

# System Management and Monitoring User Guide

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*System Management and Monitoring User Guide*

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# About This Guide

Use this guide to manage and monitor Juniper switches with the Junos OS command line-interface.

# 1

CHAPTER

## Manage and Monitor

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# System Settings

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## Specifying the Physical Location of the Switch

To specify the physical location of the switch, specify the following options for the **location** statement at the **[edit system]** hierarchy level:

- **altitude** *feet*—Number of feet above sea level.
- **building** *name*—Name of the building, 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").
- **country-code** *code*—Two-letter country code.
- **floor** *number*—Floor in the building.
- **hcoord** *horizontal-coordinate*—Bellcore Horizontal Coordinate.
- **lata** *service-area*—Long-distance service area.
- **latitude** *degrees*—Latitude in degree format.
- **longitude** *degrees*—Longitude in degree format.
- **npa-nxx** *number*—First six digits of the phone number (area code and exchange).
- **postal-code** *postal-code*—Postal code.
- **rack** *number*—Rack number.
- **vcoord** *vertical-coordinate*—Bellcore Vertical Coordinate.

The following example shows how to specify the physical location of the switch:

```
[edit system]
location {
  altitude feet;
  building name;
  country-code code;
  floor number;
  hcoord horizontal-coordinate;
  lata service-area;
  latitude degrees;
  longitude degrees;
  npa-nxx number;
  postal-code postal-code;
  rack number;
  vcoord vertical-coordinate;
}
```

## SEE ALSO

[Example: Configuring the Name of the Switch, IP Address, and System ID](#)

## Modifying the Default Time Zone for a Router or Switch Running Junos OS

The default local time zone on the router or switch is UTC (Coordinated Universal Time, formerly known as Greenwich Mean Time, or GMT).

- To modify the local time zone, include the **time-zone** statement at the **[edit system]** hierarchy level:

```
[edit system]
time-zone (GMT hour-offset | time-zone);
```

You can use the **GMT *hour-offset*** option to set the time zone relative to UTC (GMT) time. By default, ***hour-offset*** is 0. You can configure this to be a value from **-14** to **+12**.

You can also specify the ***time-zone*** value as a string such as PDT (Pacific Daylight Time) or WET (Western European Time), or specify the continent and major city.

**NOTE:** Junos OS complies with the POSIX time-zone standard, which is counter-intuitive to the way time zones are generally indicated relative to UTC. A time zone ahead of UTC (east of the Greenwich meridian) is commonly indicated as GMT +*n*; for example, the Central European Time (CET) zone is indicated as GMT +1. However, this is not true for POSIX time zone designations. POSIX indicates CET as GMT-1. If you include the **set system time-zone GMT+1** statement for a router in the CET zone, your router time will be set to one hour behind GMT, or two hours behind the actual CET time. For this reason, you might find it easier to use the POSIX time-zone strings, which you can list by entering **set system time-zone ?**.

For the time zone change to take effect for all processes running on the router or switch, you must reboot the router or switch.

The following example shows how to change the current time zone to **America/New\_York**:

```
[edit]
user@host# set system time-zone America/New_York
[edit]
user@host# show
system {
    time-zone America/New_York;
}
```

## SEE ALSO

[Understanding NTP Time Servers](#)

[Updating the IANA Time Zone Database on Junos OS Devices](#)

## Configuring Junos OS to Extend the Default Port Address Range

By default, the upper range of a port address is 5000. You can increase the range from which the port number can be selected to decrease the probability that someone can determine your port number.

- To configure Junos OS to extend the default port address range, include the **source-port** statement at the **[edit system internet-options]** hierarchy level:

```
[edit system internet-options]
source-port upper-limit upper-limit;
```

**upper-limit** *upper-limit* is the upper limit of a source port address and can be a value from 5000 through 65,355.

## SEE ALSO

*Configure TCP Options*

*Configure ARP Learning and Aging Options*

## Configuring Junos OS to Select a Fixed Source Address for Locally Generated TCP/IP Packets

By default, the source address included in locally generated Transmission Control Protocol/IP (TCP/IP) packets, such as FTP traffic, and in User Datagram Protocol (UDP) and IP packets, such as Network Time Protocol (NTP) requests, is chosen as the local address for the interface on which the traffic is transmitted. This means that the local address chosen for packets to a particular destination might change from connection to connection based on the interface that the routing protocol has chosen to reach the destination when the connection is established. If multiple equal-cost next hops are present for a destination, locally generated packets use the **lo0** address as a source.

- To configure the software to select a fixed address to use as the source for locally generated IP packets, include the **default-address-selection** statement at the **[edit system]** hierarchy level:

```
[edit system]
default-address-selection;
```

If you include the **default-address-selection** statement in the configuration, the Junos OS chooses the system default address as the source for most locally generated IP packets. The default address is usually an address configured on the **lo0** loopback interface. For example, if you specified that SSH and telnet use a particular address, but you also have **default-address selection** configured, the system default address is used.

## Rebooting and Halting a Device

To reboot the switch, issue the **request system reboot** command.

```

user@switch> request system reboot ?
Possible completions:
  <[Enter]>          Execute this command
  all-members        Reboot all virtual chassis members
  at                 Time at which to perform the operation
  both-routing-engines Reboot both the Routing Engines
  fast-boot          Enable fast reboot
  hypervisor         Reboot Junos OS, host OS, and Hypervisor
  in                 Number of minutes to delay before operation
  local              Reboot local virtual chassis member
  member             Reboot specific virtual chassis member (0..9)
  message            Message to display to all users
  other-routing-engine Reboot the other Routing Engine
  |                  Pipe through a command
{master:0}
user@switch> request system reboot
Reboot the system ? [yes,no] (no) yes
Rebooting switch

```

**NOTE:** Not all options shown in the preceding command output are available on all QFX Series, OCX Series, and EX4600 switches. See the documentation for the [request system reboot](#) command for details about options.

**NOTE:** When you issue the **request system reboot hypervisor** command on QFX10000 switches, the reboot takes longer than a standard Junos OS reboot.

Similarly, to halt the switch, issue the **request system halt** command.



**CAUTION:** Before entering this command, you must have access to the switch's console port in order to bring up the Routing Engine.

```
user@switch> request system halt ?
Possible completions:
  <[Enter]>          Execute this command
  all-members        Halt all virtual chassis members
  at                 Time at which to perform the operation
  backup-routing-engine  Halt backup Routing Engine
  both-routing-engines  Halt both Routing Engines
  in                 Number of minutes to delay before operation
  local              Halt local virtual chassis member
  member             Halt specific virtual chassis member (0..9)
  message            Message to display to all users
  other-routing-engine  Halt other Routing Engine
  |                  Pipe through a command
```

**NOTE:** When you issue this command on an individual component in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines will reboot.” If you want to halt only one member, use the **member** option. You cannot issue this command from the QFabric CLI.

Issuing the **request system halt** command on the switch halts the Routing Engine. To reboot a Routing Engine that has been halted, you must connect through the console.

## SEE ALSO

[clear system reboot](#)

[request system halt](#)

[request system power-off](#)

[Connecting a QFX Series Device to a Management Console](#)

## RELATED DOCUMENTATION

[Disable Reporting IP Address and Timestamps in Ping Responses](#)



# Hostnames

## IN THIS SECTION

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- [Mapping the Hostname of the Switch to IP Addresses | 10](#)
- [Example: Configuring the Name of the Switch, IP Address, and System ID | 10](#)

## Configuring the Hostname of a Device by Using a Configuration Group

The hostname of a Junos OS or Junos OS Evolved device is its identification. A network device must have its identity established to be accessible on the network. That is perhaps the most important reason to have a hostname, but a hostname has other purposes.

The software uses the configured hostname as part of the command prompt and to prepend log files and other accounting information. The hostname is also used anywhere else when knowing the device identity is important. For these reasons, we recommend hostnames be descriptive and memorable.

You can configure the hostname at the **[edit system]** hierarchy level, a procedure shown in *Configuring a Device's Unique Identity for the Network*. Optionally, instead of configuring the hostname at the **[edit system]** hierarchy level, you can use a configuration group, as shown in this procedure. This is a recommended best practice for configuring the hostname, especially if the device has dual Routing Engines. This procedure uses groups called **re0** and **re1** as an example.

**NOTE:** Starting with Junos OS Release 13.2R3, if you configure hostnames that are longer than the CLI screen width, regardless of the terminal screen width setting, the commit operation occurs successfully. Even if the terminal screen width is less than the hostname length, commit is successful.

In Junos OS releases earlier than Release 13.2R3, if you configured such hostnames by using the **host-name *hostname*** statement at the **[edit system]** hierarchy level and the terminal screen width was less than the length of the hostname by using the **set cli screen-width** statement, a foreign file propagation (ffp) failure error message is displayed when you attempt to commit the configuration. In such a case, because of the ffp failure, the commit operation does not complete.

and you cannot recover the router unless you make the modification in the backend in the `juniper.conf.gz` file and commit the change from the shell prompt.

To set the hostname using a configuration group:

1. Include the `host-name` statement in the configuration at the `[edit groups group-name system` hierarchy level.

The name value must be less than 256 characters.

```
[edit groups group-name system]
host-name hostname;
```

For example:

```
[edit groups re0 system]
root@# set host-name san-jose-router0
```

```
[edit groups re1 system]
root@# set host-name san-jose-router1
```

2. If you used one or more configuration groups, apply the configuration groups, substituting the appropriate group names.

For example:

```
[edit]
user@host# set apply-groups [re0 re1]
```

3. Commit the changes.

```
[edit]
root@# commit
```

The hostname subsequently appears in the device CLI prompt.

```
san-jose-router0#
```

## Mapping the Hostname of the Switch to IP Addresses

To map a hostname of a switch to one or more IP addresses, include the `inet` statement at the `[edit system static-host-mapping hostname]` hierarchy level:

```
[edit system]
static-host-mapping {
  hostname {
    inet [ addresses ];
    alias [ aliases ];
  }
}
```

*hostname* is the name specified by the `host-name` statement at the `[edit system]` hierarchy level.

For each host, you can specify one or more aliases.

### SEE ALSO

[\*Configuring a DNS Name Server for Resolving Hostnames into Addresses\*](#)

[\*Configuring a Device's Unique Identity for the Network\*](#)

[\*static-host-mapping\*](#)

## Example: Configuring the Name of the Switch, IP Address, and System ID

The following example shows how to configure the switch name, map the name to an IP address and alias, and configure a system identifier:

```
[edit]
user@switch# set system host-name switch1
[edit]
user@switch# set system static-host-mapping switch1 inet 192.168.1.77
[edit]
user@switch# set system static-host-mapping switch1 alias sj1
[edit]
user@switch# set system static-host-mapping switch1 sysid 1921.6800.1077
[edit]
```

```
user@switch# show
system {
  host-name switch-sj1;
  static-host-mapping {
    switch-sj1 {
      inet 192.168.1.77;
      alias sj1;
      sysid 1921.6800.1077;
    }
  }
}
```

## Understanding and Configuring DNS

### IN THIS SECTION

- [DNS Overview | 11](#)
- [Configuring a DNS Name Server for Resolving Hostnames into Addresses | 12](#)

## DNS Overview

### IN THIS SECTION

- [DNS Components | 12](#)
- [DNS Server Caching | 12](#)

A Domain Name System (DNS) is a distributed hierarchical system that converts hostnames to IP addresses. The DNS is divided into sections called zones. Each zone has name servers that respond to the queries belonging to their zones.

This topic includes the following sections:

## DNS Components

DNS includes three main components:

- **DNS resolver:** Resides on the client side of the DNS. When a user sends a hostname request, the resolver sends a DNS query request to the name servers to request the hostname's IP address.
- **Name servers:** Processes the DNS query requests received from the DNS resolver and returns the IP address to the resolver.
- **Resource records:** Data elements that define the basic structure and content of the DNS.

## DNS Server Caching

DNS name servers are responsible for providing the hostname IP address to users. The TTL field in the resource record defines the period for which DNS query results are cached. When the TTL value expires, the name server sends a fresh DNS query and updates the cache.

### SEE ALSO

| [\*Configuring the TTL Value for DNS Server Caching\*](#)

## Configuring a DNS Name Server for Resolving Hostnames into Addresses

Domain Name System (DNS) name servers are used for resolving hostnames to IP addresses.

Before you begin, configure your name servers with the hostname and an IP address for your Juniper Networks device. It does not matter which IP address you assign as the address of your device in the name server, as long it is an address that reaches your device. Normally, you would use the management interface IP address, but you can choose the loopback interface IP address, or a network interface IP address, or even configure multiple addresses on the name server.

For redundancy, it is a best practice to configure access to multiple name servers. You can configure a maximum of three name servers. The approach is similar to the way Web browsers resolve the names of a Web site to its network address. Additionally, the software enables you to configure one or more domain names, which it uses to resolve hostnames that are not fully qualified (in other words, the domain name is missing). This is convenient because you can use a hostname in configuring and operating the software without the need to reference the full domain name. After adding name server

addresses and domain names to your configuration, you can use DNS resolvable hostnames in your configurations and commands instead of IP addresses.

Optionally, instead of configuring the name server at the **[edit system]** hierarchy level, you can use a configuration group, as shown in this procedure. This is a recommended best practice for configuring the name server.

Starting in Junos OS Release 19.2R1, you can route traffic between a management routing instance and DNS name server. Configure a routing instance at the **[edit system name-server *server-ip-address*]** hierarchy level and the name server becomes reachable through this routing instance.

**NOTE:** This management routing instance option is not supported for SRX Series devices.

To enable a management routing instance for DNS, configure the following:

```
user@host# set system management-instance
user@host# set routing-instances mgmt_junos description description
user@host# set system name-server server-ip-address routing-instance mgmt_junos
```

If you have configured the name server using a configuration group, use the **[edit groups *group-name* system name-server]** hierarchy level, which is a recommended best practice for configuring the name server.

To configure the device to resolve hostnames into addresses:

1. Reference the IP addresses of your name servers.

```
[edit groups group-name system]
name-server {
    address;
}
```

The following example shows how to reference two name servers:

```
[edit groups global system]
user@host# set name-server 192.168.1.253
user@host# set name-server 192.168.1.254
user@host# show
name server {
    192.168.1.253/32;
```

```
192.168.1.254/32;
}
```

## 2. (Optional) Configure the routing instance for DNS.

The following example shows how to configure the routing-instance for one of the name servers:

```
[edit groups global system]
user@host# set name-server 192.168.1.253 routing-instance mgmt_junos
```

Remember to also configure the following:

- **management-instance** statement at the **[edit system]** hierarchy level
- **routing-instance** statement at the **[edit routing-instances]** hierarchy level.

## 3. (Optional) Configure the name of the domain in which the device itself is located.

This is a good practice. The software then uses this configured domain name as the default domain name to append to hostnames that are not fully qualified.

```
[edit system]
domain-name domain-name;
```

The following example shows how to configure the domain name:

```
[edit groups global system]
user@host# set domain-name company.net
user@host# show
domain-name company.net;
```

## 4. (Optional) Configure a list of domains to be searched.

If your device can reach several different domains, you can configure these as a list of domains to be searched. The software then uses this list to set an order in which it appends domain names when searching for the IP address of a host.

```
[edit groups global system]
domain-search [ domain-list ];
```

The domain list can contain up to six domain names, with a total of up to 256 characters.

The following example shows how to configure two domains to be searched. This example configures the software to search the company.net domain and then the domainone.net domain and then the domainonealternate.com domain when attempting to resolve unqualified hosts.

```
[edit groups global system]
domain-search [ company.net domainone.net domainonealternate.com ]
```

5. If you used a configuration group, apply the configuration group, substituting **global** with the appropriate group name.

```
[edit]
user@host# set apply-groups global
```

6. Commit the configuration.

```
user@host# commit
```

7. Verify the configuration.

If you have configured your name server with the hostname and an IP address for your device, you can issue the following commands to confirm that DNS is working and reachable. You can either use the configured hostname to confirm resolution to the IP address or use the IP address of your device to confirm resolution to the configured hostname.

```
user@host> show host host-name
user@host> show host host-ip-address
```

For example:

```
user@host> show host device.example.net
device.example.net
device.example.net has address 192.168.187.1
```

```
user@host> show host 192.168.187.1
10.187.168.192.in-addr.arpa domain name pointer device.example.net.
```



## SEE ALSO

*name-server (System Services)*

*domain-search*

## RELATED DOCUMENTATION

*Understanding Hostnames*

*DNSSEC Overview*

# Configure ICMP Features

## IN THIS SECTION

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- [Disable the Routing Engine Response to Multicast Ping Packets | 18](#)
- [Disable Reporting IP Address and Timestamps in Ping Responses | 18](#)
- [Configure Junos OS to Ignore ICMP Source Quench Messages | 19](#)
- [Rate Limit ICMPv4 and ICMPv6 Traffic | 20](#)
- [Rate Limit ICMPv4 and ICMPv6 Error Messages | 20](#)

Learn more about how to configure Internet Control Message Protocol (ICMP) features.

## Protocol Redirect Messages

### IN THIS SECTION

- [Understanding Protocol Redirect Messages | 17](#)
- [Disable Protocol Redirect Messages | 17](#)

ICMP redirect, also known as protocol redirect, is a mechanism used by switches and routers to convey routing information to hosts. Devices use protocol redirect messages to notify the hosts on the same data link of the best route available for a given destination. All EX series switches support sending protocol redirect messages for both IPv4 and IPv6 traffic.

**NOTE:** Switches do not send protocol redirect messages if the data packet contains routing information.

## Understanding Protocol Redirect Messages

Protocol redirect messages inform a host to update its routing information and to send packets on an alternate route. Suppose a host tries to send a data packet through a switch S1 and S1 sends the data packet to another switch, S2. Also, suppose that a direct path from the host to S2 is available (that is, the host and S2 are on the same Ethernet segment). S1 then sends a protocol redirect message to inform the host that the best route for the destination is the direct route to S2. The host should then send packets directly to S2 instead of sending them through S1. S2 still sends the original packet that it received from S1 to the intended destination.

Refer to [RFC-1122](#) and [RFC-4861](#) for more details on protocol redirecting.

## Disable Protocol Redirect Messages

By default, devices send protocol redirect messages for both IPv4 and IPv6 traffic. For security reasons, you may want to disable the device from sending protocol redirect messages.

To disable protocol redirect messages for the entire device, include the `no-redirects` or `no-redirects-ipv6` statement at the `[edit system]` hierarchy level.

- For IPv4 traffic:

```
[edit system]
user@host# set no-redirects
```

- For IPv6 traffic:

```
[edit system]
user@host# set no-redirects-ipv6
```

To re-enable the sending of redirect messages on the device, delete the **no-redirects** statement (for IPv4 traffic) or the **no-redirects-ipv6** statement (for IPv6 traffic) from the configuration.

To disable protocol redirect messages on a per-interface basis, include the `no-redirects` statement at the `[edit interfaces interface-name unit logical-unit-number family family]` hierarchy level.

- For IPv4 traffic:

```
[edit interfaces interface-name unit logical-unit-number]
user@host# set family inet no-redirects
```

- For IPv6 traffic:

```
[edit interfaces interface-name unit logical-unit-number]
user@host# set family inet6 no-redirects
```

## Disable the Routing Engine Response to Multicast Ping Packets

By default, the Routing Engine responds to ICMP echo requests sent to multicast group addresses. By configuring the Routing Engine to ignore multicast ping packets, you can prevent unauthorized persons from discovering the list of provider edge (PE) devices in the network.

To disable the Routing Engine from responding to these ICMP echo requests, include the `no-multicast-echo` statement at the `[edit system]` hierarchy level:

```
[edit system]
no-multicast-echo;
```

## Disable Reporting IP Address and Timestamps in Ping Responses

When you issue the `ping` command with the `record-route` option, the Routing Engine displays the path of the ICMP echo request packets and the timestamps in the ICMP echo responses by default. By configuring the `no-ping-record-route` and `no-ping-timestamp` options, you can prevent unauthorized persons from discovering information about the provider edge (PE) device and its loopback address.

You can configure the Routing Engine to disable the setting of the **record-route** option in the IP header of the ping request packets. Disabling the **record-route** option prevents the Routing Engine from recording and displaying the path of the ICMP echo request packets in the response.

To configure the Routing Engine to disable the setting of the **record route** option, include the `no-ping-record-route` statement at the **[edit system]** hierarchy level:

```
[edit system]
no-ping-record-route;
```

To disable the reporting of timestamps in the ICMP echo responses, include the `no-ping-time-stamp` option at the **[edit system]** hierarchy level:

```
[edit system]
no-ping-time-stamp;
```

## Configure Junos OS to Ignore ICMP Source Quench Messages

By default, the device reacts to Internet Control Message Protocol (ICMP) source quench messages. To ignore ICMP source quench messages, include the **no-source-quench** statement at the **[edit system internet-options]** hierarchy level:

```
[edit system internet-options]
no-source-quench;
```

To stop ignoring ICMP source quench messages, use the **source-quench** statement:

```
[edit system internet-options]
source-quench;
```

## Rate Limit ICMPv4 and ICMPv6 Traffic

To limit the rate at which ICMPv4 or ICMPv6 messages can be generated by the Routing Engine and sent to the Routing Engine, include the appropriate rate limiting statement at the `[edit system internet-options]` hierarchy level.

- For IPv4:

```
[edit system internet-options]
icmpv4-rate-limit bucket-size bucket-size packet-rate packet-rate
```

- For IPv6:

```
[edit system internet-options]
icmpv6-rate-limit bucket-size bucket-size packet-rate packet-rate
```

## Rate Limit ICMPv4 and ICMPv6 Error Messages

### IN THIS SECTION

- [Why to Rate Limit ICMPv4 and ICMPv6 Error Messages | 21](#)
- [How to Rate Limit ICMPv4 and ICMPv6 Error Messages | 21](#)

By default, ICMP error messages for non-ttl-expired IPv4 and IPv6 packets are generated at the rate of 1 packet per second (pps). You can adjust this rate to a value that you decide provides sufficient information for your network without causing network congestion.

**NOTE:** For ttl-expired IPv4 or IPv6 packets, the rate for ICMP error messages is not configurable. It is fixed at 500 pps.

## Why to Rate Limit ICMPv4 and ICMPv6 Error Messages

An example use case for adjusting the rate limit is a data center providing web services. Suppose this data center has many servers on the network that use jumbo frames with an MTU of 9100 bytes when they communicate to hosts over the Internet. These other hosts require an MTU of 1500 bytes. Unless maximum segment size (MSS) is enforced on both sides of the connection, a server might reply with a packet that is too large to be transmitted across the Internet without being fragmented when it reaches the edge router in the data center.

Because TCP/IP implementations often have Path MTU Discovery enabled by default with the `do-not-fragment` bit set to 1, a transit device will drop a packet that is too big rather than fragmenting it. The device will return an ICMP error message indicating the destination was unreachable because the packet was too big. The message will also provide the MTU that is required where the error occurred. The sending host should adjust the sending MSS for that connection and resend the data in smaller packet sizes to avoid the fragmentation issue.

At high core interface speeds, the default rate limit of 1 pps for the error messages may not be enough to notify all the hosts when there are many hosts in the network that require this service. The consequence is that outbound packets are silently dropped. This action can trigger additional retransmissions or back-off behaviors, depending on the volume of requests that the data center edge router is handling on each core-facing interface.

In this situation, you can increase the rate limit to enable a higher volume of oversized packets to reach the sending hosts. (Adding more core-facing interfaces can also help resolve the problem.)

## How to Rate Limit ICMPv4 and ICMPv6 Error Messages

Although you configure the rate limit at the `[edit chassis]` hierarchy level, it is not a chassis-wide limit. Instead, the rate limit applies per interface family. This means, for example, that multiple physical interfaces configured with `family inet` can simultaneously generate the ICMP error messages at the configured rate.

**NOTE:** This rate limit takes effect only for traffic that lasts 10 seconds or longer. The rate limit is not applied to traffic with a shorter duration, such as 5 seconds or 9 seconds.

- To configure the rate limit for ICMPv4, use the `icmp` statement:

```
[edit chassis]
user@host# set icmp rate-limit rate-limit
```

Starting in Junos OS Release 19.1R1, the maximum rate increased from 50 pps to 1000 pps.

- To configure the rate limit for ICMPv6, use the `icmp6` statement:

```
[edit chassis]
user@host# set icmp6 rate-limit rate-limit
```

You must also consider that the rate limit value can interact with your DDoS protection configuration. The default bandwidth value for exceptioned packets that exceed the MTU is 250 pps. DDoS protection flags a violation when the number of packets exceeds that value. If you set the rate limit higher than the current `mtu-exceeded` bandwidth value, then you must configure the bandwidth value to match the rate limit.

For example, suppose you set the ICMP rate limit to 300 pps:

```
user@host# set chassis icmp rate-limit 300
```

You must configure the DDoS protection `mtu-exceeded` `bandwidth` to match that value.

```
user@host# set system ddos-protection protocols exceptions mtu-exceeded bandwidth 300
```

## RELATED DOCUMENTATION

*Configure TCP Options*

[Junos OS Network Interfaces Library for Routing Devices](#)

# Alarms

## IN THIS SECTION

- [System Alarms | 23](#)
- [Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types | 23](#)
- [System-Wide Alarms and Alarms for Each Interface Type | 24](#)

## System Alarms

Switches provide predefined system alarms that can be triggered by a missing rescue configuration, failure to install a license for a licensed software feature, or high disk usage. You can display alarm messages by issuing the **show system alarms** operational mode command.

For example: The switch might trigger an alarm when disk usage in the **/var** partition exceeds 75 percent. A usage level between 76 and 90 percent indicates high usage and raises a minor alarm condition, whereas a usage level above 90 percent indicates that the partition is full and raises a major alarm condition.

The following sample output shows the system alarm messages that are displayed when disk usage is exceeded on the switch.

```
user@host> show system alarms

4 alarms currently active
Alarm time           Class  Description
2013-10-08 20:08:20 UTC  Minor  RE 0 /var partition usage is high
2013-10-08 20:08:20 UTC  Major  RE 0 /var partition is full
2013-10-08 20:08:08 UTC  Minor  FPC 1 /var partition usage is high
2013-10-08 20:08:08 UTC  Major  FPC 1 /var partition is full
```

**BEST PRACTICE:** We recommend that you regularly request a system file storage cleanup to optimize the performance of the switch and prevent generating system alarms.

## Configuring Junos OS to Determine Conditions That Trigger Alarms on Different Interface Types

For the different types of PICs, you can configure which conditions trigger alarms and whether they trigger a red or yellow alarm. Red alarm conditions light the **RED ALARM** LED and trigger an audible alarm if one is connected. Yellow alarm conditions light the **YELLOW ALARM** LED and trigger an audible alarm if one is connected.



**NOTE:** By default, any failure condition on the integrated-services interface (Adaptive Services PIC) triggers a red alarm.

To configure conditions that trigger alarms and that can occur on any interface of the specified type, include the **alarm** statement at the **[edit chassis]** hierarchy level.

```
[edit chassis]
alarm {
  interface-type {
    alarm-name (red | yellow | ignore);
  }
}
```

*alarm-name* is the name of an alarm.

## System-Wide Alarms and Alarms for Each Interface Type

Table 1 on page 24 lists the system-wide alarms and the alarms for each interface type.

**Table 1: Configurable PIC Alarm Conditions**

Interface/System	Alarm Condition	Configuration Option
SONET/SDH and ATM	Link alarm indication signal	<b>ais-l</b>
	Path alarm indication signal	<b>ais-p</b>
	Signal degrade (SD)	<b>ber-sd</b>
	Signal fail (SF)	<b>ber-sf</b>
	Loss of cell delineation (ATM only)	<b>locd</b>

Table 1: Configurable PIC Alarm Conditions (Continued)

Interface/System	Alarm Condition	Configuration Option
	Loss of framing	<b>lof</b>
	Loss of light	<b>lol</b>
	Loss of pointer	<b>lop-p</b>
	Loss of signal	<b>los</b>
	Phase-locked loop out of lock	<b>pll</b>
	Synchronous transport signal (STS) payload label (C2) mismatch	<b>plm-p</b>
	Line remote failure indication	<b>rfl</b>
	Path remote failure indication	<b>rfl-p</b>
	STS path (C2) unequipped	<b>uneq-p</b>
<b>E3/T3</b>	Alarm indicator signal	<b>ais</b>
	Excessive numbers of zeros	<b>exz</b>
	Failure of the far end	<b>ferf</b>
	Idle alarm	<b>idle</b>
	Line code violation	<b>lcv</b>

Table 1: Configurable PIC Alarm Conditions (*Continued*)

Interface/System	Alarm Condition	Configuration Option
	Loss of frame	<b>lof</b>
	Loss of signal	<b>los</b>
	Phase-locked loop out of lock	<b>pll</b>
	Yellow alarm	<b>ylw</b>
<b>Ethernet</b>	Link has gone down	<b>link-down</b>
<b>DS1</b>	Alarm indicator signal	<b>ais</b>
	Yellow alarm	<b>ylw</b>
<b>Integrated services</b>	Hardware or software failure	<b>failure</b>
<b>Management Ethernet</b>	Link has gone down	<b>link-down</b>

## RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms](#)

[Alarm Types and Severity Levels](#)

[Network Management and Monitoring Guide](#)

[Freeing Up System Storage Space](#)

[show system alarms](#)

# System Troubleshooting

## IN THIS SECTION

- [Saving Core Files Generated by Junos OS Processes | 27](#)
- [Viewing Core Files from Junos OS Processes | 28](#)

## Saving Core Files Generated by Junos OS Processes

By default, when an internal Junos OS process generates a core file, the file and associated context information are saved for debugging purposes in a compressed tar file named `/var/tmp/process-name.core.core-number.tgz`. The contextual information includes the configuration and system log message files.

- To disable the saving of core files and associated context information:

```
[edit system]
no-saved-core-context;
```

- To save the core files only:

```
[edit system]
saved-core-files number;
```

Where *number* is the number of core files to save and can be a value from 1 through 10.

- To save the core files along with the contextual information:

```
[edit system]
saved-core-context;
```

## Viewing Core Files from Junos OS Processes

When an internal Junos OS process generates a core file, you can find the output at `/var/crash/` and `/var/tmp/`. For Junos OS Evolved, you can find the output core files at `/var/core/` for Routing Engine core files and `/var/lib/ftp/in/` for FPC core files. Using these directories provides a quick method of finding core issues across large networks.

Use the CLI command `show system core-dumps` to view core files.

```
root@host> show system core-dumps
-rw----- 1 root  wheel  268369920 Jun 18 17:59 /var/crash/vmcore.0
-rw-rw---- 1 root  field   3371008 Jun 18 17:53 /var/tmp/rpd.core.0
-rw-r--r-- 1 root  wheel   27775914 Jun 18 17:59 /var/crash/kernel.0
```

### SEE ALSO

[Saving Core Files from Junos OS Processes](#)

### RELATED DOCUMENTATION

[Day One: Monitoring and Troubleshooting](#)

[https://www.juniper.net/documentation/en\\_US/junos/information-products/pathway-pages/qfx-series/troubleshooting-qf.html](https://www.juniper.net/documentation/en_US/junos/information-products/pathway-pages/qfx-series/troubleshooting-qf.html)

## Device Monitoring

### IN THIS SECTION

- [Monitoring System Properties | 29](#)
- [Monitoring System Process Information | 32](#)
- [Monitoring Interfaces | 33](#)
- [Other Tools to Configure and Monitor Devices Running Junos OS | 35](#)

## Monitoring System Properties

### IN THIS SECTION

- Purpose | 29
- Action | 29
- Meaning | 29

### Purpose

View system properties such as the name, IP address, and resource usage.

### Action

To monitor system properties in the CLI, enter the following commands:

- `show system uptime`
- `show system users`
- `show system storage`

### Meaning

[Table 2 on page 29](#) summarizes key output fields in the system properties display.

**Table 2: Summary of Key System Properties Output Fields**

Field	Values	Additional Information
<b>General Information</b>		
Serial Number	Serial number of device.	

**Table 2: Summary of Key System Properties Output Fields (Continued)**

Field	Values	Additional Information
Junos OS Version	Version of Junos OS active on the switch, including whether the software is for domestic or export use.	Export software is for use outside the USA and Canada.
Hostname	Name of the device.	
IP Address	IP address of the device.	
Loopback Address	Loopback address.	
Domain Name Server	Address of the domain name server.	
Time Zone	Time zone on the device.	
<b>Time</b>		
Current Time	Current system time, in Coordinated Universal Time (UTC).	
System Booted Time	Date and time when the device was last booted and how long it has been running.	
Protocol Started Time	Date and time when the protocols were last started and how long they have been running.	

Table 2: Summary of Key System Properties Output Fields (*Continued*)

Field	Values	Additional Information
Last Configured Time	Date and time when a configuration was last committed. This field also shows the name of the user who issued the last <b>commit</b> command.	
Load Average	CPU load average for 1, 5, and 15 minutes.	
<b>Storage Media</b>		
Internal Flash Memory	Usage details of internal flash memory.	
External Flash Memory	Usage details of external USB flash memory.	
<b>Logged in Users Details</b>		
User	Username of any user logged in to the switch.	
Terminal	Terminal through which the user is logged in.	
From	System from which the user has logged in. A hyphen indicates that the user is logged in through the console.	
Login Time	Time when the user logged in.	This is the <b>user@switch</b> field in <b>show system users</b> command output.
Idle Time	How long the user has been idle.	



## SEE ALSO

| [show system processes](#)

## Monitoring System Process Information

### IN THIS SECTION

- [Purpose | 32](#)
- [Action | 32](#)
- [Meaning | 32](#)

### Purpose

View the processes running on the device.

### Action

To view the software processes running on the device:

```
user@switch> show system processes
```

### Meaning

[Table 3 on page 32](#) summarizes the output fields in the system process information display.

The display includes the total CPU load and total memory utilization.

**Table 3: Summary of System Process Information Output Fields**

Field	Values
PID	Identifier of the process.
Name	Owner of the process.

Table 3: Summary of System Process Information Output Fields (*Continued*)

Field	Values
State	Current state of the process.
CPU Load	Percentage of the CPU that is being used by the process.
Memory Utilization	Amount of memory that is being used by the process.
Start Time	Time of day when the process started.

**SEE ALSO**

| *show system uptime*

## Monitoring Interfaces

**IN THIS SECTION**

- Purpose | 33
- Action | 33

**Purpose**

View general information about all physical and logical interfaces for a device.

**Action**

Enter the following **show** commands in the CLI to view interface status and traffic statistics.

- **show interfaces terse**

**NOTE:** On SRX Series devices, when configuring identical IPs on a single interface, you will not see a warning message; instead, you will see a syslog message.

- **show interfaces extensive**
- **show interfaces *interface-name***

**NOTE:** If you are using the J-Web user interfaces, select **Monitor>Interfaces** in the J-Web user interface. The J-Web Interfaces page displays the following details about each device interface:

- **Port**—Indicates the interface name.
- **Admin Status**—Indicates whether the interface is enabled (Up) or disabled (Down).
- **Link Status**—Indicates whether the interface is linked (Up) or not linked (Down).
- **Address**—Indicates the IP address of the interface.
- **Zone**—Indicates whether the zone is an untrust zone or a trust zone.
- **Services**—Indicates services that are enabled on the device, such as HTTP and SSH.
- **Protocols**—Indicates protocols that are enabled on the device, such as BGP and IGMP.
- **Input Rate graph**—Displays interface bandwidth utilization. Input rates are shown in bytes per second.
- **Output Rate graph**—Displays interface bandwidth utilization. Output rates are shown in bytes per second.
- **Error Counters chart**—Displays input and output error counters in the form of a bar chart.
- **Packet Counters chart**—Displays the number of broadcast, unicast, and multicast packet counters in the form of a pie chart. (Packet counter charts are supported only for interfaces that support MAC statistics.)

To change the interface display, use the following options:

- **Port for FPC**—Controls the member for which information is displayed.
- **Start/Stop button**—Starts or stops monitoring the selected interfaces.
- **Show Graph**—Displays input and output packet counters and error counters in the form of charts.

- Pop-up button—Displays the interface graphs in a separate pop-up window.
- Details—Displays extensive statistics about the selected interface, including its general status, traffic information, IP address, I/O errors, class-of-service data, and statistics.
- Refresh Interval—Indicates the duration of time after which you want the data on the page to be refreshed.
- Clear Statistics—Clears the statistics for the selected interface.

## SEE ALSO

| [Interfaces User Guide for Security Devices](#)

## Other Tools to Configure and Monitor Devices Running Junos OS

Starting in Junos OS Release 15.1, apart from the command-line interface, Junos OS also supports the following applications, scripts, and utilities that enable you to configure and monitor devices running Junos OS:

- Junos XML Management Protocol Application Programming Interface (API)—Application programmers can use the Junos XML Management Protocol API to monitor and configure Juniper Networks devices. Juniper Networks provides a Perl module with the API to help you more quickly and easily develop custom Perl scripts for configuring and monitoring the devices.
- NETCONF Application Programming Interface (API)—Application programmers can also use the NETCONF API to monitor and configure Juniper Networks devices.
- Junos OS commit scripts—You can define scripts to enforce custom configuration tasks, enforce consistency, prevent common mistakes, and more. Every time you commit a new candidate configuration, the active commit scripts are called to inspect the new candidate configuration. If a configuration violates your custom rules, the script can instruct the Junos OS to perform various actions, including making changes to the configuration and generating custom, warning, and system log messages.
- Junos OS Op scripts—You can add your own commands to the operation-mode CLI. You can use these scripts to automate troubleshooting of known network problems and correct them.
- Junos OS event scripts—You can use event scripts to diagnose and fix issues, monitor the overall status of the system, and examine errors periodically. Event scripts are similar to op scripts except that certain events on the switch will trigger these scripts.

- **CHEF**—You can use CHEF automate the provisioning and management of compute, networking, and storage resources. Chef for Junos OS provides support for Chef on selected Junos OS devices, allowing you to automate common switching network configurations.
- **Puppet**—You can use PUPPET for configuration management. Puppet provides an efficient and scalable solution for managing the configurations of large numbers of devices. System administrators take advantage of Puppet to manage compute resources such as physical and virtual servers.

## SEE ALSO

[CLI User Interface Overview](#)

[NETCONF XML Management Protocol Developer Guide](#)

## Release History Table

Release	Description
15.1	Starting in Junos OS Release 15.1, apart from the command-line interface, Junos OS also supports the following applications, scripts, and utilities that enable you to configure and monitor devices running Junos OS:

## RELATED DOCUMENTATION

*Understanding Device and Network Management Features*

[Day One: Monitoring and Troubleshooting](#)

# Passive Monitoring

## IN THIS SECTION

- [Understanding Passive Monitoring | 37](#)
- [Example: Configuring Passive Monitoring on QFX10000 Switches | 38](#)

## Understanding Passive Monitoring

### IN THIS SECTION

- [Passive Monitoring Benefits | 37](#)
- [Guidelines for Configuring Passive Monitoring | 37](#)

Passive monitoring is a type of network monitoring used to passively capture traffic from monitoring interfaces. When you enable passive monitoring, the device accepts and monitors traffic on the interface and forwards the traffic to monitoring tools like IDS servers and packet analyzers, or other devices such as routers or end node hosts.

- Starting in Junos OS Release 18.4R1, passive monitoring is supported on QFX10000 switches.
- Starting in Junos OS Evolved 19.4R1, passive monitoring is supported on PTX10003 routers.

### Passive Monitoring Benefits

- Provides filtering capabilities for monitoring ingress and egress traffic at the Internet point of presence (PoP) where security networks are attached.

### Guidelines for Configuring Passive Monitoring

- You can only configure passive monitoring at the interface level. Configuration per VLAN or logical interface is not supported.
- A passive monitoring interface cannot be an aggregated Ethernet (AE) interface.
- Monitoring tools or devices must be directly connected to the switch or router.
- Packets with more than two MPLS labels and more than two VLAN tags are dropped.
- Exception packets such as IP packet options, router alert, and TTL expiry packets are treated as regular traffic.
- Ethernet encapsulation is not supported.
- MPLS family filter configuration is not supported.
- Link Aggregation Control Protocol (LACP) is not supported on the AE bundle connected to the monitoring tool or device.

## Example: Configuring Passive Monitoring on QFX10000 Switches

### IN THIS SECTION

- [Requirements | 38](#)
- [Overview | 38](#)
- [Configuration | 39](#)
- [Verification | 42](#)

This example shows how to configure passive monitoring on QFX10000 switches.

### Requirements

This example uses the following hardware and software components:

- Two routers (R1 and R2)
- One QFX10002 switch
- Two devices, directly connected to the switch
- Junos OS Release 18.4R1 or later

### Overview

#### IN THIS SECTION

- [Topology | 39](#)

This example describes how to configure passive monitoring on the switch.

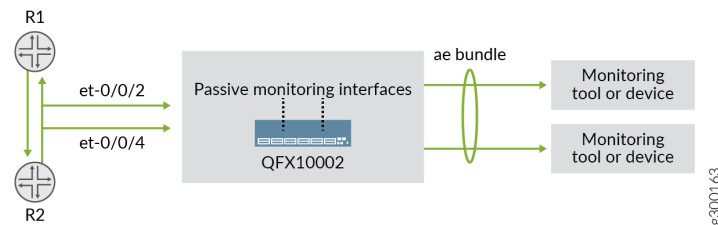
In [Figure 1 on page 39](#), `et-0/0/2` and `et-0/0/4` are configured as passive monitoring interfaces. Packets coming into the network are exchanged between Router 1 (R1) and Router 2 (R2) in two directions (R1 to R2, R2 to R1) and are sent to the monitored interfaces. When traffic is received, a firewall filter transfers all packets to a routing instance and forwards the packets to the monitoring tools. The interfaces are then grouped into a single logical interface, known as a link aggregation group (LAG) or AE bundle. This enables the traffic to be evenly distributed across the monitoring tools effectively

increasing the uplink bandwidth. If one interface fails, the bundle continues to carry traffic over the remaining interfaces.

Optionally, you can apply symmetric hashing over the passive monitor interfaces for load balancing traffic to the monitoring tools. This allows ingress and egress traffic of the same flow to be sent out through the same monitored interface. To configure symmetric hashing, include the **no-incoming-port** option under the **[edit forwarding-options enhanced-hash-key]** hierarchy. Symmetric hashing is enabled and disabled at the global level only. Per protocol hashing is not supported.

## Topology

Figure 1: Passive Monitoring Topology



## Configuration

### IN THIS SECTION

- [CLI Quick Configuration | 40](#)
- [Configuring Passive Monitoring | 40](#)

The following example requires you to navigate various levels in the CLI hierarchy. For information about navigating the CLI, see *Using the CLI Editor in Configuration Mode*.



