tbps.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 16.1.

RELATED DOCUMENTATION

| [MPC8E](#)

bandwidth-degradation

IN THIS SECTION

- [Syntax | 275](#)
- [Hierarchy Level | 275](#)

- [Description | 275](#)
- [Options | 276](#)
- [Required Privilege Level | 276](#)
- [Release Information | 276](#)

Syntax

```
bandwidth-degradation {  
    action (log-only | restart | offline | restart-then-offline);  
    no-fabric-switchover;  
    percentage (1-99);  
}
```

Hierarchy Level

```
[edit chassis fpc slot-numberfabric]
```

Description

Configure a FPC to take a specific action once bandwidth degradation reaches a certain percentage to avoid causing a null route in the chassis.

NOTE: This configuration statement is mutually exclusive with the **offline-on-fabric-bandwidth-reduction** statement. If both statements are configured, the commit check fails and returns an error.

Options

log-only	A message gets logged in the chassisd and message files when the fabric degradation threshold is reached. No other actions are taken.
restart	The FPC with a degraded fabric plane is restarted once the threshold is reached.
offline	The FPC with a degraded fabric plane is taken offline once the threshold is reached. The FPC requires manual intervention to be brought back online. This is the default action if no action attribute configured.
restart-then-offline	The FPC with a degraded fabric plane is restarted once the threshold is reached, and if fabric plane degradation is detected again within 10 minutes, the FPC is taken offline. The FPC requires manual intervention to be brought back online.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[Managing Bandwidth Degradation | 44](#)

[blackhole-action | 277](#)

[offline-on-fabric-bandwidth-reduction | 339](#)

blackhole-action

IN THIS SECTION

- [Syntax | 277](#)
- [Hierarchy Level | 277](#)
- [Description | 277](#)
- [Required Privilege Level | 277](#)
- [Release Information | 278](#)

Syntax

```
blackhole-action (log-only | restart | offline | restart-then-offline);
```

Hierarchy Level

```
[edit chassis fpc slot-number fabric]
```

Description

Configure an FPC to take a specific action when fabric plane degradation reaches 100 percent.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[Managing Bandwidth Degradation](#) | 44

[bandwidth-degradation](#) | 274

chassis

IN THIS SECTION

- [Syntax](#) | 278
- [Hierarchy Level](#) | 278
- [Description](#) | 279
- [Required Privilege Level](#) | 279
- [Release Information](#) | 279

Syntax

```
chassis { ... }
```

Hierarchy Level

```
[edit]
```

Description

Configure router chassis properties.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

craft-lockout

IN THIS SECTION

- [Syntax | 279](#)
- [Hierarchy Level | 280](#)
- [Description | 280](#)
- [Required Privilege Level | 280](#)
- [Release Information | 280](#)

Syntax

```
craft-lockout;
```

Hierarchy Level

```
[edit chassis]
```

Description

Disable the physical operation of the craft interface front panel.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 8.1.

RELATED DOCUMENTATION

| [Configuring the Junos OS to Disable the Physical Operation of the Craft Interface](#) | 230

degraded

IN THIS SECTION

- [Syntax](#) | 281
- [Hierarchy Level](#) | 281

- [Description | 281](#)
- [Options | 281](#)
- [Required Privilege Level | 282](#)
- [Release Information | 282](#)

Syntax

```
degraded {  
    action-fpc-restart-disable;  
    degraded-fabric-detection-enable;  
    degraded-fpc-bad-plane-threshold number-bad-planes;  
}
```

Hierarchy Level

```
[edit chassis fabric]
```

Description

Configure options that apply to degraded chassis fabric conditions.

Options

- **action-fpc-restart-disable**—Allow the user to disable restarting of the FPCs during healing from a degraded fabric condition. The device can automatically recover from degraded fabric conditions by restarting both the fabric planes and the FPCs. If the `action-fpc-restart-disable` statement is configured, the healing attempt is limited to restarting the fabric planes only.

The system will detect a null-route filtering condition and try to heal the system.

- **degraded-fabric-detection-enable**—Enable detection of an FPC with degraded fabric.
- **degraded-fpc-bad-plane-threshold number-bad-planes**—Configure the number of bad planes that indicate an FPC is degraded.

Options: *number-bad-planes*—Number of bad planes.

Range: 4 through 18

Default: 4

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 11.4.

Statement “action-fpc-restart-disable” introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions | 45](#)

disable-grant-bypass

IN THIS SECTION

- [Syntax | 283](#)
- [Hierarchy Level | 283](#)
- [Description | 283](#)
- [Default | 284](#)
- [Required Privilege Level | 284](#)
- [Release Information | 284](#)

Syntax

```
disable-grant-bypass;
```

Hierarchy Level

```
[edit chassis fabric]
```

Description

Disable the fabric grant bypass feature. This feature is used for communication between Packet Forwarding Engines. For instance, when a Packet Forwarding Engine wants to send a packet to another Packet Forwarding Engine (on the same MPC or on a different MPC), a request is sent to the Packet Forwarding Engine across the fabric plane. Only after the request is granted, can the source Packet Forwarding Engine send the packet to the destination Packet Forwarding Engine. Disabling the default behavior controls congestion and thus improves system behavior and performance on MX2010 and MX2020 routers.

NOTE: After disabling fabric grant bypass feature on the MX2010 and MX2020, you must reboot the router for the changes to take effect. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable the fabric grant bypass feature and reboot the router.

Default

Enabled for all MPCs on MX2010 and MX2020 routers with Switch Fabric Boards (SFBs). On MX2010 and MX2020 routers with the Switch Fabric Board SFB2, this feature is enabled only on the MPCs, MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP), and disabled on all other MPCs. The feature is disabled on routers with Switch Control Boards (SCBs).

Required Privilege Level

view

Release Information

Statement introduced in Junos OS Release 16.1.

RELATED DOCUMENTATION

[Understanding Fabric Grant Bypass | 63](#)

[Disabling Fabric Grant Bypass to Control Congestion and Improve Performance | 64](#)

[Re-Enabling Fabric Grant Bypass | 65](#)

disk-failure-action

IN THIS SECTION

- [Syntax | 285](#)
- [Hierarchy Level | 285](#)
- [Description | 285](#)
- [Options | 285](#)
- [Required Privilege Level | 286](#)
- [Release Information | 286](#)

Syntax

```
disk-failure-action (halt | reboot);
```

Hierarchy Level

```
[edit chassis routing-engine on-disk-failure]
```

Description

Configure the Routing Engine to halt or reboot when the Routing Engine hard disk fails.

Options

halt—Specify the Routing Engine to halt.

reboot—Specify the Routing Engine to reboot.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 9.0.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 227

enhanced-mode (Network Services)

IN THIS SECTION

- [Syntax](#) | 287
- [Hierarchy Level](#) | 287
- [Description](#) | 287
- [Default](#) | 288
- [Required Privilege Level](#) | 289
- [Release Information](#) | 289

Syntax

```
enhanced-mode;
```

Hierarchy Level

```
[edit chassis network-services]
```

Description

PTX1000, PTX3000 and PTX5000 Routers—When you configure **enhanced-mode** on PTX series routers, the following features are enabled on the router:

- Filter-based generic routing encapsulation (GRE) for IPV4 and IPV6 tunneling.
- **promote gre-key** statement for configuring gre-key as one of the matches in a filter.
- **promote dscp** under **family inet**, and **promote traffic-class** under **family inet6** statements for configuring these as one of the matches in a filter. (Added in Junos OS 17.1 for all PTX Series routers with third-generation FPCs.)
- **gtp-tunnel-endpoint-identifier** statement for including hash calculation for IPv4 or IPv6 packets in the GPRS tunneling protocol—Tunnel end point ID (GTP-TEID) field hash calculations.
- Wider configuration range for Bidirectional Forwarding Detection (BFD) protocol intervals.
- Support for up to two million routes per chassis.
- Support for Layer 3 VPN. The **vrf-table-label** statement is supported. (Added in Junos OS 15.1F5 for PTX5000 routers.)
- Support for destination class usage (DCU) and source class usage (SCU) accounting. (Added in Junos OS 15.1F5 for PTX5000 routers.)

NOTE:

- When you configure the **enhanced-mode** statement, only third-generation FPCs are allowed to be powered on. All other FPCs are powered off and cannot be brought online.
- When you do not configure the **enhanced-mode** statement, third-generation FPCs do not support the advanced features in the preceding list. Third-generation FPC only provide the same functionality as the first-generation and second-generation FPCs.
- After you configure the **enhanced-mode** statement and commit the configuration, the router must reboot.

T4000 Routers—When you configure **enhanced-mode** on T4000 routers, improved virtual private LAN service (VPLS) MAC address learning by supporting up to 262,143 MAC addresses per VPLS routing instance is enabled.

NOTE:

- The **enhanced-mode** statement supports up to 262,143 MAC addresses per VPLS routing instance. However, the MAC address learning limit for each interface remains the same (that is, 65,535 MAC addresses).
- After you configure the **enhanced-mode** statement and committing the configuration, you receive a warning message that prompts you to reboot the router. You must reboot the router and then modify the size of the VPLS MAC address table; otherwise, the improved VPLS MAC address learning does not take effect.
- When the T4000 router reboots after the **enhanced-mode** statement is configured, only the T4000 Type 5 FPCs are online while the remaining FPCs are offline.

Default

PTX Series Routers, except the PTX10000 line of routers—By default, the **enhanced-mode** statement is disabled.

PTX 10000 line of routers (such as PTX10001, PTX10003, PTX10008, and PTX10016 routers)—By default, the **enhanced-mode** statement is enabled.

T4000 Routers—By default, the improved VPLS MAC address learning feature is disabled.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Network Services Mode Overview | 236](#)

[show chassis fpc | 1330](#)

[mac-table-size](#)

[show chassis network-services | 1438](#)

error

IN THIS SECTION

- [Syntax | 290](#)
- [Junos OS | 290](#)
- [Junos OS Evolved | 290](#)
- [Description | 291](#)
- [Options | 291](#)
- [Required Privilege Level | 293](#)
- [Release Information | 293](#)

Syntax

```
error {
  (fatal | major | minor) {
    threshold threshold value;
    action (alarm | disable-pfe | offline-pic | log | get-state |offline |
reset);
  }
  scope error-scope {
    category category {
      (fatal | major | minor) {
        threshold threshold value;
        action (alarm | disable-pfe | log | get-state |offline | reset);
      }
    }
  }
  error-id;
}
```

Junos OS

[edit chassis]

[edit chassis fpc *slot-number*]

Junos OS Evolved

[edit chassis fpc *slot-number*]

[edit chassis sib slot *slot-number*]

Description

Configure the threshold at which FPC or SIB errors will take the action you configure to be performed by the device. Starting from Junos OS Release 18.1R3, you can configure error thresholds and actions at the error scope and error category levels on MX Series routers.

Some Juniper devices include an internal framework for detecting and correcting FPC errors that can have the potential to affect services. You can classify the errors according to severity, set an automatic recovery action for each severity, and set a threshold (i.e., the number of times the error must occur before the action is triggered).

NOTE:

- You cannot configure the severity level of an error. However you can modify the severity of an error by using the error ID. See ["error-id" on page 294](#).
- On the MX104 routers, Junos does not initiate restart of the system on encountering a Fatal error. Additionally, though you can configure the action **disable-pfe** for Major errors on the MX104, the router does not disable its only PFE on encountering a Major error.

Options

You can configure the threshold for the following severity levels:

- **fatal**—Fatal error on the FPC. An error that results in blockage of considerable amount of traffic across modules is a fatal error.
- **major**—Major error on the FPC. An error that results in continuing loss of packet traffic but does not affect other modules is a major error.
- **minor**—Minor error on the FPC. An error that results in the loss of a single packet but is fully recoverable is a minor error.
- **threshold** *threshold-value*—Configure the threshold value at which to take action. If the severity level of the error is fatal, the action is carried out only once when the total number of errors crosses the threshold value. If the severity level of the error is major, the action is carried out once after the occurrence crosses the threshold. If the severity level is minor, the action is carried out as many times as the value specified by the threshold. For example, when the severity level is minor, and you have configured the threshold value as 10, the action is carried out after the tenth occurrence. On Junos OS Evolved, for the errors belonging to the **internal** category, the default threshold value is 1.

NOTE: You can set the threshold value to 0 for errors with severity level as minor. This implies that no action is taken for that error. You cannot set the threshold value to 0 for errors with severity level as major or fatal.

Default: The error count for fatal and major actions is 1. The default error count for minor actions is 10.

Range: 0–429,496,729

The available detection and recovery actions are as follows:

- **alarm**—Raise an alarm.
- **disable-pfe**—Disable the PFE interfaces on the FPC.
- **get-state**—Get the current state of the FPC.
- **log**—Generate a log for the event.
- **offline**—Take the FPC offline.
- **offline-pic**—Take the PIC (installed in the FPC) offline.
- **reset**—Reset the FPC.

NOTE: Starting in Junos OS Evolved Release 19.1R1, the **offline** and **disable-pfe** actions are not available for errors with **minor** severity (under the hierarchy **edit chassis error minor action**).

The available detection and recovery actions are as follows for devices running Junos OS Evolved:

- **alarm**—Raise an alarm.
- **fault**—System goes to fault state but stays up (diagnostics can be run on it).
- **get-state**—Get the current state of the FPC.
- **log**—Generate a log for the event.

NOTE: Starting in Junos OS Release 17.2R1, if you configure the **disable-pfe**, **offline**, **offline-pic** or **reset** action on an MX Series or PTX Series router, the **get-state** action is additionally configured on the router. This means, for example, if you configure the **disable-pfe** action on the router, the router gets both **disable-pfe** and **get-state** actions configured.

- **scope *error-scope***—Group the errors of a particular severity into different scopes. Errors belonging to each error scope is further grouped into categories, before thresholds and actions are defined at the group level. The following scopes are available: **board** and **pfe**. Junos OS Evolved also supports the scope **switch**.
- **category *category***—Categorize errors into various subgroups under the scope level. An error category helps you group similar errors belonging to a particular scope and define actions for them at once. This feature eliminates the need for configurations against individual error-ids. Some of the error-categories are **functional**, **io** (input/output errors), **storage** (for example, errors related to HDD, SSD, and flash), **memory** (for example, errors related to static RAM), **processing** (for example, CPU-related errors), and **switch**. Junos OS Evolved also supports the category **internal**. On every occurrence of an error belonging to the **internal** category, the software by default raises an alarm at the individual error level (not at the scope or category level). You cannot configure an action against errors belonging to the **internal** category.
- ***error-id***—Use the error ID to disable an error or modify the error severity associated with that error. An *error-id*, which is a unique error identifier, is represented as a Uniform Resource Identifier (URI). For example, `/cpu/0/memory/0/memory-uncorrected-error` is an error ID that indicates an uncorrectable error under CPU memory module instance **0**.

Required Privilege Level

interface	To view this statement in the configuration.
interface-control	To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 13.3.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Configuring FPC Error Levels and Actions | 213](#)

[show chassis fabric errors | 1082](#)

[show chassis fpc errors | 1391](#)

error-id

IN THIS SECTION

- [Syntax | 294](#)
- [Hierarchy Level | 294](#)
- [Description | 295](#)
- [Options | 295](#)
- [Required Privilege Level | 295](#)
- [Release Information | 295](#)

Syntax

```
error-id {  
    severity; {  
        (fatal | major | minor) {  
        }  
    }  
    state {  
        disable;  
    }  
}
```

Hierarchy Level

[edit chassis fpc *slot-number* error]

[edit chassis sib slot *slot-number* error]

Description

Manage an error by using the error identifier. This feature allows you to disable an error or modify its severity. The **disable** option allows you to stop the error from being reported in the system until the error is enabled again.

An *error-id*, a unique error identifier, is represented as a Uniform Resource Identifier (URI), and is composed of a module identifier and an error identifier. For example, the error-id **"/cpu/0/memory/0/memory-uncorrected-error"** indicates an uncorrectable error under CPU memory module instance 0.

Options

- **severity**—Apply a new severity to the error ID. You can apply any of the following severities:
 - **fatal**—Fatal error on the FPC. An error that results in blockage of considerable amount of traffic across modules is a fatal error.
 - **major**—Major error on the FPC. An error that results in continuing loss of packet traffic but does not affect other modules is a major error.
 - **minor**—Minor error on the FPC. An error that results in the loss of a single packet but is fully recoverable is a minor error.
- **state**—By default, an error is in “enabled” state.
 - **disable**—Disable an error.

Required Privilege Level

routing—To view this statement in the configuration.

routing-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[Managing FPC Errors | 219](#)

[Configuring FPC Error Levels and Actions | 213](#)

[show chassis fpc errors | 1391](#)

fatal

IN THIS SECTION

- [Syntax | 296](#)
- [Hierarchy Level | 297](#)
- [Description | 297](#)
- [Required Privilege Level | 297](#)
- [Release Information | 297](#)

Syntax

```
fatal {  
    threshold threshold-value;  
    action {  
        alarm;  
        disable-pfe;  
        get-state;  
        log;  
        offline;  
        reset;  
    }  
}
```


Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289]

[edit chassis]

Description

Severity level of the error. An error that results in blockage of considerable amount of traffic across modules is a fatal error. The severity level of an error cannot be configured by a user.

The other statements are explained separately.

Required Privilege Level

interface To view this statement in the configuration.

interface-control To add this statement to the configuration.

Release Information

Statement introduced for PTX Series routers in Junos OS Release 13.3.

Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Configuring FPC Error Levels and Actions | 213](#)

feeds (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

IN THIS SECTION

- [Syntax | 298](#)
- [Hierarchy Level | 298](#)
- [Description | 298](#)
- [Options | 299](#)
- [Required Privilege Level | 299](#)
- [Release Information | 299](#)

Syntax

```
feeds number-of-input-feeds;
```

Hierarchy Level

```
[edit chassis pem]  
[edit chassis lcc lcc-number pem] (Routing Matrix)
```

Description

Configure the number of input feeds connected to the six-input DC power supply on T640, T1600, or T4000 routers. The value assigned to the **feeds** statement must be equal to the number of input feeds provided to the power supply.

When providing four or five input feeds on standalone routers, you must configure the **feeds** statement at the **[edit chassis pem]** hierarchy level. When providing four or five input feeds to an LCC router in a routing matrix, you must configure the **feeds** statement at the **[edit chassis lcc lcc-number pem]** hierarchy level.

NOTE:

- Before configuring input feeds for your router, see the *T640 Core Router Hardware Guide*, *T1600 Core Router Hardware Guide*, or *T4000 Core Router Hardware Guide* for special considerations and for the number of input feeds supported by the router.
- All power supplies in the router must use the same number of inputs feeds.

Options

- **Range:** 4 through 6
- **Default:** 6

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.1.

RELATED DOCUMENTATION

| [Configuring the Six-Input DC Power Supply on T Series Routers](#) | 102

fpc (M320, T320, T640 and PTX Series Routers)

IN THIS SECTION

- [Syntax | 300](#)
- [Hierarchy Level | 301](#)
- [Description | 301](#)
- [Options | 302](#)
- [Required Privilege Level | 302](#)
- [Release Information | 302](#)

Syntax

```
fpc slot-number {
    error {
        [fatal | major | minor] {
            threshold threshold-value;
            action (alarm | disable-pfe | offline-pic | log | get-state |offline
| reset);
        }
    }
    optical-options {
        expansion-card {
            fpc fpc-slot;
        }
        express-in {
            fpc fpc-slot;
        }
        tca tca-identifier (enable-tca | no-enable-tca) (threshold number |
threshold-24hrs number) ;
        wavelength nm{
            switch interface-name{
            }
            wss-express-in fpc-slot;
        }
    }
}
```

```

    }
}
pic pic-number {
  cel {
    e1 port-number {
      channel-group group-number timeslots slot-number;
    }
  }
  ct3 {
    port port-number {
      t1 link-number {
        channel-group group-number timeslots slot-number;
      }
    }
  }
  framing (sdh | sonet);
  idle-cell-format {
    itu-t;
    payload-pattern payload-pattern-byte;
  }
  max-queues-per-interface (8 | 4);
  no-concatenate;
  q-pic-large-buffer (large-scale | small-scale);
}
}

```

Hierarchy Level

[edit chassis]

Description

Configure properties for the PICs in individual Flexible PIC Concentrators (FPCs).

Options

slot-number—Slot number in which the FPC is installed.

- **Range:** M320, T640, T1600, T4000, and PTX5000 routers: 0 through 7
- **Range:** PTX3000 routers: 0, 2, 4, 6, 8, 10, 12, 14

NOTE: On PTX1000 routers, the FPC number is always 0.

The remaining statements are explained separately.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

Error statement introduced for PTX Series routers in Junos OS Release 13.3.

RELATED DOCUMENTATION

[Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs](#)

[Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized \(Multiplexed\) Mode](#)

[Configuring FPC Error Levels and Actions | 213](#)

fpc (MX Series 5G Universal Routing Platforms)

IN THIS SECTION

- [Syntax | 303](#)
- [Hierarchy Level | 304](#)
- [Description | 304](#)
- [Options | 304](#)
- [Required Privilege Level | 305](#)
- [Release Information | 305](#)

Syntax

```
fpc slot-number {  
    inline-services {  
        flow-table-size {  
            ipv4-flow-table-size units;  
            ipv4-flow-table-size units;  
            ipv6-extended-attrib;  
        }  
    }  
    ir-mode (R | IR);  
    pic number {  
        inline-services {  
            bandwidth (1g | 10g);  
        }  
        port-mirror-instance port-mirroring-instance-name-pic-level;  
        tunnel-services {  
            bandwidth (1g | 10g)  
        }  
    }  
    port-mirror-instance port-mirroring-instance-name-fpc-level;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure properties for the DPC or MPC and corresponding Packet Forwarding Engines to create tunnel interfaces.

(MX Series Virtual Chassis only) When you configure chassis properties for MPCs installed in a Virtual Chassis member router, statements included at the `[edit chassis member member-id fpc slot slot-number]` hierarchy level apply to the MPC in the specified slot number only on the specified member router in the Virtual Chassis. Statements included at the `[edit chassis fpc slot slot-number]` hierarchy level apply to the MPCs in the specified slot number on *each* member router in the Virtual Chassis.

BEST PRACTICE: To ensure that the statement you use to configure MPC chassis properties in an MX Series Virtual Chassis applies to the intended member router and MPC, we recommend that you always include the `member member-ID` option before the `fpc` statement, where *member-id* is 0 or 1 for a two-member MX Series Virtual Chassis.

Options

`fpc slot-number`—Specify the slot number of the DPC.

- **Range:** 0 through 11

`pic number`—Specify the number of the Packet Forwarding Engine. Each DPC includes four Packet Forwarding Engines.

- **Range:** 0 through 4

`port-mirror-instance port-mirroring-instance-name-fpc-level`—Associate a port-mirroring instance with the DPC and its corresponding PICs. The port-mirroring instance is configured under the `[edit forwarding-options port-mirroring]` hierarchy level.

The remaining statements are explained separately. Search for a statement in [CLI Explorer](#) or click a linked statement in the Syntax section for details.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 8.2.

port-mirror-instance option added in Junos OS Release 9.3.

ipv6-extended-attrib option added in Junos OS Release 14.2 for MX Series routers.

RELATED DOCUMENTATION

[Configuring Port-Mirroring Instances on MX Series 5G Universal Routing Platforms](#)

Enabling Inline Service Interfaces

[Virtual Chassis Components Overview](#)

fpc (TX Matrix and TX Matrix Plus Routers)

IN THIS SECTION

- [Syntax | 306](#)
- [Hierarchy Level | 306](#)
- [Description | 306](#)
- [Options | 306](#)
- [Required Privilege Level | 307](#)
- [Release Information | 307](#)

Syntax

```
fpc slot-number {
  pic pic-number {
    atm-cell-relay-accumulation;
    atm-l2circuit-mode (cell | aal5 | trunk trunk);
    framing (sdh | sonet);
    idle-cell-format {
      itu-t;
      payload-pattern payload-pattern-byte;
    }
    max-queues-per-interface (8 | 4);
    no-concatenate;
    no-mcast-replication;
    q-pic-large-buffer (large-scale | small-scale);
  }
}
```

Hierarchy Level

```
[edit chassis lcc number]
```

Description

On a TX Matrix or TX Matrix Plus router, configure properties for the PICs in individual FPCs.

Options

slot-number—Slot number in which the FPC is installed.

- **Range:** 0 through 7

The remaining statements are explained separately.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[TX Matrix Router and T640 Router Configuration Overview](#)

[TX Matrix Plus Router Configuration Overview](#)

[Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs](#)

[TX Matrix Router Chassis and Interface Names](#)

[TX Matrix Plus Router Chassis and Interface Names](#)

fpc-feb-connectivity

IN THIS SECTION

- [Syntax | 308](#)
- [Hierarchy Level | 308](#)
- [Description | 308](#)
- [Options | 308](#)
- [Required Privilege Level | 308](#)
- [Release Information | 309](#)

Syntax

```
fpc-feb-connectivity {  
    fpc number feb (slot-number | none);  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

On the M120 router only, configure a connection between any Flexible PIC Concentrator (FPC) and any Forwarding Engine Board (FEB).

Options

fpc *number*—Specify the FPC slot number.

- **Range:** 0 through 5

feb *slot-number*—Specify the FEB slot number.

- **Range:** : 0 through 5

none—Disconnect the FPC from the FEB.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support FPC to FEB Connectivity on M120 Routers](#)

fpc-offline-on-blackholing

IN THIS SECTION

- [Syntax | 309](#)
- [Hierarchy Level | 309](#)
- [Description | 310](#)
- [Required Privilege Level | 310](#)
- [Release Information | 310](#)

Syntax

```
fpc-offline-on-blackholing;
```

Hierarchy Level

```
[edit chassis fabric degraded]
```

Description

Take the FPC offline and raise an alarm if a traffic null route condition is detected in the routing matrix. By default, FPCs remain online when a null route condition is detected.

Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 14.2.

RELATED DOCUMENTATION

| [show chassis alarms](#) | 481

fpc-nmi-volt-fail-knob

IN THIS SECTION

- [Syntax](#) | 311
- [Hierarchy Level](#) | 311
- [Description](#) | 311
- [Required Privilege Level](#) | 311
- [Release Information](#) | 311

Syntax

```
fpc-nmi-volt-fail-knob (enable | disable)
```

Hierarchy Level

```
[edit chassis]
```

Description

Enable or disable the non maskable interrupt (NMI) for the voltage failure errors on the flexible pic concentrator (FPC).

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration

Release Information

Statement introduced in Junos OS Release 10.4R15, 11.4R8-S2, 11.4R9, 12.1R8, 12.2R6, 12.3R3-S1, 12.3R4, 13.1R3, and 13.2R1

RELATED DOCUMENTATION

[show chassis fpc | 1330](#)

[Configuring Voltage Level Monitoring of FPCs | 107](#)

fpc-restart

IN THIS SECTION

- [Syntax | 312](#)
- [Hierarchy Level | 312](#)
- [Description | 312](#)
- [Default | 313](#)
- [Required Privilege Level | 313](#)
- [Release Information | 313](#)

Syntax

```
fpc-restart;
```

Hierarchy Level

```
[edit chassis fabric degraded]
```

Description

Allow the user to restart the FPCs when a traffic null route condition is detected in the routing matrix. To enable this feature set the **fpc-restart** statement at the **edit chassis fabric degraded** hierarchy level.

Default

FPCs are not restarted when a null route condition is detected.

Required Privilege Level

routing—To view this statement in the configuration.

routing-control—To add this statement to the configuration.

Release Information

Statement added in Junos OS Release 13.2R6.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions | 45](#)

fpc-resync

IN THIS SECTION

- [Syntax | 314](#)
- [Hierarchy Level | 314](#)
- [Description | 314](#)
- [Required Privilege Level | 314](#)
- [Release Information | 314](#)

Syntax

```
fpc-resync;
```

Hierarchy Level

```
[edit chassis]
```

Description

(On M320, T320, T640, T1600, T4000, TX Matrix, and TX Matrix Plus routers only) When a Flexible PIC Concentrator (FPC) is brought online, resynchronize the sequence numbers of the FPC with the other active FPCs.

NOTE: In order to prevent null-route filtering, the **fpc-resync** command will have no effect if a single LMNR based FPC and one or more I-chip FPCs exist in the same chassis.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 10.2.

RELATED DOCUMENTATION

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)

fru-poweron-sequence

IN THIS SECTION

- [Syntax | 315](#)
- [Hierarchy Level | 315](#)
- [Description | 315](#)
- [Options | 316](#)
- [Required Privilege Level | 316](#)
- [Release Information | 317](#)

Syntax

```
fru-poweron-sequence fru-poweron-sequence;
```

Hierarchy Level

```
[edit chassis]
```

Description

(MX Series 5G Universal Routing Platforms only) Configure the power-on sequence for the DPCs in the chassis for routers with the enhanced AC Power Entry Module (PEM).

(T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport routers)
Configure the power-on sequence for Flexible PIC Concentrators (FPCs) installed in the chassis.

Options

(MX Series 5G Universal Routing Platforms only) *fru-poweron-sequence*—Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs.

NOTE: If the power-on sequence is not configured by including the **fru-poweron-sequence** statement, Junos OS uses the `/var/log/poweron_seq.log` file to determine the power-on sequence for the last power-on operation for the DPCs and the same sequence is used. If the `/var/log/boot_seq.log` file, is not available, Junos OS uses the ascending order of the slot numbers of the DPCs as the sequence to power on the DPCs.

(T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport routers)
fru-poweron-sequence—Power-on sequence for the FPCs in the chassis. The numbers indicate the slot number of the FPCs.

NOTE:

- If the configured sequence contains invalid numbers, Junos OS considers only the valid numbers in the sequence. The invalid numbers are silently discarded.
- If the power-on sequence is not configured by including the **fru-poweron-sequence** statement, Junos OS uses the ascending order of the slot numbers of the FPCs as the sequence to power on the FPCs.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 10.0.

RELATED DOCUMENTATION

[Redistributing the Available Power by Configuring Power-On Sequence | 105](#)

[Configuring Power-On Sequence to Redistribute the Available Power | 106](#)

input-current (T4000 Routers)

IN THIS SECTION

- [Syntax | 317](#)
- [Hierarchy Level | 317](#)
- [Description | 318](#)
- [Options | 318](#)
- [Required Privilege Level | 318](#)
- [Release Information | 318](#)

Syntax

```
input-current amps-in-each-feed;
```

Hierarchy Level

```
[edit chassis pem]
```

Description

Configure the amount of input current received in each feed. The value assigned to the **input-current** statement must be equal to the input current capability of each feed.

NOTE: Before configuring input current for your router, see the *T4000 Core Router Hardware Guide* for special considerations.

Options

Values:

- 40—Indicates 40 A of input current is received in each feed.
- 60—Indicates 60 A of input current is received in each feed.
- **Default:** 60 A

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Configuring the Six-Input DC Power Supply on T Series Routers](#) | 102

ir-mode

IN THIS SECTION

- [Syntax | 319](#)
- [Hierarchy Level | 319](#)
- [Description | 319](#)
- [Default | 320](#)
- [Options | 320](#)
- [Required Privilege Level | 320](#)
- [Release Information | 321](#)

Syntax

```
ir-mode (IR | R);
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configure the license mode of the specified enhanced MPC in an MPC slot as IR or R. Setting the license mode enables you to distinguish between an MPC with an IR license and an MPC with an R license after the MPC is installed on the router.

NOTE: The license mode settings are used only to provide information. You cannot set or alter the license of the MPC when you configure the mode.

Default

The default IR mode is Base. You do not set this configuration statement if Base is the mode of your license. Base mode includes the following features:

- All Layer 2, Layer 2.5, and Layer 3 features.
- Up to 32 Layer 3 routing instances of the virtual routing and forwarding (VRF) instance type.
- Up to 2 million routes in the forwarding information base (FIB), provided there is hardware support. (FIB is also known as forwarding table.)
- Up to 6 million routes in the routing information base (RIB), also known as routing table.

Options

IR Configure the license mode IR for an MPC installed in a specified MPC slot. Includes the following features:

- All Layer 2, Layer 2.5, and Layer 3 features.
- Up to 32 Layer 3 routing instances of the virtual routing and forwarding (VRF) instance type.

R Configure the license mode R for an MPC installed in a specified MPC slot. Includes full-scale Layer 2, Layer 2.5, and Layer 3 features. Scale is determined by the hardware capabilities.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 14.2.

RELATED DOCUMENTATION

[License Modes for Enhanced MPCs Overview](#)

[Configuring the License Mode for Specific Enhanced MPCs on MX Series Routers](#)

[Viewing the License Mode for MPC Cards on MX Series Routers](#)

led-beacon

IN THIS SECTION

- [Syntax | 321](#)
- [Hierarchy Level | 321](#)
- [Description | 322](#)
- [Required Privilege Level | 322](#)
- [Release Information | 322](#)

Syntax

```
led-beacon
```

Hierarchy Level

```
[edit interfaces interface-name (with port number)]
```

Description

This command causes the LED for the specified port to flash green. You can use the command to physically locate a specific optic port on the PIC.

NOTE: At the [edit interfaces *interface-name (with port number)*] hierarchy level, you must include the port number as part of the interface name. For example, **et-x/y/z(:n)**.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1F3 and 16.1R2.

RELATED DOCUMENTATION

| *show interfaces detail*

license-mode

IN THIS SECTION

- [Syntax | 323](#)
- [Hierarchy Level | 323](#)
- [Description | 323](#)

- Options | 323
- Required Privilege Level | 324
- Release Information | 324

Syntax

```
license-mode IR | R
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configures the FPC's license mode. This can be used to track the number of PICs configured for a specific mode.

Options

- | | |
|----|-------------------------------|
| IR | Sets the PIC to LSR mode. |
| R | Sets the PIC to full IP mode. |

NOTE: Starting in Junos OS Release 16.1R3 for PTX Series routers, the **IR** and **R** options are used. For previous releases (starting in Junos OS Release 15.1F3) the **Ip** (full IP mode) and **lsr** (LSR mode) options are used.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1F3.

RELATED DOCUMENTATION

[fpc \(M320, T320, T640 and PTX Series Routers\)](#) | 300

limited-ifl-scaling

IN THIS SECTION

- [Syntax](#) | 324
- [Hierarchy Level](#) | 325
- [Description](#) | 325
- [Required Privilege Level](#) | 325
- [Release Information](#) | 325

Syntax

```
limited-ifl-scaling;
```

Hierarchy Level

```
[edit chassis network-services enhanced-ip]
```

Description

Limits the maximum number of logical interfaces on MX Series routers with MS-DPCs to 64,000 for enhanced IP network services mode.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Command introduced in Junos OS Release 15.1R3.

RELATED DOCUMENTATION

[Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode | 243](#)

[Network Services Mode Overview | 236](#)

Configuring Enhanced IP Network Services for a Virtual Chassis

linerate-mode

IN THIS SECTION

- [Syntax | 326](#)
- [Hierarchy Level | 326](#)
- [Description | 326](#)
- [Required Privilege Level | 326](#)
- [Release Information | 327](#)

Syntax

```
linerate-mode;
```

Hierarchy Level

```
[edit chassis fpc slot-number pic pic-number linerate-mode],  
[edit chassis lcc number fpc slot-number pic pic-number linerate-mode] (Routing  
Matrix)
```

Description

For 10-port 10-Gigabit Oversubscribed Ethernet (OSE) PICs only, configure the line rate operation.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 10.1.

RELATED DOCUMENTATION

[Junos OS Network Interfaces Library for Routing Devices](#)

l2-channel-error-threshold (chassis)

IN THIS SECTION

- [Syntax | 327](#)
- [Hierarchy Level | 328](#)
- [Description | 328](#)
- [Required Privilege Level | 328](#)
- [Release Information | 328](#)

Syntax

```
l2-channel-error-threshold threshold; {  
    l2-channel-errors (ignore | red | yellow);  
}
```

Hierarchy Level

```
[edit chassis alarm l2-chan-err-ethernet]
```

Description

Use this command to specify the threshold limit for the L2 error count. Range is 1 through 4294967295 per hour and default value is 50,000 per hour.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 21.1R1.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms](#)

I2-channel-errors (chassis)

IN THIS SECTION

● [Syntax](#) | 329

- Hierarchy Level | 329
- Description | 329
- Options | 329
- Required Privilege Level | 330
- Release Information | 330

Syntax

```
l2-channel-errors (ignore |red | yellow);
```

Hierarchy Level

```
[edit chassis alarm l2-chan-err-ethernet]
```

Description

Configure chassis alarm for L2 channel error. When you configure this statement, chassis raises an alarm when the L2 channel error count crosses 50,000 per hour. If you do not configure this statement, chassis do not raise any alarm for L2 channel errors.

Options

ignore—This configuration does not raise any alarm for L2 channel error. This is the default configuration.

red—This configuration raises a red alarm for L2 channel error.

yellow—This configuration raises a red alarm for L2 channel error.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 21.1R1.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms](#)

major

IN THIS SECTION

- [Syntax | 330](#)
- [Hierarchy Level | 331](#)
- [Description | 331](#)
- [Required Privilege Level | 331](#)
- [Release Information | 331](#)

Syntax

```
major {  
    threshold threshold-value;  
    action {  
        alarm;    }  
}
```

```

    disable-pfe;
    get-state;
    log;
    offline;
    reset;
  }
}

```

Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number*"error " on page 289]

[edit chassis]

Description

Severity level of the error. An error that results in continuing loss of packet traffic but does not affect other modules is a major error. The severity level of an error cannot be configured by a user.

The other statements are explained separately.

Required Privilege Level

interface To view this statement in the configuration.

interface-control To add this statement to the configuration.

Release Information

Statement introduced for PTX Series routers in Junos OS Release 13.3.

Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[show chassis fpc errors | 1391](#)

[Configuring FPC Error Levels and Actions | 213](#)

max-power

IN THIS SECTION

- [Syntax | 332](#)
- [PTX10008 | 332](#)
- [PTX10001-36MR | 333](#)
- [Description | 333](#)
- [Options | 333](#)
- [Required Privilege Level | 333](#)
- [Release Information | 334](#)

Syntax

```
max-power watts;
```

PTX10008

```
[edit chassis fpc slot-number]
```

PTX10001-36MR

```
[edit chassis psm]
```

Description

For the PTX10001-36MR router— Override the maximum power value of a power supply module (PSM) by specifying a lesser power value (in watts). You can use this configuration to monitor the power consumed in real time against the configured value. The system raises a chassis alarm when the consumption exceeds the configured power.

For the PTX10008 router—Override the default power budget allocated to the line card by specifying a power value (in watts). You can use the command **show chassis fpc detail** to view the maximum power consumption by a line card.

Options

watts—Specify power value (in watts) with which you want to override the default/maximum power.

NOTE: On the PTX10008 router, if you configure a power value (in watts) that is greater than the maximum value supported by the line card, the power budget for the line card is set to its supported maximum. On the PTX10001-36MR router, if you configure a power value (in watts) that is greater than the maximum value supported by the PSM, the configuration does not work.

Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

Release Information

The **max-power *watts*** statement introduced in Junos OS Evolved Release 20.1R2 for PTX10008 routers.

The **max-power *watts*** statement introduced in Junos OS Evolved Release 20.2R1 for PTX10001-36MR routers.

RELATED DOCUMENTATION

| [show chassis fpc | 1330](#)

minor

IN THIS SECTION

- [Syntax | 334](#)
- [Hierarchy Level | 335](#)
- [Description | 335](#)
- [Required Privilege Level | 335](#)
- [Release Information | 335](#)

Syntax

```
minor {  
  threshold threshold-value;  
  action {  
    alarm;  
    disable-pfe;  
    get-state;  
    log;  
    offline;  
    reset;
```

```

    }
}

```

Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289]

[edit chassis]

Description

Severity level of the error. An error that results in the loss of a single packet but is fully recoverable is a minor error. The severity level of an error cannot be configured by a user.

The other statements are explained separately.

Required Privilege Level

interface	To view this statement in the configuration.
interface-control	To add this statement to the configuration.

Release Information

Statement introduced for PTX Series routers in Junos OS Release 13.3.

Statement introduced for MX240, MX480, MX960, and MX2020 routers in Junos OS Release 14.2.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[show chassis fpc errors | 1391](#)

[Configuring FPC Error Levels and Actions | 213](#)

network-services

IN THIS SECTION

- [Syntax | 336](#)
- [Hierarchy Level | 336](#)
- [Description | 336](#)
- [Default | 337](#)
- [Options | 337](#)
- [Required Privilege Level | 337](#)
- [Release Information | 337](#)

Syntax

```
network-services (ethernet | enhanced-ethernet | ip | enhanced-ip | lan);
```

Hierarchy Level

```
[edit chassis]
```

Description

Set the router's network services to a specific mode of operation. On MX240, MX480, and MX960 routers, MPC5E and MPC7E power on only if the network services mode configured is **enhanced-ip** or **enhanced-ethernet**.

MX2010 and MX2020 support only **enhanced-ip** and **enhanced-ethernet** network services modes.

Default

- MX80, MX104, MX2010, MX2020—**enhanced-ip**
- MX240, MX480, MX960—**ip**

Options

ethernet—Set the router's network services to Ethernet and use standard, compiled firewall filter format.

enhanced-ethernet—Set the router's network services to enhanced Ethernet and use enhanced mode capabilities. Only MPCs and MS-DPCs are powered on in the chassis.

ip—Set the router's network services to Internet Protocol and use standard, compiled firewall filter format.

enhanced-ip—Set the router's network services to enhanced Internet Protocol and use enhanced mode capabilities. Only MPCs and MS-DPCs are powered on in the chassis. Non-service DPCs do not work with enhanced network services mode options. This feature is enabled by default on MX80, MX104, MX2010, and MX2020 Universal Routing Platforms.

lan—Set the router's network services to LAN and use standard, compiled firewall filter format. Reboot the system after setting the router's network services to LAN.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 8.5.

enhanced-ethernet and **enhanced-ip** options introduced in Junos OS Release 11.4.

limited-ifl-scaling option introduced in Junos OS Release 15.1R3 for MX Series routers.

RELATED DOCUMENTATION

[Network Services Mode Overview](#)

[Firewall Filters and Enhanced Network Services Mode Overview](#)

[Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers](#)

[Configuring Enhanced IP Network Services for a Virtual Chassis](#)

[Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode](#)

no-power-budget

IN THIS SECTION

- [Syntax | 338](#)
- [Hierarchy Level | 338](#)
- [Description | 339](#)
- [Required Privilege Level | 339](#)
- [Release Information | 339](#)

Syntax

```
no-power-budget;
```

Hierarchy Level

```
[edit chassis]
```

Description

Disable power budgeting. If you disable the power management on the PTX10008, the router keeps all the FRUs powered on by default. The router does not move any of the FRUs to offline state even if it does not have sufficient power. However, in case of a power shortage, a power redundancy alarm is raised as shown in the following example.

```
user@router> show system alarms

1 alarm currently active

Alarm time Class Description

2019-07-25 21:16:25 UTC Major chassis No Redundant Power
```

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Evolved Release 20.1R2.

offline-on-fabric-bandwidth-reduction

IN THIS SECTION

- [Syntax | 340](#)
- [Hierarchy Level | 340](#)

- [Description | 340](#)
- [Required Privilege Level | 340](#)
- [Release Information | 340](#)

Syntax

```
offline-on-fabric-bandwidth-reduction;
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configure an FPC with degraded fabric bandwidth offline, to avoid causing a null route in the chassis for an extended time.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Disabling an FPC with Degraded Fabric Bandwidth | 45](#)

[Managing Bandwidth Degradation | 44](#)

on-disk-failure (Chassis Routing Engine)

IN THIS SECTION

- [Syntax | 341](#)
- [Hierarchy Level | 341](#)
- [Description | 342](#)
- [Options | 342](#)
- [Required Privilege Level | 342](#)
- [Release Information | 342](#)

Syntax

```
on-disk-failure {  
    disk-failure-action (halt | reboot);  
}
```

Hierarchy Level

```
[edit chassis routing-engine]
```

Description

Instruct the router to halt or reboot if it detects hard disk errors on the Routing Engine.

Options

The remaining statement is explained separately. See [CLI Explorer](#).

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before JUNOS Release 7.4.

The **disk-failure-action** statement added in JUNOS Release 9.0.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 227

on-error

IN THIS SECTION

- [Syntax](#) | 343
- [Hierarchy Level](#) | 343

- Description | 343
- Options | 343
- Required Privilege Level | 344
- Release Information | 344

Syntax

```
on-error {  
    raise-alarm;  
    power (cycle | off);  
    write-coredump;  
}
```

Hierarchy Level

```
[edit chassis cfeb slot-number]  
[edit chassis feb slot-number]  
[edit chassis fpc slot-number sanity-poll]  
[edit chassis lcc number fpc number sanity-poll] (Routing Matrix)
```

Description

Instruct the FPC or FEB or CFEB to perform actions during an error condition.

Options

raise-alarm—Generate and display a chassis alarm in case of an error.

power cycle—Reboot the FPC or FEB or CFEB after generating a core file. This statement is useful in case of temporary software errors that are eliminated after reboot.

power off—Halt the FPC or FEB or CFEB and keep it offline. This statement is useful in case of permanent hardware failures.



CAUTION: The **power off** statement halts the FPC or FEB or CFEB. Ensure that you have backup paths through different FPC or FEB or CFEB to avoid service outage.

NOTE: The **power cycle** and **power off** statements are mutually exclusive: You can configure either the **power cycle** or the **power off** statement for an error.

write-coredump—Trigger the core file in case of an error.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Configuring Sanity Polling](#) | 222

[sanity-poll](#) | 372

[retry-count](#) | 368

oss-map

IN THIS SECTION

- [Syntax | 345](#)
- [Hierarchy Level | 345](#)
- [Description | 345](#)
- [Options | 346](#)
- [Required Privilege Level | 346](#)
- [Release Information | 346](#)

Syntax

```
oss-map {  
    model-name t640|t1600;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure the operations support systems (OSS) mapping feature to map a T4000 chassis to a T1600 chassis or a T640 chassis, so that the T4000 chassis is represented as a T1600 chassis or a T640 chassis, respectively. The configuration helps prevent requalifying the T1600 chassis and T640 chassis as a new chassis on the OSS.

Options

model-name t640—Perform OSS mapping on a T4000 chassis to represent it as a T640 chassis, thereby overriding the chassis model name as displayed in the output of the **show chassis hardware**, the **show snmp mib walk system**, and the **show snmp mib walk jnxBoxAnatomy** operational commands.

model-name t1600—Perform OSS mapping on a T4000 chassis to represent it as a T1600 chassis, thereby overriding the chassis model name as displayed in the output of the **show chassis hardware**, the **show snmp mib walk system**, and the **show snmp mib walk jnxBoxAnatomy** operational commands.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

[Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis | 248](#)

[Example: Configuring a T4000 Chassis to Represent a T640 Chassis | 250](#)

[show chassis oss-map | 1442](#)

packet-scheduling

IN THIS SECTION

● [Syntax | 347](#)

● [Hierarchy Level | 347](#)

- Description | 347
- Default | 347
- Options | 348
- Required Privilege Level | 348
- Release Information | 348

Syntax

```
(packet-scheduling | no-packet-scheduling);
```

Hierarchy Level

```
[edit chassis]
```

Description

(M 160 routers only) Enable packet-scheduling mode, in which the Packet Director application-specific integrated circuit (ASIC) schedules packet dispatches to compensate for transport delay differences. This preserves the interpacket gaps as the packets are distributed from the Packet Director ASIC to the Packet Forwarding Engine.

Default

no-packet-scheduling

NOTE: The packet-scheduling feature is available on M160 routers only.

Options

no-packet-scheduling—Do not schedule packets.

packet-scheduling—Schedule packets to preserve interpacket gaps.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Enabling an M160 Router to Operate in Packet Scheduling Mode | 246](#)

pem (M320 Routers)

IN THIS SECTION

- [Syntax | 349](#)
- [Hierarchy Level | 349](#)
- [Description | 349](#)
- [Options | 349](#)
- [Required Privilege Level | 349](#)
- [Release Information | 350](#)

Syntax

```
pem {  
    minimum number;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure the minimum number of Power Entry Modules (PEMs) on an M320 router. With this configuration, PEM absent alarms are generated only if the PEM count falls below the minimum specified.

Options

minimum *number*—Minimum number of PEMs on the router.

- **Range:** 0 through 3

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs](#)

[sib](#) | [376](#)

pem (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

IN THIS SECTION

- [Syntax](#) | [350](#)
- [Hierarchy Level](#) | [351](#)
- [Description](#) | [351](#)
- [Options](#) | [351](#)
- [Required Privilege Level](#) | [351](#)
- [Release Information](#) | [351](#)

Syntax

```
pem {  
    feeds number-of-input-feeds;  
    input-current amps-in-each-feed;  
}
```

Hierarchy Level

```
[edit chassis]
[edit chassis lcc lcc-number] (Routing Matrix)
```

Description

Configure the power supply parameters of the six-input DC power supply on T640, T1600, or T4000 routers.

Options

feeds *number-of-input-feeds*—Number of input feeds connected to the six-input DC power supply.
(For T4000 routers only) **input-current** *amps-in-each-feed*—Input current (in amperes) in each feed.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.1.

Option **feeds** introduced in Junos OS Release 12.1.

Option **input-current** introduced for T4000 routers in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Configuring the Six-Input DC Power Supply on T Series Routers](#) | 102

pem-absence

IN THIS SECTION

- [Syntax | 352](#)
- [Hierarchy Level | 352](#)
- [Description | 352](#)
- [Options | 353](#)
- [Required Privilege Level | 353](#)
- [Release Information | 353](#)

Syntax

```
pem-absence ignore;
```

Hierarchy Level

```
[edit chassis alarm]
```

Description

Configure **pem-absence ignore** to ignore the red alarm of missing power supply unit. To delete the configuration use **[# delete chassis alarm pem-absence]** command.

Options

ignore—Ignores the power supply module absence alarm.

Required Privilege Level

Release Information

Statement introduced in Junos OS Release 20.3R1 for SRX4100 and SRX4200.

Statement introduced in Junos OS Release 20.4R1 for SRX1500 and SRX4600.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms | 137](#)

[show chassis alarms | 481](#)

pfe power off

IN THIS SECTION

- [Syntax | 354](#)
- [Hierarchy Level | 354](#)
- [Description | 354](#)
- [Default | 354](#)
- [Options | 354](#)
- [Required Privilege Level | 355](#)
- [Release Information | 355](#)

Syntax

```
pfe pfe-id power (off | on);
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Power on or power off a Packet Forwarding Engine in a running system, or keep a Packet Forwarding Engine powered off when the FPC comes online. You need to apply this command to both the Packet Forwarding Engines in the ASIC to be able to commit the configuration.

On MX series routers with MPC10E-15C-MRATE, you can power off or power on only the Packet Forwarding Engine 2. The Packet Forwarding Engines 0 and 1 do not support this command. On the MPC10E-15C-MRATE, operating the Packet Forwarding Engine 2 requires the Packet Forwarding Engines 0 and 1 to be functional. You can use the command **show chassis fpc *fpc-slot* detail** to view the Packet Forwarding Engine power ON/OFF status and bandwidth for the individual Packet Forwarding Engines in the MPC10E-15C-MRATE.

Default

on

Options

pfe *pfe-id* The ID of the Packet Forwarding Engine to be powered off.

NOTE:

- For the MPC10E-15C-MRATE line card, only the Packet Forwarding Engine 2 is applicable.

power (off | on) Power off or on the selected Packet Forwarding Engine.

- **Default:** on

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 19.1R1.

RELATED DOCUMENTATION

[Managing Power | 94](#)

[MPC10E-15C-MRATE](#)

pic (M Series and T Series Routers)

IN THIS SECTION

● [Syntax | 356](#)

● [Hierarchy Level | 357](#)

- Description | 357
- Options | 357
- Required Privilege Level | 357
- Release Information | 357

Syntax

```
pic pic-number {
  cel {
    el port-number {
      channel-group group-number timeslots slot-number;
    }
  }
  ct3 {
    port port-number {
      t1 link-number {
        channel-group group-number timeslots slot-number;
      }
    }
  }
  framing (sdh | sonet);
  idle-cell format {
    itu-t;
    payload-pattern payload-pattern-byte;
  }
  inline-services {
    bandwidth (1g | 10g);
  }
  max-queues-per-interface (8 | 4);
  no-concatenate;
}
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configure properties for an individual PIC.

Options

pic-number—Slot number in which the PIC is installed.

- **Range:** 0 through 3

The remaining statements are explained separately. Search for a statement in [CLI Explorer](#) or click a linked statement in the Syntax section for details.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs](#)

[Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized \(Multiplexed\) Mode](#)

Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots

Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs

pic (MX Series Routers)

IN THIS SECTION

- [Syntax | 358](#)
- [Hierarchy Level | 359](#)
- [Description | 359](#)
- [Options | 360](#)
- [Required Privilege Level | 360](#)
- [Release Information | 360](#)

Syntax

```
pic pic-number {
  account-layer2-overhead;
  adaptive-services {
    (layer-2 | layer-3);
  }
  aggregate-ports;
  cel {
    e1 port-number {
      channel-group group-number timeslots slot-number;
    }
  }
  channelization;
  ct3 {
    port port-number {
      t1 link-number {
        channel-group group-number timeslots slot-number;
      }
    }
  }
}
```

```

    }
  }
}
egress-policer-overhead bytes;
framing (sdh | sonet);
idle-cell format {
    itu-t;
    payload-pattern payload-pattern-byte;
}
ingress-policer-overhead bytes;
inline-services {
    bandwidth (1g | 10g);
}
max-queues-per-interface (8 | 4);
mlfr-uni-nni-bundles number;
mlfr-uni-nni-bundles-inline number;
multi-link-layer-2-inline;
no-concatenate;
no-multi-rate;
pic-type OID of PIC type;
sparse-dlcis;
tunnel-services (Chassis) {
    bandwidth (1g | 10g | 20g | 40g);
    tunnel-only;
}
vtmapping (klm | itu-t);
}

```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configure properties for an individual PIC.

Options

pic-number—Slot number in which the PIC is installed.

- **Range:** 0 through 3

The remaining statements are explained separately.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

multi-link-layer-2-inline and **mlfr-uni-nni-bundles-inline** options introduced in Junos OS Release 14.1.

RELATED DOCUMENTATION

[Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs](#)

[Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized \(Multiplexed\) Mode](#)

[Configuring the Junos OS to Support Channelized DS3-to-DS0 Naming for Channel Groups and Time Slots](#)

[Configuring the Junos OS to Support Channel Groups and Time Slots for Channelized E1 PICs](#)

Enabling Inline Service Interfaces

preserve-fpc-poweron-sequence

IN THIS SECTION

- [Syntax | 361](#)
- [Hierarchy Level | 361](#)
- [Description | 361](#)
- [Required Privilege Level | 362](#)
- [Release Information | 362](#)

Syntax

```
preserve-fpc-poweron-sequence;
```

Hierarchy Level

```
[edit chassis]
```

Description

Preserve the sequence in which the line cards—specifically, MPCs on MX series routers—on a router or switch are powered on when the device is restarted. During a system reboot, the line cards are brought online in the sequence specified in the system log file `/var/log/ fpc_poweron_seq.log`. When a line card goes offline, its entry is removed from the log file. You can use the `show chassis power sequence` command to view the configured power-on sequence.

NOTE:

- If both **preserve-fpc-poweron-sequence** and [fru-poweron-sequence](#) statements are configured, then the power-on sequence specified in the [fru-poweron-sequence](#) statement takes precedence.
- If **preserve-fpc-poweron-sequence** is configured and [fru-poweron-sequence](#) not configured, then the line cards are powered on in the sequence preserved in the system log file `/var/log/fpc_poweron_seq.log`.
- If neither of these statements is configured, then the line cards are powered on in the ascending order of their slot numbers. Line cards whose slot numbers are not specified in the log file are powered on in the ascending order of their slot numbers.

Required Privilege Level

chassis—To view this statement in the configuration.

chassis-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[fru-poweron-sequence](#) | 315

[show chassis power sequence](#) | 1520

[Understanding How Dynamic Power Management Enables Better Utilization of Power](#) | 94

redundancy-mode

IN THIS SECTION

- [Syntax | 363](#)
- [Hierarchy Level | 363](#)
- [Description | 363](#)
- [Options | 364](#)
- [Required Privilege Level | 364](#)
- [Release Information | 364](#)

Syntax

```
redundancy-mode (increased-bandwidth | redundant)
```

Hierarchy Level

```
[edit chassis fabric]
```

Description

Configure the active control boards to be in redundancy mode or increased fabric bandwidth mode.

In increased fabric bandwidth mode, which is the default behavior for MX Series routers with Switch Control Board (SCB), the maximum number of available fabric planes are used. The MX Series routers that contain the Enhanced SCB—SCBE—and the MPC3E, the control boards operate in redundancy fabric mode (all the FPCs use 4 fabric planes as active planes) by default.

In increased fabric bandwidth mode, which is the default mode on the SRX5600 and SRX5800 Services Gateways with the [SRX5K-SCB4](#) Switch Control Board, six active planes (without any spare planes) are used. With the redundant fabric mode, the SRX5600 and SRX5800 Services Gateways use four active planes and two spare planes.

Options

increased-bandwidth	Enable increased fabric bandwidth mode for the control boards, which causes all the available fabric planes to be used.
redundant	Enable redundancy mode for the control boards, which causes all the FPCs to use 4 fabric planes as active planes.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.2.

RELATED DOCUMENTATION

[Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers](#) | 34

[Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers](#) | 31

[MX Series Routers Fabric Resiliency](#) | 28

[show chassis fabric redundancy-mode](#) | 1195

[Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers](#) | 52

restart chassis-control

IN THIS SECTION

- [Syntax | 365](#)
- [Syntax \(MX Series Routers\) | 365](#)
- [Syntax \(PTX Series\) | 366](#)
- [Description | 366](#)
- [Options | 366](#)
- [Required Privilege Level | 367](#)
- [Output Fields | 367](#)
- [Sample Output | 367](#)
- [Release Information | 367](#)

Syntax

```
restart chassis-control  
<lcc number | sfc number>  
<gracefully | immediately | soft>
```

Syntax (MX Series Routers)

```
restart chassis-control  
<gracefully | immediately | soft>
```

Syntax (PTX Series)

```
restart chassis-control
<gracefully | immediately | soft>
```

Description

Restart the chassis management process.

NOTE: When GRES is configured and the **restart chassis-control** command is executed on a TX Matrix Plus router with 3D SIBs, we cannot ascertain which Routing Engine becomes a primary. This is due to the chassisd restart. The chassis process or chassisd is responsible for maintaining and retaining primary role and when it is restarted, the new chassisd is processed based on the router load. This results in one of the Routing Engines being made primary.

Options

- icc *number*** (Routing matrix only) (Optional) Restart the software process for a specific T640 routing node that is connected to a TX Matrix platform. Replace ***number*** with a value from **0** through **3**.
- sfc *number*** (TX Matrix Plus routers only) (Optional) Restart the software process on the TX Matrix Plus router (or switch-fabric chassis). Replace ***number*** with **0**.
- gracefully** (Optional) Restart the software process.
- immediately** (Optional) Immediately restart the software process.

NOTE: For PTX Series routers, when the **restart chassis-control** command is executed with the **immediately** option set, the PFE's state will be reset to enabled regardless of whether or not the PFE's state is set to disabled when the action occurs.

soft (Optional) Reread and reactivate the configuration without completely restarting the software processes. For example, Border Gateway Protocol (BGP) peers stay up and the routing table stays constant. Omitting this option results in a graceful restart of the software process.

Required Privilege Level

reset

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

restart chassis-control gracefully

```
user@host> restart chassis-control gracefully
Chassis control process started, pid 1631
```

restart chassis-control soft

```
user@host> restart chassis-control soft
Chassis control process started, pid 1653
```

Release Information

Command introduced before JUNOS Release 7.4.

RELATED DOCUMENTATION

| [restart](#)

retry-count

IN THIS SECTION

- [Syntax | 368](#)
- [Hierarchy Level | 368](#)
- [Description | 369](#)
- [Options | 369](#)
- [Required Privilege Level | 369](#)
- [Release Information | 369](#)

Syntax

```
retry-count number;
```

Hierarchy Level

```
[edit chassis cfeb slot-number]  
[edit chassis cluster redundancy-group group-number ip-monitoring ]  
[edit chassis feb slot-number]  
[edit chassis fpc slot-number sanity-poll]  
[edit chassis lcc number fpc number sanity-poll] (Routing Matrix)
```


Description

Number of times sanity polling periodically checks for an error condition in the FPC.

Options

number—Number of times sanity polling is allowed to check for an error condition.

- **Range:** 1 through 30
- **Default:** 10

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Configuring Sanity Polling](#) | 222

[sanity-poll](#) | 372

[on-error](#) | 342

routing-engine (Chassis)

IN THIS SECTION

- [Syntax | 370](#)
- [Hierarchy Level | 371](#)
- [Description | 371](#)
- [Options | 371](#)
- [Required Privilege Level | 372](#)
- [Release Information | 372](#)

Syntax

```
routing-engine {
  on-disk-failure {
    disk-failure-action (halt | reboot);
  }
  disk {
    ssd-series ssd-series-name {
      id id-num {
        id-threshold id-threshold-value;
        id-value (norm | raw);
        id-flag (high | low);
      }
    }
    smart-check {
  }
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure a Routing Engine to halt or reboot automatically when a hard disk error occurs. A hard disk error may cause a Routing Engine to enter a state in which it responds to local pings and interfaces remain up, but no other processes are responding. Rebooting or halting prevents this. You can also configure the device to perform certain health checks on the Routing Engine solid-state drive (SSD) and log a health event or raise an alarm in case a predefined health attribute threshold is breached.

Options

- | | |
|--|--|
| disk | Configure health check parameters for the SSD. |
| ssd-series <i>ssd-series-name</i> | Specify the SSD series name. |
| id <i>id-num</i> | Specify the ID of the SSD smart attribute for which you are configuring the health check. You can view the smart attributes and their IDs of an SSD by using the command show vmhost hard-disk-test status disk /dev/sda . <ul style="list-style-type: none"> • Range: 1 - 255 |
| id-threshold | Specify the SSD smart attribute threshold, breaching which will result in the device logging a health event or raising an alarm. |
| id-value | Choose the attribute value type from the following options: <ul style="list-style-type: none"> • norm—Use this option to instruct the device to consider normalized value for the specified smart attribute. • raw—Use this option to instruct the device to consider raw value for the specified smart attribute. |
| id-flag | Choose the attribute value flag from the following options: |

- high—The software considers the threshold to be breached if the value is greater than smart threshold.
- low—The software considers the threshold to be breached if the value is less than smart threshold.

smart-check Configure the device to raise alarm when an error occurs. See ["smart-check" on page 379](#).

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

The **disk-failure-action** statement added in Junos OS Release 9.0.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 227

sanity-poll

IN THIS SECTION

- [Syntax](#) | 373
- [Hierarchy Level](#) | 373
- [Description](#) | 373

- [Options | 374](#)
- [Required Privilege Level | 374](#)
- [Release Information | 374](#)

Syntax

```
sanity-poll {  
    retry-count number;  
    on-error {  
        raise-alarm;  
        power (cycle | off);  
        write-coredump;  
    }  
}
```

Hierarchy Level

```
[edit chassis cfeb slot-number]  
[edit chassis feb slot-number]  
[edit chassis fpc slot-number]  
[edit chassis lcc number fpc number] (Routing Matrix)
```

Description

Enable sanity polling and start periodic sanity checking for a particular FPC. The periodic sanity check includes checking for error conditions such as “register sanity issues,” “high temperature,” “hardware failure,” and so on in the FPC.

NOTE: Currently, periodic sanity check is performed only on the routing chip register.

Options

The remaining statements are explained separately. See [CLI Explorer](#).

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Configuring Sanity Polling](#) | 222

[retry-count](#) | 368

[on-error](#) | 342

sfm (Chassis)

IN THIS SECTION

- [Syntax](#) | 375
- [Hierarchy Level](#) | 375
- [Description](#) | 375
- [Options](#) | 375
- [Required Privilege Level](#) | 375
- [Release Information](#) | 376

Syntax

```
sfm slot-number power off;
```

Hierarchy Level

```
[edit chassis]
```

Description

For routers with SFMs, configure an SFM to stay offline.

By default, if you use the **request chassis sfm** CLI command to take an SFM offline, the SFM will attempt to restart when you enter a **commit** CLI command. To prevent a restart, configure an SFM to stay offline. This feature is useful for repair situations. The SFM remains offline until you delete this statement.

Options

slot-number—Slot number in which the SFM is installed.

power off—Take the SFM offline and configure it to remain offline.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring an SFM to Stay Offline | 226](#)

[High Availability User Guide](#)

sib

IN THIS SECTION

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- [Hierarchy Level | 377](#)
- [Description | 377](#)
- [Options | 377](#)
- [Required Privilege Level | 377](#)
- [Release Information | 377](#)

Syntax

```
sib {  
    minimum number;  
}
```


Hierarchy Level

```
[edit chassis]
```

Description

Configure the minimum number of SIBs on an M320 router. With this configuration, SIB absent alarms are generated only if the SIB count falls below the minimum specified.

Options

number—Minimum number of SIBs on the router.

- **Range:** 0 through 3

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs](#)

[pem \(M320 Routers\) | 348](#)

slow-pfe-alarm

IN THIS SECTION

- [Syntax | 378](#)
- [Hierarchy Level | 378](#)
- [Description | 378](#)
- [Required Privilege Level | 378](#)
- [Release Information | 379](#)

Syntax

```
slow-pfe-alarm;
```

Hierarchy Level

```
[edit chassis]
```

Description

Enable the slow Packet Forwarding Engine alarm on a M Series, MX Series, or a T Series router.

Required Privilege Level

routing—To view this statement in the configuration.

routing-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 12.1R6, 12.2R5, 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

[Configuring Slow Packet Forwarding Engine Alarm](#) | 200

smart-check

IN THIS SECTION

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- [Hierarchy Level](#) | 380
- [Description](#) | 380
- [Options](#) | 380
- [Required Privilege Level](#) | 381
- [Release Information](#) | 381

Syntax

```
smart-check {  
  ssd-series ssd-series-name {  
    id id-num {  
      id-threshold id-threshold-value;  
      id-value (norm | raw);  
      id-flag (high | low);  
    }  
  }  
}
```

Hierarchy Level

```
[edit chassis routing-engine disk]
```

Description

Configure the device to perform health monitoring on the Routing Engine disk and raise alarm when an error occurs. You can specify threshold value for each smart attribute of the solid-state drive (SSD). The device raises an alarm when the threshold is breached. You can view the alarms by using the command `show chassis alarms`.

Options

disk	Configure health check parameters for the SSD.
ssid-series <i>ssid-series-name</i>	Specify the SSD series name.
id <i>id-num</i>	Specify the ID of the SSD smart attribute for which you are configuring the health check. You can view the smart attributes and their IDs of an SSD by using the command <code>show vmhost hard-disk-test status disk /dev/sda</code> . <ul style="list-style-type: none"> • Range: 1 - 255
id-threshold	Specify the SSD smart attribute threshold, breaching which will result in the device logging a health event or raising an alarm.
id-value	Choose the attribute value type from the following options: <ul style="list-style-type: none"> • norm—Use this option to instruct the device to consider normalized value for the specified smart attribute. • raw—Use this option to instruct the device to consider raw value for the specified smart attribute.
id-flag	Choose the attribute value flag from the following options:

- high—The software considers the threshold to be breached if the value is greater than smart threshold.
- low—The software considers the threshold to be breached if the value is less than smart threshold.

smart-check

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 19.2R1.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 227

syslog (Chassis)

IN THIS SECTION

- [Syntax](#) | 382
- [Hierarchy Level](#) | 382
- [Description](#) | 382
- [Options](#) | 382
- [Required Privilege Level](#) | 383

Syntax

```
syslog {  
    facility {  
        severity;  
        destination destination;  
    }  
}
```

Hierarchy Level

```
[edit chassis fpc slot-number pic pic-number adaptive-services service-package  
extension-provider]
```

Description

Enable PIC system logging to record or view system log messages on a specific PIC. The system log information is passed to the kernel for logging in the `/var/log` directory.

Options

facility—Group of messages that are either generated by the same software process or concern a similar condition or activity. Possible values include the following: **daemon**, **external**, **kernel**, and **pfe**.

severity—Classification of effect on functioning. Possible values are the following options:

- **any**—Include all severity levels.
- **none**—Disable logging of the associated facility to a destination.

- **emergency**—System panic or other condition that causes the routing platform to stop functioning.
- **alert**—Conditions that require immediate correction, such as a corrupted system database.
- **critical**—Critical conditions, such as hard errors.
- **error**—Error conditions that generally have less serious consequences than errors in the emergency, alert, and critical levels.
- **warning**—Conditions that warrant monitoring.
- **notice**—Conditions that are not errors but might warrant special handling.
- **info**—Events or nonerror conditions of interest.

The remaining statement is explained separately. See [CLI Explorer](#).

Required Privilege Level

`interface`—To view this statement in the configuration.

`interface-control`—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 9.2.

Options `daemon` and `kernel` (for *facility*) introduced in Junos OS Release 9.5.

thermal-health-check

IN THIS SECTION

- [Syntax | 384](#)
- [Hierarchy Level | 384](#)
- [Description | 384](#)

- Options | 384
- Required Privilege Level | 385
- Release Information | 385

Syntax

```
thermal-health-check {  
    action-onfail [auto-shutdown | none]  
    shutdown-timer value;  
    power-threshold value;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Enable thermal health check, and configure an action to be taken on detection of a thermal health event such as power leakage. The thermal check feature monitors the PSM power output and FRU power consumption and if it detects that the PSM power output exceeds the FRU power consumption by a user-defined threshold, it assumes that there is a thermal health event, and takes an action based on the user configuration.

Options

action-onfail Choose an action to be performed on detection of a thermal health event. The following options are available:

- **auto-shutdown**—The software shuts down the system when a thermal health event is detected.
- **none**—The software raises a major alarm when a thermal health event is detected.

shutdown-timer *value*

Duration (in seconds) after which the system is shut down on detection of a thermal health event, if **auto-shutdown** is set as **action-onfail**.

- **Range:** 10 through 900 seconds
- **Default:** 900 seconds

power-threshold *value*

Power leak threshold (in watts) considered for the configured action to be taken. This means the configured action is taken if the power leak exceeds by the value configured here (or if the PSM output power exceeds the FRU power consumption by the set threshold value).

- **Range:** 600W through 1000W
- **Default:** 600W

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 20.1R1.

RELATED DOCUMENTATION

[Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog](#) | 228

[watchdog \(PSM\)](#) | 390

threshold

IN THIS SECTION

- [Syntax | 386](#)
- [Hierarchy Level | 386](#)
- [Description | 387](#)
- [Default | 387](#)
- [Options | 387](#)
- [Required Privilege Level | 387](#)
- [Release Information | 388](#)

Syntax

```
threshold threshold-value;
```

Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289 "fatal" on page 296]

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289 "major" on page 330]

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289 "minor" on page 334]

[edit chassis "error " on page 289 "fatal" on page 296]

[edit chassis "error " on page 289 "major" on page 330]

[edit chassis "error " on page 289 "minor" on page 334]

Description

Configure the threshold value at which to take action. If the severity level of the error is fatal, the action is carried out only once when the total number of errors crosses the threshold value. If the severity level of the error is major, the action is carried out once after the occurrence crosses the threshold. If the severity level is minor, the action is carried out as many times as the value specified by the threshold. For example, when the severity level is minor, and you have configured the threshold value as 10, the action is carried out after the tenth occurrence.

NOTE: You can set the threshold value to 0 for errors with severity level as minor. This implies that no action is taken for that error. You cannot set the threshold value to 0 for errors with severity level as major or fatal.

Default

By default, the error count for fatal and major actions is 1. The default error count for minor actions is 10.

Options

number Specify the threshold of error counts at which to take action.

- **Range:** 0 through 4,294,967,295

Required Privilege Level

interface To view this statement in the configuration.

interface-control To add this statement to the configuration.

Release Information

Statement introduced for PTX Series routers in Junos OS Release 13.3.

Statement introduced for MX240, MX480 MX960, and MX2020 routers in Junos OS Release 14.2.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[show chassis fpc errors | 1391](#)

[Configuring FPC Error Levels and Actions | 213](#)

ucode-imem-remap

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- [Syntax | 388](#)
- [Hierarchy Level | 389](#)
- [Description | 389](#)
- [Required Privilege Level | 389](#)
- [Release Information | 389](#)

Syntax

```
ucode-imem-remap;
```

Hierarchy Level

```
[edit chassis feb slot number]
```

Description

M120 routers with a single type-1 FPC mapped to an FEB support a microcode remap feature to resolve microcode overflow resulting in bad PIC combinations.

You can enable the microcode remap by using the **ucode-imem-remap** statement at the **[edit chassis feb slot *number*]** hierarchy level. The default microcode map will continue to be available if the **ucode-imem-remap** statement is not configured.

NOTE: On M120 routers, the FEB is automatically restarted once the **ucode-imem-remap** statement is configured and committed.

Required Privilege Level

interfaces—To view this statement in the configuration.

interfaces-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 10.4R2.

watchdog (PSM)

IN THIS SECTION

- [Syntax | 390](#)
- [Hierarchy Level | 390](#)
- [Description | 390](#)
- [Options | 391](#)
- [Required Privilege Level | 391](#)
- [Release Information | 391](#)

Syntax

```
watchdog{
    timeout value;
    pat-frequency value;
}
```

Hierarchy Level

```
[edit chassis psm]
```

Description

Enable the power supply module (PSM) watchdog feature. Generally, Junos detects the thermal event health events and takes the required action as per user configuration. However, if a thermal health event causes Junos to go down, the PSM watchdog feature detects it and shuts down the router.

NOTE: The PSM watchdog feature works only if all the online PSMs in the router support the feature.

Options

timeout *value* Specify the watchdog timer in seconds. After the specified duration, the watchdog expires.

- **Range:** 600 through 900 seconds
- **Default:** 900 seconds

pat-frequency *value* Specify the frequency (in minutes) at which the software resets the watchdog counter. If the watchdog counter doesn't get reset because of reasons such as Routing Engine crash and system reboot, on watchdog timer expiry, the PSM turns off the output power.

- **Range:** 1 through 3 minutes
- **Default:** 1 minute

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 20.1R1.

RELATED DOCUMENTATION

[Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog](#) | 228

10

CHAPTER

Administrative Commands

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request chassis spmb restart | 462

set chassis display message | 466

clear chassis alarms fabric degraded

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Syntax (TX Matrix Plus Router with 3D SIBs)

```
clear chassis alarms fabric degraded lcc number fpc number
```

Description

Clear the fabric degraded alarm for an FPC.

Options

**lcc
*number*** Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

fpc number Flexible PIC Concentrator (FPC) slot number. On a TX Matrix Plus router in the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, specify the number of a T1600 or T4000 router by using the **lcc number** option and replace **fpc number** with a value from 0 through 7.

Required Privilege Level

clear

Sample Output

show system alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show system alarms

sfc0-re0:
-----
2 alarms currently active
Alarm time           Class  Description
2013-05-08 18:13:58 UTC Major  LCC 0 Major Errors
2013-05-08 17:48:46 UTC Major  LCC 7 Major Errors

lcc0-rel:
-----
3 alarms currently active
Alarm time           Class  Description
2013-05-08 17:35:34 UTC Minor  SIB 3 Not Online
2013-05-08 17:35:34 UTC Minor  SIB 2 Not Online
2013-05-08 18:19:24 UTC Major  FPC 5 degraded fabric condition detected

user@host> clear chassis alarms fabric degraded
lcc 0 fpc 5
lcc0-rel:
-----

```

```
user@host> show system alarms
```

```
sfc0-re0:
```

```
-----
```

```
2 alarms currently active
```

Alarm time	Class	Description
2013-05-08 18:13:58 UTC	Major	LCC 0 Major Errors
2013-05-08 17:48:46 UTC	Major	LCC 7 Major Errors

```
lcc0-rel:
```

```
-----
```

```
2 alarm currently active
```

Alarm time	Class	Description
2013-05-08 17:36:34 UTC	Minor	SIB 3 Not Online
2013-05-08 17:36:34 UTC	Minor	SIB 2 Not Online

Release Information

Command introduced in Junos OS Release 13.2.

RELATED DOCUMENTATION

| *show system alarms*

clear chassis display message

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- [Syntax | 398](#)
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- [Syntax \(QFabric Systems\) | 399](#)
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- [Options | 399](#)
- [Required Privilege Level | 400](#)
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- [Sample Output | 400](#)
- [Release Information | 401](#)

Syntax

```
clear chassis display message
```

Syntax (TX Matrix Router)

```
clear chassis display message  
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
clear chassis display message  
<lcc number | sfc number>
```

Syntax (QFabric Systems)

```
clear chassis display message
<node-device name | interconnect-device name>
```

Description

(M40e, M160, M320, T Series routers, EX Series, and QFabric systems only) Clear or stop a text message on the craft interface display, which is on the front of the router or switch or on the LCD panel display on the router or switch. The craft interface alternates the display of text messages with standard craft interface messages, switching between messages every 2 seconds. By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.

Options

none	Clear or stop a text message on the craft interface display.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Interconnect device.
lcc <i>number</i>	(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

node-device name	(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Node device in a Node group.
scc	(TX Matrix routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix router (switch-card chassis).
sfc number	(TX Matrix Plus routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.

Required Privilege Level

clear

Output Fields

See "[show chassis craft-interface](#)" on page 513 for an explanation of output fields.

Sample Output

clear chassis display message

The following example displays and then clears the text message on the craft interface display:

```

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
      +-----+

```



```

|NOC contact Dusty   |
|(888) 526-1234     |
+-----+

user@host> clear chassis display message

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0 1 2 3 4 5 6 7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|host           |
|Up: 0+17:05:47 |
|               |
|Temperature OK |
+-----+

```

Release Information

Command introduced in Junos OS Release 7.5.

sfc option for the TX Matrix Plus routers introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

[set chassis display message](#) | [466](#)

[show chassis craft-interface](#) | [513](#)

clear chassis fpc errors

IN THIS SECTION

- [Syntax | 402](#)
- [Description | 402](#)
- [Options | 402](#)
- [Required Privilege Level | 403](#)
- [Output Fields | 403](#)
- [Sample Output | 403](#)
- [Release Information | 403](#)

Syntax

```
clear chassis fpc errors fpc-slot fpc-slot (all | error-id error-id)
```

Description

Clear the chassis FPC errors. You can choose to clear a particular error or all errors on the FPC.

Options

- | | |
|---------------------------------|---|
| fpc-slot <i>fpc-slot</i> | The slot number of the FPC in which you want to run this command. |
| all | Clear all the errors on the FPC. |
| error-id <i>error-id</i> | Clear a particular error identified by an error-id. An <i>error-id</i> , a unique error identifier, is represented as a Uniform Resource Identifier (URI). For example, <code>/cpu/0/memory/0/</code> |

memory-uncorrected-error is an error-id that indicates an uncorrectable error under CPU memory module instance 0.

Required Privilege Level

clear

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear chassis fpc errors

```
user@host> clear chassis fpc errors fpc-slot  
1 all  
  
Clearing error(s) on fpc 1, option all
```

Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

| [error](#) | [289](#)

clear chassis sib errors

IN THIS SECTION

- [Syntax | 404](#)
- [Description | 404](#)
- [Options | 404](#)
- [Required Privilege Level | 405](#)
- [Output Fields | 405](#)
- [Sample Output | 405](#)
- [Release Information | 405](#)

Syntax

```
clear chassis sib errors sib-slot sib-slot (all | error-id error-id)
```

Description

Clear the chassis SIB errors. You can choose to clear a particular error or all errors on the SIB.

Options

- | | |
|---------------------------------|---|
| fpc-slot <i>fpc-slot</i> | The slot number of the SIB in which you want to run this command. |
| all | Clear all the errors on the SIB. |
| error-id <i>error-id</i> | Clear a particular error identified by an error-id. An <i>error-id</i> , a unique error identifier, is represented as a Uniform Resource Identifier (URI). For example, <code>/cpu/0/memory/0/</code> |

memory-uncorrected-error is an error-id that indicates an uncorrectable error under CPU memory module instance 0.

Required Privilege Level

clear

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear chassis sib errors

```
user@host> clear chassis sib errors sib-slot
1 all

Clearing error(s) on sib 1, option all
```

Release Information

Command introduced in Junos OS Evolved Release 19.4R1.

RELATED DOCUMENTATION

| [error](#) | [289](#)

request chassis afeb

IN THIS SECTION

- [Syntax | 406](#)
- [Description | 406](#)
- [Options | 406](#)
- [Required Privilege Level | 407](#)
- [Output Fields | 407](#)
- [Sample Output | 407](#)
- [Release Information | 407](#)

Syntax

```
request chassis afeb (offline | online | restart)
```

Description

Control the operation of the compact Forwarding Engine Board (FEB).

Options

offline	Take the FEB offline.
online	Bring the FEB online.
restart	Restart the FEB.

Required Privilege Level

view

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis afeb online (MX104 Router)

```
user@host> request chassis afeb online
AFEB is already online
```

Release Information

Command introduced in Junos OS Release 13.2.

RELATED DOCUMENTATION

| [show chassis afeb](#) | [478](#)

request chassis cb

IN THIS SECTION

● [Syntax](#) | [408](#)

- [Syntax \(TX Matrix Router\) | 408](#)
- [Syntax \(TX Matrix Plus Router\) | 408](#)
- [Syntax \(QFabric System\) | 409](#)
- [Syntax \(EX9253 Switches\) | 409](#)
- [Description | 409](#)
- [Options | 409](#)
- [Required Privilege Level | 411](#)
- [Output Fields | 411](#)
- [Sample Output | 411](#)
- [Release Information | 412](#)

Syntax

```
request chassis cb (offline | online) slot slot-number
```

Syntax (TX Matrix Router)

```
request chassis cb (offline | online) <slot slot-number | lcc number slot cb-slot-number | scc number slot cb-slot-number>
```

Syntax (TX Matrix Plus Router)

```
request chassis cb (offline | online) <slot slot-number | lcc number slot cb-slot-number | sfc number slot cb-slot-number>
```


Syntax (QFabric System)

```
request chassis cb (offline | online) interconnect-device name slot slot-number  
<interconnect-device name slot slot-number (offline | online)>
```

Syntax (EX9253 Switches)

```
request chassis cb (offline | online) name slot slot-number
```

Description

(M120, M320, and MX Series routers and T Series routers, QFabric systems, and EX8200 switches only)
Control the operation of the Control Board (CB).

Options

offline Take the Control Board offline.

NOTE: On a QFabric system, to bring the backup Control Board on a QFX3008-I Interconnect device offline, issue the **request chassis cb slot *backup-slot-number* offline** command.

NOTE: Only backup Control Board can be turned offline or online. To turn a Control Board offline or to bring it back online, the Routing Engine should be turned offline first.

online Bring the Control Board online.

interconnect-device <i>name</i>	(QFabric systems only) (Optional) Bring the QFX3008-I Interconnect device Control Board either offline or online:
slot <i>slot-number</i>	<p>Control Board slot number:</p> <ul style="list-style-type: none"> (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using the <i>lcc number</i> option (the recommended method), replace <i>cb-slot-number</i> with a value from 0 through 1. <p>Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the <i>lcc number</i> option (the recommended method), replace <i>cb-slot-number</i> with a value from 0 through 1.</p> <ul style="list-style-type: none"> M320 router—Replace <i>slot-number</i> with a value from 0 through 1. MX480/MX240 routers—Replace <i>slot-number</i> with a value from 0 through 1. MX960 router—Replace <i>slot-number</i> with a value from 0 through 2. MX2020, MX2010, and MX2008 routers—Replace <i>slot-number</i> with 0 or 1. EX8208 switch—Replace <i>slot-number</i> with a value from 0 through 2. EX8216 switch—Replace <i>slot-number</i> with a value from 0 through 1. QFabric System—Replace <i>slot-number</i> with a value from 0 through 1.
<i>lcc number</i>	<p>(TX Matrix, TX Matrix Plus routers only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
<i>sfc number</i>	(TX Matrix Plus routers only) (Optional) Change the CB status for the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> with 0.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis cb

```
user@host> request chassis cb offline slot 1

Backup CB 1 cannot be set offline, backup RE is online
```

request chassis cb interconnect-device (QFabric System)

```
user@switch> request chassis cb interconnect-device
interconnect1 offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

request chassis cb (MX2020 Router)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

request chassis cb (MX2010 Router)

```
user@host> request chassis cb offline slot 1
Backup CB 1 cannot be set offline, backup RE is online
```

request chassis cb (MX2008 Router)

```
user@host>request chassis cb offline slot 1  
Backup CB 1 cannot be set offline, backup RE is online
```

request chassis cb (MX10003 Router)

```
user@host>request chassis cb online slot 1  
CB 1 appears to be online already
```

request chassis cb (EX9253 Switch)

```
user@switch>request chassis cb offline slot 1  
Offline initiated, use "show chassis environment cb" to verify
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

[show chassis environment cb | 675](#)

[Understanding Switching Control Board Redundancy](#)

request chassis cfeb

IN THIS SECTION

- [Syntax | 413](#)
- [Description | 413](#)
- [Options | 413](#)
- [Required Privilege Level | 414](#)
- [Output Fields | 414](#)
- [Sample Output | 414](#)
- [Release Information | 414](#)

Syntax

```
request chassis cfeb (offline | online | restart)
```

Description

(M7i and M10i routers only) Control the operation of the Compact Forwarding Engine Board (CFEB).

Options

offline	Take the CFEB offline.
online	Bring the CFEB online.
restart	Restart the CFEB.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis cfep

```
user@host> request chassis cfep offline
CFEB Offlined
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis cfep | 509](#)

[Configuring CFEB Redundancy on the M10i Router](#)

[CFEB Overview](#)

request chassis fabric plane

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- [Syntax | 415](#)
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Syntax

```
request chassis fabric plane plane-number (offline | online)
```

Description

(M120 and MX Series routers and EX8200 switches only) Control the operation of the specified fabric plane.

On an MX480 or MX240 series router, you can configure the active control board for redundancy mode or increased bandwidth mode. When running in increased bandwidth mode, MX series routers with Trio chips and the MPC3E will use all eight active fabric planes.

To take both plane 0 and plane 1 offline on a MX480 and MX240 series routers with one or more MPC4E MICs installed, a X86 Media Service Blade, and/or 100G PFE, and where redundancy-mode is configured for "increased-bandwidth", Juniper recommends taking plane 1 offline before plane 0. Likewise, when the router is configured for increased-bandwidth mode, taking fabric planes 0, 2, 4, and 6 offline can cause the chassis to run in a reduced fabric bandwidth mode. Plane 7 may remain in a "spare" state (as seen in the "show chassis fabric summary" command output) until plane 3 is taken offline and then brought back up.

Options

- offline** Take the fabric plane offline. Use the **request chassis fabric plane *plane-number* offline** command to clear a FAULT state on a fabric plane. To bring the fabric plane back online, use the **request chassis fabric plane *plane-number* online** command.
- online** Bring the fabric plane online.
- plane *plane-number*** Fabric plane number.
- For the M120 router, replace *plane-number* with a value from 0 through 3.
 - For the MX480 and MX240 routers, replace *plane-number* with a value from 0 through 7.
 - For the MX2020, MX2010, and MX2008 routers, replace *plane-number* with a value from 0 through 7.
 - For the MX960 router, replace *plane-number* with a value from 0 through 5.
 - For the EX8208 switch, replace *plane-number* with a value from 0 through 11.
 - For the EX8216 switch, replace *plane-number* with a value from 0 through 7.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis fabric plane 0 online

```
user@host> request chassis fabric plane 0 online
Online initiated, use "show chassis fabric plane" to verify
```

request chassis fabric plane 0 offline

```
user@host> request chassis fabric plane 0 offline
Offline initiated, use "show chassis fabric plane" to verify
```

request chassis fabric plane 0 online (EX8200 switch)

```
user@host> request chassis fabric plane 0 online

Plane 0 is already active
```

request chassis fabric plane (MX2020 Router)

```
user@host> request chassis fabric plane 2 online
Plane 2 is already active
```

request chassis fabric plane (MX2010 Router)

```
user@host> request chassis fabric plane 4 online
Plane 4 is already active
```

request chassis fabric plane (MX2008 Router)

```
user@host>request chassis fabric plane 4 online
Plane 4 is already active
```

request chassis fabric plane (MX10003 Router)

```
user@host>request chassis fabric plane 4 online
Plane 4 is already active
```

request chassis fabric plane (EX9253 Switch)

```
user@switch>request chassis fabric plane 0 online
Plane 0 is already active
```

Release Information

Command introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

- [show chassis fabric plane | 1141](#)
- [show chassis fabric plane-location | 1183](#)
- [show chassis fabric summary | 1230](#)

request chassis fabric pfe

IN THIS SECTION

- [Syntax | 419](#)
- [Description | 419](#)
- [Options | 419](#)
- [Required Privilege Level | 419](#)
- [Release Information | 420](#)

Syntax

```
request chassis fabric pfe pfe-number fpc fpc-number offline
```

Description

Make a specified fabric of the packet forwarding engine (PFE) offline.

This command makes only the specified PFE of the FPC offline and rest of the PFEs of the FPC are not affected. If a PFE of an FPC is affected because of fabric path wedge errors, the affected PFE is disabled and the associated fabric goes offline as part of fabric hardening actions. The output of the **show chassis fabric fpcs** and **show chassis fabric plane** commands show a new state for the PFE as **Fabric Disabled**.

Fabric stream wedge occurs when the ASIC of the FPC is in the stuck state, and the ingress PFE fails to send traffic to the destination PFE. You can use the request **chassis fabric pfe *pfe-number* fpc *fpc-number* offline** command to make any PFE offline.

NOTE: This statement does not have an option to bring the PFE back online. You must restart the FPC to bring the PFE back online.

Options

pfe-number [0-3]

fpc-number [0-11] or [0-5] or [0-19] or [0-2], depending on the type of the chassis.

Required Privilege Level

interface—To view this statement in the configuration.

interface-control—To add this statement to the configuration.

Release Information

Command introduced in Junos OS Release 17.2.

RELATED DOCUMENTATION

[show chassis fabric plane](#) | 1141

[show chassis fabric fpcs](#) | 1089

request chassis feb

IN THIS SECTION

- [Syntax](#) | 420
- [Syntax \(ACX Series Routers\)](#) | 421
- [Description](#) | 421
- [Options](#) | 421
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- [Output Fields](#) | 421
- [request chassis feb \(M120 Router\)](#) | 422
- [request chassis feb \(ACX Series Routers\)](#) | 422
- [Release Information](#) | 422

Syntax

```
request chassis feb (offline | online | restart) slot slot-number
```

Syntax (ACX Series Routers)

```
request chassis feb restart slot slot-number
```

Description

(M120 router only) Control the operation of the specified Forwarding Engine Board (FEB).

(ACX Series routers) Restart the specified FEB.

Options

offline	Take the specified FEB offline.
online	Bring the specified FEB online.
restart	Restart the specified FEB.
slot <i>slot-number</i>	FEB slot number. Replace <i>slot-number</i> with a value from 0 through 5.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

request chassis feb (M120 Router)

request chassis feb offline slot 0

```
user@host> request chassis feb offline slot
0
Offline initiated, use "show chassis feb" to verify
```

request chassis feb online slot 0

```
user@host> request chassis feb online slot 0
Online initiated, use "show chassis feb" to verify
```

request chassis feb restart slot 0

```
user@host> request chassis feb restart slot
0
Restart initiated, use "show chassis feb" to verify
```

request chassis feb (ACX Series Routers)

command-name

```
user@host> request chassis feb restart slot
0
FEB will be restarted NOW.
```

Release Information

Command introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

[show chassis feb | 1300](#)

[show chassis fabric feb | 1080](#)

[show chassis fpc-feb-connectivity | 1396](#)

feb

Understanding Switching Control Board Redundancy

request chassis fpc

IN THIS SECTION

- [Syntax | 423](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 424](#)
- [Syntax \(MX Series Routers\) | 424](#)
- [Syntax \(QFabric System\) | 424](#)
- [Description | 424](#)
- [Options | 426](#)
- [Required Privilege Level | 428](#)
- [Output Fields | 428](#)
- [Sample Output | 429](#)
- [Release Information | 430](#)

Syntax

```
request chassis fpc (offline | online | restart) slot slot-number
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
request chassis fpc (offline | online | restart) slot slot-number
<lcc number>
```

Syntax (MX Series Routers)

```
request chassis fpc (offline | online | restart) slot slot-number
<all-members>
<local>
<member member-id>
```

Syntax (QFabric System)

```
request chassis fpc
<interconnect-device name slot slot-number (offline | online)>
<(offline | online) interconnect-device name slot slot-number>
<slot slot-number interconnect-device name (offline | online)>
```

Description

(M20, M40, M40e, M120, M160, M320, MX Series, and T Series routers, QFabric systems, EX Series switches, and PTX Series Packet Transport Routers only) Control the operation of the Flexible PIC Concentrator (FPC).

NOTE: Starting with Junos OS Release 12.3, it is possible that FPCs brought offline by using the **request chassis fpc slot *fpc-slot* offline** operational-mode CLI command can come online during a configuration commit or power-supply replacement procedure. As an alternative, use the **set**

fpc *fpc-slot* power off configuration-mode command at the **[edit chassis]** hierarchy level to ensure that the FPCs remain offline.

NOTE: Starting in Junos OS Evolved Release 19.1R1, PTX10003-80C and PTX10003-160C devices do not support the **request chassis fpc online** command. The only way to bring up an FPC (MPC) that is offline is by rebooting the chassis.

On Junos OS Evolved, an FPC does not restart when you enter a commit command that configures an element of that FPC.

NOTE: In releases earlier than Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs in the PTX5000 router might be powered on by the router during a reboot, or when triggered by other power management events on the router, such as when you take another FPC offline. Starting with Junos OS Release 15.1F3 and Junos OS Release 16.1, offline FPCs do not come online during reboots or other power management events. To bring such an FPC online:

1. Delete the **fpc *fpc-slot* power off** statement from the **[edit chassis]** hierarchy level, if that statement is configured, and commit the configuration.
2. Either issue the **request chassis fpc online slot *fpc-slot*** operational-mode CLI command or press and hold the FPC **ONLINE/OFFLINE** button for about 5 seconds until the green **OK** LED next to the button lights steadily.

NOTE: If a CLI-based firmware upgrade is in progress, the specified FPC does not restart. Starting with Junos OS Release 15.1, the following message is displayed when this occurs:

```
user@host> request chassis fpc slot 0 restart
FPC 0 Firmware update in progress. Wait!!!
```

NOTE: The command **request chassis fpc (offline | online) slot *slot-number*** is not supported on PTX1000 router. Whereas, **request chassis fpc restart slot *slot-number*** is supported on PTX1000 router

NOTE: On EX9204, EX9208, EX9214, and EX9253 switches, when a line card is brought online, if the aggregate interface is initialized before the child interface is marked as part of the aggregate interface, there might be a loss of traffic from the aggregate interface for up to 30 seconds and the CPU usage of the line card installed on the switch might go up to 100%.

Options

offline	Take the FPC offline.
online	Bring the FPC online.
interconnect-device <i>name</i>	(QFabric systems only) Bring the FPC on the QFX3008-I Interconnect device either offline or online: <ul style="list-style-type: none"> (QFabric System) On a QFabric system, specify the name of the QFX3008-I Interconnect device containing the FPC you want to bring either offline or online.
restart	Restart the FPC.
slot <i>slot-number</i>	FPC slot number: <ul style="list-style-type: none"> M20 router—0 through 3. M120 router—0 through 5. MX240 router—0 through 2. On the MX240 router, slot-number corresponds to the (DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number. MX480 router—0 through 5. On the MX480 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number. MX960 router—0 through 11. On the MX960 router, slot-number corresponds to the DPC slot number. If an MPC is installed, slot-number corresponds to the MPC slot number. MX2020 router—0 through 19. MX2010 router—0 through 9.

- MX2008 router—0 through 9.
- TX Matrix and TX Matrix Plus routers only—On the TX Matrix router, if you specify the number of the T640 router by using the `lcc number` option (the recommended method), replace `slot-number` with a value from 0 through 7. Otherwise, replace `slot-number` with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 or T4000 router by using the `lcc number` option (the recommended method), replace `slot-number` with a value from 0 through 7. Otherwise, replace `slot-number` with a value from 0 through 31. In case of TX Matrix Plus router with 3D SIBs, replace `slot-number` with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis fpc lcc 1 slot 1 offline
user@host> request chassis fpc slot 9 offline
```

- Other routers—0 through 7.
- QFabric System—Replace `slot-number` with a value from 0 through 2.
- EX Series switches:
 - EX4200 switches in a Virtual Chassis configuration—Replace `slot-number` with a value from 0 through 9.
 - EX6210 switches—Replace `slot-number` with a value from 0 through 9.

NOTE: These commands are not supported for slots 4 and 5 when a Switch Fabric and Routing Engine (SRE) module is installed in those slots. These commands are supported for slots 4 and 5 only if a line card is installed in them.

- EX8208 switches—Replace `slot-number` with a value from 0 through 7.
- EX8216 switches—Replace `slot-number` with a value from 0 through 15.
- EX9204 switches—Replace `slot-number` with a value from 0 through 2.
- EX9208 switches—Replace `slot-number` with a value from 0 through 5.

- EX9214 switches—Replace *slot-number* with a value from 0 through 11.
- PTX5000 Packet Transport Router—Replace *slot-number* with a value from 0 through 7.

all-members (MX Series routers only) (Optional) Change FPC status of all members of the Virtual Chassis configuration.

local (MX Series routers only) (Optional) Change FPC status of the local Virtual Chassis member.

member
member-id (MX Series routers only) (Optional) Change FPC status of the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

lcc number (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc

```
user@host> request chassis fpc online slot 0
FPC 0 already online
```

request chassis fpc (MX Series Routers with Media Services Blade [MSB])

```
user@host> request chassis fpc slot 0
Possible completions:
  offline           Take FPC offline
  online            Bring FPC online
  restart           Restart FPC
```

request chassis fpc (MX2020 Router)

```
user@host >request chassis fpc online slot 2
FPC 2 already online
```

request chassis fpc (MX2010 Router)

```
user@host >request chassis fpc offline slot 5
Offline initiated, use "show chassis fpc" to verify
```

request chassis fpc (MX2008 Router)

```
user@host >request chassis fpc online slot 5
FPC 5 already online
```

request chassis fpc (MX10003 Router)

```
user@host>request chassis fpc online slot 1
FPC 1 already online
```

request chassis fpc (MX204 Router)

```
user@host>request chassis fpc online slot 0
FPC 0 already online
```

request chassis fpc (EX9200 Switch)

```
user@host> request chassis fpc slot 0
Possible completions:
  offline           Take FPC offline
  online            Bring FPC online
  restart           Restart FPC
```

request chassis fpc (EX9251 Switch)

```
user@switch> request chassis fpc online slot
0
FPC 0 already online
```

request chassis fpc (EX9253 Switch)

```
user@switch> request chassis online fpc slot
0
FPC 0 already online
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis fpc | 1330](#)

[show chassis fpc-feb-connectivity | 1396](#)

[show chassis fabric fpcs | 1089](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)

[MX960 Flexible PIC Concentrator Description](#)

request chassis fpm resync

IN THIS SECTION

- [Syntax | 431](#)
- [Syntax \(TX Matrix Routers\) | 432](#)
- [Syntax \(TX Matrix Plus Routers\) | 432](#)
- [Syntax \(MX Series Routers\) | 432](#)
- [Description | 432](#)
- [Options | 432](#)
- [Required Privilege Level | 433](#)
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Syntax

```
request chassis fpm resync
```

Syntax (TX Matrix Routers)

```
request chassis fpm resync (lcc number | scc)
```

Syntax (TX Matrix Plus Routers)

```
request chassis fpm resync (lcc number | sfc number)
```

Syntax (MX Series Routers)

```
request chassis fpm resync
<all-members>
<local>
<member member-id>
```

Description

(M40e, M120, M160, M320, MX Series, and T Series routers only) Resynchronize the craft interface status.

Options

- all-members** (MX Series routers only) (Optional) Resynchronize the craft interface status on all members of the Virtual Chassis configuration.
- lcc number** (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.
Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Resynchronize the craft interface status on the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Resynchronize the craft interface status on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
scc	(TX Matrix routers only) Resynchronize the craft interface status on the TX Matrix router (switch-card chassis).
<i>sfc number</i>	(TX Matrix Plus routers only) Resynchronize the craft interface status on the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0 .

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis fpm resync

```
user@host> request chassis fpm resync
Front Panel resynced
```

request chassis fpm resync (MX2010 Router)

```
user@host > request chassis fpm resync
Front Panel resynced.
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

[show chassis environment fpm | 804](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)

request chassis mcs

IN THIS SECTION

- [Syntax | 435](#)
- [Description | 435](#)
- [Options | 435](#)

- Required Privilege Level | 435
- Output Fields | 436
- Sample Output | 436
- Release Information | 436

Syntax

```
request chassis mcs (offline | online | restart) slot slot-number
```

Description

(M40e and M160 routers only) Control the operation of the Miscellaneous Control Subsystem (MCS).

Options

offline	Take the MCS offline.
online	Bring the MCS online.
restart	Restart the MCS.
slot <i>slot-number</i>	MCS slot number. Replace <i>slot-number</i> with 0 or 1.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis mcs

```
user@host> request chassis mcs online slot 0  
MCS 0 appears to be online already
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

| [show chassis environment mcs](#) | [845](#)

request chassis mic

IN THIS SECTION

- [Syntax](#) | [437](#)
- [Description](#) | [437](#)
- [Options](#) | [437](#)
- [Required Privilege Level](#) | [438](#)
- [Output Fields](#) | [438](#)
- [Sample Output](#) | [438](#)

Syntax

```
request chassis mic (offline | online) fpc-slot slot-number mic-slot slot-number
```

Description

(MX Series routers only) Control the operation of the Modular Interface Cards (MICs) installed on a Modular Port Concentrator (MPC).

NOTE: On MX960 routers, if the MIC is not functioning correctly, you should take the MPC offline, replace it with a new MPC, and reinstall the MIC. On MX104 routers, the **request chassis mic** command is not supported on FPC slot 2 and MIC slot 0.

Options

offline Take the MIC offline.

online Bring the MIC online.

fpc-slot *slot-number* FPC slot number where the MIC is installed:

- ACX4000 router—Replace **fpc-slot** with the value **0** or **1**.
- MX80 router—Replace **fpc-slot** with the value **1**. This command is not supported on FPC slot 0.
- MX104—Replace **fpc-slot** with the value from **0** through **2**.
- MX240 router—Replace **fpc-slot** with a value from **0** through **2**.

- MX480 router—Replace *fpc-slot* with a value from **0** through **5**.
- MX960 router—Replace *fpc-slot* with a value from **0** through **11**.
- MX2020 router—Replace *fpc-slot* with a value from **0** through **19**.
- MX2010 router—Replace *fpc-slot* with a value from **0** through **9**.
- MX2008 router—Replace *fpc-slot* with a value from **0** through **9**.

mic-slot *slot-number* MIC slot number. Replace *slot-number* with **0** or **1**.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis mic online

```
user@host> request chassis mic online fpc-slot
1 mic-slot 1
```

request chassis mic (MX Routers with Media Services Blade [MSB])

```
user@host> request chassis mic fpc-slot 1 mic-slot
0
Possible completions:
  offline           Take MIC offline
  online            Bring MIC online
```

request chassis mic offline (MX104 Router)

```
user@host > request chassis mic mic-slot 0 fpc-slot
1 offline
fpc 1 mic 0 offline initiated, use "show chassis fpc pic-status 1" to verify
```

request chassis mic online (MX2010 Router)

```
user@host> request chassis mic online fpc-slot 1 mic-slot
0
FPC 1, MIC 0 is already online
```

request chassis mic online (MX2008 Router)

```
user@host>request chassis mic online fpc-slot 0 mic-slot
0
FPC 0 is not online
```

Release Information

Command introduced in Junos OS Release 10.1.

RELATED DOCUMENTATION

| *show chassis hardware*

request chassis optics

IN THIS SECTION

- Syntax | 440
- Description | 440
- Options | 440
- Required Privilege Level | 441
- Output Fields | 441
- Sample Output | 441
- Release Information | 442

Syntax

```
request chassis optics fpc-slot fpc-slot-number reactivate
```

Description

(MX240, MX480, and MX960 routers) Control the status of the optical transceiver.

Options

fpc-slot *fpc-slot-number* Slot number of the line card that houses the optical transceiver.

- MX240 router—Replace *fpc-slot-number* with a value from 0 through 2.
- MX480 router—Replace *fpc-slot-number* with a value from 0 through 5.
- MX960 router—Replace *fpc-slot-number* with a value from 0 through 11.

reactivate Reactivate the optical transceiver.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis optics (MX480 router)

```
user@host> request chassis optics fpc-slot 5
reactivate
Enable FPC 5 non-nebs optics.
```

request chassis optics (MX10003 router)

```
user@host>request chassis optics fpc-slot 1 reactivate
Enable FPC 1 non-nebs optics.
```

request chassis optics (EX9251 swich)

```
user@switch>request chassis optics fpc-slot 0 reactivate
Enable FPC 0 non-nebs optics.
```

request chassis optics (EX9253 swich)

```
user@switch>request chassis optics fpc-slot 1 reactivate
Enable FPC 1 non-nebs optics.
```

Release Information

Command introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Determining Transceiver Support and Specifications for M Series and T Series Routers](#)

request chassis pic

IN THIS SECTION

- [Syntax | 443](#)
- [Syntax \(MX Series Routers\) | 443](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 443](#)
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Syntax

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number
```

Syntax (MX Series Routers)

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number
<member member-id>
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number
<lcc number>
```

Description

Control the operation of the PIC.

NOTE: Starting with Junos OS Release 12.3, it is possible that PICs brought offline by using the **request chassis fpc slot *fpc-slot* pic *pic-slot* offline** operational mode command can come online during a configuration commit or power-supply replacement procedure. (See the following note about difference in behavior on Junos OS Evolved.) As an alternative, use the **set fpc *fpc-slot* pic *pic-slot* power off** configuration mode command at the [edit chassis] hierarchy level to ensure that PICs remain offline.

NOTE: On Junos OS Evolved, a PIC does not restart when you enter a **commit** command that configures an element of that PIC.

NOTE: The `request chassis pic (offline | online) fpc-slot slot number pic-slot slot-number` command is not supported for built-in PICs on MX Series routers.

To view a list of built-in PICs on the router or switch chassis, use the `show chassis hardware` command.

NOTE: This command is not supported on MX960 and MX2020 routers with MPC5EQ.

NOTE: T1600 routers and TX Matrix Plus routers with 100-Gigabit Ethernet PICs require two adjacent PIC slots, 0 and 1, for each PIC. Therefore, only **online** and **offline** command options to PIC slot 0 are allowed. Use of the **online** and **offline** command options for PIC slot 1 with the described router and PIC combination is not allowed.

NOTE: In T Series routers, when the PIC state is set from **offline** to **online** or vice-versa before the processing is complete for the previous command, you are provided feedback on the status of your request. The following sample messages are displayed if you try to set a PIC **offline** or **online**:

```
user@switch> request chassis pic fpc-slot 1
pic-slot 0 online
fpc 1 pic 0 online initiated, use "show chassis fpc pic-status" to
verify
```

```
user@switch> request chassis pic fpc-slot 1
pic-slot 0 online
```

```
FPC 1 PIC 0 already transitioning to online
```

When the same PIC is set to a different state while the transition is in progress, you are provided feedback on the status of your request.

```
user@switch> request chassis pic fpc-slot 1
pic-slot 0 offline
FPC 1, PIC 0 already transitioning to online. Please retry later.
```

NOTE: If a CLI-based firmware upgrade is in progress, it prevents the specified PIC from restarting. Starting in Junos OS Release 15.1, the following message is displayed:

```
user@host> request chassis pic fpc-slot 0 pic-slot
1 offline
PIC's Firmware update in progress. Wait!!!
```

Options

offline Take the PIC offline.

online Bring the PIC online.

fpc-slot *slot-number* Flexible PIC Concentrator (FPC) slot number. Replace *slot-number* with a value appropriate for your router or switch:

- ACX4000 routers—1 or 2.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—0.
 - EX4200 switches in a Virtual Chassis configuration—0 through 9 (switch's member ID).
 - EX8208 switches—0 through 7 (line card).
 - EX8216 switches—0 through 15 (line card).
- M5, M7i, M10, and M10i routers—0 or 1.
- M20 routers—0 through 3.
- M40 and M40e routers—0 through 7.
- M120 routers—0 through 5.
- M160 routers—0 through 7.
- M320 routers—0 through 7.

- MX 5, MX10, and MX40 routers—0 or 1.
- MX80 routers—0 or 1.
- MX240 routers—0 through 2
- MX480 routers—0 through 5
- MX2020 routers—0 through 19.
- MX2010 routers—0 through 9.
- MX960 routers—0 through 11.
- MX10003 routers—0 or 1.
- MX204 routers—0.
- PTX5000 routers—0 or 1.
- T Series routers—0 through 7.
- TX Matrix and TX Matrix Plus routers only—On a TX Matrix router, if you specify the number of the T640 router by using the **lcc number** option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, replace **slot-number** with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the **number** of the T1600 or T4000 router by using the lcc number option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, for the FPC slot number, replace **slot-number** with a value from 0 through 31. On a TX Matrix Plus router with 3D SIBs to assign the FPC slot number, replace **slot-number** with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis pic fpc-slot 1 lcc 1 pic-slot 0 offline
user@host> request chassis pic fpc-slot 9 pic-slot 0 offline
```

- QFX5100 standalone switches—0.

lcc number (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace **number** with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.

- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

member <i>member-id</i>	(MX Series routers only) (Optional) Change the PIC status on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with the value that is assigned to the specified member.
offline	Take the PIC offline.
online	Bring the PIC online.
pic- slot <i>slot- number</i>	<p>PIC slot number.</p> <ul style="list-style-type: none"> • EX3200 and EX4200 switches—0 for built-in network interfaces and 1 for interfaces on uplink modules. • EX8208 and EX8216 switches—0. • M Series routers—0, 1, 2, or 3 • MX960 router—<i>slot-number</i> corresponds to the slot number of the Packet Forwarding Engine. • MX204 router—0 or 1. • PTX5000 routers—0 or 1. • T320 router—0 or 1. • T640 router—0, 1, 2, or 3. • T1600 router —0, 1, 2, or 3. • T4000 router—0, 1, 2, or 3. • QFX5100 standalone switches—0, 1, or 2. PIC 0 is used for all interfaces that are not configured on expansion modules, and PIC 1 and PIC 2 are used for interfaces configured on expansion modules.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis pic

```
user@host> request chassis pic pic-slot  
0 online fpc-slot 0  
FPC 0, PIC 0 is already online
```

request chassis pic online member (MX Series Routers)

```
user@host> request chassis pic online member  
1 fpc-slot 11 pic-slot 3  
fpc 11 pic 3 online initiated
```

request chassis pic offline member (MX Series Routers)

```
user@host> request chassis pic offline member  
1 fpc-slot 11 pic-slot 3  
fpc 11 pic 3 offline initiated
```


request chassis pic (MX10003 Router)

```
user@host> request chassis pic online pic-slot  
1 fpc-slot 0  
FPC 0 is not online
```

request chassis pic online member (PTX10008 Router)

```
user@host> request chassis pic online pic-slot  
1 fpc-slot 0  
FPC 0, PIC 1 is empty
```

Release Information

Command introduced before Junos OS Release 7.4.

Option **member** introduced in Junos OS Release 14.2 for MX Series routers.

RELATED DOCUMENTATION

show chassis hardware

show chassis pic

request chassis port-led

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- [Required Privilege Level | 451](#)

- [Output Fields | 452](#)
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Syntax

```
request chassis port-led (start | stop) fpc-slot fpc-slot-number pic-slot pic-slot-number port (port-number | all-10g | all-40g | all-100g | all-port) duration duration
```

Description

Enable remote port identification of the Modular Interface Card (MIC) or PIC by making the LED of the appropriate active port blink for a duration of time. You can also make the LEDs of all active ports, specific active ports, and specific port types blink. For instance, on MX480 routers with MPC7E-MRATE, you can make the LED of all active ports that support port speeds of 100 Gbps blink. Enabling remote port identification provides cabling assistance and reduces cabling mistakes.

NOTE: You can stop a LED from blinking before the end of duration. After the LED stops blinking, it resumes its normal operation of indicating current link status of the port.

Options

start	Start blinking of the LEDs of the specified ports.
stop	Stop the LEDs of the specified ports from blinking.
fpc-slot <i>fpc-slot-number</i>	(MX Series routers) Modular Port Concentrator (MPC) slot number. Replace <i>fpc-slot-number</i> with a value appropriate for your router:

- MX240 routers—0 through 2.
- MX480 routers—0 through 5.
- MX960 routers—0 through 11.
- MX2010 routers—0 through 9.
- MX2020 routers—0 through 19.
- MX10003 routers—0 through 1.
- MX10008 routers—0 through 6.

pic-slot <i>pic-slot-number</i>	(MX Series routers) MIC slot number. Replace <i>pic-slot-number</i> with a value from 0 through 3. For MX10008 routers with JNP10K-LC2101 MPC only, replace <i>pic-slot-number</i> with a value from 0 through 5.
port <i>port-number</i>	Port number. Replace <i>port-number</i> with a value appropriate for your MPC or line card: <ul style="list-style-type: none"> • MIC-MRATE—0 through 11. • MX10003 MPC—0 through 5 for PIC 0 and 0 through 11 for PIC1 • JNP10K-LC2101 MPC—0 through 3 per PIC. JNP110K-LC2101 supports 6 built-in PICs and each PIC supports 4 ports.
all-10g	Active ports that support port speed of 10 Gbps.
all-40g	Active ports that support port speed of 40 Gbps.
all-100g	Active ports that support port speed of 100 Gbps.
all-ports	All active ports.
duration <i>duration</i>	Duration, in seconds, to perform LED blinking. Replace <i>duration</i> with a value from 0 through 65,535. The default duration is 5 minutes (300 seconds).

Required Privilege Level

view

Output Fields

When you enter this command, you are asked to verify the LED status based on your request.

Sample Output

request chassis port-led (MX2020 Routers with MPC8E)

```
user@host> request chassis port-led start fpc-slot
3 pic-slot 0 port all-10g duration 5
Command sent to FPC_3. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX480 Routers with MPC7E-MRATE)

```
user@host> request chassis port-led start fpc-slot
3 pic-slot 0 port 2 duration 5
Command sent to FPC_3. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX10003 Router)

```
user@host> request chassis port-led start fpc-slot
1 pic-slot 1 port 0 duration 5
Command sent to FPC_1. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all active 100GE ports)

```
user@host> request chassis port-led start fpc-slot
1 pic-slot 1 port all-100g duration 5
Command sent to FPC_1. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all active 40GE ports)

```
user@host> request chassis port-led start fpc-slot
0 pic-slot 1 port all-40g duration 5
Command sent to FPC_0. Check physically about LED status on the PIC_1 ports.
```

request chassis port-led (MX10003 Router for all the active ports in a PIC)

```
user@host> request chassis port-led start fpc-slot
0 pic-slot 0 port all-ports duration 5
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX204 Router for all the active ports in a PIC)

```
user@host> request chassis port-led start fpc-slot
0 pic-slot 0 port all-ports duration 5
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (EX9251 Switch)

```
user@switch> request chassis port-led start
fpc-slot 0 pic-slot 0 port all-ports duration 5
Command sent to FPC_0. Check physically about LED status on the PIC_0 ports.
```

request chassis port-led (MX10008 Router with JNP10K-LC2101)

```
user@host> request chassis port-led start fpc-slot
0 pic-slot 2 all-ports duration 15
Command sent to FPC_0. Check physically about LED status on the PIC_2 ports.
```

Release Information

Command introduced in Junos OS Release 15.1F4.

RELATED DOCUMENTATION

| [Remote Port Identification using LEDs for Cabling Assistance](#) | 231

request chassis sfb

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Syntax

```
request chassis sfb (offline | online) slot slot-number  
<all-members>  
<local>  
<member member-id>
```

Description

Control the operation of the Switch Fabric Board (SFB).

Options

all-members	(Optional) Control the operation of the SFB in all members of the Virtual Chassis configuration.
local	(Optional) Control the operation of the SFB in the local Virtual Chassis member.
member <i>member-id</i>	(Optional) Control the operation of the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.
offline	Take the Switch Fabric Board offline.
online	Bring the Switch Fabric Board online.
slot <i>slot-number</i>	Switch Fabric Board slot number. Replace <i>slot-number</i> with a value of 0 through 7.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis sfb

```
user@host> request chassis sfb offline slot
1
Backup SFB 1 cannot be set offline, backup RE is online
```

request chassis sfb (MX2010 Routers)

```
user@host> request chassis sfb offline slot 7
Offline initiated, use "show chassis sfb" to verify
```

request chassis sfb (MX2008 Routers)

```
user@host>request chassis sfb offline slot 1
Offline initiated, use "show chassis sfb" to verify
```

Release Information

Command introduced in Junos OS Release 12.3.

all-members, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

| [show chassis sfb](#) | [1560](#)

request chassis sfm

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- [Description](#) | [457](#)
- [Options](#) | [457](#)
- [Required Privilege Level](#) | [457](#)
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- [Sample Output | 458](#)
- [Release Information | 458](#)

Syntax

```
request chassis sfm (offline | online | restart) slot slot-number
```

Description

(M40e and M160 routers only) Control the operation of the specified Switching and Forwarding Module (SFM).

Options

offline	Take the SFM offline.
online	Bring the SFM online.
restart	Restart the SFM.
slot <i>slot-number</i>	SFM slot number. Replace <i>slot-number</i> with a value from 0 through 3.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis sfm (M40e)

```
user@host> request chassis sfm slot 1 restart
M40e router:
error: SFM 0 is transitioning to online state.
```

request chassis sfm (M160)

```
user@host> request chassis sfm slot 1 restart
M160 router:
Restart initiated, use "show chassis sfm" to verify
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis sfm | 1568](#)

[Configuring SFM Redundancy on M40e and M160 Routers](#)

[M40e Switching and Forwarding Module \(SFM\) Description](#)

request chassis sib

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Syntax

```
request chassis sib (offline | online) slot slot-number
```

Syntax (TX Matrix Router)

```
request chassis sib (all-chassis | lcc number | scc) (offline |  
online) slot slot-number  
(start-receiver number | stop-receiver number)
```

Syntax (TX Matrix Plus Router)

```
request chassis sib (all-lcc | f13 slot-number | f2s sib-slot/sib-f2s-slot-
number | lcc number | (offline | online) slot slot-number)
```

Description

(M320 routers and T Series routers only) Control the operation of the specified Switch Interface Board (SIB).

Options

- all-chassis** (TX Matrix routers only) Control the status of the specified SIB.
- all-lcc** (TX Matrix Plus router only) On TX Matrix Plus router, control the operation of the SIB on all routers connected to the TX Matrix Plus router.
- f13 slot-number** Control the operation of F13 SIBs. Replace *slot-number* with a value **0, 1, 3, 4, 6, 7, 8, 9, 11, or 12**.
- f2s sib-slot/sib-f2s-slot-number** (TX Matrix Plus routers only) (Optional) Control the operation of the SIB F2s. Replace *sib-slot* with a value from **0** through **4**, followed by a *sib-f2s-slot-number* value **0, 2, 4** or **6**.
- lcc number** (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

scc (TX Matrix router only) TX Matrix router (switch-card chassis) on a routing matrix.

offline Take the SIB offline.

NOTE: In PTX Series (PTX3000 and PTX5000) and T Series (T640 and T1600) Routers with active PFE interfaces, when the last SIB is taken offline, a message displays that if no SIB is brought online within 10 seconds, the system will take action to address the fabric null route condition. Taking all SIBs offline in these PTX Series or T Series Routers with active PFE interfaces results in null route condition, and the software takes action to rectify this condition if it persists for more than 10 seconds. If these routers do not have active PFE interfaces, taking all SIBs offline does not result in null route condition, and the message is not displayed when the last active SIB is taken offline. For details on null route condition, see "[Fabric Resiliency and Degradation](#)" on page 26.

online Bring the SIB online.

slot *slot-number* SIB slot number. For the T320 router, replace *slot-number* with a value from 0 through 2. For the T640 router, TX Matrix router, and T1600 router in a routing matrix, replace *slot-number* with a value from 0 through 4.

start-receiver *number* (TX Matrix routers only) Start the SIB optical receiver. Replace *number* with a value from 0 through 3.

stop-receiver *number* (TX Matrix routers only) Stop the SIB optical receiver. Replace *number* with a value from 0 through 3.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis sib

```
user@host> request chassis sib slot 0 online
Online initiated, use "show chassis sibs" to verify
```

request chassis sib

```
user@host> request chassis sib f13 slot 0 offline
Offline initiated, use "show chassis sibs" to verify
```

Release Information

Command introduced before Junos OS Release 7.4.

f13 and **f2s** options for the TX Matrix Plus router introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

[show chassis sibs | 1573](#)

[show chassis environment sib | 941](#)

[Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router](#)

[M320 SIB Description](#)

request chassis spmb restart

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Syntax

```
request chassis spmb restart slot slot-number
```

Syntax (MX2020, MX2010, and 2008 Routers)

```
request chassis spmb restart slot slot-number  
<all-members>  
<local>  
<member member-id>
```

Syntax (TX Matrix Router)

```
request chassis spmb restart (lcc number | scc) slot slot-number
```

Syntax (TX Matrix Plus Router)

```
request chassis spmb restart (lcc number | sfc number) slot slot-number
```

Description

Restart the specified Switch Processor Mezzanine Board (SPMB) on the Control Board (CB).

Options

- all-members** (MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in all members of the Virtual Chassis configuration.
- lcc number** (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.
- Replace *number* with the following values depending on the LCC configuration:
- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
 - 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
 - 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
 - 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- local** (MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the local Virtual Chassis member.
- member**
member-id (MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.
- scc** (TX Matrix routers only) TX Matrix router (switch-card chassis) in the routing matrix.

sfc number (TX Matrix Plus routers only) The switch-fabric chassis number of the TX Matrix Plus router. Replace the *number* variable with a value **0**.

slot slot-number The SPMB slot number. Replace *slot-number* with **0** or **1**.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis spmb restart

```
user@host> request chassis spmb restart slot  
0
```

request chassis spmb restart (MX2010 Router)

```
user@host> request chassis spmb restart slot 0  
Restart initiated, use "show chassis spmb" to verify
```

request chassis spmb restart (MX2008 Router)

```
user@host>request chassis spmb restart slot 0  
Restart initiated, use "show chassis spmb" to verify
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option for the TX Matrix Plus router introduced in Junos OS Release 9.6.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis spmb | 1592](#)

[show chassis spmb sibs | 1607](#)

set chassis display message

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- [Syntax \(TX Matrix Router\) | 467](#)
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Syntax

```
set chassis display message "message"  
<permanent>
```

Syntax (TX Matrix Router)

```
set chassis display message "message" (lcc number | scc)  
<permanent>
```

Syntax (TX Matrix Plus Router)

```
set chassis display message "message " (fpc-slot slot-number | lcc number |  
sfc number)  
<permanent>
```

Description

Display or stop a text message on the craft interface display, which is on the front of the router, or on the LCD panel display on the switch. The craft interface alternates the display of text messages with standard craft interface messages three times, switching between messages every 60 seconds.

NOTE: On T Series routers, when this command is executed with the **permanent** option, the display of the text message alternates with that of the standard craft interface message continuously every 60 seconds.

By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.

Options

"message"	Message to display. On the craft interface display, if the message is longer than 20 characters, it wraps onto the next line. If a word does not fit on one line, the entire word moves down to the next line. Any portion of the message that does not fit on the display is truncated. An empty pair of quotation marks (" ") deletes the text message from the craft interface display. On the LCD panel display, the message is limited to 16 characters.
fpc-slot slot-number	(TX Matrix Plus routers and EX4200 and QFX Series only) On the router or switch, display the text message on the craft interface for a specific Flexible PIC Concentrator (FPC). Replace <i>slot-number</i> with a value from 0 through 31 . On the switch, display the text message for a specific member of a Virtual Chassis, where fpc-slot slot-number corresponds to the member ID. Replace <i>slot-number</i> with a value from 0 through 9 . On the QFX Series, the <i>slot-number</i> is always 0 . On a TX Matrix Plus router with 3D SIBs replace <i>slot-number</i> with a value from 0 through 63 .
lcc number	(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
permanent	(Optional) Display a text message on the craft interface display or LCD panel display permanently.
scc	(TX Matrix routers only) Display the text message on the craft interface display of the TX Matrix router (switch-card chassis).
sfc number	(TX Matrix Plus routers only) Display the text message on the craft interface display of the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level

clear

Output Fields

See [show chassis craft-interface](#) for an explanation of output fields.

Sample Output

set chassis display message (Creating)

The following example shows how to set the display message and verify the result:

```
user@host> set chassis display message "NOC
contact Dusty (888) 555-1234"
message sent
```

```
user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0 1 2 3 4 5 6 7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|NOC contact Dusty  |
|(888) 555-1234    |
+-----+
```

set chassis display message (Deleting)

The following example shows how to delete the display message and verify that the message is removed:

```

user@host> set chassis display message ""
message sent

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|host           |
|Up: 0+17:05:47 |
|               |
|Temperature OK |
+-----+

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option for TX Matrix Plus router introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

[clear chassis display message](#)

[show chassis craft-interface](#)

11

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show chassis adc

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Syntax

```
show chassis adc  
<all-members>  
<local>  
<member member-id>
```

Description

Display chassis information about the adapter cards (ADCs).

Options

- | | |
|--------------------|--|
| none | Display information about all adapter cards. |
| all-members | (Optional) Display information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration. |

local	(Optional) Display information about the ADCs in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display information about the ADCs in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.

Required Privilege Level

view

Output Fields

Table 28 on page 475 lists the output fields for the **show chassis adc** command. Output fields are listed in the approximate order in which they appear.

Table 28: show chassis adc Output Fields

Field Name	Field Description
Slot	Slot number.
State	Status of the adapter card. <ul style="list-style-type: none"> • Online—The adapter card is online and running. • Offline—Adapter card is powered down.
Uptime	How long the Routing Engine has been connected to the adapter card and, therefore, how long the adapter card has been up and running.
GNF (Node slicing)	GNF identifier for each ADC.

Sample Output

show chassis adc (MX2020 Router)

```
user@host> show chassis adc
Slot  State                               Uptime
0     Online 1 hour, 21 minutes, 7 seconds
1     Online 1 hour, 21 minutes, 3 seconds
2     Online 1 hour, 20 minutes, 59 seconds
3     Online 1 hour, 20 minutes, 54 seconds
4     Online 1 hour, 20 minutes, 50 seconds
5     Online 1 hour, 20 minutes, 46 seconds
6     Online 1 hour, 20 minutes, 42 seconds
7     Online 1 hour, 20 minutes, 37 seconds
8     Online 1 hour, 20 minutes, 33 seconds
9     Online 1 hour, 20 minutes, 28 seconds
10    Online 1 hour, 20 minutes, 24 seconds
11    Online 1 hour, 20 minutes, 19 seconds
12    Online 1 hour, 20 minutes, 15 seconds
13    Online 1 hour, 20 minutes, 8 seconds
14    Online 1 hour, 20 minutes, 4 seconds
15    Online 1 hour, 19 minutes, 59 seconds
16    Online 1 hour, 19 minutes, 55 seconds
17    Online 1 hour, 19 minutes, 50 seconds
18    Online 1 hour, 19 minutes, 45 seconds
19    Online 1 hour, 19 minutes, 39 seconds
```

show chassis adc (MX2010 Router)

```
user@host > show chassis adc
Slot  State                               Uptime
0     Online 12 hours, 17 minutes, 38 seconds
1     Online 12 hours, 17 minutes, 30 seconds
2     Online 12 hours, 17 minutes, 22 seconds
3     Online 12 hours, 17 minutes, 14 seconds
4     Online 12 hours, 17 minutes, 6 seconds
5     Online 12 hours, 16 minutes, 58 seconds
6     Online 12 hours, 16 minutes, 49 seconds
7     Online 12 hours, 16 minutes, 41 seconds
```

```

8   Online 12 hours, 16 minutes, 33 seconds
9   Online 12 hours, 16 minutes, 25 seconds

```

show chassis adc (MX2008 Router)

```

user@host > show chassis adc
Slot  State                               Uptime
0     Empty  --- Native line card ---
1     Empty  --- Native line card ---
2     Empty
3     Empty
4     Empty
5     Empty
6     Empty
7     Online 1 hour, 14 minutes, 32 seconds
8     Empty
9     Empty

```

show chassis adc (Node Slicing)

```

user@router> show chassis adc

Slot  State          Uptime                                GNF
0     Online       12 hours, 57 minutes, 46 seconds      3
1     Empty       --- Native line card ---             2
2     Online       12 hours, 57 minutes, 18 seconds      3
3     Online       11 minutes, 23 seconds                6
4     Empty       --- Native line card ---             6
5     Empty       --- Native line card ---             4
6     Online       13 hours, 38 minutes, 58 seconds      1
7     Online       13 hours, 3 minutes, 40 seconds       5
8     Empty       --- Native line card ---             5
9     Empty       --- Native line card ---             5

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2020 and MX2010 Universal Routing Platforms.

all-members, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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show chassis afeb

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Syntax

```
show chassis afeb
```

Description

Display compact Forwarding Engine Board status.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 29 on page 479](#) lists the output fields for the **show chassis afeb** command. Output fields are listed in the approximate order in which they appear.

Table 29: show chassis afeb

Field Name	Field Description
State	State of the compact Forwarding Engine Board: <ul style="list-style-type: none"> • Offline—FEB is powered down. • Online—FEB is operational and running. • Check—FEB is in alarmed state because of the following reasons: <ul style="list-style-type: none"> • Hardware error. • PFE is unable to boot.
Temperature	Temperature of the air passing by the FEB, in degrees Celsius or in both degrees Celsius and degrees Fahrenheit.
CPU Utilization	Total percentage of CPU being used.
Interrupt Utilization	Of the total CPU being used by the FEB processor, the percentage being used for interrupts.

Table 29: show chassis afeb (Continued)

Field Name	Field Description
Heap Utilization	Percentage of heap space (dynamic memory) being used by the FEB processor. If this number exceeds 80 percent, you might experience a software problem (memory leak).
Buffer Utilization	Percentage of buffer space being used by the FEB processor for buffering internal messages.
Total CPU DRAM	Total DRAM, in megabytes, available to the FEB processor.
Start time	Time when the Routing Engine detected that the FEB was running.
Uptime	How long the Routing Engine has been connected to the FEB and, therefore, how long the compact Forwarding Engine Board has been up and running.

Sample Output

show chassis afeb (MX104 Router)

```

user@host> show chassis afeb
FEB status:
Slot 0 information:
  State                Online
  Temperature          31 degrees C / 87 degrees F
  CPU utilization       3 percent
  Interrupt utilization 0 percent
  Heap utilization     11 percent
  Buffer utilization    13 percent
  Total CPU DRAM      2048 MB
  Start time:         2013-05-27 08:50:03 IST
  Uptime:             3 hours, 29 minutes, 34 seconds

```


Release Information

Command introduced in Junos OS Release 13.2.

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show chassis alarms

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Syntax

```
show chassis alarms
```

Syntax (MX Series Routers)

```
show chassis alarms
<all-members>
<local>
<member member-id>
```

Syntax (SRX1500, SRX4100, and SRX4200)

```
show chassis alarms
1 alarms currently active
Alarm time          Class  Description
2020-02-28 10:07:16 CST Major  FPC0: PEM 0 Not Present
```

Syntax (SRX4600)

```
show chassis alarms
node0:
-----
2 alarms currently active
Alarm time Class Description
2020-10-08 19:42:06 UTC Major FPC 0 BITS CPLD Version Mismatch
2020-10-08 19:42:06 UTC Minor PEM 1 Not Present
```

Syntax (TX Matrix Routers)

```
show chassis alarms  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis alarms  
<lcc number | sfc number>
```

Syntax (MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms)

```
show chassis alarms  
<satellite [slot-id slot-id]>
```

Syntax (MX10003, MX204, MX10008, OCX Series, PTX Series, ACX Series, EX9251, and EX9253)

```
show chassis alarms
```

Syntax (QFX Series)

```
show chassis alarms  
<interconnect-device name>  
<node-device name>
```

Description

Display information about the conditions that have been configured to trigger alarms. In Junos, the chassis alarms are different from the system alarms (viewed by using the **show system alarms** command). The system alarms indicate a missing rescue configuration or software license, where valid. For more information, see [Alarm Overview](#).

Options

none	Display information about the conditions that have been configured to trigger alarms.
all-members	(MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display information about alarm conditions for the Interconnect device.
lcc <i>number</i>	<p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display information about alarm conditions for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display information about alarm conditions for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> variable with a value of 0 or 1.

node-device <i>name</i>	(QFabric systems only) (Optional) Display information about alarm conditions for the Node device.
satellite [slot-id <i>slot-id</i>]	(Junos Fusion only)(Optional) Display information about alarm conditions for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
scc	(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).
sfc <i>number</i>	(TX Matrix Plus router only) (Optional) Show information about the respective TX Matrix Plus router, which is the switch-fabric chassis. Replace <i>number</i> variable with 0 .

Additional Information

Chassis alarms are preset. You cannot modify them.

You cannot clear the alarms for chassis components. Instead, you must remedy the cause of the alarm. When a chassis alarm LED is lit, it indicates that you are running the router or switch in a manner that we do not recommend.

On routers, you can manually silence external devices connected to the alarm relay contacts by pressing the alarm cutoff button, located on the craft interface. Silencing the device does not remove the alarm messages from the display (if present on the router) or extinguish the alarm LEDs. In addition, new alarms that occur after you silence an external device reactivate the external device.

NOTE: MX10003 routers do not support craft interface.

In Junos OS release 11.1 and later, alarms for fans also show the slot number of the fans in the CLI output.

In Junos OS Release 11.2 and later, the command output on EX8200 switches shows the detailed location (**Plane/FPC/PFE**) for link errors in the chassis.

In Junos OS Release 10.2 and later, an alarm is shown on T Series routers for a standby SONET Clock Generator (SCG) that is offline or absent.

You may often see the following error messages, in which only the error code is shown and no other information is provided:

```
Apr 12 08:04:10 send: red alarm set, device FPC 6, reason FPC 6 Major Errors -
Error code: 257
Apr 12 08:04:19 send: red alarm set, device FPC 1, reason FPC 1 Major Errors -
Error code: 559
```

To understand what CM_ALARM error codes mean, you need to first identify the structure of the CM Alarm codes. A CM_ALARM code has the following structure:

Bits:	Error type:
1-31	Major (1)
0	Minor (0)

According to the table above, the LSB (bit 0) identifies the **Error Type** (major alarm, if the bit is set and minor alarm if the bit is unset). The rest of the bits (1 - 31) identify the actual error code.

Take an example of the following error code, which was logged on a T1600:

```
Apr 12 08:04:10 send: red alarm set, device FPC 1, reason FPC 1 Major Errors -
Error code: 559
```

First, you have to convert 559 to binary; that is **1000101111**. The LSB in this case is **1**, which means that this is a major alarm. After removing the LSB, you are left with **100010111**, which is equal to 279 in decimal. This is the actual error code, its meaning can be found from the following list:

Chip Type: L Chip	Code
CMALARM_LCHIP_LOUT_DESRD_PARITY_ERR	1
CMALARM_LCHIP_LOUT_DESRD_UNINIT_ERR	2
CMALARM_LCHIP_LOUT_DESRD_ILLEGALLINK_ERR	3

CMALARM_LCHIP_LOUT_DESRD_ILLEGALSIZES_ERR	4
CMALARM_LCHIP_LOUT_HDRF_TOERR_ERR	5
CMALARM_LCHIP_LOUT_HDRF_PARITY_ERR	6
CMALARM_LCHIP_LOUT_HDRF_UCERR_ERR	7
CMALARM_LCHIP_LOUT_NLIF_CRCDROP_ERR	8
CMALARM_LCHIP_LOUT_NLIF_CRCERR_ERR	9
CMALARM_LCHIP_UCODE_TIMEOUT_ERR	10
CMALARM_LCHIP_LIN_SRCTL_ACCT_DROP_ERR	11
CMALARM_LCHIP_LIN_SRCTL_ACCT_ADDR_SIZE_ERR	12
CMALARM_LCHIP_SRAM_PARITY_ERR	13
CMALARM_LCHIP_UCODE_OVFLW_ERR	14
CMALARM_LCHIP_LOUT_HDRF_MTU_ERR	15

Chip Type: M Chip	Code
CMALARM_MCHIP_ECC_UNCORRECT_ERR	128

Chip Type: N Chip	Code
CMALARM_NCHIP_RDDMA_JBUS_TIMEOUT_ERR	256

CMALARM_NCHIP_RDDMA_FIFO_OVFLW_ERR	257
CMALARM_NCHIP_RDDMA_FIFO_UNFLW_ERR	258
CMALARM_NCHIP_RDDMA_SIZE_ERR	259
CMALARM_NCHIP_RDDMA_JBUS_CRC_ERR	260
CMALARM_NCHIP_WRDMA_PKTR_ERR	261
CMALARM_NCHIP_WRDMA_PKT_CRC_ERR	262
CMALARM_NCHIP_WRDMA_JBUS_TIMEOUT_ERR	263
CMALARM_NCHIP_WRDMA_FIFO_OVFLW_ERR	264
CMALARM_NCHIP_WRDMA_FIFO_UNFLW_ERR	265
CMALARM_NCHIP_WRDMA_PKT_LEN_ERR	266
CMALARM_NCHIP_WRDMA_JBUS_CRC_ERR	267
CMALARM_NCHIP_PKTR_DMA_AGE_ERR	268
CMALARM_NCHIP_PKTR_ICELLSIG_ERR	269
CMALARM_NCHIP_PKTR_FTTL_ERR	270
CMALARM_NCHIP_RODR_OFFSET_OVFLW_ERR	271
CMALARM_NCHIP_PKTR_TMO_CELL_ERR	272

CMALARM_NCHIP_PKTR_TMO_OUTRANGE_ERR	273
CMALARM_NCHIP_PKTR_MD_REQUEST_Q_OVFLW_ERR	274
CMALARM_NCHIP_PKTR_DMA_BUFFER_OVFLW_ERR	275
CMALARM_NCHIP_PKTR_GRT_OVFLW_ERR	276
CMALARM_NCHIP_FRQ_ERR	277
CMALARM_NCHIP_RODR_IN_Q_OVFLW_ERR	278
CMALARM_NCHIP_DBUF_CRC_ERR	279

Chip Type: R Chip	Code
CMALARM_RCHIP_SRAM_PARITY_ERR	512

Chip Type: R Chip	Code
CMALARM_ICHIP_WO_DESRD_ID_ERR	601
CMALARM_ICHIP_WO_DESRD_DATA_ERR	602
CMALARM_ICHIP_WO_DESRD_OFLOW_ERR	603
CMALARM_ICHIP_WO_HDRF_UCERR_ERR	604
CMALARM_ICHIP_WO_HDRF_MTUERR_ERR	605
CMALARM_ICHIP_WO_HDRF_PARITY_ERR	606

CMALARM_ICHIP_WO_HDRF_TOERR_ERR	607
CMALARM_ICHIP_WO_IP_CRC_ERR	608
CMALARM_ICHIP_WO_IP_INTER_ERR	609
CMALARM_ICHIP_WI_WAN_TIMEOUT_ERR	625
CMALARM_ICHIP_WI_FAB_TIMEOUT_ERR	626
CMALARM_ICHIP_RLDRAM_BIST_ERR	630
CMALARM_ICHIP_SDRAM_BIST_ERR	631
CMALARM_ICHIP_RLDRAM_PARITY_ERR	632
CMALARM_ICHIP_SDRAM_UNCORRECT_ERR	633
CMALARM_ICHIP_SDRAM_CORRECT_ERR	634
CMALARM_ICHIP_FUSE_DONE_ERR	635

According to the table above, the **279** error code corresponds to **CMALARM_NCHIP_DBUF_CRC_ERR**; this means that new CRC errors were seen on the NCHIP of this particular FPC, which is FPC as per the logs.

If you do not want to convert decimal to binary and vice versa, you may use the following shortcut:

For major alarms, the **Actual Error Code = (Error Code - 1)/2**, where **Error Code** is the code that you get in the log message. For example, if you get the following log:

```
Apr 12 08:04:10 send: red alarm set, device FPC 6, reason FPC 6 Major Errors
- Error code: 257
```

Actual Error Code = $(257-1)/2 = 128$. Similarly, for minor alarms, Actual Error Code = $(\text{Error Code})/2$

NOTE: Starting in Junos OS Release 18.2R1, on MX Series routers, the **show chassis alarms** output does not display error codes for PFE-related errors. You can use the following commands to view more details of the errors that caused the alarms:

- **show chassis errors active**
- **show chassis errors active detail**

Required Privilege Level

view

Output Fields

[Table 30 on page 491](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

Table 30: show chassis alarms Output Fields

Field Name	Field Description
Alarm time	Date and time the alarm was first recorded.
Class	Severity class for this alarm: Minor or Major .
Description	Information about the alarm.

Sample Output

show chassis alarms (Alarms Active)

```

user@host> show chassis alarms
3 alarms are currently active
Alarm time           Class  Description
2000-02-07 10:12:22 UTC Major fxp0: ethernet link down
2000-02-07 10:11:54 UTC Minor YELLOW ALARM - PEM 1 Removed
2000-02-07 10:11:03 UTC Minor YELLOW ALARM - Lower Fan Tray Removed

```

show chassis alarms (No Alarms Active)

```

user@host> show chassis alarms
No alarms are currently active

```

show chassis alarms (Fan Tray)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time           Class  Description
2010-11-11 20:27:38 UTC Major Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC Minor Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC Major Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC Major Side Fan Tray 0 Failure

```

show chassis alarms (MX150)

```

user@host > show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2016-06-04 01:49:43 PDT Major Fan Tray 1 Fan 0 failed

```

show chassis alarms (MX104 Router)

```

user@host >show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2013-06-05 14:43:31 IST  Minor  Backup RE Active

```

show chassis alarms (MX2010 Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2012-08-07 00:46:06 PDT  Major  Fan Tray 2 Failure
2012-08-06 18:24:36 PDT  Minor  Redundant feed missing for PSM 6
2012-08-06 07:41:04 PDT  Minor  Redundant feed missing for PSM 8
2012-08-04 02:42:06 PDT  Minor  Redundant feed missing for PSM 5
2012-08-03 21:14:24 PDT  Minor  Loss of communication with Backup RE
2012-08-03 12:26:03 PDT  Minor  Redundant feed missing for PSM 4
2012-08-03 10:40:18 PDT  Minor  Redundant feed missing for PSM 7

```

show chassis alarms (MX2020 Router)

```

user@host> show chassis alarms
1 alarms currently active
Alarm time Class Description
2012-10-03 12:14:59 PDT Minor Plane 0 not online

```

show chassis alarms (MX10003 Router)

```

user@host> show chassis alarms

9 alarms currently active
Alarm time           Class  Description
2017-07-13 21:50:31 PDT  Major  FPC 1 Temperature Hot
2017-07-13 21:50:04 PDT  Minor  FPC 1 PIC 1 Invalid port profile configuration
2017-07-13 21:49:13 PDT  Minor  FPC 1 PIC 0 Invalid port profile configuration
2017-07-13 21:48:54 PDT  Major  FPC 0 Temperature Hot

```

```

2017-07-13 21:43:54 PDT Minor CB 1 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:54 PDT Minor CB 0 Voltage Sensor ADS7830_0x4B Sensor Failed
2017-07-13 21:43:31 PDT Minor Loss of communication with Backup RE

```

Starting in Junos OS Release 19.2R1, the MX10003 routers do not raise an alarm if a Power Entry Module (PEM) slot is empty. However, when the number of operational PEMs goes below 2, the router raises a major alarm. This alarm is cleared when the required number of PEMs are made available.

show chassis alarms (MX204 Router)

```

user@host> show chassis alarms

1 alarms currently active
Alarm time           Class  Description
2017-11-05 22:13:03 PST Major PEM 0 Not Present

```

show chassis alarms (MX2008 Router)

```

user@host>show chassis alarms
No alarms currently active

```

show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure)

A major CB 0 failure alarm occurs in the event of a bad CB (unknown or mismatched CBs do not trigger this alarm in Junos Release OS 12.3R9 and later). Following GRES or recovery, if the hardware issue persists, the traffic moves to the good CB and continues. If the alarm was triggered by something transient like a power zone budget on GRES, bringing the CB back online can clear the alarm. Otherwise, replace the bad CB. Note that fabric link speed is not impacted by an offline SCB. The alarm might be raised on CB0, CB1, and CB2.

```

user@host> show chassis alarms

6 alarms currently active
Alarm time           Class  Description
2014-10-31 16:49:41 EDT Major PEM 3 Not OK
2014-10-31 16:49:41 EDT Major PEM 2 Not OK
2014-10-31 16:49:31 EDT Major CB 0 Failure
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 0 Not Online

```

```
2014-10-31 16:49:31 EDT Minor CB 0 Fabric Chip 1 Not Online
2014-10-31 16:49:31 EDT Minor Backup RE Active
```

show chassis alarms (PTX10008 Router)

```
user@host>show chassis alarms
12 alarms currently active
Alarm time          Class Description
2017-05-09 01:38:55 PDT Minor Loss of communication with Backup RE
2017-05-05 06:49:57 PDT Major FPC 5 LCPU Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 PE2 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE1 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE0 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-C Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-B Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-A Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Intake-B Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 Intake-A Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 5 running at lower speed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 4 running at lower speed
```

show chassis alarms (T4000 Router)

```
user@host> show chassis alarms
9 alarms currently active
Alarm time          Class Description
2007-06-02 01:41:10 UTC Minor RE 0 Not Supported
2007-06-02 01:41:10 UTC Minor CB 0 Not Supported
2007-06-02 01:41:10 UTC Minor Mixed Master and Backup RE types
2007-05-30 19:37:33 UTC Major SPMB 1 not online
2007-05-30 19:37:29 UTC Minor Front Bottom Fan Tray Absent
2007-05-30 19:37:13 UTC Major PEM 1 Input Failure
2007-05-30 19:37:13 UTC Major PEM 0 Not OK
2007-05-30 19:37:03 UTC Major PEM 0 Improper for Platform
2007-05-30 19:37:03 UTC Minor Backup RE Active
```

show chassis alarms (Unreachable Destinations Present on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time           Class  Description
2011-08-30 18:43:53 PDT  Major  FPC 7 has unreachable destinations
2011-08-30 18:43:53 PDT  Major  FPC 5 has unreachable destinations
2011-08-30 18:43:52 PDT  Major  FPC 3 has unreachable destinations
2011-08-30 18:43:52 PDT  Major  FPC 2 has unreachable destinations
2011-08-30 18:43:52 PDT  Minor  SIB 0 Not Online
2011-08-30 18:43:33 PDT  Minor  SIB 4 Not Online
2011-08-30 18:43:28 PDT  Minor  SIB 3 Not Online
2011-08-30 18:43:05 PDT  Minor  SIB 2 Not Online
2011-08-30 18:43:28 PDT  Minor  SIB 1 Not Online
2011-08-30 18:43:05 PDT  Major  PEM 1 Not Ok

```

show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time           Class  Description
2011-08-30 18:43:53 PDT  Major  FPC 7 offline due to unreachable destinations
2011-08-30 18:43:53 PDT  Major  FPC 5 offline due to unreachable destinations
2011-08-30 18:43:52 PDT  Major  FPC 3 offline due to unreachable destinations
2011-08-30 18:43:52 PDT  Major  FPC 2 offline due to unreachable destinations
2011-08-30 18:43:52 PDT  Minor  SIB 0 Not Online
2011-08-30 18:43:33 PDT  Minor  SIB 4 Not Online
2011-08-30 18:43:28 PDT  Minor  SIB 3 Not Online
2011-08-30 18:43:05 PDT  Minor  SIB 2 Not Online
2011-08-30 18:43:28 PDT  Minor  SIB 1 Not Online
2011-08-30 18:43:05 PDT  Major  PEM 1 Not Ok

```

show chassis alarms (SCG Absent on a T Series Router)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time           Class  Description
2011-01-23 21:42:46 PST  Major  SCG 0 NO EXT CLK MEAS-BKUP SCG ABS

```


show chassis alarms (Alarms Active on a TX Matrix Router)

```

user@host> show chassis alarms
scc-re0:
-----
8 alarms currently active
Alarm time           Class  Description
2004-08-05 18:43:53 PDT  Minor  LCC 0 Minor Errors
2004-08-05 18:43:53 PDT  Minor  SIB 3 Not Online
2004-08-05 18:43:52 PDT  Major  SIB 2 Absent
2004-08-05 18:43:52 PDT  Major  SIB 1 Absent
2004-08-05 18:43:52 PDT  Major  SIB 0 Absent
2004-08-05 18:43:33 PDT  Major  LCC 2 Major Errors
2004-08-05 18:43:28 PDT  Major  LCC 0 Major Errors
2004-08-05 18:43:05 PDT  Minor  LCC 2 Minor Errors
lcc0-re0:
-----
5 alarms currently active
Alarm time           Class  Description
2004-08-05 18:43:53 PDT  Minor  SIB 3 Not Online
2004-08-05 18:43:49 PDT  Major  SIB 2 Absent
2004-08-05 18:43:49 PDT  Major  SIB 1 Absent
2004-08-05 18:43:49 PDT  Major  SIB 0 Absent
2004-08-05 18:43:28 PDT  Major  PEM 0 Not OK
lcc2-re0:
-----
5 alarms currently active
Alarm time           Class  Description
2004-08-05 18:43:35 PDT  Minor  SIB 3 Not Online
2004-08-05 18:43:33 PDT  Major  SIB 2 Absent
2004-08-05 18:43:33 PDT  Major  SIB 1 Absent
2004-08-05 18:43:33 PDT  Major  SIB 0 Absent
2004-08-05 18:43:05 PDT  Minor  PEM 1 Absent

```

show chassis alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis alarms
sfc0-re0:
-----
Alarm time           Class  Description

```

```
2014-04-08 14:35:13 IST Minor FPM 0 SFC Config Size Changed
2014-04-08 14:32:58 IST Major Fan Tray Failure
2014-04-08 14:31:53 IST Major SIB F13 6 Fault
2014-04-08 14:31:43 IST Major SIB F13 11 Fault
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3 Fbr Cbl
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 15 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 14
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 7 fault
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 4 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 3 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0 Fbr Cbl
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 12 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12
2014-04-08 14:31:08 IST Major SIB F13 6 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 6 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 4 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 2 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 0 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 XC HSL Link Error
2014-04-08 14:29:27 IST Minor LCC 0 Minor Errors
2014-04-08 14:28:37 IST Major LCC 0 Major Errors
```

```

2014-04-08 14:28:37 IST Major LCC 2 Major Errors
2014-04-08 14:28:37 IST Minor LCC 2 Minor Errors
2014-04-08 14:28:24 IST Major SIB F2S 4/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/0 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/0 Absent
2014-04-08 14:28:24 IST Major SIB F13 9 Absent
2014-04-08 14:28:24 IST Major SIB F13 8 Absent
2014-04-08 14:28:24 IST Major SIB F13 7 Absent
2014-04-08 14:28:24 IST Major SIB F13 4 Absent
2014-04-08 14:28:24 IST Major SIB F13 1 Absent
2014-04-08 14:28:22 IST Major PEM 0 Input Failure
2014-04-08 14:28:22 IST Major PEM 0 Not OK

```

lcc0-re0:

```

-----
12 alarms currently active
Alarm time          Class Description
2014-04-08 14:36:08 IST Minor CB 1 M/S Switch Changed
2014-04-08 14:36:08 IST Minor CB 1 CHASSIS ID Changed
2014-04-08 14:35:43 IST Minor CB 0 M/S Switch Changed
2014-04-08 14:35:43 IST Minor CB 0 CHASSIS ID Changed
2014-04-08 14:29:30 IST Minor SIB 4 Not Online
2014-04-08 14:29:30 IST Minor SIB 3 Not Online
2014-04-08 14:29:30 IST Minor SIB 2 Not Online
2014-04-08 14:29:24 IST Major Rear Fan Tray Failure
2014-04-08 14:29:24 IST Major Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:24 IST Major Front Top Fan Tray Improper for Platform
2014-04-08 14:28:37 IST Major SIB 4 Absent
2014-04-08 14:28:37 IST Major SIB 3 Absent

```

lcc2-re0:

```

-----
12 alarms currently active
Alarm time          Class Description
2014-04-08 14:36:02 IST Minor CB 1 M/S Switch Changed
2014-04-08 14:36:02 IST Minor CB 1 CHASSIS ID Changed
2014-04-08 14:35:42 IST Minor CB 0 M/S Switch Changed
2014-04-08 14:34:42 IST Minor CB 0 CHASSIS ID Changed

```

```

2014-04-08 14:29:29 IST Minor SIB 0 CXP 7 Unsupported Optics
2014-04-08 14:29:27 IST Major Front Bottom Fan Tray Improper for Platform
2014-04-08 14:29:27 IST Major Front Top Fan Tray Improper for Platform
2014-04-08 14:29:25 IST Minor SIB 4 Not Online
2014-04-08 14:29:25 IST Minor SIB 3 Not Online
2014-04-08 14:28:47 IST Major PEM 0 Not OK
2014-04-08 14:28:36 IST Major SIB 2 Absent
2014-04-08 14:28:36 IST Minor Host 0 Boot from alternate media

```

```
lcc6-re0:
```

```
-----
2 alarms currently active
```

Alarm time	Class	Description
2013-11-06 04:03:56 PST	Minor	SIB 1 CXP 0 XC HSL Link Error
2013-11-06 03:49:32 PST	Major	PEM 1 Not OK

show chassis alarms (Alarms on a T4000 Router After the enhanced-mode Statement is Enabled)

To enable improved virtual private LAN service (VPLS) MAC address learning on T4000 routers, you must include the **enhanced-mode** statement at the **[edit chassis network-services]** hierarchy level and reboot the router. When router reboots, only the T4000 Type 5 FPCs are required to be present on the router. If there are any other FPCs (apart from T4000 Type 5 FPCs) on the T4000 router, such FPCs become offline, and FPC misconfiguration alarms are generated. The **show chassis alarm** command output displays FPC misconfiguration (**FPC *fpc-slot* misconfig**) as the reason for the generation of the alarms.

```

user@host> show chassis alarms
2 alarms currently active
      Alarm time           Class  Description
      2011-10-22 10:10:47 PDT  Major  FPC 1 misconfig
      2011-10-22 10:10:46 PDT  Major  FPC 0 misconfig

```

show chassis alarms (Backup Routing Engine)

```

user@host> show chassis alarms
2 alarms are currently active
Alarm time           Class  Description

```

```
2005-04-07 10:12:22 PDT Minor Host 1 Boot from alternate media
2005-04-07 10:11:54 PDT Major Host 1 compact-flash missing in Boot List
```

show chassis alarms (EX Series Switch)

```
user@switch> show chassis alarms

4 alarms currently active
Alarm time           Class  Description
2014-03-12 15:36:09 UTC  Minor  Require a Fan Tray upgrade
2014-03-12 15:00:02 UTC  Major  PEM 0 Input Failure
2014-03-12 15:00:02 UTC  Major  PEM 0 Not OK
2014-03-12 14:59:51 UTC  Minor  Host 1 Boot from alternate media
```

show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches)

```
user@switch> show chassis alarms

1 alarms currently active
Alarm time           Class  Description
2012-03-05   2:10:24 UTC  Major  FPC 0 PEM 0 Airflow not matching Chassis
Airflow
```

show chassis alarms node-device (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms node-device

Test
node-device ED3694
3 alarms currently active
Alarm time           Class  Description
2011-08-24 16:04:15 UTC  Major  Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC  Major  Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC  Major  Test PEM 0 is not supported/powerd
```

show chassis alarms (Alarms Active on the QFabric System)

```

user@switch> show chassis alarms
IC-1:
-----
1 alarms currently active
Alarm time           Class  Description
2011-08-24 16:04:15 UTC  Minor Backup RE Active

Test:
-----
3 alarms currently active
Alarm time           Class  Description
2011-08-24 16:04:15 UTC  Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC  Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC  Major Test PEM 0 is not supported/powerd

SNG-0:
-----

NW-NG-0:
-----
1 alarms currently active
Alarm time           Class  Description
2011-08-24 15:49:27 UTC  Major Test PEM 0 is not supported/powerd

```

show chassis alarms (Alarms Active on an EX8200 Switch)

```

user@switch> show chassis alarms

6 alarms currently active
Alarm time           Class  Description
2010-12-02 19:15:22 UTC  Major Fan Tray Failure
2010-12-02 19:15:22 UTC  Major Fan Tray Failure
2010-12-02 19:15:14 UTC  Minor Check CB 0 Fabric Chip 1 on Plane/FPC/PFE:
1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...
2010-12-02 19:15:14 UTC  Minor Check CB 0 Fabric Chip 0 on Plane/FPC/PFE:
1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ...

```

```
2010-12-02 19:14:18 UTC Major PSU 1 Output Failure
2010-12-02 19:14:18 UTC Minor Loss of communication with Backup RE
```

show chassis alarms (EX9251 Switch)

```
user@switch> show chassis alarms

2 alarms currently active
Alarm time          Class Description
2018-03-08 05:13:10 PST Major PEM 0 Not Powered
2018-03-08 05:13:10 PST Major Fan Tray 2 is not present
```

show chassis alarms (EX9253 Switch)

```
user@switch> show chassis alarms

6 alarms currently active
Alarm time          Class Description
2018-03-07 01:09:01 PST Major Power Budget:Insufficient Power
2018-03-06 23:56:34 PST Minor Loss of communication with Backup RE
2018-02-15 00:48:10 PST Minor PEM 3 Not Present
2018-02-15 00:48:10 PST Minor PEM 2 Not Present
2018-02-15 00:48:07 PST Major PEM 4 Not Powered
2018-02-15 00:48:07 PST Major PEM 1 Not Powered
```

show chassis alarms (Alarms Active on a PTX5000 Packet Transport Router)

```
user@host> show chassis alarms

23 alarms currently active
Alarm time          Class Description
2011-07-12 16:22:05 PDT Minor No Redundant Power for Rear Chassis
2011-07-12 16:22:05 PDT Major PDU 0 PSM 1 Not OK
2011-07-12 16:21:57 PDT Minor No Redundant Power for Fan 0-2
2011-07-12 16:21:57 PDT Major PDU 0 PSM 0 Not OK
2011-07-12 15:56:06 PDT Major PDU 1 PSM 2 Not OK
2011-07-12 15:56:06 PDT Minor No Redundant Power for FPC 0-7
2011-07-12 15:56:06 PDT Major PDU 0 PSM 3 Not OK
```

```
2011-07-12 15:28:20 PDT Major PDU 0 PSM 2 Not OK
2011-07-12 15:19:14 PDT Minor Backup RE Active
```

show chassis alarms (Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

All PDUs installed on a PTX5000 router must be of the same type. The **Mix of PDUs or Power Manager Non Operational** alarm is raised when different types of PDUs are installed on a PTX5000 router.

```
user@host> show chassis alarms
15 alarms currently active
Alarm time          Class Description
2013-03-19 23:03:53 PDT Minor No Redundant Power
2013-03-19 23:03:48 PDT Minor Mix of PDUs
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 3 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 2 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 1 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 0 Absent
2013-03-19 23:03:46 PDT Major No CG Online
```

show chassis alarms (PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

The **PDU Converter Failed** alarm is raised when one or more 36 V booster converter of a DC PDU fails. If two or more 36 V booster converter fails, fan trays fail and the router might get over heated. Therefore, when this alarm is raised, check the PDU and replace it, if required.

```
user@host> show chassis alarms
11 alarms currently active
Alarm time          Class Description
2013-12-11 22:14:13 PST Minor No Redundant Power for System
2013-12-11 22:14:10 PST Major PDU 0 PSM 7 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 6 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 5 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 4 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 3 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 2 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 1 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 0 Not OK
```



```
2013-12-11 22:14:10 PST Major PDU 0 Not OK
2013-12-11 22:14:01 PST Major PDU 0 Converter Failed
```

show chassis alarms (No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis alarms
8 alarms currently active
Alarm time           Class  Description
2013-11-19 01:58:41 PST Major No Power for System
2013-11-19 01:58:37 PST Major PDU 0 PSM 1 Not OK
2013-11-19 01:56:46 PST Major PDU 0 PSM 2 Not OK
2013-11-19 01:54:26 PST Major PDU 0 PSM 3 Not OK
2013-11-19 01:53:30 PST Major PDU 1 PSM 3 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 2 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 1 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 0 Not OK
```

show chassis alarms (Alarms Active on an ACX2000 Universal Metro Router)

```
user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2012-05-22 11:19:09 UTC Major xe-0/3/1: Link down
2012-05-22 11:19:09 UTC Major xe-0/3/0: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/7: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/6: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/3: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/2: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/1: Link down
```

show chassis alarms (Active Alarm to Indicate Status of the Bad SCB Clock on MX Series)

```
user@host> show chassis alarms
1 alarm currently active
Alarm time           Class  Description
2013-08-06 07:48:35 PDT Major CB 0 19.44 MHz clock failure
```

show chassis alarms (Alarms active on a PTX1000 Packet Transport Router)

```
user@host> show chassis alarms
2 alarms currently active
Alarm time           Class  Description
2004-08-10 00:55:49 UTC Major  PEM 1 Not Present
2004-08-10 00:55:49 UTC Major  PEM 0 Not Present
```

show chassis alarms (MX10003 Router)

If LCMD is down on the backup RE, then the following alarm is seen on the primary.

```
user@host> show chassis alarms
1 alarm currently active
Alarm time           Class  Description
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed
```

If LCMD is down on the primary, then following alarms are displayed.

```
user@host> show chassis alarms
3 alarms currently active
Alarm time           Class  Description
2017-05-10 14:12:21 PDT Major  VMHost RE 0 host application failed
2017-05-10 14:12:16 PDT Minor  LCM Peer Absent
2017-05-09 13:26:27 PDT Major  VMHost RE 1 host application failed
```

If the LCMD process is crashing on the primary, the system will switchover after one minute provided the backup RE LCMD connection is stable. The system will not switchover under the following conditions: if the backup RE LCMD connection is unstable or if the current primary just gained primary role. When the primary has just gained primary role, the switchover happens only after four minutes.

The LCM peer connection un-stable alarm is raised when the LCMD-CHASD IPC communication flaps three times within a small interval of two to three minutes. Once LCM peer connection un-stable alarm is raised, the connection status is monitored for two minutes.

```
user@host> show chassis alarms
7 alarms currently active
Alarm time           Class  Description
2017-05-29 10:12:17 PDT Minor  LCM Peer Connection un-stable
```

```

2017-05-29 09:04:17 PDT Minor PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 3 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor Loss of communication with Backup RE

```

If there are no more connection flaps within this two minutes time interval, the LCM peer connection un-stable alarm is cleared.

```

6 alarms currently active
Alarm time          Class Description
2017-05-29 09:04:17 PDT Minor PEM 8 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 9 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 7 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 3 Not Powered
2017-05-29 09:04:17 PDT Minor PEM 0 Not Powered
2017-05-29 09:04:08 PDT Minor Loss of communication with Backup RE

```

A major alarm is raised even if there is on one PLL lock error, and this alarm can be cleared only through an FPC restart.

```

user@host> show chassis alarms
4 alarms currently active
Alarm time          Class Description
2017-02-16 09:06:06 PDT Major FPC 0 Major Errors
2017-02-16 09:08:40 PDT Major FPC 1 Major Errors
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Outer Fan running at over speed
2017-02-16 09:11:47 PST Minor Fan Tray 3 Pair 1 Inner Fan running at over speed

```

show chassis alarms (Alarms active on a MX10008 Router)

```

user@host> show chassis alarms
13 alarms currently active
Alarm time          Class Description
2018-07-17 05:48:08 PDT Major FPC 2 I2C Failure
2018-07-17 05:47:02 PDT Minor Mixed Master and Backup RE types
2018-07-17 05:47:01 PDT Major Fan Tray 0 Fan 5 Failed
2018-07-17 05:47:01 PDT Major Fan Tray 0 Fan 4 Failed
2018-07-17 05:47:01 PDT Minor PEM 5 Not Powered

```

```

2018-07-17 05:47:01 PDT Minor PEM 5 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 5 Feed 1 has no input source
2018-07-17 05:47:01 PDT Minor PEM 4 Not Powered
2018-07-17 05:47:01 PDT Minor PEM 4 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 4 Feed 1 has no input source
2018-07-17 05:47:01 PDT Minor PEM 3 Not Powered
2018-07-17 05:47:01 PDT Minor PEM 3 Feed 2 has no input source
2018-07-17 05:47:01 PDT Minor PEM 3 Feed 1 has no input source

```

show chassis alarms (ACX710 Router)

```

user@host> show chassis alarms
Alarm time           Class  Description
2011-01-23 21:42:46 PST Major  PTP Local Clock OOS
2011-01-23 21:42:46 PST Major  PTP No Foreign Master
2011-01-23 21:42:46 PST Major  Chassis Loss of all Equipment Clock Synch
References
2011-01-23 21:42:46 PST Major  Chassis Loss of Equipment Clock Synch Reference 1
2011-01-23 21:42:46 PST Major  Chassis Loss of Equipment Clock Synch Reference 2
2011-01-23 21:42:46 PST Major  Equipment Clock QL Below Threshold
2011-01-23 21:42:46 PST Major  TOD Input A Signal Fail
2011-01-23 21:42:46 PST Major  1PPS lost
2011-01-23 21:42:46 PST Major  SyncE Port incompatible Media Type

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

satellite option introduced in Junos OS Release 14.2R3 for Junos Fusion.

Command introduced in Junos OS Release 18.2R1 for EX9253 Switches and MX10008 Universal Routing Platforms.

RELATED DOCUMENTATION

[Configuring an RMON Alarm Entry and Its Attributes](#)

[Chassis Conditions That Trigger Alarms](#)

show chassis cfeb

IN THIS SECTION

- [Syntax | 509](#)
- [Description | 509](#)
- [Options | 510](#)
- [Required Privilege Level | 510](#)
- [Output Fields | 510](#)
- [Sample Output | 511](#)
- [Release Information | 512](#)

Syntax

```
show chassis cfeb
```

Description

(M7i and M10i routers only) Display status information about the Compact Forwarding Engine Board (CFEB).

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 31 on page 510](#) lists the output fields for the **show chassis cfeb** command. Output fields are listed in the approximate order in which they appear.

Table 31: show chassis cfeb Output Fields

Field Name	Field Description
State	Status of the CFEB: <ul style="list-style-type: none"> • Online—CFEB is online and running. • Offline—CFEB is powered down.
Intake Temperature	Temperature of the air before flowing past the CFEB.
Exhaust Temperature	Temperature of the air after flowing past the CFEB.
CPU utilization	Percentage of CPU being used by the CFEB processor.
Interrupt utilization	Of the total CPU being used by the CFEB processor, the percentage being used for interrupts

Table 31: show chassis cfeb Output Fields (*Continued*)

Field Name	Field Description
Heap Utilization	Percentage of heap space (dynamic memory) being used by the CFEB processor. If this number exceeds 80 percent, there may be a software problem (memory leak).
Buffer Utilization	Percentage of buffer space being used by the CFEB processor for buffering internal messages
Total CPU DRAM	Amount of DRAM available to the CFEB CPU.
Internet Processor II	Information about the CFEB processor.
Start time	Time when the Routing Engine detected that the CFEB was running.
Uptime	How long the Routing Engine has been connected to the CFEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running.

Sample Output

show chassis cfeb (M7i)

```

user@host> show chassis cfeb
CFEB status:
  State                Online
  Intake Temperature   27 degrees C / 80 degrees F
  Exhaust Temperature  33 degrees C / 91 degrees F
  CPU utilization       3 percent
  Interrupt utilization 0 percent
  Heap utilization      8 percent
  Buffer utilization     21 percent
  Total CPU DRAM       128 MB

```

```

Internet Processor II      Version 1, Foundry IBM, Part number 164
Start time:                2003-06-11 11:41:22 PDT
Uptime:                    1 hour, 39 minutes, 31 seconds

```

show chassis cfeb (M10i)

```

user@host> show chassis cfeb
CFEB status:
Slot 0 information:
  StateMaster
  Intake temperature       35 degrees C / 95 degrees F
  Exhaust temperature     43 degrees C / 109 degrees F
  CPU utilization          3 percent
  Interrupt utilization    0 percent
  Heap utilization         10 percent
  Buffer utilization        22 percent
  Total CPU DRAM           128 MB
  Internet Processor II    Version 1, Foundry IBM, Part number 164
  Start time:              2004-11-01 03:24:15 PST
  Uptime:                  12 hours, 56 minutes, 18 seconds
Slot 1 information:
  State                    Backup

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis cfeb | 413](#)

Configuring CFEB Redundancy on the M10i Router

[CFEB Overview](#)

show chassis craft-interface

IN THIS SECTION

- [Syntax \(MX Series Routers\) | 513](#)
- [Syntax \(MX104, MX2010, MX2020, MX2008, and ACX Series routers.\) | 513](#)
- [Syntax \(TX Matrix Routers\) | 514](#)
- [Syntax \(TX Matrix Plus Routers\) | 514](#)
- [Description | 514](#)
- [Options | 514](#)
- [Required Privilege Level | 515](#)
- [Output Fields | 515](#)
- [Sample Output | 518](#)
- [Release Information | 539](#)

Syntax (MX Series Routers)

```
show chassis craft-interface  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104, MX2010, MX2020, MX2008, and ACX Series routers.)

```
show chassis craft-interface
```

Syntax (TX Matrix Routers)

```
show chassis craft-interface
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis craft-interface
<lcc number | sfc number>
```

Description

For routers or switches that have a display on the craft interface, show the messages that are currently displayed. On all routers except for the M20 router, you must enter this command on the primary Routing Engine.

Options

- none** (TX Matrix, TX Matrix Plus routers, MX104, MX2010, MX2020, and MX2008 routers, and ACX Series routers only) On a TX Matrix router, show messages that are currently displayed on the craft interface on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, show messages that are currently displayed on the craft interface on the TX Matrix Plus router and its attached routers.
- all-members** (MX Series routers only) (Optional) Display information currently on the craft interface for all members of the Virtual Chassis configuration.
- lcc number** (TX Matrix, TX Matrix Plus routers only) (Optional) On a TX Matrix router, show messages that are currently displayed on the craft interface for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, show messages that are currently displayed on the craft interface for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display information currently on the craft interface for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display information currently on the craft interface for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
scc	(TX Matrix router only) (Optional) Show messages that are currently displayed on the craft interface for the TX Matrix router (switch-card chassis).
<i>sfc number</i>	(TX Matrix Plus router only) (Optional) Show messages that are currently displayed on the craft interface for the respective TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with 0 .

Required Privilege Level

view

Output Fields

[Table 32 on page 516](#) lists the output fields for the **show chassis craft-interface** command. Output fields are listed in the approximate order in which they appear.

Table 32: show chassis craft-interface Output Fields

Field Name	Field Description
LCD screen or FPM Display Contents	<p>Contents of the Front Panel Module display:</p> <ul style="list-style-type: none"> • router-name—Name of the router. • Up—How long the router has been operational, in days, hours, minutes, and seconds. • message—Information about the router traffic load, the power supply status, the fan status, and the temperature status. The display of this information changes every 2 seconds. If a text message has been created with the set chassis display command, this message appears on all four lines of the craft interface display. The display alternates between the text message and the standard system status messages every 2 seconds.
SFC Front Panel Switch Settings	<p>(TX Matrix Plus Routers)—Display the SFC front panel switch settings:</p> <p>SFC Chassis Number and Config Size are settings on physical switches located on the left side of the craft interface of the TX Matrix Plus router.</p> <ul style="list-style-type: none"> • SFC Chassis Number—This field always displays the value 00. • Config Size—The value of this field is 0 for the TX Matrix Plus router. The value of this field is 3 for TX Matrix Plus router with 3D SIBs.
Front Panel System LEDs	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel System LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.</p>
Front Panel Alarm Indicators	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Alarm indicators. A dot (.) indicates the relay is off. An asterisk (*) indicates the relay is active.</p>
Input Relay	<p>Status of the configured input relay ports—0 through 3. The mode is normally open or closed. The status is clear or raised.</p>

Table 32: show chassis craft-interface Output Fields *(Continued)*

Field Name	Field Description
Output Relay	Status of the configured output ports—0 or 1. The mode is normally open or closed. The status is clear or raised.
Front Panel FPC LEDs	(MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Flexible PIC Concentrator (FPC) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 10 (0-9) FPCs LEDs. On MX2020 routers, there are 20 (0-9 and 10-19) FPCs LEDs.
CB LEDs	Status of the Control Board (CB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
PS LEDs	(MX2010, MX2020, and MX2008 Routers) Status of the Power Supply (PS) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. On MX2010 and MX2008 routers, there are 9 (0-8) PS LEDs. On MX2020 routers, there are 18 (0-8 and 9-17) PS LEDs.
PS Status	(MX104 Routers) Status of the Power Supply (PS). Green indicates that the power supply is functioning. Red indicates that the power supply is not functioning. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
FAN Tray LEDs	(MX2010, MX2020, and MX2008 Routers) Status of the Fan Tray LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
Front Panel SFB LEDs	(MX2010, MX2020, and MX2008 Routers) Status of the Front Panel Switch Fabric Boards (SFB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
Front Panel Chassis Info	(MX2010, MX2020, and MX2008 Routers) Information about the chassis such as the chassis number and role. User can set the chassis number in multi-chassis configurations.

Table 32: show chassis craft-interface Output Fields (Continued)

Field Name	Field Description
MCS and SFM LEDs	Status of the Miscellaneous Control Subsystem (MCS) and Switching and Forwarding Module (SFM) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit. When neither a dot nor an asterisk is displayed, there is no board in that slot.
SIB LEDs	Status of the Switch Interface Board (SIB) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.
SCG LEDs	Status of the SONET Clock Generator (SCG) LEDs. A dot (.) indicates the LED is not lit. An asterisk (*) indicates the LED is lit.

Sample Output

show chassis craft-interface (M20 Router)

```

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED on, relay on
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3
-----
Green  .  *  *.
Red    ....
LCD screen:
+-----+
|host           |
|1 Alarm active |
|Y: FERF       |
|              |
+-----+

```

show chassis craft-interface (M40 Router)

```

user@host> show chassis craft-interface
Front Panel LCD Display: enabled
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host Fail LED:  Off
NICs           0  1  2  3  4  5  6  7
-----
Green  *.  *.  *.  *.
Red    .....
LCD Screen:
+-----+
|host           |
|Up: 27+18:52:37 |
|               |
|52.649kpps Load |
+-----+

```

show chassis craft-interface (M120 Router)

```

user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine   0   1
-----
OK               *   .
Fail             .   .
Master          *   .

Front Panel Alarm Indicators:
-----
Red LED         *
Yellow LED     .
Major relay     *
Minor relay     .

Front Panel FPC LEDs:
FPC            0  1  2  3  4  5
-----

```

```

Red      .   .   .   .   .   .
Green    .   *   .   *   *   *

CB LEDs:
  CB     0   1
-----
Amber    .   .
Green    *   *

PS LEDs:
  PS     0   1
-----
Red      .   .
Green    *   *

FEB LEDs:
  FEB    0   1   2   3   4   5
-----
Red      .   .   .   .   .   .
Green    .   .   .   *   *   *
Active   .   .   .   *   *   *

```

show chassis craft-interface (M160 Router)

```

user@host> show chassis craft-interface
FPM Display contents:
+-----+
|hosts           |
|Up: 1+16:46    |
|               |
|Fans OK        |
+-----+

Front Panel System LEDs:
Host      0   1
-----
OK        .   *
Fail      .   .
Master    .   *

Front Panel Alarm Indicators:

```



```

-----
Red LED      .
Yellow LED   .
Major relay.
Minor relay.

Front Panel FPC LEDs:
FPC   0   1   2   3   4   5   6   7
-----
Red   . . . . .
Green *   * . . . . .

MCS and SFM LEDs:
MCS   0   1       SFM   0   1   2   3
-----
Amber  .           . .
Green  .           . .
Blue   *           *   *

```

show chassis craft-interface (MX150)

```

user@host > show chassis craft-interface
                LED status for: FPC 0
                -----
LEDs status:
  Alarm LED : Off
  System LED: Green
  Master LED: Green

Interface          STATUS LED      LINK/ACTIVITY LED
-----
ge-0/0/0           N/A            (null)
lc-0/0/0           (null)        (null)
ge-0/0/10          N/A            (null)
gr-0/0/10          N/A            (null)
ip-0/0/10          N/A            (null)
vt-0/0/10          N/A            (null)
ge-0/0/11          N/A            (null)

```

show chassis craft-interface (MX104 Router)

```

user@host > show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    .
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED      *
Major relay      .
Minor relay      *

Input relay:
-----
Port   Mode   Status
  0    Open   Clear
  1    Open   Clear
  2    Open   Clear
  3    Open   Clear

Output relay:
-----
Port   Mode   Status
  0    Open   Clear
  1    Open   Clear

PS Status:
  PS   0    1
-----
Red    .    .
Green *    .

```

show chassis craft-interface (MX2010 Router)

```

user@host > show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    .
Fail              .    *
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED      *
Major relay      .
Minor relay      *

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7    8    9
-----
Red    .    .    .    .    .    .    .    .    .    .
Green *    *    .    .    .    .    .    .    *    *

CB LEDs:
CB    0    1
-----
Amber .    .
Green *    *

PS LEDs:
PS    0    1    2    3    4    5    6    7    8
-----
Red    .    .    .    .    .    .    .    .    .
Green .    .    .    .    *    *    *    *    *

Fan Tray LEDs:
FT    0    1    2    3
-----
Red    .    .    .    .
Green *    *    *    *

Front Panel SFB LEDs:

```

```

SFB    0    1    2    3    4    5    6    7
-----
Red    .    .    .    .    .    .    .    .
Green  *    *    *    *    *    *    *    *

```

Front Panel Chassis Info:

```

Chassis Number    0x0
Chassis Role      S

```

show chassis craft-interface (MX2020 Router)

```

user@host > show chassis craft-interface

```

Front Panel System LEDs:

```

Routing Engine 0 1

```

```

-----
OK * *

```

```

Fail . .

```

```

Master * .

```

Front Panel Alarm Indicators:

```

-----
Red LED .

```

```

Yellow LED .

```

```

Major relay .

```

```

Minor relay .

```

Front Panel FPC LEDs:

```

FPC 0 1 2 3 4 5 6 7 8 9

```

```

-----
Red . . . . .

```

```

Green * * * * * * * * *

```

Front Panel FPC LEDs:

```

FPC 10 11 12 13 14 15 16 17 18 19

```

```

-----
Red . . . . .

```

```

Green * * * * * * * * *

```

CB LEDs:

```

CB 0 1

```

```

-----
Amber . .

```

```

Green * *

```

PS LEDs:

```

PS 0 1 2 3 4 5 6 7 8
-----
Red . . . . .
Green * * * * * . . * *
PS LEDs:
PS 9 10 11 12 13 14 15 16 17
-----
Red . . . . .
Green * * * * * * * * *
Fan Tray LEDs:
FT 0 1 2 3
-----
Red . . . .
Green * * * *
Front Panel SFB LEDs:
SFB 0 1 2 3 4 5 6 7
-----
Red . . . . .
Green * * * * * * * *
Front Panel Chassis Info:
Chassis Number 0x57
Chassis Role M

```

show chassis craft-interface (MX2008 Router)

```

user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master            *    .

Front Panel Alarm Indicators:
-----
Red LED          .
Yellow LED       .
Major relay      .
Minor relay      .

Front Panel FPC LEDs:

```

```

FPC      0      1      2      3      4      5      6      7      8      9
-----
Red      .      .      .      .      .      .      .      .      .      .
Green    *      *      .      .      .      .      .      *      .      .

CB LEDs:
  CB      0      1
-----
Amber    .      .
Green    *      *

PS LEDs:
  PS      0      1      2      3      4      5      6      7      8
-----
Red      .      .      .      .      .      .      .      .      .
Green    .      *      *      *      *      *      *      *      .

Fan Tray LEDs:
  FT      0      1
-----
Red      .      .
Green    *      *

Front Panel SFB LEDs:
SFB      0      1      2      3      4      5      6      7
-----
Red      .      .      .      .      .      .      .      .
Green    *      *      *      *      *      *      *      *

Front Panel Chassis Info:
Chassis Number    0x36
Chassis Role      M

```

show chassis craft-interface (T4000 Router)

```

user@host> show chassis craft-interface
FPM Display contents:
+-----+
|stymphalian      |
|2 Alarms active  |
|R: Front Top Fan Tra|

```

```

|Y: PEM 1 Absent      |
+-----+

```

Front Panel System LEDs:

```

Routing Engine    0    1
-----

```

```

OK                *    *
Fail              .    .
Master           *    .

```

Front Panel Alarm Indicators:

```

-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

Front Panel FPC LEDs:

```

FPC    0    1    2    3    4    5    6    7
-----
Red    .    .    .    .    .    .    .    .
Green  *    .    .    *    .    *    *    .

```

CB LEDs:

```

CB    0    1
-----
Amber  .    .
Green  *    *
Blue   *    .

```

SCG LEDs:

```

SCG   0    1
-----
Amber  .    .
Green  *    *
Blue   *    .

```

SIB LEDs:

```

SIB   0    1    2    3    4
-----
Red    .    .    .    .    .
Green  *    *    *    *    *

```

show chassis craft-interface (TX Matrix Routing Matrix)

```

user@host> show chassis craft-interface
scc-re0:
-----
FPM Display contents:
+-----+
|bradley      |
|8 Alarms active |
|R: SIB 2 Absent |
|R: SIB 1 Absent |
+-----+

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *   .
Fail              .   .
Master            *   .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

CB LEDs:
  CB    0    1
-----
Amber. .
Green * .
Blue  * .

SIB LEDs:
  SIB  0    1    2    3    4
-----
Fail . . . . .
OK   . . . . *
Active . . . . *

lcc0-re0:

```



```
-----
FPM Display contents:
```

```
+-----+
|hybrid          |
|5 Alarms active |
|R: SIB 2 Absent |
|R: SIB 1 Absent |
+-----|
```

```
Front Panel System LEDs:
```

```
Routing Engine    0    1
-----
```

```
OK                * .
Fail              . .
Master            * .
```

```
Front Panel Alarm Indicators:
-----
```

```
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *
```

```
Front Panel FPC LEDs:
```

```
FPC    0    1    2    3    4    5    6    7
-----
```

```
Red . . . . .
Green. * * . . . . .
```

```
CB LEDs:
```

```
CB    0    1
-----
```

```
Amber. .
Green * .
Blue * .
```

```
SCG LEDs:
```

```
SCG  0    1
-----
```

```
Amber. .
Green * .
Blue * .
```

```
SIB LEDs:
```

```

SIB  0   1   2   3   4
-----
Red   . . . . .
Green . . . . *

```

lcc2-re0:

FPM Display contents:

```

+-----+
| prius           |
| 5 Alarms active |
| R: SIB 2 Absent |
| R: SIB 1 Absent |
+-----|

```

Front Panel System LEDs:

```

Routing Engine    0    1
-----

```

```

OK                *   .
Fail              .   .
Master            *   .

```

Front Panel Alarm Indicators:

```

-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

```

Front Panel FPC LEDs:

```

FPC   0   1   2   3   4   5   6   7
-----

```

```

Red   . . . . .
Green *   *   * . . . .

```

CB LEDs:

```

CB    0   1
-----

```

```

Amber . .
Green * .
Blue  * .

```

SCG LEDs:

```

SCG  0  1
-----
Amber. .
Green * .
Blue  * .

SIB LEDs:
  SIB  0  1  2  3  4
-----
Red   . . . . .
Green. . . . *

```

show chassis craft-interface (TX Matrix Plus Routing Matrix)

```

user@host> show chassis craft-interface
sfc0-re0:
-----
FPM Display Contents:
+-----+
|noname          |
|12 Alarms active |
|R: SIB F13 12 Absent|
|R: SIB F13 9 Absent |
+-----+

SFC Front Panel Switch Settings:
SFC Chassis Number : 00
Config Size        : 1

Front Panel System LEDs:
Routing Engine     0  1
-----
OK                 *  *
Fail               .  .
Master            *  .

Front Panel Alarm Indicators:
-----
Red LED           *
Yellow LED        *
Major relay       *

```

Minor relay *

Front Panel F13 SIB LEDs:

SIB 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

```
-----
Fail . . . . .
OK * . . * . . * . * . . * . . . .
Active . . . * . . * . * . . * . . . .
```

PS LEDs:

PS 0 1

```
-----
Red . *
Green * .
```

Fan Tray LEDs:

FT 0 1 2 3 4 5

```
-----
Red . . . . * *
Green * * * * . .
```

CB LEDs:

CB 0 1

```
-----
Amber . .
Green * *
Blue * .
```

lcc0-re0:

FPM Display contents:

```
+-----+
|noname1          |
|1 Alarm active   |
|R: PEM 1 Not OK  |
|                 |
+-----+-----|
```

Front Panel System LEDs:

Routing Engine 0 1

```
-----
OK                * *
Fail              . .
```

Master * .

Front Panel Alarm Indicators:

Red LED *
 Yellow LED .
 Major relay *
 Minor relay .

Front Panel FPC LEDs:

FPC 0 1 2 3 4 5 6 7

Red
 Green . * . * * . . *

CB LEDs:

CB 0 1

Amber . .
 Green * *
 Blue * .

SCG LEDs:

SCG 0 1

Amber . .
 Green * *
 Blue * .

SIB LEDs:

SIB 0 1 2 3 4

Red
 Green * * * * *

lcc1-re0:

FPM Display contents:

+-----+

|noname2 |

|2 Alarms active |

|R: FPC 0 PIC 0 Failu|

|R: PEM 1 Not OK |

```

+-----|
Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       .
Major relay      *
Minor relay      .

Front Panel FPC LEDs:
FPC    0    1    2    3    4    5    6    7
-----
Red     .    .    .    .    .    .    .    .
Green  *    *    *    .    .    *    .    .

CB LEDs:
  CB    0    1
-----
Amber  .    .
Green  *    *
Blue   *    .

SCG LEDs:
  SCG   0    1
-----
Amber  .    .
Green  *    *
Blue   *    .

SIB LEDs:
  SIB   0    1    2    3    4
-----
Red     .    .    .    .    .
Green  *    *    *    *    *

```

show chassis craft-interface (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis craft-interface
sfc0-re0:
-----
FPM Display Contents:
+-----+
|noname          |
|48 Alarms active |
|R: LCC 2 Major Error|
|R: LCC 0 Major Error|
+-----+

SFC Front Panel Switch Settings:
SFC Chassis Number : 00
Config Size       : 3

Front Panel System LEDs:
Routing Engine    0    1
-----
OK                *    *
Fail              .    .
Master           *    .

Front Panel Alarm Indicators:
-----
Red LED          *
Yellow LED       *
Major relay      *
Minor relay      *

Front Panel F13 SIB LEDs:
SIB   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
-----
Fail  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
OK    *  .  .  *  .  .  *  .  .  .  .  .  .  .  .  .
Active *  .  .  *  .  .  *  .  .  .  .  .  .  .  .  .  .

PS LEDs:
PS    0  1
-----
Red   *  .

```

Green . *

Fan Tray LEDs:

FT 0 1 2 3 4 5

```
-----
Red . . . . . *
Green * * * * * .
```

CB LEDs:

CB 0 1

```
-----
Amber . .
Green * *
Blue * .
```

lcc0-re0:

FPM Display contents:

```
+-----+
|noname1      |
|14 Alarms active |
|R: PEM 1 Not OK |
|R: FPC 7 misconfig |
+-----|
```

Front Panel System LEDs:

Routing Engine 0 1

```
-----
OK * *
Fail . .
Master * .
```

Front Panel Alarm Indicators:

```
-----
Red LED *
Yellow LED *
Major relay *
Minor relay *
```

Front Panel FPC LEDs:

FPC 0 1 2 3 4 5 6 7

```
-----
Red . . . . . . . .
```



```
Green . . . . * . . . .
```

CB LEDs:

```
CB 0 1
```

```
Amber . .
```

```
Green * *
```

```
Blue * .
```

SCG LEDs:

```
SCG 0 1
```

```
Amber . .
```

```
Green * *
```

```
Blue * .
```

SIB LEDs:

```
SIB 0 1 2 3 4
```

```
Red . . . . .
```

```
Green * * * . .
```

show chassis craft-interface (ACX2000 Universal Metro Router)

```
user@host> show chassis craft-interface
```

Front Panel System LEDs:

Routing Engine

```
OK *
```

```
Fail .
```

Front Panel Alarm Indicators:

```
Red LED .
```

```
Yellow LED .
```

```
Major relay .
```

```
Minor relay .
```

Input relay:

```
Port Mode Status
```

```

0      Open   Clear
1      Open   Clear
2      Open   Clear
3      Open   Clear

```

Output relay:

```

Port    Mode    Status
0       Open   Clear
1       Open   Clear

```

PS Status:

```

PS      0      1
-----
Red     .      .
Green  *      *

```

show chassis craft-interface (ACX500 Router)

```
user@host> show chassis craft-interface
```

Front Panel System LEDs:

Routing Engine

```

-----
OK              *
Fail            .

```

Front Panel Alarm Indicators:

```

-----
Red LED        .
Yellow LED     .
Major relay    .
Minor relay    .

```

Input relay:

```

Port    Mode    Status
0       Open   Clear
1       Open   Clear
2       Open   Clear
3       Open   Clear

```

```

Output relay:
-----
Port      Mode    Status
  0        Open   Clear
  1        Open   Clear

PS Status:
  PS      0      1
-----
Red       .      .
Green    *      *

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option for the TX Matrix Plus router introduced in Junos OS Release 9.6.