## 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, copy and paste the commands into the CLI at the **[edit]** hierarchy level, and then enter **commit** from configuration mode.

```

set interfaces et-0/0/2 passive-monitor-mode
set interfaces et-0/0/2 unit 0 family inet filter input pm
set interfaces et-0/0/4 passive-monitor-mode
set interfaces et-0/0/4 unit 0 family inet filter input pm1
set firewall family inet filter pm1 term t1 from interface et-0/0/4.0
set firewall family inet filter pm1 term t1 then count c1
set firewall family inet filter pm1 term t1 then routing-instance pm_inst
set firewall family inet filter pm term t1 from interface et-0/0/2.0
set firewall family inet filter pm term t1 then count c3
set firewall family inet filter pm term t1 then routing-instance pm_inst
set routing-instances pm_inst instance-type virtual-router
set routing-instances pm_inst interface ae0.0
set routing-instances pm_inst routing-options static route 0.0.0.0/0 next-hop 198.51.1.1
set interfaces xe-0/0/9:0 ether-options 802.3ad ae0
set interfaces xe-0/0/9:1 ether-options 802.3ad ae0
set interfaces ae0 unit 0 family inet address 198.51.1.2/24 arp 198.51.1.1 mac 00:10:94:00:00:05
set routing-instances pm_inst interface ae0.0
set forwarding-options enhanced-hash-key inet no-incoming-port

```

## Configuring Passive Monitoring

### Step-by-Step Procedure

To configure passive monitoring:

1. Configure passive-monitor mode on the switch interfaces:

```

[edit]]
user@switch#
set interfaces et-0/0/2 passive-monitor-mode
set interfaces et-0/0/2 unit 0 family inet filter input pm
set interfaces et-0/0/4 passive-monitor-mode
set interfaces et-0/0/4 unit 0 family inet filter input pm1

```

2. Configure a **family inet** firewall filter on the passive monitor interfaces to forward the traffic to a routing instance. Supported filter actions are **accept**, **reject**, **count**, **routing-instance**.

```
[edit]
user@switch#
set firewall family inet filter pm1 term t1 from interface et-0/0/4.0
set firewall family inet filter pm1 term t1 then count c1
set firewall family inet filter pm1 term t1 then routing-instance pm_inst
set firewall family inet filter pm term t1 from interface et-0/0/2.0
set firewall family inet filter pm term t1 then count c3
set firewall family inet filter pm term t1 then routing-instance pm_inst
```

3. Create a routing-instance with a static route that points to the devices.

```
[edit]
user@switch#
set routing-instances pm_inst instance-type virtual-router
set routing-instances pm_inst interface ae0.0
set routing-instances pm_inst routing-options static route 0.0.0.0/0 next-hop 198.1.1.1
```

4. Configure an AE bundle on the passive monitoring interfaces.

```
[edit]
user@switch#
set interfaces xe-0/0/9:0 ether-options 802.3ad ae0
set interfaces xe-0/0/9:1 ether-options 802.3ad ae0
set interfaces ae0 unit 0 family inet address 198.51.1.2/24 arp 198.51.1.1 mac 00:10:94:00:00:05
set routing-instances pm_inst interface ae0.0
```

5. (Optional) Configure symmetric hashing.

```
[edit]
user@switch#
set forwarding-options enhanced-hash-key inet no-incoming-port
```

6. From configuration mode, confirm your configuration by entering the **show interfaces** command. If the command output does not display the intended configuration, repeat the instructions in this example to correct it.

7. If you are done configuring the interfaces, enter **commit** from configuration mode.

## Verification

### IN THIS SECTION

- [Verify the Passive Monitoring Configuration | 42](#)
- [Verify Symmetric Hashing | 44](#)

Confirm that the configuration is working properly.

### Verify the Passive Monitoring Configuration

#### Purpose

Verify that passive monitoring is working on the interfaces. If the interface output shows **No-receive** and **No-transmit**, this means that passive monitoring is working.

#### Action

From operational mode, enter the **show interfaces** command to view the passive monitoring interfaces.

```
user@host> show interfaces et-0/0/2
Physical interface: et-0/0/2, Enabled, Physical link is Up
  Interface index: 146, SNMP ifIndex: 515
  Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 40Gbps, BPDU Error:
None, Loop Detect PDU Error: None, Ethernet-Switching Error: None, MAC-REWRITE
Error: None,
  Loopback: Disabled, Source filtering: Disabled, Flow control: Disabled, Media
type: Fiber
  Device flags      : Present Running
  Interface flags:  SNMP-Traps No-receive No-transmit Internal: 0x4000
  Link flags       : None
  CoS queues      : 8 supported, 8 maximum usable queues
  Current address: 3c:61:04:75:3c:5d, Hardware address: 3c:61:04:75:3c:5d
  Last flapped    : 2018-05-17 11:19:05 PDT (00:17:55 ago)
  Input rate      : 0 bps (0 pps)
  Output rate     : 0 bps (0 pps)
```

```

Active alarms : None
Active defects : None
PCS statistics                               Seconds
  Bit errors                                 0
  Errored blocks                            0
Ethernet FEC Mode : NONE
Ethernet FEC statistics                       Errors
  FEC Corrected Errors                      0
  FEC Uncorrected Errors                    0
  FEC Corrected Errors Rate                  0
  FEC Uncorrected Errors Rate                0
PRBS Statistics : Disabled
Interface transmit statistics: Disabled

```

user@host **show interfaces et-0/0/4**

```

Physical interface: et-0/0/4, Enabled, Physical link is Up
  Interface index: 146, SNMP ifIndex: 515
  Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 40Gbps, BPDU Error:
None, Loop Detect PDU Error: None, Ethernet-Switching Error: None, MAC-REWRITE
Error: None,
  Loopback: Disabled, Source filtering: Disabled, Flow control: Disabled, Media
type: Fiber
  Device flags : Present Running
  Interface flags: SNMP-Traps No-receive No-transmit Internal: 0x4000
  Link flags : None
  CoS queues : 8 supported, 8 maximum usable queues
  Current address: 3c:61:04:75:3c:5d, Hardware address: 3c:61:04:75:3c:5d
  Last flapped : 2018-05-17 11:19:05 PDT (00:18:17 ago)
  Input rate : 0 bps (0 pps)
  Output rate : 0 bps (0 pps)
  Active alarms : None
  Active defects : None
PCS statistics                               Seconds
  Bit errors                                 0
  Errored blocks                            0
Ethernet FEC Mode : NONE
Ethernet FEC statistics                       Errors
  FEC Corrected Errors                      0
  FEC Uncorrected Errors                    0
  FEC Corrected Errors Rate                  0
  FEC Uncorrected Errors Rate                0

```

```
PRBS Statistics : Disabled
Interface transmit statistics: Disabled
```

## Verify Symmetric Hashing

### Purpose

Verify the output for symmetric hashing. The incoming port fields for **inet,inet6** and **L2** should all be set to No.

### Action

From configuration mode, enter the **show forwarding-options enhanced-hash-key** command.

```
Slot 0

Seed value for Hash function      0: 3626023417
Seed value for Hash function      1: 3626023417
Seed value for Hash function      2: 3626023417
Seed value for Hash function      3: 3626023417

Inet settings:
-----
    IPV4 dest address:      Yes
    IPV4 source address:   Yes
    L4 Dest Port:          Yes
    L4 Source Port:        Yes
Incoming port:              No
Inet6 settings:
-----
    IPV6 dest address:     Yes
    IPV6 source address:   Yes
    L4 Dest Port:          Yes
    L4 Source Port:        Yes
Incoming port:              No
L2 settings:
-----
    Dest Mac address:      No
    Source Mac address:    No
    Vlan Id:                Yes
```

```

    Inner-vlan Id:      No
    Incoming port:     No
  GRE settings:
  -----
    Key:               No
    Protocol:          No
  MPLS settings:
  -----
    MPLS Enabled:      Yes

  VXLAN settings:
  -----
    VXLAN VNID:        No

```

### Release History Table

Release	Description
18.4R1	Starting in Junos OS Release 18.4R1, passive monitoring is supported on QFX10000 switches.
18.4R1	Starting in Junos OS Evolved 19.4R1, passive monitoring is supported on PTX10003 routers.

## How to Locate a Device or Port Using the Chassis Beacon

### IN THIS SECTION

- [Turning On the Chassis Beacon For the Default Interval | 46](#)
- [Turning On the Chassis Beacon For a Specified Interval | 47](#)

By default, when a network port and its associated link are active, the status LED for that port blinks green at a rate of 8 blinks per second. With the chassis beacon feature, you can use the `request chassis beacon` command to slow the current rate at which the status LED blinks green to 2 blinks per second. The slower and steadier green light acts as a beacon that you, as a network administrator in a

remote office, can enable to guide a network installer in a busy data center or lab to a Juniper Networks device or port on the device.

You can use the following options with the chassis beacon feature:

- Turn on the beacon for:
  - 5 minutes (default)
  - A specified number of minutes (1 through 120)
- Turn off the beacon:
  - Immediately
  - After a specified number of minutes (1 through 120) elapses

You can use these options on all network ports on an FPC or just one network port on an FPC.

To turn the beacon on or off on a Virtual Chassis, you must:

- Issue the **request chassis beacon** command on the primary switch in the Virtual Chassis.
- When specifying the FPC slot number, use the target Virtual Chassis member number.

You can slow the rate at which the status LED blinks green to 2 blinks per second. The slower and steadier green light acts as a beacon that guides a network installer in a busy data center or lab to a Juniper Networks device or port on the device.

This topic covers the available options in the following use cases:

## Turning On the Chassis Beacon For the Default Interval

You can turn on the chassis beacon for the default interval, which is 5 minutes.

1. Turn on the chassis beacon using one of the following commands:
  - a. For all network ports on a specified FPC:

```
user@switch> request chassis beacon fpc slot-number on
```

- b. For a specified network port on an FPC:

```
user@switch> request chassis beacon fpc slot-number pic-slot slot-number port port-number on
```

After you turn on the chassis beacon, you can expect the following behavior:

- The chassis beacon overrides the current state of the status LED for all or the specified network port on the FPC.
  - If you turn on the beacon for only one network port, the status LEDs for the remaining network ports on the FPC are turned off.
  - Unless you issue a command to explicitly turn off the chassis beacon before the default interval is over, it turns off after 5 minutes. The state of the status LED for all ports or the specified port returns to the state it was in before you turned on the chassis beacon.
2. If you want to turn the chassis beacon off before the 5-minute interval is over, use one of the following commands:
    - a. For all network ports on a specified FPC:

```
user@switch> request chassis beacon fpc slot-number off
```

- b. For a specified network port on an FPC:

```
user@switch> request chassis beacon fpc slot-number pic-slot slot-number port port-number off
```

## Turning On the Chassis Beacon For a Specified Interval

You can turn on the chassis beacon for 1 through 120 minutes.

1. Turn on the chassis beacon using one of the following commands:
  - a. For all network ports on a specified FPC:

```
user@switch> request chassis beacon fpc slot-number on timer number-of-minutes
```

- b. For a specified network port on an FPC:

```
user@switch> request chassis beacon fpc slot-number pic-slot slot-number port port-number on timer number-of-minutes
```

After you turn on the chassis beacon, you can expect the following behavior:



- The chassis beacon overrides the current state of the status LEDs for all or one network port on the FPC.
  - If you turn on the chassis beacon for only one network port, the status LEDs for the remaining network ports on the FPC are turned off.
  - The chassis beacon stays on until you explicitly issue a command to turn it off.
2. You can turn off the chassis beacon immediately or after a specified time interval (1 through 120 minutes) is over.
- a. To turn off the chassis beacon immediately, use one of the following commands:

For all network ports on a specified FPC:

```
user@switch> request chassis beacon fpc slot-number off
```

OR

For a specified network port on an FPC:

```
user@switch> request chassis beacon fpc slot-number pic-slot slot-number port port-number off
```

- b. To turn off the chassis beacon after a specified time interval of 1 through 120 minutes is over, use one of the following commands:
- For all network ports on a specified FPC:

```
user@switch> request chassis beacon fpc slot-number off timer number-of-minutes
```

OR

For a specified network port on an FPC:

```
user@switch> request chassis beacon fpc slot-number pic-slot slot-number port port-number off  
timer number-of-minutes
```

After you turn off the chassis beacon, the state of the status LED for all or one port on the FPC returns to the state it was in before you turned on the chassis beacon.

# 2

CHAPTER

## Configuration Statements

---

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---

# checksum

## IN THIS SECTION

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- [Description | 51](#)
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## Syntax

```
checksum (md5 | sha-256 | sha1) hash;
```

## Hierarchy Level

```
[edit event-options event-script filename],  
[edit system scripts commit file filename],
```

## Description

For Junos commit scripts and op scripts, specify the MD5, SHA-1, or SHA-256 checksum hash. When it executes a local event or commit script, the Junos OS verifies the authenticity of the script by using the configured checksum hash.

## Options

**md5 hash**—MD5 checksum of this script.

**sha-256 hash**—SHA-256 checksum of this script.

**sha1 hash**—SHA-1 checksum of this script.

## Required Privilege Level

**maintenance**—To view this statement in the configuration.

**maintenance-control**—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

---

*Configuring Checksum Hashes for a Commit Script*

---

*Configuring Checksum Hashes for an Event Script*

---

*Configuring Checksum Hashes for an Op Script*

---

*file checksum md5*

---

*file checksum sha-256*

---

*file checksum sha1*

# compress-configuration-files (System)

## IN THIS SECTION

- Syntax | 53
- Hierarchy Level | 53
- Description | 53
- Default | 54
- Required Privilege Level | 54
- Release Information | 54

## Syntax

```
(compress-configuration-files | no-compress-configuration-files);
```

## Hierarchy Level

```
[edit system]
```

## Description

Compress the current operational configuration file. The file is stored in the file **juniper.conf**, in the **/config** file system, along with the last three committed versions of the configuration. However, with large networks, the current configuration file might exceed the available space in the **/config** file system. Compressing the current configuration file allows the file to fit in the file system, typically reducing the size of the file by 90 percent. The current configuration file is compressed on the second commit of the configuration after the first commit is made to include the **compress-configuration-files** statement.

**NOTE:** We recommend that you enable compression of the configuration files to minimize the amount of disk space that they require.

## Default

The current operational configuration file is uncompressed.

## 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 11.1.

### RELATED DOCUMENTATION

| *Compressing the Current Configuration File*

# domain-name

### IN THIS SECTION

- [Syntax | 55](#)
- [Hierarchy Level | 55](#)

- Description | 55
- Options | 55
- Required Privilege Level | 55
- Release Information | 56

## Syntax

```
domain-name domain-name;
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the name of the domain in which the switch is located. This is the default domain name that is appended to hostnames that are not fully qualified.

## Options

*domain-name*—Name of the domain.

## 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 11.1.

### RELATED DOCUMENTATION

| *Configuring a DNS Name Server for Resolving Hostnames into Addresses*

# domain-search

## IN THIS SECTION

- [Syntax | 56](#)
- [Hierarchy Level | 56](#)
- [Description | 57](#)
- [Options | 57](#)
- [Required Privilege Level | 57](#)
- [Release Information | 57](#)

## Syntax

```
domain-search domain-list;
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure a list of domains to be searched.

## Options

*domain-list*—List of domain names to search. The list can contain up to 6 domain names, with a total of up to 256 characters.

## 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 11.1.

### RELATED DOCUMENTATION

*Configuring a DNS Name Server for Resolving Hostnames into Addresses*

# enhanced-hash-key

### IN THIS SECTION

- [Syntax \(EX Series\) | 58](#)
- [Syntax \(QFX5000 Line of Switches\) | 59](#)

- [Syntax \(QFX10000 Series Switches\) | 63](#)
- [Hierarchy Level | 64](#)
- [Description | 64](#)
- [Required Privilege Level | 65](#)
- [Release Information | 65](#)

## Syntax (EX Series)

```
enhanced-hash-key {
  ecmp-resilient-hash;
  fabric-load-balance {
    flowlet {
      inactivity-interval interval;
    }
    per-packet;
  }
  hash-mode {
    layer2-header;
    layer2-payload;
  }
  family inet {
    no-ipv4-destination-address;
    no-ipv4-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-protocol;
    vlan-id;
  }
  family inet6 {
    no-ipv6-destination-address;
    no-ipv6-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-next-header;
    vlan-id;
  }
  layer2 {
```

```

no-destination-mac-address;
no-ether-type;
no-source-mac-address;
vlan-id;
}
}

```

## Syntax (QFX5000 Line of Switches)

```

enhanced-hash-key {
  conditional-match name {
    offset1 {
      base-offset1 (start-of-L2Header | start-of-L3-InnerHeader | start-of-
L3-OuterHeader | start-of-L4-Header);
      matchdata1 matchdata1;
      matchdata1-mask matchdata1-mask;
      offset1-value offset1-value;
    }
    offset2 {
      base-offset2 (start-of-L2Header | start-of-L3-InnerHeader | start-of-
L3-OuterHeader | start-of-L4-Header);
      matchdata2 matchdata2;
      matchdata2-mask matchdata2-mask;
      offset2-value offset2-value;
    }
    offset3 {
      base-offset3 (start-of-L2Header | start-of-L3-InnerHeader | start-of-
L3-OuterHeader | start-of-L4-Header);
      matchdata3 matchdata3;
      matchdata3-mask matchdata3-mask;
      offset3-value offset3-value;
    }
    offset4 {
      base-offset4 (start-of-L2Header | start-of-L3-InnerHeader | start-of-
L3-OuterHeader | start-of-L4-Header);
      matchdata4 matchdata4;
      matchdata4-mask matchdata4-mask;
      offset4-value offset4-value;
    }
  }
}

```

```

}
ecmp-dlb {
    assigned-flow;
    per-packet;
    flowlet inactivity-interval;
    ether-type (ipv4|ipv6|mpls);
}

ecmp-resilient-hash;
fabric-load-balance {
    flowlet {
        inactivity-interval interval;
    }
    per-packet;
}
flex-hashing name {
    ethtype {
        inet {
            conditional-match conditional-match;
            hash-offset {
                offset1 {
                    base-offset1 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
                    offset1-mask offset1-mask;
                    offset1-value offset1-value;
                    offset2 {
                        base-offset2 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
                        offset2-mask offset2-mask;
                        offset2-value offset2-value;
                    }
                }
            }
        }
        interface interface;
    }
    inet6 {
        conditional-match conditional-match;
        hash-offset {
            offset1 {
                base-offset1 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
                offset1-mask offset1-mask;
                offset1-value offset1-value;
            }
        }
    }
}

```

```

        offset2 {
            base-offset2 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
            offset2-mask offset2-mask;
            offset2-value offset2-value;
        }
    }
}
interface interface;
}
mpls {
    conditional-match conditional-match;
    hash-offset {
        offset1 {
            base-offset1 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
            offset1-mask offset1-mask;
            offset1-value offset1-value;
            offset2 {
                base-offset2 (start-of-L2Header | start-of-L3-
InnerHeader | start-of-L3-OuterHeader | start-of-L4-Header);
                offset2-mask offset2-mask;
                offset2-value offset2-value;
            }
        }
    }
    interface interface;
    num-labels num-labels;
}
}
hash-mode {
    layer2-header;
    layer2-payload;
    gtp-header-offset offset-value;
}
hash-parameters {
    ecmp {
        function {
            (crc16-bisync | crc16-ccitt | crc32-hi | crc32-lo);
        }
        offset offset;
        preprocess;
    }
}

```

```
    }
    lag {
        function {
            (crc16-bisync | crc16-ccitt | crc32-hi | crc32-lo);
        }
        offset offset;
        preprocess;
    }
}
family inet {
    gtp-tunnel-endpoint-identifier;
    no-incoming-port;
    no-ipv4-destination-address;
    no-ipv4-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-protocol;
    vlan-id;
}
family inet6 {
    no-incoming-port;
    no-ipv6-destination-address;
    no-ipv6-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-next-header;
    vlan-id;
}
layer2 {
    no-destination-mac-address;
    no-ether-type;
    no-source-mac-address;
    vlan-id;
}
symmetric-hash {
    inet;
    inet6;
}
}
vxlan {
    no-inner-payload;
}
```

## Syntax (QFX10000 Series Switches)

```
enhanced-hash-key {
  hash-seed seed-value;
  family inet {
    gtp-tunnel-endpoint-identifier;
    no-ipv4-destination-address;
    no-ipv4-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-incoming-port;
  }
  family inet6 {
    gtp-tunnel-endpoint-identifier;
    ipv6-flow-label;
    no-ipv6-destination-address;
    no-ipv6-source-address;
    no-l4-destination-port;
    no-l4-source-port;
    no-incoming-port;
  }
  layer2 {
    destination-mac-address
    inner-vlan-id;
    no-ether-type;
    no-vlan-id;
    source-mac-address;
  }
  no-mpls;
  gre {
    key;
    protocol;
  }
  vxlan-vnid
}
}
```



## Hierarchy Level

```
[edit forwarding-options]
```

## Description

Configure the hashing key used to hash link aggregation group (LAG) and equal-cost multipath (ECMP) traffic, or enable adaptive load balancing (ALB) in a Virtual Chassis Fabric (VCF).

**NOTE:** Starting in Junos OS Release 14.1X53-D46, 15.1R7, 16.1R6, 17.1R3, 17.2R2, 17.3R2, and 17.4R1, the ALB feature is deprecated. If **fabric-load-balance** is enabled in the configuration for a VCF, delete the configuration item upon upgrading Junos OS.

The hashing algorithm is used to make traffic-forwarding decisions for traffic entering a LAG bundle or for traffic exiting a switch when ECMP is enabled.

For LAG bundles, the hashing algorithm determines how traffic entering a LAG bundle is placed onto the bundle's member links. The hashing algorithm tries to manage bandwidth by evenly load-balancing all incoming traffic across the member links in the bundle.

When ECMP is enabled, the hashing algorithm determines how incoming traffic is forwarded to the next-hop device.

On QFX10000 Series switches, you can configure the hash seed for load balancing. By default, the QFX10000 Series switches use the system MAC address to generate a hash seed value. You can configure the hash seed value using the **hash-seed** statement at the **[edit forwarding-options enhanced-hash-key]** hierarchy level. Set a value between 0 and 4294967295. If you do not configure a hash seed value, the system generates a hash seed value based on the system MAC address.

The remaining statements are explained separately. See [CLI Explorer](#).

Starting in Junos OS Release 18.4R1, symmetric hashing is supported on the QFX10000 Series switches. You configure the **no-incoming-port** option under the **[edit forwarding-options enhanced-hash-key]** hierarchy. By default, Dynamic IP (DIP), SIP, Layer 4 source and destination ports, and the incoming port are used for hashing. You can only configure symmetric hashing at the global level.

Starting in Junos OS Release 19.4R1, the dynamic load balancing on ECMP is supported on QFX5120-32C and QFX5120-48Y switches. You can configure the **ecmp-dlb** option under the **[edit forwarding-options enhanced-hash-key]** hierarchy. Refer *Dynamic Load Balancing* for more details.

To enable symmetric hashing on the QFX5000 line of switches, configure the **symmetric-hash** option.

## 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 13.2X51-D15.

The **fabric-load-balance** statement introduced in Junos OS Release 14.1X53-D10.

The **fabric-load-balance** statement deprecated starting in Junos OS Releases 14.1X53-D46, 15.1R7, 16.1R6, 17.1R3, 17.2R2, 17.3R2, and 17.4R1.

The **hash-seed** statement introduced in Junos OS Release 15.1X53-D30.

The **ecmp-dlb** statement introduced in Junos OS Release 19.4R1 for QFX5120-32C and QFX5120-48Y switches.

Option **symmetric-hash** introduced in Junos OS Release 20.4R1.

## RELATED DOCUMENTATION

---

*[Configuring the Fields in the Algorithm Used To Hash LAG Bundle and ECMP Traffic \(CLI Procedure\)](#)*

---

*[Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic](#)*

---

[Understanding Passive Monitoring](#)

---

*[Understanding Per-Packet Load Balancing](#)*

---

*[show forwarding-options enhanced-hash-key](#)*

# ethernet (Alarm)

## IN THIS SECTION

- [Syntax | 66](#)
- [Hierarchy Level | 66](#)
- [Description | 66](#)
- [Options | 67](#)
- [Required Privilege Level | 67](#)
- [Release Information | 67](#)

## Syntax

```
ethernet {  
    link-down (red | yellow | ignore);  
}
```

## Hierarchy Level

```
[edit chassis alarm],  
[edit chassis interconnect-device name alarm],  
[edit chassis node-group name alarm]
```

## Description

Configure alarms for an Ethernet interface.

## Options

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 11.1.

# hardware-timestamp

### IN THIS SECTION

- [Syntax | 67](#)
- [Hierarchy Level | 68](#)
- [Description | 68](#)
- [Required Privilege Level | 68](#)
- [Release Information | 68](#)

## Syntax

```
hardware-timestamp;
```

## Hierarchy Level

```
[edit services rpm probe owner test test-name]
```

## Description

Enable timestamping of RPM probe messages in the Packet Forwarding Engine host processor. This feature is supported only with **icmp-ping**, **icmp-ping-timestamp**, **udp-ping**, and **udp-ping-timestamp** probe types.

## 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.

Statement applied to MX Series routers in Junos OS Release 10.0.

Statement introduced in Junos OS Release 19.1 for PTX Series routers.

# host-name

### IN THIS SECTION

- [Syntax | 69](#)
- [Hierarchy Level | 69](#)

- Description | 69
- Options | 69
- Required Privilege Level | 69
- Release Information | 70

## Syntax

```
host-name hostname;
```

## Hierarchy Level

```
[edit system]
```

## Description

Set the hostname of the switch.

## Options

*hostname*—Name of the switch.

## 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 11.1.

### RELATED DOCUMENTATION

*Configuring the Hostname of a Router or Switch by Using a Configuration Group*

# inet (enhanced-hash-key)

## IN THIS SECTION

- [Syntax \(EX Series and QFX5100 Switch\) | 70](#)
- [Syntax \(QFX10000 Series Switches\) | 71](#)
- [Hierarchy Level | 71](#)
- [Description | 71](#)
- [Default | 72](#)
- [Options | 72](#)
- [Required Privilege Level | 72](#)
- [Release Information | 73](#)

## Syntax (EX Series and QFX5100 Switch)

```
inet {  
    gtp-tunnel-endpoint-identifier;  
    no-ipv4-destination-address;  
    no-ipv4-source-address;  
    no-l4-destination-port;  
    no-l4-source-port;  
    no-protocol;
```

```
vlan-id;
}
```

## Syntax (QFX10000 Series Switches)

```
inet {
  gtp-tunnel-endpoint-identifier;
  no-ipv4-destination-address;
  no-ipv4-source-address;
  no-l4-destination-port;
  no-l4-source-port;
  no-incoming-port;
}
```

## Hierarchy Level

```
[edit forwarding-options enhanced-hash-key family]
```

## Description

Select the payload fields in IPv4 traffic used by the hashing algorithm to make hashing decisions.

When IPv4 traffic enters a LAG and the hash mode is set to Layer 2 payload, the hashing algorithm checks the fields configured using the **inet** statement and uses the information in the fields to decide how to place traffic onto the LAG bundle's member links or how to forward traffic to the next hop device when ECMP is enabled.

The hashing algorithm, when used to hash LAG bundle traffic, always tries to manage bandwidth by evenly load-balancing all incoming traffic across the member links in the bundle.

The hashing algorithm only inspects the IPv4 fields in the payload to make hashing decisions when the hash mode is set to **layer2-payload**. The hash mode is set to Layer 2 payload by default. You can set the hash mode to Layer 2 payload using the **set forwarding-options enhanced-hash-key hash-mode layer2-payload** statement.



## Default

The following fields are used by the hashing algorithm to make hashing decisions for IPv4 traffic:

- IP destination address
- IP source address
- Layer 4 destination port
- Layer 4 source port
- Protocol

## Options

<b>no-ipv4-destination-address</b>	Exclude the IPv4 destination address field from the hashing algorithm.
<b>no-ipv4-source-address</b>	Exclude the IPv4 source address field from the hashing algorithm.
<b>no-l4-destination-port</b>	Exclude the Layer 4 destination port field from the hashing algorithm.
<b>no-l4-source-port</b>	Exclude the Layer 4 source port field from the hashing algorithm.
<b>no-protocol</b>	Exclude the protocol field from the hashing algorithm.
<b>no-incoming-port</b>	Exclude the incoming port number from the hashing algorithm.
<b>vlan-id</b>	Include the VLAN ID field in the hashing algorithm.

**NOTE:** The **vlan-id** option is not supported and should not be configured on a Virtual Chassis or Virtual Chassis Fabric (VCF) that contains any of the following switches as members: EX4300, EX4600, QFX3500, QFX3600, QFX5100, or QFX5110 switches.

## 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 13.2X51-D15.

### RELATED DOCUMENTATION

[Configuring the Fields in the Algorithm Used To Hash LAG Bundle and ECMP Traffic \(CLI Procedure\)](#)

[Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic](#)

[Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic \(QFX 10002 and QFX 10008 Switches\)](#)

[Understanding Per-Packet Load Balancing](#)

[hash-seed](#)

[enhanced-hash-key | 57](#)

[hash-mode](#)

[inet \(enhanced-hash-key\) | 70](#)

## inet6-backup-router

### IN THIS SECTION

- [Syntax | 74](#)
- [Hierarchy Level | 74](#)
- [Description | 74](#)
- [Options | 74](#)
- [Required Privilege Level | 74](#)
- [Release Information | 75](#)

## Syntax

```
inet6-backup-router address <destination destination-address>;
```

## Hierarchy Level

```
[edit system]
```

## Description

Set a default router (running IP version 6 [IPv6]) to use while the local router or switch (running IPv6) is booting and if the routing protocol processes fail to start. The Junos OS removes the route to this router or switch as soon as the software starts.

## Options

- |   |   |
|---|---|
| <b>address</b>                                  | Address of the default router.  |
| <b>destination<br/>destination-<br/>address</b> | (Optional) Destination address that is reachable through the backup router. You can include this option to achieve network reachability while loading, configuring, and recovering the router or switch, but without the risk of installing a default route in the forwarding table. <ul style="list-style-type: none"> <li>• <b>Default:</b> All hosts (default route) are reachable through the backup router.</li> </ul> |

## Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

# inet6 (enhanced-hash-key)

### IN THIS SECTION

- [Syntax \(EX Series and QFX5100 Switch\) | 75](#)
- [Syntax \(QFX10000 Series Switches\) | 76](#)
- [Hierarchy Level | 76](#)
- [Description | 76](#)
- [Default | 77](#)
- [Options | 77](#)
- [Required Privilege Level | 77](#)
- [Release Information | 78](#)

## Syntax (EX Series and QFX5100 Switch)

```
inet6 {  
    no-ipv6-destination-address;  
    no-ipv6-source-address;  
    no-l4-destination-port;  
    no-l4-source-port;  
    no-next-header;  
    vlan-id;  
}
```

## Syntax (QFX10000 Series Switches)

```
inet6 {  
    gtp-tunnel-endpoint-identifier;  
    ipv6-flow-label;  
    no-ipv6-destination-address;  
    no-ipv6-source-address;  
    no-l4-destination-port;  
    no-l4-source-port;  
    no-incoming-port;  
}
```

## Hierarchy Level

```
[edit forwarding-options enhanced-hash-key family]
```

## Description

Select the payload fields in an IPv6 packet used by the hashing algorithm to make hashing decisions.

When IPv6 traffic enters a LAG and the hash mode is set to Layer 2 payload, the hashing algorithm checks the fields configured using this statement and uses the information in the fields to decide how to place traffic onto the LAG bundle's member links or to forward traffic to the next hop device when ECMP is enabled.

The hashing algorithm, when used to hash LAG traffic, always tries to manage bandwidth by evenly load-balancing all incoming traffic across the member links in the bundle.

The hashing algorithm only inspects the IPv6 fields in the payload to make hashing decisions when the hash mode is set to Layer 2 payload. The hash mode is set to Layer 2 payload by default. You can set the hash mode to Layer 2 payload using the **set forwarding-options enhanced-hash-key hash-mode layer2-payload** statement.

## Default

The data in the following fields are used by the hashing algorithm to make hashing decisions for IPv6 traffic:

- IP destination address
- IP source address
- Layer 4 destination port
- Layer 4 source port
- Next header

## Options

<b>no-ipv6-destination-address</b>	Exclude the IPv6 destination address field from the hashing algorithm.
<b>no-ipv6-source-address</b>	Exclude the IPv6 source address field from the hashing algorithm.
<b>no-l4-destination-port</b>	Exclude the Layer 4 destination port field from the hashing algorithm.
<b>no-l4-source-port</b>	Exclude the Layer 4 source port field from the hashing algorithm.
<b>no-incoming-port</b>	Exclude the incoming port number from the hashing algorithm.
<b>no-next-header</b>	Exclude the Next Header field from the hashing algorithm.
<b>vlan-id</b>	Include the VLAN ID field in the hashing algorithm.

## 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 13.2X51-D15.

### RELATED DOCUMENTATION

*Configuring the Fields in the Algorithm Used To Hash LAG Bundle and ECMP Traffic (CLI Procedure)*

*Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic*

[Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic \(QFX 10002 and QFX 10008 Switches\)](#)

*Understanding Per-Packet Load Balancing*

*hash-seed*

[enhanced-hash-key | 57](#)

*hash-mode*

[inet \(enhanced-hash-key\) | 70](#)

## internet-options

### IN THIS SECTION

- [Syntax | 79](#)
- [Hierarchy Level | 79](#)
- [Description | 79](#)
- [Options | 80](#)
- [Required Privilege Level | 82](#)
- [Release Information | 82](#)

## Syntax

```

internet-options {
    (gre-path-mtu-discovery | no-gre-path-mtu-discovery);
    icmpv4-rate-limit bucket-size <bucket-size seconds> <packet-rate packet-
rate>;
    icmpv6-rate-limit bucket-size <bucket-size seconds> <packet-rate packet-
rate>;
    (ipip-path-mtu-discovery | no-ipip-path-mtu-discovery);
    ipv6-duplicate-addr-detection-transmits ipv6-duplicate-addr-detection-
transmits;
    (ipv6-path-mtu-discovery | no-ipv6-path-mtu-discovery);
    (ipv6-reject-zero-hop-limit | no-ipv6-reject-zero-hop-limit);
    ipv6-path-mtu-discovery-timeout minutes;
    no-tcp-reset (drop-all-tcp | drop-tcp-with-syn-only);
    no-tcp-rfc1323;
    no-tcp-rfc1323-paws;
    (path-mtu-discovery | no-path-mtu-discovery);
    source-port {
        upper-limit upper-limit;
    }
    (source-quench | no-source-quench);
    tcp-drop-synfin-set;
    tcp-mss mss-value;
}

```

## Hierarchy Level

```
[edit system]
```

## Description

Configure system IP options to protect against certain types of DoS attacks.



## Options

- gre-path-mtu-discovery** (ACX Series, EX Series, Junos Fusion, M Series, MX Series, OCX Series, PTX Series, QFX Series, SRX Series, T Series) Configure path MTU discovery for outgoing GRE tunnel connections. By default, path MTU discovery is enabled.
- **no-gre-path-mtu-discovery**—Path MTU discovery is disabled.
- icmpv4-rate-limit** Configure rate-limiting parameters for ICMPv4 messages sent.
- **Values:**
    - **bucket-size *seconds***—Number of seconds in the rate-limiting bucket. Range: 0 through 4294967295 seconds. Default: 5.
    - **packet-rate *pps***—Rate-limiting packets earned per second. Range: 0 through 4294967295 pps. Default: 1000.
- icmpv6-rate-limit** (ACX Series, EX Series, M Series, MX Series, PTX Series, QFX Series, SRX Series) Configure rate-limiting parameters for ICMPv6 messages sent.
- **Values:**
    - **bucket-size *seconds***—Number of seconds in the rate-limiting bucket. Range: 0 through 4294967295 seconds. Default: 5.
    - **packet-rate *pps***—Rate-limiting packets earned per second. Range: 0 through 4294967295 pps. Default: 1000.
- ipip-path-mtu-discovery** (ACX Series, EX Series, Junos Fusion, M Series, MX Series, OCX Series, PTX Series, QFX Series, SRX Series, T Series) Configure path MTU discovery for outgoing IP-IP tunnel connections. By default, path MTU discovery is enabled.
- **no-ipip-path-mtu-discovery**—Path MTU discovery is disabled.
- ipv6-duplicate-addr-detection-transmits** Control the number of attempts for IPv6 duplicate address detection.
- **Range:** 0 to 20
  - **Default:** 3
- ipv6-path-mtu-discovery** (ACX Series, EX Series, Junos Fusion, M Series, MX Series, OCX Series, PTX Series, QFX Series, SRX Series, T Series) Configure path MTU discovery for IPv6 packets. By default, IPv6 path MTU discovery is enabled.
- **no-ipv6-path-mtu-discovery**—IPv6 path MTU discovery is disabled.

<b>ipv6-path-mtu-discovery-timeout</b>	<p>(ACX Series, EX Series, Junos Fusion, M Series, MX Series, OCX Series, PTX Series, QFX Series, SRX Series, T Series) Set the IPv6 path MTU discovery time-out interval.</p> <ul style="list-style-type: none"> <li>• <b>Values:</b> <i>minutes</i>—IPv6 path MTU discovery timeout.</li> <li>• <b>Default:</b> 10 minutes.</li> </ul>
<b>ipv6-reject-zero-hop-limit</b>	<p>Reject incoming IPv6 packets with a zero hop-limit value in their header. This is enabled by default.</p> <ul style="list-style-type: none"> <li>• <code>no-ipv6-reject-zero-hop-limit</code>—Allow incoming IPv6 packets with a zero hop-limit value in their header.</li> </ul>
<b>no-tcp-reset</b>	<p>Do not send an RST TCP packet (a packet with the reset flag set) in response to a TCP packet received on a non-listening port.</p> <p>By default, when a TCP packet is received on a non-listening port, a device sends a TCP packet with the RST flag set and drops the connection. This might lead to a security risk. Configuring this statement prevents the sending of RST TCP packets to non-listening ports.</p> <p>You must configure this statement with one of two options:</p> <ul style="list-style-type: none"> <li>• <code>drop-all-tcp</code>—When a TCP segment is received on a closed port, the device drops the packet and does not send back a RST segment. This helps to protect against stealth port scans.</li> <li>• <code>drop-tcp-with-syn-only</code>—When a TCP packet with a SYN bit is received on a non-listening port, the device drops the packet and does not send back a RST segment, which makes the device appear as a null route. For all other TCP packets, the device sends back a RST segment and does not drop the packet.</li> </ul>
<b>no-tcp-rfc1323</b>	<p>Configure the Junos OS to disable RFC 1323 TCP extensions.</p>
<b>no-tcp-rfc1323-paws</b>	<p>Configure the Junos OS to disable the RFC 1323 Protection Against Wrapped Sequence (PAWS) number extension.</p>
<b>path-mtu-discovery</b>	<p>Configure path MTU discovery for outgoing Transmission Control Protocol (TCP) connections. By default, path MTU discovery is enabled.</p> <ul style="list-style-type: none"> <li>• <code>no-path-mtu-discovery</code>—Path MTU discovery is disabled.</li> </ul>
<b>source-port</b>	<p>Configure the range of port addresses.</p> <ul style="list-style-type: none"> <li>• <b>Values:</b></li> </ul>

- `upper-limit` *upper-limit*—(Optional) The range of port addresses can be a value from 5000 through 65,355.

**source-quench** Configure how the Junos OS handles Internet Control Message Protocol (ICMP) source quench messages. By default, the Junos OS reacts to ICMP source quench messages.

- `no-source-quench`—Do not react to incoming ICMP source quench messages.

**tcp-drop-synfin-set** Configure the device to drop packets that have both the SYN and FIN bits set.

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

`admin`—To view this statement in the configuration.

`admin-control`—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

`no-tcp-reset` introduced in Junos OS Release 9.4.

`no-tcp-reset` introduced in Junos OS Release 11.1 for SRX Series and vSRX devices.

`icmpv4-rate-limit` and `source-port` introduced in Junos OS Release 11.1 for the QFX Series and Junos OS Release 14.1X53-D20 for the OCX Series.

## RELATED DOCUMENTATION

*Configure ICMP Features*

*Configure IPv6 Features*

*Configure Path MTU Discovery*

*Configure TCP Options*

*Configuring Junos OS to Extend the Default Port Address Range*

# lcd-menu

## IN THIS SECTION

- [Syntax | 83](#)
- [Hierarchy Level | 84](#)
- [Description | 84](#)
- [Options | 84](#)
- [Required Privilege Level | 84](#)
- [Release Information | 85](#)

## Syntax

EX3200, EX3300, EX4200, or EX4500 switch:

```
lcd-menu fpc slot-number {  
    menu-item (menu-name | menu-option) <disable>;  
}
```

EX6200 or EX8200 switch or XRE200 External Routing Engine:

```
lcd-menu {  
    menu-item (menu-name | menu-option) <disable>;  
}
```

## Hierarchy Level

```
[edit chassis]
```

## Description

Disable or enable the Maintenance menu or the Status menu in the LCD panel.

## Options

**none**—(EX6200 and EX8200 switches and XRE200 External Routing Engines only) Disable or enable the specified menu or menu options.

**fpc *slot-number***—(EX3200, EX3300, EX4200, and EX4500 switches only) Disable or enable the specified menu or menu options, where *slot-number* is:

- 0—On standalone switches.
- 0–9—On a device in a Virtual Chassis. The value is the member ID of the device.

**NOTE:** This option is not available on an EX8200 Virtual Chassis. The LCD panel on an XRE200 External Routing Engine provides information for the XRE200 External Routing Engine only.

**disable**—(Optional) Disable the specified menu.

The remaining statement is explained separately. See [CLI Explorer](#).

## Required Privilege Level

**interface**—To view this statement in the configuration.

**interface-level**—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 10.2.

### RELATED DOCUMENTATION

*Configuring the LCD Panel on EX Series Switches (CLI Procedure)*

[LCD Panel in EX3200 Switches](#)

[LCD Panel in EX3300 Switches](#)

*LCD Panel in EX4200 Switches*

[LCD Panel in EX4500 Switches](#)

[LCD Panel in an EX6200 Switch](#)

[LCD Panel in an EX8200 Switch](#)

[LCD Panel in an XRE200 External Routing Engine](#)

## location

### IN THIS SECTION

- [Syntax | 85](#)
- [Hierarchy Level | 86](#)
- [Description | 86](#)
- [Options | 86](#)
- [Required Privilege Level | 87](#)
- [Release Information | 87](#)

## Syntax

```
location {  
    altitude feet;
```

```

    building name;
    country-code code;
    floor number;
    hcoord horizontal-coordinate;
    lata service-area;
    latitude degrees;
    longitude degrees;
    npa-nxx number;
    postal-code postal-code;
    rack number;
    vcoord vertical-coordinate;
}

```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the system location.

## Options

**altitude *feet***—Number of feet above sea level.

**building *name***—Name of the building. The name of the building can be 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").