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show chassis environment

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Syntax (T320, T640, T1600, and T4000 Routers)

```
show chassis environment
<cb cb-slot-number>
<fpc fpc-slot-number>
<fpm>
<pem pem-slot-number>
<routing-engine re-slot-number>
<scg scg-slot-number>
<sib sib-slot-number>
```

Syntax (TX Matrix Routers)

```
show chassis environment  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment  
<cb cb-slot-number>  
<cip cip-slot-number>  
<fpc fpc-slot-number>  
<fpm>  
<lcc number>  
<pem pem-slot-number>  
<routing-engine re-slot-number>  
<scg scg-slot-number>  
< sfc number>  
<sib sib-slot-number>
```

Syntax (MX Series Routers)

```
show chassis environment  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104 Universal Routing Platforms)

```
show chassis environment  
<cb>
```

```
<pem pem-slot-number>
<routing-engine re-slot-number>
```

Syntax (MX150 Router Appliance)

```
show chassis environment
<pem pem-slot-number>
<routing-engine re-slot-number>
```

Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms)

```
show chassis environment
<adc adc-slot-number>
<all-members>
<cb cb-slot-number>
<fan fantray-slot-number>
<fpc fpc-slot-number>
<fpm>
<local>
<member member-id>
<monitored>
<psm psm-slot-number>
<routing-engine re-slot-number>
<sfb sfb-slot-number>
<satellite [fpc-slot slot-id |device-alias alias-name]>
```

Syntax (MX10003 and MX204 Universal Routing Platforms)

```
show chassis environment
<cb cb-slot-number>
<fpc fpc-slot-number>
```

```
<pem pem-slot-number>
<routing-engine re-slot-number>
```

Syntax (EX8200 Switches)

```
show chassis environment
<all-members>
<cb cb-slot-number>
<fpc fpc-slot-number>
<local>
<member member-id>
<psu psu-slot-number>
<routing-engine re-slot-number>
```

Syntax (EX Series Switches except EX8200)

```
show chassis environment
<all-members>
<fpc fpc-slot-number>
<local>
<member member-id>
<power-supply-unit>
<routing-engine>
<satellite [fpc-slot slot-id |device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis environment
<cb slot-number <interconnect-device name>>
<fpc slot-number <interconnect-device name>>
<interconnect-device name <slot-number>
<node-device name>
```

```
<pem slot-number (interconnect-device name slot-number) | (node-device name)>  
<routing-engine name <interconnect-device name slot-number>>
```

Syntax (OCX Series)

```
show chassis environment
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis environment  
<cb cb-slot-number>  
<ccg ccg-slot-number >  
<fpc fpc-slot-number>  
<fpm>  
<monitored>  
<pdu pdu-slot-number>  
<routing-engine re-slot-number>  
<sib sib-slot-number>
```

Syntax (ACX Series Universal Metro Routers)

```
show chassis environment  
<cb cb-slot-number>  
<pem pem-slot-number>  
<routing-engine re-slot-number>
```


Syntax (ACX5048 and ACX5096 Routers)

```
show chassis environment
<fpc slot-number>
<pem>
<routing-engine>
```

Syntax (ACX500 Routers)

```
show chassis environment
<cb cb-slot-number>
<routing-engine re-slot-number>
```

Description

Display environmental information about the router or switch chassis, including the temperature and information about the fans, power supplies, and Routing Engine.

In addition, on ACX4000 routers, display temperature information about the different channels of a Modular Interface Card (MIC). The number of channels displayed depends on the type of MIC installed.

Starting with Junos OS Release 14.1, the **show chassis environment *cb cb-slot-number* | *ccg ccg-slot-number* | *fpc fpc-slot-number* | *fpm* | *monitored* | *pdu pdu-slot-number* | *routing-engine re-slot-number* | *sib sib-slot-number*** operational mode command output displays environmental information for the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router.

Options

none Display environmental information about the router or switch chassis. On a TX Matrix router, display environmental information about the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the TX Matrix Plus router and its attached routers.

all-members	(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for all the members of the Virtual Chassis configuration.
adc <i>adc-slot-number</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the adapter cards. For MX2020 routers, replace <i>adc-slot-number</i> with a value from 0 through 19 . For MX2010 and MX2008 routers, replace <i>adc-slot-number</i> with a value from 0 through 9 .
cb <i>cb-slot-number</i>	(ACX Series Universal Metro Routers, EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2020 routers, MX2010 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, and T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Control Board. On devices other than EX Series switches, replace <i>cb-slot</i> with 0 or 1 .
cip <i>cip-slot-number</i>	(TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Connection Interface Panel (CIP). Replace the <i>cip-slot-number</i> variable with a value of 0 or 1 .
cb interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information for the Control Board on an Interconnect device.
ccg <i>ccg-slot-number</i>	(PTX Series only) (Optional) Display chassis environmental information for the Centralized Clock Generator. Replace <i>cb-slot</i> with a value of 0 or 1 .
fan <i>fantray-slot-number</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the fan trays. Replace <i>fantray-slot-number</i> with a value from 0 through 3 .
fpc <i>fpc-slot</i>	(EX Series switches, M120, M320, and M40e routers, MX Series routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series Packet Transport Routers, QFX Series, QFX3500 switches, QFabric systems, T Series routers, and TX Matrix Plus routers) (Optional) Display chassis environmental information for a specified Flexible PIC Concentrator. For MX2010 and MX2008 routers, replace <i>fpc-slot</i> with a value from 0 through 9 . For MX2020 routers, replace <i>fpc-slot</i> with a value from 0 through 19 . For information about FPC numbering, see " show chassis environment fpc " on page 721. On a QFabric system, display chassis environmental information for a specified Flexible PIC Concentrator on an Interconnect device. On an EX Series switch, display chassis environmental information for a specified Flexible PIC Concentrator; see the hardware documentation for your switch for information on FPC numbering. On a TX Matrix Plus router with 3D SIBs replace <i>fpc-slot</i> with a value from 0 through 63 .

fpm	(M120, M320, and M40e routers, MX2010 routers, MX2020 routers, MX2008 routers, PTX Series, Packet Transport Routers, T Series routers, and TX Matrix Plus routers only) (Optional) Display chassis environmental information for the craft interface (FPM).
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.
lcc <i>number</i>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the specified member of the Virtual Chassis configuration. On MX Series routers, replace <i>member-id</i> with a value of 0 or 1 . For EX Series switches, see <i>member</i> for member ID values.
monitored	(MX2020 routers and PTX Series Packet Transport Routers only) (Optional) Display chassis environmental information for monitored temperatures only. Temperatures that are not included in temperature alarm computations are not displayed.
node-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information for the Node device.
pdu <i>pdu-slot-number</i>	(PTX Series only) (Optional) Display chassis environmental information for the specified power distribution unit.

pem	(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Interconnect device or Node device.
pem <i>pem-slot-number</i>	(ACX Series Universal Metro Routers, M120, M320, and M40e routers, MX Series routers, MX104 routers, QFX Series, and T Series routers only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Power Entry Module. For information about the options, see " show chassis environment pem " on page 861.
psm <i>psm-slot-number</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the power supply module. For MX2020 routers, replace <i>psm-slot-number</i> with a value from 0 through 17. For MX2010 and MX2008 routers, replace <i>psm-slot-number</i> with a value from 0 through 8.
psu <i>psu-slot-number</i>	(EX Series switches only) (Optional) Display chassis environmental information for a specified power supply.
routing-engine	(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Routing Engine on the specified Interconnect device.
routing-engine <i>re-slot-number</i>	(Optional) Display chassis environmental information for the specified Routing Engine. For information about the options, see " show chassis environment routing-engine " on page 898.
satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>]	(Junos Fusion only)(Optional) Display chassis environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
scg	(T Series routers only) (Optional) Display chassis environmental information about the SONET Clock Generator.
scc	(TX Matrix routers only) (Optional) Display chassis environmental information about the TX Matrix router (switch-card chassis).
sfb <i>sfb-slot-number</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the switch fabric board. Replace <i>sfb-slot-number</i> with a value from 0 through 7.
sfc <i>number</i>	(TX Matrix Plus routers only) (Optional) Display chassis environmental information about the respective TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with 0.

sib sib-slot-number (M320 routers, PTX Series Packet Transport Routers, and T Series routers only)
(Optional) Display chassis environmental information about the specified switch interface board. For information about the options, see [show chassis environment sib](#).

Required Privilege Level

view

Output Fields

[Table 33 on page 550](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

Table 33: show chassis environment Output Fields

Field Name	Field Description
Class	<p>Information about the category or class of chassis component:</p> <ul style="list-style-type: none"> • Power: Power information: <ul style="list-style-type: none"> • (M5, M10, M20, and M40 routers and EX Series switches only) Power supply status: OK, Testing, (during initial power-on), Failed, or Absent. • (M7i, M10i, M40e, M120, M160, M320, and T Series routers and EX Series switches only) Power Entry Modules status: OK, Testing, (during initial power-on), Check, Failed, or Absent. • (PTX Series only) Power information is reported in PDU or PSM combinations. The status is: OK, Testing, (during initial power-on), Check, Failed, or Absent. • Temp: Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F). <ul style="list-style-type: none"> • On PTX Series Packet Transport Routers and MX2010, MX2020, and MX2008 Routers, multiple cooling zones are supported. FRU temperatures in each zone are coordinated with the fan speed of fan trays in those zones. • EX2200 switches have a side-to-rear cooling system. The Local Intake temperature is measured by the sensor on the right side of the chassis, and the Remote Intake temperature is measured by the sensor on the left side of the chassis. • Pic: On ACX4000 routers, multiple temperature channels on a MIC. The status is: OK and the Measurement is in degrees Celsius (C) and Fahrenheit (F). • Fan: Fan status: OK, Testing (during initial power-on), Failed, or Absent. On PTX Series Packet Transport Routers and MX2010, MX2020, and MX2008 Routers, multiple fan trays are supported. Fan status is reported in Fan Tray or Fan combinations. Measurement indicates actual fan RPM (PTX and MX2010, MX2020, and MX2008 Routers only). • Misc: Information about other components of the chassis.

Table 33: show chassis environment Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • On some routers, this field indicates the status of one or more additional components. • On the M40e, M160, and M320 router, Misc includes CIP (Connector Interface Panel). OK indicates that the CIP is present. Absent indicates that the CIP is not present. • On T Series routers, Misc includes CIP and SPMB (Switch Processor Mezzanine Board). OK indicates that the CIP or SPMB is present. Absent indicates that the CIP or SPMB is not present. • On PTX Series Packet Transport Routers, Misc includes the SPMB (Switch Processor Mezzanine Board). The SPMB is located on the control boards. OK indicates that the control board is present. Absent indicates that the control board is not present.
Item	<p>(MX2010, MX2020, and MX2008 Routers) Information about the chassis component: Routing Engines, Controls Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).</p> <p>(MX104 Routers) Information about the chassis components: Routing Engines, Control Board (CB), Power Entry Module (PEM), and Compact Forwarding Engine Board (AFEB).</p> <p>(QFabric Systems) Information about the chassis component: Control Boards, Routing Engines, Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs), Node Devices, and Interconnect Devices.</p> <p>(QFX Series) Information about the chassis component: Flexible PIC Concentrators (FPCs), and Power Entry Modules (PEMs).</p>

Table 33: show chassis environment Output Fields (Continued)

Field Name	Field Description
Status	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the specified chassis component. For example, if the Class is Fan, the fan status can be:</p> <ul style="list-style-type: none"> • OK: The fans are operational. • Testing: The fans are being tested during initial power-on. • Failed: The fans have failed or the fans are not spinning. • Absent: The fan tray is not installed. <p>If the Class is Power, the power supply status can be:</p> <ul style="list-style-type: none"> • OK: The power component is operational. • Testing: The power component is being tested during initial power-on. • Check: There is insufficient power---that is, fewer than the minimum required feeds are connected. • Failed: The inputs leads have failed. • Absent: The power component is not installed.
Measurement	<p>(MX104, MX2010, MX2020, and MX2008 Routers) Dependant on the Class. For example, if the Class is Temp, indicates the temperature in degree Celsius and degrees Fahrenheit. If the Class is Fan, indicates actual fan RPM.</p>

Sample Output

show chassis environment (M5 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A      OK
          Power Supply B    Absent
Temp   FPC 0                 OK          30 degrees C / 86 degrees F

```



```

      FEB                OK          33 degrees C / 91 degrees F
      PS Intake          OK          27 degrees C / 80 degrees F
      PS Exhaust        OK          27 degrees C / 80 degrees F
      Routing Engine    OK          34 degrees C / 93 degrees F
Fans  Left Fan 1       OK          Spinning at normal speed
      Left Fan 2       OK          Spinning at normal speed
      Left Fan 3       OK          Spinning at normal speed
      Left Fan 4       OK          Spinning at normal speed
Misc  Craft Interface OK

```

show chassis environment (M7i Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply 0      OK
      Power Supply 1      Absent
Temp  Intake              OK          22 degrees C / 71 degrees F
      FPC 0               OK          23 degrees C / 73 degrees F
      Power Supplies      OK          23 degrees C / 73 degrees F
      CFEB Intake         OK          24 degrees C / 75 degrees F
      CFEB Exhaust        OK          29 degrees C / 84 degrees F
      Routing Engine      OK          26 degrees C / 78 degrees F
Fans  Fan 1               OK          Spinning at normal speed
      Fan 2               OK          Spinning at normal speed
      Fan 3               OK          Spinning at normal speed
      Fan 4               OK          Spinning at normal speed

```

show chassis environment (M10 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A      OK
      Power Supply B      Failed
Temp  FPC 0                OK          36 degrees C / 96 degrees F
      FPC 1                OK          35 degrees C / 95 degrees F
      FEB                  OK          34 degrees C / 93 degrees F
      PS Intake            OK          31 degrees C / 87 degrees F
      PS Exhaust           OK          34 degrees C / 93 degrees F

```

	Routing Engine	OK	35 degrees C / 95 degrees F
Fans	Left Fan 1	OK	Spinning at normal speed
	Left Fan 2	OK	Spinning at normal speed
	Left Fan 3	OK	Spinning at normal speed
	Left Fan 4	OK	Spinning at normal speed
Misc	Craft Interface	OK	

show chassis environment (M10i Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply 0       OK
      Power Supply 1       OK
      Power Supply 2       Absent
      Power Supply 3       Absent
Temp  Intake                 OK          26 degrees C / 78 degrees F
      FPC 0                 OK          27 degrees C / 80 degrees F
      FPC 1                 OK          28 degrees C / 82 degrees F
      Lower Power Supplies OK          29 degrees C / 84 degrees F
      Upper Power Supplies OK          28 degrees C / 82 degrees F
      CFEB Intake          OK          27 degrees C / 80 degrees F
      CFEB Exhaust         OK          36 degrees C / 96 degrees F
      Routing Engine 0     OK          31 degrees C / 87 degrees F
      Routing Engine 1     OK          27 degrees C / 80 degrees F
Fans  Fan Tray 0 Fan 1       OK          Spinning at normal speed
      Fan Tray 0 Fan 2       OK          Spinning at normal speed
      Fan Tray 0 Fan 3       OK          Spinning at normal speed
      Fan Tray 0 Fan 4       OK          Spinning at normal speed
      Fan Tray 0 Fan 5       OK          Spinning at normal speed
      Fan Tray 0 Fan 6       OK          Spinning at normal speed
      Fan Tray 0 Fan 7       OK          Spinning at normal speed
      Fan Tray 0 Fan 8       OK          Spinning at normal speed
      Fan Tray 1 Fan 1       Absent
      Fan Tray 1 Fan 2       Absent
      Fan Tray 1 Fan 3       Absent
      Fan Tray 1 Fan 4       Absent
      Fan Tray 1 Fan 5       Absent
      Fan Tray 1 Fan 6       Absent
      Fan Tray 1 Fan 7       Absent

```

```
Fan Tray 1 Fan 8      Absent
```

show chassis environment (M20 Router)

```
user@host> show chassis environment
Class Item              Status      Measurement
Power Power Supply A      OK
      Power Supply B      Absent
Temp  FPC 0                 OK          28 degrees C / 82 degrees F
      FPC 1                 OK          27 degrees C / 80 degrees F
      Power Supply A        OK          22 degrees C / 71 degrees F
      Power Supply B        Absent
      SSB 0                 OK          30 degrees C / 86 degrees F
      Backplane              OK          22 degrees C / 71 degrees F
      Routing Engine 0       OK          26 degrees C / 78 degrees F
      Routing Engine 1       Testing
Fans  Rear Fan            OK          Spinning at normal speed
      Front Upper Fan        OK          Spinning at normal speed
      Front Middle Fan       OK          Spinning at normal speed
      Front Bottom Fan       OK          Spinning at normal speed
Misc  Craft Interface     OK
```

show chassis environment (M40 Router)

```
user@host> show chassis environment
Class Item              Status      Measurement
Power Power Supply A      OK
      Power Supply B        Absent
Temp  FPC 3                 OK          24 degrees C / 75 degrees F
      FPC 6                 OK          26 degrees C / 78 degrees F
      SCB                   OK          26 degrees C / 78 degrees F
      Backplane @ A1         OK          28 degrees C / 82 degrees F
      Backplane @ A2         OK          23 degrees C / 73 degrees F
      Routing Engine         OK          26 degrees C / 78 degrees F
Fans  Top Impeller         OK          Spinning at normal speed
      Bottom impeller        OK          Spinning at normal speed
      Rear Left Fan          OK          Spinning at normal speed
      Rear Center Fan        OK          Spinning at normal speed
```

```

Rear Right Fan      OK      Spinning at normal speed
Misc Craft Interface OK

```

show chassis environment (M40e Router)

```

user@host> show chassis environment
Class Item          Status      Measurement
Power PEM 0         OK
      PEM 1         Absent
Temp  PCG 0          OK          44 degrees C / 111 degrees F
      PCG 1          OK          47 degrees C / 116 degrees F
      Routing Engine 0 OK          40 degrees C / 104 degrees F
      Routing Engine 1 OK          37 degrees C / 98 degrees F
      MCS 0          OK          45 degrees C / 113 degrees F
      MCS 1          OK          42 degrees C / 107 degrees F
      SFM 0 SPP      OK          40 degrees C / 104 degrees F
      SFM 0 SPR      OK          44 degrees C / 111 degrees F
      SFM 1 SPP      OK          43 degrees C / 109 degrees F
      SFM 1 SPR      OK          45 degrees C / 113 degrees F
      FPC 0          OK          38 degrees C / 100 degrees F
      FPC 1          OK          40 degrees C / 104 degrees F
      FPC 2          OK          38 degrees C / 100 degrees F
      FPC 4          OK          34 degrees C / 93 degrees F
      FPC 5          OK          43 degrees C / 109 degrees F
      FPC 6          OK          41 degrees C / 105 degrees F
      FPC 7          OK          43 degrees C / 109 degrees F
      FPM CMB        OK          28 degrees C / 82 degrees F
      FPM Display    OK          28 degrees C / 82 degrees F
Fans  Rear Bottom Blower OK          Spinning at normal speed
      Rear Top Blower OK          Spinning at normal speed
      Front Top Blower OK          Spinning at normal speed
      Fan Tray Rear Left OK          Spinning at normal speed
      Fan Tray Rear Right OK          Spinning at normal speed
      Fan Tray Front Left OK          Spinning at normal speed
      Fan Tray Front Right OK          Spinning at normal speed
Misc  CIP            OK

```

show chassis environment (M120 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                                OK
      PEM 1                                OK
      Routing Engine 0                     OK          43 degrees C / 109 degrees F
      Routing Engine 1                     OK          44 degrees C / 111 degrees F
      CB 0 Intake                           OK          33 degrees C / 91 degrees F
      CB 0 Exhaust A                        OK          36 degrees C / 96 degrees F
      CB 0 Exhaust B                        OK          35 degrees C / 95 degrees F
      CB 1 Intake                           OK          34 degrees C / 93 degrees F
      CB 1 Exhaust A                        OK          38 degrees C / 100 degrees F
      CB 1 Exhaust B                        OK          35 degrees C / 95 degrees F
      FEB 3 Intake                          OK          35 degrees C / 95 degrees F
      FEB 3 Exhaust A                       OK          37 degrees C / 98 degrees F
      FEB 3 Exhaust B                       OK          39 degrees C / 102 degrees F
      FEB 4 Intake                          OK          33 degrees C / 91 degrees F
      FEB 4 Exhaust A                       OK          39 degrees C / 102 degrees F
      FEB 4 Exhaust B                       OK          36 degrees C / 96 degrees F
      FPC 2 Exhaust A                       OK          32 degrees C / 89 degrees F
      FPC 2 Exhaust B                       OK          31 degrees C / 87 degrees F
      FPC 3 Exhaust A                       OK          32 degrees C / 89 degrees F
      FPC 3 Exhaust B                       OK          33 degrees C / 91 degrees F
      FPC 4 Exhaust A                       OK          32 degrees C / 89 degrees F
      FPC 4 Exhaust B                       OK          30 degrees C / 86 degrees F
Fans  Front Top Tray Fan 1                 OK          Spinning at normal speed
      Front Top Tray Fan 2                 OK          Spinning at normal speed
      Front Top Tray Fan 3                 OK          Spinning at normal speed
      Front Top Tray Fan 4                 OK          Spinning at normal speed
      Front Top Tray Fan 5                 OK          Spinning at normal speed
      Front Top Tray Fan 6                 OK          Spinning at normal speed
      Front Top Tray Fan 7                 OK          Spinning at normal speed
      Front Top Tray Fan 8                 OK          Spinning at normal speed
      Front Bottom Tray Fan 1              OK          Spinning at normal speed
      Front Bottom Tray Fan 2              OK          Spinning at normal speed
      Front Bottom Tray Fan 3              OK          Spinning at normal speed
      Front Bottom Tray Fan 4              OK          Spinning at normal speed
      Front Bottom Tray Fan 5              OK          Spinning at normal speed
      Front Bottom Tray Fan 6              OK          Spinning at normal speed
      Front Bottom Tray Fan 7              OK          Spinning at normal speed
      Front Bottom Tray Fan 8              OK          Spinning at normal speed

```

```

Rear Top Tray Fan 1      OK      Spinning at normal speed
Rear Top Tray Fan 2      OK      Spinning at normal speed
Rear Top Tray Fan 3      OK      Spinning at normal speed
Rear Top Tray Fan 4      OK      Spinning at normal speed
Rear Top Tray Fan 5      OK      Spinning at normal speed
Rear Top Tray Fan 6      OK      Spinning at normal speed
Rear Top Tray Fan 7      OK      Spinning at normal speed
Rear Top Tray Fan 8      OK      Spinning at normal speed
Rear Bottom Tray Fan 1   OK      Spinning at normal speed
Rear Bottom Tray Fan 2   OK      Spinning at normal speed
Rear Bottom Tray Fan 3   OK      Spinning at normal speed
Rear Bottom Tray Fan 4   OK      Spinning at normal speed
Rear Bottom Tray Fan 5   OK      Spinning at normal speed
Rear Bottom Tray Fan 6   OK      Spinning at normal speed
Rear Bottom Tray Fan 7   OK      Spinning at normal speed
Rear Bottom Tray Fan 8   OK      Spinning at normal speed

```

show chassis environment (M160 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK          PEM 1          Absent
Temp  PCG 0                 OK          45 degrees C / 113 degrees F
      PCG 1                 Absent
      Routing Engine 0      OK          35 degrees C / 95 degrees F
      Routing Engine 1      Absent
      MCS 0                 OK          50 degrees C / 122 degrees F
      SFM 0 SPP              OK          47 degrees C / 116 degrees F
      SFM 0 SPR              OK          49 degrees C / 120 degrees F
      SFM 1 SPP              OK          50 degrees C / 122 degrees F
      SFM 1 SPR              OK          50 degrees C / 122 degrees F
      SFM 2 SPP              OK          51 degrees C / 123 degrees F
      SFM 2 SPR              OK          52 degrees C / 125 degrees F
      SFM 3 SPP              OK          52 degrees C / 125 degrees F
      SFM 3 SPR              OK          48 degrees C / 118 degrees F
      FPC 0                  OK          45 degrees C / 113 degrees F
      FPC 6                  OK          43 degrees C / 109 degrees F
      FPM CMB                OK          31 degrees C / 87 degrees F
      FPM Display            OK          33 degrees C / 91 degrees F
Fans  Rear Bottom Blower    OK          Spinning at normal speed
      Rear Top Blower        OK          Spinning at normal speed

```

```

Front Top Blower      OK      Spinning at normal speed
Fan Tray Rear Left   OK      Spinning at normal speed
Fan Tray Rear Right  OK      Spinning at normal speed
Fan Tray Front Left  OK      Spinning at normal speed
Fan Tray Front Right OK      Spinning at normal speed
Misc CIP             OK

```

show chassis environment (M320 Router)

```

user@host> show chassis environment
Class Item              Status      Measurement
Temp PEM 0              Absent
    PEM 1              Absent
    PEM 2              OK
    PEM 3              OK
Routing Engine 0       OK          33 degrees C / 91 degrees F
Routing Engine 1       OK          32 degrees C / 89 degrees F
CB 0                   OK          36 degrees C / 96 degrees F
CB 1                   OK          36 degrees C / 96 degrees F
SIB 0                  OK          38 degrees C / 100 degrees F
SIB 1                  OK          29 degrees C / 84 degrees F
SIB 2                  OK          38 degrees C / 100 degrees F
SIB 3                  OK          41 degrees C / 105 degrees F
FPC 0 Intake           OK          28 degrees C / 82 degrees F
FPC 0 Exhaust          OK          40 degrees C / 104 degrees F
FPC 1 Intake           OK          29 degrees C / 84 degrees F
FPC 1 Exhaust          OK          39 degrees C / 102 degrees F
FPC 2 Intake           OK          28 degrees C / 82 degrees F
FPC 2 Exhaust          OK          38 degrees C / 100 degrees F
FPC 3 Intake           OK          28 degrees C / 82 degrees F
FPC 3 Exhaust          OK          39 degrees C / 102 degrees F
FPC 6 Intake           OK          27 degrees C / 80 degrees F
FPC 6 Exhaust          OK          39 degrees C / 102 degrees F
FPC 7 Intake           OK          27 degrees C / 80 degrees F
FPC 7 Exhaust          OK          42 degrees C / 107 degrees F
FPM GBUS               OK          30 degrees C / 86 degrees F
Fan Top Left Front fan OK          Spinning at normal speed
Top Right Rear fan    OK          Spinning at normal speed
Top Right Front fan   OK          Spinning at normal speed
Top Left Rear fan     OK          Spinning at normal speed

```

```

Bottom Left Front fan OK      Spinning at normal speed
Bottom Right Rear fan OK     Spinning at normal speed
Bottom Right Front fan OK    Spinning at normal speed
Bottom Left Rear fan  OK     Spinning at normal speed
Rear Fan 1 (TOP)           OK     Spinning at normal speed
Rear Fan 2                  OK     Spinning at normal speed
Rear Fan 3                  OK     Spinning at normal speed
Rear Fan 4                  OK     Spinning at normal speed
Rear Fan 5                  OK     Spinning at normal speed
Rear Fan 6                  OK     Spinning at normal speed
Rear Fan 7 (Bottom)       OK     Spinning at normal speed
Misc CIP                    OK

```

show chassis environment (MX150)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Power FPC 0 Power Supply 0              OK
Temp  FPC 0 Sensor 1                     OK          42 degrees C / 107 degrees F
      FPC 0 Sensor 2                     OK          39 degrees C / 102 degrees F
      FPC 0 Coretemp                     OK          75 degrees C / 167 degrees F
Fans  FPC 0 Fan Tray 0                   OK          Spinning at normal speed
      FPC 0 Fan Tray 1                   OK          Spinning at normal speed

```

show chassis environment (MX104 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                               OK          34 degrees C / 93 degrees F
      PEM 1                               Absent
      ABB 0 Intake                         OK          33 degrees C / 91 degrees F
      ABB 0 Exhaust A                      OK          42 degrees C / 107 degrees F
      ABB 0 Exhaust B                      OK          43 degrees C / 109 degrees F
      ABB 1 Intake                         Absent
      ABB 1 Exhaust A                      Absent
      ABB 1 Exhaust B                      Absent
Routing Engine 0                         OK          34 degrees C / 93 degrees F
Routing Engine 0 CPU                      OK          46 degrees C / 114 degrees F
Routing Engine 1                         Absent

```



```

Routing Engine 1 CPU          Absent
AFEB 0 AFEB Processor        OK           33 degrees C / 91 degrees F
Fans Fan 1                    OK           Spinning at normal speed
     Fan 2                    OK           Spinning at normal speed
     Fan 3                    OK           Spinning at normal speed
     Fan 4                    OK           Spinning at normal speed
     Fan 5                    OK           Spinning at normal speed

```

show chassis environment (MX240 Router)

```

user@host> show chassis environment
Class Item                    Status      Measurement
Temp PEM 0                     OK          40 degrees C / 104 degrees F
     PEM 1                     OK          45 degrees C / 113 degrees F
     PEM 2                     Absent
     PEM 3                     Absent
Routing Engine 0              OK          39 degrees C / 102 degrees F
Routing Engine 1              OK          37 degrees C / 98 degrees F
CB 0 Intake                   OK          36 degrees C / 96 degrees F
CB 0 Exhaust A                OK          34 degrees C / 93 degrees F
CB 0 Exhaust B                OK          38 degrees C / 100 degrees F
CB 0 ACBC                     OK          37 degrees C / 98 degrees F
CB 0 SF A                     OK          49 degrees C / 120 degrees F
CB 0 SF B                     OK          41 degrees C / 105 degrees F
CB 1 Intake                   OK          37 degrees C / 98 degrees F
CB 1 Exhaust A                OK          34 degrees C / 93 degrees F
CB 1 Exhaust B                OK          39 degrees C / 102 degrees F
CB 1 ACBC                     OK          38 degrees C / 100 degrees F
CB 1 SF A                     OK          47 degrees C / 116 degrees F
CB 1 SF B                     OK          41 degrees C / 105 degrees F
FPC 1 Intake                  OK          33 degrees C / 91 degrees F
FPC 1 Exhaust A               OK          38 degrees C / 100 degrees F
FPC 1 Exhaust B               OK          53 degrees C / 127 degrees F
FPC 1 I3 0 TSensor            OK          50 degrees C / 122 degrees F
FPC 1 I3 0 Chip               OK          53 degrees C / 127 degrees F
FPC 1 I3 1 TSensor            OK          49 degrees C / 120 degrees F
FPC 1 I3 1 Chip               OK          52 degrees C / 125 degrees F
FPC 1 I3 2 TSensor            OK          47 degrees C / 116 degrees F
FPC 1 I3 2 Chip               OK          49 degrees C / 120 degrees F
FPC 1 I3 3 TSensor            OK          44 degrees C / 111 degrees F
FPC 1 I3 3 Chip               OK          46 degrees C / 114 degrees F

```

	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed
	Middle Fan	OK	Spinning at normal speed
	Rear Fan	OK	Spinning at normal speed

show chassis environment (MX240 Router with SCBE)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	40 degrees C / 104 degrees F
	PEM 1	OK	45 degrees C / 113 degrees F
	PEM 2	Absent	
	PEM 3	Absent	
	Routing Engine 0	OK	39 degrees C / 102 degrees F
	Routing Engine 1	OK	37 degrees C / 98 degrees F
	CB 0 Intake	OK	36 degrees C / 96 degrees F
	CB 0 Exhaust A	OK	34 degrees C / 93 degrees F
	CB 0 Exhaust B	OK	38 degrees C / 100 degrees F
	CB 0 ACBC	OK	37 degrees C / 98 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	41 degrees C / 105 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	34 degrees C / 93 degrees F

	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	38 degrees C / 100 degrees F
	CB 1 XF A	OK	47 degrees C / 116 degrees F
	CB 1 XF B	OK	41 degrees C / 105 degrees F
	FPC 1 Intake	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 1 I3 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 1 I3 0 Chip	OK	53 degrees C / 127 degrees F
	FPC 1 I3 1 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	47 degrees C / 116 degrees F
	FPC 1 I3 2 Chip	OK	49 degrees C / 120 degrees F
	FPC 1 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	45 degrees C / 113 degrees F
	FPC 1 IA 0 Chip	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 TSensor	OK	44 degrees C / 111 degrees F
	FPC 1 IA 1 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 Intake	OK	32 degrees C / 89 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 0 Chip	OK	56 degrees C / 132 degrees F
	FPC 2 I3 1 TSensor	OK	52 degrees C / 125 degrees F
	FPC 2 I3 1 Chip	OK	55 degrees C / 131 degrees F
	FPC 2 I3 2 TSensor	OK	49 degrees C / 120 degrees F
	FPC 2 I3 2 Chip	OK	52 degrees C / 125 degrees F
	FPC 2 I3 3 TSensor	OK	44 degrees C / 111 degrees F
	FPC 2 I3 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 0 TSensor	OK	50 degrees C / 122 degrees F
	FPC 2 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 2 IA 1 TSensor	OK	47 degrees C / 116 degrees F
	FPC 2 IA 1 Chip	OK	53 degrees C / 127 degrees F
Fans	Front Fan	OK	Spinning at normal speed
	Middle Fan	OK	Spinning at normal speed
	Rear Fan	OK	Spinning at normal speed

show chassis environment (MX480 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Temp PEM 0                 OK          35 degrees C / 95 degrees F
      PEM 1                 OK          40 degrees C / 104 degrees F
      PEM 2                 Absent
      PEM 3                 Absent
Routing Engine 0          OK          44 degrees C / 111 degrees F
Routing Engine 1          OK          45 degrees C / 113 degrees F
CB 0 Intake               OK          36 degrees C / 96 degrees F
CB 0 Exhaust A           OK          38 degrees C / 100 degrees F
CB 0 Exhaust B           OK          39 degrees C / 102 degrees F
CB 0 ACBC                 OK          37 degrees C / 98 degrees F
CB 0 SF A                 OK          51 degrees C / 123 degrees F
CB 0 SF B                 OK          44 degrees C / 111 degrees F
CB 1 Intake               OK          36 degrees C / 96 degrees F
CB 1 Exhaust A           OK          39 degrees C / 102 degrees F
CB 1 Exhaust B           OK          40 degrees C / 104 degrees F
CB 1 ACBC                 OK          37 degrees C / 98 degrees F
CB 1 SF A                 OK          50 degrees C / 122 degrees F
CB 1 SF B                 OK          43 degrees C / 109 degrees F
FPC 0 Intake              OK          36 degrees C / 96 degrees F
FPC 0 Exhaust A          OK          39 degrees C / 102 degrees F
FPC 0 Exhaust B          OK          51 degrees C / 123 degrees F
FPC 0 I3 0 TSensor       OK          49 degrees C / 120 degrees F
FPC 0 I3 0 Chip          OK          56 degrees C / 132 degrees F
FPC 0 I3 1 TSensor       OK          47 degrees C / 116 degrees F
FPC 0 I3 1 Chip          OK          52 degrees C / 125 degrees F
FPC 0 I3 2 TSensor       OK          46 degrees C / 114 degrees F
FPC 0 I3 2 Chip          OK          48 degrees C / 118 degrees F
FPC 0 I3 3 TSensor       OK          42 degrees C / 107 degrees F
FPC 0 I3 3 Chip          OK          45 degrees C / 113 degrees F
FPC 0 IA 0 TSensor       OK          45 degrees C / 113 degrees F
FPC 0 IA 0 Chip          OK          45 degrees C / 113 degrees F
FPC 0 IA 1 TSensor       OK          44 degrees C / 111 degrees F
FPC 0 IA 1 Chip          OK          48 degrees C / 118 degrees F
FPC 1 Intake              OK          37 degrees C / 98 degrees F
FPC 1 Exhaust A          OK          41 degrees C / 105 degrees F
FPC 1 Exhaust B          OK          52 degrees C / 125 degrees F
FPC 1 I3 0 TSensor       OK          51 degrees C / 123 degrees F
FPC 1 I3 0 Chip          OK          57 degrees C / 134 degrees F

```

	FPC 1 I3 1 TSensor	OK	48 degrees C / 118 degrees F
	FPC 1 I3 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 1 I3 2 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 I3 2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 I3 3 TSensor	OK	42 degrees C / 107 degrees F
	FPC 1 I3 3 Chip	OK	46 degrees C / 114 degrees F
	FPC 1 IA 0 TSensor	OK	49 degrees C / 120 degrees F
	FPC 1 IA 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 1 IA 1 TSensor	OK	46 degrees C / 114 degrees F
	FPC 1 IA 1 Chip	OK	50 degrees C / 122 degrees F
Fans	Top Rear Fan	OK	Spinning at normal speed
	Bottom Rear Fan	OK	Spinning at normal speed
	Top Middle Fan	OK	Spinning at normal speed
	Bottom Middle Fan	OK	Spinning at normal speed
	Top Front Fan	OK	Spinning at normal speed
	Bottom Front Fan	OK	Spinning at normal speed

show chassis environment (MX480 Router with SCBE)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                                 OK          35 degrees C / 95 degrees F
      PEM 1                                 OK          40 degrees C / 104 degrees F
      PEM 2                                 Absent
      PEM 3                                 Absent
      Routing Engine 0                       OK          44 degrees C / 111 degrees F
      Routing Engine 1                       OK          45 degrees C / 113 degrees F
      CB 0 Intake                             OK          36 degrees C / 96 degrees F
      CB 0 Exhaust A                          OK          38 degrees C / 100 degrees F
      CB 0 Exhaust B                          OK          39 degrees C / 102 degrees F
      CB 0 ACBC                               OK          37 degrees C / 98 degrees F
      CB 0 XF A                               OK          51 degrees C / 123 degrees F
      CB 0 XF B                               OK          44 degrees C / 111 degrees F
      CB 1 Intake                             OK          36 degrees C / 96 degrees F
      CB 1 Exhaust A                          OK          39 degrees C / 102 degrees F
      CB 1 Exhaust B                          OK          40 degrees C / 104 degrees F
      CB 1 ACBC                               OK          37 degrees C / 98 degrees F
      CB 1 XF A                               OK          50 degrees C / 122 degrees F
      CB 1 XF B                               OK          43 degrees C / 109 degrees F
      FPC 0 Intake                             OK          36 degrees C / 96 degrees F
      FPC 0 Exhaust A                          OK          39 degrees C / 102 degrees F

```

```

FPC 0 Exhaust B           OK           51 degrees C / 123 degrees F
FPC 0 I3 0 TSensor       OK           49 degrees C / 120 degrees F
FPC 0 I3 0 Chip          OK           56 degrees C / 132 degrees F
FPC 0 I3 1 TSensor       OK           47 degrees C / 116 degrees F
FPC 0 I3 1 Chip          OK           52 degrees C / 125 degrees F
FPC 0 I3 2 TSensor       OK           46 degrees C / 114 degrees F
FPC 0 I3 2 Chip          OK           48 degrees C / 118 degrees F
FPC 0 I3 3 TSensor       OK           42 degrees C / 107 degrees F
FPC 0 I3 3 Chip          OK           45 degrees C / 113 degrees F
FPC 0 IA 0 TSensor       OK           45 degrees C / 113 degrees F
FPC 0 IA 0 Chip          OK           45 degrees C / 113 degrees F
FPC 0 IA 1 TSensor       OK           44 degrees C / 111 degrees F
FPC 0 IA 1 Chip          OK           48 degrees C / 118 degrees F
FPC 1 Intake              OK           37 degrees C / 98 degrees F
FPC 1 Exhaust A          OK           41 degrees C / 105 degrees F
FPC 1 Exhaust B          OK           52 degrees C / 125 degrees F
FPC 1 I3 0 TSensor       OK           51 degrees C / 123 degrees F
FPC 1 I3 0 Chip          OK           57 degrees C / 134 degrees F
FPC 1 I3 1 TSensor       OK           48 degrees C / 118 degrees F
FPC 1 I3 1 Chip          OK           52 degrees C / 125 degrees F
FPC 1 I3 2 TSensor       OK           46 degrees C / 114 degrees F
FPC 1 I3 2 Chip          OK           50 degrees C / 122 degrees F
FPC 1 I3 3 TSensor       OK           42 degrees C / 107 degrees F
FPC 1 I3 3 Chip          OK           46 degrees C / 114 degrees F
FPC 1 IA 0 TSensor       OK           49 degrees C / 120 degrees F
FPC 1 IA 0 Chip          OK           48 degrees C / 118 degrees F
FPC 1 IA 1 TSensor       OK           46 degrees C / 114 degrees F
FPC 1 IA 1 Chip          OK           50 degrees C / 122 degrees F
Fans Top Rear Fan        OK           Spinning at normal speed
      Bottom Rear Fan    OK           Spinning at normal speed
      Top Middle Fan     OK           Spinning at normal speed
      Bottom Middle Fan  OK           Spinning at normal speed
      Top Front Fan      OK           Spinning at normal speed
      Bottom Front Fan   OK           Spinning at normal speed

```

show chassis environment (MX960 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Temp  PEM 0                  Absent
      PEM 1                  Absent

```

	PEM 2	Check	
	PEM 3	OK	35 degrees C / 95 degrees F
	Routing Engine 0	OK	37 degrees C / 98 degrees F
	Routing Engine 1	Absent	
	CB 0 Intake	OK	24 degrees C / 75 degrees F
	CB 0 Exhaust A	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust B	OK	27 degrees C / 80 degrees F
	CB 1 Intake	Absent	
	CB 1 Exhaust A	Absent	
	CB 1 Exhaust B	Absent	
	CB 1 ACBC	Absent	
	CB 1 SF A	Absent	
	CB 1 SF B	Absent	
	CB 2 Intake	Absent	
	CB 2 Exhaust A	Absent	
	CB 2 Exhaust B	Absent	
	CB 2 ACBC	Absent	
	CB 2 SF A	Absent	
	CB 2 SF B	Absent	
	FPC 4 Intake	OK	24 degrees C / 75 degrees F
	FPC 4 Exhaust A	OK	36 degrees C / 96 degrees F
	FPC 4 Exhaust B	OK	38 degrees C / 100 degrees F
	FPC 7 Intake	OK	24 degrees C / 75 degrees F
	FPC 7 Exhaust A	OK	36 degrees C / 96 degrees F
	FPC 7 Exhaust B	OK	42 degrees C / 107 degrees F
Fans	Top Fan Tray Temp	Failed	
	Top Tray Fan 1	OK	Spinning at normal speed
	Top Tray Fan 2	OK	Spinning at normal speed
	Top Tray Fan 3	OK	Spinning at normal speed
	Top Tray Fan 4	OK	Spinning at normal speed
	Top Tray Fan 5	OK	Spinning at normal speed
	Top Tray Fan 6	OK	Spinning at normal speed
	Bottom Fan Tray Temp	Failed	
	Bottom Tray Fan 1	OK	Spinning at normal speed
	Bottom Tray Fan 2	OK	Spinning at normal speed
	Bottom Tray Fan 3	OK	Spinning at normal speed
	Bottom Tray Fan 4	OK	Spinning at normal speed
	Bottom Tray Fan 5	OK	Spinning at normal speed
	Bottom Tray Fan 6	OK	Spinning at normal speed

show chassis environment (MX960 Router with SCBE)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                                 Absent
      PEM 1                               OK          50 degrees C / 122 degrees F
      PEM 2                               OK          50 degrees C / 122 degrees F
      PEM 3                               OK          50 degrees C / 122 degrees F
      Routing Engine 0                    OK          42 degrees C / 107 degrees F
      Routing Engine 0 CPU                  OK          51 degrees C / 123 degrees F
      Routing Engine 1                      OK          39 degrees C / 102 degrees F
      Routing Engine 1 CPU                  OK          44 degrees C / 111 degrees F
      CB 0 Intake                          OK          35 degrees C / 95 degrees F
      CB 0 Exhaust A                       OK          36 degrees C / 96 degrees F
      CB 0 Exhaust B                       OK          43 degrees C / 109 degrees F
      CB 0 ACBC                            OK          38 degrees C / 100 degrees F
      CB 0 XF A                             OK          53 degrees C / 127 degrees F
      CB 0 XF B                             OK          47 degrees C / 116 degrees F
      CB 1 Intake                          OK          35 degrees C / 95 degrees F
      CB 1 Exhaust A                       OK          35 degrees C / 95 degrees F
      CB 1 Exhaust B                       OK          41 degrees C / 105 degrees F
      CB 1 ACBC                            OK          38 degrees C / 100 degrees F
      CB 1 XF A                             OK          52 degrees C / 125 degrees F
      CB 1 XF B                             OK          47 degrees C / 116 degrees F
      CB 2 Intake                          OK          32 degrees C / 89 degrees F
      CB 2 Exhaust A                       OK          30 degrees C / 86 degrees F
      CB 2 Exhaust B                       OK          35 degrees C / 95 degrees F
      CB 2 ACBC                            OK          33 degrees C / 91 degrees F
      CB 2 XF A                             OK          51 degrees C / 123 degrees F
      CB 2 XF B                             OK          50 degrees C / 122 degrees F
      FPC 0 Intake                          OK          35 degrees C / 95 degrees F
      FPC 0 Exhaust A                      OK          39 degrees C / 102 degrees F
      FPC 0 Exhaust B                      OK          50 degrees C / 122 degrees F
      FPC 0 I3 0 TSensor                    OK          50 degrees C / 122 degrees F
      FPC 0 I3 0 Chip                       OK          56 degrees C / 132 degrees F
      FPC 0 I3 1 TSensor                    OK          47 degrees C / 116 degrees F
      FPC 0 I3 1 Chip                       OK          50 degrees C / 122 degrees F
      FPC 0 I3 2 TSensor                    OK          45 degrees C / 113 degrees F
      FPC 0 I3 2 Chip                       OK          48 degrees C / 118 degrees F
      FPC 0 I3 3 TSensor                    OK          41 degrees C / 105 degrees F
      FPC 0 I3 3 Chip                       OK          44 degrees C / 111 degrees F
      FPC 0 IA 0 TSensor                    OK          45 degrees C / 113 degrees F

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FPC 0 IA 0 Chip	OK	45 degrees C / 113 degrees F
FPC 0 IA 1 TSensor	OK	44 degrees C / 111 degrees F
FPC 0 IA 1 Chip	OK	48 degrees C / 118 degrees F
FPC 1 Intake	OK	36 degrees C / 96 degrees F
FPC 1 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 1 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 1 LU 0 TCAM TSensor	OK	53 degrees C / 127 degrees F
FPC 1 LU 0 TCAM Chip	OK	57 degrees C / 134 degrees F
FPC 1 LU 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 1 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 1 MQ 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 1 MQ 0 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 1 TCAM TSensor	OK	51 degrees C / 123 degrees F
FPC 1 LU 1 TCAM Chip	OK	52 degrees C / 125 degrees F
FPC 1 LU 1 TSensor	OK	51 degrees C / 123 degrees F
FPC 1 LU 1 Chip	OK	53 degrees C / 127 degrees F
FPC 1 MQ 1 TSensor	OK	51 degrees C / 123 degrees F
FPC 1 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 2 Intake	OK	35 degrees C / 95 degrees F
FPC 2 Exhaust A	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 2 I3 0 TSensor	OK	52 degrees C / 125 degrees F
FPC 2 I3 0 Chip	OK	59 degrees C / 138 degrees F
FPC 2 I3 1 TSensor	OK	48 degrees C / 118 degrees F
FPC 2 I3 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 I3 2 TSensor	OK	47 degrees C / 116 degrees F
FPC 2 I3 2 Chip	OK	49 degrees C / 120 degrees F
FPC 2 I3 3 TSensor	OK	41 degrees C / 105 degrees F
FPC 2 I3 3 Chip	OK	44 degrees C / 111 degrees F
FPC 2 IA 0 TSensor	OK	47 degrees C / 116 degrees F
FPC 2 IA 0 Chip	OK	46 degrees C / 114 degrees F
FPC 2 IA 1 TSensor	OK	45 degrees C / 113 degrees F
FPC 2 IA 1 Chip	OK	49 degrees C / 120 degrees F
FPC 3 Intake	OK	34 degrees C / 93 degrees F
FPC 3 Exhaust A	OK	34 degrees C / 93 degrees F
FPC 3 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 3 I3 0 TSensor	OK	48 degrees C / 118 degrees F
FPC 3 I3 0 Chip	OK	52 degrees C / 125 degrees F
FPC 3 I3 1 TSensor	OK	46 degrees C / 114 degrees F
FPC 3 I3 1 Chip	OK	48 degrees C / 118 degrees F
FPC 3 IA 0 TSensor	OK	41 degrees C / 105 degrees F
FPC 3 IA 0 Chip	OK	40 degrees C / 104 degrees F
FPC 5 Intake	OK	42 degrees C / 107 degrees F

FPC 5 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 5 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 5 LU 0 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 5 LU 1 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 5 LU 2 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 5 LU 3 TSensor	OK	53 degrees C / 127 degrees F
FPC 5 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 0 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 1 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 2 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 5 MQ 3 TSensor	OK	47 degrees C / 116 degrees F
FPC 5 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 7 Intake	OK	36 degrees C / 96 degrees F
FPC 7 Exhaust A	OK	35 degrees C / 95 degrees F
FPC 7 Exhaust B	OK	33 degrees C / 91 degrees F
FPC 7 QX 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 QX 0 Chip	OK	47 degrees C / 116 degrees F
FPC 7 LU 0 TCAM TSensor	OK	42 degrees C / 107 degrees F
FPC 7 LU 0 TCAM Chip	OK	44 degrees C / 111 degrees F
FPC 7 LU 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 LU 0 Chip	OK	46 degrees C / 114 degrees F
FPC 7 MQ 0 TSensor	OK	42 degrees C / 107 degrees F
FPC 7 MQ 0 Chip	OK	45 degrees C / 113 degrees F
FPC 8 Intake	OK	33 degrees C / 91 degrees F
FPC 8 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 8 Exhaust B	OK	36 degrees C / 96 degrees F
FPC 8 I3 0 TSensor	OK	38 degrees C / 100 degrees F
FPC 8 I3 0 Chip	OK	43 degrees C / 109 degrees F
FPC 8 BDS 0 TSensor	OK	37 degrees C / 98 degrees F
FPC 8 BDS 0 Chip	OK	36 degrees C / 96 degrees F
FPC 8 IA 0 TSensor	OK	37 degrees C / 98 degrees F
FPC 8 IA 0 Chip	OK	37 degrees C / 98 degrees F
FPC 10 Intake	OK	38 degrees C / 100 degrees F
FPC 10 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 10 Exhaust B	OK	41 degrees C / 105 degrees F
FPC 10 I3 0 TSensor	OK	40 degrees C / 104 degrees F
FPC 10 I3 0 Chip	OK	42 degrees C / 107 degrees F

	FPC 10 I3 1 TSensor	OK	40 degrees C / 104 degrees F
	FPC 10 I3 1 Chip	OK	44 degrees C / 111 degrees F
	FPC 10 I3 2 TSensor	OK	42 degrees C / 107 degrees F
	FPC 10 I3 2 Chip	OK	43 degrees C / 109 degrees F
	FPC 10 I3 3 TSensor	OK	39 degrees C / 102 degrees F
	FPC 10 I3 3 Chip	OK	44 degrees C / 111 degrees F
	FPC 10 IA 0 TSensor	OK	36 degrees C / 96 degrees F
	FPC 10 IA 0 Chip	OK	36 degrees C / 96 degrees F
	FPC 10 IA 1 TSensor	OK	43 degrees C / 109 degrees F
	FPC 10 IA 1 Chip	OK	42 degrees C / 107 degrees F
Fans	Top Fan Tray Temp	OK	37 degrees C / 98 degrees F
	Top Tray Fan 1	OK	Spinning at normal speed
	Top Tray Fan 2	OK	Spinning at normal speed
	Top Tray Fan 3	OK	Spinning at normal speed
	Top Tray Fan 4	OK	Spinning at normal speed
	Top Tray Fan 5	OK	Spinning at normal speed
	Top Tray Fan 6	OK	Spinning at normal speed
	Bottom Fan Tray Temp	OK	28 degrees C / 82 degrees F
	Bottom Tray Fan 1	OK	Spinning at normal speed
	Bottom Tray Fan 2	OK	Spinning at normal speed
	Bottom Tray Fan 3	OK	Spinning at normal speed
	Bottom Tray Fan 4	OK	Spinning at normal speed
	Bottom Tray Fan 5	OK	Spinning at normal speed
	Bottom Tray Fan 6	OK	Spinning at normal speed

show chassis environment (MX960 Router with MPC5EQ)

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user@host> show chassis environment
Class Item                               Status      Measurement
Temp  PEM 0                                 OK          50 degrees C / 122 degrees F
      PEM 1                                 OK          45 degrees C / 113 degrees F
      PEM 2                                 OK          45 degrees C / 113 degrees F
      PEM 3                                 Absent
      Routing Engine 0                     OK          31 degrees C / 87 degrees F
      Routing Engine 0 CPU                   OK          30 degrees C / 86 degrees F
      Routing Engine 1                       Present
      Routing Engine 1 CPU                   Present
      CB 0 Intake                           OK          29 degrees C / 84 degrees F
      CB 0 Exhaust A                         OK          29 degrees C / 84 degrees F
      CB 0 Exhaust B                         OK          34 degrees C / 93 degrees F
      CB 0 ACBC                              OK          32 degrees C / 89 degrees F

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CB 0 XF A	OK	49 degrees C / 120 degrees F
CB 0 XF B	OK	45 degrees C / 113 degrees F
CB 1 Intake	OK	26 degrees C / 78 degrees F
CB 1 Exhaust A	OK	26 degrees C / 78 degrees F
CB 1 Exhaust B	OK	27 degrees C / 80 degrees F
CB 1 ACBC	OK	26 degrees C / 78 degrees F
CB 1 XF A	OK	32 degrees C / 89 degrees F
CB 1 XF B	OK	32 degrees C / 89 degrees F
CB 2 Intake	OK	28 degrees C / 82 degrees F
CB 2 Exhaust A	OK	27 degrees C / 80 degrees F
CB 2 Exhaust B	OK	33 degrees C / 91 degrees F
CB 2 ACBC	OK	30 degrees C / 86 degrees F
CB 2 XF A	OK	48 degrees C / 118 degrees F
CB 2 XF B	OK	46 degrees C / 114 degrees F
FPC 0 Intake	OK	38 degrees C / 100 degrees F
FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 0 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 0 XL TSen	OK	48 degrees C / 118 degrees F
FPC 0 XL Chip	OK	50 degrees C / 122 degrees F
FPC 0 XL_XR0 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
FPC 0 XL_XR1 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XL_XR1 Chip	OK	54 degrees C / 129 degrees F
FPC 0 XQ TSen	OK	48 degrees C / 118 degrees F
FPC 0 XQ Chip	OK	52 degrees C / 125 degrees F
FPC 0 XQ_XR0 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XQ_XR0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XQ_XR1 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XQ_XR1 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 0 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 0 Chip	OK	63 degrees C / 145 degrees F
FPC 0 XM 1 TSen	OK	53 degrees C / 127 degrees F
FPC 0 XM 1 Chip	OK	46 degrees C / 114 degrees F
FPC 0 PLX PCIe Switch TSe	OK	53 degrees C / 127 degrees F
FPC 0 PLX PCIe Switch Chi	OK	66 degrees C / 150 degrees F
FPC 1 Intake	OK	31 degrees C / 87 degrees F
FPC 1 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 1 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 1 LU 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 LU 1 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 2 TSen	OK	41 degrees C / 105 degrees F

FPC 1 LU 2 Chip	OK	46 degrees C / 114 degrees F
FPC 1 LU 3 TSen	OK	41 degrees C / 105 degrees F
FPC 1 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 1 XM 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 1 XF 0 TSen	OK	41 degrees C / 105 degrees F
FPC 1 XF 0 Chip	OK	63 degrees C / 145 degrees F
FPC 1 PLX Switch TSen	OK	41 degrees C / 105 degrees F
FPC 1 PLX Switch Chip	OK	43 degrees C / 109 degrees F
FPC 3 Intake	OK	31 degrees C / 87 degrees F
FPC 3 Exhaust A	OK	37 degrees C / 98 degrees F
FPC 3 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 1 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 1 Chip	OK	46 degrees C / 114 degrees F
FPC 3 LU 2 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 2 Chip	OK	40 degrees C / 104 degrees F
FPC 3 LU 3 TSen	OK	42 degrees C / 107 degrees F
FPC 3 LU 3 Chip	OK	41 degrees C / 105 degrees F
FPC 3 MQ 0 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 0 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 Chip	OK	40 degrees C / 104 degrees F
FPC 3 MQ 2 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 2 Chip	OK	36 degrees C / 96 degrees F
FPC 3 MQ 3 TSen	OK	37 degrees C / 98 degrees F
FPC 3 MQ 3 Chip	OK	38 degrees C / 100 degrees F
FPC 4 Intake	OK	34 degrees C / 93 degrees F
FPC 4 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 4 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 4 XL TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL Chip	OK	47 degrees C / 116 degrees F
FPC 4 XL_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 4 XL_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XL_XR1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ Chip	OK	47 degrees C / 116 degrees F
FPC 4 XQ_XR0 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 4 XQ_XR1 TSen	OK	44 degrees C / 111 degrees F
FPC 4 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F

FPC 4 XM 0 TSen	OK	51 degrees C / 123 degrees F
FPC 4 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 4 XM 1 TSen	OK	51 degrees C / 123 degrees F
FPC 4 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 4 PLX PCIe Switch TSe	OK	51 degrees C / 123 degrees F
FPC 4 PLX PCIe Switch Chi	OK	60 degrees C / 140 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	45 degrees C / 113 degrees F
FPC 5 Exhaust B	OK	47 degrees C / 116 degrees F
FPC 5 XL TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL Chip	OK	47 degrees C / 116 degrees F
FPC 5 XL_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR0 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XL_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XL_XR1 Chip	OK	49 degrees C / 120 degrees F
FPC 5 XQ TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ Chip	OK	48 degrees C / 118 degrees F
FPC 5 XQ_XR0 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR0 Chip	OK	60 degrees C / 140 degrees F
FPC 5 XQ_XR1 TSen	OK	45 degrees C / 113 degrees F
FPC 5 XQ_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 5 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 0 Chip	OK	48 degrees C / 118 degrees F
FPC 5 XM 1 TSen	OK	50 degrees C / 122 degrees F
FPC 5 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 5 PLX PCIe Switch TSe	OK	50 degrees C / 122 degrees F
FPC 5 PLX PCIe Switch Chi	OK	59 degrees C / 138 degrees F
FPC 7 Intake	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust A	OK	32 degrees C / 89 degrees F
FPC 7 Exhaust B	OK	33 degrees C / 91 degrees F
FPC 7 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 0 Chip	OK	44 degrees C / 111 degrees F
FPC 7 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 1 Chip	OK	47 degrees C / 116 degrees F
FPC 7 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 2 Chip	OK	39 degrees C / 102 degrees F
FPC 7 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 7 LU 3 Chip	OK	43 degrees C / 109 degrees F
FPC 7 XM 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 0 Chip	OK	57 degrees C / 134 degrees F
FPC 7 XM 1 TSen	OK	49 degrees C / 120 degrees F
FPC 7 XM 1 Chip	OK	48 degrees C / 118 degrees F
FPC 7 PLX Switch TSen	OK	49 degrees C / 120 degrees F

FPC 7 PLX Switch Chip	OK	45 degrees C / 113 degrees F
FPC 8 Intake	OK	36 degrees C / 96 degrees F
FPC 8 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 8 Exhaust B	OK	46 degrees C / 114 degrees F
FPC 8 XL TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL Chip	OK	47 degrees C / 116 degrees F
FPC 8 XL_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR0 Chip	OK	53 degrees C / 127 degrees F
FPC 8 XL_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XL_XR1 Chip	OK	52 degrees C / 125 degrees F
FPC 8 XQ TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ Chip	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR0 Chip	OK	59 degrees C / 138 degrees F
FPC 8 XQ_XR1 TSen	OK	46 degrees C / 114 degrees F
FPC 8 XQ_XR1 Chip	OK	57 degrees C / 134 degrees F
FPC 8 XM 0 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 0 Chip	OK	61 degrees C / 141 degrees F
FPC 8 XM 1 TSen	OK	52 degrees C / 125 degrees F
FPC 8 XM 1 Chip	OK	47 degrees C / 116 degrees F
FPC 8 PLX PCIe Switch TSe	OK	52 degrees C / 125 degrees F
FPC 8 PLX PCIe Switch Chi	OK	63 degrees C / 145 degrees F
FPC 9 Intake	OK	31 degrees C / 87 degrees F
FPC 9 Exhaust A	OK	34 degrees C / 93 degrees F
FPC 9 Exhaust B	OK	35 degrees C / 95 degrees F
FPC 9 QX 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 QX 0 Chip	OK	45 degrees C / 113 degrees F
FPC 9 LU 0 TCAM TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 TCAM Chip	OK	41 degrees C / 105 degrees F
FPC 9 LU 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 LU 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 MQ 0 TSen	OK	42 degrees C / 107 degrees F
FPC 9 MQ 0 Chip	OK	43 degrees C / 109 degrees F
FPC 9 QX 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 QX 1 Chip	OK	40 degrees C / 104 degrees F
FPC 9 LU 1 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TCAM Chip	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 9 MQ 1 TSen	OK	38 degrees C / 100 degrees F
FPC 9 MQ 1 Chip	OK	41 degrees C / 105 degrees F
FPC 10 Intake	OK	35 degrees C / 95 degrees F
FPC 10 Exhaust A	OK	51 degrees C / 123 degrees F

	FPC 10 Exhaust B	OK	46 degrees C / 114 degrees F
	FPC 10 XL TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XL Chip	OK	44 degrees C / 111 degrees F
	FPC 10 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XL_XR0 Chip	OK	47 degrees C / 116 degrees F
	FPC 10 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
	FPC 10 XQ TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XQ Chip	OK	46 degrees C / 114 degrees F
	FPC 10 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F
	FPC 10 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F
	FPC 10 XQ_XR1 Chip	OK	53 degrees C / 127 degrees F
	FPC 10 XM 0 TSen	OK	51 degrees C / 123 degrees F
	FPC 10 XM 0 Chip	OK	61 degrees C / 141 degrees F
	FPC 10 XM 1 TSen	OK	51 degrees C / 123 degrees F
	FPC 10 XM 1 Chip	OK	49 degrees C / 120 degrees F
	FPC 10 PLX PCIe Switch TSe	OK	51 degrees C / 123 degrees F
	FPC 10 PLX PCIe Switch Chi	OK	61 degrees C / 141 degrees F
	FPC 11 Intake	OK	33 degrees C / 91 degrees F
	FPC 11 Exhaust A	OK	33 degrees C / 91 degrees F
	FPC 11 Exhaust B	OK	34 degrees C / 93 degrees F
	FPC 11 LU 0 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 LU 0 Chip	OK	48 degrees C / 118 degrees F
	FPC 11 LU 1 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 LU 1 Chip	OK	50 degrees C / 122 degrees F
	FPC 11 LU 2 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 LU 2 Chip	OK	41 degrees C / 105 degrees F
	FPC 11 LU 3 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 LU 3 Chip	OK	48 degrees C / 118 degrees F
	FPC 11 XM 0 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 XM 0 Chip	OK	57 degrees C / 134 degrees F
	FPC 11 XM 1 TSen	OK	50 degrees C / 122 degrees F
	FPC 11 XM 1 Chip	OK	52 degrees C / 125 degrees F
	FPC 11 PLX Switch TSen	OK	50 degrees C / 122 degrees F
	FPC 11 PLX Switch Chip	OK	45 degrees C / 113 degrees F
Fans	Top Fan Tray Temp	OK	42 degrees C / 107 degrees F
	Top Tray Fan 1	OK	Spinning at high speed
	Top Tray Fan 2	OK	Spinning at high speed
	Top Tray Fan 3	OK	Spinning at high speed
	Top Tray Fan 4	OK	Spinning at high speed
	Top Tray Fan 5	OK	Spinning at high speed
	Top Tray Fan 6	OK	Spinning at high speed

Top Tray Fan 7	OK	Spinning at high speed
Top Tray Fan 8	OK	Spinning at high speed
Top Tray Fan 9	OK	Spinning at high speed
Top Tray Fan 10	OK	Spinning at high speed
Top Tray Fan 11	OK	Spinning at high speed
Top Tray Fan 12	OK	Spinning at high speed
Bottom Fan Tray Temp	OK	33 degrees C / 91 degrees F
Bottom Tray Fan 1	OK	Spinning at high speed
Bottom Tray Fan 2	OK	Spinning at high speed
Bottom Tray Fan 3	OK	Spinning at high speed
Bottom Tray Fan 4	OK	Spinning at high speed
Bottom Tray Fan 5	OK	Spinning at high speed
Bottom Tray Fan 6	OK	Spinning at high speed
Bottom Tray Fan 7	OK	Spinning at high speed
Bottom Tray Fan 8	OK	Spinning at high speed
Bottom Tray Fan 9	OK	Spinning at high speed
Bottom Tray Fan 10	OK	Spinning at high speed
Bottom Tray Fan 11	OK	Spinning at high speed
Bottom Tray Fan 12	OK	Spinning at high speed

show chassis environment (MX2020 Router)

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user@host> show chassis environment
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Class	Item	Status	Measurement
Temp	PSM 0	Absent	
	PSM 1	Absent	
	PSM 2	OK	41 degrees C / 105 degrees F
	PSM 3	OK	39 degrees C / 102 degrees F
	PSM 4	OK	39 degrees C / 102 degrees F
	PSM 5	OK	38 degrees C / 100 degrees F
	PSM 6	OK	38 degrees C / 100 degrees F
	PSM 7	OK	38 degrees C / 100 degrees F
	PSM 8	OK	37 degrees C / 98 degrees F
	PSM 9	Absent	
	PSM 10	Absent	
	PSM 11	OK	47 degrees C / 116 degrees F
	PSM 12	OK	45 degrees C / 113 degrees F
	PSM 13	OK	44 degrees C / 111 degrees F
	PSM 14	OK	44 degrees C / 111 degrees F
	PSM 15	OK	43 degrees C / 109 degrees F
	PSM 16	OK	42 degrees C / 107 degrees F

PSM 17	OK	41 degrees C / 105 degrees F
PDM 0	OK	
PDM 1	Absent	
PDM 2	Absent	
PDM 3	OK	
CB 0 IntakeA-Zone0	OK	45 degrees C / 113 degrees F
CB 0 IntakeB-Zone1	OK	34 degrees C / 93 degrees F
CB 0 IntakeC-Zone0	OK	48 degrees C / 118 degrees F
CB 0 ExhaustA-Zone0	OK	45 degrees C / 113 degrees F
CB 0 ExhaustB-Zone1	OK	37 degrees C / 98 degrees F
CB 0 TCBC-Zone0	OK	41 degrees C / 105 degrees F
CB 1 IntakeA-Zone0	OK	46 degrees C / 114 degrees F
CB 1 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
CB 1 IntakeC-Zone0	OK	49 degrees C / 120 degrees F
CB 1 ExhaustA-Zone0	OK	46 degrees C / 114 degrees F
CB 1 ExhaustB-Zone1	OK	41 degrees C / 105 degrees F
CB 1 TCBC-Zone0	OK	46 degrees C / 114 degrees F
SPMB 0 Intake	OK	33 degrees C / 91 degrees F
SPMB 1 Intake	OK	42 degrees C / 107 degrees F
Routing Engine 0	OK	35 degrees C / 95 degrees F
Routing Engine 0 CPU	OK	34 degrees C / 93 degrees F
Routing Engine 1	OK	44 degrees C / 111 degrees F
Routing Engine 1 CPU	OK	42 degrees C / 107 degrees F
SFB 0 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 0 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 0 IntakeA-Zone0	OK	50 degrees C / 122 degrees F
SFB 0 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 0 Exhaust-Zone0	OK	52 degrees C / 125 degrees F
SFB 0 SFB-XF2-Zone1	OK	61 degrees C / 141 degrees F
SFB 0 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 0 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 1 Intake-Zone0	OK	56 degrees C / 132 degrees F
SFB 1 Exhaust-Zone1	OK	47 degrees C / 116 degrees F
SFB 1 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 1 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 1 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 1 SFB-XF2-Zone1	OK	62 degrees C / 143 degrees F
SFB 1 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 1 SFB-XF0-Zone0	OK	69 degrees C / 156 degrees F
SFB 2 Intake-Zone0	OK	56 degrees C / 132 degrees F
SFB 2 Exhaust-Zone1	OK	47 degrees C / 116 degrees F
SFB 2 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 2 IntakeB-Zone1	OK	40 degrees C / 104 degrees F

SFB 2 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 2 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F
SFB 2 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 2 SFB-XF0-Zone0	OK	70 degrees C / 158 degrees F
SFB 3 Intake-Zone0	OK	57 degrees C / 134 degrees F
SFB 3 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 3 IntakeA-Zone0	OK	52 degrees C / 125 degrees F
SFB 3 IntakeB-Zone1	OK	41 degrees C / 105 degrees F
SFB 3 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 3 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 3 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 3 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 4 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 4 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 4 IntakeA-Zone0	OK	54 degrees C / 129 degrees F
SFB 4 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
SFB 4 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 4 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 4 SFB-XF1-Zone0	OK	68 degrees C / 154 degrees F
SFB 4 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 5 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 5 Exhaust-Zone1	OK	50 degrees C / 122 degrees F
SFB 5 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 5 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 Exhaust-Zone0	OK	54 degrees C / 129 degrees F
SFB 5 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 5 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F
SFB 5 SFB-XF0-Zone0	OK	74 degrees C / 165 degrees F
SFB 6 Intake-Zone0	OK	58 degrees C / 136 degrees F
SFB 6 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 6 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 6 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 Exhaust-Zone0	OK	53 degrees C / 127 degrees F
SFB 6 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F
SFB 6 SFB-XF1-Zone0	OK	68 degrees C / 154 degrees F
SFB 6 SFB-XF0-Zone0	OK	72 degrees C / 161 degrees F
SFB 7 Intake-Zone0	OK	57 degrees C / 134 degrees F
SFB 7 Exhaust-Zone1	OK	50 degrees C / 122 degrees F
SFB 7 IntakeA-Zone0	OK	53 degrees C / 127 degrees F
SFB 7 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 Exhaust-Zone0	OK	54 degrees C / 129 degrees F
SFB 7 SFB-XF2-Zone1	OK	68 degrees C / 154 degrees F
SFB 7 SFB-XF1-Zone0	OK	69 degrees C / 156 degrees F

SFB 7 SFB-XF0-Zone0	OK	73 degrees C / 163 degrees F
FPC 0 Intake	OK	41 degrees C / 105 degrees F
FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 0 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 0 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 0 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 0 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 0 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 0 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 0 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 0 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 0 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 1 Intake	OK	40 degrees C / 104 degrees F
FPC 1 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 1 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 1 LU 0 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 0 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 1 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 1 Chip	OK	58 degrees C / 136 degrees F
FPC 1 LU 2 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 1 LU 3 TSen	OK	55 degrees C / 131 degrees F
FPC 1 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 1 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 1 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 1 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 1 MQ 3 Chip	OK	44 degrees C / 111 degrees F
FPC 2 Intake	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 2 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 2 LU 0 TSen	OK	58 degrees C / 136 degrees F

FPC 2 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 2 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 2 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 2 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 2 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 2 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 2 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 2 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 2 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 3 Intake	OK	40 degrees C / 104 degrees F
FPC 3 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 3 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 3 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 3 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 3 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 3 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 3 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 3 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 3 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 3 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 3 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 3 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 4 Intake	OK	40 degrees C / 104 degrees F
FPC 4 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 4 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 4 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 4 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 4 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 2 Chip	OK	51 degrees C / 123 degrees F

FPC 4 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 4 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 4 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 4 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 4 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 5 Intake	OK	41 degrees C / 105 degrees F
FPC 5 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 5 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 5 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 5 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 1 Chip	OK	66 degrees C / 150 degrees F
FPC 5 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 5 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 5 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 5 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 5 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 5 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 5 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 6 Intake	OK	42 degrees C / 107 degrees F
FPC 6 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 6 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 6 LU 0 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 0 Chip	OK	64 degrees C / 147 degrees F
FPC 6 LU 1 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 1 Chip	OK	66 degrees C / 150 degrees F
FPC 6 LU 2 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 6 LU 3 TSen	OK	61 degrees C / 141 degrees F
FPC 6 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 0 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 1 TSen	OK	50 degrees C / 122 degrees F

FPC 6 MQ 1 Chip	OK	59 degrees C / 138 degrees F
FPC 6 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 6 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 6 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 7 Intake	OK	41 degrees C / 105 degrees F
FPC 7 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 7 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 7 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 7 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 7 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 7 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 7 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 7 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 7 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 7 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 8 Intake	OK	41 degrees C / 105 degrees F
FPC 8 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 8 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 8 LU 0 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 8 LU 1 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 8 LU 2 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 2 Chip	OK	55 degrees C / 131 degrees F
FPC 8 LU 3 TSen	OK	59 degrees C / 138 degrees F
FPC 8 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 8 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 0 Chip	OK	51 degrees C / 123 degrees F
FPC 8 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 8 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 8 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 8 MQ 3 Chip	OK	47 degrees C / 116 degrees F

FPC 9 Intake	OK	42 degrees C / 107 degrees F
FPC 9 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 9 Exhaust B	OK	63 degrees C / 145 degrees F
FPC 9 LU 0 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 0 Chip	OK	65 degrees C / 149 degrees F
FPC 9 LU 1 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 1 Chip	OK	67 degrees C / 152 degrees F
FPC 9 LU 2 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 9 LU 3 TSen	OK	60 degrees C / 140 degrees F
FPC 9 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 9 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 0 Chip	OK	55 degrees C / 131 degrees F
FPC 9 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 1 Chip	OK	59 degrees C / 138 degrees F
FPC 9 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 9 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 9 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 10 Intake	OK	44 degrees C / 111 degrees F
FPC 10 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 10 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 10 LU 0 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 10 LU 1 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 1 Chip	OK	59 degrees C / 138 degrees F
FPC 10 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 2 Chip	OK	52 degrees C / 125 degrees F
FPC 10 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 10 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 10 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 10 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 10 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 10 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 10 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 11 Intake	OK	30 degrees C / 86 degrees F
FPC 11 Exhaust A	OK	35 degrees C / 95 degrees F
FPC 11 Exhaust B	OK	30 degrees C / 86 degrees F
FPC 11 LU 0 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 0 Chip	OK	58 degrees C / 136 degrees F

FPC 11 LU 1 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 11 LU 2 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 11 LU 3 TSen	OK	57 degrees C / 134 degrees F
FPC 11 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 11 MQ 0 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 0 Chip	OK	52 degrees C / 125 degrees F
FPC 11 MQ 1 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 1 Chip	OK	57 degrees C / 134 degrees F
FPC 11 MQ 2 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 11 MQ 3 TSen	OK	52 degrees C / 125 degrees F
FPC 11 MQ 3 Chip	OK	52 degrees C / 125 degrees F
FPC 12 Intake	OK	40 degrees C / 104 degrees F
FPC 12 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 12 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 12 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 12 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 12 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 12 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 12 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 12 MQ 0 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 12 MQ 2 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 12 MQ 3 TSen	OK	46 degrees C / 114 degrees F
FPC 12 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 13 Intake	OK	40 degrees C / 104 degrees F
FPC 13 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 13 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 13 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 13 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 13 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 13 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 13 LU 3 TSen	OK	51 degrees C / 123 degrees F

FPC 13 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 13 MQ 1 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 1 Chip	OK	50 degrees C / 122 degrees F
FPC 13 MQ 2 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 2 Chip	OK	44 degrees C / 111 degrees F
FPC 13 MQ 3 TSen	OK	46 degrees C / 114 degrees F
FPC 13 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 14 Intake	OK	40 degrees C / 104 degrees F
FPC 14 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 14 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 14 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 14 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 14 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 14 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 14 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 14 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 14 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 14 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 14 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 15 Intake	OK	44 degrees C / 111 degrees F
FPC 15 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 15 Exhaust B	OK	60 degrees C / 140 degrees F
FPC 15 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 0 Chip	OK	56 degrees C / 132 degrees F
FPC 15 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 1 Chip	OK	50 degrees C / 122 degrees F
FPC 15 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 2 Chip	OK	58 degrees C / 136 degrees F
FPC 15 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 15 LU 3 Chip	OK	63 degrees C / 145 degrees F
FPC 15 XM 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 XM 0 Chip	OK	56 degrees C / 132 degrees F
FPC 15 XF 0 TSen	OK	50 degrees C / 122 degrees F
FPC 15 XF 0 Chip	OK	68 degrees C / 154 degrees F

FPC 15 PLX Switch TSen	OK	50 degrees C / 122 degrees F
FPC 15 PLX Switch Chip	OK	56 degrees C / 132 degrees F
FPC 16 Intake	OK	42 degrees C / 107 degrees F
FPC 16 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 16 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 16 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 16 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 16 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 16 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 16 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 16 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 1 Chip	OK	53 degrees C / 127 degrees F
FPC 16 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 16 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 16 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 17 Intake	OK	43 degrees C / 109 degrees F
FPC 17 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 17 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 17 LU 0 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 17 LU 1 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 1 Chip	OK	60 degrees C / 140 degrees F
FPC 17 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 17 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 17 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 17 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 17 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 17 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 17 MQ 3 Chip	OK	51 degrees C / 123 degrees F
FPC 18 Intake	OK	44 degrees C / 111 degrees F
FPC 18 Exhaust A	OK	53 degrees C / 127 degrees F
FPC 18 Exhaust B	OK	57 degrees C / 134 degrees F

FPC 18 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 18 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 1 Chip	OK	62 degrees C / 143 degrees F
FPC 18 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 2 Chip	OK	53 degrees C / 127 degrees F
FPC 18 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 3 Chip	OK	55 degrees C / 131 degrees F
FPC 18 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 0 Chip	OK	54 degrees C / 129 degrees F
FPC 18 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 18 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 2 Chip	OK	50 degrees C / 122 degrees F
FPC 18 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 18 MQ 3 Chip	OK	53 degrees C / 127 degrees F
FPC 19 Intake	OK	48 degrees C / 118 degrees F
FPC 19 Exhaust A	OK	56 degrees C / 132 degrees F
FPC 19 Exhaust B	OK	64 degrees C / 147 degrees F
FPC 19 LU 0 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 0 Chip	OK	64 degrees C / 147 degrees F
FPC 19 LU 1 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 1 Chip	OK	70 degrees C / 158 degrees F
FPC 19 LU 2 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 2 Chip	OK	61 degrees C / 141 degrees F
FPC 19 LU 3 TSen	OK	63 degrees C / 145 degrees F
FPC 19 LU 3 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 0 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 0 Chip	OK	60 degrees C / 140 degrees F
FPC 19 MQ 1 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 1 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 2 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 2 Chip	OK	56 degrees C / 132 degrees F
FPC 19 MQ 3 TSen	OK	56 degrees C / 132 degrees F
FPC 19 MQ 3 Chip	OK	57 degrees C / 134 degrees F
ADC 0 Intake	OK	40 degrees C / 104 degrees F
ADC 0 Exhaust	OK	52 degrees C / 125 degrees F
ADC 0 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 0 ADC-XF0	OK	66 degrees C / 150 degrees F
ADC 1 Intake	OK	38 degrees C / 100 degrees F
ADC 1 Exhaust	OK	50 degrees C / 122 degrees F
ADC 1 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 1 ADC-XF0	OK	63 degrees C / 145 degrees F

ADC 2 Intake	OK	37 degrees C / 98 degrees F
ADC 2 Exhaust	OK	52 degrees C / 125 degrees F
ADC 2 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 2 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 3 Intake	OK	40 degrees C / 104 degrees F
ADC 3 Exhaust	OK	51 degrees C / 123 degrees F
ADC 3 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 3 ADC-XF0	OK	64 degrees C / 147 degrees F
ADC 4 Intake	OK	39 degrees C / 102 degrees F
ADC 4 Exhaust	OK	51 degrees C / 123 degrees F
ADC 4 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 4 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 5 Intake	OK	38 degrees C / 100 degrees F
ADC 5 Exhaust	OK	54 degrees C / 129 degrees F
ADC 5 ADC-XF1	OK	56 degrees C / 132 degrees F
ADC 5 ADC-XF0	OK	67 degrees C / 152 degrees F
ADC 6 Intake	OK	39 degrees C / 102 degrees F
ADC 6 Exhaust	OK	52 degrees C / 125 degrees F
ADC 6 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 6 ADC-XF0	OK	66 degrees C / 150 degrees F
ADC 7 Intake	OK	39 degrees C / 102 degrees F
ADC 7 Exhaust	OK	54 degrees C / 129 degrees F
ADC 7 ADC-XF1	OK	62 degrees C / 143 degrees F
ADC 7 ADC-XF0	OK	70 degrees C / 158 degrees F
ADC 8 Intake	OK	39 degrees C / 102 degrees F
ADC 8 Exhaust	OK	52 degrees C / 125 degrees F
ADC 8 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 8 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 9 Intake	OK	41 degrees C / 105 degrees F
ADC 9 Exhaust	OK	51 degrees C / 123 degrees F
ADC 9 ADC-XF1	OK	63 degrees C / 145 degrees F
ADC 9 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 10 Intake	OK	48 degrees C / 118 degrees F
ADC 10 Exhaust	OK	53 degrees C / 127 degrees F
ADC 10 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 10 ADC-XF0	OK	66 degrees C / 150 degrees F
ADC 12 Intake	OK	49 degrees C / 120 degrees F
ADC 12 Exhaust	OK	54 degrees C / 129 degrees F
ADC 12 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 12 ADC-XF0	OK	67 degrees C / 152 degrees F
ADC 13 Intake	OK	49 degrees C / 120 degrees F
ADC 13 Exhaust	OK	57 degrees C / 134 degrees F
ADC 13 ADC-XF1	OK	66 degrees C / 150 degrees F

	ADC 13	ADC-XF0	OK	69 degrees C / 156 degrees F
	ADC 14	Intake	OK	51 degrees C / 123 degrees F
	ADC 14	Exhaust	OK	59 degrees C / 138 degrees F
	ADC 14	ADC-XF1	OK	69 degrees C / 156 degrees F
	ADC 14	ADC-XF0	OK	74 degrees C / 165 degrees F
	ADC 15	Intake	OK	50 degrees C / 122 degrees F
	ADC 15	Exhaust	OK	59 degrees C / 138 degrees F
	ADC 15	ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 15	ADC-XF0	OK	69 degrees C / 156 degrees F
	ADC 16	Intake	OK	52 degrees C / 125 degrees F
	ADC 16	Exhaust	OK	58 degrees C / 136 degrees F
	ADC 16	ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 16	ADC-XF0	OK	70 degrees C / 158 degrees F
	ADC 17	Intake	OK	52 degrees C / 125 degrees F
	ADC 17	Exhaust	OK	59 degrees C / 138 degrees F
	ADC 17	ADC-XF1	OK	69 degrees C / 156 degrees F
	ADC 17	ADC-XF0	OK	71 degrees C / 159 degrees F
	ADC 18	Intake	OK	53 degrees C / 127 degrees F
	ADC 18	Exhaust	OK	59 degrees C / 138 degrees F
	ADC 18	ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 18	ADC-XF0	OK	73 degrees C / 163 degrees F
	ADC 19	Intake	OK	50 degrees C / 122 degrees F
	ADC 19	Exhaust	OK	59 degrees C / 138 degrees F
	ADC 19	ADC-XF1	OK	68 degrees C / 154 degrees F
	ADC 19	ADC-XF0	OK	72 degrees C / 161 degrees F
Fans	Fan Tray 0	Fan 1	OK	7440 RPM
	Fan Tray 0	Fan 2	OK	7200 RPM
	Fan Tray 0	Fan 3	OK	6960 RPM
	Fan Tray 0	Fan 4	OK	7200 RPM
	Fan Tray 0	Fan 5	OK	7080 RPM
	Fan Tray 0	Fan 6	OK	6840 RPM
	Fan Tray 1	Fan 1	OK	6840 RPM
	Fan Tray 1	Fan 2	OK	6960 RPM
	Fan Tray 1	Fan 3	OK	6960 RPM
	Fan Tray 1	Fan 4	OK	7080 RPM
	Fan Tray 1	Fan 5	OK	6960 RPM
	Fan Tray 1	Fan 6	OK	6960 RPM
	Fan Tray 2	Fan 1	OK	8640 RPM
	Fan Tray 2	Fan 2	OK	8640 RPM
	Fan Tray 2	Fan 3	OK	8760 RPM
	Fan Tray 2	Fan 4	OK	8760 RPM
	Fan Tray 2	Fan 5	OK	8640 RPM
	Fan Tray 2	Fan 6	OK	8640 RPM

Fan Tray 3 Fan 1	OK	8520 RPM
Fan Tray 3 Fan 2	OK	8520 RPM
Fan Tray 3 Fan 3	OK	8640 RPM
Fan Tray 3 Fan 4	OK	8640 RPM
Fan Tray 3 Fan 5	OK	8520 RPM
Fan Tray 3 Fan 6	OK	8520 RPM

show chassis environment (MX2020 Router with MPC5EQ and MPC6E)

Class	Item	Status	Measurement
Temp	PSM 0	OK	32 degrees C / 89 degrees F
	PSM 1	OK	32 degrees C / 89 degrees F
	PSM 2	OK	32 degrees C / 89 degrees F
	PSM 3	OK	32 degrees C / 89 degrees F
	PSM 4	OK	32 degrees C / 89 degrees F
	PSM 5	OK	33 degrees C / 91 degrees F
	PSM 6	OK	32 degrees C / 89 degrees F
	PSM 7	OK	32 degrees C / 89 degrees F
	PSM 8	OK	32 degrees C / 89 degrees F
	PSM 9	Absent	
	PSM 10	Absent	
	PSM 11	Absent	
	PSM 12	OK	33 degrees C / 91 degrees F
	PSM 13	OK	33 degrees C / 91 degrees F
	PSM 14	OK	34 degrees C / 93 degrees F
	PSM 15	OK	34 degrees C / 93 degrees F
	PSM 16	OK	33 degrees C / 91 degrees F
	PSM 17	OK	33 degrees C / 91 degrees F
	PDM 0	OK	
	PDM 1	OK	
	PDM 2	OK	
	PDM 3	OK	
	CB 0 IntakeA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
	CB 0 IntakeC-Zone0	OK	38 degrees C / 100 degrees F
	CB 0 ExhaustA-Zone0	OK	34 degrees C / 93 degrees F
	CB 0 ExhaustB-Zone1	OK	27 degrees C / 80 degrees F
	CB 0 TCBC-Zone0	OK	32 degrees C / 89 degrees F
	CB 1 IntakeA-Zone0	OK	24 degrees C / 75 degrees F
	CB 1 IntakeB-Zone1	OK	22 degrees C / 71 degrees F
	CB 1 IntakeC-Zone0	OK	34 degrees C / 93 degrees F

CB 1 ExhaustA-Zone0	OK	31 degrees C / 87 degrees F
CB 1 ExhaustB-Zone1	OK	24 degrees C / 75 degrees F
CB 1 TCBC-Zone0	OK	27 degrees C / 80 degrees F
SPMB 0 Intake	OK	25 degrees C / 77 degrees F
SPMB 1 Intake	OK	23 degrees C / 73 degrees F
Routing Engine 0	OK	28 degrees C / 82 degrees F
Routing Engine 0 CPU	OK	25 degrees C / 77 degrees F
Routing Engine 1	OK	25 degrees C / 77 degrees F
Routing Engine 1 CPU	OK	24 degrees C / 75 degrees F
SFB 0 Intake-Zone0	OK	45 degrees C / 113 degrees F
SFB 0 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 0 IntakeA-Zone0	OK	32 degrees C / 89 degrees F
SFB 0 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 0 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
SFB 0 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
SFB 0 SFB-XF1-Zone0	OK	48 degrees C / 118 degrees F
SFB 0 SFB-XF0-Zone0	OK	60 degrees C / 140 degrees F
SFB 1 Intake-Zone0	OK	44 degrees C / 111 degrees F
SFB 1 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 1 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 1 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
SFB 1 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 1 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
SFB 1 SFB-XF1-Zone0	OK	49 degrees C / 120 degrees F
SFB 1 SFB-XF0-Zone0	OK	56 degrees C / 132 degrees F
SFB 2 Intake-Zone0	OK	41 degrees C / 105 degrees F
SFB 2 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 2 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 2 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 2 SFB-XF2-Zone1	OK	47 degrees C / 116 degrees F
SFB 2 SFB-XF1-Zone0	OK	55 degrees C / 131 degrees F
SFB 2 SFB-XF0-Zone0	OK	55 degrees C / 131 degrees F
SFB 3 Intake-Zone0	OK	43 degrees C / 109 degrees F
SFB 3 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 3 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 3 IntakeB-Zone1	OK	27 degrees C / 80 degrees F
SFB 3 Exhaust-Zone0	OK	36 degrees C / 96 degrees F
SFB 3 SFB-XF2-Zone1	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF1-Zone0	OK	46 degrees C / 114 degrees F
SFB 3 SFB-XF0-Zone0	OK	57 degrees C / 134 degrees F
SFB 4 Intake-Zone0	OK	36 degrees C / 96 degrees F
SFB 4 Exhaust-Zone1	OK	32 degrees C / 89 degrees F

SFB 4 IntakeA-Zone0	OK	31 degrees C / 87 degrees F
SFB 4 IntakeB-Zone1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 4 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 4 SFB-XF1-Zone0	OK	45 degrees C / 113 degrees F
SFB 4 SFB-XF0-Zone0	OK	52 degrees C / 125 degrees F
SFB 5 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 5 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 5 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 5 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 5 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 5 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 5 SFB-XF0-Zone0	OK	49 degrees C / 120 degrees F
SFB 6 Intake-Zone0	OK	30 degrees C / 86 degrees F
SFB 6 Exhaust-Zone1	OK	29 degrees C / 84 degrees F
SFB 6 IntakeA-Zone0	OK	25 degrees C / 77 degrees F
SFB 6 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 6 Exhaust-Zone0	OK	29 degrees C / 84 degrees F
SFB 6 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 SFB-XF1-Zone0	OK	44 degrees C / 111 degrees F
SFB 6 SFB-XF0-Zone0	OK	45 degrees C / 113 degrees F
SFB 7 Intake-Zone0	OK	31 degrees C / 87 degrees F
SFB 7 Exhaust-Zone1	OK	30 degrees C / 86 degrees F
SFB 7 IntakeA-Zone0	OK	26 degrees C / 78 degrees F
SFB 7 IntakeB-Zone1	OK	24 degrees C / 75 degrees F
SFB 7 Exhaust-Zone0	OK	28 degrees C / 82 degrees F
SFB 7 SFB-XF2-Zone1	OK	50 degrees C / 122 degrees F
SFB 7 SFB-XF1-Zone0	OK	43 degrees C / 109 degrees F
SFB 7 SFB-XF0-Zone0	OK	47 degrees C / 116 degrees F
FPC 0 Intake	OK	31 degrees C / 87 degrees F
FPC 0 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 0 XL TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL Chip	OK	46 degrees C / 114 degrees F
FPC 0 XL_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR0 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XL_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XL_XR1 Chip	OK	48 degrees C / 118 degrees F
FPC 0 XQ TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ Chip	OK	44 degrees C / 111 degrees F
FPC 0 XQ_XR0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ_XR0 Chip	OK	57 degrees C / 134 degrees F

FPC 0 XQ_XR1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XQ_XR1 Chip	OK	55 degrees C / 131 degrees F
FPC 0 XM 0 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 0 Chip	OK	62 degrees C / 143 degrees F
FPC 0 XM 1 TSen	OK	48 degrees C / 118 degrees F
FPC 0 XM 1 Chip	OK	44 degrees C / 111 degrees F
FPC 0 PLX PCIe Switch TSe	OK	48 degrees C / 118 degrees F
FPC 0 PLX PCIe Switch Chi	OK	57 degrees C / 134 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 LU 1 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 1 Chip	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 2 Chip	OK	42 degrees C / 107 degrees F
FPC 1 LU 3 TSen	OK	38 degrees C / 100 degrees F
FPC 1 LU 3 Chip	OK	47 degrees C / 116 degrees F
FPC 1 XM 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XM 0 Chip	OK	44 degrees C / 111 degrees F
FPC 1 XF 0 TSen	OK	38 degrees C / 100 degrees F
FPC 1 XF 0 Chip	OK	54 degrees C / 129 degrees F
FPC 1 PLX Switch TSen	OK	38 degrees C / 100 degrees F
FPC 1 PLX Switch Chip	OK	41 degrees C / 105 degrees F
FPC 2 Intake	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust A	OK	28 degrees C / 82 degrees F
FPC 2 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 2 LU 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 0 Chip	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 1 Chip	OK	41 degrees C / 105 degrees F
FPC 2 LU 2 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 2 Chip	OK	34 degrees C / 93 degrees F
FPC 2 LU 3 TSen	OK	40 degrees C / 104 degrees F
FPC 2 LU 3 Chip	OK	38 degrees C / 100 degrees F
FPC 2 XM 0 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 0 Chip	OK	47 degrees C / 116 degrees F
FPC 2 XM 1 TSen	OK	40 degrees C / 104 degrees F
FPC 2 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 2 PLX Switch TSen	OK	40 degrees C / 104 degrees F
FPC 2 PLX Switch Chip	OK	39 degrees C / 102 degrees F
FPC 3 Intake	OK	27 degrees C / 80 degrees F

FPC 3 Exhaust A	OK	38 degrees C / 100 degrees F
FPC 3 Exhaust B	OK	31 degrees C / 87 degrees F
FPC 3 QX 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 QX 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 LU 0 TCAM TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 TCAM Chip	OK	43 degrees C / 109 degrees F
FPC 3 LU 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 LU 0 Chip	OK	42 degrees C / 107 degrees F
FPC 3 MQ 0 TSen	OK	38 degrees C / 100 degrees F
FPC 3 MQ 0 Chip	OK	39 degrees C / 102 degrees F
FPC 3 QX 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 QX 1 Chip	OK	36 degrees C / 96 degrees F
FPC 3 LU 1 TCAM TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 TCAM Chip	OK	35 degrees C / 95 degrees F
FPC 3 LU 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 LU 1 Chip	OK	37 degrees C / 98 degrees F
FPC 3 MQ 1 TSen	OK	32 degrees C / 89 degrees F
FPC 3 MQ 1 Chip	OK	36 degrees C / 96 degrees F
FPC 4 Intake	OK	29 degrees C / 84 degrees F
FPC 4 Exhaust A	OK	36 degrees C / 96 degrees F
FPC 4 Exhaust B	OK	40 degrees C / 104 degrees F
FPC 4 XL TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL Chip	OK	42 degrees C / 107 degrees F
FPC 4 XL_XR0 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL_XR0 Chip	OK	45 degrees C / 113 degrees F
FPC 4 XL_XR1 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XL_XR1 Chip	OK	46 degrees C / 114 degrees F
FPC 4 XQ TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ Chip	OK	42 degrees C / 107 degrees F
FPC 4 XQ_XR0 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ_XR0 Chip	OK	54 degrees C / 129 degrees F
FPC 4 XQ_XR1 TSen	OK	39 degrees C / 102 degrees F
FPC 4 XQ_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 4 XM 0 TSen	OK	45 degrees C / 113 degrees F
FPC 4 XM 0 Chip	OK	59 degrees C / 138 degrees F
FPC 4 XM 1 TSen	OK	45 degrees C / 113 degrees F
FPC 4 XM 1 Chip	OK	41 degrees C / 105 degrees F
FPC 4 PLX PCIe Switch TSe	OK	45 degrees C / 113 degrees F
FPC 4 PLX PCIe Switch Chi	OK	58 degrees C / 136 degrees F
FPC 5 Intake	OK	29 degrees C / 84 degrees F
FPC 5 Exhaust A	OK	33 degrees C / 91 degrees F
FPC 5 Exhaust B	OK	39 degrees C / 102 degrees F
FPC 5 LU 0 TSen	OK	40 degrees C / 104 degrees F

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FPC 5 LU 0 Chip          OK          40 degrees C / 104 degrees F
FPC 5 LU 1 TSen         OK          40 degrees C / 104 degrees F
FPC 5 LU 1 Chip         OK          45 degrees C / 113 degrees F
FPC 5 LU 2 TSen         OK          40 degrees C / 104 degrees F
FPC 5 LU 2 Chip         OK          40 degrees C / 104 degrees F
FPC 5 LU 3 TSen         OK          40 degrees C / 104 degrees F
FPC 5 LU 3 Chip         OK          46 degrees C / 114 degrees F
FPC 5 MQ 0 TSen         OK          32 degrees C / 89 degrees F
FPC 5 MQ 0 Chip         OK          33 degrees C / 91 degrees F
FPC 5 MQ 1 TSen         OK          32 degrees C / 89 degrees F
FPC 5 MQ 1 Chip         OK          35 degrees C / 95 degrees F
FPC 5 MQ 2 TSen         OK          32 degrees C / 89 degrees F
FPC 5 MQ 2 Chip         OK          32 degrees C / 89 degrees F
FPC 5 MQ 3 TSen         OK          32 degrees C / 89 degrees F
FPC 5 MQ 3 Chip         OK          32 degrees C / 89 degrees F
FPC 9 Intake            OK          25 degrees C / 77 degrees F
FPC 9 Exhaust A        OK          37 degrees C / 98 degrees F
FPC 9 Exhaust B        OK          40 degrees C / 104 degrees F
FPC 9 XL 0 TSen        OK          40 degrees C / 104 degrees F

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show chassis environment (MX2010 Router)

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user@host> show chassis environment
Class Item                Status      Measurement
Temp  PSM 0                    OK          7 degrees C / 44 degrees F
      PSM 1                    OK          7 degrees C / 44 degrees F
      PSM 2                    OK          7 degrees C / 44 degrees F
      PSM 3                    OK          6 degrees C / 42 degrees F
      PSM 4                    OK          6 degrees C / 42 degrees F
      PSM 5                    OK          6 degrees C / 42 degrees F
      PSM 6                    OK          6 degrees C / 42 degrees F
      PSM 7                    OK          7 degrees C / 44 degrees F
      PSM 8                    OK          7 degrees C / 44 degrees F
      PDM 0                    OK
      PDM 1                    Absent
      CB 0 IntakeA-Zone0       OK          14 degrees C / 57 degrees F
      CB 0 IntakeB-Zone1       OK          7 degrees C / 44 degrees F
      CB 0 IntakeC-Zone0       OK          22 degrees C / 71 degrees F
      CB 0 ExhaustA-Zone0      OK          14 degrees C / 57 degrees F
      CB 0 ExhaustB-Zone1      OK          9 degrees C / 48 degrees F

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CB 0 TCBC-Zone0	OK	11 degrees C / 51 degrees F
CB 1 IntakeA-Zone0	OK	9 degrees C / 48 degrees F
CB 1 IntakeB-Zone1	OK	5 degrees C / 41 degrees F
CB 1 IntakeC-Zone0	OK	20 degrees C / 68 degrees F
CB 1 ExhaustA-Zone0	OK	12 degrees C / 53 degrees F
CB 1 ExhaustB-Zone1	OK	7 degrees C / 44 degrees F
CB 1 TCBC-Zone0	OK	10 degrees C / 50 degrees F
SPMB 0 Intake	OK	5 degrees C / 41 degrees F
SPMB 1 Intake	OK	4 degrees C / 39 degrees F
Routing Engine 0	OK	9 degrees C / 48 degrees F
Routing Engine 0 CPU	OK	9 degrees C / 48 degrees F
Routing Engine 1	OK	6 degrees C / 42 degrees F
Routing Engine 1 CPU	OK	6 degrees C / 42 degrees F
SFB 0 Intake-Zone0	OK	26 degrees C / 78 degrees F
SFB 0 Exhaust-Zone1	OK	17 degrees C / 62 degrees F
SFB 0 IntakeA-Zone0	OK	16 degrees C / 60 degrees F
SFB 0 IntakeB-Zone1	OK	11 degrees C / 51 degrees F
SFB 0 Exhaust-Zone0	OK	18 degrees C / 64 degrees F
SFB 0 SFB-XF2-Zone1	OK	25 degrees C / 77 degrees F
SFB 0 SFB-XF1-Zone0	OK	23 degrees C / 73 degrees F
SFB 0 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
SFB 1 Intake-Zone0	OK	27 degrees C / 80 degrees F
SFB 1 Exhaust-Zone1	OK	15 degrees C / 59 degrees F
SFB 1 IntakeA-Zone0	OK	20 degrees C / 68 degrees F
SFB 1 IntakeB-Zone1	OK	10 degrees C / 50 degrees F
SFB 1 Exhaust-Zone0	OK	19 degrees C / 66 degrees F
SFB 1 SFB-XF2-Zone1	OK	26 degrees C / 78 degrees F
SFB 1 SFB-XF1-Zone0	OK	27 degrees C / 80 degrees F
SFB 1 SFB-XF0-Zone0	OK	32 degrees C / 89 degrees F
SFB 2 Intake-Zone0	OK	21 degrees C / 69 degrees F
SFB 2 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 2 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 2 IntakeB-Zone1	OK	9 degrees C / 48 degrees F
SFB 2 Exhaust-Zone0	OK	16 degrees C / 60 degrees F
SFB 2 SFB-XF2-Zone1	OK	24 degrees C / 75 degrees F
SFB 2 SFB-XF1-Zone0	OK	21 degrees C / 69 degrees F
SFB 2 SFB-XF0-Zone0	OK	26 degrees C / 78 degrees F
SFB 4 Intake-Zone0	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust-Zone1	OK	16 degrees C / 60 degrees F
SFB 4 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 4 IntakeB-Zone1	OK	11 degrees C / 51 degrees F
SFB 4 Exhaust-Zone0	OK	19 degrees C / 66 degrees F
SFB 4 SFB-XF2-Zone1	OK	27 degrees C / 80 degrees F

SFB 4 SFB-XF1-Zone0	OK	27 degrees C / 80 degrees F
SFB 4 SFB-XF0-Zone0	OK	32 degrees C / 89 degrees F
SFB 5 Intake-Zone0	OK	22 degrees C / 71 degrees F
SFB 5 Exhaust-Zone1	OK	14 degrees C / 57 degrees F
SFB 5 IntakeA-Zone0	OK	18 degrees C / 64 degrees F
SFB 5 IntakeB-Zone1	OK	10 degrees C / 50 degrees F
SFB 5 Exhaust-Zone0	OK	17 degrees C / 62 degrees F
SFB 5 SFB-XF2-Zone1	OK	22 degrees C / 71 degrees F
SFB 5 SFB-XF1-Zone0	OK	29 degrees C / 84 degrees F
SFB 5 SFB-XF0-Zone0	OK	27 degrees C / 80 degrees F
SFB 6 Intake-Zone0	OK	27 degrees C / 80 degrees F
SFB 6 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 6 IntakeA-Zone0	OK	19 degrees C / 66 degrees F
SFB 6 IntakeB-Zone1	OK	10 degrees C / 50 degrees F
SFB 6 Exhaust-Zone0	OK	20 degrees C / 68 degrees F
SFB 6 SFB-XF2-Zone1	OK	24 degrees C / 75 degrees F
SFB 6 SFB-XF1-Zone0	OK	32 degrees C / 89 degrees F
SFB 6 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
SFB 7 Intake-Zone0	OK	25 degrees C / 77 degrees F
SFB 7 Exhaust-Zone1	OK	13 degrees C / 55 degrees F
SFB 7 IntakeA-Zone0	OK	14 degrees C / 57 degrees F
SFB 7 IntakeB-Zone1	OK	8 degrees C / 46 degrees F
SFB 7 Exhaust-Zone0	OK	17 degrees C / 62 degrees F
SFB 7 SFB-XF2-Zone1	OK	21 degrees C / 69 degrees F
SFB 7 SFB-XF1-Zone0	OK	21 degrees C / 69 degrees F
SFB 7 SFB-XF0-Zone0	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	13 degrees C / 55 degrees F
FPC 0 Exhaust A	OK	13 degrees C / 55 degrees F
FPC 0 Exhaust B	OK	14 degrees C / 57 degrees F
FPC 0 LU 0 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 0 Chip	OK	25 degrees C / 77 degrees F
FPC 0 LU 1 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 0 LU 2 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 0 LU 3 TSen	OK	28 degrees C / 82 degrees F
FPC 0 LU 3 Chip	OK	23 degrees C / 73 degrees F
FPC 0 XM 0 TSen	OK	28 degrees C / 82 degrees F
FPC 0 XM 0 Chip	OK	33 degrees C / 91 degrees F
FPC 0 XM 1 TSen	OK	28 degrees C / 82 degrees F
FPC 0 XM 1 Chip	OK	26 degrees C / 78 degrees F
FPC 0 PLX Switch TSen	OK	28 degrees C / 82 degrees F
FPC 0 PLX Switch Chip	OK	26 degrees C / 78 degrees F

FPC 1 Intake	OK	10 degrees C / 50 degrees F
FPC 1 Exhaust A	OK	24 degrees C / 75 degrees F
FPC 1 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 1 LU 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 0 Chip	OK	31 degrees C / 87 degrees F
FPC 1 LU 1 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 1 Chip	OK	21 degrees C / 69 degrees F
FPC 1 LU 2 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 2 Chip	OK	25 degrees C / 77 degrees F
FPC 1 LU 3 TSen	OK	22 degrees C / 71 degrees F
FPC 1 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 1 XM 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 XM 0 Chip	OK	30 degrees C / 86 degrees F
FPC 1 XF 0 TSen	OK	22 degrees C / 71 degrees F
FPC 1 XF 0 Chip	OK	37 degrees C / 98 degrees F
FPC 1 PLX Switch TSen	OK	22 degrees C / 71 degrees F
FPC 1 PLX Switch Chip	OK	22 degrees C / 71 degrees F
FPC 2 Intake	OK	9 degrees C / 48 degrees F
FPC 2 Exhaust A	OK	10 degrees C / 50 degrees F
FPC 2 Exhaust B	OK	10 degrees C / 50 degrees F
FPC 2 LU 0 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 0 Chip	OK	25 degrees C / 77 degrees F
FPC 2 LU 1 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 1 Chip	OK	26 degrees C / 78 degrees F
FPC 2 LU 2 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 2 Chip	OK	17 degrees C / 62 degrees F
FPC 2 LU 3 TSen	OK	26 degrees C / 78 degrees F
FPC 2 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 2 XM 0 TSen	OK	26 degrees C / 78 degrees F
FPC 2 XM 0 Chip	OK	34 degrees C / 93 degrees F
FPC 2 XM 1 TSen	OK	26 degrees C / 78 degrees F
FPC 2 XM 1 Chip	OK	26 degrees C / 78 degrees F
FPC 2 PLX Switch TSen	OK	26 degrees C / 78 degrees F
FPC 2 PLX Switch Chip	OK	20 degrees C / 68 degrees F
FPC 3 Intake	OK	12 degrees C / 53 degrees F
FPC 3 Exhaust A	OK	16 degrees C / 60 degrees F
FPC 3 Exhaust B	OK	26 degrees C / 78 degrees F
FPC 3 LU 0 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 0 Chip	OK	26 degrees C / 78 degrees F
FPC 3 LU 1 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 3 LU 2 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 2 Chip	OK	22 degrees C / 71 degrees F

FPC 3 LU 3 TSen	OK	23 degrees C / 73 degrees F
FPC 3 LU 3 Chip	OK	21 degrees C / 69 degrees F
FPC 3 MQ 0 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 0 Chip	OK	18 degrees C / 64 degrees F
FPC 3 MQ 1 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 1 Chip	OK	20 degrees C / 68 degrees F
FPC 3 MQ 2 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 2 Chip	OK	17 degrees C / 62 degrees F
FPC 3 MQ 3 TSen	OK	15 degrees C / 59 degrees F
FPC 3 MQ 3 Chip	OK	16 degrees C / 60 degrees F
FPC 4 Intake	OK	11 degrees C / 51 degrees F
FPC 4 Exhaust A	OK	22 degrees C / 71 degrees F
FPC 4 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 4 LU 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 0 Chip	OK	33 degrees C / 91 degrees F
FPC 4 LU 1 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 1 Chip	OK	21 degrees C / 69 degrees F
FPC 4 LU 2 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 2 Chip	OK	26 degrees C / 78 degrees F
FPC 4 LU 3 TSen	OK	22 degrees C / 71 degrees F
FPC 4 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 4 XM 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 XM 0 Chip	OK	30 degrees C / 86 degrees F
FPC 4 XF 0 TSen	OK	22 degrees C / 71 degrees F
FPC 4 XF 0 Chip	OK	37 degrees C / 98 degrees F
FPC 4 PLX Switch TSen	OK	22 degrees C / 71 degrees F
FPC 4 PLX Switch Chip	OK	23 degrees C / 73 degrees F
FPC 5 Intake	OK	12 degrees C / 53 degrees F
FPC 5 Exhaust A	OK	12 degrees C / 53 degrees F
FPC 5 Exhaust B	OK	12 degrees C / 53 degrees F
FPC 5 LU 0 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 0 Chip	OK	28 degrees C / 82 degrees F
FPC 5 LU 1 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 1 Chip	OK	27 degrees C / 80 degrees F
FPC 5 LU 2 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 5 LU 3 TSen	OK	27 degrees C / 80 degrees F
FPC 5 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 5 XM 0 TSen	OK	27 degrees C / 80 degrees F
FPC 5 XM 0 Chip	OK	36 degrees C / 96 degrees F
FPC 5 XM 1 TSen	OK	27 degrees C / 80 degrees F
FPC 5 XM 1 Chip	OK	26 degrees C / 78 degrees F
FPC 5 PLX Switch TSen	OK	27 degrees C / 80 degrees F

FPC 5 PLX Switch Chip	OK	24 degrees C / 75 degrees F
FPC 6 Intake	OK	12 degrees C / 53 degrees F
FPC 6 Exhaust A	OK	17 degrees C / 62 degrees F
FPC 6 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 6 LU 0 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 0 Chip	OK	29 degrees C / 84 degrees F
FPC 6 LU 1 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 1 Chip	OK	30 degrees C / 86 degrees F
FPC 6 LU 2 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 2 Chip	OK	24 degrees C / 75 degrees F
FPC 6 LU 3 TSen	OK	24 degrees C / 75 degrees F
FPC 6 LU 3 Chip	OK	22 degrees C / 71 degrees F
FPC 6 MQ 0 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 0 Chip	OK	19 degrees C / 66 degrees F
FPC 6 MQ 1 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 1 Chip	OK	20 degrees C / 68 degrees F
FPC 6 MQ 2 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 2 Chip	OK	17 degrees C / 62 degrees F
FPC 6 MQ 3 TSen	OK	16 degrees C / 60 degrees F
FPC 6 MQ 3 Chip	OK	16 degrees C / 60 degrees F
FPC 7 Intake	OK	10 degrees C / 50 degrees F
FPC 7 Exhaust A	OK	10 degrees C / 50 degrees F
FPC 7 Exhaust B	OK	11 degrees C / 51 degrees F
FPC 7 LU 0 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 0 Chip	OK	26 degrees C / 78 degrees F
FPC 7 LU 1 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 1 Chip	OK	29 degrees C / 84 degrees F
FPC 7 LU 2 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 2 Chip	OK	19 degrees C / 66 degrees F
FPC 7 LU 3 TSen	OK	26 degrees C / 78 degrees F
FPC 7 LU 3 Chip	OK	24 degrees C / 75 degrees F
FPC 7 XM 0 TSen	OK	26 degrees C / 78 degrees F
FPC 7 XM 0 Chip	OK	34 degrees C / 93 degrees F
FPC 7 XM 1 TSen	OK	26 degrees C / 78 degrees F
FPC 7 XM 1 Chip	OK	32 degrees C / 89 degrees F
FPC 7 PLX Switch TSen	OK	26 degrees C / 78 degrees F
FPC 7 PLX Switch Chip	OK	22 degrees C / 71 degrees F
FPC 8 Intake	OK	10 degrees C / 50 degrees F
FPC 8 Exhaust A	OK	22 degrees C / 71 degrees F
FPC 8 Exhaust B	OK	28 degrees C / 82 degrees F
FPC 8 LU 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 0 Chip	OK	33 degrees C / 91 degrees F
FPC 8 LU 1 TSen	OK	20 degrees C / 68 degrees F

FPC 8 LU 1 Chip	OK	23 degrees C / 73 degrees F
FPC 8 LU 2 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 2 Chip	OK	26 degrees C / 78 degrees F
FPC 8 LU 3 TSen	OK	20 degrees C / 68 degrees F
FPC 8 LU 3 Chip	OK	33 degrees C / 91 degrees F
FPC 8 XM 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 XM 0 Chip	OK	29 degrees C / 84 degrees F
FPC 8 XF 0 TSen	OK	20 degrees C / 68 degrees F
FPC 8 XF 0 Chip	OK	38 degrees C / 100 degrees F
FPC 8 PLX Switch TSen	OK	20 degrees C / 68 degrees F
FPC 8 PLX Switch Chip	OK	24 degrees C / 75 degrees F
FPC 9 Intake	OK	11 degrees C / 51 degrees F
FPC 9 Exhaust A	OK	11 degrees C / 51 degrees F
FPC 9 Exhaust B	OK	11 degrees C / 51 degrees F
FPC 9 LU 0 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 0 Chip	OK	24 degrees C / 75 degrees F
FPC 9 LU 1 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 1 Chip	OK	26 degrees C / 78 degrees F
FPC 9 LU 2 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 2 Chip	OK	16 degrees C / 60 degrees F
FPC 9 LU 3 TSen	OK	25 degrees C / 77 degrees F
FPC 9 LU 3 Chip	OK	21 degrees C / 69 degrees F
FPC 9 XM 0 TSen	OK	25 degrees C / 77 degrees F
FPC 9 XM 0 Chip	OK	32 degrees C / 89 degrees F
FPC 9 XM 1 TSen	OK	25 degrees C / 77 degrees F
FPC 9 XM 1 Chip	OK	25 degrees C / 77 degrees F
FPC 9 PLX Switch TSen	OK	25 degrees C / 77 degrees F
FPC 9 PLX Switch Chip	OK	21 degrees C / 69 degrees F
ADC 0 Intake	OK	12 degrees C / 53 degrees F
ADC 0 Exhaust	OK	20 degrees C / 68 degrees F
ADC 0 ADC-XF1	OK	26 degrees C / 78 degrees F
ADC 0 ADC-XF0	OK	32 degrees C / 89 degrees F
ADC 1 Intake	OK	11 degrees C / 51 degrees F
ADC 1 Exhaust	OK	21 degrees C / 69 degrees F
ADC 1 ADC-XF1	OK	24 degrees C / 75 degrees F
ADC 1 ADC-XF0	OK	31 degrees C / 87 degrees F
ADC 2 Intake	OK	14 degrees C / 57 degrees F
ADC 2 Exhaust	OK	21 degrees C / 69 degrees F
ADC 2 ADC-XF1	OK	28 degrees C / 82 degrees F
ADC 2 ADC-XF0	OK	34 degrees C / 93 degrees F
ADC 3 Intake	OK	13 degrees C / 55 degrees F
ADC 3 Exhaust	OK	19 degrees C / 66 degrees F
ADC 3 ADC-XF1	OK	24 degrees C / 75 degrees F

	ADC 3 ADC-XF0	OK	31 degrees C / 87 degrees F
	ADC 4 Intake	OK	9 degrees C / 48 degrees F
	ADC 4 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 4 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 4 ADC-XF0	OK	35 degrees C / 95 degrees F
	ADC 5 Intake	OK	12 degrees C / 53 degrees F
	ADC 5 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 5 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 5 ADC-XF0	OK	34 degrees C / 93 degrees F
	ADC 6 Intake	OK	11 degrees C / 51 degrees F
	ADC 6 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 6 ADC-XF1	OK	26 degrees C / 78 degrees F
ADC 6	ADC-XF0	OK	35 degrees C / 95 degrees F
	ADC 7 Intake	OK	14 degrees C / 57 degrees F
	ADC 7 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 7 ADC-XF1	OK	26 degrees C / 78 degrees F
	ADC 7 ADC-XF0	OK	34 degrees C / 93 degrees F
	ADC 8 Intake	OK	14 degrees C / 57 degrees F
	ADC 8 Exhaust	OK	21 degrees C / 69 degrees F
	ADC 8 ADC-XF1	OK	24 degrees C / 75 degrees F
	ADC 8 ADC-XF0	OK	31 degrees C / 87 degrees F
	ADC 9 Intake	OK	10 degrees C / 50 degrees F
	ADC 9 Exhaust	OK	22 degrees C / 71 degrees F
	ADC 9 ADC-XF1	OK	28 degrees C / 82 degrees F
	ADC 9 ADC-XF0	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 1	OK	3480 RPM
	Fan Tray 0 Fan 2	OK	3480 RPM
	Fan Tray 0 Fan 3	OK	3480 RPM
	Fan Tray 0 Fan 4	OK	3360 RPM
	Fan Tray 0 Fan 5	OK	3360 RPM
	Fan Tray 0 Fan 6	OK	3480 RPM
	Fan Tray 1 Fan 1	OK	3360 RPM
	Fan Tray 1 Fan 2	OK	3360 RPM
	Fan Tray 1 Fan 3	OK	3360 RPM
	Fan Tray 1 Fan 4	OK	3480 RPM
	Fan Tray 1 Fan 5	OK	3480 RPM
	Fan Tray 1 Fan 6	OK	3480 RPM
	Fan Tray 2 Fan 1	OK	3360 RPM
	Fan Tray 2 Fan 2	OK	3360 RPM
	Fan Tray 2 Fan 3	OK	3480 RPM
	Fan Tray 2 Fan 4	OK	3480 RPM
	Fan Tray 2 Fan 5	OK	3360 RPM
	Fan Tray 2 Fan 6	OK	3480 RPM

Fan Tray 3 Fan 1	OK	3360 RPM
Fan Tray 3 Fan 2	OK	3360 RPM
Fan Tray 3 Fan 3	OK	3480 RPM
Fan Tray 3 Fan 4	OK	3480 RPM
Fan Tray 3 Fan 5	OK	3480 RPM
Fan Tray 3 Fan 6	OK	3360 RPM

show chassis environment (MX2008 Router)

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user@host>show chassis environment
Class Item                               Status      Measurement
Temp  PSM 0                                  Absent
      PSM 1                               OK          29 degrees C / 84 degrees F
      PSM 2                               OK          30 degrees C / 86 degrees F
      PSM 3                               OK          29 degrees C / 84 degrees F
      PSM 4                               OK          29 degrees C / 84 degrees F
      PSM 5                               OK          30 degrees C / 86 degrees F
      PSM 6                               OK          29 degrees C / 84 degrees F
      PSM 7                               OK          31 degrees C / 87 degrees F
      PSM 8                                  Absent
      PDM 0                               OK
      PDM 1                               OK
      CB 0 Inlet1                          OK          37 degrees C / 98 degrees F
      CB 0 Inlet2                          OK          45 degrees C / 113 degrees F
      CB 0 Inlet3                          OK          44 degrees C / 111 degrees F
      CB 0 Inlet4                          OK          41 degrees C / 105 degrees F
      CB 0 Exhaust1                        OK          30 degrees C / 86 degrees F
      CB 0 Exhaust2                        OK          40 degrees C / 104 degrees F
      CB 0 Exhaust3                        OK          48 degrees C / 118 degrees F
      CB 0 Exhaust4                        OK          46 degrees C / 114 degrees F
      CB 1 Inlet1                          OK          30 degrees C / 86 degrees F
      CB 1 Inlet2                          OK          31 degrees C / 87 degrees F
      CB 1 Inlet3                          OK          29 degrees C / 84 degrees F
      CB 1 Inlet4                          OK          32 degrees C / 89 degrees F
      CB 1 Exhaust1                        OK          30 degrees C / 86 degrees F
      CB 1 Exhaust2                        OK          33 degrees C / 91 degrees F
      CB 1 Exhaust3                        OK          34 degrees C / 93 degrees F
      CB 1 Exhaust4                        OK          34 degrees C / 93 degrees F
      Routing Engine 0                     OK
      Routing Engine 0 CPU                  OK          75 degrees C / 167 degrees F
      Routing Engine 1                     OK

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Routing Engine 1 CPU	OK	46 degrees C / 114 degrees F
SFB 0 Inlet2	OK	44 degrees C / 111 degrees F
SFB 0 Exhaust1	OK	39 degrees C / 102 degrees F
SFB 0 Inlet1	OK	41 degrees C / 105 degrees F
SFB 0 Exhaust2	OK	45 degrees C / 113 degrees F
SFB 0 SFB2-PF-local	OK	45 degrees C / 113 degrees F
SFB 0 SFB2-PF-die	OK	51 degrees C / 123 degrees F
SFB 1 Inlet2	OK	30 degrees C / 86 degrees F
SFB 1 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 1 Inlet1	OK	28 degrees C / 82 degrees F
SFB 1 Exhaust2	OK	31 degrees C / 87 degrees F
SFB 1 SFB2-PF-local	OK	30 degrees C / 86 degrees F
SFB 1 SFB2-PF-die	OK	37 degrees C / 98 degrees F
SFB 2 Inlet2	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 2 Inlet1	OK	27 degrees C / 80 degrees F
SFB 2 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 2 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 2 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 3 Inlet2	OK	28 degrees C / 82 degrees F
SFB 3 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 3 Inlet1	OK	26 degrees C / 78 degrees F
SFB 3 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 3 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 3 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 4 Inlet2	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 4 Inlet1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 4 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 4 SFB2-PF-die	OK	32 degrees C / 89 degrees F
SFB 5 Inlet2	OK	29 degrees C / 84 degrees F
SFB 5 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 5 Inlet1	OK	28 degrees C / 82 degrees F
SFB 5 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 5 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 5 SFB2-PF-die	OK	34 degrees C / 93 degrees F
SFB 6 Inlet2	OK	33 degrees C / 91 degrees F
SFB 6 Exhaust1	OK	32 degrees C / 89 degrees F
SFB 6 Inlet1	OK	32 degrees C / 89 degrees F
SFB 6 Exhaust2	OK	34 degrees C / 93 degrees F
SFB 6 SFB2-PF-local	OK	33 degrees C / 91 degrees F
SFB 6 SFB2-PF-die	OK	40 degrees C / 104 degrees F

SFB 7 Inlet2	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust1	OK	28 degrees C / 82 degrees F
SFB 7 Inlet1	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 7 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 7 SFB2-PF-die	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	29 degrees C / 84 degrees F
FPC 0 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 0 Exhaust B	OK	42 degrees C / 107 degrees F
FPC 0 XL 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 Chip	OK	53 degrees C / 127 degrees F
FPC 0 XL 0 XR2 0 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 0 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 0 XR2 1 TSen	OK	38 degrees C / 100 degrees F
FPC 0 XL 0 XR2 1 Chip	OK	59 degrees C / 138 degrees F
FPC 0 XL 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XL 1 XR2 0 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XL 1 XR2 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 1 Chip	OK	50 degrees C / 122 degrees F
FPC 0 XM 0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 XM 1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 Chip	OK	40 degrees C / 104 degrees F
FPC 0 PCIE Switch TSen	OK	42 degrees C / 107 degrees F
FPC 0 PCIE Switch Chip	OK	22 degrees C / 71 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	52 degrees C / 125 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 EA0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0 Chip	OK	47 degrees C / 116 degrees F
FPC 1 EA0_XR0 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR0 Chip	OK	56 degrees C / 132 degrees F
FPC 1 EA0_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA0_XR1 Chip	OK	53 degrees C / 127 degrees F
FPC 1 EA1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1 Chip	OK	49 degrees C / 120 degrees F
FPC 1 EA1_XR0 TSen	OK	54 degrees C / 129 degrees F

FPC 1 EA1_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 1 EA1_XR1 TSen	OK	54 degrees C / 129 degrees F
FPC 1 EA1_XR1 Chip	OK	58 degrees C / 136 degrees F
FPC 1 PEX TSen	OK	54 degrees C / 129 degrees F
FPC 1 PEX Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2 Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR0 Chip	OK	45 degrees C / 113 degrees F
FPC 1 EA2_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR1 Chip	OK	42 degrees C / 107 degrees F
FPC 1 EA3 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3 Chip	OK	40 degrees C / 104 degrees F
FPC 1 EA3_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR0 Chip	OK	50 degrees C / 122 degrees F
FPC 1 EA3_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR1 Chip	OK	46 degrees C / 114 degrees F
FPC 1 EA0_HMC0 Logic die	OK	60 degrees C / 140 degrees F
FPC 1 EA0_HMC0 DRAM botm	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC1 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA0_HMC1 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA0_HMC2 Logic die	OK	57 degrees C / 134 degrees F
FPC 1 EA0_HMC2 DRAM botm	OK	54 degrees C / 129 degrees F
FPC 1 EA1_HMC0 Logic die	OK	65 degrees C / 149 degrees F
FPC 1 EA1_HMC0 DRAM botm	OK	62 degrees C / 143 degrees F
FPC 1 EA1_HMC1 Logic die	OK	64 degrees C / 147 degrees F
FPC 1 EA1_HMC1 DRAM botm	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA1_HMC2 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA2_HMC0 Logic die	OK	50 degrees C / 122 degrees F
FPC 1 EA2_HMC0 DRAM botm	OK	47 degrees C / 116 degrees F
FPC 1 EA2_HMC1 Logic die	OK	54 degrees C / 129 degrees F
FPC 1 EA2_HMC1 DRAM botm	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC0 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC0 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC1 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC1 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC2 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC2 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 7 Intake	OK	30 degrees C / 86 degrees F
FPC 7 Exhaust A	OK	45 degrees C / 113 degrees F

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FPC 7 Exhaust B           OK           38 degrees C / 100 degrees F
FPC 7 QX 0 TSen          OK           48 degrees C / 118 degrees F
FPC 7 QX 0 Chip          OK           51 degrees C / 123 degrees F
FPC 7 LU 0 TCAM TSen     OK           48 degrees C / 118 degrees F
FPC 7 LU 0 TCAM Chip     OK           51 degrees C / 123 degrees F
FPC 7 LU 0 TSen          OK           48 degrees C / 118 degrees F
FPC 7 LU 0 Chip          OK           50 degrees C / 122 degrees F
FPC 7 MQ 0 TSen          OK           48 degrees C / 118 degrees F
FPC 7 MQ 0 Chip          OK           54 degrees C / 129 degrees F
FPC 7 QX 1 TSen          OK           41 degrees C / 105 degrees F
FPC 7 QX 1 Chip          OK           42 degrees C / 107 degrees F
FPC 7 LU 1 TCAM TSen     OK           41 degrees C / 105 degrees F
FPC 7 LU 1 TCAM Chip     OK           43 degrees C / 109 degrees F
FPC 7 LU 1 TSen          OK           41 degrees C / 105 degrees F
FPC 7 LU 1 Chip          OK           46 degrees C / 114 degrees F
FPC 7 MQ 1 TSen          OK           41 degrees C / 105 degrees F
FPC 7 MQ 1 Chip          OK           47 degrees C / 116 degrees F
ADC 7 Intake              OK           32 degrees C / 89 degrees F
ADC 7 Exhaust            OK           39 degrees C / 102 degrees F
ADC 7 ADC-XF1            OK           46 degrees C / 114 degrees F
ADC 7 ADC-XF0            OK           54 degrees C / 129 degrees F
Fans Fan Tray 0 Fan 1    OK           6240 RPM
Fans Fan Tray 0 Fan 2    OK           6120 RPM
Fans Fan Tray 0 Fan 3    OK           6120 RPM
Fans Fan Tray 0 Fan 4    OK           5760 RPM
Fans Fan Tray 0 Fan 5    OK           5880 RPM
Fans Fan Tray 0 Fan 6    OK           6000 RPM
Fans Fan Tray 1 Fan 1    OK           5880 RPM
Fans Fan Tray 1 Fan 2    OK           5880 RPM
Fans Fan Tray 1 Fan 3    OK           6000 RPM
Fans Fan Tray 1 Fan 4    OK           6000 RPM
Fans Fan Tray 1 Fan 5    OK           6000 RPM
Fans Fan Tray 1 Fan 6    OK           6000 RPM

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show chassis environment (T320 Router)

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user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK
      PEM 1                Absent
Temp  SCG 0                 OK          28 degrees C / 82 degrees F

```


	SCG 1	OK	28 degrees C / 82 degrees F
	Routing Engine 0	OK	31 degrees C / 87 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	32 degrees C / 89 degrees F
	CB 1	OK	32 degrees C / 89 degrees F
	SIB 0	OK	33 degrees C / 91 degrees F
	SIB 1	OK	33 degrees C / 91 degrees F
	SIB 2	OK	34 degrees C / 93 degrees F
	FPC 0 Top	OK	38 degrees C / 100 degrees F
	FPC 0 Bottom	OK	32 degrees C / 89 degrees F
	FPC 1 Top	OK	38 degrees C / 100 degrees F
	FPC 1 Bottom	OK	33 degrees C / 91 degrees F
	FPC 2 Top	OK	36 degrees C / 96 degrees F
	FPC 2 Bottom	OK	31 degrees C / 87 degrees F
	FPM GBUS	OK	26 degrees C / 78 degrees F
	FPM Display	OK	29 degrees C / 84 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed
	Top Left Rear fan	OK	Spinning at normal speed
	Top Right Front fan	OK	Spinning at normal speed
	Top Right Middle fan	OK	Spinning at normal speed
	Top Right Rear fan	OK	Spinning at normal speed
	Bottom Left Front fan	OK	Spinning at normal speed
	Bottom Left Middle fan	OK	Spinning at normal speed
	Bottom Left Rear fan	OK	Spinning at normal speed
	Bottom Right Front fan	OK	Spinning at normal speed
	Bottom Right Middle fan	OK	Spinning at normal speed
	Bottom Right Rear fan	OK	Spinning at normal speed
	Rear Tray Top fan	OK	Spinning at normal speed
	Rear Tray Second fan	OK	Spinning at normal speed
	Rear Tray Middle fan	OK	Spinning at normal speed
	Rear Tray Fourth fan	OK	Spinning at normal speed
	Rear Tray Bottom fan	OK	Spinning at normal speed
Misc	CIP	OK	
	SPMB 0	OK	
	SPMB 1	OK	

show chassis environment (MX10003 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 0 Inlet Temp Sensor 0x49	OK	29 degrees C / 84 degrees F
	CB 1 Exhaust Temp Sensor 0x49	OK	36 degrees C / 96 degrees F
	CB 1 Inlet Temp Sensor 0x49	OK	31 degrees C / 87 degrees F
	FPC 0 Intake Temp Sensor	OK	29 degrees C / 84 degrees F
	FPC 0 Exhaust-A Temp Sensor	OK	55 degrees C / 131 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 0 EA0 Chip	OK	58 degrees C / 136 degrees F
	FPC 0 EA0-XR0 Chip	OK	61 degrees C / 141 degrees F
	FPC 0 EA0-XR1 Chip	OK	62 degrees C / 143 degrees F
	FPC 0 EA1 Chip	OK	67 degrees C / 152 degrees F
	FPC 0 EA1-XR0 Chip	OK	71 degrees C / 159 degrees F
	FPC 0 EA1-XR1 Chip	OK	72 degrees C / 161 degrees F
	FPC 0 PEX Chip	OK	75 degrees C / 167 degrees F
	FPC 0 EA2 Chip	OK	49 degrees C / 120 degrees F
	FPC 0 EA2-XR0 Chip	OK	55 degrees C / 131 degrees F
	FPC 0 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 0 PF Chip	OK	68 degrees C / 154 degrees F
	FPC 0 EA0_HMC0 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC0 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC1 Logic die	OK	72 degrees C / 161 degrees F
	FPC 0 EA0_HMC1 DRAM botm	OK	69 degrees C / 156 degrees F
	FPC 0 EA0_HMC2 Logic die	OK	75 degrees C / 167 degrees F
	FPC 0 EA0_HMC2 DRAM botm	OK	72 degrees C / 161 degrees F
	FPC 0 EA1_HMC0 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EA1_HMC0 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EA1_HMC1 Logic die	OK	79 degrees C / 174 degrees F
	FPC 0 EA1_HMC1 DRAM botm	OK	76 degrees C / 168 degrees F
	FPC 0 EA1_HMC2 Logic die	OK	82 degrees C / 179 degrees F
	FPC 0 EA1_HMC2 DRAM botm	OK	79 degrees C / 174 degrees F
	FPC 0 EA2_HMC0 Logic die	OK	61 degrees C / 141 degrees F
	FPC 0 EA2_HMC0 DRAM botm	OK	58 degrees C / 136 degrees F
	FPC 0 EA2_HMC1 Logic die	OK	62 degrees C / 143 degrees F
	FPC 0 EA2_HMC1 DRAM botm	OK	59 degrees C / 138 degrees F
	FPC 0 EA2_HMC2 Logic die	OK	64 degrees C / 147 degrees F
	FPC 0 EA2_HMC2 DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 1 Intake Temp Sensor	OK	28 degrees C / 82 degrees F

	FPC 1 Exhaust-A Temp Sensor	OK	58 degrees C / 136 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 1 EA0 Chip	OK	64 degrees C / 147 degrees F
	FPC 1 EA0-XR0 Chip	OK	67 degrees C / 152 degrees F
	FPC 1 EA0-XR1 Chip	OK	68 degrees C / 154 degrees F
	FPC 1 EA1 Chip	OK	70 degrees C / 158 degrees F
	FPC 1 EA1-XR0 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 EA1-XR1 Chip	OK	74 degrees C / 165 degrees F
	FPC 1 PEX Chip	OK	88 degrees C / 190 degrees F
	FPC 1 EA2 Chip	OK	50 degrees C / 122 degrees F
	FPC 1 EA2-XR0 Chip	OK	54 degrees C / 129 degrees F
	FPC 1 EA2-XR1 Chip	OK	56 degrees C / 132 degrees F
	FPC 1 PF Chip	OK	71 degrees C / 159 degrees F
	FPC 1 EA0_HMC0 Logic die	OK	74 degrees C / 165 degrees F
	FPC 1 EA0_HMC0 DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 1 EA0_HMC1 Logic die	OK	78 degrees C / 172 degrees F
	FPC 1 EA0_HMC1 DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1 EA0_HMC2 Logic die	OK	78 degrees C / 172 degrees F
	FPC 1 EA0_HMC2 DRAM botm	OK	75 degrees C / 167 degrees F
	FPC 1 EA1_HMC0 Logic die	OK	84 degrees C / 183 degrees F
	FPC 1 EA1_HMC0 DRAM botm	OK	81 degrees C / 177 degrees F
	FPC 1 EA1_HMC1 Logic die	OK	81 degrees C / 177 degrees F
	FPC 1 EA1_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 1 EA1_HMC2 Logic die	OK	85 degrees C / 185 degrees F
	FPC 1 EA1_HMC2 DRAM botm	OK	82 degrees C / 179 degrees F
	FPC 1 EA2_HMC0 Logic die	OK	63 degrees C / 145 degrees F
	FPC 1 EA2_HMC0 DRAM botm	OK	60 degrees C / 140 degrees F
	FPC 1 EA2_HMC1 Logic die	OK	60 degrees C / 140 degrees F
	FPC 1 EA2_HMC1 DRAM botm	OK	57 degrees C / 134 degrees F
	FPC 1 EA2_HMC2 Logic die	OK	66 degrees C / 150 degrees F
	FPC 1 EA2_HMC2 DRAM botm	OK	63 degrees C / 145 degrees F
Power	PEM 0	OK	
	PEM 1	OK	
	PEM 2	OK	
	PEM 3	OK	
	PEM 4	Absent	
	PEM 5	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed

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Fan Tray 1 Fan 2      OK      Spinning at normal speed
Fan Tray 1 Fan 3      OK      Spinning at normal speed
Fan Tray 2 Fan 0      OK      Spinning at normal speed
Fan Tray 2 Fan 1      OK      Spinning at normal speed
Fan Tray 2 Fan 2      OK      Spinning at normal speed
Fan Tray 2 Fan 3      OK      Spinning at normal speed
Fan Tray 3 Fan 0      OK      Spinning at normal speed
Fan Tray 3 Fan 1      OK      Spinning at normal speed
Fan Tray 3 Fan 2      OK      Spinning at normal speed
Fan Tray 3 Fan 3      OK      Spinning at normal speed

```

show chassis environment (MX10008 Router)

```

user@host> show chassis environment
Class Item                                     Status      Measurement
Temp  Routing Engine 0 CPU                        OK          41 degrees C / 105 degrees F
      Routing Engine 1 CPU                        OK          40 degrees C / 104 degrees F
      CB 0 Intake A Temp Sensor                 OK          24 degrees C / 75 degrees F
      CB 0 Intake B Temp Sensor                 OK          24 degrees C / 75 degrees F
      CB 0 Exhaust A Temp Sensor                OK          28 degrees C / 82 degrees F
      CB 0 Exhaust B Temp Sensor                OK          30 degrees C / 86 degrees F
      CB 0 Middle Temp Sensor                   OK          28 degrees C / 82 degrees F
      CB 1 Intake A Temp Sensor                 OK          24 degrees C / 75 degrees F
      CB 1 Intake B Temp Sensor                 OK          23 degrees C / 73 degrees F
      CB 1 Exhaust A Temp Sensor                OK          27 degrees C / 80 degrees F
      CB 1 Exhaust B Temp Sensor                OK          29 degrees C / 84 degrees F
      CB 1 Middle Temp Sensor                   OK          28 degrees C / 82 degrees F
      FPC 0 Intake-A Temp Sensor                OK          32 degrees C / 89 degrees F
      FPC 0 Exhaust-A Temp Sensor              OK          44 degrees C / 111 degrees F
      FPC 0 Exhaust-B Temp Sensor              OK          49 degrees C / 120 degrees F
      FPC 0 EA0 Temp Sensor                     OK          66 degrees C / 150 degrees F
      FPC 0 EA0_XR0 Temp Sensor                 OK          69 degrees C / 156 degrees F
      FPC 0 EA0_XR1 Temp Sensor                 OK          73 degrees C / 163 degrees F
      FPC 0 EA1 Temp Sensor                     OK          60 degrees C / 140 degrees F
      FPC 0 EA1_XR0 Temp Sensor                 OK          64 degrees C / 147 degrees F
      FPC 0 EA1_XR1 Temp Sensor                 OK          63 degrees C / 145 degrees F
      FPC 0 EA2 Temp Sensor                     OK          68 degrees C / 154 degrees F
      FPC 0 EA2_XR0 Temp Sensor                 OK          73 degrees C / 163 degrees F
      FPC 0 EA2_XR1 Temp Sensor                 OK          72 degrees C / 161 degrees F
      FPC 0 EA3 Temp Sensor                     OK          63 degrees C / 145 degrees F
      FPC 0 EA3_XR0 Temp Sensor                 OK          66 degrees C / 150 degrees F

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FPC 0 EA3_XR1	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 0 EA4	Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 0 EA4_XR0	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 0 EA4_XR1	Temp Sensor	OK	70 degrees C / 158 degrees F
FPC 0 EA5	Temp Sensor	OK	56 degrees C / 132 degrees F
FPC 0 EA5_XR0	Temp Sensor	OK	61 degrees C / 141 degrees F
FPC 0 EA5_XR1	Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0 EA0_HMC0	Logic die	OK	75 degrees C / 167 degrees F
FPC 0 EA0_HMC0	DRAM botm	OK	72 degrees C / 161 degrees F
FPC 0 EA0_HMC1	Logic die	OK	75 degrees C / 167 degrees F
FPC 0 EA0_HMC1	DRAM botm	OK	72 degrees C / 161 degrees F
FPC 0 EA0_HMC2	Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA0_HMC2	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA1_HMC0	Logic die	OK	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 0 EA1_HMC1	Logic die	OK	73 degrees C / 163 degrees F
FPC 0 EA1_HMC1	DRAM botm	OK	70 degrees C / 158 degrees F
FPC 0 EA1_HMC2	Logic die	OK	72 degrees C / 161 degrees F
FPC 0 EA1_HMC2	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 0 EA2_HMC0	Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA2_HMC0	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA2_HMC1	Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA2_HMC1	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA2_HMC2	Logic die	OK	79 degrees C / 174 degrees F
FPC 0 EA2_HMC2	DRAM botm	OK	76 degrees C / 168 degrees F
FPC 0 EA3_HMC0	Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA3_HMC1	Logic die	OK	78 degrees C / 172 degrees F
FPC 0 EA3_HMC1	DRAM botm	OK	75 degrees C / 167 degrees F
FPC 0 EA3_HMC2	Logic die	OK	77 degrees C / 170 degrees F
FPC 0 EA3_HMC2	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0 EA4_HMC0	Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA4_HMC0	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA4_HMC1	Logic die	OK	81 degrees C / 177 degrees F
FPC 0 EA4_HMC1	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 0 EA4_HMC2	Logic die	OK	80 degrees C / 176 degrees F
FPC 0 EA4_HMC2	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0 EA5_HMC0	Logic die	OK	68 degrees C / 154 degrees F
FPC 0 EA5_HMC0	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 0 EA5_HMC1	Logic die	OK	68 degrees C / 154 degrees F
FPC 0 EA5_HMC1	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 0 EA5_HMC2	Logic die	OK	67 degrees C / 152 degrees F
FPC 0 EA5_HMC2	DRAM botm	OK	64 degrees C / 147 degrees F

FPC 2 Intake-A Temp Sensor	OK	32 degrees C / 89 degrees F
FPC 2 Exhaust-A Temp Sensor	OK	52 degrees C / 125 degrees F
FPC 2 Exhaust-B Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 2 EA0 Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 2 EA0_XR0 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA0_XR1 Temp Sensor	OK	78 degrees C / 172 degrees F
FPC 2 EA1 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA1_XR0 Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 2 EA1_XR1 Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 2 EA2 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA2_XR0 Temp Sensor	OK	80 degrees C / 176 degrees F
FPC 2 EA2_XR1 Temp Sensor	OK	80 degrees C / 176 degrees F
FPC 2 EA3 Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 2 EA3_XR0 Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2 EA3_XR1 Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2 EA4 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA4_XR0 Temp Sensor	OK	76 degrees C / 168 degrees F
FPC 2 EA4_XR1 Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2 EA5 Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 2 EA5_XR0 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA5_XR1 Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2 EA0_HMC0 Logic die	OK	84 degrees C / 183 degrees F
FPC 2 EA0_HMC0 DRAM botm	OK	81 degrees C / 177 degrees F
FPC 2 EA0_HMC1 Logic die	OK	85 degrees C / 185 degrees F
FPC 2 EA0_HMC1 DRAM botm	OK	82 degrees C / 179 degrees F
FPC 2 EA0_HMC2 Logic die	OK	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 DRAM botm	OK	80 degrees C / 176 degrees F
FPC 2 EA1_HMC0 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC0 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA1_HMC1 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC1 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA1_HMC2 Logic die	OK	76 degrees C / 168 degrees F
FPC 2 EA1_HMC2 DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2 EA2_HMC0 Logic die	OK	86 degrees C / 186 degrees F
FPC 2 EA2_HMC0 DRAM botm	OK	83 degrees C / 181 degrees F
FPC 2 EA2_HMC1 Logic die	OK	87 degrees C / 188 degrees F
FPC 2 EA2_HMC1 DRAM botm	OK	84 degrees C / 183 degrees F
FPC 2 EA2_HMC2 Logic die	OK	87 degrees C / 188 degrees F
FPC 2 EA2_HMC2 DRAM botm	OK	84 degrees C / 183 degrees F
FPC 2 EA3_HMC0 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA3_HMC0 DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2 EA3_HMC1 Logic die	OK	80 degrees C / 176 degrees F
FPC 2 EA3_HMC1 DRAM botm	OK	77 degrees C / 170 degrees F

FPC 2	EA3_HMC2	Logic die	OK	80 degrees C / 176 degrees F
FPC 2	EA3_HMC2	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2	EA4_HMC0	Logic die	OK	88 degrees C / 190 degrees F
FPC 2	EA4_HMC0	DRAM botm	OK	85 degrees C / 185 degrees F
FPC 2	EA4_HMC1	Logic die	OK	89 degrees C / 192 degrees F
FPC 2	EA4_HMC1	DRAM botm	OK	86 degrees C / 186 degrees F
FPC 2	EA4_HMC2	Logic die	OK	80 degrees C / 176 degrees F
FPC 2	EA4_HMC2	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 2	EA5_HMC0	Logic die	OK	72 degrees C / 161 degrees F
FPC 2	EA5_HMC0	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 2	EA5_HMC1	Logic die	OK	69 degrees C / 156 degrees F
FPC 2	EA5_HMC1	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 2	EA5_HMC2	Logic die	OK	72 degrees C / 161 degrees F
FPC 2	EA5_HMC2	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 3	Intake-A	Temp Sensor	OK	30 degrees C / 86 degrees F
FPC 3	Exhaust-A	Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3	Exhaust-B	Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 3	EA0	Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 3	EA0_XR0	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 3	EA0_XR1	Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 3	EA1	Temp Sensor	OK	54 degrees C / 129 degrees F
FPC 3	EA1_XR0	Temp Sensor	OK	59 degrees C / 138 degrees F
FPC 3	EA1_XR1	Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 3	EA2	Temp Sensor	OK	62 degrees C / 143 degrees F
FPC 3	EA2_XR0	Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 3	EA2_XR1	Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 3	EA3	Temp Sensor	OK	54 degrees C / 129 degrees F
FPC 3	EA3_XR0	Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3	EA3_XR1	Temp Sensor	OK	56 degrees C / 132 degrees F
FPC 3	EA4	Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 3	EA4_XR0	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 3	EA4_XR1	Temp Sensor	OK	70 degrees C / 158 degrees F
FPC 3	EA5	Temp Sensor	OK	55 degrees C / 131 degrees F
FPC 3	EA5_XR0	Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 3	EA5_XR1	Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 3	EA0_HMC0	Logic die	OK	69 degrees C / 156 degrees F
FPC 3	EA0_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 3	EA0_HMC1	Logic die	OK	70 degrees C / 158 degrees F
FPC 3	EA0_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
FPC 3	EA0_HMC2	Logic die	OK	69 degrees C / 156 degrees F
FPC 3	EA0_HMC2	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 3	EA1_HMC0	Logic die	OK	67 degrees C / 152 degrees F
FPC 3	EA1_HMC0	DRAM botm	OK	64 degrees C / 147 degrees F

FPC 3	EA1_HMC1	Logic die	OK	64 degrees C / 147 degrees F
FPC 3	EA1_HMC1	DRAM botm	OK	61 degrees C / 141 degrees F
FPC 3	EA1_HMC2	Logic die	OK	64 degrees C / 147 degrees F
FPC 3	EA1_HMC2	DRAM botm	OK	61 degrees C / 141 degrees F
FPC 3	EA2_HMC0	Logic die	OK	74 degrees C / 165 degrees F
FPC 3	EA2_HMC0	DRAM botm	OK	71 degrees C / 159 degrees F
FPC 3	EA2_HMC1	Logic die	OK	76 degrees C / 168 degrees F
FPC 3	EA2_HMC1	DRAM botm	OK	73 degrees C / 163 degrees F
FPC 3	EA2_HMC2	Logic die	OK	74 degrees C / 165 degrees F
FPC 3	EA2_HMC2	DRAM botm	OK	71 degrees C / 159 degrees F
FPC 3	EA3_HMC0	Logic die	OK	69 degrees C / 156 degrees F
FPC 3	EA3_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 3	EA3_HMC1	Logic die	OK	68 degrees C / 154 degrees F
FPC 3	EA3_HMC1	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 3	EA3_HMC2	Logic die	OK	68 degrees C / 154 degrees F
FPC 3	EA3_HMC2	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 3	EA4_HMC0	Logic die	OK	81 degrees C / 177 degrees F
FPC 3	EA4_HMC0	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 3	EA4_HMC1	Logic die	OK	80 degrees C / 176 degrees F
FPC 3	EA4_HMC1	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 3	EA4_HMC2	Logic die	OK	81 degrees C / 177 degrees F
FPC 3	EA4_HMC2	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 3	EA5_HMC0	Logic die	OK	68 degrees C / 154 degrees F
FPC 3	EA5_HMC0	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 3	EA5_HMC1	Logic die	OK	70 degrees C / 158 degrees F
FPC 3	EA5_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
FPC 3	EA5_HMC2	Logic die	OK	69 degrees C / 156 degrees F
FPC 3	EA5_HMC2	DRAM botm	OK	66 degrees C / 150 degrees F
Power	PEM 0		OK	29 degrees C / 84 degrees F
	PEM 1		OK	27 degrees C / 80 degrees F
	PEM 2		OK	30 degrees C / 86 degrees F
	PEM 3		Check	
	PEM 4		Check	
	PEM 5		Check	
Fans	Fan Tray 0	Fan 0	OK	Spinning at normal speed
	Fan Tray 0	Fan 1	OK	Spinning at normal speed
	Fan Tray 0	Fan 2	OK	Spinning at normal speed
	Fan Tray 0	Fan 3	OK	Spinning at normal speed
	Fan Tray 0	Fan 4	Failed	
	Fan Tray 0	Fan 5	Failed	
	Fan Tray 0	Fan 6	OK	Spinning at normal speed
	Fan Tray 0	Fan 7	OK	Spinning at normal speed
	Fan Tray 0	Fan 8	OK	Spinning at normal speed

Fan Tray 0 Fan 9	OK	Spinning at normal speed
Fan Tray 0 Fan 10	OK	Spinning at normal speed
Fan Tray 1 Fan 0	OK	Spinning at normal speed
Fan Tray 1 Fan 1	OK	Spinning at normal speed
Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
SFB 0 Intake-A	OK	32 degrees C / 89 degrees F
SFB 0 Intake-B	OK	21 degrees C / 69 degrees F
SFB 0 Exhaust-A	OK	27 degrees C / 80 degrees F
SFB 0 Exhaust-B	OK	32 degrees C / 89 degrees F
SFB 0 PF0	OK	39 degrees C / 102 degrees F
SFB 0 PF1	OK	29 degrees C / 84 degrees F
SFB 1 Intake-A	OK	43 degrees C / 109 degrees F
SFB 1 Intake-B	OK	20 degrees C / 68 degrees F
SFB 1 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 1 Exhaust-B	OK	44 degrees C / 111 degrees F
SFB 1 PF0	OK	50 degrees C / 122 degrees F
SFB 1 PF1	OK	29 degrees C / 84 degrees F
SFB 2 Intake-A	OK	39 degrees C / 102 degrees F
SFB 2 Intake-B	OK	20 degrees C / 68 degrees F
SFB 2 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 2 Exhaust-B	OK	38 degrees C / 100 degrees F
SFB 2 PF0	OK	45 degrees C / 113 degrees F
SFB 2 PF1	OK	30 degrees C / 86 degrees F
SFB 3 Intake-A	OK	36 degrees C / 96 degrees F
SFB 3 Intake-B	OK	20 degrees C / 68 degrees F
SFB 3 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 3 Exhaust-B	OK	35 degrees C / 95 degrees F
SFB 3 PF0	OK	42 degrees C / 107 degrees F
SFB 3 PF1	OK	29 degrees C / 84 degrees F
SFB 4 Intake-A	OK	30 degrees C / 86 degrees F
SFB 4 Intake-B	OK	20 degrees C / 68 degrees F
SFB 4 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 4 Exhaust-B	OK	31 degrees C / 87 degrees F
SFB 4 PF0	OK	41 degrees C / 105 degrees F
SFB 4 PF1	OK	29 degrees C / 84 degrees F

SFB 5 Intake-A	OK	30 degrees C / 86 degrees F
SFB 5 Intake-B	OK	21 degrees C / 69 degrees F
SFB 5 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 5 Exhaust-B	OK	30 degrees C / 86 degrees F
SFB 5 PF0	OK	35 degrees C / 95 degrees F
SFB 5 PF1	OK	34 degrees C / 93 degrees F

show chassis environment (MX204 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	35 degrees C / 95 degrees F
	CB 0 Top Left Inlet Sensor	OK	37 degrees C / 98 degrees F
	CB 0 Top Right Exhaust Sensor	OK	43 degrees C / 109 degrees F
	CB 0 Top Left Exhaust Sensor	OK	50 degrees C / 122 degrees F
	CB 0 CPU Core-0 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-1 Temp	OK	48 degrees C / 118 degrees F
	CB 0 CPU Core-2 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-3 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-4 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-5 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-6 Temp	OK	47 degrees C / 116 degrees F
	CB 0 CPU Core-7 Temp	OK	47 degrees C / 116 degrees F
	FPC 0 EA0_HMC0 Logic die	OK	77 degrees C / 170 degrees F
	FPC 0 EA0_HMC0 DRAM botm	OK	74 degrees C / 165 degrees F
	FPC 0 EA0_HMC1 Logic die	OK	81 degrees C / 177 degrees F
	FPC 0 EA0_HMC1 DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 0 EA0 Chip	OK	94 degrees C / 201 degrees F
	FPC 0 EA0-XR0 Chip	OK	64 degrees C / 147 degrees F
FPC 0 EA0-XR1 Chip	OK	65 degrees C / 149 degrees F	
Power	PEM 0	Absent	
	PEM 1	OK	48 degrees C / 118 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed

show chassis environment (T640 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Temp  PEM 0                  Absent
      PEM 1                  OK          22 degrees C / 71 degrees F
      SCG 0                  OK          30 degrees C / 86 degrees F
      SCG 1                  OK          30 degrees C / 86 degrees F
      Routing Engine 0      Present
      Routing Engine 1      OK          27 degrees C / 80 degrees F
      CB 0                   Present
      CB 1                   OK          33 degrees C / 91 degrees F
      SIB 0                  Absent
      SIB 1                  Absent
      SIB 2                  Absent
      SIB 3                  Absent
      SIB 4                  Absent
      FPC 4 Top              Testing
      FPC 4 Bottom          Testing
      FPC 5 Top              Testing
      FPC 5 Bottom          Testing
      FPC 6 Top              Testing
      FPC 6 Bottom          Testing
      FPM GBUS               OK          23 degrees C / 73 degrees F
      FPM Display            Absent
Fans  Top Left Front fan    OK          Spinning at normal speed
      Top Left Middle fan   OK          Spinning at normal speed
      Top Left Rear fan     OK          Spinning at normal speed
      Top Right Front fan   OK          Spinning at normal speed
      Top Right Middle fan  OK          Spinning at normal speed
      Top Right Rear fan    OK          Spinning at normal speed
      Bottom Left Front fan OK          Spinning at normal speed
      Bottom Left Middle fan OK          Spinning at normal speed
      Bottom Left Rear fan  OK          Spinning at normal speed
      Bottom Right Front fan OK          Spinning at normal speed
      Bottom Right Middle fan OK          Spinning at normal speed
      Bottom Right Rear fan OK          Spinning at normal speed
      Fourth Blower from top OK          Spinning at normal speed
      Bottom Blower         OK          Spinning at normal speed
      Middle Blower         OK          Spinning at normal speed
      Top Blower            OK          Spinning at normal speed
      Second Blower from top OK          Spinning at normal speed

```

```

Misc  CIP                OK
      SPMB 0            OK
      SPMB 1            OK

```

show chassis environment (T4000 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Temp  PEM 0                 OK          33 degrees C / 91 degrees F
      PEM 1                 Absent
      SCG 0                 OK          33 degrees C / 91 degrees F
      SCG 1                 OK          33 degrees C / 91 degrees F
      Routing Engine 0      OK          33 degrees C / 91 degrees F
      Routing Engine 0 CPU  OK          50 degrees C / 122 degrees F
      Routing Engine 1      OK          32 degrees C / 89 degrees F
      Routing Engine 1 CPU  OK          46 degrees C / 114 degrees F
      CB 0                  OK          32 degrees C / 89 degrees F
      CB 1                  OK          33 degrees C / 91 degrees F
      SIB 0                 OK          42 degrees C / 107 degrees F
      SIB 1                 OK          42 degrees C / 107 degrees F
      SIB 2                 OK          42 degrees C / 107 degrees F
      SIB 3                 OK          43 degrees C / 109 degrees F
      SIB 4                 OK          45 degrees C / 113 degrees F
      FPC 0 Fan Intake      OK          34 degrees C / 93 degrees F
      FPC 0 Fan Exhaust    OK          48 degrees C / 118 degrees F
      FPC 0 PMB             OK          47 degrees C / 116 degrees F
      FPC 0 LMB0            OK          50 degrees C / 122 degrees F
      FPC 0 LMB1            OK          41 degrees C / 105 degrees F
      FPC 0 LMB2            OK          35 degrees C / 95 degrees F
      FPC 0 PFE1 LU2       OK          46 degrees C / 114 degrees F
      FPC 0 PFE1 LU0       OK          41 degrees C / 105 degrees F
      FPC 0 PFE0 LU0       OK          57 degrees C / 134 degrees F
      FPC 0 XF1            OK          46 degrees C / 114 degrees F
      FPC 0 XF0            OK          52 degrees C / 125 degrees F
      FPC 0 XM1            OK          41 degrees C / 105 degrees F
      FPC 0 XM0            OK          50 degrees C / 122 degrees F
      FPC 0 PFE0 LU1       OK          56 degrees C / 132 degrees F
      FPC 0 PFE0 LU2       OK          45 degrees C / 113 degrees F
      FPC 0 PFE1 LU1       OK          37 degrees C / 98 degrees F
      FPC 3 Fan Intake     OK          36 degrees C / 96 degrees F

```

FPC 3 Fan Exhaust	OK	51 degrees C / 123 degrees F
FPC 3 PMB	OK	43 degrees C / 109 degrees F
FPC 3 LMB0	OK	57 degrees C / 134 degrees F
FPC 3 LMB1	OK	54 degrees C / 129 degrees F
FPC 3 LMB2	OK	38 degrees C / 100 degrees F
FPC 3 PFE1 LU2	OK	63 degrees C / 145 degrees F
FPC 3 PFE1 LU0	OK	45 degrees C / 113 degrees F
FPC 3 PFE0 LU0	OK	69 degrees C / 156 degrees F
FPC 3 XF1	OK	62 degrees C / 143 degrees F
FPC 3 XF0	OK	63 degrees C / 145 degrees F
FPC 3 XM1	OK	43 degrees C / 109 degrees F
FPC 3 XM0	OK	67 degrees C / 152 degrees F
FPC 3 PFE0 LU1	OK	63 degrees C / 145 degrees F
FPC 3 PFE0 LU2	OK	66 degrees C / 150 degrees F
FPC 3 PFE1 LU1	OK	41 degrees C / 105 degrees F
FPC 5 Top	OK	39 degrees C / 102 degrees F
FPC 5 Bottom	OK	38 degrees C / 100 degrees F
FPC 6 Fan Intake	OK	33 degrees C / 91 degrees F
FPC 6 Fan Exhaust	OK	49 degrees C / 120 degrees F
FPC 6 PMB	OK	40 degrees C / 104 degrees F
FPC 6 LMB0	OK	60 degrees C / 140 degrees F
FPC 6 LMB1	OK	58 degrees C / 136 degrees F
FPC 6 LMB2	OK	40 degrees C / 104 degrees F
FPC 6 PFE1 LU2	OK	69 degrees C / 156 degrees F
FPC 6 PFE1 LU0	OK	45 degrees C / 113 degrees F
FPC 6 PFE0 LU0	OK	71 degrees C / 159 degrees F
FPC 6 XF1	OK	58 degrees C / 136 degrees F
FPC 6 XF0	OK	65 degrees C / 149 degrees F
FPC 6 XM1	OK	39 degrees C / 102 degrees F
FPC 6 XM0	OK	66 degrees C / 150 degrees F
FPC 6 PFE0 LU1	OK	69 degrees C / 156 degrees F
FPC 6 PFE0 LU2	OK	69 degrees C / 156 degrees F
FPC 6 PFE1 LU1	OK	42 degrees C / 107 degrees F
FPM GBUS	OK	24 degrees C / 75 degrees F
FPM Display	OK	27 degrees C / 80 degrees F
Fans Top Left Front fan	OK	Spinning at high speed
Fans Top Left Middle fan	OK	Spinning at high speed
Fans Top Left Rear fan	OK	Spinning at high speed
Fans Top Right Front fan	OK	Spinning at high speed
Fans Top Right Middle fan	OK	Spinning at high speed
Fans Top Right Rear fan	OK	Spinning at high speed
Fans Bottom Left Front fan	OK	Spinning at high speed
Fans Bottom Left Middle fan	OK	Spinning at high speed

```

Bottom Left Rear fan      OK      Spinning at high speed
Bottom Right Front fan   OK      Spinning at high speed
Bottom Right Middle fan  OK      Spinning at high speed
Bottom Right Rear fan    OK      Spinning at high speed
Rear Tray Top fan        OK      Spinning at high speed
Rear Tray Second fan     OK      Spinning at high speed
Rear Tray Third fan      OK      Spinning at high speed
Rear Tray Fourth fan     OK      Spinning at high speed
Rear Tray Fifth fan      OK      Spinning at high speed
Rear Tray Sixth fan      OK      Spinning at high speed
Rear Tray Seventh fan    OK      Spinning at high speed
Rear Tray Bottom fan     OK      Spinning at high speed
Misc CIP                  OK
SPMB 0                    OK
SPMB 1                    OK

```

show chassis environment (TX Matrix Router)

```
user@host> show chassis environment
```

```

-----
Class Item                Status      Measurement
Temp PEM 0                 Absent
    PEM 1                  OK          29 degrees C / 84 degrees F
    Routing Engine 0       OK          34 degrees C / 93 degrees F
    Routing Engine 1       OK          34 degrees C / 93 degrees F
    CB 0                   OK          32 degrees C / 89 degrees F
    CB 1                   OK          32 degrees C / 89 degrees F
    SIB 0                  OK          44 degrees C / 111 degrees F
    SIB 0 (B)              OK          44 degrees C / 111 degrees F
    FPM GBUS               OK          27 degrees C / 80 degrees F
    FPM Display            OK          32 degrees C / 89 degrees F
Fans Top Left Front fan    OK          Spinning at normal speed
    Top Left Middle fan    OK          Spinning at normal speed
    Top Left Rear fan      OK          Spinning at normal speed
    Top Right Front fan    OK          Spinning at normal speed
    Top Right Middle fan   OK          Spinning at normal speed
    Top Right Rear fan     OK          Spinning at normal speed
    Bottom Left Front fan  OK          Spinning at normal speed
    Bottom Left Middle fan OK          Spinning at normal speed
    Bottom Left Rear fan   OK          Spinning at normal speed

```

```

Bottom Right Front fan OK      Spinning at normal speed
Bottom Right Middle fan OK     Spinning at normal speed
Bottom Right Rear fan  OK      Spinning at normal speed
Rear Tray Top fan      OK      Spinning at normal speed
Rear Tray Second fan   OK      Spinning at normal speed
Rear Tray Third fan    OK      Spinning at normal speed
Rear Tray Fourth fan   OK      Spinning at normal speed
Rear Tray Fifth fan    OK      Spinning at normal speed
Rear Tray Sixth fan    OK      Spinning at normal speed
Rear Tray Seventh fan  OK      Spinning at normal speed
Rear Tray Bottom fan   OK      Spinning at normal speed

Misc CIP 0              OK
    CIP 1              OK
    SPMB 0            OK
    SPMB 1            OK

```

```
lcc0-re0:
```

```

-----
Class Item                Status      Measurement
Temp PEM 0                OK          29 degrees C / 84 degrees F
    PEM 1                Absent
    SCG 0                OK          35 degrees C / 95 degrees F
    SCG 1                Absent
    Routing Engine 0     OK          39 degrees C / 102 degrees F
    Routing Engine 1     OK          36 degrees C / 96 degrees F
    CB 0                 OK          32 degrees C / 89 degrees F
    CB 1                 OK          32 degrees C / 89 degrees F
    SIB 0                OK          40 degrees C / 104 degrees F
    SIB 0 (B)           OK          51 degrees C / 123 degrees F
    FPC 0 Top            OK          45 degrees C / 113 degrees F
    FPC 0 Bottom        OK          31 degrees C / 87 degrees F
    FPC 1 Top            OK          34 degrees C / 93 degrees F
    FPC 1 Bottom        OK          31 degrees C / 87 degrees F
    FPM GBUS            OK          30 degrees C / 86 degrees F
    FPM Display         OK          34 degrees C / 93 degrees F
Fans Top Left Front fan  OK          Spinning at normal speed
    Top Left Middle fan  OK          Spinning at normal speed
    Top Left Rear fan     OK          Spinning at normal speed
    Top Right Front fan   OK          Spinning at normal speed
    Top Right Middle fan  OK          Spinning at normal speed
    Top Right Rear fan    OK          Spinning at normal speed
    Bottom Left Front fan  OK          Spinning at normal speed
    Bottom Left Middle fan OK          Spinning at normal speed

```

```

Bottom Left Rear fan   OK           Spinning at normal speed
Bottom Right Front fan OK           Spinning at normal speed
Bottom Right Middle fan OK          Spinning at normal speed
Bottom Right Rear fan  OK           Spinning at normal speed
Rear Tray Top fan      OK           Spinning at normal speed
Rear Tray Second fan   OK           Spinning at normal speed
Rear Tray Third fan    OK           Spinning at normal speed
Rear Tray Fourth fan   OK           Spinning at normal speed
Rear Tray Fifth fan    OK           Spinning at normal speed
Rear Tray Sixth fan    OK           Spinning at normal speed
Rear Tray Seventh fan  OK           Spinning at normal speed
Rear Tray Bottom fan   OK           Spinning at normal speed

Misc  CIP                OK
      SPMB 0             OK
      SPMB 1             OK

```

```
lcc2-re0:
```

```

-----
Class Item                Status      Measurement
Temp  PEM 0                OK          29 degrees C / 84 degrees F
      PEM 1                Absent
      SCG 0                OK          32 degrees C / 89 degrees F
      SCG 1                Absent
      Routing Engine 0     OK          31 degrees C / 87 degrees F
      Routing Engine 1     OK          32 degrees C / 89 degrees F
      CB 0                 OK          30 degrees C / 86 degrees F
      SIB 0                OK          38 degrees C / 100 degrees F
      SIB 0 (B)           OK          49 degrees C / 120 degrees F
      FPC 0 Top            OK          45 degrees C / 113 degrees F
      FPC 0 Bottom        OK          33 degrees C / 91 degrees F
      FPC 1 Top            OK          37 degrees C / 98 degrees F
      FPC 1 Bottom        OK          33 degrees C / 91 degrees F
      FPM GBUS            OK          30 degrees C / 86 degrees F
      FPM Display         OK          34 degrees C / 93 degrees F
Fans  Top Left Front fan  OK          Spinning at normal speed
      Top Left Middle fan  OK          Spinning at normal speed

```

```
...
```



```

Rear Tray Third fan      OK      Spinning at normal speed
Rear Tray Fourth fan     OK      Spinning at normal speed
Rear Tray Fifth fan      OK      Spinning at normal speed
Rear Tray Sixth fan      OK      Spinning at normal speed
Rear Tray Seventh fan    OK      Spinning at normal speed
Rear Tray Bottom fan     OK      Spinning at normal speed
Misc CIP                 OK
SPMB 0                   OK
SPMB 1                   OK

```

show chassis environment (TX Matrix Plus Router)

```
user@host> show chassis environment
```

```

-----
Class Item                Status      Measurement
Temp PEM 0                 OK          28 degrees C / 82 degrees F
      PEM 1                 Absent
      Routing Engine 0      OK          27 degrees C / 80 degrees F
      Routing Engine 1      OK          29 degrees C / 84 degrees F
      CB 0 Intake           OK          26 degrees C / 78 degrees F
      CB 0 Exhaust A        OK          25 degrees C / 77 degrees F
      CB 0 Exhaust B        OK          25 degrees C / 77 degrees F
      CB 1 Intake           OK          26 degrees C / 78 degrees F
      CB 1 Exhaust A        OK          26 degrees C / 78 degrees F
      CB 1 Exhaust B        OK          26 degrees C / 78 degrees F
      SIB F13 0             OK          47 degrees C / 116 degrees F
      SIB F13 0 (B)         OK          48 degrees C / 118 degrees F
      SIB F13 1             OK          38 degrees C / 100 degrees F
      SIB F13 1 (B)         OK          37 degrees C / 98 degrees F
      SIB F2S 0/0           OK          27 degrees C / 80 degrees F
      SIB F2S 0/2           OK          28 degrees C / 82 degrees F
      SIB F2S 0/4           OK          27 degrees C / 80 degrees F
      SIB F2S 0/6           OK          28 degrees C / 82 degrees F
      SIB F2S 1/0           OK          26 degrees C / 78 degrees F
      SIB F2S 1/2           OK          26 degrees C / 78 degrees F
      SIB F2S 1/4           OK          26 degrees C / 78 degrees F
      SIB F2S 1/6           OK          26 degrees C / 78 degrees F
      SIB F2S 2/0           OK          25 degrees C / 77 degrees F
      SIB F2S 2/2           OK          25 degrees C / 77 degrees F
      SIB F2S 2/4           OK          23 degrees C / 73 degrees F

```

	CIP 0 Intake	OK	23 degrees C / 73 degrees F
	CIP 0 Exhaust A	OK	24 degrees C / 75 degrees F
	CIP 0 Exhaust B	OK	24 degrees C / 75 degrees F
	CIP 1 Intake	OK	24 degrees C / 75 degrees F
	CIP 1 Exhaust A	OK	25 degrees C / 77 degrees F
	CIP 1 Exhaust B	OK	25 degrees C / 77 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 2	OK	Spinning at normal speed
	Fan Tray 2 Fan 3	OK	Spinning at normal speed
	Fan Tray 2 Fan 4	OK	Spinning at normal speed
	Fan Tray 2 Fan 5	OK	Spinning at normal speed
	Fan Tray 2 Fan 6	OK	Spinning at normal speed
	Fan Tray 2 Fan 7	OK	Spinning at normal speed
	Fan Tray 2 Fan 8	OK	Spinning at normal speed
	Fan Tray 2 Fan 9	OK	Spinning at normal speed
	Fan Tray 3 Fan 1	OK	Spinning at normal speed
	Fan Tray 3 Fan 2	OK	Spinning at normal speed
	Fan Tray 3 Fan 3	OK	Spinning at normal speed
	Fan Tray 3 Fan 4	OK	Spinning at normal speed
	Fan Tray 3 Fan 5	OK	Spinning at normal speed
	Fan Tray 3 Fan 6	OK	Spinning at normal speed
	Fan Tray 3 Fan 7	OK	Spinning at normal speed
	Fan Tray 3 Fan 8	OK	Spinning at normal speed
	Fan Tray 3 Fan 9	OK	Spinning at normal speed
	Fan Tray 4 Fan 1	OK	Spinning at normal speed
	Fan Tray 4 Fan 2	OK	Spinning at normal speed
	Fan Tray 4 Fan 3	OK	Spinning at normal speed
	Fan Tray 4 Fan 4	OK	Spinning at normal speed
	Fan Tray 4 Fan 5	OK	Spinning at normal speed
	Fan Tray 4 Fan 6	OK	Spinning at normal speed
	Fan Tray 4 Fan 7	OK	Spinning at normal speed

Fan Tray 4 Fan 8	OK	Spinning at normal speed
Fan Tray 4 Fan 9	OK	Spinning at normal speed
Fan Tray 5 Fan 1	OK	Spinning at normal speed
Fan Tray 5 Fan 2	OK	Spinning at normal speed
Fan Tray 5 Fan 3	OK	Spinning at normal speed
Fan Tray 5 Fan 4	OK	Spinning at normal speed
Fan Tray 5 Fan 5	OK	Spinning at normal speed
Fan Tray 5 Fan 6	OK	Spinning at normal speed
Fan Tray 5 Fan 7	OK	Spinning at normal speed
Fan Tray 5 Fan 8	OK	Spinning at normal speed
Fan Tray 5 Fan 9	OK	Spinning at normal speed
Misc SPMB 0	OK	
SPMB 1	OK	

lcc0-re0:

```
-----
```

Class	Item	Status	Measurement
Temp	PEM 0	OK	27 degrees C / 80 degrees F
	PEM 1	Absent	
	SCG 0	OK	31 degrees C / 87 degrees F
	SCG 1	OK	35 degrees C / 95 degrees F
	Routing Engine 0	OK	30 degrees C / 86 degrees F
	Routing Engine 1	OK	30 degrees C / 86 degrees F
	CB 0	OK	31 degrees C / 87 degrees F
	CB 1	OK	31 degrees C / 87 degrees F
	SIB 0	OK	41 degrees C / 105 degrees F
	SIB 0 (B)	OK	34 degrees C / 93 degrees F
	SIB 1	OK	0 degrees C / 32 degrees F
	SIB 1 (B)	OK	0 degrees C / 32 degrees F
	SIB 2	OK	0 degrees C / 32 degrees F
	SIB 2 (B)	OK	0 degrees C / 32 degrees F
	SIB 3	OK	0 degrees C / 32 degrees F
	SIB 3 (B)	OK	0 degrees C / 32 degrees F
	SIB 4	OK	0 degrees C / 32 degrees F
	SIB 4 (B)	OK	0 degrees C / 32 degrees F
	FPC 0 Top	OK	49 degrees C / 120 degrees F
	FPC 0 Bottom	OK	50 degrees C / 122 degrees F
	FPC 1 Top	OK	48 degrees C / 118 degrees F
	FPC 1 Bottom	OK	49 degrees C / 120 degrees F
	FPM GBUS	OK	27 degrees C / 80 degrees F
	FPM Display	OK	30 degrees C / 86 degrees F
Fans	Top Left Front fan	OK	Spinning at normal speed
	Top Left Middle fan	OK	Spinning at normal speed

```

Top Left Rear fan          OK          Spinning at normal speed
Top Right Front fan       OK          Spinning at normal speed
Top Right Middle fan     OK          Spinning at normal speed
Top Right Rear fan       OK          Spinning at normal speed
Bottom Left Front fan    OK          Spinning at normal speed
Bottom Left Middle fan   OK          Spinning at normal speed
Bottom Left Rear fan     OK          Spinning at normal speed
Bottom Right Front fan   OK          Spinning at normal speed
Bottom Right Middle fan  OK          Spinning at normal speed
Bottom Right Rear fan    OK          Spinning at normal speed
Rear Tray Top fan        OK          Spinning at normal speed
Rear Tray Second fan     OK          Spinning at normal speed
Rear Tray Third fan      OK          Spinning at normal speed
Rear Tray Fourth fan     OK          Spinning at normal speed
Rear Tray Fifth fan      OK          Spinning at normal speed
Rear Tray Sixth fan      OK          Spinning at normal speed
Rear Tray Seventh fan    OK          Spinning at normal speed
Rear Tray Bottom fan     OK          Spinning at normal speed
Misc CIP                  OK
SPMB 0                    OK
SPMB 1                    OK

```

show chassis environment (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis environment
```

```

-----
Class Item                Status      Measurement
Temp PEM 0                 Check      30 degrees C / 86 degrees F
      PEM 1                 OK         33 degrees C / 91 degrees F
      Routing Engine 0     OK         28 degrees C / 82 degrees F
      Routing Engine 0 CPU OK         42 degrees C / 107 degrees F
      Routing Engine 1     OK         29 degrees C / 84 degrees F
      Routing Engine 1 CPU OK         44 degrees C / 111 degrees F
      CB 0 Intake          OK         30 degrees C / 86 degrees F
      CB 0 Exhaust A       OK         28 degrees C / 82 degrees F
      CB 0 Exhaust B       OK         30 degrees C / 86 degrees F
      CB 1 Intake          OK         31 degrees C / 87 degrees F
      CB 1 Exhaust A       OK         27 degrees C / 80 degrees F
      CB 1 Exhaust B       OK         31 degrees C / 87 degrees F
      SIB F13 0 Board      OK         44 degrees C / 111 degrees F

```

	SIB F13 0 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F13 3 Board	OK	45 degrees C / 113 degrees F
	SIB F13 3 XF Junction	OK	60 degrees C / 140 degrees F
	SIB F13 6 Board	OK	47 degrees C / 116 degrees F
	SIB F13 6 XF Junction	OK	62 degrees C / 143 degrees F
	SIB F2S 0/0 Board	OK	32 degrees C / 89 degrees F
	SIB F2S 0/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/2 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/2 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 0/4 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 0/6 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 0/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/0 Board	OK	31 degrees C / 87 degrees F
	SIB F2S 1/0 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 1/2 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 1/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 1/4 XF Junction	OK	35 degrees C / 95 degrees F
	SIB F2S 1/6 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 1/6 XF Junction	OK	41 degrees C / 105 degrees F
	SIB F2S 2/0 Board	OK	30 degrees C / 86 degrees F
	SIB F2S 2/0 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/2 Board	OK	28 degrees C / 82 degrees F
	SIB F2S 2/2 XF Junction	OK	39 degrees C / 102 degrees F
	SIB F2S 2/4 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/4 XF Junction	OK	42 degrees C / 107 degrees F
	SIB F2S 2/6 Board	OK	29 degrees C / 84 degrees F
	SIB F2S 2/6 XF Junction	OK	41 degrees C / 105 degrees F
	CIP 0 Intake	OK	25 degrees C / 77 degrees F
	CIP 0 Exhaust A	OK	26 degrees C / 78 degrees F
	CIP 0 Exhaust B	OK	26 degrees C / 78 degrees F
	CIP 1 Intake	OK	26 degrees C / 78 degrees F
	CIP 1 Exhaust A	OK	27 degrees C / 80 degrees F
	CIP 1 Exhaust B	OK	27 degrees C / 80 degrees F
Fans	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed

Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 2 Fan 1	OK	Spinning at normal speed
Fan Tray 2 Fan 2	OK	Spinning at normal speed
Fan Tray 2 Fan 3	OK	Spinning at normal speed
Fan Tray 2 Fan 4	OK	Spinning at normal speed
Fan Tray 2 Fan 5	OK	Spinning at normal speed
Fan Tray 2 Fan 6	OK	Spinning at normal speed
Fan Tray 2 Fan 7	OK	Spinning at normal speed
Fan Tray 2 Fan 8	OK	Spinning at normal speed
Fan Tray 2 Fan 9	OK	Spinning at normal speed
Fan Tray 3 Fan 1	OK	Spinning at normal speed
Fan Tray 3 Fan 2	OK	Spinning at normal speed
Fan Tray 3 Fan 3	OK	Spinning at normal speed
Fan Tray 3 Fan 4	OK	Spinning at normal speed
Fan Tray 3 Fan 5	OK	Spinning at normal speed
Fan Tray 3 Fan 6	OK	Spinning at normal speed
Fan Tray 3 Fan 7	OK	Spinning at normal speed
Fan Tray 3 Fan 8	OK	Spinning at normal speed
Fan Tray 3 Fan 9	OK	Spinning at normal speed
Fan Tray 4 Fan 1	OK	Spinning at normal speed
Fan Tray 4 Fan 2	OK	Spinning at normal speed
Fan Tray 4 Fan 3	OK	Spinning at normal speed
Fan Tray 4 Fan 4	OK	Spinning at normal speed
Fan Tray 4 Fan 5	OK	Spinning at normal speed
Fan Tray 4 Fan 6	OK	Spinning at normal speed
Fan Tray 4 Fan 7	OK	Spinning at normal speed
Fan Tray 4 Fan 8	OK	Spinning at normal speed
Fan Tray 4 Fan 9	OK	Spinning at normal speed
Fan Tray 5 Fan 1	OK	Spinning at normal speed
Fan Tray 5 Fan 2	OK	Spinning at normal speed
Fan Tray 5 Fan 3	OK	Spinning at normal speed
Fan Tray 5 Fan 4	OK	Spinning at normal speed
Fan Tray 5 Fan 5	OK	Spinning at normal speed
Fan Tray 5 Fan 6	OK	Spinning at normal speed
Fan Tray 5 Fan 7	OK	Spinning at normal speed
Fan Tray 5 Fan 8	OK	Spinning at normal speed
Fan Tray 5 Fan 9	Check	
Misc SPMB 0	OK	
SPMB 1	OK	

Bottom Fan 8	OK	Spinning at normal speed
Bottom Fan 9	OK	Spinning at normal speed

show chassis environment (EX9200 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	PEM 0	Check	
	PEM 1	OK	40 degrees C / 104 degrees F
	PEM 2	OK	40 degrees C / 104 degrees F
	PEM 3	Absent	
	Routing Engine 0	OK	35 degrees C / 95 degrees F
	Routing Engine 0 CPU	OK	33 degrees C / 91 degrees F
	Routing Engine 1	OK	38 degrees C / 100 degrees F
	Routing Engine 1 CPU	OK	33 degrees C / 91 degrees F
	CB 0 Intake	OK	35 degrees C / 95 degrees F
	CB 0 Exhaust A	OK	33 degrees C / 91 degrees F
	CB 0 Exhaust B	OK	40 degrees C / 104 degrees F
	CB 0 ACBC	OK	39 degrees C / 102 degrees F
	CB 0 XF A	OK	49 degrees C / 120 degrees F
	CB 0 XF B	OK	46 degrees C / 114 degrees F
	CB 1 Intake	OK	37 degrees C / 98 degrees F
	CB 1 Exhaust A	OK	32 degrees C / 89 degrees F
	CB 1 Exhaust B	OK	39 degrees C / 102 degrees F
	CB 1 ACBC	OK	41 degrees C / 105 degrees F
	CB 1 XF A	OK	49 degrees C / 120 degrees F
	CB 1 XF B	OK	49 degrees C / 120 degrees F
	FPC 2 Intake	OK	37 degrees C / 98 degrees F
	FPC 2 Exhaust A	OK	40 degrees C / 104 degrees F
	FPC 2 Exhaust B	OK	34 degrees C / 93 degrees F
	FPC 2 LU 0 TCAM TSen	OK	44 degrees C / 111 degrees F
	FPC 2 LU 0 TCAM Chip	OK	48 degrees C / 118 degrees F
	FPC 2 LU 0 TSen	OK	44 degrees C / 111 degrees F
	FPC 2 LU 0 Chip	OK	60 degrees C / 140 degrees F
	FPC 2 MQ 0 TSen	OK	44 degrees C / 111 degrees F
	FPC 2 MQ 0 Chip	OK	51 degrees C / 123 degrees F
	FPC 3 Intake	OK	39 degrees C / 102 degrees F
	FPC 3 Exhaust A	OK	51 degrees C / 123 degrees F

[...Output truncated...]

Fans	Top Rear Fan	OK	Spinning at intermediate-speed
	Bottom Rear Fan	OK	Spinning at intermediate-speed
	Top Middle Fan	OK	Spinning at intermediate-speed
	Bottom Middle Fan	OK	Spinning at intermediate-speed
	Top Front Fan	OK	Spinning at intermediate-speed
	Bottom Front Fan	OK	Spinning at intermediate-speed

show chassis environment (EX9251 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Top Right Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Left Inlet Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Top Right Exhaust Sensor	OK	40 degrees C / 104 degrees F
	CB 0 Top Left Exhaust Sensor	OK	59 degrees C / 138 degrees F
	CB 0 CPU Core-0 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-1 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-2 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-3 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-4 Temp	OK	45 degrees C / 113 degrees F
	CB 0 CPU Core-5 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-6 Temp	OK	44 degrees C / 111 degrees F
	CB 0 CPU Core-7 Temp	OK	43 degrees C / 109 degrees F
Power	PEM 0	Check	
	PEM 1	OK	36 degrees C / 96 degrees F
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 2 Fan 0	Absent	
	Fan Tray 2 Fan 1	Absent	

show chassis environment (EX9253 Switch)

```
user@switch> show chassis environment
```

Class	Item	Status	Measurement
Temp	CB 0 Exhaust Temp Sensor	OK	37 degrees C / 98 degrees F

```

CB 0 Inlet Temp Sensor      OK      31 degrees C / 87 degrees F
CB 0 CPU DIE Temp Sensor    OK      42 degrees C / 107 degrees F
CB 1 Exhaust Temp Sensor    OK      31 degrees C / 87 degrees F
CB 1 Inlet Temp Sensor      OK      28 degrees C / 82 degrees F
CB 1 CPU DIE Temp Sensor    OK      42 degrees C / 107 degrees F
FPC 0 Intake Temp Sensor    OK      31 degrees C / 87 degrees F
FPC 0 Exhaust-A Temp Sensor OK      58 degrees C / 136 degrees F
FPC 0 Exhaust-B Temp Sensor OK      47 degrees C / 116 degrees F
FPC 1 Intake Temp Sensor    OK      29 degrees C / 84 degrees F
FPC 1 Exhaust-A Temp Sensor OK      59 degrees C / 138 degrees F
FPC 1 Exhaust-B Temp Sensor OK      48 degrees C / 118 degrees F
Power PEM 0                 OK      54 degrees C / 129 degrees F
    PEM 1                   Check
    PEM 2                   Absent
    PEM 3                   Absent
    PEM 4                   Check
    PEM 5                   OK      61 degrees C / 141 degrees F
Fans Fan Tray 0 Fan 0        OK      Spinning at normal speed
    Fan Tray 0 Fan 1        OK      Spinning at normal speed
    Fan Tray 0 Fan 2        OK      Spinning at normal speed
    Fan Tray 0 Fan 3        OK      Spinning at normal speed
    Fan Tray 1 Fan 0        OK      Spinning at normal speed
    Fan Tray 1 Fan 1        OK      Spinning at normal speed
    Fan Tray 1 Fan 2        OK      Spinning at normal speed
    Fan Tray 1 Fan 3        OK      Spinning at normal speed
    Fan Tray 2 Fan 0        OK      Spinning at normal speed
    Fan Tray 2 Fan 1        OK      Spinning at normal speed
    Fan Tray 2 Fan 2        OK      Spinning at normal speed
    Fan Tray 2 Fan 3        OK      Spinning at normal speed
    Fan Tray 3 Fan 0        OK      Spinning at normal speed
    Fan Tray 3 Fan 1        OK      Spinning at normal speed
    Fan Tray 3 Fan 2        OK      Spinning at normal speed
    Fan Tray 3 Fan 3        OK      Spinning at normal speed

```

show chassis environment (QFX Series and OCX Series)

```

user@switch> show chassis environment
Class Item                Status      Measurement
Temp  CB 0 Top Right Inlet Sensor OK          29 degrees C / 84 degrees F
      CB 0 Top Left Inlet Sensor OK          29 degrees C / 84 degrees F
      CB 0 Top Right Exhaust Sensor OK         40 degrees C / 104 degrees F

```

```

CB 0 Top Left Exhaust Sensor OK 59 degrees C / 138 degrees F
CB 0 CPU Core-0 Temp OK 45 degrees C / 113 degrees F
CB 0 CPU Core-1 Temp OK 44 degrees C / 111 degrees F
CB 0 CPU Core-2 Temp OK 44 degrees C / 111 degrees F
CB 0 CPU Core-3 Temp OK 44 degrees C / 111 degrees F
CB 0 CPU Core-4 Temp OK 45 degrees C / 113 degrees F
CB 0 CPU Core-5 Temp OK 44 degrees C / 111 degrees F
CB 0 CPU Core-6 Temp OK 44 degrees C / 111 degrees F
CB 0 CPU Core-7 Temp OK 43 degrees C / 109 degrees F
Power PEM 0 Check
PEM 1 OK 36 degrees C / 96 degrees F
Fans Fan Tray 0 Fan 0 OK Spinning at normal speed
Fan Tray 0 Fan 1 OK Spinning at normal speed
Fan Tray 1 Fan 0 OK Spinning at normal speed
Fan Tray 1 Fan 1 OK Spinning at normal speed
Fan Tray 2 Fan 0 Absent
Fan Tray 2 Fan 1 Absent

```

show chassis environment interconnect-device (QFabric System)

```

user@switch> show chassis environment interconnect-device
IC-A0004
Class Item Status Measurement
CB 0
CB 0 L Intake OK 30 degrees C / 86 degrees F
CB 0 R Intake OK 31 degrees C / 87 degrees F
CB 0 L Exhaust OK 32 degrees C / 89 degrees F
CB 0 R Exhaust OK 33 degrees C / 91 degrees F
Routing Engine 0 CPU temp OK 51 degrees C / 123 degrees F
CB 1
CB 1 L Intake OK 27 degrees C / 80 degrees F
CB 1 R Intake OK 29 degrees C / 84 degrees F
CB 1 L Exhaust OK 31 degrees C / 87 degrees F
CB 1 R Exhaust OK 32 degrees C / 89 degrees F
Routing Engine 1 CPU temp OK 40 degrees C / 104 degrees F
FC 0 FPC 0
FPC 0 L Intake OK 25 degrees C / 77 degrees F
FPC 0 R Intake OK 28 degrees C / 82 degrees F
FPC 0 L Exhaust OK 28 degrees C / 82 degrees F
FPC 0 R Exhaust OK 29 degrees C / 84 degrees F
FC 7 FPC 7

```

FPC 7 L Intake	OK	25 degrees C / 77 degrees F
FPC 7 R Intake	OK	26 degrees C / 78 degrees F
FPC 7 L Exhaust	OK	28 degrees C / 82 degrees F
FPC 7 R Exhaust	OK	29 degrees C / 84 degrees F
RC 0 FPC 8		
FPC 8 L Intake	OK	25 degrees C / 77 degrees F
FPC 8 R Intake	OK	26 degrees C / 78 degrees F
FPC 8 L Exhaust	OK	32 degrees C / 89 degrees F
FPC 8 R Exhaust	OK	30 degrees C / 86 degrees F
RC 7 FPC 15		
FPC 15 L Intake	OK	24 degrees C / 75 degrees F
FPC 15 R Intake	OK	25 degrees C / 77 degrees F
FPC 15 L Exhaust	OK	33 degrees C / 91 degrees F
FPC 15 R Exhaust	OK	31 degrees C / 87 degrees F
Fans TFT 0 Fan 0	OK	Spinning at normal speed
Fans TFT 0 Fan 1	OK	Spinning at normal speed
Fans TFT 0 Fan 2	OK	Spinning at normal speed
Fans TFT 0 Fan 3	OK	Spinning at normal speed
Fans TFT 0 Fan 4	OK	Spinning at normal speed
Fans TFT 0 Fan 5	OK	Spinning at normal speed
Fans BFT 1 Fan 0	OK	Spinning at normal speed
Fans BFT 1 Fan 1	OK	Spinning at normal speed
Fans BFT 1 Fan 2	OK	Spinning at normal speed
Fans BFT 1 Fan 3	Check	
Fans BFT 1 Fan 4	OK	Spinning at normal speed
Fans BFT 1 Fan 5	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 0 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 0 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 1 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 2 Rotor 1	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 0	OK	Spinning at normal speed
Fans SFT 1 Fan 3 Rotor 1	OK	Spinning at normal speed
Fans SFT 2 Fan 0 Rotor 0	OK	Spinning at normal speed


```

Fans SFT 7 Fan 2 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 2 Rotor 1      OK      Spinning at normal speed
Fans SFT 7 Fan 3 Rotor 0      OK      Spinning at normal speed
Fans SFT 7 Fan 3 Rotor 1      OK      Spinning at normal speed
Power PEM 0                    OK      30 degrees C / 86 degrees F
Power PEM 1                    OK      30 degrees C / 86 degrees F
Power PEM 2                    OK      30 degrees C / 86 degrees F
Power PEM 3                    Absent
Power PEM 4                    Absent
Power PEM 5                    Absent

```

show chassis environment node-device (QFabric System)

```

user@switch> show chassis environment node-device
node1
Class Item                      Status      Measurement
Power node1 Power Supply 0      Absent
      node1 Power Supply 1      Absent
Fans  node1 Fan Tray 0          Testing
      node1 Fan Tray 1          Testing
      node1 Fan Tray 2          Testing

```

show chassis environment pem node-device (QFabric System)

```

user@switch> show chassis environment pem node-device
node1
FPC 0 PEM 0 status:
  State           Check
  Airflow         Front to Back
  Temperature     OK
  AC Input:       OK
  DC Output       Voltage (V) Current (A) Power (W) Load (%)
                  12          10          120    18
FPC 0 PEM 1 status:
  State           Online
  Airflow         Back to Front
  Temperature     OK
  AC Input:       OK

```

DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	11	10	110	17

show chassis environment (PTX5000 Packet Transport Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Temp	PDU 0	OK	
	PDU 0 PSM 0	OK	36 degrees C / 96 degrees F
	PDU 0 PSM 1	OK	38 degrees C / 100 degrees F
	PDU 0 PSM 2	OK	38 degrees C / 100 degrees F
	PDU 0 PSM 3	OK	37 degrees C / 98 degrees F
	PDU 1	Absent	
	CCG 0	OK	44 degrees C / 111 degrees F
	CCG 1	OK	44 degrees C / 111 degrees F
	Routing Engine 0	OK	62 degrees C / 143 degrees F
	Routing Engine 0 CPU	OK	75 degrees C / 167 degrees F
	Routing Engine 1	OK	51 degrees C / 123 degrees F
	Routing Engine 1 CPU	OK	64 degrees C / 147 degrees F
	CB 0 Intake	OK	38 degrees C / 100 degrees F
	CB 0 Exhaust A	OK	46 degrees C / 114 degrees F
	CB 0 Exhaust B	OK	42 degrees C / 107 degrees F
	CB 1 Intake	OK	35 degrees C / 95 degrees F
	CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
	CB 1 Exhaust B	OK	36 degrees C / 96 degrees F
	SIB 0 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 0 Junction	OK	45 degrees C / 113 degrees F
	SIB 1 Exhaust	OK	44 degrees C / 111 degrees F
	SIB 1 Junction	OK	43 degrees C / 109 degrees F
	SIB 2 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 2 Junction	OK	42 degrees C / 107 degrees F
	SIB 3 Exhaust	OK	43 degrees C / 109 degrees F
	SIB 3 Junction	OK	43 degrees C / 109 degrees F
	SIB 4 Exhaust	OK	47 degrees C / 116 degrees F
	SIB 4 Junction	OK	42 degrees C / 107 degrees F
	SIB 5 Exhaust	OK	42 degrees C / 107 degrees F
	SIB 5 Junction	OK	40 degrees C / 104 degrees F
	SIB 6 Exhaust	OK	46 degrees C / 114 degrees F
	SIB 6 Junction	OK	42 degrees C / 107 degrees F
	SIB 7 Exhaust	OK	43 degrees C / 109 degrees F
	SIB 7 Junction	OK	39 degrees C / 102 degrees F

SIB 8 Exhaust	OK	44 degrees C / 111 degrees F
SIB 8 Junction	OK	41 degrees C / 105 degrees F
FPC 0 PMB	OK	35 degrees C / 95 degrees F
FPC 0 Intake	OK	33 degrees C / 91 degrees F
FPC 0 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 0 Exhaust B	OK	43 degrees C / 109 degrees F
FPC 0 TL0	OK	48 degrees C / 118 degrees F
FPC 0 TQ0	OK	53 degrees C / 127 degrees F
FPC 0 TL1	OK	56 degrees C / 132 degrees F
FPC 0 TQ1	OK	58 degrees C / 136 degrees F
FPC 0 TL2	OK	55 degrees C / 131 degrees F
FPC 0 TQ2	OK	56 degrees C / 132 degrees F
FPC 0 TL3	OK	59 degrees C / 138 degrees F
FPC 0 TQ3	OK	59 degrees C / 138 degrees F
FPC 2 PMB	OK	35 degrees C / 95 degrees F
FPC 2 Intake	OK	34 degrees C / 93 degrees F
FPC 2 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 2 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 2 TL0	OK	53 degrees C / 127 degrees F
FPC 2 TQ0	OK	53 degrees C / 127 degrees F
FPC 2 TL1	OK	57 degrees C / 134 degrees F
FPC 2 TQ1	OK	58 degrees C / 136 degrees F
FPC 2 TL2	OK	54 degrees C / 129 degrees F
FPC 2 TQ2	OK	59 degrees C / 138 degrees F
FPC 2 TL3	OK	60 degrees C / 140 degrees F
FPC 2 TQ3	OK	64 degrees C / 147 degrees F
PIC 2/0 Ambient	OK	49 degrees C / 120 degrees F
FPC 3 PMB	OK	34 degrees C / 93 degrees F
FPC 3 Intake	OK	35 degrees C / 95 degrees F
FPC 3 Exhaust A	OK	54 degrees C / 129 degrees F
FPC 3 Exhaust B	OK	49 degrees C / 120 degrees F
FPC 3 TL0	OK	49 degrees C / 120 degrees F
FPC 3 TQ0	OK	55 degrees C / 131 degrees F
FPC 3 TL1	OK	56 degrees C / 132 degrees F
FPC 3 TQ1	OK	58 degrees C / 136 degrees F
FPC 3 TL2	OK	56 degrees C / 132 degrees F
FPC 3 TQ2	OK	59 degrees C / 138 degrees F
FPC 3 TL3	OK	62 degrees C / 143 degrees F
FPC 3 TQ3	OK	63 degrees C / 145 degrees F
PIC 3/1	Absent	
FPC 5 PMB	OK	35 degrees C / 95 degrees F
FPC 5 Intake	OK	34 degrees C / 93 degrees F
FPC 5 Exhaust A	OK	51 degrees C / 123 degrees F

	FPC 5 Exhaust B	OK	53 degrees C / 127 degrees F
	FPC 5 TL0	OK	54 degrees C / 129 degrees F
	FPC 5 TQ0	OK	52 degrees C / 125 degrees F
	FPC 5 TL1	OK	61 degrees C / 141 degrees F
	FPC 5 TQ1	OK	60 degrees C / 140 degrees F
	FPC 5 TL2	OK	55 degrees C / 131 degrees F
	FPC 5 TQ2	OK	55 degrees C / 131 degrees F
	FPC 5 TL3	OK	59 degrees C / 138 degrees F
	FPC 5 TQ3	OK	58 degrees C / 136 degrees F
	PIC 5/0 Ambient	OK	51 degrees C / 123 degrees F
	PIC 5/1 Ambient	OK	34 degrees C / 93 degrees F
	PIC 5/1 cfp-5/1/0	OK	34 degrees C / 93 degrees F
	PIC 5/1 cfp-5/1/1	OK	36 degrees C / 96 degrees F
	FPC 6 PMB	OK	36 degrees C / 96 degrees F
	FPC 6 Intake	OK	33 degrees C / 91 degrees F
	FPC 6 Exhaust A	OK	51 degrees C / 123 degrees F
	FPC 6 Exhaust B	OK	39 degrees C / 102 degrees F
	FPC 6 TL0	OK	44 degrees C / 111 degrees F
	FPC 6 TQ0	OK	54 degrees C / 129 degrees F
	FPC 6 TL1	OK	59 degrees C / 138 degrees F
	FPC 6 TQ1	OK	58 degrees C / 136 degrees F
	FPC 6 TL2	OK	60 degrees C / 140 degrees F
	FPC 6 TQ2	OK	57 degrees C / 134 degrees F
	FPC 6 TL3	OK	65 degrees C / 149 degrees F
	FPC 6 TQ3	OK	60 degrees C / 140 degrees F
	FPC 7 PMB	OK	35 degrees C / 95 degrees F
	FPC 7 Intake	OK	33 degrees C / 91 degrees F
	FPC 7 Exhaust A	OK	53 degrees C / 127 degrees F
	FPC 7 Exhaust B	OK	40 degrees C / 104 degrees F
	FPC 7 TL0	OK	46 degrees C / 114 degrees F
	FPC 7 TQ0	OK	58 degrees C / 136 degrees F
	FPC 7 TL1	OK	53 degrees C / 127 degrees F
	FPC 7 TQ1	OK	59 degrees C / 138 degrees F
	FPC 7 TL2	OK	56 degrees C / 132 degrees F
	FPC 7 TQ2	OK	61 degrees C / 141 degrees F
	FPC 7 TL3	OK	63 degrees C / 145 degrees F
	FPC 7 TQ3	OK	63 degrees C / 145 degrees F
	FPM I2CS	OK	37 degrees C / 98 degrees F
Fans	Fan Tray 0 Fan 1	OK	3042 RPM
	Fan Tray 0 Fan 2	OK	3042 RPM
	Fan Tray 0 Fan 3	OK	3000 RPM
	Fan Tray 0 Fan 4	OK	3042 RPM
	Fan Tray 0 Fan 5	OK	3000 RPM

```

Fan Tray 0 Fan 6      OK      3042 RPM
Fan Tray 0 Fan 7      OK      3085 RPM
Fan Tray 0 Fan 8      OK      3042 RPM
Fan Tray 0 Fan 9      OK      3042 RPM
Fan Tray 0 Fan 10     OK      3085 RPM
Fan Tray 0 Fan 11     OK      3085 RPM
Fan Tray 0 Fan 12     OK      3128 RPM
Fan Tray 0 Fan 13     OK      3128 RPM
Fan Tray 0 Fan 14     OK      3042 RPM
Fan Tray 1 Fan 1      OK      2299 RPM
Fan Tray 1 Fan 2      OK      2399 RPM
Fan Tray 1 Fan 3      OK      2299 RPM
Fan Tray 1 Fan 4      OK      2266 RPM
Fan Tray 1 Fan 5      OK      2266 RPM
Fan Tray 1 Fan 6      OK      2366 RPM
Fan Tray 2 Fan 1      OK      2199 RPM
Fan Tray 2 Fan 2      OK      2133 RPM
Fan Tray 2 Fan 3      OK      2366 RPM
Fan Tray 2 Fan 4      OK      2233 RPM
Fan Tray 2 Fan 5      OK      2399 RPM
Fan Tray 2 Fan 6      OK      2233 RPM
Misc SPMB 0 Intake    OK      50 degrees C / 122 degrees F
Misc SPMB 1 Intake    OK      40 degrees C / 104 degrees F

```

show chassis environment (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis environment
Class Item              Status      Measurement
Temp PDU 0                OK
    PDU 0 PSM 0         OK          41 degrees C / 105 degrees F
    PDU 0 PSM 1         Absent
    PDU 0 PSM 2         OK          43 degrees C / 109 degrees F
    PDU 0 PSM 3         Absent
    PDU 0 PSM 4         OK          44 degrees C / 111 degrees F
    PDU 0 PSM 5         Absent
    PDU 0 PSM 6         OK          45 degrees C / 113 degrees F
    PDU 0 PSM 7         Absent
    PDU 1                OK
    PDU 1 PSM 0         Absent
    PDU 1 PSM 1         OK          45 degrees C / 113 degrees F
    PDU 1 PSM 2         Absent

```

```

PDU 1 PSM 3          OK          43 degrees C / 109 degrees F
PDU 1 PSM 4          Absent
PDU 1 PSM 5          OK          46 degrees C / 114 degrees F
PDU 1 PSM 6          Absent
PDU 1 PSM 7          OK          46 degrees C / 114 degrees F
CCG 0                OK          27 degrees C / 80 degrees F
CCG 1                OK          29 degrees C / 84 degrees F
...

```

show chassis environment (PTX1000 Packet Transport Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power FPC 0 Power Supply 0 Absent
      FPC 0 Power Supply 1 Absent
      FPC 0 Power Supply 2 OK
      FPC 0 Power Supply 3 OK
Temp  FPC 0 Intake Temp Sensor OK          25 degrees C / 77 degrees F
      FPC 0 Exhaust Temp Sensor OK          35 degrees C / 95 degrees F
      FPC 0 Mezz Temp Sensor 0 OK          25 degrees C / 77 degrees F
      FPC 0 Mezz Temp Sensor 1 OK          34 degrees C / 93 degrees F
      FPC 0 PE2 Temp Sensor OK          34 degrees C / 93 degrees F
      FPC 0 PE1 Temp Sensor OK          32 degrees C / 89 degrees F
      FPC 0 PF0 Temp Sensor OK          40 degrees C / 104 degrees F
      FPC 0 PE0 Temp Sensor OK          33 degrees C / 91 degrees F
      FPC 0 PE5 Temp Sensor OK          34 degrees C / 93 degrees F
      FPC 0 PE4 Temp Sensor OK          34 degrees C / 93 degrees F
      FPC 0 PF1 Temp Sensor OK          41 degrees C / 105 degrees F
      FPC 0 PE3 Temp Sensor OK          36 degrees C / 96 degrees F
      FPC 0 CPU Die Temp Sensor OK          40 degrees C / 104 degrees F
      FPC 0 OCXO Temp Sensor OK          37 degrees C / 98 degrees F
Fans  FPC 0 Fan Tray 0      OK          Spinning at normal speed
      FPC 0 Fan Tray 1      OK          Spinning at normal speed
      FPC 0 Fan Tray 2      OK          Spinning at normal speed

```

show chassis environment (PTX10008 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
      Routing Engine 0 CPU OK          40 degrees C / 104 degrees F

```

	Routing Engine 1 CPU	OK	40 degrees C / 104 degrees F
Temp	CB 0 Intake Temp Sensor	OK	29 degrees C / 84 degrees F
	CB 0 Exhaust Temp Sensor	OK	33 degrees C / 91 degrees F
	CB 1 Intake Temp Sensor	OK	28 degrees C / 82 degrees F
	CB 1 Exhaust Temp Sensor	OK	32 degrees C / 89 degrees F
	FPC 0 Intake-A Temp Sensor	OK	38 degrees C / 100 degrees F
	FPC 0 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
	FPC 0 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	FPC 0 Exhaust-B Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 0 Exhaust-C Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 0 PE0 Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 0 PE1 Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 0 PE2 Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 0 LCPU Temp Sensor	OK	41 degrees C / 105 degrees F
	FPC 1 Intake-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 1 Intake-B Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 1 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 1 Exhaust-B Temp Sensor	OK	38 degrees C / 100 degrees F
	FPC 1 Exhaust-C Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 1 PE0 Temp Sensor	OK	41 degrees C / 105 degrees F
	FPC 1 PE1 Temp Sensor	OK	41 degrees C / 105 degrees F
	FPC 1 PE2 Temp Sensor	OK	45 degrees C / 113 degrees F
	FPC 1 LCPU Temp Sensor	OK	40 degrees C / 104 degrees F
	FPC 2 Intake-A Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 2 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
	FPC 2 Exhaust-A Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 2 Exhaust-B Temp Sensor	OK	54 degrees C / 129 degrees F
	FPC 2 Exhaust-C Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 2 PE0 Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 2 PE1 Temp Sensor	OK	59 degrees C / 138 degrees F
	FPC 2 PE2 Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 2 PE3 Temp Sensor	OK	60 degrees C / 140 degrees F
	FPC 2 PE4 Temp Sensor	OK	49 degrees C / 120 degrees F
	FPC 2 PE5 Temp Sensor	OK	63 degrees C / 145 degrees F
	FPC 2 LCPU Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 3 Intake-A Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 3 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
	FPC 3 Exhaust-A Temp Sensor	OK	46 degrees C / 114 degrees F
	FPC 3 Exhaust-B Temp Sensor	OK	48 degrees C / 118 degrees F
	FPC 3 Exhaust-C Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 3 PE0 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 3 PE1 Temp Sensor	OK	53 degrees C / 127 degrees F
	FPC 3 PE2 Temp Sensor	OK	46 degrees C / 114 degrees F

FPC 3 PE3 Temp Sensor	OK	53 degrees C / 127 degrees F
FPC 3 PE4 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3 LCPU Temp Sensor	OK	47 degrees C / 116 degrees F
FPC 5 Intake-A Temp Sensor	Failed	
FPC 5 Intake-B Temp Sensor	Failed	
FPC 5 Exhaust-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-B Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 5 Exhaust-C Temp Sensor	OK	41 degrees C / 105 degrees F
FPC 5 PE0 Temp Sensor	OK	46 degrees C / 114 degrees F
FPC 5 PE1 Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 5 PE2 Temp Sensor	OK	51 degrees C / 123 degrees F
FPC 5 LCPU Temp Sensor	Failed	
FPC 6 Intake-A Temp Sensor	OK	40 degrees C / 104 degrees F
FPC 6 Intake-B Temp Sensor	OK	36 degrees C / 96 degrees F
FPC 6 Exhaust-A Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 Exhaust-C Temp Sensor	OK	39 degrees C / 102 degrees F
FPC 6 PE0 Temp Sensor	OK	44 degrees C / 111 degrees F
FPC 6 PE1 Temp Sensor	OK	45 degrees C / 113 degrees F
FPC 6 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 6 LCPU Temp Sensor	OK	40 degrees C / 104 degrees F
SIB 0 Intake-A Temp Sensor	OK	37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 0 PF1 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 1 Intake-A Temp Sensor	OK	43 degrees C / 109 degrees F
SIB 1 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	44 degrees C / 111 degrees F
SIB 1 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
SIB 1 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
SIB 2 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
SIB 2 Exhaust-B Temp Sensor	OK	47 degrees C / 116 degrees F
SIB 2 PF0 Temp Sensor	OK	55 degrees C / 131 degrees F
SIB 2 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
SIB 3 Intake-A Temp Sensor	OK	45 degrees C / 113 degrees F
SIB 3 Intake-B Temp Sensor	OK	35 degrees C / 95 degrees F
SIB 3 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F

	SIB 3 Exhaust-B Temp Sensor	OK	45 degrees C / 113 degrees F
	SIB 3 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
	SIB 3 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
	SIB 4 Intake-A Temp Sensor	OK	46 degrees C / 114 degrees F
	SIB 4 Intake-B Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 4 Exhaust-A Temp Sensor	OK	36 degrees C / 96 degrees F
	SIB 4 Exhaust-B Temp Sensor	OK	46 degrees C / 114 degrees F
	SIB 4 PF0 Temp Sensor	OK	54 degrees C / 129 degrees F
	SIB 4 PF1 Temp Sensor	OK	41 degrees C / 105 degrees F
	SIB 5 Intake-A Temp Sensor	OK	38 degrees C / 100 degrees F
	SIB 5 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	SIB 5 Exhaust-A Temp Sensor	OK	34 degrees C / 93 degrees F
	SIB 5 Exhaust-B Temp Sensor	OK	39 degrees C / 102 degrees F
	SIB 5 PF0 Temp Sensor	OK	44 degrees C / 111 degrees F
	SIB 5 PF1 Temp Sensor	OK	42 degrees C / 107 degrees F
Power	Power Supply 0	OK	
	Power Supply 1	OK	
	Power Supply 2	OK	
	Power Supply 3	OK	
	Power Supply 4	Check	
	Power Supply 5	OK	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	Failed	
	Fan Tray 0 Fan 5	Failed	
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 1 Fan 0	OK	Spinning at normal speed
	Fan Tray 1 Fan 1	OK	Spinning at normal speed
	Fan Tray 1 Fan 2	OK	Spinning at normal speed
	Fan Tray 1 Fan 3	OK	Spinning at normal speed
	Fan Tray 1 Fan 4	OK	Spinning at normal speed
	Fan Tray 1 Fan 5	OK	Spinning at normal speed
	Fan Tray 1 Fan 6	OK	Spinning at normal speed
	Fan Tray 1 Fan 7	OK	Spinning at normal speed
	Fan Tray 1 Fan 8	OK	Spinning at normal speed

```

Fan Tray 1 Fan 9          OK          Spinning at normal speed
Fan Tray 1 Fan 10         OK          Spinning at normal speed

```

show chassis environment (PTX10016 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
-----
Routing Engine 0 CPU                     OK          34 degrees C / 93 degrees F
Routing Engine 1 CPU                     OK          34 degrees C / 93 degrees F
Temp CB 0 Intake Temp Sensor              OK          20 degrees C / 68 degrees F
      CB 0 Exhaust Temp Sensor            OK          24 degrees C / 75 degrees F
      CB 1 Intake Temp Sensor              OK          20 degrees C / 68 degrees F
      CB 1 Exhaust Temp Sensor            OK          23 degrees C / 73 degrees F
      FPC 1 Intake-A Temp Sensor           OK          37 degrees C / 98 degrees F
      FPC 1 Intake-B Temp Sensor           OK          32 degrees C / 89 degrees F
      FPC 1 Exhaust-A Temp Sensor          OK          37 degrees C / 98 degrees F
      FPC 1 Exhaust-B Temp Sensor          OK          36 degrees C / 96 degrees F
      FPC 1 Exhaust-C Temp Sensor          OK          36 degrees C / 96 degrees F
      FPC 1 PE0 Temp Sensor                OK          45 degrees C / 113 degrees F
      FPC 1 PE1 Temp Sensor                OK          46 degrees C / 114 degrees F
      FPC 1 PE2 Temp Sensor                OK          54 degrees C / 129 degrees F
      FPC 1 LCPU Temp Sensor               OK          35 degrees C / 95 degrees F
      FPC 3 Intake-A Temp Sensor           OK          35 degrees C / 95 degrees F
      FPC 3 Intake-B Temp Sensor           OK          31 degrees C / 87 degrees F
      FPC 3 Exhaust-A Temp Sensor          OK          36 degrees C / 96 degrees F
      FPC 3 Exhaust-B Temp Sensor          OK          35 degrees C / 95 degrees F
      FPC 3 Exhaust-C Temp Sensor          OK          33 degrees C / 91 degrees F
      FPC 3 PE0 Temp Sensor                OK          43 degrees C / 109 degrees F
      FPC 3 PE1 Temp Sensor                OK          45 degrees C / 113 degrees F
      FPC 3 PE2 Temp Sensor                OK          49 degrees C / 120 degrees F
      FPC 3 LCPU Temp Sensor               OK          35 degrees C / 95 degrees F
      FPC 6 Intake-A Temp Sensor           OK          34 degrees C / 93 degrees F
      FPC 6 Intake-B Temp Sensor           OK          31 degrees C / 87 degrees F
      FPC 6 Exhaust-A Temp Sensor          OK          35 degrees C / 95 degrees F
      FPC 6 Exhaust-B Temp Sensor          OK          35 degrees C / 95 degrees F
      FPC 6 Exhaust-C Temp Sensor          OK          35 degrees C / 95 degrees F
      FPC 6 PE0 Temp Sensor                OK          43 degrees C / 109 degrees F
      FPC 6 PE1 Temp Sensor                OK          43 degrees C / 109 degrees F
      FPC 6 PE2 Temp Sensor                OK          47 degrees C / 116 degrees F
      FPC 6 LCPU Temp Sensor               OK          35 degrees C / 95 degrees F
      FPC 8 Intake-A Temp Sensor           OK          34 degrees C / 93 degrees F

```

	FPC 8 Intake-B Temp Sensor	OK	31 degrees C / 87 degrees F
	FPC 8 Exhaust-A Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-B Temp Sensor	OK	37 degrees C / 98 degrees F
	FPC 8 Exhaust-C Temp Sensor	OK	38 degrees C / 100 degrees F
	FPC 8 PE0 Temp Sensor	OK	42 degrees C / 107 degrees F
	FPC 8 PE1 Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 8 PE2 Temp Sensor	OK	47 degrees C / 116 degrees F
	FPC 8 LCPU Temp Sensor	OK	33 degrees C / 91 degrees F
	FPC 9 Intake-A Temp Sensor	OK	44 degrees C / 111 degrees F
	FPC 9 Intake-B Temp Sensor	OK	28 degrees C / 82 degrees F
	FPC 9 Exhaust-A Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 Exhaust-B Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 Exhaust-C Temp Sensor	OK	48 degrees C / 118 degrees F
	FPC 9 PE0 Temp Sensor	OK	52 degrees C / 125 degrees F
	FPC 9 PE1 Temp Sensor	OK	66 degrees C / 150 degrees F
	FPC 9 PE2 Temp Sensor	OK	50 degrees C / 122 degrees F
	FPC 9 PE3 Temp Sensor	OK	65 degrees C / 149 degrees F
	FPC 9 PE4 Temp Sensor	OK	51 degrees C / 123 degrees F
	FPC 9 PE5 Temp Sensor	OK	68 degrees C / 154 degrees F
	FPC 9 LCPU Temp Sensor	OK	46 degrees C / 114 degrees F
Power	Power Supply 0	OK	22 degrees C / 71 degrees F
	Power Supply 1	OK	23 degrees C / 73 degrees F
	Power Supply 2	OK	23 degrees C / 73 degrees F
	Power Supply 3	OK	21 degrees C / 69 degrees F
	Power Supply 4	OK	22 degrees C / 71 degrees F
	Power Supply 5	OK	25 degrees C / 77 degrees F
	Power Supply 6	OK	21 degrees C / 69 degrees F
	Power Supply 7	Absent	
	Power Supply 8	Absent	
	Power Supply 9	Absent	
Fans	Fan Tray 0 Fan 0	OK	Spinning at normal speed
	Fan Tray 0 Fan 1	OK	Spinning at normal speed
	Fan Tray 0 Fan 2	OK	Spinning at normal speed
	Fan Tray 0 Fan 3	OK	Spinning at normal speed
	Fan Tray 0 Fan 4	OK	Spinning at normal speed
	Fan Tray 0 Fan 5	OK	Spinning at normal speed
	Fan Tray 0 Fan 6	OK	Spinning at normal speed
	Fan Tray 0 Fan 7	OK	Spinning at normal speed
	Fan Tray 0 Fan 8	OK	Spinning at normal speed
	Fan Tray 0 Fan 9	OK	Spinning at normal speed
	Fan Tray 0 Fan 10	OK	Spinning at normal speed
	Fan Tray 0 Fan 11	OK	Spinning at normal speed
	Fan Tray 0 Fan 12	OK	Spinning at normal speed

Fan Tray 0 Fan 13	OK	Spinning at normal speed
Fan Tray 0 Fan 14	OK	Spinning at normal speed
Fan Tray 0 Fan 15	OK	Spinning at normal speed
Fan Tray 0 Fan 16	OK	Spinning at normal speed
Fan Tray 0 Fan 17	OK	Spinning at normal speed
Fan Tray 0 Fan 18	OK	Spinning at normal speed
Fan Tray 0 Fan 19	OK	Spinning at normal speed
Fan Tray 0 Fan 20	OK	Spinning at normal speed
Fan Tray 1 Fan 0	OK	Spinning at normal speed
Fan Tray 1 Fan 1	OK	Spinning at normal speed
Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
Fan Tray 1 Fan 11	OK	Spinning at normal speed
Fan Tray 1 Fan 12	OK	Spinning at normal speed
Fan Tray 1 Fan 13	OK	Spinning at normal speed
Fan Tray 1 Fan 14	OK	Spinning at normal speed
Fan Tray 1 Fan 15	OK	Spinning at normal speed
Fan Tray 1 Fan 16	OK	Spinning at normal speed
Fan Tray 1 Fan 17	OK	Spinning at normal speed
Fan Tray 1 Fan 18	OK	Spinning at normal speed
Fan Tray 1 Fan 19	OK	Spinning at normal speed
Fan Tray 1 Fan 20	OK	Spinning at normal speed
SIB 0 Intake-A Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-B Temp Sensor	OK	20 degrees C / 68 degrees F
SIB 0 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 0 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-B Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 0 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 0 PF0 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 0 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 0 PF3 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 0 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 0 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 1 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 1 Intake-B Temp Sensor	OK	22 degrees C / 71 degrees F

SIB 1 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 1 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 1 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 1 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 1 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 1 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 1 PF3 Temp Sensor	OK	38 degrees C / 100 degrees F
SIB 1 PF4 Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 1 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 2 Intake-A Temp Sensor	OK	24 degrees C / 75 degrees F
SIB 2 Intake-B Temp Sensor	OK	21 degrees C / 69 degrees F
SIB 2 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 2 Exhaust-A Temp Sensor	OK	28 degrees C / 82 degrees F
SIB 2 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 2 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 2 PF0 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 2 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 2 PF2 Temp Sensor	OK	33 degrees C / 91 degrees F
SIB 2 PF3 Temp Sensor	OK	41 degrees C / 105 degrees F
SIB 2 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 2 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 3 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 3 Intake-B Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 3 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 3 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 3 Exhaust-B Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 Exhaust-C Temp Sensor	OK	24 degrees C / 75 degrees F
SIB 3 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 3 PF1 Temp Sensor	OK	30 degrees C / 86 degrees F
SIB 3 PF2 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 3 PF3 Temp Sensor	OK	39 degrees C / 102 degrees F
SIB 3 PF4 Temp Sensor	OK	27 degrees C / 80 degrees F
SIB 3 PF5 Temp Sensor	OK	26 degrees C / 78 degrees F
SIB 4 Intake-A Temp Sensor	OK	22 degrees C / 71 degrees F
SIB 4 Intake-B Temp Sensor	OK	25 degrees C / 77 degrees F
SIB 4 Intake-C Temp Sensor	OK	16 degrees C / 60 degrees F
SIB 4 Exhaust-A Temp Sensor	OK	29 degrees C / 84 degrees F
SIB 4 Exhaust-B Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 Exhaust-C Temp Sensor	OK	23 degrees C / 73 degrees F
SIB 4 PF0 Temp Sensor	OK	32 degrees C / 89 degrees F
SIB 4 PF1 Temp Sensor	OK	31 degrees C / 87 degrees F
SIB 4 PF2 Temp Sensor	OK	32 degrees C / 89 degrees F

```

SIB 4 PF3 Temp Sensor      OK      40 degrees C / 104 degrees F
SIB 4 PF4 Temp Sensor      OK      26 degrees C / 78 degrees F
SIB 4 PF5 Temp Sensor      OK      25 degrees C / 77 degrees F
SIB 5 Intake-A Temp Sensor  OK      21 degrees C / 69 degrees F
SIB 5 Intake-B Temp Sensor  OK      20 degrees C / 68 degrees F
SIB 5 Intake-C Temp Sensor  OK      16 degrees C / 60 degrees F
SIB 5 Exhaust-A Temp Sensor OK      27 degrees C / 80 degrees F
SIB 5 Exhaust-B Temp Sensor OK      27 degrees C / 80 degrees F
SIB 5 Exhaust-C Temp Sensor OK      23 degrees C / 73 degrees F
SIB 5 PF0 Temp Sensor      OK      30 degrees C / 86 degrees F
SIB 5 PF1 Temp Sensor      OK      29 degrees C / 84 degrees F
SIB 5 PF2 Temp Sensor      OK      30 degrees C / 86 degrees F
SIB 5 PF3 Temp Sensor      OK      32 degrees C / 89 degrees F
SIB 5 PF4 Temp Sensor      OK      28 degrees C / 82 degrees F
SIB 5 PF5 Temp Sensor      OK      27 degrees C / 80 degrees F

```

show chassis environment (ACX2000 Universal Metro Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
PCB Left                  OK          44 degrees C / 111 degrees F
SFP+ Xcvr                  OK          50 degrees C / 122 degrees F
FEB                        OK          70 degrees C / 158 degrees F
PCB Up                    OK          63 degrees C / 145 degrees F
PCB Mid                   OK          66 degrees C / 150 degrees F
Telecom Mod                OK          65 degrees C / 149 degrees F
Routing Engine             OK          54 degrees C / 129 degrees F
Heater off

```

show chassis environment (ACX4000 Universal Metro Router)

On the ACX4000 router, the MIC output of the **show chassis environment** command varies depending on the number of temperature channels present in the installed MIC.