**country-code *code***—Two-letter country code.

**floor *number***—Floor in the building.

**hcoord *horizontal-coordinate***—Bellcore Horizontal Coordinate.

**lata *service-area***—Long-distance service area.

**latitude *degrees***—Latitude in degree format.

**longitude** *degrees*—Longitude in degree format.

**npa-nxx** *number*—First six digits of the phone number (area code and exchange).

**postal-code** *postal-code*—Postal code.

**rack** *number*—Rack number.

**vcoord** *vertical-coordinate*—Bellcore Vertical Coordinate.

## 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 11.1.

### RELATED DOCUMENTATION

| *Specifying the Physical Location of the Switch*

# location (System)

#### IN THIS SECTION

- [Syntax | 88](#)
- [Hierarchy Level | 88](#)
- [Description | 88](#)
- [Options | 89](#)
- [Required Privilege Level | 89](#)



## Syntax

```
location {  
    altitude feet;  
    building name;  
    country-code code;  
    floor number;  
    hcoord horizontal-coordinate;  
    lata transport-area;  
    latitude degrees;  
    longitude degrees;  
    npa-nxx number;  
    postal-code postal-code;  
    rack number;  
    vcoord vertical-coordinate;  
}
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the system location in various formats.

## Options

<b>altitude</b> <i>feet</i>	Number of feet above sea level.
<b>building</b> <i>name</i>	Name of building. The name of the building can be 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").
<b>country-code</b> <i>code</i>	Two-letter country code.
<b>floor</b> <i>number</i>	Floor in the building.
<b>hcoord</b> <i>horizontal-coordinate</i>	Bellcore Horizontal Coordinate.
<b>lata</b> <i>transport-area</i>	Local Access Transport Area.
<b>latitude</b> <i>degrees</i>	Latitude in degree format.
<b>longitude</b> <i>degrees</i>	Longitude in degree format.
<b>npa-nxx</b> <i>number</i>	First six digits of the phone number (area code and exchange).
<b>postal-code</b> <i>postal-code</i>	Postal code.
<b>rack</b> <i>number</i>	Rack number.
<b>vcoord</b> <i>vertical-coordinate</i>	Bellcore Vertical Coordinate.

## Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

## RELATED DOCUMENTATION

| [Specifying the Device Physical Location](#)

# max-configurations-on-flash

## IN THIS SECTION

- [Syntax | 90](#)
- [Hierarchy Level | 90](#)
- [Description | 90](#)
- [Options | 91](#)
- [Required Privilege Level | 91](#)
- [Release Information | 91](#)

## Syntax

```
max-configurations-on-flash number;
```

## Hierarchy Level

```
[edit system]
```

## Description

Specify the number of configurations stored on the internal fixed media storage (for example, USB device).

## Options

*number*—The number of configurations stored on the CompactFlash card.

- **Range:** 0 through 49. The most recently saved configuration is number 0, and the oldest saved configuration is number 49.

## 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 11.1.

### RELATED DOCUMENTATION

*Saving a Configuration to a File*

[Setting or Deleting the Rescue Configuration](#)

*Uploading a Configuration File*

[Uploading a Configuration File](#)

## menu-item

### IN THIS SECTION

- [Syntax | 92](#)
- [Hierarchy Level | 92](#)
- [Description | 92](#)

- Options | 92
- Required Privilege Level | 96
- Release Information | 96

## Syntax

```
menu-item (menu-name | menu-option) <disable>;
```

## Hierarchy Level

```
[edit chassis lcd-menu],  
[edit chassis lcd-menu fpc slot-number]
```

## Description

Disable or enable the Maintenance menu, the Status menu, or an individual option in one of those menus in the LCD panel.

On EX3200, EX3300, EX4200, and EX4500 switches, you use **menu-item** at the **[edit chassis lcd-menu fpc *slot-number*]** hierarchy level.

On EX6200 and EX8200 switches, and on XRE200 External Routing Engines, you use **menu-item** at the **[edit chassis lcd-menu]** hierarchy level.

## Options

***menu-name***—Name of the LCD menu:

- **maintenance-menu**

- **status-menu**

**menu-option**—Specific option on one of the LCD menus. You must include the quotation marks when you type the option. [Table 4 on page 93](#) describes the different menu options of the LCD menus supported on the switches.

**Table 4: Menu Options of the LCD Menus Supported on the Switches**

Menu	Menu Options	Option Descriptions	Platforms Supported
<b>maintenance-menu</b>	<b>"maintenance-menu halt-menu"</b>	System halt option	All switches except EX2200
	<b>"maintenance-menu system-reboot"</b>	System reboot option	All switches except EX2200
	<b>"maintenance-menu rescue-config"</b>	Load rescue option	All switches except EX2200
	<b>"maintenance-menu vc-uplink-config"</b>	Request VC port option for a device in a Virtual Chassis configuration	EX3300, EX4200, and EX4500 switches and XRE200 External Routing Engines only
	<b>"maintenance-menu factory-default"</b>	Factory default option	All switches except EX2200

Table 4: Menu Options of the LCD Menus Supported on the Switches *(Continued)*

Menu	Menu Options	Option Descriptions	Platforms Supported
status-menu	"status-menu vcp-status"	Virtual Chassis port (VCP) status for a device in a Virtual Chassis configuration	EX3300, EX4200, and EX4500 switches and XRE200 External Routing Engines only
	"status-menu sf-status1-menu"	Status of the switch fabric on the Switch Fabric and Routing Engine (SRE) module in slot SRE0 on EX8208 switches  Status of the switch fabric on the Switch Fabric (SF) modules in slots SF0 and SF1 on EX8216 switches	EX8208 and EX8216 switches only
	"status-menu sf-status2-menu"	Status of the switch fabric on the SRE module in slot SRE1 on EX8208 switches  Status of the switch fabric on the SF modules in slots SF2–SF5 on EX8216 switches	EX8208 and EX8216 switches only

Table 4: Menu Options of the LCD Menus Supported on the Switches *(Continued)*

Menu	Menu Options	Option Descriptions	Platforms Supported
	<b>"status-menu sf-status3-menu"</b>	Status of the switch fabric on the SF modules in slots SF6 and SF7 on EX8216 switches	EX8216 switches only
	<b>"status-menu power-status"</b>	Status of the power supply or power supplies	EX3200, EX3300, EX4200, and EX4500 switches and XRE200 External Routing Engines only
	<b>"status-menu psu-status1-menu"</b>	Status of the power supplies in slots P0 and P1	EX8208 and EX8216 switches only
	<b>"status-menu psu-status2-menu"</b>	Status of the power supplies in slots P2–P5	EX8208 and EX8216 switches only
	<b>"status-menu environ-menu"</b>	Status of the fan; current chassis temperature	All switches (except EX2200) and XRE200 External Routing Engine



Table 4: Menu Options of the LCD Menus Supported on the Switches *(Continued)*

Menu	Menu Options	Option Descriptions	Platforms Supported
	"status-menu show-version"	The version of Junos OS loaded on the switch	All switches except EX2200

**disable**—(Optional) Disable the specified menu.

## Required Privilege Level

view-level—To view this statement in the configuration.

control-level—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 10.2.

### RELATED DOCUMENTATION

*Configuring the LCD Panel on EX Series Switches (CLI Procedure)*

[LCD Panel in EX3200 Switches](#)

[LCD Panel in EX3300 Switches](#)

*LCD Panel in EX4200 Switches*

[LCD Panel in EX4500 Switches](#)

[LCD Panel in EX4550 Switches](#)

[LCD Panel in an EX6200 Switch](#)

[LCD Panel in an EX8200 Switch](#)

[LCD Panel in an XRE200 External Routing Engine](#)

# no-multicast-echo

## IN THIS SECTION

- [Syntax | 97](#)
- [Hierarchy Level | 97](#)
- [Description | 97](#)
- [Default | 97](#)
- [Required Privilege Level | 98](#)
- [Release Information | 98](#)

## Syntax

```
no-multicast-echo
```

## Hierarchy Level

```
[edit system]
```

## Description

Disable the Routing Engine from responding to ICMP echo requests sent to multicast group addresses.

## Default

The Routing Engine responds to ICMP echo requests sent to multicast group addresses.

## 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 8.1.

### RELATED DOCUMENTATION

| *Configure ICMP Features*

# no-ping-record-route

### IN THIS SECTION

- [Syntax | 98](#)
- [Hierarchy Level | 99](#)
- [Description | 99](#)
- [Required Privilege Level | 99](#)
- [Release Information | 99](#)

## Syntax

```
no-ping-record-route;
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the Junos OS to disable the reporting of the IP address in ping responses.

## 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 9.4.

### RELATED DOCUMENTATION

*Disable Reporting IP Address and Timestamps in Ping Responses*

# no-ping-time-stamp

### IN THIS SECTION

- [Syntax | 100](#)
- [Hierarchy Level | 100](#)

- Description | 100
- Required Privilege Level | 100
- Release Information | 100

## Syntax

```
no-ping-time-stamp;
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the Junos OS to disable the recording of timestamps in ping responses.

## 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 9.4.

## RELATED DOCUMENTATION

| [Disable Reporting IP Address and Timestamps in Ping Responses](#)

# no-redirects (IPv4 Traffic)

## IN THIS SECTION

- [Syntax | 101](#)
- [Hierarchy Level | 101](#)
- [Description | 101](#)
- [Default | 102](#)
- [Required Privilege Level | 102](#)
- [Release Information | 102](#)

## Syntax

```
no-redirects;
```

## Hierarchy Level

```
[edit system]
[edit interfaces interface-name unit logical-unit-number family family]
```

## Description

Stop protocol redirect messages for IPv4 traffic from being sent on the entire device or on an interface on the device.

To disable the sending of protocol redirect messages for the entire device, include the **no-redirects** statement at the **[edit system]** hierarchy level.

To disable the sending of protocol redirect messages on a specific interface, include the **no-redirects** statement at the **[edit interfaces *interface-name* unit *logical-unit-number* family *family*]** hierarchy level.

## Default

For EX Series Switches: The interface sends redirect messages.

For other devices: The device sends redirect messages.

## Required Privilege Level

For EX Series Switches:

- interface—To view this statement in the configuration.
- interface-control—To add this statement to the configuration.

For other devices:

- system—To view this statement in the configuration.
- system-control—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

### RELATED DOCUMENTATION

*Protocol Redirect Messages*

[Junos OS Network Interfaces Library for Routing Devices](#)

# optional

## IN THIS SECTION

- Syntax | 103
- Hierarchy Level | 103
- Description | 103
- Required Privilege Level | 103
- Release Information | 104

## Syntax

```
optional;
```

## Hierarchy Level

```
[edit system scripts commit file filename]
```

## Description

For Junos OS commit scripts, allow a commit operation to succeed even if the script specified in the **file** statement is missing from the **/var/db/scripts/commit** directory on the router.

## Required Privilege Level

maintenance—To view this statement in the configuration.



maintenance-control—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

| *Controlling Execution of Commit Scripts During Commit Operations*

# passive-monitor-mode

## IN THIS SECTION

- [Syntax | 104](#)
- [Hierarchy Level | 105](#)
- [Description | 105](#)
- [Required Privilege Level | 105](#)
- [Release Information | 105](#)

## Syntax

```
passive-monitor-mode;
```

## Hierarchy Level

```
[edit interfaces interface-name],  
[edit interfaces interface-name unit logical-unit-number],  
[edit logical-systems logical-system-name interfaces interface-name unit logical-unit-number]
```

## Description

Monitor packet flows from another router. If you include this statement in the configuration, the interface does not send keepalives or alarms, and does not participate actively on the network.

This statement is supported on ATM, Ethernet, and SONET/SDH interfaces. For more information, see [ATM Interfaces User Guide for Routing Devices](#).

For ATM and Ethernet interfaces, you can include this statement on the physical interface only.

For SONET/SDH interfaces, you can include this statement on the logical interface only.

## 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 Passive Monitoring on ATM Interfaces](#)

---

*Passive Monitoring on Ethernet Interfaces Overview*

---

[Enabling Packet Flow Monitoring on SONET/SDH Interfaces](#)

---

## ports

### IN THIS SECTION

- [Syntax | 106](#)
- [Hierarchy Level | 107](#)
- [Description | 107](#)
- [Options | 107](#)
- [Required Privilege Level | 107](#)
- [Release Information | 107](#)

## Syntax

```
ports {
  auxiliary {
    disable;
    insecure;
    type terminal-type;
    port-type (mini-usb | rj45);
  }
  console {
    disable;
    insecure;
    log-out-on-disconnect;
    type terminal-type;
  }
}
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the properties of the console and auxiliary ports. The ports are located on the router's craft interface.

See the switch's hardware documentation for port locations.

## Options

The remaining statements are explained separately. See [CLI Explorer](#).

## Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

### RELATED DOCUMENTATION

| *Configuring Junos OS to Set Console and Auxiliary Port Properties*

# ports

## IN THIS SECTION

- [Syntax | 108](#)
- [Hierarchy Level | 108](#)
- [Description | 109](#)
- [Required Privilege Level | 109](#)
- [Release Information | 109](#)

## Syntax

```
ports {  
    auxiliary {  
        disable;  
        insecure;  
        type terminal-type;  
    }  
    console {  
        disable;  
        insecure;  
        log-out-on-disconnect;  
        type terminal-type;  
    }  
}
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure the properties of the console and auxiliary ports. The ports are located on the craft interface.

See the switch hardware documentation for port locations.

The remaining statements are explained separately.

## 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 11.1.

### RELATED DOCUMENTATION

| [Configuring Console and Auxiliary Port Properties](#)

## power

### IN THIS SECTION

- [Syntax | 110](#)
- [Hierarchy Level | 110](#)
- [Hierarchy Level \(EX Series Switches\) | 110](#)
- [Description | 110](#)
- [Default | 111](#)

- Options | 111
- Required Privilege Level | 111
- Release Information | 112

## Syntax

```
power (off | on);
```

## Hierarchy Level

```
[edit chassis fpc slot-number]  
[edit chassis fpc slot pic],  
[edit chassis lcc name fpc name pic slot],  
[edit chassis member name fpc slot pic]
```

## Hierarchy Level (EX Series Switches)

```
[edit chassis fpc slot]
```

## Description

Turn a Flexible PIC Concentrator (FPC), or a Physical Interface Card (PIC) in the specified FPC, on or off.

The **power (off | on)** command at the **edit chassis fpc *slot-number*** hierarchy configures the Flexible PIC Concentrator (FPC) to stay offline or to come online automatically.

The **edit chassis fpc *slot-number* pic *pic-number* power off** command turns off the power to the PIC in the specified FPC.

**NOTE:**

- The **power off** command is applicable only to the fixed-configuration MPC with six 40-Gigabit Ethernet ports and twenty-four 10-Gigabit Ethernet ports (MPC5E-40G10G). For other PICs, it is ignored with a syslog message.
- On an EX6200 switch, the power statement has no effect when you configure it for an uplink port FPC on the Switch Fabric and Routing Engine (SRE) module. If you configure the statement for those FPCs, the configuration will be committed, but a message that informs you that the configuration has no effect is logged in the system log. You cannot turn the power on or off for these FPCs.
- The PTX10003-80C and PTX10003-160C routers running Junos OS Evolved do not support the **set chassis fpc *fpc-slot* power on** command. Executing this command on an FPC which is offline could cause unintended reboots of the router.

In Junos Node Slicing, issuing the command **set chassis fpc *slot-number* power off** on the BSYS (base system) powers off even those FPCs that are assigned to the Guest Network Functions (GNFs) in which unified in-service software upgrade (ISSU) is in progress. Learn more about [Junos Node Slicing](#).

## Default

**on**

## Options

**off**—Take the FPC (or a PIC in the specified FPC) offline, and configure it to stay offline, as, for example, after a system reboot.

**on**—Bring the FPC (or a PIC in the specified FPC) online, and configure it to come online automatically, as, for example, after a system reboot.

## Required Privilege Level

**interface**—To view this statement in the configuration.



interface-control—To add this statement to the configuration.

## Release Information

The edit chassis fpc *slot-number* power (off | on) statement introduced before Junos OS Release 7.4.

Statement introduced in Junos OS Release 9.4.

The edit chassis fpc *slot-number* pic *pic-number* power *off* introduced in Junos OS Release 13.3R2.

The edit chassis fpc *slot-number* pfe *slot-number* power (off | on) statement introduced in Junos OS Release 19.1R1.

### RELATED DOCUMENTATION

*Managing Power*

[Removing a Line Card from an EX6200 Switch](#)

[EX8208 Switch Hardware and CLI Terminology Mapping](#)

[EX8216 Switch Hardware and CLI Terminology Mapping](#)

[EX6210 Switch Hardware and CLI Terminology Mapping](#)

## processes

### IN THIS SECTION

- [Syntax | 113](#)
- [Hierarchy Level | 113](#)
- [Description | 113](#)
- [Default | 113](#)
- [Options | 113](#)
- [Required Privilege Level | 114](#)
- [Release Information | 114](#)

## Syntax

```
processes {
    process-name (enable | disable) failover (alternate-media | other-routing-
engine);
    timeout seconds;
}
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure which Junos OS processes are running on the router or switch.



**CAUTION:** Never disable any of the software processes unless instructed to do so by a customer support engineer.

## Default

All processes are enabled by default.

## Options

**(enable |  
disable)**

(Optional) Enable or disable a specified process.

**failover  
(alternate-**

(Optional) For routers or switches with redundant Routing Engines only, switch to backup media if a process fails repeatedly. If a process fails four times within 30

<b>media   other-routing-engine)</b>	seconds, the router or switch reboots from the alternate media or the other Routing Engine.
<b>process-name</b>	One of the valid process names. You can obtain a complete list of process names by using the CLI command completion feature. After specifying a process name, command completion also indicates any additional options for that process.
<b>timeout seconds</b>	(Optional) How often the system checks the watchdog timer, in seconds. If the watchdog timer has not been checked in the specified number of seconds, the system reloads. If you set the time value too low, it is possible for the system to reboot immediately after it loads. <ul style="list-style-type: none"><li>• <b>Values:</b> 15, 60, or 180</li><li>• <b>Default:</b> 180 seconds (rounded up to 291 seconds by the Junos kernel)</li></ul>

## Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

## Release Information

Statement introduced before Junos OS Release 7.4.

### RELATED DOCUMENTATION

| *Disabling Junos OS Processes*

# saved-core-context

## IN THIS SECTION

- Syntax | 115
- Hierarchy Level | 115
- Description | 115
- Default | 116
- Required Privilege Level | 116
- Release Information | 116

## Syntax

```
(saved-core-context | no-saved-core-context);
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure whether the switch saves core files generated by internal Junos OS processes, along with contextual information (system log files and a copy of the current configuration):

- **saved-core-context**—The switch saves each core file and its associated context in a compressed tar file named `/var/tmp/process-name.core.core-number.tgz`.
- **no-saved-core-context**—The switch does not save core files and their associated context.

## Default

The switch saves core files.

## Required Privilege Level

admin—To view this statement in the configuration.

admin-control—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

*Saving Core Files from Junos OS Processes*

[saved-core-files](#) | 116

# saved-core-files

### IN THIS SECTION

- [Syntax](#) | 117
- [Hierarchy Level](#) | 117
- [Description](#) | 117
- [Options](#) | 117
- [Required Privilege Level](#) | 117
- [Release Information](#) | 117

## Syntax

```
saved-core-files number;
```

## Hierarchy Level

```
[edit system]
```

## Description

Save core files generated by internal Junos OS processes, but not the associated contextual information (configuration and system log files).

## Options

*number*—Maximum number of core files to save.

- **Range:** 1 through 10

## Required Privilege Level

admin—To view this statement in the configuration.

admin-control—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 11.1.

## RELATED DOCUMENTATION

*Saving Core Files from Junos OS Processes*

[saved-core-context](#) | 115

# static-host-mapping

## IN THIS SECTION

- [Syntax](#) | 118
- [Hierarchy Level](#) | 118
- [Description](#) | 119
- [Options](#) | 119
- [Required Privilege Level](#) | 119
- [Release Information](#) | 119

## Syntax

```
static-host-mapping {  
  hostname {  
    alias [ alias ];  
    inet [ address ];  
    sysid system-identifier;  
  }  
}
```

## Hierarchy Level

```
[edit system]
```

## Description

Map a hostname to one or more IP addresses and aliases, and configure an International Organization for Standardization (ISO) system identifier (system ID).

## Options

**alias** *alias*—Alias for the hostname.

**hostname**—Fully qualified hostname.

**inet** *address*—IP address. You can specify one or more IP addresses for the host.

**sysid** *system-identifier*—ISO system identifier (system ID). This is the 6-byte portion of the Intermediate System-to-Intermediate System (IS-IS) network service access point (NSAP). We recommend that you use the host's IP address represented in binary-coded decimal (BCD) format.

## 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 11.1.

### RELATED DOCUMENTATION

*Configuring the Hostname of a Router or Switch by Using a Configuration Group*



# time-format

## IN THIS SECTION

- [Syntax | 120](#)
- [Hierarchy Level | 120](#)
- [Description | 120](#)
- [Default | 121](#)
- [Options | 121](#)
- [Required Privilege Level | 121](#)
- [Release Information | 121](#)

## Syntax

```
time-format (year | millisecond | year millisecond);
```

## Hierarchy Level

```
[edit system syslog]
```

## Description

Include the year, the millisecond, or both, in the timestamp on every standard-format system log message. The additional information is included for messages directed to each destination configured by a **file**, **console**, or **user** statement at the `[edit system syslog]` hierarchy level, but not to destinations configured by a **host** statement.

## Default

The timestamp specifies the month, date, hour, minute, and second when the message was logged—for example, **Aug 21 12:36:30**.

**NOTE:** When the **structured-data** statement is included at the `[edit system syslog file filename]` hierarchy level, this statement is ignored for the file.

## Options

**millisecond**—Include the millisecond in the timestamp.

**year**—Include the year in the timestamp.

## 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 11.1.

### RELATED DOCUMENTATION

| *Including the Year or Millisecond in Timestamps*

# time-zone

## IN THIS SECTION

- [Syntax | 122](#)
- [Hierarchy Level | 122](#)
- [Description | 122](#)
- [Default | 123](#)
- [Options | 123](#)
- [Required Privilege Level | 125](#)
- [Release Information | 125](#)

## Syntax

```
time-zone (GMT hour-offset | time-zone);
```

## Hierarchy Level

```
[edit system]
```

## Description

Set the local time zone. To have the time zone change take effect for all processes running on the switch, you must reboot the switch.

## Default

UTC

## Options

**GMT *hour-offset***—Set the time zone relative to UTC time.

- **Range:** -14 through +12
- **Default:** 0

***time-zone***—Specify the time zone as **UTC**, which is the default time zone, or as a string such as PDT (Pacific Daylight Time), or use one of the following continents and major cities:

```
Africa/Abidjan, Africa/Accra, Africa/Addis_Ababa, Africa/Algiers, Africa/Asmera,
Africa/Bamako, Africa/Bangui, Africa/Banjul, Africa/Bissau, Africa/Blantyre,
Africa/Brazzaville, Africa/Bujumbura, Africa/Cairo, Africa/Casablanca, Africa/
Ceuta, Africa/Conakry, Africa/Dakar, Africa/Dar_es_Salaam, Africa/Djibouti,
Africa/Douala, Africa/El_Aaiun, Africa/Freetown, Africa/Gaborone, Africa/Harare,
Africa/Johannesburg, Africa/Kampala, Africa/Khartoum, Africa/Kigali, Africa/
Kinshasa, Africa/Lagos, Africa/Libreville, Africa/Lome, Africa/Luanda, Africa/
Lubumbashi, Africa/Lusaka, Africa/Malabo, Africa/Maputo, Africa/Maseru, Africa/
Mbabane, Africa/Mogadishu, Africa/Monrovia, Africa/Nairobi, Africa/Ndjamena,
Africa/Niamey, Africa/Nouakchott, Africa/Ouagadougou, Africa/Porto-Novo, Africa/
Sao_Tome, Africa/Timbuktu, Africa/Tripoli, Africa/Tunis, Africa/Windhoek
America/Adak, America/Anchorage, America/Anguilla, America/Antigua, America/
Aruba, America/Asuncion, America/Barbados, America/Belize, America/Bogota,
America/Boise, America/Buenos_Aires, America/Caracas, America/Catamarca, America/
Cayenne, America/Cayman, America/Chicago, America/Cordoba, America/Costa_Rica,
America/Cuiaba, America/Curacao, America/Dawson, America/Dawson_Creek, America/
Denver, America/Detroit, America/Dominica, America/Edmonton, America/
El_Salvador, America/Ensenada, America/Fortaleza, America/Glace_Bay, America/
Godthab, America/Goose_Bay, America/Grand_Turk, America/Grenada, America/
Guadeloupe, America/Guatemala, America/Guayaquil, America/Guyana, America/
Halifax, America/Havana, America/Indiana/Knox, America/Indiana/Marengo, America/
Indiana/Vevay, America/Indianapolis, America/Inuvik, America/Iqaluit, America/
Jamaica, America/Jujuy, America/Juneau, America/La_Paz, America/Lima, America/
Los_Angeles, America/Louisville, America/Maceio, America/Managua, America/
Manaus, America/Martinique, America/Mazatlan, America/Mendoza, America/
```

Menominee, America/Mexico\_City, America/Miquelon, America/Montevideo, America/  
 Montreal, America/Montserrat, America/Nassau, America/New\_York, America/Nipigon,  
 America/Nome, America/Noronha, America/Panama, America/Pangnirtung, America/  
 Paramaribo, America/Phoenix, America/Port-au-Prince, America/Port\_of\_Spain,  
 America/Porto\_Acre, America/Puerto\_Rico, America/Rainy\_River, America/  
 Rankin\_Inlet, America/Regina, America/Rosario, America/Santiago, America/  
 Santo\_Domingo, America/Sao\_Paulo, America/Scoresbysund, America/Shiprock,  
 America/St\_Johns, America/St\_Kitts, America/St\_Lucia, America/St\_Thomas, America/  
 St\_Vincent, America/Swift\_Current, America/Tegucigalpa, America/Thule, America/  
 Thunder\_Bay, America/Tijuana, America/Tortola, America/Vancouver, America/  
 Whitehorse, America/Winnipeg, America/Yakutat, America/Yellowknife  
 Antarctica/Casey, Antarctica/DumontD'Urville, Antarctica/Mawson, Antarctica/  
 McMurdo, Antarctica/Palmer, Antarctica/South\_Pole  
 Arctic/Longyearbyen  
 Asia/Aden, Asia/Alma-Ata, Asia/Amman, Asia/Anadyr, Asia/Aqtau, Asia/Aqtobe, Asia/  
 Ashkhabad, Asia/Baghdad, Asia/Bahrain, Asia/Baku, Asia/Bangkok, Asia/Beirut,  
 Asia/Bishkek, Asia/Brunei, Asia/Calcutta, Asia/Chungking, Asia/Colombo, Asia/  
 Dacca, Asia/Damascus, Asia/Dubai, Asia/Dushanbe, Asia/Gaza, Asia/Harbin, Asia/  
 Hong\_Kong, Asia/Irkutsk, Asia/Ishigaki, Asia/Jakarta, Asia/Jayapura, Asia/  
 Jerusalem, Asia/Kabul, Asia/Kamchatka, Asia/Karachi, Asia/Kashgar, Asia/  
 Katmandu, Asia/Krasnoyarsk, Asia/Kuala\_Lumpur, Asia/Kuching, Asia/Kuwait, Asia/  
 Macao, Asia/Magadan, Asia/Manila, Asia/Muscat, Asia/Nicosia, Asia/Novosibirsk,  
 Asia/Omsk, Asia/Phnom\_Penh, Asia/Pyongyang, Asia/Qatar, Asia/Rangoon, Asia/  
 Riyadh, Asia/Saigon, Asia/Seoul, Asia/Shanghai, Asia/Singapore, Asia/Taipei,  
 Asia/Tashkent, Asia/Tbilisi, Asia/Tehran, Asia/Thimbu, Asia/Tokyo, Asia/  
 Ujung\_Pandang, Asia/Ulan\_Bator, Asia/Urumqi, Asia/Vientiane, Asia/Vladivostok,  
 Asia/Yakutsk, Asia/Yekaterinburg, Asia/Yerevan  
 Atlantic/Azores, Atlantic/Bermuda, Atlantic/Canary, Atlantic/Cape\_Verde,  
 Atlantic/Faeroe, Atlantic/Jan\_Mayen, Atlantic/Madeira, Atlantic/Reykjavik,  
 Atlantic/South\_Georgia, Atlantic/St\_Helena, Atlantic/Stanley  
 Australia/Adelaide, Australia/Brisbane, Australia/Broken\_Hill, Australia/Darwin,  
 Australia/Hobart, Australia/Lindeman, Australia/Lord\_Howe, Australia/Melbourne,  
 Australia/Perth, Australia/Sydney  
 Europe/Amsterdam, Europe/Andorra, Europe/Athens, Europe/Belfast, Europe/  
 Belgrade, Europe/Berlin, Europe/Bratislava, Europe/Brussels, Europe/Bucharest,  
 Europe/Budapest, Europe/Chisinau, Europe/Copenhagen, Europe/Dublin, Europe/  
 Gibraltar, Europe/Helsinki, Europe/Istanbul, Europe/Kaliningrad, Europe/Kiev,  
 Europe/Lisbon, Europe/Ljubljana, Europe/London, Europe/Luxembourg, Europe/  
 Madrid, Europe/Malta, Europe/Minsk, Europe/Monaco, Europe/Moscow, Europe/Oslo,  
 Europe/Paris, Europe/Prague, Europe/Riga, Europe/Rome, Europe/Samara, Europe/  
 San\_Marino, Europe/Sarajevo, Europe/Simferopol, Europe/Skopje, Europe/Sofia,  
 Europe/Stockholm, Europe/Tallinn, Europe/Tirane, Europe/Vaduz, Europe/Vatican,  
 Europe/Vienna, Europe/Vilnius, Europe/Warsaw, Europe/Zagreb, Europe/Zurich

```

Indian/Antananarivo, Indian/Chagos, Indian/Christmas, Indian/Cocos, Indian/
Comoro, Indian/Kerguelen, Indian/Mahe, Indian/Maldives, Indian/Mauritius, Indian/
Mayotte, Indian/Reunion
Pacific/Apia, Pacific/Auckland, Pacific/Chatham, Pacific/Easter, Pacific/Efate,
Pacific/Enderbury, Pacific/Fakaofu, Pacific/Fiji, Pacific/Funafuti, Pacific/
Galapagos, Pacific/Gambier, Pacific/Guadalcanal, Pacific/Guam, Pacific/Honolulu,
Pacific/Johnston, Pacific/Kiritimati, Pacific/Kosrae, Pacific/Kwajalein, Pacific/
Majuro, Pacific/Marquesas, Pacific/Midway, Pacific/Nauru, Pacific/Niue, Pacific/
Norfolk, Pacific/Noumea, Pacific/Pago_Pago, Pacific/Palau, Pacific/Pitcairn,
Pacific/Ponape, Pacific/Port_Moresby, Pacific/Rarotonga, Pacific/Saipan, Pacific/
Tahiti, Pacific/Tarawa, Pacific/Tongatapu, Pacific/Truk, Pacific/Wake, Pacific/
Wallis, Pacific/Yap

```

## 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 11.1.

### RELATED DOCUMENTATION

*Modifying the Default Time Zone for a Router or Switch Running Junos OS*

# traceoptions (Layer 2 Learning)

## IN THIS SECTION

● [Syntax | 126](#)

- [Hierarchy Level | 126](#)
- [Description | 126](#)
- [Default | 127](#)
- [Options | 127](#)
- [Required Privilege Level | 128](#)
- [Release Information | 128](#)

## Syntax

```
traceoptions {  
    file filename <files number> <size size> <world-readable | no-world-  
readable>;  
    flag flag (detail | disable | receive | send);  
    in-memory-debug;  
    level;  
    no-remote-trace;  
}
```

## Hierarchy Level

```
[edit protocols l2-learning]
```

## Description

Define tracing operations for Layer 2 learning.

## Default

The **traceoptions** feature is disabled by default.

## Options

**file *filename***—Name of the file to receive the output of the tracing operation. Enclose the name within quotation marks. All files are placed in the directory **/var/log**.

You can specify the following options:

- **no-world-readable**—(Optional) Restrict file access to the user who created the file.
- **size *size***—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named **trace-file** reaches its maximum size, it is renamed **trace-file.0**, then **trace-file.1**, and so on, until the maximum number of trace files is reached. Then the oldest trace file is overwritten. If you specify a maximum number of files, you also must specify a maximum file size with the **files** option. Use **xk** to specify KB, **xm** to specify MB, or **xg** to specify gigabytes.
- **world-readable**—(Optional) Enable unrestricted file access.

**flag *flag***—Tracing operation to perform. To specify more than one tracing operation, include multiple flag statements. You can include the following flags:

- **all**—All tracing operations.
- **bmac-next-hop**—Trace backbone MAC next hop operations.
- **bridge-bmac-next-hop**—Trace backbone MAC next hop bridge operations.
- **bridging-interface**—Trace interface bridge operations.
- **bridging-domain**—Trace bridging domain operations.
- **configuration**—Trace configuration operations.
- **flood-next-hop**—Trace flood next hop operations.
- **initialization**—Trace initialization operations.
- **interface-device**—Trace interface device operations.
- **interface-family**—Trace interface family operations.
- **interface-logical**—Trace logical interface operations.



- **ipc**—Trace inter-process communications operations.
- **irb**—Trace integrated routing and bridging operations.
- **isid**—Trace i-tagged service ID operations.
- **kack**—Trace kernel-acknowledgment.
- **learning-domain**—Trace learning domain operations.
- **logical-system**—Trace logical system operations.
- **mac-learning**—Trace MAC address learning.
- **mc-ae**—Trace multichassis aggregated Ethernet interface operations.
- **redundant-trunk-group**—Trace redundant trunk group operations.
- **routing-instance**—Trace routing instance operations.
- **routing-socket**—Trace routing socket operations.
- **storm-control**—Trace storm control operations.
- **unknown-unicast-forwarding**—Trace unknown unicast forwarding events.
- **vpls-ping**—Trace Virtual Private VLAN Service (VPLS) ping operations.

**in-memory-debug**—Enable trace parameters in the memory.

**level**—Specify level of debugging output.

**no-remote-trace**—Disable remote tracing.

## 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 13.2.

# traceoptions (SBC Configuration Process)

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## Syntax

```
traceoptions {  
    file filename <files number> <match regex> <size size> <world-readable | no-  
world-readable>;  
    flag flag;  
}
```

## Hierarchy Level

```
[edit system processes sbc-configuration-process]
```

## Description

Configure trace options for the session border controller (SBC) process of the border signaling gateway (BSG).

## Options

**file *filename***—Name of the file that receives the output of the tracing operation. Enclose the name in quotation marks. All files are placed in the directory `/var/log`. You can include the following file options:

- **files *number***—(Optional) Maximum number of trace files. When a trace file named **trace-file** reaches its maximum size, it is renamed **trace-file.0**, then **trace-file.1**, and so on, until the maximum number of trace files is reached. Then the oldest trace file is overwritten.

If you specify a maximum number of files, you must also specify a maximum file size with the **size** option and a filename.

- **Range:** 2 through 1000
- **Default:** 3 files
- **match *regex***—(Optional) Refine the output to include lines that contain the regular expression.
- **no-world-readable**—(Optional) Disable unrestricted file access.
- **size *size***—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named **trace-file** reaches this size, it is renamed **trace-file.0**. When the trace-file again reaches its maximum size, **trace-file.0** is renamed **trace-file.1** and **trace-file** is renamed **trace-file.0**. This renaming scheme continues until the maximum number of trace files is reached. Then the oldest trace file is overwritten. If you specify a maximum file size, you also must specify a maximum number of trace files with the **files** option and filename.
- **Syntax:** ***xk*** to specify KB, ***xm*** to specify MB, or ***xg*** to specify GB.
- **Range:** 10 KB through 1 GB
- **Default:** 128 KB
- **world-readable**—(Optional) Enable unrestricted file access.

**flag *flag***—Tracing operation to perform. To specify more than one tracing operation, include multiple **flag** statements. You can include the following flags:

- **all *trace-level***—Trace all SBC process operations.
- **common *trace-level***—Trace common events.
- **configuration *trace-level***—Trace configuration events.
- **device-monitor *trace-level***—Trace device monitor events.
- **ipc *trace-level***—Trace IPC events.

- **memory-pool *trace-level***—Trace memory pool events.
- ***trace-level***—Trace level options are related to the severity of the event being traced. When you choose a trace level, messages at that level and higher levels are captured. Enter one of the following trace levels as the ***trace-level***:
  - **debug**—Log all code flow of control.
  - **error**—Log failures with a short-term effect.
  - **info**—Log summary for normal operations, such as the policy decisions made for a call.
  - **trace**—Log program trace START and EXIT macros.
  - **warning**—Log failure recovery events or failure of an external entity.
- **ui *trace-level***—Trace user interface operations.

## 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 9.5.

# use-imported-time-zones

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## Syntax

```
use-imported-time-zones;
```

## Hierarchy Level

```
[edit system]
```

## Description

Configure a custom time zone from a locally generated time zone database.

## Required Privilege Level

admin—To view this statement in the configuration.

admin-control—To add this statement to the configuration.

## Release Information

Statement introduced in Junos OS Release 11.1.

**RELATED DOCUMENTATION**

| *Updating the IANA Time Zone Database on Junos OS Devices*

# 3

CHAPTER

## Operational Commands

---

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---

# clear log

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## Syntax

```
clear log filename  
<all>
```

## Description

Remove contents of a log file.

## Options

***filename*** Name of the specific log file to delete. Note that the file name cannot contain any special characters, including: `! [= ; | ( ) { }`

**all** (Optional) Delete the specified log file and all archived versions of it.

## Required Privilege Level

clear

## Output Fields

See [file list](#) for an explanation of output fields.

## Sample Output

### clear log

The following sample commands list log file information, clear the contents of a log file, and then display the updated log file information:

```
user@host> file list lcc0-re0:/var/log/sampled detail
lcc0-re0:
-----
-rw-r----- 1 root  wheel      26450 Jun 23 18:47 /var/log/sampled
total 1

user@host> clear log lcc0-re0:sampled
lcc0-re0:
-----

user@host> file list lcc0-re0:/var/log/sampled detail
lcc0-re0:
-----
-rw-r----- 1 root  wheel      57 Sep 15 03:44 /var/log/sampled
total 1
```

## Release Information

Command introduced before Junos OS Release 7.4.

## RELATED DOCUMENTATION

| [show log](#)

# clear chassis display message

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## 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

<b>none</b>	Clear or stop a text message on the craft interface display.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Interconnect device.
<b>lcc <i>number</i></b>	(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:

- 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.

<b>node-device <i>name</i></b>	(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.
<b>scc</b>	(TX Matrix routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix router (switch-card chassis).
<b>sfc <i>number</i></b>	(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* 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*

*show chassis craft-interface*

# clear system commit

### IN THIS SECTION

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## Syntax

```
clear system commit  
<synchronize-server pending-jobs>
```



## Description

Clear pending commit operations.

## Options

<b>none</b>	Clear pending commit operations on the static configuration database.
<b>synchronize-server pending-jobs</b>	(Optional) Clear pending commit synchronize operations for all instances of the ephemeral configuration database on an MX Series Virtual Chassis or a device with dual Routing Engines. This option can only be executed on the primary Routing Engine of the Virtual Chassis primary router or the dual Routing Engine system.

**NOTE:** The `clear system commit synchronize-server pending-jobs` command should be used only under the supervision of the Juniper Networks Technical Assistance Center (JTAC) during a troubleshooting session.

## Required Privilege Level

maintenance (or the actual user who scheduled the commit)

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### clear system commit

```
user@host> clear system commit
Pending commit cleared.
```

### clear system commit (None Pending)

```
user@host> clear system commit
No commit scheduled.
```

### clear system commit (User Does Not Have Required Privilege Level)

```
user@host> clear system commit
error: Permission denied
```

### clear system commit synchronize-server pending-jobs

```
user@host> clear system commit synchronize-server pending-jobs
```

## Release Information

Command introduced before Junos OS Release 7.4.

Option **synchronize-server** introduced in Junos OS Release 17.2R1.

### RELATED DOCUMENTATION

| *show system commit*

# clear system reboot

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## Syntax

```
clear system reboot  
<both-routing-engines>
```

## Syntax (EX Series Switches)

```
clear system reboot  
<all-members>  
<both-routing-engines>  
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
clear system reboot  
<both-routing-engines>  
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
clear system reboot  
<both-routing-engines>  
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (QFX Series)

```
clear system reboot  
<infrastructure name>  
<interconnect-device name>  
<node-group name>
```

## Description

Clear any pending system software reboots or halts. When issued on a TX Matrix router without any options, the default behavior clears all pending system software reboots or halts on all T640 routers connected to the TX Matrix router. When issued on a TX Matrix Plus router without any options, the default behavior clears all pending system software reboots or halts on all T1600 or T4000 routers connected to the TX Matrix Plus router.

## Options

<b>none</b>	Clear all pending system software reboots or halts.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for all the Routing Engines in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests on the l connected T1600 or T4000 LCCs.
<b>all-members</b>	(EX4200 switches only) (Optional) Clear all halt or reboot requests on all members of the Virtual Chassis configuration.
<b>both-routing-engines</b>	(Systems with multiple Routing Engines) (Optional) Clear all halt or reboot requests on both Routing Engines. On a TX Matrix router, clear both Routing Engines on all chassis connected to the TX Matrix router. Likewise, on a TX Matrix Plus router, clear both Routing Engines on all chassis connected to the TX Matrix Plus router.
<b>infrastructure <i>name</i></b>	(QFabric systems) (Optional) Clear all halt or reboot requests on the fabric control Routing Engines or fabric manager Routing Engines.
<b>interconnect-device <i>name</i></b>	(QFabric systems) (Optional) Clear all halt or reboot requests on the Interconnect device.
<b>lcc <i>number</i></b>	<p>(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests for a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

<b>local</b>	(EX4200 switches only) (Optional) Clear all halt or reboot requests on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches only) (Optional) Clear all halt or reboot requests on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value from 0 through 9.
<b>node-group <i>name</i></b>	(QFabric systems) (Optional) Clear all halt or reboot requests on the Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Clear all halt or reboot requests for the TX Matrix router (or switch-card chassis).
<b>sfc <i>number</i></b>	(TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for the TX Matrix Plus router. 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

**clear system reboot**

```
user@host> clear system reboot
reboot requested by root at Sat Dec 12 19:37:34 1998
[process id 17855]
Terminating...
```

## clear system reboot (TX Matrix Router)

```
user@host> clear system reboot
scc-re0:
-----
No shutdown/reboot scheduled.
lcc0-re0:
-----
No shutdown/reboot scheduled.
lcc2-re0:
-----
No shutdown/reboot scheduled.
```

## clear system reboot (QFX Series)

```
user@switch> clear system reboot node-group node1
No shutdown/reboot scheduled.
```

## 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 system reboot*

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# request chassis beacon

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## Syntax (EX Series)

```
request chassis beacon
<fpc slot-number (off | on)>
<fpc slot-number (off | on) timer minutes>
<fpc slot-number pic-slot slot-number port port-number (off | on)>
<fpc slot-number pic-slot slot-number port port-number (off | on) timer minutes>
```

## Syntax (QFX Series)

```
request chassis beacon
<all (off | on)>
<fpc slot-number (off | on)>
<interconnect-device name (cb slot-number | fpc slot-number | (off | on))>
<node-device name (off | on)>
```



## Syntax (PTX Series)

```
request chassis beacon
<all (off | on)>
<fpc slot-number (off | on)>
<interconnect-device name (cb slot-number | fpc slot-number | (off | on)>
<node-device name (off | on)>
```

## Description

(QFX Series switches only) Enable or disable the beacon LED on a QFX Series device.

(EX Series switches only) Supports the following for one or all network port status LEDs on a specified FPC:

- Enable the beacon for:
  - 5 minutes (default)
  - A specified number of minutes (1 through 120)
- Disable the beacon:
  - Instantly
  - After a specified number of minutes (1 through 120) is over

**NOTE:** To turn the beacon on or off on a Virtual Chassis, you must issue the **request chassis beacon** command on the primary switch in the Virtual Chassis. Also, when specifying the FPC slot number, you must use the target Virtual Chassis member number.

## Options

**all** Turn the beacon LED either **on** or **off** on all QFabric system Interconnect and Node devices.

<i>cb slot-number</i>	Turn the beacon LED either <b>on</b> or <b>off</b> on the Control Board of the QFX3008-I Interconnect device.
<i>fpc slot-number</i>	Turn all beacon LEDs on the specified FPC either <b>on</b> or <b>off</b> .
<i>fpc slot-number pic-slot slot-number port port-number</i>	Turn the beacon LED for the specified port either <b>on</b> or <b>off</b> .
<i>interconnect-device name</i>	Turn the beacon LED either <b>on</b> or <b>off</b> on the Interconnect device.
<i>node-device name</i>	Turn the beacon LED either <b>on</b> or <b>off</b> on the Node device.
<b>off</b>	Turn the specified beacon LEDs <b>off</b> .
<b>on</b>	Turn the specified beacon LEDs <b>on</b> .
<i>timer minutes</i>	Turn the beacon LEDs <b>on</b> for the specified number of minutes or <b>off</b> after the specified number of minutes elapses. <ul style="list-style-type: none"> <li>• <b>Range:</b> 1 through 120</li> </ul>

## 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 beacon fpc on (EX Series and QFX Series Switches)

```
user@switch> request chassis beacon fpc 0 on
```

```
Beacon set to ON
```

**request chassis beacon fpc on timer (EX Series Switches)**

```
user@switch> request chassis beacon fpc 0 on
timer 10
Beacon set to ON
```

**request chassis beacon fpc pic-slot port on (EX Series Switches)**

```
user@switch> request chassis beacon fpc 0 pic-slot
0 port 1 on
Beacon set to ON
```

**request chassis beacon fpc pic-slot port on timer (EX Series Switches)**

```
user@switch> request chassis beacon fpc 0 pic-slot
0 port 1 on timer 10
Beacon set to ON
```

**request chassis beacon node-device (QFabric System)**

```
user@switch> request chassis beacon node-device
node1 on

node1                ON
```

**request chassis beacon on interconnect-device fpc (QFabric System)**

```
user@switch> request chassis beacon on interconnect-device
fpc 2

FPC 2                ON
```

## request chassis beacon fpc 0 on (PTX Router)

```
user@switch> request chassis beacon fpc 0 on

FPC 0                ON
```

## Release Information

Command introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

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[show chassis beacon | 251](#)

## request chassis cb

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## 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 *name*** (QFabric systems only) (Optional) Bring the QFX3008-I Interconnect device Control Board either offline or online:

**slot *slot-number*** Control Board slot number:

- (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 *cb-slot-number* with a value from 0 through 1.