```

user@host> show chassis environment

Class Item                Status      Measurement
Temp  PEM 0                  OK          33 degrees C / 91 degrees F
      PEM 1                  Absent
      PCB Bottom             OK          30 degrees C / 86 degrees F

```

	PCB Middle	OK	34 degrees C / 93 degrees F
	BCM56445	OK	33 degrees C / 91 degrees F
	SFP+ Xcvr	OK	32 degrees C / 89 degrees F
	Fan tray inlet	OK	39 degrees C / 102 degrees F
	Exhaust	OK	30 degrees C / 86 degrees F
	Routing Engine	OK	32 degrees C / 89 degrees F
	Heater off		
Pic	PIC 0/0 Channel 0	OK	28 degrees C / 82 degrees F
	PIC 0/0 Channel 1	OK	29 degrees C / 84 degrees F
	PIC 0/0 Channel 2	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 8	OK	0 degrees C / 32 degrees F
	PIC 0/0 Channel 9	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 0	OK	33 degrees C / 91 degrees F
	PIC 1/0 Channel 1	OK	31 degrees C / 87 degrees F
	PIC 1/0 Channel 2	OK	30 degrees C / 86 degrees F
	PIC 1/0 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 1/0 Channel 8	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 0	OK	31 degrees C / 87 degrees F
	PIC 1/1 Channel 1	OK	29 degrees C / 84 degrees F
	PIC 1/1 Channel 2	OK	28 degrees C / 82 degrees F
	PIC 1/1 Channel 3	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 4	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 5	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 6	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 7	OK	0 degrees C / 32 degrees F
	PIC 1/1 Channel 8	OK	0 degrees C / 32 degrees F
Fans	Fan 1	OK	Spinning at normal speed
	Fan 2	OK	Spinning at normal speed

show chassis environment (ACX5048 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	Absent	
	FPC 0 Power Supply 1	OK	
Temp	FPC 0 Sensor TopMiddle E	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor TopRight C	OK	18 degrees C / 64 degrees F
	FPC 0 Sensor TopLeft C	OK	21 degrees C / 69 degrees F
	FPC 0 Sensor TopRight E	OK	20 degrees C / 68 degrees F
	FPC 0 Sensor CPURight C	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor CPULeft E	OK	22 degrees C / 71 degrees F
	FPC 0 Sensor CPU Die Temp	OK	39 degrees C / 102 degrees F
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed
	FPC 0 Fan Tray 3	OK	Spinning at normal speed
	FPC 0 Fan Tray 4	OK	Spinning at normal speed

show chassis environment (ACX5096 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
Power	FPC 0 Power Supply 0	OK	
	FPC 0 Power Supply 1	OK	
Temp	FPC 0 Sensor TopMiddle E	OK	32 degrees C / 89 degrees F
	FPC 0 Sensor TopRight I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor TopLeft I	OK	23 degrees C / 73 degrees F
	FPC 0 Sensor TopRight E	OK	28 degrees C / 82 degrees F
	FPC 0 Sensor CPURight I	OK	30 degrees C / 86 degrees F
	FPC 0 Sensor CPULeft I	OK	29 degrees C / 84 degrees F
	FPC 0 Sensor Die Temp	OK	46 degrees C / 114 degrees F
FPC 0 Mezz Temp	OK	23 degrees C / 73 degrees F	
Fans	FPC 0 Fan Tray 0	OK	Spinning at normal speed
	FPC 0 Fan Tray 1	OK	Spinning at normal speed
	FPC 0 Fan Tray 2	OK	Spinning at normal speed

show chassis environment (ACX500 Router)

```
user@host> show chassis environment
```

Class	Item	Status	Measurement
	Power Mod	OK	47 degrees C / 116 degrees F
	BCM54610	OK	46 degrees C / 114 degrees F
	DPLL31404	OK	45 degrees C / 113 degrees F
	CPLD	OK	42 degrees C / 107 degrees F
	1588-FPGA	OK	43 degrees C / 109 degrees F
	NPU	OK	62 degrees C / 143 degrees F
	MAC sensor 1	OK	40 degrees C / 104 degrees F
	MAC sensor 2	OK	38 degrees C / 100 degrees F
	SFP PHY	OK	38 degrees C / 100 degrees F
	Combo/RJ45 PHY	OK	37 degrees C / 98 degrees F
	SFP sensor 1	OK	35 degrees C / 95 degrees F
	SFP sensor 2	OK	33 degrees C / 91 degrees F
	SFP sensor 3	OK	32 degrees C / 89 degrees F
	Routing Engine	OK	54 degrees C / 129 degrees F
	Heater	off	

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

monitored option added in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.

pem option introduced in Junos OS Release 12.3 for ACX4000 Universal Metro Routers.

satellite option introduced in Junos OS Release 14.2R3.

all-members, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2010 and MX2020 routers.

RELATED DOCUMENTATION

[show chassis environment adc](#)

[show chassis environment cb](#)

[show chassis environment ccg](#)

[show chassis environment cip](#)

[show chassis environment fpc](#) | **721**

[show chassis environment fpm](#)

[show chassis environment lcc](#)

[show chassis environment mcs](#)

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show chassis environment adc

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Syntax

```
show chassis environment adc
<adc-slot-number>
<all-members>
<local>
<member member-id>
```

Description

Display chassis environmental information about the adapter cards.

Options

none	Display environmental information about all adapter cards.
<i>adc-slot-number</i>	(Optional) Display environmental information about the specified adapter card. For MX2020 routers, replace <i>adc-slot-number</i> with a value of 0 through 19 . For MX2010 and MX2008 routers, replace <i>adc-slot-number</i> with a value of 0 through 9 .
all-members	(Optional) Display chassis environmental information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration.
local	(Optional) Display chassis environmental information about the ADCs in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display chassis environmental information about the ADCs in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.

Required Privilege Level

view

Output Fields

Table 34 on page 660 lists the output fields for the **show chassis environment adc** command. Output fields are listed in the approximate order in which they appear.

Table 34: show chassis environment adc Output Fields

Field Name	Field Description
State	Status of the adapter card. <ul style="list-style-type: none"> • Online—The adapter card is online and running. • Offline—Adapter card is powered down.
Temperature	Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the adapter card. <ul style="list-style-type: none"> • Intake Temperature—Measures the temperature of the air intake. • Exhaust Temperature—Measures the temperature of the hot air exhaust. • ADC-XF1—Measures the temperature of the ADC chipset, ADC-XF1. • ADC-XF0—Measures the temperature of the ADC chipset, ADC-XF0.
Power	Power required and measured on the adapter card. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.

Sample Output

show chassis environment adc (MX2020 Router)

```

user@host> show chassis environment adc
ADC 0 status:
  State                Online
  Intake Temperature   39 degrees C / 102 degrees F

```

Exhaust Temperature	50 degrees C / 122 degrees F
ADC-XF1 Temperature	58 degrees C / 136 degrees F
ADC-XF0 Temperature	64 degrees C / 147 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 1 status:

State	Online
Intake Temperature	38 degrees C / 100 degrees F
Exhaust Temperature	48 degrees C / 118 degrees F
ADC-XF1 Temperature	59 degrees C / 138 degrees F
ADC-XF0 Temperature	61 degrees C / 141 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 2 status:

State	Online
Intake Temperature	36 degrees C / 96 degrees F
Exhaust Temperature	50 degrees C / 122 degrees F
ADC-XF1 Temperature	52 degrees C / 125 degrees F
ADC-XF0 Temperature	59 degrees C / 138 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
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LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-CH0	1500 mV

ADC 3 status:

State	Online
Intake Temperature	39 degrees C / 102 degrees F
Exhaust Temperature	50 degrees C / 122 degrees F
ADC-XF1 Temperature	61 degrees C / 141 degrees F
ADC-XF0 Temperature	63 degrees C / 145 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 4 status:

State	Online
Intake Temperature	38 degrees C / 100 degrees F
Exhaust Temperature	49 degrees C / 120 degrees F
ADC-XF1 Temperature	60 degrees C / 140 degrees F
ADC-XF0 Temperature	62 degrees C / 143 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1500 mV

LTC3880-XF1-1.5v-CH0 1500 mV

LTC3880-XF1-1.5v-CH1 1502 mV

ADC 5 status:

State Online
 Intake Temperature 37 degrees C / 98 degrees F
 Exhaust Temperature 52 degrees C / 125 degrees F
 ADC-XF1 Temperature 55 degrees C / 131 degrees F
 ADC-XF0 Temperature 66 degrees C / 150 degrees F

Power

LTC3880-XF0-1.0v-RAIL 1029 mV
 LTC3880-XF0-1.0v-CH0 1029 mV
 LTC3880-XF0-1.0v-CH1 1033 mV
 LTC3880-XF0-1.5v-CH0 1500 mV
 LTC3880-XF1-1.0v-RAIL 1030 mV
 LTC3880-XF1-1.0v-CH0 1030 mV
 LTC3880-XF1-1.0v-CH1 1033 mV
 LTC3880-XF1-1.5v-CH0 1500 mV

ADC 6 status:

State Online
 Intake Temperature 39 degrees C / 102 degrees F
 Exhaust Temperature 51 degrees C / 123 degrees F
 ADC-XF1 Temperature 58 degrees C / 136 degrees F
 ADC-XF0 Temperature 64 degrees C / 147 degrees F

Power

LTC3880-XF0-1.0v-RAIL 1029 mV
 LTC3880-XF0-1.0v-CH0 1029 mV
 LTC3880-XF0-1.0v-CH1 1033 mV
 LTC3880-XF0-1.5v-RAIL 1499 mV
 LTC3880-XF0-1.5v-CH0 1499 mV
 LTC3880-XF0-1.5v-CH1 1501 mV
 LTC3880-XF1-1.0v-RAIL 1029 mV
 LTC3880-XF1-1.0v-CH0 1029 mV
 LTC3880-XF1-1.0v-CH1 1033 mV
 LTC3880-XF1-1.5v-RAIL 1499 mV
 LTC3880-XF1-1.5v-CH0 1499 mV
 LTC3880-XF1-1.5v-CH1 1502 mV

ADC 7 status:

State Online
 Intake Temperature 38 degrees C / 100 degrees F
 Exhaust Temperature 52 degrees C / 125 degrees F
 ADC-XF1 Temperature 61 degrees C / 141 degrees F
 ADC-XF0 Temperature 69 degrees C / 156 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-CH0	1500 mV

ADC 8 status:

State	Online
Intake Temperature	38 degrees C / 100 degrees F
Exhaust Temperature	50 degrees C / 122 degrees F
ADC-XF1 Temperature	63 degrees C / 145 degrees F
ADC-XF0 Temperature	64 degrees C / 147 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 9 status:

State	Online
Intake Temperature	40 degrees C / 104 degrees F
Exhaust Temperature	50 degrees C / 122 degrees F
ADC-XF1 Temperature	59 degrees C / 138 degrees F
ADC-XF0 Temperature	62 degrees C / 143 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV


```

LTC3880-XF1-1.5v-RAIL    1499 mV
LTC3880-XF1-1.5v-CH0    1499 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 10 status:
State                      Online
Intake Temperature        46 degrees C / 114 degrees F
Exhaust Temperature       52 degrees C / 125 degrees F
ADC-XF1 Temperature       66 degrees C / 150 degrees F
ADC-XF0 Temperature       65 degrees C / 149 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1499 mV
LTC3880-XF0-1.5v-CH0    1499 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1500 mV
LTC3880-XF1-1.5v-CH0    1500 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 11 status:
State                      Online
Intake Temperature        47 degrees C / 116 degrees F
Exhaust Temperature       53 degrees C / 127 degrees F
ADC-XF1 Temperature       64 degrees C / 147 degrees F
ADC-XF0 Temperature       65 degrees C / 149 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1500 mV
LTC3880-XF0-1.5v-CH0    1500 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1499 mV
LTC3880-XF1-1.5v-CH0    1499 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 12 status:
State                      Online

```

Intake Temperature	48 degrees C / 118 degrees F
Exhaust Temperature	54 degrees C / 129 degrees F
ADC-XF1 Temperature	66 degrees C / 150 degrees F
ADC-XF0 Temperature	65 degrees C / 149 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 13 status:

State	Online
Intake Temperature	48 degrees C / 118 degrees F
Exhaust Temperature	55 degrees C / 131 degrees F
ADC-XF1 Temperature	66 degrees C / 150 degrees F
ADC-XF0 Temperature	67 degrees C / 152 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1034 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1503 mV

ADC 14 status:

State	Online
Intake Temperature	50 degrees C / 122 degrees F
Exhaust Temperature	57 degrees C / 134 degrees F
ADC-XF1 Temperature	68 degrees C / 154 degrees F
ADC-XF0 Temperature	72 degrees C / 161 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1034 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1034 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 15 status:

State	Online
Intake Temperature	49 degrees C / 120 degrees F
Exhaust Temperature	56 degrees C / 132 degrees F
ADC-XF1 Temperature	68 degrees C / 154 degrees F
ADC-XF0 Temperature	68 degrees C / 154 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1034 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1034 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 16 status:

State	Online
Intake Temperature	51 degrees C / 123 degrees F
Exhaust Temperature	56 degrees C / 132 degrees F
ADC-XF1 Temperature	67 degrees C / 152 degrees F
ADC-XF0 Temperature	68 degrees C / 154 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV

LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 17 status:

State	Online
Intake Temperature	51 degrees C / 123 degrees F
Exhaust Temperature	56 degrees C / 132 degrees F
ADC-XF1 Temperature	68 degrees C / 154 degrees F
ADC-XF0 Temperature	69 degrees C / 156 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1034 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 18 status:

State	Online
Intake Temperature	52 degrees C / 125 degrees F
Exhaust Temperature	57 degrees C / 134 degrees F
ADC-XF1 Temperature	66 degrees C / 150 degrees F
ADC-XF0 Temperature	71 degrees C / 159 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1034 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1034 mV
LTC3880-XF1-1.5v-RAIL	1500 mV

```

LTC3880-XF1-1.5v-CH0      1500 mV
LTC3880-XF1-1.5v-CH1      1502 mV
ADC 19 status:
State                      Online
Intake Temperature         49 degrees C / 120 degrees F
Exhaust Temperature        56 degrees C / 132 degrees F
ADC-XF1 Temperature        67 degrees C / 152 degrees F
ADC-XF0 Temperature        70 degrees C / 158 degrees F
Power
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL      1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL      1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL      1500 mV
LTC3880-XF1-1.5v-CH0      1500 mV
LTC3880-XF1-1.5v-CH1      1502 mV

```

show chassis environment adc (MX2010 Router)

```

user@host> show chassis environment adc
ADC 0 status:
State                      Online
Intake Temperature         33 degrees C / 91 degrees F
Exhaust Temperature        42 degrees C / 107 degrees F
ADC-XF1 Temperature        46 degrees C / 114 degrees F
ADC-XF0 Temperature        53 degrees C / 127 degrees F
Power
LTC3880-XF0-1.0v-RAIL      998 mV
LTC3880-XF0-1.0v-CH0      998 mV
LTC3880-XF0-1.0v-CH1      1001 mV
LTC3880-XF0-1.5v-RAIL      1454 mV
LTC3880-XF0-1.5v-CH0      1454 mV
LTC3880-XF0-1.5v-CH1      1456 mV
LTC3880-XF1-1.0v-RAIL      998 mV
LTC3880-XF1-1.0v-CH0      998 mV
LTC3880-XF1-1.0v-CH1      1002 mV

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```

LTC3880-XF1-1.5v-RAIL    1454 mV
LTC3880-XF1-1.5v-CH0    1454 mV
LTC3880-XF1-1.5v-CH1    1457 mV
ADC 1 status:
State                     Online
Intake Temperature        32 degrees C / 89 degrees F
Exhaust Temperature       42 degrees C / 107 degrees F
ADC-XF1 Temperature       44 degrees C / 111 degrees F
ADC-XF0 Temperature       52 degrees C / 125 degrees F
Power
LTC3880-XF0-1.0v-RAIL    998 mV
LTC3880-XF0-1.0v-CH0    998 mV
LTC3880-XF0-1.0v-CH1    1002 mV
LTC3880-XF0-1.5v-RAIL    1454 mV
LTC3880-XF0-1.5v-CH0    1454 mV
LTC3880-XF0-1.5v-CH1    1456 mV
LTC3880-XF1-1.0v-RAIL    999 mV
LTC3880-XF1-1.0v-CH0    999 mV
LTC3880-XF1-1.0v-CH1    1002 mV
LTC3880-XF1-1.5v-RAIL    1454 mV
LTC3880-XF1-1.5v-CH0    1454 mV
LTC3880-XF1-1.5v-CH1    1456 mV
ADC 2 status:
State                     Online
Intake Temperature        35 degrees C / 95 degrees F
Exhaust Temperature       42 degrees C / 107 degrees F
ADC-XF1 Temperature       48 degrees C / 118 degrees F
ADC-XF0 Temperature       54 degrees C / 129 degrees F
Power
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1500 mV
LTC3880-XF0-1.5v-CH0    1500 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1499 mV
LTC3880-XF1-1.5v-CH0    1499 mV
LTC3880-XF1-1.5v-CH1    1502 mV
ADC 3 status:
State                     Online

```

Intake Temperature	35 degrees C / 95 degrees F
Exhaust Temperature	40 degrees C / 104 degrees F
ADC-XF1 Temperature	44 degrees C / 111 degrees F
ADC-XF0 Temperature	51 degrees C / 123 degrees F

Power

LTC3880-XF0-1.0v-RAIL	999 mV
LTC3880-XF0-1.0v-CH0	999 mV
LTC3880-XF0-1.0v-CH1	1002 mV
LTC3880-XF0-1.5v-RAIL	1454 mV
LTC3880-XF0-1.5v-CH0	1454 mV
LTC3880-XF0-1.5v-CH1	1456 mV
LTC3880-XF1-1.0v-RAIL	999 mV
LTC3880-XF1-1.0v-CH0	999 mV
LTC3880-XF1-1.0v-CH1	1002 mV
LTC3880-XF1-1.5v-RAIL	1454 mV
LTC3880-XF1-1.5v-CH0	1454 mV
LTC3880-XF1-1.5v-CH1	1457 mV

ADC 4 status:

State	Online
Intake Temperature	31 degrees C / 87 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
ADC-XF1 Temperature	48 degrees C / 118 degrees F
ADC-XF0 Temperature	56 degrees C / 132 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 5 status:

State	Online
Intake Temperature	33 degrees C / 91 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
ADC-XF1 Temperature	47 degrees C / 116 degrees F
ADC-XF0 Temperature	54 degrees C / 129 degrees F

Power

```

LTC3880-XF0-1.0v-RAIL      999 mV
LTC3880-XF0-1.0v-CH0      999 mV
LTC3880-XF0-1.0v-CH1     1002 mV
LTC3880-XF0-1.5v-RAIL     1454 mV
LTC3880-XF0-1.5v-CH0     1454 mV
LTC3880-XF0-1.5v-CH1     1456 mV
LTC3880-XF1-1.0v-RAIL     998 mV
LTC3880-XF1-1.0v-CH0     998 mV
LTC3880-XF1-1.0v-CH1     1002 mV
LTC3880-XF1-1.5v-RAIL     1454 mV
LTC3880-XF1-1.5v-CH0     1454 mV
LTC3880-XF1-1.5v-CH1     1457 mV
ADC 6 status:
State                       Online
Intake Temperature          32 degrees C / 89 degrees F
Exhaust Temperature         42 degrees C / 107 degrees F
ADC-XF1 Temperature         47 degrees C / 116 degrees F
ADC-XF0 Temperature         55 degrees C / 131 degrees F
Power
LTC3880-XF0-1.0v-RAIL      1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0     1499 mV
LTC3880-XF0-1.5v-CH1     1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0     1030 mV
LTC3880-XF1-1.0v-CH1     1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0     1499 mV
LTC3880-XF1-1.5v-CH1     1502 mV
ADC 7 status:
State                       Online
Intake Temperature          36 degrees C / 96 degrees F
Exhaust Temperature         43 degrees C / 109 degrees F
ADC-XF1 Temperature         46 degrees C / 114 degrees F
ADC-XF0 Temperature         55 degrees C / 131 degrees F
Power
LTC3880-XF0-1.0v-RAIL      1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1500 mV
LTC3880-XF0-1.5v-CH0     1500 mV

```


LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1502 mV

ADC 8 status:

State	Online
Intake Temperature	35 degrees C / 95 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
ADC-XF1 Temperature	44 degrees C / 111 degrees F
ADC-XF0 Temperature	51 degrees C / 123 degrees F

Power

LTC3880-XF0-1.0v-RAIL	999 mV
LTC3880-XF0-1.0v-CH0	999 mV
LTC3880-XF0-1.0v-CH1	1002 mV
LTC3880-XF0-1.5v-RAIL	1455 mV
LTC3880-XF0-1.5v-CH0	1455 mV
LTC3880-XF0-1.5v-CH1	1456 mV
LTC3880-XF1-1.0v-RAIL	999 mV
LTC3880-XF1-1.0v-CH0	999 mV
LTC3880-XF1-1.0v-CH1	1002 mV
LTC3880-XF1-1.5v-RAIL	1455 mV
LTC3880-XF1-1.5v-CH0	1455 mV
LTC3880-XF1-1.5v-CH1	1457 mV

ADC 9 status:

State	Online
Intake Temperature	31 degrees C / 87 degrees F
Exhaust Temperature	43 degrees C / 109 degrees F
ADC-XF1 Temperature	48 degrees C / 118 degrees F
ADC-XF0 Temperature	56 degrees C / 132 degrees F

Power

LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1455 mV
LTC3880-XF0-1.5v-CH0	1455 mV
LTC3880-XF0-1.5v-CH1	1457 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1454 mV

```
LTC3880-XF1-1.5v-CH0    1454 mV
LTC3880-XF1-1.5v-CH1    1457 mV
```

show chassis environment adc (MX2008 Router)

```
user@host>show chassis environment adc
ADC 7 status:
State                               Online
Intake Temperature                   32 degrees C / 89 degrees F
Exhaust Temperature                  39 degrees C / 102 degrees F
ADC-XF1 Temperature                  46 degrees C / 114 degrees F
ADC-XF0 Temperature                  54 degrees C / 129 degrees F
Power
LTC3880-XF0-1.0v-RAIL                1029 mV
LTC3880-XF0-1.0v-CH0                 1029 mV
LTC3880-XF0-1.0v-CH1                 1033 mV
LTC3880-XF0-1.5v-RAIL                1499 mV
LTC3880-XF0-1.5v-CH0                 1499 mV
LTC3880-XF0-1.5v-CH1                 1501 mV
LTC3880-XF1-1.0v-RAIL                1029 mV
LTC3880-XF1-1.0v-CH0                 1029 mV
LTC3880-XF1-1.0v-CH1                 1033 mV
LTC3880-XF1-1.5v-RAIL                1499 mV
LTC3880-XF1-1.5v-CH0                 1499 mV
LTC3880-XF1-1.5v-CH1                 1502 mV
ADC-2.5V                             2851 mV
ADC-3.3V                              3787 mV
```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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show chassis environment cb

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Syntax

```
show chassis environment cb  
<slot>
```

Syntax (TX Matrix Routers)

```
show chassis environment cb  
<lcc number | scc>  
<slot>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment cb  
<lcc number | sfc number >  
<slot>
```

Syntax (MX Series Routers)

```
show chassis environment cb  
<slot>  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104 Universal Routing Platforms)

```
show chassis environment cb
```

Syntax (MX2010, MX2020, MX10003, MX204, MX2008, and MX10008 Universal Routing Platforms; EX9251 and EX9253 Switches)

```
show chassis environment cb  
<slot>
```

Syntax (QFabric System)

```
show chassis environment cb
<slot interconnect-device interconnect-device-name>
< interconnect-device interconnect-device-name slot>
```

Description

(M120, M320, MX Series, and T Series routers, EX8200 switches, and PTX Series Packet Transport Routers only) Display environmental information about the Control Boards (CBs).

Options

- | | |
|----------------------------|---|
| none | Display environmental information about all CBs. For a TX Matrix router, display environmental information about all CBs on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display environmental information about all CBs on the TX Matrix Plus router and its attached T1600 or T4000 routers. |
| all-members | (MX Series routers only) (Optional) Display environmental information about the CBs on all the members of the Virtual Chassis configuration. |
| interconnect-device | (QFabric systems only) Display environmental information about CBs on the Interconnect device. |
| lcc <i>number</i> | <p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display environmental information about the CBs on the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display environmental information about the CBs on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
scc	(TX Matrix router only) (Optional) Display environmental information about the CBs in the TX Matrix router (switch-card chassis).
sfc number	(TX Matrix Plus router only) (Optional) Display environmental information about the CBs in the TX Matrix Plus router (or switch-fabric chassis).
slot	(Optional) Display environmental information about the specified CB. On routers and PTX Series Packet Transport Routers, replace <i>slot</i> with 0 or 1 . On EX Series switches replace <i>slot</i> with 0 , 1 , or 2 . On QFX Series switches, replace <i>slot</i> with 0 or 1 .

Required Privilege Level

view

Output Fields

[Table 35 on page 679](#) lists the output fields for the **show chassis environment cb** command. Output fields are listed in the approximate order in which they appear.

Table 35: show chassis environment cb Output Fields

Field Name	Field Description
State	<p>Status of the CB. If two CBs are installed and online, one is functioning as the primary, and the other is the standby.</p> <ul style="list-style-type: none"> • Online—CB is online and running. • Offline— CB is powered down. <p>NOTE: On the EX8208 switch, the installation can include three CBs.</p>
Temperature	<p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the CB.</p> <ul style="list-style-type: none"> • Temperature Intake—Measures the temperature of the air intake to cool the power supplies. • Temperature Exhaust—Measures the temperature of the hot air exhaust. <p>NOTE: On the MX2010, MX2020, and MX2008 routers, the intake temperature measures the temperature of the air intake to cool the Control Board (CB). The MX2010, MX2020, and MX2008 routers include intake and exhaust temperatures for multiple zones (Intake A, Intake B, Intake C, Exhaust A, Exhaust B, and TCBC).</p>
Power	<p>Power required and measured on the CB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p>
BUS Revision	<p>Revision level of the generic bus device. (Not on switches.)</p>
FPGA Revision	<p>Revision level of the field-programmable gate array (FPGA). (Not on switches.)</p>

Table 35: show chassis environment cb Output Fields (Continued)

Field Name	Field Description
PMBus device (on MX240, MX480, and MX960 routers with Enhanced MX SCB)	<p>Enhanced SCB on MX 240, MX480, and MX960 routers allows the system to save power by supplying only the amount of voltage that is required. Configurable PMBus devices are used to provide the voltage for each individual device. There is one PMBus device for each XF ASIC so that the output can be customized to each device. The following PMBus device information is displayed for routers with Enhanced MX SCB:</p> <ul style="list-style-type: none"> • Expected voltage • Measured voltage • Measured current • Calculated power

Sample Output

show chassis environment cb (M120 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  Power
    1.2 V              1214 mV
    1.5 V              1495 mV
    2.5 V              2494 mV
    3.3 V              3319 mV
    5.0 V              5085 mV
    3.3 V bias         3296 mV
  Bus Revision         12
  FPGA Revision        17
CB 1 status:
  State                Online Standby
  Temperature          34 degrees C / 93 degrees F

```



```

Power
  1.2 V          1195 mV
  1.5 V          1495 mV
  2.5 V          2504 mV
  3.3 V          3312 mV
  5.0 V          5111 mV
  3.3 V bias     3296 mV
Bus Revision     12
FPGA Revision    17

```

show chassis environment cb (M320 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature           29 degrees C / 84 degrees F
  Power:
    1.8 V              1805 mV
    2.5 V              2501 mV
    3.3 V              3293 mV
    4.6 V              4725 mV
    5.0 V              5032 mV
    12.0 V             11975 mV
    3.3 V bias         3286 mV
    8.0 V bias         7589 mV
  BUS Revision         40
  FPGA Revision        7
CB 1 status:
  State                Online Standby
  Temperature           32 degrees C / 89 degrees F
  Power:
    1.8 V              1802 mV
    2.5 V              2482 mV
    3.3 V              3289 mV
    4.6 V              4720 mV
    5.0 V              5001 mV
    12.0 V             11946 mV
    3.3 V bias         3274 mV
    8.0 V bias         7562 mV

```

```
BUS Revision          40
FPGA Revision         7
```

show chassis environment cb (MX80 Router)

```
user@host> show chassis environment cb
CB 0 status:
State                Online Master
Temperature          36 degrees C / 96 degrees F
Power 1
  1.0 V              1034 mV
  1.0 V MQ           1037 mV
  1.0 V LU           1005 mV
  1.2 V              1218 mV
  1.5 V              1524 mV
  1.8 V              1814 mV
  2.5 V              2558 mV
  3.3 V              3296 mV
  5.0 V              5233 mV
  5.0 V bias         5207 mV
  12.0 V             12162 mV
```

show chassis environment cb (MX104 Router)

```
user@host > show chassis environment cb
CB 0 status:
State                Online Master
Temperature          33 degrees C / 91 degrees F
Power 1
  0.75 V             751 mV
  1.0 V              1005 mV
  1.1 V              1113 mV
  1.5 V              1494 mV
  2.5 V              2518 mV
  3.3 V              3338 mV
  5.0 V              4960 mV
  12.0 V             12006 mV
FPGA Revision        25
```

```
CB 1 status:
```

```
State                               Empty
```

show chassis environment cb (MX240 Router)

```
user@host> show chassis environment cb
```

```
CB 0 status:
```

```
State                               Online Standby
Temperature                          37 degrees C / 98 degrees F
Power 1
  1.2 V                               1208 mV
  1.5 V                               1521 mV
  1.8 V                               1811 mV
  2.5 V                               2513 mV
  3.3 V                               3332 mV
  5.0 V                               5059 mV
  12.0 V                              12162 mV
  1.25 V                              1260 mV
  3.3 V SM3                           3306 mV
  5.0 V RE                             5085 mV
  12.0 V RE                            11872 mV
Power 2
  11.3 V bias PEM                     11272 mV
  4.6 V bias MidPlane                 4827 mV
  11.3 V bias FPD                     11272 mV
  11.3 V bias POE 0                   11292 mV
  11.3 V bias POE 1                   11253 mV
Bus Revision                          42
FPGA Revision                         1
```

show chassis environment cb (MX240 Router with Enhanced MX SCB)

```
user@host> show chassis environment cb
```

```
CB 0 status:
```

```
State                               Online Standby
Temperature                          37 degrees C / 98 degrees F
Power 1
  1.2 V                               1208 mV
  1.5 V                               1521 mV
  1.8 V                               1811 mV
```

```

2.5 V                2513 mV
3.3 V                3332 mV
5.0 V                5059 mV
12.0 V              12162 mV
1.25 V              1260 mV
3.3 V SM3           3306 mV
5.0 V RE            5085 mV
12.0 V RE           11872 mV
Power 2
11.3 V bias PEM     11272 mV
4.6 V bias MidPlane 4827 mV
11.3 V bias FPD     11272 mV
11.3 V bias POE 0   11292 mV
11.3 V bias POE 1   11253 mV
Bus Revision        42
FPGA Revision       1
PMBus               Expected Measured Measured Calculated
device              voltage  voltage  current  power
XF ASIC A           1000 mV   997 mV  11031 mA 10997 mW
XF ASIC B           1000 mV   996 mV  12125 mA 12076 mW

```

show chassis environment cb (MX480 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                Online Master
Temperature          41 degrees C / 105 degrees F
Power 1
1.2 V                1202 mV
1.5 V                1511 mV
1.8 V                1798 mV
2.5 V                2507 mV
3.3 V                3312 mV
5.0 V                5027 mV
12.0 V              12200 mV
1.25 V              1260 mV
3.3 V SM3           3293 mV
5 V RE               5040 mV
12 V RE              11910 mV
Power 2
11.3 V bias PEM     11156 mV

```

```

4.6 V bias MidPlane      4801 mV
11.3 V bias FPD          11214 mV
11.3 V bias POE 0        11098 mV
11.3 V bias POE 1        11330 mV
Bus Revision              42
FPGA Revision             1

```

show chassis environment cb (MX480 Router with Enhanced MX SCB)

```

user@host> show chassis environment cb
CB 0 status:
State                      Online Master
Temperature                 41 degrees C / 105 degrees F
Power 1
  1.2 V                     1202 mV
  1.5 V                     1511 mV
  1.8 V                     1798 mV
  2.5 V                     2507 mV
  3.3 V                     3312 mV
  5.0 V                     5027 mV
  12.0 V                    12200 mV
  1.25 V                    1260 mV
  3.3 V SM3                 3293 mV
  5 V RE                    5040 mV
  12 V RE                   11910 mV
Power 2
  11.3 V bias PEM           11156 mV
  4.6 V bias MidPlane       4801 mV
  11.3 V bias FPD           11214 mV
  11.3 V bias POE 0         11098 mV
  11.3 V bias POE 1         11330 mV
Bus Revision                 42
FPGA Revision                 1
PMBus                       Expected  Measured  Measured  Calculated
device                       voltage   voltage   current   power
XF ASIC A                    1000 mV   997 mV   11031 mA  10997 mW
XF ASIC B                    1000 mV   996 mV   12125 mA  12076 mW

```

show chassis environment cb (MX960 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          24 degrees C / 75 degrees F
  Power 1
    1.2 V              1965 mV
    1.5 V              2465 mV
    1.8 V              2990 mV
    2.5 V              3296 mV
    3.3 V              3296 mV
    5.0 V              6593 mV
    12.0 V             13187 mV
    3.3 V bias         3296 mV
    1.25 V             1994 mV
    3.3 V SM3         3296 mV
    5 V RE             6593 mV
    12 V RE           13174 mV
  Power 2              Sensor failure
  Bus Revision         4
  FPGA Revision        3

```

show chassis environment cb (MX960 Router with Enhanced MX SCB)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          24 degrees C / 75 degrees F
  Power 1
    1.2 V              1965 mV
    1.5 V              2465 mV
    1.8 V              2990 mV
    2.5 V              3296 mV
    3.3 V              3296 mV
    5.0 V              6593 mV
    12.0 V             13187 mV
    3.3 V bias         3296 mV
    1.25 V             1994 mV
    3.3 V SM3         3296 mV

```

```

5 V RE                6593 mV
12 V RE                13174 mV
Power 2               Sensor failure
Bus Revision          4
FPGA Revision         3
PMBus                 Expected Measured Measured Calculated
device                voltage  voltage  current  power
XF ASIC A             1000 mV   997 mV  11031 mA  10997 mW
XF ASIC B             1000 mV   996 mV  12125 mA  12076 mW

```

show chassis environment cb (MX2020 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                Online Master
IntakeA-Zone0 Temperature  44 degrees C / 111 degrees F
IntakeB-Zone1 Temperature  34 degrees C / 93 degrees F
IntakeC-Zone0 Temperature  45 degrees C / 113 degrees F
ExhaustA-Zone0 Temperature 43 degrees C / 109 degrees F
ExhaustB-Zone1 Temperature 36 degrees C / 96 degrees F
TCBC-Zone0 Temperature    39 degrees C / 102 degrees F
Power 1
1.0 V                1011 mV
1.2 V                1208 mV
1.8 V                1801 mV
2.5 V                2552 mV
3.3 V                3312 mV
5.0 V                5040 mV
5.0 V RE             4988 mV
12.0 V               12065 mV
12.0 V RE            12046 mV
Bus Revision         99
FPGA Revision        270
CB 1 status:
State                Online Standby
IntakeA-Zone0 Temperature  45 degrees C / 113 degrees F
IntakeB-Zone1 Temperature  41 degrees C / 105 degrees F
IntakeC-Zone0 Temperature  46 degrees C / 114 degrees F
ExhaustA-Zone0 Temperature 44 degrees C / 111 degrees F
ExhaustB-Zone1 Temperature 41 degrees C / 105 degrees F
TCBC-Zone0 Temperature    45 degrees C / 113 degrees F

```

```

Power 1
  1.0 V          1008 mV
  1.2 V          1208 mV
  1.8 V          1798 mV
  2.5 V          2539 mV
  3.3 V          3325 mV
  5.0 V          5033 mV
  5.0 V RE       4950 mV
  12.0 V         12046 mV
  12.0 V RE      11968 mV
Bus Revision    99
FPGA Revision   0

```

show chassis environment cb (MX2010 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
IntakeA-Zone0 Temperature 36 degrees C / 96 degrees F
IntakeB-Zone1 Temperature 30 degrees C / 86 degrees F
IntakeC-Zone0 Temperature 38 degrees C / 100 degrees F
ExhaustA-Zone0 Temperature 36 degrees C / 96 degrees F
ExhaustB-Zone1 Temperature 32 degrees C / 89 degrees F
TCBC-Zone0 Temperature   34 degrees C / 93 degrees F
Power 1
  1.0 V          1015 mV
  1.2 V          1205 mV
  1.8 V          1804 mV
  2.5 V          2552 mV
  3.3 V          3325 mV
  5.0 V          5020 mV
  5.0 V RE       4988 mV
  12.0 V         12104 mV
  12.0 V RE      12026 mV
Bus Revision    100
FPGA Revision   270
CB 1 status:
  State                Online
IntakeA-Zone0 Temperature 35 degrees C / 95 degrees F
IntakeB-Zone1 Temperature 28 degrees C / 82 degrees F
IntakeC-Zone0 Temperature 37 degrees C / 98 degrees F

```



```

ExhaustA-Zone0 Temperature 34 degrees C / 93 degrees F
ExhaustB-Zone1 Temperature 29 degrees C / 84 degrees F
TCBC-Zone0 Temperature     32 degrees C / 89 degrees F
Power 1
  1.0 V                    1011 mV
  1.2 V                    1208 mV
  1.8 V                    1788 mV
  2.5 V                    2526 mV
  3.3 V                    3319 mV
  5.0 V                    5046 mV
  5.0 V RE                 4975 mV
  12.0 V                   12046 mV
  12.0 V RE                12007 mV
Bus Revision               100
FPGA Revision              0

```

show chassis environment cb (MX2008 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Inlet1 Temperature   37 degrees C / 98 degrees F
  Inlet2 Temperature   45 degrees C / 113 degrees F
  Inlet3 Temperature   44 degrees C / 111 degrees F
  Inlet4 Temperature   42 degrees C / 107 degrees F
  Exhaust1 Temperature 30 degrees C / 86 degrees F
  Exhaust2 Temperature 40 degrees C / 104 degrees F
  Exhaust3 Temperature 48 degrees C / 118 degrees F
  Exhaust4 Temperature 46 degrees C / 114 degrees F
Power 1
  1.0 V PHY            989 mV
  1.15 V               1150 mV
  1.2 V bias           1189 mV
  1.5 V                1488 mV
  1.8 V                1772 mV
  2.5 V                2462 mV
  3.3 V bias           3296 mV
  VCCIO                1028 mV
Power 2
  1.1 V                1099 mV
  3.3 V                3300 mV

```

```

Power 3
  0.95 V XL710          949 mV
  1.05 V                1050 mV
Power 4
  1.2 V                 1199 mV
  5.0 V                 4999 mV
Power 5
  1.0 V                 1000 mV
  1.2 V PHY             1199 mV
Bus Revision            114
FPGA Revision           1
CB 1 status:
State                   Online Standby
Inlet1 Temperature     30 degrees C / 86 degrees F
Inlet2 Temperature     31 degrees C / 87 degrees F
Inlet3 Temperature     29 degrees C / 84 degrees F
Inlet4 Temperature     32 degrees C / 89 degrees F
Exhaust1 Temperature   30 degrees C / 86 degrees F
Exhaust2 Temperature   33 degrees C / 91 degrees F
Exhaust3 Temperature   34 degrees C / 93 degrees F
Exhaust4 Temperature   35 degrees C / 95 degrees F
Power 1
  1.0 V PHY             986 mV
  1.15 V                1153 mV
  1.2 V bias            1195 mV
  1.5 V                 1498 mV
  1.8 V                 1798 mV
  2.5 V                 2494 mV
  3.3 V bias            3296 mV
  VCCIO                 1034 mV
Power 2
  1.1 V                 1100 mV
  3.3 V                 3300 mV
Power 3
  0.95 V XL710          949 mV
  1.05 V                1050 mV
Power 4
  1.2 V                 1199 mV
  5.0 V                 5000 mV
Power 5
  1.0 V                 1000 mV
  1.2 V PHY             1199 mV

```

```

Bus Revision          114
FPGA Revision         1

```

show chassis environment cb (MX10003 Router)

```
user@host> show chassis environment cb
```

```
CB 0 status:
```

```

State                Online Master
CB 0 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
CB 0 Inlet Temp Sensor 0x49 28 degrees C / 82 degrees F

```

```
Power
```

```

VDD1V5_PCH          1489 mV
VDDIO                940 mV
VDD3V3_PCH          3332 mV
VDD2V5_AB           2508 mV
VDD1V8_CLC          1764 mV
VDD3V3              3292 mV
VDD2V5_CD           2508 mV
VDD1V2_CBC_GTX      0 mV
VDD1V8_GLS_GTX      0 mV
VDD1V2_CBC           0 mV
VDD1V8_GLS           0 mV
BIAS3V3_BP           0 mV
VDD1V2_GH            1200 mV
VDD3V3_CBC           3299 mV
VDD1V2_CD            1199 mV
BIAS3V3              3340 mV
VDD1V2_AB            1200 mV
VDD5V0               5000 mV
VDD1V05              1049 mV
VDD1V05              1050 mV
VCORE                1780 mV
12V                  12272 mV    3952 mA    48984 mW

```

```
CB 1 status:
```

```

State                Online Standby
CB 1 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
CB 1 Inlet Temp Sensor 0x49 31 degrees C / 87 degrees F

```

```
Power
```

```

VDD1V5_PCH          1489 mV
VDDIO                940 mV

```

```

VDD3V3_PCH                3351 mV
VDD2V5_AB                 2508 mV
VDD1V8_CLC                1764 mV
VDD3V3                    3312 mV
VDD2V5_CD                 2508 mV
VDD1V2_CBC_GTX           1195 mV
VDD1V8_GLS_GTX           1764 mV
VDD1V2_CBC                1195 mV
VDD1V8_GLS                1783 mV
BIAS3V3_BP                4096 mV
VDD1V2_GH                 1200 mV
VDD3V3_CBC                3300 mV
VDD1V2_CD                 1200 mV
BIAS3V3                   3339 mV
VDD1V2_AB                 1200 mV
VDD5V0                    5000 mV
VDD1V05                   1050 mV
VDD1V05                   1050 mV
VCORE                     1780 mV
12V                        12351 mV    3823 mA    45007 mW

```

show chassis environment cb (MX204 Router)

```

user@host> show chassis environment cb

CB 0 status:
State                Online Master
CB 0 Top Right Inlet Sensor35 degrees C / 95 degrees F
CB 0 Top Left Inlet Sensor 37 degrees C / 98 degrees F
CB 0 Top Right Exhaust Sensor43 degrees C / 109 degrees F
CB 0 Top Left Exhaust Sensor50 degrees C / 122 degrees F
CB 0 CPU Core-0 Temp      48 degrees C / 118 degrees F
CB 0 CPU Core-1 Temp      48 degrees C / 118 degrees F
CB 0 CPU Core-2 Temp      48 degrees C / 118 degrees F
CB 0 CPU Core-3 Temp      47 degrees C / 116 degrees F
CB 0 CPU Core-4 Temp      47 degrees C / 116 degrees F
CB 0 CPU Core-5 Temp      47 degrees C / 116 degrees F
CB 0 CPU Core-6 Temp      47 degrees C / 116 degrees F
CB 0 CPU Core-7 Temp      47 degrees C / 116 degrees F
Power
VDD1V5_PCH              1509 mV

```

VDDIO	950 mV		
VDD3V3_PCH	3312 mV		
VDD2V5_AB	2508 mV		
VDD1V8_FRMR	1813 mV		
VDD3V3	3312 mV		
VDD2V5_CD	2508 mV		
VDD1V8_PLL	1813 mV		
VDD1V5	1499 mV		
EA0_1V5	1499 mV		
EA0_1V04	1038 mV		
EA0_PLL_1V0	999 mV		
EA0_2V5	2508 mV		
BIAS3V	3332 mV		
VDD1V2_CD	1214 mV		
VDD1V2_AB	1215 mV		
VDD1V05	1050 mV		
BIAS3V3	3309 mV		
VDD1V0	1015 mV		
VDD1V8	1804 mV		
VDD1V2	1199 mV		
VDD2V5	2504 mV		
EA0_VDD0V9	949 mV		
EA0_HM1_VDD0V9	899 mV		
EA0_VDD0V9R2	952 mV		
EA0_VDD1V0	1000 mV		
VDD3V3	3304 mV		
EA0_XR_VDD1V2	1199 mV		
EA0_XR_VDD0V9	903 mV		
EA0_HM_VDDM1V2	1199 mV		
EA0_HM_VDD1V2	1199 mV		
VDDCPU0	1770 mV		
12V Hotswap A	11968 mV	4696 mA	55466 mW
12V Hotswap B	12048 mV	14936 mA	180652 mW

show chassis environment cb (MX10008 Router)

```

user@host> show chassis environment cb
CB 0 status:
State                               Online Master
CB 0 Intake A Temp Sensor           24 degrees C / 75 degrees F
CB 0 Intake B Temp Sensor           24 degrees C / 75 degrees F

```

```

CB 0 Exhaust A Temp Sensor      28 degrees C / 82 degrees F
CB 0 Exhaust B Temp Sensor      30 degrees C / 86 degrees F
CB 0 Middle Temp Sensor         28 degrees C / 82 degrees F

```

Power

```

  GESW_VDD1V0          1000 mV
  VDD1V0                1000 mV
  VDD1V2                1199 mV
  VDD3V3                3299 mV
  XL710_VCCD           950 mV
  VDD1V05              1050 mV
  VDD2V5                2500 mV
  FPGA_VDD1V2         1200 mV
  VDD1V8                1800 mV
  VDD1V15              1150 mV
  VDD1V1                1099 mV
  VCCIO                 950 mV
  PHY_VDD1V0          1000 mV
  VDD5V0                4998 mV
  FPGA_VDD1V5         1496 mV
  VDD1V5                1496 mV

      12V                12281 mV      7700 mA      92400 mW

```

CB 1 status:

```

State                Online Standby
CB 1 Intake A Temp Sensor      24 degrees C / 75 degrees F
CB 1 Intake B Temp Sensor      23 degrees C / 73 degrees F
CB 1 Exhaust A Temp Sensor     27 degrees C / 80 degrees F
CB 1 Exhaust B Temp Sensor     30 degrees C / 86 degrees F
CB 1 Middle Temp Sensor       28 degrees C / 82 degrees F

```

Power

```

  GESW_VDD1V0          999 mV
  VDD1V0                1000 mV
  VDD1V2                1199 mV
  VDD3V3                3299 mV
  XL710_VCCD           950 mV
  VDD1V05              1050 mV
  VDD2V5                2499 mV
  FPGA_VDD1V2         1200 mV
  VDD1V8                1799 mV
  VDD1V15              1150 mV
  VDD1V1                1100 mV
  VCCIO                 949 mV
  PHY_VDD1V0          999 mV
  VDD5V0                5000 mV

```

FPGA_VDD1V5	1502 mV		
VDD1V5	1496 mV		
12V	12281 mV	8002 mA	96024 mW

show chassis environment cb (T4000 Core Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature          33 degrees C / 91 degrees F
  Power 1
    1.8 V              1805 mV
    2.5 V              2523 mV
    3.3 V              3324 mV
    3.3 V bias         3296 mV
    4.6 V              4680 mV
    5.0 V              4893 mV
    8.0 V bias         7572 mV
    12.0 V             11916 mV
  Power 2
    1.0 V              993 mV
    1.2 V              1210 mV
    3.3 V RE           3330 mV
  Bus Revision         51
  FPGA Revision        5
CB 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  Power 1
    1.8 V              1810 mV
    2.5 V              2496 mV
    3.3 V              3308 mV
    3.3 V bias         3286 mV
    4.6 V              4692 mV
    5.0 V              4954 mV
    8.0 V bias         7282 mV
    12.0 V             11926 mV
  Power 2
    1.0 V              993 mV
    1.2 V              1185 mV
    3.3 V RE           3316 mV

```

```

Bus Revision          51
FPGA Revision         5

```

show chassis environment cb (TX Matrix Router)

```
user@host> show chassis environment cb
```

```
-----
CB 0 status:
```

```

State                Online Master
Temperature           32 degrees C / 89 degrees F
Power:
  1.8 V              1797 mV
  2.5 V              2477 mV
  3.3 V              3311 mV
  4.6 V              4727 mV
  5.0 V              5015 mV
 12.0 V             12185 mV
  3.3 V bias         3304 mV
  8.0 V bias         7870 mV
BUS Revision          40
FPGA Revision         1

```

```
CB 1 status:
```

```
State                Online Standby
```

```
...
```

```
lcc0-re0:
```

```
-----
CB 0 status:
```

```

State                Online Master
Temperature           32 degrees C / 89 degrees F
Power:
  1.8 V              1787 mV
  2.5 V              2473 mV
  3.3 V              3306 mV
  4.6 V              4793 mV
  5.0 V              5025 mV
 12.0 V             12156 mV
  3.3 V bias         3289 mV
  8.0 V bias         7609 mV
BUS Revision          40
FPGA Revision         5

```



```

CB 1 status:
  State                      Online Standby
  ....
  BUS Revision                40
  FPGA Revision               5

```

```
lcc2-re0:
```

```

-----
CB 0 status:
  State                      Online Master
  ...
CB 1 status:
  State                      Online Standby
  ...

```

show chassis environment cb (TX Matrix Plus Router)

```

user@host> show chassis environment cb
sfc0-re0:
-----
CB 0 status:
  State                      Online Master
  Temperature                 38 degrees C / 100 degrees F
  Power 1
    1.0 V                     1005 mV
    1.1 V                     1108 mV
    1.2 V                     1205 mV
    1.25 V                    1269 mV
    1.5 V                     1508 mV
    1.8 V                     1814 mV
    2.5 V                     2507 mV
    3.3 V                     3306 mV
    3.3 V bias                 3300 mV
    9.0 V                     9058 mV
    9.0 V RE                   9107 mV
  Power 2
    3.9 V                     3963 mV
    5.0 V                     5020 mV
    9.0 V                     9087 mV
  Bus Revision                79
  FPGA Revision               23

```

CB 1 status:

State	Online Standby
Temperature	39 degrees C / 102 degrees F
Power 1	
1.0 V	1002 mV
1.1 V	1105 mV
1.2 V	1198 mV
1.25 V	1276 mV
1.5 V	1504 mV
1.8 V	1804 mV
2.5 V	2507 mV
3.3 V	3300 mV
3.3 V bias	3293 mV
9.0 V	9039 mV
9.0 V RE	9049 mV
Power 2	
3.9 V	3892 mV
5.0 V	5040 mV
9.0 V	9058 mV
Bus Revision	79
FPGA Revision	23

lcc0-re0:

CB 0 status:

State	Online Master
Temperature	39 degrees C / 102 degrees F
Power 1	
1.8 V	1799 mV
2.5 V	2499 mV
3.3 V	3327 mV
3.3 V bias	3299 mV
4.6 V	4673 mV
5.0 V	4918 mV
8.0 V bias	7308 mV
12.0 V	11887 mV
Power 2	
1.0 V	996 mV
1.2 V	1199 mV
3.3 V RE	3319 mV
Bus Revision	51
FPGA Revision	3

CB 1 status:

State	Online Standby
Temperature	40 degrees C / 104 degrees F
Power 1	
1.8 V	1800 mV
2.5 V	2496 mV
3.3 V	3322 mV
3.3 V bias	3284 mV
4.6 V	4680 mV
5.0 V	4954 mV
8.0 V bias	7284 mV
12.0 V	11902 mV
Power 2	
1.0 V	998 mV
1.2 V	1205 mV
3.3 V RE	3327 mV
Bus Revision	51
FPGA Revision	3

lccl-re0:

 CB 0 status:

State	Online Master
Temperature	41 degrees C / 105 degrees F
Power 1	
1.8 V	1804 mV
2.5 V	2517 mV
3.3 V	3300 mV
3.3 V bias	3284 mV
4.6 V	4681 mV
5.0 V	4927 mV
8.0 V bias	7357 mV
12.0 V	11907 mV
Power 2	
1.0 V	991 mV
1.2 V	1202 mV
3.3 V RE	3301 mV
Bus Revision	51
FPGA Revision	3

CB 1 status:

State	Online Standby
Temperature	40 degrees C / 104 degrees F
Power 1	
1.8 V	1805 mV

2.5 V	2528 mV
3.3 V	3324 mV
3.3 V bias	3289 mV
4.6 V	4694 mV
5.0 V	4959 mV
8.0 V bias	7311 mV
12.0 V	11926 mV
Power 2	
1.0 V	998 mV
1.2 V	1200 mV
3.3 V RE	3313 mV
Bus Revision	51
FPGA Revision	3

lcc2-re0:

CB 0 status:

State	Online Master
Temperature	41 degrees C / 105 degrees F
Power 1	
1.8 V	1805 mV
2.5 V	2494 mV
3.3 V	3333 mV
3.3 V bias	3296 mV
4.6 V	4673 mV
5.0 V	4901 mV
8.0 V bias	7343 mV
12.0 V	11916 mV
Power 2	
1.0 V	993 mV
1.2 V	1213 mV
3.3 V RE	3328 mV
Bus Revision	51
FPGA Revision	3

CB 1 status:

State	Online Standby
Temperature	41 degrees C / 105 degrees F
Power 1	
1.8 V	1804 mV
2.5 V	2523 mV
3.3 V	3334 mV
3.3 V bias	3291 mV
4.6 V	4697 mV

5.0 V	4969 mV
8.0 V bias	7308 mV
12.0 V	11936 mV
Power 2	
1.0 V	996 mV
1.2 V	1200 mV
3.3 V RE	3328 mV
Bus Revision	51
FPGA Revision	3

lcc3-re0:

CB 0 status:

State	Online Master
Temperature	37 degrees C / 98 degrees F
Power 1	
1.8 V	1809 mV
2.5 V	2510 mV
3.3 V	3296 mV
3.3 V bias	3291 mV
4.6 V	4670 mV
5.0 V	4905 mV
8.0 V bias	7211 mV
12.0 V	11882 mV
Power 2	
1.0 V	996 mV
1.2 V	1188 mV
3.3 V RE	3326 mV
Bus Revision	51
FPGA Revision	5

CB 1 status:

State	Online Standby
Temperature	38 degrees C / 100 degrees F
Power 1	
1.8 V	1813 mV
2.5 V	2510 mV
3.3 V	3322 mV
3.3 V bias	3289 mV
4.6 V	4692 mV
5.0 V	4967 mV
8.0 V bias	7194 mV
12.0 V	11916 mV
Power 2	

1.0 V	996 mV
1.2 V	1205 mV
3.3 V RE	3273 mV
Bus Revision	51
FPGA Revision	5

show chassis environment cb (EX8200 Switch)

```

user@host> show chassis environment cb

CB 0 status:
State                               Online Master
Temperature Intake                   20 degrees C / 68 degrees F
Temperature Exhaust                   24 degrees C / 75 degrees F
Power 1
  1.1 V                               1086 mV
  1.2 V                               1179 mV
  1.2 V *                             1182 mV
  1.2 V *                             1182 mV
  1.25 V                              1211 mV
  1.5 V                               1472 mV
  1.8 V                               1756 mV
  2.5 V                               2449 mV
  3.3 V                               3254 mV
  3.3 V bias                          3300 mV
  5.0 V                               4911 mV
  12.0 V                              11891 mV
Power 2
  3.3 V bias *                        3615 mV
  3.3 V bias *                        3615 mV
  3.3 V bias *                        3567 mV
  3.3 V bias *                        3664 mV
  4.3 V bias *                        4224 mV
  4.3 V bias *                        4215 mV
  4.3 V bias *                        4224 mV
  4.3 V bias *                        4205 mV
  4.3 V bias *                        4195 mV
  4.3 V bias *                        4215 mV
  5.0 V bias                          4920 mV
CB 1 status:
State                               Online Standby

```

Temperature Intake	19 degrees C / 66 degrees F
Temperature Exhaust	23 degrees C / 73 degrees F

Power 1

1.1 V	1082 mV
1.2 V	1169 mV
1.2 V *	1179 mV
1.2 V *	1179 mV
1.25 V	1214 mV
1.5 V	1482 mV
1.8 V	1759 mV
2.5 V	2481 mV
3.3 V	3248 mV
3.3 V bias	3306 mV
5.0 V	4911 mV
12.0 V	11910 mV

Power 2

3.3 V bias *	3644 mV
3.3 V bias *	3664 mV
3.3 V bias *	3586 mV
3.3 V bias *	3654 mV
4.3 V bias *	4224 mV
4.3 V bias *	4215 mV
4.3 V bias *	4224 mV
4.3 V bias *	4205 mV
4.3 V bias *	4244 mV
4.3 V bias *	4215 mV
5.0 V bias	4930 mV

CB 2 status:

State	Online
Temperature Intake	19 degrees C / 66 degrees F
Temperature Exhaust	23 degrees C / 73 degrees F

Power 1

1.2 V	1195 mV
1.5 V	1511 mV
1.8 V	1804 mV
2.5 V	2526 mV
3.3 V	3300 mV
3.3 V bias	3306 mV
12.0 V	12220 mV

show chassis environment cb (EX8208 Switch)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature Intake    20 degrees C / 68 degrees F
  Temperature Exhaust   24 degrees C / 75 degrees F
  Power 1
    1.1 V                1086 mV
    1.2 V                1179 mV
    1.2 V *              1182 mV
    1.2 V *              1182 mV
    1.25 V               1211 mV
    1.5 V                1466 mV
    1.8 V                1759 mV
    2.5 V                2455 mV
    3.3 V                3261 mV
    3.3 V bias           3300 mV
    5.0 V                4930 mV
    12.0 V               11891 mV
  Power 2
    3.3 V bias *         3606 mV
    3.3 V bias *         3615 mV
    3.3 V bias *         3567 mV
    3.3 V bias *         3673 mV
    4.3 V bias *         4224 mV
    4.3 V bias *         4215 mV
    4.3 V bias *         4234 mV
    4.3 V bias *         4205 mV
    4.3 V bias *         4186 mV
    4.3 V bias *         4215 mV
    5.0 V bias           4940 mV
CB 1 status:
  State                Online Standby
  Temperature Intake    19 degrees C / 66 degrees F
  Temperature Exhaust   23 degrees C / 73 degrees F
  Power 1
    1.1 V                1086 mV
    1.2 V                1169 mV
    1.2 V *              1179 mV
    1.2 V *              1179 mV
    1.25 V               1211 mV

```



```

1.5 V          1479 mV
1.8 V          1759 mV
2.5 V          2475 mV
3.3 V          3235 mV
3.3 V bias     3306 mV
5.0 V          4930 mV
12.0 V         11891 mV
Power 2
3.3 V bias *   3644 mV
3.3 V bias *   3664 mV
3.3 V bias *   3586 mV
3.3 V bias *   3654 mV
4.3 V bias *   4215 mV
4.3 V bias *   4224 mV
4.3 V bias *   4215 mV
4.3 V bias *   4215 mV
4.3 V bias *   4234 mV
4.3 V bias *   4224 mV
5.0 V bias     4920 mV
CB 2 status:
State          Online
Temperature Intake  20 degrees C / 68 degrees F
Temperature Exhaust 24 degrees C / 75 degrees F
Power 1
1.2 V          1202 mV
1.5 V          1508 mV
1.8 V          1804 mV
2.5 V          2520 mV
3.3 V          3300 mV
3.3 V bias     3300 mV
12.0 V         12200 mV

```

show chassis environment cb (EX9251 Switch)

```

user@switch> show chassis environment cb
CB 0 status:
State          Online Master
CB 0 Top Right Inlet Sensor29 degrees C / 84 degrees F
CB 0 Top Left Inlet Sensor 28 degrees C / 82 degrees F
CB 0 Top Right Exhaust Sensor40 degrees C / 104 degrees F
CB 0 Top Left Exhaust Sensor59 degrees C / 138 degrees F

```

CB 0 CPU Core-0 Temp	45 degrees C / 113 degrees F
CB 0 CPU Core-1 Temp	44 degrees C / 111 degrees F
CB 0 CPU Core-2 Temp	44 degrees C / 111 degrees F
CB 0 CPU Core-3 Temp	44 degrees C / 111 degrees F
CB 0 CPU Core-4 Temp	45 degrees C / 113 degrees F
CB 0 CPU Core-5 Temp	44 degrees C / 111 degrees F
CB 0 CPU Core-6 Temp	44 degrees C / 111 degrees F
CB 0 CPU Core-7 Temp	43 degrees C / 109 degrees F

Power

VDD1V5_PCH	1499 mV
VDDIO	950 mV
VDD3V3_PCH	3312 mV
VDD2V5_AB	2489 mV
VDD1V8_FRMR	1793 mV
VDD3V3	3292 mV
VDD2V5_CD	2508 mV
VDD1V8_PLL	1793 mV
VDD1V5	1499 mV
EA0_1V5	1499 mV
EA0_1V04	999 mV
EA0_PLL_1V0	999 mV
EA0_2V5	2508 mV
BIAS3V	3292 mV
VDD1V2_CD	1215 mV
VDD1V2_AB	1214 mV
VDD1V05	1050 mV
BIAS3V3	3309 mV
VDD1V0	1014 mV
VDD1V8	1805 mV
VDD1V2	1200 mV
VDD2V5	2504 mV
EA0_VDD0V9	949 mV
EA0_HM1_VDD0V9	899 mV
EA0_VDD0V9R2	952 mV
EA0_VDD1V0	999 mV
VDD3V3	3305 mV
EA0_XR_VDD1V2	1199 mV
EA0_XR_VDD0V9	903 mV
EA0_HM_VDDM1V2	1199 mV
EA0_HM_VDD1V2	1199 mV
VDDCPU0	1770 mV

12V Hotswap A	11955 mV	4861 mA	59347 mW
12V Hotswap B	11916 mV	15046 mA	180887 mW

show chassis environment cb (EX9253 Switch)

```

user@switch> show chassis environment cb
CB 0 status:
  State                               Online Master
CB 0 Exhaust Temp Sensor             38 degrees C / 100 degrees F
CB 0 Inlet Temp Sensor                32 degrees C / 89 degrees F
CB 0 CPU DIE Temp Sensor             43 degrees C / 109 degrees F
Power
  VDD1V5_PCH                          1489 mV
  VDDIO                                940 mV
  VDD3V3_PCH                          3332 mV
  VDD2V5_AB                           2508 mV
  VDD1V8_CLC                          1783 mV
  VDD3V3                               3312 mV
  VDD2V5_CD                           2508 mV
  VDD1V2_CBC_GTX                      1195 mV
  VDD1V8_GLS_GTX                      1783 mV
  VDD1V2_CBC                          1176 mV
  VDD1V8_GLS                          1783 mV
  BIAS3V3_BP                          3978 mV
  VDD1V2_GH                           1200 mV
  VDD3V3_CBC                          3299 mV
  VDD1V2_CD                           1200 mV
  BIAS3V3                             3340 mV
  VDD1V2_AB                          1199 mV
  VDD5V0                              5000 mV
  VDD1V05                             1050 mV
  VDD1V05                             1050 mV
  VCORE                               1770 mV
      12V                              12061 mV   4806 mA   57841 mW
CB 1 status:
  State                               Offline
CB 1 Exhaust Temp Sensor             32 degrees C / 89 degrees F
CB 1 Inlet Temp Sensor                29 degrees C / 84 degrees F
CB 1 CPU DIE Temp Sensor             43 degrees C / 109 degrees F
Power                                Disabled

```

show chassis environment cb (PTX5000 Packet Transport Router)

```
user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Intake Temperature   38 degrees C / 100 degrees F
  Exhaust A Temperature 45 degrees C / 113 degrees F
  Exhaust B Temperature 42 degrees C / 107 degrees F
  Power 1
    1.2 V                1200 mV
    1.25 V               1250 mV
    2.5 V                2500 mV
    3.3 V                3300 mV
  Power 2
    1.0 V                1000 mV
    3.3 V bias           3293 mV
    3.9 V                3921 mV
  Bus Revision         132
  FPGA Revision        27
CB 1 status:
  State                Online Standby
  Intake Temperature   34 degrees C / 93 degrees F
  Exhaust A Temperature 39 degrees C / 102 degrees F
  Exhaust B Temperature 36 degrees C / 96 degrees F
  Power 1
    1.2 V                1199 mV
    1.25 V               1250 mV
    2.5 V                2499 mV
    3.3 V                3299 mV
  Power 2
    1.0 V                1000 mV
    3.3 V bias           3312 mV
    3.9 V                3961 mV
  Bus Revision         132
  FPGA Revision        28
```

show chassis environment cb (PTX10008 Router)

```
user@host> show chassis environment cb
CB 0 status:
```

```

State                               Online Master
CB 0 Intake Temp Sensor             28 degrees C / 82 degrees F
CB 0 Exhaust Temp Sensor            32 degrees C / 89 degrees F
Power
  VDD 2.5V                           2489 mV
  Bias 3.3V                           3332 mV
  VDD 3.3V                             3292 mV
  VCC 1.8V                             1822 mV
  VDD 1.2V                             1205 mV
  VCC 1V                               999 mV
  VCC CPU 1.8V                         1803 mV
  VDD 2.5V                             2489 mV
  VCC Aux 5V                           5115 mV
  VDD DDR 1.5V                         1499 mV
  VTT SA CPU 0.8V                      803 mV
  VTT CPU 1.05V                        1048 mV
  VCC Core CPU                          901 mV
  VCC PCH 1.5V                          1519 mV
  VDD 1.05V                             1048 mV
  VCC 2.5V                             2508 mV
  FORT VCCA 1V                          960 mV
  VDD .85V                              862 mV
  VTT DDRA .75V                         744 mV
  VTT DDRB .75V                         744 mV
      12V                               12285 mV   3779 mA   46339 mW

```

CB 1 status:

```

State                               Online Standby
CB 1 Intake Temp Sensor             27 degrees C / 80 degrees F
CB 1 Exhaust Temp Sensor            32 degrees C / 89 degrees F
Power
  VDD 2.5V                           2489 mV
  Bias 3.3V                           3332 mV
  VDD 3.3V                             3273 mV
  VCC 1.8V                             1822 mV
  VDD 1.2V                             1195 mV
  VCC 1V                               999 mV
  VCC CPU 1.8V                         1783 mV
  VDD 2.5V                             2489 mV
  VCC Aux 5V                           5056 mV
  VDD DDR 1.5V                         1499 mV
  VTT SA CPU 0.8V                      793 mV
  VTT CPU 1.05V                        1048 mV
  VCC Core CPU                          882 mV

```

```

VCC PCH 1.5V          1509 mV
VDD 1.05V             1048 mV
VCC 2.5V              2489 mV
FORT VCCA 1V         960 mV
VDD .85V              862 mV
VTT DDRA .75V        744 mV
VTT DDRB .75V        744 mV
    12V                12391 mV    3779 mA    46727 mW

```

show chassis environment cb (PTX10016 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
CB 0 Intake Temp Sensor 20 degrees C / 68 degrees F
CB 0 Exhaust Temp Sensor 24 degrees C / 75 degrees F
Power
  VDD 2.5V              2508 mV
  Bias 3.3V             3351 mV
  VDD 3.3V              3292 mV
  VCC 1.8V              1832 mV
  VDD 1.2V              1205 mV
  VCC 1V                 999 mV
  VCC CPU 1.8V          1793 mV
  VDD 2.5V              2508 mV
  VCC Aux 5V            5056 mV
  VDD DDR 1.5V          1509 mV
  VTT SA CPU 0.8V       803 mV
  VTT CPU 1.05V         1048 mV
  VCC Core CPU          960 mV
  VCC PCH 1.5V          1519 mV
  VDD 1.05V             1058 mV
  VCC 2.5V              2528 mV
  FORT VCCA 1V         960 mV
  VDD .85V              852 mV
  VTT DDRA .75V        744 mV
  VTT DDRB .75V        744 mV
    12V                12259 mV    3649 mA    45173 mW
CB 1 status:
  State                Online Standby
CB 1 Intake Temp Sensor 20 degrees C / 68 degrees F

```

```

CB 1 Exhaust Temp Sensor  23 degrees C / 73 degrees F
Power
  VDD 2.5V                2508 mV
  Bias 3.3V               3312 mV
  VDD 3.3V                3273 mV
  VCC 1.8V                1822 mV
  VDD 1.2V                1195 mV
  VCC 1V                  989 mV
  VCC CPU 1.8V           1783 mV
  VDD 2.5V                2489 mV
  VCC Aux 5V             5086 mV
  VDD DDR 1.5V          1499 mV
  VTT SA CPU 0.8V       803 mV
  VTT CPU 1.05V         1048 mV
  VCC Core CPU          1029 mV
  VCC PCH 1.5V          1519 mV
  VDD 1.05V             1048 mV
  VCC 2.5V               2528 mV
  FORT VCCA 1V          960 mV
  VDD .85V               862 mV
  VTT DDRA .75V         744 mV
  VTT DDRB .75V         744 mV
      12V                12285 mV    3952 mA    48447 mW

```

show chassis environment cb (QFabric System)

```

user@switch> show chassis environment cb interconnect-device
IC-123 0
CB 0 status:
  State                Online Master
  Left Intake Temperature  33 degrees C / 91 degrees F
  Right Intake Temperature 33 degrees C / 91 degrees F
  Left Exhaust Temperature 36 degrees C / 96 degrees F
  Right Exhaust Temperature 35 degrees C / 95 degrees F
  Power                 OK
  VDD 3V3               3294 mV
  VDD 2V5               2436 mV
  VDD 1V8               1746 mV
  VDD 1V5               1460 mV
  VDD 1V25              1210 mV
  VDD 1V2               1164 mV

```

CPU CORE 1V2	1120 mV
VDD 1V0	968 mV
VDD 5V0	5088 mV
CPU MP BIAS 4V3	4050 mV
BIAS 3V3	3180 mV
VTT 0V9	866 mV

show chassis environment cb 0 (PTX10003-80C and PTX10003-160C Routers)

```

user@router> show chassis environment cb 0

CB 0 status:
State                Online Master
Power 1
  PCIe SW0 power, CORE 0.9 V      894 mV
Power 2
  CLOCK MAIN, 2.5 V                2495 mV
  PCIe SW0 power, SERDES 0.9 V    897 mV
Power 3
  PCIe SW1 power, CORE 0.9 V      897 mV
Power 4
  PCIe SW1 power, SERDES 0.9 V    894 mV
Power 5
  Ethernet SW0 power, 1.0 V       998 mV
Power 6
  Ethernet SW1 power, CORE 1.0 V  998 mV
Power 7
  12 V                             12034 mV
Bus Revision          0
FPGA Revision         0

```

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, the **show chassis environment cb** command does not show the Bus and FPGA revision information. If you want to view the FPGA revision or version information for the CB, use the **show system firmware** command.

Release Information

Command introduced before Junos Release 7.4.

option introduced for the TX Matrix Plus router in Junos Release 9.6.

Command introduced in Junos OS Release 18.2R1 for MX10008 Universal Routing Platforms, and EX9253 switches.

RELATED DOCUMENTATION

[request chassis cb | 407](#)

[Understanding Switching Control Board Redundancy](#)

show chassis environment ccg

IN THIS SECTION

- [Syntax | 713](#)
- [Description | 714](#)
- [Options | 714](#)
- [Required Privilege Level | 714](#)
- [Output Fields | 714](#)
- [Sample Output | 715](#)
- [Release Information | 715](#)

Syntax

```
show chassis environment ccg  
<slot>
```

Description

(PTX5000 Packet Transport Routers only) Display environmental information about the Centralized Clock Generators (CCGs).

Options

none Display environmental information about all CCGs on the router.

slot (Optional) Display environmental information about the specified CCG. Replace *slot* with 0 or 1.

Required Privilege Level

view

Output Fields

[Table 36 on page 714](#) lists the output fields for the **show chassis environment ccg** command. Output fields are listed in the approximate order in which they appear.

Table 36: show chassis environment cb Output Fields

Field Name	Field Description
State	Status of the CCG: Online - Master clock , Online - Standby , or Offline . If two CCGs are installed and online, one is functioning as the primary clock, and the other is the standby clock.
Temperature	Temperature of the air flowing past the CCG.
Power	Power required and measured on the CCG. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.

Table 36: show chassis environment cb Output Fields (Continued)

Field Name	Field Description
BUS Revision	Revision level of the generic bus device.

Sample Output

show chassis environment ccg (PTX5000)

```

user@host> show chassis environment ccg
CCG 0 status:
  State                Online - Master clock
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V bias         1200 mV
    1.8 V              1799 mV
    3.3 V              3300 mV
    3.3 V bias        3300 mV
  Bus Revision         103
CCG 1 status:
  State                Offline
  Power                Disabled
  Temperature          31 degrees C / 87 degrees F
  Power
    1.2 V bias         1198 mV
    1.8 V              161 mV
    3.3 V              451 mV
    3.3 V bias        3311 mV
  Bus Revision         103

```

Release Information

Command introduced in Junos OS Release 12.1.

RELATED DOCUMENTATION

Clock Sources for PTX Series Packet Transport Routers

[show chassis environment](#) | 539

show chassis environment fan

IN THIS SECTION

- [Syntax](#) | 716
- [Description](#) | 716
- [Options](#) | 717
- [Required Privilege Level](#) | 717
- [Output Fields](#) | 717
- [Sample Output](#) | 718
- [Release Information](#) | 721

Syntax

```
show chassis environment fan  
<all-members>  
<fantray-slot-number>  
<local>  
<member member-id>
```

Description

(MX2020 and MX2010 routers only) Display environmental information about the fans and fan trays.

Options

none	Display environmental information about all fans and fan trays.
all-members	(Optional) Display environmental information about the fan and fan trays in all members of the Virtual Chassis configuration.
<i>fantray-slot-number</i>	(Optional) Display environmental information about the specified fan tray. Replace <i>fantray-slot-number</i> with a value from 0 through 3 .
local	(Optional) Display environmental information about the fans and fan trays in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display environmental information about the fans and fan trays in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.

Required Privilege Level

view

Output Fields

[Table 37 on page 717](#) lists the output fields for the **show chassis environment fan** command. Output fields are listed in the approximate order in which they appear.

Table 37: show chassis environment fan Output Fields

Field Name	Field Description
Fan Tray Status	Status of the fan tray.
Temperature	Temperature in Celsius (C) and Fahrenheit (F) maintained by the fans.

Table 37: show chassis environment fan Output Fields (*Continued*)

Field Name	Field Description
Power	Power required and measured on the fan tray. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
Max Power Consumption	Maximum power consumed by the fan tray.

Sample Output

show chassis environment fan (MX2020 routers)

```

user@host> show chassis environment fan
Fan Tray 0 status:
  Temperature          23 degrees C / 73 degrees F
  Power
    1.2 V              1189 mV
    3.3 V              3293 mV
    5.0 V              5230 mV
    5.0 V bias         5278 mV
    52.0 V A           49944 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
Fan Tray 1 status:
  Temperature          22 degrees C / 71 degrees F
  Power
    1.2 V              1192 mV
    3.3 V              3300 mV
    5.0 V              5230 mV
    5.0 V bias         5230 mV
    52.0 V A           50205 mV
    52.0 V B           435 mV
  Max Power Consumption 1150 Watts
Fan Tray 2 status:

```

```

Temperature          31 degrees C / 87 degrees F
Power
  1.2 V              1192 mV
  3.3 V              3287 mV
  5.0 V              5211 mV
  5.0 V bias         5220 mV
  52.0 V A           50031 mV
  52.0 V B           435 mV
Max Power Consumption 1150 Watts
Fan Tray 3 status:
Temperature          31 degrees C / 87 degrees F
Power
  1.2 V              1208 mV
  3.3 V              3306 mV
  5.0 V              5240 mV
  5.0 V bias         5259 mV
  52.0 V A           50553 mV
  52.0 V B           435 mV
Max Power Consumption 1150 Watts

```

show chassis environment fan 3 (MX2020 routers)

```

user@host> show chassis environment fan 3
Fan Tray 3 status:
Temperature          31 degrees C / 87 degrees F
Power
  1.2 V              1208 mV
  3.3 V              3306 mV
  5.0 V              5240 mV
  5.0 V bias         5259 mV
  52.0 V A           50553 mV
  52.0 V B           435 mV
Max Power Consumption 1150 Watts

```

show chassis environment fan (PTX10008 routers)

```

user@host> show chassis environment fan

Fan Tray 0 status:
HS 0                12338 mV    4035 mA    40623 mW

```

```

      HS 1                12325 mV      3044 mA      36483 mW
      HS 2                12272 mV      3374 mA      38388 mW
      HS 3                12364 mV      2218 mA      37918 mW
      Temperature                28 degrees C / 82 degrees
F
Fan Tray 1 status:
      HS 0                12232 mV      3209 mA      50455 mW
      HS 1                12311 mV      3760 mA      50196 mW
      HS 2                12311 mV      5356 mA      47397 mW
      HS 3                12259 mV      3264 mA      15807 mW
      Temperature                28 degrees C / 82 degrees F

```

show chassis environment fan (PTX10016 routers)

```

user@host> show chassis environment fan

Aug 02 21:13:00
Fan Tray 0 status:
      HS 0                12364 mV      4200 mA      48926 mW
      HS 1                12285 mV      3264 mA      69885 mW
      HS 2                12285 mV      4365 mA      57559 mW
      HS 3                12259 mV      2714 mA      67768 mW
      Temperature                25 degrees C / 77 degrees F
Fan Tray 1 status:
      HS 0                12325 mV      1888 mA      76354 mW
      HS 1                12325 mV      5026 mA      70779 mW
      HS 2                12285 mV      4200 mA      50032 mW
      HS 3                12311 mV      5246 mA      55630 mW
      Temperature                24 degrees C / 75 degrees F

```

show chassis environment fan (MX10008 routers)

```

user@host> show chassis environment fan

Fan Tray 0 status:
      HS 0                12298 mV      4200 mA      59676 mW
      HS 1                12338 mV      4585 mA      48856 mW
      HS 2                12325 mV      4530 mA      63863 mW
      HS 3                12311 mV      2879 mA      37800 mW

```



```

Temperature                26 degrees C / 78 degrees F
Fan Tray 1 status:
  HS 0                    12298 mV    4145 mA    57559 mW
  HS 1                    12298 mV    2934 mA    60288 mW
  HS 2                    12325 mV    5026 mA    46715 mW
  HS 3                    12272 mV    1833 mA    47209 mW
Temperature                25 degrees C / 77 degrees F

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis environment | 539](#)

[show chassis fan | 1281](#)

show chassis environment fpc

IN THIS SECTION

- [Syntax | 722](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 722](#)
- [Syntax \(MX Series Routers\) | 722](#)
- [Syntax \(MX2010, MX10003, MX204, MX2008, and MX10008, OCX Series, PTX3000, PTX10008 devices and Junos OS Evolved platforms\) | 723](#)
- [Syntax \(MX2020 Universal Routing Platforms\) | 723](#)
- [Syntax \(QFX Series\) | 723](#)

- [Description | 723](#)
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- [Required Privilege Level | 726](#)
- [Output Fields | 726](#)
- [Sample Output | 728](#)
- [Release Information | 804](#)

Syntax

```
show chassis environment fpc  
<slot>
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
show chassis environment fpc  
<lcc number>  
<slot>
```

Syntax (MX Series Routers)

```
show chassis environment fpc  
<slot>  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX2010, MX10003, MX204, MX2008, and MX10008, OCX Series, PTX3000, PTX10008 devices and Junos OS Evolved platforms)

```
show chassis environment fpc
<slot>
```

Syntax (MX2020 Universal Routing Platforms)

```
show chassis environment fpc
<slot>
<satellite [fpc-slot slot-id | device-alias alias-name]
```

Syntax (QFX Series)

```
show chassis environment fpc
<fpc-slot>
interconnect-device name
```

Description

(M40e, M120, M160, M320, MX Series, T Series routers, EX Series, QFX Series, and PTX Series routers only) Display environmental information about Flexible PIC Concentrators (FPCs).

Options

none Display environmental information about all FPCs. On a TX Matrix router, display environmental information about all FPCs on the TX Matrix router and its attached

T640 routers. On a TX Matrix Plus router, display environmental information about all FPCs on the TX Matrix Plus router and its attached routers.

all-members	(MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.
lcc <i>number</i>	(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display environmental information for the FPCs in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>]	(Junos Fusion only)(Optional) Display environmental information for the FPCs in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
<i>slot</i> or <i>fpc-slot</i>	(Optional) Display environmental information about an individual FPC: <ul style="list-style-type: none"> • (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using only the lcc <i>number</i> option (the recommended method), replace <i>slot</i> with a value from 0 through 7. Similarly, on a TX Matrix Plus router, if you specify the number of the router by using only the lcc <i>number</i> option (the recommended method), replace <i>slot</i> with a value

from 0 through 7. Otherwise, replace *slot* with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis environment fpc 1 lcc 1
user@host> show chassis environment fpc 9
```

- M120 router—Replace *slot* with a value from 0 through 5.
- MX240 router—Replace *slot* with a value from 0 through 2.
- MX480 router—Replace *slot* with a value from 0 through 5.
- MX960 router—Replace *slot* with a value from 0 through 11.
- MX2010 router—Replace *slot* with a value from 0 through 9.
- MX2020 router—Replace *slot* with a value from 0 through 19.
- MX2008 router—Replace *slot* with a value from 0 through 9.
- Other routers—Replace *slot* with a value from 0 through 7.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—Replace *slot* with 0.
 - EX4200 switches in a Virtual Chassis configuration—Replace *slot* with a value from 0 through 9 (switch's member ID).
 - EX6210 switches—Replace *slot* with a value from 0 through 3 (line card only), 4 or 5 (line card or Switch Fabric and Rotuing Engine (SRE) module), or 6 through 9 (line card only).
 - EX8208 switches—Replace *slot* with a value from 0 through 7 (line card).
 - EX8216 switches—Replace *slot* with a value from 0 through 15 (line card).
- QFX3500 switches —Replace *fpc-slot* with 0 through 15.
- PTX5000 Packet Transport Router—Replace *fpc-slot* with 0 through 7.
- PTX3000 Packet Transport Router—Replace *fpc-slot* with 0 through 15.

Required Privilege Level

view

Output Fields

Table 38 on page 726 lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

Table 38: show chassis environment fpc Output Fields

Field Name	Field Description
State	Status of the FPC: <ul style="list-style-type: none"> • Unknown—FPC is not detected by the router. • Empty—No FPC is present. • Present—FPC is detected by the chassis daemon but is either not supported by the current version of the Junos OS, or the FPC is coming up but not yet online. • Ready—FPC is in intermediate or transition state. • Announce online—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative. • Online—FPC is online and running. • Offline—FPC is powered down. • Diagnostics—FPC is set to operate in diagnostics mode.
Temperature	(M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC.

Table 38: show chassis environment fpc Output Fields (*Continued*)

Field Name	Field Description
PMB Temperature	(PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC). The PTX5000 Packet Transport Router with FPC2-PTX-P1A include multiple temperatures for PMB (TEMPO and TEMP1).
PMB CPU Temperature	(PTX5000 Packet Transport Router with FPC2-PTX-P1A only) Temperature of the air flowing past the PMB CPU.
Temperature Intake	(M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing into the chassis.
Temperature Top	(T Series routers only) Temperature of the air flowing past the top of the FPC.
Temperature Exhaust	(M120 and M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing out of the chassis. The PTX Series Packet Transport Routers, and the MX2010, MX2020, and MX2008 routers include exhaust temperatures for multiple zones (Exhaust A and Exhaust B).
Temperature Bottom	(T Series routers only) Temperature of the air flowing past the bottom of the FPC.
TL <i>n</i> Temperature	(PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC.
TQ <i>n</i> Temperature	(PTX Series only) Temperature of the air flowing past the specified TQ area of the packet forwarding engine (PFE) on the FPC.
Temperature MMBO	(T640 router only) Temperature of the air flowing past the type 3 FPC.

Table 38: show chassis environment fpc Output Fields (*Continued*)

Field Name	Field Description
Temperature MMB1	(M320 and T Series routers only) Temperature of the air flowing past the type 1, type 2, and type 3 FPC.
Power	Information about the voltage supplied to the FPC. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
CMB Revision or BUS revision	Revision level of the chassis management bus device (M Series router) or bus (T Series routers).

Sample Output

show chassis environment fpc (M120 Router)

```

user@host> show chassis environment fpc
FPC 2 status:
  State                Online
  Temperature Exhaust A 32 degrees C / 89 degrees F
  Temperature Exhaust B 31 degrees C / 87 degrees F
Power A-Board
  1.2 V                1202 mV
  1.5 V                1508 mV
  1.8 V                1798 mV
  2.5 V                2507 mV
  3.3 V                3351 mV
  5.0 V                4995 mV
  3.3 V bias          3296 mV
  1.2 V Rocket IO     1205 mV
  1.5 V Rocket IO     1501 mV
I2C Slave Revision    12
FPC 3 status:
  State                Online
  Temperature Exhaust A 31 degrees C / 87 degrees F

```



```

Temperature Exhaust B      33 degrees C / 91 degrees F
Power A-Board
  1.2 V                    1211 mV
  1.5 V                    1501 mV
  1.8 V                    1798 mV
  2.5 V                    2471 mV
  3.3 V                    3293 mV
  5.0 V                    4930 mV
  3.3 V bias               3296 mV
  1.2 V Rocket IO         1205 mV
  1.5 V Rocket IO         1501 mV
Power B-Board
  1.2 V                    1214 mV
  1.5 V                    1501 mV
  2.5 V                    2471 mV
  3.3 V                    3300 mV
  5.0 V                    4943 mV
  3.3 V bias               3296 mV
  1.2 V Rocket IO         1205 mV
  1.5 V Rocket IO         1501 mV
I2C Slave Revision        12
FPC 4 status:
State                      Online
Temperature Exhaust A     32 degrees C / 89 degrees F
Temperature Exhaust B     30 degrees C / 86 degrees F
Power A-Board
  1.2 V                    1195 mV
  1.5 V                    1504 mV
  1.8 V                    1801 mV
  2.5 V                    2504 mV
  3.3 V                    3293 mV
  5.0 V                    4917 mV
  3.3 V bias               3296 mV
  1.2 V Rocket IO         1202 mV
  1.5 V Rocket IO         1492 mV
I2C Slave Revision        12

```

show chassis environment fpc (M160 Router)

```

user@host> show chassis environment fpc
FPC 0 status:

```

```

State                               Online
Temperature                          42 degrees C / 107 degrees F
Power:
  1.5 V                               1500 mV
  2.5 V                               2509 mV
  3.3 V                               3308 mV
  5.0 V                               4991 mV
  5.0 V bias                          4952 mV
  8.0 V bias                          8307 mV
CMB Revision                          12
FPC 1 status:
State                               Online
Temperature                          45 degrees C / 113 degrees F
Power:
  1.5 V                               1498 mV
  2.5 V                               2501 mV
  3.3 V                               3319 mV
  5.0 V                               5020 mV
  5.0 V bias                          5025 mV
  8.0 V bias                          8307 mV
CMB Revision                          12

```

show chassis environment fpc (M320 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
Temperature Intake                   27 degrees C / 80 degrees F
Temperature Exhaust                   38 degrees C / 100 degrees F
Temperature MMB1                      31 degrees C / 87 degrees F
Power:
  1.5 V                               1487 mV
  1.5 V *                             1494 mV
  1.8 V                               1821 mV
  2.5 V                               2533 mV
  3.3 V                               3323 mV
  5.0 V                               5028 mV
  3.3 V bias                          3296 mV
  5.0 V bias                          4984 mV
CMB Revision                          16
FPC 1 status:

```

```

State                               Online
Temperature Intake                   27 degrees C / 80 degrees F
Temperature Exhaust                   37 degrees C / 98 degrees F
Temperature MMB1                      32 degrees C / 89 degrees F
Power:
  1.5 V                               1504 mV
  1.5 V *                             1499 mV
  1.8 V                               1820 mV
  2.5 V                               2529 mV
  3.3 V                               3328 mV
  5.0 V                               5013 mV
  3.3 V bias                          3294 mV
  5.0 V bias                          4984 mV
CMB Revision                          16
FPC 2 status:
State                               Online
Temperature Intake                   28 degrees C / 82 degrees F
Temperature Exhaust                   38 degrees C / 100 degrees F
Temperature MMB1                      32 degrees C / 89 degrees F
Power:
  1.5 V                               1498 mV
  1.5 V *                             1487 mV
  1.8 V                               1816 mV
  2.5 V                               2531 mV
  3.3 V                               3324 mV
  5.0 V                               5025 mV
  3.3 V bias                          3277 mV
  5.0 V bias                          5013 mV
CMB Revision                          17
FPC 3 status:
...

```

show chassis environment fpc (MX2020 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
Temperature Intake                   41 degrees C / 105 degrees F
Temperature Exhaust A                 48 degrees C / 118 degrees F
Temperature Exhaust B                 60 degrees C / 140 degrees F
Temperature LU 0 TSen                 56 degrees C / 132 degrees F

```

```

Temperature LU 0 Chip      59 degrees C / 138 degrees F
Temperature LU 1 TSen     56 degrees C / 132 degrees F
Temperature LU 1 Chip     61 degrees C / 141 degrees F
Temperature LU 2 TSen     56 degrees C / 132 degrees F
Temperature LU 2 Chip     52 degrees C / 125 degrees F
Temperature LU 3 TSen     56 degrees C / 132 degrees F
Temperature LU 3 Chip     52 degrees C / 125 degrees F
Temperature MQ 0 TSen     49 degrees C / 120 degrees F
Temperature MQ 0 Chip     49 degrees C / 120 degrees F
Temperature MQ 1 TSen     49 degrees C / 120 degrees F
Temperature MQ 1 Chip     52 degrees C / 125 degrees F
Temperature MQ 2 TSen     49 degrees C / 120 degrees F
Temperature MQ 2 Chip     45 degrees C / 113 degrees F
Temperature MQ 3 TSen     49 degrees C / 120 degrees F
Temperature MQ 3 Chip     46 degrees C / 114 degrees F

```

Power

```

AS-BIAS3V3-z12105      3299 mV
AS-VDD1V8-z12006      1807 mV
AS-VDD2V5-z12006      2512 mV
AS-AVDD1V0-z12004      997 mV
AS-PCIE_1V0-z12004      996 mV
AS-VDD3V3-z12004      3294 mV
AS-VDD_1V5A-z12004     1501 mV
AS-VDD_1V5B-z12004     1498 mV
AS-LU0_1V0-z12004      998 mV
AS-LU1_1V0-z12004     1002 mV
AS-MQ0_1V0-z12004      999 mV
AS-MQ1_1V0-z12004      994 mV
AS-LU2_1V0-z12004     1000 mV
AS-LU3_1V0-z12004      998 mV
AS-MQ2_1V0-z12004     1002 mV
AS-MQ3_1V0-z12004      999 mV
AS-PMB_1V1-z12006     1096 mV

```

```
I2C Slave Revision      68
```

FPC 1 status:

```

State                    Online
Temperature Intake       39 degrees C / 102 degrees F
Temperature Exhaust A    48 degrees C / 118 degrees F
Temperature Exhaust B    55 degrees C / 131 degrees F
Temperature LU 0 TSen    52 degrees C / 125 degrees F
Temperature LU 0 Chip    54 degrees C / 129 degrees F
Temperature LU 1 TSen    52 degrees C / 125 degrees F
Temperature LU 1 Chip    56 degrees C / 132 degrees F

```

Temperature LU 2 TSen	52 degrees C / 125 degrees F
Temperature LU 2 Chip	49 degrees C / 120 degrees F
Temperature LU 3 TSen	52 degrees C / 125 degrees F
Temperature LU 3 Chip	50 degrees C / 122 degrees F
Temperature MQ 0 TSen	48 degrees C / 118 degrees F
Temperature MQ 0 Chip	48 degrees C / 118 degrees F
Temperature MQ 1 TSen	48 degrees C / 118 degrees F
Temperature MQ 1 Chip	51 degrees C / 123 degrees F
Temperature MQ 2 TSen	48 degrees C / 118 degrees F
Temperature MQ 2 Chip	45 degrees C / 113 degrees F
Temperature MQ 3 TSen	48 degrees C / 118 degrees F
Temperature MQ 3 Chip	45 degrees C / 113 degrees F

Power

AS-BIAS3V3-z12105	3291 mV
AS-VDD1V8-z12006	1786 mV
AS-VDD2V5-z12006	2496 mV
AS-AVDD1V0-z12004	1000 mV
AS-PCIE_1V0-z12004	1000 mV
AS-VDD3V3-z12004	3294 mV
AS-VDD_1V5A-z12004	1500 mV
AS-VDD_1V5B-z12004	1498 mV
AS-LU0_1V0-z12004	1003 mV
AS-LU1_1V0-z12004	1000 mV
AS-MQ0_1V0-z12004	1000 mV
AS-MQ1_1V0-z12004	995 mV
AS-LU2_1V0-z12004	1002 mV
AS-LU3_1V0-z12004	997 mV
AS-MQ2_1V0-z12004	1000 mV
AS-MQ3_1V0-z12004	998 mV
AS-PMB_1V1-z12006	1096 mV

I2C Slave Revision	68
--------------------	----

FPC 2 status:

State	Online
Temperature Intake	39 degrees C / 102 degrees F
Temperature Exhaust A	48 degrees C / 118 degrees F
Temperature Exhaust B	58 degrees C / 136 degrees F
Temperature LU 0 TSen	55 degrees C / 131 degrees F
Temperature LU 0 Chip	57 degrees C / 134 degrees F
Temperature LU 1 TSen	55 degrees C / 131 degrees F
Temperature LU 1 Chip	63 degrees C / 145 degrees F
Temperature LU 2 TSen	55 degrees C / 131 degrees F
Temperature LU 2 Chip	51 degrees C / 123 degrees F
Temperature LU 3 TSen	55 degrees C / 131 degrees F

Temperature LU 3 Chip	52 degrees C / 125 degrees F
Temperature MQ 0 TSen	48 degrees C / 118 degrees F
Temperature MQ 0 Chip	50 degrees C / 122 degrees F
Temperature MQ 1 TSen	48 degrees C / 118 degrees F
Temperature MQ 1 Chip	52 degrees C / 125 degrees F
Temperature MQ 2 TSen	48 degrees C / 118 degrees F
Temperature MQ 2 Chip	47 degrees C / 116 degrees F
Temperature MQ 3 TSen	48 degrees C / 118 degrees F
Temperature MQ 3 Chip	47 degrees C / 116 degrees F

Power

AS-BIAS3V3-z12105	3299 mV
AS-VDD1V8-z12006	1805 mV
AS-VDD2V5-z12006	2510 mV
AS-AVDD1V0-z12004	999 mV
AS-PCIE_1V0-z12004	998 mV
AS-VDD3V3-z12004	3296 mV
AS-VDD_1V5A-z12004	1492 mV
AS-VDD_1V5B-z12004	1497 mV
AS-LU0_1V0-z12004	997 mV
AS-LU1_1V0-z12004	1000 mV
AS-MQ0_1V0-z12004	998 mV
AS-MQ1_1V0-z12004	1001 mV
AS-LU2_1V0-z12004	996 mV
AS-LU3_1V0-z12004	995 mV
AS-MQ2_1V0-z12004	998 mV
AS-MQ3_1V0-z12004	997 mV
AS-PMB_1V1-z12006	1100 mV

I2C Slave Revision 68

FPC 3 status:

State	Online
Temperature Intake	41 degrees C / 105 degrees F
Temperature Exhaust A	48 degrees C / 118 degrees F
Temperature Exhaust B	58 degrees C / 136 degrees F
Temperature LU 0 TSen	56 degrees C / 132 degrees F
Temperature LU 0 Chip	59 degrees C / 138 degrees F
Temperature LU 1 TSen	56 degrees C / 132 degrees F
Temperature LU 1 Chip	61 degrees C / 141 degrees F
Temperature LU 2 TSen	56 degrees C / 132 degrees F
Temperature LU 2 Chip	51 degrees C / 123 degrees F
Temperature LU 3 TSen	56 degrees C / 132 degrees F
Temperature LU 3 Chip	53 degrees C / 127 degrees F
Temperature MQ 0 TSen	50 degrees C / 122 degrees F
Temperature MQ 0 Chip	51 degrees C / 123 degrees F

```

Temperature MQ 1 TSen      50 degrees C / 122 degrees F
Temperature MQ 1 Chip      55 degrees C / 131 degrees F
Temperature MQ 2 TSen      50 degrees C / 122 degrees F
Temperature MQ 2 Chip      47 degrees C / 116 degrees F
Temperature MQ 3 TSen      50 degrees C / 122 degrees F
Temperature MQ 3 Chip      50 degrees C / 122 degrees F
Power
AS-BIAS3V3-z12105         3305 mV
AS-VDD1V8-z12006          1810 mV
AS-VDD2V5-z12006          2508 mV
AS-AVDD1V0-z12004          999 mV
AS-PCIE_1V0-z12004         1001 mV
AS-VDD3V3-z12004          3294 mV
AS-VDD_1V5A-z12004         1500 mV
AS-VDD_1V5B-z12004         1498 mV
AS-LU0_1V0-z12004          998 mV
AS-LU1_1V0-z12004          998 mV
AS-MQ0_1V0-z12004          999 mV
AS-MQ1_1V0-z12004          998 mV
AS-LU2_1V0-z12004         1000 mV
AS-LU3_1V0-z12004         1001 mV
AS-MQ2_1V0-z12004          996 mV
AS-MQ3_1V0-z12004          998 mV
AS-PMB_1V1-z12006         1098 mV
I2C Slave Revision        68
FPC 4 status:
...

```

show chassis environment fpc (MX2010 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                Online
Temperature Intake    36 degrees C / 96 degrees F
Temperature Exhaust A 42 degrees C / 107 degrees F
Temperature Exhaust B 51 degrees C / 123 degrees F
Temperature LU 0 TSen 49 degrees C / 120 degrees F
Temperature LU 0 Chip 50 degrees C / 122 degrees F
Temperature LU 1 TSen 49 degrees C / 120 degrees F
Temperature LU 1 Chip 54 degrees C / 129 degrees F
Temperature LU 2 TSen 49 degrees C / 120 degrees F

```

Temperature LU 2 Chip	45 degrees C / 113 degrees F
Temperature LU 3 TSen	49 degrees C / 120 degrees F
Temperature LU 3 Chip	46 degrees C / 114 degrees F
Temperature MQ 0 TSen	40 degrees C / 104 degrees F
Temperature MQ 0 Chip	41 degrees C / 105 degrees F
Temperature MQ 1 TSen	40 degrees C / 104 degrees F
Temperature MQ 1 Chip	44 degrees C / 111 degrees F
Temperature MQ 2 TSen	40 degrees C / 104 degrees F
Temperature MQ 2 Chip	38 degrees C / 100 degrees F
Temperature MQ 3 TSen	40 degrees C / 104 degrees F
Temperature MQ 3 Chip	41 degrees C / 105 degrees F

Power

AS-BIAS3V3-z12105	3300 mV
AS-VDD1V8-z12006	1805 mV
AS-VDD2V5-z12006	2505 mV
AS-AVDD1V0-z12004	998 mV
AS-PCIE_1V0-z12004	999 mV
AS-VDD3V3-z12004	3303 mV
AS-VDD_1V5A-z12004	1497 mV
AS-VDD_1V5B-z12004	1497 mV
AS-LU0_1V0-z12004	998 mV
AS-LU1_1V0-z12004	1003 mV
AS-MQ0_1V0-z12004	998 mV
AS-MQ1_1V0-z12004	998 mV
AS-LU2_1V0-z12004	997 mV
AS-LU3_1V0-z12004	1001 mV
AS-MQ2_1V0-z12004	996 mV
AS-MQ3_1V0-z12004	994 mV
AS-PMB_1V1-z12006	1097 mV

I2C Slave Revision	68
--------------------	----

FPC 1 status:

State	Online
Temperature Intake	34 degrees C / 93 degrees F
Temperature Exhaust A	46 degrees C / 114 degrees F
Temperature Exhaust B	54 degrees C / 129 degrees F
Temperature LU 0 TSen	45 degrees C / 113 degrees F
Temperature LU 0 Chip	55 degrees C / 131 degrees F
Temperature LU 1 TSen	45 degrees C / 113 degrees F
Temperature LU 1 Chip	44 degrees C / 111 degrees F
Temperature LU 2 TSen	45 degrees C / 113 degrees F
Temperature LU 2 Chip	50 degrees C / 122 degrees F
Temperature LU 3 TSen	45 degrees C / 113 degrees F
Temperature LU 3 Chip	58 degrees C / 136 degrees F


```

Temperature XM 0 TSen      45 degrees C / 113 degrees F
Temperature XM 0 Chip      51 degrees C / 123 degrees F
Temperature XF 0 TSen      45 degrees C / 113 degrees F
Temperature XF 0 Chip      63 degrees C / 145 degrees F
Temperature PLX Switch TSen45 degrees C / 113 degrees F
Temperature PLX Switch Chip47 degrees C / 116 degrees F

```

Power

```

MPC-BIAS3V3-z12105      3300 mV
MPC-VDD3V3-z16100      3294 mV
MPC-VDD2V5-z16100      2505 mV
MPC-VDD1V8-z12004      1796 mV
MPC-AVDD1V0-z12004      991 mV
MPC-VDD1V2-z16100      1196 mV
MPC-VDD1V5A-z12004      1491 mV
MPC-VDD1V5B-z12004      1492 mV
MPC-XF_0V9-z12004      996 mV
MPC-PCIE_1V0-z16100     1003 mV
MPC-LU0_1V0-z12004      996 mV
MPC-LU1_1V0-z12004      996 mV
MPC-LU2_1V0-z12004      998 mV
MPC-LU3_1V0-z12004      994 mV
MPC-12VA-BMR453        12031 mV
MPC-12VB-BMR453        12003 mV
MPC-PMB_1V1-z12006      1104 mV
MPC-PMB_1V2-z12106      1194 mV
MPC-XM_0V9-vt273m      911 mV

```

```
I2C Slave Revision      110
```

FPC 8 status:

```

State                    Online
Temperature Intake       32 degrees C / 89 degrees F
Temperature Exhaust A    44 degrees C / 111 degrees F
Temperature Exhaust B    37 degrees C / 98 degrees F
Temperature LU 0 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 0 TCAM Chip 49 degrees C / 120 degrees F
Temperature LU 0 TSen     41 degrees C / 105 degrees F
Temperature LU 0 Chip     52 degrees C / 125 degrees F
Temperature MQ 0 TSen     41 degrees C / 105 degrees F
Temperature MQ 0 Chip     47 degrees C / 116 degrees F
Temperature LU 1 TCAM TSen 39 degrees C / 102 degrees F
Temperature LU 1 TCAM Chip 42 degrees C / 107 degrees F
Temperature LU 1 TSen     39 degrees C / 102 degrees F
Temperature LU 1 Chip     46 degrees C / 114 degrees F
Temperature MQ 1 TSen     39 degrees C / 102 degrees F

```

```

Temperature MQ 1 Chip      45 degrees C / 113 degrees F
Power
  MPC-BIAS3V3-z12105      3296 mV
  MPC-VDD3V3-z12006      3298 mV
  MPC-VDD2V5-z12006      2505 mV
  MPC-TCAM_1V0-z12004     997 mV
  MPC-AVDD1V0-z12006     1007 mV
  MPC-VDD1V8-z12006     1803 mV
  MPC-PCIE_1V0-z12006    1004 mV
  MPC-LU0_1V0-z12004     1000 mV
  MPC-MQ0_1V0-z12004     999 mV
  MPC-VDD_1V5-z12004     1498 mV
  MPC-PMB_1V1-z12006     1102 mV
  MPC-9VA-BMR453         9009 mV
  MPC-9VB-BMR453         8960 mV
  MPC-PMB_1V2-z12105     1202 mV
  MPC-LU1_1V0-z12004     1005 mV
  MPC-MQ1_1V0-z12004     1000 mV
I2C Slave Revision       70
FPC 9 status:
  State                   Online
  Temperature Intake      34 degrees C / 93 degrees F
  Temperature Exhaust A   41 degrees C / 105 degrees F
  Temperature Exhaust B   54 degrees C / 129 degrees F
  Temperature LU 0 TSen   51 degrees C / 123 degrees F
  Temperature LU 0 Chip   52 degrees C / 125 degrees F
  Temperature LU 1 TSen   51 degrees C / 123 degrees F
  Temperature LU 1 Chip   55 degrees C / 131 degrees F
  Temperature LU 2 TSen   51 degrees C / 123 degrees F
  Temperature LU 2 Chip   47 degrees C / 116 degrees F
  Temperature LU 3 TSen   51 degrees C / 123 degrees F
  Temperature LU 3 Chip   47 degrees C / 116 degrees F
  Temperature MQ 0 TSen   40 degrees C / 104 degrees F
  Temperature MQ 0 Chip   42 degrees C / 107 degrees F
  Temperature MQ 1 TSen   40 degrees C / 104 degrees F
  Temperature MQ 1 Chip   44 degrees C / 111 degrees F
  Temperature MQ 2 TSen   40 degrees C / 104 degrees F
  Temperature MQ 2 Chip   38 degrees C / 100 degrees F
  Temperature MQ 3 TSen   40 degrees C / 104 degrees F
  Temperature MQ 3 Chip   40 degrees C / 104 degrees F
Power
  AS-BIAS3V3-z12105      3302 mV
  AS-VDD1V8-z12006      1808 mV

```

```

AS-VDD2V5-z12006      2513 mV
AS-AVDD1V0-z12004    997 mV
AS-PCIE_1V0-z12004   999 mV
AS-VDD3V3-z12004     3294 mV
AS-VDD_1V5A-z12004   1503 mV
AS-VDD_1V5B-z12004   1502 mV
AS-LU0_1V0-z12004    996 mV
AS-LU1_1V0-z12004    999 mV
AS-MQ0_1V0-z12004    997 mV
AS-MQ1_1V0-z12004    999 mV
AS-LU2_1V0-z12004    997 mV
AS-LU3_1V0-z12004    998 mV
AS-MQ2_1V0-z12004    1000 mV
AS-MQ3_1V0-z12004    1000 mV
AS-PMB_1V1-z12006    1102 mV
I2C Slave Revision    68

```

show chassis environment fpc (MX2008 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State           Online
Temperature Intake      29 degrees C / 84 degrees F
Temperature Exhaust A   43 degrees C / 109 degrees F
Temperature Exhaust B   42 degrees C / 107 degrees F
Temperature XL 0 TSen    38 degrees C / 100 degrees F
Temperature XL 0 Chip    53 degrees C / 127 degrees F
Temperature XL 0 XR2 0 TSen38 degrees C / 100 degrees F
Temperature XL 0 XR2 0 Chip60 degrees C / 140 degrees F
Temperature XL 0 XR2 1 TSen38 degrees C / 100 degrees F
Temperature XL 0 XR2 1 Chip60 degrees C / 140 degrees F
Temperature XL 1 TSen    30 degrees C / 86 degrees F
Temperature XL 1 Chip    43 degrees C / 109 degrees F
Temperature XL 1 XR2 0 TSen30 degrees C / 86 degrees F
Temperature XL 1 XR2 0 Chip50 degrees C / 122 degrees F
Temperature XL 1 XR2 1 TSen30 degrees C / 86 degrees F
Temperature XL 1 XR2 1 Chip50 degrees C / 122 degrees F
Temperature XM 0 TSen    42 degrees C / 107 degrees F
Temperature XM 0 Chip    49 degrees C / 120 degrees F
Temperature XM 1 TSen    42 degrees C / 107 degrees F
Temperature XM 1 Chip    42 degrees C / 107 degrees F

```

```

Temperature XM 2 TSen      42 degrees C / 107 degrees F
Temperature XM 2 Chip      42 degrees C / 107 degrees F
Temperature XM 3 TSen      42 degrees C / 107 degrees F
Temperature XM 3 Chip      40 degrees C / 104 degrees F
Temperature PCIe Switch TSen42 degrees C / 107 degrees F
Temperature PCIe Switch Chip22 degrees C / 71 degrees F

```

Power

```

MPC-VDD_3V3-vt273m      3304 mV
MPC-VDD_2V5-vt273m      2503 mV
MPC-VDD_1V5-vt273m      1499 mV
MPC-PCIE_0V9-vt273m      900 mV
MPC-VDD_1V8-vt273m      1799 mV
MPC-VDD_1V2-vt273m      1203 mV
MPC-XM01_AVDD_1V0-vt273 1001 mV
MPC-XM23_AVDD_1V0-vt273 1001 mV
MPC-XM0_0V9-vt273m      900 mV
MPC-XM1_0V9-vt273m      901 mV
MPC-XM2_0V9-vt273m      903 mV
MPC-XM3_0V9-vt273m      899 mV
MPC-XL0_XR0_0V9-vt273m  899 mV
MPC-XL0_XR1_0V9-vt273m  903 mV
MPC-XL0_0V9-vt273m      899 mV
MPC-XL0_AVDD_1V0-vt273m 1000 mV
MPC-XL0_VDD_1V5-vt273m  1498 mV
MPC-XL0_XR_1V2-vt273m   1200 mV
MPC-XL1_XR0_0V9-vt273m  899 mV
MPC-XL1_XR1_0V9-vt273m  899 mV
MPC-XL1_0V9-vt273m      900 mV
MPC-XL1_AVDD_1V0-vt273m 1000 mV
MPC-XL1_VDD_1V5-vt273m  1501 mV
MPC-XL1_XR_1V2-vt273m   1199 mV
MPC-PMB-1V05-ltc2978    1049 mV
MPC-PMB-1V5-ltc2978     1500 mV
MPC-PMB-2V5-ltc2978     2500 mV
MPC-PMB-3V3-ltc2978     3298 mV

```

```
I2C Slave Revision      20
```

FPC 1 status:

```

State                    Online
Temperature Intake       29 degrees C / 84 degrees F
Temperature Exhaust A    52 degrees C / 125 degrees F
Temperature Exhaust B    44 degrees C / 111 degrees F
Temperature EA0 TSen     55 degrees C / 131 degrees F
Temperature EA0 Chip     48 degrees C / 118 degrees F

```

```

Temperature EA0_XR0 TSen 55 degrees C / 131 degrees F
Temperature EA0_XR0 Chip 57 degrees C / 134 degrees F
Temperature EA0_XR1 TSen 55 degrees C / 131 degrees F
Temperature EA0_XR1 Chip 54 degrees C / 129 degrees F
Temperature EA1 TSen 55 degrees C / 131 degrees F
Temperature EA1 Chip 50 degrees C / 122 degrees F
Temperature EA1_XR0 TSen 55 degrees C / 131 degrees F
Temperature EA1_XR0 Chip 59 degrees C / 138 degrees F
Temperature EA1_XR1 TSen 55 degrees C / 131 degrees F
Temperature EA1_XR1 Chip 59 degrees C / 138 degrees F
Temperature PEX TSen 55 degrees C / 131 degrees F
Temperature PEX Chip 39 degrees C / 102 degrees F
Temperature EA2 TSen 43 degrees C / 109 degrees F
Temperature EA2 Chip 39 degrees C / 102 degrees F
Temperature EA2_XR0 TSen 43 degrees C / 109 degrees F
Temperature EA2_XR0 Chip 45 degrees C / 113 degrees F
Temperature EA2_XR1 TSen 43 degrees C / 109 degrees F
Temperature EA2_XR1 Chip 43 degrees C / 109 degrees F
Temperature EA3 TSen 43 degrees C / 109 degrees F
Temperature EA3 Chip 41 degrees C / 105 degrees F
Temperature EA3_XR0 TSen 43 degrees C / 109 degrees F
Temperature EA3_XR0 Chip 50 degrees C / 122 degrees F
Temperature EA3_XR1 TSen 43 degrees C / 109 degrees F
Temperature EA3_XR1 Chip 46 degrees C / 114 degrees F
Temperature EA0_HMC0 Logic die 61 degrees C / 141 degrees F
Temperature EA0_HMC0 DRAM botm 58 degrees C / 136 degrees F
Temperature EA0_HMC1 Logic die 62 degrees C / 143 degrees F
Temperature EA0_HMC1 DRAM botm 59 degrees C / 138 degrees F
Temperature EA0_HMC2 Logic die 59 degrees C / 138 degrees F
Temperature EA0_HMC2 DRAM botm 56 degrees C / 132 degrees F
Temperature EA1_HMC0 Logic die 67 degrees C / 152 degrees F
Temperature EA1_HMC0 DRAM botm 64 degrees C / 147 degrees F
Temperature EA1_HMC1 Logic die 65 degrees C / 149 degrees F
Temperature EA1_HMC1 DRAM botm 62 degrees C / 143 degrees F
Temperature EA1_HMC2 Logic die 63 degrees C / 145 degrees F
Temperature EA1_HMC2 DRAM botm 60 degrees C / 140 degrees F
Temperature EA2_HMC0 Logic die 51 degrees C / 123 degrees F
Temperature EA2_HMC0 DRAM botm 48 degrees C / 118 degrees F
Temperature EA2_HMC1 Logic die 55 degrees C / 131 degrees F
Temperature EA2_HMC1 DRAM botm 52 degrees C / 125 degrees F
Temperature EA2_HMC2 Logic die 52 degrees C / 125 degrees F
Temperature EA2_HMC2 DRAM botm 49 degrees C / 120 degrees F
Temperature EA3_HMC0 Logic die 51 degrees C / 123 degrees F

```

Temperature EA3_HMC0 DRAM botm 48 degrees C / 118 degrees F
 Temperature EA3_HMC1 Logic die 52 degrees C / 125 degrees F
 Temperature EA3_HMC1 DRAM botm 49 degrees C / 120 degrees F
 Temperature EA3_HMC2 Logic die 52 degrees C / 125 degrees F
 Temperature EA3_HMC2 DRAM botm 49 degrees C / 120 degrees F

Power

MPC-EA0_0V9-vt1527mb	950 mV
MPC-EA1_0V9-vt1527mb	950 mV
MPC-EA2_0V9-vt1527mb	925 mV
MPC-EA3_0V9-vt1527mb	924 mV
MAX20751-1V0	1020 mV
MAX20731-0V9	891 mV
MAX20751-EA0-AVDD1V0	1000 mV
MAX20731-EA0-1V2	1189 mV
MAX20731-EA0-HMC-1V2	1182 mV
MAX20731-EA0-0V906	899 mV
MAX20731-EA0-HMC-0V9	891 mV
MAX20751-EA1-AVDD1V0	1000 mV
MAX20731-EA1-1V2	1189 mV
MAX20731-EA1-HMC-1V2	1182 mV
MAX20731-EA1-0V906	899 mV
MAX20731-EA1-HMC-0V9	889 mV
MAX20751-EA2-AVDD1V0	1000 mV
MAX20731-EA2-1V2	1186 mV
MAX20731-EA2-HMC-1V2	1193 mV
MAX20731-EA2-0V906	899 mV
MAX20731-EA2-HMC-0V9	889 mV
MAX20751-EA3-AVDD1V0	1000 mV
MAX20731-EA3-1V2	1186 mV
MAX20731-EA3-HMC-1V2	1193 mV
MAX20731-EA3-0V906	897 mV
MAX20731-EA3-HMC-0V9	894 mV
MAX20731-3V3	3268 mV
UCD9090_0-CH_1-EA0_PLL_	1010 mV
UCD9090_0-CH_2-EA0_1V04	1038 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1494 mV
UCD9090_0-CH_5-EA1_PLL_	1012 mV
UCD9090_0-CH_6-EA1_1V04	1038 mV
UCD9090_0-CH_7-EA1_2V5	2497 mV
UCD9090_0-CH_8-EA1_1V5	1498 mV
UCD9090_0-CH_9-VDD_1V8	1804 mV
UCD9090_0-CH_10-VDD_2V5	2499 mV

```

UCD9090_1-CH_1-EA2_PLL_      1017 mV
UCD9090_1-CH_2-EA2_1V04     1041 mV
UCD9090_1-CH_3-EA2_2V5     2499 mV
UCD9090_1-CH_4-EA2_1V5     1503 mV
UCD9090_1-CH_5-EA3_PLL_     1015 mV
UCD9090_1-CH_6-EA3_1V04     1048 mV
UCD9090_1-CH_7-EA3_2V5     2499 mV
UCD9090_1-CH_8-EA3_1V5     1500 mV
UCD9090_1-CH_9-VDD_1V5     1497 mV
UCD9090_1-CH_10-VDD_1V2    1216 mV
PMB PVCC 0.7V - 1.05V       802 mV
PMB PVNN 0V - 1.02V        976 mV
PMB 1.0V                    1002 mV
PMB 1.1V                    1076 mV
PMB 1.35V                   1347 mV
PMB VDDQ 1.5V              1504 mV
PMB 1.8V                    1804 mV
PMB VDD 3.3V               3292 mV
PMB BIAS 5.0V              5008 mV
PMB USB 5.0V               5000 mV
PMB 12V                    10866 mV

I2C Slave Revision          112

FPC 7 status:
State                        Online
Temperature Intake           31 degrees C / 87 degrees F
Temperature Exhaust A       46 degrees C / 114 degrees F
Temperature Exhaust B       38 degrees C / 100 degrees F
Temperature QX 0 TSen       49 degrees C / 120 degrees F
Temperature QX 0 Chip       52 degrees C / 125 degrees F
Temperature LU 0 TCAM TSen  49 degrees C / 120 degrees F
Temperature LU 0 TCAM Chip  52 degrees C / 125 degrees F
Temperature LU 0 TSen       49 degrees C / 120 degrees F
Temperature LU 0 Chip       51 degrees C / 123 degrees F
Temperature MQ 0 TSen       49 degrees C / 120 degrees F
Temperature MQ 0 Chip       55 degrees C / 131 degrees F
Temperature QX 1 TSen       41 degrees C / 105 degrees F
Temperature QX 1 Chip       42 degrees C / 107 degrees F
Temperature LU 1 TCAM TSen  41 degrees C / 105 degrees F
Temperature LU 1 TCAM Chip  43 degrees C / 109 degrees F
Temperature LU 1 TSen       41 degrees C / 105 degrees F
Temperature LU 1 Chip       46 degrees C / 114 degrees F
Temperature MQ 1 TSen       41 degrees C / 105 degrees F
Temperature MQ 1 Chip       47 degrees C / 116 degrees F

```

```

Power
MPC-BIAS3V3-z12105          3302 mV
MPC-VDD3V3-z12006          3307 mV
MPC-VDD2V5-z12006          2505 mV
MPC-TCAM_1V0-z12004         1000 mV
MPC-AVDD1V0-z12006         1006 mV
MPC-VDD1V8-z12006          1800 mV
MPC-PCIE_1V0-z12006         1000 mV
MPC-LU0_1V0-z12004          997 mV
MPC-MQ0_1V0-z12004          999 mV
MPC-VDD_1V5-z12004         1495 mV
MPC-PMB_1V1-z12006         1096 mV
MPC-9VA-BMR453              9051 mV
MPC-9VB-BMR453              8990 mV
MPC-PMB_1V2-z12106         1200 mV
MPC-LU1_1V0-z12004          997 mV
MPC-MQ1_1V0-z12004          998 mV
MPC-QXM0_1V0-z12006         1000 mV
MPC-QXM1_1V0-z12006         999 mV
I2C Slave Revision          70

```

show chassis environment fpc (MX240 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State           Online
Temperature Intake      34 degrees C / 93 degrees F
Temperature Exhaust A   39 degrees C / 102 degrees F
Temperature Exhaust B   53 degrees C / 127 degrees F
Temperature I3 0 TSensor 51 degrees C / 123 degrees F
Temperature I3 0 Chip    54 degrees C / 129 degrees F
Temperature I3 1 TSensor 50 degrees C / 122 degrees F
Temperature I3 1 Chip    53 degrees C / 127 degrees F
Temperature I3 2 TSensor 48 degrees C / 118 degrees F
Temperature I3 2 Chip    51 degrees C / 123 degrees F
Temperature I3 3 TSensor 45 degrees C / 113 degrees F
Temperature I3 3 Chip    48 degrees C / 118 degrees F
Temperature IA 0 TSensor 45 degrees C / 113 degrees F
Temperature IA 0 Chip    45 degrees C / 113 degrees F
Temperature IA 1 TSensor 45 degrees C / 113 degrees F
Temperature IA 1 Chip    49 degrees C / 120 degrees F

```


Power

1.5 V	1492 mV
2.5 V	2507 mV
3.3 V	3306 mV
1.8 V PFE 0	1801 mV
1.8 V PFE 1	1804 mV
1.8 V PFE 2	1798 mV
1.8 V PFE 3	1798 mV
1.2 V PFE 0	1169 mV
1.2 V PFE 1	1189 mV
1.2 V PFE 2	1182 mV
1.2 V PFE 3	1176 mV

I2C Slave Revision	42
--------------------	----

FPC 2 status:

State	Online
Temperature Intake	33 degrees C / 91 degrees F
Temperature Exhaust A	41 degrees C / 105 degrees F
Temperature Exhaust B	53 degrees C / 127 degrees F
Temperature I3 0 TSensor	53 degrees C / 127 degrees F
Temperature I3 0 Chip	58 degrees C / 136 degrees F
Temperature I3 1 TSensor	52 degrees C / 125 degrees F
Temperature I3 1 Chip	56 degrees C / 132 degrees F
Temperature I3 2 TSensor	50 degrees C / 122 degrees F
Temperature I3 2 Chip	52 degrees C / 125 degrees F
Temperature I3 3 TSensor	46 degrees C / 114 degrees F
Temperature I3 3 Chip	49 degrees C / 120 degrees F
Temperature IA 0 TSensor	51 degrees C / 123 degrees F
Temperature IA 0 Chip	49 degrees C / 120 degrees F
Temperature IA 1 TSensor	48 degrees C / 118 degrees F
Temperature IA 1 Chip	53 degrees C / 127 degrees F

Power

1.5 V	1492 mV
2.5 V	2445 mV
3.3 V	3293 mV
1.8 V PFE 0	1827 mV
1.8 V PFE 1	1775 mV
1.8 V PFE 2	1788 mV
1.8 V PFE 3	1798 mV
1.2 V PFE 0	1250 mV
1.2 V PFE 1	1234 mV
1.2 V PFE 2	1231 mV

```

1.2 V PFE 3          1192 mV
I2C Slave Revision  42

```

show chassis environment fpc (MX480 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
State                Online
Temperature Intake   36 degrees C / 96 degrees F
Temperature Exhaust A 41 degrees C / 105 degrees F
Temperature Exhaust B 55 degrees C / 131 degrees F
Temperature I3 0 TSensor 55 degrees C / 131 degrees F
Temperature I3 0 Chip  57 degrees C / 134 degrees F
Temperature I3 1 TSensor 53 degrees C / 127 degrees F
Temperature I3 1 Chip  53 degrees C / 127 degrees F
Temperature I3 2 TSensor 52 degrees C / 125 degrees F
Temperature I3 2 Chip  49 degrees C / 120 degrees F
Temperature I3 3 TSensor 47 degrees C / 116 degrees F
Temperature I3 3 Chip  47 degrees C / 116 degrees F
Temperature IA 0 TSensor 54 degrees C / 129 degrees F
Temperature IA 0 Chip  58 degrees C / 136 degrees F
Temperature IA 1 TSensor 48 degrees C / 118 degrees F
Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
 1.5 V                1479 mV
 2.5 V                2542 mV
 3.3 V                3319 mV
 1.8 V PFE 0         1811 mV
 1.8 V PFE 1         1804 mV
 1.8 V PFE 2         1804 mV
 1.8 V PFE 3         1814 mV
 1.2 V PFE 0         1192 mV
 1.2 V PFE 1         1202 mV
 1.2 V PFE 2         1205 mV
 1.2 V PFE 3         1189 mV
I2C Slave Revision  40

```

show chassis environment fpc (MX960 Router MPC10E-15C-MRATE)

```

user@router> show chassis environment fpc 8

FPC 8 status:
  State                Online
  Temperature Intake           37 degrees C / 98 degrees
F
  Temperature Exhaust A       50 degrees C / 122 degrees
F
  Temperature Exhaust B       56 degrees C / 132 degrees
F
  Temperature ZT0 Chip         83 degrees C / 181 degrees
F
  Temperature ZT1 Chip         80 degrees C / 176 degrees
F
  Temperature ZT2 Chip         81 degrees C / 177 degrees
F
  Temperature PCIE_SW Chip     64 degrees C / 147 degrees
F
  Temperature ZT0 TestMacro    73 degrees C / 163 degrees
F
  Temperature ZT0 hbmio_grp3   74 degrees C / 165 degrees
F
  Temperature ZT0 hbmio_grp0   76 degrees C / 168 degrees
F
  Temperature ZT0 gumem1       78 degrees C / 172 degrees
F
  Temperature ZT0 llm          80 degrees C / 176 degrees
F
  Temperature ZT0 wanio_sd     78 degrees C / 172 degrees
F
  Temperature ZT0 fabio_sd     84 degrees C / 183 degrees
F
  Temperature ZT0 flexmem      84 degrees C / 183 degrees
F
  Temperature ZT1 TestMacro    70 degrees C / 158 degrees
F
  Temperature ZT1 hbmio_grp3   71 degrees C / 159 degrees
F
  Temperature ZT1 hbmio_grp0   74 degrees C / 165 degrees
F

```

Temperature ZT1 gumem1	75 degrees C / 167 degrees
F	
Temperature ZT1 llm	78 degrees C / 172 degrees
F	
Temperature ZT1 wanio_sd	76 degrees C / 168 degrees
F	
Temperature ZT1 fabio_sd	78 degrees C / 172 degrees
F	
Temperature ZT1 flexmem	82 degrees C / 179 degrees
F	
Temperature ZT2 TestMacro	71 degrees C / 159 degrees
F	
Temperature ZT2 hbmio_grp3	72 degrees C / 161 degrees
F	
Temperature ZT2 hbmio_grp0	75 degrees C / 167 degrees
F	
Temperature ZT2 gumem1	76 degrees C / 168 degrees
F	
Temperature ZT2 llm	78 degrees C / 172 degrees
F	
Temperature ZT2 wanio_sd	78 degrees C / 172 degrees
F	
Temperature ZT2 fabio_sd	80 degrees C / 176 degrees
F	
Temperature ZT2 flexmem	76 degrees C / 168 degrees
F	
Temperature ZT0 HBM0	74 degrees C / 165 degrees
F	
Temperature ZT0 HBM1	74 degrees C / 165 degrees
F	
Temperature ZT1 HBM0	74 degrees C / 165 degrees
F	
Temperature ZT1 HBM1	75 degrees C / 167 degrees
F	
Temperature ZT2 HBM0	73 degrees C / 163 degrees
F	
Temperature ZT2 HBM1	73 degrees C / 163 degrees
F	
Temperature FAB RT1.0	73 degrees C / 163 degrees
F	
Temperature FAB RT2.0	75 degrees C / 167 degrees
F	
Temperature FAB RT3.0	73 degrees C / 163 degrees

F	Temperature FAB RT4.0	70 degrees C / 158 degrees
F	Temperature FAB RT5.0	67 degrees C / 152 degrees
F	Temperature FAB RT6.0	67 degrees C / 152 degrees
F	Temperature FAB RT7.0	65 degrees C / 149 degrees
F	Temperature FAB RT8.0	66 degrees C / 150 degrees
F	Temperature WAN RT9.0	64 degrees C / 147 degrees
F	Temperature WAN RT9.1	62 degrees C / 143 degrees
F	Temperature WAN RT10.0	65 degrees C / 149 degrees
F	Temperature WAN RT10.1	63 degrees C / 145 degrees
F	Temperature WAN RT11.0	51 degrees C / 123 degrees
F	Temperature WAN RT11.1	49 degrees C / 120 degrees
F	Temperature PIM4820 T1	72 degrees C / 161 degrees
F	Temperature BMR456-12V-BRICK-A T1	83 degrees C / 181 degrees
F	Temperature BMR456-12V-BRICK-B T1	91 degrees C / 195 degrees
F	Temperature MAX20730-ZT0-AVDDH T1	72 degrees C / 161 degrees
F	Temperature MAX20730-ZT0-HBM-VDDQ T1	64 degrees C / 147 degrees
F	Temperature MAX20730-ZT0-HBM-VDDC T1	65 degrees C / 149 degrees
F	Temperature MAX20730-ZT1-AVDDH T1	65 degrees C / 149 degrees
F	Temperature MAX20730-ZT1-HBM-VDDQ T1	60 degrees C / 140 degrees
F	Temperature MAX20730-ZT1-HBM-VDDC T1	57 degrees C / 134 degrees
F	Temperature MAX20730-ZT2-AVDDH T1	65 degrees C / 149 degrees
F		

Temperature MAX20730-ZT2-HBM-VDDQ T1	58 degrees C / 136 degrees
F	
Temperature MAX20730-ZT2-HBM-VDDC T1	55 degrees C / 131 degrees
F	
Temperature CPU0_PMB	61 degrees C / 141 degrees
F	
Temperature CPU7_PMB	61 degrees C / 141 degrees
F	
Temperature DDR4 A	38 degrees C / 100 degrees
F	
Temperature DDR4 B	37 degrees C / 98 degrees
F	
Power	
PIM4820	56967 mV
BMR456-12V-BRICK-A	12016 mV
BMR456-12V-BRICK-B	12039 mV
MAX20743-RT01-DVDD	724 mV
MAX20743-RT234-DVDD	724 mV
MAX20743-RT567-DVDD	724 mV
MAX20754-ZT0-VDD	750 mV
MAX20754-ZT0-VDDM	799 mV
MAX20743-ZT0-AVDD	904 mV
MAX20730-ZT0-AVDDH	1103 mV
MAX20730-ZT0-HBM-VDDQ	1198 mV
MAX20730-ZT0-HBM-VDDC	1202 mV
MAX20730-VDD-1V25	1246 mV
MAX20754-ZT1-VDD	724 mV
MAX20754-ZT1-VDDM	800 mV
MAX20743-ZT1-AVDD	904 mV
MAX20730-ZT1-AVDDH	1103 mV
MAX20730-ZT1-HBM-VDDQ	1202 mV
MAX20730-ZT1-HBM-VDDC	1198 mV
MAX20730-PCIE-0V9	901 mV
MAX20754-ZT2-VDD	724 mV
MAX20754-ZT2-VDDM	799 mV
MAX20743-ZT2-AVDD	904 mV
MAX20730-ZT2-AVDDH	1103 mV
MAX20730-ZT2-HBM-VDDQ	1198 mV
MAX20730-ZT2-HBM-VDDC	1198 mV
MAX20730-VDD3V3	3308 mV
MAX20754-WAN-VDD3V3	3301 mV
MAX20754-WAN-DVDD0V8	799 mV
MAX20743-WAN-VDD1V0A	1003 mV

```

MAX20743-WAN-AVDD0V8      800 mV
MAX20743-WAN-VDD1V0C     1003 mV
TPS53631-1V2-VDDQ-PMB    1225 mV
TPS53641-VCCIN-PMB       1770 mV
TPS53641-VCCSBUS-PMB     1040 mV
MAX20730-BIAS3P30-PMB    3308 mV
MAX20730-BIAS5P0-PMB     5063 mV
MAX20730-VPP-V2P5-PMB    2503 mV
MAX20730-VDD1V2          1195 mV
MAX20730-VDD1V5          1496 mV
MAX20730-VDD1V8          1799 mV
MAX20730-VDD2V5          2511 mV
MAX20754-RT-AVDD-0V8     800 mV
MAX20743-XGE-VDD-AVS     1012 mV
PMB VCC1P05_PCH_SW       1048 mV
PMB VCC1P3                1294 mV
PMB VCC1P5                1485 mV
PMB VCC1P7                1705 mV
PMB DDR4_VPP              2519 mV
PMB VCC3P3                3336 mV
PMB VCC3P3_PCH           3332 mV
I2C Slave Revision       124

```

show chassis environment fpc (MX960 Router)

```

user@host> show chassis environment fpc
FPC 5 status:
State                Online
Temperature Intake    27 degrees C / 80 degrees F
Temperature Exhaust A 34 degrees C / 93 degrees F
Temperature Exhaust B 40 degrees C / 104 degrees F
Temperature I3 0 TSensor 39 degrees C / 102 degrees F
Temperature I3 0 Chip  41 degrees C / 105 degrees F
Temperature I3 1 TSensor 38 degrees C / 100 degrees F
Temperature I3 1 Chip  37 degrees C / 98 degrees F
Temperature I3 2 TSensor 37 degrees C / 98 degrees F
Temperature I3 2 Chip  34 degrees C / 93 degrees F
Temperature I3 3 TSensor 32 degrees C / 89 degrees F
Temperature I3 3 Chip  33 degrees C / 91 degrees F
Temperature IA 0 TSensor 39 degrees C / 102 degrees F
Temperature IA 0 Chip  44 degrees C / 111 degrees F

```

```

Temperature IA 1 TSensor 36 degrees C / 96 degrees F
Temperature IA 1 Chip    44 degrees C / 111 degrees F
Power
  1.5 V                  1479 mV
  2.5 V                  2523 mV
  3.3 V                  3254 mV
  1.8 V PFE 0           1798 mV
  1.8 V PFE 1           1798 mV
  1.8 V PFE 2           1807 mV
  1.8 V PFE 3           1791 mV
  1.2 V PFE 0           1173 mV
  1.2 V PFE 1           1179 mV
  1.2 V PFE 2           1179 mV
  1.2 V PFE 3           1185 mV
I2C Slave Revision      6
FPC 6 status:
State                    Online
Temperature Intake       25 degrees C / 77 degrees F
Temperature Exhaust A    38 degrees C / 100 degrees F
Temperature Exhaust B    38 degrees C / 100 degrees F
Temperature I3 0 TSensor 40 degrees C / 104 degrees F
Temperature I3 0 Chip    40 degrees C / 104 degrees F
Temperature I3 1 TSensor 40 degrees C / 104 degrees F
Temperature I3 1 Chip    38 degrees C / 100 degrees F
Temperature I3 2 TSensor 37 degrees C / 98 degrees F
Temperature I3 2 Chip    32 degrees C / 89 degrees F
Temperature I3 3 TSensor 34 degrees C / 93 degrees F
Temperature I3 3 Chip    33 degrees C / 91 degrees F
Temperature IA 0 TSensor 45 degrees C / 113 degrees F
Temperature IA 0 Chip    47 degrees C / 116 degrees F
Temperature IA 1 TSensor 37 degrees C / 98 degrees F
Temperature IA 1 Chip    42 degrees C / 107 degrees F
Power
  1.5 V                  1485 mV
  2.5 V                  2510 mV
  3.3 V                  3332 mV
  1.8 V PFE 0           1801 mV
  1.8 V PFE 1           1814 mV
  1.8 V PFE 2           1804 mV
  1.8 V PFE 3           1820 mV
  1.2 V PFE 0           1192 mV
  1.2 V PFE 1           1189 mV
  1.2 V PFE 2           1202 mV

```



```

1.2 V PFE 3          1156 mV
I2C Slave Revision  40

```

show chassis environment fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis environment fpc
FPC 0 status:
  State                Online
  Temperature Intake    32 degrees C / 89 degrees F
  Temperature Exhaust A 39 degrees C / 102 degrees F
  Temperature Exhaust B 37 degrees C / 98 degrees F
  Temperature QX 0 TSen 44 degrees C / 111 degrees F
  Temperature QX 0 Chip 48 degrees C / 118 degrees F
  Temperature LU 0 TCAM TSen 44 degrees C / 111 degrees F
  Temperature LU 0 TCAM Chip 47 degrees C / 116 degrees F
  Temperature LU 0 TSen 44 degrees C / 111 degrees F
  Temperature LU 0 Chip 48 degrees C / 118 degrees F
  Temperature MQ 0 TSen 44 degrees C / 111 degrees F
  Temperature MQ 0 Chip 47 degrees C / 116 degrees F
Power
  MPC-BIAS3V3-z12105    3297 mV
  MPC-VDD3V3-z12105    3306 mV
  MPC-VDD2V5-z12105    2498 mV
  MPC-TCAM_1V0-z12004   999 mV
  MPC-AVDD1V0-z12006    999 mV
  MPC-VDD1V8-z12006    1796 mV
  MPC-PCIE_1V0-z12006   1002 mV
  MPC-LU0_1V0-z12004    997 mV
  MPC-MQ0_1V0-z12004    995 mV
  MPC-VDD_1V5-z12004    1496 mV
  MPC-PMB_1V1-z12006    1094 mV
  MPC-9VA-BMR453        9054 mV
  MPC-9VB-BMR453        9037 mV
  MPC-PMB_1V2-z12106    1191 mV
  MPC-QXM0_1V0-z12006   1000 mV
  I2C Slave Revision    66
FPC 1 status:
  State                Online
  Temperature Intake    35 degrees C / 95 degrees F
  Temperature Exhaust A 50 degrees C / 122 degrees F
  Temperature Exhaust B 56 degrees C / 132 degrees F

```

```

Temperature LU 0 TSen      46 degrees C / 114 degrees F
Temperature LU 0 Chip      59 degrees C / 138 degrees F
Temperature LU 1 TSen      46 degrees C / 114 degrees F
Temperature LU 1 Chip      45 degrees C / 113 degrees F
Temperature LU 2 TSen      46 degrees C / 114 degrees F
Temperature LU 2 Chip      60 degrees C / 140 degrees F
Temperature LU 3 TSen      46 degrees C / 114 degrees F
Temperature LU 3 Chip      71 degrees C / 159 degrees F
Temperature XM 0 TSen      46 degrees C / 114 degrees F
Temperature XM 0 Chip      -18 degrees C / 0 degrees F
Temperature XF 0 TSen      46 degrees C / 114 degrees F
Temperature XF 0 Chip      76 degrees C / 168 degrees F
Power
MPC-BIAS3V3-z12105        3292 mV
MPC-VDD3V3-z16100         3303 mV
MPC-VDD2V5-z16100         2501 mV
MPC-VDD1V8-z12004         1801 mV
MPC-AVDD1V0-z12006         996 mV
MPC-VDD1V2-z16100         1199 mV
MPC-VDD1V5A-z12004         1493 mV
MPC-VDD1V5B-z12004         1498 mV
MPC-XF_0V9-z12006          996 mV
MPC-PCIE_1V0-z16100        1000 mV
MPC-LU0_1V0-z12004          994 mV
MPC-LU1_1V0-z12004          994 mV
MPC-LU2_1V0-z12004          992 mV
MPC-LU3_1V0-z12004          993 mV
MPC-12VA-BMR453            12003 mV
MPC-12VB-BMR453            12043 mV
MPC-PMB_1V1-z12006         1091 mV
MPC-PMB_1V2-z12106         1196 mV
MPC-XM_0V9-vt273m          899 mV
I2C Slave Revision         106

```

show chassis environment fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```

user@host>show chassis environment fpc 1
FPC 1 status:
State                Online
Temperature Intake   36 degrees C / 96 degrees F

```

```

Temperature Exhaust A      39 degrees C / 102 degrees F
Temperature LU TSen        52 degrees C / 125 degrees F
Temperature LU Chip        54 degrees C / 129 degrees F
Temperature XM TSen        52 degrees C / 125 degrees F
Temperature XM Chip        60 degrees C / 140 degrees F
Temperature PCIe TSen      52 degrees C / 125 degrees F
Temperature PCIe Chip      69 degrees C / 156 degrees F
Power
  MPC-BIAS3V3-z12106      3302 mV
  MPC-VDD3V3-z16100      3325 mV
  MPC-AVDD1V0-z16100     1007 mV
  MPC-PCIE_1V0-z16100     904 mV
  MPC-LU0_1V0-z12004      996 mV
  MPC-VDD_1V5-z12004     1498 mV
  MPC-12VA-BMR453        11733 mV
  MPC-12VB-BMR453        11728 mV
  MPC-XM_0V9-vt273m      900 mV
I2C Slave Revision        81

```

show chassis environment fpc (MX10003 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
  State           Online
FPC 0 Intake Temp Sensor  29 degrees C / 84 degrees F
FPC 0 Exhaust-A Temp Sensor56 degrees C / 132 degrees F
FPC 0 Exhaust-B Temp Sensor44 degrees C / 111 degrees F
FPC 0 EA0 Chip           58 degrees C / 136 degrees F
FPC 0 EA0-XR0 Chip       61 degrees C / 141 degrees F
FPC 0 EA0-XR1 Chip       62 degrees C / 143 degrees F
FPC 0 EA1 Chip           67 degrees C / 152 degrees F
FPC 0 EA1-XR0 Chip       72 degrees C / 161 degrees F
FPC 0 EA1-XR1 Chip       72 degrees C / 161 degrees F
FPC 0 PEX Chip           77 degrees C / 170 degrees F
FPC 0 EA2 Chip           48 degrees C / 118 degrees F
FPC 0 EA2-XR0 Chip       54 degrees C / 129 degrees F
FPC 0 EA2-XR1 Chip       56 degrees C / 132 degrees F
FPC 0 PF Chip            68 degrees C / 154 degrees F
FPC 0 EA0_HMC0 Logic die 72 degrees C / 161 degrees F
FPC 0 EA0_HMC0 DRAM botm 69 degrees C / 156 degrees F

```

FPC 0 EA0_HMC1	Logic die	71 degrees C / 159 degrees F
FPC 0 EA0_HMC1	DRAM botm	68 degrees C / 154 degrees F
FPC 0 EA0_HMC2	Logic die	75 degrees C / 167 degrees F
FPC 0 EA0_HMC2	DRAM botm	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0	Logic die	81 degrees C / 177 degrees F
FPC 0 EA1_HMC0	DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA1_HMC1	Logic die	80 degrees C / 176 degrees F
FPC 0 EA1_HMC1	DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA1_HMC2	Logic die	82 degrees C / 179 degrees F
FPC 0 EA1_HMC2	DRAM botm	79 degrees C / 174 degrees F
FPC 0 EA2_HMC0	Logic die	60 degrees C / 140 degrees F
FPC 0 EA2_HMC0	DRAM botm	57 degrees C / 134 degrees F
FPC 0 EA2_HMC1	Logic die	61 degrees C / 141 degrees F
FPC 0 EA2_HMC1	DRAM botm	58 degrees C / 136 degrees F
FPC 0 EA2_HMC2	Logic die	63 degrees C / 145 degrees F
FPC 0 EA2_HMC2	DRAM botm	60 degrees C / 140 degrees F

Power

LTC3887-PF-VDD0V9-RAIL	898 mV
LTC3887-PF-VDD0V9-DEV0-	898 mV
LTC3887-PF-VDD0V9-DEV0-	900 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	1000 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	899 mV
LTC3887-V1P0	999 mV
LTC3887-PHY-VDD1V0-A	999 mV
LTC3887-3V3	3300 mV
LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1005 mV
UCD9090_0-CH_2-EA0_1V4	1049 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1499 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1037 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	797 mV
UCD9090_0-CH_10-PVNN	991 mV
UCD9090_1-CH_1-EA2_PLL_	1008 mV

```

UCD9090_1-CH_2-EA2_1V4      1009 mV
UCD9090_1-CH_3-EA2_2V5      2499 mV
UCD9090_1-CH_4-EA2_1V5      1513 mV
UCD9090_1-CH_5-1V0_PFP1     1009 mV
UCD9090_1-CH_6-V1P1         1075 mV
UCD9090_1-CH_7-V1P5         1531 mV
UCD9090_1-CH_8-V1P35        1359 mV
UCD9090_1-CH_9-VDD1V5       1511 mV
UCD9090_1-CH_10-VDD1V2      1210 mV
LTC3887-EA0-VDD0V9-RAIL     949 mV
LTC3887-EA0-VDD0V9-DEV0     949 mV
LTC3887-EA0-VDD0V9-DEV0     951 mV
LTC3887-EA0-VDD0V9-DEV1     949 mV
LTC3887-EA0-VDD0V9-DEV1     951 mV
LTC3887-EA0-VDD0V9R2-RA     947 mV
LTC3887-EA0-VDD0V9R2-CH     947 mV
LTC3887-EA0-VDD0V9R2-CH     949 mV
LTC3887-EA0-VDD1V0-RAIL     999 mV
LTC3887-EA0-VDD1V0-CH0      999 mV
LTC3887-EA0-VDD1V0-CH1      1001 mV
LTC3887-EA0-XR-VDD0V9       900 mV
LTC3887-EA0-XR-VDD1V2       1199 mV
LTC3887-EA0-HM1-VDD0V9      899 mV
LTC3887-EA0-HM-VDD1V2       1200 mV
LTC3887-EA0-HM-VDDM1V2      1199 mV
LTC3887-EA1-VDD0V9-RAIL     949 mV
LTC3887-EA1-VDD0V9-DEV0     952 mV
LTC3887-EA1-VDD0V9-DEV0     952 mV
LTC3887-EA1-VDD0V9-DEV1     951 mV
LTC3887-EA1-VDD0V9-DEV1     951 mV
LTC3887-EA1-VDD0V9R2-RA     948 mV
LTC3887-EA1-VDD0V9R2-CH     948 mV
LTC3887-EA1-VDD0V9R2-CH     950 mV
LTC3887-EA1-VDD1V0-RAIL     1000 mV
LTC3887-EA1-VDD1V0-CH0      1000 mV
LTC3887-EA1-VDD1V0-CH1      1001 mV

I2C Slave Revision          13

FPC 1 status:
State                        Online
FPC 1 Intake Temp Sensor    27 degrees C / 80 degrees F
FPC 1 Exhaust-A Temp Sensor 60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor 46 degrees C / 114 degrees F
FPC 1 EA0 Chip               63 degrees C / 145 degrees F

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FPC 1 EA0-XR0 Chip	67 degrees C / 152 degrees F
FPC 1 EA0-XR1 Chip	68 degrees C / 154 degrees F
FPC 1 EA1 Chip	70 degrees C / 158 degrees F
FPC 1 EA1-XR0 Chip	75 degrees C / 167 degrees F
FPC 1 EA1-XR1 Chip	75 degrees C / 167 degrees F
FPC 1 PEX Chip	89 degrees C / 192 degrees F
FPC 1 EA2 Chip	49 degrees C / 120 degrees F
FPC 1 EA2-XR0 Chip	53 degrees C / 127 degrees F
FPC 1 EA2-XR1 Chip	56 degrees C / 132 degrees F
FPC 1 PF Chip	71 degrees C / 159 degrees F
FPC 1 EA0_HMC0 Logic die	74 degrees C / 165 degrees F
FPC 1 EA0_HMC0 DRAM botm	71 degrees C / 159 degrees F
FPC 1 EA0_HMC1 Logic die	78 degrees C / 172 degrees F
FPC 1 EA0_HMC1 DRAM botm	75 degrees C / 167 degrees F
FPC 1 EA0_HMC2 Logic die	78 degrees C / 172 degrees F
FPC 1 EA0_HMC2 DRAM botm	75 degrees C / 167 degrees F
FPC 1 EA1_HMC0 Logic die	84 degrees C / 183 degrees F
FPC 1 EA1_HMC0 DRAM botm	81 degrees C / 177 degrees F
FPC 1 EA1_HMC1 Logic die	82 degrees C / 179 degrees F
FPC 1 EA1_HMC1 DRAM botm	79 degrees C / 174 degrees F
FPC 1 EA1_HMC2 Logic die	85 degrees C / 185 degrees F
FPC 1 EA1_HMC2 DRAM botm	82 degrees C / 179 degrees F
FPC 1 EA2_HMC0 Logic die	62 degrees C / 143 degrees F
FPC 1 EA2_HMC0 DRAM botm	59 degrees C / 138 degrees F
FPC 1 EA2_HMC1 Logic die	60 degrees C / 140 degrees F
FPC 1 EA2_HMC1 DRAM botm	57 degrees C / 134 degrees F
FPC 1 EA2_HMC2 Logic die	65 degrees C / 149 degrees F
FPC 1 EA2_HMC2 DRAM botm	62 degrees C / 143 degrees F

Power

LTC3887-PF-VDD0V9-RAIL	899 mV
LTC3887-PF-VDD0V9-DEV0-	899 mV
LTC3887-PF-VDD0V9-DEV0-	901 mV
LTC3887-PF-VDD0V9-DEV1-	899 mV
LTC3887-PF-VDD0V9-DEV1-	901 mV
LTC3887-PF-AVDD1V0-RAIL	998 mV
LTC3887-PF-AVDD1V0-CH0	998 mV
LTC3887-PF-AVDD1V0-CH1	999 mV
LTC3887-ETHSW-VDD1V0	999 mV
LTC3887-VDD2V5	2499 mV
LTC3887-PCIE-VDD0V9	900 mV
LTC3887-V1P0	1000 mV
LTC3887-PHY-VDD1V0-A	1000 mV
LTC3887-3V3	3300 mV

LTC3887-VDD1V8	1799 mV
UCD9090_0-CH_1-EA0_PLL_	1004 mV
UCD9090_0-CH_2-EA0_1V4	1004 mV
UCD9090_0-CH_3-EA0_2V5	2499 mV
UCD9090_0-CH_4-EA0_1V5	1511 mV
UCD9090_0-CH_5-EA1_PLL_	999 mV
UCD9090_0-CH_6-EA1_1V4	1008 mV
UCD9090_0-CH_7-EA1_2V5	2499 mV
UCD9090_0-CH_8-EA1_1V5	1510 mV
UCD9090_0-CH_9-PVCC	839 mV
UCD9090_0-CH_10-PVNN	1016 mV
UCD9090_1-CH_1-EA2_PLL_	1011 mV
UCD9090_1-CH_2-EA2_1V4	1046 mV
UCD9090_1-CH_3-EA2_2V5	2499 mV
UCD9090_1-CH_4-EA2_1V5	1501 mV
UCD9090_1-CH_5-1V0_PFP	1000 mV
UCD9090_1-CH_6-V1P1	1037 mV
UCD9090_1-CH_7-V1P5	1530 mV
UCD9090_1-CH_8-V1P35	1360 mV
UCD9090_1-CH_9-VDD1V5	1513 mV
UCD9090_1-CH_10-VDD1V2	1217 mV
LTC3887-EA0-VDD0V9-RAIL	949 mV
LTC3887-EA0-VDD0V9-DEV0	949 mV
LTC3887-EA0-VDD0V9-DEV0	951 mV
LTC3887-EA0-VDD0V9-DEV1	949 mV
LTC3887-EA0-VDD0V9-DEV1	952 mV
LTC3887-EA0-VDD0V9R2-RA	947 mV
LTC3887-EA0-VDD0V9R2-CH	947 mV
LTC3887-EA0-VDD0V9R2-CH	949 mV
LTC3887-EA0-VDD1V0-RAIL	1000 mV
LTC3887-EA0-VDD1V0-CH0	1000 mV
LTC3887-EA0-VDD1V0-CH1	1001 mV
LTC3887-EA0-XR-VDD0V9	899 mV
LTC3887-EA0-XR-VDD1V2	1200 mV
LTC3887-EA0-HM1-VDD0V9	899 mV
LTC3887-EA0-HM-VDD1V2	1199 mV
LTC3887-EA0-HM-VDDM1V2	1199 mV
LTC3887-EA1-VDD0V9-RAIL	948 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV0	950 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV
LTC3887-EA1-VDD0V9-DEV1	951 mV
LTC3887-EA1-VDD0V9R2-RA	947 mV

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LTC3887-EA1-VDD0V9R2-CH      947 mV
LTC3887-EA1-VDD0V9R2-CH      949 mV
LTC3887-EA1-VDD1V0-RAIL      1000 mV
LTC3887-EA1-VDD1V0-CH0       1000 mV
LTC3887-EA1-VDD1V0-CH1       1002 mV
I2C Slave Revision            99

```

show chassis environment fpc (MX204 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
  State                               Online
FPC 0 EA0_HMC0 Logic die             77 degrees C / 170 degrees F
FPC 0 EA0_HMC0 DRAM botm             74 degrees C / 165 degrees F
FPC 0 EA0_HMC1 Logic die             80 degrees C / 176 degrees F
FPC 0 EA0_HMC1 DRAM botm             77 degrees C / 170 degrees F
FPC 0 EA0 Chip                        93 degrees C / 199 degrees F
FPC 0 EA0-XR0 Chip                    63 degrees C / 145 degrees F
FPC 0 EA0-XR1 Chip                    64 degrees C / 147 degrees F
Power
I2C Slave Revision                    0

```

show chassis environment fpc (MX10008 Router)

```

user@host> show chassis environment fpc

FPC 0 status:
  State                               Online
FPC 0 Intake-A Temp Sensor            32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor           44 degrees C / 111 degrees F
FPC 0 Exhaust-B Temp Sensor           50 degrees C / 122 degrees F
FPC 0 EA0 Temp Sensor                  67 degrees C / 152 degrees F
FPC 0 EA0_XR0 Temp Sensor              69 degrees C / 156 degrees F
FPC 0 EA0_XR1 Temp Sensor              73 degrees C / 163 degrees F
FPC 0 EA1 Temp Sensor                  61 degrees C / 141 degrees F
FPC 0 EA1_XR0 Temp Sensor              65 degrees C / 149 degrees F
FPC 0 EA1_XR1 Temp Sensor              63 degrees C / 145 degrees F
FPC 0 EA2 Temp Sensor                  69 degrees C / 156 degrees F
FPC 0 EA2_XR0 Temp Sensor              73 degrees C / 163 degrees F

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FPC 0 EA2_XR1 Temp Sensor	72 degrees C / 161 degrees F
FPC 0 EA3 Temp Sensor	64 degrees C / 147 degrees F
FPC 0 EA3_XR0 Temp Sensor	66 degrees C / 150 degrees F
FPC 0 EA3_XR1 Temp Sensor	66 degrees C / 150 degrees F
FPC 0 EA4 Temp Sensor	70 degrees C / 158 degrees F
FPC 0 EA4_XR0 Temp Sensor	72 degrees C / 161 degrees F
FPC 0 EA4_XR1 Temp Sensor	72 degrees C / 161 degrees F
FPC 0 EA5 Temp Sensor	58 degrees C / 136 degrees F
FPC 0 EA5_XR0 Temp Sensor	61 degrees C / 141 degrees F
FPC 0 EA5_XR1 Temp Sensor	64 degrees C / 147 degrees F
FPC 0 EA0_HMC0 Logic die	75 degrees C / 167 degrees F
FPC 0 EA0_HMC0 DRAM botm	72 degrees C / 161 degrees F
FPC 0 EA0_HMC1 Logic die	76 degrees C / 168 degrees F
FPC 0 EA0_HMC1 DRAM botm	73 degrees C / 163 degrees F
FPC 0 EA0_HMC2 Logic die	77 degrees C / 170 degrees F
FPC 0 EA0_HMC2 DRAM botm	74 degrees C / 165 degrees F
FPC 0 EA1_HMC0 Logic die	72 degrees C / 161 degrees F
FPC 0 EA1_HMC0 DRAM botm	69 degrees C / 156 degrees F
FPC 0 EA1_HMC1 Logic die	73 degrees C / 163 degrees F
FPC 0 EA1_HMC1 DRAM botm	70 degrees C / 158 degrees F
FPC 0 EA1_HMC2 Logic die	72 degrees C / 161 degrees F
FPC 0 EA1_HMC2 DRAM botm	69 degrees C / 156 degrees F
FPC 0 EA2_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 0 EA2_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA2_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 0 EA2_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA2_HMC2 Logic die	80 degrees C / 176 degrees F
FPC 0 EA2_HMC2 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0 Logic die	77 degrees C / 170 degrees F
FPC 0 EA3_HMC0 DRAM botm	74 degrees C / 165 degrees F
FPC 0 EA3_HMC1 Logic die	78 degrees C / 172 degrees F
FPC 0 EA3_HMC1 DRAM botm	75 degrees C / 167 degrees F
FPC 0 EA3_HMC2 Logic die	77 degrees C / 170 degrees F
FPC 0 EA3_HMC2 DRAM botm	74 degrees C / 165 degrees F
FPC 0 EA4_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 0 EA4_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA4_HMC1 Logic die	81 degrees C / 177 degrees F
FPC 0 EA4_HMC1 DRAM botm	78 degrees C / 172 degrees F
FPC 0 EA4_HMC2 Logic die	80 degrees C / 176 degrees F
FPC 0 EA4_HMC2 DRAM botm	77 degrees C / 170 degrees F
FPC 0 EA5_HMC0 Logic die	69 degrees C / 156 degrees F
FPC 0 EA5_HMC0 DRAM botm	66 degrees C / 150 degrees F
FPC 0 EA5_HMC1 Logic die	68 degrees C / 154 degrees F

FPC 0 EA5_HMC1 DRAM botm		65 degrees C / 149 degrees F	
FPC 0 EA5_HMC2 Logic die		68 degrees C / 154 degrees F	
FPC 0 EA5_HMC2 DRAM botm		65 degrees C / 149 degrees F	
Power			
12V SS 1	12259 mV	9841 mA	120642 mW
12V SS 2	12259 mV	21054 mA	258104 mW
12V SS 3	12285 mV	9841 mA	120902 mW
12V SS 4	12232 mV	20968 mA	256496 mW
12V SS 5	12179 mV	14993 mA	182614 mW
VDD 1.0V_A	1000 mV	95375 mA	95375 mW
VDD 1.0V_B	0 mV	0 mA	0 mW
VDD 3.3V	3298 mV	12500 mA	41235 mW
VDD 0.9V	894 mV	3569 mA	3192 mW
ETH SW 1V	980 mV	4500 mA	4410 mW
VDD 1.8V	1809 mV	895 mA	1619 mW
PVCC	951 mV	0 mA	0 mW
PVNN	1009 mV	0 mA	0 mW
V1P0	1006 mV	0 mA	0 mW
V1P1	1070 mV	0 mA	0 mW
V1P3	1351 mV	0 mA	0 mW
VDDQ	1500 mV	0 mA	0 mW
V1P8	1816 mV	0 mA	0 mW
VDD3V3	3296 mV	0 mA	0 mW
V5V0_BIAS	5025 mV	0 mA	0 mW
VDD12V0	12174 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	40625 mA	36578 mW
EA0 AVDD 1.0V	1000 mV	32500 mA	32500 mW
EA0 HMC Core 0.9V	894 mV	10081 mA	9017 mW
EA0 1.2V	1189 mV	15081 mA	17945 mW
EA01_HMC_VDDM 1.2V	1193 mV	-151 mA	-180 mW
EA0_XR 0.906V	905 mV	13802 mA	12496 mW
EA1 Core 0.9V	900 mV	41000 mA	36916 mW
EA1 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA1 HMC Core 0.9V	897 mV	9848 mA	8835 mW
EA1 1.2V	1197 mV	15313 mA	18332 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1032 mV	0 mA	0 mW
EA0_2V5	2445 mV	0 mA	0 mW
EA0_1V5	1512 mV	0 mA	0 mW
EA1_PLL_1V0	1000 mV	0 mA	0 mW
EA1_1V04	1051 mV	0 mA	0 mW
EA1_2V5	2516 mV	0 mA	0 mW
EA1_1V5	1503 mV	0 mA	0 mW

EA1_XR 0.906V	908 mV	14151 mA	12850 mW
EA2 Core 0.9V	899 mV	40625 mA	36538 mW
EA2 AVDD 1.0V	1000 mV	27250 mA	27276 mW
EA2 HMC Core 0.9V	897 mV	9616 mA	8627 mW
EA2 1.2V	1193 mV	15779 mA	18832 mW
EA23_HMC_VDDM 1.2V	1197 mV	81 mA	97 mW
EA2_XR 0.906V	908 mV	14848 mA	13484 mW
EA3 Core 0.9V	899 mV	40625 mA	36538 mW
EA3 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA3 HMC Core 0.9V	897 mV	10546 mA	9461 mW
EA3 1.2V	1197 mV	15895 mA	19028 mW
EA2_PLL_1V0	1025 mV	0 mA	0 mW
EA2_1V04	1048 mV	0 mA	0 mW
EA2_2V5	2516 mV	0 mA	0 mW
EA2_1V5	1500 mV	0 mA	0 mW
EA3_PLL_1V0	1009 mV	0 mA	0 mW
EA3_1V04	1032 mV	0 mA	0 mW
EA3_2V5	2551 mV	0 mA	0 mW
EA3_1V5	1496 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	15895 mA	14434 mW
EA4 Core 0.9V	900 mV	41000 mA	36916 mW
EA4 AVDD 1.0V	999 mV	31250 mA	31219 mW
EA4 HMC Core 0.9V	894 mV	9965 mA	8913 mW
EA4 1.2V	1197 mV	15779 mA	18889 mW
EA45_HMC_VDDM 1.2V	1197 mV	546 mA	654 mW
EA4_XR 0.906V	908 mV	15197 mA	13801 mW
EA5 Core 0.9V	900 mV	39750 mA	35790 mW
EA5 AVDD 1.0V	1000 mV	28000 mA	28000 mW
EA5 HMC Core 0.9V	897 mV	9965 mA	8940 mW
EA5 1.2V	1197 mV	15546 mA	18610 mW
EA4_PLL_1V0	1003 mV	0 mA	0 mW
EA4_1V04	1041 mV	0 mA	0 mW
EA4_2V5	2541 mV	0 mA	0 mW
EA4_1V5	1506 mV	0 mA	0 mW
EA5_PLL_1V0	1022 mV	0 mA	0 mW
EA5_1V04	1048 mV	0 mA	0 mW
EA5_2V5	2532 mV	0 mA	0 mW
EA5_1V5	1509 mV	0 mA	0 mW
VDD2V5	2503 mV	0 mA	0 mW
VDD1V5	1509 mV	0 mA	0 mW
VDD1V2	1206 mV	0 mA	0 mW
EA5_XR 0.906V	902 mV	14500 mA	13088 mW

FPC 2 status:

State	Online
FPC 2 Intake-A Temp Sensor	33 degrees C / 91 degrees F
FPC 2 Exhaust-A Temp Sensor	52 degrees C / 125 degrees F
FPC 2 Exhaust-B Temp Sensor	50 degrees C / 122 degrees F
FPC 2 EA0 Temp Sensor	72 degrees C / 161 degrees F
FPC 2 EA0_XR0 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA0_XR1 Temp Sensor	79 degrees C / 174 degrees F
FPC 2 EA1 Temp Sensor	64 degrees C / 147 degrees F
FPC 2 EA1_XR0 Temp Sensor	68 degrees C / 154 degrees F
FPC 2 EA1_XR1 Temp Sensor	66 degrees C / 150 degrees F
FPC 2 EA2 Temp Sensor	75 degrees C / 167 degrees F
FPC 2 EA2_XR0 Temp Sensor	81 degrees C / 177 degrees F
FPC 2 EA2_XR1 Temp Sensor	81 degrees C / 177 degrees F
FPC 2 EA3 Temp Sensor	67 degrees C / 152 degrees F
FPC 2 EA3_XR0 Temp Sensor	69 degrees C / 156 degrees F
FPC 2 EA3_XR1 Temp Sensor	69 degrees C / 156 degrees F
FPC 2 EA4 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA4_XR0 Temp Sensor	77 degrees C / 170 degrees F
FPC 2 EA4_XR1 Temp Sensor	76 degrees C / 168 degrees F
FPC 2 EA5 Temp Sensor	60 degrees C / 140 degrees F
FPC 2 EA5_XR0 Temp Sensor	65 degrees C / 149 degrees F
FPC 2 EA5_XR1 Temp Sensor	65 degrees C / 149 degrees F
FPC 2 EA0_HMC0 Logic die	84 degrees C / 183 degrees F
FPC 2 EA0_HMC0 DRAM botm	81 degrees C / 177 degrees F
FPC 2 EA0_HMC1 Logic die	86 degrees C / 186 degrees F
FPC 2 EA0_HMC1 DRAM botm	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 Logic die	83 degrees C / 181 degrees F
FPC 2 EA0_HMC2 DRAM botm	80 degrees C / 176 degrees F
FPC 2 EA1_HMC0 Logic die	76 degrees C / 168 degrees F
FPC 2 EA1_HMC0 DRAM botm	73 degrees C / 163 degrees F
FPC 2 EA1_HMC1 Logic die	77 degrees C / 170 degrees F
FPC 2 EA1_HMC1 DRAM botm	74 degrees C / 165 degrees F
FPC 2 EA1_HMC2 Logic die	76 degrees C / 168 degrees F
FPC 2 EA1_HMC2 DRAM botm	73 degrees C / 163 degrees F
FPC 2 EA2_HMC0 Logic die	87 degrees C / 188 degrees F
FPC 2 EA2_HMC0 DRAM botm	84 degrees C / 183 degrees F
FPC 2 EA2_HMC1 Logic die	89 degrees C / 192 degrees F
FPC 2 EA2_HMC1 DRAM botm	86 degrees C / 186 degrees F
FPC 2 EA2_HMC2 Logic die	88 degrees C / 190 degrees F
FPC 2 EA2_HMC2 DRAM botm	85 degrees C / 185 degrees F
FPC 2 EA3_HMC0 Logic die	80 degrees C / 176 degrees F
FPC 2 EA3_HMC0 DRAM botm	77 degrees C / 170 degrees F
FPC 2 EA3_HMC1 Logic die	81 degrees C / 177 degrees F

FPC 2 EA3_HMC1	DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA3_HMC2	Logic die	81 degrees C / 177 degrees F
FPC 2 EA3_HMC2	DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA4_HMC0	Logic die	88 degrees C / 190 degrees F
FPC 2 EA4_HMC0	DRAM botm	85 degrees C / 185 degrees F
FPC 2 EA4_HMC1	Logic die	90 degrees C / 194 degrees F
FPC 2 EA4_HMC1	DRAM botm	87 degrees C / 188 degrees F
FPC 2 EA4_HMC2	Logic die	81 degrees C / 177 degrees F
FPC 2 EA4_HMC2	DRAM botm	78 degrees C / 172 degrees F
FPC 2 EA5_HMC0	Logic die	73 degrees C / 163 degrees F
FPC 2 EA5_HMC0	DRAM botm	70 degrees C / 158 degrees F
FPC 2 EA5_HMC1	Logic die	69 degrees C / 156 degrees F
FPC 2 EA5_HMC1	DRAM botm	66 degrees C / 150 degrees F
FPC 2 EA5_HMC2	Logic die	73 degrees C / 163 degrees F
FPC 2 EA5_HMC2	DRAM botm	70 degrees C / 158 degrees F

Power

12V SS 1	12285 mV	9408 mA	115582 mW
12V SS 2	12338 mV	20881 mA	257637 mW
12V SS 3	12351 mV	10317 mA	127430 mW
12V SS 4	12285 mV	21054 mA	258660 mW
12V SS 5	12153 mV	13954 mA	169591 mW
VDD 1.0V_A	1000 mV	91000 mA	91000 mW
VDD 1.0V_B	0 mV	0 mA	0 mW
VDD 3.3V	3298 mV	9125 mA	30101 mW
VDD 0.9V	897 mV	3337 mA	2993 mW
ETH SW 1V	0 mV	0 mA	0 mW
VDD 1.8V	1809 mV	1127 mA	2040 mW
PVCC	835 mV	0 mA	0 mW
PVNN	1000 mV	0 mA	0 mW
V1P0	1003 mV	0 mA	0 mW
V1P1	1070 mV	0 mA	0 mW
V1P3	1348 mV	0 mA	0 mW
VDDQ	1493 mV	0 mA	0 mW
V1P8	1806 mV	0 mA	0 mW
VDD3V3	3303 mV	0 mA	0 mW
V5V0_BIAS	5000 mV	0 mA	0 mW
VDD12V0	12116 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	38875 mA	35002 mW
EA0 AVDD 1.0V	999 mV	31875 mA	31843 mW
EA0 HMC Core 0.9V	894 mV	9034 mA	8081 mW
EA0 1.2V	1197 mV	15430 mA	18471 mW
EA01_HMC_VDDM 1.2V	1200 mV	-267 mA	-321 mW
EA0_XR 0.906V	908 mV	15430 mA	14012 mW

EA1 Core 0.9V	900 mV	38875 mA	35002 mW
EA1 AVDD 1.0V	1000 mV	28250 mA	28250 mW
EA1 HMC Core 0.9V	899 mV	8802 mA	7920 mW
EA1 1.2V	1197 mV	15081 mA	18054 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1048 mV	0 mA	0 mW
EA0_2V5	2425 mV	0 mA	0 mW
EA0_1V5	1483 mV	0 mA	0 mW
EA1_PLL_1V0	1019 mV	0 mA	0 mW
EA1_1V04	1019 mV	0 mA	0 mW
EA1_2V5	2490 mV	0 mA	0 mW
EA1_1V5	1480 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	14965 mA	13590 mW
EA2 Core 0.9V	900 mV	44000 mA	39617 mW
EA2 AVDD 1.0V	1000 mV	28625 mA	28625 mW
EA2 HMC Core 0.9V	891 mV	10546 mA	9404 mW
EA2 1.2V	1200 mV	15313 mA	18387 mW
EA23_HMC_VDDM 1.2V	1193 mV	-267 mA	-319 mW
EA2_XR 0.906V	908 mV	15197 mA	13801 mW
EA3 Core 0.9V	900 mV	39750 mA	35790 mW
EA3 AVDD 1.0V	1000 mV	27750 mA	27750 mW
EA3 HMC Core 0.9V	897 mV	9267 mA	8314 mW
EA3 1.2V	1197 mV	15430 mA	18471 mW
EA2_PLL_1V0	1009 mV	0 mA	0 mW
EA2_1V04	1041 mV	0 mA	0 mW
EA2_2V5	2496 mV	0 mA	0 mW
EA2_1V5	1493 mV	0 mA	0 mW
EA3_PLL_1V0	1003 mV	0 mA	0 mW
EA3_1V04	1041 mV	0 mA	0 mW
EA3_2V5	2490 mV	0 mA	0 mW
EA3_1V5	1500 mV	0 mA	0 mW
EA3_XR 0.906V	908 mV	15081 mA	13695 mW
EA4 Core 0.9V	899 mV	45750 mA	41148 mW
EA4 AVDD 1.0V	1000 mV	32250 mA	32250 mW
EA4 HMC Core 0.9V	897 mV	10779 mA	9670 mW
EA4 1.2V	1193 mV	16011 mA	19110 mW
EA45_HMC_VDDM 1.2V	1200 mV	-267 mA	-321 mW
EA4_XR 0.906V	905 mV	15779 mA	14286 mW
EA5 Core 0.9V	900 mV	38375 mA	34552 mW
EA5 AVDD 1.0V	1000 mV	27750 mA	27777 mW
EA5 HMC Core 0.9V	899 mV	8453 mA	7606 mW
EA5 1.2V	1200 mV	14732 mA	17689 mW
EA4_PLL_1V0	1012 mV	0 mA	0 mW

EA4_1V04	1029 mV	0 mA	0 mW
EA4_2V5	2496 mV	0 mA	0 mW
EA4_1V5	1490 mV	0 mA	0 mW
EA5_PLL_1V0	1003 mV	0 mA	0 mW
EA5_1V04	1032 mV	0 mA	0 mW
EA5_2V5	2503 mV	0 mA	0 mW
EA5_1V5	1480 mV	0 mA	0 mW
VDD2V5	2461 mV	0 mA	0 mW
VDD1V5	1490 mV	0 mA	0 mW
VDD1V2	1212 mV	0 mA	0 mW
EA5_XR 0.906V	910 mV	13686 mA	12466 mW

FPC 3 status:

State	Online
FPC 3 Intake-A Temp Sensor	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor	45 degrees C / 113 degrees F
FPC 3 EA0 Temp Sensor	60 degrees C / 140 degrees F
FPC 3 EA0_XR0 Temp Sensor	65 degrees C / 149 degrees F
FPC 3 EA0_XR1 Temp Sensor	67 degrees C / 152 degrees F
FPC 3 EA1 Temp Sensor	54 degrees C / 129 degrees F
FPC 3 EA1_XR0 Temp Sensor	60 degrees C / 140 degrees F
FPC 3 EA1_XR1 Temp Sensor	58 degrees C / 136 degrees F
FPC 3 EA2 Temp Sensor	62 degrees C / 143 degrees F
FPC 3 EA2_XR0 Temp Sensor	67 degrees C / 152 degrees F
FPC 3 EA2_XR1 Temp Sensor	67 degrees C / 152 degrees F
FPC 3 EA3 Temp Sensor	55 degrees C / 131 degrees F
FPC 3 EA3_XR0 Temp Sensor	57 degrees C / 134 degrees F
FPC 3 EA3_XR1 Temp Sensor	57 degrees C / 134 degrees F
FPC 3 EA4 Temp Sensor	69 degrees C / 156 degrees F
FPC 3 EA4_XR0 Temp Sensor	71 degrees C / 159 degrees F
FPC 3 EA4_XR1 Temp Sensor	70 degrees C / 158 degrees F
FPC 3 EA5 Temp Sensor	55 degrees C / 131 degrees F
FPC 3 EA5_XR0 Temp Sensor	58 degrees C / 136 degrees F
FPC 3 EA5_XR1 Temp Sensor	59 degrees C / 138 degrees F
FPC 3 EA0_HMC0 Logic die	69 degrees C / 156 degrees F
FPC 3 EA0_HMC0 DRAM botm	66 degrees C / 150 degrees F
FPC 3 EA0_HMC1 Logic die	70 degrees C / 158 degrees F
FPC 3 EA0_HMC1 DRAM botm	67 degrees C / 152 degrees F
FPC 3 EA0_HMC2 Logic die	70 degrees C / 158 degrees F
FPC 3 EA0_HMC2 DRAM botm	67 degrees C / 152 degrees F
FPC 3 EA1_HMC0 Logic die	68 degrees C / 154 degrees F
FPC 3 EA1_HMC0 DRAM botm	65 degrees C / 149 degrees F
FPC 3 EA1_HMC1 Logic die	65 degrees C / 149 degrees F

FPC 3 EA1_HMC1 DRAM botm	62 degrees C / 143 degrees F
FPC 3 EA1_HMC2 Logic die	64 degrees C / 147 degrees F
FPC 3 EA1_HMC2 DRAM botm	61 degrees C / 141 degrees F
FPC 3 EA2_HMC0 Logic die	74 degrees C / 165 degrees F
FPC 3 EA2_HMC0 DRAM botm	71 degrees C / 159 degrees F
FPC 3 EA2_HMC1 Logic die	77 degrees C / 170 degrees F
FPC 3 EA2_HMC1 DRAM botm	74 degrees C / 165 degrees F
FPC 3 EA2_HMC2 Logic die	74 degrees C / 165 degrees F
FPC 3 EA2_HMC2 DRAM botm	71 degrees C / 159 degrees F
FPC 3 EA3_HMC0 Logic die	70 degrees C / 158 degrees F
FPC 3 EA3_HMC0 DRAM botm	67 degrees C / 152 degrees F
FPC 3 EA3_HMC1 Logic die	68 degrees C / 154 degrees F
FPC 3 EA3_HMC1 DRAM botm	65 degrees C / 149 degrees F
FPC 3 EA3_HMC2 Logic die	68 degrees C / 154 degrees F
FPC 3 EA3_HMC2 DRAM botm	65 degrees C / 149 degrees F
FPC 3 EA4_HMC0 Logic die	82 degrees C / 179 degrees F
FPC 3 EA4_HMC0 DRAM botm	79 degrees C / 174 degrees F
FPC 3 EA4_HMC1 Logic die	80 degrees C / 176 degrees F
FPC 3 EA4_HMC1 DRAM botm	77 degrees C / 170 degrees F
FPC 3 EA4_HMC2 Logic die	81 degrees C / 177 degrees F
FPC 3 EA4_HMC2 DRAM botm	78 degrees C / 172 degrees F
FPC 3 EA5_HMC0 Logic die	69 degrees C / 156 degrees F
FPC 3 EA5_HMC0 DRAM botm	66 degrees C / 150 degrees F
FPC 3 EA5_HMC1 Logic die	70 degrees C / 158 degrees F
FPC 3 EA5_HMC1 DRAM botm	67 degrees C / 152 degrees F
FPC 3 EA5_HMC2 Logic die	69 degrees C / 156 degrees F
FPC 3 EA5_HMC2 DRAM botm	66 degrees C / 150 degrees F

Power

12V SS 1	12259 mV	9538 mA	116927 mW
12V SS 2	12259 mV	20491 mA	251202 mW
12V SS 3	12298 mV	9711 mA	119433 mW
12V SS 4	12219 mV	20491 mA	250391 mW
12V SS 5	12206 mV	10447 mA	127520 mW
VDD 1.0V_A	1000 mV	42250 mA	42291 mW
VDD 1.0V_B	996 mV	8918 mA	8890 mW
VDD 3.3V	3301 mV	10375 mA	34255 mW
VDD 0.9V	897 mV	3569 mA	3202 mW
ETH SW 1V	983 mV	4267 mA	4195 mW
VDD 1.8V	1812 mV	1825 mA	3309 mW
PVCC	974 mV	0 mA	0 mW
PVNN	1003 mV	0 mA	0 mW
V1P0	1003 mV	0 mA	0 mW
V1P1	1070 mV	0 mA	0 mW

V1P3	1351 mV	0 mA	0 mW
VDDQ	1496 mV	0 mA	0 mW
V1P8	1809 mV	0 mA	0 mW
VDD3V3	3309 mV	0 mA	0 mW
V5V0_BIAS	4987 mV	0 mA	0 mW
VDD12V0	12212 mV	0 mA	0 mW
EA0 Core 0.9V	900 mV	38125 mA	34327 mW
EA0 AVDD 1.0V	999 mV	31125 mA	31094 mW
EA0 HMC Core 0.9V	897 mV	9500 mA	8522 mW
EA0 1.2V	1193 mV	15430 mA	18416 mW
EA01_HMC_VDDM 1.2V	1193 mV	313 mA	374 mW
EA0_XR 0.906V	913 mV	14965 mA	13671 mW
EA1 Core 0.9V	900 mV	39750 mA	35790 mW
EA1 AVDD 1.0V	1000 mV	26000 mA	26000 mW
EA1 HMC Core 0.9V	897 mV	8918 mA	8001 mW
EA1 1.2V	1200 mV	15779 mA	18946 mW
EA0_PLL_1V0	1003 mV	0 mA	0 mW
EA0_1V04	1019 mV	0 mA	0 mW
EA0_2V5	2448 mV	0 mA	0 mW
EA0_1V5	1470 mV	0 mA	0 mW
EA1_PLL_1V0	1016 mV	0 mA	0 mW
EA1_1V04	1035 mV	0 mA	0 mW
EA1_2V5	2506 mV	0 mA	0 mW
EA1_1V5	1483 mV	0 mA	0 mW
EA1_XR 0.906V	908 mV	13918 mA	12639 mW
EA2 Core 0.9V	900 mV	38625 mA	34777 mW
EA2 AVDD 1.0V	1000 mV	26375 mA	26400 mW
EA2 HMC Core 0.9V	897 mV	9383 mA	8418 mW
EA2 1.2V	1200 mV	15779 mA	18946 mW
EA23_HMC_VDDM 1.2V	1193 mV	81 mA	97 mW
EA2_XR 0.906V	908 mV	13918 mA	12639 mW
EA3 Core 0.9V	899 mV	40250 mA	36201 mW
EA3 AVDD 1.0V	1000 mV	26750 mA	26776 mW
EA3 HMC Core 0.9V	894 mV	9267 mA	8289 mW
EA3 1.2V	1197 mV	16127 mA	19306 mW
EA2_PLL_1V0	993 mV	0 mA	0 mW
EA2_1V04	1045 mV	0 mA	0 mW
EA2_2V5	2474 mV	0 mA	0 mW
EA2_1V5	1490 mV	0 mA	0 mW
EA3_PLL_1V0	980 mV	0 mA	0 mW
EA3_1V04	1032 mV	0 mA	0 mW
EA3_2V5	2506 mV	0 mA	0 mW
EA3_1V5	1474 mV	0 mA	0 mW

EA3_XR 0.906V	910 mV	14732 mA	13419 mW
EA4 Core 0.9V	900 mV	42500 mA	38266 mW
EA4 AVDD 1.0V	1000 mV	32250 mA	32281 mW
EA4 HMC Core 0.9V	899 mV	10081 mA	9071 mW
EA4 1.2V	1193 mV	16360 mA	19526 mW
EA45_HMC_VDDM 1.2V	1193 mV	662 mA	791 mW
EA4_XR 0.906V	908 mV	15430 mA	14012 mW
EA5 Core 0.9V	899 mV	37000 mA	33278 mW
EA5 AVDD 1.0V	1000 mV	26125 mA	26150 mW
EA5 HMC Core 0.9V	897 mV	9267 mA	8314 mW
EA5 1.2V	1197 mV	15662 mA	18750 mW
EA4_PLL_1V0	1000 mV	0 mA	0 mW
EA4_1V04	1029 mV	0 mA	0 mW
EA4_2V5	2487 mV	0 mA	0 mW
EA4_1V5	1496 mV	0 mA	0 mW
EA5_PLL_1V0	1009 mV	0 mA	0 mW
EA5_1V04	1032 mV	0 mA	0 mW
EA5_2V5	2503 mV	0 mA	0 mW
EA5_1V5	1496 mV	0 mA	0 mW
VDD2V5	2483 mV	0 mA	0 mW
VDD1V5	1470 mV	0 mA	0 mW
VDD1V2	1203 mV	0 mA	0 mW
EA5_XR 0.906V	908 mV	14500 mA	13167 mW

show chassis environment fpc (T320, T640, and T1600 Routers)

```

user@host> show chassis environment fpc
FPC 0 status:
  State                Online
  Temperature Top      42 degrees C / 107 degrees F
  Temperature Bottom   36 degrees C / 96 degrees F
  Temperature MMB1     39 degrees C / 102 degrees F
Power:
  1.8 V                1959 mV
  2.5 V                2495 mV
  3.3 V                3344 mV
  5.0 V                5047 mV
  1.8 V bias           1787 mV
  3.3 V bias           3291 mV
  5.0 V bias           4998 mV
  8.0 V bias           7343 mV

```

```

BUS Revision          40
FPC 1 status:
  State                Online
  Temperature Top      42 degrees C / 107 degrees F
  Temperature Bottom   39 degrees C / 102 degrees F
  Temperature MMB1     40 degrees C / 104 degrees F
Power:
  1.8 V                1956 mV
  2.5 V                2498 mV
  3.3 V                3340 mV
  5.0 V                5023 mV
  1.8 V bias           1782 mV
  3.3 V bias           3277 mV
  5.0 V bias           4989 mV
  8.0 V bias           7289 mV
BUS Revision          40
FPC 2 status:
  State                Online
  Temperature Top      43 degrees C / 109 degrees F
  Temperature Bottom   39 degrees C / 102 degrees F
  Temperature MMB1     41 degrees C / 105 degrees F
Power:
  1.8 V                1963 mV
  2.5 V                2503 mV
  3.3 V                3340 mV
  5.0 V                5042 mV
  1.8 V bias           1797 mV
  3.3 V bias           3311 mV
  5.0 V bias           5013 mV
  8.0 V bias           7221 mV
BUS Revision          40

```

show chassis environment fpc (T4000 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
  State                Online
  Fan Intake           34 degrees C / 93 degrees F
  Fan Exhaust          48 degrees C / 118 degrees F
  PMB                  47 degrees C / 116 degrees F
  LMB0                 50 degrees C / 122 degrees F

```

LMB1	41 degrees C / 105 degrees F
LMB2	35 degrees C / 95 degrees F
PFE1 LU2	46 degrees C / 114 degrees F
PFE1 LU0	41 degrees C / 105 degrees F
PFE0 LU0	57 degrees C / 134 degrees F
XF1	47 degrees C / 116 degrees F
XF0	52 degrees C / 125 degrees F
XM1	41 degrees C / 105 degrees F
XM0	50 degrees C / 122 degrees F
PFE0 LU1	56 degrees C / 132 degrees F
PFE0 LU2	45 degrees C / 113 degrees F
PFE1 LU1	37 degrees C / 98 degrees F
Power 1	
1.0 V	991 mV
1.2 V bias	1195 mV
1.8 V	1788 mV
2.5 V	2483 mV
3.3 V	3289 mV
3.3 V bias	3299 mV
12.0 V A	10608 mV
12.0 V B	10637 mV
Power 2	
0.9 V	881 mV
0.9 V PFE0	916 mV
0.9 V PFE1	903 mV
1.0 V PFE0	1012 mV
1.0 V PFE1	1002 mV
1.1 V	1095 mV
1.5 V_0	1494 mV
1.5 V_1	1479 mV
Power 3	
1.0 V PFE0	1000 mV
1.0 V PFE1	1002 mV
1.0 V PFE0 *	995 mV
1.0 V PFE1 *	995 mV
1.8 V PFE 0	1788 mV
1.8 V PFE 1	1789 mV
2.5 V	2482 mV
12.0 V	11614 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1003 mV
1.0 V PFE1 LU2	1004 mV

XM0	67 degrees C / 152 degrees F
PFE0 LU1	63 degrees C / 145 degrees F
PFE0 LU2	66 degrees C / 150 degrees F
PFE1 LU1	41 degrees C / 105 degrees F
Power 1	
1.0 V	1002 mV
1.2 V bias	1201 mV
1.8 V	1785 mV
2.5 V	2485 mV
3.3 V	3288 mV
3.3 V bias	3285 mV
12.0 V A	10412 mV
12.0 V B	10515 mV
Power 2	
0.9 V	882 mV
0.9 V PFE0	920 mV
0.9 V PFE1	905 mV
1.0 V PFE0	1015 mV
1.0 V PFE1	1001 mV
1.1 V	1094 mV
1.5 V_0	1495 mV
1.5 V_1	1478 mV
Power 3	
0.92 V PFE1	998 mV
1.0 V PFE0	997 mV
1.0 V PFE0 *	992 mV
1.0 V PFE1 *	991 mV
1.8 V PFE 0	1780 mV
1.8 V PFE 1	1797 mV
2.5 V	2492 mV
12.0 V	11604 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1004 mV
1.0 V PFE1 LU2	1003 mV
1.0 V PFE0 LU0 *	1000 mV
1.0 V PFE1 LU0 *	1001 mV
1.0 V PFE1 LU2 *	1003 mV
12.0 V	11653 mV
12.0 V C	11672 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2512 mV
LMB0 VDD1V8	1790 mV

LMB0 VDD1V5	1500 mV
LMB0 PFE0 LU0 AVDD1V0	1004 mV
LMB0 PFE0 LU0 VDD1V0	1002 mV
LMB0 VDD12V0	10608 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1788 mV
LMB1 VDD1V5	1480 mV
LMB1 PFE0 LU2 AVDD1V0	1000 mV
LMB1 PFE0 LU2 VDD1V0	1004 mV
LMB1 VDD12V0	10672 mV
LMB2 VDD2V5	2488 mV
LMB2 VDD1V8	1798 mV
LMB2 VDD1V5	1494 mV
LMB2 PFE1 LU1 AVDD1V0	1000 mV
LMB2 PFE1 LU1 VDD1V0	1004 mV
LMB2 VDD12V0	10528 mV
PMB 1.05v	1050 mV
PMB 1.5v	1500 mV
PMB 2.5v	2499 mV
PMB 3.3v	3299 mV
Bus Revision	113
FPC 5 status:	
State	Online
Temperature Top	39 degrees C / 102 degrees F
Temperature Bottom	38 degrees C / 100 degrees F
Power	
1.8 V	1804 mV
1.8 V bias	1802 mV
3.3 V	3294 mV
3.3 V bias	3277 mV
5.0 V bias	5008 mV
5.0 V TOP	5067 mV
8.0 V bias	6642 mV
Power (Base/PMB/MMB)	
1.2 V	1202 mV
1.5 V	1504 mV
5.0 V BOT	5079 mV
12.0 V TOP Base	11848 mV
12.0 V BOT Base	11780 mV
1.1 V PMB	1111 mV
1.2 V PMB	1189 mV
1.5 V PMB	1494 mV
1.8 V PMB	1819 mV

2.5 V PMB	2503 mV
3.3 V PMB	3294 mV
5.0 V PMB	5035 mV
12.0 V PMB	11788 mV
0.75 MMB TOP	766 mV
1.5 V MMB TOP	1484 mV
1.8 V MMB TOP	1772 mV
2.5 V MMB TOP	2485 mV
1.2 V MMB TOP	1137 mV
5.0 V MMB TOP	4946 mV
12.0 V MMB TOP	11772 mV
3.3 V MMB TOP	3289 mV
0.75 MMB BOT	759 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1792 mV
2.5 V MMB BOT	2490 mV
1.2 V MMB BOT	1145 mV
5.0 V MMB BOT	4922 mV
12.0 V MMB BOT	11625 mV
3.3 V MMB BOT	3282 mV
APS 00	2495 mV
APS 01	3308 mV
APS 02	3301 mV
5.0 V PIC 0	4967 mV
APS 10	2512 mV
APS 11	3316 mV
APS 12	3304 mV
5.0 V PIC 1	5081 mV
Bus Revision	49
FPC 6 status:	
State	Online
Fan Intake	34 degrees C / 93 degrees F
Fan Exhaust	49 degrees C / 120 degrees F
PMB	40 degrees C / 104 degrees F
LMB0	60 degrees C / 140 degrees F
LMB1	58 degrees C / 136 degrees F
LMB2	40 degrees C / 104 degrees F
PFE1 LU2	69 degrees C / 156 degrees F
PFE1 LU0	45 degrees C / 113 degrees F
PFE0 LU0	71 degrees C / 159 degrees F
XF1	58 degrees C / 136 degrees F
XF0	65 degrees C / 149 degrees F
XM1	40 degrees C / 104 degrees F

XM0	66 degrees C / 150 degrees F
PFE0 LU1	69 degrees C / 156 degrees F
PFE0 LU2	68 degrees C / 154 degrees F
PFE1 LU1	42 degrees C / 107 degrees F
Power 1	
1.0 V	998 mV
1.2 V bias	1191 mV
1.8 V	1781 mV
2.5 V	2487 mV
3.3 V	3302 mV
3.3 V bias	3300 mV
12.0 V A	10388 mV
12.0 V B	10388 mV
Power 2	
0.9 V	902 mV
0.9 V PFE0	921 mV
0.9 V PFE1	907 mV
1.0 V PFE0	996 mV
1.0 V PFE1	974 mV
1.1 V	1095 mV
1.5 V_0	1495 mV
1.5 V_1	1478 mV
Power 3	
1.0 V PFE0	997 mV
1.0 V PFE1	998 mV
1.0 V PFE0 *	993 mV
1.0 V PFE1 *	991 mV
1.8 V PFE 0	1796 mV
1.8 V PFE 1	1789 mV
2.5 V	2465 mV
12.0 V	11609 mV
Power 4	
1.0 V PFE0 LU0	1003 mV
1.0 V PFE1 LU0	1006 mV
1.0 V PFE1 LU2	1002 mV
1.0 V PFE0 LU0 *	1000 mV
1.0 V PFE1 LU0 *	998 mV
1.0 V PFE1 LU2 *	998 mV
12.0 V	11638 mV
12.0 V C	11702 mV
Power (Base/PMB/MMB)	
LMB0 VDD2V5	2484 mV
LMB0 VDD1V8	1780 mV

LMB0 VDD1V5	1496 mV
LMB0 PFE0 LU0 AVDD1V0	998 mV
LMB0 PFE0 LU0 VDD1V0	1004 mV
LMB0 VDD12V0	10528 mV
LMB1 VDD2V5	2472 mV
LMB1 VDD1V8	1776 mV
LMB1 VDD1V5	1474 mV
LMB1 PFE0 LU2 AVDD1V0	994 mV
LMB1 PFE0 LU2 VDD1V0	1004 mV
LMB1 VDD12V0	10544 mV
LMB2 VDD2V5	2476 mV
LMB2 VDD1V8	1790 mV
LMB2 VDD1V5	1492 mV
LMB2 PFE1 LU1 AVDD1V0	996 mV
LMB2 PFE1 LU1 VDD1V0	1010 mV
LMB2 VDD12V0	10528 mV
PMB 1.05v	1050 mV
PMB 1.5v	1499 mV
PMB 2.5v	2500 mV
PMB 3.3v	3300 mV
Bus Revision	80

show chassis environment fpc lcc (TX Matrix Router)

```

user@host> show chassis environment fpc lcc
0
lcc0-re0:
-----
FPC 1 status:
State                Online
Temperature Top      30 degrees C / 86 degrees F
Temperature Bottom   25 degrees C / 77 degrees F
Temperature MMB0     Absent
Temperature MMB1    27 degrees C / 80 degrees F
Power:
  1.8 V                1813 mV
  2.5 V                2504 mV
  3.3 V                3338 mV
  5.0 V                5037 mV
  1.8 V bias          1797 mV
  3.3 V bias          3301 mV

```

```

5.0 V bias          5013 mV
8.0 V bias          7345 mV
BUS Revision        40
FPC 2 status:
State               Online
Temperature Top     37 degrees C / 98 degrees F
Temperature Bottom  26 degrees C / 78 degrees F
Temperature MMB0    32 degrees C / 89 degrees F
Temperature MMB1    27 degrees C / 80 degrees F
Power:
1.8 V              1791 mV
2.5 V              2517 mV
3.3 V              3308 mV
5.0 V              5052 mV
1.8 V bias         1797 mV
3.3 V bias         3289 mV
5.0 V bias         4991 mV
8.0 V bias         7477 mV
BUS Revision        40

```

show chassis environment fpc lcc (TX Matrix Plus Router)

```

user@host> show chassis environment fpc lcc
0
lcc0-re0:
-----
FPC 1 status:
State               Online
Temperature Top     46 degrees C / 114 degrees F
Temperature Bottom  47 degrees C / 116 degrees F
Power
1.8 V              1788 mV
1.8 V bias         1787 mV
3.3 V              3321 mV
3.3 V bias         3306 mV
5.0 V bias         5018 mV
5.0 V TOP          5037 mV
8.0 V bias         7223 mV
Power (Base/PMB/MMB)
1.2 V              1205 mV
1.5 V              1503 mV

```

5.0 V BOT	5084 mV
12.0 V TOP Base	11775 mV
12.0 V BOT Base	11794 mV
1.1 V PMB	1108 mV
1.2 V PMB	1196 mV
1.5 V PMB	1499 mV
1.8 V PMB	1811 mV
2.5 V PMB	2515 mV
3.3 V PMB	3318 mV
5.0 V PMB	5030 mV
12.0 V PMB	11832 mV
0.75 MMB TOP	752 mV
1.5 V MMB TOP	1489 mV
1.8 V MMB TOP	1782 mV
2.5 V MMB TOP	2498 mV
1.2 V MMB TOP	1155 mV
5.0 V MMB TOP	4902 mV
12.0 V MMB TOP	11721 mV
3.3 V MMB TOP	3316 mV
0.75 MMB BOT	754 mV
1.5 V MMB BOT	1482 mV
1.8 V MMB BOT	1758 mV
2.5 V MMB BOT	2488 mV
1.2 V MMB BOT	1157 mV
5.0 V MMB BOT	4962 mV
12.0 V MMB BOT	11691 mV
3.3 V MMB BOT	3308 mV
APS 00	1484 mV
APS 01	2503 mV
APS 02	3313 mV
5.0 V PIC 0	5025 mV
APS 10	1501 mV
APS 11	2466 mV
APS 12	3311 mV
5.0 V PIC 1	5081 mV
Bus Revision	49

show chassis environment fpc (QFX Series and OCX Series)

```
user@switch> show chassis environment fpc 0
FPC 0 status:
```

State	Online
Temperature	42 degrees C / 107 degrees F

show chassis environment fpc interconnect-device (QFabric Systems)

```

user@switch> show chassis environment fpc interconnect-device
interconnect1 0
FC 0 FPC 0 status:
  State                Online
  Left Intake Temperature 24 degrees C / 75 degrees F
  Right Intake Temperature 24 degrees C / 75 degrees F
  Left Exhaust Temperature 27 degrees C / 80 degrees F
  Right Exhaust Temperature 27 degrees C / 80 degrees F
  Power
    BIAS 3V3                3330 mV
    VDD 3V3                  3300 mV
    VDD 2V5                  2502 mV
    VDD 1V5                  1496 mV
    VDD 1V2                  1194 mV
    VDD 1V0                  1000 mV
    SW0 VDD 1V0              1020 mV
    SW0 CVDD 1V025           1032 mV
    SW1 VDD 1V0              1022 mV
    SW1 CVDD 1V025           1030 mV
    VDD 12V0 DIV3_33         3414 mV

```

show chassis environment fpc 5(PTX3000 Packet Transport Router)

```

user@host> show chassis environment fpc 5
FPC 5 status:
  State                Online
  Intake Temperature   31 degrees C / 87 degrees F
  Exhaust Temperature  41 degrees C / 105 degrees F
  Power
    FPC 12.0v           12221 mV
    FPC VCC 0.5-1.3v    1640 mV
    FPC VNN 0.5-1.3v    1640 mV
    FPC 1.0v            1640 mV
    FPC 1.1v            1640 mV
    FPC 1.35v           1640 mV

```

FPC VDDQ 1.5v	1640 mV
FPC 1.8v	1640 mV
FPC 3.3v	3280 mV
FPC 5.0v bias	5143 mV
FPC 5.0v usb	5143 mV
FPC VCC 12.0v	12289 mV
FPC Vref 3.3v	3280 mV
MAIN 12.0v-i	2265 mA

show chassis environment fpc 0 (PTX5000 Packet Transport Router)

```

user@host> show chassis environment fpc 0
FPC 0 status:
State                               Online
PMB Temperature                     35 degrees C / 95 degrees F
Intake Temperature                   33 degrees C / 91 degrees F
Exhaust A Temperature                51 degrees C / 123 degrees F
Exhaust B Temperature                43 degrees C / 109 degrees F
TL0 Temperature                      48 degrees C / 118 degrees F
TQ0 Temperature                      53 degrees C / 127 degrees F
TL1 Temperature                      56 degrees C / 132 degrees F
TQ1 Temperature                      58 degrees C / 136 degrees F
TL2 Temperature                      55 degrees C / 131 degrees F
TQ2 Temperature                      57 degrees C / 134 degrees F
TL3 Temperature                      59 degrees C / 138 degrees F
TQ3 Temperature                      59 degrees C / 138 degrees F
Power
PMB 1.05v                            1049 mV
PMB 1.5v                              1500 mV
PMB 2.5v                              2500 mV
PMB 3.3v                              3299 mV
PFE0 1.5v                             1500 mV
PFE0 1.0v                             999 mV
TQ0 0.9v                               900 mV
TL0 0.9v                               900 mV
PFE1 1.5v                             1499 mV
PFE1 1.0v                             999 mV
TQ1 0.9v                               899 mV
TL1 0.9v                               900 mV
PFE2 1.5v                             1500 mV
PFE2 1.0v                             1000 mV

```


PMB	1.05v	1049 mV
PMB	3.3v	3299 mV
PMB	1.1v-a	1100 mV
PMB	1.5v	1499 mV
PMB	1.1v-b	1100 mV
Base	3.3v	3300 mV
FPC Base	2.5v	2499 mV
TL1	0.9v	897 mV
TQ1	0.9v	897 mV
PFE1	1.0v	999 mV
PFE1	1.5v	1499 mV
TL2	0.9v	897 mV
TQ2	0.9v	897 mV
PFE2	1.0v	999 mV
PFE2	1.5v	1499 mV
FPC Base	1.0v	1000 mV
FPC Base	1.2v	1199 mV
TL5	0.9v	898 mV
TQ5	0.9v	898 mV
PFE5	1.0v	1000 mV
PFE5	1.5v	1500 mV
TL6	0.9v	897 mV
TQ6	0.9v	897 mV
PFE6	1.0v	1000 mV
PFE6	1.5v	1499 mV
Mezz Base	2.5v	2500 mV
TL0	0.9v	896 mV
TQ0	0.9v	896 mV
PFE0	1.0v	999 mV
PFE0	1.5v	1499 mV

show chassis environment fpc (PTX10008 router)

```

user@host> show chassis environment fpc
FPC 0 status:
State                               Online
FPC 0 Intake-A Temp Sensor 37 degrees C / 98 degrees F
FPC 0 Intake-B Temp Sensor 34 degrees C / 93 degrees F
FPC 0 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
FPC 0 Exhaust-B Temp Sensor38 degrees C / 100 degrees F
FPC 0 Exhaust-C Temp Sensor40 degrees C / 104 degrees F

```



```

FPC 0 PE0 Temp Sensor      41 degrees C / 105 degrees F
FPC 0 PE1 Temp Sensor      42 degrees C / 107 degrees F
FPC 0 PE2 Temp Sensor      44 degrees C / 111 degrees F
FPC 0 LCPU Temp Sensor     40 degrees C / 104 degrees F

```

Power

```

PE0 Core 0.9V              872 mV   28777 mA  25146 mW
PE0 HMC0 Core 0.9V         899 mV   10359 mA   9328 mW
PE1 Core 0.9V              896 mV   29476 mA  26414 mW
PE1 HMC0 Core 0.9V         899 mV   10218 mA   9187 mW
PE2 Core 0.9V              872 mV   28839 mA  25199 mW
PE2 HMC0 Core 0.9V         900 mV   10296 mA   9265 mW
PE0 Serdes 1.0V           1020 mV  29000 mA  29593 mW
PE1 Serdes 1.0V           1019 mV  29109 mA  29718 mW
PE2 Serdes 1.0V           1019 mV  28484 mA  29078 mW
LCPU Platform 1.1V        1099 mV   3515 mA   3867 mW
LCPU Core 1.0V            1000 mV   8750 mA   8703 mW
PHY VDD B 1.0V            1000 mV  17062 mA  17031 mW
PHY VDD A 1.0V            999 mV   15640 mA  15625 mW
BCM Core 1.0V              999 mV   7054 mA   7054 mW
BCM PEX 1.0V               999 mV   3562 mA   3558 mW
HMC Core 1.2V              1199 mV  1280 mA   1513 mW
HMC Serdes 1.2V           1199 mV  32937 mA  39500 mW
VDD 1.5V                   1500 mV   2824 mA   4234 mW
VDD 2.5V                   2449 mV   3812 mA   9343 mW
VDD 3.3V                   3299 mV   5085 mA  16796 mW
12V                        12259 mV  29609 mA 368196 mW

```

FPC 1 status:

```

State                       Online
FPC 1 Intake-A Temp Sensor 37 degrees C / 98 degrees F
FPC 1 Intake-B Temp Sensor 34 degrees C / 93 degrees F
FPC 1 Exhaust-A Temp Sensor38 degrees C / 100 degrees F
FPC 1 Exhaust-B Temp Sensor38 degrees C / 100 degrees F
FPC 1 Exhaust-C Temp Sensor40 degrees C / 104 degrees F
FPC 1 PE0 Temp Sensor      41 degrees C / 105 degrees F
FPC 1 PE1 Temp Sensor      42 degrees C / 107 degrees F
FPC 1 PE2 Temp Sensor      44 degrees C / 111 degrees F
FPC 1 LCPU Temp Sensor     39 degrees C / 102 degrees F

```

Power

```

PE0 Core 0.9V              898 mV   29351 mA  26421 mW
PE0 HMC0 Core 0.9V         899 mV   9734 mA   8750 mW
PE1 Core 0.9V              873 mV   28539 mA  24933 mW
PE1 HMC0 Core 0.9V         899 mV   9937 mA   8937 mW
PE2 Core 0.9V              875 mV   28906 mA  25316 mW

```

PE2 HMC0 Core 0.9V	899 mV	10140 mA	9125 mW
PE0 Serdes 1.0V	1019 mV	28312 mA	28890 mW
PE1 Serdes 1.0V	1020 mV	28656 mA	29234 mW
PE2 Serdes 1.0V	1020 mV	29437 mA	30015 mW
LCPU Platform 1.1V	1100 mV	4617 mA	5078 mW
LCPU Core 1.0V	1000 mV	8781 mA	8781 mW
PHY VDD B 1.0V	1000 mV	15953 mA	15984 mW
PHY VDD A 1.0V	1000 mV	15484 mA	15484 mW
BCM Core 1.0V	999 mV	7945 mA	7937 mW
BCM PEX 1.0V	999 mV	3515 mA	3515 mW
HMC Core 1.2V	1199 mV	1269 mA	1521 mW
HMC Serdes 1.2V	1199 mV	33000 mA	39593 mW
VDD 1.5V	1500 mV	2691 mA	4062 mW
VDD 2.5V	2449 mV	3582 mA	8781 mW
VDD 3.3V	3300 mV	2563 mA	8458 mW
12V	12311 mV	29002 mA	357577 mW

FPC 2 status:

State	Online
FPC 2 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 2 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 2 Exhaust-A Temp Sensor	50 degrees C / 122 degrees F
FPC 2 Exhaust-B Temp Sensor	52 degrees C / 125 degrees F
FPC 2 Exhaust-C Temp Sensor	51 degrees C / 123 degrees F
FPC 2 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE1 Temp Sensor	56 degrees C / 132 degrees F
FPC 2 PE2 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE3 Temp Sensor	57 degrees C / 134 degrees F
FPC 2 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 2 PE5 Temp Sensor	60 degrees C / 140 degrees F
FPC 2 LCPU Temp Sensor	47 degrees C / 116 degrees F

Power

PE0 Core 0.9V	874 mV	28117 mA	24617 mW
PE1 Core 0.9V	899 mV	29601 mA	26632 mW
PE0 Serdes 1.0V	1019 mV	41031 mA	41843 mW
PE1 Serdes 1.0V	1019 mV	35656 mA	36343 mW
PE0 HMC Core 0.9V	899 mV	8125 mA	7312 mW
PE0,1 HMC Memory 1.2V	1199 mV	565 mA	688 mW
PE1 HMC Core 0.9V	899 mV	7921 mA	7125 mW
PE0,1 HMC Serdes 1.2V	1199 mV	21281 mA	25562 mW
PE2 Core 0.9V	899 mV	29187 mA	26242 mW
PE3 Core 0.9V	899 mV	29976 mA	27074 mW
PE2 Serdes 1.0V	1019 mV	38562 mA	39343 mW
PE3 Serdes 1.0V	1019 mV	34937 mA	35656 mW

PE2 HMC Core 0.9V	899 mV	8093 mA	7281 mW
PE2,3 HMC Memory 1.2V	1199 mV	610 mA	732 mW
PE3 HMC Core 0.9V	899 mV	7710 mA	6937 mW
PE2,3 HMC Serdes 1.2V	1199 mV	21500 mA	25812 mW
VDD 3.3V	3300 mV	7937 mA	26187 mW
VDD 1.5V	1499 mV	3234 mA	4851 mW
VDD 2.5V	2449 mV	4539 mA	11109 mW
PE4 Core 0.9V	874 mV	29914 mA	26183 mW
PE5 Core 0.9V	874 mV	29820 mA	26031 mW
PE4 Serdes 1.0V	1020 mV	43968 mA	44843 mW
PE5 Serdes 1.0V	1019 mV	27453 mA	28031 mW
PE4 HMC Core 0.9V	900 mV	7937 mA	7140 mW
PE4,5 HMC Memory 1.2V	1200 mV	1185 mA	1421 mW
PE5 HMC Core 0.9V	899 mV	8718 mA	7843 mW
PE4,5 HMC Serdes 1.2V	1199 mV	21125 mA	25343 mW
LCPU platform 1.1V	1099 mV	3777 mA	4156 mW
LCPU core 1.0V	1000 mV	9062 mA	9062 mW
BCM core 1.0V	1000 mV	9328 mA	9328 mW
BCM & PEX Serdes 1.0V	999 mV	4125 mA	4125 mW
12V	12311 mV	53347 mA	660345 mW

FPC 3 status:

State	Online
FPC 3 Intake-A Temp Sensor	43 degrees C / 109 degrees F
FPC 3 Intake-B Temp Sensor	30 degrees C / 86 degrees F
FPC 3 Exhaust-A Temp Sensor	48 degrees C / 118 degrees F
FPC 3 Exhaust-B Temp Sensor	49 degrees C / 120 degrees F
FPC 3 Exhaust-C Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE0 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE1 Temp Sensor	55 degrees C / 131 degrees F
FPC 3 PE2 Temp Sensor	47 degrees C / 116 degrees F
FPC 3 PE3 Temp Sensor	54 degrees C / 129 degrees F
FPC 3 PE4 Temp Sensor	48 degrees C / 118 degrees F
FPC 3 PE5 Temp Sensor	58 degrees C / 136 degrees F
FPC 3 LCPU Temp Sensor	46 degrees C / 114 degrees F

Power

PE0 Core 0.9V	899 mV	29695 mA	26718 mW
PE1 Core 0.9V	899 mV	29695 mA	26710 mW
PE0 Serdes 1.0V	1020 mV	40156 mA	40906 mW
PE1 Serdes 1.0V	1020 mV	35281 mA	35968 mW
PE0 HMC Core 0.9V	900 mV	7492 mA	6742 mW
PE0,1 HMC Memory 1.2V	1199 mV	569 mA	683 mW
PE1 HMC Core 0.9V	899 mV	7570 mA	6812 mW
PE0,1 HMC Serdes 1.2V	1199 mV	20562 mA	24656 mW

PE2 Core 0.9V	899 mV	29734 mA	26765 mW
PE3 Core 0.9V	900 mV	29960 mA	26968 mW
PE2 Serdes 1.0V	1019 mV	37718 mA	38500 mW
PE3 Serdes 1.0V	1020 mV	35250 mA	35937 mW
PE2 HMC Core 0.9V	899 mV	7750 mA	6976 mW
PE2,3 HMC Memory 1.2V	1200 mV	546 mA	656 mW
PE3 HMC Core 0.9V	899 mV	7718 mA	6945 mW
PE2,3 HMC Serdes 1.2V	1199 mV	20625 mA	24750 mW
VDD 3.3V	3299 mV	5917 mA	19515 mW
VDD 1.5V	1499 mV	4015 mA	6015 mW
VDD 2.5V	2449 mV	4335 mA	10625 mW
PE4 Core 0.9V	899 mV	29835 mA	26875 mW
PE5 Core 0.9V	924 mV	30554 mA	28277 mW
PE4 Serdes 1.0V	1019 mV	43281 mA	44187 mW
PE5 Serdes 1.0V	1020 mV	27140 mA	27703 mW
PE4 HMC Core 0.9V	899 mV	7476 mA	6726 mW
PE4,5 HMC Memory 1.2V	1199 mV	531 mA	637 mW
PE5 HMC Core 0.9V	899 mV	7539 mA	6781 mW
PE4,5 HMC Serdes 1.2V	1199 mV	20375 mA	24468 mW
LCPU platform 1.1V	1099 mV	3453 mA	3796 mW
LCPU core 1.0V	999 mV	8984 mA	8984 mW
BCM core 1.0V	999 mV	7929 mA	7921 mW
BCM & PEX Serdes 1.0V	1000 mV	4046 mA	4046 mW
12V	12351 mV	51918 mA	644880 mW

FPC 5 status:

```

State                               Online
FPC 5 Intake-A Temp Sensor Failed
FPC 5 Intake-B Temp Sensor Failed
FPC 5 Exhaust-A Temp Sensor41 degrees C / 105 degrees F
FPC 5 Exhaust-B Temp Sensor41 degrees C / 105 degrees F
FPC 5 Exhaust-C Temp Sensor42 degrees C / 107 degrees F
FPC 5 PE0 Temp Sensor      47 degrees C / 116 degrees F
FPC 5 PE1 Temp Sensor      49 degrees C / 120 degrees F
FPC 5 PE2 Temp Sensor      53 degrees C / 127 degrees F
FPC 5 LCPU Temp Sensor     Failed

```

Power

PE0 Core 0.9V	923 mV	30976 mA	28578 mW
PE0 HMC0 Core 0.9V	899 mV	10093 mA	9078 mW
PE1 Core 0.9V	897 mV	29398 mA	26414 mW
PE1 HMC0 Core 0.9V	899 mV	9734 mA	8750 mW
PE2 Core 0.9V	922 mV	30226 mA	27886 mW
PE2 HMC0 Core 0.9V	899 mV	9984 mA	8968 mW
PE0 Serdes 1.0V	1019 mV	29296 mA	29890 mW

PE1 Serdes 1.0V	1020 mV	28687 mA	29296 mW
PE2 Serdes 1.0V	1020 mV	28187 mA	28765 mW
LCPU Platform 1.1V	1100 mV	3664 mA	4031 mW
LCPU Core 1.0V	999 mV	9125 mA	9125 mW
PHY VDD B 1.0V	999 mV	15593 mA	15593 mW
PHY VDD A 1.0V	1000 mV	15453 mA	15453 mW
BCM Core 1.0V	999 mV	7773 mA	7765 mW
BCM PEX 1.0V	1000 mV	3460 mA	3464 mW
HMC Core 1.2V	1199 mV	1328 mA	1628 mW
HMC Serdes 1.2V	1199 mV	32203 mA	38625 mW
VDD 1.5V	1499 mV	2675 mA	4007 mW
VDD 2.5V	2450 mV	3675 mA	9000 mW
VDD 3.3V	3300 mV	1814 mA	5980 mW
12V	12272 mV	29045 mA	361369 mW

FPC 6 status:

State	Online
FPC 6 Intake-A Temp Sensor	41 degrees C / 105 degrees F
FPC 6 Intake-B Temp Sensor	37 degrees C / 98 degrees F
FPC 6 Exhaust-A Temp Sensor	40 degrees C / 104 degrees F
FPC 6 Exhaust-B Temp Sensor	40 degrees C / 104 degrees F
FPC 6 Exhaust-C Temp Sensor	40 degrees C / 104 degrees F
FPC 6 PE0 Temp Sensor	45 degrees C / 113 degrees F
FPC 6 PE1 Temp Sensor	47 degrees C / 116 degrees F
FPC 6 PE2 Temp Sensor	51 degrees C / 123 degrees F
FPC 6 LCPU Temp Sensor	41 degrees C / 105 degrees F

Power

PE0 Core 0.9V	897 mV	30214 mA	27179 mW
PE0 HMC0 Core 0.9V	899 mV	10000 mA	8984 mW
PE1 Core 0.9V	873 mV	29332 mA	25601 mW
PE1 HMC0 Core 0.9V	899 mV	9828 mA	8828 mW
PE2 Core 0.9V	898 mV	30781 mA	27675 mW
PE2 HMC0 Core 0.9V	899 mV	10328 mA	9296 mW
PE0 Serdes 1.0V	1019 mV	28921 mA	29531 mW
PE1 Serdes 1.0V	1020 mV	29437 mA	30046 mW
PE2 Serdes 1.0V	1019 mV	29671 mA	30281 mW
LCPU Platform 1.1V	1100 mV	3671 mA	4039 mW
LCPU Core 1.0V	1000 mV	8218 mA	8187 mW
PHY VDD B 1.0V	1000 mV	15984 mA	15984 mW
PHY VDD A 1.0V	999 mV	16093 mA	16093 mW
BCM Core 1.0V	1000 mV	8046 mA	8062 mW
BCM PEX 1.0V	1000 mV	3500 mA	3500 mW
HMC Core 1.2V	1199 mV	1327 mA	1579 mW
HMC Serdes 1.2V	1199 mV	33031 mA	39593 mW

VDD 1.5V	1499 mV	2722 mA	4078 mW
VDD 2.5V	2449 mV	3539 mA	8671 mW
VDD 3.3V	3299 mV	8082 mA	26656 mW
12V	12311 mV	31124 mA	385270 mW

show chassis environment fpc (PTX10016 router)

```

user@host> show chassis environment fpc
FPC 1 status:
  State                Online
FPC 1 Intake-A Temp Sensor 36 degrees C / 96 degrees F
FPC 1 Intake-B Temp Sensor 32 degrees C / 89 degrees F
FPC 1 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F
FPC 1 Exhaust-B Temp Sensor 36 degrees C / 96 degrees F
FPC 1 Exhaust-C Temp Sensor 36 degrees C / 96 degrees F
FPC 1 PE0 Temp Sensor      45 degrees C / 113 degrees F
FPC 1 PE1 Temp Sensor      46 degrees C / 114 degrees F
FPC 1 PE2 Temp Sensor      53 degrees C / 127 degrees F
FPC 1 LCPU Temp Sensor     35 degrees C / 95 degrees F
Power
  PE0 Core 0.9V            897 mV  28992 mA  26027 mW
  PE0 HMC0 Core 0.9V       899 mV  10156 mA   9156 mW
  PE1 Core 0.9V            871 mV  28800 mA  25164 mW
  PE1 HMC0 Core 0.9V       899 mV  10125 mA   9109 mW
  PE2 Core 0.9V            898 mV  29914 mA  26906 mW
  PE2 HMC0 Core 0.9V       899 mV  10343 mA   9296 mW
  PE0 Serdes 1.0V          1019 mV 27515 mA  28093 mW
  PE1 Serdes 1.0V          1020 mV 27968 mA  28546 mW
  PE2 Serdes 1.0V          1019 mV 27796 mA  28359 mW
  LCPU Platform 1.1V       1100 mV  3347 mA   3289 mW
  LCPU Core 1.0V           1000 mV  7960 mA   7960 mW
  PHY VDD B 1.0V           1000 mV 16437 mA  16437 mW
  PHY VDD A 1.0V           999 mV  15656 mA  15656 mW
  BCM Core 1.0V            1000 mV  7289 mA   7335 mW
  BCM PEX 1.0V             999 mV  3453 mA   3453 mW
  HMC Core 1.2V            1199 mV  1218 mA   1453 mW
  HMC Serdes 1.2V          1199 mV 32093 mA  38562 mW
  VDD 1.5V                  1500 mV  2859 mA   4289 mW
  VDD 2.5V                  2449 mV  3875 mA   9500 mW
  VDD 3.3V                  3299 mV  2806 mA   9257 mW
  12V                       12351 mV 28569 mA 354877 mW

```

FPC 3 status:

```

State                               Online
FPC 3 Intake-A Temp Sensor 35 degrees C / 95 degrees F
FPC 3 Intake-B Temp Sensor 31 degrees C / 87 degrees F
FPC 3 Exhaust-A Temp Sensor36 degrees C / 96 degrees F
FPC 3 Exhaust-B Temp Sensor34 degrees C / 93 degrees F
FPC 3 Exhaust-C Temp Sensor33 degrees C / 91 degrees F
FPC 3 PE0 Temp Sensor        43 degrees C / 109 degrees F
FPC 3 PE1 Temp Sensor        45 degrees C / 113 degrees F
FPC 3 PE2 Temp Sensor        49 degrees C / 120 degrees F
FPC 3 LCPU Temp Sensor       35 degrees C / 95 degrees F

```

Power

```

PE0 Core 0.9V                    897 mV  28832 mA  25871 mW
PE0 HMC0 Core 0.9V                899 mV  10359 mA   9328 mW
PE1 Core 0.9V                    873 mV  28230 mA  24671 mW
PE1 HMC0 Core 0.9V                899 mV  10468 mA   9421 mW
PE2 Core 0.9V                    898 mV  29539 mA  26539 mW
PE2 HMC0 Core 0.9V                899 mV  10656 mA   9593 mW
PE0 Serdes 1.0V                  1020 mV  27484 mA  28031 mW
PE1 Serdes 1.0V                  1019 mV  27515 mA  28078 mW
PE2 Serdes 1.0V                  1020 mV  27625 mA  28187 mW
LCPU Platform 1.1V               1099 mV   3050 mA   3355 mW
LCPU Core 1.0V                   999 mV   7820 mA   7804 mW
PHY VDD B 1.0V                   999 mV  15406 mA  15406 mW
PHY VDD A 1.0V                   1000 mV  14953 mA  14953 mW
BCM Core 1.0V                    1000 mV   7648 mA   7648 mW
BCM PEX 1.0V                     1000 mV   3531 mA   3531 mW
HMC Core 1.2V                    1200 mV   1234 mA   1476 mW
HMC Serdes 1.2V                  1199 mV  34671 mA  41593 mW
VDD 1.5V                         1499 mV   3484 mA   5226 mW
VDD 2.5V                         2449 mV   3218 mA   7890 mW
VDD 3.3V                         3299 mV   2468 mA   8148 mW
12V                               12311 mV  28785 mA  355950 mW

```

FPC 6 status:

```

State                               Online
FPC 6 Intake-A Temp Sensor 34 degrees C / 93 degrees F
FPC 6 Intake-B Temp Sensor 31 degrees C / 87 degrees F
FPC 6 Exhaust-A Temp Sensor34 degrees C / 93 degrees F
FPC 6 Exhaust-B Temp Sensor35 degrees C / 95 degrees F
FPC 6 Exhaust-C Temp Sensor35 degrees C / 95 degrees F
FPC 6 PE0 Temp Sensor          42 degrees C / 107 degrees F
FPC 6 PE1 Temp Sensor          43 degrees C / 109 degrees F
FPC 6 PE2 Temp Sensor          47 degrees C / 116 degrees F

```

FPC 6 LCPU Temp Sensor 34 degrees C / 93 degrees F

Power

PE0 Core 0.9V	922 mV	29394 mA	27160 mW
PE0 HMC0 Core 0.9V	899 mV	10078 mA	9062 mW
PE1 Core 0.9V	923 mV	29636 mA	27304 mW
PE1 HMC0 Core 0.9V	899 mV	9890 mA	8890 mW
PE2 Core 0.9V	898 mV	29734 mA	26757 mW
PE2 HMC0 Core 0.9V	899 mV	9968 mA	8968 mW
PE0 Serdes 1.0V	1020 mV	26968 mA	27515 mW
PE1 Serdes 1.0V	1019 mV	27421 mA	27984 mW
PE2 Serdes 1.0V	1019 mV	27625 mA	28171 mW
LCPU Platform 1.1V	1099 mV	3230 mA	4742 mW
LCPU Core 1.0V	999 mV	8171 mA	8171 mW
PHY VDD B 1.0V	1000 mV	15671 mA	15687 mW
PHY VDD A 1.0V	999 mV	15703 mA	15703 mW
BCM Core 1.0V	999 mV	7500 mA	7492 mW
BCM PEX 1.0V	1000 mV	3480 mA	3468 mW
HMC Core 1.2V	1199 mV	1199 mA	1440 mW
HMC Serdes 1.2V	1199 mV	31046 mA	37250 mW
VDD 1.5V	1499 mV	2804 mA	4203 mW
VDD 2.5V	2449 mV	3746 mA	9171 mW
VDD 3.3V	3300 mV	3173 mA	10476 mW
12V	12311 mV	28786 mA	355654 mW

FPC 8 status:

State

Online

FPC 8 Intake-A Temp Sensor 34 degrees C / 93 degrees F
 FPC 8 Intake-B Temp Sensor 30 degrees C / 86 degrees F
 FPC 8 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F
 FPC 8 Exhaust-B Temp Sensor 37 degrees C / 98 degrees F
 FPC 8 Exhaust-C Temp Sensor 37 degrees C / 98 degrees F
 FPC 8 PE0 Temp Sensor 42 degrees C / 107 degrees F
 FPC 8 PE1 Temp Sensor 44 degrees C / 111 degrees F
 FPC 8 PE2 Temp Sensor 47 degrees C / 116 degrees F
 FPC 8 LCPU Temp Sensor 33 degrees C / 91 degrees F

Power

PE0 Core 0.9V	897 mV	29382 mA	26437 mW
PE0 HMC0 Core 0.9V	899 mV	10265 mA	9250 mW
PE1 Core 0.9V	872 mV	28867 mA	25175 mW
PE1 HMC0 Core 0.9V	899 mV	10171 mA	9109 mW
PE2 Core 0.9V	899 mV	30210 mA	27214 mW
PE2 HMC0 Core 0.9V	900 mV	10187 mA	9171 mW
PE0 Serdes 1.0V	1020 mV	27843 mA	28421 mW
PE1 Serdes 1.0V	1020 mV	28265 mA	28828 mW

PE2 Serdes 1.0V	1019 mV	28406 mA	29000 mW
LCPU Platform 1.1V	1099 mV	3000 mA	3300 mW
LCPU Core 1.0V	1000 mV	7937 mA	7937 mW
PHY VDD B 1.0V	1000 mV	15843 mA	15843 mW
PHY VDD A 1.0V	1000 mV	15250 mA	15250 mW
BCM Core 1.0V	999 mV	6914 mA	6898 mW
BCM PEX 1.0V	999 mV	3445 mA	3445 mW
HMC Core 1.2V	1199 mV	1162 mA	1390 mW
HMC Serdes 1.2V	1199 mV	33437 mA	40125 mW
VDD 1.5V	1499 mV	2851 mA	4273 mW
VDD 2.5V	2450 mV	3867 mA	9484 mW
VDD 3.3V	3300 mV	3258 mA	10753 mW
12V	12338 mV	28656 mA	356171 mW

FPC 9 status:

State	Online
FPC 9 Intake-A Temp Sensor	44 degrees C / 111 degrees F
FPC 9 Intake-B Temp Sensor	28 degrees C / 82 degrees F
FPC 9 Exhaust-A Temp Sensor	51 degrees C / 123 degrees F
FPC 9 Exhaust-B Temp Sensor	52 degrees C / 125 degrees F
FPC 9 Exhaust-C Temp Sensor	48 degrees C / 118 degrees F
FPC 9 PE0 Temp Sensor	52 degrees C / 125 degrees F
FPC 9 PE1 Temp Sensor	65 degrees C / 149 degrees F
FPC 9 PE2 Temp Sensor	50 degrees C / 122 degrees F
FPC 9 PE3 Temp Sensor	65 degrees C / 149 degrees F
FPC 9 PE4 Temp Sensor	50 degrees C / 122 degrees F
FPC 9 PE5 Temp Sensor	67 degrees C / 152 degrees F
FPC 9 LCPU Temp Sensor	45 degrees C / 113 degrees F

Power

PE0 Core 0.9V	875 mV	28316 mA	24808 mW
PE1 Core 0.9V	875 mV	28546 mA	24996 mW
PE0 Serdes 1.0V	1019 mV	38906 mA	39687 mW
PE1 Serdes 1.0V	1020 mV	33078 mA	33781 mW
PE0 HMC Core 0.9V	899 mV	7718 mA	6945 mW
PE0,1 HMC Memory 1.2V	1199 mV	579 mA	695 mW
PE1 HMC Core 0.9V	899 mV	7289 mA	6570 mW
PE0,1 HMC Serdes 1.2V	1199 mV	20187 mA	24250 mW
PE2 Core 0.9V	924 mV	29062 mA	26894 mW
PE3 Core 0.9V	900 mV	28914 mA	26039 mW
PE2 Serdes 1.0V	1020 mV	36375 mA	37093 mW
PE3 Serdes 1.0V	1019 mV	32640 mA	33296 mW
PE2 HMC Core 0.9V	900 mV	7695 mA	6921 mW
PE2,3 HMC Memory 1.2V	1199 mV	562 mA	674 mW
PE3 HMC Core 0.9V	899 mV	7554 mA	6796 mW

PE2,3 HMC Serdes 1.2V	1199 mV	20156 mA	24218 mW
VDD 3.3V	3300 mV	8964 mA	29609 mW
VDD 1.5V	1499 mV	3968 mA	5945 mW
VDD 2.5V	2449 mV	4414 mA	10890 mW
PE4 Core 0.9V	900 mV	28527 mA	25679 mW
PE5 Core 0.9V	899 mV	28902 mA	26035 mW
PE4 Serdes 1.0V	1019 mV	41281 mA	42125 mW
PE5 Serdes 1.0V	1019 mV	25781 mA	26328 mW
PE4 HMC Core 0.9V	900 mV	7382 mA	6648 mW
PE4,5 HMC Memory 1.2V	1199 mV	626 mA	750 mW
PE5 HMC Core 0.9V	899 mV	7562 mA	6796 mW
PE4,5 HMC Serdes 1.2V	1199 mV	20312 mA	24375 mW
LCPU platform 1.1V	1099 mV	3687 mA	4054 mW
LCPU core 1.0V	1000 mV	9000 mA	9000 mW
BCM core 1.0V	999 mV	7843 mA	7835 mW
BCM & PEX Serdes 1.0V	999 mV	4062 mA	4062 mW
12V	12417 mV	51659 mA	643215 mW

show chassis environment FPC 1 (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis environment fpc 1
FPC 1 status:
  State                Online
  Temperature Intake    36 degrees C / 96 degrees F
  Temperature Exhaust A 39 degrees C / 102 degrees F
  Temperature LU TSen   52 degrees C / 125 degrees F
  Temperature LU Chip   54 degrees C / 129 degrees F
  Temperature XM TSen   52 degrees C / 125 degrees F
  Temperature XM Chip   60 degrees C / 140 degrees F
  Temperature PCIe TSen 52 degrees C / 125 degrees F
  Temperature PCIe Chip 69 degrees C / 156 degrees F
Power
  MPC-BIAS3V3-z12106    3302 mV
  MPC-VDD3V3-z16100    3325 mV
  MPC-AVDD1V0-z16100   1007 mV
  MPC-PCIE_1V0-z16100   904 mV
  MPC-LU0_1V0-z12004    996 mV
  MPC-VDD_1V5-z12004    1498 mV
  MPC-12VA-BMR453       11733 mV
  MPC-12VB-BMR453       11728 mV
  MPC-XM_0V9-vt273m     900 mV

```

show chassis environment FPC (Junos OS Evolved)

```
user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
Intake Temperature                  32 degrees C / 89 degrees F
Exhaust-A Temperature               43 degrees C / 109 degrees F
Exhaust-B Temperature               32 degrees C / 89 degrees F
PE0 Temperature                     34 degrees C / 93 degrees F
PE1 Temperature                     38 degrees C / 100 degrees F
PE2 Temperature                     38 degrees C / 100 degrees F
PE3 Temperature                     36 degrees C / 96 degrees F
PE4 Temperature                     35 degrees C / 95 degrees F
PE5 Temperature                     35 degrees C / 95 degrees F
Power 1
  RT_1 1.0v                         1018 mV
  RT_2 1.0v                         1018 mV
Power 2
  FPC 1 1.0v                         999 mV
  FPC 2 1.0v                         998 mV
Power 3
  FPC 2.5v                           2499 mV
  FPC 3.3v                           3299 mV
Power 4
  FPC 0.9v                           899 mV
  FPC 1.5v                           1499 mV
Power 5
  PE0 1 1.0v                          1039 mV
  PE0 2 1.0v                          1039 mV
Power 6
  PE0 1 0.9v                          900 mV
  PE0 2 0.9v                          900 mV
Power 7
  PE0 3 0.9v                          902 mV
  PE0 4 0.9v                          902 mV
Power 8
  PE0 H 0.9v                          899 mV
  PE0 H 1.2v                          1199 mV
```

Power 9		
PE1 1 1.0v		1040 mV
PE1 2 1.0v		1039 mV
Power 10		
PE1 1 0.9v		901 mV
PE1 2 0.9v		901 mV
Power 11		
PE1 3 0.9v		900 mV
PE1 4 0.9v		900 mV
Power 12		
PE1 H 0.9v		899 mV
PE1 H 1.2v		1199 mV
Power 13		
PE2 1 1.0v		1039 mV
PE2 2 1.0v		1039 mV
Power 14		
PE2 1 0.9v		900 mV
PE2 2 0.9v		900 mV
Power 15		
PE2 3 0.9v		900 mV
PE2 4 0.9v		900 mV
Power 16		
PE2 H 0.9v		899 mV
PE2 H 1.2v		1199 mV
Power 17		
PE3 1 1.0v		1039 mV
PE3 2 1.0v		1039 mV
Power 18		
PE3 1 0.9v		899 mV
PE3 2 0.9v		900 mV
Power 19		
PE3 3 0.9v		899 mV
PE3 4 0.9v		900 mV
Power 20		
PE3 H 0.9v		899 mV
PE3 H 1.2v		1199 mV
Power 21		
PE4 1 1.0v		1039 mV
PE4 2 1.0v		1039 mV
Power 22		
PE4 1 0.9v		900 mV
PE4 2 0.9v		900 mV
Power 23		

```

    PE4 3 0.9v          901 mV
    PE4 4 0.9v          901 mV
Power 24
    PE4 H 0.9v         899 mV
    PE4 H 1.2v        1199 mV
Power 25
    PE5 1 1.0v         1040 mV
    PE5 2 1.0v         1039 mV
Power 26
    PE5 1 0.9v         901 mV
    PE5 2 0.9v         901 mV
Power 27
    PE5 3 0.9v         901 mV
    PE5 4 0.9v         901 mV
Power 28
    PE5 H 0.9v         899 mV
    PE5 H 1.2v        1199 mV
Power 29
    PIC0 12.0v         12342 mV
Power 30
    PIC1 12.0v         12342 mV
Power 31
    A    12.0v         12375 mV
    B    12.0v         1008 mV
Bus Revision           115
FPC 1 status:
State                 Online
Intake Temperature    33 degrees C / 91 degrees F
Exhaust-A Temperature 44 degrees C / 111 degrees F
Exhaust-B Temperature 33 degrees C / 91 degrees F
PE0 Temperature       34 degrees C / 93 degrees F
PE1 Temperature       38 degrees C / 100 degrees F
PE2 Temperature       37 degrees C / 98 degrees F
PE3 Temperature       36 degrees C / 96 degrees F
PE4 Temperature       34 degrees C / 93 degrees F
PE5 Temperature       36 degrees C / 96 degrees F
Power 1
    RT_1 1.0v          1018 mV
    RT_2 1.0v          1018 mV
Power 2
    FPC 1 1.0v         999 mV
    FPC 2 1.0v         999 mV
Power 3

```

FPC	2.5v	2499 mV
FPC	3.3v	3300 mV
Power 4		
FPC	0.9v	899 mV
FPC	1.5v	1500 mV
Power 5		
PE0 1	1.0v	1039 mV
PE0 2	1.0v	1039 mV
Power 6		
PE0 1	0.9v	925 mV
PE0 2	0.9v	925 mV
Power 7		
PE0 3	0.9v	925 mV
PE0 4	0.9v	926 mV
Power 8		
PE0 H	0.9v	899 mV
PE0 H	1.2v	1199 mV
Power 9		
PE1 1	1.0v	1040 mV
PE1 2	1.0v	1039 mV
Power 10		
PE1 1	0.9v	900 mV
PE1 2	0.9v	901 mV
Power 11		
PE1 3	0.9v	899 mV
PE1 4	0.9v	900 mV
Power 12		
PE1 H	0.9v	899 mV
PE1 H	1.2v	1199 mV
Power 13		
PE2 1	1.0v	1040 mV
PE2 2	1.0v	1039 mV
Power 14		
PE2 1	0.9v	926 mV
PE2 2	0.9v	926 mV
Power 15		
PE2 3	0.9v	927 mV
PE2 4	0.9v	927 mV
Power 16		
PE2 H	0.9v	899 mV
PE2 H	1.2v	1199 mV
Power 17		
PE3 1	1.0v	1039 mV

```

    PE3 2 1.0v                1039 mV
Power 18
    PE3 1 0.9v                926 mV
    PE3 2 0.9v                927 mV
Power 19
    PE3 3 0.9v                925 mV
    PE3 4 0.9v                926 mV
Power 20
    PE3 H 0.9v                899 mV
    PE3 H 1.2v                1199 mV
Power 21
    PE4 1 1.0v                1039 mV
    PE4 2 1.0v                1040 mV
Power 22
    PE4 1 0.9v                925 mV
    PE4 2 0.9v                925 mV
Power 23
    PE4 3 0.9v                925 mV
    PE4 4 0.9v                926 mV
Power 24
    PE4 H 0.9v                900 mV
    PE4 H 1.2v                1199 mV
Power 25
    PE5 1 1.0v                1039 mV
    PE5 2 1.0v                1039 mV
Power 26
    PE5 1 0.9v                898 mV
    PE5 2 0.9v                899 mV
Power 27
    PE5 3 0.9v                900 mV
    PE5 4 0.9v                900 mV
Power 28
    PE5 H 0.9v                899 mV
    PE5 H 1.2v                1199 mV
Power 29
    PIC0 12.0v                0 mV
Power 30
    PIC1 12.0v                12402 mV
Power 31
    A    12.0v                12344 mV
    B    12.0v                1008 mV
Bus Revision                115
FPC 2 status:

```

State	Online
Intake Temperature	31 degrees C / 87 degrees F
Exhaust-A Temperature	38 degrees C / 100 degrees F
Exhaust-B Temperature	28 degrees C / 82 degrees F
PE0 Temperature	28 degrees C / 82 degrees F
PE1 Temperature	33 degrees C / 91 degrees F
PE2 Temperature	34 degrees C / 93 degrees F
PE3 Temperature	31 degrees C / 87 degrees F
Power 1	
RT_1 1.0v	1018 mV
RT_2 1.0v	1018 mV
Power 2	
FPC 1 1.0v	999 mV
FPC 2 1.0v	999 mV
Power 3	
FPC 2.5v	2499 mV
FPC 3.3v	3299 mV
Power 4	
FPC 0.9v	899 mV
FPC 1.5v	1500 mV
Power 5	
PE0 1 1.0v	1039 mV
PE0 2 1.0v	1040 mV
Power 6	
PE0 1 0.9v	900 mV
PE0 2 0.9v	901 mV
Power 7	
PE0 3 0.9v	900 mV
PE0 4 0.9v	900 mV
Power 8	
PE0 H 0.9v	899 mV
PE0 H 1.2v	1199 mV
Power 9	
PE1 1 1.0v	1039 mV
PE1 2 1.0v	1039 mV
Power 10	
PE1 1 0.9v	875 mV
PE1 2 0.9v	876 mV
Power 11	
PE1 3 0.9v	875 mV
PE1 4 0.9v	875 mV
Power 12	
PE1 H 0.9v	899 mV


```

    PE1 H 1.2v                1199 mV
Power 13
    PE2 1 1.0v                1039 mV
    PE2 2 1.0v                1039 mV
Power 14
    PE2 1 0.9v                900 mV
    PE2 2 0.9v                900 mV
Power 15
    PE2 3 0.9v                900 mV
    PE2 4 0.9v                900 mV
Power 16
    PE2 H 0.9v                899 mV
    PE2 H 1.2v                1199 mV
Power 17
    PE3 1 1.0v                1039 mV
    PE3 2 1.0v                1039 mV
Power 18
    PE3 1 0.9v                875 mV
    PE3 2 0.9v                875 mV
Power 19
    PE3 3 0.9v                875 mV
    PE3 4 0.9v                875 mV
Power 20
    PE3 H 0.9v                899 mV
    PE3 H 1.2v                1200 mV
Power 21
    PIC0 12.0v                12281 mV
Power 22
    PIC1 12.0v                0 mV
Power 23
    A    12.0v                12406 mV
    B    12.0v                1006 mV
Bus Revision                115
FPC 3 status:
State                       Online
Intake Temperature         33 degrees C / 91 degrees F
Exhaust-A Temperature      44 degrees C / 111 degrees F
Exhaust-B Temperature      30 degrees C / 86 degrees F
PE0 Temperature           33 degrees C / 91 degrees F
PE1 Temperature           37 degrees C / 98 degrees F
PE2 Temperature           38 degrees C / 100 degrees F
PE3 Temperature           34 degrees C / 93 degrees F
PE4 Temperature           33 degrees C / 91 degrees F

```

```

PE5 Temperature          36 degrees C / 96 degrees F
Power 1
  RT_1  1.0v             1018 mV
  RT_2  1.0v             1018 mV
Power 2
  FPC 1  1.0v             999 mV
  FPC 2  1.0v             999 mV
Power 3
  FPC   2.5v             2500 mV
  FPC   3.3v             3299 mV
Power 4
  FPC   0.9v              899 mV
  FPC   1.5v             1500 mV
Power 5
  PE0 1  1.0v             1039 mV
  PE0 2  1.0v             1039 mV
Power 6
  PE0 1  0.9v              900 mV
  PE0 2  0.9v              900 mV
Power 7
  PE0 3  0.9v              898 mV
  PE0 4  0.9v              899 mV
Power 8
  PE0 H 0.9v              899 mV
  PE0 H 1.2v             1199 mV
Power 9
  PE1 1  1.0v             1040 mV
  PE1 2  1.0v             1039 mV
Power 10
  PE1 1  0.9v              926 mV
  PE1 2  0.9v              926 mV
Power 11
  PE1 3  0.9v              925 mV
  PE1 4  0.9v              925 mV
Power 12
  PE1 H 0.9v              900 mV
  PE1 H 1.2v             1199 mV
Power 13
  PE2 1  1.0v             1039 mV
  PE2 2  1.0v             1039 mV
Power 14
  PE2 1  0.9v              873 mV
  PE2 2  0.9v              873 mV

```

Power 15		
PE2 3 0.9v		875 mV
PE2 4 0.9v		875 mV
Power 16		
PE2 H 0.9v		899 mV
PE2 H 1.2v		1199 mV
Power 17		
PE3 1 1.0v		1039 mV
PE3 2 1.0v		1039 mV
Power 18		
PE3 1 0.9v		899 mV
PE3 2 0.9v		900 mV
Power 19		
PE3 3 0.9v		899 mV
PE3 4 0.9v		899 mV
Power 20		
PE3 H 0.9v		899 mV
PE3 H 1.2v		1199 mV
Power 21		
PE4 1 1.0v		1040 mV
PE4 2 1.0v		1040 mV
Power 22		
PE4 1 0.9v		949 mV
PE4 2 0.9v		950 mV
Power 23		
PE4 3 0.9v		950 mV
PE4 4 0.9v		951 mV
Power 24		
PE4 H 0.9v		899 mV
PE4 H 1.2v		1199 mV
Power 25		
PE5 1 1.0v		1039 mV
PE5 2 1.0v		1039 mV
Power 26		
PE5 1 0.9v		900 mV
PE5 2 0.9v		900 mV
Power 27		
PE5 3 0.9v		900 mV
PE5 4 0.9v		900 mV
Power 28		
PE5 H 0.9v		899 mV
PE5 H 1.2v		1199 mV
Power 29		

```

    PIC0 12.0v                0 mV
Power 30
    PIC1 12.0v                0 mV
Power 31
    A   12.0v                12406 mV
    B   12.0v                1008 mV
Bus Revision                  115
FPC 6 status:
State                         Onlining
Bus Revision                  115

```

Release Information

Command introduced before Junos OS Release 7.4.

satellite option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

[request chassis fpc](#)

[show chassis fpc](#)

[show chassis fpc-feb-connectivity](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online](#)

[MX960 Flexible PIC Concentrator Description](#)

show chassis environment fpm

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Syntax

```
show chassis environment fpm
```

Syntax (TX Matrix Routers)

```
show chassis environment fpm  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment fpm  
<lcc number | sfc number>
```

Description

(M40e, M120, M160, M320, MX Series, and T Series routers and the PTX Series Packet Transport Routers only) Display environmental information about the front panel module in the router.

Options

none	(TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about the front panel modules (craft interfaces) on the TX Matrix Plus router and its attached routers.
lcc number	<p>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
scc	(TX Matrix router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix router (or switch-card chassis).
sfc number	(TX Matrix Plus router only) (Optional) Display environmental information about the front panel module (craft interface) on the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level

view

Output Fields

[Table 39 on page 807](#) lists the output fields for the **show chassis environment fpm** command. Output fields are listed in the approximate order in which they appear.

Table 39: show chassis environment fpm Output Fields

Field Name	Field Description
State	FPM status: <ul style="list-style-type: none"> • Online—FPM is online and running. • Offline—FPM is powered down.
FPM CMB Voltage	(M40e and M160 routers only) Information about the voltage supplied to the FPM chassis management bus (CMB) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
FPM GBUS Voltage	(M320 and T Series routers only) Information about the voltage supplied to the FPM generic bus (GBUS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
FPM I2CS Voltage	(PTX Series only) Information about the voltage supplied to the FPM generic bus (I2CS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
FPM Display Voltage	Information about the voltage supplied to the FPM display. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
FPM CMB Temperature	(M40e and M160 routers only) Temperature of the air flowing past the FPM CMB device
FPM GBUS Temperature	(M320 and T Series routers only) Temperature of the air flowing past the FPM GBUS device.
FPM I2CS Temperature	(PTX Series only) Temperature of the air flowing past the FPM I2CS device.
FPM Display Temperature	Temperature of the air flowing past the FPM display.

Table 39: show chassis environment fpm Output Fields (*Continued*)

Field Name	Field Description
CMB Revision	(M40e and M160 routers only) Revision level of the CMB device.
GBUS Revision	(M320 and T Series routers only) Revision level of the GBUS device.
I2CS Revision	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Revision level of the I2CS device.

Sample Output

show chassis environment fpm (M40e and M160 Routers)

```

user@host> show chassis environment fpm
FPM status:
  State                               Online
FPM CMB Voltage:
  5.0 V bias                          5030 mV
  8.0 V bias                          8083 mV
FPM Display Voltage:
  5.0 V bias                          4998 mV
FPM CMB temperature                   34 degrees C / 93 degrees F
FPM Display temperature               35 degrees C / 95 degrees F
CMB Revision                          12

```

show chassis environment fpm (M320 Router)

```

user@host> show chassis environment fpm
FPM status:
  State                               Online
FPM GBUS Voltage:
  5.0 V                               5006 mV
  1.8 V bias                          1799 mV

```



```
3.3 V bias          3294 mV
5.0 V bias          4998 mV
8.0 V bias          7682 mV
FPM GBUS temperature 30 degrees C / 86 degrees F
GBUS Revision       51
```

show chassis environment fpm (MX2010 Router)

```
user@host > show chassis environment fpm
FPM status:
  State          Online
  I2CS Revision  4
```

show chassis environment fpm (MX2020 Router)

```
user@host > show chassis environment fpm
FPM status:
  State          Online
  I2CS Revision  3
```

show chassis environment fpm (MX2008 Router)

```
user@host > show chassis environment fpm
FPM status:
  State          Online
  I2CS Revision  5
```

show chassis environment fpm (MX240 Router)

```
user@host> show chassis environment fpm
FPM status:
  State          Online
  I2CS Revision  41
```

show chassis environment fpm (MX480 Router)

```

user@host> show chassis environment fpm
FPM status:
  State                Online
  I2CS Revision        41

```

show chassis environment fpm (T Series Routers)

```

user@host> show chassis environment fpm
FPM status:
  State                Online
  FPM GBUS Voltage:
    1.8 V bias         1787 mV
    3.3 V bias         3286 mV
    5.0 V bias         4991 mV
    8.0 V bias         7162 mV
  FPM Display Voltage:
    5.0 V              4996 mV
  FPM GBUS temperature 29 degrees C / 84 degrees F
  FPM Display temperature 26 degrees C / 78 degrees F
  GBUS Revision        37

```

show chassis environment fpm lcc (TX Matrix Router)

```

user@host> show chassis environment fpm lcc
0
lcc0-re0:
-----
FPM status:
  State                Online
  FPM GBUS Voltage:
    1.8 V bias         1797 mV
    3.3 V bias         3294 mV
    5.0 V bias         5015 mV
    8.0 V bias         7470 mV
  FPM Display Voltage:
    5.0 V              5018 mV
  FPM GBUS temperature 25 degrees C / 77 degrees F

```

```
FPM Display temperature      29 degrees C / 84 degrees F
GBUS Revision                37
```

show chassis environment fpm scc (TX Matrix Router)

```
user@host> show chassis environment fpm scc
scc-re0:
-----
FPM status:
State                               Online
FPM GBUS Voltage:
  1.8 V bias                        1789 mV
  3.3 V bias                        3296 mV
  5.0 V bias                        5003 mV
  8.0 V bias                        7592 mV
FPM Display Voltage:
  5.0 V                             5010 mV
FPM GBUS temperature                22 degrees C / 71 degrees F
FPM Display temperature              27 degrees C / 80 degrees F
GBUS Revision                        37
```

show chassis environment fpm sfc (TX Matrix Plus Router)

```
user@host> show chassis environment fpm sfc
sfc0-re0:
-----
FPM status:
State                               Online
FPM I2CS Voltage:
  3.3 V                             3300 mV
  5.0 V                             5001 mV
  9.0 V FPD                          8672 mV
FPM I2CS temperature                33 degrees C / 91 degrees F
I2CS Revision                        69

lcc0-re0:
-----
FPM status:
State                               Online
```

```

FPM GBUS Voltage:
  1.8 V bias          1802 mV
  3.3 V bias          3301 mV
  5.0 V bias          4984 mV
  8.0 V bias          7377 mV
FPM Display Voltage:
  5.0 V              5015 mV
FPM GBUS temperature  30 degrees C / 86 degrees F
FPM Display temperature 32 degrees C / 89 degrees F
GBUS Revision         37

```

```
lcc1-re0:
```

```

-----
FPM status:
  State                Online
FPM GBUS Voltage:
  1.8 V bias          1789 mV
  3.3 V bias          3311 mV
  5.0 V bias          5013 mV
  8.0 V bias          7467 mV
FPM Display Voltage:
  5.0 V              5015 mV
FPM GBUS temperature  29 degrees C / 84 degrees F
FPM Display temperature 31 degrees C / 87 degrees F
GBUS Revision         37

```

show chassis environment fpm (T4000 Core Router)

```

user@host> show chassis environment fpm
CB 0 status:
  State                Online Master
  Temperature          34 degrees C / 93 degrees F
  Power 1
    1.8 V              1804 mV
    2.5 V              2499 mV
    3.3 V              3317 mV
    3.3 V bias         3291 mV
    4.6 V              4663 mV
    5.0 V              4905 mV
    8.0 V bias         7658 mV
    12.0 V             11877 mV

```

```

Power 2
  1.0 V          996 mV
  1.2 V          1207 mV
  3.3 V RE       3354 mV
Bus Revision    51
FPGA Revision   5
CB 1 status:
State           Online Standby
Temperature     36 degrees C / 96 degrees F
Power 1
  1.8 V          1791 mV
  2.5 V          2494 mV
  3.3 V          3321 mV
  3.3 V bias     3301 mV
  4.6 V          4666 mV
  5.0 V          4945 mV
  8.0 V bias     7645 mV
  12.0 V         11897 mV
Power 2
  1.0 V          991 mV
  1.2 V          1201 mV
  3.3 V RE       3289 mV
Bus Revision    51
FPGA Revision   5

user@host> show chassis environment fpm
FPM status:
State           Online
FPM GBUS Voltage:
  1.8 V bias     1802 mV
  3.3 V bias     3294 mV
  5.0 V bias     5003 mV
  8.0 V bias     7306 mV
FPM Display Voltage:
  5.0 V          5010 mV
FPM GBUS temperature 26 degrees C / 78 degrees F
FPM Display temperature 29 degrees C / 84 degrees F
GBUS Revision      37

```

show chassis environment fpm (PTX5000 Packet Transport Router)

```
user@host> show chassis environment fpm

FPM status:
  State                Online
  FPM I2CS Voltage:
    3.3 V              3300 mV
    5.0 V              4975 mV
  FPM I2CS temperature 37 degrees C / 98 degrees F
  I2CS Revision        109
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

| [request chassis fpm resync](#) | [431](#)

show chassis environment monitored

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Syntax

```
show chassis environment monitored
```

Syntax (MX2020, MX2010, and MX2008 Routers)

```
show chassis environment monitored  
<all-members>  
<local>  
<member member-id>
```

Description

(PTX Series Packet Transport Routers, MX2010, MX2020, MX2008, and MX10008 routers) Display status information for monitored temperatures.

On the PTX Series Packet Transport Routers, and on MX2010, MX2020, MX2008, and MX10008 routers, you can configure which temperatures are monitored for computing temperature alarms. Use this command to display only the temperatures that are monitored. Temperatures that are not included in the temperature alarm computations are not displayed.

Options

none Display status information for monitored temperatures.

all-members	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in all members of the Virtual Chassis configuration.
local	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the local member of the Virtual Chassis.
member <i>member-id</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.

Required Privilege Level

view

Output Fields

[Table 40 on page 816](#) lists the output fields for the **show chassis environment monitored** command. Output fields are listed in the approximate order in which they appear.

Table 40: show chassis environment monitored Output Fields

Field Name	Field Description
Item	Chassis component: <ul style="list-style-type: none"> (PTX Series Packet Transport Routers, and MX2010, MX2020, and Mx2008 routers)—Information about the chassis, Routing Engines, Control Boards (CBs), Switch Interface Boards (SIBs), PICs, and Flexible PIC Concentrators (FPCs).
Status	Status of the specified item: OK , Alarm , or Present .
Measurement	Temperature of the air flowing past the specified chassis component. Temperature is displayed in degrees Celsius (C) and degrees Fahrenheit (F).

Sample Output

show chassis environment monitored (PTX3000 Packet Transport Router)

```

user@host> show chassis environment monitored
Class Item                               Status      Measurement
-----
Routing Engine 0 CPU                     OK          54 degrees C / 129 degrees F
Routing Engine 1 CPU                     Present
CB 0 Exhaust A                           OK          25 degrees C / 77 degrees F
CB 1 Exhaust A                           OK          22 degrees C / 71 degrees F
SIB 0 Exhaust                             OK          34 degrees C / 93 degrees F
SIB 0 TF                                  OK          42 degrees C / 107 degrees F
SIB 1 Exhaust                             OK          31 degrees C / 87 degrees F
SIB 1 TF                                  OK          41 degrees C / 105 degrees F
SIB 2 Exhaust                             OK          32 degrees C / 89 degrees F
SIB 2 TF                                  OK          40 degrees C / 104 degrees F
SIB 3 Exhaust                             OK          32 degrees C / 89 degrees F
SIB 3 TF                                  OK          40 degrees C / 104 degrees F
SIB 4 Exhaust                             OK          31 degrees C / 87 degrees F
SIB 4 TF                                  OK          40 degrees C / 104 degrees F
SIB 5 Exhaust                             OK          31 degrees C / 87 degrees F
SIB 5 TF                                  OK          39 degrees C / 102 degrees F
SIB 6 Exhaust                             OK          31 degrees C / 87 degrees F
SIB 6 TF                                  OK          39 degrees C / 102 degrees F
SIB 7 Exhaust                             OK          35 degrees C / 95 degrees F
SIB 7 TF                                  OK          40 degrees C / 104 degrees F
SIB 8 Exhaust                             OK          32 degrees C / 89 degrees F
SIB 8 TF                                  OK          40 degrees C / 104 degrees F
FPC 2 PMB CPU                             OK          67 degrees C / 152 degrees F
FPC 2 Exhaust                             OK          40 degrees C / 104 degrees F
FPC 2 Intake                              OK          33 degrees C / 91 degrees F
FPC 2 TL0                                 OK          69 degrees C / 156 degrees F
FPC 2 TQ0                                 OK          60 degrees C / 140 degrees F
FPC 2 TL1                                 OK          56 degrees C / 132 degrees F
FPC 2 TQ1                                 OK          45 degrees C / 113 degrees F
PIC Ambient                               OK          40 degrees C / 104 degrees F
FPC 6 PMB CPU                             OK          80 degrees C / 176 degrees F
FPC 6 Exhaust                             OK          53 degrees C / 127 degrees F
FPC 6 Intake                              OK          36 degrees C / 96 degrees F
FPC 6 TL0                                 OK          69 degrees C / 156 degrees F
FPC 6 TQ0                                 OK          65 degrees C / 149 degrees F

```

FPC 6 TL1	OK	52 degrees C / 125 degrees F
FPC 6 TQ1	OK	47 degrees C / 116 degrees F
PIC Ambient	OK	46 degrees C / 114 degrees F
FPC 12 PMB CPU	OK	42 degrees C / 107 degrees F
FPC 12 Intake	OK	33 degrees C / 91 degrees F
FPC 12 Exhaust	OK	41 degrees C / 105 degrees F
FPC 12 TL0	OK	48 degrees C / 118 degrees F
FPC 12 TQ0	OK	45 degrees C / 113 degrees F
FPC 12 TL1	OK	58 degrees C / 136 degrees F
FPC 12 TQ1	OK	50 degrees C / 122 degrees F
PIC Ambient	OK	56 degrees C / 132 degrees F
PIC 100G_OTN_LH-12/0/0	OK	74 degrees C / 165 degrees F
PIC 100G_OTN_LH-12/0/1	OK	93 degrees C / 199 degrees F

show chassis environment monitored (PTX5000 Packet Transport Router)

```
user@host> show chassis environment monitored
```

Class	Item	Status	Measurement
	Routing Engine 0 CPU	OK	71 degrees C / 159 degrees F
	Routing Engine 1 CPU	OK	62 degrees C / 143 degrees F
	CB 0 Exhaust A	OK	45 degrees C / 113 degrees F
	CB 0 Exhaust B	OK	41 degrees C / 105 degrees F
	CB 1 Exhaust A	OK	39 degrees C / 102 degrees F
	CB 1 Exhaust B	OK	36 degrees C / 96 degrees F

show chassis environment monitored (MX2010 Router)

```
user@host > show chassis environment monitored
```

Class	Item	Status	Measurement
Temp	CB 0 IntakeA-Zone0	OK	37 degrees C / 98 degrees F
	CB 0 IntakeB-Zone1	OK	31 degrees C / 87 degrees F
	CB 0 IntakeC-Zone0	OK	39 degrees C / 102 degrees F
	CB 0 ExhaustA-Zone0	OK	36 degrees C / 96 degrees F
	CB 0 ExhaustB-Zone1	OK	32 degrees C / 89 degrees F
	CB 0 TCBC-Zone0	OK	34 degrees C / 93 degrees F
	CB 1 IntakeA-Zone0	OK	36 degrees C / 96 degrees F
	CB 1 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
	CB 1 IntakeC-Zone0	OK	38 degrees C / 100 degrees F

CB 1 ExhaustA-Zone0	OK	36 degrees C / 96 degrees F
CB 1 ExhaustB-Zone1	OK	30 degrees C / 86 degrees F
CB 1 TCBC-Zone0	OK	33 degrees C / 91 degrees F
SPMB 0 Intake	OK	30 degrees C / 86 degrees F
SPMB 1 Intake	OK	28 degrees C / 82 degrees F
Routing Engine 0 CPU	OK	32 degrees C / 89 degrees F
Routing Engine 1 CPU	Present	
SFB 0 Intake-Zone0	OK	46 degrees C / 114 degrees F
SFB 0 Exhaust-Zone1	OK	38 degrees C / 100 degrees F
SFB 0 IntakeA-Zone0	OK	35 degrees C / 95 degrees F
SFB 0 IntakeB-Zone1	OK	31 degrees C / 87 degrees F
SFB 0 Exhaust-Zone0	OK	39 degrees C / 102 degrees F
SFB 0 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 0 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 0 SFB-XF0-Zone0	OK	56 degrees C / 132 degrees F
SFB 1 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 1 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 1 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 1 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 1 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 1 SFB-XF2-Zone1	OK	42 degrees C / 107 degrees F
SFB 1 SFB-XF1-Zone0	OK	40 degrees C / 104 degrees F
SFB 1 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 2 Intake-Zone0	OK	33 degrees C / 91 degrees F
SFB 2 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 2 IntakeA-Zone0	OK	28 degrees C / 82 degrees F
SFB 2 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust-Zone0	OK	31 degrees C / 87 degrees F
SFB 2 SFB-XF2-Zone1	OK	41 degrees C / 105 degrees F
SFB 2 SFB-XF1-Zone0	OK	39 degrees C / 102 degrees F
SFB 2 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 3 Intake-Zone0	OK	33 degrees C / 91 degrees F
SFB 3 Exhaust-Zone1	OK	33 degrees C / 91 degrees F
SFB 3 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 3 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 3 Exhaust-Zone0	OK	31 degrees C / 87 degrees F
SFB 3 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 3 SFB-XF1-Zone0	OK	40 degrees C / 104 degrees F
SFB 3 SFB-XF0-Zone0	OK	42 degrees C / 107 degrees F
SFB 4 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 4 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 4 IntakeA-Zone0	OK	29 degrees C / 84 degrees F
SFB 4 IntakeB-Zone1	OK	28 degrees C / 82 degrees F

SFB 4 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 4 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 4 SFB-XF1-Zone0	OK	42 degrees C / 107 degrees F
SFB 4 SFB-XF0-Zone0	OK	43 degrees C / 109 degrees F
SFB 5 Intake-Zone0	OK	34 degrees C / 93 degrees F
SFB 5 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 5 IntakeA-Zone0	OK	30 degrees C / 86 degrees F
SFB 5 IntakeB-Zone1	OK	28 degrees C / 82 degrees F
SFB 5 Exhaust-Zone0	OK	32 degrees C / 89 degrees F
SFB 5 SFB-XF2-Zone1	OK	41 degrees C / 105 degrees F
SFB 5 SFB-XF1-Zone0	OK	41 degrees C / 105 degrees F
SFB 5 SFB-XF0-Zone0	OK	44 degrees C / 111 degrees F
SFB 6 Intake-Zone0	OK	35 degrees C / 95 degrees F
SFB 6 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 6 IntakeA-Zone0	OK	30 degrees C / 86 degrees F
SFB 6 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 6 Exhaust-Zone0	OK	33 degrees C / 91 degrees F
SFB 6 SFB-XF2-Zone1	OK	44 degrees C / 111 degrees F
SFB 6 SFB-XF1-Zone0	OK	43 degrees C / 109 degrees F
SFB 6 SFB-XF0-Zone0	OK	46 degrees C / 114 degrees F
SFB 7 Intake-Zone0	OK	39 degrees C / 102 degrees F
SFB 7 Exhaust-Zone1	OK	34 degrees C / 93 degrees F
SFB 7 IntakeA-Zone0	OK	34 degrees C / 93 degrees F
SFB 7 IntakeB-Zone1	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust-Zone0	OK	37 degrees C / 98 degrees F
SFB 7 SFB-XF2-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 SFB-XF1-Zone0	OK	47 degrees C / 116 degrees F
SFB 7 SFB-XF0-Zone0	OK	52 degrees C / 125 degrees F
FPC 0 Intake	OK	36 degrees C / 96 degrees F
FPC 0 Exhaust A	OK	42 degrees C / 107 degrees F
FPC 0 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 0 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 0 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 0 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 2 Chip	OK	45 degrees C / 113 degrees F
FPC 0 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 0 LU 3 Chip	OK	46 degrees C / 114 degrees F
FPC 0 MQ 0 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 0 Chip	OK	41 degrees C / 105 degrees F
FPC 0 MQ 1 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 1 Chip	OK	44 degrees C / 111 degrees F

FPC 0 MQ 2 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 2 Chip	OK	38 degrees C / 100 degrees F
FPC 0 MQ 3 TSen	OK	40 degrees C / 104 degrees F
FPC 0 MQ 3 Chip	OK	41 degrees C / 105 degrees F
FPC 1 Intake	OK	34 degrees C / 93 degrees F
FPC 1 Exhaust A	OK	46 degrees C / 114 degrees F
FPC 1 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 1 LU 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 1 LU 1 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 1 Chip	OK	44 degrees C / 111 degrees F
FPC 1 LU 2 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 1 LU 3 TSen	OK	45 degrees C / 113 degrees F
FPC 1 LU 3 Chip	OK	58 degrees C / 136 degrees F
FPC 1 XM 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 XM 0 Chip	OK	52 degrees C / 125 degrees F
FPC 1 XF 0 TSen	OK	45 degrees C / 113 degrees F
FPC 1 XF 0 Chip	OK	63 degrees C / 145 degrees F
FPC 1 PLX Switch TSen	OK	45 degrees C / 113 degrees F
FPC 1 PLX Switch Chip	OK	47 degrees C / 116 degrees F
FPC 8 Intake	OK	32 degrees C / 89 degrees F
FPC 8 Exhaust A	OK	44 degrees C / 111 degrees F
FPC 8 Exhaust B	OK	37 degrees C / 98 degrees F
FPC 8 LU 0 TCAM TSen	OK	41 degrees C / 105 degrees F
FPC 8 LU 0 TCAM Chip	OK	49 degrees C / 120 degrees F
FPC 8 LU 0 TSen	OK	41 degrees C / 105 degrees F
FPC 8 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 8 MQ 0 TSen	OK	41 degrees C / 105 degrees F
FPC 8 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 8 LU 1 TCAM TSen	OK	39 degrees C / 102 degrees F
FPC 8 LU 1 TCAM Chip	OK	42 degrees C / 107 degrees F
FPC 8 LU 1 TSen	OK	39 degrees C / 102 degrees F
FPC 8 LU 1 Chip	OK	46 degrees C / 114 degrees F
FPC 8 MQ 1 TSen	OK	39 degrees C / 102 degrees F
FPC 8 MQ 1 Chip	OK	45 degrees C / 113 degrees F
FPC 9 Intake	OK	34 degrees C / 93 degrees F
FPC 9 Exhaust A	OK	41 degrees C / 105 degrees F
FPC 9 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 9 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 9 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 1 Chip	OK	55 degrees C / 131 degrees F

FPC 9 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 9 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 9 LU 3 Chip	OK	47 degrees C / 116 degrees F
FPC 9 MQ 0 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 0 Chip	OK	42 degrees C / 107 degrees F
FPC 9 MQ 1 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 1 Chip	OK	44 degrees C / 111 degrees F
FPC 9 MQ 2 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 2 Chip	OK	38 degrees C / 100 degrees F
FPC 9 MQ 3 TSen	OK	40 degrees C / 104 degrees F
FPC 9 MQ 3 Chip	OK	40 degrees C / 104 degrees F
ADC 0 Intake	OK	35 degrees C / 95 degrees F
ADC 0 Exhaust	OK	44 degrees C / 111 degrees F
ADC 0 ADC-XF1	OK	48 degrees C / 118 degrees F
ADC 0 ADC-XF0	OK	59 degrees C / 138 degrees F
ADC 1 Intake	OK	34 degrees C / 93 degrees F
ADC 1 Exhaust	OK	45 degrees C / 113 degrees F
ADC 1 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 1 ADC-XF0	OK	56 degrees C / 132 degrees F
ADC 8 Intake	OK	35 degrees C / 95 degrees F
ADC 8 Exhaust	OK	41 degrees C / 105 degrees F
ADC 8 ADC-XF1	OK	52 degrees C / 125 degrees F
ADC 8 ADC-XF0	OK	55 degrees C / 131 degrees F
ADC 9 Intake	OK	33 degrees C / 91 degrees F
ADC 9 Exhaust	OK	42 degrees C / 107 degrees F
ADC 9 ADC-XF1	OK	55 degrees C / 131 degrees F
ADC 9 ADC-XF0	OK	56 degrees C / 132 degrees F

show chassis environment monitored (MX2020 Router)

```

user@host > show chassis environment monitored
Class Item                               Status      Measurement
Temp  CB 0 IntakeA-Zone0                     OK          44 degrees C / 111 degrees F
      CB 0 IntakeB-Zone1                   OK          34 degrees C / 93 degrees F
      CB 0 IntakeC-Zone0                   OK          46 degrees C / 114 degrees F
      CB 0 ExhaustA-Zone0                  OK          44 degrees C / 111 degrees F
      CB 0 ExhaustB-Zone1                 OK          36 degrees C / 96 degrees F
      CB 0 TCBC-Zone0                     OK          39 degrees C / 102 degrees F
      CB 1 IntakeA-Zone0                   OK          46 degrees C / 114 degrees F
      CB 1 IntakeB-Zone1                   OK          43 degrees C / 109 degrees F

```

CB 1 IntakeC-Zone0	OK	47 degrees C / 116 degrees F
CB 1 ExhaustA-Zone0	OK	45 degrees C / 113 degrees F
CB 1 ExhaustB-Zone1	OK	42 degrees C / 107 degrees F
CB 1 TCBC-Zone0	OK	46 degrees C / 114 degrees F
SPMB 0 Intake	OK	33 degrees C / 91 degrees F
SPMB 1 Intake	OK	43 degrees C / 109 degrees F
Routing Engine 0 CPU	OK	34 degrees C / 93 degrees F
Routing Engine 1 CPU	OK	42 degrees C / 107 degrees F
SFB 0 Intake-Zone0	OK	52 degrees C / 125 degrees F
SFB 0 Exhaust-Zone1	OK	45 degrees C / 113 degrees F
SFB 0 IntakeA-Zone0	OK	47 degrees C / 116 degrees F
SFB 0 IntakeB-Zone1	OK	38 degrees C / 100 degrees F
SFB 0 Exhaust-Zone0	OK	49 degrees C / 120 degrees F
SFB 0 SFB-XF2-Zone1	OK	59 degrees C / 138 degrees F
SFB 0 SFB-XF1-Zone0	OK	65 degrees C / 149 degrees F
SFB 0 SFB-XF0-Zone0	OK	65 degrees C / 149 degrees F
SFB 1 Intake-Zone0	OK	53 degrees C / 127 degrees F
SFB 1 Exhaust-Zone1	OK	45 degrees C / 113 degrees F
SFB 1 IntakeA-Zone0	OK	48 degrees C / 118 degrees F
SFB 1 IntakeB-Zone1	OK	39 degrees C / 102 degrees F
SFB 1 Exhaust-Zone0	OK	48 degrees C / 118 degrees F
SFB 1 SFB-XF2-Zone1	OK	60 degrees C / 140 degrees F
SFB 1 SFB-XF1-Zone0	OK	64 degrees C / 147 degrees F
SFB 1 SFB-XF0-Zone0	OK	66 degrees C / 150 degrees F
SFB 2 Intake-Zone0	OK	54 degrees C / 129 degrees F
SFB 2 Exhaust-Zone1	OK	46 degrees C / 114 degrees F
SFB 2 IntakeA-Zone0	OK	48 degrees C / 118 degrees F
SFB 2 IntakeB-Zone1	OK	39 degrees C / 102 degrees F
SFB 2 Exhaust-Zone0	OK	50 degrees C / 122 degrees F
SFB 2 SFB-XF2-Zone1	OK	63 degrees C / 145 degrees F
SFB 2 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 2 SFB-XF0-Zone0	OK	67 degrees C / 152 degrees F
SFB 3 Intake-Zone0	OK	54 degrees C / 129 degrees F
SFB 3 Exhaust-Zone1	OK	46 degrees C / 114 degrees F
SFB 3 IntakeA-Zone0	OK	50 degrees C / 122 degrees F
SFB 3 IntakeB-Zone1	OK	40 degrees C / 104 degrees F
SFB 3 Exhaust-Zone0	OK	50 degrees C / 122 degrees F
SFB 3 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 3 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 3 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 4 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 4 Exhaust-Zone1	OK	48 degrees C / 118 degrees F
SFB 4 IntakeA-Zone0	OK	51 degrees C / 123 degrees F

SFB 4 IntakeB-Zone1	OK	42 degrees C / 107 degrees F
SFB 4 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 4 SFB-XF2-Zone1	OK	63 degrees C / 145 degrees F
SFB 4 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 4 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 5 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 5 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 5 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 5 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 5 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 5 SFB-XF2-Zone1	OK	65 degrees C / 149 degrees F
SFB 5 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 5 SFB-XF0-Zone0	OK	71 degrees C / 159 degrees F
SFB 6 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 6 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 6 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 6 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 6 Exhaust-Zone0	OK	51 degrees C / 123 degrees F
SFB 6 SFB-XF2-Zone1	OK	64 degrees C / 147 degrees F
SFB 6 SFB-XF1-Zone0	OK	66 degrees C / 150 degrees F
SFB 6 SFB-XF0-Zone0	OK	68 degrees C / 154 degrees F
SFB 7 Intake-Zone0	OK	55 degrees C / 131 degrees F
SFB 7 Exhaust-Zone1	OK	49 degrees C / 120 degrees F
SFB 7 IntakeA-Zone0	OK	51 degrees C / 123 degrees F
SFB 7 IntakeB-Zone1	OK	43 degrees C / 109 degrees F
SFB 7 Exhaust-Zone0	OK	52 degrees C / 125 degrees F
SFB 7 SFB-XF2-Zone1	OK	66 degrees C / 150 degrees F
SFB 7 SFB-XF1-Zone0	OK	67 degrees C / 152 degrees F
SFB 7 SFB-XF0-Zone0	OK	70 degrees C / 158 degrees F
FPC 0 Intake	OK	41 degrees C / 105 degrees F
FPC 0 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 0 Exhaust B	OK	60 degrees C / 140 degrees F
FPC 0 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 0 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 0 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 2 Chip	OK	52 degrees C / 125 degrees F
FPC 0 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 0 LU 3 Chip	OK	52 degrees C / 125 degrees F
FPC 0 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 0 Chip	OK	49 degrees C / 120 degrees F
FPC 0 MQ 1 TSen	OK	49 degrees C / 120 degrees F

FPC 0 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 0 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 0 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 0 MQ 3 Chip	OK	46 degrees C / 114 degrees F
FPC 1 Intake	OK	39 degrees C / 102 degrees F
FPC 1 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 1 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 1 LU 0 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 1 LU 1 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 1 Chip	OK	56 degrees C / 132 degrees F
FPC 1 LU 2 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 1 LU 3 TSen	OK	52 degrees C / 125 degrees F
FPC 1 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 1 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 1 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 1 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 1 MQ 3 Chip	OK	45 degrees C / 113 degrees F
FPC 2 Intake	OK	39 degrees C / 102 degrees F
FPC 2 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 2 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 2 LU 0 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 2 LU 1 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 2 LU 2 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 2 LU 3 TSen	OK	55 degrees C / 131 degrees F
FPC 2 LU 3 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 2 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 2 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 2 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 2 MQ 3 Chip	OK	47 degrees C / 116 degrees F

FPC 3 Intake	OK	41 degrees C / 105 degrees F
FPC 3 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 3 Exhaust B	OK	58 degrees C / 136 degrees F
FPC 3 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 3 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 3 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 3 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 3 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 3 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 0 Chip	OK	51 degrees C / 123 degrees F
FPC 3 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 3 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 3 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 3 MQ 3 Chip	OK	50 degrees C / 122 degrees F
FPC 4 Intake	OK	41 degrees C / 105 degrees F
FPC 4 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 4 Exhaust B	OK	59 degrees C / 138 degrees F
FPC 4 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 0 Chip	OK	60 degrees C / 140 degrees F
FPC 4 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 4 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 4 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 4 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 4 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 4 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 4 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 4 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 4 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 5 Intake	OK	42 degrees C / 107 degrees F
FPC 5 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 5 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 5 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 0 Chip	OK	61 degrees C / 141 degrees F

FPC 5 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 5 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 5 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 5 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 5 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 5 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 5 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 2 Chip	OK	50 degrees C / 122 degrees F
FPC 5 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 5 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 6 Intake	OK	42 degrees C / 107 degrees F
FPC 6 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 6 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 6 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 0 Chip	OK	62 degrees C / 143 degrees F
FPC 6 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 6 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 6 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 6 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 6 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 0 Chip	OK	58 degrees C / 136 degrees F
FPC 6 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 1 Chip	OK	61 degrees C / 141 degrees F
FPC 6 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 2 Chip	OK	51 degrees C / 123 degrees F
FPC 6 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 6 MQ 3 Chip	OK	51 degrees C / 123 degrees F
FPC 7 Intake	OK	42 degrees C / 107 degrees F
FPC 7 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 7 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 7 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 0 Chip	OK	59 degrees C / 138 degrees F
FPC 7 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 1 Chip	OK	64 degrees C / 147 degrees F
FPC 7 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 7 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 7 LU 3 TSen	OK	58 degrees C / 136 degrees F

FPC 7 LU 3 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 7 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 1 Chip	OK	54 degrees C / 129 degrees F
FPC 7 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 7 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 7 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 8 Intake	OK	42 degrees C / 107 degrees F
FPC 8 Exhaust A	OK	50 degrees C / 122 degrees F
FPC 8 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 8 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 8 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 1 Chip	OK	65 degrees C / 149 degrees F
FPC 8 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 2 Chip	OK	56 degrees C / 132 degrees F
FPC 8 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 8 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 8 MQ 0 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 8 MQ 1 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 1 Chip	OK	58 degrees C / 136 degrees F
FPC 8 MQ 2 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 8 MQ 3 TSen	OK	50 degrees C / 122 degrees F
FPC 8 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 9 Intake	OK	43 degrees C / 109 degrees F
FPC 9 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 9 Exhaust B	OK	61 degrees C / 141 degrees F
FPC 9 LU 0 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 0 Chip	OK	61 degrees C / 141 degrees F
FPC 9 LU 1 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 9 LU 2 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 2 Chip	OK	55 degrees C / 131 degrees F
FPC 9 LU 3 TSen	OK	58 degrees C / 136 degrees F
FPC 9 LU 3 Chip	OK	54 degrees C / 129 degrees F
FPC 9 MQ 0 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 9 MQ 1 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 1 Chip	OK	54 degrees C / 129 degrees F

FPC 9 MQ 2 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 9 MQ 3 TSen	OK	52 degrees C / 125 degrees F
FPC 9 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 10 Intake	OK	44 degrees C / 111 degrees F
FPC 10 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 10 Exhaust B	OK	54 degrees C / 129 degrees F
FPC 10 LU 0 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 0 Chip	OK	54 degrees C / 129 degrees F
FPC 10 LU 1 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 1 Chip	OK	58 degrees C / 136 degrees F
FPC 10 LU 2 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 2 Chip	OK	51 degrees C / 123 degrees F
FPC 10 LU 3 TSen	OK	53 degrees C / 127 degrees F
FPC 10 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 10 MQ 0 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 10 MQ 1 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 10 MQ 2 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 2 Chip	OK	48 degrees C / 118 degrees F
FPC 10 MQ 3 TSen	OK	49 degrees C / 120 degrees F
FPC 10 MQ 3 Chip	OK	48 degrees C / 118 degrees F
FPC 11 Intake	OK	39 degrees C / 102 degrees F
FPC 11 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 11 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 11 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 11 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 1 Chip	OK	55 degrees C / 131 degrees F
FPC 11 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 2 Chip	OK	49 degrees C / 120 degrees F
FPC 11 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 11 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 11 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 11 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 11 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 11 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 11 MQ 3 Chip	OK	49 degrees C / 120 degrees F
FPC 12 Intake	OK	39 degrees C / 102 degrees F

FPC 12 Exhaust A	OK	47 degrees C / 116 degrees F
FPC 12 Exhaust B	OK	50 degrees C / 122 degrees F
FPC 12 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 0 Chip	OK	51 degrees C / 123 degrees F
FPC 12 LU 1 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 12 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 2 Chip	OK	47 degrees C / 116 degrees F
FPC 12 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 12 LU 3 Chip	OK	49 degrees C / 120 degrees F
FPC 12 MQ 0 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 0 Chip	OK	46 degrees C / 114 degrees F
FPC 12 MQ 1 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 12 MQ 2 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 2 Chip	OK	45 degrees C / 113 degrees F
FPC 12 MQ 3 TSen	OK	47 degrees C / 116 degrees F
FPC 12 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 13 Intake	OK	40 degrees C / 104 degrees F
FPC 13 Exhaust A	OK	48 degrees C / 118 degrees F
FPC 13 Exhaust B	OK	51 degrees C / 123 degrees F
FPC 13 LU 0 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 13 LU 1 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 13 LU 2 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 13 LU 3 TSen	OK	50 degrees C / 122 degrees F
FPC 13 LU 3 Chip	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 0 Chip	OK	47 degrees C / 116 degrees F
FPC 13 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 1 Chip	OK	51 degrees C / 123 degrees F
FPC 13 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 2 Chip	OK	46 degrees C / 114 degrees F
FPC 13 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 13 MQ 3 Chip	OK	47 degrees C / 116 degrees F
FPC 14 Intake	OK	41 degrees C / 105 degrees F
FPC 14 Exhaust A	OK	49 degrees C / 120 degrees F
FPC 14 Exhaust B	OK	50 degrees C / 122 degrees F
FPC 14 LU 0 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 0 Chip	OK	50 degrees C / 122 degrees F
FPC 14 LU 1 TSen	OK	49 degrees C / 120 degrees F

FPC 14 LU 1 Chip	OK	54 degrees C / 129 degrees F
FPC 14 LU 2 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 2 Chip	OK	48 degrees C / 118 degrees F
FPC 14 LU 3 TSen	OK	49 degrees C / 120 degrees F
FPC 14 LU 3 Chip	OK	50 degrees C / 122 degrees F
FPC 14 MQ 0 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 0 Chip	OK	48 degrees C / 118 degrees F
FPC 14 MQ 1 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 1 Chip	OK	52 degrees C / 125 degrees F
FPC 14 MQ 2 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 2 Chip	OK	47 degrees C / 116 degrees F
FPC 14 MQ 3 TSen	OK	48 degrees C / 118 degrees F
FPC 14 MQ 3 Chip	OK	50 degrees C / 122 degrees F
FPC 15 Intake	OK	42 degrees C / 107 degrees F
FPC 15 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 15 Exhaust B	OK	52 degrees C / 125 degrees F
FPC 15 LU 0 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 0 Chip	OK	55 degrees C / 131 degrees F
FPC 15 LU 1 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 1 Chip	OK	59 degrees C / 138 degrees F
FPC 15 LU 2 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 15 LU 3 TSen	OK	52 degrees C / 125 degrees F
FPC 15 LU 3 Chip	OK	51 degrees C / 123 degrees F
FPC 15 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 15 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 1 Chip	OK	60 degrees C / 140 degrees F
FPC 15 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 2 Chip	OK	52 degrees C / 125 degrees F
FPC 15 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 15 MQ 3 Chip	OK	53 degrees C / 127 degrees F
FPC 16 Intake	OK	44 degrees C / 111 degrees F
FPC 16 Exhaust A	OK	51 degrees C / 123 degrees F
FPC 16 Exhaust B	OK	53 degrees C / 127 degrees F
FPC 16 LU 0 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 0 Chip	OK	52 degrees C / 125 degrees F
FPC 16 LU 1 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 1 Chip	OK	56 degrees C / 132 degrees F
FPC 16 LU 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 2 Chip	OK	50 degrees C / 122 degrees F
FPC 16 LU 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 LU 3 Chip	OK	50 degrees C / 122 degrees F

FPC 16 MQ 0 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 0 Chip	OK	50 degrees C / 122 degrees F
FPC 16 MQ 1 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 1 Chip	OK	55 degrees C / 131 degrees F
FPC 16 MQ 2 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 2 Chip	OK	49 degrees C / 120 degrees F
FPC 16 MQ 3 TSen	OK	51 degrees C / 123 degrees F
FPC 16 MQ 3 Chip	OK	52 degrees C / 125 degrees F
FPC 17 Intake	OK	45 degrees C / 113 degrees F
FPC 17 Exhaust A	OK	52 degrees C / 125 degrees F
FPC 17 Exhaust B	OK	55 degrees C / 131 degrees F
FPC 17 LU 0 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 0 Chip	OK	57 degrees C / 134 degrees F
FPC 17 LU 1 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 1 Chip	OK	61 degrees C / 141 degrees F
FPC 17 LU 2 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 TSen	OK	54 degrees C / 129 degrees F
FPC 17 LU 3 Chip	OK	55 degrees C / 131 degrees F
FPC 17 MQ 0 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 0 Chip	OK	53 degrees C / 127 degrees F
FPC 17 MQ 1 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 1 Chip	OK	57 degrees C / 134 degrees F
FPC 17 MQ 2 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 2 Chip	OK	51 degrees C / 123 degrees F
FPC 17 MQ 3 TSen	OK	53 degrees C / 127 degrees F
FPC 17 MQ 3 Chip	OK	54 degrees C / 129 degrees F
FPC 18 Intake	OK	46 degrees C / 114 degrees F
FPC 18 Exhaust A	OK	53 degrees C / 127 degrees F
FPC 18 Exhaust B	OK	57 degrees C / 134 degrees F
FPC 18 LU 0 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 0 Chip	OK	58 degrees C / 136 degrees F
FPC 18 LU 1 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 1 Chip	OK	63 degrees C / 145 degrees F
FPC 18 LU 2 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 2 Chip	OK	54 degrees C / 129 degrees F
FPC 18 LU 3 TSen	OK	56 degrees C / 132 degrees F
FPC 18 LU 3 Chip	OK	56 degrees C / 132 degrees F
FPC 18 MQ 0 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 0 Chip	OK	57 degrees C / 134 degrees F
FPC 18 MQ 1 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 1 Chip	OK	62 degrees C / 143 degrees F
FPC 18 MQ 2 TSen	OK	54 degrees C / 129 degrees F

FPC 18 MQ 2 Chip	OK	53 degrees C / 127 degrees F
FPC 18 MQ 3 TSen	OK	54 degrees C / 129 degrees F
FPC 18 MQ 3 Chip	OK	56 degrees C / 132 degrees F
FPC 19 Intake	OK	49 degrees C / 120 degrees F
FPC 19 Exhaust A	OK	56 degrees C / 132 degrees F
FPC 19 Exhaust B	OK	62 degrees C / 143 degrees F
FPC 19 LU 0 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 0 Chip	OK	63 degrees C / 145 degrees F
FPC 19 LU 1 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 1 Chip	OK	69 degrees C / 156 degrees F
FPC 19 LU 2 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 2 Chip	OK	61 degrees C / 141 degrees F
FPC 19 LU 3 TSen	OK	62 degrees C / 143 degrees F
FPC 19 LU 3 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 0 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 0 Chip	OK	62 degrees C / 143 degrees F
FPC 19 MQ 1 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 1 Chip	OK	64 degrees C / 147 degrees F
FPC 19 MQ 2 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 2 Chip	OK	59 degrees C / 138 degrees F
FPC 19 MQ 3 TSen	OK	58 degrees C / 136 degrees F
FPC 19 MQ 3 Chip	OK	60 degrees C / 140 degrees F
ADC 0 Intake	OK	40 degrees C / 104 degrees F
ADC 0 Exhaust	OK	50 degrees C / 122 degrees F
ADC 0 ADC-XF1	OK	58 degrees C / 136 degrees F
ADC 0 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 1 Intake	OK	38 degrees C / 100 degrees F
ADC 1 Exhaust	OK	48 degrees C / 118 degrees F
ADC 1 ADC-XF1	OK	59 degrees C / 138 degrees F
ADC 1 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 2 Intake	OK	36 degrees C / 96 degrees F
ADC 2 Exhaust	OK	50 degrees C / 122 degrees F
ADC 2 ADC-XF1	OK	53 degrees C / 127 degrees F
ADC 2 ADC-XF0	OK	59 degrees C / 138 degrees F
ADC 3 Intake	OK	39 degrees C / 102 degrees F
ADC 3 Exhaust	OK	49 degrees C / 120 degrees F
ADC 3 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 3 ADC-XF0	OK	62 degrees C / 143 degrees F
ADC 4 Intake	OK	39 degrees C / 102 degrees F
ADC 4 Exhaust	OK	49 degrees C / 120 degrees F
ADC 4 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 4 ADC-XF0	OK	61 degrees C / 141 degrees F
ADC 5 Intake	OK	38 degrees C / 100 degrees F

ADC 5 Exhaust	OK	52 degrees C / 125 degrees F
ADC 5 ADC-XF1	OK	55 degrees C / 131 degrees F
ADC 5 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 6 Intake	OK	39 degrees C / 102 degrees F
ADC 6 Exhaust	OK	51 degrees C / 123 degrees F
ADC 6 ADC-XF1	OK	58 degrees C / 136 degrees F
ADC 6 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 7 Intake	OK	39 degrees C / 102 degrees F
ADC 7 Exhaust	OK	52 degrees C / 125 degrees F
ADC 7 ADC-XF1	OK	61 degrees C / 141 degrees F
ADC 7 ADC-XF0	OK	68 degrees C / 154 degrees F
ADC 8 Intake	OK	39 degrees C / 102 degrees F
ADC 8 Exhaust	OK	50 degrees C / 122 degrees F
ADC 8 ADC-XF1	OK	64 degrees C / 147 degrees F
ADC 8 ADC-XF0	OK	63 degrees C / 145 degrees F
ADC 9 Intake	OK	41 degrees C / 105 degrees F
ADC 9 Exhaust	OK	50 degrees C / 122 degrees F
ADC 9 ADC-XF1	OK	60 degrees C / 140 degrees F
ADC 9 ADC-XF0	OK	62 degrees C / 143 degrees F
ADC 10 Intake	OK	46 degrees C / 114 degrees F
ADC 10 Exhaust	OK	53 degrees C / 127 degrees F
ADC 10 ADC-XF1	OK	66 degrees C / 150 degrees F
ADC 10 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 11 Intake	OK	46 degrees C / 114 degrees F
ADC 11 Exhaust	OK	53 degrees C / 127 degrees F
ADC 11 ADC-XF1	OK	63 degrees C / 145 degrees F
ADC 11 ADC-XF0	OK	64 degrees C / 147 degrees F
ADC 12 Intake	OK	47 degrees C / 116 degrees F
ADC 12 Exhaust	OK	53 degrees C / 127 degrees F
ADC 12 ADC-XF1	OK	65 degrees C / 149 degrees F
ADC 12 ADC-XF0	OK	65 degrees C / 149 degrees F
ADC 13 Intake	OK	48 degrees C / 118 degrees F
ADC 13 Exhaust	OK	55 degrees C / 131 degrees F
ADC 13 ADC-XF1	OK	65 degrees C / 149 degrees F
ADC 13 ADC-XF0	OK	67 degrees C / 152 degrees F
ADC 14 Intake	OK	49 degrees C / 120 degrees F
ADC 14 Exhaust	OK	57 degrees C / 134 degrees F
ADC 14 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 14 ADC-XF0	OK	72 degrees C / 161 degrees F
ADC 15 Intake	OK	50 degrees C / 122 degrees F
ADC 15 Exhaust	OK	56 degrees C / 132 degrees F
ADC 15 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 15 ADC-XF0	OK	68 degrees C / 154 degrees F

ADC 16 Intake	OK	51 degrees C / 123 degrees F
ADC 16 Exhaust	OK	57 degrees C / 134 degrees F
ADC 16 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 16 ADC-XF0	OK	68 degrees C / 154 degrees F
ADC 17 Intake	OK	51 degrees C / 123 degrees F
ADC 17 Exhaust	OK	57 degrees C / 134 degrees F
ADC 17 ADC-XF1	OK	69 degrees C / 156 degrees F
ADC 17 ADC-XF0	OK	69 degrees C / 156 degrees F
ADC 18 Intake	OK	52 degrees C / 125 degrees F
ADC 18 Exhaust	OK	58 degrees C / 136 degrees F
ADC 18 ADC-XF1	OK	67 degrees C / 152 degrees F
ADC 18 ADC-XF0	OK	72 degrees C / 161 degrees F
ADC 19 Intake	OK	50 degrees C / 122 degrees F
ADC 19 Exhaust	OK	58 degrees C / 136 degrees F
ADC 19 ADC-XF1	OK	68 degrees C / 154 degrees F
ADC 19 ADC-XF0	OK	71 degrees C / 159 degrees F

show chassis environment monitored (MX2008 Router)

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user@host> show chassis environment monitored
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Class	Item	Status	Measurement
Temp	CB 0 Inlet1	OK	37 degrees C / 98 degrees F
	CB 0 Inlet2	OK	46 degrees C / 114 degrees F
	CB 0 Inlet3	OK	44 degrees C / 111 degrees F
	CB 0 Inlet4	OK	42 degrees C / 107 degrees F
	CB 0 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 0 Exhaust2	OK	40 degrees C / 104 degrees F
	CB 0 Exhaust3	OK	48 degrees C / 118 degrees F
	CB 0 Exhaust4	OK	46 degrees C / 114 degrees F
	CB 1 Inlet1	OK	30 degrees C / 86 degrees F
	CB 1 Inlet2	OK	31 degrees C / 87 degrees F
	CB 1 Inlet3	OK	29 degrees C / 84 degrees F
	CB 1 Inlet4	OK	32 degrees C / 89 degrees F
	CB 1 Exhaust1	OK	30 degrees C / 86 degrees F
	CB 1 Exhaust2	OK	33 degrees C / 91 degrees F
	CB 1 Exhaust3	OK	34 degrees C / 93 degrees F
	CB 1 Exhaust4	OK	35 degrees C / 95 degrees F
	Routing Engine 0 CPU	OK	76 degrees C / 168 degrees F
	Routing Engine 1 CPU	OK	47 degrees C / 116 degrees F
	SFB 0 Inlet2	OK	44 degrees C / 111 degrees F
	SFB 0 Exhaust1	OK	39 degrees C / 102 degrees F

SFB 0 Inlet1	OK	41 degrees C / 105 degrees F
SFB 0 Exhaust2	OK	45 degrees C / 113 degrees F
SFB 0 SFB2-PF-local	OK	45 degrees C / 113 degrees F
SFB 0 SFB2-PF-die	OK	51 degrees C / 123 degrees F
SFB 1 Inlet2	OK	30 degrees C / 86 degrees F
SFB 1 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 1 Inlet1	OK	28 degrees C / 82 degrees F
SFB 1 Exhaust2	OK	31 degrees C / 87 degrees F
SFB 1 SFB2-PF-local	OK	30 degrees C / 86 degrees F
SFB 1 SFB2-PF-die	OK	37 degrees C / 98 degrees F
SFB 2 Inlet2	OK	28 degrees C / 82 degrees F
SFB 2 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 2 Inlet1	OK	27 degrees C / 80 degrees F
SFB 2 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 2 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 2 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 3 Inlet2	OK	28 degrees C / 82 degrees F
SFB 3 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 3 Inlet1	OK	26 degrees C / 78 degrees F
SFB 3 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 3 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 3 SFB2-PF-die	OK	33 degrees C / 91 degrees F
SFB 4 Inlet2	OK	28 degrees C / 82 degrees F
SFB 4 Exhaust1	OK	26 degrees C / 78 degrees F
SFB 4 Inlet1	OK	26 degrees C / 78 degrees F
SFB 4 Exhaust2	OK	28 degrees C / 82 degrees F
SFB 4 SFB2-PF-local	OK	27 degrees C / 80 degrees F
SFB 4 SFB2-PF-die	OK	32 degrees C / 89 degrees F
SFB 5 Inlet2	OK	29 degrees C / 84 degrees F
SFB 5 Exhaust1	OK	27 degrees C / 80 degrees F
SFB 5 Inlet1	OK	27 degrees C / 80 degrees F
SFB 5 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 5 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 5 SFB2-PF-die	OK	34 degrees C / 93 degrees F
SFB 6 Inlet2	OK	34 degrees C / 93 degrees F
SFB 6 Exhaust1	OK	32 degrees C / 89 degrees F
SFB 6 Inlet1	OK	31 degrees C / 87 degrees F
SFB 6 Exhaust2	OK	34 degrees C / 93 degrees F
SFB 6 SFB2-PF-local	OK	34 degrees C / 93 degrees F
SFB 6 SFB2-PF-die	OK	40 degrees C / 104 degrees F
SFB 7 Inlet2	OK	29 degrees C / 84 degrees F
SFB 7 Exhaust1	OK	28 degrees C / 82 degrees F
SFB 7 Inlet1	OK	29 degrees C / 84 degrees F

SFB 7 Exhaust2	OK	29 degrees C / 84 degrees F
SFB 7 SFB2-PF-local	OK	28 degrees C / 82 degrees F
SFB 7 SFB2-PF-die	OK	33 degrees C / 91 degrees F
FPC 0 Intake	OK	29 degrees C / 84 degrees F
FPC 0 Exhaust A	OK	43 degrees C / 109 degrees F
FPC 0 Exhaust B	OK	42 degrees C / 107 degrees F
FPC 0 XL 0 TSen	OK	39 degrees C / 102 degrees F
FPC 0 XL 0 Chip	OK	53 degrees C / 127 degrees F
FPC 0 XL 0 XR2 0 TSen	OK	39 degrees C / 102 degrees F
FPC 0 XL 0 XR2 0 Chip	OK	60 degrees C / 140 degrees F
FPC 0 XL 0 XR2 1 TSen	OK	39 degrees C / 102 degrees F
FPC 0 XL 0 XR2 1 Chip	OK	60 degrees C / 140 degrees F
FPC 0 XL 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 Chip	OK	43 degrees C / 109 degrees F
FPC 0 XL 1 XR2 0 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 0 Chip	OK	50 degrees C / 122 degrees F
FPC 0 XL 1 XR2 1 TSen	OK	30 degrees C / 86 degrees F
FPC 0 XL 1 XR2 1 Chip	OK	51 degrees C / 123 degrees F
FPC 0 XM 0 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 0 Chip	OK	50 degrees C / 122 degrees F
FPC 0 XM 1 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 1 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 2 Chip	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 TSen	OK	42 degrees C / 107 degrees F
FPC 0 XM 3 Chip	OK	40 degrees C / 104 degrees F
FPC 0 PCIE Switch TSen	OK	42 degrees C / 107 degrees F
FPC 0 PCIE Switch Chip	OK	22 degrees C / 71 degrees F
FPC 1 Intake	OK	29 degrees C / 84 degrees F
FPC 1 Exhaust A	OK	52 degrees C / 125 degrees F
FPC 1 Exhaust B	OK	44 degrees C / 111 degrees F
FPC 1 EA0 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA0 Chip	OK	48 degrees C / 118 degrees F
FPC 1 EA0_XR0 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA0_XR0 Chip	OK	57 degrees C / 134 degrees F
FPC 1 EA0_XR1 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA0_XR1 Chip	OK	54 degrees C / 129 degrees F
FPC 1 EA1 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA1 Chip	OK	51 degrees C / 123 degrees F
FPC 1 EA1_XR0 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA1_XR0 Chip	OK	58 degrees C / 136 degrees F
FPC 1 EA1_XR1 TSen	OK	55 degrees C / 131 degrees F
FPC 1 EA1_XR1 Chip	OK	59 degrees C / 138 degrees F

FPC 1 PEX TSen	OK	55 degrees C / 131 degrees F
FPC 1 PEX Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2 Chip	OK	39 degrees C / 102 degrees F
FPC 1 EA2_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR0 Chip	OK	46 degrees C / 114 degrees F
FPC 1 EA2_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA2_XR1 Chip	OK	43 degrees C / 109 degrees F
FPC 1 EA3 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3 Chip	OK	40 degrees C / 104 degrees F
FPC 1 EA3_XR0 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR0 Chip	OK	51 degrees C / 123 degrees F
FPC 1 EA3_XR1 TSen	OK	43 degrees C / 109 degrees F
FPC 1 EA3_XR1 Chip	OK	47 degrees C / 116 degrees F
FPC 1 EA0_HMC0 Logic die	OK	61 degrees C / 141 degrees F
FPC 1 EA0_HMC0 DRAM botm	OK	58 degrees C / 136 degrees F
FPC 1 EA0_HMC1 Logic die	OK	62 degrees C / 143 degrees F
FPC 1 EA0_HMC1 DRAM botm	OK	59 degrees C / 138 degrees F
FPC 1 EA0_HMC2 Logic die	OK	59 degrees C / 138 degrees F
FPC 1 EA0_HMC2 DRAM botm	OK	56 degrees C / 132 degrees F
FPC 1 EA1_HMC0 Logic die	OK	66 degrees C / 150 degrees F
FPC 1 EA1_HMC0 DRAM botm	OK	63 degrees C / 145 degrees F
FPC 1 EA1_HMC1 Logic die	OK	65 degrees C / 149 degrees F
FPC 1 EA1_HMC1 DRAM botm	OK	62 degrees C / 143 degrees F
FPC 1 EA1_HMC2 Logic die	OK	63 degrees C / 145 degrees F
FPC 1 EA1_HMC2 DRAM botm	OK	60 degrees C / 140 degrees F
FPC 1 EA2_HMC0 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA2_HMC0 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA2_HMC1 Logic die	OK	55 degrees C / 131 degrees F
FPC 1 EA2_HMC1 DRAM botm	OK	52 degrees C / 125 degrees F
FPC 1 EA2_HMC2 Logic die	OK	52 degrees C / 125 degrees F
FPC 1 EA2_HMC2 DRAM botm	OK	49 degrees C / 120 degrees F
FPC 1 EA3_HMC0 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC0 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC1 Logic die	OK	51 degrees C / 123 degrees F
FPC 1 EA3_HMC1 DRAM botm	OK	48 degrees C / 118 degrees F
FPC 1 EA3_HMC2 Logic die	OK	52 degrees C / 125 degrees F
FPC 1 EA3_HMC2 DRAM botm	OK	49 degrees C / 120 degrees F
FPC 7 Intake	OK	31 degrees C / 87 degrees F
FPC 7 Exhaust A	OK	46 degrees C / 114 degrees F
FPC 7 Exhaust B	OK	38 degrees C / 100 degrees F
FPC 7 QX 0 TSen	OK	49 degrees C / 120 degrees F
FPC 7 QX 0 Chip	OK	52 degrees C / 125 degrees F

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FPC 7 LU 0 TCAM TSen      OK      49 degrees C / 120 degrees F
FPC 7 LU 0 TCAM Chip      OK      52 degrees C / 125 degrees F
FPC 7 LU 0 TSen           OK      49 degrees C / 120 degrees F
FPC 7 LU 0 Chip           OK      51 degrees C / 123 degrees F
FPC 7 MQ 0 TSen           OK      49 degrees C / 120 degrees F
FPC 7 MQ 0 Chip           OK      55 degrees C / 131 degrees F
FPC 7 QX 1 TSen           OK      41 degrees C / 105 degrees F
FPC 7 QX 1 Chip           OK      42 degrees C / 107 degrees F
FPC 7 LU 1 TCAM TSen      OK      41 degrees C / 105 degrees F
FPC 7 LU 1 TCAM Chip      OK      43 degrees C / 109 degrees F
FPC 7 LU 1 TSen           OK      41 degrees C / 105 degrees F
FPC 7 LU 1 Chip           OK      46 degrees C / 114 degrees F
FPC 7 MQ 1 TSen           OK      41 degrees C / 105 degrees F
FPC 7 MQ 1 Chip           OK      47 degrees C / 116 degrees F
ADC 7 Intake               OK      32 degrees C / 89 degrees F
ADC 7 Exhaust              OK      39 degrees C / 102 degrees F
ADC 7 ADC-XF1              OK      46 degrees C / 114 degrees F
ADC 7 ADC-XF0              OK      54 degrees C / 129 degrees F

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show chassis environment monitored (MX10008 Router)

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user@host> show chassis environment monitored
Class Item                                     Status      Measurement
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Routing Engine 0 CPU
Routing Engine 1 CPU
Temp CB 0 Intake A Temp Sensor                 OK          24 degrees C / 75 degrees F
     CB 0 Intake B Temp Sensor                 OK          24 degrees C / 75 degrees F
     CB 0 Exhaust A Temp Sensor                 OK          28 degrees C / 82 degrees F
     CB 0 Exhaust B Temp Sensor                 OK          30 degrees C / 86 degrees F
     CB 0 Middle Temp Sensor                   OK          28 degrees C / 82 degrees F
     CB 1 Intake A Temp Sensor                 OK          24 degrees C / 75 degrees F
     CB 1 Intake B Temp Sensor                 OK          23 degrees C / 73 degrees F
     CB 1 Exhaust A Temp Sensor                 OK          27 degrees C / 80 degrees F
     CB 1 Exhaust B Temp Sensor                 OK          30 degrees C / 86 degrees F
     CB 1 Middle Temp Sensor                   OK          28 degrees C / 82 degrees F
FPC 0 Intake-A Temp Sensor                     OK          32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor                     OK          44 degrees C / 111 degrees F
FPC 0 Exhaust-B Temp Sensor                     OK          49 degrees C / 120 degrees F
FPC 0 EA0 Temp Sensor                          OK          67 degrees C / 152 degrees F
FPC 0 EA0_XR0 Temp Sensor                       OK          69 degrees C / 156 degrees F
FPC 0 EA0_XR1 Temp Sensor                       OK          73 degrees C / 163 degrees F

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FPC 0	EA1	Temp Sensor	OK	61 degrees C / 141 degrees F
FPC 0	EA1_XR0	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 0	EA1_XR1	Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0	EA2	Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 0	EA2_XR0	Temp Sensor	OK	73 degrees C / 163 degrees F
FPC 0	EA2_XR1	Temp Sensor	OK	72 degrees C / 161 degrees F
FPC 0	EA3	Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 0	EA3_XR0	Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 0	EA3_XR1	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 0	EA4	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 0	EA4_XR0	Temp Sensor	OK	72 degrees C / 161 degrees F
FPC 0	EA4_XR1	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 0	EA5	Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 0	EA5_XR0	Temp Sensor	OK	62 degrees C / 143 degrees F
FPC 0	EA5_XR1	Temp Sensor	OK	63 degrees C / 145 degrees F
FPC 0	EA0_HMC0	Logic die	OK	75 degrees C / 167 degrees F
FPC 0	EA0_HMC0	DRAM botm	OK	72 degrees C / 161 degrees F
FPC 0	EA0_HMC1	Logic die	OK	76 degrees C / 168 degrees F
FPC 0	EA0_HMC1	DRAM botm	OK	73 degrees C / 163 degrees F
FPC 0	EA0_HMC2	Logic die	OK	77 degrees C / 170 degrees F
FPC 0	EA0_HMC2	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0	EA1_HMC0	Logic die	OK	73 degrees C / 163 degrees F
FPC 0	EA1_HMC0	DRAM botm	OK	70 degrees C / 158 degrees F
FPC 0	EA1_HMC1	Logic die	OK	73 degrees C / 163 degrees F
FPC 0	EA1_HMC1	DRAM botm	OK	70 degrees C / 158 degrees F
FPC 0	EA1_HMC2	Logic die	OK	72 degrees C / 161 degrees F
FPC 0	EA1_HMC2	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 0	EA2_HMC0	Logic die	OK	80 degrees C / 176 degrees F
FPC 0	EA2_HMC0	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0	EA2_HMC1	Logic die	OK	81 degrees C / 177 degrees F
FPC 0	EA2_HMC1	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 0	EA2_HMC2	Logic die	OK	80 degrees C / 176 degrees F
FPC 0	EA2_HMC2	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0	EA3_HMC0	Logic die	OK	77 degrees C / 170 degrees F
FPC 0	EA3_HMC0	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0	EA3_HMC1	Logic die	OK	78 degrees C / 172 degrees F
FPC 0	EA3_HMC1	DRAM botm	OK	75 degrees C / 167 degrees F
FPC 0	EA3_HMC2	Logic die	OK	77 degrees C / 170 degrees F
FPC 0	EA3_HMC2	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 0	EA4_HMC0	Logic die	OK	80 degrees C / 176 degrees F
FPC 0	EA4_HMC0	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0	EA4_HMC1	Logic die	OK	81 degrees C / 177 degrees F
FPC 0	EA4_HMC1	DRAM botm	OK	78 degrees C / 172 degrees F

FPC 0	EA4_HMC2	Logic die	OK	80 degrees C / 176 degrees F
FPC 0	EA4_HMC2	DRAM botm	OK	77 degrees C / 170 degrees F
FPC 0	EA5_HMC0	Logic die	OK	69 degrees C / 156 degrees F
FPC 0	EA5_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 0	EA5_HMC1	Logic die	OK	68 degrees C / 154 degrees F
FPC 0	EA5_HMC1	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 0	EA5_HMC2	Logic die	OK	68 degrees C / 154 degrees F
FPC 0	EA5_HMC2	DRAM botm	OK	65 degrees C / 149 degrees F
FPC 2	Intake-A	Temp Sensor	OK	33 degrees C / 91 degrees F
FPC 2	Exhaust-A	Temp Sensor	OK	52 degrees C / 125 degrees F
FPC 2	Exhaust-B	Temp Sensor	OK	50 degrees C / 122 degrees F
FPC 2	EA0	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 2	EA0_XR0	Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2	EA0_XR1	Temp Sensor	OK	79 degrees C / 174 degrees F
FPC 2	EA1	Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2	EA1_XR0	Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 2	EA1_XR1	Temp Sensor	OK	66 degrees C / 150 degrees F
FPC 2	EA2	Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2	EA2_XR0	Temp Sensor	OK	81 degrees C / 177 degrees F
FPC 2	EA2_XR1	Temp Sensor	OK	81 degrees C / 177 degrees F
FPC 2	EA3	Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 2	EA3_XR0	Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2	EA3_XR1	Temp Sensor	OK	69 degrees C / 156 degrees F
FPC 2	EA4	Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2	EA4_XR0	Temp Sensor	OK	76 degrees C / 168 degrees F
FPC 2	EA4_XR1	Temp Sensor	OK	75 degrees C / 167 degrees F
FPC 2	EA5	Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 2	EA5_XR0	Temp Sensor	OK	64 degrees C / 147 degrees F
FPC 2	EA5_XR1	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 2	EA0_HMC0	Logic die	OK	84 degrees C / 183 degrees F
FPC 2	EA0_HMC0	DRAM botm	OK	81 degrees C / 177 degrees F
FPC 2	EA0_HMC1	Logic die	OK	85 degrees C / 185 degrees F
FPC 2	EA0_HMC1	DRAM botm	OK	82 degrees C / 179 degrees F
FPC 2	EA0_HMC2	Logic die	OK	83 degrees C / 181 degrees F
FPC 2	EA0_HMC2	DRAM botm	OK	80 degrees C / 176 degrees F
FPC 2	EA1_HMC0	Logic die	OK	76 degrees C / 168 degrees F
FPC 2	EA1_HMC0	DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2	EA1_HMC1	Logic die	OK	77 degrees C / 170 degrees F
FPC 2	EA1_HMC1	DRAM botm	OK	74 degrees C / 165 degrees F
FPC 2	EA1_HMC2	Logic die	OK	76 degrees C / 168 degrees F
FPC 2	EA1_HMC2	DRAM botm	OK	73 degrees C / 163 degrees F
FPC 2	EA2_HMC0	Logic die	OK	87 degrees C / 188 degrees F
FPC 2	EA2_HMC0	DRAM botm	OK	84 degrees C / 183 degrees F

FPC 2	EA2_HMC1	Logic die	OK	88 degrees C / 190 degrees F
FPC 2	EA2_HMC1	DRAM botm	OK	85 degrees C / 185 degrees F
FPC 2	EA2_HMC2	Logic die	OK	88 degrees C / 190 degrees F
FPC 2	EA2_HMC2	DRAM botm	OK	85 degrees C / 185 degrees F
FPC 2	EA3_HMC0	Logic die	OK	81 degrees C / 177 degrees F
FPC 2	EA3_HMC0	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 2	EA3_HMC1	Logic die	OK	81 degrees C / 177 degrees F
FPC 2	EA3_HMC1	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 2	EA3_HMC2	Logic die	OK	81 degrees C / 177 degrees F
FPC 2	EA3_HMC2	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 2	EA4_HMC0	Logic die	OK	88 degrees C / 190 degrees F
FPC 2	EA4_HMC0	DRAM botm	OK	85 degrees C / 185 degrees F
FPC 2	EA4_HMC1	Logic die	OK	90 degrees C / 194 degrees F
FPC 2	EA4_HMC1	DRAM botm	OK	87 degrees C / 188 degrees F
FPC 2	EA4_HMC2	Logic die	OK	81 degrees C / 177 degrees F
FPC 2	EA4_HMC2	DRAM botm	OK	78 degrees C / 172 degrees F
FPC 2	EA5_HMC0	Logic die	OK	72 degrees C / 161 degrees F
FPC 2	EA5_HMC0	DRAM botm	OK	69 degrees C / 156 degrees F
FPC 2	EA5_HMC1	Logic die	OK	69 degrees C / 156 degrees F
FPC 2	EA5_HMC1	DRAM botm	OK	66 degrees C / 150 degrees F
FPC 2	EA5_HMC2	Logic die	OK	73 degrees C / 163 degrees F
FPC 2	EA5_HMC2	DRAM botm	OK	70 degrees C / 158 degrees F
FPC 3	Intake-A	Temp Sensor	OK	30 degrees C / 86 degrees F
FPC 3	Exhaust-A	Temp Sensor	OK	48 degrees C / 118 degrees F
FPC 3	Exhaust-B	Temp Sensor	OK	45 degrees C / 113 degrees F
FPC 3	EA0	Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 3	EA0_XR0	Temp Sensor	OK	65 degrees C / 149 degrees F
FPC 3	EA0_XR1	Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 3	EA1	Temp Sensor	OK	54 degrees C / 129 degrees F
FPC 3	EA1_XR0	Temp Sensor	OK	60 degrees C / 140 degrees F
FPC 3	EA1_XR1	Temp Sensor	OK	59 degrees C / 138 degrees F
FPC 3	EA2	Temp Sensor	OK	62 degrees C / 143 degrees F
FPC 3	EA2_XR0	Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 3	EA2_XR1	Temp Sensor	OK	67 degrees C / 152 degrees F
FPC 3	EA3	Temp Sensor	OK	55 degrees C / 131 degrees F
FPC 3	EA3_XR0	Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3	EA3_XR1	Temp Sensor	OK	57 degrees C / 134 degrees F
FPC 3	EA4	Temp Sensor	OK	68 degrees C / 154 degrees F
FPC 3	EA4_XR0	Temp Sensor	OK	71 degrees C / 159 degrees F
FPC 3	EA4_XR1	Temp Sensor	OK	70 degrees C / 158 degrees F
FPC 3	EA5	Temp Sensor	OK	55 degrees C / 131 degrees F
FPC 3	EA5_XR0	Temp Sensor	OK	58 degrees C / 136 degrees F
FPC 3	EA5_XR1	Temp Sensor	OK	59 degrees C / 138 degrees F

	FPC 3	EA0_HMC0	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA0_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
	FPC 3	EA0_HMC1	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA0_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA0_HMC2	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA0_HMC2	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA1_HMC0	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA1_HMC0	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA1_HMC1	Logic die	OK	65 degrees C / 149 degrees F
	FPC 3	EA1_HMC1	DRAM botm	OK	62 degrees C / 143 degrees F
	FPC 3	EA1_HMC2	Logic die	OK	64 degrees C / 147 degrees F
	FPC 3	EA1_HMC2	DRAM botm	OK	61 degrees C / 141 degrees F
	FPC 3	EA2_HMC0	Logic die	OK	74 degrees C / 165 degrees F
	FPC 3	EA2_HMC0	DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 3	EA2_HMC1	Logic die	OK	76 degrees C / 168 degrees F
	FPC 3	EA2_HMC1	DRAM botm	OK	73 degrees C / 163 degrees F
	FPC 3	EA2_HMC2	Logic die	OK	74 degrees C / 165 degrees F
	FPC 3	EA2_HMC2	DRAM botm	OK	71 degrees C / 159 degrees F
	FPC 3	EA3_HMC0	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA3_HMC0	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA3_HMC1	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA3_HMC1	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA3_HMC2	Logic die	OK	68 degrees C / 154 degrees F
	FPC 3	EA3_HMC2	DRAM botm	OK	65 degrees C / 149 degrees F
	FPC 3	EA4_HMC0	Logic die	OK	82 degrees C / 179 degrees F
	FPC 3	EA4_HMC0	DRAM botm	OK	79 degrees C / 174 degrees F
	FPC 3	EA4_HMC1	Logic die	OK	80 degrees C / 176 degrees F
	FPC 3	EA4_HMC1	DRAM botm	OK	77 degrees C / 170 degrees F
	FPC 3	EA4_HMC2	Logic die	OK	81 degrees C / 177 degrees F
	FPC 3	EA4_HMC2	DRAM botm	OK	78 degrees C / 172 degrees F
	FPC 3	EA5_HMC0	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA5_HMC0	DRAM botm	OK	66 degrees C / 150 degrees F
	FPC 3	EA5_HMC1	Logic die	OK	70 degrees C / 158 degrees F
	FPC 3	EA5_HMC1	DRAM botm	OK	67 degrees C / 152 degrees F
	FPC 3	EA5_HMC2	Logic die	OK	69 degrees C / 156 degrees F
	FPC 3	EA5_HMC2	DRAM botm	OK	66 degrees C / 150 degrees F
Power	PEM 0			OK	29 degrees C / 84 degrees F
	PEM 1			OK	27 degrees C / 80 degrees F
	PEM 2			OK	30 degrees C / 86 degrees F
	PEM 3			Check	
	PEM 4			Check	
	PEM 5			Check	
Fans	Fan Tray 0	Fan 0		OK	Spinning at normal speed

Fan Tray 0 Fan 1	OK	Spinning at normal speed
Fan Tray 0 Fan 2	OK	Spinning at normal speed
Fan Tray 0 Fan 3	OK	Spinning at normal speed
Fan Tray 0 Fan 4	Failed	
Fan Tray 0 Fan 5	Failed	
Fan Tray 0 Fan 6	OK	Spinning at normal speed
Fan Tray 0 Fan 7	OK	Spinning at normal speed
Fan Tray 0 Fan 8	OK	Spinning at normal speed
Fan Tray 0 Fan 9	OK	Spinning at normal speed
Fan Tray 0 Fan 10	OK	Spinning at normal speed
Fan Tray 1 Fan 0	OK	Spinning at normal speed
Fan Tray 1 Fan 1	OK	Spinning at normal speed
Fan Tray 1 Fan 2	OK	Spinning at normal speed
Fan Tray 1 Fan 3	OK	Spinning at normal speed
Fan Tray 1 Fan 4	OK	Spinning at normal speed
Fan Tray 1 Fan 5	OK	Spinning at normal speed
Fan Tray 1 Fan 6	OK	Spinning at normal speed
Fan Tray 1 Fan 7	OK	Spinning at normal speed
Fan Tray 1 Fan 8	OK	Spinning at normal speed
Fan Tray 1 Fan 9	OK	Spinning at normal speed
Fan Tray 1 Fan 10	OK	Spinning at normal speed
SFB 0 Intake-A	OK	33 degrees C / 91 degrees F
SFB 0 Intake-B	OK	22 degrees C / 71 degrees F
SFB 0 Exhaust-A	OK	27 degrees C / 80 degrees F
SFB 0 Exhaust-B	OK	32 degrees C / 89 degrees F
SFB 0 PF0	OK	40 degrees C / 104 degrees F
SFB 0 PF1	OK	29 degrees C / 84 degrees F
SFB 1 Intake-A	OK	43 degrees C / 109 degrees F
SFB 1 Intake-B	OK	21 degrees C / 69 degrees F
SFB 1 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 1 Exhaust-B	OK	44 degrees C / 111 degrees F
SFB 1 PF0	OK	50 degrees C / 122 degrees F
SFB 1 PF1	OK	29 degrees C / 84 degrees F
SFB 2 Intake-A	OK	39 degrees C / 102 degrees F
SFB 2 Intake-B	OK	21 degrees C / 69 degrees F
SFB 2 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 2 Exhaust-B	OK	38 degrees C / 100 degrees F
SFB 2 PF0	OK	45 degrees C / 113 degrees F
SFB 2 PF1	OK	30 degrees C / 86 degrees F
SFB 3 Intake-A	OK	37 degrees C / 98 degrees F
SFB 3 Intake-B	OK	21 degrees C / 69 degrees F
SFB 3 Exhaust-A	OK	26 degrees C / 78 degrees F
SFB 3 Exhaust-B	OK	35 degrees C / 95 degrees F

SFB 3 PF0	OK	42 degrees C / 107 degrees F
SFB 3 PF1	OK	30 degrees C / 86 degrees F
SFB 4 Intake-A	OK	31 degrees C / 87 degrees F
SFB 4 Intake-B	OK	20 degrees C / 68 degrees F
SFB 4 Exhaust-A	OK	25 degrees C / 77 degrees F
SFB 4 Exhaust-B	OK	32 degrees C / 89 degrees F
SFB 4 PF0	OK	41 degrees C / 105 degrees F
SFB 4 PF1	OK	30 degrees C / 86 degrees F
SFB 5 Intake-A	OK	30 degrees C / 86 degrees F
SFB 5 Intake-B	OK	21 degrees C / 69 degrees F
SFB 5 Exhaust-A	OK	26 degrees C / 78 degrees F
SFB 5 Exhaust-B	OK	30 degrees C / 86 degrees F
SFB 5 PF0	OK	35 degrees C / 95 degrees F
SFB 5 PF1	OK	34 degrees C / 93 degrees F

Release Information

Command introduced in Junos OS Release 12.1.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis environment | 539](#)

[Chassis-Level User Guide](#)

show chassis environment mcs

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● [Description | 846](#)

- [Options | 846](#)
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- [Output Fields | 847](#)
- [Sample Output | 848](#)
- [Release Information | 849](#)

Syntax

```
show chassis environment mcs  
<slot>
```

Description

(M40e and M160 routers only) Display environmental information about the Miscellaneous Control Subsystems (MCSs).

Options

none Display environmental information about both MCSs.

slot (Optional) Display environmental information about an individual MCS. Replace **slot** with **0** or **1**

Required Privilege Level

view

Output Fields

Table 41 on page 847 lists the output fields for the **show chassis environment mcs** command. Output fields are listed in the approximate order in which they appear.

Table 41: show chassis environment mcs Output Fields

Field Name	Field Description
State	Status of the MCS: <ul style="list-style-type: none"> • Present—MCS is detected by the chassis daemon but is either not supported by the current version of Junos or MCS is coming up but not yet online. • Online—MCS is online and running. • Offline—MCS is powered down. • Empty—No MCS is present. • Master—MCS is online, operating as primary. • Standby—MCS is online, operating as standby.
Temperature	Temperature of the air flowing past the MCS.
Power	Information about the voltage supplied to the MCS. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
BUS Revision	Revision level of the generic bus device.
FPGA Revision	Revision level of the field-programmable gate array (FPGA) revision.

Sample Output

show chassis environment mcs (M40e Router)

```

user@host> show chassis environment mcs
MCS 0 status:
  State                Online Master
  Temperature          45 degrees C / 113 degrees F
  Power:
    3.3 V              3283 mV
    5.0 V              5013 mV
    12.0 V             11721 mV
    5.0 V bias         5025 mV
    8.0 V bias         8229 mV
  BUS Revision        12
  FPGA Revision       13
MCS 1 status:
  State                Online Standby
  Temperature          42 degrees C / 107 degrees F
  Power:
    3.3 V              3296 mV
    5.0 V              4971 mV
    12.0 V             11814 mV
    5.0 V bias         4976 mV
    8.0 V bias         8241 mV
  BUS Revision        12
  FPGA Revision       13

```

show chassis environment mcs (M160 Router)

```

user@host> show chassis environment mcs
MCS 0 status:
  State                Online Master
  Temperature          50 degrees C / 122 degrees F
  Power:
    3.3 V              3306 mV
    5.0 V              4993 mV
    12.0 V             11799 mV
    5.0 V bias         4993 mV
    8.0 V bias         8288 mV

```


BUS Revision	12
FPGA Revision	13

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

| [request chassis mcs](#) | [434](#)

show chassis environment pcg

IN THIS SECTION

- [Syntax](#) | [849](#)
- [Description](#) | [850](#)
- [Options](#) | [850](#)
- [Required Privilege Level](#) | [850](#)
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- [Release Information](#) | [853](#)

Syntax

```
show chassis environment pcg  
<slot>
```

Description

(M40e and M160 routers only) Display environmental information about the Packet Forwarding Engine clock generators (PCGs).

Options

none Display environmental information about both PCGs.

slot (Optional) Display environmental information about an individual PCG. Replace *slot* with 0 or 1.

Required Privilege Level

view

Output Fields

[Table 42 on page 850](#) lists the output fields for the **show chassis environment pcg** command. Output fields are listed in the approximate order in which they appear.

Table 42: show chassis environment pcg Output Fields

Field Name	Field Description
PCG slot status	Slot number: 0 or 1 .

Table 42: show chassis environment pcg Output Fields (Continued)

Field Name	Field Description
State	Status of PCG: <ul style="list-style-type: none"> • Present—PCG is detected by the chassis process but is either not supported by the current version of Junos OS or PCG is coming up but is not yet online. • Online—PCG is powered down. If Online, it can be the Master clock or the Standby clock. • Offline—PCG is powered down. • Empty—No PCG is present.
Temperature	Temperature of the air flowing past the PCG.
Frequency	Frequency setting and measurement for the PCG.
Power	Information about the voltage supplied to the PCG. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
BUS Revision	Revision level of the generic bus device.

Sample Output

show chassis environment pcg (M40e Router)

```

user@host> show chassis environment pcg
PCG 0 status:
  State                Online - Master clock
  Temperature           44 degrees C / 111 degrees F
  Frequency:
    Setting             125.00 MHz

```

```

Measurement          124.95 MHz
Power:
  3.3 V              3266 mV
  5.0 V bias        4964 mV
  8.0 V bias        8112 mV
BUS Revision          12
PCG 1 status:
State                 Online - Standby
Temperature           47 degrees C / 116 degrees F
Frequency:
  Setting            125.00 MHz
  Measurement        124.96 MHz
Power:
  3.3 V              3271 mV
  5.0 V bias        4979 mV
  8.0 V bias        8117 mV
BUS Revision          12

```

show chassis environment pcg (M160 Router)

```

user@host> show chassis environment pcg
PCG 0 status:
State                 Online - Master clock
Temperature           41 degrees C / 105 degrees F
Frequency:
  Setting            125.00 MHz
  Measurement        125.03 MHz
Power:
  3.3 V              3286 mV
  5.0 V bias        5010 mV
  8.0 V bias        8183 mV
BUS Revision          12
PCG 1 status:
State                 Online - Standby
Temperature           43 degrees C / 109 degrees F
Frequency:
  Setting            125.00 MHz
  Measurement        125.01 MHz
Power:
  3.3 V              3288 mV
  5.0 V bias        4993 mV

```

```
8.0 V bias          8197 mV
BUS Revision        12
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

| *request chassis pcg*

show chassis environment pdu

IN THIS SECTION

- [Syntax | 853](#)
- [Description | 854](#)
- [Options | 854](#)
- [Required Privilege Level | 854](#)
- [Output Fields | 854](#)
- [Sample Output | 856](#)
- [Release Information | 861](#)

Syntax

```
show chassis environment pdu
<none>
<slot>
```

Description

Display the environmental status information of a power distribution unit (PDU).

Starting from Junos OS Release 14.1, the **show chassis environment pdu *slot*** operational mode command output displays environmental status information for the new DC power supply module (PSM) and PDU that are added to provide power to the high-density FPC—FPC2-PTX-P1A.

Starting from Junos OS Release 14.2, the power management software in Junos OS tracks the PSM power capacity to identify the power available for the PTX5000 router. Each PSM is assigned a power capability value that is equal to its maximum power rating. Therefore, the total input power—power that the chassis draws from a PDU—is the sum of all the online PSMs' maximum rating. Note that to limit the PDU's output power, the power management software adjusts the maximum rating of the PSMs according to the feed—that is, 60 A, 100 A, or 150 A—selected.

Options

none Display environmental information about all PDUs.

slot (Optional) Display environmental information about an individual PDU. For the PTX5000, replace *slot* with **0** or **1**.

Required Privilege Level

view

Output Fields

[Table 43 on page 855](#) lists the output fields for the **show chassis environment pdu** command. Output fields are listed in the approximate order in which they appear.

Table 43: show chassis environment pdu Output Fields

Field Name	Field Description
PDU <i>slot</i> status	Number of the PDU slot.
PDU - State	Status of the PDU. Status can be Online , Present , or Absent .
PDU - BoostConv	Status of the booster converter.
Feed Switch	Status of the connected input line cord in the AC PDU. Status can be , 60A , 100A , or 150A .
PDU - Hours Used	Number of hours the PDU has been operational.
PDU - Firmware Version	Version level of the firmware running on the PDU.
PSM <i>number</i> status	PSM number. PSMs are numbered 0 through 3 .
PSM - State	Status of the PSM. Status can be Online , Present , or Absent .
PSM - Temperature	Temperature of the air flowing past the PSM.
PSM - Fans	Status of the cooling fans associated with the PSM.
PSM - AC Input	Status of the AC input for the specified component
PSM - AC Output	Status of the AC output for the specified component.
PSM - DC input	Status of the DC input for the specified component.

Table 43: show chassis environment pdu Output Fields (Continued)

Field Name	Field Description
PSM - DC output	Status of the DC output for the specified component.
PSM-Health check status	Reason for the health check failure of the PSM.
PSM - Hours Used	Number of hours the PSM has been operational.
PSM - Firmware Version	Version level of the firmware running on the PSM.

Sample Output

show chassis environment pdu (PTX5000)

```

user@host> show chassis environment pdu 0
PDU 0 status:
  State                Online
  Hours Used           4281
  Firmware Version (MCU1) 00.02
  Firmware Version (MCU2) 00.02
  Firmware Version (MCU3) 00.02
  Firmware Version (MCU4) 00.02
PDU 0 PSM 0 status:
  State                Online
  Temperature          OK   32 degrees C / 89 degrees F
  Fans                 OK
  DC Input              OK
  DC Output             OK
  Hours Used           2864
  Firmware Version     00.04
PDU 0 PSM 1 status:
  State                Online

```



```

Temperature          OK   30 degrees C / 86 degrees F
Fans                 OK
DC Input             OK
DC Output            OK
Hours Used           3540
Firmware Version     00.04
PDU 0 PSM 2 status:
State                Online
Temperature          OK   29 degrees C / 84 degrees F
Fans                 OK
DC Input             OK
DC Output            OK
Hours Used           3711
Firmware Version     00.04
PDU 0 PSM 3 status:
State                Online
Temperature          OK   29 degrees C / 84 degrees F
Fans                 OK
DC Input             OK
DC Output            OK
Hours Used           4243
Firmware Version     00.04

```

show chassis environment pdu (PTX5000 Packet Transport Router with DC PSM and PDU)

```

user@host> show chassis environment pdu 1
PDU 1 status:
State                Online
BoostConv            OK
Hours Used           1054
Firmware Version (MCU1) 03.05
PDU 1 PSM 0 status:
State                Empty
PDU 1 PSM 1 status:
State                Online
Temperature          OK   45 degrees C / 113 degrees F
Fans                 OK
DC Input             OK
DC Output            OK
Hours Used           1027
Firmware Version     03.07

```

```

PDU 1 PSM 2 status:
  State                Empty
PDU 1 PSM 3 status:
  State                Online
  Temperature          OK   43 degrees C / 109 degrees F
  Fans                 OK
  DC Input             OK
  DC Output            OK
  Hours Used           1029
  Firmware Version     03.07
PDU 1 PSM 4 status:
  State                Empty
PDU 1 PSM 5 status:
  State                Online
  Temperature          OK   46 degrees C / 114 degrees F
  Fans                 OK
  DC Input             OK
  DC Output            OK
  Hours Used           1028
  Firmware Version     03.07
PDU 1 PSM 6 status:
  State                Empty
PDU 1 PSM 7 status:
  State                Online
  Temperature          OK   46 degrees C / 114 degrees F
  Fans                 OK
  DC Input             OK
  DC Output            OK
  Hours Used           1030
  Firmware Version     03.07

```

show chassis environment pdu (PTX5000 Packet Transport Router with AC PSM and PDU)

```

user@host> show chassis environment pdu 0
PDU 0 status:
  State                Online
  BoostConv            OK
  Feed Switch          150 Amps
  Hours Used           177
  Firmware Version (MCU1) 03.04
  Firmware Version (MCU2) 03.02

```

```

Firmware Version (MCU3)    03.02
Firmware Version (MCU4)    03.02
Firmware Version (MCU5)    03.02
Firmware Version (MCU6)    03.02
Firmware Version (MCU7)    03.02
Firmware Version (MCU8)    03.02
PDU 0 PSM 0 status:
State                       Online
Temperature                 OK    28 degrees C / 82 degrees F
Fans                       OK
AC Input                   OK
DC Output                  OK
Hours Used                 652
Firmware Version           01.01

```

show chassis environment pdu (PTX5000 Packet Transport Router after a health check failure on a PSM)

```

user@host> show chassis environment pdu 0
PDU 0 status:
State                       Online
BoostConv                  OK
Feed Switch                20 Amps
Hours Used                 16706
Firmware Version (MCU1)    91.02
Firmware Version (MCU2)    03.02
Firmware Version (MCU3)    03.02
Firmware Version (MCU4)    03.02
Firmware Version (MCU5)    03.02
Firmware Version (MCU6)    03.02
Firmware Version (MCU7)    03.02
Firmware Version (MCU8)    03.02
PDU 0 PSM 0 status:
State                       Online
Temperature                 OK    29 degrees C / 84 degrees F
Fans                       OK
AC Input                   OK
DC Output                  OK
Hours Used                 9847
Firmware Version           01.01
PDU 0 PSM 1 status:

```

```
State Online
Temperature OK 29 degrees C / 84 degrees F
Fans OK
AC Input OK
DC Output OK
Hours Used 5586
Firmware Version 01.01
PDU 0 PSM 2 status:
State Online
Temperature OK 28 degrees C / 82 degrees F
Fans OK
AC Input OK
DC Output OK
Hours Used 10425
Firmware Version 01.01
PDU 0 PSM 3 status:
State Online
Temperature OK 28 degrees C / 82 degrees F
Fans OK
AC Input OK
DC Output OK
Hours Used 9912
Firmware Version 01.01
PDU 0 PSM 4 status:
State Empty
PDU 0 PSM 5 status:
State Empty
PDU 0 PSM 6 status:
State Present
Temperature OK 32 degrees C / 89 degrees F
Fans OK
AC Input OK
DC Output OK
Health check status Failed, PSM set to NOT OK
Hours Used 5770
Firmware Version 01.01
PDU 0 PSM 7 status:
State Online
Temperature OK 33 degrees C / 91 degrees F
Fans OK
AC Input OK
DC Output OK
```

Hours Used	20167
Firmware Version	01.01

Release Information

Command introduced in Junos OS Release 12.1X48.

RELATED DOCUMENTATION

[PTX5000 Packet Transport Router Hardware Guide](#)

show chassis environment pem

IN THIS SECTION

- [Syntax](#) | **862**
- [Syntax \(ACX4000 Router\)](#) | **862**
- [Syntax \(TX Matrix Routers\)](#) | **862**
- [Syntax \(TX Matrix Plus Routers\)](#) | **862**
- [Syntax \(MX Series Router\)](#) | **862**
- [Syntax \(PTX Series Router\)](#) | **863**
- [Syntax \(MX104 Universal Routing Platforms\)](#) | **863**
- [Syntax \(MX10003 , MX204, MX10008, OCX Series, EX9251, and EX9253 devices\)](#) | **863**
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Syntax

```
show chassis environment pem  
<slot>
```

Syntax (ACX4000 Router)

```
show chassis environment pem
```

Syntax (TX Matrix Routers)

```
show chassis environment pem  
<lcc number | scc>  
<slot>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment pem  
<lcc number | sfc number>  
<slot>
```

Syntax (MX Series Router)

```
show chassis environment pem  
<slot>  
<all-members>
```

```
<local>
<member member-id>
```

Syntax (PTX Series Router)

```
show chassis environment pem
<slot>
<all-members>
<local>
<member member-id>
```

Syntax (MX104 Universal Routing Platforms)

```
show chassis environment pem
<slot>
<satellite [fpc-slot slot-id | device-alias alias-name]
```

Syntax (MX10003 , MX204, MX10008, OCX Series, EX9251, and EX9253 devices)

```
show chassis environment pem
<slot>
```

Syntax (QFX Series)

```
show chassis environment pem
<slot (interconnect-device name slot ) | (node-device name)>
```

Description

Display Power Entry Module (PEM) environmental status information.

NOTE: The new high-capacity (4100W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

Options

none	Display environmental information about both PEMs. For the TX Matrix router, display environmental information about the PEMs, the TX Matrix router, and its attached T640 routers. For the TX Matrix Plus router, display environmental information about the PEMs, the TX Matrix Plus router, and its attached routers.
all-members	(MX Series routers only) (Optional) Display environmental information about the PEMs in all the member routers of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Interconnect device.
lcc <i>number</i>	<p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display environmental information about the PEM in the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display environmental information about the PEM in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device <i>name</i>	(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Node device.
satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>]	(Junos Fusion only)(Optional) Display environmental information about the PEM in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
scc	(TX Matrix routers only) (Optional) Display environmental information about the PEM in the TX Matrix router (or switch-card chassis).
sfc	(TX Matrix Plus routers only) (Optional) Display environmental information about the PEM in the TX Matrix Plus router (or switch-fabric chassis).
<i>slot</i>	(Optional) Display environmental information about an individual PEM. Replace <i>slot</i> with 0 or 1.

Required Privilege Level

view

Output Fields

[Table 44 on page 865](#) lists the output fields for the **show chassis environment pem** command. Output fields are listed in the approximate order in which they appear.

Table 44: show chassis environment pem Output Fields

Field Name	Field Description
PEM <i>slot</i> status	Number of the PEM slot.

Table 44: show chassis environment pem Output Fields (Continued)

Field Name	Field Description
State	Status of the PEM.
Temperature	Temperature of the air flowing past the PEM.
AC Input	Status of the AC input for the specified component
AC Output	Status of the AC output for the specified component.
DC input	Status of the DC input for the specified component.
DC output	Status of the DC output for the specified component.
Load	(Not available on M40e or M160 routers) Information about the load on supply, in percentage of rated current being used.
Voltage	(M120, M160, M320, T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about voltage supplied to the PEM. (MX104 routers only) Information about voltage supplied by the PEM to the system.
Current	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM current.
Power	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about the PEM power.
SCG/CB/SIB	(T640, T1600, TX Matrix, and TX Matrix Plus routers only) SONET Clock Generator/Control Board/Switch Interface Board.

Table 44: show chassis environment pem Output Fields (Continued)

Field Name	Field Description
FAN	(T640, T1600, and T4000 routers with six-input DC power supply only) Information about the DC output to the fan.

Sample Output

show chassis environment pem (M40e Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  AC input             OK
  DC output            OK

```

show chassis environment pem (M120 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC Input:           OK
  DC Output:          OK
  Load                 Less than 20 percent
  Voltage:
    48.0 V input       52864 mV
    48.0 V fan supply  41655 mV
    3.3 V              3399 mV
PEM 1 status:
  State                Online
  Temperature          OK
  DC Input:           OK
  DC Output:          OK

```

Load	Less than 20 percent
Voltage:	
48.0 V input	54537 mV
48.0 V fan supply	42910 mV
3.3 V	3506 mV

show chassis environment pem (M160 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature          OK
  DC input             OK
  DC output            OK
  Load                 Less than 20 percent
  Voltage:
    48.0 V input       54833 mV
    48.0 V fan supply  50549 mV
    8.0 V bias         8239 mV
    5.0 V bias         5006 mV

```

show chassis environment pem (M320 Router)

```

user@host> show chassis environment pem
PEM 2 status:
  State                Online
  Temperature          OK
  DC input             OK
  Load                 Less than 40 percent
    48.0 V input       51853 mV
    48.0 V fan supply  48877 mV
    8.0 V bias         8449 mV
    5.0 V bias         4998 mV
PEM 3 status:
  State                Online
  Temperature          OK
  DC input             OK
  Load                 Less than 40 percent
    48.0 V input       51717 mV
    48.0 V fan supply  49076 mV

```

8.0 V bias	8442 mV
5.0 V bias	4998 mV

show chassis environment pem (MX150)

```
user@host> show chassis environment pem
FPC 0 PEM 0 status:
  State           Online
  Airflow         Front to Back
  Temperature      OK
```

show chassis environment pem (MX104 Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature      OK
  DC Output:      OK
  Voltage:
    12.0 V output  12281 mV
    3.3 V output   3353 mV
PEM 1 status:
  State           Empty
```

show chassis environment pem (MX240 Router)

```
user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature      OK
  DC Output:      OK
PEM 1 status:
  State           Online
  Temperature      OK
  DC Output:      OK
```

show chassis environment pem (MX480 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature     OK
  DC Input:       OK
  DC Output:      OK
  Voltage:
PEM 1 status:
  State           Online
  Temperature     OK
  DC Input:       OK
  DC Output:      OK
  Voltage:

```

show chassis environment pem (MX960 Router)

```

user@host> show chassis environment pem
PEM 2 status:
  State           Present
PEM 3 status:
  State           Online
  Temperature     OK
  DC Output:      OK

```

show chassis environment pem (MX10003 Router)

```

user@host> show chassis environment pem

PEM 0 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    34 degrees C / 93 degrees F
  Temperature     OK    26 degrees C / 78 degrees F
  Temperature     OK    24 degrees C / 75 degrees F
  Firmware version 0x22
  Cooling Fan     8752 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)

```

```

12.00      26      312      10
PEM 1 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    35 degrees C / 95 degrees F
  Temperature     OK    26 degrees C / 78 degrees F
  Temperature     OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan     8480 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      27      324      11
PEM 2 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    37 degrees C / 98 degrees F
  Temperature     OK    29 degrees C / 84 degrees F
  Temperature     OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan     8656 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      25      300      10
PEM 3 status:
  State           Online
  Airflow         Front to Back
  Temperature     OK    35 degrees C / 95 degrees F
  Temperature     OK    26 degrees C / 78 degrees F
  Temperature     OK    25 degrees C / 77 degrees F
  Firmware version 0x22
  Cooling Fan     8448 RPM
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  12.00      26      312      10
PEM 4 status:
  State           Empty
PEM 5 status:
  State           Empty

```

show chassis environment pem (MX204 Router)

```

user@host> show chassis environment pem

PEM 0 status:

```

```

State                               Empty
PEM 1 status:
State                               Online
Airflow                             Front to Back
Temperature                          OK   48 degrees C / 118 degrees F
Temperature                          OK   51 degrees C / 123 degrees F
Fan Sensor                           5400 RPM
DC Output                            Voltage(V) Current(A) Power(W) Load(%)
                                   11.94      16          191      29

```

show chassis environment pem (MX10008 Router)

```

user@host> show chassis environment pem
PEM 0 status:
State                               Online
Airflow                             Front to Back
Temperature                          OK   29 degrees C / 84 degrees F
Firmware version                    0x36
Fan 0                               5880 RPM
DC Output                            Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      104          1248      46
PEM 1 status:
State                               Online
Airflow                             Front to Back
Temperature                          OK   27 degrees C / 80 degrees F
Firmware version                    0x36
Fan 0                               5940 RPM
DC Output                            Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      104          1248      46
PEM 2 status:
State                               Online
Airflow                             Front to Back
Temperature                          OK   30 degrees C / 86 degrees F
Firmware version                    0x36
Fan 0                               5940 RPM
DC Output                            Voltage(V) Current(A) Power(W) Load(%)
                                   12.00      105          1260      46
PEM 3 status:
State                               Present
PEM 4 status:
State                               Present

```



```

PEM 5 status:
  State                Present

```

show chassis environment pem (PTX10016 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   21 degrees C / 69 degrees F
  Firmware version     0x36
  Fan 0                5760 RPM
  DC Output            Voltage(V) Current (A)  Power(W)  Load(%)
                    12.00      51          612      22
PEM 1 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   23 degrees C / 73 degrees F
  Firmware version     0x36
  Fan 0                5760 RPM
  DC Output            Voltage(V) Current (A)  Power(W)  Load(%)
                    12.00      52          624      23
PEM 2 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   23 degrees C / 73 degrees F
  Firmware version     0x36
  Fan 0                5760 RPM
  DC Output            Voltage(V) Current (A)  Power(W)  Load(%)
                    12.00      51          612      22
PEM 3 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   21 degrees C / 69 degrees F
  Firmware version     0x36
  Fan 0                5760 RPM
  DC Output            Voltage(V) Current (A)  Power(W)  Load(%)
                    12.00      51          612      22
PEM 4 status:
  State                Online
  Airflow              Front to Back

```


FPC 2	0	0	0	0
FPC 3	0	0	0	0
FPC 4	0	0	0	0
FPC 5	0	0	0	0
FPC 6	57158	1581	90	12
FPC 7	0	0	0	0
SCG/CB/SIB	56750	1125	63	5

show chassis environment pem (T4000 Router)

```

user@host> show chassis environment pem
PEM 0 status:
  State           Online
  Temperature     33 degrees C / 91 degrees F
  DC Input:       OK
                   Voltage (V)  Current (A)  Power (W)  Load (%)
  INPUT 0         54.625      9.812       535        22
  INPUT 1         54.625     10.250      559        23
  INPUT 2         55.125      0.125        6          0
  INPUT 3         54.500     10.062      548        22
  INPUT 4         54.750      9.375       513        21
  INPUT 5         54.750     10.187      557        23
  DC Output       Voltage (V)  Current (A)  Power (W)  Load (%)
  FPC 0           55.750     10.125      564        37
  FPC 1           51.625      0.000        0          0
  FPC 2           52.000      0.000        0          0
  FPC 3           55.062     10.437      574        38
  FPC 4           52.125      0.000        0          0
  FPC 5           55.000      9.375       515        34
  FPC 6           55.187      9.687       534        35
  FPC 7           51.437      0.000        0          0
  SCG/CB/SIB     55.375     15.750      872        35
  FAN             54.562     14.750      804        42

```

show chassis environment pem (T640/T1600/T4000 Routers With Six-Input DC Power Supply)

```

user@host> show chassis environment pem
PEM 1 status:

```


FPC 7	0	0	0	0
SCG/CB/SIB	0	0	0	0

show chassis environment pem scc (TX Matrix Routing Matrix)

```
user@host> show chassis environment pem scc
```

```
scc-re0:
```

```
-----
```

```
PEM 1 status:
```

```
State                      Online
Temperature                 24 degrees C / 75 degrees F
DC input:                   OK
DC output:                  Voltage  Current      Power    Load
SIB 0                       0          0          0        0
SIB 1                       0          0          0        0
SIB 2                       0          0          0        0
SIB 3                       56550      0          0        0
SIB 4                       55958      6912       386      51
```

show chassis environment pem sfc (TX Matrix Plus Routing Matrix)

```
user@host> show chassis environment pem sfc
```

```
0
```

```
sfc0-re0:
```

```
-----
```

```
PEM 0 status:
```

```
State                      Online
Temperature                 35 degrees C / 95 degrees F
DC Input:                   OK
DC Output                   Voltage  Current      Power    Load
Channel 0                   53820   14140       761     59
Channel 1                   53550   12720       681     53
Channel 2                   53840   12930       696     54
Channel 3                   53690   14990       804     63
Channel 4                   53620   15070       808     63
Channel 5                   53900   14820       798     62
Channel 6                   54120   5020        271     21
```

show chassis environment pem lcc (TX Matrix Plus Routing Matrix)

```

user@host> show chassis environment lcc 0

lcc0-rel:
-----
PEM 0 status:
  State           Online
  Temperature     38 degrees C / 100 degrees F
  DC Input:       OK
  DC Output       Voltage   Current   Power    Load
  FPC 0           0         0         0         0
  FPC 1           0         0         0         0
  FPC 2           0         0         0         0
  FPC 3           0         0         0         0
  FPC 4           56408     7575     427       56
  FPC 5           0         0         0         0
  FPC 6           56266     7956     447       59
  FPC 7           56283     6100     343       45
  SCG/CB/SIB     55916     8950     500       41

PEM 1 status:
  State           Present
  Temperature     35 degrees C / 95 degrees F
  DC Input:       Check
  DC Output       Voltage   Current   Power    Load
  FPC 0           0         0         0         0
  FPC 1           0         0         0         0
  FPC 2           0         0         0         0
  FPC 3           0         0         0         0
  FPC 4           0         0         0         0
  FPC 5           0         0         0         0
  FPC 6           0         0         0         0
  FPC 7           0         0         0         0
  SCG/CB/SIB     0         0         0         0

```

show chassis environment pem node-device (QFabric System)

```

user@switch> show chassis environment pem node-device
node1
FPC 0 PEM 0 status:

```

```

State                Check
Airflow              Front to Back
Temperature          OK
AC Input:            OK
DC Output            Voltage (V) Current (A) Power (W) Load (%)
                   12          10          120      18
FPC 0 PEM 1 status:
State                Online
Airflow              Back to Front
Temperature          OK
AC Input:            OK
DC Output            Voltage (V) Current (A) Power (W) Load (%)
                   11          10          110      17

```

show chassis environment pem (QFX Series and OCX Series)

```

user@switch> show chassis environment pem
FPC 0 PEM 1 status:
State                Online
Airflow              Front to Back
Temperature          OK
AC Input:            OK
DC Output            Voltage (V) Current (A) Power (W) Load (%)
                   12          17          204      31

```

show chassis environment pem (QFX 10016)

```

user@router> show chassis environment pem 1

PEM 1 status:
State                Present
Input                Voltage (V) Current (A) Power (W)
INP 1                229.9      0.4      96.6
INP 2                233.7      0.4      98.2
Health check Information:
  Status:              Scheduled
  Last Result:         Pass
  Last Execution:      2019-04-23 15:09:54
  Next Scheduled Run:  2019-04-23 15:32:59

```



```

PEM 1 status:
  State                Present
PEM 2 status:
  State                Empty
PEM 3 status:
  State                Empty
PEM 4 status:
  State                Present
PEM 5 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK    61 degrees C / 141 degrees F
  Temperature          OK    49 degrees C / 120 degrees F
  Temperature          OK    28 degrees C / 82 degrees F
  Firmware version     04.10
  Cooling Fan          8656 RPM
  DC Output             Voltage (V) Current (A) Power (W) Load (%)
                       12.00      51          612      21

```

show chassis environment pem (PTX1000 Packet Transport Routers)

```

user@router> show chassis environment pem

PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temp Sensor 0        OK    22 degrees C / 71 degrees F
  Temp Sensor 1        OK    23 degrees C / 73 degrees F
  Fan 0                9184 RPM
  Fan 1                7936 RPM
  DC Output             Voltage (V) Current (A) Power (W) Load (%)
                       12          24          288      18

PEM 2 status:
  State                Online
  Airflow              Front to Back
  Temp Sensor 0        OK    22 degrees C / 71 degrees F
  Temp Sensor 1        OK    26 degrees C / 78 degrees F
  Fan 0                9056 RPM
  Fan 1                7808 RPM

```

DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	12	24	288	18

On PTX1000 Packet Transport Routers, you cannot view the **show chassis environment pem** output at the PEM slot level, by using the command **show chassis environment pem slot**.

Release Information

Command introduced before Junos OS Release 7.4.

satellite option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

| *show chassis hardware*

show chassis environment psu

IN THIS SECTION

- [Syntax | 883](#)
- [Description | 883](#)
- [Options | 883](#)
- [Required Privilege Level | 883](#)
- [Output Fields | 883](#)
- [Sample Output | 884](#)
- [Release Information | 885](#)

Syntax

```
show chassis environment psu
<slot-number>
```

Description

(On EX8200 switches only) Display the state of the power supply.

Options

none Display the state of the power supply for all power supplies.

slot-number (Optional) Display the state of the power supply for a specific power supply slot number (0-5).

Required Privilege Level

view

Output Fields

[Table 45 on page 883](#) lists the output fields for the **show chassis environment psu** command. Output fields are listed in the approximate order in which they appear.

Table 45: show chassis environment psu Output Fields

Field Name	Field Description
State	State of the power supply: Online, Offline, or Empty.

Table 45: show chassis environment psu Output Fields (Continued)

Field Name	Field Description
Temperature	Temperature for the online power supply: OK or Out of Range.
DC Output	DC output for the online power supply: OK or Out of Range.

Sample Output

show chassis environment psu

```

user@switch> show chassis environment psu

PSU 0 status:
  State                Offline
PSU 1 status:
  State                Online
  Temperature          OK
  DC Output:           OK
PSU 2 status:
  State                Online
  Temperature          OK
  DC Output:           OK
PSU 3 status:
  State                Offline
PSU 4 status:
  State                Offline
PSU 5 status:
  State                Offline

```

show chassis environment psu (for PSU 1)

```

user@switch> show chassis environment psu 1
PSU 1 status:
  State                Online

```

```
Temperature          OK
DC Output:           OK
```

Release Information

Command introduced in Junos OS Release 10.3.

RELATED DOCUMENTATION

Verifying Power Configuration and Use
show chassis power-budget-statistics

show chassis environment psm

IN THIS SECTION

- [Syntax | 885](#)
- [Description | 886](#)
- [Options | 886](#)
- [Required Privilege Level | 886](#)
- [Output Fields | 886](#)
- [Sample Output | 887](#)
- [Release Information | 898](#)

Syntax

```
show chassis environment psm
<all-members>
<local>
```

```
<member member-id>
<psm-slot-number>
```

Description

Display chassis environmental information about the power supply module (PSM).

Options

none	Display environmental information about all power supply modules (PSMs).
all-members	(Optional) Display chassis environmental information about the PSM in all members of the Virtual Chassis configuration.
local	(Optional) Display chassis environmental information about the PSM in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display chassis environmental information about the PSM in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.
<i>psm-slot-number</i>	(Optional) Display environmental information about the specified power supply module. For MX2020 routers, replace <i>psm-slot-number</i> with a value from 0 through 17. For MX2010 and MX2008 routers, replace <i>psm-slot-number</i> with a value from 0 through 8.

Required Privilege Level

view

Output Fields

[Table 46 on page 887](#) lists the output fields for the **show chassis environment psm** command. Output fields are listed in the approximate order in which they appear.

Table 46: show chassis environment psm Output Fields

Field Name	Field Description
State	Status of the PSM. <ul style="list-style-type: none"> • Online—The PSM is online and running. • Offline—PSM is powered down.
Temperature	The status of the temperature of the air flowing past the PSM. <ul style="list-style-type: none"> • Out of range—Displayed if the PSM detects over-temperature. • OK—Displayed if the temperature is within the acceptable limit.
DC Input	State of the DC input power feed for the specified zone at the specified amps and voltage, and load for the PSM.
DC Output	DC power output in watts (W) for the specified zone at the specified amps and voltage (A @ V), and load and percentage utilization of the maximum capacity for the PSM.
Hours Used	Number of hours the PSM has been operational.

Sample Output

show chassis environment psm (MX2020 Router)

```

user@host> show chassis environment psm
PSM 2 status:
  State           Online
  Temperature     OK
  DC Input        Feed      Voltage (V)  Current (A)  Power (W)
                  INP0       50.00       18.90       945.00
                  INP1       0.00        0.00        0.00
  DC Output       Voltage (V) Current (A)  Power (W)   Load (%)

```

	51.75	16.50	853.88	40.66
Hours Used	6140			
PSM 3 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	18.90	952.56
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.75	16.50	853.88	40.66
Hours Used	6140			
PSM 4 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	18.90	952.56
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.75	871.00	41.48
Hours Used	6140			
PSM 5 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	18.90	952.56
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.50	858.00	40.86
Hours Used	6140			
PSM 6 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	18.90	952.56
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.75	871.00	41.48
Hours Used	6140			
PSM 7 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	19.20	967.68

	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.75	871.00	41.48
Hours Used	6140			
PSM 8 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.00	20.40	1020.00
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.75	17.00	879.75	41.89
Hours Used	3380			
PSM 11 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	50.40	18.30	922.32
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.25	845.00	40.24
Hours Used	5615			
PSM 12 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	50.40	18.30	922.32
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.00	832.00	39.62
Hours Used	6143			
PSM 13 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	50.40	18.00	907.20
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.00	832.00	39.62
Hours Used	6143			
PSM 14 status:				
State	Online			
Temperature	OK			

DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	50.00	18.30	915.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.00	832.00	39.62
Hours Used	6143			
PSM 15 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	48.80	18.90	922.32
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.25	845.00	40.24
Hours Used	6143			
PSM 16 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	48.80	18.90	922.32
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.25	845.00	40.24
Hours Used	6143			
PSM 17 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	48.80	18.90	922.32
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.00	16.25	845.00	40.24
Hours Used	5207			

show chassis environment psm (MX2020 Router with 240-V high-voltage DC PSMs)

```

user@host> show chassis environment psm

PSM 0 status:
  State           Online
  Temperature     OK

```

DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	240.00	1.00	240.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.75	3.75	197.81	7.91
Hours Used	2026			
PSM 1 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	240.00	0.90	216.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.75	3.25	171.44	6.86
Hours Used	2530			
PSM 2 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	240.00	0.90	216.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.75	3.50	184.62	7.38
Hours Used	2530			
PSM 3 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	240.00	0.90	216.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.75	3.50	184.62	7.38
Hours Used	2026			
PSM 4 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	0.00	0.00	0.00
	INP1	240.00	0.90	216.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.50	3.50	183.75	7.35
Hours Used	2530			
PSM 5 status:				

```

State                Online
Temperature          OK
DC Input             Feed      Voltage (V)  Current (A)  Power (W)
                   INP0       0.00        0.00        0.00
                   INP1       240.00      1.00        240.00
DC Output            Voltage (V)  Current (A)  Power (W)    Load (%)
                   52.50     3.75        196.88      7.88
Hours Used           2530
PSM 6 status:
State                Online
Temperature          OK
DC Input             Feed      Voltage (V)  Current (A)  Power (W)
                   INP0       0.00        0.00        0.00
                   INP1       240.00      1.00        240.00
DC Output            Voltage (V)  Current (A)  Power (W)    Load (%)
                   52.50     3.75        196.88      7.88
Hours Used           2002
PSM 7 status:
State                Online
Temperature          OK
DC Input             Feed      Voltage (V)  Current (A)  Power (W)
                   INP0       0.00        0.00        0.00
                   INP1       240.00      1.00        240.00
DC Output            Voltage (V)  Current (A)  Power (W)    Load (%)
                   52.50     3.75        196.88      7.88
Hours Used           2146
PSM 8 status:
State                Online
Temperature          OK
DC Input             Feed      Voltage (V)  Current (A)  Power (W)
                   INP0       0.00        0.00        0.00
                   INP1       240.00      1.00        240.00
DC Output            Voltage (V)  Current (A)  Power (W)    Load (%)
                   52.50     3.75        196.88      7.88
Hours Used           2026
PSM 9 status:
State                Online
Temperature          OK
DC Input             Feed      Voltage (V)  Current (A)  Power (W)
                   INP0       240.00      0.80        192.00
                   INP1       0.00        0.00        0.00
DC Output            Voltage (V)  Current (A)  Power (W)    Load (%)
                   52.50     2.75        144.38      5.78

```

```

Hours Used                2530
PSM 10 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage (V)  Current (A)  Power (W)
                        INP0       240.00      0.80         192.00
                        INP1       0.00        0.00         0.00
DC Output                 Voltage (V)  Current (A)  Power (W)    Load (%)
                        52.75      2.75        145.06      5.80
Hours Used                682
PSM 11 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage (V)  Current (A)  Power (W)
                        INP0       240.00      0.70         168.00
                        INP1       0.00        0.00         0.00
DC Output                 Voltage (V)  Current (A)  Power (W)    Load (%)
                        52.75      2.75        145.06      5.80
Hours Used                2098
PSM 12 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage (V)  Current (A)  Power (W)
                        INP0       240.00      0.80         192.00
                        INP1       0.00        0.00         0.00
DC Output                 Voltage (V)  Current (A)  Power (W)    Load (%)
                        52.25      3.00        156.75      6.27
Hours Used                2458
PSM 13 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage (V)  Current (A)  Power (W)
                        INP0       240.00      0.80         192.00
                        INP1       0.00        0.00         0.00
DC Output                 Voltage (V)  Current (A)  Power (W)    Load (%)
                        52.25      2.75        143.69      5.75
Hours Used                2601
PSM 14 status:
State                     Online
Temperature               OK
DC Input                  Feed      Voltage (V)  Current (A)  Power (W)
                        INP0       240.00      0.80         192.00
                        INP1       0.00        0.00         0.00

```

DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.75	2.75	145.06	5.80
Hours Used	682			
PSM 15 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	240.00	0.80	192.00
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.25	2.75	143.69	5.75
Hours Used	2122			
PSM 16 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	240.00	0.70	168.00
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.25	2.50	130.62	5.22
Hours Used	2050			
PSM 17 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	240.00	0.80	192.00
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	52.50	3.00	157.50	6.30
Hours Used	2122			

show chassis environment psm (MX2010 Router)

```

user@host> show chassis environment psm
PSM 0 status:
  State           Online
  Temperature     OK
  DC Input        Feed      Voltage (V)  Current (A)  Power (W)
                  INP0       51.20       14.70       752.64
                  INP1       0.00        0.00        0.00

```

DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2056			
PSM 1 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	51.20	14.35	734.72
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	12.75	653.44	26.14
Hours Used	2008			
PSM 2 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	51.20	14.35	734.72
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.50	13.00	669.50	26.78
Hours Used	2032			
PSM 3 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	14.35	723.24
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.00	12.75	650.25	26.01
Hours Used	2008			
PSM 4 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	51.20	14.00	716.80
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2055			
PSM 5 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)

	INP0	51.20	14.70	752.64
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2056			
PSM 6 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.80	14.70	746.76
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2056			
PSM 7 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	14.70	740.88
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2056			
PSM 8 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	50.40	14.70	740.88
	INP1	0.00	0.00	0.00
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	13.00	666.25	26.65
Hours Used	2056			

show chassis environment psm (MX2008 Router)

```

user@host> show chassis environment psm
PSM 1 status:
  State           Online
  Temperature     OK
  DC Input
    Feed          Voltage (V)  Current (A)  Power (W)
    INP0          53.20       4.55         242.06

```


	INP1	53.20	3.85	204.82
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.50	7.75	399.12	15.96
Hours Used	2811			
PSM 2 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	53.20	4.55	242.06
	INP1	53.20	3.85	204.82
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.25	8.00	410.00	16.40
Hours Used	2882			
PSM 3 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	52.40	1.75	91.70
	INP1	52.80	8.40	443.52
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.50	7.75	399.12	15.96
Hours Used	2668			
PSM 4 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	52.80	0.35	18.48
	INP1	53.20	8.40	446.88
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.50	7.75	399.12	15.96
Hours Used	2740			
PSM 5 status:				
State	Online			
Temperature	OK			
DC Input	Feed	Voltage (V)	Current (A)	Power (W)
	INP0	52.40	0.00	0.00
	INP1	53.20	8.40	446.88
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)
	51.50	7.75	399.12	15.96
Hours Used	2932			
PSM 6 status:				
State	Online			
Temperature	OK			

DC Input	Feed	Voltage (V)	Current (A)	Power (W)	
	INP0	54.00	8.40	453.60	
	INP1	53.20	0.00	0.00	
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)	
	51.50	7.75	399.12	15.96	
Hours Used	2932				
PSM 7 status:					
State	Online				
Temperature	OK				
DC Input	Feed	Voltage (V)	Current (A)	Power (W)	
	INP0	54.00	8.40	453.60	
	INP1	53.20	0.00	0.00	
DC Output	Voltage (V)	Current (A)	Power (W)	Load (%)	
	51.25	7.75	397.19	15.89	
Hours Used	2931				

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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show chassis environment routing-engine

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Syntax

```
show chassis environment routing-engine  
<slot>
```

Syntax (TX Matrix Routers)

```
show chassis environment routing-engine  
<lcc number | scc>  
<slot>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment routing-engine  
<lcc number | sfc number>  
<slot>
```

Syntax (MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms)

```
show chassis environment routing-engine  
<slot>  
<satellite [fpc-slot slot-id | device-alias alias-name]
```

Syntax (MX Series and PTX Series Devices)

```
show chassis environment routing-engine  
<slot>  
<all-members>  
<local>  
<member member-id>
```

Syntax (QFX Series and OCX Series)

```
show chassis environment routing-engine  
interconnect-device name
```

Syntax (EX9251 and EX9253 Switches; ACX500, ACX5048 and ACX5096 Routers)

```
show chassis environment routing-engine
```

Description

Display Routing Engine environmental status information.

Options

none	Display environmental information about all Routing Engines. For a TX Matrix router, display environmental information about all Routing Engines on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display environmental information about all Routing Engines on the TX Matrix Plus router and its attached routers.
all-members	(MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device.
lcc <i>number</i>	<p>–(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the specified member in the Virtual Chassis configuration. Replace <i>member-id</i> with the value of 0 or 1.

satellite [fpc-slot slot-id device-alias alias-name]	(Junos Fusion only)(Optional) Display environmental information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
scc	(TX Matrix router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix router (switch-card chassis).
sfc	(TX Matrix Plus router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix Plus router (or switch-fabric chassis).
slot	(Optional) Display environmental information about an individual Routing Engine. On M10i, M20, M40e, M120, M160, M320, MX Series, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, and T Series routers, replace <i>slot</i> with 0 or 1. On M5, M7i, M10, and M40 routers, replace <i>slot</i> with 0. On EX3200 and EX4200 standalone switches, replace <i>slot</i> with 0. On EX4200 switches in a Virtual Chassis configuration and on EX8208 and EX8216 switches, replace <i>slot</i> with 0 or 1. On the QFX3500 switch, there is only one Routing Engine, so you do not need to specify the slot number. On PTX Series Packet Transport Routers, replace <i>slot</i> with 0 or 1

Required Privilege Level

view

Output Fields

[Table 47 on page 902](#) lists the output fields for the **show chassis environment routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 47: show chassis environment routing-engine Output Fields

Field Name	Field Description
Routing engine <i>slot</i> status	Number of the Routing Engine slot: 0 or 1.

Table 47: show chassis environment routing-engine Output Fields (Continued)

Field Name	Field Description
State	Status of the Routing Engine: <ul style="list-style-type: none"> • Online Primary—Routing Engine is online, operating as Primary. • Online Standby—Routing Engine is online, operating as Standby. • Offline—Routing Engine is offline.
Temperature	Temperature of the air flowing past the Routing Engine.
CPU Temperature	(PTX Series and T4000 Core Routers only) Temperature of the air flowing past the Routing Engine CPU.

Sample Output

show chassis environment routing-engine (Nonredundant)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature           27 degrees C / 80 degrees

```

show chassis environment routing-engine (Redundant)

```

user@host> show chassis environment routing-engine
Route Engine 0 status:
  State:                Online Master
  Temperature:          26 degrees C / 78 degrees F
Route Engine 1 status:
  State:                Online Standby
  Temperature:          26 degrees C / 78 degrees F

```

show chassis environment routing-engine (MX150)

```

user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  CPU Temperature      42 degrees C / 107 degrees F

```

show chassis environment routing-engine (MX104 Router)

```

user@ host >show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          34 degrees C / 93 degrees F
  CPU Temperature      43 degrees C / 109 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          33 degrees C / 91 degrees F
  CPU Temperature      39 degrees C / 102 degrees F

```

show chassis environment routing-engine (MX2010 Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          37 degrees C / 98 degrees F
  CPU Temperature      37 degrees C / 98 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature          35 degrees C / 95 degrees F
  CPU Temperature      34 degrees C / 93 degrees F

```

show chassis environment routing-engine (MX2020 Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature          35 degrees C / 95 degrees F

```



```

CPU Temperature          34 degrees C / 93 degrees F
Routing Engine 1 status:
  State                   Online Standby
  Temperature             44 degrees C / 111 degrees F
  CPU Temperature        43 degrees C / 109 degrees F

```

show chassis environment routing-engine (MX2008 Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                   Online Master
  CPU Temperature        75 degrees C / 167 degrees F
Routing Engine 1 status:
  State                   Online Standby
  CPU Temperature        47 degrees C / 116 degrees F

```

show chassis environment routing-engine (TX Matrix Plus Router)

```

user@host> show chassis environment routing-engine
sfc0-re0:
-----
Routing Engine 0 status:
  State                   Online Master
  Temperature             26 degrees C / 78 degrees F
Routing Engine 1 status:
  State                   Online Standby
  Temperature             28 degrees C / 82 degrees F

lcc0-re0:
-----
Routing Engine 0 status:
  State                   Online Master
  Temperature             30 degrees C / 86 degrees F
Routing Engine 1 status:
  State                   Online Standby
  Temperature             29 degrees C / 84 degrees F

```

show chassis environment routing-engine (T4000 Core Router)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
  Temperature     33 degrees C / 91 degrees F
  CPU Temperature 50 degrees C / 122 degrees F
Routing Engine 1 status:
  State           Online Standby
  Temperature     33 degrees C / 91 degrees F
  CPU Temperature 46 degrees C / 114 degrees F

```

show chassis environment routing-engine (QFX Series and OCX Series)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
  Temperature     42 degrees C / 107 degrees F

```

show chassis environment routing-engine interconnect-device (QFabric System)

```

user@switch> show chassis environment routing-engine
interconnect-device interconnect1
routing-engine interconnect-device interconnect1
Routing Engine 0 status:
  State           Online Standby
  Temperature     52 degrees C / 125 degrees F
Routing Engine 1 status:
  State           Online Master
  Temperature     57 degrees C / 134 degrees F

```

show chassis environment routing-engine (PTX5000 Packet Transport Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State           Online Master
  Temperature     55 degrees C / 131 degrees F

```

```

CPU Temperature          66 degrees C / 150 degrees F
Routing Engine 1 status:
  State                   Online Standby
  Temperature              52 degrees C / 125 degrees F
  CPU Temperature          64 degrees C / 147 degrees F

```

show chassis environment routing-engine (PTX10008 Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                   Online Master
  CPU Temperature          40 degrees C / 104 degrees F
Routing Engine 1 status:
  State                   Online Standby
  CPU Temperature          40 degrees C / 104 degrees F

```

show chassis environment routing-engine (PTX10016 Router)

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                   Online Master
  CPU Temperature          33 degrees C / 91 degrees F
Routing Engine 1 status:
  State                   Online Standby
  CPU Temperature          38 degrees C / 100 degrees F

```

show chassis environment routing-engine (ACX5048 and ACX5096 Routers)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                   Online Master
  Temperature              33 degrees C / 91 degrees F

```

show chassis environment routing-engine (ACX500 Routers)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature           54 degrees C / 129 degrees F

```

Sample Output**show chassis environment routing-engine (PTX5000 (RE-PTX-X8-64G), MX240 (RE-S-X6-64G), MX480 (RE-S-X6-64G), MX960 (RE-S-X6-64G), MX2010 (RE-MX2K-X8-64G), MX2020 (RE-MX2K-X8-64G))**

```

user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
  Temperature           37 degrees C / 98 degrees F
  CPU Temperature       52 degrees C / 125 degrees F
Routing Engine 1 status:
  State                Online Standby
  Temperature           37 degrees C / 98 degrees F
  CPU Temperature       51 degrees C / 123 degrees F

```

show chassis environment routing-engine (MX204 Routers)

```

user@host> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master

```

show chassis environment routing-engine (MX10008 Routers)

```

Routing Engine 0 status:
  State                Online Master
  CPU Temperature       41 degrees C / 105 degrees F

```

```
Routing Engine 1 status:
  State                Online Standby
  CPU Temperature      40 degrees C / 104 degrees F
```

show chassis environment routing-engine (EX9251 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
```

show chassis environment routing-engine (EX9253 Switches)

```
user@switch> show chassis environment routing-engine
Routing Engine 0 status:
  State                Online Master
Routing Engine 1 status:
  State                Present
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

RELATED DOCUMENTATION

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show chassis environment scg

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- [Syntax \(TX Matrix and TX Matrix Plus Router\) | 910](#)
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- [Sample Output | 912](#)
- [Release Information | 916](#)

Syntax

```
show chassis environment scg  
<slot>
```

Syntax (TX Matrix and TX Matrix Plus Router)

```
show chassis environment scg  
<lcc number>  
<slot>
```

Description

Display SONET Clock Generator (SCG) environmental information.

Options

- none** (TX Matrix and TX Matrix Plus routers only) Display environmental information about all SCGs. On a TX Matrix router, display environmental information about all SCGs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SCGs on the TX Matrix Plus router and its attached routers.
- lcc
number** (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.
Replace *number* with the following values depending on the LCC configuration:
- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
 - 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
 - 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
 - 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- slot** (Optional) Display environmental information about the SCG. Replace *slot* with **0** or **1**.

Required Privilege Level

view

Output Fields

[Table 48 on page 912](#) lists the output fields for the **show chassis environment scg** command. Output fields are listed in the approximate order in which they appear.

Table 48: show chassis environment scg Output Fields

Field Name	Field Description
SCG slot status	Number of the SCG slot: 0 or 1 .
State	<p>Status of the SCG:</p> <ul style="list-style-type: none"> • Online—SCG is online and running. • Offline—SCG is powered down. <p>If two SCGs are installed and online, one is functioning as the primary, and the other is the standby.</p>
Temperature	Temperature of the air flowing past the SCG.
Power	Power on the SCG. The left column displays required power, in volts. The right column displays measured power, in millivolts.
BUS Revision	Revision level of the generic bus device.

Sample Output

show chassis environment scg (T Series Routers)

```

user@host> show chassis environment scg
SCG 0 status:
  State                Online - Master clock
  Temperature          29 degrees C / 84 degrees F
  Power:
    GROUND              0 mV
    3.3 V               3297 mV
    5.0 V               5050 mV
    5.6 V               5682 mV
    1.8 V bias          1787 mV
    3.3 V bias          3277 mV

```



```

5.0 V bias          4984 mV
8.0 V bias          8400 mV
BUS Revision        40
SCG 1 status:
State                Online - Standby
Temperature          28 degrees C / 82 degrees F
Power:
GROUND              0 mV
3.3 V               3317 mV
5.0 V               5057 mV
5.6 V               5689 mV
1.8 V bias          1794 mV
3.3 V bias          3296 mV
5.0 V bias          4991 mV
8.0 V bias          8410 mV
BUS Revision        40

```

show chassis environment scg (T4000 Core Routers)

```

user@host> show chassis environment scg
SCG 0 status:
State                Online - Master clock
Temperature          33 degrees C / 91 degrees F
Power
GROUND              0 mV
1.8 V bias          1794 mV
3.3 V               3310 mV
3.3 V bias          3299 mV
5.0 V               5040 mV
5.0 V bias          5003 mV
5.6 V               5780 mV
8.0 V bias          7416 mV
Bus Revision        40
SCG 1 status:
State                Online - Standby
Temperature          33 degrees C / 91 degrees F
Power
GROUND              0 mV
1.8 V bias          1794 mV
3.3 V               3319 mV
3.3 V bias          3286 mV

```

5.0 V	5047 mV
5.0 V bias	5013 mV
5.6 V	5758 mV
8.0 V bias	7347 mV
Bus Revision	40

show chassis environment scg lcc (TX Matrix Router)

```

user@host> show chassis environment scg lcc
0 0
lcc0-re0:
-----
SCG 0 status:
State                Online - Master clock
Temperature           30 degrees C / 86 degrees F
Power:
  GROUND              0 mV
  3.3 V               3321 mV
  5.0 V               5062 mV
  5.6 V               5682 mV
  1.8 V bias          1789 mV
  3.3 V bias          3289 mV
  5.0 V bias          4993 mV
  8.0 V bias          7807 mV
BUS Revision          40

```

show chassis environment scg lcc (TX Matrix Plus Router)

```

user@host> show chassis environment scg lcc
0
lcc0-re0:
-----
SCG 0 status:
State                Online - Master clock
Temperature           42 degrees C / 107 degrees F
Power:
  GROUND              0 mV
  1.8 V bias          1800 mV
  3.3 V               3290 mV
  3.3 V bias          3304 mV

```

5.0 V	5042 mV
5.0 V bias	4979 mV
5.6 V	5765 mV
8.0 V bias	7682 mV
Bus Revision	40

show chassis environment scg (TX Matrix Plus Router)

```

user@host> show chassis environment scg
lcc0-re0:
-----
SCG 0 status:
  State                Online - Master clock
  Temperature          40 degrees C / 104 degrees F
  Power
    GROUND              0 mV
    1.8 V bias          1800 mV
    3.3 V               3291 mV
    3.3 V bias          3304 mV
    5.0 V               5042 mV
    5.0 V bias          4979 mV
    5.6 V               5765 mV
    8.0 V bias          7643 mV
  Bus Revision         40

lcc1-re0:
-----
SCG 0 status:
  State                Online - Master clock
  Temperature          37 degrees C / 98 degrees F
  Power
    GROUND              0 mV
    1.8 V bias          1788 mV
    3.3 V               3305 mV
    3.3 V bias          3284 mV
    5.0 V               5042 mV
    5.0 V bias          5010 mV
    5.6 V               5748 mV
    8.0 V bias          7692 mV
  Bus Revision         40

```

```

lcc2-re0:
-----
SCG 0 status:
  State                Online - Master clock
  Temperature          39 degrees C / 102 degrees F
  Power
    GROUND              0 mV
    1.8 V bias          1785 mV
    3.3 V               3306 mV
    3.3 V bias          3301 mV
    5.0 V               5045 mV
    5.0 V bias          4993 mV
    5.6 V               5765 mV
    8.0 V bias          7838 mV
  Bus Revision         40

lcc3-re0:
-----
SCG 0 status:
  State                Online - Master clock
  Temperature          39 degrees C / 102 degrees F
  Power
    GROUND              0 mV
    1.8 V bias          1800 mV
    3.3 V               3290 mV
    3.3 V bias          3294 mV
    5.0 V               5050 mV
    5.0 V bias          4984 mV
    5.6 V               5780 mV
    8.0 V bias          7716 mV
  Bus Revision         40

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

request chassis scg

show chassis environment sfb

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Syntax

```
show chassis environment sfb
<all-members>
<local>
<member member-id>
<sfb-slot-number>
```

Description

Display chassis environmental information about the Switch Fabric Board (SFB).

Options

none	Display environmental information about all Switch Fabric Boards.
all-members	(Optional) Display chassis environmental information about the SFB in all members of the Virtual Chassis configuration.
local	(Optional) Display chassis environmental information about the SFB in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display chassis environmental information about the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.
sfb-slot-number	(Optional) Display environmental information about the specified Switch Fabric Board. For MX2020, MX2010, and MX2008 routers, replace <i>sfb-slot-number</i> with a value from 0 through 7.

Required Privilege Level

view

Output Fields

[Table 49 on page 918](#) lists the output fields for the **show chassis environment sfb** command. Output fields are listed in the approximate order in which they appear.

Table 49: show chassis environment sfb Output Fields

Field Name	Field Description
State	Status of the SFB. <ul style="list-style-type: none"> • Online—The SFB is online and running. • Offline— SFB is powered down.

Table 49: show chassis environment sfb Output Fields (Continued)

Field Name	Field Description
Temperature	<p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the SFB.</p> <ul style="list-style-type: none"> • Intake—Measures the temperature of the air intake. • Exhaust—Measures the temperature of the hot air exhaust. • SFB-XF2—Measures the temperature of the hot air exhaust for the XF2 fabric plane. • SFB-XF1—Measures the temperature of the hot air exhaust for the XF1 fabric plane. • SFB-XF0—Measures the temperature of the hot air exhaust for the XF0 fabric plane.
Power	<p>Power required and measured on the SFB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p>

Sample Output

show chassis environment sfb (MX2020 Router)

```

user@host> show chassis environment sfb
SFB 0 status:
  State                Online
  Intake-Zone0 Temperature  51 degrees C / 123 degrees F
  Exhaust-Zone1 Temperature  44 degrees C / 111 degrees F
  IntakeA-Zone0 Temperature  46 degrees C / 114 degrees F
  IntakeB-Zone1 Temperature  37 degrees C / 98 degrees F
  Exhaust-Zone0 Temperature  48 degrees C / 118 degrees F
  SFB-XF2-Zone1 Temperature  58 degrees C / 136 degrees F
  SFB-XF1-Zone0 Temperature  65 degrees C / 149 degrees F
  SFB-XF0-Zone0 Temperature  64 degrees C / 147 degrees F
Power
  LTC3880-XF2-1.5v-RAIL      1500 mV

```

LTC3880-XF2-1.5v-CH0	1500 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1029 mV
LTC3880-XF2-1.0v-CH0	1029 mV
LTC3880-XF2-1.0v-CH1	1032 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

SFB 1 status:

State	Online
Intake-Zone0 Temperature	52 degrees C / 125 degrees F
Exhaust-Zone1 Temperature	44 degrees C / 111 degrees F
IntakeA-Zone0 Temperature	47 degrees C / 116 degrees F
IntakeB-Zone1 Temperature	37 degrees C / 98 degrees F
Exhaust-Zone0 Temperature	47 degrees C / 116 degrees F
SFB-XF2-Zone1 Temperature	59 degrees C / 138 degrees F
SFB-XF1-Zone0 Temperature	63 degrees C / 145 degrees F
SFB-XF0-Zone0 Temperature	65 degrees C / 149 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1500 mV
LTC3880-XF2-1.5v-CH0	1500 mV
LTC3880-XF2-1.5v-CH1	1501 mV
LTC3880-XF2-1.0v-RAIL	1030 mV
LTC3880-XF2-1.0v-CH0	1030 mV
LTC3880-XF2-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV

LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

SFB 2 status:

State	Online
Intake-Zone0 Temperature	52 degrees C / 125 degrees F
Exhaust-Zone1 Temperature	44 degrees C / 111 degrees F
IntakeA-Zone0 Temperature	47 degrees C / 116 degrees F
IntakeB-Zone1 Temperature	37 degrees C / 98 degrees F
Exhaust-Zone0 Temperature	49 degrees C / 120 degrees F
SFB-XF2-Zone1 Temperature	62 degrees C / 143 degrees F
SFB-XF1-Zone0 Temperature	66 degrees C / 150 degrees F
SFB-XF0-Zone0 Temperature	66 degrees C / 150 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1499 mV
LTC3880-XF2-1.5v-CH0	1499 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1030 mV
LTC3880-XF2-1.0v-CH0	1030 mV
LTC3880-XF2-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1500 mV
LTC3880-XF1-1.5v-CH0	1500 mV
LTC3880-XF1-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

SFB 3 status:

State	Online
-------	--------

```

Intake-Zone0 Temperature  53 degrees C / 127 degrees F
Exhaust-Zone1 Temperature 44 degrees C / 111 degrees F
IntakeA-Zone0 Temperature 48 degrees C / 118 degrees F
IntakeB-Zone1 Temperature 38 degrees C / 100 degrees F
Exhaust-Zone0 Temperature 49 degrees C / 120 degrees F
SFB-XF2-Zone1 Temperature 62 degrees C / 143 degrees F
SFB-XF1-Zone0 Temperature 65 degrees C / 149 degrees F
SFB-XF0-Zone0 Temperature 68 degrees C / 154 degrees F

```

Power

```

LTC3880-XF2-1.5v-RAIL    1500 mV
LTC3880-XF2-1.5v-CH0    1500 mV
LTC3880-XF2-1.5v-CH1    1500 mV
LTC3880-XF2-1.0v-RAIL    1029 mV
LTC3880-XF2-1.0v-CH0    1029 mV
LTC3880-XF2-1.0v-CH1    1033 mV
LTC3880-XF1-1.5v-RAIL    1500 mV
LTC3880-XF1-1.5v-CH0    1500 mV
LTC3880-XF1-1.5v-CH1    1501 mV
LTC3880-XF1-1.0v-RAIL    1030 mV
LTC3880-XF1-1.0v-CH0    1030 mV
LTC3880-XF1-1.0v-CH1    1033 mV
LTC3880-XF0-1.5v-RAIL    1499 mV
LTC3880-XF0-1.5v-CH0    1499 mV
LTC3880-XF0-1.5v-CH1    1501 mV
LTC3880-XF0-1.0v-RAIL    1030 mV
LTC3880-XF0-1.0v-CH0    1030 mV
LTC3880-XF0-1.0v-CH1    1034 mV
LTC3880-3.3v-RAIL        3300 mV
LTC3880-3.3v-CH0         3300 mV
LTC3880-3.3v-CH1         3300 mV

```

SFB 4 status:

```

State      Online
Intake-Zone0 Temperature  54 degrees C / 129 degrees F
Exhaust-Zone1 Temperature 46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature 49 degrees C / 120 degrees F
IntakeB-Zone1 Temperature 39 degrees C / 102 degrees F
Exhaust-Zone0 Temperature 50 degrees C / 122 degrees F
SFB-XF2-Zone1 Temperature 61 degrees C / 141 degrees F
SFB-XF1-Zone0 Temperature 64 degrees C / 147 degrees F
SFB-XF0-Zone0 Temperature 67 degrees C / 152 degrees F

```

Power

```

LTC3880-XF2-1.5v-RAIL    1500 mV
LTC3880-XF2-1.5v-CH0    1500 mV

```

LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1030 mV
LTC3880-XF2-1.0v-CH0	1030 mV
LTC3880-XF2-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1501 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1030 mV
LTC3880-XF0-1.0v-CH0	1030 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3299 mV
LTC3880-3.3v-CH0	3299 mV
LTC3880-3.3v-CH1	3299 mV

SFB 5 status:

State	Online
Intake-Zone0 Temperature	54 degrees C / 129 degrees F
Exhaust-Zone1 Temperature	46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature	49 degrees C / 120 degrees F
IntakeB-Zone1 Temperature	40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature	50 degrees C / 122 degrees F
SFB-XF2-Zone1 Temperature	63 degrees C / 145 degrees F
SFB-XF1-Zone0 Temperature	65 degrees C / 149 degrees F
SFB-XF0-Zone0 Temperature	70 degrees C / 158 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1500 mV
LTC3880-XF2-1.5v-CH0	1500 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1029 mV
LTC3880-XF2-1.0v-CH0	1029 mV
LTC3880-XF2-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	1030 mV
LTC3880-XF1-1.0v-CH0	1030 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV

LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3299 mV
LTC3880-3.3v-CH0	3299 mV
LTC3880-3.3v-CH1	3300 mV

SFB 6 status:

State	Online
Intake-Zone0 Temperature	54 degrees C / 129 degrees F
Exhaust-Zone1 Temperature	46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature	48 degrees C / 118 degrees F
IntakeB-Zone1 Temperature	40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature	49 degrees C / 120 degrees F
SFB-XF2-Zone1 Temperature	62 degrees C / 143 degrees F
SFB-XF1-Zone0 Temperature	64 degrees C / 147 degrees F
SFB-XF0-Zone0 Temperature	68 degrees C / 154 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1499 mV
LTC3880-XF2-1.5v-CH0	1499 mV
LTC3880-XF2-1.5v-CH1	1501 mV
LTC3880-XF2-1.0v-RAIL	1030 mV
LTC3880-XF2-1.0v-CH0	1030 mV
LTC3880-XF2-1.0v-CH1	1033 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1033 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1501 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1033 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3300 mV

SFB 7 status:

State	Online
Intake-Zone0 Temperature	53 degrees C / 127 degrees F

```

Exhaust-Zone1 Temperature 46 degrees C / 114 degrees F
IntakeA-Zone0 Temperature 49 degrees C / 120 degrees F
IntakeB-Zone1 Temperature 40 degrees C / 104 degrees F
Exhaust-Zone0 Temperature 50 degrees C / 122 degrees F
SFB-XF2-Zone1 Temperature 64 degrees C / 147 degrees F
SFB-XF1-Zone0 Temperature 66 degrees C / 150 degrees F
SFB-XF0-Zone0 Temperature 69 degrees C / 156 degrees F
Power

```

```

LTC3880-XF2-1.5v-RAIL      1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1501 mV
LTC3880-XF2-1.0v-RAIL     1029 mV
LTC3880-XF2-1.0v-CH0      1029 mV
LTC3880-XF2-1.0v-CH1      1033 mV
LTC3880-XF1-1.5v-RAIL     1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1501 mV
LTC3880-XF1-1.0v-RAIL     1030 mV
LTC3880-XF1-1.0v-CH0      1030 mV
LTC3880-XF1-1.0v-CH1      1033 mV
LTC3880-XF0-1.5v-RAIL     1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1501 mV
LTC3880-XF0-1.0v-RAIL     1030 mV
LTC3880-XF0-1.0v-CH0      1030 mV
LTC3880-XF0-1.0v-CH1      1033 mV
LTC3880-3.3v-RAIL         3300 mV
LTC3880-3.3v-CH0          3300 mV
LTC3880-3.3v-CH1          3300 mV

```

show chassis environment sfb (MX2010 Router)

```

user@host> show chassis environment sfb
SFB 0 status:
State                Online
Intake-Zone0 Temperature 31 degrees C / 87 degrees F
Exhaust-Zone1 Temperature 22 degrees C / 71 degrees F
IntakeA-Zone0 Temperature 21 degrees C / 69 degrees F
IntakeB-Zone1 Temperature 16 degrees C / 60 degrees F
Exhaust-Zone0 Temperature 23 degrees C / 73 degrees F
SFB-XF2-Zone1 Temperature 30 degrees C / 86 degrees F

```

SFB-XF1-Zone0 Temperature 28 degrees C / 82 degrees F
 SFB-XF0-Zone0 Temperature 38 degrees C / 100 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1500 mV
LTC3880-XF2-1.5v-CH0	1500 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	949 mV
LTC3880-XF2-1.0v-CH0	949 mV
LTC3880-XF2-1.0v-CH1	951 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	949 mV
LTC3880-XF1-1.0v-CH0	949 mV
LTC3880-XF1-1.0v-CH1	951 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1500 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1032 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

SFB 1 status:

State	Online
Intake-Zone0 Temperature	32 degrees C / 89 degrees F
Exhaust-Zone1 Temperature	20 degrees C / 68 degrees F
IntakeA-Zone0 Temperature	25 degrees C / 77 degrees F
IntakeB-Zone1 Temperature	15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature	24 degrees C / 75 degrees F
SFB-XF2-Zone1 Temperature	31 degrees C / 87 degrees F
SFB-XF1-Zone0 Temperature	31 degrees C / 87 degrees F
SFB-XF0-Zone0 Temperature	37 degrees C / 98 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1499 mV
LTC3880-XF2-1.5v-CH0	1499 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1029 mV
LTC3880-XF2-1.0v-CH0	1029 mV
LTC3880-XF2-1.0v-CH1	1031 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV

```

LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL    1029 mV
LTC3880-XF1-1.0v-CH0    1029 mV
LTC3880-XF1-1.0v-CH1    1031 mV
LTC3880-XF0-1.5v-RAIL    1500 mV
LTC3880-XF0-1.5v-CH0      1500 mV
LTC3880-XF0-1.5v-CH1    1500 mV
LTC3880-XF0-1.0v-RAIL    1029 mV
LTC3880-XF0-1.0v-CH0    1029 mV
LTC3880-XF0-1.0v-CH1    1032 mV
LTC3880-3.3v-RAIL        3299 mV
LTC3880-3.3v-CH0         3299 mV
LTC3880-3.3v-CH1         3299 mV
SFB 2 status:
State                      Online
Intake-Zone0 Temperature  26 degrees C / 78 degrees F
Exhaust-Zone1 Temperature 19 degrees C / 66 degrees F
IntakeA-Zone0 Temperature 23 degrees C / 73 degrees F
IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature 21 degrees C / 69 degrees F
SFB-XF2-Zone1 Temperature 29 degrees C / 84 degrees F
SFB-XF1-Zone0 Temperature 26 degrees C / 78 degrees F
SFB-XF0-Zone0 Temperature 31 degrees C / 87 degrees F
Power
LTC3880-XF2-1.5v-RAIL    1500 mV
LTC3880-XF2-1.5v-CH0    1500 mV
LTC3880-XF2-1.5v-CH1    1500 mV
LTC3880-XF2-1.0v-RAIL    1029 mV
LTC3880-XF2-1.0v-CH0    1029 mV
LTC3880-XF2-1.0v-CH1    1031 mV
LTC3880-XF1-1.5v-RAIL    1499 mV
LTC3880-XF1-1.5v-CH0    1499 mV
LTC3880-XF1-1.5v-CH1    1500 mV
LTC3880-XF1-1.0v-RAIL    1030 mV
LTC3880-XF1-1.0v-CH0    1030 mV
LTC3880-XF1-1.0v-CH1    1031 mV
LTC3880-XF0-1.5v-RAIL    1499 mV
LTC3880-XF0-1.5v-CH0    1499 mV
LTC3880-XF0-1.5v-CH1    1500 mV
LTC3880-XF0-1.0v-RAIL    1029 mV
LTC3880-XF0-1.0v-CH0    1029 mV
LTC3880-XF0-1.0v-CH1    1032 mV
LTC3880-3.3v-RAIL        3300 mV

```

```

LTC3880-3.3v-CH0      3300 mV
LTC3880-3.3v-CH1      3300 mV
SFB 3 status:
  State                Offline
  Reason               No power
SFB 4 status:
  State                Online
  Intake-Zone0 Temperature 33 degrees C / 91 degrees F
  Exhaust-Zone1 Temperature 21 degrees C / 69 degrees F
  IntakeA-Zone0 Temperature 24 degrees C / 75 degrees F
  IntakeB-Zone1 Temperature 17 degrees C / 62 degrees F
  Exhaust-Zone0 Temperature 24 degrees C / 75 degrees F
  SFB-XF2-Zone1 Temperature 32 degrees C / 89 degrees F
  SFB-XF1-Zone0 Temperature 32 degrees C / 89 degrees F
  SFB-XF0-Zone0 Temperature 37 degrees C / 98 degrees F
  Power
    LTC3880-XF2-1.5v-RAIL 1499 mV
    LTC3880-XF2-1.5v-CH0 1499 mV
LTC3880-XF2-1.5v-CH1 1500 mV
    LTC3880-XF2-1.0v-RAIL 949 mV
    LTC3880-XF2-1.0v-CH0 949 mV
    LTC3880-XF2-1.0v-CH1 952 mV
    LTC3880-XF1-1.5v-RAIL 1500 mV
    LTC3880-XF1-1.5v-CH0 1500 mV
    LTC3880-XF1-1.5v-CH1 1500 mV
    LTC3880-XF1-1.0v-RAIL 1029 mV
    LTC3880-XF1-1.0v-CH0 1029 mV
    LTC3880-XF1-1.0v-CH1 1031 mV
    LTC3880-XF0-1.5v-RAIL 1499 mV
    LTC3880-XF0-1.5v-CH0 1499 mV
    LTC3880-XF0-1.5v-CH1 1500 mV
    LTC3880-XF0-1.0v-RAIL 949 mV
    LTC3880-XF0-1.0v-CH0 949 mV
    LTC3880-XF0-1.0v-CH1 952 mV
    LTC3880-3.3v-RAIL 3299 mV
    LTC3880-3.3v-CH0 3299 mV
    LTC3880-3.3v-CH1 3299 mV
SFB 5 status:
  State                Online
  Intake-Zone0 Temperature 27 degrees C / 80 degrees F
  Exhaust-Zone1 Temperature 20 degrees C / 68 degrees F
  IntakeA-Zone0 Temperature 23 degrees C / 73 degrees F
  IntakeB-Zone1 Temperature 15 degrees C / 59 degrees F

```



```

Exhaust-Zone0 Temperature 22 degrees C / 71 degrees F
SFB-XF2-Zone1 Temperature 27 degrees C / 80 degrees F
SFB-XF1-Zone0 Temperature 34 degrees C / 93 degrees F
SFB-XF0-Zone0 Temperature 32 degrees C / 89 degrees F

```

Power

```

LTC3880-XF2-1.5v-RAIL      1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL      949 mV
LTC3880-XF2-1.0v-CH0      949 mV
LTC3880-XF2-1.0v-CH1      951 mV
LTC3880-XF1-1.5v-RAIL      1499 mV
LTC3880-XF1-1.5v-CH0      1499 mV
LTC3880-XF1-1.5v-CH1      1500 mV
LTC3880-XF1-1.0v-RAIL      949 mV
LTC3880-XF1-1.0v-CH0      949 mV
LTC3880-XF1-1.0v-CH1      951 mV
LTC3880-XF0-1.5v-RAIL      1499 mV
LTC3880-XF0-1.5v-CH0      1499 mV
LTC3880-XF0-1.5v-CH1      1500 mV
LTC3880-XF0-1.0v-RAIL      1029 mV
LTC3880-XF0-1.0v-CH0      1029 mV
LTC3880-XF0-1.0v-CH1      1032 mV
LTC3880-3.3v-RAIL          3299 mV
LTC3880-3.3v-CH0          3299 mV
LTC3880-3.3v-CH1          3299 mV

```

SFB 6 status:

```

State                        Online
Intake-Zone0 Temperature    32 degrees C / 89 degrees F
Exhaust-Zone1 Temperature   19 degrees C / 66 degrees F
IntakeA-Zone0 Temperature   24 degrees C / 75 degrees F
IntakeB-Zone1 Temperature   15 degrees C / 59 degrees F
Exhaust-Zone0 Temperature   25 degrees C / 77 degrees F
SFB-XF2-Zone1 Temperature   29 degrees C / 84 degrees F
SFB-XF1-Zone0 Temperature   37 degrees C / 98 degrees F
SFB-XF0-Zone0 Temperature   39 degrees C / 102 degrees F

```

Power

```

LTC3880-XF2-1.5v-RAIL      1500 mV
LTC3880-XF2-1.5v-CH0      1500 mV
LTC3880-XF2-1.5v-CH1      1500 mV
LTC3880-XF2-1.0v-RAIL      1029 mV
LTC3880-XF2-1.0v-CH0      1029 mV
LTC3880-XF2-1.0v-CH1      1031 mV

```

LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	949 mV
LTC3880-XF1-1.0v-CH0	949 mV
LTC3880-XF1-1.0v-CH1	951 mV
LTC3880-XF0-1.5v-RAIL	1499 mV
LTC3880-XF0-1.5v-CH0	1499 mV
LTC3880-XF0-1.5v-CH1	1500 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV
LTC3880-XF0-1.0v-CH1	1032 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

SFB 7 status:

State	Online
Intake-Zone0 Temperature	31 degrees C / 87 degrees F
Exhaust-Zone1 Temperature	18 degrees C / 64 degrees F
IntakeA-Zone0 Temperature	20 degrees C / 68 degrees F
IntakeB-Zone1 Temperature	13 degrees C / 55 degrees F
Exhaust-Zone0 Temperature	22 degrees C / 71 degrees F
SFB-XF2-Zone1 Temperature	27 degrees C / 80 degrees F
SFB-XF1-Zone0 Temperature	26 degrees C / 78 degrees F
SFB-XF0-Zone0 Temperature	39 degrees C / 102 degrees F

Power

LTC3880-XF2-1.5v-RAIL	1499 mV
LTC3880-XF2-1.5v-CH0	1499 mV
LTC3880-XF2-1.5v-CH1	1500 mV
LTC3880-XF2-1.0v-RAIL	1029 mV
LTC3880-XF2-1.0v-CH0	1029 mV
LTC3880-XF2-1.0v-CH1	1031 mV
LTC3880-XF1-1.5v-RAIL	1499 mV
LTC3880-XF1-1.5v-CH0	1499 mV
LTC3880-XF1-1.5v-CH1	1500 mV
LTC3880-XF1-1.0v-RAIL	1029 mV
LTC3880-XF1-1.0v-CH0	1029 mV
LTC3880-XF1-1.0v-CH1	1031 mV
LTC3880-XF0-1.5v-RAIL	1500 mV
LTC3880-XF0-1.5v-CH0	1500 mV
LTC3880-XF0-1.5v-CH1	1500 mV
LTC3880-XF0-1.0v-RAIL	1029 mV
LTC3880-XF0-1.0v-CH0	1029 mV

LTC3880-XF0-1.0v-CH1	1031 mV
LTC3880-3.3v-RAIL	3300 mV
LTC3880-3.3v-CH0	3300 mV
LTC3880-3.3v-CH1	3299 mV

show chassis environment sfb (MX2008 Router)

```

user@host> show chassis environment sfb

SFB 0 status:
  State                Online
  Inlet1 Temperature   26 degrees C / 78 degrees F
  Inlet2 Temperature   27 degrees C / 80 degrees F
  Exhaust1 Temperature 26 degrees C / 78 degrees F
  Exhaust2 Temperature 28 degrees C / 82 degrees F
  SFB2-PF-local Temperature 27 degrees C / 80 degrees F
  SFB2-PF-die Temperature 33 degrees C / 91 degrees F
  Power
    SFB2-PF0-1.0V-PLL      1008 mV
    SFB2-1.0V              988 mV
    SFB2-10.8V             10727 mV
    SFB2-1.5V              1491 mV
    SFB2-PF0-1.8V         1782 mV
    SFB2-2.5V              2475 mV
    SFB2-Bias-5V          5535 mV
    SFB2-3.3V-Main        3294 mV
    SFB2-1.8V             1798 mV
    MAX20751-PF0-0.9v     974 mV
    MAX20751-PF0-1.0v    1020 mV

SFB 1 status:
  State                Online
  Inlet1 Temperature   26 degrees C / 78 degrees F
  Inlet2 Temperature   29 degrees C / 84 degrees F
  Exhaust1 Temperature 26 degrees C / 78 degrees F
  Exhaust2 Temperature 29 degrees C / 84 degrees F
  SFB2-PF-local Temperature 29 degrees C / 84 degrees F
  SFB2-PF-die Temperature 41 degrees C / 105 degrees F
  Power
    SFB2-PF0-1.0V-PLL      1014 mV
    SFB2-1.0V              994 mV

```

```

SFB2-10.8V          10746 mV
SFB2-1.5V           1495 mV
SFB2-PF0-1.8V      1814 mV
SFB2-2.5V           2478 mV
SFB2-Bias-5V       5594 mV
SFB2-3.3V-Main     3306 mV
SFB2-1.8V           1774 mV
MAX20751-PF0-0.9v  974 mV
MAX20751-PF0-1.0v  1020 mV
SFB 2 status:
State               Online
Inlet1 Temperature  29 degrees C / 84 degrees F
Inlet2 Temperature  36 degrees C / 96 degrees F
Exhaust1 Temperature 27 degrees C / 80 degrees F
Exhaust2 Temperature 34 degrees C / 93 degrees F
SFB2-PF-local Temperature 38 degrees C / 100 degrees F
SFB2-PF-die Temperature 40 degrees C / 104 degrees F
Power
SFB2-PF0-1.0V-PLL   1010 mV
SFB2-1.0V           994 mV
SFB2-10.8V          10805 mV
SFB2-1.5V           1495 mV
SFB2-PF0-1.8V      1804 mV
SFB2-2.5V           2475 mV
SFB2-Bias-5V       5562 mV

SFB2-3.3V-Main     3302 mV
SFB2-1.8V           1788 mV
MAX20751-PF0-0.9v  974 mV
MAX20751-PF0-1.0v  1020

```

show chassis environment sfb (MX10008 Router)

```

user@host> show chassis environment sfb
SFB 0 status:
State               Online
Intake-A Temperature 33 degrees C / 91 degrees F
Intake-B Temperature 22 degrees C / 71 degrees F
Exhaust-A Temperature 27 degrees C / 80 degrees F
Exhaust-B Temperature 32 degrees C / 89 degrees F
PF0 Temperature      38 degrees C / 100 degrees F

```

```

PF1 Temperature                29 degrees C / 84 degrees F
Power
  PF0 Core 0.9V                 925 mV
  PF0 AVDD 1V                   999 mV
  PF1 Core 0.9V                 922 mV
  PF1 AVDD 1V                   1000 mV
  12V                            12311 mV
SFB 1 status:
  State                          Online
  Intake-A Temperature           43 degrees C / 109 degrees F
  Intake-B Temperature           21 degrees C / 69 degrees F
  Exhaust-A Temperature          25 degrees C / 77 degrees F
  Exhaust-B Temperature          43 degrees C / 109 degrees F
  PF0 Temperature                49 degrees C / 120 degrees F
  PF1 Temperature                29 degrees C / 84 degrees F
  Power
    PF0 Core 0.9V                951 mV
    PF0 AVDD 1V                  1000 mV
    PF1 Core 0.9V                924 mV
    PF1 AVDD 1V                  1000 mV
    12V                          12311 mV
SFB 2 status:
  State                          Online
  Intake-A Temperature           39 degrees C / 102 degrees F
  Intake-B Temperature           21 degrees C / 69 degrees F
  Exhaust-A Temperature          25 degrees C / 77 degrees F
  Exhaust-B Temperature          38 degrees C / 100 degrees F
  PF0 Temperature                44 degrees C / 111 degrees F
  PF1 Temperature                30 degrees C / 86 degrees F
  Power
    PF0 Core 0.9V                923 mV
    PF0 AVDD 1V                  1000 mV
    PF1 Core 0.9V                925 mV
    PF1 AVDD 1V                  999 mV
    12V                          12364 mV
SFB 3 status:
  State                          Online
  Intake-A Temperature           37 degrees C / 98 degrees F
  Intake-B Temperature           21 degrees C / 69 degrees F
  Exhaust-A Temperature          26 degrees C / 78 degrees F
  Exhaust-B Temperature          34 degrees C / 93 degrees F
  PF0 Temperature                41 degrees C / 105 degrees F
  PF1 Temperature                29 degrees C / 84 degrees F

```

Power

PF0 Core 0.9V	925 mV
PF0 AVDD 1V	1000 mV
PF1 Core 0.9V	923 mV
PF1 AVDD 1V	1000 mV
12V	12285 mV

SFB 4 status:

State	Online
Intake-A Temperature	30 degrees C / 86 degrees F
Intake-B Temperature	20 degrees C / 68 degrees F
Exhaust-A Temperature	25 degrees C / 77 degrees F
Exhaust-B Temperature	31 degrees C / 87 degrees F
PF0 Temperature	40 degrees C / 104 degrees F
PF1 Temperature	29 degrees C / 84 degrees F

Power

PF0 Core 0.9V	951 mV
PF0 AVDD 1V	1000 mV
PF1 Core 0.9V	948 mV
PF1 AVDD 1V	999 mV
12V	12193 mV

SFB 5 status:

State	Online
Intake-A Temperature	30 degrees C / 86 degrees F
Intake-B Temperature	21 degrees C / 69 degrees F
Exhaust-A Temperature	26 degrees C / 78 degrees F
Exhaust-B Temperature	30 degrees C / 86 degrees F
PF0 Temperature	34 degrees C / 93 degrees F
PF1 Temperature	33 degrees C / 91 degrees F

Power

PF0 Core 0.9V	951 mV
PF0 AVDD 1V	1000 mV
PF1 Core 0.9V	948 mV
PF1 AVDD 1V	999 mV
12V	12166 mV

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, **local**, and **member** *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

Command introduced in Junos OS Release 18.2 for MX10008 Universal Routing Platforms.

RELATED DOCUMENTATION

[request chassis sfb | 454](#)

[show chassis sfb | 1560](#)

show chassis environment sfm

IN THIS SECTION

- [Syntax | 935](#)
- [Description | 936](#)
- [Options | 936](#)
- [Required Privilege Level | 936](#)
- [Output Fields | 936](#)
- [Sample Output | 937](#)
- [Release Information | 940](#)

Syntax

```
show chassis environment sfm  
<slot>
```

Description

(M40e and M160 routers only) Display Switching and Forwarding Module (SFM) environmental information.

Options

none Display environmental information about all SFMs.

slot (Optional) Display environmental information about an individual SFM. Replace *slot* with a value from **0** through **3**.

Required Privilege Level

view

Output Fields

[Table 50 on page 936](#) lists the output fields for the **show chassis environment sfm** command. Output fields are listed in the approximate order in which they appear.

Table 50: show chassis environment sfm Output Fields

Field Name	Field Description
SFM <i>slot</i> status	SFM slot number: 0 or 1 on an M40e router, or 0 , 1 , 2 , or 3 on an M160 router.

Table 50: show chassis environment sfm Output Fields (Continued)

Field Name	Field Description
State	<p>Status of the SFM:</p> <ul style="list-style-type: none"> • Online—SFM is online and running. • Offline—SFM is powered down. <p>If two SFMs are installed and online, one is functioning as the primary, and the other is marked as the Standby.</p>
SPP Temperature	Temperature of the air flowing past the Switch Plane Processor card.
SPR Temperature	Temperature of the air flowing past the Switch Plane Router card.
SPP Power	Information about the voltage supplied to the Switch Plane Processor card. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
SPR Power	Information about the voltage supplied to the Switch Plane Router. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.
CMB Revision	Revision level of the Chassis Management Bus (CMB) device.

Sample Output

show chassis environment sfm (M40e Router)

```

user@host> show chassis environment sfm
SFM 0 status:
  State                Online
  SPP temperature      40 degrees C / 104 degrees F
  SPR temperature      44 degrees C / 111 degrees F

```

```

SPP Power:
  1.5 V          1501 mV
  2.5 V          2472 mV
  3.3 V          3293 mV
  5.0 V          5028 mV
  5.0 V bias     4964 mV
SPR Power:
  1.5 V          1501 mV
  2.5 V          2483 mV
  3.3 V          3308 mV
  5.0 V          5035 mV
  5.0 V bias     4981 mV
  8.0 V bias     8239 mV
CMB Revision    12
SFM 1 status:
State           Online - Standby
SPP temperature 43 degrees C / 109 degrees F
SPR temperature 45 degrees C / 113 degrees F
SPP Power:
  1.5 V          1503 mV
  2.5 V          2483 mV
  3.3 V          3284 mV
  5.0 V          5045 mV
  5.0 V bias     4993 mV
SPR Power:
  1.5 V          1498 mV
  2.5 V          2472 mV
  3.3 V          3284 mV
  5.0 V          5035 mV
  5.0 V bias     4991 mV
  8.0 V bias     8231 mV
CMB Revision    12

```

show chassis environment sfm (M160 Router)

```

user@host> show chassis environment sfm
SFM 0 status:
State           Online
SPP temperature 43 degrees C / 109 degrees F
SPR temperature 44 degrees C / 111 degrees F
SPP Power:

```

```

1.5 V          1504 mV
2.5 V          2474 mV
3.3 V          3290 mV
5.0 V          5015 mV
5.0 V bias     4962 mV
SPR Power:
1.5 V          1498 mV
2.5 V          2482 mV
3.3 V          3299 mV
5.0 V          5020 mV
5.0 V bias     4971 mV
8.0 V bias     8229 mV
CMB Revision   12
SFM 1 status:
State          Online
SPP temperature 47 degrees C / 116 degrees F
SPR temperature 50 degrees C / 122 degrees F
SPP Power:
1.5 V          1499 mV
2.5 V          2466 mV
3.3 V          3274 mV
5.0 V          5025 mV
5.0 V bias     4984 mV
SPR Power:
1.5 V          1496 mV
2.5 V          2470 mV
3.3 V          3279 mV
5.0 V          5020 mV
5.0 V bias     4993 mV
8.0 V bias     8222 mV
CMB Revision   12
SFM 2 status:
State          Online
SPP temperature 50 degrees C / 122 degrees F
SPR temperature 52 degrees C / 125 degrees F
SPP Power:
1.5 V          1504 mV
2.5 V          2471 mV
3.3 V          3294 mV
5.0 V          5045 mV
5.0 V bias     4981 mV
SPR Power:
1.5 V          1496 mV

```

```

2.5 V          2470 mV
3.3 V          3293 mV
5.0 V          5028 mV
5.0 V bias    4971 mV
8.0 V bias    8214 mV
CMB Revision   12
SFM 3 status:
State          Online
SPP temperature 49 degrees C / 120 degrees F
SPR temperature 48 degrees C / 118 degrees F
SPP Power:
1.5 V          1505 mV
2.5 V          2484 mV
3.3 V          3296 mV
5.0 V          5040 mV
5.0 V bias    4984 mV
SPR Power:
1.5 V          1503 mV
2.5 V          2488 mV
3.3 V          3302 mV
5.0 V          5037 mV
5.0 V bias    4993 mV
8.0 V bias    8249 mV
CMB Revision   12

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis sfm | 456](#)

request chassis sfm master switch

Configuring SFM Redundancy on M40e and M160 Routers

Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration

show chassis environment sib

IN THIS SECTION

- [Syntax | 941](#)
- [Syntax \(TX Matrix router\) | 941](#)
- [Syntax \(TX Matrix Plus Router\) | 942](#)
- [Description | 942](#)
- [Options | 942](#)
- [Required Privilege Level | 943](#)
- [Output Fields | 943](#)
- [Sample Output | 945](#)
- [Release Information | 987](#)

Syntax

```
show chassis environment sib  
<slot>
```

Syntax (TX Matrix router)

```
show chassis environment sib  
<lcc number | scc | slot>
```

Syntax (TX Matrix Plus Router)

```
show chassis environment sib
<sib-slot | lcc number | sfc number | f13 sib-slot | f2s sib-slot/sib-f2s-slot-
number>
```

Description

Display Switch Interface Board (SIB) environmental information.

Options

- none** Display environmental information about all SIBs. On a TX Matrix router, display environmental information about all SIBs on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display environmental information about all SIBs on the TX Matrix Plus router and its attached routers .
- f13 sib-slot** (TX Matrix Plus routers only) (Optional) Display SIB F13 environmental information only. Replace *sib-slot* with one of the following values: **0, 1, 3, 4, 6, 7, 8, 9, 11, or 12**. (Slots 2, 5, 10, 13, 14, and 15 are unused).
- f2s sib-slot/sib-f2s-slot-number** (TX Matrix Plus routers only) (Optional) Display SIB F2s environmental information only. Replace *sib-slot* with a value from **0** through **4**, followed by a *sib-f2s-slot-number* value of **0, 2, 4** or **6**.
- lcc number** (TX Matrix router, and TX Matrix Plus router only) (Optional) Line-card chassis number.
- Replace *number* with the following values depending on the LCC configuration:
- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
 - 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
 - 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

scc (TX Matrix routers only) (Optional) Display environmental information about the SIB in the TX Matrix router (switch-card chassis).

sfc (TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, display environmental information about the SIB in the TX Matrix Plus router (switch-fabric chassis).

sib-slot (Optional) Display environmental information about the specified SIB. For the M320 router, replace ***sib-slot*** with a value from **0** through **3**. For the T640, T1600, T4000, and TX Matrix routers, replace ***sib-slot*** with a value from **0** through **4**. For the TX Matrix Plus router, see f13 ***sib-slot*** and f2s ***sib-slot/sib-f2s-slot-number***. For the T320 router, replace ***sib-slot*** with a value from **0** through **2**. For the PTX5000 Packet Transport Router, replace ***sib-slot*** with a value from **0** through **8**.

Required Privilege Level

view

Output Fields

[Table 51 on page 944](#) lists the output fields for the **show chassis environment sib** command. Output fields are listed in the approximate order in which they appear.

Table 51: show chassis environment sib Output Fields

Field Name	Field Description
SIB slot status	<p>SIB slot number:</p> <ul style="list-style-type: none"> • 0 through 3 on an M320 router. • 0 or 2 on a T320 router. • 0 through 4 on a T640, T1600, T4000, or TX Matrix router. • 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12 for F13 SIBs on a TX Matrix Plus router. (Slots 2, 5, 10, 13, 14, and 15 are unused). • 0 through 4, followed by 0, 2, 4, or 6 for F2S SIBs on a TX Matrix Plus router. For example, SIB F2S 0/4. • 0 through 8 on a PTX5000 Packet Transport Router.
State	<p>Status of the SIB:</p> <ul style="list-style-type: none"> • Online—SIB is online and running. • Offline—SIB is powered down. • Spare (T640, T1600, T4000, and TX Matrix routers only)—SIB is redundant and will move to active state if one of the working SIBs fails. <p>Only four of the SIBs are active at any time. The fifth one is marked Spare. It is activated if there is a fault on one of the active SIBs.</p> <p>Online standby (TX Matrix Plus router only).</p>
Temperature	<p>Temperature of the air flowing past the SIB.</p> <p>On PTX Series Packet Transport Routers, separate temperatures are displayed for Intake, Exhaust, and Junction.</p>
Power	<p>Information about the voltage supplied to the SIB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p>

Sample Output

show chassis environment sib (M320 Router)

```
user@host> show chassis environment sib
SIB 0 status:
  State                Online
  Temperature          34 degrees C / 93 degrees F
  Power:
    GROUND              0 mV
    1.8 V               1805 mV
    2.5 V               2498 mV
    3.3 V               3306 mV
    1.8 V bias         1789 mV
    3.3 V bias         3299 mV
    5.0 V bias         5003 mV
    8.0 V bias         7374 mV
SIB 1 status:
  State                Online
  Temperature          35 degrees C / 95 degrees F
  Power:
    GROUND              0 mV
    1.8 V               1814 mV
    2.5 V               2477 mV
    3.3 V               3319 mV
    1.8 V bias         1792 mV
    3.3 V bias         3291 mV
    5.0 V bias         4981 mV
    8.0 V bias         7335 mV
SIB 2 status:
  State                Online
  Temperature          33 degrees C / 91 degrees F
  Power:
    GROUND              0 mV
    1.8 V               1811 mV
    2.5 V               2489 mV
    3.3 V               3330 mV
    1.8 V bias         1797 mV
    3.3 V bias         3304 mV
    5.0 V bias         5025 mV
    8.0 V bias         7330 mV
```

```
SIB 3 status:
State                Online
Temperature          37 degrees C / 98 degrees F
Power:
  GROUND              0 mV
  1.8 V               1798 mV
  2.5 V               2481 mV
  3.3 V               3328 mV
  1.8 V bias          1792 mV
  3.3 V bias          3313 mV
  5.0 V bias          5013 mV
  8.0 V bias          7467 mV
```

show chassis environment sib 1 (T640 Router)

```
user@host> show chassis environment sib 1
SIB 1 status:
State                Online
Temperature          39 degrees C / 102 degrees F
Power:
  GROUND              0 mV
  1.8 V               1809 mV
  2.5 V               2478 mV
  3.3 V               3308 mV
  1.8 V bias          1794 mV
  3.3 V bias          3274 mV
  5.0 V bias          4996 mV
  8.0 V bias          7247 mV
```

show chassis environment sib 1 (T4000 Router)

```
user@host> show chassis environment sib 1
SIB 1 status:
State                Online
Temperature          42 degrees C / 107 degrees F
Power
  8.0 V bias          8100 mV
  3.3 V bias          3284 mV
  0.9 V bias          904 mV
  1.1 V bias          1090 mV
```

1.5 V bias	1488 mV
2.5 V bias	2504 mV
9.0 V	8940 mV
3.3 V	3288 mV
XF0 1.0 V	998 mV
XF0 1.0 V LDO	994 mV
PCIe SW 1.0 V	990 mV
XF0 1.8 V	1788 mV
XF1 1.0 V	1002 mV
XF2 1.0 V	1002 mV
XF3 1.0 V	998 mV
1.2 V	1194 mV
XF1 1.0 V LDO	1000 mV
XF2 1.0 V LDO	998 mV
XF3 1.0 V LDO	998 mV
XF1 1.8 V	1798 mV
XF2 1.8 V	1800 mV
XF3 1.8 V	1794 mV
1.5 V	1488 mV
SW 3.3 V	3320 mV

show chassis environment sib scc (TX Matrix Router)

```

user@host> show chassis environment sib scc
scc-re0:
-----
SIB 3 status:
  State                Offline
  Reason                Offlined by button press
  Temperature           0 degrees C / 32 degrees F
  Power:
    GROUND              0 mV
    1.8 V               0 mV
    2.5 V               0 mV
    3.3 V               0 mV
    1.8 V bias         0 mV
    3.3 V bias         0 mV
    5.0 V bias         0 mV
    8.0 V bias         0 mV
SIB 4 status:
  State                Online

```

```

Temperature          42 degrees C / 107 degrees F
Temperature (B)      41 degrees C / 105 degrees F
Power:
  GROUND              0 mV
  1.8 V               1787 mV
  2.5 V               2488 mV
  3.3 V               3294 mV
  1.8 V bias         1787 mV
  3.3 V bias         3306 mV
  5.0 V bias         5010 mV
  8.0 V bias         7418 mV
Power (B):
  GROUND              0 mV
  1.8 V               1785 mV
  2.5 V               2485 mV
  3.3 V               3289 mV
  1.8 V bias         1799 mV
  3.3 V bias         3284 mV
  5.0 V bias         4979 mV
  8.0 V bias         7882 mV

```

show chassis environment sib (TX Matrix Plus Router)

```

user@host> show chassis environment sib
sfc0-re0:
-----
SIB F13 0 status:
  State          Online - Standby
  Temperature    54 degrees C / 129 degrees F
  Temperature (B) 50 degrees C / 122 degrees F
  Power
    1.2 V_0      1205 mV
    1.2 V_1      1202 mV
    1.2 V_2      1205 mV
    1.2 V_3      1208 mV
    1.5 V_0      1501 mV
    1.5 V_1      1508 mV
    1.8 V        1798 mV
    2.5 V        2510 mV
    3.3 V        3312 mV
    9.0 V        8991 mV

```

```

    9.0 V bias                0 mV
Power (B)
    2.5 V                    2510 mV
    3.3 V                    3318 mV
    9.0 V                    9024 mV
SIB F13 1 status:
State                        Online - Standby
Temperature                  45 degrees C / 113 degrees F
Temperature (B)              42 degrees C / 107 degrees F
Power
    1.2 V_0                  1202 mV
    1.2 V_1                  1198 mV
    1.2 V_2                  1202 mV
    1.2 V_3                  1202 mV
    1.5 V_0                  1498 mV
    1.5 V_1                  1501 mV
    1.8 V                    1811 mV
    2.5 V                    2504 mV
    3.3 V                    3292 mV
    9.0 V                    8991 mV
    9.0 V bias                0 mV
Power (B)
    2.5 V                    2507 mV
    3.3 V                    3306 mV
    9.0 V                    8970 mV
SIB F13 3 status:
State                        Online
Temperature                  48 degrees C / 118 degrees F
Temperature (B)              44 degrees C / 111 degrees F
Power
    1.2 V_0                  1205 mV
    1.2 V_1                  1202 mV
    1.2 V_2                  1202 mV
    1.2 V_3                  1202 mV
    1.5 V_0                  1508 mV
    1.5 V_1                  1504 mV
    1.8 V                    1798 mV
    2.5 V                    2520 mV
    3.3 V                    3300 mV
    9.0 V                    9009 mV
    9.0 V bias                0 mV
Power (B)
    2.5 V                    2504 mV

```

```

3.3 V          3312 mV
9.0 V          9006 mV
SIB F13 4 status:
  State        Online
  Temperature  44 degrees C / 111 degrees F
  Temperature (B) 40 degrees C / 104 degrees F
Power
  1.2 V_0     1205 mV
  1.2 V_1     1205 mV
  1.2 V_2     1202 mV
  1.2 V_3     1205 mV
  1.5 V_0     1508 mV
  1.5 V_1     1508 mV
  1.8 V       1811 mV
  2.5 V       2510 mV
  3.3 V       3312 mV
  9.0 V       8970 mV
  9.0 V bias      0 mV
Power (B)
  2.5 V       2513 mV
  3.3 V       3318 mV
  9.0 V       9048 mV
SIB F13 6 status:
  State        Online
  Temperature  50 degrees C / 122 degrees F
  Temperature (B) 46 degrees C / 114 degrees F
Power
  1.2 V_0     1195 mV
  1.2 V_1     1205 mV
  1.2 V_2     1202 mV
  1.2 V_3     1202 mV
  1.5 V_0     1495 mV
  1.5 V_1     1495 mV
  1.8 V       1801 mV
  2.5 V       2494 mV
  3.3 V       3300 mV
  9.0 V       8991 mV
  9.0 V bias      0 mV
Power (B)
  2.5 V       2500 mV
  3.3 V       3300 mV
  9.0 V       9006 mV
SIB F13 7 status:

```

```

State                               Online
Temperature                          52 degrees C / 125 degrees F
Temperature (B)                       49 degrees C / 120 degrees F
Power
  1.2 V_0                             1202 mV
  1.2 V_1                             1202 mV
  1.2 V_2                             1198 mV
  1.2 V_3                             1185 mV
  1.5 V_0                             1501 mV
  1.5 V_1                             1492 mV
  1.8 V                                1795 mV
  2.5 V                                2491 mV
  3.3 V                                3286 mV
  9.0 V                                8892 mV
  9.0 V bias                           0 mV
Power (B)
  2.5 V                                2507 mV
  3.3 V                                3306 mV
  9.0 V                                8952 mV
SIB F13 8 status:
State                               Online
Temperature                          55 degrees C / 131 degrees F
Temperature (B)                       50 degrees C / 122 degrees F
Power
  1.2 V_0                             1208 mV
  1.2 V_1                             1205 mV
  1.2 V_2                             1205 mV
  1.2 V_3                             1211 mV
  1.5 V_0                             1514 mV
  1.5 V_1                             1508 mV
  1.8 V                                1807 mV
  2.5 V                                2516 mV
  3.3 V                                3324 mV
  9.0 V                                9027 mV
  9.0 V bias                           0 mV
Power (B)
  2.5 V                                2520 mV
  3.3 V                                3318 mV
  9.0 V                                9066 mV
SIB F13 9 status:
State                               Online
Temperature                          46 degrees C / 114 degrees F
Temperature (B)                       41 degrees C / 105 degrees F

```

Power

1.2 V_0	1208 mV
1.2 V_1	1202 mV
1.2 V_2	1208 mV
1.2 V_3	1202 mV
1.5 V_0	1504 mV
1.5 V_1	1504 mV
1.8 V	1817 mV
2.5 V	2516 mV
3.3 V	3312 mV
9.0 V	9009 mV
9.0 V bias	0 mV

Power (B)

2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	9024 mV

SIB F13 11 status:

State	Online
Temperature	47 degrees C / 116 degrees F
Temperature (B)	42 degrees C / 107 degrees F

Power

1.2 V_0	1202 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1202 mV
1.5 V_0	1501 mV
1.5 V_1	1501 mV
1.8 V	1801 mV
2.5 V	2510 mV
3.3 V	3312 mV
9.0 V	8979 mV
9.0 V bias	0 mV

Power (B)

2.5 V	2252 mV
3.3 V	5014 mV
9.0 V	9954 mV

SIB F13 12 status:

State	Online
Temperature	45 degrees C / 113 degrees F
Temperature (B)	40 degrees C / 104 degrees F

Power

1.2 V_0	1211 mV
1.2 V_1	1208 mV


```

1.2 V_2                1205 mV
1.2 V_3                1205 mV
1.5 V_0                1511 mV
1.5 V_1                1501 mV
1.8 V                  1817 mV
2.5 V                  2504 mV
3.3 V                  3318 mV
9.0 V                  9027 mV
9.0 V bias              0 mV
Power (B)
  2.5 V                2520 mV
  3.3 V                3338 mV
  9.0 V                9006 mV
SIB F2S 0/0 status:
  State                Online - Standby
  Temperature          40 degrees C / 104 degrees F
  Power
    1.2 V_1            0 mV
    1.2 V_ASF          1198 mV
    1.2 V_ASF_B        1198 mV
    1.2 V_ASF_D        1202 mV
    1.5 V              1498 mV
    1.8 V              1814 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3286 mV
    9.0 V              8250 mV
SIB F2S 0/2 status:
  State                Online - Standby
  Temperature          40 degrees C / 104 degrees F
  Power
    1.2 V_1            0 mV
    1.2 V_ASF          1198 mV
    1.2 V_ASF_B        1195 mV
    1.2 V_ASF_D        1202 mV
    1.5 V              1498 mV
    1.8 V              1807 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3286 mV
    9.0 V              8250 mV
SIB F2S 0/4 status:
  State                Online - Standby

```

Temperature 40 degrees C / 104 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1202 mV
1.5 V	1504 mV
1.8 V	1817 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV

SIB F2S 0/6 status:

State Online - Standby

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1202 mV
1.5 V	1495 mV
1.8 V	1814 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV

SIB F2S 1/0 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1192 mV
1.2 V_ASF_D	1195 mV
1.5 V	1488 mV
1.8 V	1798 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV

SIB F2S 1/2 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1205 mV
1.2 V_ASF_B	1202 mV
1.2 V_ASF_D	1205 mV
1.5 V	1501 mV
1.8 V	1820 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV

SIB F2S 1/4 status:

State	Online
Temperature	39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1198 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1195 mV
1.5 V	1498 mV
1.8 V	1811 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3300 mV
9.0 V	8250 mV

SIB F2S 1/6 status:

State	Online
Temperature	39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1198 mV
1.5 V	1498 mV
1.8 V	1807 mV
3.3 V	3306 mV
3.3 V bias	3300 mV
3.3 V ASF	3292 mV
9.0 V	8250 mV

SIB F2S 2/0 status:

State	Online
Temperature	39 degrees C / 102 degrees F

Power

```

1.2 V_1                0 mV
1.2 V_ASF              1195 mV
1.2 V_ASF_B            1195 mV
1.2 V_ASF_D            1198 mV
1.5 V                  1498 mV
1.8 V                  1804 mV
3.3 V                  3300 mV
3.3 V bias             3300 mV
3.3 V ASF              3286 mV
9.0 V                  8250 mV

SIB F2S 2/2 status:
State                  Online
Temperature             38 degrees C / 100 degrees F
Power
1.2 V_1                0 mV
1.2 V_ASF              1195 mV
1.2 V_ASF_B            1195 mV
1.2 V_ASF_D            1198 mV
1.5 V                  1495 mV
1.8 V                  1807 mV
3.3 V                  3300 mV
3.3 V bias             3300 mV
3.3 V ASF              3300 mV
9.0 V                  8250 mV

SIB F2S 2/4 status:
State                  Online
Temperature             38 degrees C / 100 degrees F
Power
1.2 V_1                0 mV
1.2 V_ASF              1198 mV
1.2 V_ASF_B            1195 mV
1.2 V_ASF_D            1198 mV
1.5 V                  1501 mV
1.8 V                  1804 mV
3.3 V                  3286 mV
3.3 V bias             3292 mV
3.3 V ASF              3300 mV
9.0 V                  8230 mV

SIB F2S 2/6 status:
State                  Online
Temperature             38 degrees C / 100 degrees F
Power
1.2 V_1                0 mV

```

1.2 V_ASF	1202 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1202 mV
1.5 V	1501 mV
1.8 V	1817 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3318 mV
9.0 V	8250 mV

SIB F2S 3/0 status:

State	Online
Temperature	38 degrees C / 100 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1198 mV
1.5 V	1501 mV
1.8 V	1814 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3274 mV
9.0 V	8250 mV

SIB F2S 3/2 status:

State	Online
Temperature	37 degrees C / 98 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1195 mV
1.5 V	1495 mV
1.8 V	1804 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3286 mV
9.0 V	8250 mV

SIB F2S 3/4 status:

State	Online
Temperature	37 degrees C / 98 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1205 mV

1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1202 mV
1.5 V	1501 mV
1.8 V	1811 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3318 mV
9.0 V	8250 mV

SIB F2S 3/6 status:

State	Online
Temperature	37 degrees C / 98 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1205 mV
1.2 V_ASF_B	1202 mV
1.2 V_ASF_D	1202 mV
1.5 V	1511 mV
1.8 V	1820 mV
3.3 V	3306 mV
3.3 V bias	3306 mV
3.3 V ASF	3318 mV
9.0 V	8265 mV

SIB F2S 4/0 status:

State	Online
Temperature	36 degrees C / 96 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1198 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1198 mV
1.5 V	1501 mV
1.8 V	1814 mV
3.3 V	3292 mV
3.3 V bias	3292 mV
3.3 V ASF	3312 mV
9.0 V	8230 mV

SIB F2S 4/2 status:

State	Online
Temperature	37 degrees C / 98 degrees F
Power	
1.2 V_1	0 mV
1.2 V_ASF	1198 mV
1.2 V_ASF_B	1192 mV

```

1.2 V_ASF_D          1195 mV
1.5 V                1495 mV
1.8 V                1807 mV
3.3 V                3300 mV
3.3 V bias          3300 mV
3.3 V ASF           3300 mV
9.0 V               8250 mV

SIB F2S 4/4 status:
State                Online
Temperature          36 degrees C / 96 degrees F
Power
  1.2 V_1            0 mV
  1.2 V_ASF          1202 mV
  1.2 V_ASF_B        1195 mV
  1.2 V_ASF_D        1202 mV
  1.5 V              1501 mV
  1.8 V              1814 mV
  3.3 V              3300 mV
  3.3 V bias         3300 mV
  3.3 V ASF          3312 mV
  9.0 V              8250 mV

SIB F2S 4/6 status:
State                Online
Temperature          36 degrees C / 96 degrees F
Power
  1.2 V_1            0 mV
  1.2 V_ASF          1198 mV
  1.2 V_ASF_B        1195 mV
  1.2 V_ASF_D        1198 mV
  1.5 V              1498 mV
  1.8 V              1820 mV
  3.3 V              3292 mV
  3.3 V bias         3292 mV
  3.3 V ASF          3286 mV
  9.0 V              8230 mV

lcc0-re0:
-----

SIB 0 status:
State                Online - Standby
Temperature          49 degrees C / 120 degrees F
Temperature (B)     42 degrees C / 107 degrees F
Power

```

```

1.2 V          1204 mV
1.5 V          1484 mV
2.5 V          2500 mV
3.3 V          3312 mV
3.3 V bias     3312 mV
5.0 V bias     4956 mV
8.0 V bias     7740 mV
9.0 V          8880 mV
Power (B)
1.2 V          1206 mV
2.5 V          2500 mV
3.3 V          3316 mV
9.0 V          8988 mV
SIB 1 status:
State          Online
Temperature     49 degrees C / 120 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
1.2 V          1202 mV
1.5 V          1482 mV
2.5 V          2500 mV
3.3 V          3296 mV
3.3 V bias     3288 mV
5.0 V bias     4986 mV
8.0 V bias     7800 mV
9.0 V          8868 mV
Power (B)
1.2 V          1206 mV
2.5 V          2512 mV
3.3 V          3312 mV
9.0 V          8952 mV
SIB 2 status:
State          Online
Temperature     49 degrees C / 120 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
1.2 V          1202 mV
1.5 V          1480 mV
2.5 V          2476 mV
3.3 V          3292 mV
3.3 V bias     3308 mV
5.0 V bias     5010 mV
8.0 V bias     7800 mV

```



```
9.0 V          8880 mV
Power (B)
1.2 V          1204 mV
2.5 V          2516 mV
3.3 V          3308 mV
9.0 V          8988 mV
SIB 3 status:
State          Online
Temperature    48 degrees C / 118 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
1.2 V          1204 mV
1.5 V          1480 mV
2.5 V          2500 mV
3.3 V          3292 mV
3.3 V bias     3292 mV
5.0 V bias     4986 mV
8.0 V bias     7812 mV
9.0 V          8892 mV
Power (B)
1.2 V          1198 mV
2.5 V          2512 mV
3.3 V          3308 mV
9.0 V          8892 mV
SIB 4 status:
State          Online
Temperature    48 degrees C / 118 degrees F
Temperature (B) 42 degrees C / 107 degrees F
Power
1.2 V          1206 mV
1.5 V          1482 mV
2.5 V          2484 mV
3.3 V          3324 mV
3.3 V bias     3340 mV
5.0 V bias     4980 mV
8.0 V bias     7764 mV
9.0 V          8784 mV
Power (B)
1.2 V          1202 mV
2.5 V          2504 mV
3.3 V          3308 mV
9.0 V          8820 mV
lcc1-re0:
```

```

-----
SIB 0 status:
  State                Online - Standby
  Temperature          49 degrees C / 120 degrees F
  Temperature (B)     43 degrees C / 109 degrees F
  Power
    1.2 V              1206 mV
    1.5 V              1506 mV
    2.5 V              2496 mV
    3.3 V              3308 mV
    3.3 V bias         3296 mV
    5.0 V bias         4974 mV
    8.0 V bias         7884 mV
    9.0 V              8820 mV
  Power (B)
    1.2 V              1200 mV
    2.5 V              2508 mV
    3.3 V              3292 mV
    9.0 V              8892 mV
  ...