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 *cb-slot-number* with a value from 0 through 1.

- M320 router—Replace *slot-number* with a value from 0 through 1.
- MX480/MX240 routers—Replace *slot-number* with a value from 0 through 1.
- MX960 router—Replace *slot-number* with a value from 0 through 2.

- MX2020, MX2010, and MX2008 routers—Replace *slot-number* with 0 or 1.
- EX8208 switch—Replace *slot-number* with a value from 0 through 2.
- EX8216 switch—Replace *slot-number* with a value from 0 through 1.
- QFabric System—Replace *slot-number* with a value from 0 through 1.

***lcc number*** (TX Matrix, TX Matrix Plus routers 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.

***sfc number*** (TX Matrix Plus routers only) (Optional) Change the CB status for the TX Matrix Plus router (switch-fabric chassis). Replace *number* 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*

[Understanding Switching Control Board Redundancy](#)

## request chassis fabric plane

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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

- |                                  |   |
|----------------------------------|---|
| <b>offline</b>                   | Take the fabric plane offline. Use the <b>request chassis fabric plane <i>plane-number</i> offline</b> command to clear a FAULT state on a fabric plane. To bring the fabric plane back online, use the <b>request chassis fabric plane <i>plane-number</i> online</b> command. |
| <b>online</b>                    | Bring the fabric plane online.  |
| <b>plane <i>plane-number</i></b> | <p>Fabric plane number.</p> <ul style="list-style-type: none"> <li>• For the M120 router, replace <i>plane-number</i> with a value from 0 through 3.</li> <li>• For the MX480 and MX240 routers, replace <i>plane-number</i> with a value from 0 through 7.</li> </ul>          |

- 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*

*show chassis fabric plane-location*

*show chassis fabric summary*

## request chassis fpc

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## 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

<b>offline</b>	Take the FPC offline.
<b>online</b>	Bring the FPC online.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) Bring the FPC on the QFX3008-I Interconnect device either offline or online: <ul style="list-style-type: none"> <li>(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.</li> </ul>
<b>restart</b>	Restart the FPC.
<b>slot <i>slot-number</i></b>	FPC slot number: <ul style="list-style-type: none"> <li>M20 router—0 through 3.</li> <li>M120 router—0 through 5.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>MX2020 router—0 through 19.</li> <li>MX2010 router—0 through 9.</li> </ul>



- 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*

*show chassis fpc-feb-connectivity*

*show chassis fabric fpcs*

*Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online*

[MX960 Flexible PIC Concentrator Description](#)

# request chassis pic

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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 member-id** (MX Series routers only) (Optional) Change the PIC status on the specified member of the Virtual Chassis configuration. Replace **member-id** with the value that is assigned to the specified member.

<b>offline</b>	Take the PIC offline.
<b>online</b>	Bring the PIC online.
<b>pic-slot <i>slot-number</i></b>	<p>PIC slot number.</p> <ul style="list-style-type: none"> <li>• EX3200 and EX4200 switches—0 for built-in network interfaces and 1 for interfaces on uplink modules.</li> <li>• EX8208 and EX8216 switches—0.</li> <li>• M Series routers—0, 1, 2, or 3</li> <li>• MX960 router—<i>slot-number</i> corresponds to the slot number of the Packet Forwarding Engine.</li> <li>• MX204 router—0 or 1.</li> <li>• PTX5000 routers—0 or 1.</li> <li>• T320 router—0 or 1.</li> <li>• T640 router—0, 1, 2, or 3.</li> <li>• T1600 router —0, 1, 2, or 3.</li> <li>• T4000 router—0, 1, 2, or 3.</li> <li>• 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.</li> </ul>

## 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 routing-engine master

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## Syntax

```
request chassis routing-engine master (acquire | release | switch)
<no-confirm>
```

## Syntax (M Series, MX Series, T Series Routers)

```
request chassis routing-engine master (acquire | release | switch)
<no-confirm>
<check>
```

## Syntax (TX Matrix Routers)

```
request chassis routing-engine master (acquire | release | switch) (lcc number |
scc | all-chassis)
<no-confirm>
```

## Syntax (TX Matrix Plus Routers)

```
request chassis routing-engine master (acquire | release | switch) (lcc number |
sfc | all-chassis | all-lcc)
<no-confirm>
```

## Syntax (MX Series Virtual Chassis)

```
request chassis routing-engine master (acquire | release | switch)
<all-members>
<check>
```

```
<local>
<member member-id>
<no-confirm>
```

## Syntax (QFX Series)

```
request chassis routing-engine master (release | switch)
<check>
<interconnect-device name>
<node-group name>
<no-confirm>
```

## Syntax

## Description

For routers or switches with multiple Routing Engines, control which Routing Engine is the primary.



**CAUTION:** (Routing matrix based on the TX Matrix or TX Matrix Plus routers only)  
 Within the routing matrix, we recommend that all Routing Engines run the same Junos OS Release. If you run different releases on the Routing Engines and a change in primary role occurs on any backup Routing Engine in the routing matrix, one or all routers (in a routing matrix based on the TX Matrix router or in a routing matrix based on a TX Matrix Plus router) might become logically disconnected from the TX Matrix router and cause data loss. For more information, see the [TX Matrix Router Hardware Guide](#) or the [Junos OS High Availability User Guide](#).

**NOTE:** Successive graceful Routing Engine switchover events must be a minimum of 240 seconds (4 minutes) apart after both Routing Engines have come up.

If the router or switch displays a warning message similar to “Standby Routing Engine is not ready for graceful switchover. Packet Forwarding Engines that are not ready for graceful switchover might be reset,” do not attempt switchover. If you choose to proceed with switchover, only the Packet Forwarding Engines that were not ready for graceful switchover are reset. None of the Flexible PIC concentrators (FPCs) should spontaneously restart. We recommend that you wait until the warning no longer appears and then proceed with the switchover.

You will receive an error message stating “Command terminated. Not ready for primary role switch, try after n seconds” when this command is re-entered before 240 seconds have elapsed on EX Series switches.

**NOTE:** On a QFabric system, to avoid traffic loss on the network Node group, switch primary role of the routing engine to the backup routing engine, and then reboot.

## Options

**acquire** (Not available for Junos OS Evolved) Attempt to become the primary Routing Engine.

**release** (Not available for Junos OS Evolved) Request that the other Routing Engine become the primary.

**switch** Toggle primary role between Routing Engines.

**NOTE:** The **acquire** option should be used with caution because acquiring a Routing Engine may result in a corrupted database. If possible, use the **switch** option instead.

The **acquire**, **release**, and **switch** options have the following suboptions:

- all-chassis** (TX Matrix and TX Matrix Plus routers only) On a routing matrix composed of a TX Matrix router and the attached T640 routers, switch primary role on all the Routing Engines in the routing matrix. Likewise, on a routing matrix composed of a TX Matrix Plus router and the attached T1600 or T4000 routers, switch primary role on all the Routing Engines in the routing matrix.
- all-lcc** (TX Matrix Plus routers only) Request to acquire primary role for all line-card chassis (LCC).

<b>all-members</b>	(MX Series routers only) (Optional) Control Routing Engine primary role on the Routing Engines in all member routers of the Virtual Chassis configuration.
<b>check</b>	(QFabric systems, MX104, MX480, MX960, MX2010, MX2020, and MX2008 routers, and PTX5000 routers only) (Optional) Available with the <b>switch</b> , <b>release</b> , and <b>acquire</b> options. Check graceful switchover status of the standby Routing Engine before toggling primary role between Routing Engines.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Control Routing Engine primary role on the Routing Engines on an Interconnect device.
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Control Routing Engine primary role on the Routing Engines in the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(MX Series routers only) (Optional) Control Routing Engine primary role on the Routing Engines of the specified member in the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1.
<b>no-confirm</b>	(Optional) Do not request confirmation for the switch.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Control Routing Engine primary role on the Routing Engines on a Node group.
<b>scc</b>	(TX Matrix routers only) TX Matrix (switch-card chassis).
<b>sfc</b>	(TX Matrix Plus routers only) TX Matrix Plus router (or switch-fabric chassis).



## Additional Information

Because both Routing Engines are always running, the transition from one to the other as the primary Routing Engine is immediate. However, the changeover interrupts communication to the System and Switch Board (SSB). The SSB takes several seconds to reinitialize the Flexible PIC Concentrators (FPCs) and restart the PICs. Interior gateway protocol (IGP) and BGP convergence times depend on the specific network environment.

By default, the Routing Engine in slot 0 (**RE0**) is the primary and the Routing Engine in slot 1 (**RE1**) is the backup. To change the default primary Routing Engine, include the **routing-engine** statement at the [edit chassis redundancy] hierarchy level in the configuration. For more information, see the [Junos OS Administration Library for Routing Devices](#)

To have the backup Routing Engine become the primary Routing Engine, use the **request chassis routing-engine master switch** command. If you use this command to change the primary and then restart the chassis software for any reason, the primary reverts to the default setting.

**NOTE:** Although the configurations on the two Routing Engines do not have to be the same and are not automatically synchronized, we recommend making both configurations the same.

## 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 routing-engine primary acquire**

```
user@host> request chassis routing-engine master acquire
```

```
warning: Traffic will be interrupted while the PFE is re-initialized  
  
warning: The other routing engine's file system could be corrupted  
  
Reset other routing engine and become master ? [yes,no] (no)
```

### **request chassis routing-engine primary switch**

```
user@host> request chassis routing-engine master switch  
  
warning: Traffic will be interrupted while the PFE is re-initialized  
Toggle mastership between Routing Engines ? [yes,no] (no) yes  
  
Resolving mastership...  
Complete. The other Routing Engine becomes the master.
```

Switch primary role back to the local Routing Engine:

```
user@host> request chassis routing-engine master switch  
  
warning: Traffic will be interrupted while the PFE is re-initialized  
Toggle mastership between routing engines ? [yes,no] (no) yes  
  
Resolving mastership...  
Complete. The local routing engine becomes the master.
```

### **request chassis routing-engine master switch (Junos OS Evolved)**

```
user@host> request chassis routing-engine master switch  
Resolving mastership...  
Complete. The other Routing Engine becomes the master.
```

Switching back to primary router:

```
user@host> request chassis routing-engine master switch
Resolving mastership...
Complete. The local Routing Engine becomes the master.
```

If you did not switch back and tried to enter configuration mode, you would get the following error message:

```
user@host> configure
error: unknown command: configure
Configuration is allowed only from the master Routing Engine.
```

### **request chassis routing-engine primary switch check**

Usage shown for M Series, MX Series, and T Series routers.

```
{master}[edit]

user@host> request chassis routing-engine master switch check
```

### **command-name**

```
warning: Standby Routing Engine is not ready for graceful switchover.

{master}[edit]

user@host> request chassis routing-engine master switch check
Switchover Ready
```

You can similarly check the backup Routing Engine.

### **request chassis routing-engine master switch check (DRAM Size Mismatch Between Primary and Standby)**

```
user@host> request chassis routing-engine master switch check
error: Standby mirror connection is not up:RE DRAM Size Mismatch
```

```
{master}
```

## Release Information

Command introduced before Junos OS Release 7.4.

**all-chassis** option added in Junos OS Release 8.0.

**sfc** option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

### RELATED DOCUMENTATION

*show chassis routing-engine*

*Configuring Routing Engine Redundancy*

*Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration*

## request system halt

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## Syntax

```
request system halt
<at time>
<backup-routing-engine>
<both-routing-engines>
<other-routing-engine>
<in minutes>
<media (compact-flash | disk | removable-compact-flash | usb)>
<message "text">
```

## Syntax (EX Series Switches)

```
request system halt
<all-members>
<at time>
<backup-routing-engine>
<both-routing-engines>
<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>
<slice slice>
```

## Syntax (PTX Series)

```
request system halt
<at time>
<backup-routing-engine>
<both-routing-engines>
<other-routing-engine>
<in minutes>
<media (compact-flash | disk)>
<message "text">
```

## Syntax (TX Matrix Router)

```
request system halt
<all-lcc | lcc number | scc>
<at time>
<backup-routing-engine>
<both-routing-engines>
<other-routing-engine>
<in minutes>
<media (compact-flash | disk)>
<message "text">
```

## Syntax (TX Matrix Plus Router)

```
request system halt
<all-chassis | all-lcc | lcc number | sfc number>
<at time>
<backup-routing-engine>
<both-routing-engines>
<other-routing-engine>
<in minutes>
<media (compact-flash | disk)>
<message "text">
```

## Syntax (MX Series Router)

```
request system halt
<all-members>
<at time>
<backup-routing-engine>
<both-routing-engines>
<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>
```

## Syntax (QFX Series)

```
request system halt
<all-members>
<at time>
<both-routing-engines>
<director-device director-device-id>
<in minutes>
<local>
<media >
<member member-id>
<message "text">
<other-routing-engine>
<slice slice>
```

## Description

Stop the router or switch software.

**NOTE:** When you issue this command on an individual component—for example, a Node device—in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines will reboot.” If you want to halt only one member of a Node group, issue this command with the **member** option on the Node device CLI, because you cannot issue this command from the QFabric CLI. Also, issuing this command might cause traffic loss on an individual component.

When you issue this command on a QFX5100 switch, you are not prompted to reboot. You must power cycle the switch to reboot.

**NOTE:** For the routers with the Routing Engines RE-S-2x00x6, RE-PTX-2x00x8, and RE-S-2x00x8, this command is deprecated and might be removed completely in a future release. On these routers, this command is replaced with the **request vmhost halt** command which provides similar functionality.

## Options

<b>none</b>	Stop the router or switch software immediately.
<b>all-chassis</b>	(TX Matrix and TX Matrix Plus routers only) (Optional) Halt all chassis.
<b>all-lcc</b>	(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, halt all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.
<b>all-members</b>	(Optional) Halt all members of the Virtual Chassis configuration.
<b>at <i>time</i></b>	(Optional) Time at which to stop the software, specified in one of the following ways: <ul style="list-style-type: none"> <li>• <b>now</b>—Stop the software immediately. This is the default.</li> <li>• <b>+minutes</b>—Number of minutes from now to stop the software.</li> <li>• <b>yymmddhhmm</b>—Absolute time at which to stop the software, specified as year, month, day, hour, and minute.</li> <li>• <b>hh:mm</b>—Absolute time on the current day at which to stop the software.</li> </ul>



<b>backup-routing-engine</b>	(Optional) Halt the backup Routing Engine. This command halts the backup Routing Engine, regardless from which Routing Engine the command is executed. For example, if you issue the command from the primary Routing Engine, the backup Routing Engine is halted. If you issue the command from the backup Routing Engine, the backup Routing Engine is halted.
<b>both-routing-engines</b>	(Optional) Halt both Routing Engines at the same time.
<b>director-device director-device-id</b>	(QFabric systems only) Halt a specific Director device.
<b>lcc number</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, halt a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(Optional) Halt the local Virtual Chassis member.
<b>in minutes</b>	(Optional) Number of minutes from now to stop the software. This option is an alias for the at + <i>minutes</i> option.
<b>media (compact-flash /disk)</b>	(Optional) Boot medium for the next boot.
<b>media (external   internal)</b>	(EX Series and QFX Series switches and MX Series routers only) (Optional) Halt the boot media: <ul style="list-style-type: none"> <li>• <b>external</b>—Halt the external mass storage device.</li> <li>• <b>internal</b>—Halt the internal flash device.</li> </ul>
<b>member member-id</b>	(Optional) Halt the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, <i>member-id</i> can only be 0 or 1.

<b>message "text"</b>	(Optional) Message to display to all system users before stopping the software.
<b>other-routing-engine</b>	(Optional) Halt the other Routing Engine from which the command is issued. For example, if you issue the command from the primary Routing Engine, the backup Routing Engine is halted. Similarly, if you issue the command from the backup Routing Engine, the primary Routing Engine is halted.
<b>scc</b>	(TX Matrix routers only) (Optional) Halt the TX Matrix router (or switch-card chassis).
<b>sfc number</b>	(TX Matrix Plus routers only) (Optional) Halt the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.
<b>slice slice</b>	(EX Series and QFX Series switches only) (Optional) Halt a partition on the boot media. This option has the following suboptions: <ul style="list-style-type: none"> <li>• 1—Halt partition 1.</li> <li>• 2—Halt partition 2.</li> <li>• <b>alternate</b>—Reboot from the alternate partition.</li> </ul>

## Additional Information

On the M7i router, the **request system halt** command does not immediately power down the Packet Forwarding Engine. The power-down process can take as long as 5 minutes.

On a TX Matrix router and TX Matrix Plus router if you issue the **request system halt** command on the primary Routing Engine, all the primary Routing Engines connected to the routing matrix are halted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are halted.

**NOTE:** If you have a router or switch with two Routing Engines and you want to shut the power off to the router or switch or remove a Routing Engine, you must first halt the backup Routing Engine (if it has been upgraded), and then halt the primary Routing Engine. To halt a Routing Engine, issue the **request system halt** command. You can also halt both Routing Engines at the same time by issuing the **request system halt both-routing-engines** command.

## Required Privilege Level

maintenance

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system halt

```
user@host> request system halt
Halt the system ? [yes,no] (no) yes

*** FINAL System shutdown message from root@section2 ***
System going down IMMEDIATELY
Terminated
...
syncing disks... 11 8 done
The operating system has halted.
Please press any key to reboot.
```

### request system halt (In 2 Hours)

The following example, which assumes that the time is 5 PM (1700), illustrates three different ways to request that the system stop 2 hours from now:

```
user@host> request system halt at +120
user@host> request system halt in 120
user@host> request system halt at 19:00
```

## request system halt (Immediately)

```
user@host> request system halt at now
```

## request system halt (At 1:20 AM)

To stop the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system halt at yymmdd120
request system halt at 120
Halt the system at 120? [yes,no] (no) yes
```

## Release Information

Command introduced before Junos OS Release 7.4.

**other-routing-engine** option introduced in Junos OS Release 8.0.

**sfc** option introduced for the TX Matrix Plus router in Junos OS Release 9.6.

**director-device** option introduced for QFabric systems in Junos OS Release 12.2.

**backup-routing-engine** option introduced in Junos OS Release 13.1.

### RELATED DOCUMENTATION

---

[clear system reboot](#)

---

[request system power-off](#)

---

[request vmhost halt](#)

---

*show virtual-chassis*

---

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# request system logout

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## Syntax

```
request system logout (pid pid | terminal terminal | user username)  
<all>
```

## Description

Log out users from the router or switch and the configuration database. If a user held the **configure exclusive** lock, this command clears the exclusive lock.

## Options

- all** (Optional) Log out all sessions owned by a particular PID, terminal session, or user. (On a TX Matrix or TX Matrix Plus router, this command is broadcast to all chassis.)
- pid *pid*** Log out the user session using the specified management process identifier (PID). The PID type must be management process.

**terminal**            Log out the user for the specified terminal session.  
*terminal*

**user *username***    Log out the specified user.

## Required Privilege Level

configure

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**request system logout**

```
user@host> request system logout user test all
Connection closed by foreign host.
```

## Release Information

Command introduced before Junos OS Release 7.4.

### RELATED DOCUMENTATION

| *Log a User Out of the Device*

# request system power-off

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## Syntax

```
request system power-off
<both-routing-engines>
<other-routing-engine>
<at time>
<in minutes>
<media (compact-flash | disk | removable-compact-flash | usb)>
<message "text">
```

## Syntax (EX Series Switches)

```
request system power-off
<all-members>
<at time>
<both-routing-engines>
<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>
<slice slice>
```

## Syntax (TX Matrix Router)

```
request system power-off
<all-chassis | all-lcc | lcc number | scc>
<both-routing-engines>
<other-routing-engine>
<at time>
<in minutes>
<media (compact-flash | disk)>
<message "text">
```

## Syntax (TX Matrix Plus Router)

```
request system power-off
<all-chassis | all-lcc | lcc number | sfc number>
<both-routing-engines>
<other-routing-engine>
<at time>
<in minutes>
```



```
<media (compact-flash | disk)>
<message "text">
```

## Syntax (MX Series Router)

```
request system power-off
<all-members>
<at time>
<both-routing-engines>
<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>
```

## Syntax (QFX Series)

```
request system power-off
<at time>
<in minutes>
<media (external | internal)>
<message "text">
<slice slice>
```

## Description

Power off the Routing Engines.

**NOTE:** When you issue this command on an individual component in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines

will reboot.” If you want to halt only one member, use the **member** option. You cannot issue this command from the QFabric CLI.

**NOTE:** For a standalone chassis (such as MX Series, PTX Series, and T Series routers), the request to power off the system is applicable only to the Routing Engines. When you request to power off both Routing Engines, all the FPCs in the chassis shut down after approximately 10 minutes and the chassis fans run at full speed. The FPCs shut down because they no longer have communication with the Routing Engines and an Inter-Integrated Circuit (I2C) timeout occurred.

**NOTE:** For the routers with Routing Engines RE-S-2x00x6, RE-PTX-2x00x8, and RE-S-2x00x8, this command is deprecated and might be removed completely in a future release. On these routers, this command is replaced with the **request vmhost power-off** command which provides similar functionality.

## Options

<b>none</b>	Power off the router or switch software immediately.
<b>all-chassis</b>	(Optional) (TX Matrix and TX Matrix Plus router only) Power off all Routing Engines in the chassis.
<b>all-lcc</b>	(Optional) (TX Matrix and TX Matrix Plus router only) On a TX Matrix router, power off all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, power off all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Power off all members of the Virtual Chassis configuration.
<b>at <i>time</i></b>	(Optional) Time at which to power off the software, specified in one of the following ways: <ul style="list-style-type: none"> <li>• <b>now</b>—Power off the software immediately. This is the default.</li> <li>• <b>+<i>minutes</i></b>—Number of minutes from now to power off the software.</li> </ul>

- *yymmddhhmm*—Absolute time at which to power off the software, specified as year, month, day, hour, and minute.
- *hh:mm*—Absolute time on the current day at which to power off the software.

<b>both-routing-engines</b>	(Optional) Power off both Routing Engines at the same time.
<b>in <i>minutes</i></b>	(Optional) Number of minutes from now to power off the software. This option is an alias for the <b>at + <i>minutes</i></b> option.
<b>lcc <i>number</i></b>	(Optional) (TX Matrix and TX Matrix Plus router only) On a TX Matrix router, power off a T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, power off a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Power off the local Virtual Chassis member.
<b>media (compact-flash   disk)</b>	(Optional) Boot medium for the next boot.
<b>media (external   internal)</b>	(EX Series and QFX Series switches and MX Series routers only) (Optional) Power off the boot media: <ul style="list-style-type: none"> <li>• <b>external</b>—Power off the external mass storage device.</li> <li>• <b>internal</b>—Power off the internal flash device.</li> </ul>
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Power off the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.

<b>message</b> <i>"text"</i>	(Optional) Message to display to all system users before powering off the software.
<b>other-routing-engine</b>	(Optional) Power off the other Routing Engine from which the command is issued. For example, if you issue the command from the primary Routing Engine, the backup Routing Engine is halted. Similarly, if you issue the command from the backup Routing Engine, the primary Routing Engine is halted.
<b>scc</b>	(Optional) (TX Matrix router only) Power off only the primary Routing Engine or the backup Routing Engine on the TX Matrix router (or switch-card chassis). If you issue the command from the primary Routing Engine, the primary SCC is powered off. If you issue the command from the backup Routing Engine, the backup SCC is powered off.
<b>sfc number</b>	(Optional) (TX Matrix Plus router only) Power off only the primary Routing Engine or the backup Routing Engine on the TX Matrix Plus router (or switch-fabric chassis). If you issue the command from the primary Routing Engine, the primary SFC is powered off. If you issue the command from the backup Routing Engine, the backup SFC is powered off. Replace <i>number</i> with zero.
<b>slice slice</b>	(EX Series and QFX Series switches only) (Optional) Power off a partition on the boot media. This option has the following suboptions: <ul style="list-style-type: none"> <li>• <b>1</b>—Power off partition 1.</li> <li>• <b>2</b>—Power off partition 2.</li> <li>• <b>alternate</b>—Reboot from the alternate partition.</li> </ul>

## Additional Information

On a routing matrix composed of a TX Matrix router and T640 routers, if you issue the **request system power-off** command on the TX Matrix primary Routing Engine, all the primary Routing Engines connected to the routing matrix are powered off. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are powered off.

Likewise, on a routing matrix composed of a TX Matrix Plus router and T1600 routers, if you issue the **request system power-off** command on the TX Matrix Plus primary Routing Engine, all the primary Routing Engines connected to the routing matrix are powered off. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are powered off.

If you issue the **request system power-off both-routing-engines** command on the TX Matrix or TX Matrix Plus router, all the Routing Engines on the routing matrix are powered off.

## Required Privilege Level

maintenance

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**request system power-off**

```
user@host> request system power-off message "This router will be powered off in 30 minutes. Please save
your data and log out immediately."
warning: This command will not halt the other routing-engine.
If planning to switch off power, use the both-routing-engines option.
Power Off the system ? [yes,no] (no) yes

*** FINAL System shutdown message from remote@nutmeg ***
System going down IMMEDIATELY

This router will be powered off in 30 minutes. Please save your data and log out
immediately.

Shutdown NOW!
[pid 5177]
```

## Release Information

Command introduced in Junos OS Release 8.0.

# request system reboot

## IN THIS SECTION

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## Syntax

```
request system reboot
<at time>
<both-routing-engines>
<in minutes>
<media (compact-flash | disk | removable-compact-flash | usb)>
<message "text">
<other-routing-engine>
```

## Syntax (EX Series Switches and EX Series Virtual Chassis)

```
request system reboot
<all-members | local | member member-id>
<at time>
<in minutes>
<media (external | internal)> | <media (compact-flash | disk | removable-compact-
flash | usb)>
<message "text">
<slice slice>
```

## Syntax (MX Series Routers and MX Series Virtual Chassis, EX9200 Switches and EX9200 Virtual Chassis)

```
request system reboot
<all-members | local | member member-id>
<at time>
<both-routing-engines>
<in minutes>
<media (external | internal)> | <media (compact-flash | disk | usb)> | <junos |
network | oam | usb>
<message "text">
<other-routing-engine>
```

## Syntax (QFabric Systems)

```
request system reboot
<all <graceful>>
<at time>
<director-device name>
<director-group <graceful>>
<fabric <graceful>>
<in minutes>
<in-service>
```

```

<media>
<message "text">
<node-group name>
<slice slice>

```

## Syntax (QFX Series Switches and QFX Series Virtual Chassis, Virtual Chassis Fabric)

```

request system reboot
<all-members | local | member member-id>
<at time>
<in minutes>
<in-service>
<hypervisor>
<junos | network | oam | usb>
<message "text">
<slice slice>

```

## Syntax (TX Matrix Router)

```

request system reboot
<all-chassis | all-lcc | lcc number | scc>
<at time>
<both-routing-engines>
<in minutes>
<media (compact-flash | disk)>
<message "text">
<other-routing-engine>

```



## Syntax (TX Matrix Plus Router)

```
request system reboot
<all-chassis | all-lcc | lcc number | sfc number>
<at time>
<both-routing-engines>
<in minutes>
<media (compact-flash | disk)>
<message "text">
<other-routing-engine>
<partition (1 | 2 | alternate)>
```

## Description

Use this command to reboot the device software.

This command can be used on standalone devices and on devices supported in a Virtual Chassis, Virtual Chassis Fabric, or QFabric system.

Starting with Junos OS Release 15.1F3, the statement **request system reboot** reboots only the guest operating system on the PTX5000 with RE-PTX-X8-64G and, MX240, MX480, and MX960 with RE-S-X6-64G.

Starting with Junos OS Release 15.1F5, the statement **request system reboot** reboots only the guest operating system on the MX2010, and MX2020 with REMX2K-X8-64G.

Starting from Junos OS Release 17.2R1, PTX10008 routers do not support the **request system reboot** command. Starting from Junos OS Release 17.4R1, PTX10016 routers do not support the **request system reboot** command. Use the **request vmhost reboot** command instead of the **request system reboot** command on the PTX10008 and PTX10016 routers to reboot the Junos OS software package or bundle on the router. See [request vmhost reboot](#).

On a QFabric system, to avoid traffic loss on the network Node group, switch mastership of the Routing Engine to the backup Routing Engine, and then reboot.

## Options

The options described here are not all supported on every platform or release of Junos OS. Refer to the Syntax sections for the options commonly available on each type of platform.

<b>none</b>	Reboot the software immediately.
<b>all-chassis</b>	(Optional) On a TX Matrix router or TX Matrix Plus router, reboot all routers connected to the TX Matrix or TX Matrix Plus router, respectively.
<b>all-lcc</b>	(Optional) On a TX Matrix router or TX Matrix Plus router, reboot all line card chassis connected to the TX Matrix or TX Matrix Plus router, respectively.
<b>all-members   local   member member-id</b>	(Optional) Specify which member of the Virtual Chassis to reboot: <ul style="list-style-type: none"> <li>• <b>all-members</b>—Reboots each switch that is a member of the Virtual Chassis.</li> <li>• <b>local</b>—Reboots only the local switch (switch where you are logged in).</li> <li>• <b>member member-id</b>—Reboots the specified member switch of the Virtual Chassis</li> </ul>
<b>at time</b>	(Optional) Time at which to reboot the software, specified in one of the following ways: <ul style="list-style-type: none"> <li>• <b>now</b>—Stop or reboot the software immediately. This is the default.</li> <li>• <b>+minutes</b>—Number of minutes from now to reboot the software.</li> <li>• <b>yymmddhhmm</b>—Absolute time at which to reboot the software, specified as year, month, day, hour, and minute.</li> <li>• <b>hh:mm</b>—Absolute time on the current day at which to stop the software, specified in 24-hour time.</li> </ul>
<b>both-routing-engines</b>	(Optional) Reboot both Routing Engines at the same time.
<b>hypervisor</b>	(Optional) Reboot Junos OS, host OS, and any installed guest VMs.
<b>in minutes</b>	(Optional) Number of minutes from now to reboot the software. The minimum value is 1. This option is an alias for the <b>at +minutes</b> option.
<b>in-service</b>	(Optional) Enables you to reset the software state (no software version change) of the system with minimal disruption in data and control traffic.
<b>junos</b>	(Optional) Reboot from the Junos OS (main) volume.
<b>lcc number</b>	—(Optional) Line-card chassis (LCC) number.  Replace <i>number</i> 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.

**media**  
(compact-flash |  
disk |  
removable-  
compact-flash |  
usb)

(Optional) Use the indicated boot medium for the next boot.

**media (external  
| internal)**

(Optional) Use the indicated boot medium for the next boot:

- **external**—Reboot the device using a software package stored on an external boot source, such as a USB flash drive.
- **internal**—Reboot the device using a software package stored in an internal memory source.

**message "*text*"**

(Optional) Message to display to all system users before stopping or rebooting the software.

**network**

(Optional) Reboot using the Preboot Execution Environment (PXE) boot method over the network.

**oam**

(Optional) Reboot from the maintenance volume (OAM volume, usually the compact flash drive).

**other-routing-  
engine**

(Optional) Reboot the other Routing Engine from which the command is issued. For example, if you issue the command from the primary Routing Engine, the backup Routing Engine is rebooted. Similarly, if you issue the command from the backup Routing Engine, the primary Routing Engine is rebooted.

**partition  
*partition***

(Optional) Reboot using the specified partition on the boot media. This option is equivalent to the **slice** option that is supported on some devices. Specify one of the following *partition* values:

- **1**—Reboot from partition 1.

- **2**—Reboot from partition 2.
- **alternate**—Reboot from the alternate partition.

**scc** (Optional) Reboot the Routing Engine on the TX Matrix switch-card chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted.

**sfc number** (Optional) Reboot the Routing Engine on the TX Matrix Plus switch-fabric chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted. Replace *number* with 0.

**slice slice** (Optional) Reboot using the specified partition on the boot media. This option was originally the **partition** option but was renamed to **slice** on EX Series and QFX Series switches. Specify one of the following *slice* values:

- **1**—Reboot from partition 1.
- **2**—Reboot from partition 2.
- **alternate**—Reboot from the alternate partition (which did not boot the switch at the last bootup).

**NOTE:** The **slice** option is not supported on QFX Series switches that have no alternate slice when Junos OS boots as a Virtual Machine (VM). To switch to the previous version of Junos OS, issue the **request system software rollback** command.

**usb** (Optional) Reboot from a USB device.

The following options are available only on QFabric Systems:

**all** (Optional) Reboots the software on the Director group, fabric control Routing Engines, fabric manager Routing Engines, Interconnect devices, and network and server Node groups.

**director-device name** (Optional) Reboots the software on the Director device and the default partition (QFabric CLI).

**director-group** (Optional) Reboots the software on the Director group and the default partition (QFabric CLI).

**fabric** (Optional) Reboots the fabric control Routing Engines and the Interconnect devices.

<b>node-group name</b>	(Optional) Reboots the software on a server Node group or a network Node group.
<b>graceful</b>	(Optional) Enables the QFabric component to reboot with minimal impact to network traffic. This sub-option is only available for the <b>all</b> , <b>fabric</b> , and <b>director-group</b> options.

## Additional Information

Reboot requests are recorded in the system log files, which you can view with the **show log** command (see *show log*). Also, the names of any running processes that are scheduled to be shut down are changed. You can view the process names with the **show system processes** command (see [show system processes](#)).

On a TX Matrix or TX Matrix Plus router, if you issue the **request system reboot** command on the primary Routing Engine, all the primary Routing Engines connected to the routing matrix are rebooted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are rebooted.

**NOTE:** Before issuing the **request system reboot** command on a TX Matrix Plus router with no options or the **all-chassis**, **all-lcc**, **lcc number**, or **sfc** options, verify that primary Routing Engine for all routers in the routing matrix are in the same slot number. If the primary Routing Engine for a line-card chassis is in a different slot number than the primary Routing Engine for a TX Matrix Plus router, the line-card chassis might become logically disconnected from the routing matrix after the **request system reboot** command.

**NOTE:** To reboot a router that has two Routing Engines, reboot the backup Routing Engine (if you have upgraded it) first, and then reboot the primary Routing Engine.

## Required Privilege Level

maintenance

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### request system reboot

```
user@host> request system reboot
Reboot the system ? [yes,no] (no)
```

### request system reboot (at 2300)

```
user@host> request system reboot at 2300 message ?Maintenance time!?
Reboot the system ? [yes,no] (no) yes

shutdown: [pid 186]
*** System shutdown message from root@test.example.net ***
System going down at 23:00
```

### request system reboot (in 2 Hours)

The following example, which assumes that the time is 5 PM (17:00), illustrates three different ways to request the system to reboot in two hours:

```
user@host> request system reboot at +120
user@host> request system reboot in 120
user@host> request system reboot at 19:00
```

### request system reboot (Immediately)

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

## request system reboot (at 1:20 AM)

To reboot the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system reboot at 06060120
request system reboot at 120
Reboot the system at 120? [yes,no] (no) yes
```

## request system reboot in-service

```
user@switch> request system reboot in-service
Reboot the system ? [yes,no]
[Feb 22 02:37:04]:ISSU: Validating Image

PRE ISSR CHECK:
-----
PFE Status                : Online
Member Id zero            : Valid
VC not in mixed or fabric mode : Valid
Member is single node vc  : Valid
BFD minimum-interval check done : Valid
GRES enabled              : Valid
NSR enabled               : Valid
drop-all-tcp not configured : Valid
Ready for ISSR           : Valid

warning: Do NOT use /user during ISSR. Changes to /user during ISSR may get lost!
Current image is jinstall-jcp-i386-flex-18.1.img
[Feb 22 02:37:14]:ISSU: Preparing Backup RE
Prepare for ISSR
[Feb 22 02:37:19]:ISSU: Backup RE Prepare Done
Spawning the backup RE
Spawn backup RE, index 1 successful
Starting secondary dataplane
Second dataplane container started
GRES in progress
Waiting for backup RE switchover ready
```

```

GRES operational
Copying home directories
Copying home directories successful
Initiating Chassis In-Service-Upgrade for ISSR
Chassis ISSU Started
[Feb 22 02:42:55]:ISSU: Preparing Daemons
[Feb 22 02:43:00]:ISSU: Daemons Ready for ISSU
[Feb 22 02:43:05]:ISSU: Starting Upgrade for FRUs
[Feb 22 02:43:15]:ISSU: FPC Warm Booting
[Feb 22 02:44:16]:ISSU: FPC Warm Booted
[Feb 22 02:44:27]:ISSU: Preparing for Switchover
[Feb 22 02:44:31]:ISSU: Ready for Switchover
Checking In-Service-Upgrade status
  Item          Status          Reason
  FPC 0         Online (ISSU)
Send ISSR done to chassisd on backup RE
Chassis ISSU Completed
Removing dcpfe0 eth1 128.168.0.16 IP
Bringing down bme00
Post Chassis ISSU processing done
[Feb 22 02:44:33]:ISSU: IDLE
Stopping primary dataplane
Clearing ISSU states
Console and management sessions will be disconnected. Please login again.
device_handoff successful ret: 0
Shutdown NOW!
[pid 14305]

*** FINAL System shutdown message from root@sw-duckhorn-01 ***

System going down IMMEDIATELY

```

## Release Information

Command introduced before Junos OS Release 7.4.

Option **other-routing-engine** introduced in Junos OS Release 8.0.

Option **sfc** introduced for the TX Matrix Plus router in Junos OS Release 9.6.

Option **partition** changed to **slice** in Junos OS Release 10.0 for EX Series switches.



Option **both-routing-engines** introduced in Junos OS Release 12.1.

## RELATED DOCUMENTATION

[clear system reboot](#)

[request system halt](#)

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

[request vmhost reboot](#)

# set chassis display message

## IN THIS SECTION

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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.

<b>fpc-slot <i>slot-number</i></b>	(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 <b>0</b> through <b>31</b> . On the switch, display the text message for a specific member of a Virtual Chassis, where <b>fpc-slot <i>slot-number</i></b> corresponds to the member ID. Replace <i>slot-number</i> with a value from <b>0</b> through <b>9</b> . On the QFX Series, the <i>slot-number</i> is always <b>0</b> . On a TX Matrix Plus router with 3D SIBs replace <i>slot-number</i> with a value from <b>0</b> through <b>63</b> .
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>permanent</b>	(Optional) Display a text message on the craft interface display or LCD panel display permanently.
<b>scc</b>	(TX Matrix routers only) Display the text message on the craft interface display of the TX Matrix router (switch-card chassis).
<b>sfc <i>number</i></b>	(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](#)

# set date

## IN THIS SECTION

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## Syntax

```
set date (date-time ntp <key authentication-key number> <servers> <source-  
address source-address>)
```

## Description

Set the date and time.

## Options

*date-time*

Date and time. Enter this string inside quotation marks.

*ntp*

Use a Network Time Protocol (NTP) server to synchronize the current date and time setting on the router or switch.

<b><i>key authentication-key number</i></b>	(Optional) Specify a key number to authenticate the NTP server used to synchronize the date and time. You must specify the same key number used to authenticate the server configured at the [ <b>edit system ntp authentication-key number</b> ] hierarchy level.
<b><i>servers</i></b>	(Optional) Specify the IP address of one or more NTP servers.
<b><i>source-address source-address</i></b>	Specify the source address that the router or switch uses to contact the remote NTP server.

## Required Privilege Level

view

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

set date

```
user@host> set date ntp
21 Apr 17:22:02 ntpdate[3867]: step time server 172.17.27.46 offset 8.759252 sec
```

## Release Information

Command introduced before Junos OS Release 7.4.

**key** option introduced in Junos OS Release 12.1R2

## RELATED DOCUMENTATION

| *Setting the Date and Time*

# 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

<b>none</b>	Display information about the conditions that have been configured to trigger alarms.
<b>all-members</b>	(MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display information about alarm conditions for the Interconnect device.
<b>lcc <i>number</i></b>	<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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display information about alarm conditions for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display information about alarm conditions for the Node device.

<b>satellite [slot-id slot-id]</b>	(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.
<b>scc</b>	(TX Matrix router only) (Optional) Show information about the TX Matrix router (switch-card chassis).
<b>sfc number</b>	(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 <b>0</b> .

## 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_ILLEGALSIZERR	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
<b>Chip Type: M Chip</b>	<b>Code</b>
CMALARM_MCHIP_ECC_UNCORRECT_ERR	128
<b>Chip Type: N Chip</b>	<b>Code</b>
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 5 on page 233](#) lists the output fields for the **show chassis alarms** command. Output fields are listed in the approximate order in which they appear.

**Table 5: show chassis alarms Output Fields**

Field Name	Field Description
<b>Alarm time</b>	Date and time the alarm was first recorded.
<b>Class</b>	Severity class for this alarm: <b>Minor</b> or <b>Major</b> .
<b>Description</b>	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 beacon

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## show chassis beacon (QFX Series)

```
show chassis beacon
<cb slot-number>
<fpc slot-number>
<interconnect-device name (cb slot-number | fpc slot-number)>
<node-device name>
```

## Description

Display the beacon LED status on a QFX3500, QFX3600, QFX5100, EX4600, OCX Series standalone switch, Node device, and an Interconnect device. You can also display the beacon LED status of the Control Boards and Flexible PIC Concentrators on the Interconnect device.

## Options

<b><i>cb slot-number</i></b>	(QFabric systems only) (Optional) Display the status of the beacon LEDs for the Control Board on the Interconnect device.
<b><i>fpc slot-number</i></b>	(QFabric systems only) (Optional) Display the status of the beacon LEDs for the FPC on the Interconnect device. (Optional) Display the status of the beacon LEDs for the FPC on the standalone switch.
<b><i>interconnect-device name</i></b>	(QFabric systems only) (Optional) Display the status of the beacon LEDs for the Interconnect device.
<b><i>node-device name</i></b>	(QFabric systems only) (Optional) Display the status of the beacon LEDs for the Node device.

## Required Privilege Level

view

## Output Fields

[Table 6 on page 252](#) lists the output fields for the **show chassis beacon** command. Output fields are listed in the approximate order in which they appear.