```

show chassis environment sib sfc (TX Matrix Plus Router)

```

user@host> show chassis environment sib sfc
sfc0-re0:
-----
SIB F13 0 status:
  State                Online - Standby
  Temperature          54 degrees C / 129 degrees F
  Temperature (B)     50 degrees C / 122 degrees F
  Power
    1.2 V_0            1205 mV
    1.2 V_1            1205 mV
    1.2 V_2            1208 mV
    1.2 V_3            1208 mV
    1.5 V_0            1501 mV
    1.5 V_1            1508 mV
    1.8 V              1804 mV
    2.5 V              2504 mV
    3.3 V              3312 mV
    9.0 V              8991 mV

```

```

    9.0 V bias                0 mV
Power (B)
    2.5 V                    2516 mV
    3.3 V                    3318 mV
    9.0 V                    9048 mV
SIB F13 1 status:
State                        Online - Standby
Temperature                  45 degrees C / 113 degrees F
Temperature (B)              42 degrees C / 107 degrees F
Power
    1.2 V_0                  1202 mV
    1.2 V_1                  1205 mV
    1.2 V_2                  1198 mV
    1.2 V_3                  1205 mV
    1.5 V_0                  1498 mV
    1.5 V_1                  1495 mV
    1.8 V                    1801 mV
    2.5 V                    2507 mV
    3.3 V                    3306 mV
    9.0 V                    8970 mV
    9.0 V bias                0 mV
Power (B)
    2.5 V                    2507 mV
    3.3 V                    3306 mV
    9.0 V                    8970 mV
SIB F13 3 status:
State                        Online
Temperature                  48 degrees C / 118 degrees F
Temperature (B)              43 degrees C / 109 degrees F
Power
    1.2 V_0                  1208 mV
    1.2 V_1                  1195 mV
    1.2 V_2                  1202 mV
    1.2 V_3                  1198 mV
    1.5 V_0                  1504 mV
    1.5 V_1                  1504 mV
    1.8 V                    1801 mV
    2.5 V                    2510 mV
    3.3 V                    3312 mV
    9.0 V                    8970 mV
    9.0 V bias                0 mV
Power (B)
    2.5 V                    2500 mV

```

```

3.3 V          3332 mV
9.0 V          8970 mV
SIB F13 4 status:
State          Online
Temperature    44 degrees C / 111 degrees F
Temperature (B) 40 degrees C / 104 degrees F
Power
1.2 V_0       1205 mV
1.2 V_1       1202 mV
1.2 V_2       1205 mV
1.2 V_3       1202 mV
1.5 V_0       1508 mV
1.5 V_1       1511 mV
1.8 V         1811 mV
2.5 V         2510 mV
3.3 V         3312 mV
9.0 V         8952 mV
9.0 V bias    0 mV
Power (B)
2.5 V         2510 mV
3.3 V         3306 mV
9.0 V         9024 mV
SIB F13 6 status:
State          Online
Temperature    49 degrees C / 120 degrees F
Temperature (B) 46 degrees C / 114 degrees F
Power
1.2 V_0       1195 mV
1.2 V_1       1198 mV
1.2 V_2       1202 mV
1.2 V_3       1202 mV
1.5 V_0       1501 mV
1.5 V_1       1495 mV
1.8 V         1801 mV
2.5 V         2507 mV
3.3 V         3306 mV
9.0 V         8979 mV
9.0 V bias    0 mV
Power (B)
2.5 V         2497 mV
3.3 V         3318 mV
9.0 V         9006 mV
SIB F13 7 status:

```

```

State                               Online
Temperature                          52 degrees C / 125 degrees F
Temperature (B)                       48 degrees C / 118 degrees F
Power
  1.2 V_0                             1198 mV
  1.2 V_1                             1198 mV
  1.2 V_2                             1202 mV
  1.2 V_3                             1189 mV
  1.5 V_0                             1498 mV
  1.5 V_1                             1498 mV
  1.8 V                               1804 mV
  2.5 V                               2491 mV
  3.3 V                               3292 mV
  9.0 V                               8904 mV
  9.0 V bias                           0 mV
Power (B)
  2.5 V                               2500 mV
  3.3 V                               3306 mV
  9.0 V                               8952 mV
SIB F13 8 status:
State                               Online
Temperature                          54 degrees C / 129 degrees F
Temperature (B)                       49 degrees C / 120 degrees F
Power
  1.2 V_0                             1211 mV
  1.2 V_1                             1208 mV
  1.2 V_2                             1208 mV
  1.2 V_3                             1211 mV
  1.5 V_0                             1508 mV
  1.5 V_1                             1511 mV
  1.8 V                               1801 mV
  2.5 V                               2513 mV
  3.3 V                               3324 mV
  9.0 V                               9048 mV
  9.0 V bias                           0 mV
Power (B)
  2.5 V                               2516 mV
  3.3 V                               3318 mV
  9.0 V                               9102 mV
SIB F13 9 status:
State                               Online
Temperature                          46 degrees C / 114 degrees F
Temperature (B)                       41 degrees C / 105 degrees F

```

Power

1.2 V_0	1205 mV
1.2 V_1	1202 mV
1.2 V_2	1205 mV
1.2 V_3	1198 mV
1.5 V_0	1504 mV
1.5 V_1	1504 mV
1.8 V	1817 mV
2.5 V	2507 mV
3.3 V	3306 mV
9.0 V	8991 mV
9.0 V bias	0 mV

Power (B)

2.5 V	2510 mV
3.3 V	3332 mV
9.0 V	9006 mV

SIB F13 11 status:

State	Online
Temperature	47 degrees C / 116 degrees F
Temperature (B)	42 degrees C / 107 degrees F

Power

1.2 V_0	1202 mV
1.2 V_1	1205 mV
1.2 V_2	1202 mV
1.2 V_3	1198 mV
1.5 V_0	1501 mV
1.5 V_1	1504 mV
1.8 V	1807 mV
2.5 V	2510 mV
3.3 V	3306 mV
9.0 V	8991 mV
9.0 V bias	0 mV

Power (B)

2.5 V	2249 mV
3.3 V	4994 mV
9.0 V	9936 mV

SIB F13 12 status:

State	Online
Temperature	44 degrees C / 111 degrees F
Temperature (B)	40 degrees C / 104 degrees F

Power

1.2 V_0	1208 mV
1.2 V_1	1202 mV

```

1.2 V_2                1208 mV
1.2 V_3                1205 mV
1.5 V_0                1511 mV
1.5 V_1                1508 mV
1.8 V                  1814 mV
2.5 V                  2507 mV
3.3 V                  3318 mV
9.0 V                  9039 mV
9.0 V bias              0 mV
Power (B)
  2.5 V                2516 mV
  3.3 V                3344 mV
  9.0 V                9006 mV
SIB F2S 0/0 status:
  State                Online - Standby
  Temperature          40 degrees C / 104 degrees F
  Power
    1.2 V_1            0 mV
    1.2 V_ASF          1198 mV
    1.2 V_ASF_B        1198 mV
    1.2 V_ASF_D        1202 mV
    1.5 V              1498 mV
    1.8 V              1814 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3286 mV
    9.0 V              8250 mV
SIB F2S 0/2 status:
  State                Online - Standby
  Temperature          40 degrees C / 104 degrees F
  Power
    1.2 V_1            0 mV
    1.2 V_ASF          1198 mV
    1.2 V_ASF_B        1195 mV
    1.2 V_ASF_D        1202 mV
    1.5 V              1498 mV
    1.8 V              1807 mV
    3.3 V              3300 mV
    3.3 V bias         3300 mV
    3.3 V ASF          3292 mV
    9.0 V              8250 mV
SIB F2S 0/4 status:
  State                Online - Standby

```

Temperature 40 degrees C / 104 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1198 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1202 mV
1.5 V	1501 mV
1.8 V	1817 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV

SIB F2S 0/6 status:

State Online - Standby

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1198 mV
1.2 V_ASF_D	1198 mV
1.5 V	1495 mV
1.8 V	1814 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV

SIB F2S 1/0 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1192 mV
1.2 V_ASF_D	1195 mV
1.5 V	1492 mV
1.8 V	1798 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3280 mV
9.0 V	8250 mV

SIB F2S 1/2 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1205 mV
1.2 V_ASF_B	1202 mV
1.2 V_ASF_D	1205 mV
1.5 V	1504 mV
1.8 V	1820 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3306 mV
9.0 V	8250 mV

SIB F2S 1/4 status:

State	Online
Temperature	39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1202 mV
1.2 V_ASF_B	1195 mV
1.2 V_ASF_D	1198 mV
1.5 V	1498 mV
1.8 V	1811 mV
3.3 V	3300 mV
3.3 V bias	3300 mV
3.3 V ASF	3300 mV
9.0 V	8250 mV

SIB F2S 1/6 status:

State	Online
Temperature	39 degrees C / 102 degrees F

Power

1.2 V_1	0 mV
1.2 V_ASF	1195 mV
1.2 V_ASF_B	1192 mV
1.2 V_ASF_D	1198 mV
1.5 V	1498 mV
1.8 V	1807 mV
3.3 V	3306 mV
3.3 V bias	3300 mV
3.3 V ASF	3292 mV
9.0 V	8250 mV

SIB F2S 2/0 status:

State	Online
Temperature	38 degrees C / 100 degrees F

Power

```

1.2 V_1                0 mV
1.2 V_ASF              1195 mV
1.2 V_ASF_B           1195 mV
1.2 V_ASF_D           1198 mV
1.5 V                  1498 mV
1.8 V                  1804 mV
3.3 V                  3300 mV
3.3 V bias             3300 mV
3.3 V ASF              3292 mV
9.0 V                  8250 mV
...

```

show chassis environment sib f13 (TX Matrix Plus Router)

```

user@host> show chassis environment sib f13 0
SIB F13 0 status:
  State                Online - Standby
  Temperature          54 degrees C / 129 degrees F
  Temperature (B)     50 degrees C / 122 degrees F
  Power
    1.2 V_0            1202 mV
    1.2 V_1            1202 mV
    1.2 V_2            1208 mV
    1.2 V_3            1208 mV
    1.5 V_0            1501 mV
    1.5 V_1            1504 mV
    1.8 V              1801 mV
    2.5 V              2504 mV
    3.3 V              3318 mV
    9.0 V              8991 mV
    9.0 V bias         0 mV
  Power (B)
    2.5 V              2510 mV
    3.3 V              3318 mV
    9.0 V              9024 mV

```

show chassis environment sib f2s (TX Matrix Plus Router)

```

user@host> show chassis environment sib f2s 0/2
SIB F2S 0/2 status:

```

```

State                               Online - Standby
Temperature                          40 degrees C / 104 degrees F
Power
  1.2 V_1                            0 mV
  1.2 V_ASF                          1198 mV
  1.2 V_ASF_B                        1195 mV
  1.2 V_ASF_D                        1202 mV
  1.5 V                               1501 mV
  1.8 V                               1807 mV
  3.3 V                               3300 mV
  3.3 V bias                         3300 mV
  3.3 V ASF                          3286 mV
  9.0 V                               8250 mV

```

show chassis environment sib (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis environment sib
sfc0-re0:
-----
SIB F13 0 status:
  State                               Online
Board Temperature                    44 degrees C / 111 degrees F
XF Junction Temperature              62 degrees C / 143 degrees F
Power
  XF F1 LCC0 1.0 V                   999 mV
  PCIe Switch 1.0 V                 1000 mV
  XF F3 LCC0 1.0 V                   1000 mV
  XF F1/F3 LCC0 1.2 V                1199 mV
  XF F1 LCC1 1.0 V                   1000 mV
  XF F1/F3 LCC1 1.2 V                1199 mV
  XF F3 LCC1 1.0 V                   1000 mV
  XF F1/F3 1.5 V                     1499 mV
  XF RC LCC0 Base 1.0                1000 mV
  XF RC Base 1.2 V                   1200 mV
  XF RC LCC1 Base 1.0                1000 mV
  XF RC Base 1.5 V                   1499 mV
  3.3 V Base                         3300 mV
  VSC8248 Base 1.8V                  1796 mV
  FPGA Core 0.9 V                    899 mV
  2.5 V Base                         2500 mV
  ltc3880-3.3v-bias                  3343 mV

```

```

CXP Base 4.0 V          3999 mV
XF RC LCC0 Mezz 1.0    1000 mV
XF RC Mezz 1.2 V      1199 mV
XF RC LCC1 Mezz 1.0    999 mV
XF RC Mezz 1.5 V      1499 mV
3.3 V Mezz            3299 mV
VSC8248 Mezz 1.8V     1800 mV
CXP Mezz 4.0 V        3999 mV
[...Output Truncated...]
SIB F2S 0/0 status:
  State                Online
  Board Temperature    32 degrees C / 89 degrees F
  XF Junction Temperature 41 degrees C / 105 degrees F
  Power
    XF F2S 1.8 V LD0   1775 mV
    XF F2S 1.0 V AN    992 mV
    XF F2S 1.0 V      1002 mV
    XF F2S 1.5 V      1488 mV
    1.5 V Base         2500 mV
    3.3 V bias         3306 mV
    3.3 V Base         3280 mV
    12.0 V Base        11928 mV
[...Output Truncated...]
SIB F2S 2/6 status:
  State                Online
  Board Temperature    28 degrees C / 82 degrees F
  XF Junction Temperature 40 degrees C / 104 degrees F
  Power
    XF F2S 1.8 V LD0   1782 mV
    XF F2S 1.0 V AN    999 mV
    XF F2S 1.0 V      1005 mV
    XF F2S 1.5 V      1498 mV
    1.5 V Base         2510 mV
    3.3 V bias         3292 mV
    3.3 V Base         3292 mV
    12.0 V Base        12024 mV

lcc0-re0:
-----
SIB 0 status:
  State                Online
  Temperature          41 degrees C / 105 degrees F
  Temperature (B)      Absent

```

```

Max Jn Temperature          48 degrees C / 118 degrees F
Power
  8.0 V bias                 8156 mV
  3.3 V bias                 3284 mV
  FPGA 0.9 V bias           908 mV
  FPGA 1.1 V bias           1086 mV
  FPGA 1.5 V bias           1487 mV
  FPGA 2.5 V bias           2525 mV
  3.3 V                      3282 mV
  1.5 V                      1487 mV
  XF HSS 1.5 V              1501 mV
  XF1 1.0 V                 1001 mV
  XF2 1.0 V                 1003 mV
  XF3 1.0 V                 998 mV
  XF1 1.8 V LDO             1782 mV
  XF2 1.8 V LDO             1792 mV
  XF3 1.8 V LDO             1782 mV
  CLK BUF 2.5 V LDO         2493 mV
  XF1 1.0 V LDO             991 mV
  XF2 1.0 V LDO             991 mV
  XF3 1.0 V LDO             991 mV
  PCIe SW 3.3 V             3274 mV
  PCIe 1.0 V                996 mV
  RETIMER 1.2 V            1174 mV
  RETIMER IO 1.8 V         1770 mV
                               0 mV

Power (B)
  1.2 V                     0 mV
  2.5 V                     0 mV
  3.3 V                     0 mV
  9.0 V                     0 mV

[...Output Truncated...]
lcc2-re0:
-----
SIB 0 status:
  State                      Online
  Temperature                 42 degrees C / 107 degrees F
  Temperature (B)            Absent
  Max Jn Temperature          51 degrees C / 123 degrees F
  Power
    8.0 V bias                8146 mV
    3.3 V bias                3277 mV
    FPGA 0.9 V bias           903 mV

```

```

FPGA 1.1 V bias          1089 mV
FPGA 1.5 V bias          1479 mV
FPGA 2.5 V bias          2515 mV
3.3 V                    3277 mV
1.5 V                    1482 mV
XF HSS 1.5 V             1501 mV
XF1 1.0 V                1001 mV
XF2 1.0 V                1003 mV
XF3 1.0 V                998 mV
XF1 1.8 V LDO            1787 mV
XF2 1.8 V LDO            1792 mV
XF3 1.8 V LDO            1792 mV
CLK BUF 2.5 V LDO        2481 mV
XF1 1.0 V LDO            986 mV
XF2 1.0 V LDO            993 mV
XF3 1.0 V LDO            991 mV
PCIE SW 3.3 V            3279 mV
PCIE 1.0 V                991 mV
RETIMER 1.2 V            1179 mV
RETIMER IO 1.8 V         1772 mV
                          0 mV
Power (B)
  1.2 V                    0 mV
  2.5 V                    0 mV
  3.3 V                    0 mV
  9.0 V                    0 mV
[...Output Truncated...]

```

show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8S)

```

user@host> show chassis environment sib
SIB 0 status:
  State                Online
  Exhaust Temperature  31 degrees C / 87 degrees F
  Junction Temperature 40 degrees C / 104 degrees F
  Power
    1.0 V                1000 mV
    1.5 V                1499 mV
    1.2 V                1200 mV
    3.3 V                3300 mV
    0.9 V                900 mV

```

2.5 V	2499 mV
3.3 V bias	3313 mV
12.0 V	12296 mV
12.0 V i	2908 mA

SIB 1 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	40 degrees C / 104 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 mV
1.2 V	1200 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3313 mV
12.0 V	12312 mV
12.0 V i	2979 mA

SIB 2 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	999 mV
1.5 V	1499 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3324 mV
12.0 V	12312 mV
12.0 V i	2990 mA

SIB 3 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	39 degrees C / 102 degrees F
Power	
1.0 V	999 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2499 mV

3.3 V bias	3307 mV
12.0 V	12296 mV
12.0 V i	3144 mA

SIB 4 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	899 mV
2.5 V	2499 mV
3.3 V bias	3341 mV
12.0 V	12328 mV
12.0 V i	2836 mA

SIB 5 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1499 mV
1.2 V	1199 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3327 mV
12.0 V	12296 mV
12.0 V i	2919 mA

SIB 6 status:

State	Online
Exhaust Temperature	31 degrees C / 87 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3299 mV
0.9 V	899 mV
2.5 V	2500 mV
3.3 V bias	3294 mV


```

12.0 V          12296 mV
12.0 V i       2825 mA
SIB 7 status:
State          Online
Exhaust Temperature 30 degrees C / 86 degrees F
Junction Temperature 36 degrees C / 96 degrees F
Power
1.0 V          1000 mV
1.5 V          1500 mV
1.2 V          1200 mV
3.3 V          3300 mV
0.9 V          899 mV
2.5 V          2499 mV
3.3 V bias     3316 mV
12.0 V         12312 mV
12.0 V i       2844 mA
SIB 8 status:
State          Online
Exhaust Temperature 31 degrees C / 87 degrees F
Junction Temperature 38 degrees C / 100 degrees F
Power
1.0 V          1000 mV
1.5 V          1499 mV
1.2 V          1199 mV
3.3 V          3299 mV
0.9 V          900 mV
2.5 V          2500 mV
3.3 V bias     3333 mV
12.0 V         12328 mV
12.0 V i       2900 mA

```

show chassis environment sib (PTX5000 Packet Transport Router with SIB-I-8SE)

```

user@host> show chassis environment sib
SIB 0 status:
State          Online
Exhaust Temperature 29 degrees C / 84 degrees F
Junction Temperature 42 degrees C / 107 degrees F
Power
1.0 V          999 mV
1.5 V          1500 mV

```

1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3289 mV
12.0 V	12484 mV
2.5 V LDO	2502 mV
12.0 V i	3494 mA

SIB 1 status:

State	Online
Exhaust Temperature	28 degrees C / 82 degrees F
Junction Temperature	33 degrees C / 91 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1199 mV
3.3 V	3300 mV
0.9 V	899 mV
2.5 V	2500 mV
3.3 V bias	3313 mV
12.0 V	12484 mV
2.5 V LDO	2513 mV
12.0 V i	3099 mA

SIB 2 status:

State	Online
Exhaust Temperature	29 degrees C / 84 degrees F
Junction Temperature	39 degrees C / 102 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1199 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3307 mV
12.0 V	12484 mV
2.5 V LDO	2512 mV
12.0 V i	3336 mA

SIB 3 status:

State	Online
Exhaust Temperature	28 degrees C / 82 degrees F
Junction Temperature	34 degrees C / 93 degrees F
Power	

1.0 V	999 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2500 mV
3.3 V bias	3299 mV
12.0 V	12500 mV
2.5 V LDO	2494 mV
12.0 V i	3479 mA

SIB 4 status:

State	Online
Exhaust Temperature	28 degrees C / 82 degrees F
Junction Temperature	38 degrees C / 100 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1199 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3309 mV
12.0 V	12484 mV
2.5 V LDO	2499 mV
12.0 V i	3159 mA

SIB 5 status:

State	Online
Exhaust Temperature	27 degrees C / 80 degrees F
Junction Temperature	33 degrees C / 91 degrees F
Power	
1.0 V	1000 mV
1.5 V	1500 mV
1.2 V	1200 mV
3.3 V	3299 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3308 mV
12.0 V	12468 mV
2.5 V LDO	2495 mV
12.0 V i	3054 mA

SIB 6 status:

State	Online
Exhaust Temperature	28 degrees C / 82 degrees F

Junction Temperature 38 degrees C / 100 degrees F

Power

1.0 V	999 mV
1.5 V	1500 mV
1.2 V	1199 mV
3.3 V	3299 mV
0.9 V	899 mV
2.5 V	2499 mV
3.3 V bias	3313 mV
12.0 V	12468 mV
2.5 V LDO	2510 mV
12.0 V i	3122 mA

SIB 7 status:

State Online

Exhaust Temperature 26 degrees C / 78 degrees F

Junction Temperature 34 degrees C / 93 degrees F

Power

1.0 V	999 mV
1.5 V	1499 mV
1.2 V	1199 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3278 mV
12.0 V	12468 mV
2.5 V LDO	2504 mV
12.0 V i	3234 mA

SIB 8 status:

State Online

Exhaust Temperature 26 degrees C / 78 degrees F

Junction Temperature 34 degrees C / 93 degrees F

Power

1.0 V	999 mV
1.5 V	1499 mV
1.2 V	1199 mV
3.3 V	3300 mV
0.9 V	900 mV
2.5 V	2499 mV
3.3 V bias	3278 mV
12.0 V	12468 mV
2.5 V LDO	2504 mV
12.0 V i	3234 mA

show chassis environment sib (PTX10008 Router)

```

user@host> show chassis environment sib
SIB 0 status:
  State                Online
SIB 0 Intake-A Temp Sensor 37 degrees C / 98 degrees F
SIB 0 Intake-B Temp Sensor 31 degrees C / 87 degrees F
SIB 0 Exhaust-A Temp Sensor34 degrees C / 93 degrees F
SIB 0 Exhaust-B Temp Sensor38 degrees C / 100 degrees F
SIB 0 PF0 Temp Sensor      47 degrees C / 116 degrees F
SIB 0 PF1 Temp Sensor      40 degrees C / 104 degrees F
Power
  PF0 Core 0.9V           925 mV   28929 mA  26835 mW
  PF0 AVDD 1V             1000 mV  32656 mA  32718 mW
  PF1 Core 0.9V           922 mV   28351 mA  26210 mW
  PF1 AVDD 1V             1000 mV  30890 mA  30937 mW
  12V                     12311 mV  10880 mA  134744 mW
SIB 1 status:
  State                Online
SIB 1 Intake-A Temp Sensor 43 degrees C / 109 degrees F
SIB 1 Intake-B Temp Sensor 35 degrees C / 95 degrees F
SIB 1 Exhaust-A Temp Sensor37 degrees C / 98 degrees F
SIB 1 Exhaust-B Temp Sensor45 degrees C / 113 degrees F
SIB 1 PF0 Temp Sensor      54 degrees C / 129 degrees F
SIB 1 PF1 Temp Sensor      42 degrees C / 107 degrees F
Power
  PF0 Core 0.9V           951 mV   30468 mA  29007 mW
  PF0 AVDD 1V             999 mV   32921 mA  32921 mW
  PF1 Core 0.9V           924 mV   29046 mA  26828 mW
  PF1 AVDD 1V             1000 mV  30796 mA  30796 mW
  12V                     12298 mV  11356 mA  140682 mW
SIB 2 status:
  State                Online
SIB 2 Intake-A Temp Sensor 45 degrees C / 113 degrees F
SIB 2 Intake-B Temp Sensor 36 degrees C / 96 degrees F
SIB 2 Exhaust-A Temp Sensor38 degrees C / 100 degrees F
SIB 2 Exhaust-B Temp Sensor46 degrees C / 114 degrees F
SIB 2 PF0 Temp Sensor      55 degrees C / 131 degrees F
SIB 2 PF1 Temp Sensor      43 degrees C / 109 degrees F
Power
  PF0 Core 0.9V           924 mV   28273 mA  26140 mW
  PF0 AVDD 1V             1000 mV  32562 mA  32625 mW

```

PF1 Core 0.9V	925 mV	29351 mA	27265 mW
PF1 AVDD 1V	999 mV	31812 mA	31859 mW
12V	12351 mV	11010 mA	137481 mW

SIB 3 status:

State	Online
SIB 3 Intake-A Temp Sensor	44 degrees C / 111 degrees F
SIB 3 Intake-B Temp Sensor	36 degrees C / 96 degrees F
SIB 3 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
SIB 3 Exhaust-B Temp Sensor	45 degrees C / 113 degrees F
SIB 3 PF0 Temp Sensor	54 degrees C / 129 degrees F
SIB 3 PF1 Temp Sensor	43 degrees C / 109 degrees F

Power

PF0 Core 0.9V	924 mV	28820 mA	26695 mW
PF0 AVDD 1V	999 mV	32265 mA	32281 mW
PF1 Core 0.9V	923 mV	28933 mA	26757 mW
PF1 AVDD 1V	999 mV	31281 mA	31265 mW
12V	12285 mV	11096 mA	137296 mW

SIB 4 status:

State	Online
SIB 4 Intake-A Temp Sensor	45 degrees C / 113 degrees F
SIB 4 Intake-B Temp Sensor	36 degrees C / 96 degrees F
SIB 4 Exhaust-A Temp Sensor	37 degrees C / 98 degrees F
SIB 4 Exhaust-B Temp Sensor	46 degrees C / 114 degrees F
SIB 4 PF0 Temp Sensor	54 degrees C / 129 degrees F
SIB 4 PF1 Temp Sensor	43 degrees C / 109 degrees F

Power

PF0 Core 0.9V	950 mV	29757 mA	28281 mW
PF0 AVDD 1V	999 mV	32109 mA	32093 mW
PF1 Core 0.9V	948 mV	29460 mA	27921 mW
PF1 AVDD 1V	999 mV	30687 mA	30671 mW
12V	12193 mV	11183 mA	137352 mW

SIB 5 status:

State	Online
SIB 5 Intake-A Temp Sensor	38 degrees C / 100 degrees F
SIB 5 Intake-B Temp Sensor	32 degrees C / 89 degrees F
SIB 5 Exhaust-A Temp Sensor	35 degrees C / 95 degrees F
SIB 5 Exhaust-B Temp Sensor	39 degrees C / 102 degrees F
SIB 5 PF0 Temp Sensor	45 degrees C / 113 degrees F
SIB 5 PF1 Temp Sensor	43 degrees C / 109 degrees F

Power

PF0 Core 0.9V	951 mV	29546 mA	28156 mW
PF0 AVDD 1V	999 mV	31468 mA	31468 mW
PF1 Core 0.9V	948 mV	30007 mA	28515 mW

PF1 AVDD 1V	999 mV	31812 mA	31859 mW
12V	12179 mV	11399 mA	139720 mW

show chassis environment sib (PTX10016 Router)

```

user@host> show chassis environment sib
SIB 0 status:
  State                Online
SIB 0 Intake-A Temp Sensor 22 degrees C / 71 degrees F
SIB 0 Intake-B Temp Sensor 21 degrees C / 69 degrees F
SIB 0 Intake-C Temp Sensor 17 degrees C / 62 degrees F
SIB 0 Exhaust-A Temp Sensor 29 degrees C / 84 degrees F
SIB 0 Exhaust-B Temp Sensor 30 degrees C / 86 degrees F
SIB 0 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
SIB 0 PF0 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 0 PF2 Temp Sensor      32 degrees C / 89 degrees F
SIB 0 PF3 Temp Sensor      33 degrees C / 91 degrees F
SIB 0 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 0 PF5 Temp Sensor      27 degrees C / 80 degrees F
Power
  PF0 Core 0.9V            924 mV  24429 mA  22664 mW
  PF0 AVDD 1V              999 mV  19515 mA  19531 mW
  PF1 Core 0.9V            924 mV  24531 mA  22679 mW
  PF1 AVDD 1V              999 mV  17796 mA  17812 mW
  PF2 Core 0.9V            924 mV  24308 mA  22503 mW
  PF2 AVDD 1V              999 mV  16250 mA  16265 mW
  PF3 Core 0.9V            925 mV  24414 mA  22601 mW
  PF3 AVDD 1V              999 mV  15023 mA  15023 mW
  PF4 Core 0.9V            924 mV  24089 mA  22285 mW
  PF4 AVDD 1V              1000 mV 15148 mA  15156 mW
  PF5 Core 0.9V            898 mV  23601 mA  21273 mW
  PF5 AVDD 1V              999 mV  15453 mA  15453 mW
  12V                      12311 mV 11399 mA  141366 mW
  12V_1                    12325 mV 11053 mA  137204 mW
SIB 1 status:
  State                Online
SIB 1 Intake-A Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-B Temp Sensor 23 degrees C / 73 degrees F
SIB 1 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 1 Exhaust-A Temp Sensor 30 degrees C / 86 degrees F

```

```

SIB 1 Exhaust-B Temp Sensor32 degrees C / 89 degrees F
SIB 1 Exhaust-C Temp Sensor25 degrees C / 77 degrees F
SIB 1 PF0 Temp Sensor      33 degrees C / 91 degrees F
SIB 1 PF1 Temp Sensor      32 degrees C / 89 degrees F
SIB 1 PF2 Temp Sensor      34 degrees C / 93 degrees F
SIB 1 PF3 Temp Sensor      39 degrees C / 102 degrees F
SIB 1 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 1 PF5 Temp Sensor      28 degrees C / 82 degrees F

```

Power

```

PF0 Core 0.9V              949 mV   24101 mA  22910 mW
PF0 AVDD 1V                1000 mV  19046 mA  19062 mW
PF1 Core 0.9V              924 mV   24375 mA  22546 mW
PF1 AVDD 1V                999 mV   17843 mA  17859 mW
PF2 Core 0.9V              923 mV   24183 mA  22355 mW
PF2 AVDD 1V                999 mV   16109 mA  16117 mW
PF3 Core 0.9V              949 mV   24246 mA  23097 mW
PF3 AVDD 1V                1000 mV  14632 mA  14632 mW
PF4 Core 0.9V              925 mV   23613 mA  21882 mW
PF4 AVDD 1V                1000 mV  14742 mA  14710 mW
PF5 Core 0.9V              924 mV   24328 mA  22515 mW
PF5 AVDD 1V                1000 mV  14640 mA  14664 mW
12V                        12351 mV  11096 mA  138036 mW
12V_1                      12219 mV  11226 mA  137500 mW

```

SIB 2 status:

```

State                      Online
SIB 2 Intake-A Temp Sensor 25 degrees C / 77 degrees F
SIB 2 Intake-B Temp Sensor 22 degrees C / 71 degrees F
SIB 2 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 2 Exhaust-A Temp Sensor29 degrees C / 84 degrees F
SIB 2 Exhaust-B Temp Sensor33 degrees C / 91 degrees F
SIB 2 Exhaust-C Temp Sensor24 degrees C / 75 degrees F
SIB 2 PF0 Temp Sensor      33 degrees C / 91 degrees F
SIB 2 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 2 PF2 Temp Sensor      34 degrees C / 93 degrees F
SIB 2 PF3 Temp Sensor      42 degrees C / 107 degrees F
SIB 2 PF4 Temp Sensor      28 degrees C / 82 degrees F
SIB 2 PF5 Temp Sensor      27 degrees C / 80 degrees F

```

Power

```

PF0 Core 0.9V              899 mV   24046 mA  21656 mW
PF0 AVDD 1V                999 mV   19265 mA  19250 mW
PF1 Core 0.9V              900 mV   24234 mA  21867 mW
PF1 AVDD 1V                999 mV   18000 mA  18015 mW
PF2 Core 0.9V              900 mV   23250 mA  20953 mW

```


PF2 AVDD 1V	999 mV	16328 mA	16343 mW
PF3 Core 0.9V	899 mV	23976 mA	21570 mW
PF3 AVDD 1V	999 mV	14976 mA	15007 mW
PF4 Core 0.9V	924 mV	23718 mA	21976 mW
PF4 AVDD 1V	1000 mV	14781 mA	14765 mW
PF5 Core 0.9V	899 mV	23265 mA	20937 mW
PF5 AVDD 1V	999 mV	15125 mA	15132 mW
12V	12298 mV	10750 mA	133523 mW
12V_1	12245 mV	10880 mA	134041 mW

SIB 3 status:

State	Online
SIB 3 Intake-A Temp Sensor	23 degrees C / 73 degrees F
SIB 3 Intake-B Temp Sensor	25 degrees C / 77 degrees F
SIB 3 Intake-C Temp Sensor	17 degrees C / 62 degrees F
SIB 3 Exhaust-A Temp Sensor	30 degrees C / 86 degrees F
SIB 3 Exhaust-B Temp Sensor	32 degrees C / 89 degrees F
SIB 3 Exhaust-C Temp Sensor	25 degrees C / 77 degrees F
SIB 3 PF0 Temp Sensor	33 degrees C / 91 degrees F
SIB 3 PF1 Temp Sensor	31 degrees C / 87 degrees F
SIB 3 PF2 Temp Sensor	32 degrees C / 89 degrees F
SIB 3 PF3 Temp Sensor	40 degrees C / 104 degrees F
SIB 3 PF4 Temp Sensor	28 degrees C / 82 degrees F
SIB 3 PF5 Temp Sensor	27 degrees C / 80 degrees F

Power

PF0 Core 0.9V	924 mV	24558 mA	22734 mW
PF0 AVDD 1V	999 mV	19500 mA	19515 mW
PF1 Core 0.9V	925 mV	24570 mA	22750 mW
PF1 AVDD 1V	999 mV	17609 mA	17625 mW
PF2 Core 0.9V	899 mV	23144 mA	20832 mW
PF2 AVDD 1V	1000 mV	16375 mA	16390 mW
PF3 Core 0.9V	925 mV	24203 mA	22414 mW
PF3 AVDD 1V	1000 mV	15039 mA	15023 mW
PF4 Core 0.9V	899 mV	23523 mA	21183 mW
PF4 AVDD 1V	999 mV	15273 mA	15296 mW
PF5 Core 0.9V	924 mV	24125 mA	22367 mW
PF5 AVDD 1V	1000 mV	14953 mA	14968 mW
12V	12245 mV	10880 mA	133652 mW
12V_1	12259 mV	11053 mA	136464 mW

SIB 4 status:

State	Online
SIB 4 Intake-A Temp Sensor	23 degrees C / 73 degrees F
SIB 4 Intake-B Temp Sensor	26 degrees C / 78 degrees F
SIB 4 Intake-C Temp Sensor	18 degrees C / 64 degrees F

```

SIB 4 Exhaust-A Temp Sensor30 degrees C / 86 degrees F
SIB 4 Exhaust-B Temp Sensor33 degrees C / 91 degrees F
SIB 4 Exhaust-C Temp Sensor24 degrees C / 75 degrees F
SIB 4 PF0 Temp Sensor      34 degrees C / 93 degrees F
SIB 4 PF1 Temp Sensor      32 degrees C / 89 degrees F
SIB 4 PF2 Temp Sensor      33 degrees C / 91 degrees F
SIB 4 PF3 Temp Sensor      41 degrees C / 105 degrees F
SIB 4 PF4 Temp Sensor      28 degrees C / 82 degrees F
SIB 4 PF5 Temp Sensor      27 degrees C / 80 degrees F

```

Power

PF0 Core 0.9V	925 mV	24644 mA	22824 mW
PF0 AVDD 1V	999 mV	19375 mA	19390 mW
PF1 Core 0.9V	900 mV	24109 mA	21703 mW
PF1 AVDD 1V	999 mV	17687 mA	17695 mW
PF2 Core 0.9V	899 mV	24085 mA	21710 mW
PF2 AVDD 1V	999 mV	16578 mA	16570 mW
PF3 Core 0.9V	949 mV	24652 mA	23410 mW
PF3 AVDD 1V	1000 mV	14445 mA	14453 mW
PF4 Core 0.9V	924 mV	23902 mA	22097 mW
PF4 AVDD 1V	999 mV	14750 mA	14742 mW
PF5 Core 0.9V	925 mV	24082 mA	22308 mW
PF5 AVDD 1V	999 mV	14671 mA	14671 mW
12V	12338 mV	11139 mA	138277 mW
12V_1	12325 mV	11356 mA	140978 mW

SIB 5 status:

```

State                               Online
SIB 5 Intake-A Temp Sensor 22 degrees C / 71 degrees F
SIB 5 Intake-B Temp Sensor 22 degrees C / 71 degrees F
SIB 5 Intake-C Temp Sensor 18 degrees C / 64 degrees F
SIB 5 Exhaust-A Temp Sensor28 degrees C / 82 degrees F
SIB 5 Exhaust-B Temp Sensor28 degrees C / 82 degrees F
SIB 5 Exhaust-C Temp Sensor25 degrees C / 77 degrees F
SIB 5 PF0 Temp Sensor      32 degrees C / 89 degrees F
SIB 5 PF1 Temp Sensor      31 degrees C / 87 degrees F
SIB 5 PF2 Temp Sensor      32 degrees C / 89 degrees F
SIB 5 PF3 Temp Sensor      33 degrees C / 91 degrees F
SIB 5 PF4 Temp Sensor      29 degrees C / 84 degrees F
SIB 5 PF5 Temp Sensor      28 degrees C / 82 degrees F

```

Power

PF0 Core 0.9V	924 mV	25093 mA	23210 mW
PF0 AVDD 1V	999 mV	19781 mA	19796 mW
PF1 Core 0.9V	899 mV	24113 mA	21753 mW
PF1 AVDD 1V	1000 mV	17968 mA	17984 mW

PF2 Core 0.9V	925 mV	24218 mA	22437 mW
PF2 AVDD 1V	1000 mV	16539 mA	16531 mW
PF3 Core 0.9V	898 mV	23511 mA	21164 mW
PF3 AVDD 1V	999 mV	15015 mA	15023 mW
PF4 Core 0.9V	975 mV	25328 mA	24718 mW
PF4 AVDD 1V	1000 mV	14578 mA	14601 mW
PF5 Core 0.9V	923 mV	24175 mA	22367 mW
PF5 AVDD 1V	1000 mV	14789 mA	14765 mW
12V	12259 mV	11053 mA	136464 mW
12V_1	12272 mV	11226 mA	138221 mW

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6. for the TX Matrix Plus router.

RELATED DOCUMENTATION

[request chassis sib | 459](#)

[show chassis sibs | 1573](#)

[Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router](#)

[M320 SIB Description](#)

show chassis errors active

IN THIS SECTION

- [Syntax | 988](#)
- [Description | 988](#)
- [Options | 988](#)
- [Required Privilege Level | 988](#)

- [Output Fields | 989](#)
- [Sample Output | 990](#)
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Syntax

```
show chassis errors active  
<detail>  
<fpc-slot slot>
```

Description

Display the details of chassis errors.

Options

- | | |
|-----------------------------|--|
| detail | (Optional) Display detailed system error information. |
| fpc-slot <i>slot</i> | (Optional) Displays the active errors on the selected FPC. |

Required Privilege Level

view

Output Fields

Table 52 on page 989 lists the output fields for the **show chassis errors active** command. Output fields are listed in the approximate order in which they appear.

Table 52: show chassis errors active Output Fields

Field Name	Field Description
Location	The FPC number.
Identifier	The unique identifier of the error.
Error	The error type.
Scope	Scope of the error. The following scopes are available: <ul style="list-style-type: none"> • board • pfe
Category	Error categories include the following: <ul style="list-style-type: none"> • functional • io • storage • memory • processing • switch

Table 52: show chassis errors active Output Fields (Continued)

Field Name	Field Description
Severity	The severity of the error. It can be configured as follows: <ul style="list-style-type: none"> • fatal—Fatal error on FPC • major—Major error on FPC • minor—Minor error on FPC
Details	Details of the error
Count	Number of error instances occurred.

Sample Output

show chassis errors active detail fpc-slot 3

```

user@router> show chassis errors active detail fpc-slot
3

Slot 3

-----
Location      : FPC 3
Identifier    : /fpc/3/pfe/0/cm/0/XQSS(0)/0/
XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR
Error        : XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR
Scope        : pfe
Category     : functional
Severity     : Major
Details      : XQSS CPQW FAST DEQ DRY
Count        : 1
Support      : Help for XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR

```

Release Information

Command introduced in Junos OS Release 17.4R1.

RELATED DOCUMENTATION

[error](#) | [289](#)

show chassis ethernet-switch

IN THIS SECTION

- [Syntax](#) | [992](#)
- [Syntax \(EX8200 Switch\)](#) | [992](#)
- [Syntax \(SRX Series Devices\)](#) | [992](#)
- [Syntax \(T4000 Router\)](#) | [992](#)
- [Syntax \(TX Matrix Router\)](#) | [992](#)
- [Syntax \(TX Matrix Plus Router\)](#) | [993](#)
- [Syntax \(MX Series Router\)](#) | [993](#)
- [Syntax \(MX2010, MX2020, and MX2008 Universal Routing Platforms\)](#) | [993](#)
- [Syntax \(MX10008 Universal Routing Platforms\)](#) | [993](#)
- [Syntax \(PTX Series Packet Transport Routers\)](#) | [994](#)
- [Description](#) | [994](#)
- [Options](#) | [994](#)
- [Required Privilege Level](#) | [996](#)
- [Output Fields](#) | [996](#)
- [Sample Output](#) | [1003](#)
- [Release Information](#) | [1045](#)

Syntax

```
show chassis ethernet-switch  
<errors <port>>
```

Syntax (EX8200 Switch)

```
show chassis ethernet-switch  
<statistics <port> | switch <number>
```

Syntax (SRX Series Devices)

```
show chassis ethernet-switch  
<errors <port> | statistics <port>>
```

Syntax (T4000 Router)

```
show chassis ethernet-switch  
<errors <port> | statistics <port>>
```

Syntax (TX Matrix Router)

```
show chassis ethernet-switch  
<errors <port> | statistics <port>>  
<lcc <number> | scc>
```


Syntax (TX Matrix Plus Router)

```
show chassis ethernet-switch  
<errors <port> | switch <number>  
<lcc number | sfc number>  
<statistics <port> | switch <number>
```

Syntax (MX Series Router)

```
show chassis ethernet-switch  
<all-members>  
<errors <port>>  
<local>  
<member member-id>
```

Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms)

```
show chassis ethernet-switch  
<errors <port> | statistics <port>>  
<old-rom-packet-count>
```

Syntax (MX10008 Universal Routing Platforms)

```
statistics <port>>
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis ethernet-switch
  <errors <port>>
  <statistics <port>>
  <port-state <port>>
```

Description

(M10i, M40e, M120, M160, M320, MX Series, and T Series routers and EX8200 and PTX Series routers only) Display information about the ports on the Control Board (CB) Ethernet switch.

Options

- none** Display information about each connected port on the Ethernet switch. On a TX Matrix router, display information about each connected port on the Ethernet switch on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about each connected port on the Ethernet switch on the TX Matrix Plus router and its attached routers.
- all-members** (MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.
- errors** (Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.
- errors *port*** (Optional) Display the numbers and types of errors accumulated on the specified port (0 through 15) of the Ethernet switch. On the TX Matrix router, replace *port* with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace *port* with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace *port* with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace *port* with a value from 0 through 27.
- errors switch *number*** (TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace *number* with a value from 0 through 2.
- lcc *number*** (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
old-rom- packet- count	(MX 2020 Routers only) (Optional) Display information about installed linecards. A non-zero number indicates that the bootrom on that linecard needs to be updated.
port-state	(PTX Series only) (Optional) Display information about current port operation (Blocking , Listening , or Disabled).
scc	(TX Matrix router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix router (switch-card chassis).
<i>sfc number</i>	(TX Matrix Plus router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.
statistics	(Optional) Display traffic statistics for each connected port on the Ethernet switch.
statistics <i>port</i>	(Optional) Display traffic statistics for the specified port on the Ethernet switch. On the TX Matrix router, replace <i>port</i> with a value from 0 through 25. On the TX Matrix Plus router or EX8200 switch, replace <i>port</i> with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace <i>port</i> with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace <i>port</i> with a value from 0 through 27.
statistics switch <i>number</i>	(TX Matrix Plus routers and EX8200 switch only) (Optional) Display traffic statistics for the specified Ethernet switch number. On the TX Matrix Plus router and EX8216 switch,

replace *number* with a value from 0 through 2. On the EX8208 switch, replace *number* with a value from 0 through 1.

Required Privilege Level

view

Output Fields

[Table 53 on page 997](#) lists the output fields for the **show chassis ethernet-switch** command. Output fields are listed in the approximate order in which they appear.

Table 53: show chassis ethernet-switch Output Fields

Field Name	Field Description
<p>Link is good on port n connected to device</p> <p>or</p> <p>Link is good on Fast Ethernet port n connected to device</p> <p>or</p> <p>Link is good on Gigabit Ethernet port n connected to device</p> <p>or</p> <p>Link is down on Gigabit Ethernet port connected to device</p>	<p>Information about the link between each port on the CB's Ethernet switch and one of the following devices:</p> <ul style="list-style-type: none"> • FPC0 (Flexible PIC Concentrator 0) through FPC7 • Local controller • Routing Engine • Other Routing Engine (on a system with two Routing Engines) • SPMB (Switch Processor Mezzanine Board) • (TX Matrix router only) LCC0 (line-card chassis 0) through LCC3
Speed is	<p>Speed at which the Ethernet link is running: 10 Mb or 100 Mb. When the device is RE or Other RE on the TX Matrix router, the speed is 1000 Mb.</p> <p>NOTE: Irrespective of the device, the speed is 1000 Mb on the MX2010, MX2020, and MX2008 routers.</p>
Duplex is	Duplex type of the Ethernet link: full or half .
Autonegotiate is Enabled (or Disabled)	By default, built-in Fast Ethernet ports on a PIC autonegotiate whether to operate at 10 Mbps or 100 Mbps. All other interfaces automatically choose the correct speed based on the PIC type and whether the PIC is configured to operate in multiplexed mode (using the no-concatenate statement at the [edit chassis] hierarchy level, as described in the <i>Junos OS System Basics Configuration Guide</i>).

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
Flow Control TX is Enabled (or Disabled)	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the transmit direction is enabled (or disabled). Flow control regulates the flow of packets from the switch to the remote side of the connection.
Flow Control RX is Enabled (or Disabled)	(MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series) Flow control in the receive direction is enabled (or disabled). Flow control regulates the flow of packets from the remote side of the connection to the switch.
MLT3	Number of multilevel threshold-3 (MLT-3) Fast Ethernet errors detected.
Accumulated error counts for port <i>n</i> connected to device FPC<i>n</i>: (error output only)	
Lock	Number of lock errors detected.
Xmit	Number of transmission errors detected.
ESD	Number of electrostatic discharge (ESD) errors detected.
False Carrier	Number of false carrier errors detected. This number is increased by one if a FRU is removed.
Disconnects	Number of disconnect errors detected.
FX mode	Number of errors detected on an Ethernet link over optical fiber.
Statistics for port <i>n</i> connected to device FPC<i>n</i> (statistics output only)	
TX Packets 64 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets transmitted.

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
TX Packets 65 - 127 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets transmitted.
TX Packets 128 - 255 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets transmitted.
TX Packets 256 - 511 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets transmitted.
TX Packets 512 - 1023 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets transmitted.
TX Packets 1024 - 1518 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets transmitted.
TX Packets 1519 - 2047 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets transmitted.
TX Packets 2048 - 4095 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets transmitted.
TX Packets 4096 - 9216 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets transmitted.
TX 1519 - 1522 Good Vlan frms	(MX2010, MX2020, and MX2008 routers) Number of transmitted frames of size 1519 through 1522 octets that are good VLAN frames.
TX Octets	Number of octets sent.
TX Unicast packets	Number of unicast packets sent.

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
TX Multicast packets	Number of multicast packets sent.
TX Broadcast packets	Number of broadcast packets sent.
TX Single Collision frames	(MX2010, MX2020, and MX2008 routers) Number of packets sent after one collision.
TX Mult. Collision frames	(MX2010, MX2020, and MX2008 routers) Number of packets sent after multiple collisions.
TX Late collisions	Number of packets aborted during sending because of collisions after 64 bytes.
TX Excessive collisions	Number of packets not sent because of too many collisions.
TX Dropped packets	Number of transmitted packets that were dropped.
TX PAUSEMAC Ctrl Frames	Number of Media Access Control (MAC) frames containing PAUSE commands that were sent.
TX Oversize Packets	Number of oversize packets that were sent.
TX FCS Error Counter	Number of packets discarded because of frame check sequence errors.
TX Fragment Counter	Number of fragmented packets sent.

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
TX Byte Counter	Number of bytes sent.
TX Packet OK Counter	Number of viable packets sent.
TX Pause Packet Counter	Number of PAUSE packets sent.
RX Packets 64 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets received.
RX Packets 65 - 127 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets received.
RX Packets 128 - 255 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets received.
RX Packets 256 - 511 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets received.
RX Packets 512 - 1023 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets received.
RX Packets 1024 - 1518 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets received.
RX Packets 1519 - 2047 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets received.
RX Packets 2048 - 4095 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets received.

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
RX Packets 4096 - 9216 Octets	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets received.
RX Octets	Number of octets received.
RX Unicast packets	Number of unicast packets received.
RX Multicast packets	Number of multicast packets received.
RX Broadcast packets	Number of broadcast packets received.
RX FCS Errors	Number of packets discarded because of frame check sequence errors.
RX Alignment Errors	Number of incomplete octets received.
RX Dropped Packets	Number of incoming packets that were dropped.
RX Fragments	Number of fragmented packets received.
RX Symbol Errors	Number of symbols received that the router did not correctly decode.
RX MAC Control	Number of Media Access Control (MAC) packets received.
RX Oversize Packets	Number of oversize packets received.

Table 53: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
RX Undersize Packets	Number of undersize packets received.
RX Jabbers	Total number of frames received that exceed the maximum byte count and contain CRC errors .
RX Control Frame Counter	Number of control frames received.
RX Pause Frame Counter	Number of pause frames received.
RX Byte Counter	Number of bytes received.
RX Packet OK Counter	Number of viable packets received.

Sample Output

show chassis ethernet-switch

```

user@host> show chassis ethernet-switch
Link is good on port 0 connected to device: FPC0
  Speed is 100 MB
  Duplex is full

Link is good on port 1 connected to device: FPC1
  Speed is 100 MB
  Duplex is full

Link is good on port 2 connected to device: FPC2

```

```
Speed is 100 MB
Duplex is full
```

```
Link is good on port 3 connected to device: FPC3
```

```
Speed is 100 MBb
Duplex is full
```

```
Link is good on port 7 connected to device: Local controller
```

```
Speed is 100 MB
Duplex is full
```

```
Link is good on port 9 connected to device: SPMB
```

```
Speed is 100 MB
Duplex is full
```

```
Link is good on port 13 connected to device: FPC5
```

```
Speed is 100 MB
Duplex is full
```

show chassis ethernet-switch (MX2020 Router)

```
user@host > show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 1 connected to device: FPC1
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 2 connected to device: FPC3
Speed is 1000Mb
Duplex is full
```

Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 3 connected to device: FPC2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 4 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 5 connected to device: FPC4
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 6 connected to device: FPC6
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 7 connected to device: FPC7
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 8 connected to device: FPC8
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled

Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 10 connected to device: FPC10
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 11 connected to device: FPC11
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 12 connected to device: FPC13
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 13 connected to device: FPC12
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 14 connected to device: FPC14
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 15 connected to device: FPC15

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 16 connected to device: FPC17

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 17 connected to device: FPC16

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 18 connected to device: FPC18

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 19 connected to device: FPC19

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

```

Link is good on GE port 21 connected to device: RE-GigE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE

```

show chassis ethernet-switch statistics (MX2020 Router)

```

user@host > show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 0 connected to device FPC0:
  TX Packets 64 Octets          1468564
  TX Packets 65-127 Octets     153896
  TX Packets 128-255 Octets    237
  TX Packets 256-511 Octets    286
  TX Packets 512-1023 Octets   599
  TX Packets 1024-1518 Octets  22803
  TX Packets 1519-2047 Octets  0
  TX Packets 2048-4095 Octets  0
  TX Packets 4096-9216 Octets  0
  TX 1519-1522 Good Vlan frms  0
  TX Octets                    1646385

```


TX Multicast Packets	6
TX Broadcast Packets	970939
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	130470290
RX Packets 64 Octets	180266
RX Packets 65-127 Octets	519030
RX Packets 128-255 Octets	1390
RX Packets 256-511 Octets	42857
RX Packets 512-1023 Octets	3482
RX Packets 1024-1518 Octets	8147
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	755172
RX Multicast Packets	0
RX Broadcast Packets	42822
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75374021

Statistics for port 1 connected to device FPC1:

TX Packets 64 Octets	1493739
TX Packets 65-127 Octets	126996
TX Packets 128-255 Octets	241
TX Packets 256-511 Octets	283
TX Packets 512-1023 Octets	604
TX Packets 1024-1518 Octets	33687
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1655550
TX Multicast Packets	6
TX Broadcast Packets	969032
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	141832690
RX Packets 64 Octets	155655
RX Packets 65-127 Octets	545561
RX Packets 128-255 Octets	1394
RX Packets 256-511 Octets	42811
RX Packets 512-1023 Octets	3514
RX Packets 1024-1518 Octets	8171
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	757106
RX Multicast Packets	0
RX Broadcast Packets	44509
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0

RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75691392

Statistics for port 2 connected to device FPC3:

TX Packets 64 Octets	1465749
TX Packets 65-127 Octets	152849
TX Packets 128-255 Octets	238
TX Packets 256-511 Octets	289
TX Packets 512-1023 Octets	602
TX Packets 1024-1518 Octets	38903
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1658630
TX Multicast Packets	6
TX Broadcast Packets	968873
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	147427010
RX Packets 64 Octets	181636
RX Packets 65-127 Octets	517526
RX Packets 128-255 Octets	1405

RX Packets 256-511 Octets	42806
RX Packets 512-1023 Octets	3515
RX Packets 1024-1518 Octets	8168
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	755056
RX Multicast Packets	0
RX Broadcast Packets	44490
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75381869

Statistics for port 3 connected to device FPC2:

TX Packets 64 Octets	1473828
TX Packets 65-127 Octets	145643
TX Packets 128-255 Octets	253
TX Packets 256-511 Octets	285
TX Packets 512-1023 Octets	612
TX Packets 1024-1518 Octets	26603
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1647224
TX Multicast Packets	6
TX Broadcast Packets	968925
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0

```

TX PAUSEMAC Ctrl Frames      0
TX MAC ctrl frames           0
TX Frame deferred Xmns       0
TX Frame excessive deferl    0
TX Oversize Packets          0
TX Jabbers                    0
TX FCS Error Counter         0
TX Fragment Counter          0
TX Byte Counter               134293832
RX Packets 64 Octets         174230
RX Packets 65-127 Octets     525756
RX Packets 128-255 Octets    1404
RX Packets 256-511 Octets    42815
RX Packets 512-1023 Octets   3530
RX Packets 1024-1518 Octets  8176
RX Packets 1519-2047 Octets  0
RX Packets 2048-4095 Octets  0
RX Packets 4096-9216 Octets  0
RX Octets                     755911
RX Multicast Packets         0
RX Broadcast Packets         44499
RX FCS Errors                0
RX Align Errors              0
RX Fragments                 0
RX Symbol errors             0
RX Unsupported opcodes       0
RX Out of Range Length       0
RX False Carrier Errors      0
RX Undersize Packets         0
RX Oversize Packets          0
RX Jabbers                    0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter        0
RX Control Frame Counter     0
RX Pause Frame Counter       0
RX Byte Counter               75517355
Statistics for port 4 connected to device FPC5:
TX Packets 64 Octets         1466664
TX Packets 65-127 Octets     151155
TX Packets 128-255 Octets    238
TX Packets 256-511 Octets    277
TX Packets 512-1023 Octets   615
TX Packets 1024-1518 Octets  54674

```

TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1673623
TX Multicast Packets	6
TX Broadcast Packets	968610
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	164247790
RX Packets 64 Octets	180006
RX Packets 65-127 Octets	518217
RX Packets 128-255 Octets	1406
RX Packets 256-511 Octets	42787
RX Packets 512-1023 Octets	3515
RX Packets 1024-1518 Octets	8164
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	754095
RX Multicast Packets	0
RX Broadcast Packets	44457
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0

```

RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter      0
RX Control Frame Counter   0
RX Pause Frame Counter     0
RX Byte Counter            75311970

```

Statistics for port 5 connected to device FPC4:

```

TX Packets 64 Octets      1464770
TX Packets 65-127 Octets  154498
TX Packets 128-255 Octets 225
TX Packets 256-511 Octets 280
TX Packets 512-1023 Octets 637
TX Packets 1024-1518 Octets 26355
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX 1519-1522 Good Vlan frms 0
TX Octets                  1646765
TX Multicast Packets      6
TX Broadcast Packets     968730
TX Single Collision frames 0
TX Mult. Collision frames 0
TX Late Collisions       0
TX Excessive Collisions  0
TX Collision frames      0
TX PAUSEMAC Ctrl Frames  0
TX MAC ctrl frames       0
TX Frame deferred Xmns   0
TX Frame excessive deferl 0
TX Oversize Packets     0
TX Jabbers               0
TX FCS Error Counter     0
TX Fragment Counter      0
TX Byte Counter          134058606
RX Packets 64 Octets     169269
RX Packets 65-127 Octets 515285
RX Packets 128-255 Octets 1527
RX Packets 256-511 Octets 42804
RX Packets 512-1023 Octets 3521
RX Packets 1024-1518 Octets 9142
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Octets                 741548

```

RX Multicast Packets	0
RX Broadcast Packets	44470
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75498393

Statistics for port 6 connected to device FPC6:

TX Packets 64 Octets	1475260
TX Packets 65-127 Octets	143324
TX Packets 128-255 Octets	260
TX Packets 256-511 Octets	274
TX Packets 512-1023 Octets	603
TX Packets 1024-1518 Octets	40631
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1660352
TX Multicast Packets	6
TX Broadcast Packets	968466
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0

TX Fragment Counter	0
TX Byte Counter	149212764
RX Packets 64 Octets	172275
RX Packets 65-127 Octets	526519
RX Packets 128-255 Octets	1394
RX Packets 256-511 Octets	42777
RX Packets 512-1023 Octets	3514
RX Packets 1024-1518 Octets	8161
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	754640
RX Multicast Packets	0
RX Broadcast Packets	44443
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75386517

Statistics for port 7 connected to device FPC7:

TX Packets 64 Octets	1472361
TX Packets 65-127 Octets	145646
TX Packets 128-255 Octets	251
TX Packets 256-511 Octets	250
TX Packets 512-1023 Octets	580
TX Packets 1024-1518 Octets	49530
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	1668618
TX Multicast Packets	6
TX Broadcast Packets	968317

TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xms	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	158689814
RX Packets 64 Octets	174618
RX Packets 65-127 Octets	523421
RX Packets 128-255 Octets	1393
RX Packets 256-511 Octets	42764
RX Packets 512-1023 Octets	3514
RX Packets 1024-1518 Octets	8158
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	753868
RX Multicast Packets	0
RX Broadcast Packets	44429
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	75309863

```
Statistics for port 8 connected to device FPC8:  
...
```

show chassis ethernet-switch (MX2020 Router with MPC4E)

```
user@ host > show chassis ethernet-switch  
Displaying summary for switch 0  
Link is good on GE port 0 connected to device: FPC0  
  Speed is 1000Mb  
  Duplex is full  
  Autonegotiate is Enabled  
  Flow Control TX is Disabled  
  Flow Control RX is Disabled  
  
Link is down on GE port 1 connected to device: FPC1  
  
Link is down on GE port 2 connected to device: FPC3  
  
Link is down on GE port 3 connected to device: FPC2  
  
Link is down on GE port 4 connected to device: FPC5  
  
Link is down on GE port 5 connected to device: FPC4  
  
Link is down on GE port 6 connected to device: FPC6  
  
Link is down on GE port 7 connected to device: FPC7  
  
Link is down on GE port 8 connected to device: FPC8  
  
Link is good on GE port 9 connected to device: FPC9  
  Speed is 1000Mb  
  Duplex is full  
  Autonegotiate is Enabled  
  Flow Control TX is Disabled  
  Flow Control RX is Disabled  
  
Link is good on GE port 10 connected to device: FPC10  
  Speed is 1000Mb  
  Duplex is full  
  Autonegotiate is Enabled
```

Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 11 connected to device: FPC11

Link is down on GE port 12 connected to device: FPC13

Link is down on GE port 13 connected to device: FPC12

Link is good on GE port 14 connected to device: FPC14

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is down on GE port 15 connected to device: FPC15

Link is down on GE port 16 connected to device: FPC17

Link is down on GE port 17 connected to device: FPC16

Link is down on GE port 18 connected to device: FPC18

Link is good on GE port 19 connected to device: FPC19

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 20 connected to device: Other RE-GigE

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

Flow Control RX is Disabled

Link is good on GE port 21 connected to device: RE-GigE

Speed is 1000Mb

Duplex is full

Autonegotiate is Enabled

Flow Control TX is Disabled

```
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: Debug-GigE

Link is good on GE port 23 connected to device: SPMB
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on XE port 24 connected to device: SFP+ 0

Link is down on XE port 25 connected to device: SFP+ 1

Link is down on XE port 26 connected to device: RE-10GigE

Link is down on XE port 27 connected to device: Other RE-10GigE
```

show chassis ethernet-switch (MX2008 Router)

```
user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 0 connected to device: FPC0
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 1 connected to device: FPC1

Link is good on GE port 2 connected to device: FPC3
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 3 connected to device: FPC2
```

Link is good on GE port 4 connected to device: FPC5
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 5 connected to device: FPC4

Link is down on GE port 6 connected to device: FPC6

Link is good on GE port 7 connected to device: FPC7
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 8 connected to device: FPC8

Link is good on GE port 9 connected to device: FPC9
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 20 connected to device: CB-to-CB-GigE 1
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on GE port 21 connected to device: CB-to-CB-GigE 2
Speed is 1000Mb
Duplex is full
Autonegotiate is Enabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is down on GE port 22 connected to device: (null)

```

Link is down on GE port 23 connected to device: (null)

Link is good on XE port 24 connected to device: Other RE-10GigE
  Speed is 10000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 25 connected to device: RE-10GigE
  Speed is 10000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is down on XE port 26 connected to device: SFP+ 0

Link is down on XE port 27 connected to device: SFP+ 1

```

show chassis ethernet-switch statistics (Mx10008 Router)

```

user@host> show chassis ethernet-switch statistics
Switch Status: Online
Link is Disabled on port connected to QPHY_0
Link is Disabled on port connected to QPHY_1
Link is Down on port connected to PTP_FPGA
Link is Disabled on port connected to Unused
Link is Up on port connected to LC0
  Speed      : 10G
  Duplexity  : FD
  Autoneg    : No
  tx_packets : 2835539
  rx_packets : 2624197
  tx_errors  : 0
  rx_errors  : 0
Link is Down on port connected to LC1
Link is Up on port connected to LC2
  Speed      : 10G
  Duplexity  : FD
  Autoneg    : No

```

```

    tx_packets : 2889426
    rx_packets : 2441270
    tx_errors  : 0
    rx_errors  : 0
Link is Up on port connected to LC3
    Speed      : 10G
    Duplexity  : FD
    Autoneg    : No
    tx_packets : 2776323
    rx_packets : 2322320
    tx_errors  : 0
    rx_errors  : 0
Link is Disabled on port connected to LC8
Link is Down on port connected to LC4
Link is Disabled on port connected to LC12
Link is Disabled on port connected to LC9
Link is Down on port connected to LC5
Link is Disabled on port connected to LC13
Link is Disabled on port connected to LC10
Link is Down on port connected to LC6
Link is Disabled on port connected to LC14
Link is Disabled on port connected to LC11
Link is Down on port connected to LC7
Link is Disabled on port connected to LC15
Link is Disabled on port connected to OCB_SW
Link is Disabled on port connected to Unused
Link is Disabled on port connected to Fortville_1
Link is Up on port connected to Fortville_0
    Speed      : 10G
    Duplexity  : FD
    Autoneg    : Yes
    tx_packets : 7387765
    rx_packets : 8348292
    tx_errors  : 0
    rx_errors  : 0

```

show chassis ethernet-switch (TX Matrix Router)

```

user@host> show chassis ethernet-switch
scc-re0:
-----

```



```
Link is good on FE port 4 connected to device: LCC0
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 6 connected to device: LCC2
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 8 connected to device: SPMB
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
lcc0-re0:
```

```
-----
Link is good on FE port 1 connected to device: FPC1
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 2 connected to device: FPC2
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 8 connected to device: SPMB
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 10 connected to device: SCC
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
lcc2-re0:
```

```
-----
Link is good on FE port 0 connected to device: FPC0
Speed is 100 MB
Duplex is full
Autonegotiate is Enabled
```

```
Link is good on FE port 1 connected to device: FPC1
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 2 connected to device: FPC2
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 8 connected to device: SPMB
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled

Link is good on FE port 10 connected to device: SCC
  Speed is 100 MB
  Duplex is full
  Autonegotiate is Enabled
```

show chassis ethernet-switch errors

```
user@host> show chassis ethernet-switch errors
Accumulated error counts for port 0 connected to device FPC0:
  MLT3          2
  Lock          0
  Xmit          0
  ESD           0
  False carrier 2
  Disconnects   0
  FX mode       0
Accumulated error counts for port 1 connected to device FPC1:
  MLT3          2
  Lock          0
  Xmit          0
  ESD           0
  False carrier 2
  Disconnects   0
  FX mode       0
Accumulated error counts for port 2 connected to device FPC2:
```

```

MLT3          2
Lock          0
Xmit          0
ESD           0
False carrier 3
Disconnects   0
FX mode       0
Accumulated error counts for port 3 connected to device FPC3:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 0
Disconnects   0
Accumulated error counts for port 4 connected to device Nothing:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 0
Disconnects   0
FX mode       0
...

```

show chassis ethernet-switch errors (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch errors
sfc0-re0:
-----
Displaying error for switch 0

Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
MLT3          0
Lock          0
Xmit          0
ESD           0
False carrier 0
Disconnects   0
FX mode       0

```

```
lcc0-re0:
-----
Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 5
  Disconnects   0
  FX mode       0
Accumulated error counts for port 7 connected to device FPC1:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 7
  Disconnects   0
  FX mode       0
Accumulated error counts for port 19 connected to device Other RE:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 0
  Disconnects   0
  FX mode       0
Accumulated error counts for port 20 connected to device SFC0:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 0
  Disconnects   0
  FX mode       0
```

show chassis ethernet-switch sfc errors (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch errors
switch sfc
sfc0-re0:
```

Displaying error for switch 1

Accumulated error counts for port 0 connected to device LCC0:

MLT3	0
Lock	0
Xmit	0
ESD	0
False carrier	0
Disconnects	0
FX mode	0

Accumulated error counts for port 2 connected to device LCC1:

MLT3	0
Lock	0
Xmit	0
ESD	0
False carrier	0
Disconnects	0
FX mode	0

Accumulated error counts for port 4 connected to device LCC2:

MLT3	0
Lock	0
Xmit	0
ESD	0
False carrier	0
Disconnects	0
FX mode	0

Accumulated error counts for port 6 connected to device LCC3:

MLT3	0
Lock	0
Xmit	0
ESD	0
False carrier	0
Disconnects	0
FX mode	0

lcc0-re0:

error: command is not valid on the t1600

lcc1-re0:

error: command is not valid on the t1600

```
lcc2-re0:
-----
error: command is not valid on the t1600

lcc3-re0:
-----
error: command is not valid on the t1600
```

show chassis ethernet-switch statistics (TX Matrix Plus Router)

```
user@host> show chassis ethernet-switch statistics
sfc0-re0:
-----
Displaying port statistics for switch 0
Statistics for port 1 connected to device 1GSW:
TX Packets 64 Octets          5183577
TX Packets 65-127 Octets     67820
TX Packets 128-255 Octets    772
TX Packets 256-511 Octets    136
TX Packets 512-1023 Octets   68
TX Packets 1024-1518 Octets  10881
TX Packets 1519-2047 Octets  0
TX Packets 2048-4095 Octets  0
TX Packets 4096-9216 Octets  0
TX Packets 9217-16383 Octets 0
TX Octets                    5263254
TX Multicast Packets         16
TX Broadcast Packets         723403
TX PAUSEMAC Ctrl Frames     0
TX Oversize Packets         0
TX FCS Error Counter        0
TX Fragment Counter         0
TX Byte Counter              349922253
TX Packet OK Counter        5263254
TX Pause Packet Counter     0
TX Unicast Counter          4539835
RX Packets 64 Octets        6513629
RX Packets 65-127 Octets    88761
RX Packets 128-255 Octets   6382
RX Packets 256-511 Octets   22027
RX Packets 512-1023 Octets  4319
```

```

RX Packets 1024-1518 Octets 49922
RX Packets 1519-2047 Octets 0
RX Packets 2048-4095 Octets 0
RX Packets 4096-9216 Octets 0
RX Packets 9217-16383 Octets 0
RX Octets 6685040
RX Multicast Packets 4
RX Broadcast Packets 2137376
RX FCS Errors 0
RX Fragments 0
RX MAC Control Packets 0
RX Out of Range Length 0
RX Undersize Packets 0
RX Oversize Packets 0
RX Jabbers 0
RX Control Frame Counter 0
RX Pause Frame Counter 0
RX Byte Counter 509224602
RX Unicast Frame Count 4547660
RX Packet OK Count 6685040

```

Statistics for port 9 connected to device RE1:

```

TX Packets 64 Octets 2500318
TX Packets 65-127 Octets 443
TX Packets 128-255 Octets 0
TX Packets 256-511 Octets 0
TX Packets 512-1023 Octets 0
TX Packets 1024-1518 Octets 0
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0
TX Packets 4096-9216 Octets 0
TX Packets 9217-16383 Octets 0
TX Octets 2500761
TX Multicast Packets 4
TX Broadcast Packets 2500757
TX PAUSEMAC Ctrl Frames 0
TX Oversize Packets 0
TX FCS Error Counter 0
TX Fragment Counter 0
TX Byte Counter 160049670
TX Packet OK Counter 0
TX Pause Packet Counter 0
TX Unicast Counter 0
RX Packets 64 Octets 701191

```

RX Packets 65-127 Octets	5882
RX Packets 128-255 Octets	2
RX Packets 256-511 Octets	0
RX Packets 512-1023 Octets	17965
RX Packets 1024-1518 Octets	7
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Packets 9217-16383 Octets	0
RX Octets	725047
RX Multicast Packets	8
RX Broadcast Packets	2500757
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0
RX Out of Range Length	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	62402656
RX Unicast Frame Count	0
RX Packet OK Count	0

Statistics for port 17 connected to device RE0:

TX Packets 64 Octets	7214818
TX Packets 65-127 Octets	94640
TX Packets 128-255 Octets	6384
TX Packets 256-511 Octets	22027
TX Packets 512-1023 Octets	22284
TX Packets 1024-1518 Octets	49929
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX Packets 9217-16383 Octets	0
TX Octets	7410082
TX Multicast Packets	12
TX Broadcast Packets	2497247
TX PAUSEMAC Ctrl Frames	0
TX Oversize Packets	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	571626932

TX Broadcast Packets	1125742
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	329291449
RX Packets 64 Octets	5640175
RX Packets 65-127 Octets	79875
RX Packets 128-255 Octets	6338
RX Packets 256-511 Octets	165
RX Packets 512-1023 Octets	4317
RX Packets 1024-1518 Octets	10
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	5730880
RX Multicast Packets	4
RX Broadcast Packets	1735007
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0
RX Unsupported opcodes	0
RX Out of Range Length	0
RX False Carrier Errors	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX 1519-1522 Good Vlan frms	0
RX MTU Exceed Counter	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	371282850

Statistics for port 18 connected to device SPMB:

TX Packets 64 Octets	2990326
TX Packets 65-127 Octets	8572
TX Packets 128-255 Octets	4
TX Packets 256-511 Octets	49
TX Packets 512-1023 Octets	0
TX Packets 1024-1518 Octets	10793
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX 1519-1522 Good Vlan frms	0
TX Octets	3009744
TX Multicast Packets	20
TX Broadcast Packets	2458322
TX Single Collision frames	0
TX Mult. Collision frames	0
TX Late Collisions	0
TX Excessive Collisions	0
TX Collision frames	0
TX PAUSEMAC Ctrl Frames	0
TX MAC ctrl frames	0
TX Frame deferred Xmns	0
TX Frame excessive deferl	0
TX Oversize Packets	0
TX Jabbers	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	203712524
RX Packets 64 Octets	873454
RX Packets 65-127 Octets	8886
RX Packets 128-255 Octets	44
RX Packets 256-511 Octets	21862
RX Packets 512-1023 Octets	2
RX Packets 1024-1518 Octets	49912
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Octets	954160
RX Multicast Packets	0
RX Broadcast Packets	402369
RX FCS Errors	0
RX Align Errors	0
RX Fragments	0
RX Symbol errors	0

```

RX Unsupported opcodes      0
RX Out of Range Length     0
RX False Carrier Errors    0
RX Undersize Packets       0
RX Oversize Packets        0
RX Jabbers                  0
RX 1519-1522 Good Vlan frms 0
RX MTU Exceed Counter      0
RX Control Frame Counter   0
RX Pause Frame Counter     0
RX Byte Counter            137941752
...

```

show chassis ethernet-switch (T4000 Router)

```

user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on GE port 6 connected to device: FPC0
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 04

Link is good on GE port 9 connected to device: FPC3
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

Link is good on GE port 11 connected to device: FPC5
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

Link is good on GE port 12 connected to device: FPC6
  Speed is 100Mb
  Duplex is full
  Autonegotiate is Enabled
  False carrier sense count = 03

```

```
Link is good on GE port 14 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled

Link is good on GE port 18 connected to device: RE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled

Link is good on GE port 19 connected to device: Other RE
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Enabled
```

show chassis ethernet-switch errors (T4000 Router)

```
user@host> show chassis ethernet-switch errors

Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 4
  Disconnects   0
  FX mode       0

Accumulated error counts for port 9 connected to device FPC3:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 3
  Disconnects   0
  FX mode       0

Accumulated error counts for port 11 connected to device FPC5:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
```

```

False carrier  3
Disconnects    0
FX mode        0
Accumulated error counts for port 12 connected to device FPC6:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  3
Disconnects    0
FX mode        0
Accumulated error counts for port 19 connected to device Other RE:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0
FX mode        0

```

show chassis ethernet-switch (PTX5000 Packet Transport Router)

```

user@host> show chassis ethernet-switch
Displaying summary for switch 0
Link is good on XE port 2 connected to device: SPMB
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 11 connected to device: FPC7
  Speed is 1000Mb
  Duplex is full
  Autonegotiate is Disabled
  Flow Control TX is Disabled
  Flow Control RX is Disabled

Link is good on XE port 12 connected to device: FPC6
  Speed is 1000Mb
  Duplex is full

```

Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 13 connected to device: FPC5

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 15 connected to device: FPC3

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 16 connected to device: FPC2

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 18 connected to device: FPC0

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 19 connected to device: OTHER RE

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled
Flow Control TX is Disabled
Flow Control RX is Disabled

Link is good on XE port 20 connected to device: RE

Speed is 1000Mb
Duplex is full
Autonegotiate is Disabled

RX Broadcast Packets	10331
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0
RX Out of Range Length	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	938105
RX Unicast Frame Count	0
RX Packet OK Count	0

Statistics for port 11 connected to device FPC7:

TX Packets 64 Octets	14492
TX Packets 65-127 Octets	3542
TX Packets 128-255 Octets	6
TX Packets 256-511 Octets	45
TX Packets 512-1023 Octets	60

Continued...

Statistics for port 18 connected to device FPC0:

TX Packets 64 Octets	15212
TX Packets 65-127 Octets	3810
TX Packets 128-255 Octets	6
TX Packets 256-511 Octets	43
TX Packets 512-1023 Octets	66
TX Packets 1024-1518 Octets	169
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX Packets 9217-16383 Octets	0
TX Octets	19306
TX Multicast Packets	0
TX Broadcast Packets	10886
TX PAUSEMAC Ctrl Frames	0
TX Oversize Packets	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	1569412
TX Packet OK Counter	0
TX Pause Packet Counter	0

TX Unicast Counter	0
RX Packets 64 Octets	17994
RX Packets 65-127 Octets	8006
RX Packets 128-255 Octets	230
RX Packets 256-511 Octets	19
RX Packets 512-1023 Octets	53
RX Packets 1024-1518 Octets	11
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Packets 9217-16383 Octets	0
RX Octets	26313
RX Multicast Packets	0
RX Broadcast Packets	10886
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0
RX Out of Range Length	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX Control Frame Counter	2
RX Pause Frame Counter	2
RX Byte Counter	1836287
RX Unicast Frame Count	0
RX Packet OK Count	0

Statistics for port 19 connected to device OTHER RE:

TX Packets 64 Octets	10234
TX Packets 65-127 Octets	162
TX Packets 128-255 Octets	0
TX Packets 256-511 Octets	0
TX Packets 512-1023 Octets	0
TX Packets 1024-1518 Octets	0
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX Packets 9217-16383 Octets	0
TX Octets	10396
TX Multicast Packets	8
TX Broadcast Packets	10317
TX PAUSEMAC Ctrl Frames	0
TX Oversize Packets	0
TX FCS Error Counter	0

TX Fragment Counter	0
TX Byte Counter	666260
TX Packet OK Counter	0
TX Pause Packet Counter	0
TX Unicast Counter	0
RX Packets 64 Octets	4073
RX Packets 65-127 Octets	325
RX Packets 128-255 Octets	1
RX Packets 256-511 Octets	0
RX Packets 512-1023 Octets	0
RX Packets 1024-1518 Octets	72
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Packets 9217-16383 Octets	0
RX Octets	4471
RX Multicast Packets	0
RX Broadcast Packets	10317
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0
RX Out of Range Length	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	387333
RX Unicast Frame Count	0
RX Packet OK Count	0

Statistics for port 20 connected to device RE:

TX Packets 64 Octets	658856
TX Packets 65-127 Octets	45535
TX Packets 128-255 Octets	1900
TX Packets 256-511 Octets	532
TX Packets 512-1023 Octets	372
TX Packets 1024-1518 Octets	191
TX Packets 1519-2047 Octets	0
TX Packets 2048-4095 Octets	0
TX Packets 4096-9216 Octets	0
TX Packets 9217-16383 Octets	0
TX Octets	707386
TX Multicast Packets	0

TX Broadcast Packets	10421
TX PAUSEMAC Ctrl Frames	0
TX Oversize Packets	0
TX FCS Error Counter	0
TX Fragment Counter	0
TX Byte Counter	46608676
TX Packet OK Counter	0
TX Pause Packet Counter	0
TX Unicast Counter	0
RX Packets 64 Octets	27394
RX Packets 65-127 Octets	20271
RX Packets 128-255 Octets	78
RX Packets 256-511 Octets	215
RX Packets 512-1023 Octets	269
RX Packets 1024-1518 Octets	253370
RX Packets 1519-2047 Octets	0
RX Packets 2048-4095 Octets	0
RX Packets 4096-9216 Octets	0
RX Packets 9217-16383 Octets	0
RX Octets	301597
RX Multicast Packets	8
RX Broadcast Packets	10421
RX FCS Errors	0
RX Fragments	0
RX MAC Control Packets	0
RX Out of Range Length	0
RX Undersize Packets	0
RX Oversize Packets	0
RX Jabbers	0
RX Control Frame Counter	0
RX Pause Frame Counter	0
RX Byte Counter	275043436
RX Unicast Frame Count	0
RX Packet OK Count	0

Continued ...

show chassis ethernet-switch port-state (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch port-state
Displaying port state for switch 0
```

```
Port      : 02
Target    : SPMB
```

```
Error reading port 2 connected to device: SPMB
```

Release Information

Command introduced before Junos OS Release 7.4.

The **sfc** option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

RELATED DOCUMENTATION

[show chassis ethernet-switch-security](#) | 0

show chassis fabric degraded-fabric-reachability

IN THIS SECTION

- [Syntax](#) | 1046
- [Description](#) | 1046
- [Additional Information](#) | 1046
- [Required Privilege Level](#) | 1046
- [Output Fields](#) | 1046
- [Sample Output](#) | 1047
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Syntax

```
show chassis fabric degraded-fabric-reachability
```

Description

Display the current state of reachability between the Packet Forwarding Engines in the system.

Additional Information

Required Privilege Level

view

Output Fields

[Table 54 on page 1046](#) lists the output fields for the **show chassis fabric degraded-fabric-reachability** command. Output fields are listed in the approximate order in which they appear.

Table 54: show chassis fabric degraded-fabric-reachability Output Fields

Field Name	Field Description
FPC	Display fabric reachability for the displayed FPC slot.
PFE	Display fabric reachability for the displayed PFE slot on a per SIB and plane basis.

Table 54: show chassis fabric degraded-fabric-reachability Output Fields (Continued)

Field Name	Field Description
SIBx_Plane y	Display the SIB (x) and plane (y) where link errors occurred.
Link errors FPC/PFEs	Display the list of FPC and PFE slots that are unreachable for the displayed SIB and plane due to link errors.

Sample Output

show chassis fabric degraded-fabric-reachability

```

user@host> show chassis fabric degraded-fabric-reachability
Degraded Fabric reachability Information:
FPC #0
  PFE #0
    SIB0_Plane 0
      Link errors  FPC/PFEs    2/0 5/0 5/1 5/2 5/3
    SIB0_Plane 1
      Link errors  FPC/PFEs    2/0 5/0
  PFE #1
    SIB0_Plane 0
      Link errors  FPC/PFEs    2/0 5/0 5/1 5/2 5/3
    SIB0_Plane 1
      Link errors  FPC/PFEs    2/0 5/0

```

Release Information

Command introduced in Junos OS Release 12.1X48R4.

RELATED DOCUMENTATION

[show chassis fabric errors | 1082](#)

[show chassis fabric reachability | 1197](#)

[degraded | 280](#)

show chassis fabric destinations

IN THIS SECTION

- [Syntax | 1048](#)
- [Syntax \(MX240, MX480, MX960, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms\) | 1049](#)
- [Description | 1049](#)
- [Options | 1049](#)
- [Required Privilege Level | 1049](#)
- [Output Fields | 1049](#)
- [Sample Output | 1050](#)
- [Release Information | 1077](#)

Syntax

```
show chassis fabric destinations
```


Syntax (MX240, MX480, MX960 , MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)

```
show chassis fabric destinations fpc <fpc-slot-number>
<extended>
```

Description

Display the state of fabric destinations for all FPCs.

Options

none	Display information about the fabric destinations of all FPCs.
<i>fpc-slot-number</i>	(Optional) Display information about the specified FPC. For MX2020 routers, replace <i>fpc-slot-number</i> with a value from 0 through 19. For MX2010 and MX2008 routers, replace <i>fpc-slot-number</i> with a value from 0 through 9. For MX10003, replace <i>fpc-slot-number</i> with a value from 0 through 1.
extended	(Optional) (MX2020, MX2010, and MX2008 routers with SFB2 only) Display information about the fabric destination of all 24 planes for each FPC.

Required Privilege Level

view

Output Fields

[Table 55 on page 1050](#) lists the output fields for the **show chassis fabric destinations** command. Output fields are listed in the approximate order in which they appear.

Table 55: show chassis fabric destinations Output Fields

Field Name	Field Description
Fabric destinations state	Indicates the state of the fabric destinations: <ul style="list-style-type: none"> • 0—Destination is non-existent. • 2—Destination is enabled. • 3—Destination is disabled. • 6—Destination is in erroneous state and is disabled.
Flexible PIC Concentrator (FPC) number	Source FPC number.
Packet Forwarding Engine number	Source Packet Forwarding Engine number.
Plane number	Source plane number.

Sample Output

show chassis fabric destinations fpc 1 (MX240 Router)

In the output, the values followed by the plane number denote multiple quadruples. The first quadruple specifies FPC1, the second quadruple specifies FPC2 and so on. Each quadruple specifies the states of the fabric plane to the Packet Forwarding Engines.

```

user@host> show chassis fabric destinations
fpc 1

Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

```

```

FPC 1
  PFE 0
    Plane 0  0000 3300 3333
    Plane 1  0000 2200 2222
    Plane 2  0000 2200 2222
    Plane 3  0000 2200 2222
    Plane 4  0000 2200 2222
    Plane 5  0000 3300 3333
    Plane 6  0000 3300 3333
    Plane 7  0000 3300 3333
  PFE 1
    Plane 0  0000 3300 3333
    Plane 1  0000 2200 2222
    Plane 2  0000 2200 2222
    Plane 3  0000 2200 2222
    Plane 4  0000 2200 2222
    Plane 5  0000 3300 3333
    Plane 6  0000 3300 3333
    Plane 7  0000 3300 3333

```

show chassis fabric destinations (MX10008 Router)

```

user@host> show chassis fabric destinations

Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 1
  PFE 0
    Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
    Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
    Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
    Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
    Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
    Plane 5  000000 333333 000000  000000 000000 333333  000000 000000
  PFE 1
    Plane 0  000000 222222 000000  000000 000000 222222  000000 000000

```



```

Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000
PFE 2
Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000
PFE 3
Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000
PFE 4
Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000
PFE 5
Plane 0  000000 222222 000000  000000 000000 222222  000000 000000
Plane 1  000000 222222 000000  000000 000000 222222  000000 000000
Plane 2  000000 222222 000000  000000 000000 222222  000000 000000
Plane 3  000000 222222 000000  000000 000000 222222  000000 000000
Plane 4  000000 333333 000000  000000 000000 333333  000000 000000
Plane 5  000000 333333 000000  000000 000000 333333  000000 000000

```

show chassis fabric destinations fpc 4 (MX480 Router with MPC4E)

```

user@host > show chassis fabric destinations fpc 4
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled

```

```
6: dest-err and disabled
```

```
FPC 4
```

```
PFE 0
```

```
Plane 0  2200 2222 0000   2000 2200 0000
Plane 1  2200 2222 0000   2000 2200 0000
Plane 2  2200 2222 0000   2000 2200 0000
Plane 3  2200 2222 0000   2000 2200 0000
Plane 4  3300 3333 0000   3000 3300 0000
Plane 5  3300 3333 0000   3000 3300 0000
Plane 6  3300 3333 0000   3000 3300 0000
Plane 7  3300 3333 0000   3000 3300 0000
```

```
PFE 1
```

```
Plane 0  2200 2222 0000   2000 2200 0000
Plane 1  2200 2222 0000   2000 2200 0000
Plane 2  2200 2222 0000   2000 2200 0000
Plane 3  2200 2222 0000   2000 2200 0000
Plane 4  3300 3333 0000   3000 3300 0000
Plane 5  3300 3333 0000   3000 3300 0000
Plane 6  3300 3333 0000   3000 3300 0000
Plane 7  3300 3333 0000   3000 3300 0000
```

show chassis fabric destinations (MX960 Router)

```
user@host> show chassis fabric destinations
```

```
Fabric destinations state:
```

```
0: non-existent
2: enabled
3: disabled
6: dest-err and disabled
```

```
FPC 1
```

```
PFE 0
```

```
Plane 0  0000 3300 3333
Plane 1  0000 2200 2222
Plane 2  0000 2200 2222
Plane 3  0000 2200 2222
Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
```

```
Plane 7 0000 3300 3333
PFE 1
Plane 0 0000 3300 3333
Plane 1 0000 2200 2222
Plane 2 0000 2200 2222
Plane 3 0000 2200 2222
Plane 4 0000 2200 2222
Plane 5 0000 3300 3333
Plane 6 0000 3300 3333
Plane 7 0000 3300 3333
FPC 2
PFE 0
Plane 0 0000 3300 3333
Plane 1 0000 2200 2222
Plane 2 0000 2200 2222
Plane 3 0000 2200 2222
Plane 4 0000 2200 2222
Plane 5 0000 3300 3333
Plane 6 0000 3300 3333
Plane 7 0000 3300 3333
PFE 1
Plane 0 0000 3300 3333
Plane 1 0000 2200 2222
Plane 2 0000 2200 2222
Plane 3 0000 2200 2222
Plane 4 0000 2200 2222
Plane 5 0000 3300 3333
Plane 6 0000 3300 3333
Plane 7 0000 3300 3333
PFE 2
Plane 0 0000 3300 3333
Plane 1 0000 2200 2222
Plane 2 0000 2200 2222
Plane 3 0000 2200 2222
Plane 4 0000 2200 2222
Plane 5 0000 3300 3333
Plane 6 0000 3300 3333
Plane 7 0000 3300 3333
PFE 3
Plane 0 0000 3300 3333
Plane 1 0000 2200 2222
Plane 2 0000 2200 2222
Plane 3 0000 2200 2222
```

```

Plane 4  0000 2200 2222
Plane 5  0000 3300 3333
Plane 6  0000 3300 3333
Plane 7  0000 3300 3333

```

show chassis fabric destinations fpc 1 (MX2020 Router)

```

user@host> show chassis fabric destinations
fpc 1
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 1
  PFE 0
    Plane 0  3333 3333 3333  3333 3333 3333  3333 3333 3333  3333 3333 3333
3333 3333 3333  3333 3333 3333  3333 3333
    Plane 1  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 2  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 3  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 4  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 5  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 6  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 7  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222

  PFE 1
    Plane 0  3333 3333 3333  3333 3333 3333  3333 3333 3333  3333 3333 3333
3333 3333 3333  3333 3333 3333  3333 3333
    Plane 1  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222
    Plane 2  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222

```



```

Plane 7  2222 2222 2222  2222 2222 2222  2222 2222 2222  2222 2222 2222
2222 2222 2222  2222 2222 2222  2222 2222

```

show chassis fabric destinations extended (MX2020 Router with SFB2)

```

user@host> show chassis fabric destinations extended
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 0
PFE 0
  Plane 0  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 1  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 2  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 3  6000 3333 3300 3300 0000 0000 3000 3000 0000  0000 0000 0000  3300
3300 0000  0000 3300 3300  0000 3333
  Plane 4  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 5  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 6  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 7  2000 2222 2200 2200 0000 0000 2000 2000 0000  0000 0000 0000  3300
2200 0000  0000 2200 2200  0000 2222
  Plane 8  6000 3333 3300 3300 0000 0000 3000 3000 0000  0000 0000 0000  3300
3300 0000  0000 3300 3300  0000 3333
  Plane 9  6000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
  Plane 10 6000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
  Plane 11 6000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
  Plane 12 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
  Plane 13 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000

```



```

Plane 9  3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 10 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 11 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3200 0000  0000 2200 2200  0000 2222
Plane 12 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 13 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 14 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 15 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 16 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 17 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 18 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 19 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 20 3000 3333 3300  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 3300 0000  0000 3300 3300  0000 3333
Plane 21 3000 2222 2200  3300 0000 0000  3000 3000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 22 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222
Plane 23 2000 2222 2200  2200 0000 0000  2000 2000 0000  0000 0000 0000
3300 2200 0000  0000 2200 2200  0000 2222

```

show chassis fabric destinations (MX2010 Router)

```

user@host> show chassis fabric destinations
Fabric destinations state:
  0: non-existent
  2: enabled
  3: disabled
  6: dest-err and disabled

FPC 0

```



```

Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 1  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 2  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 3  3300 3000 3300  3333 3000 3300  3333 3300 3000  3300
Plane 4  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 5  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 6  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 7  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
FPC 9
PFE 0
Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 1  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 2  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 3  3300 3000 3300  3333 3000 3300  3333 3300 3000  3300
Plane 4  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 5  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 6  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 7  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
PFE 1
Plane 0  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 1  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 2  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 3  3300 3000 3300  3333 3000 3300  3333 3300 3000  3300
Plane 4  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 5  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 6  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200
Plane 7  2200 2000 2200  2222 2000 2200  2222 2200 2000  2200

```

show chassis fabric destinations (MX10003 Router)

```
user@host> show chassis fabric destinations
```

```
Fabric destinations state:
```

```

0: non-existent
2: enabled
3: disabled
6: dest-err and disabled

```

```
FPC 0
```

```
PFE 0
```

```
Plane 0  2220 2220
```

Plane 1	2220	2220
Plane 2	2220	2220
Plane 3	2220	2220
Plane 4	2220	2220
Plane 5	2220	2220
Plane 6	2220	2220
Plane 7	2220	2220
Plane 8	2220	2220
Plane 9	2220	2220
Plane 10	2220	2220
Plane 11	2220	2220
Plane 12	2220	2220
Plane 13	2220	2220
Plane 14	2220	2220
Plane 15	2220	2220
Plane 16	2220	2220
Plane 17	2220	2220
Plane 18	2220	2220
Plane 19	2220	2220
Plane 20	2220	2220
Plane 21	2220	2220
PFE 1		
Plane 0	2220	2220
Plane 1	2220	2220
Plane 2	2220	2220
Plane 3	2220	2220
Plane 4	2220	2220
Plane 5	2220	2220
Plane 6	2220	2220
Plane 7	2220	2220
Plane 8	2220	2220
Plane 9	2220	2220
Plane 10	2220	2220
Plane 11	2220	2220
Plane 12	2220	2220
Plane 13	2220	2220
Plane 14	2220	2220
Plane 15	2220	2220
Plane 16	2220	2220
Plane 17	2220	2220
Plane 18	2220	2220
Plane 19	2220	2220
Plane 20	2220	2220

```
Plane 21  2220 2220
PFE 2
Plane 0   2220 2220
Plane 1   2220 2220
Plane 2   2220 2220
Plane 3   2220 2220
Plane 4   2220 2220
Plane 5   2220 2220
Plane 6   2220 2220
Plane 7   2220 2220
Plane 8   2220 2220
Plane 9   2220 2220
Plane 10  2220 2220
Plane 11  2220 2220
Plane 12  2220 2220
Plane 13  2220 2220
Plane 14  2220 2220
Plane 15  2220 2220
Plane 16  2220 2220
Plane 17  2220 2220
Plane 18  2220 2220
Plane 19  2220 2220
Plane 20  2220 2220
Plane 21  2220 2220
FPC 1
PFE 0
Plane 0   2220 2220
Plane 1   2220 2220
Plane 2   2220 2220
Plane 3   2220 2220
Plane 4   2220 2220
Plane 5   2220 2220
Plane 6   2220 2220
Plane 7   2220 2220
Plane 8   2220 2220
Plane 9   2220 2220
Plane 10  2220 2220
Plane 11  2220 2220
Plane 12  2220 2220
Plane 13  2220 2220
Plane 14  2220 2220
Plane 15  2220 2220
Plane 16  2220 2220
```

```
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
Plane 21 2220 2220
PFE 1
Plane 0 2220 2220
Plane 1 2220 2220
Plane 2 2220 2220
Plane 3 2220 2220
Plane 4 2220 2220
Plane 5 2220 2220
Plane 6 2220 2220
Plane 7 2220 2220
Plane 8 2220 2220
Plane 9 2220 2220
Plane 10 2220 2220
Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
Plane 14 2220 2220
Plane 15 2220 2220
Plane 16 2220 2220
Plane 17 2220 2220
Plane 18 2220 2220
Plane 19 2220 2220
Plane 20 2220 2220
Plane 21 2220 2220
PFE 2
Plane 0 2220 2220
Plane 1 2220 2220
Plane 2 2220 2220
Plane 3 2220 2220
Plane 4 2220 2220
Plane 5 2220 2220
Plane 6 2220 2220
Plane 7 2220 2220
Plane 8 2220 2220
Plane 9 2220 2220
Plane 10 2220 2220
Plane 11 2220 2220
Plane 12 2220 2220
Plane 13 2220 2220
```

```
Plane 14  2220 2220
Plane 15  2220 2220
Plane 16  2220 2220
Plane 17  2220 2220
Plane 18  2220 2220
Plane 19  2220 2220
Plane 20  2220 2220
Plane 21  2220 2220
```

Release Information

Command introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers.

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

extended option introduced in Junos OS Release 16.1 for MX2010 and MX2020 Routers.

RELATED DOCUMENTATION

[show chassis fabric redundancy-mode | 1195](#)

[Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers | 52](#)

[MX Series Routers Fabric Resiliency | 28](#)

show chassis fabric faults recovery-actions

IN THIS SECTION

- [Syntax | 1078](#)
- [Description | 1078](#)
- [Required Privilege Level | 1078](#)
- [Output Fields | 1078](#)
- [Sample Output | 1079](#)
- [Release Information | 1079](#)

Syntax

```
show chassis fabric faults recovery-actions
```

Description

Display the last 64 recovery actions related to a fabric null route condition.

Required Privilege Level

view

Output Fields

[Table 56 on page 1078](#) lists the output fields for the **show chassis fabric faults recovery-actions** command. Output fields are listed in the approximate order in which they appear.

Table 56: show chassis fabric faults recovery-actions Output Fields

Field Name	Field Description
Fault Name	The name of fault detected. The fault name appears in a message such as: CLOS LINK ERROR detected on F2S or F13 slot <i>slot number</i> xf chip <i>chip number</i> and Link Number <i>link number</i>
Recovery Start Time	The time when recovery actions were initiated.

Table 56: show chassis fabric faults recovery-actions Output Fields (Continued)

Field Name	Field Description
Recovery Action	<p>The recovery action that was used to recover from the mentioned fault. Recovery options depend on the type of faults and can include:</p> <ul style="list-style-type: none"> • SFC SIB Reboot: The SFC SIB was rebooted. • LCC SIB Reboot: The LCC SIB was rebooted. • FPC Reboot: The FPC was rebooted. • Destination Reprogramming: Reenabling the data flow between Packet Forwarding Engines. • Interchassis Link Retraining: Retraining of optical links between an LCC SIB and an SFC SIB.

Sample Output

show chassis fabric faults recovery-actions

```

user@host> show chassis fabric faults recovery-actions
Fault Name           :CLOS LINK ERROR on F2SSlot3Chip0LinkNum2
Recovery Start Time  :2014-03-25 19:52:50 PDT
Recovery Action      :F2S slot 3 Reboot

```

Release Information

Command introduced in Junos OS Release 14.2.

RELATED DOCUMENTATION

| [auto-recovery-disable](#)

show chassis fabric feb

IN THIS SECTION

- [Syntax | 1080](#)
- [Description | 1080](#)
- [Options | 1080](#)
- [Required Privilege Level | 1081](#)
- [Output Fields | 1081](#)
- [Sample Output | 1081](#)
- [Release Information | 1082](#)

Syntax

```
show chassis fabric feb
```

Description

(M120 router only) Display the state of the electrical and optical switching fabric links between the Forwarding Engine Boards (FEBs) and the fabric planes, as interpreted by the FEB.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 57 on page 1081](#) lists the output fields for the **show chassis fabric feb** command.

Table 57: show chassis fabric feb Output Fields

Field Name	Field Description
Fabric management FEB state	State of the switching fabric link between each FEB and fabric plane: desalination error, disabled, enabled, link error, link ok, or unused.

Sample Output

show chassis fabric feb

```

user@host> show chassis fabric feb
Fabric management      FEB state
FEB 0                  Plane 0: Plane enabled
                       Plane 1: Plane enabled
                       Plane 2: Plane enabled
                       Plane 3: Plane enabled

FEB 4                  Plane 0: Plane enabled
                       Plane 1: Plane enabled
                       Plane 2: Plane enabled
                       Plane 3: Plane enabled

```

Release Information

Command introduced in Junos OS Release 8.0.

show chassis fabric errors

IN THIS SECTION

- [Syntax | 1082](#)
- [Syntax \(PTX Series Packet Transport Routers\) | 1082](#)
- [Description | 1083](#)
- [Options | 1083](#)
- [Required Privilege Level | 1085](#)
- [Output Fields | 1085](#)
- [Sample Output | 1087](#)
- [Release Information | 1089](#)

Syntax

```
show chassis fabric errors
<autoheal>
<fpc slot-number lcc number>
<sib (slot | f13 sib-slot | f2s sib-slot/sib-f2s-slot-number | lcc number)>
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis fabric errors
(autoheal | fpc slot-number | sib sib-slot)
```

Description

Display the first ten and last ten fabric errors for the FPC or Switch Interface Boards (SIBs).

NOTE: This command can only be issued on a primary Routing Engine.

Options

autoheal (TX Matrix Plus routers and PTX Series Packet Transport Routers only) Show an error log of the first 100 autoheal actions taken on the system.

fpc slot-number Show error log of the first ten and last ten errors for the specified FPC.
(PTX3000 routers only)—Replace *slot-number* with an FPC slot number: **0, 2, 4, 6, 8, 10, 12,** or **14**.

(PTX5000 routers only)—Replace *slot-number* with a value from **0** through **7**.

(TX Matrix Plus routers only)—Replace **fpc slot-number** with the following values depending on the LCC configuration:

- On a TX Matrix Plus router with the TXP-T1600 configuration, if you specify the number of a T1600 LCC by using the **lcc number** option (the recommended method), replace **fpc slot-number** with a value from **0** through **7**. Otherwise, use a value from **0** through **31**.
- On a TX Matrix Plus router with the TXP-T1600-3D, TXP-T4000-3D, or TXP-Mixed-LCC-3D configuration, if you specify the number of a T1600 or T4000 LCC by using the **lcc number** option (the recommended method), replace **fpc slot-number** with a value from **0** through **7**. Otherwise, use a value from **0** through **63**.
- **lcc number**—Show error log of the first ten and last ten errors for the specified FPC on a specific network device (line-card chassis) that is part of the routing matrix.

Replace **lcc number** with the following values depending on the LCC configuration:

- **0** through **3**, when T640 routers are connected to a TX Matrix router in a routing matrix.

- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

If you specify the number of the network device by using only the **lcc number** option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis fabric errors fpc 1 lcc 1
user@host> show chassis fabric errors fpc 9
```

sib

Show error log of the first ten and last ten errors for the specified SIB. This option has the following suboptions:

- (TX Matrix Plus routers only) *sib-slot*—Specify a value ranging from 0 through 4.
- (PTX3000 and PTX5000 routers) *sib-slot*—Specify a value ranging from 0 through 8.
- (TX Matrix Plus routers only) **f13** *sib-slot*—(Optional) Show SIB F13 errors. Specify a valid SIB value number: 0, 1, 3, 4, 6, 7, 8, 9, 11, or 12.
- (TX Matrix Plus routers only) **f2s** *sib-slot/sib-f2s-slot-number*—(Optional) Show SIB F2S errors. Replace *sib-slot* with a value from 0 through 4, followed by a *sib-f2s-slot-number* value 0, 2, 4 or 6.
- (TX Matrix Plus routers only) **lcc number**—(Optional) Show error log of the first ten and last ten SIB errors for the specified network device (line-card chassis).

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

NOTE: The `lcc number` suboption is mandatory when using the following format for the command: `show chassis fabric errors sib lcc number sib slot-number`. For instance, issuing `show chassis fabric errors sib lcc 2 3` displays errors detected on LCC 2, SIB 3.

This suboption is not required when the `f13` or `f2s` suboptions are used with the `sib slot-number` option.

Required Privilege Level

view

Output Fields

Table 58 on page 1085 lists the output fields for the `show chassis fabric errors` command. Output fields are listed in the approximate order in which they appear.

Table 58: show chassis fabric errors Output Fields

Field Name	Field Description
Time	Time the error was logged. (TX Matrix Plus routers and PTX Series Packet Transport Routers only) For the autoheal option, shows the timestamp when autoheal was attempted on a SIB that was in fault state.
Error log of first 10 errors	List of the first ten errors.

Table 58: show chassis fabric errors Output Fields (*Continued*)

Field Name	Field Description
Error log of last 10 errors	List of the last ten errors.
Error log of first 100 errors	<p>Indicates the autoheal action taken on the SIB. The following actions can occur:</p> <ul style="list-style-type: none"> • Req—A SIB autoheal request was made on a faulty SIB. • Action—Autohealing (taking the SIB offline and then online) is initiated. • Denied—Autohealing (taking the SIB offline and then online) is denied because the SIB went to a fault state before the autoheal configuration period completed. • Set info—Setting information to force skipping autoheal on the SIB so that no further attempts to autoheal the faulty SIB are made. • Clear info— if a user takes a SIB offline and then online, then the autoheal information of the SIB is cleared. If the SIB goes to a fault state, autoheal is attempted on the SIB. • (PTX3000 and PTX5000 routers only) Completed—Autohealing is completed. This message is displayed whether autohealing is successful or not.
fpc slot number	(PTX5000 Packet Transport Router only)—Range is 0 through 7.
sib slot number	(PTX Series Packet Transport Routers only)—Range is 0 through 8.
lcc number	Not supported on PTX Series Packet Transport Routers.

Sample Output

show chassis fabric errors (F13 SIB Errors on a TX Matrix Plus Router)

```

user@host> show chassis fabric errors sib f13
11Can you provide CLI output for QFX,
depending on which options are available?

Time                               Error log of first 10 errors
2009-10-06 02:21:17 PDT             LOS on Cable-D(1,0)

```

show chassis fabric errors (F2S SIB Errors on a TX Matrix Plus Router)

```

user@host> show chassis fabric errors sib f2s
0/0

Time                               Error log of first 10 errors
2009-10-06 13:51:42 PDT             Cell drop errors on CLOS F2 SF 0 Port 0 link

```

show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```

user@host> show chassis fabric errors sib 1
lcc 0
lcc0-re0:

-----

Time                               Error log of first 10 errors
2009-10-06 02:23:16 PDT             Cell drop errors on FPC7_T link

2009-10-06 02:23:16 PDT             Cell drop errors on FPC7_B link

```

show chassis fabric errors (FPC Errors Specific to an LCC Connected to a TX Matrix Plus Router)

```

user@host> show chassis fabric errors fpc 5
lcc 0
lcc0-re0:
-----

Time                Error log of first 10 errors
2009-10-06 13:56:59 PDT    PFE_T has link error on plane 1

```

show chassis fabric errors (SIB Errors Specific to an LCC Connected to a TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric errors sib 1
lcc 0
lcc0-re0:
-----

Time                Error log of first 10 errors
2013-02-11 04:46:42 PST    CRC errors on XC link SIB01_XF3#11,0

```

show chassis fabric errors fpc or sib (PTX Series Packet Transport Routers)

```

user@host> show chassis fabric errors fpc 1
Time                Error log of first 10 errors
2012-01-06 16:27:03 PST    Link errs on PFE 2, SIB 0, Plane 0

user@host> show chassis fabric errors sib 1
Time                Error log of first 10 errors
2015-011-16 15:34:33 PST    Link errs on PFE 0, FPC 0, Plane 2
2015-011-16 15:44:33 PST    CM set ASIC 1 to FAULT (Fault due to PIO errors)

```


show chassis fabric errors autoheal (PTX Series Packet Transport Routers)

```

user@host> show chassis fabric errors autoheal
Mar 30 01:43:00
Time                               Error log of first 100 errors
2016-03-29 23:46:23 PDT             Req: sib 0
2016-03-29 23:46:23 PDT             Action: SIB 0 (autohealing)
2016-03-29 23:54:52 PDT             Completed: SIB 0 (autoheal)

```

show chassis fabric errors autoheal (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric errors autoheal
Time                               Error log of first 100 errors
2013-03-25 00:16:10 PDT             Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:16:12 PDT             Action: Plane 3 F13 8 Cbl 4 (autohealing)
2013-03-25 00:17:24 PDT             Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:17:24 PDT             Denied: Plane 3 F13 8 Cbl 4 (time < configured)
2013-03-25 00:17:24 PDT             Set info: Plane 3 F13 8 Cbl 4 (skip autoheal)
2013-03-25 01:20:17 PDT             Clear info: Plane 3

```

Release Information

Command introduced in Junos OS Release 10.0.

show chassis fabric fpcs

IN THIS SECTION

- [Syntax | 1090](#)
- [Syntax \(MX Series Routers\) | 1090](#)
- [Syntax \(T4000, MX2010, MX2020, MX10003, and MX2008 Routers\) | 1090](#)
- [Syntax \(PTX Series Packet Transport Routers\) | 1091](#)

- [Syntax \(TX Matrix Plus Router\) | 1091](#)
- [Syntax \(QFX Series Switches\) | 1091](#)
- [Description | 1091](#)
- [Options | 1091](#)
- [Required Privilege Level | 1092](#)
- [Output Fields | 1092](#)
- [Sample Output | 1094](#)
- [Release Information | 1130](#)

Syntax

```
show chassis fabric fpcs  
<lcc number>
```

Syntax (MX Series Routers)

```
show chassis fabric fpcs  
<extended>  
<all-members>  
<local>  
<member member-id>
```

Syntax (T4000, MX2010, MX2020, MX10003, and MX2008 Routers)

```
show chassis fabric fpcs
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis fabric fpcs <slot fpc-slot>
```

Syntax (TX Matrix Plus Router)

```
show chassis fabric fpcs  
<lcc number>
```

Syntax (QFX Series Switches)

```
show chassis fabric fpcs <slot fpc-slot>
```

Description

Display the state of the electrical switch fabric links between the Flexible PIC Concentrators (FPCs) and the Switch Interface Boards (SIBs).

Options

- | | |
|-----------------|--|
| none | Display the switch fabric link state. On a TX Matrix router, display the switching fabric link states for the FPCs in all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display the switching fabric link states for the FPCs in all routers connected to the TX Matrix Plus router. |
| extended | (MX2020 and MX2010 Routers with SFB2) (Optional) Display the fabric link state for all 24 fabric planes. |

all-members	(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in all members of the Virtual Chassis configuration.
lcc <i>number</i>	(TX Matrix router and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the switch fabric link state for the FPCs in the specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the switch fabric link state for the FPCs in the specified router (line-card chassis) that is connected to the TX Matrix Plus router. Replace <i>number</i> with a following value depending on the LCC configurations: <ul style="list-style-type: none"> • From 0 through 3 on a T640 router on the routing matrix with TX Matrix routers. • From 0 through 3 on a T1600 router on the routing matrix with TX Matrix Plus routers. • From 0 through 7 on a T1600 router in a routing matrix with TX Matrix Plus router with 3D SIBs. • 0, 2, 4, 6 on a T4000 router in a routing matrix with TX Matrix Plus router with 3D SIBs.
local	(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
slot <i>fpc-slot</i>	(PTX Series Packet Transport Routers and QFX Series switches only) (Optional) Display the fabric state of the specified FPC slot. If no value is provided, display the status of all FPCs.

Required Privilege Level

view

Output Fields

[Table 59 on page 1093](#) lists the output fields for the **show chassis fabric fpcs** command. Output fields are listed in the approximate order in which they appear.

Table 59: show chassis fabric fpcs Output Fields

Field Name	Field Description
Fabric management FPC state	<p>Switching fabric link (link from SIB to FPC) state for each FPC:</p> <ul style="list-style-type: none"> • Unused—FPC is not present. (On MX240 and MX480 routers with AS- MLC modular carrier card or MPC4E only) the fabric plane from the pair that share physical links (1 and 5, and 3 and 7) is inactive. • Destination error on PFEs <i>list of PFE numbers</i>—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines. NOTE: In Junos OS Release 9.6 and later, the list of Packet Forwarding Engines with destination errors is displayed in the output. In Junos OS Releases before 9.6, the output only indicates that there are destination errors. However, the list of Packet Forwarding Engines with destination errors is not displayed. • Links ok—Link between the spare SIB and FPC is eligible to carry traffic. • Link error—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic. • Plane disabled—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> • Destination errors have exceeded the thresholds. • Run-time link errors have exceeded the thresholds. • Initialization time link errors detected, and link training was unsuccessful. • Plane Disabled, Links Error (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the FPC RX.

Table 59: show chassis fabric fpcs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • Plane Disabled, Links Down (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the SIB RX. • Plane enabled—Link between the active SIB and FPC is eligible to carry traffic. <p>NOTE: On the Enhanced MX SCB with MPC, a maximum of 4 planes are operational and running. On all the other SCBs with MPC, all the planes are operational and running.</p> <ul style="list-style-type: none"> • Plane Enabled, Links OK (PTX Series Packet Transport Routers and QFX Series switches only)—The FPC CCL RX link is eligible to carry traffic. • Plane Enabled, Links OK (TX Matrix and TX Matrix Plus routers only)—The FPC HSL RX link is eligible to carry traffic.

Sample Output

show chassis fabric fpcs (M320 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC #2
  PFE #1
    SIB #0
      Plane enabled
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled

```

show chassis fabric fpcs (MX960 Router)

```
user@host> show chassis fabric fpcs
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #3
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
  PFE #1
    Plane 0: Plane enabled
```

```

    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled
    Plane 5: Plane enabled
FPC 2
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #2
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
...

```

show chassis fabric fpcs (MX480 Router with MPC4E)

In the following output, **FPC4** is the MPC4E (MPC4E-3D-32XGE-SFPP) card.

```

user@host > show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Links ok
    Plane 1: Links ok
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Plane enabled

```



```
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
FPC 1
PFE #0
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #1
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #2
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
PFE #3
Plane 0: Links ok
Plane 1: Links ok
```

```
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
```

FPC 3

PFE #0

```
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Links ok
Plane 6: Plane enabled
Plane 7: Links ok
```

FPC 4

PFE #0

```
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused
```

PFE #1

```
Plane 0: Links ok
Plane 1: Links ok
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Unused
Plane 6: Plane enabled
Plane 7: Unused
```

show chassis fabric fpcs (MX960 with AS MLC Modular Carrier Card)

In the following output, FPC 5 is the AS MLC modular carrier card (AS MCC).

```
user@host>show chassis fabric fpcs
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 1
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
FPC 4
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
  PFE #1
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
```

```
Plane 4: Links ok
Plane 5: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
FPC 5
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
FPC 8
PFE #0
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #2
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
```

```
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
```

show chassis fabric fpcs (MX2020 Router with SFB2)

```
user@host> show chassis fabric fpcs extended
Fabric management FPC state:
FPC 0
  PFE #0
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Destination error
    Plane 4: Plane enabled
    Plane 5: Plane enabled
    Plane 6: Plane enabled
    Plane 7: Plane enabled
    Plane 8: Destination error
    Plane 9: Destination error
    Plane 10: Destination error
    Plane 11: Destination error
    Plane 12: Plane enabled
    Plane 13: Plane enabled
    Plane 14: Plane enabled
    Plane 15: Plane enabled
    Plane 16: Plane enabled
    Plane 17: Plane enabled
    Plane 18: Plane disabled
    Plane 19: Plane disabled
    Plane 20: Plane disabled
    Plane 21: Destination error
    Plane 22: Plane enabled
    Plane 23: Plane enabled
```

FPC 1

PFE #0

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #1

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled

Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #2

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #3

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled

```
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Plane disabled
Plane 19: Plane disabled
Plane 20: Plane disabled
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
```

...

FPC 19

PFE #0

```
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
```


PFE #1

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled

PFE #2

Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled

```
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
PFE #3
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Plane enabled
Plane 5: Plane enabled
Plane 6: Plane enabled
Plane 7: Plane enabled
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
Plane 12: Plane enabled
    Plane 13: Plane enabled
Plane 14: Plane enabled
Plane 15: Plane enabled
Plane 16: Plane enabled
Plane 17: Plane enabled
Plane 18: Unused
Plane 19: Unused
Plane 20: Unused
Plane 21: Plane enabled
Plane 22: Plane enabled
Plane 23: Plane enabled
```

show chassis fabric fpcs (T320 Router)

```
user@host> show chassis fabric fpcs
FPC #3
  PFE #1
    SIB #0
      Links ok
    SIB #1
```

```

        Plane enabled
    SIB #2
        Plane enabled
FPC #5
    PFE #1
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled
FPC #7
    PFE #1
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled

```

show chassis fabric fpcs (TX Matrix Router)

```

user@host> show chassis fabric fpcs
lcc0-re0:
-----
Fabric management FPC state:
FPC #0
    PFE #1
        SIB #0
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
FPC #2
    PFE #1
        SIB #0
            Links ok
        SIB #2

```

```

        Links ok
SIB #3
        Links ok
SIB #4
        Links ok  FPC #3
PFE #1
SIB #2
        Plane enabled
SIB #3
        Link error
        Destination error on PFES      0   1   2   3   4   5   6   7
        8   9  10  11  12  13  14  15  16  17  18  19  20  21
SIB #4
        Destination error on PFES      0   1   2   3   4   5   6   7
        8   9  10  11  12  13  14  15  16  17  18  19  20  21
...
FPC #4
PFE #0
SIB #4 Links ok
PFE #1
SIB #4 Links ok
FPC #5
PFE #1
SIB #4 Links ok
FPC #6
PFE #1
SIB #4 Links ok

lcc2-re0:
-----
Fabric management FPC state:
FPC #0
PFE #1
SIB #4 Links ok
FPC #1
PFE #1
SIB #4 Links ok
FPC #2
PFE #0
SIB #4 Links ok
PFE #1
SIB #4 Links ok
FPC #4

```

```

PFE #0
  SIB #4 Links ok
PFE #1
  SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok

```

show chassis fabric fpcs lcc (TX Matrix Router with 3D SIBs)

```

user@host> show chassis fabric fpcs lcc 4
lcc4-re0:

```

```

-----
Fabric management FPC state:

```

```

FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #3
  PFE #0
    SIB #0
      Links ok

```

```
SIB #1
    Links ok
SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok
PFE #1
  SIB #0
    Links ok
  SIB #1
    Links ok
  SIB #2
    Links ok
  SIB #3
    Links ok
  SIB #4
    Links ok
```

show chassis fabric fpcs (T1600 Router)

```
user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
```

```
SIB #2
    Plane enabled
SIB #3
    Plane enabled
SIB #4
    Plane enabled
FPC #1
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #4
  PFE #0
```

```

SIB #0
    Links ok
SIB #1
    Plane enabled
SIB #2
    Plane enabled
SIB #3
    Plane enabled
SIB #4
    Plane enabled
PFE #1
  SIB #0
    Links ok
  SIB #1
    Plane enabled
  SIB #2
    Plane enabled
  SIB #3
    Plane enabled
  SIB #4
    Plane enabled
FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFES      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21
    SIB #4
      Destination error on PFES      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21

```

show chassis fabric fpcs (T4000 Core Router)

```

Fabric management FPC state:
FPC #2
  PFE #0
    SIB #0
      Links ok
    SIB #1

```



```
Plane enabled
SIB #2
Plane enabled
SIB #3
Plane enabled
SIB #4
Plane enabled
FPC #3
PFE #0
SIB #0
Links ok
SIB #1
Plane enabled
SIB #2
Plane enabled
SIB #3
Plane enabled
SIB #4
Plane enabled
FPC #5
PFE #0
SIB #0
Links ok
SIB #1
Plane enabled
SIB #2
Plane enabled
SIB #3
Plane enabled
SIB #4
Plane enabled
PFE #1
SIB #0
Links ok
SIB #1
Plane enabled
SIB #2
Plane enabled
SIB #3
Plane enabled
SIB #4
Plane enabled
FPC #6
```

```
PFE #0
  SIB #0
    Links ok
  SIB #1
    Plane enabled
  SIB #2
    Plane enabled
  SIB #3
    Plane enabled
  SIB #4
    Plane enabled
PFE #1
  SIB #0
    Links ok
  SIB #1
    Plane enabled
  SIB #2
    Plane enabled
  SIB #3
    Plane enabled
  SIB #4
    Plane enabled
```

show chassis fabric fpcs (TX Matrix Plus Router)

```
user@host> show chassis fabric fpcs
lcc0-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #0
      Unused
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
```

FPC #2

PFE #0

SIB #0

Unused

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

PFE #1

SIB #0

Unused

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

FPC #3

PFE #1

SIB #2

Plane enabled

SIB #3

Link error

Destination error on PFES	0	1	2	3	4	5	6	7					
8	9	10	11	12	13	14	15	16	17	18	19	20	21

SIB #4

Destination error on PFES	0	1	2	3	4	5	6	7					
8	9	10	11	12	13	14	15	16	17	18	19	20	21

FPC #4

PFE #0

SIB #0

Unused

SIB #1

Links ok

SIB #2

Links ok

SIB #3

```
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Unused
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #6
PFE #0
SIB #0
Unused
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Unused
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #7
PFE #0
SIB #0
Unused
SIB #1
Links ok
```

```
SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok
```

```
lcc1-re0:
```

```
-----
Fabric management FPC state:
```

```
FPC #2
```

```
  PFE #0
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```
    SIB #4
        Links ok
```

```
  PFE #1
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```
    SIB #4
        Links ok
```

```
FPC #4
```

```
  PFE #0
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```

SIB #4
    Links ok
PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Destination error on PFEs      1   8   9  29  40  65  72  73
        93 104
    SIB #4
        Links ok
FPC #6
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
    PFE #1
        SIB #0
            Links ok
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
FPC #7
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Links ok

```

```
SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok
```

```
lcc2-re0:
```

```
-----
Fabric management FPC state:
```

```
FPC #0
```

```
  PFE #0
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```
    SIB #4
        Links ok
```

```
  PFE #1
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```
    SIB #4
        Links ok
```

```
FPC #2
```

```
  PFE #0
```

```
    SIB #0
        Links ok
```

```
    SIB #1
        Links ok
```

```
    SIB #2
        Links ok
```

```
    SIB #3
        Links ok
```

```
SIB #4
    Links ok
PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #4
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
FPC #5
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
    PFE #1
        SIB #0
            Links ok
        SIB #1
            Links ok
        SIB #2
```



```
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #6
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #7
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
```

lcc3-re0:

Fabric management FPC state:

FPC #0

PFE #0

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

PFE #1

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

FPC #2

PFE #0

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

PFE #1

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

```
SIB #3
    Links ok
SIB #4
    Links ok
FPC #4
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #5
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
  PFE #1
    SIB #0
      Links ok
    SIB #1
```

```
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #6
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
PFE #1
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
FPC #7
PFE #0
SIB #0
Links ok
SIB #1
Links ok
SIB #2
Links ok
SIB #3
Links ok
SIB #4
Links ok
```

show chassis fabric fpcs (EX8200 Switch)

```
user@host> show chassis fabric fpcs
```

```
Fabric management FPC state
```

```
FPC 6
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
    Plane 8: Plane enabled
    Plane 9: Plane enabled
    Plane 10: Plane enabled
    Plane 11: Plane enabled
```

```
  PFE #1
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
    Plane 8: Plane enabled
    Plane 9: Plane enabled
    Plane 10: Plane enabled
    Plane 11: Plane enabled
```

```
FPC 7
```

```
  PFE #0
```

```
    Plane 0: Plane enabled
    Plane 1: Plane enabled
    Plane 2: Plane enabled
    Plane 3: Plane enabled
    Plane 4: Links ok
    Plane 5: Links ok
    Plane 6: Links ok
    Plane 7: Links ok
```

```

Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled
PFE #1
Plane 0: Plane enabled
Plane 1: Plane enabled
Plane 2: Plane enabled
Plane 3: Plane enabled
Plane 4: Links ok
Plane 5: Links ok
Plane 6: Links ok
Plane 7: Links ok
Plane 8: Plane enabled
Plane 9: Plane enabled
Plane 10: Plane enabled
Plane 11: Plane enabled

```

show chassis fabric fpcs (Junos OS Evolved)

The output of the **show chassis fabric fpcs** command is modified to include ASIC information. In the earlier releases, this command displayed ASICs as FCOREs. With this modification, for every FPC and SIB, information about ASIC and FCORE is presented separately in the output.

```

user@host> show chassis fabric fpcs slot 0
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic1_Fcore0 (plane 1) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
    SIB1_Asic1_Fcore0 (plane 3) Plane Enabled, Links ok
    SIB2_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
    SIB2_Asic1_Fcore0 (plane 5) Plane Enabled, Links ok
    SIB3_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
    SIB3_Asic1_Fcore0 (plane 7) Plane Enabled, Links ok
    SIB4_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
    SIB4_Asic1_Fcore0 (plane 9) Plane Enabled, Links ok

```

show chassis fabric fpcs (PTX10008 Router)

```
user@host> show chassis fabric fpcs slot 8
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #1
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #2
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
FPC #5
  PFE #0
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #1
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #2
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #3
    SIB0_FASICO (plane 0)  Plane Enabled, Links OK
    SIB0_FASIC1 (plane 1)  Plane Enabled, Links OK
    SIB1_FASICO (plane 2)  Plane Enabled, Links OK
    SIB1_FASIC1 (plane 3)  Plane Enabled, Links OK
  PFE #4
```

```

SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #5
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
FPC #6
PFE #0
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #1
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #2
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #3
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #4
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK
PFE #5
SIB0_FASICO (plane 0) Plane Enabled, Links OK
SIB0_FASIC1 (plane 1) Plane Enabled, Links OK
SIB1_FASICO (plane 2) Plane Enabled, Links OK
SIB1_FASIC1 (plane 3) Plane Enabled, Links OK

```


show chassis fabric fpcs (QFX10008 Switch)

```

user@host> show chassis fabric fpcs slot 0
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_PFO (plane 0)  Plane Enabled, Links OK
    SIB0_PF1 (plane 1)  Plane Enabled, Links OK
    SIB1_PFO (plane 2)  Plane Enabled, Links OK
    SIB1_PF1 (plane 3)  Plane Enabled, Links OK
    SIB2_PFO (plane 4)  Plane Enabled, Links OK
    SIB2_PF1 (plane 5)  Plane Enabled, Links OK
    SIB3_PFO (plane 6)  Plane Enabled, Links OK
    SIB3_PF1 (plane 7)  Plane Enabled, Links OK
    SIB4_PFO (plane 8)  Plane Enabled, Links OK
    SIB4_PF1 (plane 9)  Plane Enabled, Links OK
    SIB5_PFO (plane 10) Plane Enabled, Links OK
    SIB5_PF1 (plane 11) Plane Enabled, Links OK
  PFE #1
    SIB0_PFO (plane 0)  Plane Enabled, Links OK
    SIB0_PF1 (plane 1)  Plane Enabled, Links OK
    SIB1_PFO (plane 2)  Plane Enabled, Links OK
    SIB1_PF1 (plane 3)  Plane Enabled, Links OK
    SIB2_PFO (plane 4)  Plane Enabled, Links OK
    SIB2_PF1 (plane 5)  Plane Enabled, Links OK
    SIB3_PFO (plane 6)  Plane Enabled, Links OK
    SIB3_PF1 (plane 7)  Plane Enabled, Links OK
    SIB4_PFO (plane 8)  Plane Enabled, Links OK
    SIB4_PF1 (plane 9)  Plane Enabled, Links OK
    SIB5_PFO (plane 10) Plane Enabled, Links OK
    SIB5_PF1 (plane 11) Plane Enabled, Links OK
  PFE #2
    SIB0_PFO (plane 0)  Plane Enabled, Links OK
    SIB0_PF1 (plane 1)  Plane Enabled, Links OK
    SIB1_PFO (plane 2)  Plane Enabled, Links OK
    SIB1_PF1 (plane 3)  Plane Enabled, Links OK
    SIB2_PFO (plane 4)  Plane Enabled, Links OK
    SIB2_PF1 (plane 5)  Plane Enabled, Links OK
    SIB3_PFO (plane 6)  Plane Enabled, Links OK
    SIB3_PF1 (plane 7)  Plane Enabled, Links OK
    SIB4_PFO (plane 8)  Plane Enabled, Links OK
    SIB4_PF1 (plane 9)  Plane Enabled, Links OK

```

```

SIB5_PFO (plane 10)  Plane Enabled, Links OK
SIB5_PFO (plane 11)  Plane Enabled, Links OK
PFE #3
SIB0_PFO (plane 0)   Plane Enabled, Links OK
SIB0_PFO (plane 1)   Plane Enabled, Links OK
SIB1_PFO (plane 2)   Plane Enabled, Links OK
SIB1_PFO (plane 3)   Plane Enabled, Links OK
SIB2_PFO (plane 4)   Plane Enabled, Links OK
SIB2_PFO (plane 5)   Plane Enabled, Links OK
SIB3_PFO (plane 6)   Plane Enabled, Links OK
SIB3_PFO (plane 7)   Plane Enabled, Links OK
SIB4_PFO (plane 8)   Plane Enabled, Links OK
SIB4_PFO (plane 9)   Plane Enabled, Links OK
SIB5_PFO (plane 10)  Plane Enabled, Links OK
SIB5_PFO (plane 11)  Plane Enabled, Links OK

```

Release Information

Command introduced before Junos OS Release 7.4.

extended option introduced in JunosOS Release 16.1 for MX2020 and MX2010 Routers.

RELATED DOCUMENTATION

request chassis fabric fpc

[show chassis fpc | 1330](#)

[Displaying Information About DPCs or FPCs in an MX Series Router](#)

show chassis fabric map

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Syntax

```
show chassis fabric map  
plane <plane-number>
```

Syntax (MX Series Router)

```
show chassis fabric map  
<all-members>  
<local>  
<member member-id>  
<plane plane-number>
```

Description

(M120 and MX Series routers and EX8200 switches only) On the M120 router, display the state of the switching fabric map for connections from the Forwarding Engine Boards (FEBs) to the ports on the fabric planes, as interpreted by the fabric plane. On the MX Series router and the EX8200 switch, display the state of the switching fabric map for connections from each Packet Forwarding Engine on the Dense Port Concentrators (DPCs) to the ports on the fabric planes, as interpreted by the fabric plane. For information about the meaning of “fabric plane”, “DPCs”, and “SIBs” on the switches, see the hardware documentation for your switch.

Options

none	Display the switching fabric map state for the M120 or MX Series router or EX8200 switch.
all-members	(MX Series routers only) (Optional) Display the switching fabric map state for all the members of the Virtual Chassis configuration.
local	(MX Series routers only) (Optional) Display the switching fabric map state for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the switching fabric map state for the specified member of the Virtual Chassis configuration. Replace the <i>member-id</i> with a value of 0 or 1.
plane <i>plane-number</i>	(Optional) Display the state of the fabric link for the specified plane number. <ul style="list-style-type: none"> • For the M120 router, replace <i>plane-number</i> with a value from 0 through 3. • For the MX480 and MX240 routers, replace <i>plane-number</i> with a value from 0 through 7. • For the MX960 router, replace <i>plane-number</i> with a value from 0 through 5. • For the EX8208 switch, replace <i>plane-number</i> with a value from 0 through 11. • For the EX8216 switch, replace <i>plane-number</i> with a value from 0 through 7.

Required Privilege Level

view

Output Fields

[Table 60 on page 1133](#) lists the output fields for the **show chassis fabric map** command. Output fields are listed in the approximate order in which they appear.

Table 60: show chassis fabric map Output Fields

Field Name	Field Description
in-links	Fabric map for receive side links.
out-links	Fabric map for transmit side links.
state	<p>State of the fabric link:</p> <ul style="list-style-type: none"> • RESET—Link between SIB and FPC/DPC is powered down on purpose. This is done in all non-dual PFE based boards. • UP—Link between SIB and FPC/DPC is up and running. • DOWN—Link between SIB and FPC/DPC is powered down. • FAULT—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults.

Sample Output

show chassis fabric map (MX480 Router)

This sample applies to Junos OS Releases 18.2R2, 18.3R2, and 18.4R1 and later, in which the output of the CLI command **show chassis fabric map**, on MX series routers carrying MPCs with SF and XF ASICs, uses the label FPC instead of DPC (for example, 'FPC5PFE0').

```
user@host> show chassis fabric map plane 0

FPC5PFE0->CB0F0_02_0    Up          CB0F0_02_0->FPC5PFE0    Up
```

```

FPC5PFE1->CB0F0_02_1    Up      CB0F0_02_1->FPC5PFE1    Up
FPC5PFE2->CB0F0_02_2    Down    CB0F0_02_2->FPC5PFE2    Down
FPC5PFE3->CB0F0_02_3    Down    CB0F0_02_3->FPC5PFE3    Down
FPC5PFE0->CB0F0_03_0    Up      CB0F0_03_0->FPC5PFE0    Up
FPC5PFE1->CB0F0_03_1    Up      CB0F0_03_1->FPC5PFE1    Up
FPC5PFE2->CB0F0_03_2    Down    CB0F0_03_2->FPC5PFE2    Down
FPC5PFE3->CB0F0_03_3    Down    CB0F0_03_3->FPC5PFE3    Down
FPC3PFE0->CB0F0_04_0    Up      CB0F0_04_0->FPC3PFE0    Up
FPC3PFE1->CB0F0_04_1    Up      CB0F0_04_1->FPC3PFE1    Up
FPC3PFE2->CB0F0_04_2    Down    CB0F0_04_2->FPC3PFE2    Down
FPC3PFE3->CB0F0_04_3    Down    CB0F0_04_3->FPC3PFE3    Down
FPC3PFE0->CB0F0_05_0    Up      CB0F0_05_0->FPC3PFE0    Up
FPC3PFE1->CB0F0_05_1    Up      CB0F0_05_1->FPC3PFE1    Up
FPC3PFE2->CB0F0_05_2    Down    CB0F0_05_2->FPC3PFE2    Down
FPC3PFE3->CB0F0_05_3    Down    CB0F0_05_3->FPC3PFE3    Down
FPC1PFE0->CB0F0_06_0    Down    CB0F0_06_0->FPC1PFE0    Down
FPC1PFE1->CB0F0_06_1    Down    CB0F0_06_1->FPC1PFE1    Down
FPC1PFE2->CB0F0_06_2    Down    CB0F0_06_2->FPC1PFE2    Down
FPC1PFE3->CB0F0_06_3    Down    CB0F0_06_3->FPC1PFE3    Down
[...Output truncated...]

```

show chassis fabric map (M120 Router)

```

user@host> show chassis fabric map
FEB0->CB0F0_00 up CB0F0_08->FEB7 Down

FEB1->CB0F0_01 Down CB0F0_09->FEB6 Down

FEB6->CB0F0_02 Down CB0F0_10->FEB1 Down

FEB2->CB0F0_03 Down CB0F0_11->FEB0 up

FEB3->CB0F0_04 Down CB0F0_12->FEB3 Down

FEB4->CB0F0_05 up CB0F0_13->FEB2 Down

FEB7->CB0F0_06 Down CB0F0_14->FEB5 Down

FEB5->CB0F0_07 Down CB0F0_15->FEB4 up:

```

show chassis fabric map (MX Series Routers)

```

user@host> show chassis fabric map
DPC4PFE0->CB0F0_00_0    up          CB0F0_00_0->DPC4PFE0    up
DPC4PFE1->CB0F0_00_1    up          CB0F0_00_1->DPC4PFE1    up
DPC4PFE2->CB0F0_00_2    up          CB0F0_00_2->DPC4PFE2    up
DPC4PFE3->CB0F0_00_3    up          CB0F0_00_3->DPC4PFE3    up
DPC7PFE0->CB0F0_01_0    Down       CB0F0_01_0->DPC7PFE0    Down
DPC7PFE1->CB0F0_01_1    Down       CB0F0_01_1->DPC7PFE1    Down
DPC7PFE2->CB0F0_01_2    Down       CB0F0_01_2->DPC7PFE2    Down
DPC7PFE3->CB0F0_01_3    Down       CB0F0_01_3->DPC7PFE3    Down
DPC3PFE0->CB0F0_03_0    Down       CB0F0_03_0->DPC3PFE0    Down
DPC3PFE1->CB0F0_03_1    Down       CB0F0_03_1->DPC3PFE1    Down
DPC3PFE2->CB0F0_03_2    Down       CB0F0_03_2->DPC3PFE2    Down
DPC3PFE3->CB0F0_03_3    Down       CB0F0_03_3->DPC3PFE3    Down
DPC8PFE0->CB0F0_05_0    Down       CB0F0_05_0->DPC8PFE0    Down
DPC8PFE1->CB0F0_05_1    Down       CB0F0_05_1->DPC8PFE1    Down
DPC8PFE2->CB0F0_05_2    Down       CB0F0_05_2->DPC8PFE2    Down
DPC8PFE3->CB0F0_05_3    Down       CB0F0_05_3->DPC8PFE3    Down
DPC1PFE0->CB0F0_06_0    Down       CB0F0_06_0->DPC1PFE0    Down
DPC1PFE1->CB0F0_06_1    Down       CB0F0_06_1->DPC1PFE1    Down
DPC1PFE2->CB0F0_06_2    Down       CB0F0_06_2->DPC1PFE2    Down
DPC1PFE3->CB0F0_06_3    Down       CB0F0_06_3->DPC1PFE3    Down
DPC10PFE0->CB0F0_07_0   Down       CB0F0_07_0->DPC10PFE0   Down
DPC10PFE1->CB0F0_07_1   Down       CB0F0_07_1->DPC10PFE1   Down
DPC10PFE2->CB0F0_07_2   Down       CB0F0_07_2->DPC10PFE2   Down
DPC10PFE3->CB0F0_07_3   Down       CB0F0_07_3->DPC10PFE3   Down
DPC11PFE0->CB0F0_08_0   Down       CB0F0_08_0->DPC11PFE0   Down
DPC11PFE1->CB0F0_08_1   Down       CB0F0_08_1->DPC11PFE1   Down
DPC11PFE2->CB0F0_08_2   Down       CB0F0_08_2->DPC11PFE2   Down
DPC11PFE3->CB0F0_08_3   Down       CB0F0_08_3->DPC11PFE3   Down
DPC0PFE0->CB0F0_09_0   Down       CB0F0_09_0->DPC0PFE0   Down
DPC0PFE1->CB0F0_09_1   Down       CB0F0_09_1->DPC0PFE1   Down
DPC0PFE2->CB0F0_09_2   Down       CB0F0_09_2->DPC0PFE2   Down
DPC0PFE3->CB0F0_09_3   Down       CB0F0_09_3->DPC0PFE3   Down
DPC9PFE0->CB0F0_11_0   Down       CB0F0_11_0->DPC9PFE0   Down
DPC9PFE1->CB0F0_11_1   Down       CB0F0_11_1->DPC9PFE1   Down
DPC9PFE2->CB0F0_11_2   Down       CB0F0_11_2->DPC9PFE2   Down
DPC9PFE3->CB0F0_11_3   Down       CB0F0_11_3->DPC9PFE3   Down
DPC2PFE0->CB0F0_13_0   up          CB0F0_13_0->DPC2PFE0   up
DPC2PFE1->CB0F0_13_1   up          CB0F0_13_1->DPC2PFE1   up
DPC2PFE2->CB0F0_13_2   up          CB0F0_13_2->DPC2PFE2   up

```

DPC2PFE3->CB0F0_13_3	up	CB0F0_13_3->DPC2PFE3	up
DPC6PFE0->CB0F0_14_0	Down	CB0F0_14_0->DPC6PFE0	Down
DPC6PFE1->CB0F0_14_1	Down	CB0F0_14_1->DPC6PFE1	Down
DPC6PFE2->CB0F0_14_2	Down	CB0F0_14_2->DPC6PFE2	Down
DPC6PFE3->CB0F0_14_3	Down	CB0F0_14_3->DPC6PFE3	Down
DPC5PFE0->CB0F0_15_0	Down	CB0F0_15_0->DPC5PFE0	Down
DPC5PFE1->CB0F0_15_1	Down	CB0F0_15_1->DPC5PFE1	Down
DPC5PFE2->CB0F0_15_2	Down	CB0F0_15_2->DPC5PFE2	Down
DPC5PFE3->CB0F0_15_3	Down	CB0F0_15_3->DPC5PFE3	Down
DPC4PFE0->CB0F1_00_0	up	CB0F1_00_0->DPC4PFE0	up
DPC4PFE1->CB0F1_00_1	up	CB0F1_00_1->DPC4PFE1	up
DPC4PFE2->CB0F1_00_2	up	CB0F1_00_2->DPC4PFE2	up
DPC4PFE3->CB0F1_00_3	up	CB0F1_00_3->DPC4PFE3	up
DPC7PFE0->CB0F1_01_0	Down	CB0F1_01_0->DPC7PFE0	Down
DPC7PFE1->CB0F1_01_1	Down	CB0F1_01_1->DPC7PFE1	Down
DPC7PFE2->CB0F1_01_2	Down	CB0F1_01_2->DPC7PFE2	Down
DPC7PFE3->CB0F1_01_3	Down	CB0F1_01_3->DPC7PFE3	Down
DPC3PFE0->CB0F1_03_0	Down	CB0F1_03_0->DPC3PFE0	Down
DPC3PFE1->CB0F1_03_1	Down	CB0F1_03_1->DPC3PFE1	Down
DPC3PFE2->CB0F1_03_2	Down	CB0F1_03_2->DPC3PFE2	Down
DPC3PFE3->CB0F1_03_3	Down	CB0F1_03_3->DPC3PFE3	Down
DPC8PFE0->CB0F1_05_0	Down	CB0F1_05_0->DPC8PFE0	Down
DPC8PFE1->CB0F1_05_1	Down	CB0F1_05_1->DPC8PFE1	Down
DPC8PFE2->CB0F1_05_2	Down	CB0F1_05_2->DPC8PFE2	Down
DPC8PFE3->CB0F1_05_3	Down	CB0F1_05_3->DPC8PFE3	Down
DPC1PFE0->CB0F1_06_0	Down	CB0F1_06_0->DPC1PFE0	Down
DPC1PFE1->CB0F1_06_1	Down	CB0F1_06_1->DPC1PFE1	Down
DPC1PFE2->CB0F1_06_2	Down	CB0F1_06_2->DPC1PFE2	Down
DPC1PFE3->CB0F1_06_3	Down	CB0F1_06_3->DPC1PFE3	Down
DPC10PFE0->CB0F1_07_0	Down	CB0F1_07_0->DPC10PFE0	Down
DPC10PFE1->CB0F1_07_1	Down	CB0F1_07_1->DPC10PFE1	Down
DPC10PFE2->CB0F1_07_2	Down	CB0F1_07_2->DPC10PFE2	Down
DPC10PFE3->CB0F1_07_3	Down	CB0F1_07_3->DPC10PFE3	Down
DPC11PFE0->CB0F1_08_0	Down	CB0F1_08_0->DPC11PFE0	Down
DPC11PFE1->CB0F1_08_1	Down	CB0F1_08_1->DPC11PFE1	Down
DPC11PFE2->CB0F1_08_2	Down	CB0F1_08_2->DPC11PFE2	Down
DPC11PFE3->CB0F1_08_3	Down	CB0F1_08_3->DPC11PFE3	Down
DPC0PFE0->CB0F1_09_0	Down	CB0F1_09_0->DPC0PFE0	Down
DPC0PFE1->CB0F1_09_1	Down	CB0F1_09_1->DPC0PFE1	Down
DPC0PFE2->CB0F1_09_2	Down	CB0F1_09_2->DPC0PFE2	Down
DPC0PFE3->CB0F1_09_3	Down	CB0F1_09_3->DPC0PFE3	Down
DPC9PFE0->CB0F1_11_0	Down	CB0F1_11_0->DPC9PFE0	Down
DPC9PFE1->CB0F1_11_1	Down	CB0F1_11_1->DPC9PFE1	Down

DPC9PFE2->CB0F1_11_2	Down	CB0F1_11_2->DPC9PFE2	Down
DPC9PFE3->CB0F1_11_3	Down	CB0F1_11_3->DPC9PFE3	Down
DPC2PFE0->CB0F1_13_0	up	CB0F1_13_0->DPC2PFE0	up
DPC2PFE1->CB0F1_13_1	up	CB0F1_13_1->DPC2PFE1	up
DPC2PFE2->CB0F1_13_2	up	CB0F1_13_2->DPC2PFE2	up
DPC2PFE3->CB0F1_13_3	up	CB0F1_13_3->DPC2PFE3	up
DPC6PFE0->CB0F1_14_0	Down	CB0F1_14_0->DPC6PFE0	Down
DPC6PFE1->CB0F1_14_1	Down	CB0F1_14_1->DPC6PFE1	Down
DPC6PFE2->CB0F1_14_2	Down	CB0F1_14_2->DPC6PFE2	Down
DPC6PFE3->CB0F1_14_3	Down	CB0F1_14_3->DPC6PFE3	Down
DPC5PFE0->CB0F1_15_0	Down	CB0F1_15_0->DPC5PFE0	Down
DPC5PFE1->CB0F1_15_1	Down	CB0F1_15_1->DPC5PFE1	Down
DPC5PFE2->CB0F1_15_2	Down	CB0F1_15_2->DPC5PFE2	Down
DPC5PFE3->CB0F1_15_3	Down	CB0F1_15_3->DPC5PFE3	Down
DPC4PFE0->CB1F0_00_0	up	CB1F0_00_0->DPC4PFE0	up
DPC4PFE1->CB1F0_00_1	up	CB1F0_00_1->DPC4PFE1	up
DPC4PFE2->CB1F0_00_2	up	CB1F0_00_2->DPC4PFE2	up
DPC4PFE3->CB1F0_00_3	up	CB1F0_00_3->DPC4PFE3	up
DPC7PFE0->CB1F0_01_0	Down	CB1F0_01_0->DPC7PFE0	Down
DPC7PFE1->CB1F0_01_1	Down	CB1F0_01_1->DPC7PFE1	Down
DPC7PFE2->CB1F0_01_2	Down	CB1F0_01_2->DPC7PFE2	Down
DPC7PFE3->CB1F0_01_3	Down	CB1F0_01_3->DPC7PFE3	Down
DPC3PFE0->CB1F0_03_0	Down	CB1F0_03_0->DPC3PFE0	Down
DPC3PFE1->CB1F0_03_1	Down	CB1F0_03_1->DPC3PFE1	Down
DPC3PFE2->CB1F0_03_2	Down	CB1F0_03_2->DPC3PFE2	Down
DPC3PFE3->CB1F0_03_3	Down	CB1F0_03_3->DPC3PFE3	Down
DPC8PFE0->CB1F0_05_0	Down	CB1F0_05_0->DPC8PFE0	Down
DPC8PFE1->CB1F0_05_1	Down	CB1F0_05_1->DPC8PFE1	Down
DPC8PFE2->CB1F0_05_2	Down	CB1F0_05_2->DPC8PFE2	Down
DPC8PFE3->CB1F0_05_3	Down	CB1F0_05_3->DPC8PFE3	Down
DPC1PFE0->CB1F0_06_0	Down	CB1F0_06_0->DPC1PFE0	Down
DPC1PFE1->CB1F0_06_1	Down	CB1F0_06_1->DPC1PFE1	Down
DPC1PFE2->CB1F0_06_2	Down	CB1F0_06_2->DPC1PFE2	Down
DPC1PFE3->CB1F0_06_3	Down	CB1F0_06_3->DPC1PFE3	Down
DPC10PFE0->CB1F0_07_0	Down	CB1F0_07_0->DPC10PFE0	Down
DPC10PFE1->CB1F0_07_1	Down	CB1F0_07_1->DPC10PFE1	Down
DPC10PFE2->CB1F0_07_2	Down	CB1F0_07_2->DPC10PFE2	Down
DPC10PFE3->CB1F0_07_3	Down	CB1F0_07_3->DPC10PFE3	Down
DPC11PFE0->CB1F0_08_0	Down	CB1F0_08_0->DPC11PFE0	Down
DPC11PFE1->CB1F0_08_1	Down	CB1F0_08_1->DPC11PFE1	Down
DPC11PFE2->CB1F0_08_2	Down	CB1F0_08_2->DPC11PFE2	Down
DPC11PFE3->CB1F0_08_3	Down	CB1F0_08_3->DPC11PFE3	Down
DPC0PFE0->CB1F0_09_0	Down	CB1F0_09_0->DPC0PFE0	Down

DPC0PFE1->CB1F0_09_1	Down	CB1F0_09_1->DPC0PFE1	Down
DPC0PFE2->CB1F0_09_2	Down	CB1F0_09_2->DPC0PFE2	Down
DPC0PFE3->CB1F0_09_3	Down	CB1F0_09_3->DPC0PFE3	Down
DPC9PFE0->CB1F0_11_0	Down	CB1F0_11_0->DPC9PFE0	Down
DPC9PFE1->CB1F0_11_1	Down	CB1F0_11_1->DPC9PFE1	Down
DPC9PFE2->CB1F0_11_2	Down	CB1F0_11_2->DPC9PFE2	Down
DPC9PFE3->CB1F0_11_3	Down	CB1F0_11_3->DPC9PFE3	Down
DPC2PFE0->CB1F0_13_0	up	CB1F0_13_0->DPC2PFE0	up
DPC2PFE1->CB1F0_13_1	up	CB1F0_13_1->DPC2PFE1	up
DPC2PFE2->CB1F0_13_2	up	CB1F0_13_2->DPC2PFE2	up
DPC2PFE3->CB1F0_13_3	up	CB1F0_13_3->DPC2PFE3	up
DPC6PFE0->CB1F0_14_0	Down	CB1F0_14_0->DPC6PFE0	Down
DPC6PFE1->CB1F0_14_1	Down	CB1F0_14_1->DPC6PFE1	Down
DPC6PFE2->CB1F0_14_2	Down	CB1F0_14_2->DPC6PFE2	Down
DPC6PFE3->CB1F0_14_3	Down	CB1F0_14_3->DPC6PFE3	Down
DPC5PFE0->CB1F0_15_0	Down	CB1F0_15_0->DPC5PFE0	Down
DPC5PFE1->CB1F0_15_1	Down	CB1F0_15_1->DPC5PFE1	Down
DPC5PFE2->CB1F0_15_2	Down	CB1F0_15_2->DPC5PFE2	Down
DPC5PFE3->CB1F0_15_3	Down	CB1F0_15_3->DPC5PFE3	Down
DPC4PFE0->CB1F1_00_0	up	CB1F1_00_0->DPC4PFE0	up
DPC4PFE1->CB1F1_00_1	up	CB1F1_00_1->DPC4PFE1	up
DPC4PFE2->CB1F1_00_2	up	CB1F1_00_2->DPC4PFE2	up
DPC4PFE3->CB1F1_00_3	up	CB1F1_00_3->DPC4PFE3	up
DPC7PFE0->CB1F1_01_0	Down	CB1F1_01_0->DPC7PFE0	Down
DPC7PFE1->CB1F1_01_1	Down	CB1F1_01_1->DPC7PFE1	Down
DPC7PFE2->CB1F1_01_2	Down	CB1F1_01_2->DPC7PFE2	Down
DPC7PFE3->CB1F1_01_3	Down	CB1F1_01_3->DPC7PFE3	Down
DPC3PFE0->CB1F1_03_0	Down	CB1F1_03_0->DPC3PFE0	Down
DPC3PFE1->CB1F1_03_1	Down	CB1F1_03_1->DPC3PFE1	Down
DPC3PFE2->CB1F1_03_2	Down	CB1F1_03_2->DPC3PFE2	Down
DPC3PFE3->CB1F1_03_3	Down	CB1F1_03_3->DPC3PFE3	Down
DPC8PFE0->CB1F1_05_0	Down	CB1F1_05_0->DPC8PFE0	Down
DPC8PFE1->CB1F1_05_1	Down	CB1F1_05_1->DPC8PFE1	Down
DPC8PFE2->CB1F1_05_2	Down	CB1F1_05_2->DPC8PFE2	Down
DPC8PFE3->CB1F1_05_3	Down	CB1F1_05_3->DPC8PFE3	Down
DPC1PFE0->CB1F1_06_0	Down	CB1F1_06_0->DPC1PFE0	Down
DPC1PFE1->CB1F1_06_1	Down	CB1F1_06_1->DPC1PFE1	Down
DPC1PFE2->CB1F1_06_2	Down	CB1F1_06_2->DPC1PFE2	Down
DPC1PFE3->CB1F1_06_3	Down	CB1F1_06_3->DPC1PFE3	Down
DPC10PFE0->CB1F1_07_0	Down	CB1F1_07_0->DPC10PFE0	Down
DPC10PFE1->CB1F1_07_1	Down	CB1F1_07_1->DPC10PFE1	Down
DPC10PFE2->CB1F1_07_2	Down	CB1F1_07_2->DPC10PFE2	Down
DPC10PFE3->CB1F1_07_3	Down	CB1F1_07_3->DPC10PFE3	Down

```

DPC11PFE0->CB1F1_08_0   Down      CB1F1_08_0->DPC11PFE0   Down
DPC11PFE1->CB1F1_08_1   Down      CB1F1_08_1->DPC11PFE1   Down
DPC11PFE2->CB1F1_08_2   Down      CB1F1_08_2->DPC11PFE2   Down
DPC11PFE3->CB1F1_08_3   Down      CB1F1_08_3->DPC11PFE3   Down
DPC0PFE0->CB1F1_09_0   Down      CB1F1_09_0->DPC0PFE0   Down
DPC0PFE1->CB1F1_09_1   Down      CB1F1_09_1->DPC0PFE1   Down
DPC0PFE2->CB1F1_09_2   Down      CB1F1_09_2->DPC0PFE2   Down
DPC0PFE3->CB1F1_09_3   Down      CB1F1_09_3->DPC0PFE3   Down
DPC9PFE0->CB1F1_11_0   Down      CB1F1_11_0->DPC9PFE0   Down
DPC9PFE1->CB1F1_11_1   Down      CB1F1_11_1->DPC9PFE1   Down
DPC9PFE2->CB1F1_11_2   Down      CB1F1_11_2->DPC9PFE2   Down
DPC9PFE3->CB1F1_11_3   Down      CB1F1_11_3->DPC9PFE3   Down
DPC2PFE0->CB1F1_13_0   up        CB1F1_13_0->DPC2PFE0   up
DPC2PFE1->CB1F1_13_1   up        CB1F1_13_1->DPC2PFE1   up
DPC2PFE2->CB1F1_13_2   up        CB1F1_13_2->DPC2PFE2   up
DPC2PFE3->CB1F1_13_3   up        CB1F1_13_3->DPC2PFE3   up
DPC6PFE0->CB1F1_14_0   Down      CB1F1_14_0->DPC6PFE0   Down
DPC6PFE1->CB1F1_14_1   Down      CB1F1_14_1->DPC6PFE1   Down
DPC6PFE2->CB1F1_14_2   Down      CB1F1_14_2->DPC6PFE2   Down
DPC6PFE3->CB1F1_14_3   Down      CB1F1_14_3->DPC6PFE3   Down
DPC5PFE0->CB1F1_15_0   Down      CB1F1_15_0->DPC5PFE0   Down
DPC5PFE1->CB1F1_15_1   Down      CB1F1_15_1->DPC5PFE1   Down
DPC5PFE2->CB1F1_15_2   Down      CB1F1_15_2->DPC5PFE2   Down
DPC5PFE3->CB1F1_15_3   Down      CB1F1_15_3->DPC5PFE3   Down
plane 4 is not up
plane 5 is not up

```

show chassis fabric map plane 1 (EX8200 Switch)

```

user@host> show chassis fabric map plane 1
user@host> show chassis fabric map plane 1
DPC6PFE0->CB0F0_00_0   Down      CB0F0_00_0->DPC6PFE0   Down
DPC6PFE1->CB0F0_00_1   Down      CB0F0_00_1->DPC6PFE1   Down
DPC6PFE2->CB0F0_00_2   Down      CB0F0_00_2->DPC6PFE2   Down
DPC6PFE3->CB0F0_00_3   Down      CB0F0_00_3->DPC6PFE3   Down
DPC0PFE0->CB0F0_01_0   Down      CB0F0_01_0->DPC0PFE0   Down
DPC0PFE1->CB0F0_01_1   Down      CB0F0_01_1->DPC0PFE1   Down
DPC0PFE2->CB0F0_01_2   Down      CB0F0_01_2->DPC0PFE2   Down
DPC0PFE3->CB0F0_01_3   Down      CB0F0_01_3->DPC0PFE3   Down
DPC5PFE0->CB0F0_02_0   Down      CB0F0_02_0->DPC5PFE0   Down
DPC5PFE1->CB0F0_02_1   Down      CB0F0_02_1->DPC5PFE1   Down

```

DPC5PFE2->CB0F0_02_2	Down	CB0F0_02_2->DPC5PFE2	Down
DPC5PFE3->CB0F0_02_3	Down	CB0F0_02_3->DPC5PFE3	Down
DPC3PFE0->CB0F0_03_0	Down	CB0F0_03_0->DPC3PFE0	Down
DPC3PFE1->CB0F0_03_1	Down	CB0F0_03_1->DPC3PFE1	Down
DPC3PFE2->CB0F0_03_2	Down	CB0F0_03_2->DPC3PFE2	Down
DPC3PFE3->CB0F0_03_3	Down	CB0F0_03_3->DPC3PFE3	Down
DPC4PFE0->CB0F0_04_0	Down	CB0F0_04_0->DPC4PFE0	Down
DPC4PFE1->CB0F0_04_1	Down	CB0F0_04_1->DPC4PFE1	Down
DPC4PFE2->CB0F0_04_2	Down	CB0F0_04_2->DPC4PFE2	Down
DPC4PFE3->CB0F0_04_3	Down	CB0F0_04_3->DPC4PFE3	Down
DPC2PFE0->CB0F0_05_0	Down	CB0F0_05_0->DPC2PFE0	Down
DPC2PFE1->CB0F0_05_1	Down	CB0F0_05_1->DPC2PFE1	Down
DPC2PFE2->CB0F0_05_2	Down	CB0F0_05_2->DPC2PFE2	Down
DPC2PFE3->CB0F0_05_3	Down	CB0F0_05_3->DPC2PFE3	Down
DPC7PFE0->CB0F0_06_0	Down	CB0F0_06_0->DPC7PFE0	Down
DPC7PFE1->CB0F0_06_1	Down	CB0F0_06_1->DPC7PFE1	Down
DPC7PFE2->CB0F0_06_2	Down	CB0F0_06_2->DPC7PFE2	Down
DPC7PFE3->CB0F0_06_3	Down	CB0F0_06_3->DPC7PFE3	Down
DPC1PFE0->CB0F0_07_0	Down	CB0F0_07_0->DPC1PFE0	Down
DPC1PFE1->CB0F0_07_1	Down	CB0F0_07_1->DPC1PFE1	Down
DPC1PFE2->CB0F0_07_2	Down	CB0F0_07_2->DPC1PFE2	Down
DPC1PFE3->CB0F0_07_3	Down	CB0F0_07_3->DPC1PFE3	Down
DPC0PFE0->CB0F0_08_0	Down	CB0F0_08_0->DPC0PFE0	Down
DPC0PFE1->CB0F0_08_1	Down	CB0F0_08_1->DPC0PFE1	Down
DPC0PFE2->CB0F0_08_2	Down	CB0F0_08_2->DPC0PFE2	Down
DPC0PFE3->CB0F0_08_3	Down	CB0F0_08_3->DPC0PFE3	Down
DPC7PFE0->CB0F0_09_0	Down	CB0F0_09_0->DPC7PFE0	Down
DPC7PFE1->CB0F0_09_1	Down	CB0F0_09_1->DPC7PFE1	Down
DPC7PFE2->CB0F0_09_2	Down	CB0F0_09_2->DPC7PFE2	Down
DPC7PFE3->CB0F0_09_3	Down	CB0F0_09_3->DPC7PFE3	Down
DPC1PFE0->CB0F0_10_0	Down	CB0F0_10_0->DPC1PFE0	Down
DPC1PFE1->CB0F0_10_1	Down	CB0F0_10_1->DPC1PFE1	Down
DPC1PFE2->CB0F0_10_2	Down	CB0F0_10_2->DPC1PFE2	Down
DPC1PFE3->CB0F0_10_3	Down	CB0F0_10_3->DPC1PFE3	Down
DPC4PFE0->CB0F0_11_0	Down	CB0F0_11_0->DPC4PFE0	Down
DPC4PFE1->CB0F0_11_1	Down	CB0F0_11_1->DPC4PFE1	Down
DPC4PFE2->CB0F0_11_2	Down	CB0F0_11_2->DPC4PFE2	Down
DPC4PFE3->CB0F0_11_3	Down	CB0F0_11_3->DPC4PFE3	Down
DPC2PFE0->CB0F0_12_0	Down	CB0F0_12_0->DPC2PFE0	Down
DPC2PFE1->CB0F0_12_1	Down	CB0F0_12_1->DPC2PFE1	Down
DPC2PFE2->CB0F0_12_2	Down	CB0F0_12_2->DPC2PFE2	Down
DPC2PFE3->CB0F0_12_3	Down	CB0F0_12_3->DPC2PFE3	Down
DPC5PFE0->CB0F0_13_0	Down	CB0F0_13_0->DPC5PFE0	Down

DPC5PFE1->CB0F0_13_1	Down	CB0F0_13_1->DPC5PFE1	Down
DPC5PFE2->CB0F0_13_2	Down	CB0F0_13_2->DPC5PFE2	Down
DPC5PFE3->CB0F0_13_3	Down	CB0F0_13_3->DPC5PFE3	Down
DPC3PFE0->CB0F0_14_0	Down	CB0F0_14_0->DPC3PFE0	Down
DPC3PFE1->CB0F0_14_1	Down	CB0F0_14_1->DPC3PFE1	Down
DPC3PFE2->CB0F0_14_2	Down	CB0F0_14_2->DPC3PFE2	Down
DPC3PFE3->CB0F0_14_3	Down	CB0F0_14_3->DPC3PFE3	Down
DPC6PFE0->CB0F0_15_0	Down	CB0F0_15_0->DPC6PFE0	Down
DPC6PFE1->CB0F0_15_1	Down	CB0F0_15_1->DPC6PFE1	Down
DPC6PFE2->CB0F0_15_2	Down	CB0F0_15_2->DPC6PFE2	Down
DPC6PFE3->CB0F0_15_3	Down	CB0F0_15_3->DPC6PFE3	Down

Release Information

Command introduced in Junos OS Release 8.0.

show chassis fabric plane

IN THIS SECTION

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Syntax

```
show chassis fabric plane
```

Syntax (TX Matrix Plus Router)

```
show chassis fabric plane  
<detail | extensive | terse>  
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis fabric plane  
<extended>  
<detail | extensive | terse>  
<all-members>  
<local>  
<member member-id>
```

Description

(TX Matrix Plus router, T4000, T1600, M120, and MX Series routers and EX8200 switches only) On the M120 router, display the state of all fabric plane connections to the Forwarding Engine Boards (FEBs). On MX Series routers, display the state of all fabric plane connections to the Dense Port Concentrators (DPCs) and Packet Forwarding Engines (PFEs) on the Flexible PIC Concentrators (FPCs). On the TX Matrix Plus router, and on T1600 or T4000 routers in a routing matrix, display the state of the fabric management plane and the logical planes on the switch-fabric chassis (SFC) and line-card chassis (LCC). On EX8200 switches, display the state of all fabric planes. This command can be used on the primary Routing Engine only.

Options

none	(MX2010, MX2020, and MX2008 Routers only) (Optional) Display the state of the fabric management plane.
extended	(MX2020, MX2010, and MX2008 Routers only) (Optional) Display the state of the fabric management planes (all 24 fabric planes).
detail	(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display detailed output for the fabric management plane. Show Switch Interface Board (SIB) states for the TXP-F13 SIB and the TXP-F2S SIB.
extensive	(TX Matrix Plus routers, T1600 or T4000 routers in a routing matrix, and MX Series routers only) (Optional) Display extensive output for the fabric management plane.
terse	(TX Matrix Plus routers and MX Series routers only) (Optional) Display terse output for the fabric management plane.
all-members	(MX Series routers only) (Optional) Display the state of all fabric plane connections on all members of the Virtual Chassis configuration.
lcc <i>number</i>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display the state of all fabric plane connections on the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the state of all fabric plane connections on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.

sfc *number* (TX Matrix Plus router only) (Optional) Show information about the TX Matrix Plus router (SFC). Replace *number* with 0.

Required Privilege Level

view

Output Fields

[Table 61 on page 1144](#) lists the output fields for the **show chassis fabric plane** command. Output fields are listed in the approximate order in which they appear.

Table 61: show chassis fabric plane Output Fields

Field Name	Field Description	Level of output
Plane	(TX Matrix Plus, MX Series routers, M120 routers, and EX8200 switches only) Number of the plane.	none

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
Plane state	<p>(MX Series and M120 routers and EX8200 switches only) State of each plane:</p> <ul style="list-style-type: none"> • ACTIVE—SIB is operational and running. <p>NOTE: On the Enhanced MX SCB with MPCs, a maximum of 4 planes are operational and running. On all the other SCBs with MPCs, all the planes are operational and running.</p> <ul style="list-style-type: none"> • FAULTY— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. <p>(MX2010, MX2020, MX10003, and MX2008 Routers only) State of each plane:</p> <ul style="list-style-type: none"> • ACTIVE—SFB is operational and running. • OFFLINE— SFB is in offline. 	none
FEB	<p>(M120 routers only) FEB number and state of links to each FEB:</p> <ul style="list-style-type: none"> • Link error—Link between SIB and FPC is not operational. • Links ok—Link between SIB and FPC is active. • Unused—No FPC is present. 	none

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
FPC	<p>(MX Series routers only) Slot number of each Dense Port Concentrator (DPC) or Flexible PIC Concentrator (FPC). An FPC occupies two DPC slots on an MX Series router. The interface corresponds to the lowest numbered DPC slot for which the FPC is installed.</p>	none
PFE	<p>(MX Series and M120 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DCP: Links ok, Link error, or Unused. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> • Links ok: Link between SIB and FPC is active. • Link error: Link between SIB and FPC is not operational. • Unused: No FPC is present. <p>(On MX240 and MX480 routers with AS MLC modular carrier card and MPC4E only) Indicates that the link between the fabric plane and the hardware link on the modular carrier card or MPC4E is not operational.</p> <p>(MX2010, MX2020, and MX2008 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DPC: Links ok, Link error, or Unused. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> • Links ok: Link between SFB and FPC is active. • Link error: Link between SFB and FPC is not operational. • Unused: No FPC is present. 	none

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
State	<p data-bbox="518 365 1092 436">(TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—State of the fabric plane:</p> <ul style="list-style-type: none"> <li data-bbox="518 470 1149 541">• Online: Fabric plane is operational and running and links on the SIB are operational. <li data-bbox="518 575 1149 684">• Offline: Fabric plane state is Offline because the plane does not have four or more F2S and one F13 online. <li data-bbox="518 718 1149 789">• Empty: Fabric plane state is Empty if all SIBs in the plane are absent. <li data-bbox="518 823 1149 932">• Spare: Fabric plane is redundant and can be operational if the operational fabric plane encounters an error. <li data-bbox="518 966 1159 1075">• Check: Fabric plane is in alarmed state due to the following reason and the cause of the error must be resolved: <ul style="list-style-type: none"> <li data-bbox="558 1108 1159 1218">• One or more SIBs (belonging to the fabric plane) in the Online or Spare states has transitioned to the Check state. <p data-bbox="591 1251 1110 1323">Check state of the SIB can be caused by link errors or destination errors.</p> <li data-bbox="518 1356 1159 1465">• Fault: Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the Fault state. A SIB can be in the Fault state because of the following reasons: <ul style="list-style-type: none"> <li data-bbox="558 1541 1062 1570">• On-board fabric ASIC is not operational. <li data-bbox="558 1604 922 1633">• Fiber optic connector faults. <li data-bbox="558 1667 847 1696">• FPC connector faults. 	none

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
	<ul style="list-style-type: none"> • SIB midplane connector faults. • Link errors have exceeded the threshold. 	
Link Errors	(TX Matrix Plus routers with 3D SIBs only) indicate the number of links which are marked faulty because the errors on them have crossed threshold.	none
Cable Errors	(TX Matrix Plus routers with 3D SIBs only) Indicate the number of mandatory cables that are not connected, or in up state for that plane	none
Destination Errors	(TX Matrix Plus routers with 3D SIBs only) Indicates the number of destinations that are not reachable on this plane.	none
Uptime	(TX Matrix Plus, and T1600 or T4000 routers in a routing matrix only)—Time the fabric plane has been up and running.	none

Fabric Management Plane State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
PLANE number	<p>State of the fabric plane:</p> <ul style="list-style-type: none"> • Online: Fabric plane is operational and running and links on the SIB are operational. • Offline: Fabric plane state is Offline because the plane does not have 4 or more F2S and 1 F13 online. • Empty: Fabric plane state is Empty if all SIBs in the plane are absent. • Spare: Fabric plane is redundant and can be operational if the operational fabric plane encounters an error. • Check: Fabric plane is in alarmed state due to the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> • One or more SIBs (belonging to the fabric plane) in the Online or Spare states has transitioned to the Check state. <p>Check state of the SIB can be caused because of link errors or destination errors.</p> • Fault: Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the Fault state. A SIB can be in the Fault state because of the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold. 	extensive

Table 61: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
SIB F13/F2S slot-number	<p>State of the TXP-F13 SIB or TXP-F2S SIB:</p> <ul style="list-style-type: none"> • Activating—Transitional state when the SIB is transitioning to the Online or Spare state. • Deactivating—Transitional state when the SIB is going offline. • Online—SIB is operational and running. • Offline—SIB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. • Empty—No SIB is present. • Fault— SIB is in alarmed state because of the following reasons and the cause of the error must be resolved: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold • Check—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is Online or Spare can transition to the Check state. <p>NOTE: If a SIB is not inserted properly, the SIB cannot transition to the Online or Spare state, and therefore cannot transition to the Check state.</p>	extensive

Table 61: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
SIB F13 <i>slot-number</i> <i>Odd/Even</i>	State of the TXP-F13 SIB even and odd port connection optical links from the TX Matrix Plus router (SFC) to the router (LCC) in the routing matrix . The left four ports on the SFC are labeled Even and provide connections to one even-numbered LCC—LCC0 or LCC2. The right four ports on the SFC are labeled Odd and provide connections to one odd-numbered LCC—LCC1 or LCC3.	extensive
LCC <i>number</i>, SIB <i>slot-number</i>	State of the SIB on the LCC that is connected to the Even or Odd port on the TXP-F13 SIB faceplate: <ul style="list-style-type: none"> • Links ok—Links between the TXP-F13 SIB on the SFC and the LCC are active. • Links error—One or more links between the TXP-F13 SIB on the SFC and the LCC, have experienced an error, but the affected links remain operational. • Unused—No SIB is present. 	extensive

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
SG number Port number	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> • Links ok—Link is active. • Link error—Link is operational with errors. • Link error crc saturated—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error. • Link error crc saturated with optical errors—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error. • Unused—Port is not in use. 	extensive
SIB F2S slot-number	State of the intra-chassis links between the TXP-F2S and TXP-F13 SIBs.	extensive

Fabric Management SIB State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

Table 61: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
SIB slot-number	<p>State of the SIBs on the T1600/T4000 router (LCC) in the routing matrix:</p> <ul style="list-style-type: none"> • Activating—Transitional state when the SIB is coming online. • Deactivating—Transitional state when the SIB is going offline. • Connected—SIBS on an LCC are connected and trained, but are either not online or are spare, because the plane on the the TX Matrix Plus router (SFC) is still offline. <p>The LCC SIB transitions to the Connected state when the F13 SIB to which it connects is online but the SFC plane (to which the LCC SIB connects) is offline for some reason; for instance, when there are insufficient number of F2 SIBs in the plane.</p> <ul style="list-style-type: none"> • Disconnected—If an F13 SIB on the TX Matrix Plus router (SFC) goes offline, then the SIBs on the LCCs connected to the F13 SIB get disconnected. <p>On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained.</p> <p>The Disconnected state is valid only for SIBs on an LCC. An LCC SIB transitions to the Disconnected state when the F13 SIB to which it connects goes Offline, irrespective of the state of the SFC plane.</p> <p>SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault state (because of link errors, for instance), and if an LCC SIB connected to the F13 SIB comes online, the LCC SIB transitions to the SFC Error state. This state</p>	extensive

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
	<p>indicates that the F13 SIB to which the LCC SIB is connected has errors.</p> <p>NOTE: The Connected, Disconnected, and SFC Error states are applicable only to the SIBs on an LCC.</p> <ul style="list-style-type: none"> • Online—SIB is operational and running. • Offline—SIB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic. • Empty—No SIB is present. • Fault— SIB is in alarmed state where the SIB’s plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board fabric ASIC is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Link errors have exceeded the threshold • Check—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is Online or Spare can transition to the Check state. <p>NOTE: If a SIB is not inserted properly, the SIB cannot transition to the Online or Spare state, and therefore cannot transition to the Check state.</p>	

Table 61: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
LCC SIB Link State	State of the LCC SIB link: <ul style="list-style-type: none"> • Links ok—Link is active. • Links error—A link error has occurred, but the link remains operational. • Unused—SIB is not in use. 	extensive
SG number Port number	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> • Links ok—Link is active. • Link error—Link is operational with errors. • Link error crc saturated—CRC has exceeded the rate threshold and reached saturation without optical issues—that is, a cable has not been cut, removed, or otherwise experienced an error. • Link error crc saturated with optical errors—CRC has exceeded the rate threshold and reached saturation with optical issues—that is, a cable has been cut, removed, or otherwise experienced an error. • Unused—Port is not in use. 	extensive

Sample Output

show chassis fabric plane (M120 Router)

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE

```

```
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 1
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 2
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
Plane 3
Plane state: ACTIVE
FEB 0: Links ok
FEB 1: Links ok
FEB 2: Links ok
FEB 3: Links ok
FEB 4: Links ok
FEB 5: Links ok
```

show chassis fabric plane (MX10008 Router)

```
user@host> show chassis fabric plane

Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
```

```
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
  FPC 5
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
    PFE 3 :Links ok
    PFE 4 :Links ok
    PFE 5 :Links ok
Plane 1
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
```

```

Plane 3
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok
    FPC 5
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
      PFE 3 :Links ok
      PFE 4 :Links ok
      PFE 5 :Links ok

```

show chassis fabric plane (MX240 with AS MLC Modular Carrier Card)

In the following output, FPC 1 is the AS MLC modular carrier card (AS MCC).

```

user@host>show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 1
  Plane state: ACTIVE
    Plane state: ACTIVE
    FPC 1
      PFE 0 :Links ok
    FPC 2
      PFE 0 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 2
      PFE 0 :Links ok
    FPC 4

```

```
        PFE 0 :Links ok
        PFE 2 :Links ok
    FPC 5
        PFE 0 :Links ok
Plane 3
    Plane state: ACTIVE
        Plane state: ACTIVE
            FPC 1
                PFE 0 :Links ok
            FPC 2
                PFE 0 :Links ok
Plane 4
    Plane state: ACTIVE
        Plane state: ACTIVE
            FPC 1
                PFE 0 :Links ok
            FPC 2
                PFE 0 :Links ok
Plane 5
    Plane state: ACTIVE
        FPC 1
            PFE 0 :Unused
        FPC 2
            PFE 0 :Links ok
Plane 6
    Plane state: ACTIVE
        FPC 1
            PFE 0 :Links ok
        FPC 2
            PFE 0 :Links ok
Plane 7
    Plane state: ACTIVE
        FPC 1
            PFE 0 :Unused
        FPC 2
            PFE 0 :Links ok
```

show chassis fabric plane (TX Matrix Plus Router)

```

user@host> show chassis fabric plane
sfc0-re0:
-----
Plane  State                Link errors  Destination errors  Uptime
0      Spare                NONE         NONE
1      Online               NONE         NONE                 10 hours, 16 seconds
2      Online               NONE         NONE                 10 hours, 13 seconds
3      Online               NONE         NONE                 10 hours, 9 seconds
4      Online               NONE         NONE                 10 hours, 7 seconds

lcc0-re0:
-----
SIB    State                Link errors  Destination errors  Uptime
0      Spare                NONE         NONE
1      Online               NONE         NONE                 10 hours, 16 seconds
2      Online               NONE         NONE                 10 hours, 13 seconds
3      Online               NONE         NONE                 10 hours, 9 seconds
4      Online               NONE         NONE                 10 hours, 7 seconds

lcc2-re0:
-----
SIB    State                Link errors  Destination errors  Uptime
0      Spare                NONE         NONE
1      Online               NONE         NONE                 10 hours, 16 seconds
2      Online               NONE         NONE                 10 hours, 12 seconds
3      Online               NONE         NONE                 10 hours, 9 seconds
4      Online               NONE         NONE                 10 hours, 7 seconds

```

show chassis fabric plane (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane
sfc0-re0:
-----
Plane  State                Cable errors  Link errors  Destination errors  Uptime
0      Spare                NONE         NONE         NONE
1      Online               NONE         NONE         NONE                 5 hours, 11
minutes, 3 seconds
2      Online               NONE         NONE         NONE                 8 hours, 4
minutes, 24 seconds

```



```

 3   Online      NONE      NONE      NONE      8 hours, 3
minutes, 16 seconds
 4   Online      NONE      NONE      NONE      8 hours, 2
minutes, 12 seconds

```

lcc2-re0:

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
 0   Spare      NONE          NONE          NONE                 5 hours, 11
minutes, 3 seconds
 1   Online      NONE          NONE          NONE                 8 hours, 4
minutes, 57 seconds
 2   Online      NONE          NONE          NONE                 8 hours, 3
minutes, 53 seconds
 3   Online      NONE          NONE          NONE                 8 hours, 2
minutes, 45 seconds

```

lcc4-re0:

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
 0   Spare      NONE          NONE          NONE                 5 hours, 11
minutes, 12 seconds
 1   Online      NONE          NONE          NONE                 8 hours, 4
minutes, 24 seconds
 2   Online      NONE          NONE          NONE                 8 hours, 3
minutes, 16 seconds
 3   Online      NONE          NONE          NONE                 8 hours, 2
minutes, 12 seconds

```

lcc5-re0:

```

-----
SIB   State      Cable errors  Link errors  Destination errors  Uptime
 0   Spare      NONE          NONE          NONE                 5 hours, 11
minutes, 12 seconds
 1   Online      NONE          NONE          NONE                 8 hours, 4
minutes, 24 seconds
 2   Online      NONE          NONE          NONE                 8 hours, 3
minutes, 15 seconds

```

4	Online	NONE	NONE	NONE	8 hours, 2 minutes, 11 seconds
---	--------	------	------	------	--------------------------------

show chassis fabric plane detail (TX Matrix Plus Router)

```
user@host> show chassis fabric plane detail
sfc0-re0:
```

```
-----
Fabric Management PLANE State:
```

```
PLANE 0: Spare
```

```
  SIB F13 0 : Spare
  SIB F13 1 : Empty
  SIB F2S 0/0 : Spare
  SIB F2S 0/2 : Spare
  SIB F2S 0/4 : Spare
  SIB F2S 0/6 : Spare
```

```
PLANE 1: Online
```

```
  SIB F13 3 : Online
  SIB F13 4 : Empty
  SIB F2S 1/0 : Online
  SIB F2S 1/2 : Online
  SIB F2S 1/4 : Online
  SIB F2S 1/6 : Online
```

```
PLANE 2: Online
```

```
  SIB F13 6 : Online
  SIB F13 7 : Empty
  SIB F2S 2/0 : Online
  SIB F2S 2/2 : Online
  SIB F2S 2/4 : Online
  SIB F2S 2/6 : Online
```

```
PLANE 3: Online
```

```
  SIB F13 8 : Online
  SIB F13 9 : Online
  SIB F2S 3/0 : Online
  SIB F2S 3/2 : Online
  SIB F2S 3/4 : Online
  SIB F2S 3/6 : Online
```

```
PLANE 4: Online
```

```
  SIB F13 11 : Online
  SIB F13 12 : Online
  SIB F2S 4/0 : Online
```

```

SIB F2S 4/2 : Online
SIB F2S 4/4 : Online
SIB F2S 4/6 : Online

```

```
lcc0-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
lcc1-re0:
```

```
-----
Fabric Management SIB State:
```

```

SIB 0 : Spare
SIB 1 : Online
SIB 2 : Online
SIB 3 : Online
SIB 4 : Online

```

```
...
```

show chassis fabric plane extensive (TX Matrix Plus Router)

```
user@host> show chassis fabric plane extensive
```

```
sfc0-re0:
```

```
-----
Fabric Management PLANE State:
```

```
PLANE 0: Spare
```

```

SIB F13 0 : Spare
SIB F13 1 : Empty
SIB F2S 0/0 : Spare
SIB F2S 0/2 : Spare
SIB F2S 0/4 : Spare
SIB F2S 0/6 : Spare

```

```
SIB F13 0 Even:
```

```
    LCC 0, SIB 0 : Links ok
```

```
    SG 0
```

```
        Port 0 : Links ok
```

```
        Port 1 : Links ok
```

```
      Port 2      : Links ok
      Port 3      : Links ok
SG 1
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
SG 2
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
SG 3
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
SIB F13 0 Odd:
  LCC 1, SIB 0 : Links ok
  SG 0
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 1
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 2
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
  SG 3
    Port 0      : Links ok
    Port 1      : Links ok
    Port 2      : Links ok
    Port 3      : Links ok
SIB F2S 0/0: Links ok
SIB F2S 0/2: Links ok
SIB F2S 0/4: Links ok
SIB F2S 0/6: Links ok
```

SIB F13 1 Even:

LCC 2, SIB 0 : Unused

SG 0

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 1

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 2

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 3

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SIB F13 1 Odd:

LCC 3, SIB 0 : Unused

SG 0

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 1

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 2

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

Port 3 : Unused

SG 3

Port 0 : Unused

Port 1 : Unused

Port 2 : Unused

```

        Port 3      : Unused
    SIB F2S 0/0: Unused
    SIB F2S 0/2: Unused
    SIB F2S 0/4: Unused
    SIB F2S 0/6: Unused
PLANE 1:    Online
    SIB F13 3   :    Online
    SIB F13 4   :    Empty
    SIB F2S 1/0 :    Online
    SIB F2S 1/2 :    Online
    SIB F2S 1/4 :    Online
    SIB F2S 1/6 :    Online
    SIB F13 3 Even:
...

```

show chassis fabric plane extensive (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane extensive
sfc0-re0:

```

```

-----
Fabric Management PLANE State:

```

```

PLANE 0:    Online
    SIB F13 0   :    Empty
    SIB F13 1   :    Online
    SIB F2S 0/0 :    Online
    SIB F2S 0/2 :    Online
    SIB F2S 0/4 :    Online
    SIB F2S 0/6 :    Online
    SIB F13 0
        LCC 0, SIB 0 : Unused
            PFE 0   : Unused
            PFE 1   : Unused
            PFE 2   : Unused
            PFE 3   : Unused
            PFE 4   : Unused
            PFE 5   : Unused
            PFE 6   : Unused
            PFE 7   : Unused
            PFE 8   : Unused
            PFE 9   : Unused
            PFE 10  : Unused

```

```
PFE 11 : Unused
PFE 12 : Unused
PFE 13 : Unused
PFE 14 : Unused
PFE 15 : Unused
LCC 1, SIB 0 : Unused
PFE 0 : Unused
PFE 1 : Unused
PFE 2 : Unused
PFE 3 : Unused
PFE 4 : Unused
PFE 5 : Unused
PFE 6 : Unused
PFE 7 : Unused
PFE 8 : Unused
PFE 9 : Unused
PFE 10 : Unused
PFE 11 : Unused
PFE 12 : Unused
PFE 13 : Unused
PFE 14 : Unused
PFE 15 : Unused
LCC 2, SIB 0 : Unused
PFE 0 : Unused
PFE 1 : Unused
PFE 2 : Unused
PFE 3 : Unused
PFE 4 : Unused
PFE 5 : Unused
PFE 6 : Unused
PFE 7 : Unused
PFE 8 : Unused
PFE 9 : Unused
PFE 10 : Unused
...
lcc5-re0:
```

```
Fabric Management SIB State:
SIB 0 : Online
LCC SIB Link State : Links ok
PFE 0 : Links ok
PFE 1 : Links ok
PFE 2 : Links ok
```

```
PFE 3 : Links ok
PFE 4 : Links ok
PFE 5 : Links ok
PFE 6 : Links ok
PFE 7 : Links ok
PFE 8 : Links ok
PFE 9 : Links ok
PFE 10 : Links ok
PFE 11 : Links ok
PFE 12 : Links ok
PFE 13 : Links ok
PFE 14 : Links ok
PFE 15 : Links ok
FPC 1
    PFE 0 : Links ok
FPC 2
    PFE 0 : Links ok
FPC 3
    PFE 0 : Links ok
    PFE 1 : Links ok
FPC 4
    PFE 0 : Links ok
SIB 1 : Online
LCC SIB Link State : Links ok
    PFE 0 : Links ok
    PFE 1 : Links ok
    PFE 2 : Links ok
    PFE 3 : Links ok
    PFE 4 : Links ok
    PFE 5 : Links ok
    PFE 6 : Links ok
    PFE 7 : Links ok
    PFE 8 : Links ok
    PFE 9 : Links ok
    PFE 10 : Links ok
    PFE 11 : Links ok
    PFE 12 : Links ok
    PFE 13 : Links ok
    PFE 14 : Links ok
    PFE 15 : Links ok
FPC 1
    PFE 0 : Links ok
FPC 2
```



```

        PFE 0      : Links ok
FPC 3
        PFE 0      : Links ok
        PFE 1      : Links ok
FPC 4
        PFE 0      : Links ok

```

show chassis fabric plane terse (TX Matrix Plus Router)

```
user@host> show chassis fabric plane terse
```

```
sfc0-re0:
```

```
-----
```

Plane	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds
2	Online	NONE	NONE	18 minutes, 36 seconds
3	Online	NONE	NONE	18 minutes, 33 seconds
4	Online	NONE	NONE	18 minutes, 31 seconds

```
lcc1-re0:
```

```
-----
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds
2	Online	NONE	NONE	
3	Online	NONE	NONE	
4	Empty	NONE	NONE	

```
lcc2-re0:
```

```
-----
```

SIB	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	18 minutes, 37 seconds
2	Online	NONE	NONE	18 minutes, 36 seconds
3	Online	NONE	NONE	18 minutes, 32 seconds
4	Online	NONE	NONE	18 minutes, 31 seconds

show chassis fabric plane terse (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane terse
sfc0-re0:
-----
Plane  State          Cable errors  Link errors  Destination errors  Uptime
  0    Offline         NONE          NONE         NONE                 1 day, 18
hours, 14 minutes, 26 seconds
  1    Online          NONE          NONE         NONE
  2    Offline         NONE          NONE         NONE
  3    Offline         NONE          NONE         NONE
  4    Offline         NONE          NONE         NONE

lcc2-re0:
-----
SIB    State          Cable errors  Link errors  Destination errors  Uptime
  0    Offline         NONE          NONE         NONE                 1 day, 18
hours, 17 minutes
  1    Online          NONE          NONE         NONE
  2    Offline         NONE          NONE         NONE
  3    Offline         NONE          NONE         NONE
  4    Offline         NONE          NONE         NONE

lcc4-re0:
-----
SIB    State          Cable errors  Link errors  Destination errors  Uptime
  0    Offline         NONE          NONE         NONE                 1 day, 18
hours, 14 minutes, 38 seconds
  1    Online          NONE          NONE         NONE
  2    Offline         NONE          NONE         NONE
  3    Offline         NONE          NONE         NONE
  4    Offline         NONE          NONE         NONE

lcc5-re0:
-----
SIB    State          Cable errors  Link errors  Destination errors  Uptime
  0    Offline         NONE          NONE         NONE                 1 day, 18
hours, 14 minutes, 34 seconds
  1    Online          NONE          NONE         NONE
  2    Offline         NONE          NONE         NONE

```

3	Offline	NONE	NONE	NONE
4	Offline	NONE	NONE	NONE

show chassis fabric plane lcc (TX Matrix Plus Router)

```

user@host> show chassis fabric plane lcc 1
lcc1-re0:
-----
SIB   State           Link errors  Destination errors  Uptime
0     Spare           NONE         NONE
1     Online          NONE         NONE                 25 minutes, 17 seconds
2     Disconnected    NONE         NONE
3     Disconnected    NONE         NONE
4     Empty           NONE         NONE

```

show chassis fabric plane lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane lcc 2
lcc2-re0:
-----
SIB   State           Cable errors  Link errors  Destination errors  Uptime
0     Offline         NONE         NONE         NONE
1     Online          NONE         NONE         NONE                 1 day, 18
hours, 16 minutes, 44 seconds
2     Offline         NONE         NONE         NONE
3     Offline         NONE         NONE         NONE
4     Offline         NONE         NONE         NONE

```

show chassis fabric plane sfc (TX Matrix Plus Router)

```

user@host> show chassis fabric plane sfc 0
sfc0-re0:
-----
Plane State           Link errors  Destination errors  Uptime
0     Spare           NONE         NONE
1     Online          NONE         NONE                 27 minutes, 7 seconds
2     Online          NONE         NONE                 27 minutes, 6 seconds

```

3	Online	NONE	NONE	27 minutes, 3 seconds
4	Online	NONE	NONE	27 minutes, 1 second

show chassis fabric plane sfc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane sfc 0
sfc0-re0:
-----
Plane  State          Cable errors  Link errors  Destination errors  Uptime
 0   Offline          NONE         NONE         NONE                1 day, 18
hours, 14 minutes, 20 seconds
 2   Offline          NONE         NONE         NONE
 3   Offline          NONE         NONE         NONE
 4   Offline          NONE         NONE         NONE

```

show chassis fabric plane (T1600 Router)

```

user@host> show chassis fabric plane
Plane  State          Uptime
 0   Online          15 hours, 42 minutes, 9 seconds
 1   Online          15 hours, 42 minutes, 9 seconds
 2   Fault
 3   Online          15 hours, 42 minutes, 9 seconds
 4   Online          15 hours, 42 minutes, 9 seconds

```

show chassis fabric plane extensive (T1600 Router)

```

user@host> show chassis fabric plane extensive
Fabric Management PLANE State:
PLANE 0:   Online
  ST-SIB-L 0: Links ok
    SG 0
      Port 0   : Links ok
      Port 1   : Links ok
      Port 2   : Links ok
      Port 3   : Links ok
    SG 1

```

```
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
SG 2
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
SG 3
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
ST-SIB-L 0
    FPC 4
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 6
        PFE 0: Links ok
        PFE 1: Links ok
    FPC 7
        PFE 0: Links ok
PLANE 1:    Online
ST-SIB-L 1: Links ok
    SG 0
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 1
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 2
        Port 0    : Links ok
        Port 1    : Links ok
        Port 2    : Links ok
        Port 3    : Links ok
    SG 3
        Port 0    : Links ok
        Port 1    : Links ok
```

```
    Port 2      : Links ok
    Port 3      : Links ok
ST-SIB-L 1
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 2:      Online
  ST-SIB-L 2: Links ok
    SG 0
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
    SG 1
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
    SG 2
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
    SG 3
      Port 0      : Links ok
      Port 1      : Links ok
      Port 2      : Links ok
      Port 3      : Links ok
  ST-SIB-L 2
    FPC 4
      PFE 0: Links ok
      PFE 1: Links ok
    FPC 6
      PFE 0: Links ok
      PFE 1: Links ok
    FPC 7
      PFE 0: Links ok
PLANE 3:      Spare
```

```
ST-SIB-L 3: Links ok
  SG 0
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 1
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 2
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 3
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
ST-SIB-L 3
  FPC 4
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 6
    PFE 0: Links ok
    PFE 1: Links ok
  FPC 7
    PFE 0: Links ok
PLANE 4:   Online
ST-SIB-L 4: Links ok
  SG 0
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 1
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 2
```

```

    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  SG 3
    Port 0    : Links ok
    Port 1    : Links ok
    Port 2    : Links ok
    Port 3    : Links ok
  ST-SIB-L 4
    FPC 4
      PFE 0: Links ok
      PFE 1: Links ok
    FPC 6
      PFE 0: Links ok
      PFE 1: Links ok
    FPC 7
      PFE 0: Links ok

```

show chassis fabric plane detail (T1600 Router)

```

user@host> show chassis fabric plane detail
Fabric Management PLANE State:
PLANE 0:    Online
PLANE 1:    Online
PLANE 2:    Online
PLANE 3:    Spare
PLANE 4:    Online

```

show chassis fabric plane (EX8200 Switch)

```

user@host> show chassis fabric plane
Fabric management PLANE state
Plane 0
  Plane state: ACTIVE
Plane 1
  Plane state: ACTIVE
Plane 2
  Plane state: ACTIVE
Plane 3

```



```
Plane state: ACTIVE
Plane 4
Plane state: SPARE
Plane 5
Plane state: SPARE
Plane 6
Plane state: SPARE
Plane 7
Plane state: SPARE
Plane 8
Plane state: ACTIVE
Plane 9
Plane state: ACTIVE
Plane 10
Plane state: ACTIVE
Plane 11
Plane state: ACTIVE
```

show chassis fabric plane (EX9253 Switch)

```
user@switch> show chassis fabric plane
Fabric management PLANE state
Plane 0
Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
Plane 1
Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
```

```
        PFE 2 :Links ok
Plane 2
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 3
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 4
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 5
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 6
  Plane state: ACTIVE
```

```
FPC 0
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
FPC 1
  PFE 0 :Links ok
  PFE 1 :Links ok
  PFE 2 :Links ok
Plane 7
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 8
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 9
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 10
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
```

```
        PFE 2 :Links ok
    FPC 1
        PFE 0 :Links ok
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 11
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 12
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 13
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
Plane 14
    Plane state: ACTIVE
        FPC 0
            PFE 0 :Links ok
            PFE 1 :Links ok
            PFE 2 :Links ok
        FPC 1
            PFE 0 :Links ok
```

```
        PFE 1 :Links ok
        PFE 2 :Links ok
Plane 15
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 16
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 17
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 18
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 19
```

```
Plane state: ACTIVE
  FPC 0
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
  FPC 1
    PFE 0 :Links ok
    PFE 1 :Links ok
    PFE 2 :Links ok
Plane 20
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
Plane 21
  Plane state: ACTIVE
    FPC 0
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
    FPC 1
      PFE 0 :Links ok
      PFE 1 :Links ok
      PFE 2 :Links ok
```

Release Information

Command introduced in Junos OS Release 8.0.

detail, extensive, lcc, sfc, and terse options introduced for the TX Matrix Plus router in Junos OS Release 9.6.

extended option introduced in Junos OS Release 16.1 for MX2020 and MX2010 Routers.