**Table 6: show chassis led Output Fields**

Field Name	Field Description
<b>Slot</b>	FPC slot number of the device whose content is being displayed. On QFX3500 standalone switches, the number is always <b>0</b> .
<b>Beacon State</b>	Status of the beacon state: <ul style="list-style-type: none"> <li>• Off—The beacon is <b>OFF</b>.</li> <li>• On—The beacon is <b>ON</b>.</li> </ul>

## Sample Output

### show chassis beacon (OCX Series and QFX Series Switches)

```
user@switch> show chassis beacon
Slot          Beacon State
          FPC      0          OFF
```

### 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
```

## Release Information

Command introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

| [request chassis beacon](#) | [151](#)

## show chassis environment

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- [Syntax \(TX Matrix Routers\)](#) | [255](#)
- [Syntax \(TX Matrix Plus Routers\)](#) | [256](#)
- [Syntax \(MX Series Routers\)](#) | [256](#)
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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

<b>none</b>	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.
<b>all-members</b>	(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for all the members of the Virtual Chassis configuration.
<b>adc <i>adc-slot-number</i></b>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the adapter cards. For MX2020 routers, replace <b><i>adc-slot-number</i></b> with a value from <b>0</b> through <b>19</b> . For MX2010 and MX2008 routers, replace <b><i>adc-slot-number</i></b> with a value from <b>0</b> through <b>9</b> .
<b>cb <i>cb-slot-number</i></b>	(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 <b>0</b> or <b>1</b> .
<b><i>cip cip-slot-number</i></b>	(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 <b>0</b> or <b>1</b> .
<b><i>cb interconnect-device name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information for the Control Board on an Interconnect device.
<b><i>ccg ccg-slot-number</i></b>	(PTX Series only) (Optional) Display chassis environmental information for the Centralized Clock Generator. Replace <i>cb-slot</i> with a value of <b>0</b> or <b>1</b> .
<b><i>fan fantray-slot-number</i></b>	(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 <b>0</b> through <b>3</b> .
<b><i>fpc fpc-slot</i></b>	(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 <b>0</b> through <b>9</b> . For MX2020 routers, replace <i>fpc-slot</i> with a value from <b>0</b> through <b>19</b> . For information about FPC numbering, see <i>show chassis environment fpc</i> . 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 <b>0</b> through <b>63</b> .
<b><i>fpm</i></b>	(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).
<b><i>interconnect-device name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.
<b><i>lcc number</i></b>	(TX Matrix routers and TX Matrix Plus routers 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.

<b>local</b>	(MX Series routers and EX Series switches only) (Optional) Display chassis environmental information for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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 <b>0</b> or <b>1</b> . For EX Series switches, see <i>member</i> for member ID values.
<b>monitored</b>	(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.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information for the Node device.
<b>pdu <i>pdu-slot-number</i></b>	(PTX Series only) (Optional) Display chassis environmental information for the specified power distribution unit.
<b>pem</b>	(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Power Entry Module on the specified Interconnect device or Node device.
<b>pem <i>pem-slot-number</i></b>	(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 <i>show chassis environment pem</i> .
<b>psm <i>psm-slot-number</i></b>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the power supply module. For MX2020 routers,

replace *psm-slot-number* with a value from **0** through **17**. For MX2010 and MX2008 routers, replace *psm-slot-number* with a value from **0** through **8**.

<b>psu <i>psu-slot-number</i></b>	(EX Series switches only) (Optional) Display chassis environmental information for a specified power supply.
<b>routing-engine</b>	(QFX3500 switches and QFabric systems only) (Optional) Display chassis environmental information for the Routing Engine on the specified Interconnect device.
<b>routing-engine <i>re-slot-number</i></b>	(Optional) Display chassis environmental information for the specified Routing Engine. For information about the options, see <i>show chassis environment routing-engine</i> .
<b>satellite [fpc-slot <i>slot-id</i>] device-alias <i>alias-name</i>]</b>	(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.
<b>scg</b>	(T Series routers only) (Optional) Display chassis environmental information about the SONET Clock Generator.
<b>scc</b>	(TX Matrix routers only) (Optional) Display chassis environmental information about the TX Matrix router (switch-card chassis).
<b>sfb <i>sfb-slot-number</i></b>	(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 <b>0</b> through <b>7</b> .
<b>sfc <i>number</i></b>	(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 <b>0</b> .
<b>sib <i>sib-slot-number</i></b>	(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 <a href="#">show chassis environment sib</a> .

## Required Privilege Level

view



## Output Fields

[Table 7 on page 265](#) lists the output fields for the **show chassis environment** command. Output fields are listed in the approximate order in which they appear.

Table 7: 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"> <li>• <b>Power:</b> Power information: <ul style="list-style-type: none"> <li>• (M5, M10, M20, and M40 routers and EX Series switches only) Power supply status: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Failed</b>, or <b>Absent</b>.</li> <li>• (M7i, M10i, M40e, M120, M160, M320, and T Series routers and EX Series switches only) Power Entry Modules status: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Check</b>, <b>Failed</b>, or <b>Absent</b>.</li> <li>• (PTX Series only) Power information is reported in PDU or PSM combinations. The status is: <b>OK</b>, <b>Testing</b>, (during initial power-on), <b>Check</b>, <b>Failed</b>, or <b>Absent</b>.</li> </ul> </li> <li>• <b>Temp:</b> Temperature of air flowing through the chassis in degrees Celsius (C) and Fahrenheit (F). <ul style="list-style-type: none"> <li>• 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.</li> <li>• EX2200 switches have a side-to-rear cooling system. The <b>Local Intake</b> temperature is measured by the sensor on the right side of the chassis, and the <b>Remote Intake</b> temperature is measured by the sensor on the left side of the chassis.</li> </ul> </li> <li>• <b>Pic:</b> On ACX4000 routers, multiple temperature channels on a MIC. The status is: <b>OK</b> and the <b>Measurement</b> is in degrees Celsius (C) and Fahrenheit (F).</li> <li>• <b>Fan:</b> Fan status: <b>OK</b>, <b>Testing</b> (during initial power-on), <b>Failed</b>, or <b>Absent</b>.  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. <b>Measurement</b> indicates actual fan RPM (PTX and MX2010, MX2020, and MX2008 Routers only).</li> <li>• <b>Misc:</b> Information about other components of the chassis.</li> </ul>

Table 7: show chassis environment Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> <li>• On some routers, this field indicates the status of one or more additional components.</li> <li>• On the M40e, M160, and M320 router, <b>Misc</b> includes <b>CIP</b> (Connector Interface Panel). <b>OK</b> indicates that the CIP is present. <b>Absent</b> indicates that the CIP is not present.</li> <li>• On T Series routers, <b>Misc</b> includes <b>CIP</b> and <b>SPMB</b> (Switch Processor Mezzanine Board). <b>OK</b> indicates that the <b>CIP</b> or <b>SPMB</b> is present. <b>Absent</b> indicates that the <b>CIP</b> or <b>SPMB</b> is not present.</li> <li>• On PTX Series Packet Transport Routers, <b>Misc</b> includes the <b>SPMB</b> (Switch Processor Mezzanine Board). The SPMB is located on the control boards. <b>OK</b> indicates that the control board is present. <b>Absent</b> indicates that the control board is not present.</li> </ul>
<b>Item</b>	<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 7: show chassis environment Output Fields (Continued)

Field Name	Field Description
<b>Status</b>	<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"> <li>• <b>OK:</b> The fans are operational.</li> <li>• <b>Testing:</b> The fans are being tested during initial power-on.</li> <li>• <b>Failed:</b> The fans have failed or the fans are not spinning.</li> <li>• <b>Absent:</b> The fan tray is not installed.</li> </ul> <p>If the Class is Power, the power supply status can be:</p> <ul style="list-style-type: none"> <li>• <b>OK:</b> The power component is operational.</li> <li>• <b>Testing:</b> The power component is being tested during initial power-on.</li> <li>• <b>Check:</b> There is insufficient power---that is, fewer than the minimum required feeds are connected.</li> <li>• <b>Failed:</b> The inputs leads have failed.</li> <li>• <b>Absent:</b> The power component is not installed.</li> </ul>
<b>Measurement</b>	<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)

```

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

```

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

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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

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### show chassis environment (MX2020 Router)

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user@host> show chassis environment
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

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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)

```

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

```



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

```

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

```

### show chassis environment (T320 Router)

```

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

```

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

```



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
Top Left Middle fan	OK	Spinning at high speed
Top Left Rear fan	OK	Spinning at high speed
Top Right Front fan	OK	Spinning at high speed
Top Right Middle fan	OK	Spinning at high speed
Top Right Rear fan	OK	Spinning at high speed
Bottom Left Front fan	OK	Spinning at high speed
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

```

```
...
```

## show chassis environment (T1600 Router)

```

user@host> show chassis environment
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)

```

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
      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](#)

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[show chassis environment cip](#)

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*[show chassis environment fpc](#)*

---

[show chassis environment fpm](#)

---

[show chassis environment lcc](#)

---

[show chassis environment mcs](#)

---

[show chassis environment monitored](#)

---

[show chassis environment pcg](#)

---

[show chassis environment pdu](#)

---

*[show chassis environment pem](#)*

---

[show chassis environment psm](#)

---

[show chassis environment psu](#)

---

*[show chassis environment routing-engine](#)*

---

[show chassis environment scg](#)

---

[show chassis environment sfb](#)

---

[show chassis environment sib](#)

---

[show chassis environment sfc](#)

## show chassis environment fpc

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## 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.

<b>all-members</b>	(MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device.
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>satellite [fpc-slot <i>slot-id</i>   device-alias <i>alias-name</i>]</b>	(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.
<b><i>slot</i> or <i>fpc-slot</i></b>	(Optional) Display environmental information about an individual FPC: <ul style="list-style-type: none"> <li>• (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 <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot</i></b> with a value from <b>0</b> through <b>7</b>. Similarly, on a TX Matrix Plus router, if you specify the number of the router by using only the <b>lcc <i>number</i></b> option (the recommended method), replace <b><i>slot</i></b> with a value</li> </ul>

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 8 on page 378 lists the output fields for the **show chassis environment fpc** command. Output fields are listed in the approximate order in which they appear.

**Table 8: show chassis environment fpc Output Fields**

Field Name	Field Description
<b>State</b>	Status of the FPC: <ul style="list-style-type: none"> <li>• <b>Unknown</b>—FPC is not detected by the router.</li> <li>• <b>Empty</b>—No FPC is present.</li> <li>• <b>Present</b>—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.</li> <li>• <b>Ready</b>—FPC is in intermediate or transition state.</li> <li>• <b>Announce online</b>—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative.</li> <li>• <b>Online</b>—FPC is online and running.</li> <li>• <b>Offline</b>—FPC is powered down.</li> <li>• <b>Diagnostics</b>—FPC is set to operate in diagnostics mode.</li> </ul>
<b>Temperature</b>	(M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC.

Table 8: show chassis environment fpc Output Fields (*Continued*)

Field Name	Field Description
<b>PMB Temperature</b>	(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 ( <b>TEMPO</b> and <b>TEMP1</b> ).
<b>PMB CPU Temperature</b>	(PTX5000 Packet Transport Router with FPC2-PTX-P1A only) Temperature of the air flowing past the PMB CPU.
<b>Temperature Intake</b>	(M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing into the chassis.
<b>Temperature Top</b>	(T Series routers only) Temperature of the air flowing past the top of the FPC.
<b>Temperature Exhaust</b>	(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 ( <b>Exhaust A</b> and <b>Exhaust B</b> ).
<b>Temperature Bottom</b>	(T Series routers only) Temperature of the air flowing past the bottom of the FPC.
<b>TL <i>n</i> Temperature</b>	(PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC.
<b>TQ <i>n</i> Temperature</b>	(PTX Series only) Temperature of the air flowing past the specified TQ area of the packet forwarding engine (PFE) on the FPC.
<b>Temperature MMBO</b>	(T640 router only) Temperature of the air flowing past the type 3 FPC.

Table 8: show chassis environment fpc Output Fields (Continued)

Field Name	Field Description
<b>Temperature MMB1</b>	(M320 and T Series routers only) Temperature of the air flowing past the type 1, type 2, and type 3 FPC.
<b>Power</b>	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.
<b>CMB Revision or BUS revision</b>	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

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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

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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

```

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_FFPL	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

```

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

```

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 Sensor37 degrees C / 98 degrees F
FPC 1 Exhaust-B Temp Sensor36 degrees C / 96 degrees F
FPC 1 Exhaust-C Temp Sensor36 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 pem

### IN THIS SECTION

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- [Syntax \(TX Matrix Routers\) | 457](#)

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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.

<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Interconnect device.
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display environmental information about the PEM in the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Node device.
<b>satellite [fpc-slot <i>slot-id</i>   device-alias <i>alias-name</i>]</b>	(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.
<b>scc</b>	(TX Matrix routers only) (Optional) Display environmental information about the PEM in the TX Matrix router (or switch-card chassis).
<b>sfc</b>	(TX Matrix Plus routers only) (Optional) Display environmental information about the PEM in the TX Matrix Plus router (or switch-fabric chassis).
<b>slot</b>	(Optional) Display environmental information about an individual PEM. Replace <i>slot</i> with 0 or 1.

## Required Privilege Level

view

## Output Fields

[Table 9 on page 461](#) lists the output fields for the **show chassis environment pem** command. Output fields are listed in the approximate order in which they appear.

**Table 9: show chassis environment pem Output Fields**

Field Name	Field Description
PEMs/ <i>ot</i> status	Number of the PEM slot.
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.

**Table 9: show chassis environment pem Output Fields (Continued)**

Field Name	Field Description
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.
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
Temperature           OK   22 degrees C / 71 degrees F
Firmware version     0x36
Fan 0                5760 RPM
DC Output            Voltage(V) Current(A) Power(W) Load(%)
                   12.00    52      624    23

```

## PEM 5 status:

```

State                Online
Airflow              Front to Back
Temperature           OK   24 degrees C / 75 degrees F
Firmware version     0x36
Fan 0                5700 RPM
DC Output            Voltage(V) Current(A) Power(W) Load(%)
                   12.00    51      612    22

```

## PEM 6 status:

```

State                Online
Airflow              Front to Back
Temperature           OK   21 degrees C / 69 degrees F
Firmware version     0x36
Fan 0                5700 RPM
DC Output            Voltage(V) Current(A) Power(W) Load(%)
                   12.00    50      600    22

```

**show chassis environment pem (T320 Router)**

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature           OK
  DC input:            OK

```

**show chassis environment pem (T640 Router)**

```

user@host> show chassis environment pem
PEM 0 status:
  State                Online
  Temperature           22 degrees C / 71 degrees F
  AC input: OK
  DC output:
    Voltage    Current    Power    Load
    FPC 0      56875     606      34      4
    FPC 1      57016     525      29      3
    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:
  State                Online
  Temperature          36 degrees C / 96 degrees F
  DC Input:            OK
                        Voltage (V)  Current (A)  Power (W)  Load (%)
  INPUT 0              0.000       0.000       0          0
  INPUT 1              54.875       3.812       209        27
  INPUT 2              55.375       3.937       218        29
  INPUT 3              54.625       3.750       204        27
  INPUT 4              55.125       3.375       186        24
  INPUT 5              55.125       3.375       186        24
  DC Output            Voltage (V)  Current (A)  Power (W)  Load (%)
  FPC 0               52.312       0.000       0          0
  FPC 1               52.687       0.000       0          0
  FPC 2               52.812       0.000       0          0
  FPC 3               55.812       7.062       394        52
  FPC 4               52.625       0.000       0          0
  FPC 5               52.625       0.000       0          0
  FPC 6               52.750       0.000       0          0
  FPC 7               52.750       0.000       0          0
  SCG/CB/SIB          55.937      11.937       667        55
  FAN                  55.812       4.937       275        36

```



**show chassis environment pem lcc (TX Matrix Routing Matrix)**

```

user@host> show chassis environment pem 0 lcc
0
lcc0-re0:
-----
PEM 0 status:
State                Present
Temperature          27 degrees C / 80 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 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

```

### show chassis environment pem interconnect-device (QFabric System)

```

user@switch> show chassis environment pem interconnect-device
IC1 1
IC1 PEM 1 status:
State                Online
Airflow              Front to Back
Temperature           OK
AC Input:            OK
DC Output            Voltage (V) Current (A) Power (W) Load (%)
                    12          18          216      33

```

### show chassis environment pem (EX9251 Switches)

```

user@switch> show chassis environment pem
PEM 0 status:
State                Present
PEM 1 status:
State                Online

```

```

Airflow                Front to Back
Temperature            OK   36 degrees C / 96 degrees F
Temperature            OK   35 degrees C / 95 degrees F
Fan Sensor             5940 RPM
DC Output              Voltage(V) Current(A) Power(W) Load(%)
                      11.85      17      201      30

```

### show chassis environment pem (EX9253 Switches)

```

user@switch> show chassis environment pem
PEM 0 status:
  State                Online
  Airflow              Front to Back
  Temperature          OK   56 degrees C / 132 degrees F
  Temperature          OK   46 degrees C / 114 degrees F
  Temperature          OK   28 degrees C / 82 degrees F
  Firmware version    04.10
  Cooling Fan         9056 RPM
  DC Output            Voltage(V) Current(A) Power(W) Load(%)
                      12.00      47      564      19
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 power-supply-unit

## IN THIS SECTION

- [Syntax | 478](#)
- [Description | 478](#)
- [Required Privilege Level | 478](#)
- [Output Fields | 478](#)
- [Sample Output | 479](#)
- [Release Information | 479](#)

## Syntax

```
show chassis environment power-supply-unit
```

## Description

(On EX4500 switches only) Display the state of the power supply and the direction of the airflow through the power supply.

## Required Privilege Level

view

## Output Fields

[Table 10 on page 479](#) lists the output fields for the **show chassis environment power-supply-unit** command. Output fields are listed in the approximate order in which they appear.

**Table 10: show chassis environment power-supply-unit Output Fields**

Field Name	Field Description
<b>State</b>	State of the power supply: Online or Offline.
<b>Airflow</b>	Direction of airflow of the power supply. One of the following: Front to back or Back to front.

## Sample Output

### show chassis environment power-supply-unit

```
user@switch> show chassis environment power-supply-unit

FPC 0 PSU 1 status:
  State           Online
  Airflow         Front to back
```

## Release Information

Command introduced in Junos OS Release 10.2.

### RELATED DOCUMENTATION

[Monitoring Chassis Information](#)



# show chassis environment psu

## IN THIS SECTION

- [Syntax | 480](#)
- [Description | 480](#)
- [Options | 480](#)
- [Required Privilege Level | 481](#)
- [Output Fields | 481](#)
- [Sample Output | 481](#)
- [Release Information | 482](#)

## 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 11 on page 481](#) lists the output fields for the **show chassis environment psu** command. Output fields are listed in the approximate order in which they appear.

**Table 11: show chassis environment psu Output Fields**

Field Name	Field Description
<b>State</b>	State of the power supply: Online, Offline, or Empty.
<b>Temperature</b>	Temperature for the online power supply: OK or Out of Range.
<b>DC Output</b>	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 routing-engine

### IN THIS SECTION

- [Syntax | 483](#)
- [Syntax \(TX Matrix Routers\) | 483](#)

- [Syntax \(TX Matrix Plus Routers\) | 484](#)
- [Syntax \(MX104, MX2010, MX2020, MX10003, MX204, and MX2008 Universal Routing Platforms\) | 484](#)
- [Syntax \(MX Series and PTX Series Devices\) | 484](#)
- [Syntax \(QFX Series and OCX Series\) | 484](#)
- [Syntax \(EX9251 and EX9253 Switches; ACX500, ACX5048 and ACX5096 Routers\) | 485](#)
- [Description | 485](#)
- [Options | 485](#)
- [Required Privilege Level | 486](#)
- [Output Fields | 486](#)
- [Sample Output | 487](#)
- [Sample Output | 492](#)
- [Release Information | 493](#)

## 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

<b>none</b>	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.
<b>all-members</b>	(MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device.
<b>lcc <i>number</i></b>	<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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

<b>local</b>	(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the local Virtual Chassis member.
<b>member</b> <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.
<b>satellite</b> [ <i>fpc-slot slot-id</i> ] <b>device-</b> <i>alias alias-name</i> ]	(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.
<b>scc</b>	(TX Matrix router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix router (switch-card chassis).
<b>sfc</b>	(TX Matrix Plus router only) (Optional) Display environmental information about the Routing Engine in the TX Matrix Plus router (or switch-fabric chassis).
<b>slot</b>	(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 12 on page 487](#) 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 12: 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.
State	Status of the Routing Engine: <ul style="list-style-type: none"> <li>• Online Primary—Routing Engine is online, operating as Primary.</li> <li>• Online Standby—Routing Engine is online, operating as Standby.</li> <li>• Offline—Routing Engine is offline.</li> </ul>
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**

[request chassis routing-engine master](#)

*show chassis routing-engine*

# show chassis ethernet-switch

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## 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

<b>none</b>	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.
<b>all-members</b>	(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.
<b>errors</b>	(Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.
<b>errors <i>port</i></b>	(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 <b><i>port</i></b> with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace <b><i>port</i></b> with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace <b><i>port</i></b> with a value from 0 through 25. On the T4000 routers, MX2020 routers, MX2010 routers, and MX2008 routers, replace <b><i>port</i></b> with a value from 0 through 27.
<b>errors switch <i>number</i></b>	(TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace <b><i>number</i></b> with a value from 0 through 2.
<b>lcc <i>number</i></b>	(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.  Replace <b><i>number</i></b> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

<b>local</b>	(MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>old-rom- packet- count</b>	(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.
<b>port-state</b>	(PTX Series only) (Optional) Display information about current port operation ( <b>Blocking</b> , <b>Listening</b> , or <b>Disabled</b> ).
<b>scc</b>	(TX Matrix router only) (Optional) Display information about the ports on the CB's Ethernet switch on the TX Matrix router (switch-card chassis).
<b><i>sfc number</i></b>	(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.
<b>statistics</b>	(Optional) Display traffic statistics for each connected port on the Ethernet switch.
<b>statistics <i>port</i></b>	(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.
<b>statistics switch <i>number</i></b>	(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 <i>number</i> with a value from 0 through 2. On the EX8208 switch, replace <i>number</i> with a value from 0 through 1.

## Required Privilege Level

view

## Output Fields

Table 13 on page 499 lists the output fields for the **show chassis ethernet-switch** command. Output fields are listed in the approximate order in which they appear.

**Table 13: show chassis ethernet-switch Output Fields**

Field Name	Field Description
<p><b>Link is good on port n connected to device</b></p> <p>or</p> <p><b>Link is good on Fast Ethernet port n connected to device</b></p> <p>or</p> <p><b>Link is good on Gigabit Ethernet port n connected to device</b></p> <p>or</p> <p><b>Link is down on Gigabit Ethernet port connected to device</b></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"> <li>• FPC0 (Flexible PIC Concentrator 0) through FPC7</li> <li>• Local controller</li> <li>• Routing Engine</li> <li>• Other Routing Engine (on a system with two Routing Engines)</li> <li>• SPMB (Switch Processor Mezzanine Board)</li> <li>• (TX Matrix router only) LCC0 (line-card chassis 0) through LCC3</li> </ul>
<b>Speed is</b>	<p>Speed at which the Ethernet link is running: <b>10 Mb</b> or <b>100 Mb</b>. When the device is <b>RE</b> or <b>Other RE</b> on the TX Matrix router, the speed is <b>1000 Mb</b>.</p> <p><b>NOTE:</b> Irrespective of the device, the speed is <b>1000 Mb</b> on the MX2010, MX2020, and MX2008 routers.</p>
<b>Duplex is</b>	Duplex type of the Ethernet link: <b>full</b> or <b>half</b> .

Table 13: show chassis ethernet-switch Output Fields (*Continued*)

Field Name	Field Description
<b>Autonegotiate is Enabled (or Disabled)</b>	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 <b>no-concatenate</b> statement at the <b>[edit chassis]</b> hierarchy level, as described in the <i>Junos OS System Basics Configuration Guide</i> ).
<b>Flow Control TX is Enabled (or Disabled)</b>	(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.
<b>Flow Control RX is Enabled (or Disabled)</b>	(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.
<b>MLT3</b>	Number of multilevel threshold-3 (MLT-3) Fast Ethernet errors detected.

**Accumulated error counts for port  $n$  connected to device FPC $n$ : (error output only)**

<b>Lock</b>	Number of lock errors detected.
<b>Xmit</b>	Number of transmission errors detected.
<b>ESD</b>	Number of electrostatic discharge (ESD) errors detected.
<b>False Carrier</b>	Number of false carrier errors detected. This number is increased by one if a FRU is removed.
<b>Disconnects</b>	Number of disconnect errors detected.
<b>FX mode</b>	Number of errors detected on an Ethernet link over optical fiber.

**Statistics for port  $n$  connected to device FPC $n$  (statistics output only)**

Table 13: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
<b>TX Packets 64 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets transmitted.
<b>TX Packets 65 - 127 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets transmitted.
<b>TX Packets 128 - 255 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets transmitted.
<b>TX Packets 256 - 511 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets transmitted.
<b>TX Packets 512 - 1023 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets transmitted.
<b>TX Packets 1024 - 1518 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets transmitted.
<b>TX Packets 1519 - 2047 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets transmitted.
<b>TX Packets 2048 - 4095 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets transmitted.
<b>TX Packets 4096 - 9216 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets transmitted.
<b>TX 1519 - 1522 Good Vlan frms</b>	(MX2010, MX2020, and MX2008 routers) Number of transmitted frames of size 1519 through 1522 octets that are good VLAN frames.
<b>TX Octets</b>	Number of octets sent.

Table 13: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
<b>TX Unicast packets</b>	Number of unicast packets sent.
<b>TX Multicast packets</b>	Number of multicast packets sent.
<b>TX Broadcast packets</b>	Number of broadcast packets sent.
<b>TX Single Collision frames</b>	(MX2010, MX2020, and MX2008 routers) Number of packets sent after one collision.
<b>TX Mult. Collision frames</b>	(MX2010, MX2020, and MX2008 routers) Number of packets sent after multiple collisions.
<b>TX Late collisions</b>	Number of packets aborted during sending because of collisions after 64 bytes.
<b>TX Excessive collisions</b>	Number of packets not sent because of too many collisions.
<b>TX Dropped packets</b>	Number of transmitted packets that were dropped.
<b>TX PAUSEMAC Ctrl Frames</b>	Number of Media Access Control (MAC) frames containing PAUSE commands that were sent.
<b>TX Oversize Packets</b>	Number of oversize packets that were sent.
<b>TX FCS Error Counter</b>	Number of packets discarded because of frame check sequence errors.

Table 13: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
<b>TX Fragment Counter</b>	Number of fragmented packets sent.
<b>TX Byte Counter</b>	Number of bytes sent.
<b>TX Packet OK Counter</b>	Number of viable packets sent.
<b>TX Pause Packet Counter</b>	Number of PAUSE packets sent.
<b>RX Packets 64 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 64 octets received.
<b>RX Packets 65 - 127 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 65 through 127 octets received.
<b>RX Packets 128 - 255 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 128 through 255 octets received.
<b>RX Packets 256 - 511 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 256 through 511 octets received.
<b>RX Packets 512 - 1023 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 512 through 1023 octets received.
<b>RX Packets 1024 - 1518 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1024 through 1518 octets received.
<b>RX Packets 1519 - 2047 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 1519 through 2047 octets received.



Table 13: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
<b>RX Packets 2048 - 4095 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 2048 through 4095 octets received.
<b>RX Packets 4096 - 9216 Octets</b>	(MX2010, MX2020, and MX2008 routers) Number of packets of size 4096 through 9216 octets received.
<b>RX Octets</b>	Number of octets received.
<b>RX Unicast packets</b>	Number of unicast packets received.
<b>RX Multicast packets</b>	Number of multicast packets received.
<b>RX Broadcast packets</b>	Number of broadcast packets received.
<b>RX FCS Errors</b>	Number of packets discarded because of frame check sequence errors.
<b>RX Alignment Errors</b>	Number of incomplete octets received.
<b>RX Dropped Packets</b>	Number of incoming packets that were dropped.
<b>RX Fragments</b>	Number of fragmented packets received.
<b>RX Symbol Errors</b>	Number of symbols received that the router did not correctly decode.
<b>RX MAC Control</b>	Number of Media Access Control (MAC) packets received.

Table 13: show chassis ethernet-switch Output Fields *(Continued)*

Field Name	Field Description
<b>RX Oversize Packets</b>	Number of oversize packets received.
<b>RX Undersize Packets</b>	Number of undersize packets received.
<b>RX Jabbers</b>	Total number of frames received that exceed the maximum byte count and contain CRC errors .
<b>RX Control Frame Counter</b>	Number of control frames received.
<b>RX Pause Frame Counter</b>	Number of pause frames received.
<b>RX Byte Counter</b>	Number of bytes received.
<b>RX Packet OK Counter</b>	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 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 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 Xmsns    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 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	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 Packet OK Counter	0
TX Pause Packet Counter	0
TX Unicast Counter	0
RX Packets 64 Octets	4823701
RX Packets 65-127 Octets	67812
RX Packets 128-255 Octets	772
RX Packets 256-511 Octets	136
RX Packets 512-1023 Octets	68
RX Packets 1024-1518 Octets	10881
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	4903370
RX Multicast Packets	8
RX Broadcast Packets	2497247
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	326889517
RX Unicast Frame Count	0
RX Packet OK Count	0

Displaying port statistics for switch 1

Statistics for port 0 connected to device LCC0:

TX Packets 64 Octets	5053443
TX Packets 65-127 Octets	59737
TX Packets 128-255 Octets	768
TX Packets 256-511 Octets	87
TX Packets 512-1023 Octets	68
TX Packets 1024-1518 Octets	85
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	5114188



TX Multicast Packets	16
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 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	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 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	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
Flow Control TX is Disabled
Flow Control RX is Disabled
```

### show chassis ethernet-switch statistics (PTX5000 Packet Transport Router)

```
user@host> show chassis ethernet-switch statistics
Displaying port statistics for switch 0
Statistics for port 2 connected to device SPMB:
TX Packets 64 Octets          10942
TX Packets 65-127 Octets     843
TX Packets 128-255 Octets    2
TX Packets 256-511 Octets    2
TX Packets 512-1023 Octets   0
TX Packets 1024-1518 Octets  6862
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                    18651
TX Multicast Packets         6
TX Broadcast Packets        10331
TX PAUSEMAC Ctrl Frames     0
TX Oversize Packets         0
TX FCS Error Counter        0
TX Fragment Counter         0
TX Byte Counter              8105166
TX Packet OK Counter        0
TX Pause Packet Counter     0
TX Unicast Counter          0
RX Packets 64 Octets         8679
RX Packets 65-127 Octets    2364
RX Packets 128-255 Octets   531
RX Packets 256-511 Octets   112
RX Packets 512-1023 Octets  26
RX Packets 1024-1518 Octets 8
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                    11720
```

```

RX Multicast Packets      0
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 fan

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## 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

<b>all-members</b>	(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration.
<b>local</b>	(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>interconnect-device <i>name</i></b>	(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.

<b><i>lcc number</i></b>	(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.  Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>satellite [slot-id slot-id] device-alias <i>alias-name</i></b>	(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.
<b>scc</b>	(TX Matrix routers only) (Optional) Display information about the fan tray and fans for the TX Matrix router (switch-card chassis).
<b>sfc number</b>	(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 14 on page 551 lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 14: show chassis fan Output Fields

Field Name	Field Description
<b>Item</b>	Fan item identifier.
<b>Status</b>	Status of the fan: <ul style="list-style-type: none"> <li>• <b>OK</b>—Fan is running properly and within the normal range.</li> <li>• <b>Check</b>—Fan is in <b>Check</b> state because of some fault or alarm condition.</li> </ul>
<b>RPM</b>	(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).
<b>% RPM</b>	(PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used.
<b>Measurement</b>	(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: <ul style="list-style-type: none"> <li>• Spinning at high speed</li> <li>• Spinning at intermediate speed</li> <li>• Spinning at normal speed</li> <li>• Spinning at low speed (except EX Series switches)</li> </ul> (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.



## 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 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

<b>none</b>	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.
<b>all-members</b>	(MX Series routers only) (Optional) Display the version levels of the firmware running for all members of the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device.
<b>lcc <i>number</i></b>	<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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display the version levels of the firmware running for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device</b>	(QFabric systems only) (Optional) Display the version levels of the firmware running on the Node device.

<b>satellite</b> [ <b>slot-id slot-id</b>   <b>device-alias alias-name</b> ]	(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.
<b>scc</b>	(TX Matrix router only) (Optional) Display version levels for the firmware on the TX Matrix router (switch-card chassis).
<b>sfc number</b>	(TX Matrix Plus router only) (Optional) Display version levels for the firmware on the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.
<b>detail</b>	(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 15 on page 570](#) lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

**Table 15: show chassis firmware Output Fields**

Field Name	Field Description
<b>Part</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Chassis part name.
<b>Type</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Type of firmware: On routers: ROM or O/S. On switches: uboot or loader.
<b>Version</b>	(MX Series, MX2010, MX2020, and MX2008 routers) Version of firmware running on the chassis part.

Table 15: show chassis firmware Output Fields (*Continued*)

Field Name	Field Description
<b>FPC</b>	<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>
<b>AFEB</b>	(MX104 routers) Version of the compact Forwarding Engine Board.
<b>Boot</b>	( <i>detail</i> option only) Version of the SYSPLD.
<b>PoE</b>	( <i>detail</i> option only) Version of the PoE firmware.
<b>PFE- &lt;number&gt;</b>	( <i>detail</i> option only) Version of the Packet Forwarding Engine used in the switch.
<b>PHY-</b>	( <i>detail</i> option only) Version of the physical layer device (PHY) used in the switch.
<b>microcode</b>	( <i>detail</i> option only) Microcode of the physical layer devices (PHY) used in the switch.
<b>uboot</b>	( <i>detail</i> option only) Version of the u-boot used in the switch.
<b>loader</b>	( <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

```

FPC 10	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 11	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 12	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 13	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 14	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 15	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 16	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 17	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 18	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
FPC 19	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 10.0b39
SPMB 0	O/S	Version 12.3-20130415.0 by userb on 2013-
	ROM	Juniper ROM Monitor Version 12.1b1
SPMB 1	O/S	Version 12.3-20130415.0 by userb on 2013-
	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 fpc

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## 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.

<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display status information for all FPCs on the Interconnect device.
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers and EX Series switches only) (Optional) Display status information for all FPCs on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display status information for each Node device. Each Node device is equivalent to an FPC.
<b>pic-status</b>	(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 16 on page 597](#) lists the output fields for the **show chassis fpc** command. Output fields are listed in the approximate order in which they appear.

Table 16: show chassis fpc Output Fields

Field Name	Field Description	Level of Output
<b>Slot or Slot State</b>	<p>Slot number and state. The state can be one of the following conditions:</p> <ul style="list-style-type: none"> <li>• <b>Dead</b>—Held in reset because of errors.</li> <li>• <b>Diag</b>—Slot is being ignored while the FPC is running diagnostics.</li> <li>• <b>Dormant</b>—Held in reset.</li> <li>• <b>Empty</b>—No FPC is present.</li> <li>• <b>Offline</b>—(PTX Series Packet Transport Routers only) One of the following two states is displayed: <ul style="list-style-type: none"> <li>• <b>FPC offlined due to unreachable destinations</b></li> <li>• <b>FPC Offlined due to degraded FPC action</b></li> </ul> </li> <li>• <b>Online</b>—FPC is online and running.</li> <li>• <b>Present</b>—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 <b>Hardware Not Supported</b> or <b>Hardware Not In Right Slot</b>. The FPC is coming up but not yet online.</li> <li>• <b>Probed</b>—Probe is complete; awaiting restart of the Packet Forwarding Engine.</li> <li>• <b>Probe-wait</b>—Waiting to be probed.</li> <li>• <b>Unknown</b>—FPC is present but the state is unknown.</li> <li>• <b>Present</b>—FPC is plugged in. The FPC is not powered on or operational.</li> <li>• <b>Onlining</b>—FPC is in the process of going online. ASIC and rest of the hardware is initializing.</li> </ul>	all levels

Table 16: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> <li>• <b>Offlining</b>—FPC is in the process of going offline. ASIC and rest of the hardware is being shutdown down to take the offline gracefully.</li> <li>• <b>Fault</b>—FPC is in an alarmed state in which none of the PICs are operational.</li> <li>• <b>Fault-off</b>—FPC is powered off due to a fault.</li> <li>• <b>Spare</b>—FPC is redundant and will move to active state if one of the working FPCs fails to pass traffic.</li> </ul>	
<b>Logical slot</b>	Slot number.	all levels
<b>Temp (C) or Temperature</b>	Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit.	all levels all levels
<b>Temperature (PTX Series)</b>	<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"> <li>• <b>Temperature (PMB)</b>—Temperature of the air passing by the Processor Mezzanine Board (PMB) at the bottom of the FPC.</li> <li>• <b>Temperature (Intake)</b>—Temperature of the air flowing into the chassis.</li> <li>• <b>Temperature (Exhaust)</b>—Exhaust temperatures for multiple zones (Exhaust A and Exhaust B).</li> <li>• <b>Temperature (TL<i>n</i>)</b>--Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC.</li> <li>• <b>Temperature (TQ<i>n</i>)</b>--Temperature of the specified Queuing and Memory Interface ASIC (TQ) of the packet forwarding engine on the FPC.</li> </ul>	<b>detail</b>

Table 16: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
<b>Total CPU Utilization (%)</b>	Total percentage of CPU being used by the FPC's processor.	all levels
<b>Interrupt CPU Utilization (%)</b>	Of the total CPU being used by the FPC's processor, the percentage being used for interrupts.	none specified
<b>1 min CPU utilization (%)</b>  <b>NOTE:</b> 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
<b>5 min CPU utilization (%)</b>  <b>NOTE:</b> 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 16: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
<b>15 min CPU utilization (%)</b>  <b>NOTE:</b> 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
<b>Memory DRAM (MB)</b>	Total DRAM, in megabytes, available to the FPC's processor.	none specified
<b>Heap Utilization (%)</b>	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).  <b>NOTE:</b> 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
<b>Buffer Utilization (%)</b>	Percentage of buffer space being used by the FPC's processor for buffering internal messages.	none specified
<b>Total CPU DRAM</b>	Amount of DRAM available to the FPC's CPU.	<b>detail</b>
<b>Total RLDRAM</b>	Amount of reduced latency dynamic random access memory (RLDRAM) available to the FPC CPU.	<b>detail</b>

Table 16: show chassis fpc Output Fields (Continued)

Field Name	Field Description	Level of Output
<b>Total DDR DRAM</b>	Amount of double data rate dynamic random access memory (DDR DRAM) available to the FPC CPU.	<b>detail</b>
<b>Total SRAM</b>	Amount of static RAM (SRAM) used by the FPC's CPU.	<b>detail</b>
<b>Total SDRAM</b>	Total amount of memory used for storing packets and notifications.	<b>detail</b>
<b>I/O Manager ASICs information</b>	I/O Manager version number, manufacturer, and part number.	<b>detail</b>
<b>Start time</b>	Time when the Routing Engine detected that the FPC was running.	<b>detail</b>
<b>Uptime</b>	How long the Routing Engine has been connected to the FPC and, therefore, how long the FPC has been up and running.	<b>detail</b>
<b>PIC type</b>	(pic-status output only) Type of PIC.	none specified
<b>GNF (Node slicing)</b>	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 RLDRAM          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	Interrupt	Memory DRAM (MB)	Utilization (%) Heap	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 (%) Total	CPU Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) 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 (%) Total	CPU Utilization (%) Interrupt	Memory DRAM (MB)	Utilization (%) Heap	Utilization (%) 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 Type 2 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*

*show chassis fpc-feb-connectivity*

*show chassis fabric fpcs*

*Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online*

[MX960 Flexible PIC Concentrator Description](#)

*ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*

*enhanced-mode*

## show chassis fabric fpcs

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## 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 *number*** (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 ***number*** with a following value depending on the LCC configurations:
- 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.

<b>local</b>	(MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the local Virtual Chassis member.
<b>member</b> <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.
<b>slot</b> <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 17 on page 651](#) lists the output fields for the **show chassis fabric fpcs** command. Output fields are listed in the approximate order in which they appear.

Table 17: 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"> <li>• <b>Unused</b>—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.</li> <li>• <b>Destination error on PFEs <i>list of PFE numbers</i></b>—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines.  <b>NOTE:</b> 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.</li> <li>• <b>Links ok</b>—Link between the spare SIB and FPC is eligible to carry traffic.</li> <li>• <b>Link error</b>—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic.</li> <li>• <b>Plane disabled</b>—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> <li>• Destination errors have exceeded the thresholds.</li> <li>• Run-time link errors have exceeded the thresholds.</li> <li>• Initialization time link errors detected, and link training was unsuccessful.</li> </ul> </li> <li>• <b>Plane Disabled, Links Error</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the FPC RX.</li> </ul>

Table 17: show chassis fabric fpcs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> <li>• <b>Plane Disabled, Links Down</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The plane is disabled because of link errors detected at the SIB RX.</li> <li>• <b>Plane enabled</b>—Link between the active SIB and FPC is eligible to carry traffic.</li> </ul> <p><b>NOTE:</b> 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"> <li>• <b>Plane Enabled, Links OK</b> (PTX Series Packet Transport Routers and QFX Series switches only)—The FPC CCL RX link is eligible to carry traffic.</li> <li>• <b>Plane Enabled, Links OK</b> (TX Matrix and TX Matrix Plus routers only)—The FPC HSL RX link is eligible to carry traffic.</li> </ul>

## 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*

[Displaying Information About DPCs or FPCs in an MX Series Router](#)

# show chassis fabric map

## IN THIS SECTION

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- [Syntax \(MX Series Router\) | 689](#)
- [Description | 689](#)
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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

<b>none</b>	Display the switching fabric map state for the M120 or MX Series router or EX8200 switch.
<b>all-members</b>	(MX Series routers only) (Optional) Display the switching fabric map state for all the members of the Virtual Chassis configuration.
<b>local</b>	(MX Series routers only) (Optional) Display the switching fabric map state for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>plane <i>plane-number</i></b>	(Optional) Display the state of the fabric link for the specified plane number. <ul style="list-style-type: none"> <li>• For the M120 router, replace <i>plane-number</i> with a value from 0 through 3.</li> <li>• For the MX480 and MX240 routers, replace <i>plane-number</i> with a value from 0 through 7.</li> <li>• For the MX960 router, replace <i>plane-number</i> with a value from 0 through 5.</li> <li>• For the EX8208 switch, replace <i>plane-number</i> with a value from 0 through 11.</li> <li>• For the EX8216 switch, replace <i>plane-number</i> with a value from 0 through 7.</li> </ul>

## Required Privilege Level

view

## Output Fields

[Table 18 on page 691](#) lists the output fields for the **show chassis fabric map** command. Output fields are listed in the approximate order in which they appear.

**Table 18: show chassis fabric map Output Fields**

Field Name	Field Description
<b>in-links</b>	Fabric map for receive side links.
<b>out-links</b>	Fabric map for transmit side links.
<b>state</b>	<p>State of the fabric link:</p> <ul style="list-style-type: none"> <li>• <b>RESET</b>—Link between SIB and FPC/DPC is powered down on purpose. This is done in all non-dual PFE based boards.</li> <li>• <b>UP</b>—Link between SIB and FPC/DPC is up and running.</li> <li>• <b>DOWN</b>—Link between SIB and FPC/DPC is powered down.</li> <li>• <b>FAULT</b>—SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>• On-board F-chip is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> </ul> </li> </ul>

## 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

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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

<b>none</b>	(MX2010, MX2020, and MX2008 Routers only) (Optional) Display the state of the fabric management plane.
<b>extended</b>	(MX2020, MX2010, and MX2008 Routers only) (Optional) Display the state of the fabric management planes (all 24 fabric planes).
<b>detail</b>	(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.
<b>extensive</b>	(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.
<b>terse</b>	(TX Matrix Plus routers and MX Series routers only) (Optional) Display terse output for the fabric management plane.
<b>all-members</b>	(MX Series routers only) (Optional) Display the state of all fabric plane connections on all members of the Virtual Chassis configuration.
<b>lcc <i>number</i></b>	(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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display the state of all fabric plane connections on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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 19 on page 702](#) lists the output fields for the **show chassis fabric plane** command. Output fields are listed in the approximate order in which they appear.

**Table 19: 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 19: 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"> <li>• ACTIVE—SIB is operational and running.</li> </ul> <p><b>NOTE:</b> 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"> <li>• FAULTY— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> </ul> </li> </ul> <p>(MX2010, MX2020, MX10003, and MX2008 Routers only) State of each plane:</p> <ul style="list-style-type: none"> <li>• ACTIVE—SFB is operational and running.</li> <li>• OFFLINE— SFB is in offline.</li> </ul>	none
FEB	<p>(M120 routers only) FEB number and state of links to each FEB:</p> <ul style="list-style-type: none"> <li>• Link error—Link between SIB and FPC is not operational.</li> <li>• Links ok—Link between SIB and FPC is active.</li> <li>• Unused—No FPC is present.</li> </ul>	none



Table 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
<b>FPC</b>	<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
<b>PFE</b>	<p>(MX Series and M120 routers only) Slot number of each Packet Forwarding Engine and the state of the links to the DCP: <b>Links ok</b>, <b>Link error</b>, or <b>Unused</b>. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> <li>• <b>Links ok</b>: Link between SIB and FPC is active.</li> <li>• <b>Link error</b>: Link between SIB and FPC is not operational.</li> <li>• <b>Unused</b>: No FPC is present.</li> </ul> <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: <b>Links ok</b>, <b>Link error</b>, or <b>Unused</b>. Each DPC includes four Packet Forwarding Engines.</p> <ul style="list-style-type: none"> <li>• <b>Links ok</b>: Link between SFB and FPC is active.</li> <li>• <b>Link error</b>: Link between SFB and FPC is not operational.</li> <li>• <b>Unused</b>: No FPC is present.</li> </ul>	none

Table 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
<b>State</b>	<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 data-bbox="518 470 1159 1709" style="list-style-type: none"> <li data-bbox="518 470 1159 541">• <b>Online:</b> Fabric plane is operational and running and links on the SIB are operational.</li> <li data-bbox="518 575 1159 684">• <b>Offline:</b> Fabric plane state is <b>Offline</b> because the plane does not have four or more F2S and one F13 online.</li> <li data-bbox="518 718 1159 789">• <b>Empty:</b> Fabric plane state is <b>Empty</b> if all SIBs in the plane are absent.</li> <li data-bbox="518 823 1159 932">• <b>Spare:</b> Fabric plane is redundant and can be operational if the operational fabric plane encounters an error.</li> <li data-bbox="518 966 1159 1709"> <ul style="list-style-type: none"> <li data-bbox="518 966 1159 1075">• <b>Check:</b> 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 <b>Online</b> or <b>Spare</b> states has transitioned to the <b>Check</b> state.</li> </ul> <p data-bbox="591 1251 1110 1323"><b>Check</b> state of the SIB can be caused by link errors or destination errors.</p> </li></ul> </li> <li data-bbox="518 1356 1159 1709">• <b>Fault:</b> Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the <b>Fault</b> state. A SIB can be in the <b>Fault</b> state because of the following reasons: <ul style="list-style-type: none"> <li data-bbox="558 1545 1062 1575">• On-board fabric ASIC is not operational.</li> <li data-bbox="558 1608 922 1638">• Fiber optic connector faults.</li> <li data-bbox="558 1671 847 1701">• FPC connector faults.</li> </ul> </li> </ul>	none

Table 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
	<ul style="list-style-type: none"> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold.</li> </ul>	
<b>Link Errors</b>	(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
<b>Cable Errors</b>	(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
<b>Destination Errors</b>	(TX Matrix Plus routers with 3D SIBs only) Indicates the number of destinations that are not reachable on this plane.	none
<b>Uptime</b>	(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 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
<b>PLANE number</b>	<p data-bbox="516 365 805 394">State of the fabric plane:</p> <ul style="list-style-type: none"> <li data-bbox="516 428 1146 499">• <b>Online:</b> Fabric plane is operational and running and links on the SIB are operational.</li> <li data-bbox="516 533 1114 642">• <b>Offline:</b> Fabric plane state is <b>Offline</b> because the plane does not have 4 or more F2S and 1 F13 online.</li> <li data-bbox="516 676 1141 747">• <b>Empty:</b> Fabric plane state is <b>Empty</b> if all SIBs in the plane are absent.</li> <li data-bbox="516 781 1060 890">• <b>Spare:</b> Fabric plane is redundant and can be operational if the operational fabric plane encounters an error.</li> <li data-bbox="516 924 1136 1184">• <b>Check:</b> 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"> <li data-bbox="553 1075 1151 1184">• One or more SIBs (belonging to the fabric plane) in the <b>Online</b> or <b>Spare</b> states has transitioned to the <b>Check</b> state.</li> </ul> <p data-bbox="591 1218 1159 1289"><b>Check</b> state of the SIB can be caused because of link errors or destination errors.</p> </li> <li data-bbox="516 1323 1154 1801">• <b>Fault:</b> Fabric plane is in alarmed state if one or more SIBs belonging to the plane are in the <b>Fault</b> state. A SIB can be in the <b>Fault</b> state because of the following reasons: <ul style="list-style-type: none"> <li data-bbox="553 1507 1060 1537">• On-board fabric ASIC is not operational.</li> <li data-bbox="553 1570 922 1600">• Fiber optic connector faults.</li> <li data-bbox="553 1633 846 1663">• FPC connector faults.</li> <li data-bbox="553 1696 948 1726">• SIB midplane connector faults.</li> <li data-bbox="553 1759 1065 1789">• Link errors have exceeded the threshold.</li> </ul> </li> </ul>	<b>extensive</b>

Table 19: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
<b>SIB F13/F2S slot-number</b>	<p>State of the TXP-F13 SIB or TXP-F2S SIB:</p> <ul style="list-style-type: none"> <li>• <b>Activating</b>—Transitional state when the SIB is transitioning to the <b>Online</b> or <b>Spare</b> state.</li> <li>• <b>Deactivating</b>—Transitional state when the SIB is going offline.</li> <li>• <b>Online</b>—SIB is operational and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.</li> <li>• <b>Empty</b>—No SIB is present.</li> <li>• <b>Fault</b>— 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"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold</li> </ul> </li> <li>• <b>Check</b>—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is <b>Online</b> or <b>Spare</b> can transition to the <b>Check</b> state.</li> </ul> <p><b>NOTE:</b> If a SIB is not inserted properly, the SIB cannot transition to the <b>Online</b> or <b>Spare</b> state, and therefore cannot transition to the <b>Check</b> state.</p>	<b>extensive</b>

Table 19: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
<b>SIB F13 <i>slot-number</i></b> <b><i>Odd/Even</i></b>	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 <b>Even</b> and provide connections to one even-numbered LCC—LCC0 or LCC2. The right four ports on the SFC are labeled <b>Odd</b> and provide connections to one odd-numbered LCC—LCC1 or LCC3.	<b>extensive</b>
<b>LCC <i>number</i>, SIB <i>slot-number</i></b>	State of the SIB on the LCC that is connected to the <b>Even</b> or <b>Odd</b> port on the TXP-F13 SIB faceplate: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Links between the TXP-F13 SIB on the SFC and the LCC are active.</li> <li>• <b>Links error</b>—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.</li> <li>• <b>Unused</b>—No SIB is present.</li> </ul>	<b>extensive</b>

Table 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
<b>SG number</b> <b>Port number</b>	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Link error</b>—Link is operational with errors.</li> <li>• <b>Link error crc saturated</b>—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.</li> <li>• <b>Link error crc saturated with optical errors</b>—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.</li> <li>• <b>Unused</b>—Port is not in use.</li> </ul>	<b>extensive</b>
<b>SIB F2S slot-number</b>	State of the intra-chassis links between the TXP-F2S and TXP-F13 SIBs.	<b>extensive</b>

Fabric Management SIB State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router

Table 19: show chassis fabric plane Output Fields (*Continued*)

Field Name	Field Description	Level of output
<b>SIB slot-number</b>	<p>State of the SIBs on the T1600/T4000 router (LCC) in the routing matrix:</p> <ul style="list-style-type: none"> <li>• <b>Activating</b>—Transitional state when the SIB is coming online.</li> <li>• <b>Deactivating</b>—Transitional state when the SIB is going offline.</li> <li>• <b>Connected</b>—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.</li> </ul> <p>The LCC SIB transitions to the <b>Connected</b> 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"> <li>• <b>Disconnected</b>—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.</li> </ul> <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 <b>Disconnected</b> state is valid only for SIBs on an LCC. An LCC SIB transitions to the <b>Disconnected</b> state when the F13 SIB to which it connects goes <b>Offline</b>, irrespective of the state of the SFC plane.</p> <p><b>SFC Error</b>—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the <b>Fault</b> 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 <b>SFC Error</b> state. This state</p>	<b>extensive</b>



Table 19: 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><b>NOTE:</b> The <b>Connected</b>, <b>Disconnected</b>, and <b>SFC Error</b> states are applicable only to the SIBs on an LCC.</p> <ul style="list-style-type: none"> <li>• <b>Online</b>—SIB is operational and running.</li> <li>• <b>Offline</b>—SIB is powered down.</li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails to pass traffic.</li> <li>• <b>Empty</b>—No SIB is present.</li> <li>• <b>Fault</b>— SIB is in alarmed state where the SIB's plane is not operational for the following reasons: <ul style="list-style-type: none"> <li>• On-board fabric ASIC is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> <li>• SIB midplane connector faults.</li> <li>• Link errors have exceeded the threshold</li> </ul> </li> <li>• <b>Check</b>—SIB is in alarmed state where the SIB is partially operational because of link or destination errors. Only a SIB that is <b>Online</b> or <b>Spare</b> can transition to the <b>Check</b> state.</li> </ul> <p><b>NOTE:</b> If a SIB is not inserted properly, the SIB cannot transition to the <b>Online</b> or <b>Spare</b> state, and therefore cannot transition to the <b>Check</b> state.</p>	

Table 19: show chassis fabric plane Output Fields (Continued)

Field Name	Field Description	Level of output
<b>LCC SIB Link State</b>	State of the LCC SIB link: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Links error</b>—A link error has occurred, but the link remains operational.</li> <li>• <b>Unused</b>—SIB is not in use.</li> </ul>	<b>extensive</b>
<b>SG number</b> <b>Port number</b>	State of the SG chip ports on the LCC: <ul style="list-style-type: none"> <li>• <b>Links ok</b>—Link is active.</li> <li>• <b>Link error</b>—Link is operational with errors.</li> <li>• <b>Link error crc saturated</b>—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.</li> <li>• <b>Link error crc saturated with optical errors</b>—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.</li> <li>• <b>Unused</b>—Port is not in use.</li> </ul>	<b>extensive</b>

## 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*

*show chassis fabric plane-location*

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show chassis fabric plane-location

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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 20 on page 743](#) 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 20: 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 20: 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 sibs

### IN THIS SECTION

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### 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 21 on page 755](#) lists the output fields for the **show chassis fabric sibs** command. Output fields are listed in the approximate order in which they appear.

**Table 21: show chassis fabric sibs Output Fields**

Field Name	Field Description
<b>Fabric management SIB state</b>	Switching fabric link (link from FPC to SIB) state for each SIB: <ul style="list-style-type: none"><li>• <b>Unused</b>—SIB is not present.</li><li>• <b>Links ok</b>—Link between the SIB and the FPC is active.</li><li>• <b>Link error</b>—Link between the SIB and the FPC is not operational.</li></ul>

Table 21: show chassis fabric sibs Output Fields (Continued)

Field Name	Field Description
<b>Plane state</b>	<p>Possible plane state of the M320 SIB, TX-SIB or T640 SIB:</p> <ul style="list-style-type: none"> <li>• <b>S_ACTIVE</b>—Links on the SIB are operational, and the fabric plane (SIB) is operational and running.</li> <li>• <b>S_SPARE</b>—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 <b>S_ACTIVE</b> state encounters an error.</li> </ul> <p><b>NOTE:</b> If the plane is unusable by any of the Packet Forwarding Engines, the command output displays an additional string, <b>plane has link errors on #pfes</b>, 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"> <li>• <b>S_EMPTY</b>—No links are present on the SIB, and the fabric plane (SIB) is powered down.</li> <li>• <b>S_ACTIVATING</b>—Links on the SIB are coming online; this is a transitional state.</li> <li>• <b>S_DEACTIVATING</b>—Links on the SIB are going offline; this is a transitional state.</li> <li>• <b>S_FAULTING</b>—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational.</li> <li>• <b>S_FAULT</b>—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"> <li>• On-board F-chip is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> </ul> </li> </ul> <p>Possible plane state of the QFX Series SIB:</p>

Table 21: show chassis fabric sibs Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> <li>• <b>Active</b>—Links on the SIB are operational, and the fabric plane (SIB) is operational and running.</li> <li>• <b>Spare</b>—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 <b>S_ACTIVE</b> state encounters an error.</li> <li>• <b>Empty</b>—No links are present on the SIB, and the fabric plane (SIB) is powered down.</li> <li>• <b>Activating</b>—Links on the SIB are coming online; this is a transitional state.</li> <li>• <b>Deactivating</b>—Links on the SIB are going offline; this is a transitional state.</li> <li>• <b>Faulting</b>—Links on the SIB are being marked faulty, and the fabric plane (SIB) is not operational.</li> <li>• <b>Fault</b>—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"> <li>• On-board F-chip is not operational.</li> <li>• Fiber optic connector faults.</li> <li>• FPC connector faults.</li> </ul> </li> </ul>

## 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\*](#)

[\*show chassis sibs\*](#)

[Monitoring the SIBs](#)

[Redundant SIBs Overview](#)

## show chassis fabric summary

### IN THIS SECTION

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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 22 on page 775 lists the output fields for the **show chassis fabric summary** command. Output fields are listed in the approximate order in which they appear.

**Table 22: show chassis fabric summary Output Fields**

Field Name	Field Description
<b>Plane</b>	(MX Series, MX2020, MX2010, and MX2008 Routers only) Plane number.

---



Table 22: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
<b>State</b>	<p>(MX Series and QFX Series) State of the SIB or FPC:</p> <ul style="list-style-type: none"> <li>• <b>Online</b>—Switch Interface Board (SIB) is operational and running. <p style="margin-left: 20px;"><b>NOTE:</b> 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> </li> <li>• <b>Empty</b>—SIB is powered down.</li> <li>• <b>Check</b>—SIB is in the <b>Check</b> state because of the following reasons: <ul style="list-style-type: none"> <li>• SIB is not inserted properly.</li> <li>• 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.</li> <li>• 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"> <li>• Link errors caused by a link training failure at initialization time—The Packet Forwarding Engine does not use the SIB to send traffic. The <b>show chassis fabric fpcs</b> command shows <b>Plane disabled</b> as status for this link.</li> <li>• Link errors caused by CRC errors detected at runtime—The Packet Forwarding Engine continues to use the SIB to send traffic. The <b>show chassis fabric fpcs</b> command shows <b>Link error</b> as the status for this link.</li> </ul> </li> </ul> <p style="margin-left: 20px;"><b>NOTE:</b> The <b>Check</b> 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 <b>show chassis fabric fpcs</b> commands.</p> </li> <li>• <b>Spare</b>—SIB is redundant and will move to active state if one of the working SIBs fails.</li> </ul>

Table 22: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
	<p><b>NOTE: Spare</b> 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"> <li>• <b>Online</b>—Switch Fabric Board (SFB) is operational and running.</li> <li>• <b>Offline</b>—Switch Fabric Board (SFB) is powered down.</li> <li>• <b>Check</b>—Switch Fabric Board (SFB) is in the check state.</li> </ul>
<b>Errors</b>	<p>(PTX Series and QFX Series) Indicates whether there is any error on the SIB.</p> <ul style="list-style-type: none"> <li>• <b>None</b>—No errors</li> <li>• <b>Link Errors</b>—Fabric link errors were found on the SIB RX link.</li> <li>• <b>Cell drops</b>—Fabric cell drops were found on the SIB ASIC.</li> <li>• <b>Link, Cell drops</b>—Both Link errors and cell drops were detected on at least one of the FPC's fabric links.</li> <li>• <b>Asic Errors</b>—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.</li> </ul> <p><b>NOTE:</b> The <b>Errors</b> column is empty only when the FPC or SIB is offline.</p>
<b>Uptime</b>	(MX Series, MX2010, MX2020, and MX2008 Routers) Elapsed time the plane has been online.
<b>Link Error</b>	Fabric link errors were found on the SIB RX link.
<b>Link TF</b>	Fabric link training failure has occurred.

Table 22: show chassis fabric summary Output Fields (Continued)

Field Name	Field Description
<b>Destination errors</b>	<ul style="list-style-type: none"> <li>• <b>Local</b>—Destination error detected on the FPC or PFE's own self-stream.</li> <li>• <b>Remote</b>—Destination error detected on the FPC or PFE's non-self-streams.</li> </ul>

## 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 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.

<b>clei-models</b>	(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).
<b>detail</b>	(Optional) Include RAM and disk information in output.
<b>extensive</b>	(Optional) Display ID EEPROM information.
<b>all-members</b>	(MX Series routers only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device.
<b>lcc <i>number</i></b>	<p>(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.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display hardware-specific information for the local Virtual Chassis members.
<b>member <i>member-id</i></b>	(MX Series routers and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> variable with a value 0 or 1.
<b>models</b>	(Optional) Display model numbers and part numbers for orderable FRUs and, for components that use ID EEPROM format v2, the CLEI code.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display hardware-specific information for the Node device.

<b>satellite</b> [ <b>slot-id</b> <b>slot-id</b>   <b>device-alias</b> <b>alias-name</b> ]	(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.
<b>scc</b>	(TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).
<b>sfc number</b>	(TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with <b>0</b> .

## Additional Information

The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines, as shown in [Table 23 on page 790](#).

**Table 23: Routing Engines Displaying DIMM Information**

Routing Engines	Routers
RE-S-1800x2 and RE-S-1800x4	MX240, MX480, and MX960 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 24 on page 791 lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

**Table 24: show chassis hardware Output Fields**

Field Name	Field Description	Level of Output
<b>Item</b>	Show information about the device hardware.	All levels
<b>Version</b>	Revision level of the chassis component.	All levels
<b>Part number</b>	Part number of the chassis component.	All levels
<b>Serial number</b>	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
<b>Assb ID or Assembly ID</b>	( <b>extensive</b> keyword only) Identification number that describes the FRU hardware.	<b>extensive</b>
<b>Assembly Version</b>	( <b>extensive</b> keyword only) Version number of the FRU hardware.	<b>extensive</b>
<b>Assembly Flags</b>	( <b>extensive</b> keyword only) Flags.	<b>extensive</b>
<b>FRU model number</b>	( <b>clei-models</b> , <b>extensive</b> , and <b>models</b> keyword only) Model number of the FRU hardware component.	none specified
<b>CLEI code</b>	( <b>clei-models</b> and <b>extensive</b> 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



**Table 24: show chassis hardware Output Fields** *(Continued)*

Field Name	Field Description	Level of Output
<b>EEPROM Version</b>	ID EEPROM version used by the hardware component: <b>0x00</b> (version 0), <b>0x01</b> (version 1), or <b>0x02</b> (version 2).	<b>extensive</b>

Table 24: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
<b>Description</b>	<p data-bbox="444 365 894 394">Brief description of the hardware item:</p> <ul data-bbox="444 430 1195 1709" style="list-style-type: none"> <li data-bbox="444 430 737 459">• Type of power supply.</li> <li data-bbox="444 495 1195 567">• Type of PIC. If the PIC type is not supported on the current software release, the output states <b>Hardware Not Supported</b>.</li> <li data-bbox="444 602 1073 674">• Type of FPC: <b>FPC Type 1, FPC Type 2, FPC Type 3, FPC Type 4</b> , or <b>FPC TypeOC192</b>.</li> </ul> <p data-bbox="480 709 1102 739">On EX Series switches, a brief description of the FPC.</p> <p data-bbox="480 774 1174 846">The following list shows the PIM abbreviation in the output and the corresponding PIM name.</p> <ul data-bbox="480 879 1174 1709" style="list-style-type: none"> <li data-bbox="480 879 1174 951">• <b>2x FE</b>—Either two built-in Fast Ethernet interfaces (fixed PIM) or dual-port Fast Ethernet PIM</li> <li data-bbox="480 984 911 1014">• <b>4x FE</b>—4-port Fast Ethernet ePIM</li> <li data-bbox="480 1047 1162 1119">• <b>1x GE Copper</b>—Copper Gigabit Ethernet ePIM (one 10-Mbps, 100-Mbps, or 1000-Mbps port)</li> <li data-bbox="480 1152 1157 1182">• <b>1x GE SFP</b>—SFP Gigabit Ethernet ePIM (one fiber port)</li> <li data-bbox="480 1215 878 1245">• <b>2x Serial</b>—Dual-port serial PIM</li> <li data-bbox="480 1278 813 1308">• <b>2x T1</b>—Dual-port T1 PIM</li> <li data-bbox="480 1341 813 1371">• <b>2x E1</b>—Dual-port E1 PIM</li> <li data-bbox="480 1404 1049 1434">• <b>2x CT1E1</b>—Dual-port channelized T1/E1 PIM</li> <li data-bbox="480 1470 813 1499">• <b>1x T3</b>—T3 PIM (one port)</li> <li data-bbox="480 1533 813 1562">• <b>1x E3</b>—E3 PIM (one port)</li> <li data-bbox="480 1596 963 1625">• <b>4x BRI S/T</b>—4-port ISDN BRI S/T PIM</li> <li data-bbox="480 1659 919 1688">• <b>4x BRI U</b>—4-port ISDN BRI U PIM</li> </ul>	All levels

Table 24: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> <li>• <b>1x ADSL Annex A</b>—ADSL 2/2+ Annex A PIM (one port, for POTS)</li> <li>• <b>1x ADSL Annex B</b>—ADSL 2/2+ Annex B PIM (one port, for ISDN)</li> <li>• <b>2x SHDSL (ATM)</b>—G SHDSL PIM (2-port two-wire module or 1-port four-wire module)</li> <li>• <b>1x TGM550</b>—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog <b>LINE</b> ports, and two analog <b>TRUNK</b> ports)</li> <li>• <b>1x DS1 TIM510</b>—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup)</li> <li>• <b>4x FXS, 4xFXO, TIM514</b>—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog <b>LINE</b> ports and four analog <b>TRUNK</b> ports)</li> <li>• <b>4x BRI TIM521</b>—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports)</li> <li>• <b>Crypto Accelerator Module</b>—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services</li> <li>• <b>MPC M 16x 10GE</b>—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.)</li> <li>• For hosts, the Routing Engine type.</li> <li>• For small form-factor pluggable transceiver (SFP) modules, the type of fiber: <b>LX, SX, LH</b>, or <b>T</b>.</li> <li>• LCD description for EX Series switches (except EX2200 switches).</li> </ul>	

Table 24: show chassis hardware Output Fields (Continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> <li>• <b>MPC2</b>—1-port MPC2 that supports two separate slots for MICs.</li> <li>• <b>MPC3E</b>—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.</li> <li>• 100GBASE-LR4, pluggable CFP optics</li> <li>• Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy.</li> <li>• Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs).</li> <li>• <b>MPC4E</b>—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.</li> <li>• LCD description for MX Series routers</li> </ul>	

## 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                BUILTTIN   BUILTTIN      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           Version  Part number  Serial number  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   13T511102684 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       0000000000000000000000000000000000000000
PSM 5               REV 0B   740-033727  VG00015       0000000000000000000000000000000000000000
PSM 6               REV 0B   740-033727  VH00097       0000000000000000000000000000000000000000
PSM 7               REV 0C   740-033727  VJ00151       0000000000000000000000000000000000000000
PSM 8               REV 0C   740-033727  VJ00149       0000000000000000000000000000000000000000
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
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
SPMB 1
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

## 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 lcd

### IN THIS SECTION

- [show chassis lcd \(EX Series\) | 808](#)
- [show chassis lcd \(QFX Series\) | 808](#)



- [show chassis lcd \(OCX Series\) | 808](#)
- [Description | 809](#)
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## show chassis lcd (EX Series)

```
show chassis lcd
<fpc-slot fpc-slot-number>
<menu <(all-members | local | member member-id)>>
```

## show chassis lcd (QFX Series)

```
show chassis lcd
<fpc-slot fpc-slot-number>
<interconnect-device device-id>
<node-device device-id>
```

## show chassis lcd (OCX Series)

```
show chassis lcd
<fpc-slot fpc-slot-number>
```

## Description

Display the information that appears on the LCD panel of EX3200, EX3300, EX4200, EX4500, EX6200, and EX8200 switches, XRE200 External Routing Engines, QFX Series standalone switches, OCX Series switches, and Interconnect devices and Node devices within a QFabric system. Display the status of the currently selected port parameter of the Status LED for each network port on the device.

## Options

**none**

Display the information that appears on the LCD panel (for any EX Series member switch in a Virtual Chassis or for XRE200 External Routing Engines, display the information for all Virtual Chassis members). Display the status of the currently selected port parameter of the Status LED for each network port.

**fpc-slot <fpc-slot-number>**

(Optional) Display the information as follows:

- (EX3200, EX3300, EX4200, and EX4500 switches, QFX Series, or OCX Series) Display the information that appears on the LCD panel for either an FPC slot with no *fpc-slot-number* value specified or for the FPC slot specified by **fpc-slot 0**. **fpc-slot** refers to the switch itself and **0** is the only valid value for *fpc-slot-number*. Output for these options is the same as for the **none** option.

Also display the status of the currently selected port parameter of the Status LED for each network port.

- (EX Series Virtual Chassis member switches or XRE200 External Routing Engines) If no *fpc-slot-number* value is specified, display the information that appears on the LCD panel for all members of the Virtual Chassis. Output for this option is the same as for the **none** option. If the *fpc-slot-number* value is specified (it equals the *member-id* value), display the information for the specified member.

Also display the status of the currently selected port parameter of the Status LED for each network port.

- (EX6200 or EX8200 switches)—Display the information that appears on the LCD panel for the line card in the line-card slot specified by the *fpc-slot-number* value.

Also display the status of the currently selected port parameter of the Status LED for each network port.

<b>interconnect-device <i>device-id</i></b>	(QFabric systems only) (Optional) Display the front panel contents and LED status of all the ports on the Interconnect device.
<b>menu</b>	(Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel.
<b>menu all-members</b>	(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for all Virtual Chassis members.
<b>menu local</b>	(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for the Virtual Chassis member from which you issued the command.
<b>menu member <i>member-id</i></b>	(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for the specified Virtual Chassis member.
<b>node-device <i>device-id</i></b>	(QFabric systems only) (Optional) Display the front panel contents and LED status of all the ports on the Node device.

## Required Privilege Level

view

## Output Fields

[Table 25 on page 810](#) lists the output fields for the **show chassis lcd** command. Output fields are listed in the approximate order in which they appear.

**Table 25: show chassis lcd Output Fields**

Field Name	Field Description
<b>member-number</b> (XRE200 External Routing Engine)	Member ID of the device whose content is being displayed.

Table 25: show chassis lcd Output Fields (Continued)

Field Name	Field Description
<p><b>Front panel contents for slot</b></p> <p><b>Front panel contents</b> (EX6200, EX8200 switch, XRE200 External Routing Engine, and QFX Series)</p>	<p>FPC slot number of the switch whose content is being displayed. The number is always <b>0</b>, except for EX4200 switches in a Virtual Chassis, where it is the member ID value.</p> <p>On EX6200 switches, EX8200 switches, and XRE200 External Routing Engines, no slot number is displayed.</p> <p>On XRE200 External Routing Engines, this field appears under the <b>member number</b> field for each member device in the EX8200 Virtual Chassis.</p>
<b>LCD screen</b>	<p>The first line displays the hostname (for Virtual Chassis members, displays the member ID, the current role, and hostname; for EX8200 switches, displays <b>RE</b> and the hostname). The second line displays the currently selected port parameter of the Status LED and the alarms counter. The Status LED port parameters are:</p> <ul style="list-style-type: none"> <li>• <b>ADM</b>—Administrative</li> <li>• <b>SPD</b>—Speed</li> <li>• <b>DPX</b>—Duplex</li> <li>• <b>POE</b>—Power over Ethernet (EX3200 and EX4200 switches only)</li> </ul>
<b>LEDs status</b>	Current state of the Alarms, System, and Master LEDs (chassis status LEDs).
<b>Interface</b>	Names of the interfaces on the switch.

Table 25: show chassis lcd Output Fields (Continued)

Field Name	Field Description
<b>LED (ADM/SPD/DPX/POE)</b>	<p>State of the currently selected port parameter of the Status LED for the interface. The Status LED port parameters are:</p> <p><b>NOTE:</b> The XRE200 External Routing Engine always displays the <b>NA</b> parameter. The QFX Series products do not have any of the port parameters listed below.</p> <ul style="list-style-type: none"> <li>• <b>ADM</b>—Administrative</li> <li>• <b>SPD</b>—Speed</li> <li>• <b>DPX</b>—Duplex</li> <li>• <b>NA</b>—Not applicable.</li> <li>• <b>POE</b>—Power over Ethernet</li> </ul>
<b>fpcx</b>	<p>On standalone EX Series and QFX Series switches, always <b>0</b>. On EX Series Virtual Chassis member switches, member ID of the Virtual Chassis member whose LCD menu is displayed.</p>

## Sample Output

### show chassis lcd (Two-Member EX4200 Virtual Chassis)

```

user@switch> show chassis lcd
Front panel contents for slot: 0
-----
LCD screen:
  00:BK switch1
  LED:SPD ALARM 00
LEDs status:
  Alarms LED: Off
  System LED: Green
  Master LED: Off
Interface      LED (ADM/SPD/DPX/POE)

```

```
-----  
ge-0/0/0      Off  
ge-0/0/1      Off  
ge-0/0/2      Off  
ge-0/0/3      Off  
ge-0/0/4      Off  
ge-0/0/5      Off  
ge-0/0/6      Off  
ge-0/0/7      Off  
ge-0/0/8      Off  
ge-0/0/9      Off  
ge-0/0/10     Off  
ge-0/0/11     Off  
ge-0/0/12     Off  
ge-0/0/13     Off  
ge-0/0/14     Off  
ge-0/0/15     Off  
ge-0/0/16     Off  
ge-0/0/17     Off  
ge-0/0/18     Off  
ge-0/0/19     Off  
ge-0/0/20     Off  
ge-0/0/21     Off  
ge-0/0/22     Off  
ge-0/0/23     Off
```

Front panel contents for slot: 1

```
-----  
LCD screen:
```

01:RE switch2

LED:SPD ALARM 01

LEDs status:

Alarms LED: Yellow

System LED: Green

Master LED: Green

```
Interface      LED (ADM/SPD/DPX/POE)  
-----
```

```
ge-1/0/0      Off  
ge-1/0/1      Off  
ge-1/0/2      Off  
ge-1/0/3      Off  
ge-1/0/4      Off  
ge-1/0/5      Off  
ge-1/0/6      Off
```

```

ge-1/0/7      Off
ge-1/0/8      Off
ge-1/0/9      Off
ge-1/0/10     Off
ge-1/0/11     Off
ge-1/0/12     Off
ge-1/0/13     Off
ge-1/0/14     Off
ge-1/0/15     Off
ge-1/0/16     Off
ge-1/0/17     Off
ge-1/0/18     Off
ge-1/0/19     Off
ge-1/0/20     Off
ge-1/0/21     Off
ge-1/0/22     Off
ge-1/0/23     Off

```

The output for the **show chassis lcd fpc-slot** command is the same as the output for the **show chassis lcd** command.

### show chassis lcd fpc-slot 1 (EX4200 Virtual Chassis)

```

user@switch> show chassis lcd fpc-slot 1
Front panel contents for slot: 1
-----
LCD screen:
  01:RE switch2
  LED:SPD ALARM 01
LEDs status:
  Alarms LED: Yellow
  System LED: Green
  Master LED: Green
Interface      LED (ADM/SPD/DPX/POE)
-----
ge-1/0/0      Off
ge-1/0/1      Off
ge-1/0/2      Off
ge-1/0/3      Off
ge-1/0/4      Off
ge-1/0/5      Off

```

```
ge-1/0/6      Off
ge-1/0/7      Off
ge-1/0/8      Off
ge-1/0/9      Off
ge-1/0/10     Off
ge-1/0/11     Off
ge-1/0/12     Off
ge-1/0/13     Off
ge-1/0/14     Off
ge-1/0/15     Off
ge-1/0/16     Off
ge-1/0/17     Off
ge-1/0/18     Off
ge-1/0/19     Off
ge-1/0/20     Off
ge-1/0/21     Off
ge-1/0/22     Off
ge-1/0/23     Off
```

### show chassis lcd (EX8200 Switch)

```
user@switch> show chassis lcd
Front panel contents:
-----
LCD screen:
  RE st-8200-r
  LED:ADM ALARM 01
LEDs status:
  Alarms LED: Yellow
  System LED: Yellow
  Master LED: Green
Interface      LED (ADM/SPD/DPX)
-----
ge-0/0/0      Off
ge-0/0/1      Off
ge-0/0/2      Off
ge-0/0/3      Off
ge-0/0/4      Off
ge-0/0/5      Off
ge-0/0/6      Off
ge-0/0/7      Off
```



ge-0/0/8	Off
ge-0/0/9	Off
ge-0/0/10	Off
ge-0/0/11	Off
ge-0/0/12	Off
ge-0/0/13	Off
ge-0/0/14	Off
ge-0/0/15	Off
ge-0/0/16	Off
ge-0/0/17	Off
ge-0/0/18	Off
ge-0/0/19	Off
ge-0/0/20	Off
ge-0/0/21	Off
ge-0/0/22	Off
ge-0/0/23	Off
ge-0/0/24	Off
ge-0/0/25	Off
ge-0/0/26	Off
ge-0/0/27	Off
ge-0/0/28	Off
ge-0/0/29	Off
ge-0/0/30	Off
ge-0/0/31	Off
ge-0/0/32	Off
ge-0/0/33	Off
ge-0/0/34	Off
ge-0/0/35	Off
ge-0/0/36	Off
ge-0/0/37	Off
ge-0/0/38	Off
ge-0/0/39	Off
ge-0/0/40	Off
ge-0/0/41	Off
ge-0/0/42	Off
ge-0/0/43	Off
ge-0/0/44	Off
ge-0/0/45	Off
ge-0/0/46	Off
ge-0/0/47	Off
xe-2/0/0	Off
xe-2/0/1	Off
xe-2/0/2	Off

```
xe-2/0/3      Off
xe-2/0/4      Off
xe-2/0/5      Off
xe-2/0/6      Off
xe-2/0/7      Off
xe-3/0/0      Off
xe-3/0/1      Off
xe-3/0/2      Off
xe-3/0/3      Off
xe-3/0/4      Off
xe-3/0/5      Off
xe-3/0/6      Off
xe-3/0/7      Off
xe-5/0/0      Off
xe-5/0/1      Off
xe-5/0/2      Off
xe-5/0/3      Off
xe-5/0/4      Off
xe-5/0/5      Off
xe-5/0/6      On
xe-5/0/7      On
xe-7/0/5      Off
```

### show chassis lcd fpc-slot 2 (EX8200 Switch)

#### show chassis lcd fpc-slot 2

```
Interface      LED (ADM/SPD/DPX)
-----
xe-2/0/0      Off
xe-2/0/1      Off
xe-2/0/2      Off
xe-2/0/3      Off
xe-2/0/4      Off
xe-2/0/5      Off
xe-2/0/6      Off
xe-2/0/7      Off
```

## show chassis lcd menu (EX4200 Switch)

```
user@switch> show chassis lcd menu
fpc0:
-----
status-menu
status-menu vcp-status
status-menu power-status
status-menu environ-menu
status-menu show-version
maintenance-menu
maintenance-menu halt-menu
maintenance-menu system-reboot
maintenance-menu rescue-config
maintenance-menu vc-uplink-config
maintenance-menu factory-default
```

On an EX4200 switch in a Virtual Chassis, the output for the **show chassis lcd menu all-members** command is the same as the output for the **show chassis lcd menu** command.

## show chassis lcd menu (EX8200 Switch)

```
user@switch> show chassis lcd menu
status-menu
status-menu sf-status1-menu
status-menu sf-status2-menu
status-menu psu-status1-menu
status-menu psu-status2-menu
status-menu environ-menu
status-menu show-version
maintenance-menu
maintenance-menu halt-menu
maintenance-menu system-reboot
maintenance-menu rescue-config
maintenance-menu factory-default
```

**show chassis lcd (QFX3500 Switches)**

```

user@switch> show chassis lcd
Front panel contents for slot: 0
-----
LCD screen:
00:RE switch
ALARM 01
LEDs status:
Status/Beacon LED: Yellow Blinking
Interface STATUS LED ACTIVITY LED
-----
fte-0/1/0 Off Off

```

**show chassis lcd (XRE200 External Routing Engine in EX8200 Virtual Chassis)**

```

user@external-routing-engine> show chassis lcd
member0:
-----
Front panel contents:
-----
LCD screen:
  RE ex8200-member0
  LED:ADM ALARM 04
LEDs status:
  Alarms LED: Red
  System LED: Yellow
  Master LED: Green

member1:
-----

member8:
-----
Front panel contents:
-----
LCD screen:
  BACKUP

member9:

```

-----  
Front panel contents:  
-----

LCD screen:

09:RE xre200-member9

LED: NA ALARM 01

Interface            LED (ADM/SPD/DPX/POE)  
-----

ge-0/0/0	On
ge-0/0/1	On
ge-0/0/2	On
ge-0/0/3	On
ge-0/0/4	Off
ge-0/0/5	Off
ge-0/0/6	Off
ge-0/0/7	Off
ge-0/0/8	Off
ge-0/0/9	Off
ge-0/0/10	On
ge-0/0/11	Off
ge-0/0/12	Off
ge-0/0/13	Off
ge-0/0/14	Off
ge-0/0/15	Off
ge-0/0/16	Off
ge-0/0/17	Off
ge-0/0/18	Off
ge-0/0/19	Off
ge-0/0/20	Off
ge-0/0/21	Off
ge-0/0/22	Off
ge-0/0/23	Off
ge-0/0/24	Off
ge-0/0/25	Off
ge-0/0/26	Off
ge-0/0/27	Off
ge-0/0/28	Off
ge-0/0/29	Off
ge-0/0/30	Off
ge-0/0/31	Off
ge-0/0/32	Off
ge-0/0/33	Off
ge-0/0/34	Off

ge-0/0/35	Off
ge-0/0/36	Off
ge-0/0/37	Off
ge-0/0/38	Off
ge-0/0/39	Off
ge-0/0/40	On
ge-0/0/41	On
ge-0/0/42	On
ge-0/0/43	On
ge-0/0/44	On
ge-0/0/45	On
ge-0/0/46	On
ge-0/0/47	On
ge-16/0/0	On
ge-16/0/1	Off
ge-16/0/2	On
ge-16/0/3	Off
ge-16/0/4	On
ge-16/0/5	Off
ge-16/0/6	On
ge-16/0/7	Off
ge-16/0/8	Off
ge-16/0/9	Off
ge-16/0/10	Off
ge-16/0/11	Off
ge-16/0/12	Off
ge-16/0/13	On
ge-16/0/14	Off
ge-16/0/15	On
ge-16/0/16	Off
ge-16/0/17	On
ge-16/0/18	On
ge-16/0/19	On
ge-16/0/20	On
ge-16/0/21	Off
ge-16/0/22	On
ge-16/0/23	Off
ge-16/0/24	Off
ge-16/0/25	Off
ge-16/0/26	On
ge-16/0/27	Off
ge-16/0/28	Off
ge-16/0/29	Off

ge-16/0/30	On
ge-16/0/31	Off
ge-16/0/32	On
ge-16/0/33	On
ge-16/0/34	On
ge-16/0/35	Off
ge-16/0/36	On
ge-16/0/37	Off
ge-16/0/38	Off
ge-16/0/39	Off
ge-16/0/40	Off
ge-16/0/41	Off
ge-16/0/42	On
ge-16/0/43	Off
ge-16/0/44	Off
ge-16/0/45	Off
ge-16/0/46	Off
ge-16/0/47	Off
xe-19/0/0	Off
xe-19/0/1	On
xe-19/0/2	On
xe-19/0/3	On
xe-19/0/4	On
xe-19/0/5	On
ge-22/0/0	Off
ge-22/0/1	Off
ge-22/0/2	On
ge-22/0/3	Off
ge-22/0/4	On
ge-22/0/5	On
ge-22/0/6	On
ge-22/0/7	On
ge-22/0/8	Off
ge-22/0/9	Off
ge-22/0/10	Off
ge-22/0/11	Off
ge-22/0/12	Off
ge-22/0/13	Off
ge-22/0/14	Off
ge-22/0/15	Off
ge-22/0/16	On
ge-22/0/17	Off
ge-22/0/18	On

```
ge-22/0/19      Off
ge-22/0/20      On
ge-22/0/21      Off
ge-22/0/22      On
ge-22/0/23      Off
ge-22/0/24      On
ge-22/0/25      Off
ge-22/0/26      Off
ge-22/0/27      Off
ge-22/0/28      Off
ge-22/0/29      Off
ge-22/0/30      Off
ge-22/0/31      Off
ge-22/0/32      On
ge-22/0/33      Off
ge-22/0/34      On
ge-22/0/35      Off
ge-22/0/36      Off
ge-22/0/37      Off
ge-22/0/38      Off
ge-22/0/39      Off
ge-22/0/40      Off
ge-22/0/41      Off
ge-22/0/42      Off
ge-22/0/43      Off
ge-22/0/44      Off
ge-22/0/45      Off
ge-22/0/46      Off
ge-22/0/47      Off
```

### show chassis lcd interconnect-device (QFabric Systems)

#### show chassis lcd interconnect-device IC-F1012

```
Front Panel Module Information
```

```
-----
```

```
LCD screen:
```

```
IC-F1012          3 Alarms active
```

```
LEDs status:
```

```
Status LED: Green
```

```
Power LED : Green
```

```
Major Alarm LED: off
```



Minor Alarm LED: Yellow

Fan 0 LED : Green

Fan 1 LED : Green

Fan 2 LED : Green

Fan 3 LED : Green

Fan 4 LED : Green

Fan 5 LED : Green

Fan 6 LED : Green

Fan 7 LED : Green

Fan 8 LED : Green

Fan 9 LED : Green

PEM 0 LED : Green

PEM 1 LED : Green

PEM 2 LED : Green

PEM 3 LED : off

PEM 4 LED : off

PEM 5 LED : off

LED info for: CB - 0

-----

LEDs status:

Status LED: Green

Mastership LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:pme0 :	Green	N/A
IC-F1012:pme1 :	Green	N/A
IC-F1012:pme2 :	off	N/A
IC-F1012:pme3 :	off	N/A

LED info for: CB - 1

-----

LEDs status:

Status LED: Green

Mastership LED: Amber

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:pme0 :	Green	N/A
IC-F1012:pme1 :	Green	N/A
IC-F1012:pme2 :	off	N/A
IC-F1012:pme3 :	off	N/A

LED info for: FC 0 FPC - 0

-----

LEDs status:

Status LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:fte-0/0/0	Green	N/A
IC-F1012:fte-0/0/1	Green	N/A
IC-F1012:fte-0/0/2	Green	N/A
IC-F1012:fte-0/0/3	Green	N/A
IC-F1012:fte-0/0/4	Green	N/A

LED info for: FC 1 FPC - 1

-----

LEDs status:

Status LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:fte-1/0/0	Green	N/A
IC-F1012:fte-1/0/1	Green	N/A
IC-F1012:fte-1/0/2	Green	N/A
IC-F1012:fte-1/0/3	Green	N/A
IC-F1012:fte-1/0/4	Green	N/A

LED info for: RC 0 FPC - 8

-----

LEDs status:

Status LED: Green

LED info for: RC 1 FPC - 9

-----

LEDs status:

Status LED: Green

LED info for: RC 2 FPC - 10

-----

LEDs status:

Status LED: Green

LED info for: RC 3 FPC - 11

```

-----
LEDs status:
  Status LED: Green

```

```

      LED info for: RC 4 FPC - 12
-----

```

```

LEDs status:
  Status LED: Green

```

```

      LED info for: RC 5 FPC - 13
-----

```

```

LEDs status:
  Status LED: Green

```

```

      LED info for: RC 6 FPC - 14
-----

```

```

LEDs status:
  Status LED: Green

```

```

      LED info for: RC 7 FPC - 15
-----

```

```

LEDs status:
  Status LED: Green

```

### show chassis lcd node-device (QFabric Systems)

#### show chassis lcd node-device P3774-C

```

      Front panel contents for: P3774-C
-----

```

```

      LCD screen:
      P3774-C

```

```

LEDs status:
  Status/Beacon LED: Yellow Blinking

```

Interface	STATUS LED	LINK/ACTIVITY LED
P3774-C:xe-0/0/6	Green	Green
P3774-C:xe-0/0/7	Green	Green
P3774-C:ge-0/0/10	Green	Green
P3774-C:ge-0/0/11	Green	Green Blinking
P3774-C:ge-0/0/12	Green	Off

P3774-C:ge-0/0/13	Green	Green Blinking
P3774-C:ge-0/0/20	Green	Green
P3774-C:ge-0/0/21	Green	Green
P3774-C:ge-0/0/22	Green	Green Blinking
P3774-C:ge-0/0/23	Green	Off
P3774-C:ge-0/0/30	Green	Green
P3774-C:ge-0/0/31	Green	Green
P3774-C:ge-0/0/32	Green	Green Blinking
P3774-C:ge-0/0/33	Green	Green Blinking
P3774-C:fte-0/1/0	Green	Green
P3774-C:fte-0/1/1	Green	Green Blinking
P3774-C:fte-0/1/2	Green	Green Blinking
P3774-C:fte-0/1/3	Green	Green

## Release Information

Command introduced in Junos OS Release 9.0.