RELATED DOCUMENTATION

[request chassis fabric plane | 415](#)

[show chassis fabric plane-location | 1183](#)

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

show chassis fabric plane-location

IN THIS SECTION

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- [Syntax \(MX Series Routers\) | 1183](#)
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Syntax

```
show chassis fabric plane-location
```

Syntax (MX Series Routers)

```
show chassis fabric plane-location  
<all-members>
```

```
<local>
<member member-id>
```

Syntax (MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis fabric plane-location
<extended>
```

Description

(M120, MX Series routers, and EX8200 switches only) Display the Control Board (CB) location of each plane. This command can be used on the primary Routing Engine or the backup Routing Engine. For information about the meaning of “CBs” and “fabric plane” on the switches, see the hardware documentation for your switch.

(TX Matrix Plus routers only) Display the SIB location of each fabric plane.

(PTX Series Packet Transport Routers and QFX Series switches only) Display the fabric plane location of each SIB.

(MX2010, MX2020, and MX2008 Routers only) Display the fabric plane location of each Switch Fabric Board (SFB).

Options

all-members (MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in all member routers in the Virtual Chassis configuration.

local (MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the local Virtual Chassis member.

member member-id (MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

extended (MX2020, MX2010, and MX2008 routers only) (Optional) Display the fabric plane location of all 3 planes of each Switch Fabric Board (SFB) or enhanced Switch Fabric Board (SFB2).

Required Privilege Level

view

Output Fields

[Table 62 on page 1185](#) lists the output fields for the **show chassis fabric plane-location** command. Output fields are listed in the approximate order in which they appear.

Table 62: show chassis fabric plane-location Output Fields

Field Name	Field Description
Plane <i>n</i>	Plane number. (PTX Series Packet Transport Routers and QFX Series switches) Plane numbers associated with the SIB. (MX2010, MX2020, and MX2008 Routers only) Plane numbers associated with the SFB.
Control Board <i>n</i>	Control board number.
SFC ABS-SIB-F13	(TX Matrix Plus routers only) Switch Interface Board (SIB) slot number on the F13 SIB.
SFC ABS-SIB-F2S	(TX Matrix Plus routers only) SIB slot number on the F2S SIB.
LCC ST-SIB-L	(TX Matrix Plus routers only) Line-card chassis (LCC) SIB slot number.

Table 62: show chassis fabric plane-location Output Fields (Continued)

Field Name	Field Description
SFC SIB F13	(TX Matrix Plus routers with 3D SIBs only) Switch Interface Board (SIB) slot number on the F13 SIB.
SFC SIB F2S	(TX Matrix Plus routers with 3D SIBs only) SIB slot number on the F2S SIB.
LCC SIB	(TX Matrix Plus routers with 3D SIBs only) Line-card chassis (LCC) SIB slot number.
SIB	(PTX Series Packet Transport Routers and QFX Series switches) SIB number.
Switch Fabric Board n	(MX2010, MX2020, and MX2008 Routers only) SFB number.

Sample Output

show chassis fabric plane-location (M120 Router)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 1
Plane 3                Control Board 1

```

show chassis fabric plane-location (MX240 and MX480 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0                Control Board 0

```

```

Plane 1          Control Board 0
Plane 2          Control Board 0
Plane 3          Control Board 0
Plane 4          Control Board 1
Plane 5          Control Board 1
Plane 6          Control Board 1
Plane 7          Control Board 1

```

show chassis fabric plane-location (MX960 Router)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Control Board 0
Plane 1          Control Board 0
Plane 2          Control Board 1
Plane 3          Control Board 1
Plane 4          Control Board 2
Plane 5          Control Board 2

```

show chassis fabric plane-location (MX10008 Router)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 0
Plane 2          Switch Fabric Board 0
Plane 3          Switch Fabric Board 0
Plane 4          Switch Fabric Board 1
Plane 5          Switch Fabric Board 1
Plane 6          Switch Fabric Board 1
Plane 7          Switch Fabric Board 1
Plane 8          Switch Fabric Board 2
Plane 9          Switch Fabric Board 2
Plane 10         Switch Fabric Board 2
Plane 11         Switch Fabric Board 2
Plane 12         Switch Fabric Board 3
Plane 13         Switch Fabric Board 3
Plane 14         Switch Fabric Board 3
Plane 15         Switch Fabric Board 3

```

```

Plane 16          Switch Fabric Board 4
Plane 17          Switch Fabric Board 4
Plane 18          Switch Fabric Board 4
Plane 19          Switch Fabric Board 4
Plane 20          Switch Fabric Board 5
Plane 21          Switch Fabric Board 5
Plane 22          Switch Fabric Board 5
Plane 23          Switch Fabric Board 5

```

show chassis fabric plane-location (MX2020 Router)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 1
Plane 2          Switch Fabric Board 2
Plane 3          Switch Fabric Board 3
Plane 4          Switch Fabric Board 4
Plane 5          Switch Fabric Board 5
Plane 6          Switch Fabric Board 6
Plane 7          Switch Fabric Board 7

```

show chassis fabric plane-location (MX2020 Router with SFB2)

```

user@host> show chassis fabric plane-location extended
-----Fabric Plane Locations-----
Plane 0          Switch Fabric Board 0
Plane 1          Switch Fabric Board 0
Plane 2          Switch Fabric Board 0
Plane 3          Switch Fabric Board 1
Plane 4          Switch Fabric Board 1
Plane 5          Switch Fabric Board 1
Plane 6          Switch Fabric Board 2
Plane 7          Switch Fabric Board 2
Plane 8          Switch Fabric Board 2
Plane 9          Switch Fabric Board 3
Plane 10         Switch Fabric Board 3
Plane 11         Switch Fabric Board 3
Plane 12         Switch Fabric Board 4
Plane 13         Switch Fabric Board 4

```

```
Plane 14      Switch Fabric Board 4
Plane 15      Switch Fabric Board 5
Plane 16      Switch Fabric Board 5
Plane 17      Switch Fabric Board 5
Plane 18      Switch Fabric Board 6
Plane 19      Switch Fabric Board 6
Plane 20      Switch Fabric Board 6
Plane 21      Switch Fabric Board 7
Plane 22      Switch Fabric Board 7
Plane 23      Switch Fabric Board 7
```

show chassis fabric plane-location (MX10003 Router)

```
user@host> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0
    FPC 0
    FPC 1
Plane 1
    FPC 0
    FPC 1
Plane 2
    FPC 0
    FPC 1
Plane 3
    FPC 0
    FPC 1
Plane 4
    FPC 0
    FPC 1
Plane 5
    FPC 0
    FPC 1
Plane 6
    FPC 0
    FPC 1
Plane 7
    FPC 0
    FPC 1
Plane 8
```

```
FPC 0
FPC 1
Plane 9
FPC 0
FPC 1
Plane 10
FPC 0
FPC 1
Plane 11
FPC 0
FPC 1
Plane 12
FPC 0
FPC 1
Plane 13
FPC 0
FPC 1
Plane 14
FPC 0
FPC 1
Plane 15
FPC 0
FPC 1
Plane 16
FPC 0
FPC 1
Plane 17
FPC 0
FPC 1
Plane 18
FPC 0
FPC 1
Plane 19
FPC 0
FPC 1
Plane 20
FPC 0
FPC 1
Plane 21
FPC 0
FPC 1
```

show chassis fabric plane-location (TX Matrix Plus Router)

```

user@host> show chassis fabric plane-location
Fabric Plane Locations :
Plane      SFC ABS-SIB-F13      SFC ABS-SIB-F2      LCC ST-SIB-L
0          0, 1                 0/0, 0/2, 0/4, 0/6      0
1          3, 4                 1/0, 1/2, 1/4, 1/6      1
2          6, 7                 2/0, 2/2, 2/4, 2/6      2
3          8, 9                 3/0, 3/2, 3/4, 3/6      3
4          11, 12              4/0, 4/2, 4/4, 4/6      4

```

show chassis fabric plane-location (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric plane-location
sfc0-re0
-----
-----Fabric Plane Locations-----
Plane      SFC SIB F13          SFC SIB F2          LCC SIB
0          0, 1                 0/0, 0/2, 0/4, 0/6      0
1          3, 4                 1/0, 1/2, 1/4, 1/6      1
2          6, 7                 2/0, 2/2, 2/4, 2/6      2
3          8, 9                 3/0, 3/2, 3/4, 3/6      3
4          11, 12              4/0, 4/2, 4/4, 4/6      4

```

show chassis fabric plane-location (EX8200 Switch)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
Plane 0          Control Board 0
Plane 1          Control Board 0
Plane 2          Control Board 0
Plane 3          Control Board 0
Plane 4          Control Board 1
Plane 5          Control Board 1
Plane 6          Control Board 1
Plane 7          Control Board 1
Plane 8          Control Board 2
Plane 9          Control Board 2

```

```
Plane 10                Control Board 2
Plane 11                Control Board 2
```

show chassis fabric plane-location (EX9253 Switch)

```
user@switch> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0
      FPC 0
      FPC 1
Plane 1
      FPC 0
      FPC 1
Plane 2
      FPC 0
      FPC 1
Plane 3
      FPC 0
      FPC 1
Plane 4
      FPC 0
      FPC 1
Plane 5
      FPC 0
      FPC 1
Plane 6
      FPC 0
      FPC 1
Plane 7
      FPC 0
      FPC 1
Plane 8
      FPC 0
      FPC 1
Plane 9
      FPC 0
      FPC 1
Plane 10
      FPC 0
      FPC 1
```



```
Plane 11
    FPC 0
    FPC 1
Plane 12
    FPC 0
    FPC 1
Plane 13
    FPC 0
    FPC 1
Plane 14
    FPC 0
    FPC 1
Plane 15
    FPC 0
    FPC 1
Plane 16
    FPC 0
    FPC 1
Plane 17
    FPC 0
    FPC 1
Plane 18
    FPC 0
    FPC 1
Plane 19
    FPC 0
    FPC 1
Plane 20
    FPC 0
    FPC 1
Plane 21
    FPC 0
    FPC 1
```

show chassis fabric plane-location (PTX Series Packet Transport Routers)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
  0           0   1
  1           2   3
```

2	4	5
3	6	7
4	8	9
5	10	11
6	12	13
7	14	15
8	16	17

show chassis fabric plane-location (PTX10008 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11

```

show chassis fabric plane-location (QFX 10008 Switch)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11

```

Release Information

Command introduced in Junos OS Release 8.0.

extended option introduced in Junos OS Release 16.1R1 for MX2020 and MX2010 Universal Routing Platforms.

show chassis fabric redundancy-mode

IN THIS SECTION

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- [Description | 1195](#)
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- [Required Privilege Level | 1196](#)
- [Output Fields | 1196](#)
- [Sample Output | 1196](#)
- [Release Information | 1196](#)

Syntax

```
show chassis fabric redundancy-mode
```

Description

(MX240, MX480, and MX960 routers only) Display whether redundancy mode is configured for active control boards to enable increased fabric bandwidth usage.

Options

This command has no options.

Required Privilege Level

view

Output Fields

Table 63 on page 1196 lists the output fields for the **show chassis fabric redundancy-mode** command. Output fields are listed in the approximate order in which they appear.

Table 63: show chassis fabric redundancy mode Output Fields

Field name	Field Description
Fabric redundancy mode	Currently configured mode of the fabric

Sample Output

show chassis fabric redundancy-mode

```
user@host> show chassis fabric redundancy-mode
Fabric redundancy mode: Redundant Fabric
```

Release Information

Command introduced in Junos OS Release 12.2.

RELATED DOCUMENTATION

[Detection and Corrective Actions of Line Cards with Degraded Fabric on MX Series Routers](#) | 34

[Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers | 31](#)

[MX Series Routers Fabric Resiliency | 28](#)

[redundancy-mode | 363](#)

[Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers | 52](#)

show chassis fabric reachability

IN THIS SECTION

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Syntax

```
show chassis fabric reachability
```

```
<detail>
```

```
<extended>
```

Description

(M320, MX240, MX480, MX960, and T Series routers only) Display the current state of fabric destination reachability. Additionally, display the details of the automated actions taken by the system to stop null-route filtering and attempt healing, and the final resolution of the actions.

Options

- none** Display the state of fabric destination reachability for M320, MX240, MX480, MX960, T640, T1600, and TX Matrix routers, based on periodic reachability checks. Display the system's action phase sequences to stop the null route and attempt healing, and the final resolution.
- detail** (Optional) Display the details of the actions carried out by the system in the different action phases and the final resolution.
- extended** (MX2020 and MX2010 Routers only) (Optional) Display the state of fabric destination reachability for MX2010 and MX2020 routers.

Required Privilege Level

view

Output Fields

The table lists the output fields for the **show chassis fabric reachability** command. Output fields are listed in the approximate order in which they appear.

Table 64: show chassis fabric reachability Output Fields

Field Name	Field Description	Level of Output
Fabric reachability status	<p>Display the reachability status of the fabric.</p> <ul style="list-style-type: none"> • Enabled destinations transitioned to unreachable, Fabric down action in progress—Some enabled destinations that were originally reachable have become unreachable. The system is trying to stop the fabric down condition and attempt healing. • Enabled destinations reachable—The enabled destinations are reachable. • Unreachable destinations healed—The unreachable destinations are healed and are reachable. • Unreachable destinations removed—The unreachable destinations are removed. • Unreachable destinations present—Unreachable destinations are present in the system. • Unreachable destinations present due to FPC restart disable configuration—Unreachable destinations are present as a result of user configuration set to disable FPC restart. 	All levels
Unreachable destinations	Number of FPCs that have unreachable destinations.	All levels
Detected on	Date and time when unreachable destinations are detected.	All levels
Reason	<p>Reason for the destination turning unreachable.</p> <ul style="list-style-type: none"> • Single FPC error—A single bad FPC is not reachable over the fabric. • Fabric plane error—Multiple FPCs are not able to forward traffic over the fabric planes. 	All levels

Table 64: show chassis fabric reachability Output Fields (*Continued*)

Field Name	Field Description	Level of Output
Fabric reachability action	<p>Action taken to handle the unreachable destination.</p> <ul style="list-style-type: none"> • Plane Action—The healing is attempted only for the fabric planes. • SIB Action—(PTX Series system only) The healing is attempted only for the SIBs. • Plane and FPC Action—The healing is attempted both for the fabric planes and the FPCs. • SIB and FPC Action—(PTX Series system only) The healing is attempted both for the SIBs and the FPCs. • FPC Action—The healing is attempted only for the bad FPCs. 	All levels
Acting on	<p>Current action is being performed on:</p> <ul style="list-style-type: none"> • Single FPC error—The current operation is for healing the single bad FPC. • Fabric Plane error—The current operation is for healing the fabric planes. 	All levels
Initial phase	<p>Starting phase for the healing action.</p> <ul style="list-style-type: none"> • Plane restart—The fabric planes are restarted. • SIB restart—(PTX Series system only) The SIBs are restarted. • Plane and FPC restart—Both the fabric planes and affected FPCs are restarted. • SIB and FPC restart—(PTX Series system only) SIBs and affected FPCs are restarted. 	All levels

Table 64: show chassis fabric reachability Output Fields (Continued)

Field Name	Field Description	Level of Output
Current phase	<p>Current phase for the healing action.</p> <ul style="list-style-type: none"> • Plane restart—The fabric planes are restarted. • SIB restart—(PTX Series system only) The SIBs are restarted. • Plane and FPC restart—Both the fabric planes and affected FPCs are restarted. • SIB and FPC restart—(PTX Series system only) Both the SIBs and affected FPCs are restarted. • FPC offline—The FPCs are turned offline because the previously mentioned healing processes have failed. 	All levels
Action started	Date and time when the system fabric down healing attempt is started.	All levels
Plane restart phase	<p>The status of the plane restart phase.</p> <ul style="list-style-type: none"> • Completed—The plane restart phase is completed. • In progress—The plane restart phase is in progress. 	detail
Phase started	Date and time when the plane restart phase is started.	detail
Planes restarted	List of plane numbers restarted by the system.	detail
Planes timed out	List of plane numbers that have timed out waiting to be restarted by the system.	detail
Planes being offlined / onlined	Planes that are turned offline or turned online by the system, with date and time.	detail

Table 64: show chassis fabric reachability Output Fields (Continued)

Field Name	Field Description	Level of Output
Phase completed	Date and time when the plane restart phase is completed.	detail
Plane and FPC Restart Phase	Status of the plane and FPC restart phase. <ul style="list-style-type: none"> • Completed—The plane and FPC restart phase is completed. • In progress—The plane and FPC restart phase is in progress. 	detail
Phase started	Date and time when the plane and FPC restart phase is started.	detail
FPC Offline Started	Date and time when the FPC offline action is started.	detail
Offlined FPCs	List of FPCs that are turned offline by the system.	detail
FPCs timed out	List of FPCs that have timed out waiting to be turned offline by the system.	detail
FPC being offlined	FPC that is being turned offline by the system, with date and time.	detail
FPC Offline completed	Date and time when the FPC offline action is completed.	detail
Plane restarting started	Date and time when the plane restart action is started.	detail
Planes restarted	List of planes restarted by the system.	detail
Planes being offlined / onlined	Planes that are currently being turned offline or turned online by the system, with date and time.	detail

Table 64: show chassis fabric reachability Output Fields (Continued)

Field Name	Field Description	Level of Output
Plane restarting completed	Date and time when the plane restarting action is completed.	detail
FPC online started	Date and time when FPC online action is started.	detail
Onlined FPCs	List of FPCs that are turned online by the system.	detail
FPCs timed out	FPCs that have timed out waiting to be turned online by the system.	detail
FPC being onlined	FPC that is being turned online by the system, with date and time.	detail
FPC Online completed	Date and time when the action of turning the FPCs online is completed.	detail
Phase Completed	Date and time when the plane and FPC restart phase is completed.	detail
Phase started	Date and time when the plane and FPC restart phase is started.	detail
FPC restart time	Date and time when the FPC restart action is started.	detail
FPC restarted	FPC that is restarted by the system, with date and time.	detail
Phase Completed	Date and time when the plane and FPC restart phase is completed.	detail

Table 64: show chassis fabric reachability Output Fields (Continued)

Field Name	Field Description	Level of Output
FPC Offline Phase	Status of the FPC offline phase. <ul style="list-style-type: none"> • Completed— The FPC offline phase is completed. • In progress—The FPC offline phase is currently in progress. 	detail
Phase started	Date and time when the FPC offline phase is started.	detail
FPC Offline started	Date and time when the FPC offline action is started.	detail
Offlined FPCs	List of FPCs turned offline by the system.	detail
FPCs timed out	List of FPCs that have timed out waiting to be turned offline by the system.	detail
FPC being offlined	FPC that is being turned offline by the system, with date and time.	detail
FPC Offline completed	Date and time when the FPC offline action is completed.	detail
Phase Completed	Date and time when the FPC offline phase is completed.	detail
Action Completed	Date and time when the system fabric down healing attempt is completed.	All levels

Table 64: show chassis fabric reachability Output Fields (Continued)

Field Name	Field Description	Level of Output
Fabric reachability resolution	<p>Status after the healing actions are performed.</p> <ul style="list-style-type: none"> • Unreachable destinations healed after <i>phase name</i>—The unreachable destinations are healed after the healing actions are performed. The phase name indicates the last healing phase. • Unreachable destinations removed by FPCs <i>FPC number</i> offline—The unreachable destinations are removed by turning the FPCs offline. • Unreachable destinations present on FPC/PFE <i>FPC/PFE number</i>—The unreachable destinations are present on the FPCs or Packet Forwarding Engines and need to be acted upon. 	All levels

Sample Output

show chassis fabric reachability (T640 and T1600 routers)

```

user@host> show chassis fabric reachability
Fabric reachability status: Unreachable destinations removed

Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs
  Detected on                   : 2010-11-22 15:19:45 PST
  Reason                        : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : FPC action
  Acting on                     : Fabric plane error
  Initial phase                 : Plane restart
  Current phase                 : FPC offline is completed
  Action started                : 2010-11-22 15:08:05 PST

```

Action completed : 2010-11-22 15:19:45 PST

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5
offline

show chassis fabric reachability detail (T640 and T1600 routers)

```

user@host> show chassis fabric reachability
detail
Fabric reachability status: Unreachable destinations removed
Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs
    Detected on                 : 2010-11-15 15:50:32 PST
    Reason                      : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : FPC action
  Acting on                    : Fabric plane error
  Initial phase                 : Plane restart
  Current phase                 : FPC offline is completed
  Action started                : 2010-11-15 15:41:47 PST
    Plane restart phase        : Completed
      Phase started            : 2010-11-15 15:41:47 PST
        Planes restarted       : 0, 1, 2, 3, 4, 0
      Phase completed          : 2010-11-15 15:42:14 PST
    Plane and FPC Restart Phase : Completed
      Phase started            : 2010-11-15 15:45:52 PST
        FPC Offline Started    : 2010-11-15 15:45:52 PST
          Offlined FPCs       : 2, 3, 5, 7
        FPC Offline completed  : 2010-11-15 15:45:52 PST
          Plane restarting started : 2010-11-15 15:45:52 PST
            Planes restarted   : 0, 1, 2, 3, 4, 0
          Plane restarting completed : 2010-11-15 15:46:11 PST
            FPC online started  : 2010-11-15 15:46:11 PST
              Onlined FPCs    : 2, 3, 5, 7
            FPC online completed : 2010-11-15 15:46:50 PST
              Phase completed   : 2010-11-15 15:46:50 PST
    FPC offline phase          : Completed
      Phase started            : 2010-11-15 15:50:32 PST
        FPC offline started    : 2010-11-15 15:50:32 PST
          Offlined FPCs       : 2, 3, 5

```

```

          FPC offline completed      : 2010-11-15 15:50:32 PST
          Phase completed            : 2010-11-15 15:50:32 PST
          Action completed           : 2010-11-15 15:50:32 PST

```

```

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5
offline

```

show chassis fabric reachability (PTX5000 system)

```

user@host> show chassis fabric reachability
Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

```

Fabric reachability detection:

```

          Unreachable destinations    : Present on 5 FPCs
          Detected on                 : 2012-11-14 15:53:00 PST
          Reason                      : Fabric plane error

```

Fabric reachability action:

```

          Fabric reachability action  : SIB action
          Acting on                   : Fabric plane error
          Initial phase                : SIB restart
          Current phase                : SIB restart is in progress
          Action started               : 2012-11-14 15:53:00 PST

```

show chassis fabric reachability (PTX10008 Router)

```

user@host> show chassis fabric reachability
Fabric reachability status: Enabled destinations reachable

```

Fabric reachability detection:

```

          Unreachable destinations    : Present on 0 FPCs
          Detected on                 : 2017-05-10 01:54:09 PDT

```

show chassis fabric reachability (MX2020 Router with SFB2)

```

user@host > show chassis fabric reachability
Fabric reachability status: No Fabric degradation detected now

```

show chassis fabric reachability detail (MX10003 Router)

```

user@host > show chassis fabric reachability detail

May 23 23:52:27

Fabric reachability status: Fabric degradation condition healed
    Detected on                : 2017-05-23 23:49:54 PDT
    Reason                      : Fabric Degradation due to Plane
faults (fabric error)

Fabric reachability action:
    Fabric reachability action  : Plane action
    Current phase               : Plane Restart Phase is completed
    Action started              : 2017-05-23 23:50:04 PDT
    Action completed            : 2017-05-23 23:52:22 PDT
    Plane restart phase        : Completed
        Phase started          : 2017-05-23 23:50:04 PDT
            Planes restarted    : 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
        Phase completed        : 2017-05-23 23:52:22 PDT

```

show chassis fabric reachability (TX Matrix router)

```

user@host> show chassis fabric reachability
Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

Fabric reachability detection:
    Unreachable destinations    : Present on 14 FPCs
    Detected on                 : 2013-08-29 02:09:16 PDT
    Reason                      : Fabric plane error

Fabric reachability action:

```



```

Fabric reachability action      : Plane action
Acting on                      : Fabric plane error
Initial phase                  : Plane restart
Current phase                  : Plane restart is in progress
Action started                 : 2013-08-29 02:09:16 PDT

```

show chassis fabric reachability detail (TX Matrix router)

```

user@host> show chassis fabric reachability
detail
Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

Fabric reachability detection:
  Unreachable destinations      : Present on 14 FPCs
    Detected on                : 2013-08-29 02:09:16 PDT
    Reason                     : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : Plane action
  Acting on                    : Fabric plane error
  Initial phase                 : Plane restart
  Current phase                 : Plane restart is in progress
  Action started               : 2013-08-29 02:09:16 PDT
    Plane restart phase        : In progress
      Phase started            : 2013-08-29 02:09:16 PDT
        Planes restarted       : 0, 2, 3
        Planes being offlined  : 4 : 2013-08-29 02:10:11 PDT

```

show chassis fabric reachability detail (MX960 router)

After triggering a phase action from an MPC, the **show chassis fabric reachability** command includes output from DPCs, MPCs, or FPCs.

```

user@host> show chassis fabric reachability
detail
Fabric reachability status: Fabric degradation condition healed
  Detected on                  : 2018-03-14 22:28:03 PDT
  Reason                      : Fabric Degradation due to grant
timeouts seen by DPCs, MPCs, or FPCs

```

```

Fabric reachability action:
  Fabric reachability action      : Plane action
  Current phase                   : Plane Restart Phase is completed
  Action started                  : 2018-03-14 22:28:17 PDT
  Action completed                : 2018-03-14 22:29:28 PDT
    Plane restart phase          : Completed
      Phase started              : 2018-03-14 22:28:17 PDT
        Planes restarted         : 0, 1, 2, 3
          Phase completed        : 2018-03-14 22:29:28 PDT

```

```

Fabric reachability resolution: Fabric degradation healed after phase Plane
restart

```

Release Information

Command introduced before Junos OS Release 11.4.

extended option introduced in Junos OS Release 16.1R1 for MX2010 and MX2020 Universal Routing Platforms.

RELATED DOCUMENTATION

| [show chassis fabric unreachable-destinations](#) | 1278

show chassis fabric sibs

IN THIS SECTION

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- [Release Information | 1230](#)

Syntax

```
show chassis fabric sibs  
<lcc number | scc>  
<slot slot-number>
```

Description

(TX Matrix routers only) Display the state of the electrical and optical switch fabric link between the SIBs in the TX Matrix router (TX-SIBs) and the SIBs in the T640 routers (T640 LCC SIBs).

(M320, T640, T1600, T4000 and PTX Series routers and QFX Series switches) Display the state of the electrical switch fabric link between the SIBs and the FPCs.

Options

- none** (TX Matrix routers only) Display the state of the electrical and optical switch fabric link between the SIBs in the TX Matrix router (TX-SIBs) and the SIBs in the T640 routers (T640 LCC SIBs).
- (M320, T640, T1600, T4000 and PTX Series routers and QFX Series switches) Display the state of the electrical switch fabric link between the SIBs and the FPCs.
- lcc number** (Optional) Display the switching fabric link state for the T640 SIBs on a specified T640 router (line-card chassis) connected to a TX Matrix router.
- scc** (Optional) Display the switching fabric link state for the TX-SIBs on the TX Matrix router (switch-card chassis).

slot *slot-number* (Optional) Display the state of the electrical switch fabric link between the specified SIB slot and the FPCs.

Required Privilege Level

view

Output Fields

[Table 65 on page 1212](#) lists the output fields for the **show chassis fabric sibs** command. Output fields are listed in the approximate order in which they appear.

Table 65: show chassis fabric sibs Output Fields

Field Name	Field Description
Fabric management SIB state	Switching fabric link (link from FPC to SIB) state for each SIB: <ul style="list-style-type: none"> • Unused—SIB is not present. • Links ok—Link between the SIB and the FPC is active. • Link error—Link between the SIB and the FPC is not operational.

Table 65: show chassis fabric sibs Output Fields (Continued)

Field Name	Field Description
Plane state	<p>Possible plane state of the M320 SIB, TX-SIB or T640 SIB:</p> <ul style="list-style-type: none"> • S_ACTIVE—Links on the SIB are operational, and the fabric plane (SIB) is operational and running. • S_SPARE—Links on the SIB are operational and the fabric plane (SIB) is redundant and can be operational if any of the fabric planes in the S_ACTIVE state encounters an error. <p>NOTE: If the plane is unusable by any of the Packet Forwarding Engines, the command output displays an additional string, plane has link errors on #pfes, where, # indicates the total number of links (both from SIB to FPC, and from FPC to SIB) having link errors (detected either during initialization time or runtime) in this particular plane. This does not count links having destination errors.</p> <ul style="list-style-type: none"> • S_EMPTY—No links are present on the SIB, and the fabric plane (SIB) is powered down. • S_ACTIVATING—Links on the SIB are coming online; this is a transitional state. • S_DEACTIVATING—Links on the SIB are going offline; this is a transitional state. • S_FAULTING—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational. • S_FAULT—Links on the SIB are in an alarmed state, and the fabric plane (SIB) is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. <p>Possible plane state of the QFX Series SIB:</p>

Table 65: show chassis fabric sibs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • Active—Links on the SIB are operational, and the fabric plane (SIB) is operational and running. • Spare—Links on the SIB are operational and the fabric plane (SIB) is redundant and can be operational if any of the fabric planes in the S_ACTIVE state encounters an error. • Empty—No links are present on the SIB, and the fabric plane (SIB) is powered down. • Activating—Links on the SIB are coming online; this is a transitional state. • Deactivating—Links on the SIB are going offline; this is a transitional state. • Faulting—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational. • Fault—Links on the SIB are in an alarmed state, and the fabric plane (SIB) is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults.

Sample Output

show chassis fabric sibs (M320 Router)

```

user@host> show chassis fabric sibs
Fabric management SIB state:
SIB #0
  plane state: S_ACTIVE
  FPC #0

```

```
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
SIB #1
plane state: S_ACTIVE
FPC #0
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
SIB #2
plane state: S_ACTIVE
FPC #0
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
SIB #3
plane state: S_ACTIVE
FPC #0
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
```

show chassis fabric sibs (T640 Router)

```
user@host> show chassis fabric sibs
Fabric management SIB state:
SIB #0
  plane state: S_SPARE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #1
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #2
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #3
  plane state: S_ACTIVE
  FPC #0
    PFE #1 : Links ok
  FPC #2
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #4
  plane state: S_ACTIVE
```



```
FPC #0
    PFE #1 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
```

show chassis fabric sibs (T1600 Router)

```
user@host> show chassis fabric sibs
SIB #0
  plane state: S_SPARE
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #2
    PFE #0 : Links ok
  FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
  FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #1
  plane state: S_ACTIVE , plane has link errors on 2 pfes
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #3
```

```
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links okSIB #2
plane state: S_ACTIVE
SIB #2
    plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #3
    plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
```

```
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #4
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
```

show chassis fabric sibs (T4000 Core Router)

```
user@host> show chassis fabric sibs
Fabric management SIB state:
SIB #0
plane state: S_SPARE
FPC #2
    PFE #0 : Links ok
```

```
FPC #3
    PFE #0 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #1
plane state: S_ACTIVE
FPC #2
    PFE #0 : Links ok
FPC #3
    PFE #0 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #2
plane state: S_ACTIVE
FPC #2
    PFE #0 : Links ok
FPC #3
    PFE #0 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #3
plane state: S_ACTIVE
FPC #2
    PFE #0 : Links ok
FPC #3
    PFE #0 : Links ok
FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #6
    PFE #0 : Links ok
```

```

        PFE #1 : Links ok
SIB #4
  plane state: S_ACTIVE
  FPC #2
    PFE #0 : Links ok
  FPC #3
    PFE #0 : Links ok
  FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #6
    PFE #0 : Links ok
    PFE #1 : Links ok

```

show chassis fabric sibs (TX Matrix Router)

```

user@host> show chassis fabric sibs
scc-re0:
-----
Fabric management SIB state:
SIB #1
  plane state: S_ACTIVE , plane has link errors on 2 pfes
  FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #1
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #3
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #4
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #5
    PFE #0 : Links ok
    PFE #1 : Links ok
  FPC #7
    PFE #0 : Links ok
    PFE #1 : Links ok
SIB #2

```

```
plane state: S_ACTIVE
LCC #0      : Links ok
LCC #1      : Links ok
SIB #3
plane state: S_ACTIVE
LCC #0      : Links ok
LCC #1      : Links ok
SIB #4
plane state: S_ACTIVE
LCC #0      : Links ok
LCC #1      : Links ok
```

lcc0-re0:

Fabric management SIB state:

```
SIB #1
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
FPC #4
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #1 : Links ok
FPC #7
    PFE #1 : Links ok
SCC      : Links ok
SIB #2
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
```

```
FPC #2
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
FPC #4
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #1 : Links ok
FPC #7
    PFE #1 : Links ok
SCC      : Links ok
SIB #3
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
FPC #4
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #1 : Links ok
FPC #7
    PFE #1 : Links ok
SCC      : Links ok
SIB #4
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #1
    PFE #1 : Links ok
FPC #2
```

```
    PFE #0 : Links ok
    PFE #1 : Links ok
FPC #3
    PFE #1 : Links ok
FPC #4
    PFE #1 : Links ok
FPC #5
    PFE #0 : Links ok
FPC #6
    PFE #1 : Links ok
FPC #7
    PFE #1 : Links ok
SCC      : Links o
```

show chassis fabric sibs lcc (TX Matrix Router)

```
user@host> show chassis fabric sibs lcc 0
lcc1-re0:
```

```
-----
Fabric management SIB state:
```

```
SIB #1
```

```
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #4
    PFE #0 : Links ok
FPC #5
    PFE #1 : Links ok
FPC #7
    PFE #0 : Links ok
SCC      : Links ok
```

```
SIB #2
```

```
plane state: S_ACTIVE
FPC #0
    PFE #0 : Links ok
FPC #2
    PFE #1 : Links ok
FPC #4
    PFE #0 : Links ok
```



```

FPC #5
    PFE #1  : Links ok
FPC #7
    PFE #0  : Links ok
SCC       : Links ok
SIB #3
plane state: S_ACTIVE
FPC #0
    PFE #0  : Links ok
FPC #2
    PFE #1  : Links ok
FPC #4
    PFE #0  : Links ok
FPC #5
    PFE #1  : Links ok
FPC #7
    PFE #0  : Links ok
SCC       : Links ok
SIB #4
plane state: S_ACTIVE
FPC #0
    PFE #0  : Links ok
FPC #2
    PFE #1  : Links ok
FPC #4
    PFE #0  : Links ok
FPC #5
    PFE #1  : Links ok
FPC #7
    PFE #0  : Links ok
SCC       : Links ok

```

show chassis fabric sibs scc (TX Matrix Router)

```

user@host> show chassis fabric sibs scc
scc-re0:
-----
Fabric management SIB state:
SIB #1
    plane state: S_ACTIVE
    LCC #0      : Links ok

```

```
LCC #1      : Links ok
SIB #2
  plane state: S_ACTIVE
  LCC #0     : Links ok
  LCC #1     : Links ok
SIB #3
  plane state: S_ACTIVE
  LCC #0     : Links ok
  LCC #1     : Links ok
SIB #4
  plane state: S_ACTIVE
  LCC #0     : Links ok
  LCC #1     : Links ok
```

show chassis fabric sibs slot (PTX3000 Router)

```
user@host> show chassis fabric sibs slot 0
Fabric management SIB state:
SIB #0 Online
  Fcore #0 (plane 0) Active
    FPC #8
      PFE #0 : OK
      PFE #1 : OK
    FPC #12
      PFE #0 : OK
      PFE #1 : OK
  Fcore #1 (plane 1) Active
    FPC #8
      PFE #0 : OK
      PFE #1 : OK
    FPC #12
      PFE #0 : OK
      PFE #1 : OK
```

show chassis fabric sibs slot (Junos OS Evolved)

The output of the **show chassis fabric sibs** command is modified to include ASIC information. In the earlier releases, this command displayed ASICs as FCOREs. With this modification, for every FPC and SIB, information about ASIC and FCORE is presented separately in the output.

```

user@host> show chassis fabric sibs slot 0
Fabric management SIB state:
SIB #0 Online
  Asic #0 Fcore #0 (plane 0) Empty
    FPC #0
      PFE #0 : Links ok
      PFE #1 : Links ok
      PFE #2 : Links ok
      PFE #3 : Links ok

```

show chassis fabric sibs (PTX10008 Router)

```

user@host> show chassis fabric sibs
Fabric management SIB state:
SIB #0 Online
  FASIC #0 (plane 0) Active
    FPC #0
      PFE #0 : OK
      PFE #1 : OK
      PFE #2 : OK
    FPC #5
      PFE #0 : OK
      PFE #1 : OK
      PFE #2 : OK
      PFE #3 : OK
      PFE #4 : OK
      PFE #5 : OK
    FPC #6
      PFE #0 : OK
      PFE #1 : OK
      PFE #2 : OK
      PFE #3 : OK
      PFE #4 : OK
      PFE #5 : OK

```

FASIC #1 (plane 1) Active

FPC #0

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

FPC #5

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

PFE #3 : OK

PFE #4 : OK

PFE #5 : OK

FPC #6

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

PFE #3 : OK

PFE #4 : OK

PFE #5 : OK

SIB #1 Online

FASIC #0 (plane 2) Active

FPC #0

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

FPC #5

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

PFE #3 : OK

PFE #4 : OK

PFE #5 : OK

FPC #6

PFE #0 : OK

PFE #1 : OK

PFE #2 : OK

PFE #3 : OK

PFE #4 : OK

PFE #5 : OK

FASIC #1 (plane 3) Active

FPC #0

PFE #0 : OK

PFE #1 : OK

```

        PFE #2 : OK
FPC #5
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
FPC #6
        PFE #0 : OK
        PFE #1 : OK
        PFE #2 : OK
        PFE #3 : OK
        PFE #4 : OK
        PFE #5 : OK
SIB #2 Empty
SIB #3 Empty
SIB #4 Empty
SIB #5 Empty

```

show chassis fabric sibs (QFX10008 Switch)

```

user@host> show chassis fabric sibs
Fabric management SIB state:
SIB #0 Online
  FASIC #0 (plane 0) Active
    FPC #0
      PFE #0 : OK
      PFE #1 : OK
      PFE #2 : OK
      PFE #3 : OK
    FPC #1
      PFE #0 : OK
      PFE #1 : OK
  FASIC #1 (plane 1) Active
    FPC #0
      PFE #0 : OK
      PFE #1 : OK
    FPC #12
      PFE #0 : OK
      PFE #1 : OK

```

```
SIB #1 Empty
SIB #2 Empty
SIB #3 Empty
SIB #4 Empty
SIB #5 Empty
```

Release Information

Command introduced before Junos OS Release 7.4.

Command introduced on QFX Series switches in Junos OS Release 15.1X53-D30

RELATED DOCUMENTATION

[request chassis sib | 459](#)

[show chassis sibs | 1573](#)

[Monitoring the SIBs](#)

[Redundant SIBs Overview](#)

show chassis fabric summary

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Syntax

```
show chassis fabric summary <extended>
```

Syntax (EX9253 Switches)

```
show chassis fabric summary
```

Description

(MX Series routers and EX8200 switches only) Display the state of all fabric planes and the elapsed uptime.

(QFX Series switches) Display the state of all fabric planes.

Options

extended –(Optional) Display the extended summary of fabric planes.

Required Privilege Level

view

Output Fields

Table 66 on page 1232 lists the output fields for the **show chassis fabric summary** command. Output fields are listed in the approximate order in which they appear.

Table 66: show chassis fabric summary Output Fields

Field Name	Field Description
Plane	(MX Series, MX2020, MX2010, and MX2008 Routers only) Plane number.

Table 66: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
State	<p>(MX Series and QFX Series) State of the SIB or FPC:</p> <ul style="list-style-type: none"> • Online—Switch Interface Board (SIB) is operational and running. <p>NOTE: On the Enhanced MX SCB with Trio MPC, a maximum of 4 planes are operational and running. On all the other SCBs with Trio MPC, all the planes are operational and running.</p> • Empty—SIB is powered down. • Check—SIB is in the Check state because of the following reasons: <ul style="list-style-type: none"> • SIB is not inserted properly. • Some destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic to the affected destination Packet Forwarding Engine. • Some link errors are detected on the channel between the SIB and a Packet Forwarding Engine. Link errors can be detected at initialization time or runtime: <ul style="list-style-type: none"> • Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. • Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Routers because there are no SIBs in the Check state.</p> <p>For information about link and destination errors, issue the show chassis fabric fpcs commands.</p> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails.

Table 66: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
	<p>NOTE: Spare does not apply to PTX Series Packet Transport Routers because there are no spare SIBs in the device.</p> <p>(MX2010, MX2020, and MX2008 Routers) State of the SFB.</p> <ul style="list-style-type: none"> • Online—Switch Fabric Board (SFB) is operational and running. • Offline—Switch Fabric Board (SFB) is powered down. • Check—Switch Fabric Board (SFB) is in the check state.
Errors	<p>(PTX Series and QFX Series) Indicates whether there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on the SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link, Cell drops—Both Link errors and cell drops were detected on at least one of the FPC's fabric links. • Asic Errors—A fault affecting one of the ASICs on the SIB is detected. It can be an IO error or an internal error signaled by the ASIC. <p>NOTE: The Errors column is empty only when the FPC or SIB is offline.</p>
Uptime	(MX Series, MX2010, MX2020, and MX2008 Routers) Elapsed time the plane has been online.
Link Error	Fabric link errors were found on the SIB RX link.
Link TF	Fabric link training failure has occurred.

Table 66: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
Destination errors	<ul style="list-style-type: none"> • Local—Destination error detected on the FPC or PFE's own self-stream. • Remote—Destination error detected on the FPC or PFE's non-self-streams.

Sample Output

show chassis fabric summary (MX480 Router)

```
user@host> show chassis fabric summary
Plane  State  Uptime
0      Online 8 hours, 45 minutes, 29 seconds
1      Online 8 hours, 45 minutes, 28 seconds
2      Online 8 hours, 45 minutes, 28 seconds
3      Online 8 hours, 45 minutes, 28 seconds
4      Spare  8 hours, 45 minutes, 28 seconds
5      Spare  8 hours, 45 minutes, 28 seconds
6      Spare  8 hours, 45 minutes, 28 seconds
7      Check  6 hours, 10 minutes, 12 seconds
```

show chassis fabric summary (MX480 Router with MPC4E)

```
user@host > show chassis fabric summary
Plane  State  Uptime
0      Online 6 hours, 57 minutes, 44 seconds
1      Online 6 hours, 57 minutes, 40 seconds
2      Online 6 hours, 57 minutes, 39 seconds
3      Online 6 hours, 57 minutes, 34 seconds
4      Spare  6 hours, 57 minutes, 34 seconds
5      Spare  6 hours, 57 minutes, 29 seconds
```

```

6      Spare      6 hours, 57 minutes, 29 seconds
7      Spare      6 hours, 57 minutes, 24 seconds

```

Note:

For FPC slots with MPC Type 4 or MCC:

Fabric planes 1 and 5, 3 and 7 use shared physical links.

Those slots may run in a reduced bandwidth in case both plane 1 and 5, or both 3 and 7 are active.

show chassis fabric summary (MX960 Router)

```

user@host> show chassis fabric summary
Plane  State      Uptime
0      Online     3 hours, 7 minutes, 9 seconds
1      Online     3 hours, 7 minutes, 4 seconds
2      Online     3 hours, 6 minutes, 59 seconds
3      Online     3 hours, 6 minutes, 54 seconds
4      Empty
5      Empty

```

show chassis fabric summary (MX2010 Router)

```

user@host> show chassis fabric summary
Plane  State      Uptime
0      Online     1 day, 13 hours, 20 minutes, 10 seconds
1      Online     1 day, 13 hours, 19 minutes, 59 seconds
2      Online     1 day, 13 hours, 19 minutes, 49 seconds
3      Offline
4      Online     1 day, 13 hours, 19 minutes, 28 seconds
5      Check      1 day, 13 hours, 19 minutes, 17 seconds
6      Online     1 day, 13 hours, 19 minutes, 6 seconds
7      Online     1 hour, 43 minutes, 5 seconds

```

show chassis fabric summary (MX2020 Router with MPC4E)

```

user@host > show chassis fabric summary
Plane  State      Uptime
0      Online     3 days, 6 hours, 58 minutes, 29 seconds
1      Online     3 days, 6 hours, 58 minutes, 18 seconds

```

```

2      Online   3 days, 6 hours, 58 minutes, 8 seconds
3      Online   3 days, 6 hours, 57 minutes, 57 seconds
4      Online   3 days, 6 hours, 57 minutes, 46 seconds
5      Online   3 days, 6 hours, 57 minutes, 36 seconds
6      Online   3 days, 6 hours, 57 minutes, 25 seconds
7      Online   3 days, 6 hours, 57 minutes, 14 seconds

```

show chassis fabric summary (MX2008)

```

user@host > show chassis fabric summary
Plane   State   Uptime
0       Offline
1       Online  16 hours, 38 minutes, 34 seconds
2       Online  16 hours, 38 minutes, 29 seconds
3       Online  16 hours, 38 minutes, 24 seconds
4       Offline
5       Online  16 hours, 38 minutes, 13 seconds
6       Online  16 hours, 38 minutes, 8 seconds
7       Offline

```

show chassis fabric summary (EX9253 Switch)

```

user@switch> show chassis fabric summary
Plane   State   Uptime
0       Online  21 days, 8 minutes, 41 seconds
1       Online  21 days, 8 minutes, 41 seconds
2       Online  21 days, 8 minutes, 41 seconds
3       Online  21 days, 8 minutes, 41 seconds
4       Online  21 days, 8 minutes, 41 seconds
5       Online  21 days, 8 minutes, 41 seconds
6       Online  21 days, 8 minutes, 41 seconds
7       Online  21 days, 8 minutes, 41 seconds
8       Online  21 days, 8 minutes, 41 seconds
9       Online  21 days, 8 minutes, 41 seconds
10      Online  21 days, 8 minutes, 41 seconds
11      Online  21 days, 8 minutes, 41 seconds
12      Online  21 days, 8 minutes, 41 seconds
13      Online  21 days, 8 minutes, 41 seconds
14      Online  21 days, 8 minutes, 41 seconds
15      Online  21 days, 8 minutes, 41 seconds

```

```

16    Online    21 days, 8 minutes, 41 seconds
17    Online    21 days, 8 minutes, 41 seconds
18    Online    21 days, 8 minutes, 41 seconds
19    Online    21 days, 8 minutes, 41 seconds
20    Online    21 days, 8 minutes, 41 seconds
21    Online    21 days, 8 minutes, 41 seconds

```

show chassis fabric summary (PTX Series Packet Transport Router)

```

user@host> show chassis fabric summary
FRU           State          Errors

SIB0          Online         None
SIB1          Online         Link Errors
SIB2          Online         None
SIB3          Online         Cell drops
SIB4          Offline
SIB5          Online         None
SIB6          Online         Link, Cell drops
SIB7          Online         None
SIB8          Online         Link, Cell drops

FPC0          Online         None
FPC1          Online         Link Errors
FPC2          Online         None
FPC3          Offline
FPC4          Online         None
FPC5          Online         None
FPC6          Empty
FPC7          Empty

```

show chassis fabric summary (PTX10008 Router)

```

user@host> show chassis fabric summary
FRU           State          Errors

SIB0          Online         None
SIB1          Online         None
SIB2          Empty
SIB3          Empty

```

SIB4	Empty	
SIB5	Empty	
FPC0	Online	None
FPC1	Empty	
FPC2	Empty	
FPC3	Empty	
FPC4	Empty	
FPC5	Online	None
FPC6	Online	None
FPC7	Empty	

show chassis fabric summary (QFX 10008 Switch)

```
user@host> show chassis fabric summary
```

FRU	State	Errors
FPC0	Online	None
FPC1	Online	Link Errors
FPC2	Online	None
FPC3	Offline	
FPC4	Online	None
FPC5	Online	None
FPC6	Empty	
FPC7	Empty	
SIB0	Online	None
SIB1	Online	Link Errors
SIB2	Online	None
SIB3	Online	Cell drops
SIB4	Offline	
SIB5	Online	None

Sample Output

show chassis fabric summary extended (MX960 Router)

```

user@host> show chassis fabric summary extended
Plane   State      Link   Link   Destination errors  Uptime
        Error   TF     Local / Remote
0       Online    NO     NO     NO/ NO              7 days, 5 hours, 25 minutes,
20 seconds
1       Online    NO     NO     NO/ NO              7 days, 5 hours, 25 minutes,
11 seconds
2       Online    NO     NO     NO/ NO              7 days, 5 hours, 25 minutes,
5 seconds
3       Online    NO     NO     NO/ NO              7 days, 5 hours, 24 minutes,
59 seconds
4       Spare     NO     NO     NO/ NO              7 days, 5 hours, 24 minutes,
52 seconds
5       Spare     NO     NO     NO/ NO              7 days, 5 hours, 24 minutes,
45 seconds

```

show chassis fabric summary (MX10003 Router)

```

user@host> show chassis fabric summary

Plane   State      Uptime
0       Online    1 day, 10 hours, 12 minutes, 52 seconds
1       Online    1 day, 10 hours, 12 minutes, 52 seconds
2       Online    1 day, 10 hours, 12 minutes, 52 seconds
3       Online    1 day, 10 hours, 12 minutes, 52 seconds
4       Online    1 day, 10 hours, 12 minutes, 52 seconds
5       Online    1 day, 10 hours, 12 minutes, 52 seconds
6       Online    1 day, 10 hours, 12 minutes, 52 seconds
7       Online    1 day, 10 hours, 12 minutes, 52 seconds
8       Online    1 day, 10 hours, 12 minutes, 52 seconds
9       Online    1 day, 10 hours, 12 minutes, 52 seconds
10      Online    1 day, 10 hours, 12 minutes, 52 seconds
11      Online    1 day, 10 hours, 12 minutes, 52 seconds
12      Online    1 day, 10 hours, 12 minutes, 52 seconds
13      Online    1 day, 10 hours, 12 minutes, 52 seconds
14      Online    1 day, 10 hours, 12 minutes, 52 seconds

```



```

15    Online    1 day, 10 hours, 12 minutes, 52 seconds
16    Online    1 day, 10 hours, 12 minutes, 52 seconds
17    Online    1 day, 10 hours, 12 minutes, 52 seconds
18    Online    1 day, 10 hours, 12 minutes, 52 seconds
19    Online    1 day, 10 hours, 12 minutes, 52 seconds
20    Online    1 day, 10 hours, 12 minutes, 52 seconds
21    Online    1 day, 10 hours, 12 minutes, 52 seconds

```

show chassis fabric summary extended (MX10003 Router)

```
user@host> show chassis fabric summary extended
```

Plane	State	Link Error	Link TF	Destination Local / Remote	errors	Uptime
0	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
1	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
2	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
3	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
4	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
5	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
6	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
7	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
8	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
9	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
10	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
11	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
12	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds
13	Online	NO	NO	NO/ NO		1 day, 10 hours, 14 minutes, 26 seconds

```

minutes,          26 seconds
 14   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 15   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 16   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 17   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 18   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 19   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 20   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds
 21   Online      NO     NO     NO/   NO     1 day, 10 hours, 14
minutes,          26 seconds

```

Release Information

Command introduced in Junos OS Release 8.4.

extended option added in Junos OS Release 14.1R2.

show chassis fabric topology

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Syntax (TX Matrix Router)

```
show chassis fabric topology  
<lcc number | scc>  
<sib-slot>
```

Syntax (TX Matrix Plus Router)

```
show chassis fabric topology  
<lcc number | sfc number>  
<sib-slot>
```

Syntax (T4000 Core Router)

```
show chassis fabric topology  
<sib-slot>
```

Syntax (PTX Series Packet Transport Routers and QFX Series Switches)

```
show chassis fabric topology
```

Description

(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.

(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.

(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.

(PTX Series Packet Transport Routers and QFX Series switches) Display the input-output link topology.

Options

none (TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.

(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.

(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.

(QFX Series switches) Display the input-output link topology.

**lcc
number** (TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the fabric topology state for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the fabric topology state for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

- scc** (TX Matrix routers only) (Optional) Display the fabric topology state for the TX Matrix router (or switch-card chassis).
- sfc**
number (TX Matrix Plus routers only) (Optional) Display the fabric topology for the switch-fabric chassis. Replace **number** with **0**.
- sib-slot** (Optional) Display the fabric topology state for a specified SIB slot. Replace **sib-slot** with a value from **0** through **4**. On a TX Matrix Plus router, replace **sib-slot** with a value from **0** through **15**.

Required Privilege Level

view

Output Fields

[Table 67 on page 1245](#) lists the output fields for the **show chassis fabric topology** command. Output fields are listed in the approximate order in which they appear.

Table 67: show chassis fabric topology Output Fields

Field Name	Field Description
in-links	Fabric topology for receive side links.
out-links	Fabric topology for transmit side links.

Table 67: show chassis fabric topology Output Fields (Continued)

Field Name	Field Description
state	<p>State of the fabric link:</p> <ul style="list-style-type: none"> • RESET—Link between the SIB and the FPC/DPC is powered down on purpose. This is done in all non-dual Packet Forwarding Engine-based boards. • UP—Link between the SIB and the FPC/DCP is up and running. • DOWN—Link between the SIB and the FPC/DCP is powered down. • FAULT—The SIB is in the alarmed state, in which the SIB's plane is not operational for one or more of the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber-optic connector faults. • FPC connector faults. • SIB midplane connector faults. <p>NOTE: The following state descriptions are applicable only to PTX Series Packet Transport Routers.</p> <ul style="list-style-type: none"> • OK—The link between the SIB and the FPC is operational. • Down—The link between the SIB and the FPC is powered down. • Error—The CCL link between the SIB and FPC is not operational for one or more of the following reasons: <ul style="list-style-type: none"> • FPC midplane connector failure. • SIB midplane connector failure. • CCL link CRC error.

Table 67: show chassis fabric topology Output Fields (Continued)

Out-Links: and In-	State of the links from the F13 SIB to the LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate an Rx link. The following additional fields are displayed for each SIB:
---------------------------	--

Links
(TX
Matrix
Plus
router
only)

- **VCSEL Status**—Optical (VCSEL channel) link status for the corresponding electrical (HSL2) link. The states include:
 - **OK**—Optical signal power is good.
 - **Error**—Internal error.
 - **LOS**—Loss of Signal detected.
 - **High Cur**—The Tx Bias-current is higher than threshold on this channel. This is applicable only to Tx Channels.
 - **Low Cur**—The Tx Bias-current is lower than threshold on this channel. This is applicable only to Tx Channels.
 - **HSL2 Channel**—HSL2 is the electrical link used to connect ASICs to the in-link and out-link. The channel number corresponds to the link and varies based on the ASIC or configuration.
-

- **HSL2 Status** –The status of the HSL2 Channel. Includes the following states:
- **Up**—Channel is up.
- **Down**—Channel is down.
- **Reset**—Channel has been reset.
- **Fault**—Channel has faults.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

```
SF_[1|3]_port#_FB_[A-D] (VCSEL#, fiber)
```

- **SF_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the SIBs (LCC or SFC)

```
SF_[1|3]_port#_FB_[A-D] (VCSEL#, fiber)
```

- **SF_[1|3]**—Name of the ASIC, with Fabric F1 or F3 mode.
- **port#**—HSL2 port number on the SF ASIC in the LCC.
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for Out-Links:

```
Out-Links:
```

```
=====
```

```
SF_30_13_FB_A(21,09) -> FPC7_B_SG(3,3,6)_FB_A(18,09)      OK      203      Up
```


- **SF_30_13**—Name of the ASIC, with Fabric F1 or F3 mode. In this case, 3 is the F3 direction and is used in the Tx path and 0 identifies the serial link on the SF chip (in this case, link goes to sf-3 chip number 0). You can also have F1 mode and Rx path instead.
- **FB_A(21, 09)**—Fiber bundle A, with VCSEL unit number 21 within the SIB, and channel number 9 within the unit number.
- **FPC7_B_SG(3,3,6)**—FPC 7 with bottom Packet Forwarding Engine (T for top PFE and B for bottom PFE), SG ASIC, with number 3 and port number 3, with HSL2 link number with the SIB as 6.
- **FB_A(18, 09)**—Fiber Bundle, with VCSEL unit number 18 within the SIB, and VCSEL channel number 9 within the unit number.

The following is a representation of display output for links originating from the FPCs (In-Links)

```
FPC#_[T|B]_SG(ASIC#, port#, HSL2_bit)_FB_[A-D](VCSEL#, fiber)
```

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2_bit 0-7).
- **FB_[A-D]**—via fiber bundle A, B, C or D.
- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a representation of display output for links originating from the FPCs (In-Links)

```
FPC#_[T|B]_SG(ASIC#, port#, HSL2_bit)_FB_[A-D](VCSEL#, fiber)
```

- **FPC#**—FPC number with PFE (0 or 1).
- **T**—Top Packet Forwarding Engine.
- **B**—Bottom Packet Forwarding Engine.
- **SG(ASIC#, port#, HSL2_bit)**—SG ASIC information (ASIC 0-3, port 0-3, HSL2_bit 0-7).
- **FB_[A-D]**—via fiber bundle A, B, C or D.

- **VCSEL#**—VCSEL module number on SIB.
- **fiber**—Fiber channel number.

The following is a sample output with description of the fields displayed in the output for In-Links:

```
In-Links :
=====
FPC0_T_SG(0,0,0)_FB_D(04,11)  -> SF_10_00_FB_D(01,11)    OK        0        Up
```

- **FPC0**—FPC 0.
- **T**—Top Packet Forwarding Engine.
- **SG (0, 0, 0)**—SG ASIC with port number 0 and link 0.
- **FB_D (04,11)**—Fiber Bundle D with VCSEL 4, channel 11.
- **SF_10**—Indicates F1 mode chip number 0 and Rx path.
- **SF_10_00_FB_D(01,11)** —Indicates F1 mode chip number 0 and Rx path with port 0, fiber bundle D, with VCSEL 1, channel 11.

Out-links and In-links (TX Matrix Plus router with 3D SIBs only)

State of the links from the F13 SIB to the SFC/LCC or vice-versa. Out-Links indicate Tx links. In-Links indicate a Rx link. The following additional fields are displayed for each SIB:

- Description of the fields displayed in the output for **In-links** and **Out-links** for SFC:

```

-----
                In-links                State                Out-links                State
-----
CXP0_Evn->F13_SIB0_XF2,04_0      Up      F13_SIB0_XF2,04_0->CXP0_Evn      Up

```

- **CXP0_Evn**—CXP optics with type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- **F13_SIB0**—Name of the SFC data plane SIB with the SIB number. In this case, it indicates F13 SIB with number 0.
- **XF2,04_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF2 chip with port number 4 and subchannel number 0.

- Description of the fields displayed in the output for **In-links** and **Out-links** for LCC:

```

-----
                In-links                State                Out-links                State
-----
CXP0_Evn->LCC_SIB0_XF3,10_0      Up      LCC_SIB0_XF3,10_0->CXP0_Evn      Up

```

- **CXP0_Evn**—CXP optics with the type of port bits such as even or odd. In this case, it indicates CXP optics with even port bit number 0.
- **LCC_SIB0**—LCC SIB number. In this case, it indicates LCC SIB with number 0.
- **XF3,10_0**—Name of the ASIC with port and subchannel number. In this case, it Indicates XF3 with port number 10 and subchannel number 0.

Sample Output

show chassis fabric topology scc (TX Matrix Router)

```

user@host> show chassis fabric topology scc
scc-rel:
-----
fchip (mode)
in-links          state          out-
links            state
-----
Sib #0 :
-----
SIB0_F0 (F2 ):
LCC0_SIB-L0_F0,03->SIB-S0_F0,00      UP          SIB-
S0_F0,00->LCC0_SIB-L0_F1,00  UP
LCC1_SIB-L0_F0,03->SIB-S0_F0,01      UP          SIB-
S0_F0,01->LCC1_SIB-L0_F1,08  UP
LCC2_SIB-L0_F0,03->SIB-S0_F0,02      RESET       SIB-
S0_F0,02->LCC2_SIB-L0_F1,08  UP
LCC3_SIB-L0_F0,03->SIB-S0_F0,03      RESET       SIB-
S0_F0,03->LCC3_SIB-L0_F1,00  UP
LCC0_SIB-L0_F0,02->SIB-S0_F0,04  UP          SIB-S0_F0,04-
>LCC0_SIB-L0_F1,01  UP
LCC1_SIB-L0_F0,02->SIB-S0_F0,05  UP          SIB-S0_F0,05-
>LCC1_SIB-L0_F1,09  UP
LCC2_SIB-L0_F0,02->SIB-S0_F0,06  RESET       SIB-S0_F0,06-
>LCC2_SIB-L0_F1,09  UP
LCC3_SIB-L0_F0,02->SIB-S0_F0,07  RESET       SIB-S0_F0,07-
>LCC3_SIB-L0_F1,01  UP
LCC0_SIB-L0_F0,07->SIB-S0_F0,08  UP          SIB-S0_F0,08-
>LCC0_SIB-L0_F1,04  UP
LCC1_SIB-L0_F0,07->SIB-S0_F0,09  UP          SIB-S0_F0,09-
>LCC1_SIB-L0_F1,12  UP
LCC2_SIB-L0_F0,07->SIB-S0_F0,10  RESET       SIB-S0_F0,10-
>LCC2_SIB-L0_F1,12  UP
LCC3_SIB-L0_F0,07->SIB-S0_F0,11  RESET       SIB-S0_F0,11-
>LCC3_SIB-L0_F1,04  UP
LCC0_SIB-L0_F0,06->SIB-S0_F0,12  UP          SIB-S0_F0,12-
>LCC0_SIB-L0_F1,05  UP
LCC1_SIB-L0_F0,06->SIB-S0_F0,13  UP          SIB-S0_F0,13-

```

```

>LCC1_SIB-L0_F1,13  UP
LCC2_SIB-L0_F0,06->SIB-S0_F0,14  RESET          SIB-S0_F0,14-
>LCC2_SIB-L0_F1,13  UP
LCC3_SIB-L0_F0,06->SIB-S0_F0,15  RESET          SIB-S0_F0,15-
>LCC3_SIB-L0_F1,05  UP
SIB0_F1 (F2 ):
LCC0_SIB-L0_F0,11->SIB-S0_F1,00  UP              SIB-S0_F1,00-
>LCC0_SIB-L0_F1,08  UP
LCC1_SIB-L0_F0,11->SIB-S0_F1,01  UP              SIB-S0_F1,01-
>LCC1_SIB-L0_F1,00  UP
LCC2_SIB-L0_F0,11->SIB-S0_F1,02  RESET          SIB-S0_F1,02-
>LCC2_SIB-L0_F1,00  UP
LCC3_SIB-L0_F0,11->SIB-S0_F1,03  RESET          SIB-S0_F1,03-
>LCC3_SIB-L0_F1,08  UP
LCC0_SIB-L0_F0,10->SIB-S0_F1,04  UP              SIB-S0_F1,04-
>LCC0_SIB-L0_F1,09  UP
LCC1_SIB-L0_F0,10->SIB-S0_F1,05  UP              SIB-S0_F1,05-
>LCC1_SIB-L0_F1,01  UP
LCC2_SIB-L0_F0,10->SIB-S0_F1,06  RESET          SIB-S0_F1,06-
>LCC2_SIB-L0_F1,01  UP
LCC3_SIB-L0_F0,10->SIB-S0_F1,07  RESET          SIB-S0_F1,07-
>LCC3_SIB-L0_F1,09  UP
LCC0_SIB-L0_F0,15->SIB-S0_F1,08  UP              SIB-S0_F1,08-
>LCC0_SIB-L0_F1,12  UP
LCC1_SIB-L0_F0,15->SIB-S0_F1,09  UP              SIB-S0_F1,09-
>LCC1_SIB-L0_F1,04  UP
LCC2_SIB-L0_F0,15->SIB-S0_F1,10  RESET          SIB-S0_F1,10-
>LCC2_SIB-L0_F1,04  UP
LCC3_SIB-L0_F0,15->SIB-S0_F1,11  RESET          SIB-S0_F1,11-
>LCC3_SIB-L0_F1,12  UP
LCC0_SIB-L0_F0,14->SIB-S0_F1,12  UP              SIB-S0_F1,12-
>LCC0_SIB-L0_F1,13  UP
LCC1_SIB-L0_F0,14->SIB-S0_F1,13  UP              SIB-S0_F1,13-
>LCC1_SIB-L0_F1,05  UP
LCC2_SIB-L0_F0,14->SIB-S0_F1,14  RESET          SIB-S0_F1,14-
>LCC2_SIB-L0_F1,05  UP
LCC3_SIB-L0_F0,14->SIB-S0_F1,15  RESET          SIB-S0_F1,15-
>LCC3_SIB-L0_F1,13  UP
SIB0_F2 (F2 ):
LCC3_SIB-L0_F0,13->SIB-S0_F2,00          RESET          SIB-S0_F2,00-
>LCC3_SIB-L0_F1,14  UP
LCC2_SIB-L0_F0,13->SIB-S0_F2,01  RESET          SIB-S0_F2,01-
>LCC2_SIB-L0_F1,06  UP

```

```

LCC1_SIB-L0_F0,13->SIB-S0_F2,02  UP                SIB-S0_F2,02-
>LCC1_SIB-L0_F1,06  UP
LCC0_SIB-L0_F0,13->SIB-S0_F2,03  UP                SIB-S0_F2,03-
>LCC0_SIB-L0_F1,14  UP
LCC3_SIB-L0_F0,12->SIB-S0_F2,04  RESET           SIB-S0_F2,04-
>LCC3_SIB-L0_F1,15  UP
LCC2_SIB-L0_F0,12->SIB-S0_F2,05  RESET           SIB-S0_F2,05-
>LCC2_SIB-L0_F1,07  UP
LCC1_SIB-L0_F0,12->SIB-S0_F2,06  UP                SIB-S0_F2,06-
>LCC1_SIB-L0_F1,07  UP
LCC0_SIB-L0_F0,12->SIB-S0_F2,07  UP                SIB-S0_F2,07-
>LCC0_SIB-L0_F1,15  UP
LCC3_SIB-L0_F0,09->SIB-S0_F2,08  RESET           SIB-S0_F2,08-
>LCC3_SIB-L0_F1,10  UP
LCC2_SIB-L0_F0,09->SIB-S0_F2,09  RESET           SIB-S0_F2,09-
>LCC2_SIB-L0_F1,02  UP
LCC1_SIB-L0_F0,09->SIB-S0_F2,10  UP                SIB-S0_F2,10-
>LCC1_SIB-L0_F1,02  UP
LCC0_SIB-L0_F0,09->SIB-S0_F2,11  UP                SIB-S0_F2,11-
>LCC0_SIB-L0_F1,10  UP
LCC3_SIB-L0_F0,08->SIB-S0_F2,12  RESET           SIB-S0_F2,12-
>LCC3_SIB-L0_F1,11  UP
LCC2_SIB-L0_F0,08->SIB-S0_F2,13  RESET           SIB-S0_F2,13-
>LCC2_SIB-L0_F1,03  UP
LCC1_SIB-L0_F0,08->SIB-S0_F2,14  UP                SIB-
S0_F2,14->LCC1_SIB-L0_F1,03  UP
LCC0_SIB-L0_F0,08->SIB-S0_F2,15  UP                SIB-S0_F2,15-
>LCC0_SIB-L0_F1,11  UP
SIB0_F3 (F2 ):
LCC3_SIB-L0_F0,05->SIB-S0_F3,00  RESET           SIB-S0_F3,00-
>LCC3_SIB-L0_F1,06  UP
LCC2_SIB-L0_F0,05->SIB-S0_F3,01  RESET           SIB-S0_F3,01-
>LCC2_SIB-L0_F1,14  UP
LCC1_SIB-L0_F0,05->SIB-S0_F3,02  UP                SIB-S0_F3,02-
>LCC1_SIB-L0_F1,14  UP
LCC0_SIB-L0_F0,05->SIB-S0_F3,03  UP                SIB-S0_F3,03-
>LCC0_SIB-L0_F1,06  UP
LCC3_SIB-L0_F0,04->SIB-S0_F3,04  RESET           SIB-S0_F3,04-
>LCC3_SIB-L0_F1,07  UP
LCC2_SIB-L0_F0,04->SIB-S0_F3,05  RESET           SIB-S0_F3,05-
>LCC2_SIB-L0_F1,15  UP
LCC1_SIB-L0_F0,04->SIB-S0_F3,06  UP                SIB-S0_F3,06-
>LCC1_SIB-L0_F1,15  UP

```

```

LCC0_SIB-L0_F0,04->SIB-S0_F3,07  UP                               SIB-S0_F3,07-
>LCC0_SIB-L0_F1,07  UP
LCC3_SIB-L0_F0,01->SIB-S0_F3,08  RESET                          SIB-S0_F3,08-
>LCC3_SIB-L0_F1,02  UP
LCC2_SIB-L0_F0,01->SIB-S0_F3,09  RESET                          SIB-S0_F3,09-
>LCC2_SIB-L0_F1,10  UP
LCC1_SIB-L0_F0,01->SIB-S0_F3,10  UP                               SIB-S0_F3,10-
>LCC1_SIB-L0_F1,10  UP
LCC0_SIB-L0_F0,01->SIB-S0_F3,11  UP                               SIB-S0_F3,11-
>LCC0_SIB-L0_F1,02  UP
LCC3_SIB-L0_F0,00->SIB-S0_F3,12  RESET                          SIB-S0_F3,12-
>LCC3_SIB-L0_F1,03  UP
LCC2_SIB-L0_F0,00->SIB-S0_F3,13  RESET                          SIB-S0_F3,13-
>LCC2_SIB-L0_F1,11  UP
LCC1_SIB-L0_F0,00->SIB-S0_F3,14  UP                               SIB-S0_F3,14-
>LCC1_SIB-L0_F1,11  UP
LCC0_SIB-L0_F0,00->SIB-S0_F3,15  UP                               SIB-S0_F3,15-
>LCC0_SIB-L0_F1,03  UP
Sib #1 :
-----
SIB1_F0 (F2 ) :
LCC0_SIB-L1_F0,03->SIB-S1_F0,00  RESET                          SIB-S1_F0,00-
>LCC0_SIB-L1_F1,00  UP
LCC1_SIB-L1_F0,03->SIB-S1_F0,01  RESET                          SIB-S1_F0,01-
>LCC1_SIB-L1_F1,08  UP
LCC2_SIB-L1_F0,03->SIB-S1_F0,02  RESET                          SIB-S1_F0,02-
>LCC2_SIB-L1_F1,08  UP
LCC3_SIB-L1_F0,03->SIB-S1_F0,03  RESET                          SIB-S1_F0,03-
>LCC3_SIB-L1_F1,00  UP
LCC0_SIB-L1_F0,02->SIB-S1_F0,04  RESET                          SIB-S1_F0,04-
>LCC0_SIB-L1_F1,01  UP
LCC1_SIB-L1_F0,02->SIB-S1_F0,05  RESET                          SIB-S1_F0,05-
>LCC1_SIB-L1_F1,09  UP
LCC2_SIB-L1_F0,02->SIB-S1_F0,06  RESET                          SIB-S1_F0,06-
>LCC2_SIB-L1_F1,09  UP
LCC3_SIB-L1_F0,02->SIB-S1_F0,07  RESET                          SIB-S1_F0,07-
>LCC3_SIB-L1_F1,01  UP
LCC0_SIB-L1_F0,07->SIB-S1_F0,08  RESET                          SIB-S1_F0,08-
>LCC0_SIB-L1_F1,04  UP
LCC1_SIB-L1_F0,07->SIB-S1_F0,09  RESET                          SIB-S1_F0,09-
>LCC1_SIB-L1_F1,12  UP
LCC2_SIB-L1_F0,07->SIB-S1_F0,10  RESET                          SIB-S1_F0,10-
>LCC2_SIB-L1_F1,12  UP

```

```

LCC3_SIB-L1_F0,07->SIB-S1_F0,11 RESET SIB-S1_F0,11-
>LCC3_SIB-L1_F1,04 UP
LCC0_SIB-L1_F0,06->SIB-S1_F0,12 RESET SIB-S1_F0,12-
>LCC0_SIB-L1_F1,05 UP
LCC1_SIB-L1_F0,06->SIB-S1_F0,13 RESET SIB-S1_F0,13-
>LCC1_SIB-L1_F1,13 UP
LCC2_SIB-L1_F0,06->SIB-S1_F0,14 RESET SIB-S1_F0,14-
>LCC2_SIB-L1_F1,13 UP
LCC3_SIB-L1_F0,06->SIB-S1_F0,15 RESET SIB-S1_F0,15-
>LCC3_SIB-L1_F1,05 UP
SIB1_F1 (F2 ):
LCC0_SIB-L1_F0,11->SIB-S1_F1,00 RESET SIB-S1_F1,00-
>LCC0_SIB-L1_F1,08 UP
LCC1_SIB-L1_F0,11->SIB-S1_F1,01 RESET SIB-S1_F1,01-
>LCC1_SIB-L1_F1,00 UP
LCC2_SIB-L1_F0,11->SIB-S1_F1,02 RESET SIB-S1_F1,02-
>LCC2_SIB-L1_F1,00 UP
LCC3_SIB-L1_F0,11->SIB-S1_F1,03 RESET SIB-S1_F1,03-
>LCC3_SIB-L1_F1,08 UP
LCC0_SIB-L1_F0,10->SIB-S1_F1,04 RESET SIB-S1_F1,04-
>LCC0_SIB-L1_F1,09 UP
LCC1_SIB-L1_F0,10->SIB-S1_F1,05 RESET SIB-
S1_F1,05->LCC1_SIB-L1_F1,01 UP
LCC2_SIB-L1_F0,10->SIB-S1_F1,06 RESET SIB-S1_F1,06-
>LCC2_SIB-L1_F1,01 UP
LCC3_SIB-L1_F0,10->SIB-S1_F1,07 RESET SIB-S1_F1,07-
>LCC3_SIB-L1_F1,09 UP
LCC0_SIB-L1_F0,15->SIB-S1_F1,08 RESET SIB-S1_F1,08-
>LCC0_SIB-L1_F1,12 UP
LCC1_SIB-L1_F0,15->SIB-S1_F1,09 RESET SIB-S1_F1,09-
>LCC1_SIB-L1_F1,04 UP
LCC2_SIB-L1_F0,15->SIB-S1_F1,10 RESET SIB-S1_F1,10-
>LCC2_SIB-L1_F1,04 UP
LCC3_SIB-L1_F0,15->SIB-S1_F1,11 RESET -S1_F1,11-
>LCC3_SIB-L1_F1,12,05 UP
LCC0_SIB-L1_F0,14->SIB-S1_F1,12 RESET SIB-S1_F1,12-
>LCC0_SIB-L1_F1,13 UP
LCC1_SIB-L1_F0,14->SIB-S1_F1,13 RESET SIB-S1_F1,13-
>LCC1_SIB-L1_F1,05 UP
LCC2_SIB-L1_F0,14->SIB-S1_F1,14 RESET SIB-S1_F1,14-
>LCC2_SIB-L1_F1,05 UP

```


show chassis fabric topology lcc

```

user@host> show chassis fabric topology lcc
0
lcc0-re0:
-----
      fchip (mode)
in-links          state          out-links          state
-----
Sib #2 :
-----
SIB2_F0 (F1 ):
FPC0_T->SIB-L2_F0,00   DOWN          SIB-L2_F0,00->SIB-S2_F3,15 DOWN
FPC0_B->SIB-L2_F0,01   UP            SIB-L2_F0,01->SIB-S2_F3,11 DOWN
FPC1_T->SIB-L2_F0,02   DOWN          SIB-L2_F0,02->SIB-S2_F0,04 DOWN
FPC1_B->SIB-L2_F0,03   DOWN          SIB-L2_F0,03->SIB-S2_F0,00 DOWN
FPC2_T->SIB-L2_F0,04   DOWN          SIB-L2_F0,04->SIB-S2_F3,07 DOWN
FPC2_B->SIB-L2_F0,05   DOWN          SIB-L2_F0,05->SIB-S2_F3,03 DOWN
FPC3_T->SIB-L2_F0,06   DOWN          SIB-L2_F0,06->SIB-S2_F0,12 DOWN
FPC3_B->SIB-L2_F0,07   DOWN          SIB-L2_F0,07->SIB-S2_F0,08 DOWN
FPC4_T->SIB-L2_F0,08   DOWN          SIB-L2_F0,08->SIB-S2_F2,15 DOWN
FPC4_B->SIB-L2_F0,09   DOWN          SIB-L2_F0,09->SIB-S2_F2,11 DOWN
FPC5_T->SIB-L2_F0,10   DOWN          SIB-L2_F0,10->SIB-S2_F1,04 DOWN
FPC5_B->SIB-L2_F0,11   DOWN          SIB-L2_F0,11->SIB-S2_F1,00 DOWN
FPC6_T->SIB-L2_F0,12   DOWN          SIB-L2_F0,12->SIB-S2_F2,07 DOWN
FPC6_B->SIB-L2_F0,13   UP            SIB-L2_F0,13->SIB-S2_F2,03 DOWN
FPC7_T->SIB-L2_F0,14   DOWN          SIB-L2_F0,14->SIB-S2_F1,12 DOWN
FPC7_B->SIB-L2_F0,15   DOWN          SIB-L2_F0,15->SIB-S2_F1,08 DOWN
SIB2_F1 (F3 ):
SIB-S2_F0,00->SIB-L2_F1,00 UP          SIB-L2_F1,00->FPC7_B   DOWN
SIB-S2_F0,04->SIB-L2_F1,01 UP          SIB-L2_F1,01->FPC7_T   DOWN
SIB-S2_F3,11->SIB-L2_F1,02 UP          SIB-L2_F1,02->FPC6_B   DOWN
SIB-S2_F3,15->SIB-L2_F1,03 UP          SIB-L2_F1,03->FPC6_T   DOWN
SIB-S2_F0,08->SIB-L2_F1,04 UP          SIB-L2_F1,04->FPC5_B   DOWN
SIB-S2_F0,12->SIB-L2_F1,05 UP          SIB-L2_F1,05->FPC5_T   DOWN
SIB-S2_F3,03->SIB-L2_F1,06 UP          SIB-L2_F1,06->FPC4_B   DOWN
SIB-S2_F3,07->SIB-L2_F1,07 UP          SIB-L2_F1,07->FPC4_T   DOWN
SIB-S2_F1,00->SIB-L2_F1,08 UP          SIB-L2_F1,08->FPC3_B   DOWN
SIB-S2_F1,04->SIB-L2_F1,09 UP          SIB-L2_F1,09->FPC3_T   DOWN
SIB-S2_F2,11->SIB-L2_F1,10 UP          SIB-L2_F1,10->FPC2_B   DOWN
SIB-S2_F2,15->SIB-L2_F1,11 UP          SIB-L2_F1,11->FPC2_T   DOWN
SIB-S2_F1,08->SIB-L2_F1,12 UP          SIB-L2_F1,12->FPC1_B   DOWN

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SIB-S2_F1,12->SIB-L2_F1,13 UP      SIB-L2_F1,13->FPC1_T      DOWN
SIB-S2_F2,03->SIB-L2_F1,14 UP      SIB-L2_F1,14->FPC0_B      DOWN
SIB-S2_F2,07->SIB-L2_F1,15 UP      SIB-L2_F1,15->FPC0_T      DOWN
Sib #4 :
-----
SIB4_F0 (F1 ):
FPC0_T->SIB-L4_F0,00  RESET      SIB-L4_F0,00->SIB-S4_F3,15 UP
FPC0_B->SIB-L4_F0,01  UP          SIB-L4_F0,01->SIB-S4_F3,11 UP
FPC1_T->SIB-L4_F0,02  RESET      SIB-L4_F0,02->SIB-S4_F0,04 UP
FPC1_B->SIB-L4_F0,03  RESET      SIB-L4_F0,03->SIB-S4_F0,00 UP
FPC2_T->SIB-L4_F0,04  RESET      SIB-L4_F0,04->SIB-S4_F3,07 UP
FPC2_B->SIB-L4_F0,05  RESET      SIB-L4_F0,05->SIB-S4_F3,03 UP
FPC3_T->SIB-L4_F0,06  RESET      SIB-L4_F0,06->SIB-S4_F0,12 UP
FPC3_B->SIB-L4_F0,07  RESET      SIB-L4_F0,07->SIB-S4_F0,08 UP
FPC4_T->SIB-L4_F0,08  RESET      SIB-L4_F0,08->SIB-S4_F2,15 UP
FPC4_B->SIB-L4_F0,09  RESET      SIB-L4_F0,09->SIB-S4_F2,11 UP
FPC5_T->SIB-L4_F0,10  RESET      SIB-L4_F0,10->SIB-S4_F1,04 UP
FPC5_B->SIB-L4_F0,11  RESET      SIB-L4_F0,11->SIB-S4_F1,00 UP
FPC6_T->SIB-L4_F0,12  RESET      SIB-L4_F0,12->SIB-S4_F2,07 UP
FPC6_B->SIB-L4_F0,13  UP          SIB-L4_F0,13->SIB-S4_F2,03 UP
FPC7_T->SIB-L4_F0,14  RESET      SIB-L4_F0,14->SIB-S4_F1,12 UP
FPC7_B->SIB-L4_F0,15  RESET      SIB-L4_F0,15->SIB-S4_F1,08 UP
SIB4_F1 (F3 ):
SIB-S4_F0,00->SIB-L4_F1,00 UP      SIB-L4_F1,00->FPC7_B      UP
SIB-S4_F0,04->SIB-L4_F1,01 UP      SIB-L4_F1,01->FPC7_T      UP
SIB-S4_F3,11->SIB-L4_F1,02 UP      SIB-L4_F1,02->FPC6_B      UP
SIB-S4_F3,15->SIB-L4_F1,03 UP      SIB-L4_F1,03->FPC6_T      UP
SIB-S4_F0,08->SIB-L4_F1,04 UP      SIB-L4_F1,04->FPC5_B      UP
SIB-S4_F0,12->SIB-L4_F1,05 UP      SIB-L4_F1,05->FPC5_T      UP
SIB-S4_F3,03->SIB-L4_F1,06 UP      SIB-L4_F1,06->FPC4_B      UP
SIB-S4_F3,07->SIB-L4_F1,07 UP      SIB-L4_F1,07->FPC4_T      UP
SIB-S4_F1,00->SIB-L4_F1,08 UP      SIB-L4_F1,08->FPC3_B      UP
SIB-S4_F1,04->SIB-L4_F1,09 UP      SIB-L4_F1,09->FPC3_T      UP
SIB-S4_F2,11->SIB-L4_F1,10 UP      SIB-L4_F1,10->FPC2_B      UP
SIB-S4_F2,15->SIB-L4_F1,11 UP      SIB-L4_F1,11->FPC2_T      UP
SIB-S4_F1,08->SIB-L4_F1,12 UP      SIB-L4_F1,12->FPC1_B      UP
SIB-S4_F1,12->SIB-L4_F1,13 UP      SIB-L4_F1,13->FPC1_T      UP
SIB-S4_F2,03->SIB-L4_F1,14 UP      SIB-L4_F1,14->FPC0_B      UP
SIB-S4_F2,07->SIB-L4_F1,15 UP      SIB-L4_F1,15->FPC0_T      UP

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show chassis fabric topology (TX Matrix Plus Router)

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user@host> show chassis fabric topology
sfc0-re0:
-----

F13_SIB0
=====

Out-Links:
=====
SFC0_F13_SIB_00      -> LCC00_ST_SIB_L00          VCSEL    HSL2    HSL2
                        Status    Channel Status
=====
SF_30_00_FB_D(04,11) -> FPC0_T_SG(0,0,0)_FB_D(01,11)  OK        112     Up
SF_30_00_FB_D(04,10) -> FPC0_T_SG(0,0,1)_FB_D(01,10)  OK        112     Up
SF_30_00_FB_D(04,09) -> FPC0_T_SG(0,0,2)_FB_D(01,09)  OK        112     Up
SF_30_00_FB_D(04,08) -> FPC0_T_SG(0,0,3)_FB_D(01,08)  OK        112     Up
SF_30_00_FB_D(04,07) -> FPC0_T_SG(0,0,4)_FB_D(01,07)  OK        112     Up
SF_30_00_FB_D(04,06) -> FPC0_T_SG(0,0,5)_FB_D(01,06)  OK        112     Up
SF_30_00_FB_D(04,05) -> FPC0_T_SG(0,0,6)_FB_D(01,05)  OK        112     Up
SF_30_00_FB_D(04,04) -> FPC0_T_SG(0,0,7)_FB_D(01,04)  OK        112     Up
SF_30_01_FB_B(16,11)  -> FPC4_T_SG(2,0,0)_FB_B(13,11)  OK        119     Up
SF_30_01_FB_B(16,10)  -> FPC4_T_SG(2,0,1)_FB_B(13,10)  OK        119     Up
SF_30_01_FB_B(16,09)  -> FPC4_T_SG(2,0,2)_FB_B(13,09)  OK        119     Up
SF_30_01_FB_B(16,08)  -> FPC4_T_SG(2,0,3)_FB_B(13,08)  OK        119     Up
SF_30_01_FB_B(16,07)  -> FPC4_T_SG(2,0,4)_FB_B(13,07)  OK        119     Up
SF_30_01_FB_B(16,06)  -> FPC4_T_SG(2,0,5)_FB_B(13,06)  OK        119     Up
SF_30_01_FB_B(16,05)  -> FPC4_T_SG(2,0,6)_FB_B(13,05)  OK        119     Up
SF_30_01_FB_B(16,04)  -> FPC4_T_SG(2,0,7)_FB_B(13,04)  OK        119     Up
SF_30_02_FB_D(05,08)  -> FPC1_T_SG(0,2,0)_FB_D(02,08)  OK        126     Up
SF_30_02_FB_D(05,07)  -> FPC1_T_SG(0,2,1)_FB_D(02,07)  OK        126     Up
SF_30_02_FB_D(05,06)  -> FPC1_T_SG(0,2,2)_FB_D(02,06)  OK        126     Up
SF_30_02_FB_D(05,05)  -> FPC1_T_SG(0,2,3)_FB_D(02,05)  OK        126     Up
SF_30_02_FB_D(05,03)  -> FPC1_T_SG(0,2,4)_FB_D(02,03)  OK        126     Up
SF_30_02_FB_D(05,02)  -> FPC1_T_SG(0,2,5)_FB_D(02,02)  OK        126     Up
SF_30_02_FB_D(05,01)  -> FPC1_T_SG(0,2,6)_FB_D(02,01)  OK        126     Up
SF_30_02_FB_D(05,00)  -> FPC1_T_SG(0,2,7)_FB_D(02,00)  OK        126     Up
SF_30_03_FB_B(17,08)  -> FPC5_T_SG(2,2,0)_FB_B(14,08)  OK        133     Up
SF_30_03_FB_B(17,07)  -> FPC5_T_SG(2,2,1)_FB_B(14,07)  OK        133     Up
SF_30_03_FB_B(17,06)  -> FPC5_T_SG(2,2,2)_FB_B(14,06)  OK        133     Up
SF_30_03_FB_B(17,05)  -> FPC5_T_SG(2,2,3)_FB_B(14,05)  OK        133     Up

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SF_30_03_FB_B(17,03) -> FPC5_T_SG(2,2,4)_FB_B(14,03)   OK      133    Up
SF_30_03_FB_B(17,02) -> FPC5_T_SG(2,2,5)_FB_B(14,02)   OK      133    Up
SF_30_03_FB_B(17,01) -> FPC5_T_SG(2,2,6)_FB_B(14,01)   OK      133    Up
SF_30_03_FB_B(17,00) -> FPC5_T_SG(2,2,7)_FB_B(14,00)   OK      133    Up
SF_30_04_FB_C(10,11) -> FPC2_T_SG(1,0,0)_FB_C(07,11)   OK      140    Up
SF_30_04_FB_C(10,10) -> FPC2_T_SG(1,0,1)_FB_C(07,10)   OK      140    Up
SF_30_04_FB_C(10,09) -> FPC2_T_SG(1,0,2)_FB_C(07,09)   OK      140    Up
SF_30_04_FB_C(10,08) -> FPC2_T_SG(1,0,3)_FB_C(07,08)   OK      140    Up
SF_30_04_FB_C(10,07) -> FPC2_T_SG(1,0,4)_FB_C(07,07)   OK      140    Up
SF_30_04_FB_C(10,06) -> FPC2_T_SG(1,0,5)_FB_C(07,06)   OK      140    Up
SF_30_04_FB_C(10,05) -> FPC2_T_SG(1,0,6)_FB_C(07,05)   OK      140    Up
SF_30_04_FB_C(10,04) -> FPC2_T_SG(1,0,7)_FB_C(07,04)   OK      140    Up
SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)   OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)   OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)   OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)   OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)   OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)   OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)   OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)   OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)   OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)   OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)   OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)   OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)   OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)   OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)   OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)   OK      154    Up
...

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show chassis fabric topology sfc (TX Matrix Plus Router)

```

user@host> show chassis fabric topology sfc 0
sfc0-re0:
-----

F13_SIB0
=====

Out-Links:
=====

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SFC0_F13_SIB_00	-> LCC00_ST_SIB_L00	VCSEL	HSL2	HSL2
		Status	Channel	Status
=====				
SF_30_00_FB_D(04,11)	-> FPC0_T_SG(0,0,0)_FB_D(01,11)	OK	112	Up
SF_30_00_FB_D(04,10)	-> FPC0_T_SG(0,0,1)_FB_D(01,10)	OK	112	Up
SF_30_00_FB_D(04,09)	-> FPC0_T_SG(0,0,2)_FB_D(01,09)	OK	112	Up
SF_30_00_FB_D(04,08)	-> FPC0_T_SG(0,0,3)_FB_D(01,08)	OK	112	Up
SF_30_00_FB_D(04,07)	-> FPC0_T_SG(0,0,4)_FB_D(01,07)	OK	112	Up
SF_30_00_FB_D(04,06)	-> FPC0_T_SG(0,0,5)_FB_D(01,06)	OK	112	Up
SF_30_00_FB_D(04,05)	-> FPC0_T_SG(0,0,6)_FB_D(01,05)	OK	112	Up
SF_30_00_FB_D(04,04)	-> FPC0_T_SG(0,0,7)_FB_D(01,04)	OK	112	Up
SF_30_01_FB_B(16,11)	-> FPC4_T_SG(2,0,0)_FB_B(13,11)	OK	119	Up
SF_30_01_FB_B(16,10)	-> FPC4_T_SG(2,0,1)_FB_B(13,10)	OK	119	Up
SF_30_01_FB_B(16,09)	-> FPC4_T_SG(2,0,2)_FB_B(13,09)	OK	119	Up
SF_30_01_FB_B(16,08)	-> FPC4_T_SG(2,0,3)_FB_B(13,08)	OK	119	Up
SF_30_01_FB_B(16,07)	-> FPC4_T_SG(2,0,4)_FB_B(13,07)	OK	119	Up
SF_30_01_FB_B(16,06)	-> FPC4_T_SG(2,0,5)_FB_B(13,06)	OK	119	Up
SF_30_01_FB_B(16,05)	-> FPC4_T_SG(2,0,6)_FB_B(13,05)	OK	119	Up
SF_30_01_FB_B(16,04)	-> FPC4_T_SG(2,0,7)_FB_B(13,04)	OK	119	Up
SF_30_02_FB_D(05,08)	-> FPC1_T_SG(0,2,0)_FB_D(02,08)	OK	126	Up
SF_30_02_FB_D(05,07)	-> FPC1_T_SG(0,2,1)_FB_D(02,07)	OK	126	Up
SF_30_02_FB_D(05,06)	-> FPC1_T_SG(0,2,2)_FB_D(02,06)	OK	126	Up
SF_30_02_FB_D(05,05)	-> FPC1_T_SG(0,2,3)_FB_D(02,05)	OK	126	Up
SF_30_02_FB_D(05,03)	-> FPC1_T_SG(0,2,4)_FB_D(02,03)	OK	126	Up
SF_30_02_FB_D(05,02)	-> FPC1_T_SG(0,2,5)_FB_D(02,02)	OK	126	Up
SF_30_02_FB_D(05,01)	-> FPC1_T_SG(0,2,6)_FB_D(02,01)	OK	126	Up
SF_30_02_FB_D(05,00)	-> FPC1_T_SG(0,2,7)_FB_D(02,00)	OK	126	Up
SF_30_03_FB_B(17,08)	-> FPC5_T_SG(2,2,0)_FB_B(14,08)	OK	133	Up
SF_30_03_FB_B(17,07)	-> FPC5_T_SG(2,2,1)_FB_B(14,07)	OK	133	Up
SF_30_03_FB_B(17,06)	-> FPC5_T_SG(2,2,2)_FB_B(14,06)	OK	133	Up
SF_30_03_FB_B(17,05)	-> FPC5_T_SG(2,2,3)_FB_B(14,05)	OK	133	Up
SF_30_03_FB_B(17,03)	-> FPC5_T_SG(2,2,4)_FB_B(14,03)	OK	133	Up
SF_30_03_FB_B(17,02)	-> FPC5_T_SG(2,2,5)_FB_B(14,02)	OK	133	Up
SF_30_03_FB_B(17,01)	-> FPC5_T_SG(2,2,6)_FB_B(14,01)	OK	133	Up
SF_30_03_FB_B(17,00)	-> FPC5_T_SG(2,2,7)_FB_B(14,00)	OK	133	Up
SF_30_04_FB_C(10,11)	-> FPC2_T_SG(1,0,0)_FB_C(07,11)	OK	140	Up
SF_30_04_FB_C(10,10)	-> FPC2_T_SG(1,0,1)_FB_C(07,10)	OK	140	Up
SF_30_04_FB_C(10,09)	-> FPC2_T_SG(1,0,2)_FB_C(07,09)	OK	140	Up
SF_30_04_FB_C(10,08)	-> FPC2_T_SG(1,0,3)_FB_C(07,08)	OK	140	Up
SF_30_04_FB_C(10,07)	-> FPC2_T_SG(1,0,4)_FB_C(07,07)	OK	140	Up
SF_30_04_FB_C(10,06)	-> FPC2_T_SG(1,0,5)_FB_C(07,06)	OK	140	Up
SF_30_04_FB_C(10,05)	-> FPC2_T_SG(1,0,6)_FB_C(07,05)	OK	140	Up
SF_30_04_FB_C(10,04)	-> FPC2_T_SG(1,0,7)_FB_C(07,04)	OK	140	Up

```

SF_30_05_FB_A(22,11) -> FPC6_T_SG(3,0,0)_FB_A(19,11)   OK      147    Up
SF_30_05_FB_A(22,10) -> FPC6_T_SG(3,0,1)_FB_A(19,10)   OK      147    Up
SF_30_05_FB_A(22,09) -> FPC6_T_SG(3,0,2)_FB_A(19,09)   OK      147    Up
SF_30_05_FB_A(22,08) -> FPC6_T_SG(3,0,3)_FB_A(19,08)   OK      147    Up
SF_30_05_FB_A(22,07) -> FPC6_T_SG(3,0,4)_FB_A(19,07)   OK      147    Up
SF_30_05_FB_A(22,06) -> FPC6_T_SG(3,0,5)_FB_A(19,06)   OK      147    Up
SF_30_05_FB_A(22,05) -> FPC6_T_SG(3,0,6)_FB_A(19,05)   OK      147    Up
SF_30_05_FB_A(22,04) -> FPC6_T_SG(3,0,7)_FB_A(19,04)   OK      147    Up
SF_30_06_FB_C(11,08) -> FPC3_T_SG(1,2,0)_FB_C(08,08)   OK      154    Up
SF_30_06_FB_C(11,07) -> FPC3_T_SG(1,2,1)_FB_C(08,07)   OK      154    Up
SF_30_06_FB_C(11,06) -> FPC3_T_SG(1,2,2)_FB_C(08,06)   OK      154    Up
SF_30_06_FB_C(11,05) -> FPC3_T_SG(1,2,3)_FB_C(08,05)   OK      154    Up
SF_30_06_FB_C(11,03) -> FPC3_T_SG(1,2,4)_FB_C(08,03)   OK      154    Up
SF_30_06_FB_C(11,02) -> FPC3_T_SG(1,2,5)_FB_C(08,02)   OK      154    Up
SF_30_06_FB_C(11,01) -> FPC3_T_SG(1,2,6)_FB_C(08,01)   OK      154    Up
SF_30_06_FB_C(11,00) -> FPC3_T_SG(1,2,7)_FB_C(08,00)   OK      154    Up
...

```

show chassis fabric topology lcc (TX Matrix Plus Router)

```

user@host> show chassis fabric topology lcc 0
lcc0-re0:
-----

SIB0
=====

Out-Links:
=====
LCC00_ST_SIB_L00          -> SFC0_F13_SIB_00          VCSEL    HSL2    HSL2
                               Status    Channel Status
=====
FPC0_T_SG(0,0,0)_FB_D(04,11) -> SF_10_00_FB_D(01,11)   OK      12     Up
FPC0_T_SG(0,0,1)_FB_D(04,10) -> SF_10_00_FB_D(01,10)   OK      12     Up
FPC0_T_SG(0,0,2)_FB_D(04,09) -> SF_10_00_FB_D(01,09)   OK      12     Up
FPC0_T_SG(0,0,3)_FB_D(04,08) -> SF_10_00_FB_D(01,08)   OK      12     Up
FPC0_T_SG(0,0,4)_FB_D(04,07) -> SF_10_00_FB_D(01,07)   OK      12     Up
FPC0_T_SG(0,0,5)_FB_D(04,06) -> SF_10_00_FB_D(01,06)   OK      12     Up
FPC0_T_SG(0,0,6)_FB_D(04,05) -> SF_10_00_FB_D(01,05)   OK      12     Up
FPC0_T_SG(0,0,7)_FB_D(04,04) -> SF_10_00_FB_D(01,04)   OK      12     Up
FPC0_B_SG(0,1,0)_FB_D(03,07) -> SF_10_10_FB_D(00,07)   OK      15     Up

```

FPC0_B_SG(0,1,1)_FB_D(03,06)	->	SF_10_10_FB_D(00,06)	OK	15	Up
FPC0_B_SG(0,1,2)_FB_D(03,05)	->	SF_10_10_FB_D(00,05)	OK	15	Up
FPC0_B_SG(0,1,3)_FB_D(03,04)	->	SF_10_10_FB_D(00,04)	OK	15	Up
FPC0_B_SG(0,1,4)_FB_D(03,03)	->	SF_10_10_FB_D(00,03)	OK	15	Up
FPC0_B_SG(0,1,5)_FB_D(03,02)	->	SF_10_10_FB_D(00,02)	OK	15	Up
FPC0_B_SG(0,1,6)_FB_D(03,01)	->	SF_10_10_FB_D(00,01)	OK	15	Up
FPC0_B_SG(0,1,7)_FB_D(03,00)	->	SF_10_10_FB_D(00,00)	OK	15	Up
FPC1_T_SG(0,2,0)_FB_D(05,08)	->	SF_10_02_FB_D(02,08)	OK	18	Up
FPC1_T_SG(0,2,1)_FB_D(05,07)	->	SF_10_02_FB_D(02,07)	OK	18	Up
FPC1_T_SG(0,2,2)_FB_D(05,06)	->	SF_10_02_FB_D(02,06)	OK	18	Up
FPC1_T_SG(0,2,3)_FB_D(05,05)	->	SF_10_02_FB_D(02,05)	OK	18	Up
FPC1_T_SG(0,2,4)_FB_D(05,03)	->	SF_10_02_FB_D(02,03)	OK	18	Up
FPC1_T_SG(0,2,5)_FB_D(05,02)	->	SF_10_02_FB_D(02,02)	OK	18	Up
FPC1_T_SG(0,2,6)_FB_D(05,01)	->	SF_10_02_FB_D(02,01)	OK	18	Up
FPC1_T_SG(0,2,7)_FB_D(05,00)	->	SF_10_02_FB_D(02,00)	OK	18	Up
FPC1_B_SG(0,3,0)_FB_D(04,03)	->	SF_10_11_FB_D(01,03)	OK	21	Up
FPC1_B_SG(0,3,1)_FB_D(04,02)	->	SF_10_11_FB_D(01,02)	OK	21	Up
FPC1_B_SG(0,3,2)_FB_D(04,01)	->	SF_10_11_FB_D(01,01)	OK	21	Up
FPC1_B_SG(0,3,3)_FB_D(04,00)	->	SF_10_11_FB_D(01,00)	OK	21	Up
FPC1_B_SG(0,3,4)_FB_D(03,11)	->	SF_10_11_FB_D(00,11)	OK	21	Up
FPC1_B_SG(0,3,5)_FB_D(03,10)	->	SF_10_11_FB_D(00,10)	OK	21	Up
FPC1_B_SG(0,3,6)_FB_D(03,09)	->	SF_10_11_FB_D(00,09)	OK	21	Up
FPC1_B_SG(0,3,7)_FB_D(03,08)	->	SF_10_11_FB_D(00,08)	OK	21	Up
FPC2_T_SG(1,0,0)_FB_C(10,11)	->	SF_10_04_FB_C(07,11)	OK	12	Up
FPC2_T_SG(1,0,1)_FB_C(10,10)	->	SF_10_04_FB_C(07,10)	OK	12	Up
FPC2_T_SG(1,0,2)_FB_C(10,09)	->	SF_10_04_FB_C(07,09)	OK	12	Up
FPC2_T_SG(1,0,3)_FB_C(10,08)	->	SF_10_04_FB_C(07,08)	OK	12	Up
FPC2_T_SG(1,0,4)_FB_C(10,07)	->	SF_10_04_FB_C(07,07)	OK	12	Up
FPC2_T_SG(1,0,5)_FB_C(10,06)	->	SF_10_04_FB_C(07,06)	OK	12	Up
FPC2_T_SG(1,0,6)_FB_C(10,05)	->	SF_10_04_FB_C(07,05)	OK	12	Up
FPC2_T_SG(1,0,7)_FB_C(10,04)	->	SF_10_04_FB_C(07,04)	OK	12	Up
FPC2_B_SG(1,1,0)_FB_C(09,07)	->	SF_10_14_FB_C(06,07)	OK	15	Up
FPC2_B_SG(1,1,1)_FB_C(09,06)	->	SF_10_14_FB_C(06,06)	OK	15	Up
FPC2_B_SG(1,1,2)_FB_C(09,05)	->	SF_10_14_FB_C(06,05)	OK	15	Up
FPC2_B_SG(1,1,3)_FB_C(09,04)	->	SF_10_14_FB_C(06,04)	OK	15	Up
FPC2_B_SG(1,1,4)_FB_C(09,03)	->	SF_10_14_FB_C(06,03)	OK	15	Up
FPC2_B_SG(1,1,5)_FB_C(09,02)	->	SF_10_14_FB_C(06,02)	OK	15	Up
FPC2_B_SG(1,1,6)_FB_C(09,01)	->	SF_10_14_FB_C(06,01)	OK	15	Up
FPC2_B_SG(1,1,7)_FB_C(09,00)	->	SF_10_14_FB_C(06,00)	OK	15	Up
FPC3_T_SG(1,2,0)_FB_C(11,08)	->	SF_10_06_FB_C(08,08)	OK	18	Up
FPC3_T_SG(1,2,1)_FB_C(11,07)	->	SF_10_06_FB_C(08,07)	OK	18	Up
FPC3_T_SG(1,2,2)_FB_C(11,06)	->	SF_10_06_FB_C(08,06)	OK	18	Up
FPC3_T_SG(1,2,3)_FB_C(11,05)	->	SF_10_06_FB_C(08,05)	OK	18	Up

```

FPC3_T_SG(1,2,4)_FB_C(11,03) -> SF_10_06_FB_C(08,03)    OK      18      Up
FPC3_T_SG(1,2,5)_FB_C(11,02) -> SF_10_06_FB_C(08,02)    OK      18      Up
FPC3_T_SG(1,2,6)_FB_C(11,01) -> SF_10_06_FB_C(08,01)    OK      18      Up
...

```

show chassis fabric topology (T4000 Core Router)

```

user@host> show chassis fabric topology 0
  fchip (mode)
          In-links          State          Out-links          State
-----
SIB0 :
-----

Onboard Links
-----
SIB0_XF1,14_0->SIB0_XF,00_0    Up      SIB0_XF,00_0->SIB0_XF1,14_0    Up
SIB0_XF,00_0->SIB0_XF1,14_0    Up      SIB0_XF1,14_0->SIB0_XF,00_0    Up
SIB0_XF1,13_0->SIB0_XF,01_0    Up      SIB0_XF,01_0->SIB0_XF1,13_0    Up
SIB0_XF,01_0->SIB0_XF1,13_0    Up      SIB0_XF1,13_0->SIB0_XF,01_0    Up
SIB0_XF1,12_0->SIB0_XF,02_0    Up      SIB0_XF,02_0->SIB0_XF1,12_0    Up
SIB0_XF,02_0->SIB0_XF1,12_0    Up      SIB0_XF1,12_0->SIB0_XF,02_0    Up
SIB0_XF1,11_0->SIB0_XF,03_0    Up      SIB0_XF,03_0->SIB0_XF1,11_0    Up
SIB0_XF,03_0->SIB0_XF1,11_0    Up      SIB0_XF1,11_0->SIB0_XF,03_0    Up
SIB0_XF1,10_0->SIB0_XF,04_0    Up      SIB0_XF,04_0->SIB0_XF1,10_0    Up
SIB0_XF,04_0->SIB0_XF1,10_0    Up      SIB0_XF1,10_0->SIB0_XF,04_0    Up
SIB0_XF1,09_0->SIB0_XF,05_0    Up      SIB0_XF,05_0->SIB0_XF1,09_0    Up
SIB0_XF,05_0->SIB0_XF1,09_0    Up      SIB0_XF1,09_0->SIB0_XF,05_0    Up
SIB0_XF2,14_0->SIB0_XF,06_0    Up      SIB0_XF,06_0->SIB0_XF2,14_0    Up
SIB0_XF,06_0->SIB0_XF2,14_0    Up      SIB0_XF2,14_0->SIB0_XF,06_0    Up
SIB0_XF2,13_0->SIB0_XF,07_0    Up      SIB0_XF,07_0->SIB0_XF2,13_0    Up
SIB0_XF,07_0->SIB0_XF2,13_0    Up      SIB0_XF2,13_0->SIB0_XF,07_0    Up
SIB0_XF2,12_0->SIB0_XF,08_0    Up      SIB0_XF,08_0->SIB0_XF2,12_0    Up
SIB0_XF,08_0->SIB0_XF2,12_0    Up      SIB0_XF2,12_0->SIB0_XF,08_0    Up
SIB0_XF2,11_0->SIB0_XF,09_0    Up      SIB0_XF,09_0->SIB0_XF2,11_0    Up
SIB0_XF,09_0->SIB0_XF2,11_0    Up      SIB0_XF2,11_0->SIB0_XF,09_0    Up
SIB0_XF2,10_0->SIB0_XF,10_0    Up      SIB0_XF,10_0->SIB0_XF2,10_0    Up
SIB0_XF,10_0->SIB0_XF2,10_0    Up      SIB0_XF2,10_0->SIB0_XF,10_0    Up
SIB0_XF2,09_0->SIB0_XF,11_0    Up      SIB0_XF,11_0->SIB0_XF2,09_0    Up
SIB0_XF,11_0->SIB0_XF2,09_0    Up      SIB0_XF2,09_0->SIB0_XF,11_0    Up

```


SIB0_XF3,13_0->SIB0_XF,12_0	Up	SIB0_XF,12_0->SIB0_XF3,13_0	Up
SIB0_XF,12_0->SIB0_XF3,13_0	Up	SIB0_XF3,13_0->SIB0_XF,12_0	Up
SIB0_XF3,12_0->SIB0_XF,13_0	Up	SIB0_XF,13_0->SIB0_XF3,12_0	Up
SIB0_XF,13_0->SIB0_XF3,12_0	Up	SIB0_XF3,12_0->SIB0_XF,13_0	Up
SIB0_XF3,11_0->SIB0_XF,14_0	Up	SIB0_XF,14_0->SIB0_XF3,11_0	Up
SIB0_XF,14_0->SIB0_XF3,11_0	Up	SIB0_XF3,11_0->SIB0_XF,14_0	Up
SIB0_XF3,10_0->SIB0_XF,15_0	Up	SIB0_XF,15_0->SIB0_XF3,10_0	Up
SIB0_XF,15_0->SIB0_XF3,10_0	Up	SIB0_XF3,10_0->SIB0_XF,15_0	Up

PFE Links

FPC2PFE0->SIB0_XF1,05_0	Up	SIB0_XF1,05_0->FPC2PFE0	Up
FPC3PFE0->SIB0_XF2,15_0	Up	SIB0_XF2,15_0->FPC3PFE0	Up
FPC5PFE0->SIB0_XF2,05_0	Up	SIB0_XF2,05_0->FPC5PFE0	Up
FPC5PFE1->SIB0_XF2,07_0	Up	SIB0_XF2,07_0->FPC5PFE1	Up
FPC6PFE0->SIB0_XF3,01_0	Up	SIB0_XF3,01_0->FPC6PFE0	Up
FPC6PFE0->SIB0_XF3,01_1	Up	SIB0_XF3,01_1->FPC6PFE0	Up
FPC6PFE0->SIB0_XF3,02_0	Up	SIB0_XF3,02_0->FPC6PFE0	Up
FPC6PFE1->SIB0_XF3,03_0	Up	SIB0_XF3,03_0->FPC6PFE1	Up
FPC6PFE1->SIB0_XF3,03_1	Up	SIB0_XF3,03_1->FPC6PFE1	Up
FPC6PFE1->SIB0_XF3,02_1	Up	SIB0_XF3,02_1->FPC6PFE1	Up

show chassis fabric topology lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis fabric topology lcc
6
lcc6-re0:
-----
fchip (mode)
      In-links          State          Out-links          State
-----
SIB0 :
-----
CXP0_Evn->LCC_SIB0_XF3,10_0    Up    LCC_SIB0_XF3,10_0->CXP0_Evn    Up
CXP0_Odd->LCC_SIB0_XF3,11_0    Up    LCC_SIB0_XF3,11_0->CXP0_Odd    Up
CXP1_Evn->LCC_SIB0_XF3,12_0    Up    LCC_SIB0_XF3,12_0->CXP1_Evn    Up
CXP1_Odd->LCC_SIB0_XF3,13_0    Up    LCC_SIB0_XF3,13_0->CXP1_Odd    Up
CXP2_Evn->LCC_SIB0_XF2,09_0    Up    LCC_SIB0_XF2,09_0->CXP2_Evn    Up
CXP2_Odd->LCC_SIB0_XF2,10_0    Up    LCC_SIB0_XF2,10_0->CXP2_Odd    Up
CXP3_Evn->LCC_SIB0_XF2,11_0    Up    LCC_SIB0_XF2,11_0->CXP3_Evn    Up
CXP3_Odd->LCC_SIB0_XF2,12_0    Up    LCC_SIB0_XF2,12_0->CXP3_Odd    Up

```

```

CXP4_Evn->LCC_SIB0_XF2,13_0      Up      LCC_SIB0_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB0_XF1,09_0      Up      LCC_SIB0_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB0_XF2,14_0      Up      LCC_SIB0_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB0_XF1,10_0      Up      LCC_SIB0_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB0_XF1,11_0      Up      LCC_SIB0_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB0_XF1,12_0      Up      LCC_SIB0_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB0_XF1,13_0      Up      LCC_SIB0_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB0_XF1,14_0      Up      LCC_SIB0_XF1,14_0->CXP7_Odd      Up
SIB1 :
-----
SIB2 :
-----
CXP0_Evn->LCC_SIB2_XF3,10_0      Up      LCC_SIB2_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB2_XF3,11_0      Up      LCC_SIB2_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB2_XF3,12_0      Up      LCC_SIB2_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB2_XF3,13_0      Up      LCC_SIB2_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB2_XF2,09_0      Up      LCC_SIB2_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB2_XF2,10_0      Up      LCC_SIB2_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB2_XF2,11_0      Up      LCC_SIB2_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB2_XF2,12_0      Up      LCC_SIB2_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB2_XF2,13_0      Up      LCC_SIB2_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB2_XF1,09_0      Up      LCC_SIB2_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB2_XF2,14_0      Up      LCC_SIB2_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB2_XF1,10_0      Up      LCC_SIB2_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB2_XF1,11_0      Up      LCC_SIB2_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB2_XF1,12_0      Up      LCC_SIB2_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB2_XF1,13_0      Up      LCC_SIB2_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB2_XF1,14_0      Up      LCC_SIB2_XF1,14_0->CXP7_Odd      Up
SIB3 :
-----
CXP0_Evn->LCC_SIB3_XF3,10_0      Up      LCC_SIB3_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB3_XF3,11_0      Up      LCC_SIB3_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB3_XF3,12_0      Up      LCC_SIB3_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB3_XF3,13_0      Up      LCC_SIB3_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB3_XF2,09_0      Up      LCC_SIB3_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB3_XF2,10_0      Up      LCC_SIB3_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB3_XF2,11_0      Up      LCC_SIB3_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB3_XF2,12_0      Up      LCC_SIB3_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB3_XF2,13_0      Up      LCC_SIB3_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB3_XF1,09_0      Up      LCC_SIB3_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB3_XF2,14_0      Up      LCC_SIB3_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB3_XF1,10_0      Up      LCC_SIB3_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB3_XF1,11_0      Up      LCC_SIB3_XF1,11_0->CXP6_Evn      Up

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CXP6_Odd->LCC_SIB3_XF1,12_0      Up      LCC_SIB3_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB3_XF1,13_0      Up      LCC_SIB3_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB3_XF1,14_0      Up      LCC_SIB3_XF1,14_0->CXP7_Odd      Up
SIB4 :
-----
CXP0_Evn->LCC_SIB4_XF3,10_0      Up      LCC_SIB4_XF3,10_0->CXP0_Evn      Up
CXP0_Odd->LCC_SIB4_XF3,11_0      Up      LCC_SIB4_XF3,11_0->CXP0_Odd      Up
CXP1_Evn->LCC_SIB4_XF3,12_0      Up      LCC_SIB4_XF3,12_0->CXP1_Evn      Up
CXP1_Odd->LCC_SIB4_XF3,13_0      Up      LCC_SIB4_XF3,13_0->CXP1_Odd      Up
CXP2_Evn->LCC_SIB4_XF2,09_0      Up      LCC_SIB4_XF2,09_0->CXP2_Evn      Up
CXP2_Odd->LCC_SIB4_XF2,10_0      Up      LCC_SIB4_XF2,10_0->CXP2_Odd      Up
CXP3_Evn->LCC_SIB4_XF2,11_0      Up      LCC_SIB4_XF2,11_0->CXP3_Evn      Up
CXP3_Odd->LCC_SIB4_XF2,12_0      Up      LCC_SIB4_XF2,12_0->CXP3_Odd      Up
CXP4_Evn->LCC_SIB4_XF2,13_0      Up      LCC_SIB4_XF2,13_0->CXP4_Evn      Up
CXP4_Odd->LCC_SIB4_XF1,09_0      Up      LCC_SIB4_XF1,09_0->CXP4_Odd      Up
CXP5_Evn->LCC_SIB4_XF2,14_0      Up      LCC_SIB4_XF2,14_0->CXP5_Evn      Up
CXP5_Odd->LCC_SIB4_XF1,10_0      Up      LCC_SIB4_XF1,10_0->CXP5_Odd      Up
CXP6_Evn->LCC_SIB4_XF1,11_0      Up      LCC_SIB4_XF1,11_0->CXP6_Evn      Up
CXP6_Odd->LCC_SIB4_XF1,12_0      Up      LCC_SIB4_XF1,12_0->CXP6_Odd      Up
CXP7_Evn->LCC_SIB4_XF1,13_0      Up      LCC_SIB4_XF1,13_0->CXP7_Evn      Up
CXP7_Odd->LCC_SIB4_XF1,14_0      Up      LCC_SIB4_XF1,14_0->CXP7_Odd      Up

```

show chassis fabric topology (PTX5000 Router)

```

user@host> show chassis fabric topology
In-link  : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
           SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link  : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
           FPC# FE# TQ# (TQ-RX sub-chnl #)
(6, 4, 06) in FPC02FE0TQ0(02)->S01F0_0(6,4,06) will be TF Rx Port 6, TF CCL Rx
Sub-Channel 4, TF CCL Rx Instance 6.
(2, 7, 10) in S01F0_0(2,7,10)->FPC02FE0TQ0(02) will be TF-Tx Port 2, TF CCL Tx
Sub-channel 7, TF CCL Tx Instance 10.
SIB 0 FCHIP 0 FCORE 0 :
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In-links	State	Out-links	State
FPC00FE0TQ0(00)->S00F0_0(7,4,07)	OK	S00F0_0(3,7,11)->FPC00FE0TQ0(00)	OK
FPC00FE1TQ1(00)->S00F0_0(7,6,07)	OK	S00F0_0(3,5,11)->FPC00FE1TQ1(00)	OK
FPC00FE2TQ2(00)->S00F0_0(7,5,07)	OK	S00F0_0(3,6,11)->FPC00FE2TQ2(00)	OK

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FPC00FE3TQ3 (00)->S00F0_0(7,7,07) OK      S00F0_0(3,4,11)->FPC00FE3TQ3 (00) OK
FPC01FE0TQ0 (00)->S00F0_0(7,0,07) OK      S00F0_0(3,3,11)->FPC01FE0TQ0 (00) OK
FPC01FE1TQ1 (00)->S00F0_0(7,1,07) OK      S00F0_0(3,1,11)->FPC01FE1TQ1 (00) OK
FPC01FE2TQ2 (00)->S00F0_0(7,2,07) OK      S00F0_0(3,2,11)->FPC01FE2TQ2 (00) Error
FPC01FE3TQ3 (00)->S00F0_0(7,3,07) OK      S00F0_0(3,0,11)->FPC01FE3TQ3 (00) OK
FPC02FE0TQ0 (00)->S00F0_0(6,4,06) OK      S00F0_0(2,7,10)->FPC02FE0TQ0 (00) OK
FPC02FE1TQ1 (00)->S00F0_0(6,5,06) OK      S00F0_0(2,5,10)->FPC02FE1TQ1 (00) OK
FPC02FE2TQ2 (00)->S00F0_0(6,6,06) OK      S00F0_0(2,6,10)->FPC02FE2TQ2 (00) OK
FPC02FE3TQ3 (00)->S00F0_0(6,7,06) OK      S00F0_0(2,4,10)->FPC02FE3TQ3 (00) OK
FPC03FE0TQ0 (00)->S00F0_0(6,0,06) Down    S00F0_0(2,3,10)->FPC03FE0TQ0 (00) Down
FPC03FE1TQ1 (00)->S00F0_0(6,1,06) Down    S00F0_0(2,0,10)->FPC03FE1TQ1 (00) Down
FPC03FE2TQ2 (00)->S00F0_0(6,2,06) Down    S00F0_0(2,2,10)->FPC03FE2TQ2 (00) Down
FPC03FE3TQ3 (00)->S00F0_0(6,3,06) Down    S00F0_0(2,1,10)->FPC03FE3TQ3 (00) Down
FPC04FE0TQ0 (00)->S00F0_0(5,4,05) OK      S00F0_0(1,7,09)->FPC04FE0TQ0 (00) OK
FPC04FE1TQ1 (00)->S00F0_0(5,5,05) OK      S00F0_0(1,6,09)->FPC04FE1TQ1 (00) OK
FPC04FE2TQ2 (00)->S00F0_0(5,6,05) OK      S00F0_0(1,4,09)->FPC04FE2TQ2 (00) OK
FPC04FE3TQ3 (00)->S00F0_0(5,7,05) OK      S00F0_0(1,5,09)->FPC04FE3TQ3 (00) OK
FPC05FE0TQ0 (00)->S00F0_0(5,0,05) OK      S00F0_0(1,3,09)->FPC05FE0TQ0 (00) OK
FPC05FE1TQ1 (00)->S00F0_0(5,1,05) OK      S00F0_0(1,0,09)->FPC05FE1TQ1 (00) OK
FPC05FE2TQ2 (00)->S00F0_0(5,2,05) OK      S00F0_0(1,2,09)->FPC05FE2TQ2 (00) OK
FPC05FE3TQ3 (00)->S00F0_0(5,3,05) OK      S00F0_0(1,1,09)->FPC05FE3TQ3 (00) OK
FPC06FE0TQ0 (00)->S00F0_0(4,4,04) Down    S00F0_0(0,7,08)->FPC06FE0TQ0 (00) Down
FPC06FE1TQ1 (00)->S00F0_0(4,5,04) Down    S00F0_0(0,5,08)->FPC06FE1TQ1 (00) Down
FPC06FE2TQ2 (00)->S00F0_0(4,6,04) Down    S00F0_0(0,6,08)->FPC06FE2TQ2 (00) Down
FPC06FE3TQ3 (00)->S00F0_0(4,7,04) Down    S00F0_0(0,4,08)->FPC06FE3TQ3 (00) Down
FPC07FE0TQ0 (00)->S00F0_0(4,2,04) Down    S00F0_0(0,3,08)->FPC07FE0TQ0 (00) Down
FPC07FE1TQ1 (00)->S00F0_0(4,0,04) Down    S00F0_0(0,0,08)->FPC07FE1TQ1 (00) Down
FPC07FE2TQ2 (00)->S00F0_0(4,1,04) Down    S00F0_0(0,1,08)->FPC07FE2TQ2 (00) Down
FPC07FE3TQ3 (00)->S00F0_0(4,3,04) Down    S00F0_0(0,2,08)->FPC07FE3TQ3 (00) Down

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SIB 0 FCHIP 0 FCORE 1 :

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-----
                In-links                State                Out-links                State
-----
FPC00FE0TQ0 (01)->S00F0_1(3,4,11) OK      S00F0_1(7,6,07)->FPC00FE0TQ0 (01) OK
FPC00FE1TQ1 (01)->S00F0_1(3,5,11) OK      S00F0_1(7,4,07)->FPC00FE1TQ1 (01) OK
FPC00FE2TQ2 (01)->S00F0_1(3,6,11) OK      S00F0_1(7,7,07)->FPC00FE2TQ2 (01) OK
FPC00FE3TQ3 (01)->S00F0_1(3,7,11) OK      S00F0_1(7,5,07)->FPC00FE3TQ3 (01) OK
FPC01FE0TQ0 (01)->S00F0_1(3,0,11) OK      S00F0_1(7,2,07)->FPC01FE0TQ0 (01) OK
FPC01FE1TQ1 (01)->S00F0_1(3,1,11) OK      S00F0_1(7,0,07)->FPC01FE1TQ1 (01) OK
FPC01FE2TQ2 (01)->S00F0_1(3,2,11) OK      S00F0_1(7,3,07)->FPC01FE2TQ2 (01) OK
FPC01FE3TQ3 (01)->S00F0_1(3,3,11) OK      S00F0_1(7,1,07)->FPC01FE3TQ3 (01) OK
FPC02FE0TQ0 (01)->S00F0_1(2,4,10) OK      S00F0_1(6,5,06)->FPC02FE0TQ0 (01) OK

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FPC02FE1TQ1 (01)->S00F0_1 (2,5,10) OK      S00F0_1 (6,4,06)->FPC02FE1TQ1 (01) OK
FPC02FE2TQ2 (01)->S00F0_1 (2,6,10) OK      S00F0_1 (6,7,06)->FPC02FE2TQ2 (01) OK
FPC02FE3TQ3 (01)->S00F0_1 (2,7,10) OK      S00F0_1 (6,6,06)->FPC02FE3TQ3 (01) OK
FPC03FE0TQ0 (01)->S00F0_1 (2,0,10) Down    S00F0_1 (6,1,06)->FPC03FE0TQ0 (01) Down
FPC03FE1TQ1 (01)->S00F0_1 (2,1,10) Down    S00F0_1 (6,0,06)->FPC03FE1TQ1 (01) Down
FPC03FE2TQ2 (01)->S00F0_1 (2,2,10) Down    S00F0_1 (6,3,06)->FPC03FE2TQ2 (01) Down
FPC03FE3TQ3 (01)->S00F0_1 (2,3,10) Down    S00F0_1 (6,2,06)->FPC03FE3TQ3 (01) Down
FPC04FE0TQ0 (01)->S00F0_1 (1,4,09) OK      S00F0_1 (5,5,05)->FPC04FE0TQ0 (01) OK
FPC04FE1TQ1 (01)->S00F0_1 (1,5,09) OK      S00F0_1 (5,4,05)->FPC04FE1TQ1 (01) OK
FPC04FE2TQ2 (01)->S00F0_1 (1,6,09) OK      S00F0_1 (5,7,05)->FPC04FE2TQ2 (01) OK
FPC04FE3TQ3 (01)->S00F0_1 (1,7,09) OK      S00F0_1 (5,6,05)->FPC04FE3TQ3 (01) OK
FPC05FE0TQ0 (01)->S00F0_1 (1,0,09) OK      S00F0_1 (5,1,05)->FPC05FE0TQ0 (01) OK
FPC05FE1TQ1 (01)->S00F0_1 (1,1,09) OK      S00F0_1 (5,0,05)->FPC05FE1TQ1 (01) OK
FPC05FE2TQ2 (01)->S00F0_1 (1,2,09) OK      S00F0_1 (5,3,05)->FPC05FE2TQ2 (01) OK
FPC05FE3TQ3 (01)->S00F0_1 (1,3,09) OK      S00F0_1 (5,2,05)->FPC05FE3TQ3 (01) OK
FPC06FE0TQ0 (01)->S00F0_1 (0,4,08) Down    S00F0_1 (4,7,04)->FPC06FE0TQ0 (01) Down
FPC06FE1TQ1 (01)->S00F0_1 (0,5,08) Down    S00F0_1 (4,0,04)->FPC06FE1TQ1 (01) Down
FPC06FE2TQ2 (01)->S00F0_1 (0,6,08) Down    S00F0_1 (4,6,04)->FPC06FE2TQ2 (01) Down
FPC06FE3TQ3 (01)->S00F0_1 (0,7,08) Down    S00F0_1 (4,1,04)->FPC06FE3TQ3 (01) Down
FPC07FE0TQ0 (01)->S00F0_1 (0,0,08) Down    S00F0_1 (4,3,04)->FPC07FE0TQ0 (01) Down
FPC07FE1TQ1 (01)->S00F0_1 (0,1,08) Down    S00F0_1 (4,4,04)->FPC07FE1TQ1 (01) Down
FPC07FE2TQ2 (01)->S00F0_1 (0,2,08) Down    S00F0_1 (4,2,04)->FPC07FE2TQ2 (01) Down
FPC07FE3TQ3 (01)->S00F0_1 (0,3,08) Down    S00F0_1 (4,5,04)->FPC07FE3TQ3 (01) Down

```

SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0TQ0 (02)->S01F0_0 (7,4,07)	Error	S01F0_0 (3,7,11)->FPC00FE0TQ0 (02)	Down
FPC00FE1TQ1 (02)->S01F0_0 (7,6,07)	OK	S01F0_0 (3,5,11)->FPC00FE1TQ1 (02)	OK
FPC00FE2TQ2 (02)->S01F0_0 (7,5,07)	OK	S01F0_0 (3,6,11)->FPC00FE2TQ2 (02)	OK
FPC00FE3TQ3 (02)->S01F0_0 (7,7,07)	OK	S01F0_0 (3,4,11)->FPC00FE3TQ3 (02)	OK
FPC01FE0TQ0 (02)->S01F0_0 (7,0,07)	OK	S01F0_0 (3,3,11)->FPC01FE0TQ0 (02)	OK
FPC01FE1TQ1 (02)->S01F0_0 (7,1,07)	OK	S01F0_0 (3,1,11)->FPC01FE1TQ1 (02)	OK
FPC01FE2TQ2 (02)->S01F0_0 (7,2,07)	OK	S01F0_0 (3,2,11)->FPC01FE2TQ2 (02)	OK
FPC01FE3TQ3 (02)->S01F0_0 (7,3,07)	OK	S01F0_0 (3,0,11)->FPC01FE3TQ3 (02)	OK
FPC02FE0TQ0 (02)->S01F0_0 (6,4,06)	OK	S01F0_0 (2,7,10)->FPC02FE0TQ0 (02)	OK
FPC02FE1TQ1 (02)->S01F0_0 (6,5,06)	OK	S01F0_0 (2,5,10)->FPC02FE1TQ1 (02)	OK
FPC02FE2TQ2 (02)->S01F0_0 (6,6,06)	OK	S01F0_0 (2,6,10)->FPC02FE2TQ2 (02)	OK
FPC02FE3TQ3 (02)->S01F0_0 (6,7,06)	OK	S01F0_0 (2,4,10)->FPC02FE3TQ3 (02)	OK
FPC03FE0TQ0 (02)->S01F0_0 (6,0,06)	Down	S01F0_0 (2,3,10)->FPC03FE0TQ0 (02)	Down
FPC03FE1TQ1 (02)->S01F0_0 (6,1,06)	Down	S01F0_0 (2,0,10)->FPC03FE1TQ1 (02)	Down
FPC03FE2TQ2 (02)->S01F0_0 (6,2,06)	Down	S01F0_0 (2,2,10)->FPC03FE2TQ2 (02)	Down

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FPC03FE3TQ3 (02) ->S01F0_0 (6,3,06) Down      S01F0_0 (2,1,10) ->FPC03FE3TQ3 (02) Down
FPC04FE0TQ0 (02) ->S01F0_0 (5,4,05) OK        S01F0_0 (1,7,09) ->FPC04FE0TQ0 (02) OK
FPC04FE1TQ1 (02) ->S01F0_0 (5,5,05) OK        S01F0_0 (1,6,09) ->FPC04FE1TQ1 (02) OK
FPC04FE2TQ2 (02) ->S01F0_0 (5,6,05) OK        S01F0_0 (1,4,09) ->FPC04FE2TQ2 (02) OK
FPC04FE3TQ3 (02) ->S01F0_0 (5,7,05) OK        S01F0_0 (1,5,09) ->FPC04FE3TQ3 (02) OK
FPC05FE0TQ0 (02) ->S01F0_0 (5,0,05) OK        S01F0_0 (1,3,09) ->FPC05FE0TQ0 (02) OK
FPC05FE1TQ1 (02) ->S01F0_0 (5,1,05) OK        S01F0_0 (1,0,09) ->FPC05FE1TQ1 (02) OK
FPC05FE2TQ2 (02) ->S01F0_0 (5,2,05) OK        S01F0_0 (1,2,09) ->FPC05FE2TQ2 (02) OK
FPC05FE3TQ3 (02) ->S01F0_0 (5,3,05) OK        S01F0_0 (1,1,09) ->FPC05FE3TQ3 (02) OK
FPC06FE0TQ0 (02) ->S01F0_0 (4,4,04) Down      S01F0_0 (0,7,08) ->FPC06FE0TQ0 (02) Down
FPC06FE1TQ1 (02) ->S01F0_0 (4,5,04) Down      S01F0_0 (0,5,08) ->FPC06FE1TQ1 (02) Down
FPC06FE2TQ2 (02) ->S01F0_0 (4,6,04) Down      S01F0_0 (0,6,08) ->FPC06FE2TQ2 (02) Down
FPC06FE3TQ3 (02) ->S01F0_0 (4,7,04) Down      S01F0_0 (0,4,08) ->FPC06FE3TQ3 (02) Down
FPC07FE0TQ0 (02) ->S01F0_0 (4,2,04) Down      S01F0_0 (0,3,08) ->FPC07FE0TQ0 (02) Down
FPC07FE1TQ1 (02) ->S01F0_0 (4,0,04) Down      S01F0_0 (0,0,08) ->FPC07FE1TQ1 (02) Down
FPC07FE2TQ2 (02) ->S01F0_0 (4,1,04) Down      S01F0_0 (0,1,08) ->FPC07FE2TQ2 (02) Down
FPC07FE3TQ3 (02) ->S01F0_0 (4,3,04) Down      S01F0_0 (0,2,08) ->FPC07FE3TQ3 (02) Down

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SIB 1 FCHIP 0 FCORE 1 :

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-----
                In-links                State                Out-links                State
-----
FPC00FE0TQ0 (03) ->S01F0_1 (3,4,11) OK        S01F0_1 (7,6,07) ->FPC00FE0TQ0 (03) OK
FPC00FE1TQ1 (03) ->S01F0_1 (3,5,11) OK        S01F0_1 (7,4,07) ->FPC00FE1TQ1 (03) OK
FPC00FE2TQ2 (03) ->S01F0_1 (3,6,11) OK        S01F0_1 (7,7,07) ->FPC00FE2TQ2 (03) OK
FPC00FE3TQ3 (03) ->S01F0_1 (3,7,11) OK        S01F0_1 (7,5,07) ->FPC00FE3TQ3 (03) OK
FPC01FE0TQ0 (03) ->S01F0_1 (3,0,11) OK        S01F0_1 (7,2,07) ->FPC01FE0TQ0 (03) OK
FPC01FE1TQ1 (03) ->S01F0_1 (3,1,11) OK        S01F0_1 (7,0,07) ->FPC01FE1TQ1 (03) OK
FPC01FE2TQ2 (03) ->S01F0_1 (3,2,11) OK        S01F0_1 (7,3,07) ->FPC01FE2TQ2 (03) OK
FPC01FE3TQ3 (03) ->S01F0_1 (3,3,11) OK        S01F0_1 (7,1,07) ->FPC01FE3TQ3 (03) OK
FPC02FE0TQ0 (03) ->S01F0_1 (2,4,10) OK        S01F0_1 (6,5,06) ->FPC02FE0TQ0 (03) OK
FPC02FE1TQ1 (03) ->S01F0_1 (2,5,10) OK        S01F0_1 (6,4,06) ->FPC02FE1TQ1 (03) OK
FPC02FE2TQ2 (03) ->S01F0_1 (2,6,10) OK        S01F0_1 (6,7,06) ->FPC02FE2TQ2 (03) OK
FPC02FE3TQ3 (03) ->S01F0_1 (2,7,10) OK        S01F0_1 (6,6,06) ->FPC02FE3TQ3 (03) OK
FPC03FE0TQ0 (03) ->S01F0_1 (2,0,10) Down      S01F0_1 (6,1,06) ->FPC03FE0TQ0 (03) Down
FPC03FE1TQ1 (03) ->S01F0_1 (2,1,10) Down      S01F0_1 (6,0,06) ->FPC03FE1TQ1 (03) Down
FPC03FE2TQ2 (03) ->S01F0_1 (2,2,10) Down      S01F0_1 (6,3,06) ->FPC03FE2TQ2 (03) Down
FPC03FE3TQ3 (03) ->S01F0_1 (2,3,10) Down      S01F0_1 (6,2,06) ->FPC03FE3TQ3 (03) Down
FPC04FE0TQ0 (03) ->S01F0_1 (1,4,09) OK        S01F0_1 (5,5,05) ->FPC04FE0TQ0 (03) OK
FPC04FE1TQ1 (03) ->S01F0_1 (1,5,09) OK        S01F0_1 (5,4,05) ->FPC04FE1TQ1 (03) OK
FPC04FE2TQ2 (03) ->S01F0_1 (1,6,09) OK        S01F0_1 (5,7,05) ->FPC04FE2TQ2 (03) OK
FPC04FE3TQ3 (03) ->S01F0_1 (1,7,09) OK        S01F0_1 (5,6,05) ->FPC04FE3TQ3 (03) OK
FPC05FE0TQ0 (03) ->S01F0_1 (1,0,09) OK        S01F0_1 (5,1,05) ->FPC05FE0TQ0 (03) OK

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FPC05FE1TQ1 (03)->S01F0_1(1,1,09) OK      S01F0_1(5,0,05)->FPC05FE1TQ1(03) OK
FPC05FE2TQ2 (03)->S01F0_1(1,2,09) OK      S01F0_1(5,3,05)->FPC05FE2TQ2(03) OK
FPC05FE3TQ3 (03)->S01F0_1(1,3,09) OK      S01F0_1(5,2,05)->FPC05FE3TQ3(03) OK
FPC06FE0TQ0 (03)->S01F0_1(0,4,08) Down    S01F0_1(4,7,04)->FPC06FE0TQ0(03) Down
FPC06FE1TQ1 (03)->S01F0_1(0,5,08) Down    S01F0_1(4,0,04)->FPC06FE1TQ1(03) Down
FPC06FE2TQ2 (03)->S01F0_1(0,6,08) Down    S01F0_1(4,6,04)->FPC06FE2TQ2(03) Down
FPC06FE3TQ3 (03)->S01F0_1(0,7,08) Down    S01F0_1(4,1,04)->FPC06FE3TQ3(03) Down
FPC07FE0TQ0 (03)->S01F0_1(0,0,08) Down    S01F0_1(4,3,04)->FPC07FE0TQ0(03) Down
FPC07FE1TQ1 (03)->S01F0_1(0,1,08) Down    S01F0_1(4,4,04)->FPC07FE1TQ1(03) Down
FPC07FE2TQ2 (03)->S01F0_1(0,2,08) Down    S01F0_1(4,2,04)->FPC07FE2TQ2(03) Down
FPC07FE3TQ3 (03)->S01F0_1(0,3,08) Down    S01F0_1(4,5,04)->FPC07FE3TQ3(03) Down

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show chassis fabric topology (PTX10008 Router)

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user@host> show chassis fabric topology
  In-link  : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
             SIB# ASIC#_FCORE# (RX port#, RX sub-chn#, RX inst#)

  Out-link : SIB# ASIC#_FCORE# (TX port#, TX sub-chn#, TX inst#) ->
             FPC# FE# ASIC# (RX inst#, RX sub-chnl #)
SIB 0 FCHIP 0 FCORE 0 :
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In-links	State	Out-links	State
FPC00FE0(1,17)->S00F0_0(01,0,01)	OK	S00F0_0(00,0,00)->FPC00FE0(1,09)	OK
FPC00FE0(1,09)->S00F0_0(02,0,02)	OK	S00F0_0(00,1,00)->FPC00FE0(1,17)	OK
FPC00FE0(1,07)->S00F0_0(02,2,02)	OK	S00F0_0(00,2,00)->FPC00FE0(1,07)	OK
FPC00FE1(1,12)->S00F0_0(01,1,01)	OK	S00F0_0(00,3,00)->FPC00FE1(1,06)	OK
FPC00FE1(1,06)->S00F0_0(01,2,01)	OK	S00F0_0(01,1,01)->FPC00FE1(1,12)	OK
FPC00FE1(1,10)->S00F0_0(01,3,01)	OK	S00F0_0(01,3,01)->FPC00FE1(1,10)	OK
FPC00FE2(1,16)->S00F0_0(00,4,00)	OK	S00F0_0(00,4,00)->FPC00FE2(1,08)	OK
FPC00FE2(1,08)->S00F0_0(01,6,01)	OK	S00F0_0(00,5,00)->FPC00FE2(1,16)	OK
FPC00FE2(1,06)->S00F0_0(01,7,01)	OK	S00F0_0(00,6,00)->FPC00FE2(1,06)	OK
FPC05FE0(1,07)->S00F0_0(05,5,05)	OK	S00F0_0(05,2,05)->FPC05FE0(1,17)	OK
FPC05FE0(1,09)->S00F0_0(05,7,05)	OK	S00F0_0(06,4,06)->FPC05FE0(1,07)	OK
FPC05FE0(1,17)->S00F0_0(09,3,09)	OK	S00F0_0(06,7,06)->FPC05FE0(1,09)	OK
FPC05FE1(1,06)->S00F0_0(06,1,06)	OK	S00F0_0(06,0,06)->FPC05FE1(1,06)	OK
FPC05FE1(1,08)->S00F0_0(06,3,06)	OK	S00F0_0(06,2,06)->FPC05FE1(1,08)	OK
FPC05FE1(1,16)->S00F0_0(09,7,09)	OK	S00F0_0(09,6,09)->FPC05FE1(1,16)	OK
FPC05FE2(1,10)->S00F0_0(09,0,09)	OK	S00F0_0(05,0,05)->FPC05FE2(1,06)	OK
FPC05FE2(1,06)->S00F0_0(09,1,09)	OK	S00F0_0(05,1,05)->FPC05FE2(1,10)	OK

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FPC05FE2 (1,12)->S00F0_0(09,2,09) OK      S00F0_0(05,3,05)->FPC05FE2(1,12) OK
FPC05FE3 (1,11)->S00F0_0(09,4,09) OK      S00F0_0(09,4,09)->FPC05FE3(1,07) OK
FPC05FE3 (1,07)->S00F0_0(09,5,09) OK      S00F0_0(09,5,09)->FPC05FE3(1,11) OK
FPC05FE3 (1,13)->S00F0_0(09,6,09) OK      S00F0_0(09,7,09)->FPC05FE3(1,13) OK
FPC05FE4 (1,16)->S00F0_0(05,3,05) OK      S00F0_0(05,4,05)->FPC05FE4(1,06) OK
FPC05FE4 (1,06)->S00F0_0(06,5,06) OK      S00F0_0(05,6,05)->FPC05FE4(1,08) OK
FPC05FE4 (1,08)->S00F0_0(06,7,06) OK      S00F0_0(09,2,09)->FPC05FE4(1,16) OK
FPC05FE5 (1,10)->S00F0_0(05,0,05) OK      S00F0_0(09,0,09)->FPC05FE5(1,06) OK
FPC05FE5 (1,06)->S00F0_0(05,1,05) OK      S00F0_0(09,1,09)->FPC05FE5(1,10) OK
FPC05FE5 (1,12)->S00F0_0(05,2,05) OK      S00F0_0(09,3,09)->FPC05FE5(1,12) OK
FPC06FE0 (1,17)->S00F0_0(05,6,05) OK      S00F0_0(06,6,06)->FPC06FE0(1,17) OK
FPC06FE0 (1,07)->S00F0_0(07,0,07) OK      S00F0_0(08,0,08)->FPC06FE0(1,07) OK
FPC06FE0 (1,09)->S00F0_0(07,2,07) OK      S00F0_0(08,2,08)->FPC06FE0(1,09) OK
FPC06FE1 (1,16)->S00F0_0(06,2,06) OK      S00F0_0(06,3,06)->FPC06FE1(1,16) OK
FPC06FE1 (1,06)->S00F0_0(07,4,07) OK      S00F0_0(07,4,07)->FPC06FE1(1,06) OK
FPC06FE1 (1,08)->S00F0_0(07,6,07) OK      S00F0_0(07,6,07)->FPC06FE1(1,08) OK
FPC06FE2 (1,06)->S00F0_0(05,4,05) OK      S00F0_0(06,5,06)->FPC06FE2(1,06) OK
FPC06FE2 (1,10)->S00F0_0(07,1,07) OK      S00F0_0(08,1,08)->FPC06FE2(1,10) OK
FPC06FE2 (1,12)->S00F0_0(07,3,07) OK      S00F0_0(08,3,08)->FPC06FE2(1,12) OK
FPC06FE3 (1,07)->S00F0_0(06,0,06) OK      S00F0_0(06,1,06)->FPC06FE3(1,07) OK
FPC06FE3 (1,11)->S00F0_0(07,5,07) OK      S00F0_0(07,5,07)->FPC06FE3(1,11) OK
FPC06FE3 (1,13)->S00F0_0(07,7,07) OK      S00F0_0(07,7,07)->FPC06FE3(1,13) OK
FPC06FE4 (1,16)->S00F0_0(06,6,06) OK      S00F0_0(05,7,05)->FPC06FE4(1,16) OK
FPC06FE4 (1,06)->S00F0_0(08,0,08) OK      S00F0_0(07,0,07)->FPC06FE4(1,06) OK
FPC06FE4 (1,08)->S00F0_0(08,2,08) OK      S00F0_0(07,2,07)->FPC06FE4(1,08) OK
FPC06FE5 (1,06)->S00F0_0(06,4,06) OK      S00F0_0(05,5,05)->FPC06FE5(1,06) OK
FPC06FE5 (1,10)->S00F0_0(08,1,08) OK      S00F0_0(07,1,07)->FPC06FE5(1,10) OK
FPC06FE5 (1,12)->S00F0_0(08,3,08) OK      S00F0_0(07,3,07)->FPC06FE5(1,12) OK

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SIB 0 FCHIP 1 FCORE 0 :

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                In-links                State                Out-links                State
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FPC00FE0(1,15)->S00F1_0(15,4,15) OK      S00F1_0(16,4,16)->FPC00FE0(1,15) OK
FPC00FE0(1,11)->S00F1_0(17,4,17) OK      S00F1_0(18,4,18)->FPC00FE0(1,11) OK
FPC00FE0(1,13)->S00F1_0(17,6,17) OK      S00F1_0(18,6,18)->FPC00FE0(1,13) OK
FPC00FE1(1,08)->S00F1_0(15,6,15) OK      S00F1_0(16,6,16)->FPC00FE1(1,08) OK
FPC00FE1(1,14)->S00F1_0(17,5,17) OK      S00F1_0(18,5,18)->FPC00FE1(1,14) OK
FPC00FE1(1,16)->S00F1_0(17,7,17) OK      S00F1_0(18,7,18)->FPC00FE1(1,16) OK
FPC00FE2(1,14)->S00F1_0(16,0,16) OK      S00F1_0(16,0,16)->FPC00FE2(1,14) OK
FPC00FE2(1,10)->S00F1_0(18,0,18) OK      S00F1_0(18,0,18)->FPC00FE2(1,10) OK
FPC00FE2(1,12)->S00F1_0(18,2,18) OK      S00F1_0(18,2,18)->FPC00FE2(1,12) OK
FPC05FE0(1,11)->S00F1_0(02,0,02) OK      S00F1_0(02,1,02)->FPC05FE0(1,13) OK

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FPC05FE0 (1,13)->S00F1_0(02,2,02) OK      S00F1_0(02,3,02)->FPC05FE0(1,11) OK
FPC05FE0 (1,15)->S00F1_0(04,7,04) OK      S00F1_0(03,6,03)->FPC05FE0(1,15) OK
FPC05FE1 (1,10)->S00F1_0(02,4,02) OK      S00F1_0(02,5,02)->FPC05FE1(1,12) OK
FPC05FE1 (1,12)->S00F1_0(02,6,02) OK      S00F1_0(02,7,02)->FPC05FE1(1,10) OK
FPC05FE1 (1,14)->S00F1_0(04,3,04) OK      S00F1_0(04,2,04)->FPC05FE1(1,14) OK
FPC05FE2 (1,16)->S00F1_0(04,4,04) OK      S00F1_0(03,4,03)->FPC05FE2(1,08) OK
FPC05FE2 (1,08)->S00F1_0(04,5,04) OK      S00F1_0(03,5,03)->FPC05FE2(1,16) OK
FPC05FE2 (1,14)->S00F1_0(04,6,04) OK      S00F1_0(03,7,03)->FPC05FE2(1,14) OK
FPC05FE3 (1,17)->S00F1_0(04,0,04) OK      S00F1_0(04,0,04)->FPC05FE3(1,09) OK
FPC05FE3 (1,09)->S00F1_0(04,1,04) OK      S00F1_0(04,1,04)->FPC05FE3(1,17) OK
FPC05FE3 (1,15)->S00F1_0(04,2,04) OK      S00F1_0(04,3,04)->FPC05FE3(1,15) OK
FPC05FE4 (1,10)->S00F1_0(03,0,03) OK      S00F1_0(03,1,03)->FPC05FE4(1,12) OK
FPC05FE4 (1,12)->S00F1_0(03,2,03) OK      S00F1_0(03,3,03)->FPC05FE4(1,10) OK
FPC05FE4 (1,14)->S00F1_0(03,7,03) OK      S00F1_0(04,6,04)->FPC05FE4(1,14) OK
FPC05FE5 (1,16)->S00F1_0(03,4,03) OK      S00F1_0(04,4,04)->FPC05FE5(1,08) OK
FPC05FE5 (1,08)->S00F1_0(03,5,03) OK      S00F1_0(04,5,04)->FPC05FE5(1,16) OK
FPC05FE5 (1,14)->S00F1_0(03,6,03) OK      S00F1_0(04,7,04)->FPC05FE5(1,14) OK
FPC06FE0 (1,15)->S00F1_0(01,0,01) OK      S00F1_0(00,3,00)->FPC06FE0(1,15) OK
FPC06FE0 (1,11)->S00F1_0(02,1,02) OK      S00F1_0(01,0,01)->FPC06FE0(1,13) OK
FPC06FE0 (1,13)->S00F1_0(02,3,02) OK      S00F1_0(01,2,01)->FPC06FE0(1,11) OK
FPC06FE1 (1,14)->S00F1_0(01,4,01) OK      S00F1_0(00,7,00)->FPC06FE1(1,14) OK
FPC06FE1 (1,10)->S00F1_0(02,5,02) OK      S00F1_0(01,4,01)->FPC06FE1(1,12) OK
FPC06FE1 (1,12)->S00F1_0(02,7,02) OK      S00F1_0(01,6,01)->FPC06FE1(1,10) OK
FPC06FE2 (1,08)->S00F1_0(01,2,01) OK      S00F1_0(00,1,00)->FPC06FE2(1,08) OK
FPC06FE2 (1,16)->S00F1_0(15,0,15) OK      S00F1_0(01,5,01)->FPC06FE2(1,16) OK
FPC06FE2 (1,14)->S00F1_0(15,2,15) OK      S00F1_0(01,7,01)->FPC06FE2(1,14) OK
FPC06FE3 (1,09)->S00F1_0(01,6,01) OK      S00F1_0(00,5,00)->FPC06FE3(1,09) OK
FPC06FE3 (1,17)->S00F1_0(19,4,19) OK      S00F1_0(02,4,02)->FPC06FE3(1,17) OK
FPC06FE3 (1,15)->S00F1_0(19,6,19) OK      S00F1_0(02,6,02)->FPC06FE3(1,15) OK
FPC06FE4 (1,14)->S00F1_0(01,7,01) OK      S00F1_0(01,3,01)->FPC06FE4(1,14) OK
FPC06FE4 (1,10)->S00F1_0(03,1,03) OK      S00F1_0(02,0,02)->FPC06FE4(1,12) OK
FPC06FE4 (1,12)->S00F1_0(03,3,03) OK      S00F1_0(02,2,02)->FPC06FE4(1,10) OK
FPC06FE5 (1,08)->S00F1_0(01,5,01) OK      S00F1_0(01,1,01)->FPC06FE5(1,08) OK
FPC06FE5 (1,16)->S00F1_0(19,0,19) OK      S00F1_0(03,0,03)->FPC06FE5(1,16) OK
FPC06FE5 (1,14)->S00F1_0(19,2,19) OK      S00F1_0(03,2,03)->FPC06FE5(1,14) OK

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SIB 1 FCHIP 0 FCORE 0 :

In-links	State	Out-links	State
FPC00FE0 (1,05)->S01F0_0(01,0,01)	OK	S01F0_0(00,0,00)->FPC00FE0(0,01)	OK
FPC00FE0 (0,01)->S01F0_0(02,0,02)	OK	S01F0_0(00,1,00)->FPC00FE0(1,05)	OK
FPC00FE0 (0,07)->S01F0_0(02,2,02)	OK	S01F0_0(00,2,00)->FPC00FE0(0,07)	OK

FPC00FE1 (1,04)->S01F0_0(00,4,00) OK S01F0_0(00,4,00)->FPC00FE1(0,00) OK
FPC00FE1 (0,00)->S01F0_0(01,6,01) OK S01F0_0(00,5,00)->FPC00FE1(1,04) OK
FPC00FE1 (0,06)->S01F0_0(01,7,01) OK S01F0_0(00,6,00)->FPC00FE1(0,06) OK
FPC00FE2 (1,01)->S01F0_0(01,1,01) OK S01F0_0(00,3,00)->FPC00FE2(0,06) OK
FPC00FE2 (0,06)->S01F0_0(01,2,01) OK S01F0_0(01,1,01)->FPC00FE2(1,01) OK
FPC00FE2 (1,00)->S01F0_0(01,3,01) OK S01F0_0(01,3,01)->FPC00FE2(1,00) OK
FPC05FE0 (0,07)->S01F0_0(05,5,05) OK S01F0_0(05,2,05)->FPC05FE0(1,05) OK
FPC05FE0 (0,01)->S01F0_0(05,7,05) OK S01F0_0(06,4,06)->FPC05FE0(0,07) OK
FPC05FE0 (1,05)->S01F0_0(09,3,09) OK S01F0_0(06,7,06)->FPC05FE0(0,01) OK
FPC05FE1 (1,00)->S01F0_0(09,0,09) OK S01F0_0(05,0,05)->FPC05FE1(0,06) OK
FPC05FE1 (0,06)->S01F0_0(09,1,09) OK S01F0_0(05,1,05)->FPC05FE1(1,00) OK
FPC05FE1 (1,01)->S01F0_0(09,2,09) OK S01F0_0(05,3,05)->FPC05FE1(1,01) OK
FPC05FE2 (0,06)->S01F0_0(06,1,06) OK S01F0_0(06,0,06)->FPC05FE2(0,06) OK
FPC05FE2 (0,00)->S01F0_0(06,3,06) OK S01F0_0(06,2,06)->FPC05FE2(0,00) OK
FPC05FE2 (1,04)->S01F0_0(09,7,09) OK S01F0_0(09,6,09)->FPC05FE2(1,04) OK
FPC05FE3 (1,00)->S01F0_0(09,4,09) OK S01F0_0(09,4,09)->FPC05FE3(0,06) OK
FPC05FE3 (0,06)->S01F0_0(09,5,09) OK S01F0_0(09,5,09)->FPC05FE3(1,00) OK
FPC05FE3 (1,01)->S01F0_0(09,6,09) OK S01F0_0(09,7,09)->FPC05FE3(1,01) OK
FPC05FE4 (0,04)->S01F0_0(05,3,05) OK S01F0_0(05,4,05)->FPC05FE4(0,14) OK
FPC05FE4 (0,14)->S01F0_0(06,5,06) OK S01F0_0(05,6,05)->FPC05FE4(0,16) OK
FPC05FE4 (0,16)->S01F0_0(06,7,06) OK S01F0_0(09,2,09)->FPC05FE4(0,04) OK
FPC05FE5 (1,00)->S01F0_0(05,0,05) OK S01F0_0(09,0,09)->FPC05FE5(0,06) OK
FPC05FE5 (0,06)->S01F0_0(05,1,05) OK S01F0_0(09,1,09)->FPC05FE5(1,00) OK
FPC05FE5 (1,01)->S01F0_0(05,2,05) OK S01F0_0(09,3,09)->FPC05FE5(1,01) OK
FPC06FE0 (1,05)->S01F0_0(05,6,05) OK S01F0_0(06,6,06)->FPC06FE0(1,05) OK
FPC06FE0 (0,07)->S01F0_0(07,0,07) OK S01F0_0(08,0,08)->FPC06FE0(0,07) OK
FPC06FE0 (0,01)->S01F0_0(07,2,07) OK S01F0_0(08,2,08)->FPC06FE0(0,01) OK
FPC06FE1 (0,06)->S01F0_0(05,4,05) OK S01F0_0(06,5,06)->FPC06FE1(0,06) OK
FPC06FE1 (1,00)->S01F0_0(07,1,07) OK S01F0_0(08,1,08)->FPC06FE1(1,00) OK
FPC06FE1 (1,01)->S01F0_0(07,3,07) OK S01F0_0(08,3,08)->FPC06FE1(1,01) OK
FPC06FE2 (1,04)->S01F0_0(06,2,06) OK S01F0_0(06,3,06)->FPC06FE2(1,04) OK
FPC06FE2 (0,06)->S01F0_0(07,4,07) OK S01F0_0(07,4,07)->FPC06FE2(0,06) OK
FPC06FE2 (0,00)->S01F0_0(07,6,07) OK S01F0_0(07,6,07)->FPC06FE2(0,00) OK
FPC06FE3 (0,06)->S01F0_0(06,0,06) OK S01F0_0(06,1,06)->FPC06FE3(0,06) OK
FPC06FE3 (1,00)->S01F0_0(07,5,07) OK S01F0_0(07,5,07)->FPC06FE3(1,00) OK
FPC06FE3 (1,01)->S01F0_0(07,7,07) OK S01F0_0(07,7,07)->FPC06FE3(1,01) OK
FPC06FE4 (0,04)->S01F0_0(06,6,06) OK S01F0_0(05,7,05)->FPC06FE4(0,04) OK
FPC06FE4 (0,14)->S01F0_0(08,0,08) OK S01F0_0(07,0,07)->FPC06FE4(0,14) OK
FPC06FE4 (0,16)->S01F0_0(08,2,08) OK S01F0_0(07,2,07)->FPC06FE4(0,16) OK
FPC06FE5 (0,06)->S01F0_0(06,4,06) OK S01F0_0(05,5,05)->FPC06FE5(0,06) OK
FPC06FE5 (1,00)->S01F0_0(08,1,08) OK S01F0_0(07,1,07)->FPC06FE5(1,00) OK
FPC06FE5 (1,01)->S01F0_0(08,3,08) OK S01F0_0(07,3,07)->FPC06FE5(1,01) OK

SIB 1 FCHIP 1 FCORE 0 :

```

-----
                In-links                State                Out-links                State
-----
FPC00FE0(1,03)->S01F1_0(15,4,15) OK      S01F1_0(16,4,16)->FPC00FE0(1,03) OK
FPC00FE0(0,02)->S01F1_0(17,4,17) OK      S01F1_0(18,4,18)->FPC00FE0(0,02) OK
FPC00FE0(0,03)->S01F1_0(17,6,17) OK      S01F1_0(18,6,18)->FPC00FE0(0,03) OK
FPC00FE1(1,02)->S01F1_0(16,0,16) OK      S01F1_0(16,0,16)->FPC00FE1(1,02) OK
FPC00FE1(1,00)->S01F1_0(18,0,18) OK      S01F1_0(18,0,18)->FPC00FE1(1,00) OK
FPC00FE1(1,01)->S01F1_0(18,2,18) OK      S01F1_0(18,2,18)->FPC00FE1(1,01) OK
FPC00FE2(0,00)->S01F1_0(15,6,15) OK      S01F1_0(16,6,16)->FPC00FE2(0,00) OK
FPC00FE2(1,02)->S01F1_0(17,5,17) OK      S01F1_0(18,5,18)->FPC00FE2(1,02) OK
FPC00FE2(1,04)->S01F1_0(17,7,17) OK      S01F1_0(18,7,18)->FPC00FE2(1,04) OK
FPC05FE0(0,02)->S01F1_0(02,0,02) OK      S01F1_0(02,1,02)->FPC05FE0(0,03) OK
FPC05FE0(0,03)->S01F1_0(02,2,02) OK      S01F1_0(02,3,02)->FPC05FE0(0,02) OK
FPC05FE0(1,03)->S01F1_0(04,7,04) OK      S01F1_0(03,6,03)->FPC05FE0(1,03) OK
FPC05FE1(1,04)->S01F1_0(04,4,04) OK      S01F1_0(03,4,03)->FPC05FE1(0,00) OK
FPC05FE1(0,00)->S01F1_0(04,5,04) OK      S01F1_0(03,5,03)->FPC05FE1(1,04) OK
FPC05FE1(1,02)->S01F1_0(04,6,04) OK      S01F1_0(03,7,03)->FPC05FE1(1,02) OK
FPC05FE2(1,00)->S01F1_0(02,4,02) OK      S01F1_0(02,5,02)->FPC05FE2(1,01) OK
FPC05FE2(1,01)->S01F1_0(02,6,02) OK      S01F1_0(02,7,02)->FPC05FE2(1,00) OK
FPC05FE2(1,02)->S01F1_0(04,3,04) OK      S01F1_0(04,2,04)->FPC05FE2(1,02) OK
FPC05FE3(1,04)->S01F1_0(04,0,04) OK      S01F1_0(04,0,04)->FPC05FE3(0,00) OK
FPC05FE3(0,00)->S01F1_0(04,1,04) OK      S01F1_0(04,1,04)->FPC05FE3(1,04) OK
FPC05FE3(1,02)->S01F1_0(04,2,04) OK      S01F1_0(04,3,04)->FPC05FE3(1,02) OK
FPC05FE4(0,10)->S01F1_0(03,0,03) OK      S01F1_0(03,1,03)->FPC05FE4(0,12) OK
FPC05FE4(0,12)->S01F1_0(03,2,03) OK      S01F1_0(03,3,03)->FPC05FE4(0,10) OK
FPC05FE4(0,08)->S01F1_0(03,7,03) OK      S01F1_0(04,6,04)->FPC05FE4(0,08) OK
FPC05FE5(1,04)->S01F1_0(03,4,03) OK      S01F1_0(04,4,04)->FPC05FE5(0,00) OK
FPC05FE5(0,00)->S01F1_0(03,5,03) OK      S01F1_0(04,5,04)->FPC05FE5(1,04) OK
FPC05FE5(1,02)->S01F1_0(03,6,03) OK      S01F1_0(04,7,04)->FPC05FE5(1,02) OK
FPC06FE0(1,03)->S01F1_0(01,0,01) OK      S01F1_0(00,3,00)->FPC06FE0(1,03) OK
FPC06FE0(0,02)->S01F1_0(02,1,02) OK      S01F1_0(01,0,01)->FPC06FE0(0,03) OK
FPC06FE0(0,03)->S01F1_0(02,3,02) OK      S01F1_0(01,2,01)->FPC06FE0(0,02) OK
FPC06FE1(0,00)->S01F1_0(01,2,01) OK      S01F1_0(00,1,00)->FPC06FE1(0,00) OK
FPC06FE1(1,04)->S01F1_0(15,0,15) OK      S01F1_0(01,5,01)->FPC06FE1(1,04) OK
FPC06FE1(1,02)->S01F1_0(15,2,15) OK      S01F1_0(01,7,01)->FPC06FE1(1,02) OK
FPC06FE2(1,02)->S01F1_0(01,4,01) OK      S01F1_0(00,7,00)->FPC06FE2(1,02) OK
FPC06FE2(1,00)->S01F1_0(02,5,02) OK      S01F1_0(01,4,01)->FPC06FE2(1,01) OK
FPC06FE2(1,01)->S01F1_0(02,7,02) OK      S01F1_0(01,6,01)->FPC06FE2(1,00) OK
FPC06FE3(0,00)->S01F1_0(01,6,01) OK      S01F1_0(00,5,00)->FPC06FE3(0,00) OK
FPC06FE3(1,04)->S01F1_0(19,4,19) OK      S01F1_0(02,4,02)->FPC06FE3(1,04) OK
FPC06FE3(1,02)->S01F1_0(19,6,19) OK      S01F1_0(02,6,02)->FPC06FE3(1,02) OK

```

```

FPC06FE4(0,08)->S01F1_0(01,7,01) OK      S01F1_0(01,3,01)->FPC06FE4(0,08) OK
FPC06FE4(0,10)->S01F1_0(03,1,03) OK      S01F1_0(02,0,02)->FPC06FE4(0,12) OK
FPC06FE4(0,12)->S01F1_0(03,3,03) OK      S01F1_0(02,2,02)->FPC06FE4(0,10) OK
FPC06FE5(0,00)->S01F1_0(01,5,01) OK      S01F1_0(01,1,01)->FPC06FE5(0,00) OK
FPC06FE5(1,04)->S01F1_0(19,0,19) OK      S01F1_0(03,0,03)->FPC06FE5(1,04) OK
FPC06FE5(1,02)->S01F1_0(19,2,19) OK      S01F1_0(03,2,03)->FPC06FE5(1,02) OK

```

```

SIB 2
Not Online

```

```

SIB 3
Not Online

```

```

SIB 4
Not Online

```

```

SIB 5
Not Online

```

show chassis fabric topology (QFX10008 Switch)

```

user@host> show chassis fabric topology
  In-link  : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
             SIB# ASIC#_FCORE# (RX port#, RX sub-chn#, RX inst#)

  Out-link : SIB# ASIC#_FCORE# (TX port#, TX sub-chn#, TX inst#) ->
             FPC# FE# ASIC# (RX inst#, RX sub-chnl #)
SIB 0 FCHIP 0 FCORE 0 :
-----
              In-links                State                Out-links                State
-----
FPC00FE0(1,17)->S00F0_0(01,0,01) OK      S00F0_0(00,0,00)->FPC00FE0(1,09) OK
FPC00FE0(1,09)->S00F0_0(02,0,02) OK      S00F0_0(00,1,00)->FPC00FE0(1,17) OK
FPC00FE0(1,07)->S00F0_0(02,2,02) OK      S00F0_0(00,2,00)->FPC00FE0(1,07) OK
FPC00FE1(1,12)->S00F0_0(01,1,01) OK      S00F0_0(00,3,00)->FPC00FE1(1,06) OK
FPC00FE1(1,06)->S00F0_0(01,2,01) OK      S00F0_0(01,1,01)->FPC00FE1(1,12) OK
FPC00FE1(1,10)->S00F0_0(01,3,01) OK      S00F0_0(01,3,01)->FPC00FE1(1,10) OK
FPC00FE2(1,16)->S00F0_0(00,4,00) OK      S00F0_0(00,4,00)->FPC00FE2(1,08) OK
FPC00FE2(1,08)->S00F0_0(01,6,01) OK      S00F0_0(00,5,00)->FPC00FE2(1,16) OK
FPC00FE2(1,06)->S00F0_0(01,7,01) OK      S00F0_0(00,6,00)->FPC00FE2(1,06) OK

```

```

SIB 0 FCHIP 1 FCORE 0 :
-----
                In-links                State                Out-links                State
-----
FPC00FE0 (1,15)->S00F1_0(15,4,15) OK      S00F1_0(16,4,16)->FPC00FE0(1,15) OK
FPC00FE0 (1,11)->S00F1_0(17,4,17) OK      S00F1_0(18,4,18)->FPC00FE0(1,11) OK
FPC00FE0 (1,13)->S00F1_0(17,6,17) OK      S00F1_0(18,6,18)->FPC00FE0(1,13) OK
FPC00FE1 (1,08)->S00F1_0(15,6,15) OK      S00F1_0(16,6,16)->FPC00FE1(1,08) OK
FPC00FE1 (1,14)->S00F1_0(17,5,17) OK      S00F1_0(18,5,18)->FPC00FE1(1,14) OK
FPC00FE1 (1,16)->S00F1_0(17,7,17) OK      S00F1_0(18,7,18)->FPC00FE1(1,16) OK
FPC00FE2 (1,14)->S00F1_0(16,0,16) OK      S00F1_0(16,0,16)->FPC00FE2(1,14) OK
FPC00FE2 (1,10)->S00F1_0(18,0,18) OK      S00F1_0(18,0,18)->FPC00FE2(1,10) OK
FPC00FE2 (1,12)->S00F1_0(18,2,18) OK      S00F1_0(18,2,18)->FPC00FE2(1,12) OK

SIB 1
Not Online

SIB 2
Not Online

SIB 3
Not Online

SIB 4
Not Online

SIB 5
Not Online

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

| *Layer 2 Wholesale Network Topology Overview*

show chassis fabric unreachable-destinations

IN THIS SECTION

- [Syntax | 1278](#)
- [Description | 1278](#)
- [Required Privilege Level | 1278](#)
- [Output Fields | 1278](#)
- [Sample Output | 1279](#)
- [Release Information | 1281](#)

Syntax

```
show chassis fabric unreachable-destinations
```

Description

(M320 and T Series routers only) Display the list of destinations that have transitioned from a reachable state to an unreachable state.

Required Privilege Level

view

Output Fields

The table lists the output fields for the **show chassis fabric unreachable-destinations** command. Output fields are listed in the approximate order in which they appear.

Table 68: show chassis fabric unreachable-destinations Output Fields

Field Name	Field Description
Flexible PIC Concentrator (FPC) number	Source FPC number where unreachable destinations are present.
Packet Forwarding Engine number	Source Packet Forwarding Engine number where unreachable destinations are present.
Destination error on Packet Forwarding Engine	List of destination FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> that are not reachable from the source FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> over the fabric.

Sample Output

show chassis fabric unreachable-destinations(T640 and T1600 routers)

```

user@host> show chassis fabric unreachable-destinations
Fabric management unreachable destinations:
FPC 2
  PFE 0
    Destination error on PFES      2/0 3/0 3/1 7/0
FPC 3
  PFE 0
    Destination error on PFES      2/0 3/0 3/1 7/0
FPC 3
  PFE 1
    Destination error on PFES      2/0 3/0 3/1 7/0
FPC 7
  PFE 0
    Destination error on PFES      2/0 3/0 3/1 7/0

```

show chassis fabric unreachable-destinations(TX Matrix routers)

```
user@host> show chassis fabric unreachable-destinations
Fabric management unreachable destinations:
FPC 10
  PFE 0
    Destination error on PFEs    10/0 16/0 16/1 17/0 17/1 19/0 20/1 21/1 22/1
24/0
    26/0 27/0 27/1 28/1 29/1 31/1
FPC 12
  PFE 0
    Destination error on PFEs    12/0 16/0 16/1 17/0 17/1 19/0 20/1 21/1 22/1
24/0
    26/0 27/0 27/1 28/1 29/1 31/1
FPC 16
  PFE 0
    Destination error on PFEs    10/0 12/0
FPC 16
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 17
  PFE 0
    Destination error on PFEs    10/0 12/0
FPC 17
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 19
  PFE 0
    Destination error on PFEs    10/0 12/0
FPC 20
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 21
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 22
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 24
  PFE 0
    Destination error on PFEs    10/0 12/0
FPC 26
```



```

PFE 0
  Destination error on PFEs    10/0 12/0
FPC 27
  PFE 0
    Destination error on PFEs    10/0 12/0
FPC 27
  PFE 1
    Destination error on PFEs    10/0
FPC 28
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 29
  PFE 1
    Destination error on PFEs    10/0 12/0
FPC 31
  PFE 1
    Destination error on PFEs    10/0 12/0

```

Release Information

Command introduced before Junos OS Release 11.4.

RELATED DOCUMENTATION

[show chassis fabric reachability](#) | [1197](#)

show chassis fan

IN THIS SECTION

- [Syntax](#) | [1282](#)
- [Syntax \(MX Series Routers\)](#) | [1282](#)

- [Syntax \(MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform\) | 1282](#)
- [Syntax \(QFX Series\) | 1283](#)
- [Syntax \(TX Matrix Router\) | 1283](#)
- [Syntax \(TX Matrix Plus Router\) | 1283](#)
- [Description | 1283](#)
- [Options | 1283](#)
- [Required Privilege Level | 1284](#)
- [Output Fields | 1285](#)
- [Sample Output | 1286](#)
- [Release Information | 1300](#)

Syntax

```
show chassis fan
```

Syntax (MX Series Routers)

```
show chassis fan  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform)

```
show chassis fan  
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis fan
<interconnect-device name>
```

Syntax (TX Matrix Router)

```
show chassis fan
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis fan
<lcc number | sfc number>
```

Description

(T Series routers, TX Matrix routers, TX Matrix Plus routers, M120 routers, M320 routers, MX104 routers, MX2010 routers, MX2020 routers, MX2008 routers, MX Series 5G Universal Routing Platforms, QFX3008-I Interconnect devices, QFX Series, OCX Series, EX Series switches, and PTX Series Packet Transport Routers only) Show information about the fan tray and fans.

Options

- | | |
|--------------------|---|
| all-members | (MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration. |
| local | (MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member. |

member <i>member-id</i>	(MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace <i>member-id</i> variable with a value 0 or 1.
interconnect-device <i>name</i>	(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.
lcc <i>number</i>	<p>(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display information about the fan tray and fans for the specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display information about the fan tray and fans for the specified router (line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]	(Junos Fusion only) (Optional) Display information about the fan tray and fans for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.
scc	(TX Matrix routers only) (Optional) Display information about the fan tray and fans for the TX Matrix router (switch-card chassis).
sfc <i>number</i>	(TX Matrix Plus routers only) (Optional) Display information about the fan tray and fans for the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with 0.

Required Privilege Level

view

Output Fields

Table 69 on page 1285 lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 69: show chassis fan Output Fields

Field Name	Field Description
Item	Fan item identifier.
Status	Status of the fan: <ul style="list-style-type: none"> • OK—Fan is running properly and within the normal range. • Check—Fan is in Check state because of some fault or alarm condition.
RPM	(T Series routers, TX Matrix routers, TX Matrix Plus routers, MX Series 5G Universal Routing Platforms, QFX3108 Interconnect devices, and EX Series switches only) Fan speed in revolutions per minute (RPM).
% RPM	(PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used.

Table 69: show chassis fan Output Fields (Continued)

Field Name	Field Description
Measurement	<p>(T Series routers, TX Matrix routers, TX Matrix Plus routers, MX Series 5G Universal Routing Platforms, QFX3108 Interconnect devices, and EX Series switches only) Fan speed status based on different chassis cooling requirements:</p> <ul style="list-style-type: none"> • Spinning at high speed • Spinning at intermediate speed • Spinning at normal speed • Spinning at low speed (except EX Series switches) <p>(PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Fan speed in revolutions per minute (RPM) for each fan in the fan tray.</p>

Sample Output

show chassis fan

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Tray Fan 1	OK	3790	Spinning at normal speed
Top Tray Fan 2	OK	3769	Spinning at normal speed
Top Tray Fan 3	OK	3769	Spinning at normal speed
Top Tray Fan 4	OK	3790	Spinning at normal speed
Top Tray Fan 5	OK	3790	Spinning at normal speed
Top Tray Fan 6	OK	3769	Spinning at normal speed
Top Tray Fan 7	OK	3790	Spinning at normal speed
Top Tray Fan 8	OK	3769	Spinning at normal speed
Top Tray Fan 9	OK	3769	Spinning at normal speed
Top Tray Fan 10	OK	3790	Spinning at normal speed
Top Tray Fan 11	OK	3790	Spinning at normal speed
Top Tray Fan 12	OK	3769	Spinning at normal speed

Bottom Tray Fan 1	OK	2880	Spinning at normal speed
Bottom Tray Fan 2	OK	2912	Spinning at normal speed
Bottom Tray Fan 3	OK	2928	Spinning at normal speed
Bottom Tray Fan 4	OK	2896	Spinning at normal speed
Bottom Tray Fan 5	OK	2896	Spinning at normal speed
Bottom Tray Fan 6	OK	2928	Spinning at normal speed

show chassis fan (QFabric Systems)

```
user@host> show chassis fan interconnect-device interconnect1
```

Item	Status	RPM	Measurement
TFT 0 Fan 0	OK	2849	Spinning at normal speed
TFT 0 Fan 1	OK	2821	Spinning at normal speed
TFT 0 Fan 2	OK	2735	Spinning at normal speed
TFT 0 Fan 3	OK	2815	Spinning at normal speed
TFT 0 Fan 4	OK	2828	Spinning at normal speed
TFT 0 Fan 5	OK	2863	Spinning at normal speed
BFT 1 Fan 0	OK	2941	Spinning at normal speed
BFT 1 Fan 1	OK	3008	Spinning at normal speed
BFT 1 Fan 2	OK	3073	Spinning at normal speed
BFT 1 Fan 3	OK	2925	Spinning at normal speed
BFT 1 Fan 4	OK	2863	Spinning at normal speed
BFT 1 Fan 5	OK	2933	Spinning at normal speed
SFT 0 Fan 0 Rotor 0	OK	15472	Spinning at normal speed
SFT 0 Fan 0 Rotor 1	OK	14477	Spinning at normal speed
SFT 0 Fan 1 Rotor 0	OK	15561	Spinning at normal speed
SFT 0 Fan 1 Rotor 1	OK	14210	Spinning at normal speed
SFT 0 Fan 2 Rotor 0	OK	16167	Spinning at normal speed
SFT 0 Fan 2 Rotor 1	OK	14248	Spinning at normal speed
SFT 0 Fan 3 Rotor 0	OK	16463	Spinning at normal speed
SFT 0 Fan 3 Rotor 1	OK	14099	Spinning at normal speed
SFT 1 Fan 0 Rotor 0	OK	15083	Spinning at normal speed
SFT 1 Fan 0 Rotor 1	OK	13533	Spinning at normal speed
SFT 1 Fan 1 Rotor 0	OK	16071	Spinning at normal speed
SFT 1 Fan 1 Rotor 1	OK	14400	Spinning at normal speed
SFT 1 Fan 2 Rotor 0	OK	15517	Spinning at normal speed
SFT 1 Fan 2 Rotor 1	OK	14210	Spinning at normal speed
SFT 1 Fan 3 Rotor 0	OK	16413	Spinning at normal speed
SFT 1 Fan 3 Rotor 1	OK	14400	Spinning at normal speed
SFT 2 Fan 0 Rotor 0	OK	15297	Spinning at normal speed

SFT 2	Fan 0	Rotor 1	OK	14634	Spinning at normal speed
SFT 2	Fan 1	Rotor 0	OK	15561	Spinning at normal speed
SFT 2	Fan 1	Rotor 1	OK	14285	Spinning at normal speed
SFT 2	Fan 2	Rotor 0	OK	15835	Spinning at normal speed
SFT 2	Fan 2	Rotor 1	OK	14400	Spinning at normal speed
SFT 2	Fan 3	Rotor 0	OK	15789	Spinning at normal speed
SFT 2	Fan 3	Rotor 1	OK	14323	Spinning at normal speed
SFT 3	Fan 0	Rotor 0	OK	16314	Spinning at normal speed
SFT 3	Fan 0	Rotor 1	OK	14876	Spinning at normal speed
SFT 3	Fan 1	Rotor 0	OK	15835	Spinning at normal speed
SFT 3	Fan 1	Rotor 1	OK	14323	Spinning at normal speed
SFT 3	Fan 2	Rotor 0	OK	16265	Spinning at normal speed
SFT 3	Fan 2	Rotor 1	OK	14594	Spinning at normal speed
SFT 3	Fan 3	Rotor 0	OK	16071	Spinning at normal speed
SFT 3	Fan 3	Rotor 1	OK	14323	Spinning at normal speed
SFT 4	Fan 0	Rotor 0	OK	15652	Spinning at normal speed
SFT 4	Fan 0	Rotor 1	OK	14438	Spinning at normal speed
SFT 4	Fan 1	Rotor 0	OK	16167	Spinning at normal speed
SFT 4	Fan 1	Rotor 1	OK	14555	Spinning at normal speed
SFT 4	Fan 2	Rotor 0	OK	16023	Spinning at normal speed
SFT 4	Fan 2	Rotor 1	OK	14361	Spinning at normal speed
SFT 4	Fan 3	Rotor 0	OK	16216	Spinning at normal speed
SFT 4	Fan 3	Rotor 1	OK	14438	Spinning at normal speed
SFT 5	Fan 0	Rotor 0	OK	15297	Spinning at normal speed
SFT 5	Fan 0	Rotor 1	OK	14173	Spinning at normal speed
SFT 5	Fan 1	Rotor 0	OK	15472	Spinning at normal speed
SFT 5	Fan 1	Rotor 1	OK	13846	Spinning at normal speed
SFT 5	Fan 2	Rotor 0	OK	15340	Spinning at normal speed
SFT 5	Fan 2	Rotor 1	OK	13917	Spinning at normal speed
SFT 5	Fan 3	Rotor 0	OK	15835	Spinning at normal speed
SFT 5	Fan 3	Rotor 1	OK	13917	Spinning at normal speed
SFT 6	Fan 0	Rotor 0	OK	15743	Spinning at normal speed
SFT 6	Fan 0	Rotor 1	OK	14594	Spinning at normal speed
SFT 6	Fan 1	Rotor 0	OK	16167	Spinning at normal speed
SFT 6	Fan 1	Rotor 1	OK	14634	Spinning at normal speed
SFT 6	Fan 2	Rotor 0	OK	16167	Spinning at normal speed
SFT 6	Fan 2	Rotor 1	OK	14516	Spinning at normal speed
SFT 6	Fan 3	Rotor 0	OK	16666	Spinning at normal speed
SFT 6	Fan 3	Rotor 1	OK	14438	Spinning at normal speed
SFT 7	Fan 0	Rotor 0	OK	15517	Spinning at normal speed
SFT 7	Fan 0	Rotor 1	OK	14438	Spinning at normal speed
SFT 7	Fan 1	Rotor 0	OK	15517	Spinning at normal speed
SFT 7	Fan 1	Rotor 1	OK	14361	Spinning at normal speed


```

SFT 7 Fan 2 Rotor 0      OK      16167   Spinning at normal speed
SFT 7 Fan 2 Rotor 1      OK      14555   Spinning at normal speed
SFT 7 Fan 3 Rotor 0      OK      15697   Spinning at normal speed
SFT 7 Fan 3 Rotor 1      OK      14361   Spinning at normal speed

```

show chassis fan (EX Series Switches)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	3477	Spinning at normal speed
Fan 2	OK	3477	Spinning at normal speed
Fan 3	OK	3479	Spinning at normal speed
Fan 4	OK	3508	Spinning at normal speed
Fan 5	OK	3517	Spinning at normal speed
Fan 6	OK	3531	Spinning at normal speed
Fan 7	OK	3439	Spinning at normal speed
Fan 8	OK	3424	Spinning at normal speed
Fan 9	OK	3413	Spinning at normal speed
Fan 10	OK	3439	Spinning at normal speed
Fan 11	OK	3446	Spinning at normal speed
Fan 12	OK	3432	Spinning at normal speed

show chassis fan (T4000 Core Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	5190	Spinning at high speed
Top Left Middle fan	OK	5220	Spinning at high speed
Top Left Rear fan	OK	5190	Spinning at high speed
Top Right Front fan	OK	5160	Spinning at high speed
Top Right Middle fan	OK	5190	Spinning at high speed
Top Right Rear fan	OK	5160	Spinning at high speed
Bottom Left Front fan	OK	6030	Spinning at high speed
Bottom Left Middle fan	OK	6090	Spinning at high speed
Bottom Left Rear fan	OK	6090	Spinning at high speed
Bottom Right Front fan	OK	6030	Spinning at high speed
Bottom Right Middle fan	OK	6060	Spinning at high speed
Bottom Right Rear fan	OK	6060	Spinning at high speed

```

Rear Tray Top fan      OK      10000  Spinning at high speed
Rear Tray Second fan   OK      10000  Spinning at high speed
Rear Tray Third fan    OK      10000  Spinning at high speed
Rear Tray Fourth fan   OK      10000  Spinning at high speed
Rear Tray Fifth fan    OK      10000  Spinning at high speed
Rear Tray Sixth fan    OK      10000  Spinning at high speed
Rear Tray Seventh fan  OK      10000  Spinning at high speed
Rear Tray Bottom fan   OK      10000  Spinning at high speed

```

show chassis fan (TX Matrix Router)

```

user@host> show chassis fan
scc-re0:

```

```

-----
Item              Status  RPM    Measurement
Top Left Front fan  OK      3420   Spinning at normal speed
Top Left Middle fan OK      3390   Spinning at normal speed
Top Left Rear fan   OK      3420   Spinning at normal speed
Top Right Front fan OK      3390   Spinning at normal speed
Top Right Middle fan OK      3420   Spinning at normal speed
Top Right Rear fan  OK      3390   Spinning at normal speed
Bottom Left Front fan OK      3420   Spinning at normal speed
Bottom Left Middle fan OK      3450   Spinning at normal speed
Bottom Left Rear fan OK      3420   Spinning at normal speed
Bottom Right Front fan OK      3420   Spinning at normal speed
Bottom Right Middle fan OK      3420   Spinning at normal speed
Bottom Right Rear fan OK      3420   Spinning at normal speed
Rear Tray Top fan   OK      3420   Spinning at normal speed
Rear Tray Second fan OK      5190   Spinning at normal speed
Rear Tray Third fan  OK      5190   Spinning at normal speed
Rear Tray Fourth fan OK      5190   Spinning at normal speed
Rear Tray Fifth fan  OK      3420   Spinning at normal speed
Rear Tray Sixth fan  OK      3420   Spinning at normal speed
Rear Tray Seventh fan OK      3420   Spinning at normal speed
Rear Tray Bottom fan OK      3420   Spinning at normal speed

```

```

lcc2-re0:

```

```

-----
Item              Status  RPM    Measurement
Top Left Front fan  OK      3420   Spinning at normal speed
Top Left Middle fan OK      3420   Spinning at normal speed

```

```

Top Left Rear fan      OK      3450   Spinning at normal speed
Top Right Front fan    OK      3420   Spinning at normal speed
Top Right Middle fan   OK      3450   Spinning at normal speed
Top Right Rear fan     OK      3360   Spinning at normal speed
Bottom Left Front fan  OK      3420   Spinning at normal speed
Bottom Left Middle fan OK      3480   Spinning at normal speed
Bottom Left Rear fan   OK      3420   Spinning at normal speed
Bottom Right Front fan OK      3420   Spinning at normal speed
Bottom Right Middle fan OK     3390   Spinning at normal speed
Bottom Right Rear fan  OK      3420   Spinning at normal speed
Rear Tray Top fan      OK      3420   Spinning at normal speed
Rear Tray Second fan   OK      3420   Spinning at normal speed
Rear Tray Third fan    OK      3420   Spinning at normal speed
Rear Tray Fourth fan   OK      3420   Spinning at normal speed
Rear Tray Fifth fan    OK      3420   Spinning at normal speed
Rear Tray Sixth fan    OK      3420   Spinning at normal speed
Rear Tray Seventh fan  OK      3420   Spinning at normal speed
Rear Tray Bottom fan   OK      3420   Spinning at normal speed

```

show chassis fan (TX Matrix Plus Router)

```

user@host> show chassis fan
sfc0-re0:

```

```

-----
Item                Status  RPM    Measurement
Fan Tray 0 Fan 1    OK      4350   Spinning at normal speed
Fan Tray 0 Fan 2    OK      4380   Spinning at normal speed
Fan Tray 0 Fan 3    OK      4410   Spinning at normal speed
Fan Tray 0 Fan 4    OK      4380   Spinning at normal speed
Fan Tray 0 Fan 5    OK      4350   Spinning at normal speed
Fan Tray 0 Fan 6    OK      4380   Spinning at normal speed
Fan Tray 1 Fan 1    OK      4410   Spinning at normal speed
Fan Tray 1 Fan 2    OK      4380   Spinning at normal speed
Fan Tray 1 Fan 3    OK      4410   Spinning at normal speed
Fan Tray 1 Fan 4    OK      4380   Spinning at normal speed
Fan Tray 1 Fan 5    OK      4410   Spinning at normal speed
Fan Tray 1 Fan 6    OK      4410   Spinning at normal speed
Fan Tray 2 Fan 1    OK      4380   Spinning at normal speed
Fan Tray 2 Fan 2    OK      4380   Spinning at normal speed
Fan Tray 2 Fan 3    OK      4380   Spinning at normal speed
Fan Tray 2 Fan 4    OK      4410   Spinning at normal speed

```

Fan Tray 2 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 9	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 1	OK	4350	Spinning at normal speed
Fan Tray 3 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 3	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 4	OK	4440	Spinning at normal speed
Fan Tray 3 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 9	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 1	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 2	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 4 Fan 4	OK	4380	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 9	OK	4410	Spinning at normal speed

lcc0-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3450	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3420	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed

Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	7050	Spinning at normal speed
Rear Tray Second fan	OK	7050	Spinning at normal speed
Rear Tray Third fan	OK	7050	Spinning at normal speed
Rear Tray Fourth fan	OK	7050	Spinning at normal speed
Rear Tray Fifth fan	OK	7050	Spinning at normal speed
Rear Tray Sixth fan	OK	7050	Spinning at normal speed
Rear Tray Seventh fan	OK	7050	Spinning at normal speed
Rear Tray Bottom fan	OK	7050	Spinning at normal speed

show chassis fan (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fan
sfc0-re0:
```

```
-----
```

Item	Status	RPM	Measurement
Fan Tray 0 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 0 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 0 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 6	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 2	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 4	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 5	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 2	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 9	OK	4800	Spinning at normal speed

Fan Tray 3 Fan 1	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 8	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 9	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4770	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 9	Check	2010	

lcc0-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3390	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3390	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed

Rear Tray fan 1 (Top)	OK	7740	Spinning at normal speed
Rear Tray fan 2	OK	7740	Spinning at normal speed
Rear Tray fan 3	OK	7740	Spinning at normal speed
Rear Tray fan 4	OK	7740	Spinning at normal speed
Rear Tray fan 5	OK	7740	Spinning at normal speed
Rear Tray fan 6	OK	7740	Spinning at normal speed
Rear Tray fan 7	OK	7740	Spinning at normal speed
Rear Tray fan 8	OK	7740	Spinning at normal speed
Rear Tray fan 9	OK	7740	Spinning at normal speed
Rear Tray fan 10	OK	7740	Spinning at normal speed
Rear Tray fan 11	OK	7740	Spinning at normal speed
Rear Tray fan 12	OK	7740	Spinning at normal speed
Rear Tray fan 13	OK	7740	Spinning at normal speed
Rear Tray fan 14	OK	7740	Spinning at normal speed
Rear Tray fan 15	OK	7740	Spinning at normal speed
Rear Tray fan 16 (Bottom)	OK	7740	Spinning at normal speed

lcc2-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3390	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray fan 1 (Top)	OK	7740	Spinning at normal speed
Rear Tray fan 2	OK	7740	Spinning at normal speed
Rear Tray fan 3	OK	7740	Spinning at normal speed
Rear Tray fan 4	OK	7740	Spinning at normal speed
Rear Tray fan 5	OK	7740	Spinning at normal speed
Rear Tray fan 6	OK	7740	Spinning at normal speed
Rear Tray fan 7	OK	7740	Spinning at normal speed
Rear Tray fan 8	OK	7740	Spinning at normal speed
Rear Tray fan 9	OK	7740	Spinning at normal speed
Rear Tray fan 10	OK	7740	Spinning at normal speed
Rear Tray fan 11	OK	7740	Spinning at normal speed

```

Rear Tray fan 12      OK      7740   Spinning at normal speed
Rear Tray fan 13      OK      7740   Spinning at normal speed
Rear Tray fan 14      OK      7740   Spinning at normal speed
Rear Tray fan 15      OK      7740   Spinning at normal speed
Rear Tray fan 16 (Bottom) OK      7740   Spinning at normal speed

```

show chassis fan (PTX5000 Packet Transport Router)

```

user@host> show chassis fan
user@host> show chassis fan

```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	29%	2700 RPM
Fan Tray 0 Fan 2	OK	29%	2700 RPM
Fan Tray 0 Fan 3	OK	29%	2742 RPM
Fan Tray 0 Fan 4	OK	29%	2700 RPM
Fan Tray 0 Fan 5	OK	30%	2828 RPM
Fan Tray 0 Fan 6	OK	30%	2828 RPM
Fan Tray 0 Fan 7	OK	29%	2700 RPM
Fan Tray 0 Fan 8	OK	30%	2785 RPM
Fan Tray 0 Fan 9	OK	30%	2828 RPM
Fan Tray 0 Fan 10	OK	30%	2828 RPM
Fan Tray 0 Fan 11	OK	30%	2785 RPM
Fan Tray 0 Fan 12	OK	30%	2828 RPM
Fan Tray 0 Fan 13	OK	31%	2871 RPM
Fan Tray 0 Fan 14	OK	30%	2828 RPM
Fan Tray 1 Fan 1	OK	42%	3033 RPM
Fan Tray 1 Fan 2	OK	42%	3066 RPM
Fan Tray 1 Fan 3	OK	43%	3099 RPM
Fan Tray 1 Fan 4	OK	43%	3166 RPM
Fan Tray 1 Fan 5	OK	45%	3266 RPM
Fan Tray 1 Fan 6	OK	43%	3133 RPM
Fan Tray 2 Fan 1	OK	29%	2099 RPM
Fan Tray 2 Fan 2	OK	30%	2199 RPM
Fan Tray 2 Fan 3	OK	30%	2166 RPM
Fan Tray 2 Fan 4	OK	33%	2399 RPM
Fan Tray 2 Fan 5	OK	29%	2133 RPM
Fan Tray 2 Fan 6	OK	32%	2366 RPM

show chassis fan (MX150)

```

user@host > show chassis fan
Item                               Status  RPM      Measurement
FPC 0 Tray 0 Fan 0                 OK      7419    Spinning at normal speed
FPC 0 Tray 1 Fan 0                 OK      7419    Spinning at normal speed

```

show chassis fan (MX104 Router)

```

user@host > show chassis fan
Item                               Status  RPM      Measurement
Fan 1                              OK      5640    Spinning at normal speed
Fan 2                              OK      5640    Spinning at normal speed
Fan 3                              OK      5760    Spinning at normal speed
Fan 4                              OK      5640    Spinning at normal speed
Fan 5                              OK      5640    Spinning at normal speed

```

show chassis fan (MX2010 Router)

```

user@host > show chassis fan
Item                               Status  % RPM    Measurement
Fan Tray 0 Fan 1                 OK      37%     3360 RPM
Fan Tray 0 Fan 2                 OK      38%     3480 RPM
Fan Tray 0 Fan 3                 OK      37%     3360 RPM
Fan Tray 0 Fan 4                 OK      37%     3360 RPM
Fan Tray 0 Fan 5                 OK      38%     3480 RPM
Fan Tray 0 Fan 6                 OK      37%     3360 RPM
Fan Tray 1 Fan 1                 OK      38%     3480 RPM
Fan Tray 1 Fan 2                 OK      40%     3600 RPM
Fan Tray 1 Fan 3                 OK      38%     3480 RPM
Fan Tray 1 Fan 4                 OK      38%     3480 RPM
Fan Tray 1 Fan 5                 OK      38%     3480 RPM
Fan Tray 1 Fan 6                 OK      38%     3480 RPM
Fan Tray 2 Fan 1                 OK      38%     3480 RPM
Fan Tray 2 Fan 2                 OK      41%     3720 RPM
Fan Tray 2 Fan 3                 OK      38%     3480 RPM
Fan Tray 2 Fan 4                 OK      38%     3480 RPM
Fan Tray 2 Fan 5                 OK      38%     3480 RPM
Fan Tray 2 Fan 6                 OK      38%     3480 RPM

```

Fan Tray 3 Fan 1	OK	38%	3480 RPM
Fan Tray 3 Fan 2	OK	40%	3600 RPM
Fan Tray 3 Fan 3	OK	40%	3600 RPM
Fan Tray 3 Fan 4	OK	40%	3600 RPM
Fan Tray 3 Fan 5	OK	40%	3600 RPM
Fan Tray 3 Fan 6	OK	38%	3480 RPM

show chassis fan (ACX4000 Router)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	4140	Spinning at normal speed
Fan 2	OK	4200	Spinning at normal speed

show chassis fan (ACX5048 Router)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	18305	Spinning at normal speed
FPC 0 Tray 0 Fan 1	OK	15743	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	18305	Spinning at normal speed
FPC 0 Tray 1 Fan 1	OK	15606	Spinning at normal speed
FPC 0 Tray 2 Fan 0	OK	19014	Spinning at normal speed
FPC 0 Tray 2 Fan 1	OK	16167	Spinning at normal speed
FPC 0 Tray 3 Fan 0	OK	18947	Spinning at normal speed
FPC 0 Tray 3 Fan 1	OK	16265	Spinning at normal speed
FPC 0 Tray 4 Fan 0	OK	18120	Spinning at normal speed
FPC 0 Tray 4 Fan 1	OK	15743	Spinning at normal speed

show chassis fan (QFX5100 Switch and OCX Series)

```
user@switch > show chassis fan
```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	6428	Spinning at normal speed
FPC 0 Tray 0 Fan 1	OK	5515	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	6360	Spinning at normal speed
FPC 0 Tray 1 Fan 1	OK	5532	Spinning at normal speed

show chassis fan (EX9251 switches)

```
user@switch > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	9600 RPM
Fan Tray 0 Fan 1	OK	40%	8832 RPM
Fan Tray 1 Fan 0	OK	40%	9728 RPM
Fan Tray 1 Fan 1	OK	40%	9088 RPM
Fan Tray 2	Absent		

show chassis fan (EX9253 switches)

```
user@switch > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 0	OK	40%	7552 RPM
Fan Tray 0 Fan 1	OK	40%	6272 RPM
Fan Tray 0 Fan 2	OK	40%	7552 RPM
Fan Tray 0 Fan 3	OK	40%	6272 RPM
Fan Tray 1 Fan 0	OK	40%	7552 RPM
Fan Tray 1 Fan 1	OK	40%	6272 RPM
Fan Tray 1 Fan 2	OK	40%	7552 RPM
Fan Tray 1 Fan 3	OK	40%	6272 RPM
Fan Tray 2 Fan 0	OK	40%	7552 RPM
Fan Tray 2 Fan 1	OK	40%	6400 RPM
Fan Tray 2 Fan 2	OK	40%	7552 RPM
Fan Tray 2 Fan 3	OK	40%	6272 RPM
Fan Tray 3 Fan 0	OK	40%	7552 RPM
Fan Tray 3 Fan 1	OK	40%	6400 RPM
Fan Tray 3 Fan 2	OK	40%	7552 RPM
Fan Tray 3 Fan 3	OK	40%	6272 RPM

show chassis fan (Junos OS Evolved)

```
user@device> show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 1 Fan 1	Ok	48%	6597 RPM
Fan Tray 1 Fan 2	Ok	49%	5649 RPM

Fan Tray 2 Fan 1	Ok	49%	6687 RPM
Fan Tray 2 Fan 2	Ok	49%	5649 RPM
Fan Tray 3 Fan 1	Ok	49%	6642 RPM
Fan Tray 3 Fan 2	Ok	49%	5649 RPM

Release Information

Command introduced in Junos OS Release 10.0 on MX Series 5G Universal Routing Platforms, M120 routers, and M320 routers, T320 routers, T640 routers, T1600 routers, TX Matrix Routers, and TX Matrix Plus routers.

satellite option introduced in Junos OS Release 14.2R3.

Command output introduced for Junos OS Evolved Release 19.1R1.

show chassis feb

IN THIS SECTION

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Syntax

```
show chassis feb
```

Description

(ACX Series routers, and M5, M10, and M120 routers only) Display Forwarding Engine Board (FEB) status information.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 70 on page 1302](#) lists the output fields for the **show chassis feb** command. Output fields are listed in the approximate order in which they appear.

Table 70: show chassis feb

Field Name	Field Description
State	<p>State of the FEB:</p> <ul style="list-style-type: none"> • Offline—FEB is powered down. • Online—FEB is operational and running. • Check—FEB is in alarmed state where the Switch Interface Board (SIB) plane is partially operational for the following reasons: <ul style="list-style-type: none"> • FEB is not inserted properly. • Two or more links between the FEB and Packet Forwarding Engine fail.
Temp (C) or Intake temperature	Temperature of the air passing by the FEB, in degrees Celsius or in both degrees Celsius and degrees Fahrenheit.
CPU Utilization (%)	<p>Percentage of CPU being used:</p> <ul style="list-style-type: none"> • Total—Total percentage of CPU being used by the FEB processor. • Interrupt—Of the total CPU being used by the FEB processor, the percentage being used for interrupts.
Memory DRAM (MB)	Total DRAM, in megabytes, available to the FEB processor.
Utilization (%)	<p>Percentage of memory utilization:</p> <ul style="list-style-type: none"> • Heap—Percentage of heap space (dynamic memory) being used by the FEB processor. If this number exceeds 80 percent, you might experience a software problem (memory leak). • Buffer—Percentage of buffer space being used by the FPC processor for buffering internal messages.
Exhaust A temperature	Temperature of the air flowing past Exhaust A.

Table 70: show chassis feb (Continued)

Field Name	Field Description
Exhaust B temperature	Temperature of the air flowing past Exhaust B.
Total DDR DRAM	Amount of double data rate dynamic random access memory (DDR DRAM) available to the FEB CPU.
Total RLDRAM	Amount of reduced latency dynamic random access memory (RLDRAM) available to the FEB CPU.
Start time (Detail output only)	Time when the Routing Engine detected that the FEB was running.
Uptime (Detail output only)	How long the Routing Engine has been connected to the FEB, and therefore, how long the Flexible PIC Concentrator (PIC) has been up and running.

Sample Output

show chassis feb (M10 Router)

```

user@host> show chassis feb

FEB status:
  Temperature                27 degrees C / 80 degrees F
  CPU utilization             3 percent
  Interrupt utilization       0 percent
  Heap utilization            26 percent
  Buffer utilization           50 percent
  Total CPU DRAM              64 MB
  Internet Processor II      Version 1, Foundry IBM, Part number 9
  Start time:                 2010-05-23 13:59:51 PDT
  Uptime:                     6 hours, 33 minutes, 11 seconds

```

show chassis feb (M120 Router)

```

user@host> show chassis feb

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Online	47	4	0	512	7	60
1	Online	54	3	0	512	7	59
2	Online	50	4	0	512	7	59
3	Online	49	4	0	512	7	59
4	Online	46	3	0	512	7	59
5	Online	35	3	0	512	7	59

show chassis feb detail (M120 Router)

```

user@host> show chassis feb detail

```

Slot 0 information:

State	Online
Intake temperature	48 degrees C / 118 degrees F
Exhaust A temperature	51 degrees C / 123 degrees F
Exhaust B temperature	52 degrees C / 125 degrees F
Total DDR DRAM	512 MB
Total RLDRAM	32 MB
Start time:	2006-06-28 15:00:40 PDT
Uptime:	10 minutes, 21 seconds

Slot 1 information:

State	Online
Intake temperature	55 degrees C / 131 degrees F
Exhaust A temperature	46 degrees C / 114 degrees F
Exhaust B temperature	45 degrees C / 113 degrees F
Total DDR DRAM	512 MB
Total RLDRAM	32 MB
Start time:	2006-06-28 15:00:33 PDT
Uptime:	10 minutes, 28 seconds

Slot 2 information:

State	Online
Intake temperature	50 degrees C / 122 degrees F
Exhaust A temperature	47 degrees C / 116 degrees F
Exhaust B temperature	47 degrees C / 116 degrees F
Total DDR DRAM	512 MB
Total RLDRAM	32 MB


```

Start time:                2006-06-28 15:00:35 PDT
Uptime:                    10 minutes, 26 seconds
Slot 3 information:
State                       Online
Intake temperature         49 degrees C / 120 degrees F
Exhaust A temperature      47 degrees C / 116 degrees F
Exhaust B temperature      49 degrees C / 120 degrees F
Total DDR DRAM             512 MB
Total RLDRAM               32 MB
Start time:                2006-06-28 15:00:43 PDT
Uptime:                    10 minutes, 18 seconds
Slot 4 information:
State                       Online
Intake temperature         45 degrees C / 113 degrees F
Exhaust A temperature      42 degrees C / 107 degrees F
Exhaust B temperature      42 degrees C / 107 degrees F
Total DDR DRAM             512 MB
Total RLDRAM               32 MB
Start time:                2006-06-28 15:00:29 PDT
Uptime:                    10 minutes, 32 seconds
Slot 5 information:
State                       Online
Intake temperature         35 degrees C / 95 degrees F
Exhaust A temperature      33 degrees C / 91 degrees F
Exhaust B temperature      40 degrees C / 104 degrees F
Total DDR DRAM             512 MB
Total RLDRAM               32 MB
Start time:                2006-06-28 15:00:27 PDT
Uptime:                    10 minutes, 34 seconds

```

show chassis feb detail (ACX2000 Universal Metro Router)

```

user@host> show chassis feb
FEB status:
Slot 0 information:
State                       Online
Temperature                 72 degrees C / 161 degrees F
CPU utilization              17 percent
Interrupt utilization        7 percent
Heap utilization             20 percent
Buffer utilization           37 percent

```

```
Total CPU DRAM          512 MB
Start time:              2012-05-09 00:58:51 PDT
Uptime:                  5 days, 21 hours, 6 minutes, 34 seconds
```

show chassis feb detail (ACX1000 Universal Metro Router)

```
user@host> show chassis feb
FEB status:
Slot 0 information:
  State                Online
  Temperature          46 degrees C / 114 degrees F
  CPU utilization       15 percent
  Interrupt utilization 5 percent
  Heap utilization      45 percent
  Buffer utilization    37 percent
  Total CPU DRAM       256 MB
  Start time:          2012-06-05 19:51:53 PDT
  Uptime:              19 minutes, 6 seconds
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis feb | 420](#)

[show chassis fabric feb | 1080](#)

[show chassis fpc-feb-connectivity | 1396](#)

feb

Understanding Switching Control Board Redundancy

show chassis firmware

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Syntax

```
show chassis firmware
```

Syntax (TX Matrix Routers)

```
show chassis firmware  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis firmware  
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis firmware  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis firmware  
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis firmware  
interconnect-device name  
node-device name
```

Syntax (ACX5048 and ACX5096 Routers)

```
show chassis firmware
interconnect-device name
node-device name
```

Syntax (EX Series Switches)

```
show chassis firmware
<detail>
<satellite [slot-id slot-id | device-alias alias-name]>
```

Description

On routers and switches, display the version levels of the firmware running on the System Control Board (SCB), Switching and Forwarding Module (SFM), System and Switch Board (SSB), Forwarding Engine Board (FEB), Flexible PIC Concentrators (FPCs), and Routing Engines. On a TX Matrix Plus router, display the version levels of the firmware running on the FPCs and the Switch Processor Mezzanine Board (SPMBs).

On EX2200, EX3200, EX4200, QFX Series, and OCX Series switches, display the version levels of the firmware running on the switch. On an EX8208 switch, display the version levels of the firmware running on the Switch Fabric and Routing Engine (SRE) modules and on the line cards (shown as FPCs). On an EX8216 switch, display the version levels of the firmware running on the Routing Engine (RE) modules and on the line cards (shown as FPCs).

Options

none Display the version levels of the firmware running. For an EX4200 switch that is a member of a Virtual Chassis, display version levels for all members. For a TX Matrix router, display version levels for the firmware on the TX Matrix router and on all the T640 routers connected to the TX Matrix router. For a TX Matrix Plus router,

display version levels for the firmware on the TX Matrix Plus router and on all the routers connected to the TX Matrix Plus router.

all-members	(MX Series routers only) (Optional) Display the version levels of the firmware running for all members of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device.
lcc <i>number</i>	<p>(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display version levels for the firmware on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the version levels for the firmware on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display the version levels of the firmware running for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the version levels of the firmware running for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device	(QFabric systems only) (Optional) Display the version levels of the firmware running on the Node device.
satellite [slot-id slot-id] device-alias <i>alias-name</i>	(Junos Fusion only) (Optional) Display version levels of the firmware running for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.
scc	(TX Matrix router only) (Optional) Display version levels for the firmware on the TX Matrix router (switch-card chassis).

- sfc *number*** (TX Matrix Plus router only) (Optional) Display version levels for the firmware on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.
- detail** (EX3200, EX3300, EX4200, and EX4500 standalone and Virtual Chassis member switches only) (Optional) Display version levels of the firmware running on the switch for its programmable hardware components.

Required Privilege Level

view

Output Fields

[Table 71 on page 1311](#) lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

Table 71: show chassis firmware Output Fields

Field Name	Field Description
Part	(MX Series, MX2010, MX2020, and MX2008 routers) Chassis part name.
Type	(MX Series, MX2010, MX2020, and MX2008 routers) Type of firmware: On routers: ROM or O/S. On switches: uboot or loader.
Version	(MX Series, MX2010, MX2020, and MX2008 routers) Version of firmware running on the chassis part.

Table 71: show chassis firmware Output Fields (Continued)

Field Name	Field Description
FPC	<p>(<i>detail</i> option only) Number of FPC.</p> <p>For a standalone switch, the value is 0.</p> <p>For a Virtual Chassis configuration, value in the range of 0-9; refers to the member ID assigned to the switch.</p>
AFEB	(MX104 routers) Version of the compact Forwarding Engine Board.
Boot	(<i>detail</i> option only) Version of the SYSPLD.
PoE	(<i>detail</i> option only) Version of the PoE firmware.
PFE- <number>	(<i>detail</i> option only) Version of the Packet Forwarding Engine used in the switch.
PHY-	(<i>detail</i> option only) Version of the physical layer device (PHY) used in the switch.
microcode	(<i>detail</i> option only) Microcode of the physical layer devices (PHY) used in the switch.
uboot	(<i>detail</i> option only) Version of the u-boot used in the switch.
loader	(<i>detail</i> option only) Version of the loader used in the switch.

Sample Output

show chassis firmware (M10 Router)

```

user@host> show chassis firmware
Part                Type      Version
Forwarding engine board  ROM      Juniper ROM Monitor Version 4.1b2
                        O/S      Version 4.1I1 by usera on 2000-04-24 11:27

```

show chassis firmware (M20 Router)

```

user@host> show chassis firmware
Part                Type      Version
System switch board  ROM      Juniper ROM Monitor Version 3.4b26
                        O/S      Version 3.4I16 by userc on 2000-02-29 2
FPC 1                ROM      Juniper ROM Monitor Version 3.0b1
                        O/S      Version 3.4I4 by userc on 2000-02-25 21
FPC 2                ROM      Juniper ROM Monitor Version 3.0b1
                        O/S      Version 3.4I4 by userc on 2000-02-25 21

```

show chassis firmware (M40 Router)

```

user@host> show chassis firmware
Part                Type      Version
System control board  ROM      Juniper ROM Monitor Version 2.0i126Copyri
                        O/S      Version 2.0i1 by root on Thu Jul 23 00:51
FPC 5                ROM      Juniper ROM Monitor Version 2.0i49Copyrig
                        O/S      Version 2.0i1 by root on Thu Jul 23 00:59

```

show chassis firmware (M160 Router)

```

user@host> show chassis firmware
Part                Type      Version
SFM 0                ROM      Juniper ROM Monitor Version 4.0b2
                        O/S      Version 4.0I1 by usera on 2000-02-29 11:50
SFM 1                ROM      Juniper ROM Monitor Version 4.0b2
                        O/S      Version 4.0I1 by usera on 2000-02-29 11:50

```

```

FPC 0          ROM      Juniper ROM Monitor Version 4.0b2
                O/S      Version 4.0I1 by usera on 2000-02-29 11:56
FPC 1          ROM      Juniper ROM Monitor Version 4.0b2
                O/S      Version 4.0I1 by usera on 2000-02-29 11:56
FPC 2          ROM      Juniper ROM Monitor Version 4.0b3
                O/S      Version 4.0I1 by usera on 2000-02-29 11:56

```

show chassis firmware (MX150)

```

user@host > show chassis firmware
Part          Type      Version
FPC           ROM      PC Bios
                O/S      Version 17.2I20170220_0929_rohitn by rohitn
on 2017-02-20 09:38:59 UTC

```

show chassis firmware (MX104 Router)

```

user@host > show chassis firmware
Part          Type      Version
FPC 0          ROM      Juniper ROM Monitor Version 13.1b24
                O/S      Version 13.2-20130514.1 by userb on 2013-
FPC 1          ROM      Juniper ROM Monitor Version 13.1b24
                O/S      Version 13.2-20130514.1 by userb on 2013-
FPC 2          ROM      Juniper ROM Monitor Version 13.1b24
                O/S      Version 13.2-20130514.1 by userb on 2013-
AFEB          ROM      Juniper ROM Monitor Version 13.1b24
                O/S      Version 13.2-20130514.1 by userb on 2013-

```

show chassis firmware (MX240 Router)

```

user@host> show chassis firmware
Part          Type      Version
FPC 1          ROM      Juniper ROM Monitor Version 8.3b1
                O/S      Version 9.0-20080103.0 by userb on 2008-0
FPC 2          ROM      Juniper ROM Monitor Version 8.3b1
                O/S      Version 9.0-20080103.0 by userb on 2008-0

```

show chassis firmware (MX480 Router)

```

user@host> show chassis firmware
Part                Type      Version
FPC 1               ROM       Juniper ROM Monitor Version 8.3b1
                   O/S      Version 9.0-20070916.3 by userb on 2007-0

```

show chassis firmware (MX960 Router)

```

user@host> show chassis firmware
Part                Type      Version
FPC 4               ROM       Juniper ROM Monitor Version 8.0b8
                   O/S      Version 8.2I59 by user3 on 2006-10-31 19:22
FPC 7               ROM       Juniper ROM Monitor Version 8.2b1
                   O/S      Version 8.2-20061026.1 by userb on 2006-1

```

show chassis firmware (MX2020 Router)

```

user@host> show chassis firmware
Part                Type      Version
FPC 0               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 1               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 2               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 3               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 4               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 5               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 6               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 7               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 8               ROM       Juniper ROM Monitor Version 10.0b39
                   O/S      Version 12.3-20130415.0 by userb on 2013-
FPC 9               ROM       Juniper ROM Monitor Version 10.0b39

```

	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 10	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 11	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 12	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 13	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 14	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 15	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 16	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 17	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 18	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 19	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-

show chassis firmware (MX204 Router)

```

user@host> show chassis firmware

Part                Type          Version
RE 0                PRI BIOS     CBEP_P_SUM1_00.11.01
                   RE-FPGA      300
FPC                 ROM          PC Bios
                   O/S         Version 17.4I201711105_0609_aahluwalia by
aahluwalia on 2017-11-05 06:09:28 UTC

```

show chassis firmware (MX10008 Router)

```

user@host> show chassis firmware
Part                Type          Version
RE 0                PRI BIOS     CBEP_P_VAL0_00.14.1
                   FPGA         264.0
                   RE-FPGA      41.0
                   RE-SSD1     SF-SBR12050
                   RE-SSD2     SF-SBR12050
                   i40e-NVM    6.01
RE 1                PRI BIOS     CBEP_P_VAL0_00.13.01
                   FPGA         261.0
                   RE-FPGA      41.0
                   RE-SSD1     SF-SBR12034
                   RE-SSD2     SF-SBR12034
                   i40e-NVM    5.02
FPC 0               ROM          PC Bios
                   O/S         Version 18.4-20180716_dev_common.0 by
builder on 2018-07-16 00:43:35 UTC
                   ROM Monitor 0 9.14.0
                   PCIE Sw(0) 1.0.0
                   MPCS(0)   0.2.0
                   I2CS CPLD 0.4.0
                   BOOT CPLD 0.4.0
FPC 2               ROM          PC Bios
                   O/S         Version 18.4-20180716_dev_common.0 by
builder on 2018-07-16 00:43:35 UTC
                   ROM Monitor 0 9.14.0
                   PCIE Sw(0) 1.0.0
                   MPCS(0)   0.2.0
                   I2CS CPLD 0.4.0
                   BOOT CPLD 0.4.0
FPC 3               ROM          PC Bios
                   O/S         Version 18.4-20180716_dev_common.0 by
builder on 2018-07-16 00:43:35 UTC
                   ROM Monitor 0 9.14.0
                   PCIE Sw(0) 1.0.0
                   MPCS(0)   0.4.0
                   I2CS CPLD 0.8.0
                   BOOT CPLD 0.8.0
FPM                 FPGA         1.9
FTC 0               FPGA         2.0

```

FTC 1	FPGA	2.0
SFB 0	FPGA	3.0
SFB 1	FPGA	3.0
SFB 2	FPGA	3.0
SFB 3	FPGA	3.0
SFB 4	FPGA	3.0
SFB 5	FPGA	3.0

show chassis firmware (MX240, MX480, MX960 Router with Application Services Modular Line Card)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.2I21 by user1 on 2012-06-19 17:

show chassis firmware (EX4200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 1	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 2	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1

show chassis firmware (EX8200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	U-Boot	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 3	U-Boot	U-Boot 1.1.6 (Dec 4 2009 - 13:17:34) 3.1.0
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.2

FPC 5	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 7	U-Boot loader	U-Boot 1.1.6 (Feb 6 2009 - 05:31:46) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 0	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 1	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2

show chassis firmware (EX9200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 2	ROM	Juniper ROM Monitor Version 11.4b2
	O/S	Version 14.1I20140312_0741 by userd o
FPC 3	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 14.1I20140312_0741 by userd o

show chassis firmware (EX9251 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM1_00.11.01
	RE-FPGA	301
FPC	ROM	PC Bios
	O/S	Version 18.1R1.4 by builder on 2018-03-06

00:31:54 UTC

show chassis firmware (EX9253 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
RE 0	PRI BIOS	CBEP_P_SUM1_00.11.01

```

RE 1          RE-FPGA  402
              PRI BIOS  CBEP_P_SUM1_00.11.01
              RE-FPGA  402
FPC 0          ROM      PC Bios
              O/S      Version 18.2-20180129_dev_common.1 by
builder on 2018-01-29 13:35:11 UTC
FPC 1          ROM      PC Bios
              O/S      Version 18.2-20180129_dev_common.1 by
builder on 2018-01-29 13:35:11 UTC

```

show chassis firmware lcc (TX Matrix Router)

```

user@host> show chassis firmware lcc 0
lcc0-re0:
-----
Part          Type      Version
FPC 1         ROM      Juniper ROM Monitor Version 6.4b18
              O/S      Version 7.0-20040804.0 by userb on 2004-0
FPC 2         ROM      Juniper ROM Monitor Version 6.4b20
              O/S      Version 7.0-20040804.0 by userb on 2004-0
SPMB 0        ROM      Juniper ROM Monitor Version 6.4b18
              O/S      Version 7.0-20040804.0 by userb on 2004-0

```

show chassis firmware scc (TX Matrix Router)

```

user@host> show chassis firmware scc
scc-re0:
-----
Part          Type      Version
SPMB 0        ROM      Juniper ROM Monitor Version 6.4b18
              O/S      Version 7.0-20040804.0 by userb on 2004-0

```

show chassis firmware (TX Matrix Plus Router)

```

user@host> show chassis firmware
sfc0-re0:
-----

```


Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		
Global FPC 12		
Global FPC 14		
Global FPC 15		
Global FPC 20		
Global FPC 21		
Global FPC 22		
Global FPC 23		
Global FPC 24		
Global FPC 25		
Global FPC 26		
Global FPC 28		
Global FPC 29		
Global FPC 31		
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

lcc0-rel:

```
-----
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

lcc1-rel:

```
-----
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0

```

FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc2-rel:

```

-----
Part           Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 5          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 7.5b4
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc3-rel:

```

-----
Part           Type      Version
FPC 0          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 1          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 2          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 4          ROM      Juniper ROM Monitor Version 7.5b4
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 5          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                O/S      Version 9.6-20090507.0 by userb on 2009-0

```

show chassis firmware lcc (TX Matrix Plus Router)

```

user@host> show chassis firmware lcc 0
lcc0-rel:
-----
Part                Type      Version
FPC 4               ROM      Juniper ROM Monitor Version 9.0b2
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6               ROM      Juniper ROM Monitor Version 9.0b2
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7               ROM      Juniper ROM Monitor Version 9.0b2
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0              ROM      Juniper ROM Monitor Version 9.5b1
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1              ROM      Juniper ROM Monitor Version 9.5b1
                   O/S      Version 9.6-20090507.0 by userb on 2009-0

```

show chassis firmware sfc (TX Matrix Plus Router)

```

user@host> show chassis firmware sfc 0
sfc0-re0:
-----
Part                Type      Version
Global FPC 4
Global FPC 6
Global FPC 7
Global FPC 12
Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0              ROM      Juniper ROM Monitor Version 9.5b1

```

	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware (QFX Series and OCX Series)

```
user@switch> show chassis firmware
Part                Type      Version
FPC 0
Routing Engine 0    U-Boot    U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5
                    loader     FreeBSD/MIPS U-Boot bootstrap loader 0.1
```

show chassis firmware (PTX1000 Packet Transport Routers)

```
user@host> show chassis firmware
Part                Type      Version
FPC 0
                    U-Boot    ***
                    loader     FreeBSD/i386 bootstrap loader 1.2
                    BIOS      V0018.2U
                    EC FPGA   2.0
                    MAIN_CPLD 1.f
                    MEZZ_CPLD 1.f
                    RE FPGA   2.3
```

show chassis firmware (PTX10008 Routers)

```
user@host> show chassis firmware
Part                Type      Version
RE 0
    PRI BIOS        QFXS_SFP_00.31_01.01
    GDN BIOS        QFXS_SFP_00.31_01.01
    FPGA            2.4
    RE-FPGA         3.2
RE 1
    PRI BIOS        QFXS_SFP_00.31_01.01
    GDN BIOS        QFXS_SFP_00.31_01.01
    FPGA            2.3
    RE-FPGA         3.2
FPC 0
U-Boot              Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)
```

```

CTRL FPGA 4.1
PORT FPGA 2.0
FPC 5      U-Boot      Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)

CTRL FPGA 3.1
PORT FPGA 2.0
FPC 6      U-Boot      Bank B: U-Boot 2011.12-gfbea47a (Feb 26 2016
- 22:56:52)

CTRL FPGA 3.1
PORT FPGA 2.0
FPM
FTC 0      FPGA        2.0
FTC 1      FPGA        2.0
SIB 0      FPGA        3.0
SIB 1      FPGA        3.0

```

show chassis firmware interconnect-device (QFabric System)

```

user@switch> show chassis firmware interconnect-device
interconnect1
Part          Type          Version
Routing Engine 0  U-Boot      U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
loader        FreeBSD/MIPS U-Boot bootstrap loader 0.1
Routing Engine 1  U-Boot      U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
loader        FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (ACX2000 Universal Metro Router)

```

user@switch> show chassis firmware
Part          Type          Version
FPC           O/S           Version 12.2I13 by user2 on 2012-05-29 06:
FEB          O/S           Version 12.2I13 by user2 on 2012-05-29 06:

```

show chassis firmware detail (EX3300 Switch)

```

user@switch> show chassis firmware detail
FPC 0
  Boot SYSPLD          3

```

```

PoE firmware          4.1.6
PFE-0                 3
PFE-1                 3
PHY
  microcode           0x514
Boot Firmware
  uboot                U-Boot 1.1.6 (Aug 21 2011 - 01:45:26)  1.0.0
  loader               FreeBSD/arm U-Boot loader 1.0

```

show chassis firmware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis firmware
Part          Type          Version
FPC 1        ROM           Juniper ROM Monitor Version 12.1b1
              O/S           Version 12.2I21 by user1 on 2012-06-19 17:

```

show chassis firmware (ACX5048 Router)

```

user@host> show chassis firmware
Part          Type          Version
FPC           loader        FreeBSD/i386 bootstrap loader 1.2
              BIOS          V0018.7
              TMC FPGA      6.d8
              PICO CPLD0    7.b
              PICO CPLD1    7.b
              PICO CPLD2    7.b
              PICO CPLD3    7.b
              PICO CPLD4    7.b
              PICO CPLD5    7.b
              PICO CPLD6    6.a
              MRE          17.9
              Power CPLD  3.a

```

show chassis firmware (ACX5096 Router)

```

user@host> show chassis firmware
Part          Type          Version
FPC           loader        FreeBSD/i386 bootstrap loader 1.2

```

```

BIOS          V0018.7
TMC FPGA      3000001.5
PIC0 CPLD0    7.b
PIC0 CPLD1    7.b
PIC0 CPLD2    7.b
PIC0 CPLD3    7.b
PIC0 CPLD4    7.b
PIC0 CPLD5    7.b
PIC0 CPLD6    c6.a
PIC0 CPLD7    -NA-
PIC0 CPLD8    7.b
PIC0 CPLD9    7.b
PIC0 CPLD10   7.b
PIC0 CPLD11   7.b
PIC0 CPLD12   7.b
PIC0 CPLD13   7.b
PIC0 CPLD14   c6.a
MRE           7.5
Power CPLD    4.1

```

show chassis firmware (ACX500 Router)

```

user@host> show chassis firmware

Part          Type          Version
FPC           O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC
FEB          O/S           Version 15.2-20150815_dev_rbu_1_16q1.0 by
userb on 2015-08-15 04:18:02 UTC

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

Command introduced for EX8200 switches in Junos OS Release 10.2 for EX Series switches.

satellite option introduced in Junos OS Release 14.2R3.

show chassis forwarding

IN THIS SECTION

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Syntax

```
show chassis forwarding
```

Description

Display status of the forwarding process (fwdd). This command is supported on Branch SRX Series Services Gateways.

Options

This command has no options.

Required Privilege Level

view

Output Fields

Table 72 on page 1329 lists the output fields for the **show chassis forwarding** command. Output fields are listed in the approximate order in which they appear.

Table 72: show chassis forwarding Output Fields

Field Name	Field Description
FWWD status	<p>Forwarding status:</p> <ul style="list-style-type: none"> • State: <ul style="list-style-type: none"> • Online—FWDD is operational and running. • Offline—FWDD is not running. • Microkernel CPU utilization—Percentage of microkernel CPU being used by the forwarding process. • Real-time threads CPU utilization—Percentage of CPU being used by the forwarding process. • Heap utilization—Percentage of heap space (dynamic memory) being used by the forwarding process. If this number exceeds 80 percent, there may be a software problem (memory leak). • Buffer utilization—Percentage of buffer space being used by the forwarding process for buffering internal messages. • Uptime—How long the forwarding process has been up and running.

Sample Output

show chassis forwarding

```
user@host> show chassis forwarding
FWDD status:
  State                               Online
  Microkernel CPU utilization         10 percent
  Real-time threads CPU utilization   4 percent
  Heap utilization                     26 percent
  Buffer utilization                   0 percent
  Uptime:                             1 day, 1 hour, 30 minutes, 11 seconds
```

Release Information

Current—Command introduced before Junos OS Release 7.4.

Now—Command introduced in Junos OS Release 7.4. Support for Branch SRX Series added in Junos OS Release 10.1

show chassis fpc

IN THIS SECTION

- [Syntax | 1331](#)
- [Syntax \(EX Series Switches, PTX Series Routers, ACX Series Routers, TX Matrix and TX Matrix Plus Routers\) | 1331](#)
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- [Syntax \(MX Series Routers and EX Series switches\) | 1332](#)
- [Syntax \(MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms\) | 1332](#)
- [Syntax \(MX10008 Universal Routing Platforms\) | 1332](#)
- [Syntax \(QFX Series\) | 1333](#)

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- [Release Information | 1391](#)

Syntax

```
show chassis fpc
<detail <slot>> | <pic-status <slot>>
```

Syntax (EX Series Switches, PTX Series Routers, ACX Series Routers, TX Matrix and TX Matrix Plus Routers)

```
show chassis fpc
<detail <fpc-slot>> | <pic-status <fpc-slot>>
<fpc-slot>
```

Syntax (T4000 Routers)

```
show chassis fpc
<detail <fpc-slot>>
<pic-status <fpc-slot>>
```

Syntax (MX Series Routers and EX Series switches)

```
show chassis fpc
<detail <slot>> | <pic-status <slot>>
<all-members>
<local>
<member member-id>
```

Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis fpc
<slot> detail | <detail <slot>> | <pic-status <slot>>
<fpc-slot>
```

Syntax (MX10008 Universal Routing Platforms)

```
show chassis fpc
<detail>
<errors>
<fpc-slot>
pic-status <fpc-slot>
```

Syntax (QFX Series)

```
show chassis fpc
<detail>
<interconnect-device name <fpc-slot fpc-slot>>
<node-device name>
```

Syntax (OCX Series)

```
show chassis fpc
<detail>
```

Syntax (ACX500 Routers)

```
show chassis fpc
<fpc-slot>
detail <fpc-slot>
pic-status <fpc-slot>
```

Syntax (Junos OS Evolved)

```
show chassis fpc
<detail | pic-status | errors>
<fpc-slot>
```

Description

Display status information about the installed Flexible PIC Concentrators (FPCs) and PICs.