**menu** option introduced in Junos OS Release 10.2 for EX Series switches.

### RELATED DOCUMENTATION

[LCD Panel in EX3200 Switches](#)

*LCD Panel in EX4200 Switches*

[LCD Panel in EX4500 Switches](#)

[LCD Panel in an EX8200 Switch](#)

[LCD Panel in an XRE200 External Routing Engine](#)

*Configuring the LCD Panel on EX Series Switches (CLI Procedure)*

*set chassis display message*

# show chassis led

## IN THIS SECTION

- [show chassis led \(EX Series\) | 828](#)
- [show chassis led \(QFX Series\) | 828](#)
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- [Options | 829](#)
- [Required Privilege Level | 830](#)
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## show chassis led (EX Series)

```
show chassis led
<fpc-slot <fpc-slot-number>>
```

## show chassis led (QFX Series)

```
show chassis led
<fpc-slot <fpc-slot-number>>
interconnect-device name
node-device name
```

## Syntax (OCX Series)

```
show chassis led
<fpc-slot <fpc-slot-number>>
```

## Description

Display the status and colors of the chassis LEDs on the front panel of the switch. A major alarm (red) indicates a critical error condition that requires immediate action. A minor alarm (yellow) indicates a noncritical condition that requires monitoring or maintenance. A minor alarm that is left unchecked might cause interruption in service or performance degradation.

## Options

**none** Display the status of the chassis status LEDs (for EX4200 switches configured as a Virtual Chassis, display the information for all Virtual Chassis members).

**fpc-slot <fpc-slot-number>** (Optional) (Not on EX2200 switches) Display the information as follows:

- (EX3200, standalone EX4200, standalone QFX3500, EX4500, and OCX Series switches) Display the status of the chassis status LEDs for either an FPC slot with no *fpc-slot-number* value specified or for the FPC slot specified by **fpc-slot 0**. **fpc-slot** refers to the switch itself and **0** is the only valid value for *fpc-slot-number*. Output for these options is the same as for the **none** option.
- (EX4200 switches in a Virtual Chassis with two or more members) If no *fpc-slot-number* value is specified, display the status of the chassis status LEDs for all members of the Virtual Chassis. Output for this option is the same as for the **none** option. If the *fpc-slot-number* value is specified (it equals the *member-id* value), display the status of the chassis status LEDs for the specified member.
- (EX8200 switches)—Display the status of the chassis status LEDs for the line card in the line-card slot specified by the *fpc-slot-number* value.

**interconnect-device name**

(QFabric systems only) (Optional) Display the status of the chassis and interface status LEDs for the Interconnect device.

**node-device  
name** (QFabric systems only) (Optional) Display the status of the chassis and interface status LEDs for the Node device.

## Required Privilege Level

view

## Output Fields

Table 26 on page 830 lists the output fields for the **show chassis led** command. Output fields are listed in the approximate order in which they appear.

**Table 26: show chassis led Output Fields**

Field Name	Field Description
<b>Front panel contents for slot</b>	FPC slot number of the device whose content is being displayed.
<b>Front panel contents</b> (EX8200 Switches)	The number is always <b>0</b> , except for EX4200 switches in a Virtual Chassis, where it is the member ID value.
<b>Front Panel Module Information</b> (QFabric system QFX3008-I Interconnect device)	On EX8200 switches, no slot number is displayed.
<b>Front panel contents for</b> (QFabric system Node devices and QFX3600-I Interconnect devices)	On QFabric system Node devices, the name of the Node device whose content is being displayed.

Table 26: show chassis led Output Fields *(Continued)*

Field Name	Field Description
<b>Alarms LED</b>	<p>(EX Series switches only) Displays status of the ALM LED:</p> <ul style="list-style-type: none"> <li>• Off—No alarm has been configured.</li> <li>• Green—No alarm has been triggered.</li> <li>• Red—Major alarm.</li> <li>• Yellow—Minor alarm</li> </ul>
<b>System LED</b>	<p>(EX Series switches only) Displays status of the SYS LED:</p> <ul style="list-style-type: none"> <li>• Off—Switch is powered off.</li> <li>• Green—Switch is operating normally.</li> <li>• Yellow—Switch is booting.</li> </ul>
<b>Master LED:</b>	<p>Displays status of the MST LED (on EX3200, EX4200, and EX8200 switches):</p> <ul style="list-style-type: none"> <li>• Green—On an EX4200 Virtual Chassis switch, indicates the switch is the primary in the Virtual Chassis configuration. On other switches, indicates that the Routing Engine is operational.</li> <li>• Off <ul style="list-style-type: none"> <li>• On an EX4200 Virtual Chassis switch, indicates that this switch is not the primary in the Virtual Chassis configuration.</li> <li>• On EX3200, standalone EX4200, and EX8200 switches, indicates that the Routing Engine is not operational.</li> </ul> </li> </ul>



Table 26: show chassis led Output Fields *(Continued)*

Field Name	Field Description
<b>Mode LED:</b>	<p>(EX Series switches only) On an EX2200 switch only, displays the currently selected port parameter of the Status LED:</p> <ul style="list-style-type: none"> <li>• <b>ADM</b>—Administrative</li> <li>• <b>SPD</b>—Speed</li> <li>• <b>DPX</b>—Duplex</li> <li>• <b>POE</b>—Power over Ethernet</li> </ul>
<b>Status/Beacon LED</b>	<p>(QFX Series and OCX Series) Displays the system status as indicated by the Status LED on the chassis. For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Chassis Status LEDs on a QFX3500 Device</a></li> <li>• <a href="#">Chassis Status LEDs in the QFX3600 and QFX3600-I Device</a></li> </ul>
<b>LINK/SPEED LED</b>	<p>(QFX Series and OCX Series) Displays the link status and speed of a management port. For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Management Port LEDs on a QFX3500 Device</a></li> <li>• <a href="#">Management Port LEDs in the QFX3600 and QFX3600-I Device</a></li> </ul>
<b>ACTIVITY LED</b>	<p>(QFX Series and OCX Series) Displays the activity status of a management port. For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Management Port LEDs on a QFX3500 Device</a></li> <li>• <a href="#">Management Port LEDs in the QFX3600 and QFX3600-I Device</a></li> </ul>

Table 26: show chassis led Output Fields *(Continued)*

Field Name	Field Description
<b>STATUS LED</b>	<p>(QFX Series and OCX Series) Displays the link status of an interface as indicated by the ST LED. For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Control Board LEDs on a QFX3008-I Interconnect Device</a></li> <li>• <a href="#">Access Port and Uplink Port LEDs on a QFX3500 Device</a></li> <li>• <a href="#">Access Port and Uplink Port LEDs on a QFX3600 or QFX3600-I Device</a></li> </ul>
<b>LINK/ACTIVITY LED</b>	<p>(QFX Series and OCX Series) Displays link activity or faults on an interface as indicated by the LA LED. For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Access Port and Uplink Port LEDs on a QFX3500 Device</a></li> <li>• <a href="#">Access Port and Uplink Port LEDs on a QFX3600 or QFX3600-I Device</a></li> </ul>
<b>Status LED</b>	<p>(QFX3008-I Interconnect device only)</p> <ul style="list-style-type: none"> <li>• Displays the system status as indicated by the STATUS LED on the front panel of the chassis. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a>.</li> <li>• Displays the status of a Control Board as indicated by the STATUS LED on the Control Board. For more information, see <a href="#">Control Board LEDs on a QFX3008-I Interconnect Device</a>.</li> </ul>
<b>Power LED</b>	<p>(QFX3008-I Interconnect device only) Displays the status of system power on the device. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a>.</p>
<b>Major Alarm LED</b>	<p>(QFX3008-I Interconnect device only) Displays whether a critical error condition that requires immediate action exists on the device. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a>.</p>

Table 26: show chassis led Output Fields *(Continued)*

Field Name	Field Description
<b>Minor Alarm LED</b>	(QFX3008-I Interconnect device only) Displays whether a noncritical condition that requires monitoring or maintenance exists on the device. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a> .
<b>Fan 0 LED</b> <b>Fan 1 LED</b> <b>Fan 2 LED</b> <b>Fan 3 LED</b> <b>Fan 4 LED</b> <b>Fan 5 LED</b> <b>Fan 6 LED</b> <b>Fan 7 LED</b> <b>Fan 8 LED</b>	(QFX3008-I Interconnect device only) Displays the status of fan trays on the device. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a> .
<b>PEM 0 LED</b> <b>PEM 1 LED</b> <b>PEM 2 LED</b> <b>PEM 3 LED</b> <b>PEM 4 LED</b>	(QFX3008-I Interconnect device only) Displays the status of power supplies on the device. For more information, see <a href="#">Chassis Status LEDs on a QFX3008-I Interconnect Device</a> .
<b>LED info for</b>	(QFX3008-I Interconnect device only) Displays the LED information for a Control Board.
<b>Mastership LED</b>	(QFX3008-I Interconnect device only) Displays status of the MASTER LED on a Control Board. For more information, see <a href="#">Control Board LEDs on a QFX3008-I Interconnect Device</a> .

Table 26: show chassis led Output Fields (Continued)

Field Name	Field Description
<b>Interface</b>	Names of the interfaces on the device.
<b>LED (ADM/SPD/DPX/POE)</b>	<p>(EX Series switches only) State of the currently selected port parameter of the Status LED for the interface. The Status LED port parameters are:</p> <p><b>NOTE:</b> EX4500 and EX8200 switches do not have the POE port parameter.</p> <ul style="list-style-type: none"> <li>• <b>ADM</b>—Administrative</li> <li>• <b>SPD</b>—Speed</li> <li>• <b>DPX</b>—Duplex</li> <li>• <b>POE</b>—Power over Ethernet</li> </ul>

## Sample Output

### show chassis led (EX2200 Switch)

```

user@switch> show chassis led

Front panel contents for slot: 0
-----
LEDs status:
  Alarms LED: Amber
  System LED: Green
  Mode LED   : Duplex
Interface    LED (ADM/SPD/DPX/POE)
-----
ge-0/0/0      Off
ge-0/0/1      Full Duplex
ge-0/0/2      Full Duplex
ge-0/0/3      Off

```

```

ge-0/0/4      Off
ge-0/0/5      Full Duplex
ge-0/0/6      Full Duplex
ge-0/0/7      Full Duplex
ge-0/0/8      Full Duplex
ge-0/0/9      Full Duplex
ge-0/0/10     Full Duplex
ge-0/0/11     Full Duplex
ge-0/0/12     Full Duplex
ge-0/0/13     Full Duplex
ge-0/0/14     Full Duplex
ge-0/0/15     Full Duplex
ge-0/0/16     Full Duplex
ge-0/0/17     Full Duplex
ge-0/0/18     Full Duplex
ge-0/0/19     Full Duplex
ge-0/0/20     Full Duplex
ge-0/0/21     Full Duplex
ge-0/0/22     Off
ge-0/0/23     Off
ge-0/0/24     Full Duplex
ge-0/0/25     Full Duplex
ge-0/0/26     Off
ge-0/0/27     Off
ge-0/0/28     Full Duplex
ge-0/0/29     Full Duplex

```

### show chassis led

```

user@switch> show chassis led

Front panel contents for slot: 0
-----
LEDs status:
  Alarms LED: Off
  System LED: Green
  Master LED: Green
Interface      LED (ADM/SPD/DPX/POE)
-----
ge-0/0/0      Off
ge-0/0/1      Full Duplex

```

```
ge-0/0/2      Full Duplex
ge-0/0/3      Off
ge-0/0/4      Off
ge-0/0/5      Full Duplex
ge-0/0/6      Full Duplex
ge-0/0/7      Full Duplex
ge-0/0/8      Full Duplex
ge-0/0/9      Full Duplex
ge-0/0/10     Full Duplex
ge-0/0/11     Full Duplex
ge-0/0/12     Full Duplex
ge-0/0/13     Full Duplex
ge-0/0/14     Full Duplex
ge-0/0/15     Full Duplex
ge-0/0/16     Full Duplex
ge-0/0/17     Full Duplex
ge-0/0/18     Full Duplex
ge-0/0/19     Full Duplex
ge-0/0/20     Full Duplex
ge-0/0/21     Full Duplex
ge-0/0/22     Off
ge-0/0/23     Off
ge-0/0/24     Full Duplex
ge-0/0/25     Full Duplex
ge-0/0/26     Off
ge-0/0/27     Off
ge-0/0/28     Full Duplex
ge-0/0/29     Full Duplex
```

### show chassis led fpc-slot 0

```
user@switch> show chassis led fpc-slot 0
Front panel contents for slot: 0
-----
LEDs status:
  Alarms LED: Red
  System LED: Green
  Master LED: Green
Interface      LED (ADM/SPD/DPX/POE)
-----
ge-0/0/0      Off
```

```
ge-0/0/1      Off
ge-0/0/2      Off
ge-0/0/3      Off
ge-0/0/4      Off
ge-0/0/5      Off
ge-0/0/6      Off
ge-0/0/7      Off
ge-0/0/8      Off
ge-0/0/9      Off
ge-0/0/10     Off
ge-0/0/11     Off
ge-0/0/12     Off
ge-0/0/13     Off
ge-0/0/14     Off
ge-0/0/15     Off
ge-0/0/16     Off
ge-0/0/17     Off
ge-0/0/18     Off
ge-0/0/19     Off
ge-0/0/20     Off
ge-0/0/21     Off
ge-0/0/22     Off
ge-0/0/23     Off
```

### show chassis led (EX Series)

```
user@switch> show chassis led
Front panel contents for slot: 0
-----
LEDs status:
Alarms LED: Amber
Status LED: Green
Mode LED : Duplex
Interface LED (ADM/SPD/DPX/POE)
-----
ge-0/0/0 Off
ge-0/0/1 Full Duplex
ge-0/0/2 Full Duplex
ge-0/0/3 Off
ge-0/0/4 Off
ge-0/0/5 Full Duplex
```

```

ge-0/0/6 Full Duplex
ge-0/0/7 Full Duplex
ge-0/0/8 Full Duplex
ge-0/0/9 Full Duplex
ge-0/0/10 Full Duplex
ge-0/0/11 Full Duplex
ge-0/0/12 Full Duplex
ge-0/0/13 Full Duplex
ge-0/0/14 Full Duplex
ge-0/0/15 Full Duplex
ge-0/0/16 Full Duplex
ge-0/0/17 Full Duplex
ge-0/0/18 Full Duplex
ge-0/0/19 Full Duplex
ge-0/0/20 Full Duplex
ge-0/0/21 Full Duplex
ge-0/0/22 Off
ge-0/0/23 Off
ge-0/0/24 Full Duplex
ge-0/0/25 Full Duplex
ge-0/0/26 Off
ge-0/0/27 Off
ge-0/0/28 Full Duplex
ge-0/0/29 Full Duplex

```

### show chassis led node-device (QFabric System Node Device)

```

user@switch> show chassis led node-device nodel
  Front panel contents for: nodel
LEDs status:
  Status/Beacon LED: Yellow Blinking

```

Interface	LINK/SPEED LED	ACTIVITY LED
nodel:me5	Green	N/A
nodel:me6	Green	N/A

Interface	STATUS LED	LINK/ACTIVITY LED
nodel:xe-0/0/8	Green	Green
nodel:ge-0/0/10	Green	Green



```

node1:ge-0/0/12      Green      Green
node1:ge-0/0/24      Green      Green
node1:ge-0/0/25      Green      Green
node1:ge-0/0/26      Green      Green
node1:ge-0/0/27      Green      Green
node1:ge-0/0/28      Green      Green
node1:ge-0/0/29      Green      Green
node1:ge-0/0/30      Green      Green
node1:ge-0/0/31      Green      Green
node1:ge-0/0/32      Green      Green
node1:ge-0/0/33      Green      Green
node1:ge-0/0/34      Green      Green
node1:ge-0/0/35      Green      Green
node1:ge-0/0/36      Green      Green
node1:ge-0/0/37      Green      Green
node1:ge-0/0/38      Green      Green
node1:ge-0/0/39      Green      Green
node1:fte-0/1/0      Green      Green Blinking
node1:fte-0/1/2      Green      Green Blinking

```

### show chassis led interconnect-device (QFabric System - QFX3600-I Interconnect Device)

```

user@switch> show chassis led interconnect-device
IC2

          Front panel contents for: FPC 0
          -----

LEDs status:
  Status/Beacon LED: Yellow Blinking

Interface          LINK/SPEED LED          ACTIVITY LED
-----
IC-EG0712:me5      Green                    N/A
IC-EG0712:me6      Green                    N/A

Interface          STATUS LED          LINK/ACTIVITY LED
-----
IC2:fte-0/1/0      Green              Green
IC2:fte-0/1/1      Green              Green Blinking
IC2:fte-0/1/2      Green              Green
IC2:fte-0/1/3      Green              Green Blinking
IC2:fte-0/1/4      Green              Green

```

IC2:fte-0/1/5	Green	Green Blinking
IC2:fte-0/1/6	Green	Green
IC2:fte-0/1/7	Green	Green
IC2:fte-0/1/8	Green	Green Blinking
IC2:fte-0/1/9	Green	Green Blinking
IC2:fte-0/1/10	Green	Green Blinking

### show chassis led interconnect-device (QFabric System - QFX3008-I Interconnect Device)

```
user@switch> show chassis led interconnect-device
IC2
```

```
          Front Panel Module Information
          -----
```

```
LEDs status:
```

```
  Status LED: Green
  Power LED  : Yellow Blinking
  Major Alarm LED: Red
  Minor Alarm LED: Yellow
  Fan 0 LED  : Green
  Fan 1 LED  : Green
  Fan 2 LED  : Green
  Fan 3 LED  : Green
  Fan 4 LED  : Green
  Fan 5 LED  : Green
  Fan 6 LED  : Green
  Fan 7 LED  : Green
  Fan 8 LED  : Green
  Fan 9 LED  : Green
  PEM 0 LED  : Green
  PEM 1 LED  : Green
  PEM 2 LED  : Green
  PEM 3 LED  : off
  PEM 4 LED  : Yellow Blinking
  PEM 5 LED  : off
```

```
          LED info for: CB - 0
          -----
```

```
LEDs status:
```

```
  Status LED: Green
  Mastership LED: Green
```

Interface	STATUS LED	LINK/ACTIVITY LED
IC2:pme0 :	Green	N/A
IC2:pme1 :	off	N/A
IC2:pme2 :	off	N/A
IC2:pme3 :	off	N/A

LED info for: CB - 1

LEDs status:

Status LED: Green

Mastership LED: Amber

Interface	STATUS LED	LINK/ACTIVITY LED
IC2:pme0 :	Green	N/A
IC2:pme1 :	off	N/A
IC2:pme2 :	off	N/A
IC2:pme3 :	off	N/A

LED info for: FC 0 FPC - 0

LEDs status:

Status LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC2:fte-0/0/0	Green	N/A
IC2:fte-0/0/1	Green	N/A
IC2:fte-0/0/2	Green	N/A
IC2:fte-0/0/3	Green	N/A
IC2:fte-0/0/4	Green	N/A
IC2:fte-0/0/5	Green	N/A
IC2:fte-0/0/6	Green	N/A
IC2:fte-0/0/7	Green	N/A
IC2:fte-0/0/8	Green	N/A
IC2:fte-0/0/9	Green	N/A
IC2:fte-0/0/10	Green	N/A
IC2:fte-0/0/11	Green	N/A
IC2:fte-0/0/12	Green	N/A
IC2:fte-0/0/13	Green	N/A
IC2:fte-0/0/14	Green	N/A
IC2:fte-0/0/15	Green	N/A

```

                LED info for: FC 1 FPC - 1
                -----
LEDs status:
  Status LED: Green

Interface          STATUS LED      LINK/ACTIVITY LED
-----
IC2:fte-1/0/0      Green          N/A
IC2:fte-1/0/1      Green          N/A

                LED info for: RC 2 FPC - 10
                -----
LEDs status:
  Status LED: Green

                LED info for: RC 3 FPC - 11
                -----
LEDs status:
  Status LED: Green

```

## Release Information

Command introduced in Junos OS Release 10.1.

### RELATED DOCUMENTATION

[Chassis Status LEDs in EX2200 Switches](#)

[Chassis Status LEDs in EX3200 Switches](#)

*[Chassis Status LEDs in EX4200 Switches](#)*

[Chassis Status LEDs in EX4500 Switches](#)

[Chassis Status LEDs in an EX8200 Switch](#)

[Chassis Status LEDs on a QFX3500 Device](#)

[Chassis Status LEDs in the QFX3600 and QFX3600-I Device](#)

[Management Port LEDs on a QFX3500 Device](#)

[Management Port LEDs in the QFX3600 and QFX3600-I Device](#)

[Chassis Status LEDs on a QFX3008-I Interconnect Device](#)

[Control Board LEDs on a QFX3008-I Interconnect Device](#)

## show chassis location

### IN THIS SECTION

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- [Syntax \(TX Matrix Router\) | 844](#)
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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.

<b>all-members</b>	(MX Series routers only) (Optional) Display the physical location of the chassis for all the member routers in the Virtual Chassis configuration.
<b>fpc</b>	(TX Matrix router and TX Matrix Plus router only) (Optional) Display the physical location of all Flexible PIC Concentrators (FPCs).
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display the physical location of the Interconnect device.
<b>interface by-name <i>name</i></b>	(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.
<b>interface by-slot fpc <i>number</i> lcc <i>number</i></b>	<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"> <li>• The global FPC number is the FPC slot number when all the FPC slots in the routing matrix are considered: <b>0</b> through <b>31</b>. On TX Matrix Plus router with 3D SIBs, the value is <b>0</b> through <b>63</b>. The local FPC number is the FPC slot number on a particular T640 router.</li> <li>• For <b>fpc</b>, replace <i>number</i> with a value from <b>0</b> through <b>7</b>.</li> <li>• For <b>lcc</b>, replace <i>number</i> with a value from <b>0</b> through <b>7</b>.</li> </ul>
<b>lcc <i>number</i></b>	<p>(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.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> </ul>

- 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.

<b>local</b>	(MX Series routers only) (Optional) Display the physical location of the chassis for the local Virtual Chassis member.
<b>member</b> <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.
<b>node-device</b> <i>name</i>	(QFabric systems only) (Optional) Display the physical location of the Node device.
<b>scc</b>	(TX Matrix routers only) (Optional) Display the physical location of the TX Matrix router (switch-card chassis).
<b>sfc</b>	(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 27 on page 848](#) lists the output fields for the **show chassis location** command. Output fields are listed in the approximate order in which they appear.



Table 27: show chassis location Output Fields

Field Name	Field Description
<b>country-code</b>	Country code information.
<b>postal-code</b>	Postal code information.
<b>Building</b>	Building information.
<b>Floor</b>	Floor information.
<b>Global FPC</b>	Global FPC number. The FPC slot number, when all FPC slots in the routing matrix are considered. The range of values is <b>0</b> through <b>31</b> . On TX Matrix Plus router with 3D SIBs the value is <b>0</b> through <b>63</b> .
<b>LATA</b>	Local access transport area information.
<b>LCC</b>	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.
<b>Local FPC</b>	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 | 851](#)
- [Syntax \(TX Matrix Router\) | 851](#)
- [Syntax \(TX Matrix Plus Router\) | 851](#)
- [Syntax \(MX Series Router\) | 851](#)
- [Syntax \(QFX Series\) | 852](#)
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- [Options | 852](#)
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- [Output Fields | 853](#)
- [Sample Output | 854](#)
- [Release Information | 859](#)

## 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 *name*** (QFabric switches only) (Optional) Display the MAC addresses for the Interconnect device.

**lcc *number*** (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.

<b>local</b>	(MX Series routers only) (Optional) Display the MAC addresses for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-group <i>name</i></b>	(QFabric switches only) (Optional) Display the MAC addresses for the specified Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Display MAC addresses for the TX Matrix router (or switch-card chassis).
<b><i>sfc number</i></b>	(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 28 on page 853](#) lists the output fields for the **show chassis mac-addresses** command. Output fields are listed in the approximate order in which they appear.

**Table 28: show chassis mac-addresses Output Fields**

Field Name	Field Description
<b>MAC address information</b>	

---

**Table 28: show chassis mac-addresses Output Fields (Continued)**

Field Name	Field Description
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 Switch)

```

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 pic

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## 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.



<b>local</b>	(MX Series routers and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member.
<b>member</b> <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.
<b>node-device</b> <i>name</i>	(QFabric systems only) (Optional) Display PIC information for a specified Node device.
<b>pic-slot</b> <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.
<b>transport</b>	Display PIC information for optical transport network.

## Required Privilege Level

view

## Output Fields

[Table 29 on page 865](#) lists the output fields for the **show chassis pic** command. Output fields are listed in the approximate order in which they appear.

Table 29: show chassis pic Output Fields

Field Name	Field Description
<b>Type</b>	<p>PIC type.</p> <p><b>NOTE:</b> On the 1-port OC192/STM64 MICs with the SDH framing mode, the type is displayed as <b>MIC-3D-1STM64-XFP</b> and with the SONET framing mode, the type is displayed as <b>MIC-3D-1OC192-XFP</b>. By default, the 1-port OC192/STM64 MICs displays the type as <b>MIC-3D-1OC192-XFP</b>.</p>
<b>Account Layer2 Overhead</b>	(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.
<b>ASIC type</b>	Type of ASIC on the PIC.
<b>State</b>	<p>Status of the PIC. State is displayed only when a PIC is in the slot.</p> <ul style="list-style-type: none"> <li>• <b>Online</b>— PIC is online and running.</li> <li>• <b>Offline</b>—PIC is powered down.</li> <li>• <b>Empty</b>—No PIC is present.</li> <li>• <b>Present</b>—PIC is plugged in. The PIC is not powered on or operational.</li> <li>• <b>Onlining</b>—PIC is in the process of going online. PICs and rest of the hardware is initializing.</li> <li>• <b>Offlining</b>—PIC is in the process of going offline. PIC and rest of the hardware is being shutdown down to take the offline gracefully.</li> <li>• <b>Fault</b>—PIC is in an alarmed state and the PIC is not operational.</li> </ul>
<b>PIC version</b>	PIC hardware version.
<b>Uptime</b>	How long the PIC has been online.

Table 29: show chassis pic Output Fields (Continued)

Field Name	Field Description
<b>Package</b>	<p>(Multiservices interfaces cards only)</p> <p>The following services package are supported:</p> <ul style="list-style-type: none"> <li>• <b>Layer-2</b> (not applicable to the <a href="#">MS-MPC</a> and <a href="#">MS-MIC</a>.)</li> <li>• <b>Layer-3</b> (not applicable to the <a href="#">MS-MPC</a> and <a href="#">MS-MIC</a>.)</li> <li>• <b>extension-provider</b> (PICs of <a href="#">MS-MPC</a> and <a href="#">MS-MIC</a> support only this package.)</li> </ul>
<b>Port Number</b>	Port number for the PIC.
<b>Cable Type</b>	Type of cable connected to the port: <b>LH</b> , <b>LX</b> , or <b>SX</b> .
<b>PIC Port Information (MX480 Router 100-Gigabit Ethernet CFP)</b>	<p>Port-level information for the PIC.</p> <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of optical transceiver installed.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal. Uplinks and downlinks are always 1550 nm. There is a separate fiber for each direction</li> <li>• Xcvr Firmware—Transceiver firmware version.</li> </ul>

Table 29: show chassis pic Output Fields (Continued)

Field Name	Field Description
<b>PIC Port Information (MX960 Router Bidirectional Optics )</b>	Port-level information for the PIC. <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed. Uplink interfaces display -U. Down link interfaces display -D.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.               <ul style="list-style-type: none"> <li>• BX10-10-km bidirectional optics.</li> <li>• BX40-40-km bidirectional optics.</li> <li>• SFP-LX-40-km SFP optics.</li> </ul> </li> <li>• Wavelength—Wavelength of the transmitted signal. Uplinks are always 1310 nm. Downlinks are either 1490 nm or 1550 nm.</li> </ul>
<b>PIC Port Information (Next- Generation SONET/SDH SFP)</b>	Port-level information for the next-generation SONET/SDH SFP PIC. <ul style="list-style-type: none"> <li>• Port—Port number.</li> <li>• Cable type—Type of small form-factor pluggable (SFP) optical transceiver installed.</li> <li>• Fiber type—Type of fiber: <b>SM</b> (single-mode) or <b>MM</b> (multimode).</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal. Next-generation SONET/SDH SFPs use 1310 nm.</li> </ul>

Table 29: show chassis pic Output Fields (*Continued*)

Field Name	Field Description
<b>PIC port information</b> (MX104 router)	Port-level information for the PIC. <ul style="list-style-type: none"> <li>• Port—Port number</li> <li>• Cable type—Type of optical transceiver installed.</li> <li>• Fiber type—Type of fiber. SM is single-mode.</li> <li>• Xcvr vendor—Transceiver vendor name.</li> <li>• Xcvr vendor part number—Transceiver vendor part number.</li> <li>• Wavelength—Wavelength of the transmitted signal.</li> <li>• Xcvr Firmware—Firmware version of the transceiver.</li> </ul>
Port speed information	Information pertaining to port speed: <ul style="list-style-type: none"> <li>• Port—Port number.</li> <li>• PFE—Packet Forwarding Engine slot number.</li> <li>• Capable Port Speed—Speed supported by each port.</li> </ul>
<b>Multirate Mode</b>	Rate-selectabilty status for the MIC: <b>Enabled</b> or <b>Disabled</b> .
<b>Channelization</b>	Indicates whether channelization is enabled or disabled on the DS3/E3 MIC.
<b>Administrative State</b>	Indicates the administrative state of the PIC. Possible values are: In Service (Default) and Out of Service.
<b>Operational State</b>	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      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 OCP          TRXBG1LXDBVM2-JW 1490 nm
  4     SFP-1000BASE-BX10-D SM OCP          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 OCP          TRXBG1LXDDBMH-J1 1310 nm
  8     SFP-1000BASE-BX10-U SM OCP          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. FTLC1181RDN3-J3 1310 nm

  Xcvr vendor

```





PIC port information:

Port	Cable type	Fiber type	Xcvr vendor	Xcvr vendor 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 vendor 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 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 1.0
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      Xcvr vendor      Wave-      Xcvr
  type                 type      vendor           part number   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						
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 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 Built-in
  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 Built-in
  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 routing-engine

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## 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

<b>none</b>	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.
<b>all-members</b>	(MX Series routers only) (Optional) Display Routing Engine information for all members of the Virtual Chassis configuration.
<b>bios</b>	(Optional) Display the (BIOS) firmware version.
<b>errors</b>	(Optional) Display routing engine errors.
<b>hard-disk-test</b>	(Junos OS Evolved only) (Optional) Display the health of the hard disk. Use <b>disk /dev/disk-name status</b> to display the status of a particular disk.
<b>interconnect-device <i>number</i></b>	(QFabric systems only) (Optional) Display Routing Engine information for a specified Interconnect device.
<b>lcc <i>number</i></b>	<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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>

- 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.

<b>local</b>	(MX Series routers only) (Optional) Display Routing Engine information for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device <i>number</i></b>	(QFabric systems only) (Optional) Display Routing Engine information for a specified Node device.
<b>satellite [slot-id <i>slot-id</i>   device-alias <i>alias-name</i>]</b>	(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.
<b>scc</b>	(TX Matrix routers only) (Optional) Display Routing Engine information for the TX Matrix router (switch-card chassis).
<b>sfc <i>number</i></b>	(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.
<b>slot</b>	(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 30 on page 902](#) lists the output fields for the **show chassis routing-engine** command. Output fields are listed in the approximate order in which they appear.

Table 30: show chassis routing-engine Output Fields

Field Name	Field Description
<b>Slot</b>	(Systems with single and multiple Routing Engines) Slot number.
<b>Current state</b>	(Systems with multiple Routing Engines) Current state of the Routing Engine: <b>Master, Backup, or Disabled.</b>
<b>Election priority</b>	(Systems with multiple Routing Engines) Election priority for the Routing Engine: <b>Master or Backup.</b>
<b>Temperature</b>	Temperature of the air flowing past the Routing Engine.
<b>CPU Temperature</b>	Temperature of the CPU.
<b>DRAM</b>	<p>Total DRAM available to the Routing Engine's processor.</p> <p><b>NOTE:</b> 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>
<b>Memory utilization</b>	<p>Percentage of Routing Engine memory being used.</p> <p><b>NOTE:</b> 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 <a href="#">Release Information for Junos OS with Upgraded FreeBSD</a>.</p>

Table 30: show chassis routing-engine Output Fields (*Continued*)

Field Name	Field Description
<b>CPU utilization</b>	<p>Information about the Routing Engine's CPU utilization:</p> <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>5 sec CPU Utilization</b>	<p>Information about the Routing Engine's CPU utilization in the past 5 seconds:</p> <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>1 min CPU Utilization</b>	<p>Information about the Routing Engine's CPU utilization in the past 1 minute:</p> <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>



Table 30: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
<b>5 min CPU Utilization</b>	Information about the Routing Engine's CPU utilization in the past 5 minutes: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>15 min CPU Utilization</b>	Information about the Routing Engine's CPU utilization in the past 15 minutes: <ul style="list-style-type: none"> <li>• <b>User</b>—Percentage of CPU time being used by user processes.</li> <li>• <b>Background</b>—Percentage of CPU time being used by background processes.</li> <li>• <b>Kernel</b>—Percentage of CPU time being used by kernel processes.</li> <li>• <b>Interrupt</b>—Percentage of CPU time being used by interrupts.</li> <li>• <b>Idle</b>—Percentage of CPU time that is idle.</li> </ul>
<b>Model</b>	Routing Engine model number.
<b>Serial ID</b>	(Systems with multiple Routing Engines) Identification number of the Routing Engine in this slot.
<b>Start time</b>	Time at which the Routing Engine started running.
<b>Uptime</b>	How long the Routing Engine has been running.
Routing Engine BIOS Version	BIOS version being run by the Routing Engine.

Table 30: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
<b>Last reboot reason</b>	<p>Reason for last reboot, including:</p> <ul style="list-style-type: none"> <li>• <b>power cycle/failure</b>—Halt of the Routing Engine using the <b>halt</b> 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 <b>request system halt</b> 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.</li> <li>• <b>watchdog</b>—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.</li> <li>• <b>reset-button reset</b>—(Not available on the EX Series switch) Reboot due to pressing of the reset button on the Routing Engine.</li> <li>• <b>power-button hard power off</b>—Reboot due to pressing of the power button on the chassis. A powering down of the software also occurs if you enter the <b>request system power-off</b> command. You can enter this command to power down the chassis or specific Routing Engines; you can then restart the software.</li> <li>• <b>misc hardware reason</b>—Reboot due to miscellaneous hardware reasons.</li> <li>• <b>thermal shutdown</b>—Reboot due to the router or switch reaching a critical temperature at which point it is unsafe to continue operations.</li> <li>• <b>hard disk failure</b>—Reboot due to a hard disk or solid-state drive (SSD) failure.</li> <li>• <b>reset from debugger</b>—Reboot due to reset from the debugger.</li> <li>• <b>chassis control reset</b>—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 <b>restart chassis-control</b> command.</li> <li>• <b>bios auto recovery reset</b>—Reboot due to a BIOS auto-recovery reset.</li> </ul>

Table 30: show chassis routing-engine Output Fields (Continued)

Field Name	Field Description
	<ul style="list-style-type: none"> <li>• <b>could not be determined</b>—Reboot due to an undetermined reason.</li> <li>• <b>Router rebooted after a normal shutdown</b>—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 <b>request system reboot</b> command. You can enter this command to reboot the chassis or specific Routing Engines.</li> <li>• <b>Hypervisor reboot</b>—When both Linux host and Junos OS is rebooted using the <b>request vmhost reboot</b> command.</li> <li>• <b>VJUNOS Reboot</b>—When Junos OS is rebooted using the <b>request system reboot</b> command.</li> </ul>
<b>Load averages</b>	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 temperature-thresholds

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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

<b>none</b>	Display the temperature threshold details.
<b>all-members</b>	(MX Series routers only) (Optional) Display the chassis temperature threshold settings of all member routers in the Virtual Chassis configuration.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Interconnect device.
<b>lcc <i>number</i></b>	<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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(MX Series routers only) (Optional) Display the chassis temperature threshold settings of the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(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.
<b>node-device <i>name</i></b>	(QFabric systems only) (Optional) Display the chassis temperature threshold settings of the Node device.
<b>satellite [slot-id <i>slot-ID</i>   device- alias <i>alias-name</i>]</b>	(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.

<b>scc</b>	(TX Matrix routers only) (Optional) Display the temperature threshold details of the TX Matrix router (switch-card chassis).
<b>sfc <i>number</i></b>	(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 31 on page 931](#) lists the output fields for the **show chassis temperature-thresholds** command. Output fields are listed in the approximate order in which they appear.

**Table 31: 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 31: show chassis temperature-thresholds Output Fields (Continued)

Field name	Field Description
Fan speed	<p><b>NOTE:</b> On the QFX3500 switch and QFX3600 switch, there are four fan speeds: <b>low</b>, <b>medium-low</b>, <b>medium-high</b>, and <b>high</b>. 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"> <li>• 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.</li> </ul> <p><b>NOTE:</b> On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 70°C for <b>Normal</b> fan speed, which is less than or equal to 4800 RPM.</p> <ul style="list-style-type: none"> <li>• High—The fans operate at high speed if the component has exceeded this temperature or a fan has failed or is missing.</li> </ul> <p><b>NOTE:</b> On a TX Matrix Plus router with 3D SIBs, the threshold temperature at the XF junction is set to 75°C for <b>High</b> fan speed, which is greater than or equal to 5000 RPM.</p> <p><b>NOTE:</b> 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"> <li>• Normal—The temperature that must be exceeded on the component to trigger a yellow alarm when the fans are running at full speed.</li> <li>• 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.</li> </ul>

**Table 31: 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"> <li>• Normal—The temperature that must be exceeded on the component to trigger a red alarm when the fans are running at full speed.</li> <li>• 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.</li> </ul>
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
	(degrees C)		(degrees C)		(degrees C)		
	Normal	High	Normal	Bad fan	Normal	Bad fan	
Routing Engine 0 CPU	58	63	78	75	93	90	
Routing Engine 1 CPU	58	63	78	75	93	90	
CB 0 Inlet1	55	60	65	62	75	72	
CB 0 Inlet2	45	50	61	58	80	77	
CB 0 Inlet3	57	62	68	65	80	77	
CB 0 Inlet4	55	60	80	77	90	87	



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          Fan speed          Yellow alarm          Red
C)             (degrees C)           (degrees C)       (degrees C)         (degrees
Item           Bad fan      Normal
Routing Engine 100          100          102          48           54           85           85
CB Top Right Inlet Sensor 85           85           95           35           40           63           63
CB Top Left Inlet Sensor 85           85           95           40           45           65           65
CB Top Right Exhaust Sensor 85           85           95           45           50           68           68
CB Top Left Exhaust Sensor 85           85           95           65           70           78           78
CB CPU Core-0 Temp 90           90           100          65           70           80           80
CB CPU Core-1 Temp 90           90           100          65           70           80           80

```

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
SIB F2S 19 Board           60   65   78   75   85    80
95
SIB F2S 19 XF Junction     70   75   82   74   105   100
107
SIB F2S 24 Board           60   65   78   75   85    80
95
SIB F2S 24 XF Junction     70   75   82   74   105   100
107
SIB F2S 25 Board           60   65   78   75   85    80
95
SIB F2S 25 XF Junction     70   75   82   74   105   100
107
SIB F2S 26 Board           60   65   78   75   85    80
95
SIB F2S 26 XF Junction     70   75   82   74   105   100
107
SIB F2S 27 Board           60   65   78   75   85    80
95
SIB F2S 27 XF Junction     70   75   82   74   105   100
107

```

```
lcc0-re0:
```

```

-----
                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   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 (degrees C)		Yellow alarm (degrees C)		Red alarm (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	
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

## IN THIS SECTION

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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

<b>all-members</b>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in all members of the Virtual Chassis configuration.
<b>detail</b>	(MX2010, MX2020, and MX2008 routers only) (Optional) Display detailed status of the cooling system zones.
<b>detail <i>device-name</i></b>	(QFabric systems only) (Optional) Display detailed status of the two cooling systems on the Interconnect device.
<b>interconnect-device <i>name</i></b>	(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 32 on page 970 lists the output fields for the **show chassis zones** command. Output fields are listed in the approximate order in which they appear.

**Table 32: show chassis zones Output Fields**

Field Name	Field Description
<b>Slot</b>	FPC slot number of the device whose content is being displayed. On QFX3500 standalone switches, the number is always <b>0</b> .
<b>Beacon State</b>	Status of the beacon state: <ul style="list-style-type: none"> <li>• Off—The beacon is <b>OFF</b>.</li> <li>• On—The beacon is <b>ON</b>.</li> </ul>

**show chassis zones** command output fields for MX2020, MX2010, and MX2008 routers:

<b>Driving FRU</b>	Field replaceable unit (FRU).
<b>Temperature</b>	Temperature of the specified FRU in degrees Celsius and degrees Fahrenheit.

Table 32: show chassis zones Output Fields (Continued)

Field Name	Field Description
<b>Condition</b>	Condition of the specified FRU. Condition can be <b>HIGH TEMP</b> , <b>WARM TEMP</b> , <b>OK</b> , and <b>Offline</b> .
<b>Num Fans Missing</b>	Number of fans or fan trays missing.
<b>Num Fans Failed</b>	Number of fans or fan trays that have failed.
<b>Fan Duty Cycle</b>	Fan duty cycle value.

**show chassis zones detail** command output fields for MX2020, MX2010, and MX2008 routers:

<b>Item</b>	Chassis component: <ul style="list-style-type: none"> <li>Information about the chassis, Routing Engines, Control Boards (CBs), Switch Fabric Boards (SFBs), PICs, Flexible PIC Concentrators (FPCs), and Adapter Cards (ADCs).</li> </ul>
<b>Measurement</b>	Fan tray speed utilization in percentage.
<b>Status</b>	Status of the specified item. Status can be <b>OK</b> , <b>Absent</b> , or <b>Offline</b> .

## 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

*show chassis fan*

*show chassis temperature-thresholds*

# show forwarding-options enhanced-hash-key

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## Syntax