Options

none

Display status information for all FPCs. On a TX Matrix router, display status information for all FPCs on the attached T640 routers in the routing matrix. On a TX Matrix Plus router, display status information for all FPCs on the attached routers in the routing matrix.

NOTE: In EX8200 switches, line cards initialize Packet Forwarding Engine during startup. If an error occurs during hardware initialization, the FPCs with bad hardware parts power down after transferring the debug information to the Routing Engine. The Routing Engine marks the FPC offline, logs the error in system log messages (/var/log/messages), and generates an alarm to inform the user.

See the following sample output:

```
user@host> show chassis fpc
                Temp  CPU Utilization (%)
Memory  Utilization (%)
Slot State          (C)  Total  Interrupt      DRAM
(MB) Heap    Buffer
  0  Empty
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Offline          ---Hard FPC error---
  6  Empty
  7  Online           26      4          0
1024      0          32
```

The following sample output shows the alarm raised for the failed FPCs:

```
user@host> show chassis alarms
4 alarms currently active
Alarm time          Class  Description
2011-03-24 00:52:51 UTC  Major  FPC 5 Hard errors
2011-03-24 00:52:31 UTC  Major  Fan Tray Failure
2011-03-24 00:52:31 UTC  Major  Fan Tray Failure
```

```
2011-03-24 00:51:26 UTC Minor Loss of communication
with Backup RE
```

NOTE: On T4000 routers, when you include the **enhanced-mode** statement at the **[edit chassis network-services]** hierarchy level and reboot the system, only the T4000 Type 5 FPCs present on the router become online while the remaining FPCs are offline, and FPC misconfiguration alarms are generated. The **show chassis alarm** command output displays FPC misconfiguration (**FPC *fpc-slot* misconfig**) as the reason for the generation the alarms.

The following sample output shows the FPC status after the **enhanced-mode** statement is configured on the T4000 router. The T4000 Type 5 FPC present in slot 5 becomes online while the remaining FPCs are offline.

```
user@host> show chassis fpc
                Temp CPU Utilization (%)
Memory Utilization (%)
Slot State      (C) Total Interrupt DRAM
(MB) Heap      Buffer
  0  offline          ---FPC misconfiguration---
  1  offline          ---FPC misconfiguration---
  2  offline          ---FPC misconfiguration---
  3  Empty
  4  Empty
  5  Online           66      50      0
2816      29      27
```

The following sample output shows FPC misconfiguration alarms:

```
user@host> show chassis alarms
3 alarms currently active
Alarm time          Class Description
2011-03-24 00:52:51 PST Major FPC 1 misconfig
2011-03-24 00:52:31 PST Major FPC 2 misconfig
2011-03-24 00:52:31 PST Major FPC 3 misconfig
```

- detail** (Optional) Display detailed status information for all FPCs or for the FPC in the specified slot (see *fpc-slot* or *slot*).
- all-members** (MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on all members of the Virtual Chassis configuration.
- interconnect-device *name*** (QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.
- fpc-slot*** (Optional) FPC slot number:
- (TX Matrix and TX Matrix Plus routers only)—On a TX Matrix router, if you specify the number of the T640 router (line-card chassis) by using the **lcc *number*** option (the recommended method), replace *fpc-slot* with a value from **0** through **7**. Otherwise, replace *fpc-slot* with a value from **0** through **31**. Likewise, on a TX Matrix Plus router, if you specify the number of the specified router (line-card chassis) by using the **lcc *number*** option (the recommended method), replace *fpc-slot* with a value from **0** through **7**. Otherwise, replace *fpc-slot* with a value from **0** through **31**. For example, the following commands have the same result:

```
user@host> show chassis fpc detail 1 lcc 1
user@host> show chassis fpc detail 9
```

- M120 router—Replace *fpc-slot* with a value from **0** through **5**.
- MX80 router—Replace *fpc-slot* with a value from **0** through **1**.
- MX104 and MX104-40G routers—Replace *fpc-slot* with a value from **0** through **2**.
- MX240 router—Replace *fpc-slot* with a value from **0** through **2**.
- MX480 router—Replace *fpc-slot* with a value from **0** through **5**.
- MX-960 router—Replace *fpc-slot* with a value from **0** through **11**.
- MX2010 router—Replace *fpc-slot-number* with a value from **0** through **9**.
- MX2008 router—Replace *fpc-slot-number* with a value from **0** through **9**.
- MX2020 router—Replace *fpc-slot-number* with a value from **0** through **19**.
- Other routers—Replace *fpc-slot* with a value from **0** through **7**.
- EX Series switches:

- EX3200 switches and EX4200 standalone switches—Replace *fpc-slot* with **0**.
- EX4200 switches in a Virtual Chassis configuration—Replace *fpc-slot* with a value from **0** through **9**.
- EX6210 switches—Replace *fpc-slot* with a value from **0** through **9**.
- EX8208 switches—Replace *fpc-slot* with a value from **0** through **7**.
- EX8216 switches—Replace *fpc-slot* with a value from **0** through **15**.
- EX9204 switches—Replace *fpc-slot* with a value from **0** through **2**.
- EX9208 switches—Replace *fpc-slot* with a value from **0** through **5**.
- EX9214 switches—Replace *fpc-slot* with a value from **0** through **11**.
- QFX Series:
 - QFXSeries and OCX Series switches—Replace *fpc-slot* with **0**.
 - QFabric systems—Replace *fpc-slot* with **0** through **31** on the Interconnect device.
- PTX Series Packet Transport Routers:
 - PTX5000 Packet Transport Router—Replace *fpc-slot* with a value from **0** through **7**.
- ACX Series Universal Metro Routers:
 - ACX1000 and ACX2000 Universal Metro Routers—Replace *fpc-slot* with **0**.

interconnect-device *name* (QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.

lcc *number* (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- **0** through **3**, when T640 routers are connected to a TX Matrix router in a routing matrix.
- **0** through **3**, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device <i>name</i>	(QFabric systems only) (Optional) Display status information for each Node device. Each Node device is equivalent to an FPC.
pic-status	(Optional) Display status information for all PICs or for the PIC in the specified slot (see <i>fpc-slot</i>).

NOTE: On T1600 routers, Type 4 FPCs with ASICs based on the SL2.0 chipset do not support the 10-Gigabit Ethernet LAN/WAN PIC with SFP+ (10x10GE [LAN/WAN] SFPP). If you issue the **show chassis fpc** command with the **pic-status** option, the CLI displays the string “Not Supported” for 10x10GE(LAN/WAN) SFPP PICs installed on such FPCs. The following is a sample output:

```

user@host> show chassis fpc pic-
status
Slot 0   Online      E2-FPC Type 1
  PIC 0   Online      1x G/E SFP, 1000 BASE
  PIC 1   Online      Adaptive Services-II
  PIC 2   Online      1x G/E IQ, 1000 BASE
  PIC 3   Online      1x G/E IQ, 1000 BASE
Slot 1   Online      FPC Type 3-ES
  PIC 0   Present     UNUSED- Not Supported
Slot 2   Online      FPC Type 4-ES
  PIC 0   Offline     4x OC-192 SONET XFP
  PIC 1   Present     10x10GE(LAN/WAN) SFPP- Not
Supported      <<<<<<
Slot 4   Offline     FPC Type 1-ES
Slot 5   Offline     FPC Type 2-ES
Slot 6   Online      E2-FPC Type 3
  PIC 0   Online      1x OC-192 SONET XFP

```

```

PIC 1 Online 4x OC-48 SONET
PIC 2 Online 4x OC-48 SONET
PIC 3 Online MultiServices 500
Slot 7 Online FPC Type 4-ES
PIC 0 Online 4x 10GE (LAN/WAN) XFP
PIC 1 Online 4x 10GE (LAN/WAN) XFP

```

In addition, an entry is logged in the system log messages (`/var/log/messages`) that the PIC is not supported. The following is a sample message logged in the system log:

```

Apr 5 08:47:36 router1 chassisd[2770]:
CHASSISD_UNSUPPORTED_PIC: PIC 1 in FPC 2 (type 763,
version 257) is not supported

```

If you see this issue, contact Juniper Networks Technical Assistance Center (JTAC) for a possible fix. For more information about this issue and a possible solution, see [PSN-2010-03-696](#).

NOTE: When there is a double-bit ECC error in a network processor's memory, the Channelized OC3/STM1 (Multi-Rate) Circuit Emulation MIC with SFP or Channelized E1/T1 Circuit Emulation MIC is switched to the offline state.

```

user@host> show chassis fpc pic-status
Slot 1 Online MPC Type 2 3D Q
PIC 0 Offline 1xCOC12/4xCOC3 CH-CE- ECC error
detected

```

lcc number

(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

Required Privilege Level

view

Output Fields

[Table 73 on page 1341](#) lists the output fields for the **show chassis fpc** command. Output fields are listed in the approximate order in which they appear.

Table 73: show chassis fpc Output Fields

Field Name	Field Description	Level of Output
Slot or Slot State	<p>Slot number and state. The state can be one of the following conditions:</p> <ul style="list-style-type: none"> • Dead—Held in reset because of errors. • Diag—Slot is being ignored while the FPC is running diagnostics. • Dormant—Held in reset. • Empty—No FPC is present. • Offline—(PTX Series Packet Transport Routers only) One of the following two states is displayed: <ul style="list-style-type: none"> • FPC offlined due to unreachable destinations • FPC Offlined due to degraded FPC action • Online—FPC is online and running. • Present—FPC is detected by the chassis daemon but either is not supported by the current version of Junos OS or is inserted in the wrong slot. The output also states either Hardware Not Supported or Hardware Not In Right Slot. The FPC is coming up but not yet online. • Probed—Probe is complete; awaiting restart of the Packet Forwarding Engine. • Probe-wait—Waiting to be probed. • Unknown—FPC is present but the state is unknown. • Present—FPC is plugged in. The FPC is not powered on or operational. • Onlining—FPC is in the process of going online. ASIC and rest of the hardware is initializing. 	all levels

Table 73: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • Offlining—FPC is in the process of going offline. ASIC and rest of the hardware is being shutdown down to take the offline gracefully. • Fault—FPC is in an alarmed state in which none of the PICs are operational. • Fault-off—FPC is powered off due to a fault. • Spare—FPC is redundant and will move to active state if one of the working FPCs fails to pass traffic. 	
Logical slot	Slot number.	all levels
Temp (C) or Temperature	Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit.	all levels all levels
Temperature (PTX Series)	<p>On PTX Series Packet Transport Routers, temperature details are provided in degrees Celsius and Fahrenheit. Output includes:</p> <ul style="list-style-type: none"> • Temperature (PMB)—Temperature of the air passing by the Processor Mezzanine Board (PMB) at the bottom of the FPC. • Temperature (Intake)—Temperature of the air flowing into the chassis. • Temperature (Exhaust)—Exhaust temperatures for multiple zones (Exhaust A and Exhaust B). • Temperature (TL<i>n</i>)--Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC. • Temperature (TQ<i>n</i>)--Temperature of the specified Queuing and Memory Interface ASIC (TQ) of the packet forwarding engine on the FPC. 	detail

Table 73: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
Total CPU Utilization (%)	Total percentage of CPU being used by the FPC's processor.	all levels
Interrupt CPU Utilization (%)	Of the total CPU being used by the FPC's processor, the percentage being used for interrupts.	none specified
1 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 1 minute.	none specified
5 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 5 minutes.	none specified

Table 73: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
15 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008.	Information about the Routing Engine's CPU utilization in the past 15 minutes.	none specified
Memory DRAM (MB)	Total DRAM, in megabytes, available to the FPC's processor.	none specified
Heap Utilization (%)	Percentage of heap space (dynamic memory) being used by the FPC's processor. If this number exceeds 80 percent, there may be a software problem (memory leak). NOTE: On MX Series routers and EX Series switches in a broadband edge environment, heap utilization levels higher than 70 percent can affect unified ISSU, router stability, or scaling capability.	none specified
Buffer Utilization (%)	Percentage of buffer space being used by the FPC's processor for buffering internal messages.	none specified
Total CPU DRAM	Amount of DRAM available to the FPC's CPU.	detail
Total RLDRAM	Amount of reduced latency dynamic random access memory (RLDRAM) available to the FPC CPU.	detail

Table 73: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
Total DDR DRAM	Amount of double data rate dynamic random access memory (DDR DRAM) available to the FPC CPU.	detail
Total SRAM	Amount of static RAM (SRAM) used by the FPC's CPU.	detail
Total SDRAM	Total amount of memory used for storing packets and notifications.	detail
I/O Manager ASICs information	I/O Manager version number, manufacturer, and part number.	detail
Start time	Time when the Routing Engine detected that the FPC was running.	detail
Uptime	How long the Routing Engine has been connected to the FPC and, therefore, how long the FPC has been up and running.	detail
PIC type	(pic-status output only) Type of PIC.	none specified
GNF (Node slicing)	GNF identifier associated with each line card. (pic-status output only) GNF identifier associated with each PIC.	all levels

Sample Output

show chassis fpc (EX6210 Switch)

```

user@switch> show chassis fpc
          Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State  (C)  Total  Interrupt  DRAM (MB) Heap  Buffer

```


show chassis fpc detail (MX150)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Temperature          42 degrees C / 107 degrees F
  Total CPU DRAM       2048 MB
  Total RLD RAM        10 MB
  Total DDR DRAM       0 MB
  Start time           2017-04-04 04:44:04 PDT
  Uptime               7 days, 19 hours, 45 minutes, 50 seconds

```

show chassis fpc (MX104 Router)

```

user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State              (C)  Total  Interrupt  DRAM (MB) Heap  Buffer
  0  Online              32    15      5        2048    22    13
  1  Online              32    15      5        2048    22    13
  2  Online              32    15      5        2048    22    13

```

show chassis fpc detail (MX104 Router)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST
  Uptime               1 hour, 20 minutes, 22 seconds
Slot 1 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST

```

```

Uptime                1 hour, 20 minutes, 22 seconds
Slot 2 information:
  State                Online
  Temperature          32 (C)
  Total CPU DRAM       2048 MB
  Total SRAM           403 MB
  Total SDRAM          1316 MB
  Start time           2013-05-23 14:39:18 IST
  Uptime               1 hour, 20 minutes, 22 seconds

```

show chassis fpc pic-status (MX104 Router)

```

user@host> show chassis fpc pic-status
Slot 0  Online
Slot 1  Online
  PIC 0  Online      10x 1GE(LAN) -E SFP
  PIC 1  Online      10x 1GE(LAN) -E SFP
Slot 2  Online
  PIC 0  Online      4x 10GE(LAN) SFP+

```

show chassis fpc (MX240 Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total	CPU Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Empty						
1	Online	34	6	0	1024	18	30
2	Online	33	9	0	1024	24	30

If you have installed a Switch Control Board (SCB1) instead of a line card (DPC0) in the multifunction slot on the MX240, the **show chassis fpc** output shows the slot **0** as empty.

show chassis fpc detail (EX9200 Switch)

```

user@switch> show chassis fpc detail

Slot 2 information:
  State                Online
  Temperature          37

```

```

Total CPU DRAM                2048 MB
Total RLDRAM                   331 MB
Total DDR DRAM                 1536 MB
Start time:                    2014-03-12 15:35:28 UTC
Uptime:                        1 hour, 4 minutes, 29 seconds
Max Power Consumption          239 Watts
Slot 3 information:
State                          Online
Temperature                     39
Total CPU DRAM                 2048 MB
Total RLDRAM                   1036 MB
Total DDR DRAM                 6656 MB
Start time:                    2014-03-12 15:00:18 UTC
Uptime:                        1 hour, 39 minutes, 39 seconds
Max Power Consumption          520 Watts

```

show chassis fpc (MX480 Router)

```

user@host> show chassis fpc
          Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State      (C)  Total  Interrupt      1min   5min   15min  DRAM (MB)
Heap   Buffer
  0  Online           1      0      1     2     3
1024   4           56
  1  Online           1      0      2     2     3
1024   4           56

```

show chassis fpc (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis fpc
          Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State  (C)  Total  Interrupt  DRAM (MB)  Heap   Buffer
  0  Online   33   4     0       2048     10    13
  1  Online   36   7     0       2048     16    13
  2  Online   29   6     0       1024     27    29
  3  Online   33   0     0         0        0     0
  4  Online   36   7     0       2048     19    13
  5  Online   34  31    11       2048     14    13

```

show chassis fpc pic-status (MX480 Router with 100-Gigabit Ethernet CFP)

```

user@host> show chassis fpc pic-status
Slot 1  Online      MPC Type 3
  PIC 2  Online      1X100GE CFP
Slot 2  Online      DPCE 40x 1GE R EQ
  PIC 0  Online      10x 1GE(LAN) EQ
  PIC 1  Online      10x 1GE(LAN) EQ
  PIC 2  Online      10x 1GE(LAN) EQ
  PIC 3  Online      10x 1GE(LAN) EQ
Slot 3  Online      MPC Type 3
  PIC 0  Online      1X100GE CFP
  PIC 2  Online      1X100GE CFP
Slot 4  Online      MPC Type 3
  PIC 0  Online      1X100GE CFP
  PIC 2  Online      1X100GE CFP
Slot 5  Online      MPC Type 2 3D EQ
  PIC 0  Online      2x 10GE  XFP
  PIC 1  Online      2x 10GE  XFP
  PIC 2  Online      10x 1GE(LAN) SFP
  PIC 3  Online      10x 1GE(LAN) SFP

```

show chassis fpc pic-status (EX Series Switch)

```

user@host> show chassis fpc pic-status
Slot 1  Online      EX9200 32x10G SFP
  PIC 0  Online      8X10GE SFPP
  PIC 1  Online      8X10GE SFPP
  PIC 2  Online      8X10GE SFPP
  PIC 3  Online      8X10GE SFPP
Slot 2  Online      EX9200 32x10G SFP
  PIC 0  Online      8X10GE SFPP
  PIC 1  Online      8X10GE SFPP
  PIC 2  Online      8X10GE SFPP
  PIC 3  Online      8X10GE SFPP

```

show chassis fpc (MX960 Router with MPC5EQ)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Interrupt	Memory DRAM (MB)	Heap	Utilization (%)	Buffer
0	Online	38	16	0	3584	7	13	
1	Online	31	15	0	2048	17	13	
2	Empty							
3	Online	31	14	0	2048	20	13	
4	Online	34	16	0	3584	7	13	
5	Online	34	16	0	3584	7	13	
6	Empty							
7	Online	32	9	0	2048	18	14	
8	Online	36	19	0	3584	7	13	
9	Online	31	9	0	2048	13	13	
10	Online	35	14	0	3584	7	13	
11	Online	33	11	0	2048	18	14	

show chassis fpc (MX240, MX480, MX960 with Application Services Modular Line Card)

```

user@host> show chassis fpc 1 detail
Slot 1 information:
State                               Online
Temperature                           34
Total CPU DRAM                        3072 MB
Total RLDRAM                          259 MB
Total DDR DRAM                        4864 MB
Start time:                           2012-06-19 10:51:43 PDT
Uptime:                               16 minutes, 48 seconds
Max Power Consumption                 550 Watts

```

show chassis fpc (MX240, MX480, MX960, MX2010, MX2020, and MX2008 Universal Routing Platforms with Dynamic Power Management)

```

user@host> show chassis fpc 2 detail

Slot 2 information:
State                               Online
Temperature                           37

```

```

Total CPU DRAM          3584 MB
Total XR2               275 MB
Total DDR DRAM         20352 MB
Start time:            2014-07-18 02:51:23 PDT
Uptime:                5 minutes, 19 seconds
Max MPC Base Power Consumption  485 Watts
Max MIC0 Power Consumption    50 Watts
Max MIC1 Power Consumption    50 Watts
Max MPC Total Power Consumption 585 Watts

```

show chassis fpc (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass is enabled by default. All MPCs power on.

```

user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State            (C)  Total  Interrupt  DRAM (MB) Heap  Buffer
 0 Online             34    20      0      2048     9    14
 1 Offline            33    22      0      2048     9    14
 2 Online             33    17      0      2048     9    14
 3 Offline            34    25      0      2048     9
14
 4 Online             32    27      0      2048     9    14
 5 Offline            32    26      0      2048
9      14
 6 Empty
 7 Empty
 8 Empty
 9 Empty

```

show chassis fpc (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the **show chassis fpc** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass and reboot the router. Also, FPC misconfiguration alarms are generated.

```

user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)

```


Slot	State	(C)	Total	Interrupt	DRAM (MB)	Heap	Buffer
0	Online	34	20	0	2048	9	14
1	Offline	---FPC misconfiguration---					
2	Online	33	17	0	2048	9	14
3	Offline	---FPC misconfiguration---					
4	Online	32	27	0	2048	9	14
5	Offline	---FPC misconfiguration---					
6	Empty						
7	Empty						
8	Empty						
9	Empty						

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been enabled by default. All MPCs power on.

```
user@host> show chassis fpc pic-status
Slot 0   Present      MPCE Type 3 3D
Slot 1   Present      MPC Type 2 3D EQ
Slot 2   Present      MPCE Type 3 3D
Slot 3   Present      MPC 3D 16x 10GE
Slot 4   Present      MPCE Type 3 3D
Slot 5   Present      MPCE Type 1 3D Q
```

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the **show chassis fpc pic-status** command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass mode and reboot the router.

```
user@host> show chassis fpc pic-status
Slot 0   Present      MPCE Type 3 3D
Slot 1   Offline      MPC Type 2 3D EQ
Slot 2   Present      MPCE Type 3 3D
Slot 3   Offline      MPC 3D 16x 10GE
Slot 4   Present      MPCE Type 3 3D
Slot 5   Offline      MPCE Type 1 3D Q
```


show chassis fpc detail (MX10003 Router)

```

user@host> show chassis fpc detail

Slot 0 information:
  State                Online
  Total CPU DRAM       3136 MB
  Total RLDRAM         771 MB
  Total DDR DRAM       18432 MB
  Temperature          60 degrees C / 140 degrees F
  Start time           2017-07-19 20:49:58 PDT
  Uptime               2 hours, 29 minutes, 22 seconds
  Max MPC base power consumption 910 Watts
  Max MIC1 power consumption 95 Watts
  Max MPC total power consumption 1005 Watts

Slot 1 information:
  State                Online
  Total CPU DRAM       3136 MB
  Total RLDRAM         771 MB
  Total DDR DRAM       18432 MB
  Temperature          63 degrees C / 145 degrees F
  Start time           2017-07-19 20:48:01 PDT
  Uptime               2 hours, 31 minutes, 19 seconds
  Max MPC base power consumption 910 Watts
  Max MIC1 power consumption 155 Watts
  Max MPC total power consumption 1065 Watts

```

show chassis fpc <fpc-slot> (MX10003 Router)

```

user@host> show chassis fpc 0

          Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State      (C)  Total  Interrupt      1min   5min   15min  DRAM (MB)
Heap   Buffer
  0  Online      49    26      0        22    22    23    3136
 12      11

```

show chassis fpc (MX204 Router)

```

user@host> show chassis fpc

              Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State    (C)  Total  Interrupt    1min   5min   15min  DRAM (MB)
Heap   Buffer
  0  Online    Absent  8          0       8     8     8
3136   8       8

```

show chassis fpc detail (MX204 Router)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                               Online
  Total CPU DRAM                       3136 MB
  Total RLDRAM                           257 MB
  Total DDR DRAM                         4096 MB
  Temperature                            Absent
  Start time                             2017-11-05 22:14:01 PST
  Uptime                                  2 days, 8 hours, 5 minutes, 55 seconds

```

show chassis fpc <fpc-slot> (MX204 Router)

```

user@host> show chassis fpc 0

              Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State    (C)  Total  Interrupt    1min   5min   15min  DRAM (MB)
Heap   Buffer
  0  Online    Absent  8          0       8     8     8
3136   8       8

```

show chassis fpc (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Interrupt	Memory DRAM (MB)	Heap	Utilization (%)	Buffer
0	Online	31	20	0	3584	7	13	
1	Online	28	19	0	2048	17	13	
2	Online	27	10	0	2048	18	14	
3	Online	26	10	0	2048	13	13	
4	Online	29	19	0	3584	7	13	
5	Online	28	68	0	2048	20	13	
6	Empty							
7	Empty							
8	Empty							
9	Online	36	19	0	3584	10	13	
10	Online	37	26	0	3584	10	13	
11	Empty							
12	Empty							
13	Empty							
14	Empty							
15	Empty							
16	Empty							
17	Online	28	43	0	3584	10	13	
18	Online	29	19	0	3584	7	13	
19	Online	31	19	0	3584	7	13	

show chassis fpc detail (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc detail

```

Slot 0 information:

State	Online
Temperature	31
Total CPU DRAM	3584 MB
Total XR2	291 MB
Total DDR DRAM	24960 MB
Start time:	2014-04-22 23:33:19 PDT
Uptime:	6 minutes, 24 seconds
Max Power Consumption	607 Watts

Slot 1 information:

```

State                               Online
Temperature                          28
Total CPU DRAM                       2048 MB
Total RLDRAM                         1036 MB
Total DDR DRAM                       6656 MB
Start time:                          2014-04-22 23:33:24 PDT
Uptime:                              6 minutes, 19 seconds
Max Power Consumption                520 Watts
Slot 2 information:
State                               Online
Temperature                          27
Total CPU DRAM                       2048 MB
Total RLDRAM                         1036 MB
Total DDR DRAM                       11264 MB
Start time:                          2014-04-22 23:33:34 PDT
Uptime:                              6 minutes, 9 seconds
Max Power Consumption                608 Watts
Slot 3 information:
State                               Online
Temperature                          26
Total CPU DRAM                       2048 MB
Total RLDRAM                         734 MB
Total DDR DRAM                       3108 MB
Start time:                          2014-04-22 23:33:39 PDT
Uptime:                              6 minutes, 4 seconds
Max Power Consumption                368 Watts
Slot 4 information:
State                               Online
Temperature                          29
Total CPU DRAM                       3584 MB
Total XR2                             291 MB
Total DDR DRAM                       24960 MB
Start time:                          2014-04-22 23:33:51 PDT
Uptime:                              5 minutes, 52 seconds
Max Power Consumption                607 Watts
Slot 5 information:
State                               Online
Temperature                          28
Total CPU DRAM                       2048 MB
Total RLDRAM                         1324 MB
Total DDR DRAM                       5120 MB
Start time:                          2014-04-22 23:33:57 PDT
Uptime:                              5 minutes, 46 seconds

```

```

Max Power Consumption          440 Watts
Slot 9 information:
  State                         Online
  Temperature                   25
  Total CPU DRAM                3584 MB
  Total XR2                     518 MB
  Total DDR DRAM                49920 MB
  Start time:                   2014-04-22 23:31:20 PDT
  Uptime:                       8 minutes, 23 seconds
  Max Power Consumption        1130 Watts
Slot 10 information:
  State                         Online
  Temperature                   32
  Total CPU DRAM                3584 MB
  Total XR2                     518 MB
  Total DDR DRAM                49920 MB
  Start time:                   2014-04-22 23:31:25 PDT
  Uptime:                       8 minutes, 18 seconds
  Max Power Consumption        1130 Watts
Slot 17 information:
  State                         Online
  Temperature                   25
  Total CPU DRAM                3584 MB
  Total XR2                     518 MB
  Total DDR DRAM                49920 MB
  Start time:                   2014-04-22 23:31:29 PDT
  Uptime:                       8 minutes, 14 seconds
  Max Power Consumption        1130 Watts
Slot 18 information:
  State                         Online
  Temperature                   29
  Total CPU DRAM                3584 MB
  Total XR2                     291 MB
  Total DDR DRAM                24960 MB
  Start time:                   2014-04-22 23:34:11 PDT
  Uptime:                       5 minutes, 32 seconds
  Max Power Consumption        607 Watts
Slot 19 information:
  State                         Online
  Temperature                   32
  Total CPU DRAM                3584 MB
  Total XR2                     291 MB
  Total DDR DRAM                24960 MB

```

```

Start time:                2014-04-22 23:34:20 PDT
Uptime:                    5 minutes, 23 seconds
Max Power Consumption      607 Watts

```

show chassis fpc pic-status (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc pic-status
Slot 0   Online      MPC5E 3D Q 24XGE+6XLGE
  PIC 0   Online      12X10GE SFPP OTN
  PIC 1   Online      12X10GE SFPP OTN
  PIC 2   Offline     3X40GE QSFPP
  PIC 3   Offline     3X40GE QSFPP
Slot 1   Online      MPCE Type 3 3D
  PIC 0   Online      10X10GE SFPP
  PIC 2   Online      1X100GE CXP
Slot 2   Online      MPC4E 3D 2CGE+8XGE
  PIC 0   Online      4x10GE SFPP
  PIC 1   Online      1X100GE CFP
  PIC 2   Online      4x10GE SFPP
  PIC 3   Online      1X100GE CFP
Slot 3   Online      MPCE Type 2 3D P
  PIC 0   Online      2x 10GE  XFP
  PIC 1   Online      2x 10GE  XFP
Slot 4   Online      MPC5E 3D Q 2CGE+4XGE
  PIC 0   Online      2X10GE SFPP OTN
  PIC 1   Online      1X100GE CFP2 OTN
  PIC 2   Online      2X10GE SFPP OTN
  PIC 3   Online      1X100GE CFP2 OTN
Slot 5   Online      MPC 3D 16x 10GE
  PIC 0   Online      4x 10GE(LAN) SFP+
  PIC 1   Online      4x 10GE(LAN) SFP+
  PIC 2   Online      4x 10GE(LAN) SFP+
  PIC 3   Online      4x 10GE(LAN) SFP+
Slot 9   Online      MPC6E 3D
  PIC 0   Online      2X100GE CFP2 OTN
  PIC 1   Online      2X100GE CFP2 OTN
Slot 10  Online      MPC6E 3D
  PIC 0   Online      24X10GE SFPP OTN
  PIC 1   Online      4X100GE CXP
Slot 17  Online      MPC6E 3D
  PIC 0   Online      24X10GE SFPP

```



```

PIC 1 Online 4X100GE CXP
Slot 18 Online MPC5E 3D Q 24XGE+6XLGE
PIC 0 Offline 12X10GE SFPP OTN
PIC 1 Offline 12X10GE SFPP OTN
PIC 2 Online 3X40GE QSFPP
PIC 3 Online 3X40GE QSFPP
Slot 19 Online MPC5E 3D Q 24XGE+6XLGE
PIC 0 Online 12X10GE SFPP OTN
PIC 1 Offline 12X10GE SFPP OTN
PIC 2 Offline 3X40GE QSFPP
PIC 3 Online 3X40GE QSFPP

```

show chassis fpc detail (MX Series Routers)

```

user@host> show chassis fpc detail 2
Slot 0 information:
State Online
Temperature 36 degrees C / 96 degrees F
Total CPU DRAM 1024 MB
Total RLDRAM 256 MB
Total DDR DRAM 4096 MB
Start time: 2009-08-11 21:20:30 PDT
Uptime: 2 hours, 8 minutes, 50 seconds
Max Power Consumption 335 Watts

```

show chassis fpc detail (EX Series Switches)

```

user@host> show chassis fpc detail 2
Slot 1 information:
State Online
Temperature 41
Total CPU DRAM 2048 MB
Total RLDRAM 1036 MB
Total DDR DRAM 11264 MB
Start time: 2013-04-02 00:04:52 PDT
Uptime: 7 days, 9 hours, 47 minutes, 46 seconds
Max Power Consumption 610 Watts
Slot 2 information:
State Online
Temperature 41

```

```

Total CPU DRAM          2048 MB
Total RLDRAM            1036 MB
Total DDR DRAM          11264 MB
Start time:             2013-04-02 00:04:56 PDT
Uptime:                 7 days, 9 hours, 47 minutes, 42 seconds
Max Power Consumption    610 Watts

```

show chassis fpc detail (EX9251 Switches)

```

user@switch> show chassis fpc detail 2
Slot 0 information:
  State                Online
  Total CPU DRAM       3136 MB
  Total RLDRAM         257 MB
  Total DDR DRAM       4096 MB
  Temperature          Absent
  Start time           2018-03-12 14:59:49 PDT
  Uptime               1 day, 1 hour, 10 minutes, 48 seconds

```

show chassis fpc detail (EX9253 Switches)

```

user@switch> show chassis fpc detail 1
Slot 1 information:
  State                Online
  Total CPU DRAM       3136 MB
  Total RLDRAM         771 MB
  Total DDR DRAM       18432 MB
  Temperature          59 degrees C / 138 degrees F
  Start time           2018-03-04 14:20:42 PST
  Uptime               3 days, 10 hours, 40 minutes, 57 seconds
  Max MPC base power consumption  910 Watts
  Max MIC1 power consumption      95 Watts
  Max MPC total power consumption 1005 Watts

```

show chassis fpc (Hardware Not Supported)

```

user@host> show chassis fpc
show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Online				CPU less FPC		
1	Present				Hardware Not In Right Slot		
2	Online		0	0	0	0	0
3	Present				Hardware Not Supported		
4	Empty						
5	Empty						
6	Online		0	0	0	0	0

show chassis fpc detail (Hardware Not Supported)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Total CPU DRAM      ---- CPU less FPC ----
  Start time          2006-07-07 03:21:00 UTC
  Uptime              27 minutes, 51 seconds
Slot 1 information:
  State                Present
  Reason              --- Hardware Not In Right Slot ---
Slot 2 information:
  State                Online
  Total CPU DRAM      32 MB
  Start time          2006-07-07 03:20:59 UTC
  Uptime              27 minutes, 52 seconds
Slot 3 information:
  State                Present
  Reason              --- Hardware Not Supported ---
  Total CPU DRAM      0 MB
Slot 6 information:
  State                Online
  Total CPU DRAM      32 MB
  Start time          2006-07-07 03:21:01 UTC
  Uptime              27 minutes, 50 seconds

```

show chassis fpc pic-status

```

user@host> show chassis fpc pic-status
Slot 0 Online
  PIC 1    1x OC-12 ATM, MM
  PIC 2    1x OC-12 ATM, MM
  PIC 3    1x OC-12 ATM, MM
Slot 1 Online
  PIC 0    1x OC-48 SONET, SMIR
Slot 2 Online
  PIC 0    1x OC-192 SONET, SMSR

```

show chassis fpc pic-status (M Series Routers)

```

user@host> show chassis fpc pic-status
Slot 1  Online      FPC Type 1
  PIC 0  Present    2x OC-3 ATM, MM- Hardware Error
  PIC 1  Online     4x OC-3 SONET, SMIR
Slot 2  Online      E-FPC Type 2
  PIC 0  Online     4x G/E, 1000 BASE-SX
  PIC 1  Online     2x G/E SFP, 1000 BASE
  PIC 3  Online     1x Tunnel
Slot 3  Online      E-FPC Type 1
  PIC 0  Online     1x G/E IQ, 1000 BASE
  PIC 2  Online     1x G/E SFP, 1000 BASE
Slot 4  Online      E-FPC Type 2
  PIC 0  Online     4x G/E SFP, 1000 BASE
  PIC 1  Online     4x G/E SFP, 1000 BASE
  PIC 2  Online     4x G/E SFP, 1000 BASE
  PIC 3  Online     4x G/E SFP, 1000 BASE
Slot 5  Online      FPC Type 2
...

```

show chassis fpc pic-status (M120 Router)

```

user@host> show chassis fpc pic-status
Slot 1  Online      M120 CFPC 10GE
  PIC 0  Online     1x 10GE (LAN/WAN) XFP
Slot 3  Online      M120 FPC Type 2 (proto)

```

```

PIC 0 Online      2x G/E IQ, 1000 BASE
PIC 1 Online      4x OC-3 SONET, SMIR
PIC 2 Online      2x G/E IQ, 1000 BASE
PIC 3 Online      8x 1GE(LAN), IQ2
Slot 4 Online     M120 FPC Type 3 (proto)
  PIC 0 Online    10x 1GE(LAN), 1000 BASE
Slot 5 Online     M120 FPC Type 1 (proto)
  PIC 0 Present   1x G/E, 1000 BASE-LX- Not Supported
  PIC 1 Online    1x CHOC3 IQ SONET, SMLR
  PIC 2 Online    4x CHDS3 IQ
  PIC 3 Online    1x G/E SFP, 1000 BASE

```

show chassis fpc pic-status (MX240, MX480, and MX960 Routers with Application Services Modular Line Card)

In the following output **Slot 1 and Slot 5** are the Application Services Modular Carrier Cards (AS MCC), **PIC 0** is the Application Services Modular Storage Card (AS MSC), and **PIC 2** is the Application Services Modular Processing Card (AS MXC).

```

user@host>show chassis fpc pic-status
Slot 2 Online      MPC Type 1 3D Q
  Slot 1 Online    AS-MCC
  PIC 0 Online     AS-MS
  PIC 2 Online     AS-MXC
Slot 4 Offline     MPC 3D 16x 10GE
Slot 5 Offline     AS-MCC

```

show chassis fpc lcc (TX Matrix Router)

```

user@host> show chassis fpc lcc 0
lcc0-re0:
-----
                Temp CPU                               Utilization (%)
Memory Utilization (%)
Slot State      (C) Total Interrupt                DRAM
(MB)            Heap Buffer
  0 Empty
  1 Online      27    2    0                256
8 44
  2 Online      27    3    0                256

```

```

15          44
 3 Empty
 4 Empty
 5 Empty
 6 Empty
 7 Empty

```

show chassis fpc pic-status (TX Matrix Router)

```

user@host> show chassis fpc pic-status
lcc0-re0:
-----
Slot 0   Online      FPC Type 3
  PIC 0   Online      1x OC-192 SM SR1
  PIC 1   Online      1x OC-192 SM SR2
  PIC 2   Online      1x OC-192 SM SR1
  PIC 3   Online      1x Tunnel
Slot 1   Online      FPC Type 2
  PIC 0   Online      1x OC-48 SONET, SMSR
  PIC 1   Online      1x OC-48 SONET, SMSR

lcc1-re0:
-----

lcc2-re0:
-----
Slot 1   Online      FPC Type 3
  PIC 0   Online      1x OC-192 SM SR1
Slot 5   Online      FPC Type 2
  PIC 0   Online      1x OC-48 SONET, SMSR
  PIC 1   Online      2x G/E, 1000 BASE-LX
  PIC 2   Online      2x G/E, 1000 BASE-LX
  PIC 3   Online      1x OC-48 SONET, SMSR

lcc3-re0:
-----

```

show chassis fpc pic-status lcc (TX Matrix Router)

```

user@host> show chassis fpc pic-status lcc 0
lcc0-re0:
-----
Slot 0   Online      FPC Type 3
  PIC 0   Online      1x OC-192 SM SR2
Slot 1   Online      FPC Type 2
  PIC 0   Online      2x OC-12 ATM2 IQ, MM
  PIC 1   Online      1x OC-48 SONET, SMSR
  PIC 2   Online      1x OC-48 SONET, SMSR
  PIC 3   Online      4x G/E, 1000 BASE-SX

```

show chassis fpc (TX Matrix Plus Router)

```

user@host> show chassis fpc
lcc0-re0:
-----

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Empty						
1	Online	38	4	0	2048	3	24
2	Online	43	8	0	2048	6	24
3	Empty						
4	Online	43	6	0	2048	6	24
5	Empty						
6	Online	42	13	0	2048	6	24
7	Online	45	7	0	2048	3	24

```

lcc2-re0:
-----

```

Slot	State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0	Online	42	10	0	2048	6	24
1	Empty						
2	Online	42	11	0	2048	6	24
3	Online	40	5	0	2048	3	24
4	Online	33	26	0	1024	8	49
5	Empty						
6	Online	43	8	0	2048	6	24

```

7 Online          46      6      0      2048      3      24

lcc3-re0:
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
                (C)  Total  Interrupt           DRAM (MB) Heap      Buffer
0 Empty
1 Empty
2 Online        39    30     0     2048      7     24
3 Empty
4 Online        41     8     0     2048      6     24
5 Online        41    12     0     2048      6     24
6 Online        40     8     0     2048      6     24
7 Online        42     4     0     2048      3     24

```

show chassis fpc lcc (TX Matrix Plus Router)

```

user@host> show chassis fpc lcc 0
lcc0-re0:
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
                (C)  Total  Interrupt           DRAM (MB) Heap      Buffer
0 Empty
1 Online        38     4     0     2048      3     24
2 Online        43     8     0     2048      6     24
3 Empty
4 Online        43     6     0     2048      6     24
5 Empty
6 Online        42    14     0     2048      6     24
7 Online        45     6     0     2048      3     24

```

show chassis fpc detail (TX Matrix Plus Router)

```

user@host> show chassis fpc details

lcc0-re0:
-----

Slot 1 information:
State                Online
Temperature          38 degrees C / 100 degrees F

```



```
Total CPU DRAM      2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:06:22 PDT
Uptime               1 hour, 32 minutes, 51 seconds

Slot 2 information:
State                Online
Temperature          43 degrees C / 109 degrees F
Total CPU DRAM      2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:37 PDT
Uptime               1 hour, 32 minutes, 36 seconds

Slot 4 information:
State                Online
Temperature          43 degrees C / 109 degrees F
Total CPU DRAM      2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:40 PDT
Uptime               1 hour, 32 minutes, 33 seconds

Slot 6 information:
State                Online
Temperature          42 degrees C / 107 degrees F
Total CPU DRAM      2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:42 PDT
Uptime               1 hour, 32 minutes, 31 seconds

Slot 7 information:
State                Online
Temperature          45 degrees C / 113 degrees F
Total CPU DRAM      2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:06:43 PDT
Uptime               1 hour, 32 minutes, 30 seconds

lcc2-re0:
-----
Slot 0 information:
State                Online
Temperature          42 degrees C / 107 degrees F
```

```

Total CPU DRAM          2048 MB
Total SRAM              128 MB
Total SDRAM            2560 MB
Start time              2010-10-04 20:06:35 PDT
Uptime                  1 hour, 32 minutes, 38 seconds

Slot 2 information:
State                   Online
Temperature             42 degrees C / 107 degrees F
Total CPU DRAM         2048 MB
Total SRAM              128 MB
Total SDRAM            2560 MB
Start time              2010-10-04 20:06:37 PDT
Uptime                  1 hour, 32 minutes, 36 seconds

Slot 3 information:
State                   Online
Temperature             40 degrees C / 104 degrees F
Total CPU DRAM         2048 MB
Total SRAM              64 MB
Total SDRAM            1280 MB
Start time              2010-10-04 20:06:28 PDT
Uptime                  1 hour, 32 minutes, 45 seconds

Slot 4 information:
State                   Online
Temperature             33 degrees C / 91 degrees F
Total CPU DRAM         1024 MB
Total SRAM              64 MB
Total SDRAM            1280 MB
Start time              2010-10-04 20:08:03 PDT
Uptime                  1 hour, 31 minutes, 10 seconds

Slot 6 information:
State                   Online
Temperature             43 degrees C / 109 degrees F
Total CPU DRAM         2048 MB
Total SRAM              128 MB
Total SDRAM            2560 MB
Start time              2010-10-04 20:06:44 PDT
Uptime                  1 hour, 32 minutes, 29 seconds

Slot 7 information:
State                   Online
Temperature             46 degrees C / 114 degrees F
Total CPU DRAM         2048 MB
Total SRAM              64 MB
Total SDRAM            1280 MB

```

```

Start time          2010-10-04 20:06:46 PDT
Uptime              1 hour, 32 minutes, 27 seconds

```

```
lcc3-re0:
```

```
-----
Slot 2 information:
```

```

State              Online
Temperature         38 degrees C / 100 degrees F
Total CPU DRAM     2048 MB
Total SRAM         128 MB
Total SDRAM        2560 MB
Start time         2010-10-04 20:17:31 PDT
Uptime             1 hour, 21 minutes, 42 seconds

```

```
Slot 4 information:
```

```

State              Online
Temperature         41 degrees C / 105 degrees F
Total CPU DRAM     2048 MB
Total SRAM         128 MB
Total SDRAM        2560 MB
Start time         2010-10-04 20:17:34 PDT
Uptime             1 hour, 21 minutes, 39 seconds

```

```
Slot 5 information:
```

```

State              Online
Temperature         41 degrees C / 105 degrees F
Total CPU DRAM     2048 MB
Total SRAM         128 MB
Total SDRAM        2560 MB
Start time         2010-10-04 20:17:36 PDT
Uptime             1 hour, 21 minutes, 37 seconds

```

```
Slot 6 information:
```

```

State              Online
Temperature         40 degrees C / 104 degrees F
Total CPU DRAM     2048 MB
Total SRAM         128 MB
Total SDRAM        2560 MB
Start time         2010-10-04 20:17:39 PDT
Uptime             1 hour, 21 minutes, 34 seconds

```

```
Slot 7 information:
```

```

State              Online
Temperature         42 degrees C / 107 degrees F
Total CPU DRAM     2048 MB
Total SRAM         64 MB
Total SDRAM        1280 MB

```

```

Start time          2010-10-04 20:17:41 PDT
Uptime              1 hour, 21 minutes, 32 seconds

```

show chassis fpc pic-status (TX Matrix Plus Router)

```
user@host> show chassis fpc pic-status
```

```
lcc0-re0:
```

```

-----
Slot 1  Online      FPC Type 2-ES
  PIC 0  Online      8x 1GE(LAN), IQ2
Slot 2  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 4  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
  PIC 0  Online      10x 1GE(LAN), 1000 BASE
  PIC 2  Online      1x OC-192 SM SR2
  PIC 3  Online      10x 1GE(LAN), 1000 BASE

```

```
lcc2-re0:
```

```

-----
Slot 0  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
Slot 2  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
  PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 3  Online      FPC Type 2-ES
  PIC 0  Online      8x 1GE(LAN), IQ2
Slot 4  Online      FPC Type 4
  PIC 0  Online      10x10GE(LAN/WAN) SFPP
Slot 6  Online      FPC Type 4-ES
  PIC 0  Online      4x OC-192 SONET XFP
Slot 7  Online      FPC Type 3-ES
  PIC 0  Online      10x 1GE(LAN), 1000 BASE
  PIC 1  Offline     1x 10GE(LAN/WAN) IQ2E
  PIC 2  Online      1x OC-192 SM SR2
  PIC 3  Online      1x Tunnel

```

```
lcc3-re0:
```

```
-----
Slot 2  Online      FPC Type 4-ES
      PIC 0  Online      10x10GE (LAN/WAN) SFPP
Slot 4  Online      FPC Type 4-ES
      PIC 0  Online      4x OC-192 SONET XFP
Slot 5  Online      FPC Type 4-ES
      PIC 0  Online      4x OC-192 SONET XFP
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 6  Online      FPC Type 4-ES
      PIC 1  Online      4x 10GE (LAN/WAN) XFP
Slot 7  Online      FPC Type 3-ES
      PIC 0  Online      10x 1GE(LAN), 1000 BASE
      PIC 1  Online      8x 1GE (TYPE3), IQ2E
      PIC 2  Online      4x OC-48 SONET
```

show chassis fpc (T1600 Router)

```
user@host> show chassis fpc
```

Slot	State	Temp (C)	CPU Utilization (%) Total	Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Empty						
1	Empty						
2	Online	49	3	0	2048	3	24
3	Online	46	6	0	2048	6	24
4	Empty						
5	Online	46	5	0	2048	3	24
6	Empty						
7	Online	44	8	0	1024	7	49

show chassis fpc detail (T1600 Router)

```
user@host> show chassis fpc detail
```

```
show chassis fpc detail
```

```
Slot 2 information:
```

```
State                               Online
Temperature                          49 degrees C / 120 degrees F
Total CPU DRAM                       2048 MB
```

```

Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 21:12:52 PDT
Uptime                   32 minutes, 9 seconds
Slot 3 information:
State                     Online
Temperature               47 degrees C / 116 degrees F
Total CPU DRAM           2048 MB
Total SRAM                128 MB
Total SDRAM               2560 MB
Start time                2010-10-04 21:13:06 PDT
Uptime                   31 minutes, 55 seconds
Slot 5 information:
State                     Online
Temperature               46 degrees C / 114 degrees F
Total CPU DRAM           2048 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 21:12:56 PDT
Uptime                   32 minutes, 5 seconds
Slot 7 information:
State                     Online
Temperature               44 degrees C / 111 degrees F
Total CPU DRAM           1024 MB
Total SRAM                64 MB
Total SDRAM               1280 MB
Start time                2010-10-04 21:14:34 PDT
Uptime                   30 minutes, 27 seconds

```

show chassis fpc <fpc-slot> (EX Series Switch)

```

user@host> show chassis fpc 2

Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
              (C)  Total  Interrupt           DRAM (MB) Heap    Buffer
2  Online       40    12    0                2048    19    14

```

show chassis fpc slot (T1600 Router)

```
user@host> show chassis fpc slot 2
```

Slot State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
2 Online	49	3	0	2048	3	24

show chassis fpc pic-status (T1600 Router)

```
user@host> show chassis fpc pic-status
```

```
Slot 2  Online      FPC Type 1-ES
  PIC 0  Online      Load Type 1
  PIC 1  Online      4x 1GE(LAN), IQ2E
  PIC 3  Online      1x OC-12-3 SFP
Slot 3  Online      FPC Type 4-ES
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
  PIC 1  Online      4x OC-192 SONET XFP
Slot 5  Online      FPC Type 2-ES
  PIC 0  Online      Load Type 2
  PIC 1  Online      8x 1GE(LAN), IQ2E
  PIC 2  Online      8x 1GE(LAN), IQ2E
  PIC 3  Online      1x OC-48-12-3 SFP
Slot 7  Online      FPC Type 4
  PIC 0  Online      4x 10GE (LAN/WAN) XFP
```

show chassis fpc (T4000 Router)

```
user@host> show chassis fpc
```

Slot State	Temp (C)	CPU Utilization (%) Total	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Buffer
0 Online	48	15	0	2816	21	27
1 Empty						
2 Empty						
3 Online	51	15	0	2816	21	27
4 Empty						
5 Online	39	8	0	2048	6	23

6	Online	49	15	0	2816	21	27
7	Empty						

show chassis fpc detail (T4000 Router)

```
user@host> show chassis fpc detail
```

```
Slot 0 information:
```

```
State                Online
Temperature          48 degrees C / 118 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:25 PST
Uptime               2 hours, 40 minutes, 52 seconds
```

```
Slot 3 information:
```

```
State                Online
Temperature          51 degrees C / 123 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:22 PST
Uptime               2 hours, 40 minutes, 55 seconds
```

```
Slot 5 information:
```

```
State                Online
Temperature          39 degrees C / 102 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2012-02-09 22:51:27 PST
Uptime               2 hours, 45 minutes, 50 seconds
```

```
Slot 6 information:
```

```
State                Online
Temperature          49 degrees C / 120 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:29 PST
Uptime               2 hours, 40 minutes, 48 seconds
```


show chassis fpc pic-status (T4000 Router)

```

user@host> show chassis fpc pic-status
Slot 0   Online      FPC Type 5-3D
  PIC 0   Online      12x10GE (LAN/WAN) SFPP
  PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 3   Online      FPC Type 5-3D
  PIC 0   Online      1x100GE
  PIC 1   Online      12x10GE (LAN/WAN) SFPP
Slot 5   Online      FPC Type 4-ES
  PIC 0   Online      100GE
  PIC 1   Online      100GE CFP
Slot 6   Online      FPC Type 5-3D
  PIC 0   Online      12x10GE (LAN/WAN) SFPP
  PIC 1   Online      12x10GE (LAN/WAN) SFPP

```

show chassis fpc (QFX Series and OCX Series)

```

user@switch> show chassis fpc
Temp CPU Utilization (%)   Memory   Utilization (%)
Slot State                 (C) Total Interrupt    DRAM (MB) Heap    Buffer
0 Online                   26     2         0      2820     0     49

```

show chassis fpc detail (QFX3500 Switches)

```

user@switch> show chassis fpc detail
Slot 0 information:
  State                               Online
  Temperature                          28 degrees C / 82 degrees F
  Total CPU DRAM                       2820 MB
  Total SRAM                           0 MB
  Total SDRAM                          0 MB
  Start time                          2010-09-20 01:34:13 PDT
  Uptime                               3 days, 3 hours, 31 minutes, 48 seconds

```

show chassis fpc pic-status (QFX3500 Switches)

```

user@switch> show chassis fpc pic-status
Slot 0   Online           QFX 48x10G 4x40G Switch
  PIC 0   Online           48x 10G-SFP+
  PIC 1   Online           15x 10G-SFP+

```

show chassis fpc interconnect-device (QFabric System)

```

user@switch> show chassis fpc interconnect-device
interconnect1
FPC status:

Slot State           Temp
                (C)
0 Online              0
1 Online              0
2 Online              0
3 Online              0
4 Online              0
5 Online              0
6 Online              0
7 Online              0
8 Online              0
9 Online              0
10 Online             0
11 Online             0
12 Online             0
13 Online             0
14 Online             0
15 Online             0

```

show chassis fpc interconnect-device (QFabric System)

```

user@switch> show chassis fpc interconnect-device
interconnect1 3
FPC status:

Temp

```

```
Slot State          (C)
  3 Online          0
```

show chassis fpc interconnect-device detail (QFabric System)

```
user@switch> show chassis fpc interconnect-device
interconnect1 3 detail
Slot 3 information:
  State                Online
  Temperature           0 degrees C / 32 degrees F
  Start time            2011-08-18 10:45:04 PDT
  Uptime                1 minute, 49 seconds
```

show chassis fpc pic-status interconnect-device (QFabric System)

```
user@switch> show chassis fpc pic-status interconnect-device
interconnect1
Slot 0  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 1  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 2  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 3  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 4  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 5  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 6  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
  PIC 1  Online      16x 40G-GE
Slot 7  Online      QFX 16-port QSFP+ Front Card
  PIC 0  Online      16x 40G-QSFP+
```

```

PIC 1 Online          16x 40G-GE
Slot 8 Online        QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 9 Online        QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 10 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 11 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 12 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 13 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 14 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE
Slot 15 Online       QFX Fabric Rear Card
PIC 0 Online          16x 40G-GE

```

show chassis fpc pic-status node-device (QFabric System)

```

user@switch> show chassis fpc pic-status node-device
node1
Slot node1 Online      QFX 48x10G 4x40G Switch
PIC 0 Online           48x 10G-SFP+
PIC 1 Online           4x 40G-QSFP+

```

show chassis fpc (PTX5000 Packet Transport Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%) Total	CPU Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) Buffer
0	Empty						
1	Empty						
2	Online	50	6	0	2816	5	27
3	Empty						
4	Empty						
5	Online	48	9	0	2816	5	27

```

6 Empty
7 Online          49      8          0      2816      5      27

```

show chassis fpc detail (PTX5000 Packet Transport Router)

```
user@host> show chassis fpc detail
```

```
Slot 2 information:
```

```

State                Online
Temperature           35 degrees C / 95 degrees F (PMB)
Temperature           35 degrees C / 95 degrees F (Intake)
Temperature           50 degrees C / 122 degrees F (Exhaust A)
Temperature           54 degrees C / 129 degrees F (Exhaust B)
Temperature           54 degrees C / 129 degrees F (TL0)
Temperature           52 degrees C / 125 degrees F (TQ0)
Temperature           61 degrees C / 141 degrees F (TL1)
Temperature           58 degrees C / 136 degrees F (TQ1)
Temperature           57 degrees C / 134 degrees F (TL2)
Temperature           58 degrees C / 136 degrees F (TQ2)
Temperature           62 degrees C / 143 degrees F (TL3)
Temperature           61 degrees C / 141 degrees F (TQ3)
Total CPU DRAM        2816 MB
Total SRAM             0 MB
Total SDRAM            0 MB
Start time            2012-01-12 12:05:42 PST
Uptime                3 hours, 14 minutes, 7 seconds

```

```
Slot 5 information:
```

```

State                Online
Temperature           35 degrees C / 95 degrees F (PMB)
Temperature           34 degrees C / 93 degrees F (Intake)
Temperature           48 degrees C / 118 degrees F (Exhaust A)
Temperature           53 degrees C / 127 degrees F (Exhaust B)
Temperature           54 degrees C / 129 degrees F (TL0)
Temperature           52 degrees C / 125 degrees F (TQ0)
Temperature           69 degrees C / 156 degrees F (TL1)
Temperature           56 degrees C / 132 degrees F (TQ1)
Temperature           54 degrees C / 129 degrees F (TL2)
Temperature           56 degrees C / 132 degrees F (TQ2)
Temperature           59 degrees C / 138 degrees F (TL3)
Temperature           60 degrees C / 140 degrees F (TQ3)
Total CPU DRAM        2816 MB
Total SRAM             0 MB

```

```

Total SDRAM                0 MB
Start time                 2012-01-12 12:05:43 PST
Uptime                    3 hours, 14 minutes, 6 seconds
Slot 7 information:
State                      Online
Temperature                35 degrees C / 95 degrees F (PMB)
Temperature                33 degrees C / 91 degrees F (Intake)
Temperature                50 degrees C / 122 degrees F (Exhaust A)
Temperature                55 degrees C / 131 degrees F (Exhaust B)
Temperature                56 degrees C / 132 degrees F (TL0)
Temperature                56 degrees C / 132 degrees F (TQ0)
Temperature                61 degrees C / 141 degrees F (TL1)
Temperature                57 degrees C / 134 degrees F (TQ1)
Temperature                55 degrees C / 131 degrees F (TL2)
Temperature                59 degrees C / 138 degrees F (TQ2)
Temperature                62 degrees C / 143 degrees F (TL3)
Temperature                62 degrees C / 143 degrees F (TQ3)
Total CPU DRAM            2816 MB
Total SRAM                 0 MB
Total SDRAM                0 MB
Start time                 2012-01-12 12:05:44 PST
Uptime                    3 hours, 14 minutes, 5 seconds

```

show chassis fpc pic-status (PTX5000 Packet Transport Router)

```

user@host> show chassis fpc pic-status
Slot 2  Online      FPC
  PIC 0  Online      24x 10GE(LAN) SFP+
  PIC 1  Online      24x 10GE(LAN) SFP+
Slot 5  Online      FPC
  PIC 0  Online      24x 10GE(LAN) SFP+
  PIC 1  Online      2x 40GE CFP
Slot 7  Online      FPC
  PIC 0  Online      24x 10GE(LAN) SFP+
  PIC 1  Online      2x 40GE CFP

```

show chassis fpc (PTX10008 Router)

```

user@host> show chassis fpc
          Temp  CPU Utilization (%)  CPU Utilization (%)  Memory

```

```

Utilization (%)
Slot State          (C)  Total  Interrupt    1min   5min   15min  DRAM (MB)
Heap   Buffer
  0  Online          38    26      2         26    26    26    1953
20    32
  1  Empty
  2  Empty
  3  Empty
  4  Empty
  5  Online          67    26      2         26    26    26    1953
25    32
  6  Online          52    26      2         26    26    26    1953
25    32
  7  Empty

```

show chassis fpc detail (PTX10008 Router)

```

user@host> show chassis fpc detail

Slot 6 information:
  State                Online
  Total CPU DRAM       8192 MB
  Temperature           42 degrees C / 107 degrees F
  Start time           2018-09-17 02:42:16 PDT
  Uptime                53 minutes, 40 seconds
  Max power consumption 675 Watts

Slot 7 information:
  State                Online
  Total CPU DRAM       8192 MB
  Temperature           51 degrees C / 123 degrees F
  Start time           2018-09-17 02:42:26 PDT
  Uptime                53 minutes, 30 seconds
  Max power consumption 1150 Watts

```

show chassis fpc (PTX10016 Router)

```

user@host> show chassis fpc

Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)

```

Slot	State	(C)	Total	Interrupt	1min	5min	15min	DRAM (MB)
Heap	Buffer							
0	Empty							
1	Online	36	27	2	27	27	27	1953
22								
	32							
2	Empty							
3	Online	36	27	2	27	27	27	1953
22								
	32							
4	Empty							
5	Empty							
6	Online	35	27	2	27	27	27	1953
22								
	32							
7	Empty							
8	Online	34	27	2	27	27	27	1953
22								
	32							
9	Online	46	24	2	24	24	24	1953
26								
	32							
10	Empty							
11	Empty							
12	Empty							
13	Empty							
14	Empty							
15	Empty							

show chassis fpc detail (PTX10016 Router)

```

user@host> show chassis fpc detail

Slot 0 information:
  State                Online
  Total CPU DRAM       8192 MB
  Temperature           44 degrees C / 111 degrees F
  Start time           2018-09-10 07:01:09 PDT
  Uptime                6 days, 23 hours, 17 minutes, 9 seconds
  Max power consumption 1150 Watts

Slot 4 information:
  State                Online
  Total CPU DRAM       8192 MB
  Temperature           40 degrees C / 104 degrees F
  Start time           2018-09-10 07:01:17 PDT
  Uptime                6 days, 23 hours, 17 minutes, 1 second

```



```
Max power consumption          1150 Watts
Slot 6 information:
  State                          Online
  Total CPU DRAM                 8192 MB
  Temperature                    42 degrees C / 107 degrees F
  Start time                    2018-09-10 07:01:27 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 51 seconds
  Max power consumption          1150 Watts
Slot 7 information:
  State                          Online
  Total CPU DRAM                 8192 MB
  Temperature                    41 degrees C / 105 degrees F
  Start time                    2018-09-10 07:01:32 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 46 seconds
  Max power consumption          1150 Watts
Slot 9 information:
  State                          Online
  Total CPU DRAM                 16384 MB
  Temperature                    42 degrees C / 107 degrees F
  Start time                    2018-09-10 07:01:45 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 33 seconds
  Max power consumption          1150 Watts
Slot 10 information:
  State                          Online
  Total CPU DRAM                 8192 MB
  Temperature                    41 degrees C / 105 degrees F
  Start time                    2018-09-10 07:01:46 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 32 seconds
  Max power consumption          1150 Watts
Slot 11 information:
  State                          Online
  Total CPU DRAM                 16384 MB
  Temperature                    40 degrees C / 104 degrees F
  Start time                    2018-09-10 07:01:55 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 23 seconds
  Max power consumption          1150 Watts
Slot 14 information:
  State                          Online
  Total CPU DRAM                 8192 MB
  Temperature                    42 degrees C / 107 degrees F
  Start time                    2018-09-10 07:01:54 PDT
  Uptime                        6 days, 23 hours, 16 minutes, 24 seconds
  Max power consumption          1150 Watts
```

Slot 15 information:

```

State                               Online
Total CPU DRAM                       16384 MB
Temperature                           41 degrees C / 105 degrees F
Start time                            2018-09-10 07:02:03 PDT
Uptime                                6 days, 23 hours, 16 minutes, 15 seconds
Max power consumption                 1150 Watts

```

show chassis fpc (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Utilization (%)	DRAM (MB)	Heap	Buffer
0	Online	61	17	6	512	21	37

show chassis fpc 0 (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc 0

```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Utilization (%)	DRAM (MB)	Heap	Buffer
0	Online	61	17	6	512	21	37

show chassis fpc detail (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc detail
Slot 0 information:
State                               Online
Temperature                           61 degrees C / 141 degrees F
Total CPU DRAM                       512 MB
Start time                            2012-05-29 02:52:06 PDT
Uptime                                27 minutes, 17 seconds

```

show chassis fpc pic-status (ACX2000 Universal Metro Router)

```

user@host> show chassis fpc pic-status
Slot 0  Online

```

```

PIC 0 Online      16x CHE1T1, RJ48
PIC 1 Online      8x 1GE(LAN) RJ45
PIC 2 Online      2x 1GE(LAN) SFP
PIC 3 Online      2x 10GE(LAN) SFP+

```

show chassis FPC 1 (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis fpc 1

          Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State  (C)  Total  Interrupt  DRAM (MB) Heap  Buffer
-----
1 Online    34     5      0      3072     5    13

```

show chassis FPC 1 detail (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis fpc 1 detail
Slot 1 information:
  State                               Online
  Temperature                           34
  Total CPU DRAM                         3072 MB
  Total RLDRAM                           259 MB
  Total DDR DRAM                         4864 MB
  Start time:                            2012-06-19 10:51:43 PDT
  Uptime:                                 16 minutes, 48 seconds
  Max Power Consumption                   550 Watts

```

Sample Output

show chassis fpc (Node Slicing)

```

user@router>show chassis fpc

          Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State  (C)  Total  Interrupt  1min  5min  15min  DRAM (MB)

```

Heap	Buffer	GNF							
0	Online		45	12	0	12	12	12	
3584		6	25	3					
1	Online		57	22	0	20	20	20	3136
16		22	2						
2	Online		50	19	0	17	17	16	
3584		6	25	3					
3	Online		28	10	0	11	11	11	2048
10		20	6						
4	Online		42	20	0	20	19	19	
3584		8	25	6					
5	Online		58	22	0	21	20	20	3136
16		22	4						
6	Online		49	17	0	15	16	16	3136
13		20	1						
7	Online		44	11	0	10	10	10	
3584		6	25	5					
8	Online		40	19	0	18	18	18	
3584		8	25	5					
9	Online		44	19	0	20	20	20	
3584		8	25	5					

Sample Output

show chassis fpc pic-status (Node Slicing)

```
user@router> show chassis fpc pic-status
```

```
Slot 0  Online      MPC5E 3D 24XGE+6XLGE      GNF 3
  PIC 0  Online      12X10GE SFPP OTN
  PIC 1  Offline     12X10GE SFPP OTN
  PIC 2  Offline     3X40GE QSFPP
  PIC 3  Online      3X40GE QSFPP
Slot 1  Online      MPC9E 3D                  GNF 2
  PIC 1  Online      MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 2  Online      MPC5E 3D Q 2CGE+4XGE     GNF 3
  PIC 0  Online      2X10GE SFPP OTN
  PIC 1  Online      1X100GE CFP2 OTN
```

```

PIC 2 Online 2X10GE SFPP OTN
PIC 3 Online 1X100GE CFP2 OTN
Slot 3 Online MPC6E 3D EQ GNF 6
Slot 4 Online MPC6E 3D GNF 6
PIC 0 Online 24X10GE SFPP
PIC 1 Online 2X100GE CFP2 OTN
Slot 5 Online MPC9E 3D GNF 4
PIC 0 Online MRATE-12xQSFPP-XGE-XLGE-CGE
Slot 6 Online MPC7E 3D MRATE-12xQSFPP-XGE-XLGE-CGE GNF 1
PIC 0 Online MRATE-6xQSFPP-XGE-XLGE-CGE
PIC 1 Online MRATE-6xQSFPP-XGE-XLGE-CGE
Slot 7 Online MPC5E 3D 2CGE+4XGE GNF 5
PIC 0 Online 2X10GE SFPP OTN
PIC 1 Online 1X100GE CFP2 OTN
PIC 2 Online 2X10GE SFPP OTN
PIC 3 Online 1X100GE CFP2 OTN
Slot 8 Online MPC6E 3D GNF 5
PIC 0 Online 24X10GE SFPP OTN
Slot 9 Online MPC6E 3D GNF 5
PIC 0 Online 24X10GE SFPP
PIC 1 Online 4X100GE CXP

```

show chassis fpc pic-status (PTX5000 Router)

```

user@router>show chassis fpc pic-status

Slot 0 Online FPC-P2
PIC 0 Online Universal pic 96x10_24x40
PIC 1 Online Universal pic 96x10_24x40
Slot 1 Online FPC-P2
PIC 1 Online Universal pic 96x10_24x40

```

show chassis fpc (PTX10003-80C - Junos OS Evolved)

```

user@router> show chassis fpc

Temp CPU Utilization (%) CPU Utilization (%) Memory
Utilization (%)
Slot State (C) Total Interrupt 1min 5min 15min DRAM (MB)

```

```

Heap      Buffer
 0 Online
 1 Online
 2 Online
 3 Online

```

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, the **show chassis fpc** command does not display the Temperature, CPU Utilization, and Memory Utilization information, as these are fixed configuration routers and the FPCs in these routers do not have dedicated CPUs.

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, if you have configured a field-replaceable unit (FRU) to be powered off and rebooted the device, the **show chassis fpc** output will display the state of the FRU as Present and reason as **Configured power off** (see the following output):

```

user@router> show chassis fpc

                Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State      (C)  Total  Interrupt      1min   5min   15min  DRAM (MB)
Heap      Buffer
 0 Present      ---Configured power off---
 1 Online

```

Starting in Junos OS Evolved Release 19.1R1, the **show chassis fpc** output displays the FPC offline reason as **Offlined by cli command** when the FPC becomes offline because of an fpc major or fatal error. This behavior is applicable only if you have configured the offline action for major or fatal error severity, by using the command **set chassis error major action offline**. See the following output:

```

user@router> show chassis fpc

                Temp  CPU Utilization (%)  CPU Utilization (%)  Memory
Utilization (%)
Slot State      (C)  Total  Interrupt      1min   5min   15min  DRAM (MB)
Heap      Buffer
 0 Offline      ---Offlined by cli command---
 1 Online

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis fpc | 423](#)

[show chassis fpc-feb-connectivity | 1396](#)

[show chassis fabric fpcs | 1089](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)

[MX960 Flexible PIC Concentrator Description](#)

[ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping](#)

[enhanced-mode \(Network Services\) | 286](#)

show chassis fpc errors

IN THIS SECTION

- [Syntax | 1391](#)
- [Description | 1392](#)
- [Options | 1392](#)
- [Required Privilege Level | 1392](#)
- [Output Fields | 1393](#)
- [Sample Output | 1394](#)
- [Release Information | 1395](#)

Syntax

```
show chassis fpc errors;
```

Description

Display chassis error information including FPC number, severity of error, number of error occurred, cleared, threshold, and corresponding action.

Error Severity Level	Default Threshold	Default Action
Fatal	1	Restart the FPC
Major	1	Get the current state of the FPC and raise an alarm.
Minor	10	Write a log for the event.

NOTE: The MX104 router does not support the **show chassis fpc error** CLI command. This command is not available in MX104 in the Junos OS releases 13.3R7, 15.1R2, 14.1R5, 14.2R4, 13.3R8, and later.

Options

detail Display the entire list of errors that contribute to a failure for all the FPCs.

fpc-slot Display the list of errors pertaining to the FPC installed in a particular slot

Required Privilege Level

view

Output Fields

Table 74 on page 1393 lists the output fields for the **show chassis fpc errors** command. Output fields are listed in the approximate order in which they appear.

Table 74: show chassis fpc errors Output Fields

Field Name	Field Description
FPC	The FPC number.
Level	The severity of the error. It can be configured as follows: <ul style="list-style-type: none"> • fatal—Fatal error on FPC • major—Major error on FPC • minor—Minor error on FPC
Occurred	Number of error instances occurred.
Cleared	Number of error instances cleared.
Threshold	Configured threshold value. The associated detection and recovery actions are triggered when this threshold value is crossed.
Action-Taken	The number of instances of action taken.
Action	The detection and recovery actions that are triggered when the threshold value is crossed. <ul style="list-style-type: none"> • Restart the FPC. • Get the current state of the FPC and raise an alarm. • Write a log for the event.

Sample Output

show chassis fpc errors

```

user@host> show chassis fpc errors

FPC  Level Occurred Cleared Threshold Action-Taken Action
0    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
1    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
2    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
4    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
5    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
6    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET
     Pfc-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
7    Minor      0      0      10          LOG|
     Major      0      0      1          GET STATE|ALARM|
     Fatal      0      0      1          RESET

```

```
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
```

show chassis fpc errors (MX480 Router)

```
user@host> show chassis fpc errors
```

```
FPC Level Occurred Cleared Threshold Action-Taken Action
1 Minor 0 0 10 0 LOG|
Major 0 0 1 0 GET STATE|CM ALARM|DISABLE PFE
Fatal 0 0 1 0 RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
2 Minor 0 0 10 0 LOG|
Major 0 0 1 0 GET STATE|CM ALARM|DISABLE PFE
Fatal 0 0 1 0 RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
3 Minor 0 0 10 0 LOG|
Major 0 0 1 0 GET STATE|CM ALARM|DISABLE PFE
Fatal 0 0 1 0 RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
5 Minor 0 0 10 0 LOG|
Major 0 0 1 0 GET STATE|CM ALARM|DISABLE PFE
Fatal 0 0 1 0 RESET
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -ENABLED
| pfe-4 -ENABLED | pfe-5 -ENABLED | pfe-6 -ENABLED | pfe-7 -ENABLED |
```

Release Information

Command introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

| [error](#) | [289](#)

show chassis fpc-feb-connectivity

IN THIS SECTION

- [Syntax | 1396](#)
- [Description | 1396](#)
- [Options | 1396](#)
- [Required Privilege Level | 1397](#)
- [Output Fields | 1397](#)
- [Sample Output | 1399](#)
- [Release Information | 1399](#)

Syntax

```
show chassis fpc-feb-connectivity
```

Description

(M120 router only) Display the Flexible PIC Concentrator (FPC) and Forwarding Engine Board (FEB) mapping and their respective states.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 75 on page 1397](#) lists the output fields for the **show chassis fpc-feb-connectivity** command. Output fields are listed in the approximate order in which they appear.

Table 75: show chassis fpc-feb-connectivity Output Fields

Field Name	Field Description
FPC	Slot number of the Flexible PIC Concentrator (FPC).
FPC type	Type of FPC: Type 1 , Type 2 , Type 3 , or cFPC .
FPC state	<p>State of the FPC. State can be any of the following:</p> <ul style="list-style-type: none"> • Announce offline—Intermediate state where FPC is going down but is not offline and the Chassis manager acknowledges that the FPC is in the process of going offline. • Announce online—Intermediate state where FPC is coming up but is not online and the Chassis manager acknowledges that the FPC is in the process of coming online. • Empty—No FPC is present. • Offline—FPC is powered down. • Online—FPC is online and running. • Present—The chassis process has detected the FPC, but the FPC is either not supported by the current version of the Junos OS or FPC is coming up but is not online. • Ready—FPC is in transition state.

Table 75: show chassis fpc-feb-connectivity Output Fields (Continued)

Field Name	Field Description
Connected FEB	Slot number of the Forwarding Engine Board (FEB) connected to the FPC or None if the FPC is not connected to a FEB.
FEB state	<p>State of the FEB. State can be any of the following:</p> <ul style="list-style-type: none"> • Announce offline—Intermediate state where FEB is going down but is not offline and the Chassis manager acknowledges that the FEB is in the process of going offline. • Announce online—Intermediate state where FEB is coming up but is not online and the Chassis manager acknowledges that the FEB is in the process of coming online. • Empty—No FEB is present. • Offline—FEB is powered down. • Online—FEB is online and running. • Present—The chassis process has detected the FEB, but the FEB is either not supported by the current version of the Junos OS or FEB is coming up but is not online. • Ready—FEB is in transition state.
Link status	<p>Status of the link connecting the R-FEB and R-FPC:</p> <ul style="list-style-type: none"> • Error • Misconfiguration—Configuration between the R-FEB and the F-FPC is incorrect. • OK

Sample Output

show chassis fpc-feb-connectivity

```

user@host> show chassis fpc-feb-connectivity

FPC  FPC type  FPC state      Connected FEB  FEB state      Link status
0    cFPC      Online         0              Empty
1    cFPC      Online         1              Online         OK
2    Type 3    Online         3              Online         OK
3    Type 2    Online         None
4    Type 1    Online         4              Online         OK
5    Type 3    Online         None

FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
Egress queues: 8 supported, 8 in use
Queue counters:          Queued packets  Transmitted packets  Dropped packets
0 best-effort             0                  0                    0
1 expedited-fo            0                  0                    0
2 assured-forw            0                  0                    0
3 network-cont            0                  0                    0

Active alarms  : PLL, LOS, LINK
Active defects : PLL, LOF, LOS, SEF, LOP, BERR-SF, PLM-P, LINK
PCS statistics          Seconds
Bit errors              0
Errored blocks          3
MAC statistics:         Receive           Transmit
Total octets            0                0
Total packets           0                0

```

Release Information

Command introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

[request chassis fpc | 423](#)

[show chassis fpc | 1330](#)

[show chassis fabric fpcs | 1089](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 227](#)

[MX960 Flexible PIC Concentrator Description](#)

show chassis hardware

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Syntax

```
show chassis hardware
<detail | extensive>
<clei-models>
<models>
```


Syntax (EX Series, MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (TX Matrix Router)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis hardware
<detail | extensive>
<clei-models>
<models>
```

```
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series)

```
show chassis hardware
<detail | extensive>
<clei-models>
<interconnect-device name>
<node-device name>
<models>
```

Description

Display a list of all Flexible PIC Concentrators (FPCs) and PICs installed in the router or switch chassis, including the hardware version level and serial number.

In the EX Series switch command output, FPC refers to the following:

- On EX2200 switches, EX3200 switches, EX4200 standalone switches, and EX4500 switches—Refers to the switch; FPC *number* is always 0.
- On EX4200 switches in a Virtual Chassis configuration—Refers to the member of a Virtual Chassis; FPC *number* equals the member ID, from 0 through 9.
- On EX8208 and EX8216 switches—Refers to a line card; FPC *number* equals the slot number for the line card.

On QFX3500, QFX5100, and OCX Series standalone switches, and PTX1000 routers both the FPC and FPC *number* are always 0.

On T4000 Type 5 FPCs, there are no **top temperature sensor** or **bottom temperature sensor** parameters. Instead, **fan intake temperature sensor** and **fan exhaust temperature sensors** parameters are displayed.

Starting from Junos OS Release 11.4, the output of the **show chassis hardware models** operational mode command displays the enhanced midplanes FRU model numbers (CHAS-BP3-MX240-S, CHAS-BP3-MX480-S or CHAS-BP3-MX960-S) based on the router. Prior to release 11.4, the FRU model

numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through the Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 14.1, the output of the **show chassis hardware detail | extensive | clei-models | models** operational mode command displays the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router.

Options

none	Display information about hardware. For a TX Matrix router, display information about the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display information about the TX Matrix Plus router and its attached routers.
clei-models	(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).
detail	(Optional) Include RAM and disk information in output.
extensive	(Optional) Display ID EEPROM information.
all-members	(MX Series routers only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device.
lcc <i>number</i>	(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display hardware information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local (MX Series routers only) (Optional) Display hardware-specific information for the local Virtual Chassis members.

member *member-id* (MX Series routers and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value 0 or 1.

models (Optional) Display model numbers and part numbers for orderable FRUs and, for components that use ID EEPROM format v2, the CLEI code.

node-device *name* (QFabric systems only) (Optional) Display hardware-specific information for the Node device.

satellite [slot-id slot-id | device-alias alias-name] (Junos Fusion only) (Optional) Display hardware information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc (TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).

sfc *number* (TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Additional Information

The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines, as shown in [Table 76 on page 1404](#).

Table 76: Routing Engines Displaying DIMM Information

Routing Engines	Routers
RE-S-1800x2 and RE-S-1800x4	MX240, MX480, and MX960 routers

Table 76: Routing Engines Displaying DIMM Information (*Continued*)

Routing Engines	Routers
RE-A-1800x2	M120 and M320 routers

In Junos OS Release 11.4 and later, the output for the **show chassis hardware models** operational mode command for MX Series routers display the enhanced midplanes FRU model numbers—CHAS-BP3-MX240-S, CHAS-BP3-MX480-S, or CHAS-BP3-MX960-S—based on the router. In releases before Junos OS Release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 17.3R1, the output of the **show chassis hardware** command displays the mode in which vMX is running (performance mode or lite mode) in the part number field for the FPC. **RIOT-PERF** indicates performance mode and **RIOT-LITE** indicates lite mode.

Required Privilege Level

view

Output Fields

[Table 77 on page 1405](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 77: show chassis hardware Output Fields

Field Name	Field Description	Level of Output
Item	Show information about the device hardware.	All levels
Version	Revision level of the chassis component.	All levels
Part number	Part number of the chassis component.	All levels

Table 77: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
Serial number	Serial number of the chassis component. The serial number of the backplane is also the serial number of the router chassis. Use this serial number when you need to contact Juniper Networks Customer Support about the router or switch chassis.	All levels
Assb ID or Assembly ID	(extensive keyword only) Identification number that describes the FRU hardware.	extensive
Assembly Version	(extensive keyword only) Version number of the FRU hardware.	extensive
Assembly Flags	(extensive keyword only) Flags.	extensive
FRU model number	(clei-models , extensive , and models keyword only) Model number of the FRU hardware component.	none specified
CLEI code	(clei-models and extensive keyword only) Common Language Equipment Identifier code. This value is displayed only for hardware components that use ID EEPROM format v2. This value is not displayed for components that use ID EEPROM format v1.	none specified
EEPROM Version	ID EEPROM version used by the hardware component: 0x00 (version 0), 0x01 (version 1), or 0x02 (version 2).	extensive

Table 77: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
Description	<p data-bbox="444 369 894 401">Brief description of the hardware item:</p> <ul data-bbox="444 432 1195 1713" style="list-style-type: none"> <li data-bbox="444 432 737 464">• Type of power supply. <li data-bbox="444 495 1195 569">• Type of PIC. If the PIC type is not supported on the current software release, the output states Hardware Not Supported. <li data-bbox="444 600 1073 674">• Type of FPC: FPC Type 1, FPC Type 2, FPC Type 3, FPC Type 4 , or FPC TypeOC192. <p data-bbox="480 705 1101 737">On EX Series switches, a brief description of the FPC.</p> <p data-bbox="480 768 1170 842">The following list shows the PIM abbreviation in the output and the corresponding PIM name.</p> <ul data-bbox="480 873 1170 1713" style="list-style-type: none"> <li data-bbox="480 873 1170 947">• 2x FE—Either two built-in Fast Ethernet interfaces (fixed PIM) or dual-port Fast Ethernet PIM <li data-bbox="480 978 911 1010">• 4x FE—4-port Fast Ethernet ePIM <li data-bbox="480 1041 1162 1115">• 1x GE Copper—Copper Gigabit Ethernet ePIM (one 10-Mbps, 100-Mbps, or 1000-Mbps port) <li data-bbox="480 1146 1154 1178">• 1x GE SFP—SFP Gigabit Ethernet ePIM (one fiber port) <li data-bbox="480 1209 878 1241">• 2x Serial—Dual-port serial PIM <li data-bbox="480 1272 813 1304">• 2x T1—Dual-port T1 PIM <li data-bbox="480 1335 813 1367">• 2x E1—Dual-port E1 PIM <li data-bbox="480 1398 1049 1430">• 2x CT1E1—Dual-port channelized T1/E1 PIM <li data-bbox="480 1461 813 1493">• 1x T3—T3 PIM (one port) <li data-bbox="480 1524 813 1556">• 1x E3—E3 PIM (one port) <li data-bbox="480 1587 959 1619">• 4x BRI S/T—4-port ISDN BRI S/T PIM <li data-bbox="480 1650 919 1682">• 4x BRI U—4-port ISDN BRI U PIM 	All levels

Table 77: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • 1x ADSL Annex A—ADSL 2/2+ Annex A PIM (one port, for POTS) • 1x ADSL Annex B—ADSL 2/2+ Annex B PIM (one port, for ISDN) • 2x SHDSL (ATM)—G SHDSL PIM (2-port two-wire module or 1-port four-wire module) • 1x TGM550—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog LINE ports, and two analog TRUNK ports) • 1x DS1 TIM510—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup) • 4x FXS, 4xFX0, TIM514—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog LINE ports and four analog TRUNK ports) • 4x BRI TIM521—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports) • Crypto Accelerator Module—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services • MPC M 16x 10GE—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.) • For hosts, the Routing Engine type. • For small form-factor pluggable transceiver (SFP) modules, the type of fiber: LX, SX, LH, or T. • LCD description for EX Series switches (except EX2200 switches). 	

Table 77: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • MPC2—1-port MPC2 that supports two separate slots for MICs. • MPC3E—1-port MPC3E that supports two separate slots for MICs (MIC-3D-1X100GE-CFP and MIC-3D-20GE-SFP) on MX960, MX480, and MX240 routers. The MPC3E maps one MIC to one PIC (1 MIC, 1 PIC), which differs from the mapping of legacy MPCs. • 100GBASE-LR4, pluggable CFP optics • Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy. • Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs). • MPC4E—Fixed configuration MPC4E that is available in two flavors: MPC4E-3D-32XGE-SFP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers. • LCD description for MX Series routers 	

Sample Output

show chassis hardware (MX10008 Router)

```

user@host> show chassis hardware

Hardware inventory:
Item           Version  Part number  Serial number  Description
Chassis                REV 27    750-054097  ACPD6954      Midplane 8
Routing Engine 0                BUILTIN    BUILTIN       RE X10

```

Routing Engine 1		BUILTIN	BUILTIN	RE X10 128
CB 0	REV 10	750-079562	CAKF2158	Control Board
CB 1	REV 05	711-065897	CAJG2680	Control Board
FPC 1	REV 04	750-084779	CAKN5706	JNP10K-LC2101
CPU	REV 05	750-073391	CAKJ2864	LC 2101 PMB
PIC 0		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-046565	XXL0BQM	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QB350242	QSFP+-40G-SR4
Xcvr 2	REV 01	740-054053	QE408285	QSFP+-4X10G-SR
Xcvr 3	REV 01	740-046565	QF3300Z9	QSFP+-40G-SR4
PIC 1		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-067442	QJ2200LD	QSFP+-40G-SR4
Xcvr 1	REV 01	740-038153	APF170500382DP	QSFP+-40G-CU3M
Xcvr 2	REV 01	740-067442	QI4302LC	QSFP+-40G-SR4
PIC 2		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-067442	1ACP1335119	QSFP+-40G-SR4
Xcvr 1	REV 01	740-067442	1ACP1313156	QSFP+-40G-SR4
Xcvr 2	REV 01	740-067442	QK050040	QSFP+-40G-SR4
Xcvr 3	REV 01	740-067442	QJ2201BG	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-058734	1ECQ12400CS	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-046565	QF3300ZX	QSFP+-40G-SR4
Xcvr 2	REV 01	740-061405	1ECQ12510FH	QSFP-100G-SR4-T2
Xcvr 3	REV 01	740-032986	QB491182	QSFP+-40G-SR4
PIC 4		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-067442	QJ2200D5	QSFP+-40G-SR4
Xcvr 1	REV 01	740-054053	XXS0L95	QSFP+-4X10G-SR
PIC 5		BUILTIN	BUILTIN	4xQSFP28 SYNCE
Xcvr 0	REV 01	740-054053	QE251550	QSFP+-4X10G-SR
Xcvr 1	REV 01	740-054053	XZB01D5	QSFP+-4X10G-SR
Xcvr 3	REV 01	740-046565	QI1402F9	QSFP+-40G-SR4
FPD Board	REV 07	711-054687	ACPF2896	Front Panel Display
PEM 1	REV 02	740-049388	1EDL62102PR	Power Supply AC
PEM 2	REV 02	740-049388	1EDL60300H2	Power Supply AC
PEM 4	REV 02	740-049388	1EDL603003Z	Power Supply AC
PEM 5	REV 01	740-049388	1EDL339001B	Power Supply AC
FTC 0	REV 14	750-050108	ACNW3344	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE3978	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACNV5507	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNV5371	Fan Tray 8
SFB 0	REV 25	750-050058	ACPH6821	Switch Fabric (SIB) 8
SFB 1				
SFB 2	REV 24	750-050058	ACNZ0641	Switch Fabric (SIB) 8

SFB 3	REV 27	750-050058	ACPH9127	Switch Fabric (SIB) 8
SFB 5	REV 24	750-050058	ACNX7396	Switch Fabric (SIB) 8

show chassis hardware (PTX10008 Router)

```

root@host> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           DK404      JNP10008 [PTX10008]
Midplane         REV 28    750-054097  ACP22394      Midplane 8
Routing Engine 0          BUILTIN    BUILTIN       RE-PTX-2X00x4
Routing Engine 1          BUILTIN    BUILTIN       RE-PTX-2X00x4
CB 0             REV 04    750-068820  ACPT5303      Control Board
CB 1             REV 04    750-068820  ACPR1627      Control Board
FPC 6           REV 13    750-068822  ACPB2753      LC1102 - 12C / 36Q /
14
                4X
CPU              BUILTIN    BUILTIN       FPC CPU
PIC 0           BUILTIN    BUILTIN       12x100GE/36x40GE/
144x10
                GE
Xcvr 0         REV 01    740-067442  XV304N6       QSFP+-40G-SR4
Xcvr 1         REV 01    740-067442  XV30A5M       QSFP+-40G-SR4
Xcvr 2         REV 01    740-067442  XV300HC       QSFP+-40G-SR4
Xcvr 3         REV 01    740-067443  XU20L17       QSFP+-40G-SR4
Xcvr 4         REV 01    740-067442  XV303XG       QSFP+-40G-SR4
Xcvr 5         REV 01    740-067443  XV306QC       QSFP+-40G-SR4
Xcvr 6         REV 01    740-067442  XV303Y7       QSFP+-40G-SR4
Xcvr 7         REV 01    740-067443  XX60DMR       QSFP+-40G-SR4
Xcvr 9         REV 01    740-067443  XX60DNY       QSFP+-40G-SR4
Xcvr 10        REV 01    740-054053  QF4605WF      QSFP+-4X10G-SR
Xcvr 13        REV 01    740-058734  1ECQ115007D   QSFP-100GBASE-SR4
Xcvr 15        REV 01    740-046565  QH06035R      QSFP+-40G-SR4
Xcvr 16        REV 01    740-046565  QH0602KC      QSFP+-40G-SR4
Xcvr 17        REV 01    740-046565  QH0507PA      QSFP+-40G-SR4
Xcvr 18        REV 01    740-046565  QH06035M      QSFP+-40G-SR4
Xcvr 24        REV 01    740-046565  QH0507QL      QSFP+-40G-SR4
Xcvr 25        REV 01    740-067443  XV20CWP       QSFP+-40G-SR4
Xcvr 34        REV 01    740-046565  QH06035U      QSFP+-40G-SR4
Xcvr 35        REV 01    740-067443  XX60DN9       QSFP+-40G-SR4
FPC 7           REV 41    750-051357  ACPL3446      LC1101 - 30C / 30Q / 96X

```

CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0	REV 01	740-067443	XX60DPC	QSFP+-40G-SR4
Xcvr 1	REV 01	740-054053	QF4605W7	QSFP+-4X10G-SR
Xcvr 2	REV 01	740-067443	XX60DP8	QSFP+-40G-SR4
Xcvr 3	REV 01	740-067442	XV30FYM	QSFP+-40G-SR4
Xcvr 4	REV 01	740-067442	1ACP133406Z	QSFP+-40G-SR4
Xcvr 5	REV 01	740-067443	XX60DP5	QSFP+-40G-SR4
Xcvr 8	REV 01	740-046565	QH060355	QSFP+-40G-SR4
Xcvr 12	REV 01	740-058734	1ECQ115008C	QSFP-100GBASE-SR4
Xcvr 15	REV 01	740-046565	QH0602KG	QSFP+-40G-SR4
Xcvr 16	REV 01	740-046565	QH0602LG	QSFP+-40G-SR4
Xcvr 17	REV 01	740-046565	QH06035S	QSFP+-40G-SR4
Xcvr 18	REV 01	740-046565	QH0602KS	QSFP+-40G-SR4
Xcvr 24	REV 01	740-067443	QI2902DP	QSFP+-40G-SR4
Power Supply 2	REV 02	740-049388	1EDL70200NP	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL603005C	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL70200P1	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL70200B7	Power Supply AC
FTC 0	REV 16	750-050108	ACPK8682	Fan Controller 8
FTC 1	REV 16	750-050108	ACPR9530	Fan Controller 8
Fan Tray 0	REV 10	760-054372	ACPR9509	Fan Tray 8
Fan Tray 1	REV 10	760-054372	ACPV7260	Fan Tray 8
SIB 1	REV 28	750-050058	ACPV6306	Switch Fabric 8
SIB 2	REV 28		ACPR2569	Switch Fabric 8
SIB 3	REV 28	750-05	ACPW7402	Switch Fabric 8
SIB 4	REV 28	750-050058	ACPR2577	Switch Fabric 8
FPD Board	REV 07	711-054687	ACPM4965	Front Panel Display

show chassis hardware clei-models (PTX10016 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code          FRU model number
Midplane     REV 24   750-077138  CMMUN00ARA        JNP10016
CB 0         REV 04   711-065897  PROTOXCLEI        PROTO-ASSEMBLY
CB 1         REV 05   711-065897  PROTOXCLEI        PROTO-ASSEMBLY
FPC 2
  PIC 0      BUILTIN
FPC 4         REV 35   750-071976  CMUIANABAA        JNP10K-LC1101
  PIC 0      BUILTIN

```

FPC 5	REV 13	750-068822	CMUIAM9BAC	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 7	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 8	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 9	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 10	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 11	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 13	REV 41	750-071976	CMUIANABAB	JNP10K-LC1101
PIC 0		BUILTIN		
FPC 15	REV 37	750-071976	CMUIANABAA	JNP10K-LC1101
PIC 0		BUILTIN		
Power Supply 0	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	CMUPADPBAA	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 1	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 2	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 3	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 4	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
SIB 5	REV 15	750-077140	CMUCAH6CAA	JNP10016-SF
FPD Board	REV 07	711-054687		

show chassis hardware detail (EX9251 Switch)

```

user@switch> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               BLANK          EX9251
Routing Engine 0          BUILTIN      BUILTIN        RE-S-2X00x6
CB 0                    REV 05      750-069579    CAGT1382      EX9251
FPC 0                   BUILTIN      BUILTIN        MPC
  PIC 0                  BUILTIN      BUILTIN        4XSFP28 PIC
    Xcvr 0                REV 01      740-044512    APF14500007NHC  QSFP+-40G-CU50CM
    Xcvr 2                REV 01      740-046565    QH21035H       QSFP+-40G-SR4
  PIC 1                  BUILTIN      BUILTIN        8XSFP PIC
    Xcvr 0                REV 01      740-031980    AA15393URH7    SFP+-10G-SR
    Xcvr 1                REV 01      740-031980    AA162832LVG    SFP+-10G-SR
    Xcvr 2                REV 01      740-031980    MXA0NKJ        SFP+-10G-SR
    Xcvr 3                REV 01      740-031980    MXA0K75        SFP+-10G-SR
    Xcvr 4                REV 01      740-021308    MXA138L        SFP+-10G-SR
    Xcvr 5                REV 01      740-021308    13T5111102684  SFP+-10G-SR
    Xcvr 6                REV 01      740-021308    MXA138E        SFP+-10G-SR
    Xcvr 7                REV 01      740-021308    MXA152N        SFP+-10G-SR
PEM 0                   REV 02      740-070749    1F186390060    AC AFO 650W PSU
PEM 1                   REV 02      740-070749    1F186390045    AC AFO 650W PSU
Fan Tray 0                                     Fan Tray, Front to Back
Airflow - AFO
Fan Tray 1                                     Fan Tray, Front to Back
Airflow - AFO

```

show chassis hardware extensive (T640 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               T640
Jedec Code:      0x7fb0          EEPROM Version:  0x01
P/N:             .....          S/N:             .....
Assembly ID:     0x0507          Assembly Version: 00.00
Date:           00-00-0000    Assembly Flags:  0x00
Version:        .....
ID: Gibson LCC Chassis

```

Board Information Record:

Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

I2C Hex Data:

Address 0x00: 7f b0 01 ff 05 07 00 00 00 00 00 00 00 00 00 00

Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x20: ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Midplane REV 04 710-002726 AX5633

Jedec Code: 0x7fb0 EEPROM Version: 0x01

P/N: 710-002726. S/N: AX5633.

Assembly ID: 0x0127 Assembly Version: 01.04

Date: 06-27-2001 Assembly Flags: 0x00

Version: REV 04.....

ID: Gibson Backplane

Board Information Record:

Address 0x00: ad 01 08 00 00 90 69 0e f8 00 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 01 ff 01 27 01 04 52 45 56 20 30 34 00 00

Address 0x10: 00 00 00 00 37 31 30 2d 30 30 32 37 32 36 00 00

Address 0x20: 53 2f 4e 20 41 58 35 36 33 33 00 00 00 1b 06 07

Address 0x30: d1 ff ff ff ad 01 08 00 00 90 69 0e f8 00 ff ff

Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

FPM GBUS REV 02 710-002901 HE3245

...

FPM Display REV 02 710-002897 HA4873

...

CIP REV 05 710-002895 HA4729

...

PEM 1 RevX02 740-002595 MD21815 Power Entry Module

...

SCG 0 REV 04 710-003423 HF6023

...

SCG 1 REV 04 710-003423 HF6061

...

Routing Engine 0 REV 01 740-005022 210865700292 RE-3.0

...

CB 0 REV 06 710-002728 HE3614

...

FPC 1 REV 01 710-002385 HE3009 FPC Type 1

...

... REV 06 710-001726 HC0010

show chassis hardware interconnect-device (QFabric Systems)

```

user@switch> show chassis hardware interconnect-device interconnect1
Hardware inventory:
Item            Version  Part number  Serial number  Description
Chassis         REV 07
Midplane        REV 07   750-021261  BH0208188289  QFX Midplane
CB 0            REV 07   750-021261  BH0208188289  QFXIC08-CB4S

```

show chassis hardware lcc (TX Matrix Router)

```

user@host> show chassis hardware lcc 0
lcc0-re0:
-----
Hardware inventory:
Item            Version  Part number  Serial number  Description
Chassis         REV 03
Midplane        REV 03   710-005608  RA1408         T640 Backplane
FPM GBUS        REV 09   710-002901  RA2784         T640 FPM Board
FPM Display     REV 05   710-002897  RA2825         FPM Display
CIP             REV 06   710-002895  HT0684         T Series CIP
PEM 0          Rev 11   740-002595  PM18483        Power Entry Module
PEM 1          Rev 11   740-002595  qb13984        Power Entry Module
SCG 0          REV 11   710-003423  HT0022         T640 Sonet Clock Gen.
Routing Engine 0 REV 13   740-005022  210865700363  RE-3.0 (RE-600)
CB 0           REV 03   710-007655  HW1195         Control Board (CB-T)
FPC 1          REV 05   710-007527  HM3245         FPC Type 2
  CPU          REV 14   710-001726  HM1084         FPC CPU
  PIC 0        REV 02   750-007218  AZ1112         2x OC-12 ATM2 IQ, SMIR
  PIC 1        REV 02   750-007745  HG3462         4x OC-3 SONET, SMIR
  PIC 2        REV 14   750-001901  BA5390         4x OC-12 SONET, SMIR
  PIC 3        REV 09   750-008155  HS3012         2x G/E IQ, 1000 BASE
    SFP 0              NON-JNPR    P1186TY        SFP-S
    SFP 1          REV 01   740-007326  P11WLTF        SFP-SX
  MMB 1          REV 02   710-005555  HL7514         MMB-288mbit
  PPB 0          REV 04   710-003758  HM4405         PPB Type 2
  PPB 1          REV 04   710-003758  AV1960         PPB Type 2
FPC 2          REV 08   710-010154  HZ3578         E-FPC Type 3
  CPU          REV 05   710-010169  HZ3219         FPC CPU-Enhanced
  PIC 0        REV 02   750-009567  HX2882         1x 10GE(LAN), XENPAK

```


SFP 0	REV 01	740-009898	USC202U709	XENPAK-LR
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 2	REV 01	750-004535	HC0235	1x OC-192 SM SR1
PIC 3	REV 07	750-007141	HX1699	10x 1GE(LAN), 1000 BASE
SFP 0	REV 01	740-007326	2441042	SFP-SX
SFP 1	REV 01	740-007326	2441027	SFP-SX
MMB 0	REV 03	710-010171	HV2365	MMB-5M3-288mbit
MMB 1	REV 03	710-010171	HZ3888	MMB-5M3-288mbit
SPMB 0	REV 09	710-003229	HW5245	T Series Switch CPU
SIB 3	REV 07	710-005781	HR5927	SIB-L8-F16
B Board	REV 06	710-005782	HR5971	SIB-L8-F16 (B)
SIB 4	REV 07	710-005781	HR5903	SIB-L8-F16
B Board	REV 06	710-005782	HZ5275	SIB-L8-F16 (B)

show chassis hardware models (MX2010 Router)

```

user@host > show chassis hardware models
Hardware inventory:
Item                Version  Part number  Serial number  FRU model number
FPM Board           REV 06   711-032349   ZX8744         711-032349
PSM 4               REV 0C   740-033727   VK00254        000000000000000000000000
PSM 5               REV 0B   740-033727   VG00015        000000000000000000000000
PSM 6               REV 0B   740-033727   VH00097        000000000000000000000000
PSM 7               REV 0C   740-033727   VJ00151        000000000000000000000000
PSM 8               REV 0C   740-033727   VJ00149        000000000000000000000000
PDM 0               REV 0B   740-038109   WA00008
PDM 1               REV 0B   740-038109   WA00014
Routing Engine 0    REV 02   740-041821   9009094134     RE-S-1800X4-16G-S
Routing Engine 1    REV 02   740-041821   9009094141     RE-S-1800X4-16G-S
CB 0                REV 08   750-040257   CAAB3491       750-040257
CB 1                REV 08   750-040257   CAAB3489       750-040257
SFB 0               REV 06   711-032385   ZV1828         711-032385
SFB 1               REV 07   711-032385   ZZ2568         711-032385
SFB 2               REV 07   711-032385   ZZ2563         711-032385
SFB 3               REV 07   711-032385   ZZ2564         711-032385
SFB 4               REV 07   711-032385   ZZ2580         711-032385
SFB 5               REV 07   711-032385   ZZ2579         711-0323856
SFB 6               REV 07   711-032385   CAAB4882       711-044170
SFB 7               REV 07   711-032385   CAAB4898       711-044170
FPC 0               REV 33   750-028467   CAAB1919       MPC-3D-16XGE-SFPP
FPC 1               REV 21   750-033205   ZG5027         MX-MPC3-3D

```

MIC 0	REV 03	750-033307	ZV6299	MIC3-3D-10XGE-SFPP
MIC 1	REV 03	750-033307	ZV6268	MIC3-3D-10XGE-SFPP
FPC 8	REV 22	750-031089	ZT9746	MX-MPC2-3D
MIC 0	REV 26	750-028392	ABBS1150	MIC-3D-20GE-SFP
MIC 1	REV 26	750-028387	ABBR9582	MIC-3D-4XGE-XFP
FPC 9	REV 11	750-036284	ZL3591	MPCE-3D-16XGE-SFPP
ADC 0	REV 05	750-043596	CAAC2073	750-043596
ADC 1	REV 01	750-043596	ZV4117	750-043596
ADC 8	REV 01	750-043596	ZV4107	750-043596
ADC 9	REV 02	750-043596	ZW1555	750-043596
Fan Tray 0	REV 2A	760-046960	ACAY0015	
Fan Tray 1	REV 2A	760-046960	ACAY0019	
Fan Tray 2	REV 2A	760-046960	ACAY0020	
Fan Tray 3	REV 2A	760-046960	ACAY0021	

show chassis hardware node-device (QFabric Systems)

```

user@switch> show chassis hardware node-device node1
Routing Engine 0  BUILTIN      BUILTIN      QFX Routing Engine
node1            REV 05    711-032234   ED3694        QFX3500-48S4Q-AFI

CPU              BUILTIN      BUILTIN      FPC CPU
PIC 0           BUILTIN      BUILTIN      48x 10G-SFP+
Xcvr 8         REV 01    740-030658   AD0946A028B   SFP+-10G-USR

```

show chassis hardware scc (TX Matrix Router)

```

user@host> show chassis hardware scc
scc-re0:
-----
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane     REV 04    710-004396   RB0014        SCC Midplane
FPM GBUS     REV 04    710-004617   HW9141        SCC FPM Board
FPM Display  REV 04    710-004619   HS5950        SCC FPM
CIP 0        REV 01    710-010218   HV9151        SCC CIP
CIP 1        REV 01    710-010218   HV9152        SCC CIP
PEM 1        Rev 11    740-002595   QB13977       Power Entry Module

```

Routing Engine 0	REV 05	740-008883	P11123900153	RE-4.0 (RE-1600)
CB 0	REV 01	710-011709	HR5964	Control Board (CB-TX)
SPMB 0	REV 09	710-003229	HW5293	T Series Switch CPU
SIB 3				
SIB 4	REV 01	710-005839	HW1177	SIB-S8-F16
B Board	REV 01	710-005840	HW1202	SIB-S8-F16 (B)

show chassis hardware sfc (TX Matrix Plus Router)

```
user@host> show chassis hardware sfc 0
```

```
sfc0-re0:
```

```
-----
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           Version  Part number  Serial number  Description
Midplane          REV 05   710-022574   TS4027         SFC Midplane
FPM Display       REV 03   710-024027   DX0282         TXP FPM Display
CIP 0             REV 04   710-023792   DW4889         TXP CIP
CIP 1             REV 04   710-023792   DW4887         TXP CIP
PEM 0             Rev 07   740-027463   UM26368        Power Entry Module
Routing Engine 0  REV 01   740-026942   737A-1064      SFC RE
Routing Engine 1  REV 01   740-026942   737A-1082      SFC RE
CB 0              REV 09   710-022606   DW6099         SFC Control Board
CB 1              REV 09   710-022606   DW6096         SFC Control Board
SPMB 0            BUILTIN                                     SFC Switch CPU
SPMB 1            BUILTIN                                     SFC Switch CPU
SIB F13 0         REV 04   710-022600   DX0841         F13 SIB
  B Board         REV 03   710-023431   DX0966         F13 SIB Mezz
SIB F13 1         REV 04   750-024564   DW5776         F13 SIB
  B Board         REV 03   710-023431   DW9028         F13 SIB
SIB F13 3         REV 04   750-024564   DW5762         F13 SIB
  B Board         REV 03   710-023431   DW9059         F13 SIB
SIB F13 4         REV 04   750-024564   DW5797         F13 SIB
  B Board         REV 03   710-023431   DW9041         F13 SIB
SIB F13 6         REV 04   750-024564   DW5770         F13 SIB
  B Board         REV 03   710-023431   DW9079         F13 SIB Mezz
SIB F13 7         REV 04   750-024564   DW5758         F13 SIB
  B Board         REV 03   710-023431   DW9047         F13 SIB
SIB F13 8         REV 04   750-024564   DW5761         F13 SIB
  B Board         REV 03   710-023431   DW9043         F13 SIB Mezz
SIB F13 9         REV 04   750-024564   DW5754         F13 SIB
```

B Board	REV 03	710-023431	DW9078	F13 SIB Mezz
SIB F13 11	REV 04	710-022600	DX0826	F13 SIB
B Board	REV 03	710-023431	DX0967	F13 SIB Mezz
SIB F13 12	REV 04	750-024564	DW5794	F13 SIB
B Board	REV 03	710-023431	DW9044	F13 SIB Mezz
SIB F2S 0/0	REV 05	710-022603	DW7897	F2S SIB
B Board	REV 05	710-023787	DW7657	NEO PMB
SIB F2S 0/2	REV 05	710-022603	DW7833	F2S SIB
B Board	REV 05	710-023787	DW7526	NEO PMB
SIB F2S 0/4	REV 05	710-022603	DW7875	F2S SIB
B Board	REV 05	710-023787	DW7588	NEO PMB
SIB F2S 0/6	REV 05	710-022603	DW7860	F2S SIB
B Board	REV 05	710-023787	DW7589	NEO PMB
SIB F2S 1/0	REV 04	710-022603	DW4820	F2S SIB
B Board	REV 05	710-023787	DW8510	NEO PMB
SIB F2S 1/2	REV 05	710-022603	DW7849	F2S SIB
B Board	REV 05	710-023787	DW7525	NEO PMB
SIB F2S 1/4	REV 05	710-022603	DW7927	F2S SIB
B Board	REV 05	710-023787	DW7556	F2S SIB Mezz
SIB F2S 1/6	REV 05	710-022603	DW7866	F2S SIB
B Board	REV 05	710-023787	DW7651	NEO PMB
SIB F2S 2/0	REV 05	710-022603	DW7880	F2S SIB
B Board	REV 05	710-023787	DW7523	NEO PMB
SIB F2S 2/2	REV 05	710-022603	DW7895	F2S SIB
B Board	REV 05	710-023787	DW7591	NEO PMB
SIB F2S 2/4	REV 05	710-022603	DW7907	F2S SIB
B Board	REV 05	710-023787	DW7590	NEO PMB
SIB F2S 2/6	REV 05	710-022603	DW7785	F2S SIB
B Board	REV 05	710-023787	DW7524	NEO PMB
SIB F2S 3/0	REV 05	710-022603	DW7782	F2S SIB
B Board	REV 05	710-023787	DW7634	NEO PMB
SIB F2S 3/2	REV 05	710-022603	DW7793	F2S SIB
B Board	REV 05	710-023787	DW7548	NEO PMB
SIB F2S 3/4	REV 05	710-022603	DW7779	F2S SIB
B Board	REV 05	710-023787	DW7587	NEO PMB
SIB F2S 3/6	REV 05	710-022603	DW7930	F2S SIB
B Board	REV 05	710-023787	DW7505	NEO PMB
SIB F2S 4/0	REV 05	710-022603	DW7867	F2S SIB
B Board	REV 05	710-023787	DW7656	NEO PMB
SIB F2S 4/2	REV 05	710-022603	DW7917	F2S SIB
B Board	REV 05	710-023787	DW7640	NEO PMB
SIB F2S 4/4	REV 05	710-022603	DW7929	F2S SIB
B Board	REV 05	710-023787	DW7643	NEO PMB

SIB F2S 4/6	REV 05	710-022603	DW7870	F2S SIB
B Board	REV 05	710-023787	DW7635	NEO PMB
Fan Tray 0	REV 06	760-024497	DV7831	Front Fan Tray
Fan Tray 1	REV 06	760-024497	DV9614	Front Fan Tray
Fan Tray 2	REV 06	760-024502	DV9618	Rear Fan Tray
Fan Tray 3	REV 06	760-024502	DV9616	Rear Fan Tray
Fan Tray 4	REV 06	760-024502	DV7807	Rear Fan Tray
Fan Tray 5	REV 06	760-024502	DV7828	Rear Fan Tray

show chassis hardware (ACX7100-48L)

```

user@host> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis
[ACX7100-48
                L]
PSM 1             REV 04   740-085431   1ED79520221   PSU 1600W AC, Front
to
                Back Airflow
Routing Engine 0 REV 04   611-112446   YY0220320013   RE-JNP-7100
CB 0              REV 05   650-113149   YW0220320039   Control Board
FPC 0
  PIC 0           BUILTIN  BUILTIN      BUILTIN        ACX7100-48L
  6xQSFP56-DD
    Xcvr 0         REV 01   740-068639   1A1M31A311008   SFP28-25G-BASE-SR
    Xcvr 1         REV 01   740-030658   AA1230AZYWW     SFP+-10G-USR
    Xcvr 2         REV 01   740-031980   AP42G0C         SFP+-10G-SR
    Xcvr 3         REV 01   740-031980   ARN2FS9         SFP+-10G-SR
    Xcvr 4         REV 01   740-031980   AP4150P         SFP+-10G-SR
    Xcvr 5         REV 01   740-031980   123363A01134   SFP+-10G-SR
    Xcvr 6         REV 01   740-031980   B11E02539      SFP+-10G-SR
    Xcvr 7         REV 01   740-031980   ARQ0WRX         SFP+-10G-SR
    Xcvr 12        REV 01   740-031980   193363A00707   SFP+-10G-SR
    Xcvr 15        REV 01   740-031980   AMS15RT         SFP+-10G-SR
    Xcvr 18        REV 01   740-068639   1A1M31A5370MX   SFP28-25G-BASE-SR
    Xcvr 19        REV 01   740-068639   1A1M31A5370MS   SFP28-25G-BASE-SR
    Xcvr 21        REV 01   740-068639   1A1M31A5370MW   SFP28-25G-BASE-SR
    Xcvr 22        REV 01   740-068639   1A1M31A5370MT   SFP28-25G-BASE-SR
    Xcvr 43        REV 01   740-031980   CH09KN1H4      SFP+-10G-SR

```

```

Xcvr 44      REV 01  740-031980  AMB0TC1          SFP+-10G-SR
Xcvr 46      REV 01  740-031980  AP40WQN          SFP+-10G-SR
Xcvr 47      REV 01  740-031980  APR1BCS          SFP+-10G-SR
Xcvr 48      REV 01  740-054053  XXH0KH1          QSFP+-4X10G-SR
Xcvr 49      REV 01  740-058734  1ECQ144605L     QSFP-100GBASE-SR4
Xcvr 50      REV 01  740-054053  XWP0Q7D          QSFP+-4X10G-SR
Xcvr 51      REV 01  740-058734  1ECQ144604H     QSFP-100GBASE-SR4
Xcvr 52      REV 01  740-054053  XXH0KGC          QSFP+-4X10G-SR
Xcvr 53      REV 01  740-058734  1ECQ144605K     QSFP-100GBASE-SR4
Fan Tray 0
Front
                to Back Airflow - AFO
Fan Tray 1
Front
                to Back Airflow - AFO
Fan Tray 2
Front
                to Back Airflow - AFO
Fan Tray 3
Front
                to Back Airflow - AFO
Fan Tray 4
Front
                to Back Airflow - AFO
Fan Tray 5
Front
                to Back Airflow - AFO

```

Release Information

Command introduced before Junos OS Release 7.4.

models option introduced in Junos OS Release 8.2.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

Information for **disk** and **usb** introduced in Junos OS Release 15.1X53-D60 for QFX10002, QFX10008, and QFX10016 switches.

NOTE: Routers and routing platforms use the basic syntax, unless otherwise listed. For example, the EX Series has an additional satellite parameter available.

RELATED DOCUMENTATION

| [show chassis power](#)

show chassis location

IN THIS SECTION

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Syntax

```
show chassis location
```

Syntax (TX Matrix Router)

```
show chassis location
<fpc | interface (by-name name | by-slot fpc number lcc number) | lcc number |
scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis location
<fpc | interface (by-name name | by-slot fpc number lcc number) | lcc number |
sfc number>
```

Syntax (MX Series Router)

```
show chassis location
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series)

```
show chassis location
<interconnect-device name>
<node-device name>
```


Description

Display the physical location of the chassis. This command can only be used on the primary Routing Engine.

Options

none	Display all information about the physical location of the chassis. On a TX Matrix router, display all information about the physical location of the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display all information about the physical location of the TX Matrix Plus router and its attached routers.
all-members	(MX Series routers only) (Optional) Display the physical location of the chassis for all the member routers in the Virtual Chassis configuration.
fpc	(TX Matrix router and TX Matrix Plus router only) (Optional) Display the physical location of all Flexible PIC Concentrators (FPCs).
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display the physical location of the Interconnect device.
interface by-name <i>name</i>	(TX Matrix and TX Matrix Plus routers only) (Optional) Display the physical location of a specified interface name. On a TX Matrix router, this option displays the FPC number and T640 router (line-card chassis) number associated with the specified interface. On a TX Matrix Plus router, this option displays the FPC number and router (line-card chassis) number associated with the specified interface.
interface by-slot fpc <i>number</i> lcc <i>number</i>	<p>(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display the global FPC number of an interface by specifying its local FPC number and T640 router (line-card chassis) number. On a TX Matrix Plus router, display the global FPC number of an interface by specifying its local FPC number and router (line-card chassis) number.</p> <ul style="list-style-type: none"> • The global FPC number is the FPC slot number when all the FPC slots in the routing matrix are considered: 0 through 31. On TX Matrix Plus router with 3D SIBs, the value is 0 through 63. The local FPC number is the FPC slot number on a particular T640 router. • For fpc, replace <i>number</i> with a value from 0 through 7. • For lcc, replace <i>number</i> with a value from 0 through 7.

lcc <i>number</i>	(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the physical location of a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the physical location of a specified router (line-card chassis) that is connected to a TX Matrix Plus router. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display the physical location of the chassis for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the physical location of the chassis for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device <i>name</i>	(QFabric systems only) (Optional) Display the physical location of the Node device.
scc	(TX Matrix routers only) (Optional) Display the physical location of the TX Matrix router (switch-card chassis).
sfc	(TX Matrix Plus routers only) (Optional) Display the physical location of the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level

view

Output Fields

Table 78 on page 1427 lists the output fields for the **show chassis location** command. Output fields are listed in the approximate order in which they appear.

Table 78: show chassis location Output Fields

Field Name	Field Description
country-code	Country code information.
postal-code	Postal code information.
Building	Building information.
Floor	Floor information.
Global FPC	Global FPC number. The FPC slot number, when all FPC slots in the routing matrix are considered. The range of values is 0 through 31 . On TX Matrix Plus router with 3D SIBs the value is 0 through 63 .
LATA	Local access transport area information.
LCC	Line-card chassis number. On a TX Matrix router, the number of a particular T640 router connected to the TX Matrix router. On a TX Matrix Plus router, the number of a particular router connected to the TX Matrix Plus router.
Local FPC	Local FPC number. On a TX Matrix router, the FPC slot number on a particular T640 router. On a TX Matrix Plus router, the FPC slot number on a particular router.

Sample Output

show chassis location

```
user@host> show chassis location
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

show chassis location fpc (TX Matrix Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
      17         2         1
      21         2         5
```

show chassis location interface by-slot (TX Matrix Router)

```
user@host> show chassis location interface by-slot
fpc 1 lcc 1
Global FPC: 9
```

show chassis location fpc (TX Matrix Plus Router)

```
user@host> show chassis location fpc
Global FPC    LCC    Local FPC
      0         0         0
      1         0         1
```

show chassis location interface by-slot (TX Matrix Plus Router)

```
user@host> show chassis location interface by-slot
fpc 2 lcc 1
Global FPC: 10
```

show chassis location (QFX Series and OCX Series)

```
user@switch> show chassis location
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

show chassis location (QFabric Systems)

```
user@switch> show chassis location interconnect-device
interconnect1
country-code: US
postal-code: 94404
Building: Building 2, Floor: 2
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

[Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router](#)

show chassis mac-addresses

IN THIS SECTION

- [Syntax | 1430](#)
- [Syntax \(TX Matrix Router\) | 1430](#)

- [Syntax \(TX Matrix Plus Router\) | 1430](#)
- [Syntax \(MX Series Router\) | 1431](#)
- [Syntax \(QFX Series\) | 1431](#)
- [Description | 1431](#)
- [Options | 1431](#)
- [Required Privilege Level | 1432](#)
- [Output Fields | 1433](#)
- [Sample Output | 1434](#)
- [Release Information | 1438](#)

Syntax

```
show chassis mac-addresses
```

Syntax (TX Matrix Router)

```
show chassis mac-addresses  
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis mac-addresses  
<lcc number | sfc number>
```

Syntax (MX Series Router)

```
show chassis mac-addresses
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series)

```
show chassis mac-addresses
<interconnect-device name>
<node-group name>
```

Description

Display the media access control (MAC) addresses for the router, switch chassis, or switch.

Options

none	(TX Matrix, TX Matrix Plus routers, QFX Series, and OCX Series Switches) Display the MAC addresses for the router chassis or switch. On a TX Matrix router, display MAC addresses on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display MAC addresses on the TX Matrix Plus router and its attached routers.
all-members	(MX Series routers only) (Optional) Display the MAC addresses for all the member routers of the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric switches only) (Optional) Display the MAC addresses for the Interconnect device.
lcc <i>number</i>	(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display MAC addresses for a specified T640 router (or line-card chassis) that is

connected to the TX Matrix Plus router. On a TX Matrix Plus router, display MAC addresses for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display the MAC addresses for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the MAC addresses for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-group <i>name</i>	(QFabric switches only) (Optional) Display the MAC addresses for the specified Node group.
scc	(TX Matrix routers only) (Optional) Display MAC addresses for the TX Matrix router (or switch-card chassis).
<i>sfc number</i>	(TX Matrix Plus routers only) (Optional) Display MAC addresses for the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level

view

Output Fields

Table 79 on page 1433 lists the output fields for the **show chassis mac-addresses** command. Output fields are listed in the approximate order in which they appear.

Table 79: show chassis mac-addresses Output Fields

Field Name	Field Description
MAC address information	
Public base address	<p>Base address of the MAC addresses allocated to this router or switch, for example 00:24:dc:18:09:40. This address is also printed on the box of the device.</p> <p>Public MAC addresses are those addresses your switch/router assigns to Ethernet interfaces. The public base address is the first MAC address your device assigns to an interface. Consecutive public count MAC addresses are reserved for additional interfaces.</p>
	<p>Number of allocated public addresses, for example 64. Public addresses are calculated starting with the public base address. If the public base address is 00:24:dc:18:09:40, then The MAC address of ge-0/0/0 on this device is 00:24:dc:18:09:40, and ge-0/0/1 is 00:24:dc:18:09:41, and so on, up to 64 available addresses.</p>
Private base address	<p>Base address of the private MAC addresses allocated to this router or switch. The private base address is the first MAC address after the allocated consecutive public count addresses. For example, if 00:24:dc:18:09:40 is the public base and 0x40 is the public count in hex, then 00:24:dc:18:09:80 would be the private base.</p>
Private count	<p>Number of allocated private addresses.</p>

Sample Output

show chassis mac-addresses

```
user@host> show chassis mac-addresses
MAC address information
  Public base address  0:90:69:0:4:0
  Public count         1008
  Private base address 0:90:69:0:7:f0
  Private count        16
```

show chassis mac-addresses (MX2010 Router)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address  64:87:88:04:50:00
  Public count         1984
  Private base address 64:87:88:04:57:c0
  Private count        64
```

show chassis mac-addresses (PTX10008 Router)

```
user@host> show chassis mac-addresses
MAC address information:
  Public base address  30:b6:4f:0a:7a:bb
  Public count         1856
  Private base address 30:b6:4f:0a:81:fb
  Private count        192
```

show chassis mac-addresses (TX Matrix Router)

```
user@host> show chassis mac-addresses
scc-re0:
-----
MAC address information:
  Public base address  00:05:85:9e:cc:00
  Public count         8064
```

```

Private base address    00:05:85:9e:eb:80
Private count          128

```

```
lcc0-re0:
```

```
-----
```

```
MAC address information:
```

```

Public base address    00:05:85:68:98:00
Public count          2032
Private base address   00:05:85:68:9f:f0
Private count          16

```

```
lcc2-re0:
```

```
-----
```

```
MAC address information:
```

```

Public base address    00:05:85:68:78:00
Public count          2032
Private base address   00:05:85:68:7f:f0
Private count          16

```

show chassis mac-addresses (TX Matrix Plus Router)

```
user@host> show chassis mac-addresses
```

```
sfc0-re0:
```

```
-----
```

```
MAC address information:
```

```

Public base address    00:1d:b5:14:00:00
Public count          65023
Private base address   00:1d:b5:14:fd:ff
Private count          512

```

```
lcc0-re0:
```

```
-----
```

```
MAC address information:
```

```

Public base address    00:1f:12:7a:84:00
Public count          2032
Private base address   00:1f:12:7a:8b:f0
Private count          16

```

```
lcc1-re0:
```

```
-----
```

```
MAC address information:
```

```

Public base address    00:22:83:42:48:00
Public count          2032

```

```

Private base address    00:22:83:42:4f:f0
Private count          16

```

```
lcc2-re0:
```

```
-----
MAC address information:
```

```

Public base address    00:1f:12:c3:58:00
Public count           2032
Private base address   00:1f:12:c3:5f:f0
Private count          16

```

```
lcc3-re0:
```

```
-----
MAC address information:
```

```

Public base address    00:21:59:ef:b8:00
Public count           2032
Private base address   00:21:59:ef:bf:f0
Private count          16

```

show chassis mac-addresses (QFX Series and OCX Series)

```

user@switch> show chassis mac-addresses
MAC address information:
Public base address 02:00:08:00:00:00
Public count 512
Private base address 02:00:00:00:00:00
Private count 64

```

show chassis mac-addresses interconnect-device (QFabric Switches)

```

user@switch> show chassis mac-addresses interconnect-device
interconnect1
MAC address information:
Public base address    00:1f:12:30:9c:c0
Public count           58
Private base address   00:1f:12:30:9c:fa
Private count          6

```

show chassis mac-addresses node-group (QFabric Switches)

```

user@switch> show chassis mac-addresses node-group
NW-NG-0
MAC address information:
-----
RE:
  FC MAC base      00:11:00:00:00:00
  FC MAC count     2
  VLAN MAC         00:11:00:00:00:09
EC6007
  Base address     00:00:01:76:00:00
  Count            64
EC6008
  Base address     00:22:83:22:52:ae
  Count            260

```

show chassis mac-addresses (ACX5048 and ACX5096 Routers)

```

user@host> show chassis mac-addresses
FPC 0
  Base address     64:64:9b:5e:0a:00
  Count            1280

```

show chassis mac-addresses (ACX500 Routers)

```

user@host> show chassis mac-addresses
MAC address information:
  Public base address  f0:1c:2d:1b:60:80
  Public count         112
  Private base address f0:1c:2d:1b:60:f0
  Private count        16

```

show chassis mac-addresses (EX9251 Switches)

```

user@switch> show chassis mac-addresses
MAC address information:

```

```
Public base address    4c:16:fc:90:68:00
Public count          2032
Private base address   4c:16:fc:90:6f:f0
Private count         16
```

show chassis mac-addresses (EX9253 Switch)

```
user@switch> show chassis mac-addresses
MAC address information:
Public base address    38:4f:49:8f:00:b8
Public count          2330
Private base address   38:4f:49:8f:09:d2
Private count         1766
```

Release Information

Command introduced before JUNOS Release 7.4.

sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6.

RELATED DOCUMENTATION

| *ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*

show chassis network-services

IN THIS SECTION

- [Syntax | 1439](#)
- [Description | 1439](#)
- [Options | 1439](#)
- [Required Privilege Level | 1440](#)

- [Output Fields | 1440](#)
- [Sample Output | 1440](#)
- [Release Information | 1442](#)

Syntax

```
show chassis network-services
```

Description

Display the network services mode that the router is configured to run in—IP Network Services mode, Ethernet Network Services mode, Enhanced IP Network Services mode, Enhanced Ethernet Network Services mode, or Enhanced mode.

Options

all-ethernet	All Ethernet network services
all-ip	All IP network services
enhanced-ethernet	Enhanced ethernet network services
enhanced-ip	Enhanced IP network services
enhanced-mode	Enhanced network services
ethernet	Ethernet network services
ip	IP network services
lan	Ethernet LAN services

Required Privilege Level

view

Output Fields

[Table 80 on page 1440](#) lists the output fields for the **show chassis network services** command. Output fields are listed in the approximate order in which they appear.

Table 80: show chassis network services Output Fields

Field Name	Field Description
Network Services Mode	<p>Network services mode configured for the router:</p> <ul style="list-style-type: none"> • IP—IP Network Services mode. • Ethernet—Ethernet Network Services mode. • enhanced-ip—Enhanced IP Network Services mode • enhanced-ethernet—Enhanced Ethernet Network Services mode • Enhanced-Mode—Enhanced mode for PTX Series routers that have third-generation FPCs installed. See "enhanced-mode" on page 286.

Sample Output

show chassis network services

```
user@host> show chassis network services
Network Services Mode: IP
```


show chassis network services (MX104 Router)

```
user@host> show chassis network services
Network Services Mode: IP
```

show chassis network services (MX2010 Router)

```
user@host> show chassis network services
Network Services Mode: Enhanced-IP
```

show chassis network services (MX2020 Router)

```
user@host> show chassis network services
Network Services Mode: Enhanced-IP
```

show chassis network services (MX2008 Router)

```
user@host> show chassis network-services
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX10003 Router)

```
user@host> show chassis network-services
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX204 Router)

```
user@host> show chassis network-services
Network Services Mode: Enhanced-IP
```

show chassis network-services (MX10008 Router)

```
user@host> show chassis network-services
Network Services Mode: Enhanced-IP
```

show chassis network services (PTX Router with third-generation FPCs)

```
user@host> show chassis network services
Network Services Mode: Enhanced-Mode
```

Release Information

Command introduced in Junos OS Release 9.4.

RELATED DOCUMENTATION

| [enhanced-mode \(Network Services\) | 286](#)

show chassis oss-map

IN THIS SECTION

- [Syntax | 1443](#)
- [Description | 1443](#)
- [Required Privilege Level | 1443](#)
- [Output Fields | 1443](#)
- [Sample Output | 1444](#)
- [Release Information | 1444](#)

Syntax

```
show chassis oss-map
```

Description

(T4000 routers only) Display the operations support systems (OSS) mapping details.

Required Privilege Level

view

Output Fields

[Table 81 on page 1443](#) lists the output fields for the **show chassis oss-map** command. Output fields are listed in the approximate order in which they appear.

Table 81: show chassis oss-map Output Fields

Field Name	Field Description
Chassis type	Displays the original chassis type.
Oss-map	Displays the mapped chassis type.

Sample Output

command-name

```
user@T4000# show chassis oss-map
Chassis type           Oss-map
T4000                  T640
```

Release Information

Command introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

[Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis | 248](#)

[Example: Configuring a T4000 Chassis to Represent a T640 Chassis | 250](#)

[oss-map | 345](#)

show chassis pic

IN THIS SECTION

- [Syntax | 1445](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 1445](#)
- [Syntax \(MX Series Routers and EX Series Switches\) | 1445](#)
- [Syntax \(PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers\) | 1446](#)
- [Syntax \(QFX Series\) | 1446](#)
- [Syntax \(ACX5048 and ACX5096 Routers\) | 1446](#)
- [Syntax \(ACX500 Routers\) | 1446](#)

- [Description | 1446](#)
- [Options | 1447](#)
- [Required Privilege Level | 1449](#)
- [Output Fields | 1449](#)
- [Sample Output | 1454](#)
- [Release Information | 1481](#)

Syntax

```
show chassis pic fpc-slot slot-number pic-slot slot-number
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<lcc number>
```

Syntax (MX Series Routers and EX Series Switches)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<all-members>  
<local>  
<member member-id>
```

Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers)

```
show chassis pic transport fpc-slot slot-number pic-slot slot-number
```

Syntax (QFX Series)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<interconnect-device name (fpc-slot slot-number | pic-slot slot-number)>  
<node-device name pic-slot slot-number>
```

Syntax (ACX5048 and ACX5096 Routers)

```
show chassis pic  
(fpc-slot slot-number | pic-slot slot-number)
```

Syntax (ACX500 Routers)

```
show chassis pic  
(fpc-slot slot-number | pic-slot slot-number)
```

Description

Display status information about the PIC installed in the specified Flexible PIC Concentrator (FPC) and PIC slot.

Options

fpc-slot *slot-number*

Display information about the PIC in this particular FPC slot:

- On a TX Matrix router, if you specify the number of the T640 router by using the **lcc number** option (the recommended method), replace *slot-number* with a value from **0** through **7**. Otherwise, replace *slot-number* with a value from **0** through **31**.

Likewise, on a TX Matrix Plus router, if you specify the number of the T1600 router by using the **lcc number** option (the recommended method), replace *slot-number* with a value from **0** through **7**. Otherwise, replace *slot-number* with a value from **0** through **31**. For example, the following commands have the same result:

```
user@host> show chassis pic fpc-slot 1 lcc 1 pic-slot 1
user@host> show chassis pic fpc-slot 9 pic-slot 1
```

- M120 routers only—Replace *slot-number* with a value from **0** through **5**.
- MX80 routers only—Replace *slot-number* with a value from **0** through **1**.
- MX104 routers only—Replace *slot-number* with a value from **0** through **2**.
- MX240 routers only—Replace *slot-number* with a value from **0** through **2**.
- MX480 routers only—Replace *slot-number* with a value from **0** through **5**.
- MX960 routers only—Replace *slot-number* with a value from **0** through **11**.
- MX2010 routers only—Replace *slot-number* with a value from **0** through **9**.
- MX2020 routers only—Replace *slot-number* with a value from **0** through **19**.
- MX2008 routers only—Replace *slot-number* with a value from **0** through **9**.
- MX10003 routers only—Replace *slot-number* with a value from **0** through **1**.
- Other routers—Replace *slot-number* with a value from **0** through **7**.
- EX Series switches:

- EX3200 switches and EX4200 standalone switches—Replace *slot-number* with 0.
- EX4200 switches in a Virtual Chassis configuration—Replace *slot-number* with a value from 0 through 9 (switch’s member ID).
- EX8208 switches—Replace *slot-number* with a value from 0 through 7 (line card).
- EX8216 switches—Replace *slot-number* with a value from 0 through 15 (line card).
- QFX Series:
 - QFX3500, QFX3600, QFX5100, and OCX Series standalone switches—Replace *slot-number* with 0. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.
 - QFabric systems—Replace *slot-number* with any number between 0 and 15. In the command output, FPC refers to a line card. The FPC number equals the slot number for the line card.

all-members (MX Series routers and EX Series switches only) (Optional) Display PIC information for all member routers in the Virtual Chassis configuration.

interconnect-device *name* (QFabric systems only) (Optional) Display PIC information for a specified Interconnect device.

lcc *number* (TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display PIC information for a specified T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display PIC information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers and EX Series switches only) (Optional) Display PIC information for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device <i>name</i>	(QFabric systems only) (Optional) Display PIC information for a specified Node device.
pic-slot <i>slot-number</i>	Display information about the PIC in this particular PIC slot. For routers, replace <i>slot-number</i> with a value from 0 through 3. For EX3200 and EX4200 switches, replace <i>slot-number</i> with 0 for built-in network interfaces and 1 for interfaces on uplink modules. For EX8208 and EX8216 switches, replace <i>slot-number</i> with 0. For the QFX3500 standalone switch and the QFabric system, replace <i>slot-number</i> with 0 or 1.
transport	Display PIC information for optical transport network.

Required Privilege Level

view

Output Fields

[Table 82 on page 1450](#) lists the output fields for the **show chassis pic** command. Output fields are listed in the approximate order in which they appear.

Table 82: show chassis pic Output Fields

Field Name	Field Description
Type	<p>PIC type.</p> <p>NOTE: On the 1-port OC192/STM64 MICs with the SDH framing mode, the type is displayed as MIC-3D-1STM64-XFP and with the SONET framing mode, the type is displayed as MIC-3D-1OC192-XFP. By default, the 1-port OC192/STM64 MICs displays the type as MIC-3D-1OC192-XFP.</p>
Account Layer2 Overhead	(MX Series routers) Indicates whether functionality to count the Layer 2 overhead bytes in the interface statistics at the PIC level is enabled or disabled.
ASIC type	Type of ASIC on the PIC.
State	<p>Status of the PIC. State is displayed only when a PIC is in the slot.</p> <ul style="list-style-type: none"> • Online— PIC is online and running. • Offline—PIC is powered down. • Empty—No PIC is present. • Present—PIC is plugged in. The PIC is not powered on or operational. • Onlining—PIC is in the process of going online. PICs and rest of the hardware is initializing. • Offlining—PIC is in the process of going offline. PIC and rest of the hardware is being shutdown down to take the offline gracefully. • Fault—PIC is in an alarmed state and the PIC is not operational.
PIC version	PIC hardware version.
Uptime	How long the PIC has been online.

Table 82: show chassis pic Output Fields *(Continued)*

Field Name	Field Description
Package	<p>(Multiservices interfaces cards only)</p> <p>The following services package are supported:</p> <ul style="list-style-type: none"> • Layer-2 (not applicable to the MS-MPC and MS-MIC.) • Layer-3 (not applicable to the MS-MPC and MS-MIC.) • extension-provider (PICs of MS-MPC and MS-MIC support only this package.)
Port Number	Port number for the PIC.
Cable Type	Type of cable connected to the port: LH , LX , or SX .
PIC Port Information (MX480 Router 100-Gigabit Ethernet CFP)	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of optical transceiver installed. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. Uplinks and downlinks are always 1550 nm. There is a separate fiber for each direction • Xcvr Firmware—Transceiver firmware version.

Table 82: show chassis pic Output Fields (Continued)

Field Name	Field Description
PIC Port Information (MX960 Router Bidirectional Optics)	Port-level information for the PIC. <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. Uplink interfaces display -U. Down link interfaces display -D. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. <ul style="list-style-type: none"> • BX10-10-km bidirectional optics. • BX40-40-km bidirectional optics. • SFP-LX-40-km SFP optics. • Wavelength—Wavelength of the transmitted signal. Uplinks are always 1310 nm. Downlinks are either 1490 nm or 1550 nm.
PIC Port Information (Next- Generation SONET/SDH SFP)	Port-level information for the next-generation SONET/SDH SFP PIC. <ul style="list-style-type: none"> • Port—Port number. • Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. • Fiber type—Type of fiber: SM (single-mode) or MM (multimode). • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. Next-generation SONET/SDH SFPs use 1310 nm.

Table 82: show chassis pic Output Fields (*Continued*)

Field Name	Field Description
PIC port information (MX104 router)	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> • Port—Port number • Cable type—Type of optical transceiver installed. • Fiber type—Type of fiber. SM is single-mode. • Xcvr vendor—Transceiver vendor name. • Xcvr vendor part number—Transceiver vendor part number. • Wavelength—Wavelength of the transmitted signal. • Xcvr Firmware—Firmware version of the transceiver.
Port speed information	<p>Information pertaining to port speed:</p> <ul style="list-style-type: none"> • Port—Port number. • PFE—Packet Forwarding Engine slot number. • Capable Port Speed—Speed supported by each port.
Multirate Mode	Rate-selectabilty status for the MIC: Enabled or Disabled .
Channelization	Indicates whether channelization is enabled or disabled on the DS3/E3 MIC.
Administrative State	Indicates the administrative state of the PIC. Possible values are: In Service (Default) and Out of Service.
Operational State	Indicates the operational state of the PIC. Possible values are: Normal and Fault.

Sample Output

show chassis pic fpc-slot pic-slot

```

user@host> show chassis pic fpc-slot 2 pic-slot 0
PIC fpc slot 2 pic slot 0 information:
  Type                               10x 1GE(LAN), 1000 BASE
  ASIC type                           H chip
  State                               Online
  PIC version                          1.1
  Uptime                              1 day, 50 minutes, 58 seconds
PIC Port Information:
  Port      Cable      Xcvr      Xcvr Vendor
  Number    Type              Vendor Name  Part Number
  0         GIGE 1000EX      FINISAR CORP.  FTRJ8519P1BNL-J3
  1         GIGE 1000EX      FINISAR CORP.  FTRJ-8519-7D-JUN

```

show chassis pic fpc-slot pic-slot (PIC Offline)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
PIC fpc slot 1 pic slot 0 information:
  State                               Offline

```

show chassis pic fpc-slot pic-slot (FPC Offline)

```

user@host> show chassis pic fpc-slot 1 pic-slot 0
FPC 1 is not online

```

show chassis pic fpc-slot pic-slot (FPC Not Present)

```

user@host> show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4 is empty

```

show chassis pic fpc-slot pic-slot (PIC Not Present)

```
user@host> show chassis pic fpc-slot 5 pic-slot 2
FPC 5, PIC 2 is empty
```

show chassis pic fpc-slot 3 pic-slot 0 (M120 Router)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
PC slot 3, PIC slot 0 information:
Type                               2x G/E IQ, 1000 BASE
ASIC type                           IQ GE 2 VLAN-TAG FPGA
State                                Online
PIC version                          1.16
Uptime                               3 hours, 3 minutes

PIC Port Information:
Port      Cable      Xcvr      Xcvr Vendor
Number    Type          Vendor Name  Part Number
0         GIGE 1000SX  FINISAR CORP.  FTRJ8519P1BNL-J3
1         GIGE 1000SX  FINISAR CORP.  FTRJ-8519-7D-JUN
```

show chassis pic fpc-slot pic-slot (MX150)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
Type                               Virtual
State                               Online
PIC version                         0.0
Uptime                              7 days, 19 hours, 44 minutes, 40 seconds

PIC port information:
Port Cable type      Fiber      Xcvr vendor      Xcvr vendor      Wave-      Xcvr
Number type          type      part number      part number      length
Firmware
10  GIGE 1000T        n/a      Methode Elec.    SP7041-M1-JN    n/a
0.0
11  GIGE 1000T        n/a      Methode Elec.    SP7041-M1-JN    n/a
0.0
```

show chassis pic fpc-slot pic-slot (MX960 Router with Bidirectional Optics)

```

user@host> show chassis pic fpc-slot 4 pic-slot 1
FPC slot 4, PIC slot 1 information:
  Type                10x 1GE (LAN)
  Account Layer2 Overhead  Enabled
  State                Online
  PIC version          0.0
  Uptime               18 days, 5 hours, 41 minutes, 54 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	part number	Wavelength
0	SFP-1000BASE-BX10-D	SM	SumitomoElectric	SBP6H44-J3-BW-49	1490 nm
1	SFP-1000BASE-BX10-D	SM	SumitomoElectric	SBP6H44-J3-BW-49	1490 nm
2	SFP-1000BASE-BX10-D	SM	SumitomoElectric	SBP6H44-J3-BW-49	1490 nm
3	SFP-1000BASE-BX10-D	SM	OCF	TRXBG1LXDBVM2-JW	1490 nm
4	SFP-1000BASE-BX10-D	SM	OCF	TRXBG1LXDBVM2-JW	1490 nm
5	SFP-1000BASE-BX10-U	SM	SumitomoElectric	SBP6H44-J3-BW-31	1310 nm
6	SFP-1000BASE-BX10-U	SM	SumitomoElectric	SBP6H44-J3-BW-31	1310 nm
7	SFP-1000BASE-BX10-U	SM	OCF	TRXBG1LXDDBMH-J1	1310 nm
8	SFP-1000BASE-BX10-U	SM	OCF	TRXBG1LXDDBMH-J1	1310 nm
9	SFP-1000BASE-BX10-U	SM	SumitomoElectric	SBP6H44-J3-BW-31	1310 nm

show chassis pic fpc-slot pic-slot (MX480 Router with 100-Gigabit Ethernet MIC)

```

user@host> show chassis pic fpc-slot 1 pic-slot 2
FPC slot 1, PIC slot 2 information:
  Type                1X100GE CFP
  State                Online
  PIC version          2.10
  Uptime               4 minutes, 48 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	part number	Wavelength
0	100GBASE LR4	SM	FINISAR CORP.	FTLC1181RDNS-J3	1310 nm

Xcvr vendor

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr part number	Wave-length	Xcvr
0	100G LH	SM	OCLARO	TRB100AJ-01	1528.77 nm	-
	1568.36 nm					20.10

show chassis pic fpc-slot pic-slot (MX10003 Routers)

user@host > **show chassis pic fpc-slot 0 pic-slot 0**

FPC slot 0, PIC slot 1 information:

Type	MIC1
State	Online
PIC version	1.5
Uptime	13 hours, 54 minutes, 33 seconds

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr part number	Wave-length	Xcvr
0	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU2	850 nm	0.0
11	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU2	850 nm	0.0

Port speed information:

Port	PFE	Capable Port Speeds
0	0	4x10GE, 40GE, 100GE
1	0	4x10GE, 40GE, 100GE
2	0	4x10GE, 40GE, 100GE
3	0	4x10GE, 40GE, 100GE
4	1	4x10GE, 40GE, 100GE
5	1	4x10GE, 40GE, 100GE
6	1	4x10GE, 40GE, 100GE
7	1	4x10GE, 40GE, 100GE
8	2	4x10GE, 40GE, 100GE
9	2	4x10GE, 40GE, 100GE
10	2	4x10GE, 40GE, 100GE
11	2	4x10GE, 40GE, 100GE

show chassis pic fpc-slot pic-slot (PTX1000 and PTX10000)

```

user@host > show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                288X10GE/72X40GE/24X100GE
  State                Online
  PIC version          1.18
  Uptime               9 day, 5 hours, 10 minutes, 56 seconds

PIC port information:
  Port Cable type      Fiber      Xcvr vendor      Wave-      Xcvr
  type Xcvr vendor     part number      length
Firmware
  13  100GBASE LR4      SM      JUNIPER-SOURCE   SPQCELRCDFBJ2  1302 nm
0.0
  25  100GBASE LR4      SM      JUNIPER-SOURCE   SPQCELRCDFAJ2  1302 nm
0.0
  36  40GBASE LR4       SM      FINISAR CORP.    FTL4C1QE1C-J1  1301 nm
0.0
  37  40GBASE LR4       SM      FINISAR CORP.    FTL4C1QE1C-J1  1301 nm
0.0
  54  40GBASE SR4       MM      AVAGO             AFBR-79EQDZ-JU1 850 nm
0.0

Port speed information:
  Port  PFE      Capable Port Speeds
  0      4x10GE, 40GE
  1      4x10GE, 40GE, 100GE
  2      4x10GE, 40GE
  3      4x10GE, 40GE
  4      4x10GE, 40GE
  5      4x10GE, 40GE, 100GE
  6      4x10GE, 40GE
  7      4x10GE, 40GE, 100GE
  8      4x10GE, 40GE
  9      4x10GE, 40GE
  10     4x10GE, 40GE
  11     4x10GE, 40GE, 100GE
  12     4x10GE, 40GE
  13     4x10GE, 40GE, 100GE
  14     4x10GE, 40GE
  15     4x10GE, 40GE

```

16	4x10GE, 40GE
17	4x10GE, 40GE, 100GE
18	4x10GE, 40GE
19	4x10GE, 40GE, 100GE
20	4x10GE, 40GE
21	4x10GE, 40GE
22	4x10GE, 40GE
23	4x10GE, 40GE, 100GE
24	4x10GE, 40GE
25	4x10GE, 40GE, 100GE
26	4x10GE, 40GE
27	4x10GE, 40GE
28	4x10GE, 40GE
29	4x10GE, 40GE, 100GE
30	4x10GE, 40GE
31	4x10GE, 40GE, 100GE
32	4x10GE, 40GE
33	4x10GE, 40GE
34	4x10GE, 40GE
35	4x10GE, 40GE, 100GE
36	4x10GE, 40GE
37	4x10GE, 40GE, 100GE
38	4x10GE, 40GE
39	4x10GE, 40GE
40	4x10GE, 40GE
41	4x10GE, 40GE, 100GE
42	4x10GE, 40GE
43	4x10GE, 40GE, 100GE
44	4x10GE, 40GE
45	4x10GE, 40GE
46	4x10GE, 40GE
47	4x10GE, 40GE, 100GE
48	4x10GE, 40GE
49	4x10GE, 40GE, 100GE
50	4x10GE, 40GE
51	4x10GE, 40GE
52	4x10GE, 40GE
53	4x10GE, 40GE, 100GE
54	4x10GE, 40GE
55	4x10GE, 40GE, 100GE
56	4x10GE, 40GE
57	4x10GE, 40GE
58	4x10GE, 40GE

```

59          4x10GE, 40GE, 100GE
60          4x10GE, 40GE
61          4x10GE, 40GE, 100GE
62          4x10GE, 40GE
63          4x10GE, 40GE
64          4x10GE, 40GE
65          4x10GE, 40GE, 100GE
66          4x10GE, 40GE
67          4x10GE, 40GE, 100GE
68          4x10GE, 40GE
69          4x10GE, 40GE
70          4x10GE, 40GE

```

show chassis pic fpc-slot pic-slot (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC

```

user@host > show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type                    5X100GE DWDM CFP2-ACO
  State                    Online
  PIC version              1.17
  Uptime                   1 day, 5 hours, 15 minutes, 17 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wave-length	Xcvr
0	100G LH	SM	MULTILANE SAL	ML4030-ACO-2	1528.77 nm	-
1	100G LH	SM	MULTILANE SAL	ML4030-ACO-2	1528.77 nm	-
2	100G LH	SM	JUNIPER-FUJITSU	FIM38500/222	1528.77 nm	-
3	100G LH	SM	FUJITSU	FIM38500/222	1528.77 nm	-
4	100G LH	SM	FUJITSU	FIM38500/222	1528.77 nm	-

```

Firmware
1568.36 nm 1.0
1568.36 nm 1.16
1568.36 nm 1.16
1568.36 nm 1.16

```

show chassis pic fpc-slot pic-slot (MX480 Router with MPC4E)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0
FPC slot 3, PIC slot 0 information:
  Type                4x10GE SFPP
  State                Online
  PIC version          0.0
  Uptime               41 seconds

PIC port information:
  Port Cable type      Fiber          Xcvr vendor      Wave-   Xcvr
  type Xcvr vendor     part number      length
Firmware
  0  10GBASE SR        MM  OPNEXT, INC.    TRS2001EM-0014  850 nm
0.0
  1  10GBASE SR        MM  OPNEXT, INC.    TRS2001EM-0014  850 nm
0.0

```

show chassis pic fpc-slot pic-slot (MX480 router with OTN Interface)

```

user@host> show chassis pci fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type                12X10GE SFPP OTN
  State                Online
  PIC version          0.0
  Uptime               5 hours, 28 minutes, 23 seconds

PIC port information:
  Port Cable type      Fiber          Xcvr vendor      Wave-   Xcvr
  type Xcvr vendor     part number      length
Firmware
  0  10GBASE SR        MM  FINISAR CORP.   FTLX8571D3BNL-J1 850 nm
0.0
  1  10GBASE SR        MM  FINISAR CORP.   FTLX8571D3BCL-J1 850 nm
0.0
  2  10GBASE SR        MM  OPNEXT, INC.    TRS2001EM-0014  850 nm
0.0

```

show chassis pic fpc-slot pic-slot (MX2010 Router with OTN Interfaces)

```

user@host> show chassis pic fpc-slot 9 pic-slot 0
FPC slot 9, PIC slot 0 information:
  Type                2X100GE CFP2 OTN
  State                Online
  PIC version          1.9
  Uptime               3 hours, 56 minutes, 16 seconds

PIC port information:
  Port Cable type      Fiber          Xcvr vendor      Wave-   Xcvr
  type Xcvr vendor     part number      length
Firmware
  0  100GBASE LR4-D    SM  FUJITSU          FIM37300/222    1310 nm
1.3
  1  100GBASE SR10    MM  AVAGO             AFBR-8420Z      n/a    1.0

```

show chassis pic fpc-slot pic-slot (MX2010 Router)

```

user@host> show chassis pic fpc-slot 9 pic-slot 3
FPC slot 9, PIC slot 3 information:
  Type                1X100GE CFP
  Account Layer2 Overhead Enabled
  State                Online
  PIC version          0.0
  Uptime               14 hours, 51 seconds

```

show chassis pic fpc-slot pic-slot (MX2020 Router)

```

user@host> show chassis pic fpc-slot 19 pic-slot 3
FPC slot 19, PIC slot 3 information:
  Type                4x 10GE(LAN) SFP+
  Account Layer2 Overhead Enabled
  State                Online
  PIC version          0.0
  Uptime               1 day, 11 hours, 26 minutes, 36 seconds

PIC port information:
  Fiber          Xcvr vendor      Wave-   Xcvr

```

Port	Cable type	type	Xcvr vendor	part number	length
Firmware					
0	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm
0.0					
1	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm
0.0					
2	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm
0.0					
3	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm
0.0					

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis pic fpc-slot 18 pic-slot 2
FPC slot 18, PIC slot 2 information:
  Type                3X40GE QSFP
  State                Online
  PIC version          0.0
  Uptime               6 minutes, 31 seconds

PIC port information:
  Fiber                Xcvr vendor      Wave-      Xcvr
  Port Cable type     type Xcvr vendor      part number length
  Firmware
  0  40GBASE SR4       MM  AVAGO            AFBR-79E4Z-D-JU2 850 nm
  0.0
  1  40GBASE SR4       MM  AVAGO            AFBR-79E4Z-D-JU2 850 nm
  0.0
  2  40GBASE SR4       MM  AVAGO            AFBR-79E4Z-D-JU2 850 nm
  0.0

```

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC6E and OTN MIC)

```

user@host> show chassis pic fpc-slot 3 pic-slot 0
FPC slot 0, PIC slot 1 information:
  Type                24X10GE SFPP OTN
  State                Online
  PIC version          1.1
  Uptime               1 hour, 33 minutes, 59 seconds

```


PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wave-length	Xcvr
7	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	
0.0						
9	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
12	10GBASE LR	SM	FINISAR CORP.	FTLX1472M3BNL-J3	1310 nm	
0.0						
20	10GBASE ZR	SM	FINISAR CORP.	FTLX1871M3BNL-J3	1550 nm	
0.0						
21	10GBASE ER	SM	FINISAR CORP.	FTLX1671D3BTL-J4	1550 nm	
0.0						
22	10GBASE LR	SM	SOURCEPHOTONICS	SPP10SLREDFCJNP	1310 nm	
0.0						
23	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	0.0

show chassis pic fpc-slot pic-slot (MX2020 Router with MPC4E)

```
user@host> show chassis pic fpc-slot 14 pic-slot 0
```

FPC slot 14, PIC slot 2 information:

Type	4x10GE SFPP
State	Online
PIC version	0.0
Uptime	1 day, 14 hours, 49 minutes, 9 seconds

PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wave-length	Xcvr
0	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
1	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
3	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						

show chassis pic fpc-slot pic-slot (MX2010 Router)

```

user@host> show chassis pic fpc-slot 9 pic-slot 3
FPC slot 9, PIC slot 3 information:
  Type                1X100GE CFP
  Account Layer2 Overhead  Enabled
  State                Online
  PIC version          0.0
  Uptime              14 hours, 51 seconds

```

show chassis pic fpc-slot pic-slot (T1600 Router with 100-Gigabit Ethernet PIC)

```

user@host> run show chassis pic fpc-slot 3 pic-slot 1
FPC slot 3, PIC slot 1 information:
  Type                100GE SLOT1
  ASIC type            Brooklyn 100GE FPGA
  State                Online
  PIC version          1.3
  Uptime              10 minutes, 44 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
0	100GBASE LR4	SM	Opnext Inc.	TRC5E20ENFSF000F	1310 nm

show chassis pic fpc-slot pic-slot lcc (TX Matrix Router)

```

user@host> show chassis pic fpc-slot 1 pic-slot 1 lcc 0
lcc0-re0:
-----
PIC fpc slot 1 pic slot 1 information:
  Type                4x OC-3 SONET, SMIR
  ASIC type            D chip
  State                Online
  PIC version          1.2
  Uptime              5 days, 2 hours, 12 minutes, 8 seconds

```

show chassis pic fpc-slot pic-slot lcc (TX Matrix Plus Router)

```

user@host> show chassis pic fpc-slot 0 fpc-slot 8
lcc0-re0:
-----
FPC slot 8, PIC slot 0 information:
  Type                1x 10GE (LAN/WAN)
  State                Online
  Uptime              2 hours, 46 minutes, 23 seconds

PIC port information:
  Port  Cable type      Fiber
                                type  Xcvr vendor      part number      Wavelength
  0     10GBASE ZR       SM   Opnext Inc.     TRF7061BN-LF150  1550 nm
  0     10GBASE ZR       SM   FINISAR CORP.  FTRX-1811-3-J2   1550 nm

```

show chassis pic fpc-slot pic-slot (Next-Generation SONET/SDH SFP)

```

user@host> show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type                4x OC-3 1x OC-12 SFP
  ASIC type           D FPGA
  State                Online
  PIC version         1.3
  Uptime              1 day, 50 minutes, 4 seconds

PIC port information:
  Port  Cable type      Fiber
                                type  Xcvr vendor      part number      Wavelength
  0     OC48 short reach SM   FINISAR CORP.   FTRJ1321P1BTL-J2  1310 nm
  1     OC3 short reach  MM   OCP              TRPA03MM3BAS-JE   1310 nm
  2     OC3 short reach  MM   OCP              TRXA03MM3BAS-JW   1310 nm
  3     OC12 inter reach SM   FINISAR CORP.   FTLF1322P1BTR     1310 nm

```

show chassis pic fpc-slot pic-slot (12-Port T1/E1)

```

user@host> show chassis pic fpc-slot 0 pic-slot 3
FPC slot 0, PIC slot 3 information:
  Type                12x T1/E1 CE

```

```

State                               Online
PIC version                          1.1
CPU load average                      1 percent
Interrupt load average                0 percent
Total DRAM size                      128 MB
Memory buffer utilization             100 percent
Memory heap utilization                4 percent
Uptime                               1 day, 22 hours, 28 minutes, 12 seconds
Internal Clock Synchronization       Normal

```

show chassis pic fpc-slot 0 pic-slot 1 (4x CHOC3 SONET CE SFP)

```

user@host> show chassis pic fpc-slot 0 pic-slot 1
FPC slot 0, PIC slot 1 information:
  Type                               4x CHOC3 SONET CE SFP
  State                               Online
  PIC version                         1.3
  CPU load average                    1 percent
  Interrupt load average              0 percent
  Total DRAM size                    128 MB
  Memory buffer utilization            99 percent
  Memory heap utilization              4 percent
  Uptime                              1 day, 22 hours, 55 minutes, 37 seconds
  Internal Clock Synchronization     Normal

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wavelength
0	OC3 short reach	MM	AVAGO	HFBR-57E0P-JU2	n/a
1	OC3 short reach	MM	AVAGO	HFBR-57E0P-JU2	n/a
3	OC3 long reach	SM	OPNEXT INC	TRF5456AVLB314	1310 nm

show chassis pic fpc-slot 0 pic-slot 0 (SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                               MIC-3D-80C30C12-40C48
  State                               Online
  PIC version                         1.8

```

```
Uptime 3 days, 22 hours, 3 minutes, 50 seconds
```

```
PIC port information:
```

Port	Cable type	Fiber		Xcvr vendor		Wavelength
		type	Xcvr vendor	part number		
1	OC12 inter reach	SM	FINISAR CORP	FTRJ1322P1BTR-J3		1310 nm
7	OC12 inter reach	SM	FINISAR CORP	FTRJ1322P1BTR-J3		1310 nm

Multirate Mode Enabled

show chassis pic fpc-slot 3 pic-slot 0 (8-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

```
FPC slot 3, PIC slot 0 information:
```

```
Type MIC-3D-8CHOC3-4CHOC12
State Online
PIC version 1.9
Uptime 1 hour, 21 minutes, 24 seconds
```

```
PIC port information:
```

Port	Cable type	Fiber		Xcvr vendor		Wavelength
		type	Xcvr vendor	part number		
0	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
1	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
2	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J2		1310 nm
4	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
5	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
6	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
7	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm

show chassis pic fpc-slot 5 pic-slot 0 (4-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0
```

```
FPC slot 5, PIC slot 0 information:
```

```
Type MIC-3D-4CHOC3-2CHOC12
State Online
PIC version 1.9
Uptime 1 hour, 21 minutes
```

PIC port information:

Port	Cable type	Fiber		Xcvr vendor		Wavelength
		type	Xcvr vendor	part number		
1	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
2	OC12 inter reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm
3	OC12 short reach	SM	FINISAR CORP.	FTRJ1322P1BTR-J3		1310 nm

show chassis pic fpc-slot 1 pic-slot 0 (1-port OC192/STM64 MIC with XFP)

```
user@host> show chassis pic fpc-slot 1 pic-slot 0
```

FPC slot 1, PIC slot 0 information:

Type	MIC-3D-10C192-XFP
State	Online
PIC version	1.2
Uptime	1 day, 11 hours, 4 minutes, 6 seconds

PIC port information:

Port	Cable type	Fiber		Xcvr vendor		Wavelength
		type	Xcvr vendor	part number		
0	OC192 short reach	n/a	FINISAR CORP.	FTLX1412M3BCL-J3		1310 nm

show chassis pic fpc-slot 1 pic-slot 2 (8-port DS3/E3 MIC)

```
user@host> show chassis pic fpc-slot 1 pic-slot 2
```

FPC slot 1, PIC slot 2 information:

Type	MIC-3D-8DS3-E3
State	Online
PIC version	1.10
Uptime	4 days, 1 hour, 29 minutes, 19 seconds
Channelization Mode	Disabled

show chassis pic fpc-slot pic-slot (OTN)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0
```

PIC fpc slot 5 pic slot 0 information:

Type	1x10GE(LAN), OTN
ASIC type	H chip

PIC port information:

Port	Cable type	Fiber		Xcvr vendor		Wavelength
		type	Xcvr vendor	part number		
0	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
1	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
2	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
3	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
4	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
5	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
6	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
7	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
8	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
9	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
10	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
11	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
12	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
13	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
14	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
15	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
16	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
17	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
18	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
19	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
20	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
21	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
22	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
23	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
24	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
25	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
26	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
27	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
28	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
29	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
30	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
31	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
32	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
33	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
34	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
35	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
36	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
37	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
38	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm
39	10GBASE SR	MM	SumitomoElectric	SPP5101SR-J3		850 nm

show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)

```

user@host> show chassis pic transport fpc-slot 2 pic-slot 0
Administrative State:      In Service
Operational State:       Normal

```

show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```

user@host> show chassis pic transport fpc-slot 3 pic-slot 0
Administrative State:      In Service
Operational State:       Normal

```

show chassis pic fpc-slot 0 pic-slot 0 (ACX5096 Router)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                96x10G-8x40G
  State                Online
  PIC version          2.9
  Uptime               21 hours, 28 minutes, 13 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr part number	Wave-length	Firmware
0	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
1	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	0.0
3	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
4	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	0.0
5	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
6	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
7	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0

0.0						
8	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
9	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
10	10GBASE SR	MM	OPNEXT, INC.	TRS2001EN-0014	850 nm	
0.0						
11	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
12	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
13	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
14	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
15	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
16	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
17	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
18	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
19	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	
0.0						
20	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	
0.0						
21	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
22	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
23	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm	
0.0						
24	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
25	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm	
0.0						
26	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						
27	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
28	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	
0.0						

29	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P3BNL-J1	850 nm
0.0					
31	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm
0.0					
32	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm
0.0					
33	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm
0.0					
34	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm
0.0					
35	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm
0.0					
36	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm
0.0					
37	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm
0.0					
38	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm
0.0					
40	GIGE 1000LX10	SM	FINISAR CORP.	FTLF1318P2BTL-J1	1310 nm
0.0					
41	10GBASE LR	SM	OPNEXT, INC	TRS5021EN-S201	1310 nm
0.0					
42	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm
0.0					
43	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm
0.0					
44	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm
0.0					
45	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm
0.0					
46	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm
0.0					
47	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm
0.0					
48	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm
0.0					
49	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm
0.0					
50	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm
0.0					
51	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm
0.0					
52	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm

0.0						
53	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
54	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
55	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
56	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
57	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
58	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
59	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
60	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
61	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
62	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
63	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
64	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
65	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
66	10GBASE SR	MM	SumitomoElectric	SPP5200SR-J6-M	850 nm	
0.0						
67	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
68	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
69	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
70	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						
71	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm	
0.0						
72	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BCL-J1	1310 nm	
0.0						
73	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	
0.0						

74	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm
0.0					
75	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm
0.0					
76	10GBASE SR	MM	SumitomoElectric	SPP5100SR-J3	850 nm
0.0					
77	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
78	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
79	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
80	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
81	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
82	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
83	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
84	10GBASE USR	MM	OPNEXT, INC.	TRS20A0EN-0014	850 nm
0.0					
85	10GBASE LR	SM	OPNEXT, INC	TRS5021EN-S201	1310 nm
0.0					
86	10GBASE ER	SM	OPNEXT, INC	TRS7050EN-S201	1550 nm
0.0					
87	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
88	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
89	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
90	10GBASE LRM	MM	OPNEXT INC	TRS5001EN-0014	1310 nm
0.0					
91	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm
0.0					
92	10GBASE USR	MM	FINISAR CORP.	FTLX8570D3BCL-J1	850 nm
0.0					
93	10GBASE LR	SM	SumitomoElectric	SPP5100LR-J3	1310 nm
0.0					
94	10GBASE LR	SM	FINISAR CORP.	FTLX1471D3BNL-J1	1310 nm
0.0					
95	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm

```

0.0
 96 40GBASE SR4      MM  AVAGO              AFBR-79E4Z-D-JU1  850 nm
0.0
 97 40GBASE SR4      MM  AVAGO              AFBR-79E4Z-D-JU1  850 nm
0.0
 98 40GBASE SR4      MM  AVAGO              AFBR-79EQDZ-JU1   850 nm
0.0
 99 40GBASE SR4      MM  AVAGO              AFBR-79EQDZ-JU1   850 nm
0.0
100 40GBASE CU 1M    n/a  Molex Inc.         1110409055        n/a
0.0
101 40GBASE CU 1M    n/a  Molex Inc.         1110409055        n/a
0.0
102 40GBASE CU 1M    n/a  Molex Inc.         1110409055        n/a
0.0
103 40GBASE CU 1M    n/a  Molex Inc.         1110409055        n/a
0.0

```

show chassis pic fpc-slot 0 pic-slot 0 (ACX5048 Router)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                96x10G-8x40G
  State                Online
  PIC version          2.9
  Uptime               1 day, 5 hours, 27 minutes, 25 seconds

PIC port information:

```

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor part number	Wave-length	Xcvr
Firmware						
0	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
10	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P3BNL-J1	850 nm	0.0
14	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
20	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BCL-J1	850 nm	0.0
30	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P2BNL-J1	850 nm	0.0
41	10GBASE SR	MM	OPNEXT, INC.	TRS2001EN-0014	850 nm	0.0
46	GIGE 1000SX	MM	FINISAR CORP.	FTLF8519P2BNL-J1	850 nm	0.0
64	10GBASE SR	MM	FINISAR CORP.	FTLX8571D3BNL-J1	850 nm	0.0
78	GIGE 1000SX	MM	AVAGO	AFBR-5715PZ-JU2	850 nm	0.0

96	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
99	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0
100	40GBASE SR4	MM	AVAGO	AFBR-79EQDZ-JU1	850 nm	0.0

show chassis pic fpc-slot 0 pic-slot 0 (ACX500 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                2x 1GE(LAN) SFP Builtin
  State                Online
  Uptime              17 hours, 54 minutes, 45 seconds
```

show chassis pic fpc-slot 0 pic-slot 1 (ACX500 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 1
FPC slot 0, PIC slot 1 information:
  Type                4x 1GE(LAN) RJ45, SFP Builtin
  State                Online
  Uptime              17 hours, 54 minutes, 45 seconds
```

show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)

```
user@host> show chassis pic transport fpc-slot 2 pic-slot 0
Administrative State:    In Service
Operational State:     Normal
```

show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis pic transport fpc-slot 3 pic-slot 0
Administrative State:    In Service
Operational State:     Normal
```


show chassis pic fpc-slot 7 pic-slot 1 (MX960 Router MPC10E-15C-MRATE Line Card)

```

user@router> show chassis pic fpc-slot 7 pic-slot 1

FPC slot 7, PIC slot 1 information:
  Type                               MRATE-5xQSFP
  State                               Online
  PIC version                         0.0
  Uptime                              3 hours, 33 minutes, 21 seconds

PIC port information:
  Xcvr      JNPR      Fiber      Xcvr vendor      Wave-
  Port Cable type  type  Xcvr vendor      part number      length
  Firmware      Rev
  0      100GBASE LR4      SM      JUNIPER-FINISAR      FTLC1151RDPL-J3      1302 nm
  0.0      REV 01

Port speed information:

  Port  PFE      Capable Port Speeds
  0      1      4x10GE, 40GE, 100GE
  1      1      4x10GE, 40GE, 100GE
  2      1      4x10GE, 40GE, 100GE
  3      1      4x10GE, 40GE, 100GE
  4      1      4x10GE, 40GE, 100GE

```

Release Information

Command introduced before Junos OS Release 7.4.

transport option introduced in Junos OS Release 16.1R1 for MX Series Routers.

RELATED DOCUMENTATION

[request chassis pic](#)

[show chassis hardware](#)

[100-Gigabit Ethernet Type 4 PIC with CFP Overview](#)

show chassis power

IN THIS SECTION

- [Syntax | 1482](#)
- [Syntax \(MX Series Router\) | 1482](#)
- [Syntax \(MX2010, MX2020, MX10003, MX2008, and PTX Series routers; EX9200 and EX9253 Switches\) | 1483](#)
- [Syntax \(MX10008 Universal Routing Platforms\) | 1483](#)
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Syntax

```
show chassis power
```

Syntax (MX Series Router)

```
show chassis power  
<all-members>  
<local>  
<member member-id>  
<detail>
```

Syntax (MX2010, MX2020, MX10003, MX2008, and PTX Series routers; EX9200 and EX9253 Switches)

```
show chassis power
<detail>
```

Syntax (MX10008 Universal Routing Platforms)

```
show chassis power
<detail>
<sequence>
```

Description

(EX9200 switches, MX Series 5G Universal Routing Platforms and PTX Series Packet Transport Routers only) Display power limits and usage information for the AC or DC power sources.

- On EX9200 switches and the MX Series 5G Universal Routing Platforms, power is supplied by Power Entry Modules (PEMs).

NOTE: The new high-capacity (4100 W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

- On the MX2020 Universal Routing Platforms, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. The MX2020 router chassis provides 3+3 (2500W/80A) or 4+4 (2100W/60A) PSM redundancy for the critical FRUs with two power zones.
- On the MX2010 and MX2008 Universal Routing Platforms, the power system consists of three components: the power supply modules (PSMs), the power distribution module (PDM), and the

power midplane. The power feed is connected to the PDM. The PDM delivers power to the power midplane. The power midplane supplies power to the PSMs. Unlike the MX2020 router chassis, the MX2010 and MX2008 router chassis does not provide redundancy for the critical FRUs because there is only one power zone.

Starting from Junos OS Release 17.3, MX10003 routers support DC (1100W), AC High (1600W), and AC Low (800W) power supply units.

- On the PTX Series Packet Transport Routers, power is supplied by power supply modules (PSMs). On PTX5000 routers, the power feeds connect to the power distribution units (PDUs).
- Starting with Junos OS Release 14.1, the **show chassis power <detail>** operational mode command output displays power usage information for the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router. The output also displays power usage information for each PIC that is connected to the router. This command also displays power usage information for MX Series routers that have a MPC5EQ MPC installed.
- Starting in Junos OS Release 18.4R1, on MX240 routers and EX9204 switches, the enhanced AC PEM in high-line power configuration supplies a power output of 2400 W. On Junos OS versions prior to 18.4R1, this PEM supplied only 2050 W of power.

NOTE: The MX204 routers do not support the **show chassis power** command.

Options

none	Display basic power usage information for the AC and DC power sources.
all-members	(MX Series routers only) (Optional) Display power usage information for all members of the Virtual Chassis configuration.
detail	(Optional) Include power usage for specific FRUs.
local	(MX Series routers only) (Optional) Display power usage information for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display power usage information for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.

Required Privilege Level

view

Output Fields

[Table 83 on page 1486](#) lists the output fields for the **show chassis power** command. Output fields are listed in the approximate order in which they appear.

Table 83: show chassis power Output Fields:

Field Name	Field Description	Level of Output
PEM <i>number</i>	<p>(EX9200 switches and MX Series routers only) AC or DC PEM number on the chassis. The following output fields are displayed for the PEM:</p> <ul style="list-style-type: none"> • State—State of the PEM: <ul style="list-style-type: none"> • Online—PEM is present in the slot and online. • Empty—PEM is not present in the slot. • Present—PEM is present in the slot, but not online. • AC/DC Input—OK or Check—State of the AC or DC input power feed with the number of active and expected feeds (one or two). For a DC input power feed, this output field also displays the reference voltage input with maximum input voltage displayed in mV (in parentheses) for the AC or DC PEM. • Capacity—Actual power input capacity with maximum capacity displayed (in parentheses) in watts. NOTE: The maximum actual power capacity for AC and DC PEMs is: <ul style="list-style-type: none"> • MX960 AC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX960 DC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • MX480 AC PEM—2520 W if it is high-line. 1450 W if it is low-line. • MX480 DC PEM—2240 W if the DIP switch is off. 2440 W if the DIP switch is on. • MX240 AC PEM—2240 W if it is high-line. 2440 W if it is low-line. 	All levels

Table 83: show chassis power Output Fields: *(Continued)*

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • MX240 DC PEM—2240 W if the DIP switch is off. 2440 W if the DIP switch is on. • EX9204 AC PEM—2050 W if it is high-line. 1167 W if it is low-line. • EX9204 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • EX9208 AC PEM—2050 W if it is high-line. 1167 W if it is low-line. • EX9208 DC PEM—2400 W if the DIP switch is off. 2600 W if the DIP switch is on. • EX9214 AC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • EX9214 DC PEM—4100 W if two feeds are connected. 1700 W if one feed is connected. • DC Output—DC power output in Watts for the specified zone, at the specified amps and voltage ($A @ V$), and load and percentage utilization of the maximum capacity) for the zone. 	

Table 83: show chassis power Output Fields: *(Continued)*

Field Name	Field Description	Level of Output
System	<p>(EX9200 switches, MX Series, MX2020 routers, MX2010 routers, and MX2008 routers only) Overall power statistics for the system zone.</p> <p>The following output fields are displayed for MX Series routers:</p> <ul style="list-style-type: none"> • <i>Zone number</i>. • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. • Total system capacity—Cumulative power capacity of all the zones, in watts. • Total remaining capacity—Difference between the Total system capacity and cumulative Allocated power of all the zones, in watts. <p>The following output fields are displayed for MX2010, MX2020, and MX2008 routers:</p> <ul style="list-style-type: none"> • Capacity—Maximum power capacity applicable for the zone, in watts. • Allocated power—Actual capacity allocated for the zone, in watts, with remaining power displayed in parentheses. • Actual usage—Actual power usage for the zone, in watts. <p>NOTE: For MX2020 routers, there are two power subsystems (Lower Zone and Upper Zone) and the listed output fields are displayed for each zone.</p>	All levels
Total Power	(PTX Series only) Total power used by the switch (displayed in watts).	All levels
PDU number	(PTX5000 only) ID number of the power distribution unit (PDU) on the chassis.	All levels

Table 83: show chassis power Output Fields: *(Continued)*

Field Name	Field Description	Level of Output
PSM number	<p>(PTX Series, MX2020 routers, MX2010 routers, and MX2008 routers only) ID number of the power supply module..</p> <p>(PTX Series) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • Input (V)—Voltage supplied to the PSM. • Used (W)—Actual power usage for the PSM (measured in watts). <p>NOTE: Starting with Junos OS Release 14.1, no output is displayed for Input (v) and Used (W) fields for missing PSMs; unlike in earlier releases where 0 was displayed for missing PSMs.</p> <p>(MX2010, MX2020, and MX2008 routers) The following output fields are displayed for each PSM:</p> <ul style="list-style-type: none"> • State—State of the PSM: <ul style="list-style-type: none"> • Online—PSM is present in the slot and online. • Empty—PSM is not present in the slot. • Present—PSM is present in the slot but not online. • DC Input—State of the DC input power feed with the number of active or expected feeds (in parantheses). • Capacity—Actual power input capacity and maximum capacity (in parantheses) displayed in watts. <p>NOTE: The maximum capacity for AC and DC PSMs is:</p> <ul style="list-style-type: none"> • MX2010/MX2020/MX2008 AC PSM—2500 W. • MX2010/MX2020/MX2008 DC PSM—2100 W if the DIP switch is at 60A settings. 2500 W if the DIP switch is at 80A settings. <ul style="list-style-type: none"> • DC Output—DC power output in watts for the specified zone at the specified amperes and voltage (A at V), and load and percentage utilization of the maximum capacity for the zone. 	All levels

Table 83: show chassis power Output Fields: *(Continued)*

Field Name	Field Description	Level of Output
Item	<p>Actual power usage (measured in watts) for the following FRUs:</p> <ul style="list-style-type: none"> • Fan Tray <i>n</i>—Power usage for the specified fan tray. • RE<i>n</i>/CB<i>n</i>—Power usage for the specified Routing Engines and Control Boards • SIB/CCG/FPD—Power usage for the Switch Interface Board, Centralized Clock Generator (PTX5000 only), and Front Panel Display (craft interface). • FPC <i>n</i>—Power usage for the FPC in the slot specified. <p>NOTE: MX Series routers must have a MPC5EQ MPC installed to view FRU power usage with the detail command.</p>	detail

Sample Output

show chassis power (MX960 Router with DC PEM)

```

user@host> show chassis power
PEM 0:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 1:
  State:      Online
  DC input:   OK (2 feed expected, 2 feed connected)
  DC input:   48.0 V input (57000 mV)
  Capacity:   4100 W (maximum 4100 W)
  DC output:  228 W (zone 1, 4 A at 57 V, 5% of capacity)

PEM 2:

```

```

State:      Online
DC input:   OK (2 feed expected, 2 feed connected)
DC input:   48.0 V input (57000 mV)
Capacity:   4100 W (maximum 4100 W)
DC output:  513 W (zone 0, 9 A at 57 V, 12% of capacity)

PEM 3:
State:      Online
DC input:   OK (2 feed expected, 2 feed connected)
DC input:   48.0 V input (57000 mV)
Capacity:   4100 W (maximum 4100 W)
DC output:  342 W (zone 1, 6 A at 57 V, 8% of capacity)

System:
Zone 0:
  Capacity:      4100 W (maximum 4100 W)
  Allocated power: 1680 W (2420 W remaining)
  Actual usage:  1026 W
Zone 1:
  Capacity:      4100 W (maximum 4100 W)
  Allocated power: 1263 W (2837 W remaining)
  Actual usage:  570 W
Total system capacity: 8200 W (maximum 8200 W)
Total remaining power: 5257 W

```

show chassis power (MX960 Router with AC PEM)

```

user@host> show chassis power
PEM 0:
State:      Online
AC input:   OK (2 feed expected, 2 feed connected)
Capacity:   4100 W (maximum 4100 W)
DC output:  0 W (zone 0, 0 A at 56 V, 0% of capacity)

PEM 1:
State:      Present
AC input:   Check (2 feed expected, 1 feed connected)
Capacity:   1700 W (maximum 4100 W)

PEM 2:
State:      Empty

```

```

Input:      Absent

PEM 3:
State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   1700 W (maximum 1700 W)

System:
Zone 0:
Capacity:   4100 W (maximum 4100 W)
Allocated power: 540 W (3560 W remaining)
Actual usage: 0 W
Zone 1:
Capacity:   0 W (maximum 0 W)
Allocated power: 0 W (0 W remaining)
Actual usage: 0 W
Total system capacity: 4100 W (maximum 4100 W)
Total remaining power: 3560 W

```

show chassis power detail (MX960 Router with MPC5EQ)

```

user@host> show chassis power detail
PEM 0:
State:      Online
DC input:   OK (2 feed expected, 2 feed connected)
DC input:   48.0 V input (57500 mV)
Capacity:   4100 W (maximum 4100 W)
DC output:  798 W (zone 0, 14 A at 57 V, 19% of capacity)

PEM 1:
State:      Online
DC input:   OK (2 feed expected, 2 feed connected)
DC input:   48.0 V input (57500 mV)
Capacity:   4100 W (maximum 4100 W)
DC output:  1311 W (zone 1, 23 A at 57 V, 31% of capacity)

PEM 2:
State:      Online
DC input:   OK (2 feed expected, 2 feed connected)
DC input:   48.0 V input (57500 mV)
Capacity:   4100 W (maximum 4100 W)

```

DC output: 855 W (zone 0, 15 A at 57 V, 20% of capacity)

PEM 3:

State: Online
 DC input: OK (2 feed expected, 2 feed connected)
 DC input: 48.0 V input (57500 mV)
 Capacity: 4100 W (maximum 4100 W)
 DC output: 912 W (zone 1, 16 A at 57 V, 22% of capacity)

System:

Zone 0:
 Capacity: 4100 W (maximum 4100 W)
 Allocated power: 2497 W (1603 W remaining)
 Actual usage: 1653 W
 Zone 1:
 Capacity: 4100 W (maximum 4100 W)
 Allocated power: 3336 W (764 W remaining)
 Actual usage: 2223 W
 Total system capacity: 8200 W (maximum 8200 W)
 Total remaining power: 2367 W

Item	Used(W)
FPC 0	255
FPC 10	341

show chassis power (MX480 Router with AC PEM)

```
user@host> show chassis power
PEM 0:
  State: Online
  AC input: OK (1 feed expected, 1 feed connected)
  Capacity: 2520 W (maximum 2520 W)
  DC output: 472 W (zone 0, 8 A at 59 V, 18% of capacity)

PEM 1:
  State: Online
  AC input: OK (1 feed expected, 1 feed connected)
  Capacity: 2520 W (maximum 2520 W)
  DC output: 472 W (zone 0, 8 A at 59 V, 18% of capacity)

PEM 2:
```

```
State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   2520 W (maximum 2520 W)
DC output:  118 W (zone 0, 2 A at 59 V, 4% of capacity)
```

```
PEM 3:
State:      Empty
Input:      Absent
```

```
System:
Maximum capacity: 5040 W
Allocated capacity: 1675 W (33% of maximum)
Remaining capacity: 3365 W
Actual usage:      1062 W
```

show chassis power (MX2020 Router)

```
user@host > show chassis power
PSM 0:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 1:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  854.25 W (Lower Zone, 16.75 A at 51.00 V, 34.17% of capacity)

PSM 2:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  858.44 W (Lower Zone, 16.75 A at 51.25 V, 34.34% of capacity)

PSM 3:
State:      Online
DC input:   OK (INP0 feed expected, INP0 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)
```

PSM 4:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 871.25 W (Lower Zone, 17.00 A at 51.25 V, 34.85% of capacity)

PSM 5:

State: Empty
Input: Absent

PSM 6:

State: Empty
Input: Absent

PSM 7:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 867.00 W (Lower Zone, 17.00 A at 51.00 V, 34.68% of capacity)

PSM 8:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 879.75 W (Lower Zone, 17.25 A at 51.00 V, 35.19% of capacity)

PSM 9:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 10:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 11:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)

DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 12:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

PSM 13:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 612.00 W (Upper Zone, 12.00 A at 51.00 V, 29.14% of capacity)

PSM 14:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 15:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 627.81 W (Upper Zone, 12.25 A at 51.25 V, 29.90% of capacity)

PSM 16:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 615.00 W (Upper Zone, 12.00 A at 51.25 V, 29.29% of capacity)

PSM 17:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)

Capacity: 2100 W (maximum 2500 W)

DC output: 624.75 W (Upper Zone, 12.25 A at 51.00 V, 29.75% of capacity)

System:

Upper Zone:

Capacity: 18900 W (maximum 22500 W)

Allocated power: 12900 W (6000 W remaining)

Actual usage: 5596.62 W


```
Lower Zone:
  Capacity:          17500 W (maximum 17500 W)
  Allocated power:   12900 W (4600 W remaining)
  Actual usage:      6056.12 W
  Total system capacity: 36400 W (maximum 40000 W)
  Total remaining power: 10600 W
```

show chassis power detail (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis power detail
PSM 0:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 1:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 2:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  538.12 W (Lower Zone, 10.50 A at 51.25 V, 25.62% of capacity)

PSM 3:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 4:
  State:      Online
  DC input:   OK (INP0 feed expected, INP0 feed connected)
  Capacity:   2100 W (maximum 2500 W)
  DC output:  515.00 W (Lower Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 5:
```

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 6:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 540.75 W (Lower Zone, 10.50 A at 51.50 V, 25.75% of capacity)

PSM 7:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 527.88 W (Lower Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 8:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 530.44 W (Lower Zone, 10.25 A at 51.75 V, 25.26% of capacity)

PSM 9:

State: Empty
Input: Absent

PSM 10:

State: Empty
Input: Absent

PSM 11:

State: Empty
Input: Absent

PSM 12:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2100 W (maximum 2500 W)
DC output: 517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 13:

State: Online

DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2100 W (maximum 2500 W)
 DC output: 517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 14:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2100 W (maximum 2500 W)
 DC output: 515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

PSM 15:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2100 W (maximum 2500 W)
 DC output: 527.88 W (Upper Zone, 10.25 A at 51.50 V, 25.14% of capacity)

PSM 16:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2100 W (maximum 2500 W)
 DC output: 517.50 W (Upper Zone, 10.00 A at 51.75 V, 24.64% of capacity)

PSM 17:

State: Online
 DC input: OK (INP0 feed expected, INP0 feed connected)
 Capacity: 2100 W (maximum 2500 W)
 DC output: 515.00 W (Upper Zone, 10.00 A at 51.50 V, 24.52% of capacity)

System:

Upper Zone:

Capacity: 12600 W (maximum 15000 W)
 Allocated power: 9436 W (3164 W remaining)
 Actual usage: 3110.38 W

Lower Zone:

Capacity: 18900 W (maximum 22500 W)
 Allocated power: 10842 W (8058 W remaining)

Actual usage: 4799.69 W

Total system capacity: 31500 W (maximum 37500 W)

Total remaining power: 11222 W

Item	Used(W)
FPC 0	0
FPC 4	0

FPC 9	719
FPC 10	681
FPC 17	656
FPC 18	0
FPC 19	0

show chassis power (MX2020 Router with 240-V high-voltage DC PSMs and PDMs)

```
user@host> show chassis power
```

PSM 0:

```
State:      Online
DC input:   OK (INP1 feed expected, INP1 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  197.81 W (Lower Zone, 3.75 A at 52.75 V, 7.91% of capacity)
```

PSM 1:

```
State:      Online
DC input:   OK (INP1 feed expected, INP1 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  171.44 W (Lower Zone, 3.25 A at 52.75 V, 6.86% of capacity)
```

PSM 2:

```
State:      Online
DC input:   OK (INP1 feed expected, INP1 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  184.62 W (Lower Zone, 3.50 A at 52.75 V, 7.38% of capacity)
```

PSM 3:

```
State:      Online
DC input:   OK (INP1 feed expected, INP1 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  184.62 W (Lower Zone, 3.50 A at 52.75 V, 7.38% of capacity)
```

PSM 4:

```
State:      Online
DC input:   OK (INP1 feed expected, INP1 feed connected)
Capacity:   2500 W (maximum 2500 W)
DC output:  183.75 W (Lower Zone, 3.50 A at 52.50 V, 7.35% of capacity)
```

PSM 5:

State: Online
DC input: OK (INP1 feed expected, INP1 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 6:

State: Online
DC input: OK (INP1 feed expected, INP1 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 183.75 W (Lower Zone, 3.50 A at 52.50 V, 7.35% of capacity)

PSM 7:

State: Online
DC input: OK (INP1 feed expected, INP1 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 8:

State: Online
DC input: OK (INP1 feed expected, INP1 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 196.88 W (Lower Zone, 3.75 A at 52.50 V, 7.88% of capacity)

PSM 9:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 144.38 W (Upper Zone, 2.75 A at 52.50 V, 5.78% of capacity)

PSM 10:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 145.06 W (Upper Zone, 2.75 A at 52.75 V, 5.80% of capacity)

PSM 11:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 131.88 W (Upper Zone, 2.50 A at 52.75 V, 5.28% of capacity)

PSM 12:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 143.69 W (Upper Zone, 2.75 A at 52.25 V, 5.75% of capacity)

PSM 13:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 143.69 W (Upper Zone, 2.75 A at 52.25 V, 5.75% of capacity)

PSM 14:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 145.06 W (Upper Zone, 2.75 A at 52.75 V, 5.80% of capacity)

PSM 15:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 144.38 W (Upper Zone, 2.75 A at 52.50 V, 5.78% of capacity)

PSM 16:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 130.62 W (Upper Zone, 2.50 A at 52.25 V, 5.22% of capacity)

PSM 17:

State: Online
DC input: OK (INP0 feed expected, INP0 feed connected)
Capacity: 2500 W (maximum 2500 W)
DC output: 157.50 W (Upper Zone, 3.00 A at 52.50 V, 6.30% of capacity)

System:

Upper Zone:

Capacity: 22500 W (maximum 22500 W)
Allocated power: 6757 W (15743 W remaining)
Actual usage: 1286.25 W

Lower Zone:

Capacity: 22500 W (maximum 22500 W)
Allocated power: 7240 W (15260 W remaining)

```
Actual usage:      1696.62 W
Total system capacity: 45000 W (maximum 45000 W)
Total remaining power: 31003 W
```

show chassis power (MX10008)

```
user@host> show chassis power
PEM 0:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)
  DC output:  1248 W (zone 0, 104 A at 12 V, 46% of capacity)

PEM 1:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)
  DC output:  1248 W (zone 0, 104 A at 12 V, 46% of capacity)

PEM 2:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)
  DC output:  1260 W (zone 0, 105 A at 12 V, 46% of capacity)

PEM 3:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

PEM 4:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

PEM 5:
  State:      Present
  Capacity:   2700 W (maximum 2700 W)
  AC input:   Not ready

System:
```

```

Zone 0:
  Capacity:          8100 W (maximum 8100 W)
  Allocated power:  7105 W (995 W remaining)
  Actual usage:     3756 W
  Total system capacity: 8100 W (maximum 8100 W)
  Total remaining power: 995 W

```

show chassis power (PTX5000 Packet Transport Router)

```

user@host> show chassis power
Chassis Power      Input (V)      Used (W)

Total Power                               4006

PDU 0
  PSM 0
    Input 1          54          149
  PSM 1
    Input 1          54          377
  PSM 2
    Input 1          54          745
  PSM 3
    Input 1          54          715

PDU 1
  PSM 0
    Input 1          54          246
  PSM 1
    Input 1          54          332
  PSM 2
    Input 1          54          721
  PSM 3
    Input 1          54          721

```

show chassis power (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis power

Chassis Power      Input (V)      Used (W)

```


Total Power		4402
PDU 0		2104
PSM 0		
Input 1	53	229
Input 2	53	375
PSM 1		
PSM 2		
Input 1	53	248
Input 2	53	323
PSM 3		
PSM 4		
Input 1	53	206
Input 2	53	255
PSM 5		
PSM 6		
Input 1	53	206
Input 2	53	262
PSM 7		
PDU 1		2298
PSM 0		
PSM 1		
Input 1	53	289
Input 2	53	267
PSM 2		
PSM 3		
Input 1	53	309
Input 2	53	315
PSM 4		
PSM 5		
Input 1	53	335
Input 2	53	220
PSM 6		
PSM 7		
Input 1	53	308
Input 2	53	255

show chassis power detail (PTX5000 Packet Transport Router)

```

user@host> show chassis power detail
Chassis Power      Input (V)      Used (W)

Total Power                      3997

PDU 0                      1975
  PSM 0
    Input 1      54      136
  PSM 1
    Input 1      54      377
  PSM 2
    Input 1      54      741
  PSM 3
    Input 1      54      721

PDU 1                      2022
  PSM 0
    Input 1      54      235
  PSM 1
    Input 1      54      332
  PSM 2
    Input 1      54      726
  PSM 3
    Input 1      54      729

Item              Used (W)
Fan Tray 0        49
Fan Tray 1        127
Fan Tray 2        117
RE0/CB0           109
RE1/CB1           100
SIB/CCG/FPD      375
FPC 0             381
FPC 1             0
FPC 2             447
FPC 3             560
FPC 4             0
FPC 5             448

```

FPC 6	379
FPC 7	388

show chassis power detail (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis power detail
Chassis Power          Input (V)          Used (W)

Total Power                                4394

PDU 0
  PSM 0
    Input 1          53          222
    Input 2          53          368
  PSM 1
  PSM 2
    Input 1          53          248
    Input 2          53          329
  PSM 3
  PSM 4
    Input 1          53          212
    Input 2          53          248
  PSM 5
  PSM 6
    Input 1          53          206
    Input 2          53          262
  PSM 7

PDU 1                                2299
  PSM 0
  PSM 1
    Input 1          53          296
    Input 2          53          260
  PSM 2
  PSM 3
    Input 1          53          309
    Input 2          53          315
  PSM 4
  PSM 5
    Input 1          53          342
    Input 2          53          214

```

```

PSM 6
PSM 7
  Input 1          53          308
  Input 2          53          255

Item              Used(W)
Fan Trays         252
RE0/CB0           93
RE1/CB1           92
SIB               360
FPC 0             369
  PIC 0           16
  PIC 1            0
FPC 1              0
FPC 2             437
  PIC 0           44
  PIC 1           38
FPC 3             740
  PIC 0           41
  PIC 1           46
FPC 4             732
  PIC 0           74
  PIC 1           37
FPC 5              0
FPC 6              0
FPC 7              0

```

show chassis power detail (PTX10008 Router)

```

user@host> show chassis power detail

PEM 0:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (No feed expected, Both feed connected)
  DC output:  1164 W (zone 0, 97 A at 12 V, 43% of capacity)

PEM 1:
  State:      Online
  Capacity:   2700 W (maximum 2700 W)
  AC input:   OK (Both feed expected, Both feed connected)

```

```
DC output: 1188 W (zone 0, 99 A at 12 V, 44% of capacity)
```

```
PEM 2:
```

```
State:      Online
```

```
Capacity:   2700 W (maximum 2700 W)
```

```
AC input:   OK (No feed expected, Both feed connected)
```

```
DC output:  1188 W (zone 0, 99 A at 12 V, 44% of capacity)
```

```
PEM 3:
```

```
State:      Empty
```

```
Input:      Absent
```

```
PEM 4:
```

```
State:      Empty
```

```
Input:      Absent
```

```
PEM 5:
```

```
State:      Empty
```

```
Input:      Absent
```

```
System:
```

```
Zone 0:
```

```
Capacity:           8100 W (maximum 8100 W)
```

```
Allocated power:   7160 W (940 W remaining)
```

```
Actual usage:      3540 W
```

```
Total system capacity: 8100 W (maximum 8100 W)
```

```
Total remaining power: 940 W
```

Item	Used(W)
Fan Tray 0	475
Fan Tray 1	475
RE0/CB0	42
RE1/CB1	46

show chassis power detail (PTX10016 Router)

```
user@host> show chassis power detail
```

```
PEM 0:
```

```
State:      Online
```

Capacity: 2500 W (maximum 2500 W)
DC input: OK (Both feed expected, Both feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 1:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (Both feed expected, Both feed connected)
DC output: 456 W (zone 0, 38 A at 12 V, 18% of capacity)

PEM 2:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (Both feed expected, Both feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 3:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (Both feed expected, Both feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 4:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (INP2 feed expected, INP2 feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 5:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (INP2 feed expected, INP2 feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)

PEM 6:

State: Online
Capacity: 2500 W (maximum 2500 W)
DC input: OK (INP2 feed expected, INP2 feed connected)
DC output: 420 W (zone 0, 35 A at 12 V, 16% of capacity)

PEM 7:

State: Online
Capacity: 2500 W (maximum 2500 W)

```
DC input: OK (INP2 feed expected, INP2 feed connected)
DC output: 432 W (zone 0, 36 A at 12 V, 17% of capacity)
```

PEM 8:

```
State:      Online
Capacity:   2500 W (maximum 2500 W)
DC input:   OK (INP2 feed expected, INP2 feed connected)
DC output:  432 W (zone 0, 36 A at 12 V, 17% of capacity)
```

PEM 9:

```
State:      Online
Capacity:   2500 W (maximum 2500 W)
DC input:   OK (INP2 feed expected, INP2 feed connected)
DC output:  420 W (zone 0, 35 A at 12 V, 16% of capacity)
```

System:

```
Zone 0:
  Capacity:          25000 W (maximum 25000 W)
  Allocated power:  9550 W (15450 W remaining)
  Actual usage:     4320 W
Total system capacity: 25000 W (maximum 25000 W)
Total remaining power: 15450 W
```

Item	Used(W)
Fan Tray 0	975
Fan Tray 1	975
RE0/CB0	42
RE1/CB1	46

show chassis power detail (EX9208 Switch)

```
user@host> show chassis power detail
PEM 0:
  State:      Present
  AC input:   Out of range (1 feed expected, 1 feed connected)
  Capacity:   2050 W (maximum 2050 W)
  DC output:  0 W (zone 0, 0 A at 0 V, 0% of capacity)

PEM 1:
  State:      Present
  AC input:   Out of range (1 feed expected, 1 feed connected)
```

```
Capacity: 2050 W (maximum 2050 W)
DC output: 0 W (zone 0, 0 A at 0 V, 0% of capacity)
```

PEM 2:

```
State:      Present
AC input:   Out of range (1 feed expected, 1 feed connected)
Capacity:   2050 W (maximum 2050 W)
DC output:  0 W (zone 0, 0 A at 0 V, 0% of capacity)
```

PEM 3:

```
State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   2050 W (maximum 2050 W)
DC output:  754 W (zone 0, 13 A at 58 V, 36% of capacity)
```

System:

```
Zone 0:
  Capacity:      2050 W (maximum 2050 W)
  Allocated power: 1478 W (572 W remaining)
  Actual usage:  754 W
Total system capacity: 2050 W (maximum 2050 W)
Total remaining power: 572 W
```

show chassis power detail (EX9253 Switch)

```
user@switch> show chassis power detail
PEM 0:
  State:      Online
  Capacity:   1600 W (maximum 1600 W)
  AC input:   OK (1 feed expected, 1 feed connected)
  DC output:  564 W (zone 0, 47 A at 12 V, 35% of capacity)

PEM 1:
  State:      Present
  Input:      Absent

PEM 2:
  State:      Empty
  Input:      Absent

PEM 3:
```



```

State:      Empty
Input:      Absent

PEM 4:
State:      Present
Input:      Absent

PEM 5:
State:      Online
Capacity:   1600 W (maximum 1600 W)
AC input:   OK (1 feed expected, 1 feed connected)
DC output:  612 W (zone 0, 51 A at 12 V, 38% of capacity)

System:
Zone 0:
  Capacity:      3200 W (maximum 3200 W)
  Allocated power: 2157 W (1043 W remaining)
  Actual usage:  1176 W
  Total system capacity: 3200 W (maximum 3200 W)
  Total remaining power: 1043 W

Item                Used(W)
FPC 0                555
FPC 1                543
Fan Tray 0           12
Fan Tray 1           13
Fan Tray 2           12
Fan Tray 3           12
RE0/CB0              55

```

show chassis power (PTX10008 with JNP10K-PWR-DC2 Power Supply Unit - Junos OS Evolved)

```

user@router> show chassis power
Chassis Power      Voltage(V)      Power(W)

Total Input Power                10176
  PSM 0
    State: Online
    PS0                51          912
    A0                 52

```

B0	52		
PS1	51	936	
A1	52		
B1	52		
Output	12.29	1752.57	(80A input select)
PSM 1			
State: Online			
PS0	51	912	
A0	52		
B0	52		
PS1	51	936	
A1	52		
B1	52		
Output	12.25	1747	(80A input select)
PSM 2			
State: Online			
PS0	51	888	
A0	52		
B0	52		
PS1	51	912	
A1	52		
B1	52		
Output	12.51	1766.71	(80A input select)
PSM 3			
State: Online			
PS0	51	936	
B0	50		
PS1	51	984	
A1	51		
B1	51		
Output	12.49	1807.91	(80A input select)
PSM 4			
State: Online			
PS0	51	864	
A0	51		
B0	52		
PS1	51	936	
A1	51		
B1	52		
Output	12.45	1763.9	(80A input select)
PSM 5			
State: Fault			
PS0	51	960	

```

    A0          52
    B0          52
  PS1          52          0
    A1          52
    B1          52
  Output      12.43      913.38  (80A input select)

```

System:

Zone 0:

```

  Capacity:      27500 W (maximum 27500 W)
  Allocated power: 19840 W (7660 W remaining)
  Actual usage:  9216 W
  Total system capacity: 27500 W (maximum 27500 W)
  Total remaining power: 7660 W

```

show chassis power detail (PTX10008 with JNP10K-PWR-DC2 Power Supply Unit - Junos OS Evolved)

```

user@router> show chassis power detail
Chassis Power      Voltage (V)      Power (W)

Total Input Power                10176
  PSM 0
    State: Online
    PS0          52          912
      A0          52
      B0          52
    PS1          52          936
      A1          52
      B1          52
    Output      12.29      1741.75  (80A input select)
    Capacity    5500 W (maximum 5500 W)
  PSM 1
    State: Online
    PS0          51          912
      A0          52
      B0          52
    PS1          51          936
      A1          52
      B1          52
    Output      12.25      1747      (80A input select)

```

Capacity	5500 W (maximum 5500 W)		
PSM 2			
State: Online			
PS0	52	888	
A0	52		
B0	52		
PS1	51	912	
A1	52		
B1	52		
Output	12.51	1766.71	(80A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 3			
State: Online			
PS0	51	936	
B0	50		
PS1	51	984	
A1	52		
B1	52		
Output	12.49	1785.93	(80A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 4			
State: Online			
PS0	51	864	
A0	52		
B0	52		
PS1	51	936	
A1	52		
B1	52		
Output	12.47	1766.67	(80A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 5			
State: Fault			
PS0	52	960	
A0	52		
B0	52		
PS1	52	0	
A1	52		
B1	52		
Output	12.43	896.97	(80A input select)
Capacity	0 W (maximum 0 W)		
Item	Used(W)		
CB 0	80		

```

CB 1                73
FPC 0               1116
FPC 1               1153
FPC 2                457
FPC 3                476
FPC 4                468
FPC 5                446
FPC 6               1100
FPC 7                477
SIB 0               392
SIB 1               374
SIB 2               395
SIB 3               385
SIB 4               380
SIB 5               389
Fan Tray 0          629
Fan Tray 1          609

```

System:

Zone 0:

```

Capacity:           27500 W (maximum 27500 W)
Allocated power:    19840 W (7660 W remaining)
Actual usage:       9264 W
Total system capacity: 27500 W (maximum 27500 W)
Total remaining power: 7660 W

```

show chassis power (PTX10008 with JNP10K-PWR-AC2 Power Supply - Junos OS Evolved)

```

user@router> show chassis power
Chassis Power      Voltage(V)      Power(W)

Total Input Power                7248
PSM 0
  State: Online
  INP1                203            600
  INP2                203            600
  Output              12.25          1105.35 (30A input select)
PSM 1
  State: Online
  INP1                203            600
  INP2                201            600

```

```

    Output          12.29          1092.65   (30A input select)
PSM 2
  State: Online
  INP1             205             600
  INP2             201             600
  Output          12.27          1117.92   (30A input select)
PSM 3
  State: Online
  INP1             205             624
  INP2             201             624
  Output          12.27          1155.72   (30A input select)
PSM 4
  State: Online
  INP1             203             600
  INP2             203             600
  Output          12.25          1094.57   (30A input select)
PSM 5
  State: Online
  INP1             201             600
  INP2             201             600
  Output          12.25          1094.57   (30A input select)

System:
Zone 0:
  Capacity:        33000 W (maximum 33000 W)
  Allocated power: 18810 W (14190 W remaining)
  Actual usage:    7248 W
Total system capacity: 33000 W (maximum 33000 W)
Total remaining power: 14190 W

```

show chassis power detail (PTX10008 with JNP10K-PWR-AC2 Power Supply - Junos OS Evolved)

```

user@router> show chassis power detail
Chassis Power      Voltage (V)      Power (W)

Total Input Power                7248
PSM 0
  State: Online
  INP1             201             600
  INP2             205             600

```

Output	12.25	1094.57	(30A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 1			
State: Online			
INP1	203	600	
INP2	201	600	
Output	12.29	1087.24	(30A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 2			
State: Online			
INP1	201	600	
INP2	201	600	
Output	12.27	1112.52	(30A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 3			
State: Online			
INP1	203	624	
INP2	203	624	
Output	12.27	1155.72	(30A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 4			
State: Online			
INP1	203	600	
INP2	201	600	
Output	12.25	1094.57	(30A input select)
Capacity	5500 W (maximum 5500 W)		
PSM 5			
State: Online			
INP1	201	600	
INP2	203	600	
Output	12.25	1099.96	(30A input select)
Capacity	5500 W (maximum 5500 W)		
Item	Used(W)		
CB 0	86		
CB 1	75		
FPC 0	966		
FPC 2	995		
FPC 3	793		
FPC 5	809		
FPC 7	856		
SIB 0	353		
SIB 1	330		

```
SIB 2          190
SIB 3          333
SIB 4           0
SIB 5          343
Fan Tray 0     304
Fan Tray 1     305
```

System:

Zone 0:

```
Capacity:      33000 W (maximum 33000 W)
Allocated power: 18810 W (14190 W remaining)
Actual usage:  7248 W
Total system capacity: 33000 W (maximum 33000 W)
Total remaining power: 14190 W
```

Release Information

Command introduced in Junos OS Release 10.0.

RELATED DOCUMENTATION

[show chassis power sequence | 1520](#)

[Checklist for Monitoring Power Supplies](#)

show chassis power sequence

IN THIS SECTION

- [Syntax | 1521](#)
- [Description | 1521](#)
- [Options | 1521](#)
- [Required Privilege Level | 1521](#)

- [Output Fields | 1521](#)
- [Sample Output | 1522](#)
- [Release Information | 1523](#)

Syntax

```
show chassis power sequence
```

Description

(MX Series 5G Universal Routing Platforms only) Show power-on sequence for the chassis Dense Port Concentrators (DPCs).

(PTX Series Packet Transport Routers, MX2010 and MX2020 routers only) Show power-on sequence for FPCs installed in the chassis.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 84 on page 1522](#) lists the output fields for the **show chassis power sequence** command. Output fields are listed in the approximate order in which they appear.

Table 84: show chassis power sequence Output Fields

Field Name	Field Description
Chassis FRU Power Sequence	(MX Series) Power-on sequence for the DPCs in the chassis. The numbers indicate the slot number of the DPCs. (PTX Series, MX2010 and MX2020 routers only) Power-on sequence for the FPCs in the chassis. The numbers indicate the slot number of the FPC.

Sample Output

show chassis power sequence (MX Series)

```
user@host> show chassis power sequence
Chassis FRU Power Sequence: 3 4 5 6 7 8 9 10 11 0 1 2
```

show chassis power sequence (MX2010 Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9
```

show chassis power sequence (MX2020 Routers)

```
user@host > show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

show chassis power sequence (PTX5000 Packet Transport Router)

```
user@host> show chassis power sequence
Chassis FRU Power On Sequence: 0 1 2 3 4 5 6 7
```

Release Information

Command introduced in Junos OS Release 10.0.

Command introduces in Junos OS Release 12.1 for PTX Series Packet Transport Routers.

RELATED DOCUMENTATION

| [show chassis power](#) | [1482](#)

show chassis psd

IN THIS SECTION

- [Syntax](#) | [1523](#)
- [Description](#) | [1524](#)
- [Options](#) | [1524](#)
- [Additional Information](#) | [1524](#)
- [Required Privilege Level](#) | [1524](#)
- [Output Fields](#) | [1524](#)
- [Sample Output](#) | [1525](#)
- [Release Information](#) | [1525](#)

Syntax

```
show chassis psd
```

Description

(Root System Domain [RSD] only) Display information about Protected System Domains (PSDs). A PSD is initially created by the RSD configuration. An RSD and PSDs are supported on a T320 or T640 router, or a T1600 routing node, or a TX Matrix Plus Platform that is interconnected with the JCS1200 platform.

NOTE: RSD configuration is not supported on a routing matrix based on TX Matrix Plus router with 3D SIBs.

Options

This command has no options.

Additional Information

For more information about PSDs, RSDs, and the JCS1200 platform, see the *Junos OS Protected System Domain User Guide for Routing Devices*.

Required Privilege Level

view

Output Fields

[Table 85 on page 1525](#) lists the output fields for the **show chassis psd** command. Output fields are listed in the approximate order in which they appear.

Table 85: show chassis psd Output Fields

Field Name	Field Description
Slot Description	PSD identification.
State	PSD status: <ul style="list-style-type: none"> • Online—PSD is online and running. • Offline—PSD is powered down.
Uptime	Length of time that the PSD has been up and running.

Sample Output

show chassis psd

```
{master}

user@host> show chassis psd
Slot Description      State           Uptime
1                    Online         12 hours, 19 minutes, 51 seconds
2                    Online         2 hours, 18 minutes, 17 seconds
3                    Online         12 hours, 19 minutes, 51 seconds
```

Release Information

Command introduced in Junos OS Release 9.1.

show chassis routing-engine

IN THIS SECTION

- [Syntax](#) | [1526](#)
- [Syntax \(ACX Series, PTX Series, and MX104 Universal Routing Platforms.\)](#) | [1527](#)
- [Syntax \(EX Series Switches\)](#) | [1527](#)
- [Syntax \(QFX Series\)](#) | [1527](#)
- [Syntax \(MX Series Routers\)](#) | [1527](#)
- [Syntax \(MX204 and MX10003 Universal Routing Platforms\)](#) | [1528](#)
- [Syntax \(TX Matrix Routers\)](#) | [1528](#)
- [Syntax \(TX Matrix Plus Routers\)](#) | [1528](#)
- [Syntax \(Junos OS Evolved\)](#) | [1528](#)
- [Description](#) | [1529](#)
- [Options](#) | [1529](#)
- [Required Privilege Level](#) | [1530](#)
- [Output Fields](#) | [1530](#)
- [Sample Output](#) | [1535](#)
- [Release Information](#) | [1556](#)

Syntax

```
show chassis routing-engine  
<bios | slot>
```

Syntax (ACX Series, PTX Series, and MX104 Universal Routing Platforms.)

```
show chassis routing-engine
```

Syntax (EX Series Switches)

```
show chassis routing-engine  
<slot>  
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis routing-engine  
<interconnect-device name>  
<node-device name>  
<slot>  
<bios>  
<errors>
```

Syntax (MX Series Routers)

```
show chassis routing-engine  
<all-members>  
<bios | slot>  
<local>  
<member member-id>  
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (MX204 and MX10003 Universal Routing Platforms)

```
show chassis routing-engine  
<slot>  
<bios>  
<errors>
```

Syntax (TX Matrix Routers)

```
show chassis routing-engine  
<bios | slot>  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis routing-engine  
<bios | slot>  
<lcc number | sfc number>
```

Syntax (Junos OS Evolved)

```
show chassis routing-engine  
<slot>  
<bios>  
<hard-disk-test>
```


Description

Display the status of the Routing Engine.

Options

none	Display information about one or more Routing Engines. On a TX Matrix router, display information about all Routing Engines on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about all Routing Engines on the TX Matrix Plus router and its attached routers.
all-members	(MX Series routers only) (Optional) Display Routing Engine information for all members of the Virtual Chassis configuration.
bios	(Optional) Display the (BIOS) firmware version.
errors	(Optional) Display routing engine errors.
hard-disk-test	(Junos OS Evolved only) (Optional) Display the health of the hard disk. Use disk /dev/disk-name status to display the status of a particular disk.
interconnect-device <i>number</i>	(QFabric systems only) (Optional) Display Routing Engine information for a specified Interconnect device.
lcc <i>number</i>	<p>(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display Routing Engine information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display Routing Engine information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local	(MX Series routers only) (Optional) Display Routing Engine information for the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display Routing Engine information for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
node-device <i>number</i>	(QFabric systems only) (Optional) Display Routing Engine information for a specified Node device.
satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]	(Junos Fusion only) (Optional) Display Routing Engine information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
scc	(TX Matrix routers only) (Optional) Display Routing Engine information for the TX Matrix router (switch-card chassis).
sfc <i>number</i>	(TX Matrix Plus routers only) (Optional) Display Routing Engine information for the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.
slot	(Systems with multiple Routing Engines) (Optional) Display information for an individual Routing Engine. Replace <i>slot</i> with 0 or 1. For QFX3500 switches, there is only one Routing Engine, so you do not need to specify the slot number.

Required Privilege Level

view

Output Fields

[Table 86 on page 1531](#) lists the output fields for the **show chassis routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 86: show chassis routing-engine Output Fields

Field Name	Field Description
Slot	(Systems with single and multiple Routing Engines) Slot number.
Current state	(Systems with multiple Routing Engines) Current state of the Routing Engine: Master, Backup, or Disabled.
Election priority	(Systems with multiple Routing Engines) Election priority for the Routing Engine: Master or Backup.
Temperature	Temperature of the air flowing past the Routing Engine.
CPU Temperature	Temperature of the CPU.
DRAM	<p>Total DRAM available to the Routing Engine's processor.</p> <p>NOTE: When the chassis has two Routing Engines, the amount of DRAM should be the same on both. A DRAM size mismatch error can result when the Routing Engines have different amounts of DRAM.</p> <p>Starting with Junos OS Release 12.3R1, the DRAM field displays both available memory and installed memory.</p>
Memory utilization	<p>Percentage of Routing Engine memory being used.</p> <p>NOTE: For platforms running Junos OS with upgraded FreeBSD, the way memory utilization is calculated has changed. Starting in Junos OS Release 15.1R1, inactive memory is no longer included in the calculation for memory utilization. Inactive memory is now considered as free. That is, the value for used memory decreases and results in more memory to be available for other processes. For platforms that run Junos OS with upgraded FreeBSD, see Release Information for Junos OS with Upgraded FreeBSD.</p>

Table 86: show chassis routing-engine Output Fields (*Continued*)

Field Name	Field Description
CPU utilization	<p>Information about the Routing Engine's CPU utilization:</p> <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle.
5 sec CPU Utilization	<p>Information about the Routing Engine's CPU utilization in the past 5 seconds:</p> <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle.
1 min CPU Utilization	<p>Information about the Routing Engine's CPU utilization in the past 1 minute:</p> <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle.

Table 86: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
5 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 5 minutes: <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle.
15 min CPU Utilization	Information about the Routing Engine's CPU utilization in the past 15 minutes: <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle.
Model	Routing Engine model number.
Serial ID	(Systems with multiple Routing Engines) Identification number of the Routing Engine in this slot.
Start time	Time at which the Routing Engine started running.
Uptime	How long the Routing Engine has been running.
Routing Engine BIOS Version	BIOS version being run by the Routing Engine.

Table 86: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
Last reboot reason	<p>Reason for last reboot, including:</p> <ul style="list-style-type: none"> • power cycle/failure—Halt of the Routing Engine using the halt command, powering down using the power button on the chassis or any other method (such as removal of the control board or Routing Engine), and then powering back the Routing Engine. A halt of the operating system also occurs if you enter the request system halt command. You can enter this command to halt the system operations on the chassis or specific Routing Engines. To restart the software, press any key on the keyboard. • watchdog—Reboot due to a hardware watchdog. A watchdog is a hardware monitoring process that examines the health and performance of the router to enable the device to recover from failures. A watchdog checks for problems at certain intervals, and reboots the routing engine if a problem is encountered. • reset-button reset—(Not available on the EX Series switch) Reboot due to pressing of the reset button on the Routing Engine. • power-button hard power off—Reboot due to pressing of the power button on the chassis. A powering down of the software also occurs if you enter the request system power-off command. You can enter this command to power down the chassis or specific Routing Engines; you can then restart the software. • misc hardware reason—Reboot due to miscellaneous hardware reasons. • thermal shutdown—Reboot due to the router or switch reaching a critical temperature at which point it is unsafe to continue operations. • hard disk failure—Reboot due to a hard disk or solid-state drive (SSD) failure. • reset from debugger—Reboot due to reset from the debugger. • chassis control reset—Restart the chassis process that manages PICs, FPCs, and other hardware components. The chassis control module that runs the Routing Engine performs management and monitoring functions, and it provides a single access point for operational and maintenance functions. A reset of the chassis management process occurs when you enter the restart chassis-control command. • bios auto recovery reset—Reboot due to a BIOS auto-recovery reset.

Table 86: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • could not be determined—Reboot due to an undetermined reason. • Router rebooted after a normal shutdown—Reboot due to a normal shutdown. This reason is displayed if the Routing Engine is powered down by pushing and holding the online/offline button on the Routing Engine faceplate for 30 seconds, and then powered back. A reboot of the software also occurs if you enter the request system reboot command. You can enter this command to reboot the chassis or specific Routing Engines. • Hypervisor reboot—When both Linux host and Junos OS is rebooted using the request vmhost reboot command. • VJUNOS Reboot—When Junos OS is rebooted using the request system reboot command.
Load averages	Routing Engine load averages for the last 1, 5, and 15 minutes.

Sample Output

show chassis routing-engine (M5 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature                25 degrees C / 77 degrees F
  DRAM                       768 MB
  Memory utilization         21 percent
  CPU utilization:
    User                     0 percent
    Background               0 percent
    Kernel                   0 percent
    Interrupt                0 percent
    Idle                     100 percent
  Model                      RE-2.0
  Serial ID                  31000007349bf701

```

```

Start time                2003-12-04 09:42:17 PST
Uptime                    26 days, 1 hour, 12 minutes, 27 seconds
Last reboot reason        Router rebooted after a normal shutdown
Load averages:            1 minute   5 minute   15 minute
                           0.00       0.01       0.00

```

show chassis routing-engine (M20 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state            Master
  Election priority        Master (default)
  Temperature              29 degrees C / 84 degrees F
  DRAM                     768 MB
  Memory utilization        20 percent
  CPU utilization:
    User                   1 percent
    Background              0 percent
    Kernel                  2 percent
    Interrupt               0 percent
    Idle                    97 percent
  Model                    RE-2.0
  Serial ID                 58000007348d9a01
  Start time                2003-12-30 07:05:47 PST
  Uptime                    3 hours, 41 minutes, 14 seconds
  Last reboot reason        Router rebooted after a normal shutdown
  Load averages:            1 minute   5 minute   15 minute
                           0.00       0.02       0.00

Routing Engine status:
Slot 1:
  Current state            Backup
  Election priority        Backup (default)
  Temperature              29 degrees C / 84 degrees F
  DRAM                     768 MB
  Memory utilization        0 percent
  CPU utilization:
    User                   0 percent
    Background              0 percent
    Kernel                  1 percent
    Interrupt               0 percent

```



```

Idle                99 percent
Model               RE-2.0
Serial ID           d800000734745701
Start time          2003-06-17 16:37:33 PDT
Uptime              195 days, 18 hours, 47 minutes, 9 seconds
Last reboot reason  Router rebooted after a normal shutdown

```

show chassis routing-engine (MX104 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         42 degrees C / 107 degrees F
  DRAM                    3840 MB (3840 MB installed)
  Memory utilization      18 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                3 percent
    Interrupt             2 percent
    Idle                  94 percent
  Model                   RE-MX-104
  Serial ID               CAAR5925
  Start time              2013-06-05 13:17:08 IST
  Uptime                  1 hour, 15 minutes, 8 seconds
  Last reboot reason      0x200:normal shutdown
  Load averages:         1 minute   5 minute   15 minute
                        0.87       0.90       0.41

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority       Backup (default)
  Temperature             32 degrees C / 89 degrees F
  CPU temperature         38 degrees C / 100 degrees F
  DRAM                    3840 MB (3840 MB installed)
  Memory utilization      13 percent
  CPU utilization:
    User                  0 percent

```

```

Background          0 percent
Kernel              1 percent
Interrupt           2 percent
Idle                97 percent
Model               RE-MX-104
Serial ID           CAAM6369
Start time          2013-06-05 13:07:37 IST
Uptime              1 hour, 24 minutes, 34 seconds
Last reboot reason  0x200:normal shutdown
Load averages:      1 minute   5 minute   15 minute
                    0.19         0.15         0.06

```

show chassis routing-engine (MX240 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state          Master
  Election priority      Master (default)
  Temperature            36 degrees C / 96 degrees F
  CPU temperature        35 degrees C / 95 degrees F
  DRAM                   3314 MB (8192 MB installed)
  Memory utilization     37 percent
  5 sec CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                1 percent
    Interrupt             0 percent
    Idle                  99 percent
  1 min CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                1 percent
    Interrupt             0 percent
    Idle                  99 percent
  5 min CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel                1 percent
    Interrupt             0 percent
    Idle                  99 percent

```

```

15 min CPU utilization:
  User                0 percent
  Background          0 percent
  Kernel              1 percent
  Interrupt           0 percent
  Idle                99 percent
Model                 RE-S-1800x4
Serial ID             9009074155
Start time            2014-10-13 00:35:41 PDT
Uptime                98 days, 2 hours, 6 minutes, 35 seconds
Last reboot reason    Router rebooted after a normal shutdown.
Load averages:       1 minute   5 minute   15 minute
                    0.12       0.12       0.13

Routing Engine status:
Slot 1:
  Current state       Present

```

show chassis routing-engine (MX480 Router)

```

user@host> show chassis routing-engine

Routing Engine status:
Slot 0:
  Current state       Master
  Election priority   Master (default)
  Temperature         33 degrees C / 91 degrees F
  CPU temperature     32 degrees C / 89 degrees F
  DRAM                16323 MB (16384 MB installed)
  Memory utilization   7 percent
  5 sec CPU utilization:
    User              1 percent
    Background        0 percent
    Kernel            1 percent
    Interrupt         0 percent
    Idle              98 percent
  1 min CPU utilization:
    User              2 percent
    Background        0 percent
    Kernel            1 percent
    Interrupt         0 percent
    Idle              97 percent

```

```

5 min CPU utilization:
  User           1 percent
  Background     0 percent
  Kernel         1 percent
  Interrupt      0 percent
  Idle          97 percent
15 min CPU utilization:
  User           1 percent
  Background     0 percent
  Kernel         1 percent
  Interrupt      0 percent
  Idle          97 percent
Model           RE-S-1800x4
Serial ID       9009122628
Start time      2019-05-29 21:58:46 PDT
Uptime          11 days, 5 hours, 8 minutes, 55 seconds
Last reboot reason Router rebooted after a normal shutdown.
Load averages:  1 minute   5 minute   15 minute
                  0.28      0.22      0.22

```

show chassis routing-engine (MX960 Router)

```

user@host> show chassis routing-engine

Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             34 degrees C / 93 degrees F
  CPU temperature         33 degrees C / 91 degrees F
  DRAM                    16325 MB (16384 MB installed)
  Memory utilization      7 percent
  5 sec CPU utilization:
    User                   1 percent
    Background             0 percent
    Kernel                 3 percent
    Interrupt              1 percent
    Idle                   95 percent
  1 min CPU utilization:
    User                   0 percent
    Background             0 percent

```

```

Kernel                3 percent
Interrupt             0 percent
Idle                  97 percent
5 min CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               3 percent
  Interrupt            0 percent
  Idle                 97 percent
15 min CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               2 percent
  Interrupt            0 percent
  Idle                 97 percent
Model                  RE-S-1800x4
Serial ID              9013043129
Start time             2019-04-29 13:07:15 CEST
Uptime                 15 days, 22 hours, 42 minutes, 57 seconds
Last reboot reason     Router rebooted after a normal shutdown.
Load averages:         1 minute   5 minute   15 minute
                       0.17       0.20       0.22

```

Routing Engine status:

Slot 1:

```

Current state          Backup
Election priority      Backup (default)
Temperature            33 degrees C / 91 degrees F
CPU temperature        32 degrees C / 89 degrees F
DRAM                  16330 MB (16384 MB installed)
Memory utilization     9 percent
5 sec CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               0 percent
  Interrupt            0 percent
  Idle                 100 percent
Model                  RE-S-1800x4
Serial ID              9013043081
Start time             2019-04-29 13:05:17 CEST
Uptime                 15 days, 22 hours, 44 minutes, 52 seconds
Last reboot reason     0x1:power cycle/failure

```

Load averages:	1 minute	5 minute	15 minute
	0.17	0.17	0.12

show chassis routing-engine (T320 Router)

```

user@host> show chassis routing-engine
Slot 0:
  Current state           Master
  Election priority      Master (default)
  Temperature            51 degrees C / 123 degrees F
  CPU temperature        55 degrees C / 131 degrees F
  DRAM                   3584 MB
  Memory utilization     11 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               2 percent
    Interrupt            0 percent
    Idle                 97 percent
  Model                  RE-A-2000
  Serial ID              9009010618
  Start time             2012-10-10 01:24:05 PDT
  Uptime                 5 days, 10 hours, 49 minutes, 23 seconds
  Last reboot reason     0x1:power cycle/failure
  Load averages:        1 minute   5 minute   15 minute
                       0.00       0.05      0.04

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority      Backup (default)
  Temperature            45 degrees C / 113 degrees F
  CPU temperature        48 degrees C / 118 degrees F
  DRAM                   3584 MB
  Memory utilization     9 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               0 percent
    Interrupt            0 percent
    Idle                 100 percent
  Model                  RE-A-2000

```

```

Serial ID          9009003642
Start time        2012-10-10 01:24:04 PDT
Uptime           5 days, 10 hours, 49 minutes, 28 seconds
Last reboot reason 0x1:power cycle/failure

```

show chassis routing-engine (T4000 Router)

```

user@host> show chassis routing-engine
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority      Master (default)
  Temperature            33 degrees C / 91 degrees F
  CPU temperature        50 degrees C / 122 degrees F
  DRAM                   8960 MB
  Memory utilization     18 percent
  CPU utilization:
    User                  0 percent
    Background           0 percent
    Kernel                4 percent
    Interrupt            1 percent
    Idle                  95 percent
  Model                  RE-DUO-1800
  Serial ID              P737F-002248
  Start time             2012-02-09 22:49:53 PST
  Uptime                 2 hours, 21 minutes, 35 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00        0.04      0.00

Routing Engine status:
Slot 1:
  Current state           Backup
  Election priority      Backup (default)
  Temperature            32 degrees C / 89 degrees F
  CPU temperature        46 degrees C / 114 degrees F
  DRAM                   8960 MB
  Memory utilization     24 percent
  CPU utilization:
    User                  0 percent
    Background           0 percent
    Kernel                0 percent

```

```

Interrupt          0 percent
Idle               99 percent
Model              RE-DUO-1800
Serial ID          P737F-002653
Start time         2012-02-08 20:12:51 PST
Uptime             1 day, 4 hours, 58 minutes, 28 seconds
Last reboot reason Router rebooted after a normal shutdown.

```

show chassis routing-engine (TX Matrix Router)

```

user@host> show chassis routing-engine
scc-re0:
-----
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature              34 degrees C / 93 degrees F
  CPU temperature          33 degrees C / 91 degrees F
  DRAM                     2048 MB
  Memory utilization      12 percent
  CPU utilization:
    User                   0 percent
    Background              0 percent
    Kernel                  2 percent
    Interrupt               0 percent
    Idle                    98 percent
  Model                   RE-4.0
  Serial ID                P11123900153
  Start time               2004-08-05 18:42:05 PDT
  Uptime                   9 days, 22 hours, 49 minutes, 50 seconds
  Last reboot reason       Router rebooted after a normal shutdown
  Load averages:          1 minute   5 minute   15 minute
                          0.00        0.08        0.07

lcc0-re0:
-----
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)

```



```

Temperature          33 degrees C / 91 degrees F
CPU temperature      30 degrees C / 86 degrees F
DRAM                 2048 MB
Memory utilization   12 percent
CPU utilization:
  User               0 percent
  Background         0 percent
  Kernel             1 percent
  Interrupt          0 percent
  Idle               98 percent
Model                RE-3.0
Serial ID            210865700363
Start time           2004-08-05 18:42:05 PDT
Uptime               9 days, 22 hours, 48 minutes, 20 seconds
Last reboot reason   Router rebooted after a normal shutdown
Load averages:      1 minute   5 minute   15 minute
                   0.00       0.02     0.00

```

lcc2-re0:

Routing Engine status:

Slot 0:

```

Current state        Master
Election priority    Master (default)
Temperature          34 degrees C / 93 degrees F
CPU temperature      35 degrees C / 95 degrees F
DRAM                 2048 MB
Memory utilization   12 percent
CPU utilization:
  User               0 percent
  Background         0 percent
  Kernel             2 percent
  Interrupt          0 percent
  Idle               98 percent
Model                RE-4.0
Serial ID            P11123900126
Start time           2004-08-05 18:42:05 PDT
Uptime               9 days, 22 hours, 49 minutes, 4 seconds
Last reboot reason   Router rebooted after a normal shutdown
Load averages:      1 minute   5 minute   15 minute
                   0.01       0.01     0.0

```

show chassis routing-engine lcc (TX Matrix Router)

```

user@host> show chassis routing-engine 0 lcc
0
lcc0-re0:
-----
Routing Engine status:
Slot 0:
  Current state           Master
  Election priority       Master (default)
  Temperature             33 degrees C / 91 degrees F
  CPU temperature         30 degrees C / 86 degrees F
  DRAM                    2048 MB
  Memory utilization      12 percent
  CPU utilization:
    User                  0 percent
    Background            0 percent
    Kernel                 1 percent
    Interrupt              0 percent
    Idle                   98 percent
  Model                   RE-3.0
  Serial ID                210865700363
  Start time              2004-08-05 18:42:05 PDT
  Uptime                  7 days, 22 hours, 49 minutes, 6 seconds
  Last reboot reason      Router rebooted after a normal shutdown
  Load averages:         1 minute   5 minute   15 minute
                        0.00         0.00         0.00

```

show chassis routing-engine bios (TX Matrix Router)

```

user@host> show chassis routing-engine bios
scc-re0:
-----
Routing Engine BIOS Version: V1.0.0
lcc0-re0:
-----
Routing Engine BIOS Version: V1.0.17
lcc2-re0:
-----
Routing Engine BIOS Version: V1.0.0

```

show chassis routing-engine (TX Matrix Plus Router)

```

user@host> show chassis routing-engine
sfc0-re0:
-----
Routing Engine status:
  Slot 0:
    Current state           Master
    Election priority       Master (default)
    Temperature             27 degrees C / 80 degrees F
    CPU temperature         42 degrees C / 107 degrees F
    DRAM                    3327 MB
    Memory utilization      12 percent
    CPU utilization:
      User                   0 percent
      Background             0 percent
      Kernel                 2 percent
      Interrupt              0 percent
      Idle                   98 percent
    Model                   RE-TXP-SFC
    Serial ID               737A-1024
    Start time              2009-05-11 17:39:49 PDT
    Uptime                  3 hours, 45 minutes, 25 seconds
    Last reboot reason      Router rebooted after a normal shutdown.
    Load averages:         1 minute   5 minute   15 minute
                           0.00        0.00        0.00

Routing Engine status:
  Slot 1:
    Current state           Backup
    Election priority       Backup (default)
    Temperature             29 degrees C / 84 degrees F
    CPU temperature         43 degrees C / 109 degrees F
    DRAM                    3327 MB
    Memory utilization      11 percent
    CPU utilization:
      User                   0 percent
      Background             0 percent
      Kernel                 0 percent
      Interrupt              0 percent
      Idle                   100 percent
    Model                   RE-TXP-SFC
    Serial ID               737A-1024

```

```

Start time          2009-05-11 17:08:54 PDT
Uptime             4 hours, 16 minutes, 52 seconds
Last reboot reason 0x1:power cycle/failure

```

```
lcc0-re0:
```

```
-----
Routing Engine status:
```

```
Slot 0:
```

```

Current state          Master
Election priority      Master (default)
Temperature            30 degrees C / 86 degrees F
CPU temperature        43 degrees C / 109 degrees F
DRAM                  3327 MB
Memory utilization     9 percent
CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               2 percent
  Interrupt            0 percent
  Idle                 98 percent
Model                 RE-TXP-LCC
Serial ID              737F-1024
Start time            2009-05-11 17:40:32 PDT
Uptime                3 hours, 44 minutes, 51 seconds
Last reboot reason    Router rebooted after a normal shutdown.
Load averages:        1 minute   5 minute   15 minute
                      0.00       0.00       0.00

```

```
Routing Engine status:
```

```
Slot 1:
```

```

Current state          Backup
Election priority      Backup (default)
Temperature            30 degrees C / 86 degrees F
CPU temperature        43 degrees C / 109 degrees F
DRAM                  3327 MB
Memory utilization     9 percent
CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               0 percent
  Interrupt            0 percent
  Idle                 100 percent
Model                 RE-TXP-LCC
Serial ID              737F-1024

```

```

Start time          2009-05-06 17:31:32 PDT
Uptime             5 days, 3 hours, 54 minutes, 19 seconds
Last reboot reason Router rebooted after a normal shutdown.

```

show chassis routing-engine lcc (TX Matrix Plus Router)

```

user@host> show chassis routing-engine 0 lcc
0
lcc0-re0:
-----
Routing Engine status:
Slot 0:
  Current state          Master
  Election priority      Master (default)
  Temperature            30 degrees C / 86 degrees F
  CPU temperature        43 degrees C / 109 degrees F
  DRAM                   3327 MB
  Memory utilization     9 percent
  CPU utilization:
    User                 0 percent
    Background           0 percent
    Kernel               2 percent
    Interrupt            0 percent
    Idle                 98 percent
  Model                  RE-TXP-LCC
  Serial ID              737F-1024
  Start time             2009-05-11 17:40:32 PDT
  Uptime                 3 hours, 45 minutes, 26 seconds
  Last reboot reason     Router rebooted after a normal shutdown.
  Load averages:        1 minute   5 minute   15 minute
                        0.00       0.00       0.00

Routing Engine status:
Slot 1:
  Current state          Backup
  Election priority      Backup (default)
  Temperature            30 degrees C / 86 degrees F
  CPU temperature        43 degrees C / 109 degrees F
  DRAM                   3327 MB
  Memory utilization     9 percent
  CPU utilization:
    User                 0 percent

```

```

Background          0 percent
Kernel              0 percent
Interrupt           0 percent
Idle                100 percent
Model               RE-TXP-LCC
Serial ID           737F-1024
Start time          2009-05-06 17:31:32 PDT
Uptime              5 days, 3 hours, 54 minutes, 59 seconds
Last reboot reason  Router rebooted after a normal shutdown.

```

show chassis routing-engine bios (TX Matrix Plus Router)

```
user@host> show chassis routing-engine bios
```

```
sfc0-re0:
```

```
-----
Routing Engine BIOS Version: V0.0.Z
```

```
lcc0-re0:
```

```
-----
Routing Engine BIOS Version: V0.0.N
```

show chassis routing-engine (QFX Series)

```
user@switch> show chassis routing-engine
```

```
Routing Engine status:
```

```
Slot 0:
```

```
Current state Master
```

```
Election priority Master (default)
```

```
DRAM 2820 MB
```

```
Memory utilization 49 percent
```

```
CPU utilization:
```

```
User 1 percent
```

```
Background 0 percent
```

```
Kernel 1 percent
```

```
Interrupt 0 percent
```

```
Idle 97 percent
```

```
Model QFX3500-48S4Q
```

```
Serial ID S/N ED3709
```

```
Uptime 3 days, 4 hours, 29 minutes, 42 seconds
```

```
Last reboot reason 0x200:chassis control reset
```

```
Load averages: 1 minute 5 minute 15 minute
0.37 0.26 0.19
```

show chassis routing-engine (OCX Series)

```
user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
DRAM 2820 MB
Memory utilization 49 percent
CPU utilization:
User 1 percent
Background 0 percent
Kernel 1 percent
Interrupt 0 percent
Idle 97 percent
Model OCX-1100-48SX-AFI
Serial ID S/N ED3709
Uptime 3 days, 4 hours, 29 minutes, 42 seconds
Last reboot reason 0x200:chassis control reset
Load averages: 1 minute 5 minute 15 minute
0.37 0.26 0.19
```

show chassis routing engine interconnect-device (QFabric Systems)

```
user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state                Master
Election priority            Master (default)
Temperature                  48 degrees C / 118 degrees F
DRAM                        3312 MB
Memory utilization           63 percent
CPU utilization:
  User                       14 percent
  Background                  0 percent
  Kernel                      5 percent
  Interrupt                   0 percent
```

```

Idle 81 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN
Start time 2011-07-06 13:26:15 UTC
Uptime 11 hours, 24 minutes, 57 seconds
Last reboot reason 0x4:reset-button reset
Load averages: 1 minute 5 minute 15 minute
                2.62      2.31      2.28

Routing Engine status:
Slot 1:
Current state Backup
Election priority Backup (default)
Temperature 39 degrees C / 102 degrees F
DRAM 3312 MB
Memory utilization 59 percent
CPU utilization:
  User 9 percent
  Background 0 percent
  Kernel 1 percent
  Interrupt 0 percent
  Idle 91 percent
Model RE-QFXC08-CB4S
Serial ID BUILTIN
Start time 2011-07-06 13:24:58 UTC
Uptime 11 hours, 26 minutes, 18 seconds
Last reboot reason 0x4:reset-button reset

```

show chassis routing-engine (PTX Series Packet Transport Router)

```

user@switch> show chassis routing-engine
Routing Engine status:
Slot 0:
Current state Master
Election priority Master (default)
Temperature 60 degrees C / 140 degrees F
CPU temperature 76 degrees C / 168 degrees F
DRAM 17152 MB
Memory utilization 11 percent
CPU utilization:
  User 0 percent

```



```

Background          0 percent
Kernel              4 percent
Interrupt           0 percent
Idle                95 percent
Model               RE-DUO-2600
Serial ID           P737A-002231
Start time          2011-12-21 16:54:37 PST
Uptime              25 minutes, 44 seconds
Last reboot reason  Router rebooted after a normal shutdown.
Load averages:      1 minute   5 minute  15 minute
                    0.01        0.02     0.06

```

Routing Engine status:

Slot 1:

```

Current state          Backup
Election priority      Backup (default)
Temperature            50 degrees C / 122 degrees F
CPU temperature        64 degrees C / 147 degrees F
DRAM                  17152 MB
Memory utilization     10 percent
CPU utilization:
  User                 0 percent
  Background           0 percent
  Kernel               0 percent
  Interrupt            0 percent
  Idle                 99 percent
Model                 RE-DUO-2600
Serial ID              P737A-002438
Start time             2011-12-21 16:52:26 PST
Uptime                 27 minutes, 49 seconds
Last reboot reason     Router rebooted after a normal shutdown.

```

show chassis routing-engine (EX9200 Switch)

```
user@switch> show chassis routing-engine
```

Routing Engine status:

Slot 0:

```

Current state          Master
Election priority      Master (default)
Temperature            35 degrees C / 95 degrees F
CPU temperature        33 degrees C / 91 degrees F

```

```

DRAM                               8157 MB
  Installed Memory                   8192 MB
  Memory utilization                  18 percent
CPU utilization:
  User                               1 percent
  Background                         0 percent
  Kernel                             4 percent
  Interrupt                          1 percent
  Idle                               94 percent
Model                               RE-S-EX9200-1800X4
Serial ID                            9009119555
Start time                           2014-03-12 14:58:05 UTC
Uptime                               1 hour, 41 minutes, 51 seconds
Last reboot reason                   Router rebooted after a normal shutdown.
Load averages:                       1 minute   5 minute   15 minute
                                       0.02      0.02      0.00

Routing Engine status:
Slot 1:
  Current state                      Backup
  Election priority                  Backup (default)

[...Output truncated...]

```

show chassis routing-engine (EX9251 Switch)

```

user@switch> show chassis routing-engine

Routing Engine status:
  Temperature                        50 degrees C / 122 degrees F
  CPU temperature                    50 degrees C / 122 degrees F
  DRAM                               16340 MB (16384 MB installed)
  Memory utilization                  6 percent
  5 sec CPU utilization:
    User                             2 percent
    Background                       0 percent
    Kernel                           19 percent
    Interrupt                        0 percent
    Idle                             79 percent
  1 min CPU utilization:
    User                             2 percent
    Background                       0 percent

```

```

Kernel                19 percent
Interrupt             0 percent
Idle                  79 percent
5 min CPU utilization:
User                  2 percent
Background            0 percent
Kernel                19 percent
Interrupt             0 percent
Idle                  79 percent
15 min CPU utilization:
User                  2 percent
Background            0 percent
Kernel                19 percent
Interrupt             0 percent
Idle                  79 percent
Model                  RE-S-2X00x6
Start time             2018-03-08 05:11:33 PST
Uptime                10 days, 18 hours, 59 minutes, 15 seconds
Last reboot reason    0x4000:VJUNOS reboot
Load averages:        1 minute   5 minute   15 minute
                       1.06       1.09       1.08

```

show chassis routing-engine (ACX2000 Universal Metro Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature          53 degrees C / 127 degrees F
  DRAM                 1536 MB
  Memory utilization   25 percent
  CPU utilization:
    User                0 percent
    Background          0 percent
    Kernel              0 percent
    Interrupt           1 percent
    Idle                99 percent
  Model                RE-ACX-2000
  Start time           2012-05-09 00:57:07 PDT
  Uptime               5 days, 3 hours, 16 minutes, 15 seconds
  Last reboot reason   Router rebooted after a normal shutdown.

```

```

Load averages:          1 minute   5 minute   15 minute
                        0.00        0.03        0.05

```

show chassis routing-engine (ACX1000 Universal Metro Router)

```

user@host> show chassis routing-engine
Routing Engine status:
  Temperature           36 degrees C / 96 degrees F
  DRAM                  768 MB
  Memory utilization    50 percent
  CPU utilization:
    User                3 percent
    Background          0 percent
    Kernel              6 percent
    Interrupt           0 percent
    Idle                91 percent
  Model                RE-ACX-1000
  Start time           2012-05-10 07:12:23 PDT
  Uptime               4 days, 10 hours, 46 minutes, 53 seconds
  Last reboot reason   Router rebooted after a normal shutdown.
  Load averages:      1 minute   5 minute   15 minute
                        0.00        0.00        0.00

```

show chassis routing-engine (Displaying the guest reboot reason on PTX5000, MX240, MX480, MX960< MX2010, and MX2020)

```

user@host> show chassis routing-engine re0 |
match "Last reboot reason"
Last reboot reason 0x4000:VJUNOS reboot

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release in 9.6 for the TX Matrix Plus router.

5 sec CPU Utilization, 1 min CPU Utilization, 5 min CPU Utilization, and 15 min CPU Utilization output fields introduced in Junos OS Release 11.3R1.

satellite option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

[request chassis routing-engine master](#)

[Configuring Routing Engine Redundancy](#)

[Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration](#)

show chassis scb

IN THIS SECTION

- [Syntax | 1557](#)
- [Description | 1558](#)
- [Options | 1558](#)
- [Required Privilege Level | 1558](#)
- [Output Fields | 1558](#)
- [Sample Output | 1559](#)
- [Release Information | 1560](#)

Syntax

```
show chassis scb
```

Description

(M40 router only) Display System Control Board (SCB) status information.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 87 on page 1558](#) lists the output fields for the **show chassis scb** command. Output fields are listed in the approximate order in which they appear.

Table 87: show chassis scb Output Fields

Field Name	Field Description
Temperature	Temperature of the air passing by the SCB, in degrees Celsius.
CPU utilization	Total percentage of CPU being used by the SCB's processor.
Interrupt utilization	Of the total CPU being used by the SCB's processor, the percentage being used for interrupts.
Heap utilization	Percentage of heap space being used by the SCB's processor.
Buffer utilization	Percentage of buffer space being used by the SCB's processor.

Table 87: show chassis scb Output Fields (Continued)

Field Name	Field Description
DRAM	Total DRAM available to the SCB's processor.
Start time	Time when the SCB started running.
Uptime	How long the SCB has been running.
Internet Processor memory	Information about the memory of the Internet Processor ASIC on the SCB: <ul style="list-style-type: none"> • IP routes—Number of IP routes known to the Internet Processor. • MPLS routes—Number of MPLS routes known to the Internet Processor. • SRAM banks enabled—Which SRAM banks are enabled. • SRAM size—Size of SCB SRAM, in bytes. • SRAM used—Amount of SRAM used, in bytes. • SRAM utilization—Percentage of SRAM used.

Sample Output

show chassis scb

```

user@host> show chassis scb
SCB status:
  Temperature:          30 Centigrade
  CPU utilization:      5 percent
  Interrupt utilization: 0 percent
  Heap utilization:     0 percent
  Buffer utilization:    2 percent
  DRAM:                 64 Mbytes
  Start time:           1998-10-28 18:35:46 UTC
  Uptime:               6 minutes, 16 seconds

```

```
Internet Processor memory:
  IP routes:                16
  MPLS routes:              1
  SRAM banks enabled:      [ 1 1 1 1 ]
  SRAM size:                4 Mbytes
  SRAM used:               256 bytes
  SRAM utilization:        0 percent
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Checklist for Monitoring the SCB](#)

show chassis sfb

IN THIS SECTION

- [Syntax | 1561](#)
- [Syntax \(MX10008 Universal Edge Routers\) | 1561](#)
- [Description | 1561](#)
- [Options | 1561](#)
- [Required Privilege Level | 1562](#)
- [Output Fields | 1562](#)
- [Sample Output | 1563](#)
- [Release Information | 1564](#)

Syntax

```
show chassis sfb
<all-members>
<local>
<member member-id>
< slot sfb-slot-number>
```

Syntax (MX10008 Universal Edge Routers)

```
show chassis sfb
errors
< slot sfb-slot-number>
```

Description

Display chassis information about the Switch Fabric Board (SFB).

Options

none	Display chassis information about all Switch Fabric Boards.
all-members	(Optional) Display chassis information about the SFB in all members of the Virtual Chassis configuration.
local	(Optional) Display chassis information about the SFB in the local member of the Virtual Chassis.
member <i>member-id</i>	(Optional) Display chassis information about the SFB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.

sfb-slot-number (Optional) Display chassis information about the specified Switch Fabric Board. For MX2020, MX2010, and MX2008 routers, replace ***sfb-slot-number*** with a value from 0 through 7.

Required Privilege Level

view

Output Fields

[Table 88 on page 1562](#) lists the output fields for the **show chassis sfb** command. Output fields are listed in the approximate order in which they appear.

Table 88: show chassis sfb Output Fields

Field Name	Field Description
Slot	Slot number.
State	Status of the SFB. <ul style="list-style-type: none"> • Online—The SFB is online and running. • Offline— SFB is powered down.
Uptime	How long the Routing Engine has been connected to the SFB and, therefore, how long the SFB has been up and running.

Sample Output

show chassis sfb (MX2020 Router)

```
user@host> show chassis sfb
Slot  State                Uptime
 0    Online                6 hours, 11 minutes, 33 seconds
 1    Online                6 hours, 11 minutes, 27 seconds
 2    Online                6 hours, 11 minutes, 21 seconds
 3    Online                6 hours, 11 minutes, 15 seconds
 4    Online                6 hours, 11 minutes, 8 seconds
 5    Online                6 hours, 11 minutes, 2 seconds
 6    Online                6 hours, 10 minutes, 57 seconds
 7    Online                6 hours, 10 minutes, 51 seconds
```

show chassis sfb (MX2010 Router)

```
user@host> show chassis sfb
Slot  State                Uptime
 0    Online                6 hours, 48 minutes, 28 seconds
 1    Online                6 hours, 48 minutes, 23 seconds
 2    Online                6 hours, 48 minutes, 17 seconds
 3    Offline                --- Restarting unresponsive board ---
 4    Online                6 hours, 48 minutes, 12 seconds
 5    Online                6 hours, 48 minutes, 6 seconds
 6    Online                6 hours, 48 minutes
 7    Online                6 hours, 47 minutes, 55 seconds
```

show chassis sfb (MX2008 Router)

```
user@host> show chassis sfb
Slot  State                Uptime
 0    Online                10 days, 6 hours, 52 minutes, 38 seconds
 1    Online                10 days, 6 hours, 52 minutes, 32 seconds
 2    Online                10 days, 6 hours, 52 minutes, 26 seconds
 3    Online                10 days, 6 hours, 52 minutes, 20 seconds
 4    Online                10 days, 6 hours, 52 minutes, 15 seconds
 5    Online                10 days, 6 hours, 52 minutes, 9 seconds
```

```

6   Online           10 days, 6 hours, 52 minutes, 3 seconds
7   Online           10 days, 6 hours, 51 minutes, 58 seconds

```

show chassis sfb (MX10008 Router)

```

user@host> show chassis sfb
Slot  State           Uptime
0     Online           21 hours, 25 minutes, 50 seconds
1     Online           21 hours, 25 minutes, 22 seconds
2     Online           21 hours, 24 minutes, 55 seconds
3     Online           21 hours, 24 minutes, 27 seconds
4     Online           21 hours, 23 minutes, 56 seconds
5     Online           21 hours, 23 minutes, 23 seconds

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

| [request chassis sfb](#) | [454](#)

show chassis sfb errors

IN THIS SECTION

- [Syntax](#) | [1565](#)
- [Description](#) | [1565](#)
- [Options](#) | [1565](#)

- [Required Privilege Level | 1565](#)
- [Output Fields | 1566](#)
- [Sample Output | 1566](#)
- [Release Information | 1567](#)

Syntax

```
show chassis sfb errors  
< slot sfb-slot-number>
```

Description

Display information about errors pertaining to Switch Fabric Boards (SFBs).

Options

- none** Display information about the errors pertaining to all the SFBs in the router.
- sfb-slot-number*** (Optional) Display information about error for the specified Switch Fabric Board.
- **Range:** 0-5

Required Privilege Level

view

Output Fields

Table 89 on page 1566 lists the output fields for the **show chassis sfb errors** command. Output fields are listed in the approximate order in which they appear.

Table 89: show chassis sfb errors Output Fields

Field Name	Field Description
Slot	Displays the SFB slot number.
Name	Displays the name of the SFB. In MX10008 routers, SFB is identified as SIB.
DeviceID	Displays device ID.
Threshold	Displays the error threshold.
Active	Displays the number of active error instances.
Occurred	Displays the number of error instances occurred.
Cleared	Displays the number of error instances cleared.
Description	Displays error description.

Sample Output

show chassis sfb errors slot 1(MX10008 Router)

```
user@host> show chassis sfb errors slot 1
```

```
Slot Name           DeviceId    Threshold  Active  Occured  Cleared
Description
1   SIB 1_LTC3880_0  09204F8B00  1       0       0       0       PF0 Core
```

0.9V, voltage							
	09204FFFFFF	1	0	0	0	0	PF0 Core
0.9V, I2C Access							
SIB 1_LTC3880_1	09204D8B00	1	0	0	0	0	PF0 AVDD
1V, voltage							
	09204DFFFFFF	1	0	0	0	0	PF0 AVDD
1V, I2C Access							
SIB 1_LTC3880_2	09204B8B00	1	0	0	0	0	PF1 Core
0.9V, voltage							
	09204BFFFFFF	1	0	0	0	0	PF1 Core
0.9V, I2C Access							
SIB 1_LTC3880_3	0920498B00	1	0	0	0	0	PF1 AVDD
1V, voltage							
	092049FFFFFF	1	0	0	0	0	PF1 AVDD
1V, I2C Access							
SIB 1_VT7505_0	0910408800	1	0	0	0	0	HOTSWAP
12V, voltage							
	091040FFFFFF	1	0	0	0	0	HOTSWAP
12V, I2C Access							
SIB 1_TEMP_0	0901000000	1	0	0	0	0	Intake-A
Temp Sensor							
	0901000100	1	0	0	0	0	Intake-B
Temp Sensor							
	0901002300	1	0	0	0	0	PF0 Temp
Sensor							
SIB 1_TEMP_1	0902000000	1	0	0	0	0	Exhaust-
A Temp Sensor							
	0902000100	1	0	0	0	0	Exhaust-
B Temp Sensor							
	0902002300	1	0	0	0	0	PF1 Temp
Sensor							

Release Information

Command introduced in Junos OS Release 18.2.

RELATED DOCUMENTATION

| [request chassis sfb](#) | 454

show chassis sfm

IN THIS SECTION

- [Syntax](#) | 1568
- [Description](#) | 1568
- [Options](#) | 1568
- [Required Privilege Level](#) | 1569
- [Output Fields](#) | 1569
- [Sample Output](#) | 1571
- [Release Information](#) | 1572

Syntax

```
show chassis sfm
<detail <sfm-slot>>
```

Description

(M40e and M160 routers only) Display Switching and Forwarding Module (SFM) status information.

Options

none Display standard status information about all SFMs.

detail (Optional) Display detailed SFM status information.

sfm-slot (Optional) Display status information about the SFM in the specified slot only. For the M40e router, replace ***sfm-slot*** with **0** or **1**. For the M160 router, replace ***sfm-slot*** with a value from **0** through **3**.

Required Privilege Level

view

Output Fields

Table 90 on page 1569 lists the output fields for the **show chassis sfm** command. Output fields are listed in the approximate order in which they appear.

Table 90: show chassis sfm Output Fields

Field Name	Field Description	Level of Output
Slot	Slot number.	All levels
State	Status of the SFM. State can be any of the following: <ul style="list-style-type: none"> • Online—SFM is online and running. • Online-Standby (M40e router only)—SFM is online, operating as Standby. • Offline—SFM is powered down. • Empty—No SFM is present. 	All levels
Reason	If the status is Offline , reason for this state.	All levels
Temp	Temperature of air passing by the SFM, in degrees Celsius.	none specified

Table 90: show chassis sfm Output Fields (Continued)

Field Name	Field Description	Level of Output
CPU Utilization (%)	Information about CPU usage.	none specified
Total	Total percentage of the CPU being used by the SFM's processor.	All levels
Interrupt	Of the total CPU being used by the SFM's processor, the percentage being used for interrupts.	All levels
Memory Utilization	Information about memory usage.	none specified
DRAM	Total DRAM available to the SFM's processor, in megabytes (MB).	All levels
Heap	Percentage of heap space (dynamic memory) being used by the SFM's processor. If this number exceeds 80 percent, it might indicate a software problem (memory leak).	All levels
Buffer	Percentage of buffer space being used by the SFM's processor for buffering internal messages.	All levels
SPP Temperature	Temperature of air passing by the Switch Plane Processor card, in degrees Celsius and Fahrenheit	detail
SPR Temperature	Temperature of air passing by the Switch Plane Router card, in degrees Celsius and Fahrenheit.	detail
Total CPU DRAM	Total amount of CPU DRAM being used by the SFM's processor.	detail
Total SSRAM	Total amount of SSRAM being used by the SFM's processor.	detail

Table 90: show chassis sfm Output Fields (Continued)

Field Name	Field Description	Level of Output
Internet processor II	(M160 router only) Processor type.	detail
Start time	Time this SFM became active.	detail
Uptime	How long the SFM has been up and running.	detail
Packet scheduling mode	(M160 router only) Enabled or disabled.	detail

Sample Output

show chassis sfm (M160 Router)

```
user@host> show chassis sfm
```

```
SFM status:
```

Slot	State	Temp (C)	CPU Utilization (%)	Memory Utilization (%)
			Total	Interrupt
			DRAM (MB)	Heap
				Buffer
0	Online	39	0	0
1	Online	43	0	0
2	Empty	0	0	0
3	Empty	0	0	0

show chassis sfm detail (M40e Router)

```
user@host> show chassis sfm detail
```

```
Slot 0 information:
```

```
State                               Offline
Reason:                             - power configured off
```

Slot 1 information:

State	Present
SPP temperature	0 degrees C / 32 degrees F
SPR temperature	0 degrees C / 32 degrees F
Total CPU DRAM	0 MB
Total SSRAM	0 MB

show chassis sfm detail (M160 Router)

```
user@host> show chassis sfm detail
```

Slot 0 information:

State	Online
SPP temperature	37 degrees C / 98 degrees F
SPR temperature	39 degrees C / 102 degrees F
Total CPU DRAM	64 MB
Total SSRAM	8 MB
Internet Processor II	Version 1, Foundry IBM, Part number 9
Start time:	2004-08-17 09:23:08 PDT
Uptime:	72 days, 1 hour, 15 minutes, 57 seconds

Slot 1 information:

State	Online
SPP temperature	36 degrees C / 96 degrees F
SPR temperature	37 degrees C / 98 degrees F
Total CPU DRAM	64 MB
Total SSRAM	8 MB
Internet Processor II	Version 1, Foundry IBM, Part number 9
Start time:	2004-08-17 09:23:08 PDT
Uptime:	72 days, 1 hour, 15 minutes, 57 seconds

Slot 2 information:

```
....
```

```
Packet scheduling mode : Disabled
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis sfm | 456](#)

request chassis sfm master switch

Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration

show chassis sibs

IN THIS SECTION

- [Syntax | 1573](#)
- [Syntax \(TX Matrix Router\) | 1574](#)
- [Syntax \(TX Matrix Plus Router\) | 1574](#)
- [Syntax \(PTX Series Packet Transport Routers\) | 1574](#)
- [Description | 1574](#)
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- [Required Privilege Level | 1575](#)
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- [Sample Output | 1581](#)
- [Release Information | 1591](#)

Syntax

```
show chassis sibs
```

Syntax (TX Matrix Router)

```
show chassis sibs  
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis sibs  
<lcc number | sfc number>
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis sibs  
<detail>  
<slot>
```

Description

(M320,T Series routers, TX Matrix routers, TX Matrix Plus routers, and PTX Series routers only) Display Switch Interface Boards (SIBs) status information.

Options

- none** (TX Matrix routers and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.
- detail** (PTX Series) (Optional) Display detailed SIB status information.

lcc
number (TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis or LCC) that is connected to the TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified T1600 or T4000 router (LCC) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

scc (TX Matrix routers only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).

sfc
number (TX Matrix Plus routers only) (Optional) Display SIB status information for the TX Matrix Plus router (switch-fabric chassis or SFC). Replace *number* with **0**.

slot (PTX Series) (Optional) Display status information about the SIB in the specified slot only. The range of values is 0 through 8.

Required Privilege Level

view

Output Fields

[Table 91 on page 1576](#) lists the output fields for the **show chassis sibs** command. Output fields are listed in the approximate order in which they appear.

Table 91: show chassis sibs Output Fields

Field Name	Field Description
Slot	SIB slot number.
Type	(TX Matrix Plus router only) SIB type.
Uptime	How long the SIB has been up and running.

Table 91: show chassis sibs Output Fields (Continued)

Field Name	Field Description
State	<p>SIB status:</p> <ul style="list-style-type: none"> • Activating—SIB is coming online; this is a transitional state. • Deactivating—SIB is going offline; this is a transitional state. • Connected—SIBs on a T1600 router are connected and trained but are either not online or are spare, because the plane on the TX Matrix Plus router (or switch-fabric chassis) is still offline. • Disconnected—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the Disconnected state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the Disconnected state, because a SIB on the SFC has gone offline. <p>On the TX Matrix Plus router with 3D SIBs, the LCC SIB is also disconnected if the F13 SIB is online, but none of the cables are connected or trained.</p> <ul style="list-style-type: none"> • Onlining—SIB is in the process of going online. ASICs , retimers and the rest of the hardware is initializing. • Online—SIB is operational and running. • Offlining—SIB is in the process of going offline. ASICs , retimers and rest of the hardware is being shutdown down to take the offline gracefully. • Offline—SIB is powered down. <p>NOTE: If a SIB transitions to the Offline state, the command displays an appropriate reason in the output. For instance, if the SIB is taken offline using the request chassis sib command, the show chassis sibs command displays --- Offlined by cli command --- in the output.</p> <ul style="list-style-type: none"> • Spare—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.

Table 91: show chassis sibs Output Fields (Continued)

Field Name	Field Description
	<p>NOTE: Spare does not apply to PTX Series Packet Transport Routers, as there are no spare SIBs.</p> <ul style="list-style-type: none"> • Empty—No SIB is present. • Fault—SIB is in an alarmed state in which none of the SIB's planes are operational for one of the following reasons: <ul style="list-style-type: none"> • All onboard fabric ASICs are not operational. • Fiber-optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Fault-off—SIB is powered off due to a fault in SIB. • Check—SIB is in an alarmed state due to link errors or destination errors. A SIB can transition to the Check state from the online or spare state. <p>The Check state can be caused by the following reasons:</p> <ul style="list-style-type: none"> • Unsupported FPC installed on a router. • SIB not inserted properly (such as bent pins). • Destination errors are detected on the SIB. In this case, the Packet Forwarding Engine stops using the SIB to send traffic to the affected destination Packet Forwarding Engine. When a Packet Forwarding Engine cannot be reached on that plane or SIB, a destination error is reported against that SIB. <p>NOTE: For SIBs in the Check state, the output displays some additional information:</p>

Table 91: show chassis sibs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • In Junos OS Release 9.6 and later, the Check state message shows the number of Packet Forwarding Engines in the plane having destination errors. For example, Check (10 destination errors) indicates 10 Packet Forwarding Engines cannot be reached on that particular SIB. If there are no destination errors, and if the SIB transitions to the Check state because of link errors only, the Check state message shows Check (0 destination errors). • In Junos OS Release 9.5 and earlier, the Check state message shows Check (destination errors) if there are Packet Forwarding Engines with destination errors in this plane. However, it does not show the number of Packet Forwarding Engines having destination errors. If there are no destination errors and if the SIB transitions to the Check state because of link errors only, the Check state message shows Check (no destination errors). <p>If the SIB is in a Check state, because of destination errors, the CLI displays an additional line in the output, use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details.</p> <ul style="list-style-type: none"> • Link errors are detected on the channel between the SIB and a Packet Forwarding Engine. Link errors can be detected at initialization time or runtime: <ul style="list-style-type: none"> • Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The show chassis fabric fpcs command shows Plane disabled as status for this link. • Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The show chassis fabric fpcs command shows Link error as the status for this link. <p>NOTE: The Check state does not apply to PTX Series Packet Transport Routers.</p>

Table 91: show chassis sibs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> • SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault state (for instance, because of link errors), and then if an LCC SIB (connected to the F13 SIB) comes online, the LCC SIB transitions to the SFC Error state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. NOTE: The Connected, Disconnected, and SFC Error states are only applicable to the SIBs on an LCC. • Invalid—The specific SIB slot is not valid for 4-LCC chassis configuration. See the <i>TX Matrix Plus Hardware Guide</i> for more information about the supported SIB slots. NOTE: The Invalid state is applicable to TX Matrix Plus routers only. • Unknown—SIB is present but the state is unknown. • Present—SIB is plugged in. The SIB is not powered on or operational.
Fabric links	<p>Indicates status of fabric links on the SIB.</p> <ul style="list-style-type: none"> • Active—All fabric links on SIB are active. Errors detected on the SIB's fabric links, if any, are reported in the Errors column. • Unused—All fabric links on the SIB are not used for fabric traffic.

Table 91: show chassis sibs Output Fields (Continued)

Field Name	Field Description
Errors	<p>Indicates if there is any error on the SIB.</p> <ul style="list-style-type: none"> • None—No errors • Link Errors—Fabric link errors were found on SIB RX link. • Cell drops—Fabric cell drops were found on the SIB ASIC. • Link Errors, Cell drops—Both link errors and cell drops were detected on at least one of the SIB's fabric links. • Asic Errors—A fault affecting one of the ASICs on the SIB is detected. It can be an IO error or an internal error signaled by the ASIC.
Link Errors	indicate the number of links which are marked faulty because the errors on them have crossed threshold.
Cable Errors	Indicate the number of mandatory cables that are not connected, or in up state for that plane
Destination Errors	Indicate the number of destinations that are not reachable on this plane.

Sample Output

show chassis sibs (T640 Router)

```

user@host> show chassis sibs

Slot  State                Uptime
  0    Empty
  1    Offline                --- Offlined by cli command ---
  2    Check (21 destination errors)  1 day, 1 hour, 32 minutes, 55 seconds

```

```

3    Check (0 destination errors)    1 day, 1 hour, 32 minutes, 45 seconds
4    Empty

```

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

show chassis sibs (T4000 Router)

```

user@host> show chassis sibs
Slot  State                Uptime
0     Spare
1     Online                3 hours, 48 minutes, 38 seconds
2     Online                3 hours, 48 minutes, 22 seconds
3     Online                3 hours, 48 minutes, 5 seconds
4     Online                3 hours, 47 minutes, 49 seconds

```

show chassis sibs (TX Matrix Router)

```

user@host> show chassis sibs
scc-re0:
-----
Slot  State                Uptime
0     Empty
1     Empty
2     Offline                --- Offlined by cli command ---
3     Offline
4     Online                7 days, 21 hours, 50 minutes, 4 seconds
lcc0-re0:
-----
Slot  State                Uptime
0     Offline                --- Offlined by cli command ---
1     Empty
2     Check (21 destination errors)  1 day, 1 hour, 32 minutes, 55 seconds
3     Check (0 destination errors)   1 day, 1 hour, 32 minutes, 45 seconds
4     Empty

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

show chassis sibs (T1600 Router)

```

user@host> show chassis sibs

Slot
Slot  State                               Uptime
  0    Check (destination errors)         2 hours, 23 minutes, 2 seconds
  1    Offline                               --- Offlined by cli command ---
  2    Check (destination errors)         2 hours, 23 minutes, 3 seconds
  3    Check (destination errors)         2 hours, 23 minutes, 3 seconds
  4    Check (destination errors)         2 hours, 23 minutes, 3 seconds

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

show chassis sibs (TX Matrix Plus Router)

```

user@host> show chassis sibs
sfc0-re0:
-----
Slot  State          Type          Link errors  Destination errors  Uptime
  0    Spare          SIB F13       NONE         NONE
  1    Empty
  2    Invalid
  3    Online          SIB F13       NONE         NONE              1 hour,
53 minutes, 19 seconds
  4    Empty
  5    Invalid
  6    Online          SIB F13       NONE         NONE              1 hour,
53 minutes, 8 seconds
  7    Empty
  8    Online          SIB F13       NONE         NONE              1 hour,
52 minutes, 57 seconds
  9    Empty
 10    Invalid
 11    Online          SIB F13       NONE         NONE              1 hour,
52 minutes, 46 seconds
 12    Empty
 13    Invalid
 14    Invalid
 15    Invalid

```

0/0	Spare	SIB F2S	NONE	NONE	
0/2	Spare	SIB F2S	NONE	NONE	
0/4	Spare	SIB F2S	NONE	NONE	
0/6	Spare	SIB F2S	NONE	NONE	
1/0	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 29 seconds
1/2	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 28 seconds
1/4	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 27 seconds
1/6	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 26 seconds
2/0	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 18 seconds
2/2	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 17 seconds
2/4	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 16 seconds
2/6	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 14 seconds
3/0	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 7 seconds
3/2	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 5 seconds
3/4	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 4 seconds
3/6	Online	SIB F2S	NONE	NONE	1 hour, 53 minutes, 3 seconds
4/0	Online	SIB F2S	NONE	NONE	1 hour, 52 minutes, 56 seconds
4/2	Online	SIB F2S	NONE	NONE	1 hour, 52 minutes, 54 seconds
4/4	Online	SIB F2S	NONE	NONE	1 hour, 52 minutes, 53 seconds
4/6	Online	SIB F2S	NONE	NONE	1 hour, 52 minutes, 52 seconds

lcc0-re0:

```
-----
```

Slot	State	Link errors	Destination errors	Uptime
0	Spare	NONE	NONE	
1	Online	NONE	NONE	1 hour, 53 minutes, 31 seconds

2	Online	NONE	NONE	1 hour, 53 minutes, 27 seconds
3	Online	NONE	NONE	1 hour, 53 minutes, 23 seconds
4	Online	NONE	NONE	1 hour, 53 minutes, 19 seconds

show chassis sibs (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis sibs
sfc0-re0:
-----
Slot  State          Type          Cable errors  Link errors  Destination
errors  Uptime
0      Online           SIB F13       6             NONE
NONE   21 hours, 54 minutes, 28 seconds
1      Online           SIB F13       8             NONE
NONE   21 hours, 54 minutes, 12 seconds
2      Invalid
3      Online           SIB F13       6             NONE
NONE   21 hours, 57 minutes, 6 seconds
4      Online           SIB F13       8             1
NONE   21 hours, 56 minutes, 49 seconds
5      Invalid
6      Online           SIB F13       6             NONE
NONE   21 hours, 56 minutes, 25 seconds
7      Online           SIB F13       8             NONE
NONE   21 hours, 56 minutes, 8 seconds
8      Online           SIB F13       6             NONE
NONE   21 hours, 55 minutes, 43 seconds
9      Online           SIB F13       8             NONE
NONE   21 hours, 55 minutes, 26 seconds
10     Invalid
11     Empty
12     Empty
13     Invalid
14     Invalid
15     Invalid
0/0    Online           SIB F2S       -n/a-         NONE
NONE   21 hours, 55 minutes, 16 seconds
0/2    Online           SIB F2S       -n/a-         NONE

```

```

NONE          21 hours, 54 minutes, 49 seconds
0/4  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 54 minutes, 47 seconds
0/6  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 54 minutes, 45 seconds
1/0  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 57 minutes, 29 seconds
1/2  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 57 minutes, 27 seconds
1/4  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 57 minutes, 25 seconds
1/6  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 57 minutes, 23 seconds
2/0  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 48 seconds
2/2  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 46 seconds
2/4  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 43 seconds
2/6  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 41 seconds
3/0  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 6 seconds
3/2  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 4 seconds
3/4  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes, 2 seconds
3/6  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 56 minutes
4/0  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 55 minutes, 24 seconds
4/2  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 55 minutes, 22 seconds
4/4  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 55 minutes, 20 seconds
4/6  Online          SIB F2S          -n/a-          NONE
NONE          21 hours, 55 minutes, 18 seconds

```

lcc0-re0:

```

-----
Slot  State          Cable errors  Link errors  Destination errors  Uptime
  0   Online          6             NONE          NONE                21 hours,
47 minutes, 29 seconds

```

```

 1   Online           6           NONE           NONE           21 hours,
47 minutes, 50 seconds
 2   Online           6           NONE           NONE           21 hours,
47 minutes, 43 seconds
 3   Online           6           NONE           NONE           21 hours,
47 minutes, 36 seconds
 4   Empty           NONE           NONE           NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

lcc4-re0:

```

-----
Slot  State           Cable errors  Link errors  Destination errors  Uptime
 0   Online           6           NONE           NONE           21 hours,
57 minutes, 1 second
 1   Online           6           NONE           NONE           21 hours,
57 minutes, 21 seconds
 2   Online           6           NONE           NONE           21 hours,
57 minutes, 14 seconds
 3   Online           6           NONE           NONE           21 hours,
57 minutes, 7 seconds
 4   Empty           NONE           NONE           NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

lcc7-re0:

```

-----
Slot  State           Cable errors  Link errors  Destination errors  Uptime
 0   Online           2           NONE           NONE           21 hours,
56 minutes, 54 seconds
 1   Online           2           NONE           NONE           21 hours,
57 minutes, 21 seconds
 2   Online           2           NONE           NONE           21 hours,
57 minutes, 12 seconds
 3   Online           2           NONE           NONE           21 hours,
57 minutes, 3 seconds
 4   Empty           NONE           NONE           NONE
use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

show chassis sibs sfc (TX Matrix Plus Router)

```

user@host> show chassis sibs sfc 0
sfc0-re0:

```

Slot	State	Type	Link errors	Destination errors	Uptime
0	Spare	SIB F13	NONE	NONE	
1	Empty		NONE	NONE	
2	Invalid		NONE	NONE	
3	Online	SIB F13	NONE	NONE	12 hours, 6 minutes, 22 seconds
4	Empty		NONE	NONE	
5	Invalid		NONE	NONE	
6	Online	SIB F13	NONE	NONE	12 hours, 6 minutes, 11 seconds
7	Empty		NONE	NONE	
8	Online	SIB F13	NONE	NONE	12 hours, 6 minutes
9	Empty		NONE	NONE	
10	Invalid		NONE	NONE	
11	Online	SIB F13	NONE	NONE	12 hours, 5 minutes, 49 seconds
12	Empty		NONE	NONE	
13	Invalid		NONE	NONE	
14	Invalid		NONE	NONE	
15	Invalid		NONE	NONE	
0/0	Spare	SIB F2S	NONE	NONE	
0/2	Spare	SIB F2S	NONE	NONE	
0/4	Spare	SIB F2S	NONE	NONE	
0/6	Spare	SIB F2S	NONE	NONE	
1/0	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 32 seconds
1/2	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 31 seconds
1/4	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 30 seconds
1/6	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 29 seconds
2/0	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 21 seconds
2/2	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 20 seconds
2/4	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 19 seconds
2/6	Online	SIB F2S	NONE	NONE	12 hours, 6 minutes, 17 seconds
3/0	Online	SIB F2S	NONE	NONE	12

```

hours, 6 minutes, 10 seconds
3/2  Online          SIB F2S          NONE          NONE          12
hours, 6 minutes, 9 seconds
3/4  Online          SIB F2S          NONE          NONE          12
hours, 6 minutes, 7 seconds
3/6  Online          SIB F2S          NONE          NONE          12
hours, 6 minutes, 6 seconds
4/0  Online          SIB F2S          NONE          NONE          12
hours, 5 minutes, 59 seconds
4/2  Online          SIB F2S          NONE          NONE          12
hours, 5 minutes, 57 seconds
4/4  Online          SIB F2S          NONE          NONE          12
hours, 5 minutes, 56 seconds
4/6  Online          SIB F2S          NONE          NONE          12
hours, 5 minutes, 55 seconds

```

show chassis sibs lcc (TX Matrix Plus Router)

```

user@host> show chassis sibs lcc 0
lcc0-re0:
-----
Slot  State          Link errors  Destination errors  Uptime
 0   Online          NONE         NONE                20 hours, 14 minutes,
50 seconds
 1   Fault          NONE         NONE
 2   Online          NONE         NONE                20 hours, 15 minutes,
2 seconds
 3   Online          NONE         NONE                20 hours, 14 minutes,
58 seconds
 4   Online          NONE         NONE                20 hours, 14 minutes,
54 seconds

```

show chassis sibs lcc (TX Matrix Plus Router with 3D SIBs)

```

user@host> show chassis sibs lcc 0
lcc0-re0:
-----
Slot  State          Cable errors  Link errors  Destination errors  Uptime
 0   Disconnected  NONE         NONE         NONE                17 hours,
2 minutes, 37 seconds

```

```

 1   Online                NONE          NONE          NONE          17 hours,
3 minutes, 6 seconds
 2   Online                NONE          NONE          NONE          17 hours,
2 minutes, 59 seconds
 3   Online                NONE          NONE          NONE          17 hours,
2 minutes, 52 seconds
 4   Online                NONE          NONE          NONE          17 hours,
2 minutes, 44 seconds

```

show chassis sibs (M320 Router)

```

user@host> show chassis sibs

 0   Online                1 hour, 18 minutes, 3 seconds
 1   Offline              --- Offlined by cli command ---
 2   Online                1 hour, 18 minutes, 18 seconds
 3   Online                1 hour, 18 minutes, 3 seconds

```

show chassis sibs (PTX Series)

```

user@host> show chassis sibs
Slot State          Fabric links      Errors
 0   Online         Active           Asic Errors
 1   Online         Active           Link Errors
 2   Online         Active           None
 3   Online         Active           Cell drops
 4   Offline        Unused           None
 5   Online         Active           None
 6   Online         Active           None
 7   Online         Active           None
 8   Online         Active           None

```

show chassis sibs (PTX Series)

```

user@host> show chassis sibs detail
Slot 4 information
  State                Offline
  Reason               Offlined by cli command

```

Fabric links	Unused
Errors	None

show chassis sibs (PTX5000)

The **show chassis sibs** command displays only the non-empty slots.

```
user@host> show chassis sibs
Slot  State          Fabric links  Errors
 1   Online          Unused       None
 2   Online          Unused       None
 3   Online          Unused       None
 4   Online          Unused       None
 6   Fault           Unused       None
 7   Online          Unused       None
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

detail and **sib-slot** options introduced for the PTX Packet Transport Router in Junos OS Release 12.1

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

RELATED DOCUMENTATION

[request chassis sib | 459](#)

[show chassis spmb sibs | 1607](#)

[show chassis environment sib | 941](#)

[Monitoring the SIBs](#)

[M320 SIB Description](#)

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

show chassis spmb

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Syntax

```
show chassis spmb
```

Syntax (MX Series Routers)

```
show chassis spmb  
<all-members>  
<local>  
<member member-id>
```


Syntax (T4000 Routers)

```
show chassis spmb
<sibs>
```

Syntax (TX Matrix Routers)

```
show chassis spmb
<sibs>
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis spmb
<sibs>
<lcc number | sfc number>
```

Description

(T Series routers, MX2010, MX2020, and MX2008 routers only) Display Switch Processor Mezzanine Board (SPMB) status information.

Options

none (TX Matrix, TX Matrix Plus router, MX2010, MX2020, and MX2008 routers only) On a TX Matrix router, display SPMB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display SPMB status for the TX Matrix Plus router and its attached routers. On MX2010, MX2020, and MX2008 routers, display the SPMB status for the routers.

all-members	(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in all members of the Virtual Chassis configuration.
lcc <i>number</i>	(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SPMB on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SPMB on a specified router (line-card chassis) that is connected to the TX Matrix Plus router. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the local member of the Virtual Chassis.
member <i>member-id</i>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.
scc	(TX Matrix routers only) (Optional) Display information about the SPMB on the TX Matrix router (switch-card chassis).
sfc <i>number</i>	(TX Matrix Plus router only) (Optional) Display information about the SPMB on the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> with 0.
sibs	(TX Matrix and TX Matrix Plus router only) (Optional) On a TX Matrix Plus router, display information about the SIBs on the TX Matrix router (switch-card chassis). On a TX Matrix Plus router, display information about the SIBs on The TX Matrix Plus router (switch-fabric chassis). The sibs option has the following sub-options: lcc <i>number</i> (TX Matrix, TX Matrix Plus router only) (Optional) On a TX Matrix router, display information about the SIBs on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display information about the SIBs on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

scc *number*—(TX Matrix routers only) (Optional) Display information about the SIBs on the TX Matrix router (switch-card chassis). Replace *number* variable with **0**.

sfc *number*—(TX Matrix Plus router only) (Optional) Display information about the SIBs on the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with **0**.

Required Privilege Level

view

Output Fields

[Table 92 on page 1595](#) lists the output fields for the **show chassis spmb** command. Output fields are listed in the approximate order in which they appear.

Table 92: show chassis spmb Output Fields

Field Name	Field Description
Slot	SPMB slot number: 0 or 1 .

Table 92: show chassis spmb Output Fields (*Continued*)

Field Name	Field Description
State	SPMB status: <ul style="list-style-type: none"> • Online—SPMB is operational and running. • Offline—SPMB is powered down.
Total CPU Utilization (%)	Total percentage of CPU being used by the SPMB processor.
Interrupt CPU Utilization (%)	Of the total CPU being used by the SPMB processor, the percentage being used for interrupts.
Memory Heap Utilization (%)	Percentage of heap space (dynamic memory) being used by the FPC processor. If this number exceeds 80 percent, there may be a software problem (memory leak).
Buffer Utilization (%)	Percentage of buffer space being used by the SPMB processor for buffering internal messages.
Start time	Time at which the SPMB last came online.
Uptime	How long the SPMB has been up and running.

Sample Output

show chassis spmb

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization    1%
  Interrupt CPU Utilization 0%

```

```

Memory Heap Utilization      0%
Buffer Utilization           40%
Start time:                  2001-08-27 14:05:04 PDT
Uptime:                       46 minutes, 36 seconds

```

show chassis spmb (MX2010 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 12%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 1%
  Buffer Utilization     22%
  Start time:           2012-10-04 15:34:29 PDT
  Uptime:                7 hours, 10 minutes, 15 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 0%
  Buffer Utilization     22%
  Start time:           2012-10-02 14:34:54 PDT
  Uptime:                2 days, 8 hours, 9 minutes, 50 seconds

```

show chassis spmb (MX2020 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization 100%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization 3%
  Buffer Utilization     22%
  Start time:           2012-10-03 14:58:26 PDT
  Uptime:                1 day, 12 hours, 16 minutes, 14 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization 0%
  Interrupt CPU Utilization 0%

```

```

Memory Heap Utilization      0%
Buffer Utilization          22%
Start time:                 2012-10-03 14:58:27 PDT
Uptime:                     1 day, 12 hours, 16 minutes, 13 seconds

```

show chassis spmb (MX2008 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State           Online
  Start time:    2017-05-04 02:53:36 PDT
  Uptime:        10 days, 7 hours, 1 minute, 14 seconds
Slot 1 information:
  State           Online - Standby
  Start time:    2017-05-04 02:53:36 PDT
  Uptime:        10 days, 7 hours, 1 minute, 14 seconds

```

show chassis spmb (T4000 Router)

```

user@host> show chassis spmb

Slot 0 information:
  State           Online
  Total CPU Utilization  18%
  Interrupt CPU Utilization  0%
  Memory Heap Utilization  0%
  Buffer Utilization    22%
  Start time:    2012-02-09 22:51:09 PST
  Uptime:        2 hours, 25 minutes, 45 seconds
Slot 1 information:
  State           Online - Standby
  Total CPU Utilization  0%
  Interrupt CPU Utilization  0%
  Memory Heap Utilization  0%
  Buffer Utilization    22%
  Start time:    2012-02-09 22:51:10 PST
  Uptime:        2 hours, 25 minutes, 44 seconds

```

show chassis spmb lcc (TX Matrix Router)

```

user@host> show chassis spmb lcc 0
lcc0-re0:
-----
Slot 0 information:
  State                Online
  Total CPU Utilization    0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        42%
  Start time:              2004-08-05 18:43:38 PDT
  Uptime:                  8 days, 55 minutes, 52 seconds

```

show chassis spmb scc (TX Matrix Router)

```

user@host> show chassis spmb scc
scc-re0:
-----
Slot 0 information:
  State                Online
  Total CPU Utilization    1%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        42%
  Start time:              2004-08-05 18:43:37 PDT
  Uptime:                  8 days, 1 hour, 6 minutes, 51 seconds

```

show chassis spmb (T1600 Router)

```

user@host> show chassis spmb
Slot 0 information:
  State                Online
  Total CPU Utilization    2%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        24%
  Start time:              2009-05-07 22:34:03 PDT
  Uptime:                  3 days, 4 hours, 14 minutes, 33 seconds

```

Slot 1 information:

State	Online - Standby
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-07 22:34:02 PDT
Uptime:	3 days, 4 hours, 14 minutes, 34 seconds

show chassis spmb sibs (T1600 Router)

```
user@host> show chassis spmb sibs
```

Slot	State	Uptime
0	Check	3 days, 4 hours, 11 minutes, 59 seconds
1	Disconnected	3 days, 4 hours, 12 minutes, 36 seconds
2	Disconnected	3 days, 4 hours, 12 minutes, 26 seconds
3	Disconnected	3 days, 4 hours, 12 minutes, 17 seconds
4	Disconnected	3 days, 4 hours, 12 minutes, 8 seconds

show chassis spmb (TX Matrix Plus Router)

```
user@host> show chassis spmb
```

sfc0-re0:

Slot 0 information:

State	Online
Total CPU Utilization	84%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:20 PDT
Uptime:	46 minutes, 6 seconds

Slot 1 information:

State	Online - Standby
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:20 PDT
Uptime:	46 minutes, 6 seconds

lcc0-rel:

Slot 0 information:

State	Online - Standby
Total CPU Utilization	0%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:09 PDT
Uptime:	46 minutes, 24 seconds

Slot 1 information:

State	Online
Total CPU Utilization	5%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:08 PDT
Uptime:	46 minutes, 25 seconds

lcc1-rel:

Slot 0 information:

State	Online - Standby
Total CPU Utilization	1%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:09 PDT
Uptime:	46 minutes, 24 seconds

Slot 1 information:

State	Online
Total CPU Utilization	5%
Interrupt CPU Utilization	0%
Memory Heap Utilization	0%
Buffer Utilization	24%
Start time:	2009-05-11 01:25:10 PDT
Uptime:	46 minutes, 23 seconds

lcc2-rel:

Slot 0 information:

State	Online - Standby
-------	------------------

```

Total CPU Utilization          0%
Interrupt CPU Utilization      0%
Memory Heap Utilization        0%
Buffer Utilization             24%
Start time:                    2009-05-11 01:25:08 PDT
Uptime:                        46 minutes, 25 seconds
Slot 1 information:
State                          Online
Total CPU Utilization          5%
Interrupt CPU Utilization      0%
Memory Heap Utilization        0%
Buffer Utilization             24%
Start time:                    2009-05-11 01:25:10 PDT
Uptime:                        46 minutes, 23 seconds

```

```
lcc3-rel:
```

```

-----
Slot 0 information:
State                          Online - Standby
Total CPU Utilization          1%
Interrupt CPU Utilization      0%
Memory Heap Utilization        0%
Buffer Utilization             24%
Start time:                    2009-05-11 01:25:10 PDT
Uptime:                        46 minutes, 23 seconds
Slot 1 information:
State                          Online
Total CPU Utilization          5%
Interrupt CPU Utilization      0%
Memory Heap Utilization        0%
Buffer Utilization             24%
Start time:                    2009-05-11 01:25:09 PDT
Uptime:                        46 minutes, 24 seconds

```

show chassis spmb lcc (TX Matrix Plus Router)

```

user@host> show chassis spmb lcc 2
lcc2-rel:
-----
Slot 0 information:
State                          Online - Standby

```

```

Total CPU Utilization      0%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-11 01:25:08 PDT
Uptime:                    45 minutes, 18 seconds

Slot 1 information:
State                      Online
Total CPU Utilization      6%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-11 01:25:10 PDT
Uptime:                    45 minutes, 16 seconds

```

show chassis spmb scc (TX Matrix Plus Router)

```

user@host> show chassis spmb sfc 0
sfc0-re0:
-----
Slot 0 information:
State                      Online
Total CPU Utilization      87%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-11 01:25:20 PDT
Uptime:                    43 minutes, 32 seconds

Slot 1 information:
State                      Online - Standby
Total CPU Utilization      0%
Interrupt CPU Utilization  0%
Memory Heap Utilization    0%
Buffer Utilization         24%
Start time:                2009-05-11 01:25:20 PDT
Uptime:                    43 minutes, 32 seconds

```

show chassis spmb sibs (TX Matrix Plus Router)

```
user@host> show chassis spmb sibs
```

```
sfc0-re0:
```

```
-----
```

Slot	State	Type	Uptime
0	Online	SIB F13	1 hour, 18 minutes, 54 seconds
1	Online	SIB F13	1 hour, 18 minutes, 45 seconds
2	Invalid		
3	Online	SIB F13	1 hour, 20 minutes, 21 seconds
4	Online	SIB F13	1 hour, 20 minutes, 18 seconds
5	Invalid		
6	Online	SIB F13	1 hour, 19 minutes, 51 seconds
7	Fault	SIB F13	
8	Online	SIB F13	1 hour, 19 minutes, 17 seconds
9	Online	SIB F13	1 hour, 19 minutes, 13 seconds
10	Invalid		
11	Online	SIB F13	1 hour, 17 minutes, 54 seconds
12	Online	SIB F13	1 hour, 17 minutes, 51 seconds
13	Invalid		
14	Invalid		
15	Invalid		
0/0	Online	SIB F2S	1 hour, 18 minutes, 52 seconds
0/2	Online	SIB F2S	1 hour, 18 minutes, 51 seconds
0/4	Online	SIB F2S	1 hour, 18 minutes, 49 seconds
0/6	Online	SIB F2S	1 hour, 18 minutes, 48 seconds
1/0	Online	SIB F2S	1 hour, 20 minutes, 16 seconds
1/2	Online	SIB F2S	1 hour, 20 minutes, 15 seconds
1/4	Online	SIB F2S	1 hour, 20 minutes, 14 seconds
1/6	Online	SIB F2S	1 hour, 20 minutes, 13 seconds
2/0	Online	SIB F2S	1 hour, 19 minutes, 48 seconds
2/2	Online	SIB F2S	1 hour, 19 minutes, 47 seconds
2/4	Online	SIB F2S	1 hour, 19 minutes, 46 seconds
2/6	Online	SIB F2S	1 hour, 19 minutes, 44 seconds
3/0	Online	SIB F2S	1 hour, 19 minutes, 24 seconds
3/2	Online	SIB F2S	1 hour, 19 minutes, 22 seconds
3/4	Online	SIB F2S	1 hour, 19 minutes, 21 seconds
3/6	Online	SIB F2S	1 hour, 19 minutes, 20 seconds
4/0	Online	SIB F2S	1 hour, 18 minutes, 2 seconds
4/2	Online	SIB F2S	1 hour, 18 minutes
4/4	Online	SIB F2S	1 hour, 17 minutes, 58 seconds
4/6	Online	SIB F2S	1 hour, 17 minutes, 58 seconds

```
lcc0-rel:
```

```
-----
Slot  State              Uptime
 0   Online              1 hour, 18 minutes, 58 seconds
 1   Online              1 hour, 20 minutes, 25 seconds
 2   Fault
 3   Online              1 hour, 18 minutes, 30 seconds
 4   Online              1 hour, 18 minutes, 28 seconds
```

```
lcc1-rel:
```

```
-----
Slot  State              Uptime
 0   Online              1 hour, 18 minutes, 58 seconds
 1   Online              1 hour, 20 minutes, 26 seconds
 2   Fault
 3   Online              1 hour, 18 minutes, 22 seconds
 4   Online              1 hour, 18 minutes, 20 seconds
```

```
lcc2-rel:
```

```
-----
Slot  State              Uptime
 0   Online              1 hour, 18 minutes, 19 seconds
 1   Online              1 hour, 20 minutes, 25 seconds
 2   Fault
 3   Online              1 hour, 18 minutes, 17 seconds
 4   Online              1 hour, 18 minutes, 15 seconds
```

```
lcc3-rel:
```

```
-----
Slot  State              Uptime
 0   Online              1 hour, 18 minutes, 27 seconds
 1   Online              1 hour, 20 minutes, 24 seconds
 2   Fault
 3   Online              1 hour, 18 minutes, 25 seconds
 4   Online              1 hour, 18 minutes, 23 seconds
```

show chassis spmb lcc (TX Matrix Plus router with 3D SIBs)

```
user@host > show chassis spmb lcc 0
lcc0-rel:
```

```

-----
Slot 0 information:
  State                Online - Standby
  Total CPU Utilization    0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        0%
  Start time:             2013-02-08 00:57:20 PST
  Uptime:                 19 minutes, 43 seconds
Slot 1 information:
  State                Online
  Total CPU Utilization    0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        22%
  Start time:             2013-02-08 00:56:59 PST
  Uptime:                 20 minutes, 4 seconds

```

show chassis spmb sfc (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis spmb sfc o
sfc0-re0:
-----
Slot 0 information:
  State                Online
  Total CPU Utilization    0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        0%
  Start time:             2013-02-06 19:16:55 PST
  Uptime:                 1 day, 6 hours, 2 minutes, 59 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization    0%
  Interrupt CPU Utilization 0%
  Memory Heap Utilization  0%
  Buffer Utilization        0%
  Start time:             2013-02-06 19:16:53 PST
  Uptime:                 1 day, 6 hours, 3 minutes, 1 second

```

Release Information

Command introduced before Junos OS Release 7.4.

sibs option introduced for the T1600 and TX Matrix Plus routers in Junos OS Release 9.6.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[request chassis sib | 459](#)

[request chassis spmb restart | 462](#)

[show chassis spmb sibs | 1607](#)

show chassis spmb sibs

IN THIS SECTION

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- [Syntax \(TX Matrix Router\) | 1608](#)
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Syntax

```
show chassis spmb sibs
```

Syntax (TX Matrix Router)

```
show chassis spmb sibs
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis spmb sibs
<lcc number | sfc number>
```

Description

(T Series routers only) Display Switch Processor Mezzanine Board (SPMB) Switch Interface Board (SIB) status information.

Options

- none** (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, display the SIB status for the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display the SIB status for the TX Matrix Plus router and its attached routers.
- lcc number** (TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display SIB status information for a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display SIB status information for a specified router (line-card chassis) that is connected to a TX Matrix Plus router.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

scc (TX Matrix router only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis).

sfc (TX Matrix Plus router only) (Optional) Display SIB status information for the TX Matrix Plus router (or switch-fabric chassis).

Additional Information

On a T Series router, you can use either this command or the **show chassis sibs** command to produce the same output. The **show chassis sibs** command is supported on the M320 router and on the T Series routers.

Required Privilege Level

view

Output Fields

[Table 93 on page 1610](#) lists the output fields for the **show chassis spmb sibs** command. Output fields are listed in the approximate order in which they appear.

Table 93: show chassis spmb sibs Output Fields

Field Name	Field Description
Slot	SIB slot number: <ul style="list-style-type: none">• T640 router, T1600 router or TX Matrix router—0 through 4• TX Matrix Plus router:<ul style="list-style-type: none">• TXP-F13 SIB Slots—0 through 16• TXP-F2S SIB Slots —0 - 4/[0 2 4 6]• T320 router—0 through 2

Table 93: show chassis spmb sibs Output Fields (Continued)

Field Name	Field Description
State	<p>SIB status:</p> <ul style="list-style-type: none"> • Disconnected—SIBs on all T640 routers on the TX Matrix router (switch-card chassis) are in the Disconnected state, because a SIB on the SCC has gone offline. Likewise, SIBs on all T1600 or T4000 routers on the TX Matrix Plus router (or switch-fabric chassis) are in the Disconnected state, because a SIB on the SFC has gone offline. • Online—SPMB is operational and running. • Offline—SPMB is powered down. • Spare—SIB is redundant and will move to active state if one of the working SIBs fail to pass traffic. • Empty—No SPMB is present. • Fault— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> • On-board F-chip is not operational. • Fiber optic connector faults. • FPC connector faults. • SIB midplane connector faults. • Check—SIB is in alarmed state where the SIB's plane is partially operational for the following reasons: <ul style="list-style-type: none"> • SIB is not inserted properly. • Two or more links between the SIB and PFE fails.
Uptime	How long the SIB has been up and running.

Sample Output

show chassis spmb sibs (T320 Router)

```
user@host> show chassis spmb sibs
Slot  State
  0    Spare
  1    Online
  2    Online
```

show chassis-spmb-sibs (T1600 Router)

```
user@host> show chassis spmb sibs
Slot  State
  0    Spare
  1    Online
  2    Empty
  3    Online
  4    Offline
```

show chassis spmb sibs (T4000 Router)

```
user@host> show chassis spmb sibs

Slot  State                               Uptime
  0    Spare
  1    Online                             2 hours, 28 minutes, 13 seconds
  2    Online                             2 hours, 27 minutes, 57 seconds
  3    Online                             2 hours, 27 minutes, 40 seconds
  4    Online                             2 hours, 27 minutes, 24 seconds
```

show chassis spmb sibs (TX Matrix Router)

```
user@host> show chassis spmb sibs
Slot  State
  0    Online
  1    Online
```

```

2    Empty
3    Online
4    Offline

```

show chassis spmb sibs lcc (TX Matrix Router)

```

user@host> show chassis spmb sibs lcc 0
lcc0-re0:
-----
Slot  State                Uptime
 0    Empty
 1    Empty
 2    Empty
 3    Disconnected          8 days, 48 minutes, 58 seconds
 4    Online                 8 days, 48 minutes, 57 seconds

```

show chassis spmb sibs scc (TX Matrix Router)

```

user@host> show chassis spmb sibs scc
scc-re0:
-----
Slot  State                Uptime
 0    Empty
 1    Empty
 2    Empty
 3    Offline
 4    Online                 8 days, 54 minutes, 1 second

```

show chassis spmb sibs (TX Matrix Plus Router)

```

user@host> show chassis spmb sibs
sfc0-re0:
-----
Slot  State                Type                Uptime
 0    Online              SIB F13            1 hour, 52 minutes, 55 seconds
 1    Empty
 2    Invalid
 3    Online              SIB F13            1 hour, 53 minutes, 3 seconds

```

```

4   Empty
5   Invalid
6   Empty
7   Empty
8   Empty
9   Empty
10  Invalid
11  Empty
12  Empty
13  Invalid
14  Invalid
15  Invalid
0/0 Online          SIB F2S          1 hour, 53 minutes, 2 seconds
0/2 Online          SIB F2S          1 hour, 53 minutes, 1 second
0/4 Online          SIB F2S          1 hour, 52 minutes, 59 seconds
0/6 Online          SIB F2S          1 hour, 52 minutes, 58 seconds
1/0 Online          SIB F2S          1 hour, 53 minutes, 10 seconds
1/2 Online          SIB F2S          1 hour, 53 minutes, 8 seconds
1/4 Online          SIB F2S          1 hour, 53 minutes, 7 seconds
1/6 Online          SIB F2S          1 hour, 53 minutes, 6 seconds
2/0 Empty
2/2 Empty
2/4 Empty
2/6 Empty
3/0 Empty
3/2 Empty
3/4 Empty
3/6 Empty
4/0 Empty
4/2 Empty
4/4 Empty
4/6 Empty

```

lcc0-re0:

```

-----
Slot  State          Uptime
0     Online         1 hour, 53 minutes, 1 second
1     Online         1 hour, 53 minutes, 3 seconds
2     Empty
3     Empty
4     Empty

```

lcc1-rel:

```

-----
Slot  State                Uptime
 0   Online                1 hour, 47 minutes, 13 seconds
 1   Online                1 hour, 47 minutes, 15 seconds
 2   Empty
 3   Empty
 4   Empty

```

show chassis spmb sibs sfc (TX Matrix Plus Router)

```

user@host> show chassis spmb sibs sfc 0
sfc0-re0:
-----
Slot 0 information:
  State                Online
  Total CPU Utilization    16%
  Interrupt CPU Utilization  0%
  Memory Heap Utilization   0%
  Buffer Utilization        24%
  Start time:             2009-06-17 20:59:47 PDT
  Uptime:                 1 hour, 56 minutes, 30 seconds
Slot 1 information:
  State                Online - Standby
  Total CPU Utilization    0%
  Interrupt CPU Utilization  0%
  Memory Heap Utilization   0%
  Buffer Utilization        24%
  Start time:             2009-06-17 20:59:48 PDT
  Uptime:                 1 hour, 56 minutes, 29 seconds

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

RELATED DOCUMENTATION

[show chassis sibs | 1573](#)

[request chassis sib | 459](#)

[request chassis spmb restart | 462](#)

show chassis temperature-thresholds

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- [Syntax | 1616](#)
- [Syntax \(TX Matrix Routers\) | 1617](#)
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Syntax

```
show chassis temperature-thresholds
```


Syntax (TX Matrix Routers)

```
show chassis temperature-thresholds  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis temperature-thresholds  
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis temperature-thresholds  
<all-members>  
<local>  
<member member-id>  
<satellite [slot-id slot-ID |device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis temperature-thresholds  
<interconnect-device name>  
<node-device name>
```

Description

Display chassis temperature threshold settings, in degrees Celsius.

Options

none	Display the temperature threshold details.
all-members	(MX Series routers only) (Optional) Display the chassis temperature threshold settings of all member routers in the Virtual Chassis configuration.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Interconnect device.
lcc <i>number</i>	<p>(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the temperature threshold details of a specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display the temperature threshold details of a specified router (line-card chassis) that is connected to a TX Matrix Plus router.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
local	(MX Series routers only) (Optional) Display the chassis temperature threshold settings of the local Virtual Chassis member.
member <i>member-id</i>	(MX Series routers only) (Optional) Display the chassis temperature threshold settings of the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
node-device <i>name</i>	(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Node device.
satellite [slot-id <i>slot-ID</i> device- alias <i>alias-name</i>]	(Junos Fusion only) (Optional) Display the chassis temperature threshold settings for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc	(TX Matrix routers only) (Optional) Display the temperature threshold details of the TX Matrix router (switch-card chassis).
sfc <i>number</i>	(TX Matrix Plus routers only) (Optional) On TX Matrix Plus routers, display the temperature threshold details of the TX Matrix Plus router, which is the switch-fabric chassis. Replace <i>number</i> with 0.

Required Privilege Level

view

Output Fields

[Table 94 on page 1619](#) lists the output fields for the **show chassis temperature-thresholds** command. Output fields are listed in the approximate order in which they appear.

Table 94: show chassis temperature-thresholds Output Fields

Field name	Field Description
Item	Chassis component. If per FRU per slot thresholds are configured, the components about which information is displayed include the chassis, the Routing Engines, FPCs, and FEBs. If per FRU per slot thresholds are not configured, the components about which information is displayed include the chassis and the Routing Engines.

Table 94: show chassis temperature-thresholds Output Fields (Continued)

Field name	Field Description
Fan speed	<p>NOTE: On the QFX3500 switch and QFX3600 switch, there are four fan speeds: low, medium-low, medium-high, and high. The fan speed changes at the threshold when going from a low speed to a higher speed. When the fan speed changes from a higher speed to a lower speed, the temperature changes two degrees below the threshold.</p> <p>Temperature threshold settings, in degrees Celsius, for the fans to operate at normal and high speeds.</p> <ul style="list-style-type: none"> • Normal—The fans operate at normal speed if the component is at or below this temperature and all the fans are present and functioning normally. <p>NOTE: On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 70°C for Normal fan speed, which is less than or equal to 4800 RPM.</p> <ul style="list-style-type: none"> • High—The fans operate at high speed if the component has exceeded this temperature or a fan has failed or is missing. <p>NOTE: On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 75°C for High fan speed, which is greater than or equal to 5000 RPM.</p> <p>NOTE: For MX480 Routers, there are three fan speeds: Low, Medium, and High.</p> <p>An alarm is not triggered until the temperature exceeds the threshold settings for a yellow alarm or a red alarm.</p>
Yellow alarm	<p>Temperature threshold settings, in degrees Celsius, that trigger a yellow alarm.</p> <ul style="list-style-type: none"> • Normal—The temperature that must be exceeded on the component to trigger a yellow alarm when the fans are running at full speed. • Bad fan—The temperature that must be exceeded on the component to trigger a yellow alarm when one or more fans have failed or are missing.

Table 94: show chassis temperature-thresholds Output Fields (Continued)

Field name	Field Description
Red alarm	<p>Temperature threshold settings, in degrees Celsius, that trigger a red alarm.</p> <ul style="list-style-type: none"> • Normal—The temperature that must be exceeded on the component to trigger a red alarm when the fans are running at full speed. • Bad fan—The temperature that must be exceeded on the component to trigger a red alarm when one or more fans have failed or are missing.
Fire Shutdown	(T4000 routers, TX Matrix Plus router with 3D SIBs, and PTX Series Packet Transport Routers only)—Temperature threshold settings, in degrees Celsius, for the network device to shut down.

Sample Output

show chassis temperature-thresholds

```
user@host> show chassis temperature-thresholds
```

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	70	80	95	95	110	110
Routing Engine 1	70	80	95	95	110	110
FPC 0	55	60	75	65	90	80
FPC 1	55	60	75	65	90	80
FPC 2	55	60	75	65	90	80
FPC 3	55	60	75	65	90	80
FPC 4	55	60	75	65	90	80
FPC 5	55	60	75	65	90	80
FPC 6	55	60	75	65	90	80
FPC 7	55	60	75	65	90	80
FPC 8	55	60	75	65	90	80
FPC 9	55	60	75	65	90	80

FPC 10	55	60	75	65	90	80
FPC 11	55	60	75	65	90	80

show chassis temperature-thresholds (MX150)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm    Red alarm      Fire Shutdown
                (degrees C)    (degrees C)    (degrees C)
(degrees C)
Item           Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
FPC 0 Sensor 1  43    65    68     68     70     70
72
FPC 0 Sensor 2  43    65    68     68     70     70
72
FPC 0 Coretemp  78    94    100    100    105    105
110

```

show chassis temperature-thresholds (MX104 Router)

```

user@host> show chassis temperature-thresholds
                Fan speed      Yellow alarm    Red alarm      Fire
Shutdown
                (degrees C)    (degrees C)    (degrees C)
(degrees C)
Item           Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
Chassis default  48    54    65     55     75     65
100
Routing Engine 0  55    80    95     95     105    100
108

```

show chassis temperature-thresholds (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```

user@host> show chassis temperature-thresholds
Fan speed      Yellow alarm    Red alarm      Fire Shutdown
                (degrees C)    (degrees C)    (degrees C)

```

```

(degrees C)
Item          Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
Chassis default      48   54     65     55     75     65
100
Routing Engine 0     70   80     95     95    110    110
112
Routing Engine 1     70   80     95     95    110    110
112
FPC 0                55   60     75     65     90     80
95
FPC 1                55   60     75     65     90     80
95
FPC 2                55   60     75     65     90     80
95
FPC 4                55   60     75     65     90     80
95
FPC 5                55   60     75     65     90     80
95

```

show chassis temperature-thresholds (MX480 Router with MPC4E)

```

user@ host> show chassis temperature-thresholds
Fan speed      Yellow alarm   Red alarm      Fire
Shutdown
(degrees C)    (degrees C)   (degrees C)
Item          Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
Chassis default      48   54     65     55     75     65
100
Routing Engine 0     70   80     95     95    110    110
112
Routing Engine 1     70   80     95     95    110    110
112
FPC 2                55   60     75     65     95     80
100
FPC 3                55   60     75     65     95     80
100

```

```
FPC 4          55    60    75    65    90    80
95
```

show chassis temperature-thresholds (MX2010 Router with MPC7E, MPC8E, and MPC9E)

```
user@ host> show chassis temperature-thresholds
alarm          Fan speed          Yellow alarm      Red
Fire Shutdown   (degrees C)       (degrees C)      (degrees
C)              (degrees C)
Item            Normal  High  Normal  Bad fan  Normal
Bad fan        Normal

FPC 3 Intake          53    59    72    67
80    75    85
FPC 3 Exhaust A      77    85    98    93
103    98    108
FPC 3 Exhaust B      54    62    80    75
103    98    108
FPC 3 EA0 Chip        64    72    90    90
100    100    105
FPC 3 EA0_XR0 Chip    79    87    102    102
106    106    108
FPC 3 EA0_XR1 Chip    79    87    102    102
106    106    108
FPC 3 EA1 Chip        64    72    90    90
100    100    105
FPC 3 EA1_XR0 Chip    79    87    102    102
106    106    108
FPC 3 EA1_XR1 Chip    79    87    102    102
106    106    108
FPC 3 PEX Chip        74    82    100    100
105    105    110
FPC 3 EA2 Chip        64    72    90    90
100    100    105
FPC 3 EA2_XR0 Chip    79    87    102    102
106    106    108
FPC 3 EA2_XR1 Chip    79    87    102    102
106    106    108
FPC 3 EA3 Chip        64    72    90    90
100    100    105
```


FPC 3	EA3_XR0	Chip	79	87	102	102
106	106	108				
FPC 3	EA3_XR1	Chip	79	87	102	102
106	106	108				
FPC 3	EA0_HMC0	Logic die	81	89	103	103
107	107	111				
FPC 3	EA0_HMC0	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA0_HMC1	Logic die	81	89	103	103
107	107	111				
FPC 3	EA0_HMC1	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA0_HMC2	Logic die	81	89	103	103
107	107	111				
FPC 3	EA0_HMC2	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA1_HMC0	Logic die	81	89	103	103
107	107	111				
FPC 3	EA1_HMC0	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA1_HMC1	Logic die	81	89	103	103
107	107	111				
FPC 3	EA1_HMC1	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA1_HMC2	Logic die	81	89	103	103
107	107	111				
FPC 3	EA1_HMC2	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA2_HMC0	Logic die	81	89	103	103
107	107	111				
FPC 3	EA2_HMC0	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA2_HMC1	Logic die	81	89	103	103
107	107	111				
FPC 3	EA2_HMC1	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA2_HMC2	Logic die	81	89	103	103
107	107	111				
FPC 3	EA2_HMC2	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA3_HMC0	Logic die	81	89	103	103
107	107	111				
FPC 3	EA3_HMC0	DRAM botm	76	84	98	98

102	102	106				
FPC 3	EA3_HMC1	Logic die	81	89	103	103
107	107	111				
FPC 3	EA3_HMC1	DRAM botm	76	84	98	98
102	102	106				
FPC 3	EA3_HMC2	Logic die	81	89	103	103
107	107	111				
FPC 3	EA3_HMC2	DRAM botm	76	84	98	98
102	102	106				
FPC 4	Intake		46	55	65	60
81	76	90				
FPC 4	Exhaust A		61	70	80	75
100	95	110				
FPC 4	Exhaust B		61	70	80	75
95	90	105				
FPC 4	EA0 Chip		86	95	105	100
117	112	123				
FPC 4	EA0_XR0 Chip		86	95	105	100
110	105	116				
FPC 4	EA0_XR1 Chip		86	95	105	100
115	110	121				
FPC 4	EA1 Chip		86	95	105	100
117	112	123				
FPC 4	EA1_XR0 Chip		86	95	105	100
110	105	116				
FPC 4	EA1_XR1 Chip		86	95	105	100
115	110	121				
FPC 4	PCIE_SW Chip		81	90	105	100
115	110	121				
FPC 4	EA0_HMC0	DRAM botm	86	95	105	100
115	110	121				
FPC 4	EA0_HMC1	DRAM botm	86	95	105	100
115	110	121				
FPC 4	EA1_HMC0	DRAM botm	86	95	105	100
115	110	121				
FPC 4	EA1_HMC1	DRAM botm	86	95	105	100
115	110	121				
FPC 7	Intake		53	59	72	67
80	75	85				
FPC 7	Exhaust A		77	85	98	93
103	98	108				
FPC 7	Exhaust B		54	62	80	75
103	98	108				

FPC 7 EA0 Chip	64	72	90	90
100 100 105				
FPC 7 EA0_XR0 Chip	79	87	102	102
106 106 108				
FPC 7 EA0_XR1 Chip	79	87	102	102
106 106 108				
FPC 7 EA1 Chip	64	72	90	90
100 100 105				
FPC 7 EA1_XR0 Chip	79	87	102	102
106 106 108				
FPC 7 EA1_XR1 Chip	79	87	102	102
106 106 108				
FPC 7 PEX Chip	74	82	100	100
105 105 110				
FPC 7 EA2 Chip	64	72	90	90
100 100 105				
FPC 7 EA2_XR0 Chip	79	87	102	102
106 106 108				
FPC 7 EA2_XR1 Chip	79	87	102	102
106 106 108				
FPC 7 EA3 Chip	64	72	90	90
100 100 105				
FPC 7 EA3_XR0 Chip	79	87	102	102
106 106 108				
FPC 7 EA3_XR1 Chip	79	87	102	102
106 106 108				
FPC 7 EA0_HMC0 Logic die	81	89	103	103
107 107 111				
FPC 7 EA0_HMC0 DRAM botm	76	84	98	98
102 102 106				
FPC 7 EA0_HMC1 Logic die	81	89	103	103
107 107 111				
FPC 7 EA0_HMC1 DRAM botm	76	84	98	98
102 102 106				
FPC 7 EA0_HMC2 Logic die	81	89	103	103
107 107 111				
FPC 7 EA0_HMC2 DRAM botm	76	84	98	98
102 102 106				
FPC 7 EA1_HMC0 Logic die	81	89	103	103
107 107 111				
FPC 7 EA1_HMC0 DRAM botm	76	84	98	98
102 102 106				
FPC 7 EA1_HMC1 Logic die	81	89	103	103

```

107      107      111
FPC 7 EA1_HMC1 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA1_HMC2 Logic die         81   89  103  103
107      107      111
FPC 7 EA1_HMC2 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA2_HMC0 Logic die         81   89  103  103
107      107      111
FPC 7 EA2_HMC0 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA2_HMC1 Logic die         81   89  103  103
107      107      111
FPC 7 EA2_HMC1 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA2_HMC2 Logic die         81   89  103  103
107      107      111
FPC 7 EA2_HMC2 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA3_HMC0 Logic die         81   89  103  103
107      107      111
FPC 7 EA3_HMC0 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA3_HMC1 Logic die         81   89  103  103
107      107      111
FPC 7 EA3_HMC1 DRAM botm          76   84   98   98
102      102      106
FPC 7 EA3_HMC2 Logic die         81   89  103  103
107      107      111
FPC 7 EA3_HMC2 DRAM botm          76   84   98   98
102      102      106

```

As per the above output, the MPC7E, MPC8E, and MPC9E are installed in the FPC slots 4, 7, and 3, respectively.

show chassis temperature-thresholds (MX2020 Router with MPC4E)

```

user@host> show chassis temperature-thresholds
          Fan speed      Yellow alarm      Red alarm      Fire Shutdown
          (degrees C)    (degrees C)      (degrees C)    (degrees
C)
Item      Normal  High   Normal  Bad fan  Normal  Bad fan  Normal

```

Routing Engine 0	70	80	95	95	110	110	112
Routing Engine 1	70	80	95	95	110	110	112
CB 0 IntakeA-Zone0	60	65	78	75	85	80	95
CB 0 IntakeB-Zone1	60	65	78	75	85	80	95
CB 0 IntakeC-Zone0	60	65	78	75	85	80	95
CB 0 ExhaustA-Zone0	60	65	78	75	85	80	95
CB 0 ExhaustB-Zone1	60	65	78	75	85	80	95
CB 0 TCBC-Zone0	60	65	78	75	85	80	95
CB 1 IntakeA-Zone0	60	65	78	75	85	80	95
CB 1 IntakeB-Zone1	60	65	78	75	85	80	95
CB 1 IntakeC-Zone0	60	65	78	75	85	80	95
CB 1 ExhaustA-Zone0	60	65	78	75	85	80	95
CB 1 ExhaustB-Zone1	60	65	78	75	85	80	95
CB 1 TCBC-Zone0	60	65	78	75	85	80	95
SPMB 0 Intake	56	62	75	63	83	76	95
SPMB 1 Intake	56	62	75	63	83	76	95
SFB 0 Intake-Zone0	56	62	70	70	85	85	89
SFB 0 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 0 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 0 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 0 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 0 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 0 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 0 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 1 Intake-Zone0	56	62	70	70	85	85	89
SFB 1 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 1 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 1 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 1 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 1 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 1 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 1 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 2 Intake-Zone0	56	62	70	70	85	85	89
SFB 2 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 2 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 2 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 2 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 2 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 2 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 2 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 3 Intake-Zone0	56	62	70	70	85	85	89
SFB 3 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 3 IntakeA-Zone0	56	62	70	70	85	85	89

SFB 3 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 3 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 3 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 3 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 3 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 4 Intake-Zone0	56	62	70	70	85	85	89
SFB 4 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 4 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 4 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 4 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 4 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 4 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 4 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 5 Intake-Zone0	56	62	70	70	85	85	89
SFB 5 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 5 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 5 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 5 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 5 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 5 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 5 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 6 Intake-Zone0	56	62	70	70	85	85	89
SFB 6 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 6 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 6 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 6 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 6 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 6 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 6 SFB-XF0-Zone0	70	75	90	85	95	90	100
SFB 7 Intake-Zone0	56	62	70	70	85	85	89
SFB 7 Exhaust-Zone1	56	62	70	70	85	85	89
SFB 7 IntakeA-Zone0	56	62	70	70	85	85	89
SFB 7 IntakeB-Zone1	56	62	70	70	85	85	89
SFB 7 Exhaust-Zone0	56	62	70	70	85	85	89
SFB 7 SFB-XF2-Zone1	70	75	90	85	95	90	100
SFB 7 SFB-XF1-Zone0	70	75	90	85	95	90	100
SFB 7 SFB-XF0-Zone0	70	75	90	85	95	90	100
FPC 0	55	60	75	65	90	80	95
FPC 9	55	60	75	65	90	80	95
FPC 10	55	60	75	65	90	80	95
FPC 14	55	60	75	65	95	80	100
FPC 19	55	60	75	65	90	80	95
ADC 0 Intake	50	55	60	60	65	65	80

ADC 0 Exhaust	50	55	60	60	65	65	80
ADC 0 ADC-XF1	70	75	90	85	95	90	100
ADC 0 ADC-XF0	70	75	90	85	95	90	100
ADC 9 Intake	50	55	60	60	65	65	80
ADC 9 Exhaust	50	55	60	60	65	65	80
ADC 9 ADC-XF1	70	75	90	85	95	90	100
ADC 9 ADC-XF0	70	75	90	85	95	90	100
ADC 10 Intake	50	55	60	60	65	65	80
ADC 10 Exhaust	50	55	60	60	65	65	80
ADC 10 ADC-XF1	70	75	90	85	95	90	100
ADC 10 ADC-XF0	70	75	90	85	95	90	100
ADC 14 Intake	50	55	60	60	65	65	80
ADC 14 Exhaust	50	55	60	60	65	65	80
ADC 14 ADC-XF1	70	75	90	85	95	90	100
ADC 14 ADC-XF0	70	75	90	85	95	90	100
ADC 19 Intake	50	55	60	60	65	65	80
ADC 19 Exhaust	50	55	60	60	65	65	80
ADC 19 ADC-XF1	70	75	90	85	95	90	100
ADC 19 ADC-XF0	70	75	90	85	95	90	100

show chassis temperature-thresholds (MX2008 Routers)

```

user@host> show chassis temperature-thresholds

```

Item	Fan speed		Yellow alarm		Red alarm		Fire Shutdown
	(degrees C)	(degrees C)	(degrees C)	(degrees C)	(degrees C)	(degrees C)	
Item	Normal	High	Normal	Bad fan	Normal	Bad fan	
Routing Engine 0 CPU	58	63	78	75	93	90	
98							
Routing Engine 1 CPU	58	63	78	75	93	90	
98							
CB 0 Inlet1	55	60	65	62	75	72	
85							
CB 0 Inlet2	45	50	61	58	80	77	
90							
CB 0 Inlet3	57	62	68	65	80	77	
90							
CB 0 Inlet4	55	60	80	77	90	87	
95							

CB 0 Exhaust1 85	55	60	65	62	75	72
CB 0 Exhaust2 90	50	55	60	57	80	77
CB 0 Exhaust3 96	70	75	81	78	91	88
CB 0 Exhaust4 105	75	80	90	87	100	97
CB 1 Inlet1 85	55	60	65	62	75	72
CB 1 Inlet2 90	45	50	61	58	80	77
CB 1 Inlet3 90	57	62	68	65	80	77
CB 1 Inlet4 95	55	60	80	77	90	87
CB 1 Exhaust1 85	55	60	65	62	75	72
CB 1 Exhaust2 90	50	55	60	57	80	77
CB 1 Exhaust3 96	70	75	81	78	91	88
CB 1 Exhaust4 105	75	80	90	87	100	97
SFB 0 Inlet1 81	49	54	62	59	76	73
SFB 0 Inlet2 88	65	70	71	68	83	80
SFB 0 Exhaust1 80	45	50	61	58	75	72
SFB 0 Exhaust2 85	60	65	69	66	80	77
SFB 0 SFB2-PF-local 100	65	70	75	72	95	92
SFB 0 SFB2-PF-die 120	88	93	98	95	118	115
SFB 1 Inlet1 81	49	54	62	59	76	73
SFB 1 Inlet2 88	65	70	71	68	83	80
SFB 1 Exhaust1 80	45	50	61	58	75	72
SFB 1 Exhaust2	60	65	69	66	80	77

85							
SFB 1	SFB2-PF-local	65	70	75	72	95	92
100							
SFB 1	SFB2-PF-die	88	93	98	95	118	115
120							
SFB 2	Inlet1	49	54	62	59	76	73
81							
SFB 2	Inlet2	65	70	71	68	83	80
88							
SFB 2	Exhaust1	45	50	61	58	75	72
80							
SFB 2	Exhaust2	60	65	69	66	80	77
85							
SFB 2	SFB2-PF-local	65	70	75	72	95	92
100							
SFB 2	SFB2-PF-die	88	93	98	95	118	115
120							
SFB 3	Inlet1	49	54	62	59	76	73
81							
SFB 3	Inlet2	65	70	71	68	83	80
88							
SFB 3	Exhaust1	45	50	61	58	75	72
80							
SFB 3	Exhaust2	60	65	69	66	80	77
85							
SFB 3	SFB2-PF-local	65	70	75	72	95	92
100							
SFB 3	SFB2-PF-die	88	93	98	95	118	115
120							
SFB 4	Inlet1	49	54	62	59	76	73
81							
SFB 4	Inlet2	65	70	71	68	83	80
88							
SFB 4	Exhaust1	45	50	61	58	75	72
80							
SFB 4	Exhaust2	60	65	69	66	80	77
85							
SFB 4	SFB2-PF-local	65	70	75	72	95	92
100							
SFB 4	SFB2-PF-die	88	93	98	95	118	115
120							
SFB 5	Inlet1	49	54	62	59	76	73
81							

SFB 5 Inlet2	65	70	71	68	83	80
88						
SFB 5 Exhaust1	45	50	61	58	75	72
80						
SFB 5 Exhaust2	60	65	69	66	80	77
85						
SFB 5 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 5 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 6 Inlet1	49	54	62	59	76	73
81						
SFB 6 Inlet2	65	70	71	68	83	80
88						
SFB 6 Exhaust1	45	50	61	58	75	72
80						
SFB 6 Exhaust2	60	65	69	66	80	77
85						
SFB 6 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 6 SFB2-PF-die	88	93	98	95	118	115
120						
SFB 7 Inlet1	49	54	62	59	76	73
81						
SFB 7 Inlet2	65	70	71	68	83	80
88						
SFB 7 Exhaust1	45	50	61	58	75	72
80						
SFB 7 Exhaust2	60	65	69	66	80	77
85						
SFB 7 SFB2-PF-local	65	70	75	72	95	92
100						
SFB 7 SFB2-PF-die	88	93	98	95	118	115
120						
FPC 0	55	60	75	65	90	80
95						
FPC 3	55	60	75	65	105	80
110						
FPC 5	55	60	75	65	105	80
110						
FPC 7	55	60	75	65	90	80
95						
FPC 9 Intake	60	65	75	75	85	85

95							
FPC 9 Exhaust A	60	65	75	75	85	85	
95							
FPC 9 Exhaust B	60	65	75	75	85	85	
95							
FPC 9 XL 0 Chip	70	75	85	85	102	102	
110							
FPC 9 XL 0 XR2 0 Chip	75	80	90	90	105	105	
115							
FPC 9 XL 0 XR2 1 Chip	75	80	90	90	105	105	
115							
FPC 9 XL 1 Chip	70	75	85	85	102	102	
110							
FPC 9 XL 1 XR2 0 Chip	75	80	90	90	105	105	
115							
FPC 9 XL 1 XR2 1 Chip	75	80	90	90	105	105	
115							
FPC 9 XM 0 Chip	70	75	85	85	100	100	
110							
FPC 9 XM 1 Chip	70	75	85	85	100	100	
110							
FPC 9 XM 2 Chip	70	75	85	85	100	100	
110							
FPC 9 XM 3 Chip	70	75	85	85	100	100	
110							
FPC 9 PCIe Switch Chip	80	85	95	95	105	105	
120							
ADC 0 Intake	50	55	65	65	75	75	
80							
ADC 0 Exhaust	50	55	65	65	75	75	
80							
ADC 0 ADC-XF1	70	75	90	85	95	90	
100							
ADC 0 ADC-XF0	70	75	90	85	95	90	
100							
ADC 3 Intake	50	55	65	65	75	75	
80							
ADC 3 Exhaust	50	55	65	65	75	75	
80							
ADC 3 ADC-XF1	70	75	90	85	95	90	
100							
ADC 3 ADC-XF0	70	75	90	85	95	90	
100							

ADC 5 Intake	50	55	65	65	75	75
80						
ADC 5 Exhaust	50	55	65	65	75	75
80						
ADC 5 ADC-XF1	70	75	90	85	95	90
100						
ADC 5 ADC-XF0	70	75	90	85	95	90
100						
ADC 7 Intake	50	55	65	65	75	75
80						
ADC 7 Exhaust	50	55	65	65	75	75
80						
ADC 7 ADC-XF1	70	75	90	85	95	90
100						
ADC 7 ADC-XF0	70	75	90	85	95	90
100						

show chassis temperature-thresholds (MX204 Router)

```

user@host> show chassis temperature-thresholds

alarm      Fire Shutdown
           (degrees C)
Item       Normal  High   Normal  Bad fan  Normal
Bad fan    Normal
Routing Engine
100      100      102
CB Top Right Inlet Sensor
85       85       95
CB Top Left Inlet Sensor
85       85       95
CB Top Right Exhaust Sensor
85       85       95
CB Top Left Exhaust Sensor
85       85       95
CB CPU Core-0 Temp
90       90       100
CB CPU Core-1 Temp
90       90       100
    
```

CB CPU Core-2 Temp	65	70	80	80
90 90 100				
CB CPU Core-3 Temp	65	70	80	80
90 90 100				
CB CPU Core-4 Temp	65	70	80	80
90 90 100				
CB CPU Core-5 Temp	65	70	80	80
90 90 100				
CB CPU Core-6 Temp	65	70	80	80
90 90 100				
CB CPU Core-7 Temp	65	70	80	80
90 90 100				
FPC EA0_HMC0 Logic die	85	90	95	95
105 105 110				
FPC EA0_HMC0 DRAM botm	80	85	90	90
105 105 110				
FPC EA0_HMC1 Logic die	85	90	95	95
105 105 110				
FPC EA0_HMC1 DRAM botm	80	85	90	90
105 105 110				
FPC EA0 Chip	92	97	103	103
109 109 115				
FPC EA0-XR0 Chip	85	90	98	98
103 103 110				
FPC EA0-XR1 Chip	85	90	98	98
103 103 110				

show chassis temperature-thresholds (PTX10008 Routers)

```

user@host> show chassis temperature-thresholds

```

Item	Fan speed		Yellow alarm		Red alarm		Fire Shutdown
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Routing Engine 0	48	54	85	85	100	100	
102							
Routing Engine 1	48	54	85	85	100	100	
102							
CB 0 Intake Temp Sensor	30	35	80	80	85	85	

95							
CB 0 Exhaust Temp Sensor	30	35	80	80	85	85	
95							
CB 0 CPU Die Temp Sensor	40	45	95	95	100	100	
110							
CB 1 Intake Temp Sensor	30	35	80	80	85	85	
95							
CB 1 Exhaust Temp Sensor	30	35	80	80	85	85	
95							
CB 1 CPU Die Temp Sensor	40	45	95	95	100	100	
110							
FPC 0 Intake-A Temp Sensor	30	35	80	80	85	85	
95							
FPC 0 Intake-B Temp Sensor	30	35	80	80	85	85	
95							
FPC 0 Exhaust-A Temp Sensor	30	35	80	80	85	85	
95							
FPC 0 Exhaust-B Temp Sensor	30	35	80	80	85	85	
95							
FPC 0 Exhaust-C Temp Sensor	30	35	80	80	85	85	
95							
FPC 0 PE0 Temp Sensor	40	45	100	100	105	105	
115							
FPC 0 PE1 Temp Sensor	40	45	100	100	105	105	
115							
FPC 0 PE2 Temp Sensor	40	45	100	100	105	105	
115							
FPC 0 LCPU Temp Sensor	40	45	95	95	100	100	
110							
FPC 5 Intake-A Temp Sensor	30	35	80	80	85	85	
95							
FPC 5 Intake-B Temp Sensor	30	35	80	80	85	85	
95							
FPC 5 Exhaust-A Temp Sensor	30	35	80	80	85	85	
95							
FPC 5 Exhaust-B Temp Sensor	30	35	80	80	85	85	
95							
FPC 5 Exhaust-C Temp Sensor	30	35	80	80	85	85	
95							
FPC 5 PE0 Temp Sensor	40	45	100	100	105	105	
115							
FPC 5 PE1 Temp Sensor	40	45	100	100	105	105	
115							

FPC 5 PE2 Temp Sensor	40	45	100	100	105	105
115						
FPC 5 PE3 Temp Sensor	40	45	100	100	105	105
115						
FPC 5 PE4 Temp Sensor	40	45	100	100	105	105
115						
FPC 5 PE5 Temp Sensor	40	45	100	100	105	105
115						
FPC 5 LCPU Temp Sensor	40	45	95	95	100	100
110						
FPC 6 Intake-A Temp Sensor	30	35	80	80	85	85
95						
FPC 6 Intake-B Temp Sensor	30	35	80	80	85	85
95						
FPC 6 Exhaust-A Temp Sensor	30	35	80	80	85	85
95						
FPC 6 Exhaust-B Temp Sensor	30	35	80	80	85	85
95						
FPC 6 Exhaust-C Temp Sensor	30	35	80	80	85	85
95						
FPC 6 PE0 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 PE1 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 PE2 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 PE3 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 PE4 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 PE5 Temp Sensor	40	45	100	100	105	105
115						
FPC 6 LCPU Temp Sensor	40	45	95	95	100	100
110						
SIB 0 Intake-A Temp Sensor	40	45	90	90	95	95
105						
SIB 0 Intake-B Temp Sensor	40	45	90	90	95	95
105						
SIB 0 Exhaust-A Temp Sensor	40	45	90	90	95	95
105						
SIB 0 Exhaust-B Temp Sensor	40	45	90	90	95	95
105						
SIB 0 PF0 Temp Sensor	50	55	100	100	105	105

```

115
SIB 0 PF1 Temp Sensor      50   55   100   100   105   105
115
SIB 1 Intake-A Temp Sensor  40   45   90    90    95    95
105
SIB 1 Intake-B Temp Sensor  40   45   90    90    95    95
105
SIB 1 Exhaust-A Temp Sensor 40   45   90    90    95    95
105
SIB 1 Exhaust-B Temp Sensor 40   45   90    90    95    95
105
SIB 1 PF0 Temp Sensor      50   55   100   100   105   105
115
SIB 1 PF1 Temp Sensor      50   55   100   100   105   105
115

```

show chassis temperature-thresholds (T4000 Core Routers)

```

user@host> show chassis temperature-thresholds

```

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)		Fire Shutdown (degrees C)
	Normal	High	Normal	Bad fan	Normal	Bad fan	Normal
Chassis default	48	54	65	55	75	65	100
Routing Engine 0	55	65	85	85	100	100	102
Routing Engine 1	55	65	85	85	100	100	102
FPC 0	63	68	75	70	90	83	95
FPC 3	63	68	75	70	90	83	95
FPC 5	56	62	75	63	83	76	95
FPC 6	63	68	75	70	90	83	95
SIB 0	64	70	76	72	87	84	95
SIB 1	64	70	76	72	87	84	95
SIB 2	64	70	76	72	87	84	95
SIB 3	64	70	76	72	87	84	95
SIB 4	64	70	76	72	87	84	95

show chassis temperature-thresholds (TX Matrix Plus Router)

```

user@host> show chassis temperature-thresholds
sfc0-re0:

```



```

-----
                Fan speed                Yellow alarm                Red alarm
                (degrees C)                (degrees C)                (degrees C)
Item
Chassis default                48    54                65    55                75    65
Routing Engine 0                55    65                85    85                100   100
Routing Engine 1                55    65                85    85                100   100
SIB F13 0                      64    70                76    72                90    84
SIB F13 3                      64    70                76    72                90    84
SIB F13 6                      64    70                76    72                90    84
SIB F13 8                      64    70                76    72                90    84
SIB F13 11                     64    70                76    72                90    84
SIB F13 12                     64    70                76    72                90    84
SIB F2S 16                     64    70                76    72                90    84
SIB F2S 17                     64    70                76    72                90    84
SIB F2S 18                     64    70                76    72                90    84
SIB F2S 19                     64    70                76    72                90    84
SIB F2S 20                     64    70                76    72                90    84
SIB F2S 21                     64    70                76    72                90    84
SIB F2S 22                     64    70                76    72                90    84
SIB F2S 23                     64    70                76    72                90    84
SIB F2S 24                     64    70                76    72                90    84
SIB F2S 25                     64    70                76    72                90    84
SIB F2S 26                     64    70                76    72                90    84
SIB F2S 27                     64    70                76    72                90    84
SIB F2S 28                     64    70                76    72                90    84
SIB F2S 29                     64    70                76    72                90    84
SIB F2S 30                     64    70                76    72                90    84
SIB F2S 31                     64    70                76    72                90    84
SIB F2S 32                     64    70                76    72                90    84
SIB F2S 33                     64    70                76    72                90    84
SIB F2S 34                     64    70                76    72                90    84
SIB F2S 35                     64    70                76    72                90    84

```

lcc0-re0:

```

-----
                Fan speed                Yellow alarm                Red alarm
                (degrees C)                (degrees C)                (degrees C)
Item
Chassis default                48    54                65    55                75    65
Routing Engine 0                55    65                85    85                100   100
Routing Engine 1                55    65                85    85                100   100
FPC 1                          56    62                75    63                83    76

```

```

FPC 3          56    62    75    63    83    76
FPC 4          56    62    75    63    83    76
FPC 6          56    62    75    63    83    76
FPC 7          56    62    75    63    83    76
SIB 0          48    54    65    60    80    75
SIB 1          48    54    65    60    80    75
SIB 2          48    54    65    60    80    75
SIB 3          48    54    65    60    80    75
SIB 4          48    54    65    60    80    75

```

```
lcc1-re0:
```

```

-----
                Fan speed          Yellow alarm          Red alarm
                (degrees C)         (degrees C)          (degrees C)
Item           Normal  High   Normal  Bad fan  Normal  Bad fan
Chassis default      48    54    65     55     75     65
Routing Engine 0     55    65    85     85    100    100
Routing Engine 1     55    65    85     85    100    100
FPC 1               56    62    75     63     83     76
FPC 3               56    62    75     63     83     76
FPC 4               56    62    75     63     83     76
FPC 6               56    62    75     63     83     76
...

```

show chassis temperature-thresholds lcc (TX Matrix Plus Router)

```
user@host> show chassis temperature-thresholds lcc 1
```

```
lcc1-re0:
```

```

-----
                Fan speed          Yellow alarm          Red alarm
                (degrees C)         (degrees C)          (degrees C)
Item           Normal  High   Normal  Bad fan  Normal  Bad fan
Chassis default      48    54    65     55     75     65
Routing Engine 0     55    65    85     85    100    100
Routing Engine 1     55    65    85     85    100    100
FPC 1               56    62    75     63     83     76
FPC 3               56    62    75     63     83     76
FPC 4               56    62    75     63     83     76
FPC 6               56    62    75     63     83     76
SIB 0               48    54    65     60     80     75
SIB 1               48    54    65     60     80     75

```

SIB 2	48	54	65	60	80	75
SIB 3	48	54	65	60	80	75
SIB 4	48	54	65	60	80	75

show chassis temperature-thresholds sfc (TX Matrix Plus Router)

```

user@host> show chassis temperature-thresholds sfc 0
sfc0-re0:
-----

```

Item	Fan speed (degrees C)		Yellow alarm (degrees C)		Red alarm (degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65
Routing Engine 0	55	65	85	85	100	100
Routing Engine 1	55	65	85	85	100	100
SIB F13 0	64	70	76	72	90	84
SIB F13 3	64	70	76	72	90	84
SIB F13 6	64	70	76	72	90	84
SIB F13 8	64	70	76	72	90	84
SIB F13 11	64	70	76	72	90	84
SIB F13 12	64	70	76	72	90	84
SIB F2S 16	64	70	76	72	90	84
SIB F2S 17	64	70	76	72	90	84
SIB F2S 18	64	70	76	72	90	84
SIB F2S 19	64	70	76	72	90	84
SIB F2S 20	64	70	76	72	90	84
SIB F2S 21	64	70	76	72	90	84
SIB F2S 22	64	70	76	72	90	84
SIB F2S 23	64	70	76	72	90	84
SIB F2S 24	64	70	76	72	90	84
SIB F2S 25	64	70	76	72	90	84
SIB F2S 26	64	70	76	72	90	84
SIB F2S 27	64	70	76	72	90	84
SIB F2S 28	64	70	76	72	90	84
SIB F2S 29	64	70	76	72	90	84
SIB F2S 30	64	70	76	72	90	84
SIB F2S 31	64	70	76	72	90	84
SIB F2S 32	64	70	76	72	90	84
SIB F2S 33	64	70	76	72	90	84

SIB F2S 34	64	70	76	72	90	84
SIB F2S 35	64	70	76	72	90	84

show chassis temperature-thresholds (TX Matrix Plus routers with 3D SIBs)

```

user@host> show chassis temperature-thresholds
sfc0-re0:
-----
Shutdown
          Fan speed      Yellow alarm      Red alarm      Fire
(degrees C)
          (degrees C)      (degrees C)      (degrees C)
Item      Normal  High  Normal  Bad fan  Normal  Bad fan
Normal
Chassis default      48   54   65   55   75   65
100
Routing Engine 0     70   75   90   87  102   97
115
Routing Engine 1     70   75   90   87  102   97
115
SIB F13 0 Board      60   65   78   75   85   80
95
SIB F13 0 XF Junction 70   75   82   74  105  100
107
SIB F13 4 Board      60   65   78   75   85   80
95
SIB F13 4 XF Junction 70   75   82   74  105  100
107
SIB F13 6 Board      60   65   78   75   85   80
95
SIB F13 6 XF Junction 70   75   82   74  105  100
107
SIB F2S 16 Board     60   65   78   75   85   80
95
SIB F2S 16 XF Junction 70   75   82   74  105  100
107
SIB F2S 17 Board     60   65   78   75   85   80
95
SIB F2S 17 XF Junction 70   75   82   74  105  100
107
SIB F2S 18 Board     60   65   78   75   85   80

```

95	SIB F2S 18 XF Junction	70	75	82	74	105	100
107							
95	SIB F2S 19 Board	60	65	78	75	85	80
107							
95	SIB F2S 19 XF Junction	70	75	82	74	105	100
107							
95	SIB F2S 24 Board	60	65	78	75	85	80
107							
95	SIB F2S 24 XF Junction	70	75	82	74	105	100
107							
95	SIB F2S 25 Board	60	65	78	75	85	80
107							
95	SIB F2S 25 XF Junction	70	75	82	74	105	100
107							
95	SIB F2S 26 Board	60	65	78	75	85	80
107							
95	SIB F2S 26 XF Junction	70	75	82	74	105	100
107							
95	SIB F2S 27 Board	60	65	78	75	85	80
107							
95	SIB F2S 27 XF Junction	70	75	82	74	105	100
107							

lcc0-re0:

Item	Fan speed		Yellow alarm		Red alarm		Fire
	(degrees C)		(degrees C)		(degrees C)		
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Shutdown							
Chassis default	48	54	65	55	75	65	
100							
Routing Engine 0	55	65	85	85	100	100	
102							
FPC 0	63	68	75	70	90	83	
95							
FPC 1	56	62	75	63	83	76	
95							
FPC 7	56	62	75	63	83	76	
95							
SIB 0	64	70	76	72	87	84	

95							
SIB 0 ASIC Junction	63	68	75	70	105	100	
107							
SIB 2	64	70	76	72	87	84	
95							
SIB 2 ASIC Junction	63	68	75	70	105	100	
107							
SIB 3	64	70	76	72	87	84	
95							
SIB 3 ASIC Junction	63	68	75	70	105	100	
107							

show chassis temperature-thresholds (QFX3500 Switch and QFX3600)

```
user@switch> show chassis temperature-thresholds
```

Item	Fan speed		Yellow alarm		Red alarm	
	(degrees C)		(degrees C)		(degrees C)	
	Normal	High	Normal	Bad fan	Normal	Bad fan
FPC Sensor TopLeft I	48	56	53	43	56	46
FPC Sensor TopRight I	46	54	51	41	54	44
FPC Sensor TopLeft E	58	65	62	52	65	55
FPC Sensor TopRight E	56	64	61	51	64	54
FPC Sensor TopMiddle I	58	64	61	51	64	54
FPC Sensor TopMiddle E	67	74	71	61	74	64
FPC Sensor Bottom I	59	67	64	54	67	57
FPC Sensor Bottom E	66	73	70	60	73	63
FPC Sensor Die Temp	69	75	72	62	75	65
FPC Sensor Mgmt Brd I	46	54	51	41	54	44
FPC Sensor Switch I	56	63	60	50	63	53

show chassis temperature-thresholds interconnect-device (QFabric System)

```
user@switch> show chassis temperature-thresholds interconnect-device
interconnect1
temperature-thresholds interconnect-device interconnect1
```

Item	Fan speed		Yellow alarm		Red alarm	
	Normal	High	Normal	Bad fan	Normal	Bad fan
Chassis default	48	54	65	55	75	65

show chassis temperature-thresholds (PTX5000 Packet Transport Router)

```

user@switch> show chassis temperature-thresholds
user@switch> show chassis temperature-thresholds

                Fan speed      Yellow alarm      Red alarm      Fire
Shutdown
                (degrees C)      (degrees C)      (degrees C)
(degrees C)
Item           Normal  High  Normal  Bad fan  Normal  Bad fan
Normal
Routing Engine 0
115
CB 0 Exhaust A
95           60    65    78     75     85     80
CB 0 Exhaust B
95           60    65    78     75     85     80
CB 1 Exhaust A
95           60    65    78     75     85     80
CB 1 Exhaust B
95           60    65    78     75     85     80
FPC 3 Exhaust A
115          80    90    95     85    105    95
FPC 3 Exhaust B
115          80    90    95     85    105    95
FPC 3 TL5
115          80    90    95     85    105    95
FPC 3 TQ5
115          80    90    95     85    105    95
FPC 3 TL6
115          80    90    95     85    105    95
FPC 3 TQ6
115          80    90    95     85    105    95
FPC 3 TL1
115          80    90    95     85    105    95
FPC 3 TQ1
115          80    90    95     85    105    95
FPC 3 TL2
115          80    90    95     85    105    95
FPC 3 TQ2
115          80    90    95     85    105    95
FPC 3 TL4
115          80    90    95     85    105    95

```

115							
FPC 3 TQ4	80	90	95	85	105	95	
115							
FPC 3 TL7	80	90	95	85	105	95	
115							
FPC 3 TQ7	80	90	95	85	105	95	
115							
FPC 3 TL0	80	90	95	85	105	95	
115							
FPC 3 TQ0	80	90	95	85	105	95	
115							
FPC 3 TL3	80	90	95	85	105	95	
115							
FPC 3 TQ3	80	90	95	85	105	95	
115							
SIB 0 Exhaust	60	65	78	75	85	80	
95							
SIB 0 Junction	75	80	90	85	105	95	
115							
SIB 1 Exhaust	60	65	78	75	85	80	
95							
SIB 1 Junction	75	80	90	85	105	95	
115							
SIB 2 Exhaust	60	65	78	75	85	80	
95							
SIB 2 Junction	75	80	90	85	105	95	
115							
SIB 3 Exhaust	60	65	78	75	85	80	
95							
SIB 3 Junction	75	80	90	85	105	95	
115							
SIB 4 Exhaust	60	65	78	75	85	80	
95							
SIB 4 Junction	75	80	90	85	105	95	
115							
SIB 5 Exhaust	60	65	78	75	85	80	
95							
SIB 5 Junction	75	80	90	85	105	95	
115							
SIB 6 Exhaust	60	65	78	75	85	80	
95							
SIB 6 Junction	75	80	90	85	105	95	
115							

SIB 7 Exhaust 95	60	65	78	75	85	80
SIB 7 Junction 115	75	80	90	85	105	95
SIB 8 Exhaust 95	60	65	78	75	85	80
SIB 8 Junction 115	75	80	90	85	105	95

show chassis temperature-thresholds (PTX1000 Packet Transport Router)

```

user@host> show chassis temperature-thresholds

                Fan speed          Yellow alarm      Red alarm        Fire
Shutdown
                (degrees C)        (degrees C)      (degrees C)
(degrees C)
Item            Normal  High  Normal  Bad fan  Normal  Bad fan
Normal
FPC 0 Intake Temp Sensor  30   65   65     65     70     70
75
FPC 0 Exhaust Temp Sensor 30   65   65     65     70     70
75
FPC 0 Mezz Temp Sensor 0  30   65   65     65     70     70
75
FPC 0 Mezz Temp Sensor 1  30   65   65     65     70     70
75
FPC 0 PE2 Temp Sensor    50   90   90     90    100    100
103
FPC 0 PE1 Temp Sensor    50   90   90     90    100    100
103
FPC 0 PF0 Temp Sensor    50   90   90     90    100    100
103
FPC 0 PE0 Temp Sensor    50   90   90     90    100    100
103
FPC 0 PE5 Temp Sensor    50   90   90     90    100    100
103
FPC 0 PE4 Temp Sensor    50   90   90     90    100    100
103

```

```

FPC 0 PF1 Temp Sensor      50   90   90   90   100   100
103
FPC 0 PE3 Temp Sensor      50   90   90   90   100   100
103
FPC 0 CPU Die Temp Sensor  50   90   90   90   100   100
103
FPC 0 OCXO Temp Sensor     50   90   90   90   100   100
103

```

show chassis temperature-thresholds (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis temperature-thresholds
  Fan speed      Yellow alarm      Red alarm      Fire Shutdown
                (degrees C)      (degrees C)      (degrees C)
(degrees C)
Item              Normal  High   Normal  Bad fan  Normal  Bad fan
Normal
Chassis default   48    54    65     55     75     65
100
Routing Engine 0  70    80    95     95    110    110
112
Routing Engine 1  70    80    95     95    110    110
112
FPC 0             55    60    75     65     90     80
95
FPC 1             55    60    75     65     90     80
95
FPC 2             55    60    75     65     90     80
95
FPC 4             55    60    75     65     90     80
95
FPC 5             55    60    75     65     90     80
95

```

show chassis temperature-thresholds (EX9251 Switches)

```

user@switch> show chassis temperature-thresholds

```

Shutdown (degrees C) Item	Fan speed		Yellow alarm		Red alarm		Fire
	(degrees C)		(degrees C)		(degrees C)		
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Normal							
Routing Engine			48	54	85	85	
100 100 102							
CB Top Right Inlet Sensor			35	40	63	63	
85 85 95							
CB Top Left Inlet Sensor			40	45	65	65	
85 85 95							
CB Top Right Exhaust Sensor			45	50	68	68	
85 85 95							
CB Top Left Exhaust Sensor			65	70	78	78	
85 85 95							
CB CPU Core-0 Temp			65	70	80	80	
90 90 100							
CB CPU Core-1 Temp			65	70	80	80	
90 90 100							
CB CPU Core-2 Temp			65	70	80	80	
90 90 100							
CB CPU Core-3 Temp			65	70	80	80	
90 90 100							
CB CPU Core-4 Temp			65	70	80	80	
90 90 100							
CB CPU Core-5 Temp			65	70	80	80	
90 90 100							
CB CPU Core-6 Temp			65	70	80	80	
90 90 100							
CB CPU Core-7 Temp			65	70	80	80	
90 90 100							
FPC EA0_HMC0 Logic die			85	90	95	95	
105 105 110							
FPC EA0_HMC0 DRAM botm			80	85	90	90	
105 105 110							
FPC EA0_HMC1 Logic die			85	90	95	95	
105 105 110							
FPC EA0_HMC1 DRAM botm			80	85	90	90	
105 105 110							
FPC EA0 Chip			92	97	103	103	
109 109 115							
FPC EA0-XR0 Chip			85	90	98	98	

```

103      103      110
FPC EA0-XR1 Chip                85   90   98   98
103      103      110

```

show chassis temperature-thresholds (EX9253 witches)

```

user@switch> show chassis temperature-thresholds

Shutdown

Fan speed      Yellow alarm    Red alarm      Fire
(degrees C)    (degrees C)    (degrees C)

Item           Normal  High  Normal  Bad fan  Normal  Bad fan
Normal
Routing Engine 0                48   54   85   85
100      100      102
CB 0 Exhaust Temp Sensor        60   65   75   75
85      85      95
CB 0 Inlet Temp Sensor          60   65   75   75
85      85      95
CB 0 CPU DIE Temp Sensor        83   90   98   98
105      105      110
CB 1 Exhaust Temp Sensor        60   65   75   75
85      85      95
CB 1 Inlet Temp Sensor          60   65   75   75
85      85      95
CB 1 CPU DIE Temp Sensor        83   90   98   98
105      105      110
FPC 0 Intake Temp Sensor        40   45   75   70
85      80      95
FPC 0 Exhaust-A Temp Sensor     55   60   85   80
90      90      100
FPC 0 Exhaust-B Temp Sensor     55   60   85   80
90      90      100
FPC 0 EA0 Chip                  87   92   97   97
105      105      110
FPC 0 EA0-XR0 Chip              88   93   98   98
120      120      125
FPC 0 EA0-XR1 Chip              88   93   98   98
120      120      125
FPC 0 EA1 Chip                  87   92   97   97

```

105	105	110				
FPC 0	EA1-XR0	Chip	88	93	98	98
120	120	125				
FPC 0	EA1-XR1	Chip	88	93	98	98
120	120	125				
FPC 0	EA2	Chip	87	92	97	97
105	105	110				
FPC 0	EA2-XR0	Chip	88	93	98	98
120	120	125				
FPC 0	EA2-XR1	Chip	88	93	98	98
120	120	125				
FPC 0	PF	Chip	89	94	104	104
120	120	120				
FPC 0	EA0_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 0	EA0_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA0_HMC1	Logic die	88	93	103	103
120	120	125				
FPC 0	EA0_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA0_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 0	EA0_HMC2	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA1_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 0	EA1_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA1_HMC1	Logic die	88	93	103	103
120	120	125				
FPC 0	EA1_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA1_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 0	EA1_HMC2	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA2_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 0	EA2_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA2_HMC1	Logic die	88	93	103	103
120	120	125				

FPC 0	EA2_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 0	EA2_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 0	EA2_HMC2	DRAM botm	83	88	98	98
120	120	125				
FPC 1	Intake Temp Sensor		40	45	75	70
85	80	95				
FPC 1	Exhaust-A Temp Sensor		55	60	85	80
90	90	100				
FPC 1	Exhaust-B Temp Sensor		55	60	85	80
90	90	100				
FPC 1	EA0 Chip		87	92	97	97
105	105	110				
FPC 1	EA0-XR0 Chip		88	93	98	98
120	120	125				
FPC 1	EA0-XR1 Chip		88	93	98	98
120	120	125				
FPC 1	EA1 Chip		87	92	97	97
105	105	110				
FPC 1	EA1-XR0 Chip		88	93	98	98
120	120	125				
FPC 1	EA1-XR1 Chip		88	93	98	98
120	120	125				
FPC 1	EA2 Chip		87	92	97	97
105	105	110				
FPC 1	EA2-XR0 Chip		88	93	98	98
120	120	125				
FPC 1	EA2-XR1 Chip		88	93	98	98
120	120	125				
FPC 1	PF Chip		89	94	104	104
120	120	120				
FPC 1	EA0_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 1	EA0_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA0_HMC1	Logic die	88	93	103	103
120	120	125				
FPC 1	EA0_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA0_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 1	EA0_HMC2	DRAM botm	83	88	98	98

120	120	125				
FPC 1	EA1_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 1	EA1_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA1_HMC1	Logic die	88	93	103	103
120	120	125				
FPC 1	EA1_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA1_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 1	EA1_HMC2	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA2_HMC0	Logic die	88	93	103	103
120	120	125				
FPC 1	EA2_HMC0	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA2_HMC1	Logic die	88	93	103	103
120	120	125				
FPC 1	EA2_HMC1	DRAM botm	83	88	98	98
120	120	125				
FPC 1	EA2_HMC2	Logic die	88	93	103	103
120	120	125				
FPC 1	EA2_HMC2	DRAM botm	83	88	98	98
120	120	125				

Release Information

Command introduced in Junos OS Release 8.0.

sfc command introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

satellite option introduced in Junos OS Release 14.2R3.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers and EX9253 Switches.

show chassis zones

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Syntax

```
show chassis zones  
<detail>
```

Syntax (MX Series Routers)

```
show chassis zones  
<detail>  
<all-members>  
<local>  
<member member-id>
```


Syntax (QFX Series)

```
show chassis zones
<detail>
<interconnect-device name>
```

Description

(QFabric systems only) Display the status of the two cooling system zones on the Interconnect device. Zone 1 consists of eight (0 – 7) front cards, which are cooled by two fan trays. Zone 2 consists of two control boards and eight rear cards, which are cooled by eight (0 – 7) fan trays.

(MX2010, MX2020, and MX2008 routers only) Display the status of the cooling system zones of the chassis. Zone 0 consists of the Control Board, ten (0–9) FPCs, and their respective PICs, Switch Fabric Boards, and Adapter Cards. Zone 1 consists of the Routing Engine, Control Board, and Switch Processor Mezzanine Boards.

(PTX5000 Packet Transport Router only) Display the status of the two cooling system zones of the chassis. Zone 0 consists of the Routing Engine, Control Board, SIB, PMB, and the CCG, and is cooled by the vertical fan tray. Zone 1 consists of the eight (0–7) FPCs, and their respective PICs, and is cooled by the horizontal fan trays. The vertical fan tray is located at the front of the chassis. One horizontal fan tray is located at the front top of the chassis, and another is located at the front bottom of the chassis.

Options

all-members	(MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in all members of the Virtual Chassis configuration.
detail	(MX2010, MX2020, and MX2008 routers only) (Optional) Display detailed status of the cooling system zones.
detail <i>device-name</i>	(QFabric systems only) (Optional) Display detailed status of the two cooling systems on the Interconnect device.
interconnect-device <i>name</i>	(QFabric systems only) (Optional) Display the status of the cooling zones on the Interconnect device.

- local** (MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in the local member of the Virtual Chassis.
- member *member-id*** (MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in the specified member of the Virtual Chassis. Replace *member-id* with the value 0 or 1.

Required Privilege Level

view

Output Fields

[Table 95 on page 1658](#) lists the output fields for the **show chassis zones** command. Output fields are listed in the approximate order in which they appear.

Table 95: show chassis zones Output Fields

Field Name	Field Description
Slot	FPC slot number of the device whose content is being displayed. On QFX3500 standalone switches, the number is always 0 .
Beacon State	Status of the beacon state: <ul style="list-style-type: none"> • Off—The beacon is OFF. • On—The beacon is ON.

show chassis zones command output fields for MX2020, MX2010, and MX2008 routers:

Driving FRU	Field replaceable unit (FRU).
Temperature	Temperature of the specified FRU in degrees Celsius and degrees Fahrenheit.

Table 95: show chassis zones Output Fields (Continued)

Field Name	Field Description
Condition	Condition of the specified FRU. Condition can be HIGH TEMP , WARM TEMP , OK , and Offline .
Num Fans Missing	Number of fans or fan trays missing.
Num Fans Failed	Number of fans or fan trays that have failed.
Fan Duty Cycle	Fan duty cycle value.

show chassis zones detail command output fields for MX2020, MX2010, and MX2008 routers:

Item	Chassis component: <ul style="list-style-type: none"> Information about the chassis, Routing Engines, Control Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).
Measurement	Fan tray speed utilization in percentage.
Status	Status of the specified item. Status can be OK , Absent , or Offline .

Sample Output

show chassis zones interconnect-device (QFabric System)

```

user@switch> show chassis zones interconnect-device
interconnect1
Slot          Beacon State
          FPC          0          OFF

```

show chassis zones (MX2010 Router)

```

user@host> show chassis zones
ZONE 0 Status
  Driving FRU           FPC 6
  Temperature           81 degrees C / 177 degrees F
  Condition              HIGH TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        30

ZONE 1 Status
  Driving FRU           SFB 0 Exhaust-Zone1
  Temperature           71 degrees C / 159 degrees F
  Condition              WARM TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        30

```

show chassis zones detail (MX2010 Router)

```

user@host > show chassis zones
ZONE 0 Status
Item                Status          Measurement
CB 0                WARM TEMP
CB 1                WARM TEMP
FPC 0               HIGH TEMP
FPC 1               HIGH TEMP
FPC 2               WARM TEMP
FPC 3               HIGH TEMP
FPC 4               HIGH TEMP
FPC 5               HIGH TEMP
FPC 6               HIGH TEMP
FPC 7               HIGH TEMP
FPC 8               HIGH TEMP
FPC 9               HIGH TEMP
ADC 0               WARM TEMP
ADC 1               WARM TEMP
ADC 2               WARM TEMP
ADC 3               WARM TEMP

```

```

ADC 4          WARM TEMP
ADC 5          WARM TEMP
ADC 6          WARM TEMP
ADC 7          WARM TEMP
ADC 8          WARM TEMP
ADC 9          WARM TEMP
SFB 0          WARM TEMP
SFB 1          WARM TEMP
SFB 2          WARM TEMP
SFB 3          Offline
SFB 4          HIGH TEMP
SFB 5          WARM TEMP
SFB 6          HIGH TEMP
SFB 7          WARM TEMP
Fan Tray 0    OK          Spinning at 98% fan tray speed
Fan Tray 1    OK          Spinning at 98% fan tray speed

ZONE 1 Status
Item          Status      Measurement
CB 0          WARM TEMP
CB 1          WARM TEMP
Routing Engine 0  OK
Routing Engine 1  OK
SFB 0          WARM TEMP
SFB 1          WARM TEMP
SFB 2          WARM TEMP
SFB 3          Offline
SFB 4          HIGH TEMP
SFB 5          WARM TEMP
SFB 6          HIGH TEMP
SFB 7          WARM TEMP
SPMB 0        OK
SPMB 1        OK
Fan Tray 2    OK          Spinning at 64% fan tray speed
Fan Tray 3    OK          Spinning at 64% fan tray speed

```

show chassis zones (MX2020 Router)

```

user@host> show chassis zones
ZONE 0 Status
    Driving FRU          FPC 0

```

```

Temperature          31 degrees C / 87 degrees F
Condition            OK
Num Fans Missing     0
Num Fans Failed      0
Fan Duty Cycle       30

```

ZONE 1 Status

```

Driving FRU          FPC 19
Temperature          32 degrees C / 89 degrees F
Condition            OK
Num Fans Missing     0
Num Fans Failed      0
Fan Duty Cycle       30

```

show chassis zones detail (MX2020 Router)

```

user@host> show chassis zones detail
ZONE 0 Status
Item                Status          Measurement
CB 0                OK
CB 1                OK
FPC 0               OK
FPC 1               OK
FPC 2               OK
FPC 3               OK
FPC 4               OK
FPC 5               OK
FPC 6               OK
FPC 7               OK
FPC 8               OK
FPC 9               OK
ADC 0               OK
ADC 1               OK
ADC 2               OK
ADC 3               OK
ADC 4               OK
ADC 5               OK
ADC 6               OK
ADC 7               OK
ADC 8               OK
ADC 9               OK

```

SFB 0	OK	
SFB 1	OK	
SFB 2	OK	
SFB 3	OK	
SFB 4	OK	
SFB 5	OK	
SFB 6	OK	
SFB 7	OK	
Fan Tray 0	OK	Spinning at 38% fan tray speed
Fan Tray 1	OK	Spinning at 37% fan tray speed

ZONE 1 Status

Item	Status	Measurement
CB 0	OK	
CB 1	OK	
Routing Engine 0	OK	
Routing Engine 1	OK	
FPC 10	OK	
FPC 11	OK	
FPC 12	OK	
FPC 13	OK	
FPC 14	OK	
FPC 15	OK	
FPC 16	OK	
FPC 17	OK	
FPC 18	OK	
FPC 19	OK	
ADC 10	OK	
ADC 11	OK	
ADC 12	OK	
ADC 13	OK	
ADC 14	OK	
ADC 15	OK	
ADC 16	OK	
ADC 17	OK	
ADC 18	OK	
ADC 19	OK	
SFB 0	OK	
SFB 1	OK	
SFB 2	OK	
SFB 3	OK	
SFB 4	OK	
SFB 5	OK	

SFB 6	OK	
SFB 7	OK	
SPMB 0	OK	
SPMB 1	OK	
Fan Tray 2	OK	Spinning at 38% fan tray speed
Fan Tray 3	OK	Spinning at 38% fan tray speed

show chassis zones (MX2008 Router)

```
user@host> show chassis zones

ZONE 0 Status
  Driving FRU           Routing Engine 0
  Temperature           67 degrees C / 152 degrees F
  Condition              WARM TEMP
  Num Fans Missing      0
  Num Fans Failed       0
  Fan Duty Cycle        27
```

show chassis zones detail (MX2008 Router)

```
user@host> show chassis zones detail

ZONE 0 Status
Item                Status      Measurement
CB 0                OK
CB 1                OK
Routing Engine 0    OK
Routing Engine 1    OK
FPC 0               OK
FPC 1               Absent
FPC 2               Absent
FPC 3               OK
FPC 4               Absent
FPC 5               OK
FPC 6               Absent
FPC 7               OK
FPC 8               Absent
FPC 9               OK
ADC 0               OK
ADC 1               Absent
```



```

ADC 2          Absent
ADC 3          OK
ADC 4          Absent
ADC 5          OK
ADC 6          Absent
ADC 7          OK
ADC 8          Absent
ADC 9          Absent
SFB 0          OK
SFB 1          OK
SFB 2          OK
SFB 3          OK
SFB 4          OK
SFB 5          OK
SFB 6          OK
SFB 7          OK
SPMB 0         OK
SPMB 1         OK
Fan Tray 0     OK           Spinning at 60% fan tray speed
Fan Tray 1     OK           Spinning at 58% fan tray speed

```

show chassis beacon interconnect-device (QFabric System)

```

user@switch> show chassis beacon interconnect-device
interconnect1
Chassis          OFF
CB 0             OFF
CB 1             OFF
FC 0 FPC 0       OFF
FC 1 FPC 1       OFF
RC 0 FPC 8       OFF
RC 1 FPC 9       OFF

```

show chassis beacon interconnect-device fpc (QFabric System)

```

user@switch> show chassis beacon interconnect-device
interconnect1 fpc 0
FPC 0           ON

```

show chassis beacon node-device (QFabric System)

```

user@switch> show chassis beacon node-device
node1
node1          ON

```

show chassis beacon node-device fpc (QFabric System)

```

user@switch> show chassis beacon node-device
node1 fpc 0
FPC 0          ON

```

show chassis zones (PTX5000 Packet Transport Router)

```

user@host> show chassis zones
ZONE 0 Status
  Driving FRU          Routing Engine 1
  Temperature          62 degrees C / 143 degrees F
  Condition             OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       0

ZONE 1 Status
  Driving FRU          FPC 0 TL0
  Temperature          71 degrees C / 159 degrees F
  Condition             OK
  Num Fans Missing     0
  Num Fans Failed      0
  Fan Duty Cycle       0

```

show chassis zones detail (PTX5000 Packet Transport Router)

```

user@host> show chassis zones detail
ZONE 0 Status
Item          Status      Measurement
CB 0          OK

```

```

CB 1                OK
Routing Engine 0    OK
Routing Engine 1    OK
SIB 0               OK
SIB 1               OK
SIB 2               OK
SIB 3               OK
SIB 4               OK
SIB 5               Absent
SIB 6               Absent
SIB 7               Absent
SIB 8               Absent
Fan Tray 0          OK                Spinning at 30% fan tray speed

ZONE 1 Status
Item                Status                Measurement
FPC 0               OK
FPC 1               OK
FPC 2               OK
FPC 3               OK
FPC 4               OK
FPC 5               Absent
FPC 6               Offline
FPC 7               OK
Fan Tray 1          OK                Spinning at 33% fan tray speed
Fan Tray 2          OK                Spinning at 36% fan tray speed

```

Release Information

Command introduced in Junos OS Release 11.3.

all-members, **local**, and **member *member-id*** options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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[show chassis temperature-thresholds | 1616](#)

show pfe cfeb

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Syntax

```
show pfe cfeb
```

Description

(M7i routers only) Display Packet Forwarding Engine Compact Forwarding Engine Board (CFEB) status and statistics information.

Options

This command has no options.

Required Privilege Level

admin

Output Fields

Table 96 on page 1669 lists the output fields for the **show pfe cfep** command. Output fields are listed in the approximate order in which they appear.

Table 96: show pfe cfep Output Fields

Field Name	Field Description
CFEB status	<p>Status of CFEB:</p> <ul style="list-style-type: none"> • Slot—CFEB slot number. • State—Status of the CFEB: <ul style="list-style-type: none"> • Online—CFEB is online and running. • Offline—CFEB is powered down. • Last State Change—Date and time the CFEB state last changed. • Uptime (total)—How long the Routing Engine has been connected to the CFEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. • Failures—Number of PFE Peer detach failures. • Pending—Number of messages waiting to be sent. • Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the <code>policer-drop-probability-low</code> statement.

Table 96: show pfe cfeb Output Fields (*Continued*)

Field Name	Field Description
Peer message type receive qualifiers	<ul style="list-style-type: none"> • Message Type—IPC Message Type. For example, interface and nexthop. • Receive Qualifier - Message receive qualifier for a peer (non-None only): <ul style="list-style-type: none"> • All • Only this slot • Selective slot
PFE listener statistics	<p>PFE listener statistics:</p> <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened.
PFE IPC statistics	<ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages.
PFE socket-buffer mbuf depth	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket.

Table 96: show pfe cfeb Output Fields (Continued)

Field Name	Field Description
PFE socket-buffer bytes pending transmit	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit.

Sample Output

show pfe cfeb

```

user@host> show pfe cfeb

CFEB status:
  Slot:                Present
  State:               Online
  Last State Change:   2005-03-10 09:01:25 PST
  Uptime (total):     2d 00:44
  Failures:            0
  Pending:             0
  ..Policer Drop Probability: HIGH

Peer message type receive qualifiers:
Message Type          Receive Qualifier
-----
                    TTP All
                    IFD All
                    IFL All
                    Nexthop All
                    COS All
                    Route All
                    SW Firewall All
                    HW Firewall All
                    PFE Statistics All
                    PIC Statistics All
                    Sampling All
                    Monitoring None

```

```

        ASP None
        L2TP None
    Collector None
PIC Configuration All
Queue Statistics All
        (null) None

```

PFE listener statistics:

```

Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

type	TX Messages	RX messages
-----	-----	-----
Header	0	0
Test	0	0
Interface	562	14582
Chassis	0	0
Boot	0	0
Next-hop	104	0
Jtree	0	0
Cprod	0	0
Route	103	1
Pfe	3770	2925
Dfw	10	0
Mastership	0	0
Sampling	0	0
GUCP	0	0
CoS	50	0
GCCP	0	0
GHCP	0	0
IRSD	0	0
Monitoring	0	0
RE	0	0
PIC	0	0
ASP cfg	0	0
ASP cmd	0	0

L2TP cfg	0	0
Collector	0	0
PIC state	0	0
Aggregator	0	0
Empty	0	0

PFE socket-buffer mbuf depth:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0

PFE socket-buffer bytes pending transmit:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0

8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0

Release Information

Command introduced before Junos OS Release 7.4.

show pfe feb

IN THIS SECTION

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- [Options | 1675](#)
- [Required Privilege Level | 1675](#)
- [Output Fields | 1675](#)
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- [Release Information | 1684](#)

Syntax

```
show pfe feb
```

Description

(M5 and M10 routers only) Display Packet Forwarding Engine Forwarding Engine Board (FEB) status and statistics information.

Options

This command has no options.

Required Privilege Level

admin

Output Fields

[Table 97 on page 1676](#) lists the output fields for the **show pfe feb** command. Output fields are listed in the approximate order in which they appear.

Table 97: show pfe feb Output Fields

Field Name	Field Description
FEB status	<p>Status of FEB:</p> <ul style="list-style-type: none"> • Slot—FEB slot number. • State—State of the FEB: <ul style="list-style-type: none"> • Offline—FEB is powered down. • Online—FEB is operational and running. • Check—FEB is in alarmed state where the Switch Interface Board (SIB) plane is partially operational for the following reasons: <ul style="list-style-type: none"> • FEB is not inserted properly. • Two or more links between the FEB and Packet Forwarding Engine fail. • Last State Change—Date and time the CFEB state last changed. • Uptime (total)—How long the Routing Engine has been connected to the FEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. • Failures—Number of PFE Peer detach failures. • Pending—Number of messages waiting to be sent. • Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the <code>policer-drop-probability-low</code> statement.
Peer message type receive qualifiers	<ul style="list-style-type: none"> • Message Type—IPC Message Type. For example, interface and nexthop. • Receive Qualifier - Message receive qualifier for a peer (non-None only): <ul style="list-style-type: none"> • All • Only this slot • Selective slot

Table 97: show pfe feb Output Fields (Continued)

Field Name	Field Description
PFE listener statistics	PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened.
PFE IPC statistics	<ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages.
PFE socket-buffer mbuf depth	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket.
PFE socket-buffer bytes pending transmit	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit.

Sample Output

show pfe feb

```

user@host> show pfe feb

FEB status:
  Slot:                Present
  State:               Online
  Last State Change:   2005-03-11 00:33:57 PST
  Uptime (total):      1d 09:14
  Failures:            0
  Pending:             0
  ..Policer Drop Probability: HIGH

Peer message type receive qualifiers:
Message Type          Receive Qualifier
-----
                    TTP All
                    IFD All
                    IFL All
                    Nexthop All
                    COS All
                    Route All
                    SW Firewall All
                    HW Firewall All
                    PFE Statistics All
                    PIC Statistics All
                    Sampling All
                    Monitoring None
                    ASP None
                    L2TP None
                    Collector None
                    PIC Configuration All
                    Queue Statistics All
                    (null) None

PFE listener statistics:
  Open:                1
  Close:               0
  Sleep:               0

```

```

Wakeup:          0
Resync Request:  0
Resync Done:     1
Resync Fail:     0
Resync Time:     0

```

PFE IPC statistics:

type	TX Messages	RX messages
-----	-----	-----
Header	0	0
Test	0	0
Interface	639	11889
Chassis	0	0
Boot	0	0
Next-hop	104	0
Jtree	0	0
Cprod	0	0
Route	940	0
Pfe	3008	1995
Dfw	9	0
Mastership	0	0
Sampling	0	0
GUCP	0	0
CoS	35	0
GCCP	0	0
GHCP	0	0
IRSD	0	0
Monitoring	0	0
RE	0	0
PIC	0	0
ASP cfg	0	0
ASP cmd	0	0
L2TP cfg	0	0
Collector	0	0
PIC state	0	0
Aggregator	0	0
Empty	0	0

PFE socket-buffer mbuf depth:

bucket	count
-----	-----
0	0

1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0

PFE socket-buffer bytes pending transmit:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0


```

18          0
19          0
20          0
21          0

```

show pfe feb

```
user@host> show pfe feb
```

FEB status:

```

Slot:                Present
State:               Online
Last State Change:   2005-03-11 00:33:57 PST
Uptime (total):      1d 09:14
Failures:            0
Pending:             0

```

Peer message type receive qualifiers:

Message Type	Receive Qualifier
TTP	All
IFD	All
IFL	All
Nexthop	All
COS	All
Route	All
SW Firewall	All
HW Firewall	All
PFE Statistics	All
PIC Statistics	All
Sampling	All
Monitoring	None
ASP	None
L2TP	None
Collector	None
PIC Configuration	All
Queue Statistics	All
(null)	None

PFE listener statistics:

```
Open: 1
```

```

Close:          0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

type	TX Messages	RX messages
-----	-----	-----
Header	0	0
Test	0	0
Interface	639	11889
Chassis	0	0
Boot	0	0
Next-hop	104	0
Jtree	0	0
Cprod	0	0
Route	940	0
Pfe	3008	1995
Dfw	9	0
Mastership	0	0
Sampling	0	0
GUCP	0	0
CoS	35	0
GCCP	0	0
GHCP	0	0
IRSD	0	0
Monitoring	0	0
RE	0	0
PIC	0	0
ASP cfg	0	0
ASP cmd	0	0
L2TP cfg	0	0
Collector	0	0
PIC state	0	0
Aggregator	0	0
Empty	0	0

PFE socket-buffer mbuf depth:

bucket	count
--------	-------

-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0

PFE socket-buffer bytes pending transmit:

bucket	count
-----	-----
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0

16	0
17	0
18	0
19	0
20	0
21	0

Release Information

Command introduced before Junos OS Release 7.4.

show pfe fpc

IN THIS SECTION

- [Syntax | 1684](#)
- [Syntax \(TX Matrix and TX Matrix Plus Router\) | 1685](#)
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Syntax

```
show pfe fpc slot  
<detail | extensive>
```

Syntax (TX Matrix and TX Matrix Plus Router)

```
show pfe fpc
<lcc number>
```

Syntax (MX Series Router)

```
show pfe fpc slot
<detail | extensive>
<all-members>
<local>
<member member-id>
```

Description

Display Packet Forwarding Engine statistics for the specified Flexible PIC Concentrator (FPC).

Options

slot	FPC slot number. Replace <i>slot</i> with a value from 0 through 2 .
detail extensive	(Optional) Display the specified level of detail.
all-members	(MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in all members of the Virtual Chassis configuration.
lcc number	(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, the slot number of the T640 router (or line-card chassis) that houses the FPC. On a TX Matrix Plus router, lcc number represents the slot number of the router (or line-card chassis) that houses the FPC.

Replace *number* with the following values depending on the LCC configuration:

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.
- 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.
- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

local (MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in the local Virtual Chassis member.

member
member-id (MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

Required Privilege Level

admin

Output Fields

[Table 98 on page 1687](#) lists the output fields for the **show pfe fpc** command. Output fields are listed in the approximate order in which they appear.

Table 98: show pfe fpc Output Fields

Field Name	Field Description
FPC 1 status	<p>Status of FPC 1:</p> <ul style="list-style-type: none"> • Slot—FPC slot number - 1. • State—State of FPC1: <ul style="list-style-type: none"> • Dead—Held in reset because of errors. • Diag—Slot is being ignored while the FPC is running diagnostics. • Dormant—Held in reset. • Empty—No FPC is present. • Online—FPC is online and running. • Present—FPC is detected by the chassis daemon but either is not supported by the current version of Junos OS or is inserted in the wrong slot. The output also states either Hardware Not Supported or Hardware Not in Right Slot. The FPC is coming up but not yet online. • Probed—Probe is complete; awaiting restart of the Packet Forwarding Engine (PFE). • Probe-wait—Waiting to be probed. • Last State Change—Date and time the FPC state last changed. • Uptime—How long the Routing Engine has been connected to the FEB and, therefore, how long the Flexible PIC Concentrator (FPC) has been up and running. • Failures—Number of PFE Peer detach failures. • Pending—Number of messages waiting to be sent. • Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the <code>memory-enhanced</code> statement.

Table 98: show pfe fpc Output Fields (Continued)

Field Name	Field Description
PFE listener statistics	PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened.
PFE IPC statistics	<ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages.
GFPC 0 status	Status of GFPC 0: <ul style="list-style-type: none"> • Slot—GFPC slot number - 0. • State—State of GFPC. • Last State Change—Date and time the GFPC state last changed.
Peer message type receive qualifiers [non-NONE(s) only]	<ul style="list-style-type: none"> • IPC Msg Type—IPC Message Type. For example, interface, nexthop. • Receive Qualifier—Message receive qualifier for a peer (non-NONE(s) only):
IFSTATE BITS SET	IFSTATE clients that have registered to receive the message types this slot is listening to.

Table 98: show pfe fpc Output Fields (Continued)

Field Name	Field Description
PFE listener statistics	PFE listener statistics: <ul style="list-style-type: none"> • Open—Number of times a peer was opened. • Close—Number of times a peer was closed. • Sleep—Number of times a thread slept. • Wakeup—Number of times wakeup was issued. • Resync Request—Number of resync requests. • Resync Done—Number of successful resyncs. • Resync Fail—Number of failed resyncs. • Resync Time—Time the resync last happened.
PFE IPC statistics	<ul style="list-style-type: none"> • type—IPC Message Type. • TX Messages—Number of Tx messages. • RX Messages—Number of Rx messages.
PFE socket-buffer mbuf depth	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of messages in the bucket.
PFE socket-buffer bytes pending transmit	<ul style="list-style-type: none"> • bucket—Bucket number. • count—Number of bytes pending transmit.

Table 98: show pfe fpc Output Fields (Continued)

Field Name	Field Description
GFPC 2 status	<p>Status of GFPC 2:</p> <ul style="list-style-type: none"> • Slot—GFPC slot number - 2. • State—State of GFPC. • Last State Change—Date and time the GFPC state last changed. • Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the <code>memory-enhanced</code> statement. • Filter Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for firewall filters. Can be configured with the <code>memory-enhanced</code> statement.
XDPC status	<p>XDPC status:</p> <ul style="list-style-type: none"> • Slot—Present or empty. • State—Online or offline. • Last State Change—Date and time the DPC state last changed. • Uptime (total)—Length of time the DPC has been online. • Failures—Number of DPC failures. • Pending—Number of messages waiting to be sent. • Route Memory Enhanced—Reallocation of the jtree memory on the Packet Forwarding Engine to allocate more memory for routing tables. Can be configured with the <code>memory-enhanced</code> statement. • Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the <code>policer-drop-probability-low</code> statement.

Sample Output

show pfe fpc

```

user@host> show pfe fpc 1

FPC 1 status:
  Slot:                Present
  State:               Online
  Last State Change:   2000-01-10 18:12:27 UTC
  Uptime:              1d 03:31
  Failures:            0
  Pending:             0
  Route Memory Enhanced: 0
PFE listener statistics:
  Open:                1
  Close:               0
  Sleep:               0
  Wakeup:              0
  Resync Request:     0
  Resync Done:         0
  Resync Fail:         0
  Resync Time:         0

PFE IPC statistics:
type          TX Messages  RX messages
-----
  Header          0           0
  Test            0           0
  Interface       2251        2219
  Chassis         0           0
  Boot            0           0
  Next-hop        0           0
  Jtree           0           0
  Cprod           0           0
  Route           0           0
  Pfe             0           1
  Dfw

```

show pfe fpc lcc

```

user@host> show pfe fpc 0 lcc 0
lcc0-re0:
-----
GFPC 0 status:
  Slot:                Present
  State:               Online
  Last State Change:   2009-06-17 21:00:35 PDT
  Uptime (total):     02:31:45
  Failures:           0
  Pending:            0

Peer message type receive qualifiers [ non-NONE(s) only ]:
IPC Msg Type (subtype)      Receive Qualifier
-----
Interface      (0)          All
Interface      (1)          All
Interface      (2)          All
Interface      (3)          All
Interface      (4)          All
Interface      (5)          All
Interface      (6)          All
Interface      (7)          All
Interface      (8)          All
Interface      (9)          All
Interface      (10)         All
Interface      (11)         All
Interface      (12)         All
Interface      (13)         All
Interface      (14)         All
Interface      (15)         All
Interface      (16)         All
Interface      (17)         All
Interface      (18)         All
Interface      (19)         All
Interface      (20)         Slot only
Interface      (21)         All
...
Next-hop      (0)          All
Next-hop      (1)          All
Next-hop      (2)          All

```

```

Next-hop      (3)      All
Next-hop      (4)      All
Next-hop      (5)      Always TRUE
...
Route         (0)      All
Route         (1)      All
Route         (2)      All
Route         (3)      All
Route         (4)      All
Route         (5)      All
Route         (6)      All
Route         (7)      All
Route         (8)      All

...
Pfe           (1)      Always TRUE
Pfe           (3)      Always TRUE
Pfe           (5)      Always TRUE
...
Dfw           (0)      All
Dfw           (1)      All
Dfw           (2)      All
Dfw           (3)      All

...
Sampling      (1)      All
Sampling      (2)      All
Sampling      (3)      All
CoS           (0)      All
CoS           (1)      All
CoS           (2)      All
CoS           (3)      All

...
PIC           (1)      Always TRUE
PIC           (3)      Always TRUE
...
GenCfg        (8)      All
GenCfg        (15)     All
...
IFSTATE BITS SET:
-----
          IFD
          IFL

```

```

IFF
IFA
RTTABLE
ROUTE
NEXTHOP
FIREWALL
NAME TABLE
COS_FABRIC
COS_POLICY
COS_RED
COS_REWRT_TABLE
COS_REWRT_IFLMAP
COS_CLASS_TABLE
COS_CLASS_IFLMAP
COS_POLICER
COS_SHAPER
SAMPLE
RTCOS
SYSCONF
IFVP
SADB
IFVC
COS_FC_QUEUE
COS_FRAGMAP_TABLE
COS_FRAGMAP_IFLMAP
Generic config
Mesh group

```

PFE listener statistics:

```

Open:                1
Close:               0
Sleep:               0
Wakeup:              0
Resync Request:      0
Resync Done:         1
Resync Fail:         0
Resync Time:         0

```

PFE IPC statistics:

Type (subtype)	TX Messages	RX messages
-----	-----	-----
Interface (3)	165	0
Interface (4)	81	0

```

Interface ( 5)                0          190
Interface ( 8)                145         0
Interface ( 9)                425         0
Interface (10)                24          0
...
PFE socket-buffer mbuf depth:
bucket          count
-----
0              0
1              0
2              0

PFE socket-buffer bytes pending transmit:
bucket          count
-----
0              0
1              0
...

```

show pfe fpc 0 detail

```

user@host> show pfe fpc 0 detail

GFPC 2 status:
  Slot:                Present
  State:               Online
  Last State Change:   2010-11-16 03:55:25 PST
  Uptime (total):     00:11:06
  Failures:           1
  Pending:             0
  Route Memory Enhanced: 0
  Filter Memory Enhanced: 1

Peer message type receive qualifiers [ non-NONE(s) only ]:
IPC Msg Type (subtype)    Receive Qualifier
-----
Interface (0)            All
Interface (1)            All
Interface (2)            All
Interface (3)            All
Interface (4)            All

```

```

Interface      (5)      All
Interface      (6)      All
Interface      (7)      All
Interface      (8)      All
Interface      (9)      All
Interface      (10)     All
Interface      (11)     All
...
Next-hop       (0)      All
Next-hop       (1)      All
Next-hop       (2)      All
Next-hop       (3)      All
Next-hop       (4)      All
Next-hop       (5)      All
...
Route          (0)      All
Route          (1)      All
Route          (2)      All
Route          (3)      All
Route          (4)      All
Route          (5)      All
...
Pfe            (1)      Always TRUE
Pfe            (3)      Always TRUE
Pfe            (5)      Always TRUE
...
Dfw            (0)      All
Dfw            (1)      All
Dfw            (2)      All
Dfw            (3)      All
...
Sampling       (1)      All
Sampling       (2)      All
Sampling       (3)      All
CoS            (0)      All
CoS            (1)      All
CoS            (2)      All
CoS            (3)      All
CoS            (4)      All
...
PIC            (1)      Always TRUE
PIC            (3)      Always TRUE
...

```



```

GenCfg          (8)          All
GenCfg          (15)         All

```

```
...
```

```
IFSTATE BITS SET:
```

```
-----
```

```

IFD
IFL
IFF
IFA
RTTABLE
ROUTE
NEXTHOP
FIREWALL
NAME TABLE
COS_FABRIC
COS_POLICY
COS_RED
COS_REWRT_TABLE
COS_REWRT_IFLMAP
COS_CLASS_TABLE
COS_CLASS_IFLMAP
COS_POLICER
COS_SHAPER
SAMPLE
RTCOS
SYSCONF
IFVP
SADB
IFVC
COS_FC_QUEUE
COS_FRAGMAP_TABLE
COS_FRAGMAP_IFLMAP
Generic config
Mesh group

```

```
PFE listener statistics:
```

```

Open:           2
Close:          1
Sleep:          0
Wakeup:         0
Resync Request: 0
Resync Done:    2
Resync Fail:    0

```

```
Resync Time:          0
```

```
PFE IPC statistics:
```

Type (subtype)		TX Messages	RX messages
-----		-----	-----
Interface (3)		104	0
Interface (5)		0	8
Interface (8)		85	0
Interface (9)		67	0
Interface (10)		4	0
...			
Next-hop (1)		364	0
Next-hop (3)		12	0
Next-hop (11)		33	0
Next-hop (23)		39	0
Route (1)		331	0
Route (2)		34	0
Route (3)		1	0
Route (6)		1	0
Route (9)		48	0
Pfe (1)		0	1
Pfe (3)		1	0
Pfe (4)		0	1
Pfe (5)		1	0
...			
Dfw (1)		20	0
Dfw (18)		1	0
GenCfg (8)		45	0
GenCfg (15)		1	0

show pfe fpc 0 (MX 960 with DPC)

```
user@host> show pfe fpc 0
```

```
XDPC 0 status:
```

```
Slot:          Present
State:         Online
Last State Change: 2012-08-07 13:13:01 PDT
Uptime (total): 21:01:41
Failures:     0
```

Pending: 0
 Route Memory Enhanced: 0
 Policer Drop Probability: HIGH

Peer message type receive qualifiers [non-NONE(s) only]:

IPC Msg Type (subtype)	Receive Qualifier
-----	-----
Interface (0)	All
Interface (1)	All
Interface (2)	All
Interface (3)	All
Interface (4)	All
Interface (5)	All
Interface (6)	All
Interface (7)	All
Interface (8)	All
Interface (9)	All
Interface (10)	All
Interface (11)	All
Interface (12)	All
Interface (13)	All
Interface (14)	All
Interface (15)	All
Interface (16)	All
Interface (17)	All
Interface (18)	All
Interface (19)	All
Interface (20)	Slot only
Interface (21)	All
Interface (22)	Slot only
Interface (23)	All
Interface (24)	All
Interface (25)	All
Interface (26)	All
Interface (27)	All
Interface (28)	All
Interface (29)	All
Interface (30)	All
Interface (31)	All
Interface (32)	All
Interface (33)	All
Interface (34)	All
Interface (35)	All

Interface	(36)	All
Interface	(37)	All
Interface	(38)	All
Interface	(39)	All
Interface	(40)	All
Interface	(41)	All
Interface	(42)	Slot only
Interface	(43)	Slot only
Interface	(44)	Slot only
Interface	(45)	All
Interface	(46)	All
Interface	(47)	All
Interface	(48)	Slot only
Interface	(49)	Slot only
Interface	(50)	Slot only
Interface	(51)	Slot only
Interface	(52)	All
Interface	(53)	All
Interface	(54)	All
Interface	(55)	All
Interface	(56)	Slot only
Interface	(57)	All
Interface	(58)	All
Interface	(59)	All
Interface	(60)	All
Interface	(61)	All
Interface	(62)	All
Interface	(63)	All
Interface	(64)	Slot only
Interface	(65)	All
Interface	(66)	All
Interface	(67)	All
Interface	(68)	All
Interface	(69)	All
Interface	(70)	All
Interface	(71)	All
Interface	(72)	All
Interface	(73)	All
Interface	(74)	All
Interface	(75)	All
Interface	(76)	Slot only
Interface	(77)	Slot only
Interface	(78)	Slot only

Interface	(79)	All
Interface	(80)	All
Interface	(81)	All
Interface	(82)	All
Interface	(83)	Slot only
Interface	(84)	All
Interface	(85)	All
Interface	(86)	All
Interface	(87)	All
Interface	(88)	All
Interface	(89)	All
Interface	(90)	All
Interface	(91)	All
Interface	(92)	All
Interface	(93)	Slot only
Interface	(94)	Slot only
Interface	(95)	Slot only
Interface	(96)	All
Interface	(97)	All
Interface	(98)	All
Interface	(99)	All
Interface	(100)	All
Interface	(101)	All
Interface	(102)	All
Interface	(103)	All
Interface	(104)	All
Interface	(105)	Slot only
Interface	(106)	Slot only
Interface	(107)	All
Interface	(108)	All
Interface	(109)	All
Interface	(110)	All
Interface	(111)	All
Interface	(112)	All
Interface	(113)	All
Interface	(114)	All
Interface	(115)	All
Interface	(116)	All
Interface	(117)	All
Interface	(118)	All
Interface	(119)	All
Interface	(120)	All
Interface	(121)	Slot only

Interface	(122)	All
Interface	(123)	All
Interface	(124)	All
Interface	(125)	Slot only
Interface	(126)	Slot only
Interface	(127)	Slot only
Interface	(128)	All
Interface	(129)	All
Interface	(130)	All
Interface	(131)	All
Interface	(132)	All
Interface	(133)	All
Interface	(134)	All
Interface	(135)	All
Interface	(138)	All
Interface	(139)	All
Interface	(142)	All
Interface	(145)	All
Interface	(146)	All
Interface	(147)	All
Interface	(148)	All
Interface	(149)	All
Interface	(150)	Slot only
Interface	(151)	All
Interface	(152)	Slot only
Interface	(153)	All
Interface	(154)	All
Interface	(155)	All
Interface	(156)	All
Interface	(157)	All
Interface	(158)	All
Interface	(159)	Slot only
Interface	(160)	All
Interface	(161)	All
Interface	(163)	All
Interface	(164)	Slot only
Interface	(165)	Slot only
Interface	(167)	All
Interface	(168)	All
Interface	(169)	All
Interface	(170)	Slot only
Interface	(171)	Slot only
Interface	(172)	All

Interface	(173)	All
Interface	(174)	All
Interface	(175)	All
Interface	(176)	All
Interface	(177)	All
Interface	(178)	All
Interface	(179)	All
Interface	(180)	All
Interface	(181)	All
Interface	(182)	All
Interface	(183)	All
Interface	(184)	All
Interface	(185)	All
Interface	(186)	All
Interface	(187)	All
Interface	(188)	All
Interface	(189)	All
Interface	(190)	All
Interface	(191)	All
Interface	(192)	All
Interface	(193)	All
Interface	(194)	All
Interface	(195)	All
Interface	(196)	All
Interface	(197)	All
Interface	(198)	All
Interface	(199)	All
Interface	(200)	All
Interface	(201)	All
Interface	(202)	All
Interface	(204)	All
Interface	(205)	All
Interface	(206)	All
Interface	(207)	All
Interface	(208)	All
Interface	(209)	All
Interface	(210)	All
Interface	(211)	All
Interface	(212)	All
Interface	(213)	All
Interface	(214)	All
Interface	(215)	All
Interface	(216)	All

Interface	(217)	All
Interface	(218)	All
Interface	(219)	All
Interface	(220)	All
Interface	(221)	All
Interface	(222)	All
Interface	(223)	All
Interface	(224)	All
Interface	(225)	All
Interface	(226)	All
Interface	(227)	All
Interface	(229)	All
Interface	(230)	All
Interface	(231)	All
Interface	(232)	All
Interface	(233)	All
Interface	(234)	All
Interface	(235)	All
Interface	(236)	All
Interface	(237)	All
Interface	(238)	All
Interface	(239)	All
Next-hop	(0)	All
Next-hop	(1)	All
Next-hop	(2)	All
Next-hop	(3)	All
Next-hop	(4)	All
Next-hop	(5)	All
Next-hop	(6)	All
Next-hop	(7)	All
Next-hop	(8)	All
Next-hop	(9)	All
Next-hop	(10)	All
Next-hop	(11)	All
Next-hop	(12)	All
Next-hop	(13)	All
Next-hop	(14)	All
Next-hop	(15)	All
Next-hop	(16)	All
Next-hop	(17)	All
Next-hop	(18)	All
Next-hop	(19)	All
Next-hop	(20)	All

Next-hop	(21)	All
Next-hop	(22)	All
Next-hop	(23)	All
Next-hop	(24)	All
Next-hop	(25)	All
Next-hop	(26)	All
Next-hop	(27)	All
Next-hop	(28)	All
Next-hop	(29)	All
Next-hop	(30)	All
Next-hop	(31)	All
Next-hop	(32)	All
Next-hop	(33)	All
Next-hop	(34)	All
Next-hop	(35)	All
Next-hop	(36)	All
Next-hop	(37)	All
Next-hop	(39)	Always TRUE
Next-hop	(40)	All
Next-hop	(41)	All
Next-hop	(42)	All
Next-hop	(43)	All
Route	(0)	All
Route	(1)	All
Route	(2)	All
Route	(3)	All
Route	(4)	All
Route	(5)	All
Route	(6)	All
Route	(7)	All
Route	(8)	All
Route	(9)	All
Route	(10)	All
Route	(11)	All
Route	(12)	All
Route	(13)	All
Route	(14)	All
Route	(15)	All
Route	(16)	All
Route	(17)	All
Route	(18)	All
Route	(19)	All
Route	(20)	All

Route	(22)	All
Route	(23)	All
Route	(24)	All
Route	(25)	All
Route	(26)	All
Route	(27)	All
Route	(28)	All
Route	(29)	Always TRUE
Route	(30)	Always TRUE
Pfe	(1)	Always TRUE
Pfe	(3)	Always TRUE
Pfe	(5)	Always TRUE
Pfe	(7)	Always TRUE
Pfe	(10)	Always TRUE
Pfe	(11)	Always TRUE
Pfe	(12)	Always TRUE
Pfe	(13)	Always TRUE
Pfe	(14)	Always TRUE
Pfe	(15)	Always TRUE
Pfe	(35)	Always TRUE
Dfw	(0)	All
Dfw	(1)	All
Dfw	(2)	All
Dfw	(3)	All
Dfw	(4)	All
Dfw	(5)	All
Dfw	(6)	All
Dfw	(7)	All
Dfw	(8)	All
Dfw	(9)	All
Dfw	(10)	All
Dfw	(11)	All
Dfw	(12)	All
Dfw	(13)	All
Dfw	(14)	All
Dfw	(18)	All
Dfw	(19)	All
Sampling	(1)	All
Sampling	(2)	All
Sampling	(3)	All
CoS	(0)	All
CoS	(1)	All
CoS	(2)	All

CoS	(3)	All
CoS	(4)	All
CoS	(5)	All
CoS	(6)	All
CoS	(7)	All
CoS	(8)	All
CoS	(9)	All
CoS	(10)	All
CoS	(11)	All
CoS	(12)	All
CoS	(13)	All
CoS	(14)	All
CoS	(15)	All
CoS	(16)	All
CoS	(17)	All
CoS	(18)	All
CoS	(19)	All
CoS	(20)	All
CoS	(21)	All
CoS	(22)	All
CoS	(23)	All
CoS	(27)	All
CoS	(29)	All
CoS	(31)	All
CoS	(32)	All
PIC	(1)	Always TRUE
PIC	(3)	Always TRUE
PIC	(5)	Always TRUE
PIC	(7)	Always TRUE
PIC	(10)	Always TRUE
PIC	(11)	Always TRUE
PIC	(12)	Always TRUE
PIC	(13)	Always TRUE
PIC	(14)	Always TRUE
PIC	(15)	Always TRUE
GenCfg	(2)	All
GenCfg	(4)	All
GenCfg	(5)	All
GenCfg	(6)	All
GenCfg	(8)	All
GenCfg	(9)	All
GenCfg	(10)	All
GenCfg	(15)	All

GenCfg	(17)	All
GenCfg	(24)	All
GenCfg	(27)	All
GenCfg	(29)	All
GenCfg	(31)	All
STP	(1)	All
BD	(0)	All
BD	(1)	All
BD	(2)	All

IFSTATE BITS SET:

IFD
 IFL
 IFF
 IFA
 RTTABLE
 ROUTE
 NEXTHOP
 FIREWALL
 NAME TABLE
 COS_FABRIC
 COS_POLICY
 COS_RED
 COS_REWRT_TABLE
 COS_REWRT_IFLMAP
 COS_CLASS_TABLE
 COS_CLASS_IFLMAP
 COS_POLICER
 COS_SHAPER
 SAMPLE
 RTCOS
 SYSCONF
 IFVP
 SADB
 IFVC
 COS_FC_QUEUE
 COS_FRAGMAP_TABLE
 COS_FRAGMAP_IFLMAP
 Generic config
 STP
 Mesh group
 Bridge Domain
 IFBD

PFE listener statistics:

```

Open:          1
Close:         0
Sleep:         0
Wakeup:        0
Resync Request: 0
Resync Done:   1
Resync Fail:   0
Resync Time:   0

```

PFE IPC statistics:

Type (subtype)	TX Messages	RX messages
-----	-----	-----
Interface (3)	131	0
Interface (5)	0	379
Interface (9)	48	0
Interface (10)	102	0
Interface (11)	1	0
Interface (12)	204	0
Interface (13)	177	0
Interface (15)	90	0
Interface (23)	49	0
Interface (24)	8	0
Interface (29)	27	0
Interface (30)	11	0
Interface (33)	101	0
Interface (34)	101	0
Interface (35)	84	0
Interface (36)	18	0
Interface (37)	38	0
Interface (39)	0	1
Interface (53)	0	379
Interface (54)	620	0
Interface (55)	2064	0
Interface (56)	0	379
Interface (57)	57	0
Interface (58)	1	0
Interface (90)	0	21
Interface (91)	0	13
Interface (92)	0	12
Interface (117)	0	1516
Interface (138)	0	758

Interface	(151)	244	0
Interface	(163)	124	0
Interface	(201)	101	0
Interface	(226)	91	0
Interface	(229)	124	0
Interface	(238)	205	0
Next-hop	(1)	159	0
Next-hop	(2)	5	0
Next-hop	(3)	16	0
Next-hop	(11)	51	0
Next-hop	(23)	12	0
Next-hop	(40)	3	0
Route	(1)	164	0
Route	(2)	70	0
Route	(3)	11	0
Route	(6)	1	0
Route	(9)	14	0
Route	(12)	2	0
Route	(13)	1	0
Route	(22)	4	0
Pfe	(1)	0	1
Pfe	(3)	157	0
Pfe	(4)	0	157
Pfe	(5)	158	0
Pfe	(6)	0	158
Pfe	(7)	158	0
Pfe	(8)	0	158
Pfe	(9)	0	1
Pfe	(10)	1	0
Pfe	(11)	1	0
Pfe	(12)	2772	0
Pfe	(13)	108	108
Pfe	(15)	158	0
Pfe	(16)	0	158
Pfe	(47)	0	1
Dfw	(1)	23	0
Dfw	(2)	1	0
Dfw	(6)	0	6
Dfw	(18)	175	0
GenCfg	(5)	1	0
GenCfg	(8)	157	0
GenCfg	(9)	21	0
GenCfg	(15)	57	0

STP	(1)	112	0
STP	(2)	0	98
STP	(5)	0	97

Release Information

Command introduced before Junos OS Release 7.4.

show system errors active

IN THIS SECTION

- [Syntax | 1711](#)
- [Description | 1712](#)
- [Options | 1712](#)
- [Required Privilege Level | 1712](#)
- [Output Fields | 1713](#)
- [Sample Output | 1714](#)
- [Release Information | 1718](#)

Syntax

```
show system errors active
<detail [fru slot-number [scope error-scope] [category error-category]]>
<fru slot-number>
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display summary or detailed information about the active errors based on FRU, error scope, or error category.

NOTE: In PTX Series routers with Junos OS Evolved, the details of the Packet Forwarding Engine errors (reported through CMErrors), when set and cleared, are moved from the output of **show system errors active** command to the output of **show system errors inactive** command. However, the output of the **show system errors inactive detail** does not contain the details of the active FRU board errors that are cleared.

Options

none	Display a brief summary of the system error information for all applicable FRUs.
category <i>error-category</i>	(Optional) Display system error information based on error category. An error category categorizes errors into various subgroups under a specific error scope level. Values include: core, functional, io, memory, processing, storage, and switch.
detail	(Optional) Display detailed system error information.
<i>fru slot-number</i>	(Optional) Display system error information for a specific FRU. For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis.
scope <i>error-scope</i>	(Optional) Display system error information based on error scope. An error scope provides a level of classification above error category. Values include: board, pfe, and scope-all.

Required Privilege Level

admin

Output Fields

Table 99 on page 1713 list the output fields for the **show system errors active** command. Output fields are listed in the approximate order in which they appear.

Table 99: show system errors active Output Fields

Field Name	Field Description
Error Name	Name of error.
Identifier	Each error is uniquely identified with an error ID that is represented as a Uniform Resource Identifier (URI).
Description	Description of the error.
State	State of the error. Values are: enabled or disabled.
Scope	Scope classification to which the error belongs. Values include board and pfe.
Category	Category subgroup under the scope level to which the error belongs. Values include: core, functional, io, memory, processing, storage, and switch.
Level	Severity level of the error.
Threshold	Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded.
Error Limit	The maximum number of times the error is reported.
Support	Support details for the error type.
Occur count	Number of times errors of a specific scope, category, and severity level has occurred.

Table 99: show system errors active Output Fields (Continued)

Field Name	Field Description
Clear count	Number of times error instances have been cleared.
Last occurred (ms ago)	Amount of time (in milliseconds) passed since the error last occurred.

Sample Output

show system errors active

For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis.

```
user@host> show system errors active
```

```
System Active Errors Information
```

```
CB 0
```

```
-----
```

```
Active Minor Errors      : 0
```

```
Active Major Errors     : 0
```

```
Active Fatal Errors     : 0
```

```
CHASSIS 0
```

```
-----
```

```
Active Minor Errors      : 0
```

```
Active Major Errors     : 5
```

```
Active Fatal Errors     : 0
```

```
FAN 0
```

```
-----
```

```
Active Minor Errors      : 0
```

```
Active Major Errors     : 0
```

```
Active Fatal Errors     : 0
```

```
FAN 1
```

```
-----
```

```
Active Minor Errors      : 0
```

```
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FAN 2
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FAN 3
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FAN 4
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FPC 0
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FPC 1
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FPC 2
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FPC 3
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
FPM 0
```

```
-----
Active Minor Errors      : 0
Active Major Errors      : 0
Active Fatal Errors      : 0
```

```
PDU 0
```

```
-----  
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PICS 0  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PICS 1  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PSM 0  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PSM 1  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PSM 2  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
PSM 3  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
RE 0  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0  
Active Fatal Errors     : 0  
SIB 0  
-----
```

```
Active Minor Errors      : 0  
Active Major Errors     : 0
```

```

Active Fatal Errors      : 0
SIB 1
-----
Active Minor Errors     : 0
Active Major Errors     : 0
Active Fatal Errors     : 0

```

show system errors active fpc-slot

```

user@host> show system errors active fpc-slot
0
System Active Errors Information
FPC 0
-----
Active Minor Errors: 0
Active Major Errors: 1
Active Fatal Errors: 0

```

show system errors active detail

```

user@host> show system errors active detail
System Active Errors Detail Information
CHASSIS 0
-----
Error Name : fan_tray_removal
Identifier : /chassis/0/hwdre/0/cm/0/fan_tray/Fan Tray 0/fan_tray_removal
Description : Fan_tray_absent
State : disabled
Scope : board
Category : functional
Level : major
Threshold : 1
Error limit : 1
Support : No help info provided
Occur count : 1
Clear count : 0
Last occurred(ms ago) : 339112691

```

Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[show system errors count | 1718](#)

[show system errors error-id | 1720](#)

[show system errors fru | 1724](#)

show system errors count

IN THIS SECTION

- [Syntax | 1718](#)
- [Description | 1719](#)
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- [Required Privilege Level | 1719](#)
- [Output Fields | 1719](#)
- [Sample Output | 1720](#)
- [Release Information | 1720](#)

Syntax

```
show system errors count
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display information about the number of detected errors and recovery actions triggered based on error severity level.

Options

This command has no options.

Required Privilege Level

admin

Output Fields

[Table 100 on page 1719](#) lists the output fields for the **show system errors count** command. Output fields are listed in the approximate order in which they appear.

Table 100: show system errors count Output Fields

Field Name	Field Description
Level	Severity level of the error. Values are: Minor, Major, or Fatal.
Occurred	Number of times errors of a specific severity level occurred.
Cleared	Number of times errors of a specific severity level were cleared.
Action-Taken	Number of times a recovery action was triggered for a specific severity level.

Sample Output

show system errors count

```
user@host> show system errors count
Level    Occurred    Cleared      Action-Taken
-----
Minor:   0           0            0
Major:   1           0            1
Fatal:   0           0            0
```

Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[show system errors active | 1711](#)

[show system errors error-id | 1720](#)

[show system errors fru | 1724](#)

show system errors error-id

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- [Additional Information | 1721](#)
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- [Output Fields | 1722](#)
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Syntax

```
show system errors error-id error-id-uri
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display information about detected errors based on the error ID Uniform Resource Identifier (URI). For devices running Junos OS Evolved, output displays only errors that have occurred at least once in the system.

Options

This command has no options.

Additional Information

Required Privilege Level

admin

Output Fields

Table 101 on page 1722 lists the output fields for the **show system errors error-id** command. Output fields are listed in the approximate order in which they appear.

Table 101: show system errors error-id Output Fields

Field Name	Field Description
Error Name	Name of error.
Identifier	Each error is uniquely identified with an error ID that is represented as a Uniform Resource Identifier (URI).
Description	Description of the error.
State	State of the error. Values are: enabled or disabled.
Scope	Scope classification to which the error belongs. Values include board and pfe.
Category	Category subgroup under the scope level to which the error belongs. Values include: core, functional, io, memory, processing, storage, and switch.
Level	Severity level of the error.
Threshold	Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded.
Error Limit	The maximum number of times the error is reported.
Support	Support details for the error type.
Occur count	Number of times errors of a specific scope, category, and severity level has occurred.

Table 101: show system errors error-id Output Fields (Continued)

Field Name	Field Description
Clear count	Number of times error instances have been cleared.
Last occurred (ms ago)	Amount of time (in milliseconds) passed since the error last occurred.

Sample Output

show system errors error-id

```

user@host> show system errors error-id "/chassis/0/hwdre/0/cm/0/fan_tray/Fan
Tray 0/fan_tray_removal"
System Errors Detail Information
CHASSIS 0
-----
Error Name           : fan_tray_removal
Identifier           : /chassis/0/hwdre/0/cm/0/fan_tray/Fan Tray 0/
fan_tray_removal
Description          : Fan_tray_absent
State                : enabled
Scope                : board
Category             : functional
Level                : major
Threshold            : 1
Error limit          : 1
Support              : No help info provided
Occur count          : 1
Clear count          : 0
Last occurred(ms ago) : 84091182

```

Release Information

Command introduced in Junos OS Release 19.1R1.

RELATED DOCUMENTATION

[show system errors active | 1711](#)

[show system errors count | 1718](#)

[show system errors fru | 1724](#)

show system errors fru

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- [Syntax | 1724](#)
- [Description | 1725](#)
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- [Release Information | 1731](#)

Syntax

```
show system errors fru detail [fru slot-number]
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display information about detected errors based on the FRU.

Options

none	Display a brief summary of the system error information for the FRU.
detail	(Optional) Display detailed system error information.
<i>fru slot-number</i>	(Optional) Display system error information for a specific FRU. For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis.

Required Privilege Level

admin

Output Fields

[Table 102 on page 1725](#) lists the output fields for the **show system errors fru** command. Output fields are listed in the approximate order in which they appear.

Table 102: show system errors fru Output Fields

Field Name	Field Description
FRU	FRU identification number.
Scope	An error scope provides a level of classification above error category. Error scope values are: pfe and board.

Table 102: show system errors fru Output Fields (Continued)

Field Name	Field Description
Category	An error category categorizes errors into various subgroups under a specific error scope level. Values include: functional, io, memory, processing, storage, and switch.
Level	Severity level of the error.
Occurred	Number of times errors of a specific scope, category, and severity level has occurred.
Cleared	Number of times errors of a specific scope, category, and severity level were cleared.
Threshold	Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded.
Action-Taken	Number of times a user-configured recovery action was triggered for errors of a specific scope, category, and severity level.
Action	Action that is triggered when the threshold value is exceeded.

Sample Output

show system errors fru detail

```

user@host> show system errors fru detail
Fru      Scope  Category  Level  Occurred  Cleared  Threshold  Action-
Taken   Action
FPC 0
      board
          functional  Minor      0          0          10
0          LOG|

```

		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	memory	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	io	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	storage	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	switch	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	processing	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	pfe				
	functional	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	memory	Minor	0	0	10
0	LOG				

		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	io	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	storage	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	switch	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				
	processing	Minor	0	0	10
0	LOG				
		Major	0	0	1
0	GET STATE CM ALARM				
		Fatal	0	0	1
0	DISABLE PFE				

Sample Output

show system errors fru detail (PTX10003)

The following output has been shortened for clarity. For each part of a FRU, the full output displays any errors in the functional, io, memory, processing, storage, and switch categories, similar to the CB 0 FRU below.

```
user@host> show system errors fru detail
```


Fru Taken	Scope Action	Category	Level	Occurred	Cleared	Threshold	Action-
CB 0	board	functional	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
0	LOG	io	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
0	LOG	memory	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
0	LOG	processing	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
0	LOG	storage	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
0	LOG	switch	Minor	0	0	10	
0	LOG		Major	0	0	1	
0	GET STATE CM ALARM		Fatal	0	0	1	
0	CM ALARM RESET						
CHASSIS 0	board						
...							

```
FAN 0
    board
...
FAN 1
    board
...
FPC 0
    board
...
    pfe
...
FPC 1
    board
...
    pfe
...
FPM 0
    board
...
PDU 0
    board
...
PICS 0
    board
...
PICS 1
    board
...
PSM 0
    board
...
PSM 1
    board
...
RE 0
    board
...
SIB 0
    board
...
    switch
```

```
...
SIB 1
    board
...
    switch
...
```

Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[show system errors active | 1711](#)

[show system errors count | 1718](#)

[show system errors error-id | 1720](#)

show system errors inactive

IN THIS SECTION

- [Syntax | 1732](#)
- [Description | 1732](#)
- [Options | 1732](#)
- [Required Privilege Level | 1732](#)
- [Output Fields | 1732](#)
- [Sample Output | 1734](#)
- [Release Information | 1738](#)

Syntax

```
show system errors inactive  
<detail>
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display summary or detailed information about the inactive errors in the system. This command shows the information about errors that had occurred and were then cleared.

Options

none Display a brief summary of the system error information for all applicable FRUs.

detail (Optional) Display detailed system error information.

Required Privilege Level

admin

Output Fields

[Table 103 on page 1733](#) list the output fields for the **show system errors inactive** command. Output fields are listed in the approximate order in which they appear.

Table 103: show system errors inactive Output Fields

Field Name	Field Description
Error Name	Name of error.
Identifier	Each error is uniquely identified with an error ID that is represented as a Uniform Resource Identifier (URI).
Description	Description of the error.
State	State of the error. Values are: enabled or disabled.
Scope	Scope classification to which the error belongs. Values include board and pfe.
Category	Category subgroup under the scope level to which the error belongs. Values include: core, functional, io, memory, processing, storage, and switch.
Level	Severity level of the error.
Threshold	Configured threshold value. The associated detection and recovery actions are triggered when this value is exceeded.
Error Limit	The maximum number of times the error is reported.
Support	Support details for the error type.
Occur count	Number of times errors of a specific scope, category, and severity level has occurred.
Clear count	Number of times error instances have been cleared.
Last occurred (ms ago)	Amount of time (in milliseconds) passed since the error last occurred.

Sample Output

show system errors inactive

```
user@host> show system errors inactive
System Inactive Errors Information
CB 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
CB 1
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
CHASSIS 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
FAN 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
FAN 1
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
FPC 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
FPC 1
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
```

FPC 2

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 3

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 4

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 5

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 6

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 7

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPM 0

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

PICS 0

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

PSM 0

Inactive Minor Errors : 0

```
Inactive Major Errors      : 0
Inactive Fatal Errors     : 0
PSM 1
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
PSM 2
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
PSM 3
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
PSM 4
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
PSM 5
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
RE 0
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
RE 1
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
SIB 0
-----
Inactive Minor Errors     : 0
Inactive Major Errors     : 3
Inactive Fatal Errors     : 0
SIB 1
```



```

-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
SIB 2
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
SIB 3
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
SIB 4
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0
SIB 5
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors     : 0

```

show system errors inactive detail

```

user@host> show system errors inactive detail
System Inactive Errors Detail Information
SIB 0
-----
Error Name      : Cell_drop_errors
Identifier      : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/Cell_drop_errors
Description     : Cell drop errors
State          : enabled
Scope          : board
Category       : internal
Level          : major
Threshold      : 10
Error limit    : 0
Support        : No help info provided

```

```

Occur count      : 1
Clear count      : 1
Last occurred(ms ago) : 973151
System Inactive Errors Detail Information
SIB 0
-----
Error Name       : Sib_Asic_PIO_Fault
Identifier       : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/Sib_Asic_PIO_Fault
Description      : Sib Asic PIO Fault
State           : enabled
Scope          : switch
Category        : internal
Level          : major
Threshold       : 10
Error limit     : 0
Support        : No help info provided
Occur count     : 1
Clear count     : 1
Last occurred(ms ago) : 777971
System Inactive Errors Detail Information
SIB 0
-----
Error Name       : sib_link_to_fpc_fault
Identifier       : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/
sib_link_to_fpc_fault
Description      : sib_link_to_fpc_fault
State           : enabled
Scope          : board
Category        : internal
Level          : major
Threshold       : 10
Error limit     : 0
Support        : No help info provided
Occur count     : 1
Clear count     : 1
Last occurred(ms ago) : 862333

```

Release Information

Command introduced in Junos OS Evolved Release 19.4R1.

RELATED DOCUMENTATION

[show system errors count | 1718](#)

[show system errors error-id | 1720](#)

[show system errors fru | 1724](#)

show system alarms

IN THIS SECTION

- [Syntax | 1739](#)
- [Description | 1739](#)
- [Required Privilege Level | 1739](#)
- [Sample Output | 1740](#)
- [Release Information | 1740](#)

Syntax

```
show system alarms
```

Description

Displays the active alarms due to L2 channel error.

Required Privilege Level

view

Sample Output

show system alarms

```
user@host> show system alarms
1 alarm currently active
Alarm time      Class Description
2021-01-16 20:42:40 PST Minor NSD 12 channel error on physical interfaces
```

Release Information

Command introduced in Junos OS Release 21.1R1.