```
show forwarding-options enhanced-hash-key
```

## Description

Display information about which packet fields are used by the hashing algorithm to make hashing decisions.

You can configure the fields that are inspected by the hashing algorithm to make hashing decisions for traffic entering a LAG bundle using the **forwarding-options** [enhanced-hash-key](#) statement.

## Required Privilege Level

view

## Output Fields

Table 33 on page 981 lists the output fields for the **show forwarding-options enhanced-hash-key** command. Output fields are listed in the approximate order in which they first appear. Output fields vary by platform.

**Table 33: show forwarding-options enhanced-hash-key Output Fields**

Field Name	Field Description
<b>Hash-Mode</b>	Current hash mode: Layer 2 header or Layer 2 payload.
<b>Protocol</b>	Indicates whether the Protocol field is or is not used by the hashing algorithm: Yes or No.
<b>Destination L4 Port</b>	Indicates whether the Destination L4 Port field is or is not used by the hashing algorithm: Yes or No.
<b>Source L4 Port</b>	Indicates whether the Source L4 Port field is or is not used by the hashing algorithm: Yes or No.
<b>Destination IPv4 Addr</b>	Indicates whether the Destination IPv4 Addr field is or is not used by the hashing algorithm: Yes or No.
<b>Source IPv4 Addr</b>	Indicates whether the Source IPv4 Addr field is or is not used by the hashing algorithm: Yes or No.
<b>Incoming port</b>	Indicates whether the incoming port number (interface) is or is not used by the hashing algorithm. Yes or No  <b>NOTE:</b> When passive monitoring is enabled on a QFX10000 Series switch interface, the <b>inet</b> , <b>inet6</b> and <b>L2</b> fields are all set to No.
<b>Vlan id</b>	Indicates whether the Vlan ID field is or is not used by the hashing algorithm: Yes or No.

Table 33: show forwarding-options enhanced-hash-key Output Fields (Continued)

Field Name	Field Description
<b>Inner-Vlan ID</b>	Indicates whether the inner Vlan field is or is not used by the hashing algorithm: Yes or No.
<b>Next Hdr</b>	Indicates whether the Next Hdr field is or is not used by the hashing algorithm: Yes or No.
<b>Destination IPv6 Addr</b>	Indicates whether the Destination IPv6 Addr field is or is not used by the hashing algorithm: Yes or No.
<b>Source IPv6 Addr</b>	Indicates whether the Source IPv6 Addr field is or is not used by the hashing algorithm: Yes or No.
<b>Ether Type</b>	Indicates whether the Ether Type field is or is not used by the hashing algorithm: Yes or No.
<b>Destination MAC Address</b>	Indicates whether the Destination MAC Address field is or is not used by the hashing algorithm: Yes or No.
<b>Source MAC Address</b>	Indicates whether the Source MAC Address field is or is not used by the hashing algorithm: Yes or No.
<b>Symmetric-hashing</b>	Indicates whether symmetric hashing is set for <b>inet</b> and <b>inet6</b> : Yes or No.
<b>Load Balancing Method for ALB</b>	Indicates the load balancing method for adaptive load balancing (ALB): flowlet or per-packet.  The load balancing method is flowlet by default, and can be configured using the <b>fabric-load-balance</b> statement.

Table 33: show forwarding-options enhanced-hash-key Output Fields (Continued)

Field Name	Field Description
<b>Load Balancing Method for DLB (QFX5120-32C, QFX5120-48Y, and QFX5220 switches)</b>	<p>Indicates various Dynamic Load Balancing (DLB) modes:</p> <ul style="list-style-type: none"> <li>• Flowlet</li> <li>• Assigned flow</li> <li>• Per-packet</li> </ul> <p>Refer <a href="#">Dynamic Load Balancing</a> for more details.</p>
<b>Fabric Link Scale</b>	Indicates the fabric link scale, in mbps.
<b>Inactivity Interval</b>	<p>Indicates the fabric load balance inactivity interval, in microseconds (us).</p> <p>The inactivity interval is 16 microseconds by default, and can be configured using the <b>inactivity-interval</b> statement.</p>
<b>Hash Region Size/ Trunk</b>	Indicates the hash region size, in buckets per fabric trunk.
<b>Seed</b>	A hash seed value, between 0 and 4294967295. If a hash-seed value is not configured it is automatically assigned on the QFX10000 Series switches. A hash-seed prevents traffic polarization to same links on the next hop QFX switch when two are connected with LAG/ECMP.
<b>Key</b>	Indicates whether the GRE key field is or is not used by the hashing algorithm: Yes or No.
<b>Protocol</b>	Indicates if a Generic Router Encapsulation (GRE) endpoint over routes was dynamically learned by a routing protocol such as RIP or OSPF.
<b>MPLS Enabled</b>	Indicates if MPLS is enabled under L2 switching.



Table 33: show forwarding-options enhanced-hash-key Output Fields (Continued)

Field Name	Field Description
<b>VXLAN VNID</b>	A 24-bit virtual network identifier (VNID) that uniquely identifies the Virtual Extensible Local Area Networks (VXLAN) segment.

## Sample Output

### show forwarding-options enhanced-hash-key (Layer 2 Payload Hash Mode)

```

user@switch> show forwarding-options enhanced-hash-key
Slot 0

Current Hash Settings
-----
Hash-Mode                               :layer2-payload

inet Hash settings-
-----
inet packet fields
  Protocol                               : Yes
  Destination L4 Port                    : Yes
  Source L4 Port                          : Yes
  Destination IPv4 Addr                  : Yes
  Source IPv4 Addr                       : Yes
  Vlan id                                : No

inet6 Hash settings-
-----
inet6 packet fields
  Next Hdr                               : Yes
  Destination L4 Port                    : Yes
  Source L4 Port                          : Yes
  Destination IPv6 Addr                  : Yes

```

```

Source IPv6 Addr      : Yes
Vlan id               : No

```

### show forwarding-options enhanced-hash-key (Layer 2 Header Hash Mode)

```

user@switch> show forwarding-options enhanced-hash-key
Slot 0

Current Hash Settings
-----

Hash-Mode                : layer2-header

layer2 Hash settings-
-----
layer2 packet fields
  Ether Type              : Yes
  Destination MAC Address : Yes
  Source MAC Address      : Yes
  VLAN ID                 : No

```

### show forwarding-options enhanced-hash-key (Symmetric Hashing)

```

user@switch> show forwarding-options enhanced-hash-key
<some output removed for brevity>

Symmetric-hashing SETTINGS
-----

inet   : Yes
inet6  : Yes

```

### show forwarding-options enhanced-hash-key (Fabric Load Balancing Options)

```

user@switch> show forwarding-options enhanced-hash-key
<some output removed for brevity>

Fabric Load Balancing Options

```

```

-----
Load Balancing Method   : Flowlet
Fabric Link Scale       : 40960 (mbps)
Inactivity Interval     : 16 (us)
Hash Region Size/Trunk : 1024 (buckets)

```

## show forwarding-options enhanced-hash-key (Dynamic Load Balancing Options)

```
user@switch> show forwarding-options enhanced-hash-key ecmp-dlb
```

```

Slot 0
Current RTAG7 Settings
-----
Hash-Mode                               : layer2-payload
inet RTAG7 settings-
-----
inet packet fields
  Protocol                               : Yes
  Destination L4 Port                    : Yes
  Source L4 Port                          : Yes
  Destination IPv4 Addr                   : Yes
  Source IPv4 Addr                        : Yes
  Vlan id                                 : No

inet6 RTAG7 settings-
-----
inet6 packet fields
  Next Hdr                               : Yes
  Destination L4 Port                    : Yes
  Source L4 Port                          : Yes
  Destination IPv6 Addr                   : Yes
  Source IPv6 Addr                        : Yes
  Vlan id                                 : No

ECMP Load Balancing Options
-----
Load Balancing Method   : Flowlet
Inactivity Interval     : 64 (us)

```

## show forwarding-options enhanced-hash-key (QFX10000 Series Switches)

```

user@switch> show forwarding-options enhanced-hash-key
Slot 0

Seed value for Hash function      0: 2301323130
Seed value for Hash function      1: 2301323130
Seed value for Hash function      2: 2301323130
Seed value for Hash function      3: 2301323130

Inet settings:
-----
    IPV4 dest address:      Yes
    IPV4 source address:   Yes
    L4 Dest Port:          Yes
    L4 Source Port:        Yes
    Incoming port:         No
Inet6 settings:
-----
    IPV6 dest address:      Yes
    IPV6 source address:   Yes
    L4 Dest Port:          Yes
    L4 Source Port:        Yes
    Incoming port:         No
L2 settings:
-----
    Dest Mac address:      No
    Source Mac address:   No
    Vlan Id:               Yes
    Inner-vlan Id:        No
    Incoming port:         No
GRE settings:
-----
    Key:                    No
    Protocol:               No
MPLS settings:
-----
MPLS Enabled:              Yes

VXLAN settings:

```

VXLAN VNID:

No

## Release Information

Command introduced in Junos OS Release 13.2X51-D15.

**Fabric Load Balancing Options** output fields introduced in Junos OS Release 14.1X53-D10.

**Incoming port** output field introduced in Junos OS Release 18.4R1 for QFX10000 Series switches.

The **ecmp-dlb** statement introduced in Junos OS Evolved Release 19.4R2 for QFX5220 switches.

### RELATED DOCUMENTATION

[Configuring the Fields in the Algorithm Used To Hash LAG Bundle and ECMP Traffic \(CLI Procedure\)](#)

[Understanding the Algorithm Used to Hash LAG Bundle and Egress Next-Hop ECMP Traffic](#)

## show host

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- [Syntax | 989](#)
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## Syntax

```
show host hostname  
<routing-instance mgmt_junos>  
<server server-name>
```

## Syntax (Junos OS Evolved)

```
show host hostname  
<routing-instance mgmt_junos>  
<server server-name>
```

## Syntax

## Description

Display Domain Name System (DNS) hostname information.

## Options

<i>hostname</i>	Hostname or address.
<b>routing-instance <i>mgmt_junos</i></b>	(Optional) Side host server that is running.
<b>server <i>server-name</i></b>	(Optional) Name server to use.

## Additional Information

The `show host` command displays the raw data received from the name server.

## Required Privilege Level

view

## Sample Output

`show host`

```
user@host> show host device
device.example.net has address 192.0.2.0

user@host> show host 192.0.2.0
Name: device.example.net
Address: 192.0.2.0
Aliases:
```

## Release Information

Command introduced before Junos OS Release 7.4.

`routing-instance mgmt_junos` option introduced in Junos OS Evolved Release 18.3R1.

`routing-instance mgmt_junos` option introduced in Junos OS Release 19.2R1.

# show interfaces diagnostics optics

## IN THIS SECTION

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- [Sample Output | 998](#)
- [Release Information | 1001](#)

## Syntax

```
show interfaces diagnostics optics interface-name
```

## Description

Display diagnostics data and alarms for Gigabit Ethernet, 10-Gigabit Ethernet, and QSFP+ optical transceivers installed in a QFX Series product. The information provided by this command is known as digital optical monitoring (DOM) information.

Thresholds that trigger a high alarm, low alarm, high warning, or low warning are set by the transponder vendors. Generally, a high alarm or low alarm indicates that the optics module is not operating properly. This information can be used to diagnose why a transceiver is not working.

## Options

***interface-name*** Name of the interface associated with the port in which the transceiver is installed.



## Required Privilege Level

view

## Output Fields

lists the output fields for the **show interfaces diagnostics optics** command. Output fields are listed in the approximate order in which they appear.

**Table 34: show interfaces diagnostics optics Output Fields**

Field Name	Field Description
<b>Physical interface</b>	Displays the name of the physical interface.
<b>Laser bias current</b>	Displays the magnitude of the laser bias power setting current, in milliamperes. The laser bias provides direct modulation of laser diodes and modulates currents.
<b>Laser output power</b>	Displays the laser output power, in milliwatts (mW) and decibels referred to 1.0 mW (dBm).
<b>Module temperature</b>	Displays the temperature, in Celsius and Fahrenheit.
<b>Module voltage</b> (Not available for XFP transceivers)	Displays the voltage, in volts.
<b>Laser rx power</b> (Not available for SFP and SFP+ transceivers)	Displays the laser received optical power, in milliwatts (mW) and decibels referred to 1.0 mW (dBm).
<b>Receiver signal average optical power</b> (Not available for XFP transceivers)	Displays the receiver signal average optical power, in milliwatts (mW) and decibels referred to 1.0 mW (dBm).

Table 34: show interfaces diagnostics optics Output Fields *(Continued)*

Field Name	Field Description
<b>Laser bias current high alarm</b>	Displays whether the laser bias power setting high alarm is <b>On</b> or <b>Off</b> .
<b>Laser bias current low alarm</b>	Displays whether the laser bias power setting low alarm is <b>On</b> or <b>Off</b> .
<b>Laser bias current high warning</b>	Displays whether the laser bias power setting high warning is <b>On</b> or <b>Off</b> .
<b>Laser bias current low warning</b>	Displays whether the laser bias power setting low warning is <b>On</b> or <b>Off</b> .
<b>Laser output power high alarm</b>	Displays whether the laser output power high alarm is <b>On</b> or <b>Off</b> .
<b>Laser output power low alarm</b>	Displays whether the laser output power low alarm is <b>On</b> or <b>Off</b> .
<b>Laser output power high warning</b>	Displays whether the laser output power high warning is <b>On</b> or <b>Off</b> .
<b>Laser output power low warning</b>	Displays whether the laser output power low warning is <b>On</b> or <b>Off</b> .
<b>Module temperature high alarm</b>	Displays whether the module temperature high alarm is <b>On</b> or <b>Off</b> .
<b>Module temperature low alarm</b>	Displays whether the module temperature low alarm is <b>On</b> or <b>Off</b> .

Table 34: show interfaces diagnostics optics Output Fields (Continued)

Field Name	Field Description
<b>Module temperature high warning</b>	Displays whether the module temperature high warning is <b>On</b> or <b>Off</b> .
<b>Module temperature low warning</b>	Displays whether the module temperature low warning is <b>On</b> or <b>Off</b> .
<b>Module voltage high alarm</b> (Not available for XFP transceivers)	Displays whether the module voltage high alarm is <b>On</b> or <b>Off</b> .
<b>Module voltage low alarm</b> (Not available for XFP transceivers)	Displays whether the module voltage low alarm is <b>On</b> or <b>Off</b> .
<b>Module voltage high warning</b> (Not available for XFP transceivers)	Displays whether the module voltage high warning is <b>On</b> or <b>Off</b> .
<b>Module voltage low warning</b> (Not available for XFP transceivers)	Displays whether the module voltage low warning is <b>On</b> or <b>Off</b> .
<b>Laser rx power high alarm</b>	Displays whether the receive laser power high alarm is <b>On</b> or <b>Off</b> .
<b>Laser rx power low alarm</b>	Displays whether the receive laser power low alarm is <b>On</b> or <b>Off</b> .
<b>Laser rx power high warning</b>	Displays whether the receive laser power high warning is <b>On</b> or <b>Off</b> .
<b>Laser rx power low warning</b>	Displays whether the receive laser power low warning is <b>On</b> or <b>Off</b> .

Table 34: show interfaces diagnostics optics Output Fields (Continued)

Field Name	Field Description
<b>Laser bias current high alarm threshold</b>	Displays the vendor-specified threshold for the laser bias current high alarm.
<b>Module not ready alarm</b> (Not available for SFP and SFP+ transceivers)	Displays whether the module not ready alarm is <b>On</b> or <b>Off</b> . When the output is <b>On</b> , the module has an operational fault.
<b>Module power down alarm</b> (Not available for SFP and SFP+ transceivers)	Displays whether the module power down alarm is <b>On</b> or <b>Off</b> . When the output is <b>On</b> , the module is in a limited power mode, low for normal operation.
<b>Tx data not ready alarm</b> (Not available for SFP and SFP+ transceivers)	Any condition leading to invalid data on the transmit path. Displays whether the Tx data not ready alarm is <b>On</b> or <b>Off</b> .
<b>Tx not ready alarm</b> (Not available for SFP and SFP+ transceivers)	Any condition leading to invalid data on the transmit path. Displays whether the Tx not ready alarm is <b>On</b> or <b>Off</b> .
<b>Tx laser fault alarm</b> (Not available for SFP and SFP+ transceivers)	Laser fault condition. Displays whether the Tx laser fault alarm is <b>On</b> or <b>Off</b> .
<b>Tx CDR loss of lock alarm</b> (Not available for SFP and SFP+ transceivers)	Transmit clock and data recovery (CDR) loss of lock. Loss of lock on the transmit side of the CDR. Displays whether the Tx CDR loss of lock alarm is <b>On</b> or <b>Off</b> .

Table 34: show interfaces diagnostics optics Output Fields (Continued)

Field Name	Field Description
<b>Rx not ready alarm</b> (Not available for SFP and SFP+ transceivers)	Any condition leading to invalid data on the receive path. Displays whether the Rx not ready alarm is <b>On</b> or <b>Off</b> .
<b>Rx loss of signal alarm</b> (Not available for SFP and SFP+ transceivers)	Receive loss of signal alarm. When <b>on</b> , indicates insufficient optical input power to the module. Displays whether the Rx loss of signal alarm is <b>On</b> or <b>Off</b> .
<b>Rx CDR loss of lock alarm</b> (Not available for SFP and SFP+ transceivers)	Receive CDR loss of lock. Loss of lock on the receive side of the CDR. Displays whether the Rx CDR loss of lock alarm is <b>On</b> or <b>Off</b> .
<b>Laser bias current low alarm threshold</b>	Displays the vendor-specified threshold for the laser bias current low alarm.
<b>Laser bias current high warning threshold</b>	Displays the vendor-specified threshold for the laser bias current high warning.
<b>Laser bias current low warning threshold</b>	Displays the vendor-specified threshold for the laser bias current low warning.
<b>Laser output power high alarm threshold</b>	Displays the vendor-specified threshold for the laser output power high alarm.
<b>Laser output power low alarm threshold</b>	Displays the vendor-specified threshold for the laser output power low alarm.
<b>Laser output power high warning threshold</b>	Displays the vendor-specified threshold for the laser output power high warning.

Table 34: show interfaces diagnostics optics Output Fields *(Continued)*

Field Name	Field Description
<b>Laser output power low warning threshold</b>	Displays the vendor-specified threshold for the laser output power low warning.
<b>Module temperature high alarm threshold</b>	Displays the vendor-specified threshold for the module temperature high alarm.
<b>Module temperature low alarm threshold</b>	Displays the vendor-specified threshold for the module temperature low alarm.
<b>Module temperature high warning threshold</b>	Displays the vendor-specified threshold for the module temperature high warning.
<b>Module temperature low warning threshold</b>	Displays the vendor-specified threshold for the module temperature low warning.
<b>Module voltage high alarm threshold</b> (Not available for XFP transceivers)	Displays the vendor-specified threshold for the module voltage high alarm.
<b>Module voltage low alarm threshold</b> (Not available for XFP transceivers)	Displays the vendor-specified threshold for the module voltage low alarm.
<b>Module voltage high warning threshold</b> (Not available for XFP transceivers)	Displays the vendor-specified threshold for the module voltage high warning.
<b>Module voltage low warning threshold</b> (Not available for XFP transceivers)	Displays the vendor-specified threshold for the module voltage low warning.

Table 34: show interfaces diagnostics optics Output Fields (Continued)

Field Name	Field Description
<b>Laser rx power high alarm threshold</b>	Displays the vendor-specified threshold for the laser Rx power high alarm.
<b>Laser rx power low alarm threshold</b>	Displays the vendor-specified threshold for the laser Rx power low alarm.
<b>Laser rx power high warning threshold</b>	Displays the vendor-specified threshold for the laser Rx power high warning.
<b>Laser rx power low warning threshold</b>	Displays the vendor-specified threshold for the laser Rx power low warning.

## Sample Output

### show interfaces diagnostics optics xe-0/0/1 (SFP+ Transceiver)

```

user@host> show interfaces diagnostics optics
xe-0/0/1
Physical interface: xe-0/0/1
  Laser bias current           : 4.968 mA
  Laser output power           : 0.4940 mW / -3.06 dBm
  Module temperature           : 27 degrees C / 81 degrees F
  Module voltage                : 3.2310 V
  Receiver signal average optical power : 0.0000
  Laser bias current high alarm : Off
  Laser bias current low alarm  : Off
  Laser bias current high warning : Off
  Laser bias current low warning : Off
  Laser output power high alarm : Off
  Laser output power low alarm  : Off
  Laser output power high warning : Off
  Laser output power low warning : Off

```

```

Module temperature high alarm          : Off
Module temperature low alarm           : Off
Module temperature high warning        : Off
Module temperature low warning         : Off
Module voltage high alarm              : Off
Module voltage low alarm               : Off
Module voltage high warning            : Off
Module voltage low warning             : Off
Laser rx power high alarm             : Off
Laser rx power low alarm               : On
Laser rx power high warning           : Off
Laser rx power low warning            : On
Laser bias current high alarm threshold : 10.500 mA
Laser bias current low alarm threshold : 2.000 mA
Laser bias current high warning threshold : 9.000 mA
Laser bias current low warning threshold : 2.500 mA
Laser output power high alarm threshold : 1.4120 mW / 1.50 dBm
Laser output power low alarm threshold  : 0.0740 mW / -11.31 dBm
Laser output power high warning threshold : 0.7070 mW / -1.51 dBm
Laser output power low warning threshold : 0.1860 mW / -7.30 dBm
Module temperature high alarm threshold : 75 degrees C / 167 degrees F
Module temperature low alarm threshold  : -5 degrees C / 23 degrees F
Module temperature high warning threshold : 70 degrees C / 158 degrees F
Module temperature low warning threshold : 0 degrees C / 32 degrees F
Module voltage high alarm threshold     : 3.630 V
Module voltage low alarm threshold      : 2.970 V
Module voltage high warning threshold   : 3.465 V
Module voltage low warning threshold    : 3.135 V
Laser rx power high alarm threshold     : 1.5849 mW / 2.00 dBm
Laser rx power low alarm threshold      : 0.0407 mW / -13.90 dBm
Laser rx power high warning threshold   : 0.7943 mW / -1.00 dBm
Laser rx power low warning threshold    : 0.1023 mW / -9.90 dBm

```

### show interfaces diagnostics optics node1:xe-0/0/1 (SFP+ Transceiver)

```

user@host> show interfaces diagnostics optics
node1:xe-0/0/1
Physical interface: node1:xe-0/0/1
  Laser bias current          : 4.968 mA
  Laser output power         : 0.4940 mW / -3.06 dBm
  Module temperature         : 27 degrees C / 81 degrees F

```



```

Module voltage : 3.2310 V
Receiver signal average optical power : 0.0000
Laser bias current high alarm : Off
Laser bias current low alarm : Off
Laser bias current high warning : Off
Laser bias current low warning : Off
Laser output power high alarm : Off
Laser output power low alarm : Off
Laser output power high warning : Off
Laser output power low warning : Off
Module temperature high alarm : Off
Module temperature low alarm : Off
Module temperature high warning : Off
Module temperature low warning : Off
Module voltage high alarm : Off
Module voltage low alarm : Off
Module voltage high warning : Off
Module voltage low warning : Off
Laser rx power high alarm : Off
Laser rx power low alarm : On
Laser rx power high warning : Off
Laser rx power low warning : On
Laser bias current high alarm threshold : 10.500 mA
Laser bias current low alarm threshold : 2.000 mA
Laser bias current high warning threshold : 9.000 mA
Laser bias current low warning threshold : 2.500 mA
Laser output power high alarm threshold : 1.4120 mW / 1.50 dBm
Laser output power low alarm threshold : 0.0740 mW / -11.31 dBm
Laser output power high warning threshold : 0.7070 mW / -1.51 dBm
Laser output power low warning threshold : 0.1860 mW / -7.30 dBm
Module temperature high alarm threshold : 75 degrees C / 167 degrees F
Module temperature low alarm threshold : -5 degrees C / 23 degrees F
Module temperature high warning threshold : 70 degrees C / 158 degrees F
Module temperature low warning threshold : 0 degrees C / 32 degrees F
Module voltage high alarm threshold : 3.630 V
Module voltage low alarm threshold : 2.970 V
Module voltage high warning threshold : 3.465 V
Module voltage low warning threshold : 3.135 V
Laser rx power high alarm threshold : 1.5849 mW / 2.00 dBm
Laser rx power low alarm threshold : 0.0407 mW / -13.90 dBm
Laser rx power high warning threshold : 0.7943 mW / -1.00 dBm
Laser rx power low warning threshold : 0.1023 mW / -9.90 dBm

```

## Release Information

Command introduced in Junos OS Release 11.1.

### RELATED DOCUMENTATION

[Monitoring Interface Status and Traffic](#)

[Installing a Transceiver in a QFX Series Device](#)

[Removing a Transceiver from a QFX Series Device](#)

[Junos OS Network Interfaces Library for Routing Devices](#)

## show subscribers

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## Syntax

```
show subscribers
<detail | extensive | terse>
<aci-interface-set-name aci-interface-set-name>
<address address>
<agent-circuit-identifier agent-circuit-identifier>
<agent-remote-identifier agent-remote-identifier>
```

```

<aggregation-interface-set-name interface-set-name>
<client-type client-type>
<count>
<id session-id <accounting-statistics>>
<interface interface <accounting-statistics>>
<logical-system logical-system>
<mac-address mac-address>
<physical-interface physical-interface-name>
<profile-name profile-name>
<routing-instance routing-instance>
<stacked-vlan-id stacked-vlan-id>
<subscriber-state subscriber-state>
<user-name user-name>
<vci vci-identifier>
<vpi vpi-identifier>
<vlan-id vlan-id>

```

## Description

Display information for active subscribers.

## Options

**detail | extensive | terse** (Optional) Display the specified level of output.

***aci-interface-set-name*** (Optional) Display all dynamic subscriber sessions that use the specified agent circuit identifier (ACI) interface set. Use the ACI interface set name generated by the router, such as `aci-1003-ge-1/0/0.4001`, and not the actual ACI value found in the DHCP or PPPoE control packets.

***address*** (Optional) Display subscribers whose IP address matches the specified address. You must specify the IPv4 or IPv6 address prefix without a netmask (for example, `192.0.2.0`). If you specify the IP address as a prefix with a netmask (for example, `192.0.2.0/32`), the router displays a message that the IP address is invalid, and rejects the command.

***agent-circuit-identifier***

(Optional) Display all dynamic subscriber sessions whose ACI value matches the specified string. You can specify either the complete ACI string or a substring. To specify a substring, you must enter characters that form the beginning of the string, followed by an asterisk (\*) as a wildcard to substitute for the remainder of the string. The wildcard can be used only at the end of the specified substring; for example:

```
user@host1> show subscribers agent-circuit-identifier substring*
```

Junos OS Release	Substring Support
Junos OS Release 13.3R1	You can specify a substring without a wildcard.
Starting in Junos OS Release 14.1R1	You must specify the complete ACI string; you cannot specify a wildcard.
Starting in Junos OS Release 15.1R7, 16.1R7, 16.2R3, 17.1R3, 17.2R3, 17.3R3, 17.4R2, 18.1R2, 18.2R1	You can specify a substring, but you must include the wildcard character at the end of the substring.

***agent-remote-identifier***

(Optional) Display all dynamic subscriber sessions whose ARI value matches the specified string. You must specify the complete ACI string; you cannot specify a wildcard.

***aggregation-interface-set-name interface-set-name***

(Optional) Display summary information for the specified aggregation node interface set, including interface, VLAN ID, username and LS:RI.

***client-type***

(Optional) Display subscribers whose client type matches one of the following client types:

- **dhcp**—DHCP clients only.
- **dotlx**—Dotlx clients only.
- **essm**—ESSM clients only.
- **fixed-wireless-access**—Fixed wireless access clients only.

- **fwauth**—FwAuth (authenticated across a firewall) clients only.
- **l2tp**—L2TP clients only.
- **mlppp**—MLPPP clients only.
- **ppp**—PPP clients only.
- **pppoe**—PPPoE clients only.
- **static**—Static clients only.
- **vlan**—VLAN clients only.
- **vlan-oob**—VLAN out-of-band (ANCP-triggered) clients only.
- **vpls-pw**—VPLS pseudowire clients only.
- **xauth**—Xauth clients only.

<b>count</b>	(Optional) Display the count of total subscribers and active subscribers for any specified option. You can use the <b>count</b> option alone or with the <b>address</b> , <b>client-type</b> , <b>interface</b> , <b>logical-system</b> , <b>mac-address</b> , <b>profile-name</b> , <b>routing-instance</b> , <b>stacked-vlan-id</b> , <b>subscriber-state</b> , or <b>vlan-id</b> options.
<b>id session-id</b>	(Optional) Display a specific subscriber session whose session ID matches the specified subscriber ID. You can display subscriber IDs by using the <b>show subscribers extensive</b> or the <b>show subscribers interface extensive</b> commands.
<b>id session-id accounting-statistics</b>	(Optional) Display accurate subscriber accounting statistics for a subscriber session with the specified ID. Requires the <b>actual-transmit-statistics</b> statement to be configured in the dynamic profile for the dynamic logical interface. If the statement is not configured, a value of 0 is displayed for accounting statistics.
<b>interface</b>	(Optional) Display subscribers whose interface matches the specified interface.
<b>interface accounting-statistics</b>	(Optional) Display subscriber accounting statistics for the specified interface. Requires the <b>actual-transmit-statistics</b> statement to be configured in the dynamic profile for the dynamic logical interface.
<b>logical-system</b>	(Optional) Display subscribers whose logical system matches the specified logical system.
<b>mac-address</b>	(Optional) Display subscribers whose MAC address matches the specified MAC address.

<i>physical-interface-name</i>	(M120, M320, and MX Series routers only) (Optional) Display subscribers whose physical interface matches the specified physical interface.
<i>profile-name</i>	(Optional) Display subscribers whose dynamic profile matches the specified profile name.
<i>routing-instance</i>	(Optional) Display subscribers whose routing instance matches the specified routing instance.
<i>stacked-vlan-id</i>	(Optional) Display subscribers whose stacked VLAN ID matches the specified stacked VLAN ID.
<i>subscriber-state</i>	(Optional) Display subscribers whose subscriber state matches the specified subscriber state (ACTIVE, CONFIGURED, INIT, TERMINATED, or TERMINATING).
<i>user-name</i>	(M120, M320, and MX Series routers only) (Optional) Display subscribers whose username matches the specified subscriber name.
<i>vci-identifier</i>	(MX Series routers with MPCs and ATM MICs with SFP only) (Optional) Display active ATM subscribers whose ATM virtual circuit identifier (VCI) matches the specified VCI identifier. The range of values is 0 through 255.
<i>vpi-identifier</i>	(MX Series routers with MPCs and ATM MICs with SFP only) (Optional) Display active ATM subscribers whose ATM virtual path identifier (VPI) matches the specified VPI identifier. The range of values is 0 through 65,535.
<i>vlan-id</i>	(Optional) Display subscribers whose VLAN ID matches the specified VLAN ID, regardless of whether the subscriber uses a single-tagged or double-tagged VLAN. For subscribers using a double-tagged VLAN, this option displays subscribers where the inner VLAN tag matches the specified VLAN ID. To display only subscribers where the specified value matches only double-tagged VLANs, use the <b>stacked-vlan-id</b> <i>stacked-vlan-id</i> option to match the outer VLAN tag.

**NOTE:** Because of display limitations, logical system and routing instance output values are truncated when necessary.

## Required Privilege Level

view

## Output Fields

Table 35 on page 1006 lists the output fields for the **show subscribers** command. Output fields are listed in the approximate order in which they appear.

**Table 35: show subscribers Output Fields**

Field Name	Field Description
<b>Interface</b>	Interface associated with the subscriber. The router or switch displays subscribers whose interface matches or begins with the specified interface.  The * character indicates a continuation of addresses for the same session.
<b>IP Address/VLAN ID</b>	Subscriber IP address or VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i>  No IP address or VLAN ID is assigned to an L2TP tunnel-switched session. For these subscriber sessions the value is <b>Tunnel-switched</b> .
<b>User Name</b>	Name of subscriber.
<b>LS:RI</b>	Logical system and routing instance associated with the subscriber.
<b>Type</b>	Subscriber client type (DHCP, FWA, GRE, L2TP, PPP, PPPoE, STATIC-INTERFACE, VLAN).
<b>IP Address</b>	Subscriber IPv4 address.
<b>IP Netmask</b>	Subscriber IP netmask.  (MX Series) This field displays 255.255.255.255 by default. For tunneled or terminated PPP subscribers only, this field displays the actual value of Framed-IP-Netmask when the SDB_FRAMED_PROTOCOL attribute in the session database is equal to AUTHD_FRAMED_PROTOCOL_PPP. This occurs in the use case where the LNS generates access-internal routes when it receives Framed-IP-Netmask from RADIUS during authorization. When it receives Framed-Pool from RADIUS, the pool mask is ignored and the default /32 mask is used.

Table 35: show subscribers Output Fields (*Continued*)

Field Name	Field Description
<b>Primary DNS Address</b>	<p>IP address of primary DNS server.</p> <p>This field is displayed with the <b>extensive</b> option only when the address is provided by RADIUS.</p>
<b>Secondary DNS Address</b>	<p>IP address of secondary DNS server.</p> <p>This field is displayed with the <b>extensive</b> option only when the address is provided by RADIUS.</p>
<b>IPv6 Primary DNS Address</b>	<p>IPv6 address of primary DNS server.</p> <p>This field is displayed with the <b>extensive</b> option only when the address is provided by RADIUS.</p>
<b>IPv6 Secondary DNS Address</b>	<p>IPv6 address of secondary DNS server.</p> <p>This field is displayed with the <b>extensive</b> option only when the address is provided by RADIUS.</p>
<b>Domain name server inet</b>	<p>IP addresses for the DNS server, displayed in order of configuration.</p> <p>This field is displayed with the <b>extensive</b> option only when the addresses are derived from the access profile or the global access configuration.</p>
<b>Domain name server inet6</b>	<p>IPv6 addresses for the DNS server, displayed in order of configuration.</p> <p>This field is displayed with the <b>extensive</b> option only when the addresses are derived from the access profile or the global access configuration.</p>
<b>Primary WINS Address</b>	<p>IP address of primary WINS server.</p>
<b>Secondary WINS Address</b>	<p>IP address of secondary WINS server.</p>



Table 35: show subscribers Output Fields (*Continued*)

Field Name	Field Description
<b>IPv6 Address</b>	Subscriber IPv6 address, or multiple addresses.
<b>IPv6 Prefix</b>	Subscriber IPv6 prefix. If you are using DHCPv6 prefix delegation, this is the delegated prefix.
<b>IPv6 User Prefix</b>	IPv6 prefix obtained through NDRA.
<b>IPv6 Address Pool</b>	Subscriber IPv6 address pool. The IPv6 address pool is used to allocate IPv6 prefixes to the DHCPv6 clients.
<b>IPv6 Network Prefix Length</b>	Length of the network portion of the IPv6 address.
<b>IPv6 Prefix Length</b>	Length of the subscriber IPv6 prefix.
<b>Logical System</b>	Logical system associated with the subscriber.
<b>Routing Instance</b>	Routing instance associated with the subscriber.
<b>Interface</b>	(Enhanced subscriber management for MX Series routers) Name of the enhanced subscriber management logical interface, in the form <b>demux0.nnnn</b> (for example, <b>demux0.3221225472</b> ), to which access-internal and framed subscriber routes are mapped.
<b>Interface Type</b>	Whether the subscriber interface is <b>Static</b> or <b>Dynamic</b> .

Table 35: show subscribers Output Fields (Continued)

Field Name	Field Description
<b>Interface Set</b>	<p>Internally generated name of the dynamic ACI or ALI interface set used by the subscriber session. The prefix of the name indicates the string received in DHCP or PPPoE control packets on which the interface set is based. For ALI interface sets, the prefix indicates that the value is configured as a trusted option to identify the subscriber line.</p> <p>The name of the interface set uses one of the following prefixes:</p> <ul style="list-style-type: none"> <li>• <b>aci</b>—ACI; for example, aci-1033-demux0.3221225524. This is the only prefix allowed for ACI interface sets.</li> <li>• <b>ari</b>—ARI; for example, ari-1033-demux0.3221225524.</li> <li>• <b>aci+ari</b>—Both the ACI and ARI; for example, aci+ari-1033-demux0.3221225524.</li> <li>• <b>noids</b>—Neither the ACI nor the ARI were received; for example, noids-1033-demux0.3221225524.</li> </ul> <p><b>NOTE:</b> ACI interface sets are configured with the <b>agent-circuit-identifier</b> autoconfiguration stanza. ALI interface sets are configured with the <b>line-identity</b> autoconfiguration stanza.</p> <p>Besides dynamic ACI and ALI interface sets, this field can be an interface set based on a substring of the ARI string. This occurs when the dynamic profile includes the predefined variable \$junos-pon-id-interface-set-name, and the profile is applied for a passive optical network (PON). The ARI string is inserted by the optical line terminal (OLT). The final substring in the string, unique for the PON, identifies individual subscriber circuits, and is used as the name of the interface set.</p>
<b>Interface Set Type</b>	Interface type of the ACI interface set: <b>Dynamic</b> . This is the only ACI interface set type currently supported.
<b>Interface Set Session ID</b>	Identifier of the dynamic ACI interface set entry in the session database.

Table 35: show subscribers Output Fields (Continued)

Field Name	Field Description
<b>Underlying Interface</b>	Name of the underlying interface for the subscriber session.
<b>Dynamic Profile Name</b>	Dynamic profile used for the subscriber.
<b>Dynamic Profile Version</b>	Version number of the dynamic profile used for the subscriber.
<b>MAC Address</b>	MAC address associated with the subscriber.
<b>State</b>	Current state of the subscriber session ( <b>Init, Configured, Active, Terminating, Tunneled</b> ).
<b>L2TP State</b>	Current state of the L2TP session, <b>Tunneled</b> or <b>Tunnel-switched</b> . When the value is <b>Tunnel-switched</b> , two entries are displayed for the subscriber; the first entry is at the LNS interface on the LTS and the second entry is at the LAC interface on the LTS.
<b>Tunnel switch Profile Name</b>	Name of the L2TP tunnel switch profile that initiates tunnel switching.
<b>Local IP Address</b>	IP address of the local gateway (LAC).
<b>Remote IP Address</b>	IP address of the remote peer (LNS).
<b>PFE Flow ID</b>	Forwarding flow identifier.
<b>VLAN Id</b>	VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i> .

Table 35: show subscribers Output Fields (Continued)

Field Name	Field Description
<b>Stacked VLAN Id</b>	Stacked VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i> .
<b>RADIUS Accounting ID</b>	RADIUS accounting ID associated with the subscriber.
<b>Agent Circuit ID</b>	<p>For the <b>dhcp</b> client type, option 82 agent circuit ID associated with the subscriber. The ID is displayed as an ASCII string unless the value has nonprintable characters, in which case it is displayed in hexadecimal format.</p> <p>For the <b>vlan-oob</b> client type, the agent circuit ID or access-loop circuit identifier that identifies the subscriber line based on the subscriber-facing DSLAM interface on which the subscriber request originates.</p>
<b>Agent Remote ID</b>	<p>For the <b>dhcp</b> client type, option 82 agent remote ID associated with the subscriber. The ID is displayed as an ASCII string unless the value has nonprintable characters, in which case it is displayed in hexadecimal format.</p> <p>For the <b>vlan-oob</b> client type, the agent remote ID or access-loop remote identifier that identifies the subscriber line based on the NAS-facing DSLAM interface on which the subscriber request originates.</p>
<b>Aggregation Interface-set Name</b>	<p>Value of the \$junos-aggregation-interface-set-name predefined variable; one of the following:</p> <ul style="list-style-type: none"> <li>• When the <b>hierarchical-access-network-detection</b> option is configured for the access lines and the value of the Access-Aggregation-Circuit-ID-ASCII attribute (TLV 0x0003) received either in the ANCP Port Up message or PPPoE PADR IA tags begins with a # character, then the variable takes the value of the remainder of the string after the # character.</li> <li>• When the <b>hierarchical-access-network-detection</b> option is not configured, or if the sting does not begin with the # character, then the variable takes the value specified with the <b>predefined-variable-defaults</b> statement.</li> </ul>

Table 35: show subscribers Output Fields (*Continued*)

Field Name	Field Description
<b>Accounting Statistics</b>	Actual transmitted subscriber accounting statistics by session ID or interface. Service accounting statistics are not included. These statistics do not include overhead bytes or dropped packets; they are the accurate statistics used by RADIUS. The statistics are counted when the <b>actual-transmit-statistics</b> statement is included in the dynamic profile.
<b>DHCP Relay IP Address</b>	IP address used by the DHCP relay agent.
<b>ATM VPI</b>	(MX Series routers with MPCs and ATM MICs with SFP only) ATM virtual path identifier (VPI) on the subscriber's physical interface.
<b>ATM VCI</b>	(MX Series routers with MPCs and ATM MICs with SFP only) ATM virtual circuit identifier (VCI) for each VPI configured on the subscriber interface.
<b>Login Time</b>	Date and time at which the subscriber logged in.
<b>DHCPV6 Options</b>	<b>len</b> = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCPv6 options.
<b>Server DHCP Options</b>	<b>len</b> = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCP options.
<b>Server DHCPV6 Options</b>	<b>len</b> = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCPv6 options.
<b>DHCPV6 Header</b>	<b>len</b> = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCPv6 options.
<b>Effective shaping-rate</b>	Actual downstream traffic shaping rate for the subscriber, in kilobits per second.

Table 35: show subscribers Output Fields *(Continued)*

Field Name	Field Description
<b>IPv4 Input Service Set</b>	Input service set in access dynamic profile.
<b>IPv4 Output Service Set</b>	Output service set in access dynamic profile.
<b>PCEF Profile</b>	PCEF profile in access dynamic profile.
<b>PCEF Rule/ Rulebase</b>	PCC rule or rulebase used in dynamic profile.
<b>Dynamic configuration</b>	Values for variables that are passed into the dynamic profile from RADIUS.
<b>Service activation time</b>	Time at which the first family in this service became active.
<b>IPv4 rpf-check Fail Filter Name</b>	Name of the filter applied by the dynamic profile to IPv4 packets that fail the RPF check.
<b>IPv6 rpf-check Fail Filter Name</b>	Name of the filter applied by the dynamic profile to IPv6 packets that fail the RPF check.
<b>DHCP Options</b>	<b>len</b> = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCP options, as defined in RFC 2132.
<b>Session ID</b>	ID number for a subscriber session.
<b>Underlying Session ID</b>	For DHCPv6 subscribers on a PPPoE network, displays the session ID of the underlying PPPoE interface.

Table 35: show subscribers Output Fields (*Continued*)

Field Name	Field Description
<b>Service Sessions</b>	Number of service sessions (that is, a service activated using RADIUS CoA) associated with the subscribers.
<b>Service Session ID</b>	ID number for a subscriber service session.
<b>Service Session Name</b>	Service session profile name.
<b>Session Timeout (seconds)</b>	Number of seconds of access provided to the subscriber before the session is automatically terminated.
<b>Idle Timeout (seconds)</b>	Number of seconds subscriber can be idle before the session is automatically terminated.
<b>IPv6 Delegated Address Pool</b>	Name of the pool used for DHCPv6 prefix delegation.
<b>IPv6 Delegated Network Prefix Length</b>	Length of the prefix configured for the IPv6 delegated address pool.
<b>IPv6 Interface Address</b>	Address assigned by the Framed-Ipv6-Prefix AAA attribute. This field is displayed only when the predefined variable \$junos-ipv6-address is used in the dynamic profile.
<b>IPv6 Framed Interface Id</b>	Interface ID assigned by the Framed-Interface-Id AAA attribute.
<b>ADF IPv4 Input Filter Name</b>	Name assigned to the Ascend-Data-Filter (ADF) interface IPv4 input filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.

Table 35: show subscribers Output Fields *(Continued)*

Field Name	Field Description
<b>ADF IPv4 Output Filter Name</b>	Name assigned to the Ascend-Data-Filter (ADF) interface IPv4 output filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
<b>ADF IPv6 Input Filter Name</b>	Name assigned to the Ascend-Data-Filter (ADF) interface IPv6 input filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
<b>ADF IPv6 Output Filter Name</b>	Name assigned to the Ascend-Data-Filter (ADF) interface IPv6 output filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
<b>IPv4 Input Filter Name</b>	Name assigned to the IPv4 input filter (client or service session).
<b>IPv4 Output Filter Name</b>	Name assigned to the IPv4 output filter (client or service session).
<b>IPv6 Input Filter Name</b>	Name assigned to the IPv6 input filter (client or service session).
<b>IPv6 Output Filter Name</b>	Name assigned to the IPv6 output filter (client or service session).
<b>IFL Input Filter Name</b>	Name assigned to the logical interface input filter (client or service session).
<b>IFL Output Filter Name</b>	Name assigned to the logical interface output filter (client or service session).



Table 35: show subscribers Output Fields (*Continued*)

Field Name	Field Description
<b>DSL type</b>	PPPoE subscriber's access line type reported by the PPPoE intermediate agent in a PADI or PADO packet in the Vendor-Specific-Tags TLV in subattribute DSL-Type (0x0091). The DSL type is one of the following types: <b>ADSL</b> , <b>ADSL2</b> , <b>ADSL2+</b> , <b>OTHER</b> , <b>SDSL</b> , <b>VDSL</b> , or <b>VDSL2</b> .
<b>Frame/Cell Mode</b>	<p>Mode type of the PPPoE subscriber's access line determined by the PPPoE daemon based on the received subattribute DSL-Type (0x0091):</p> <ul style="list-style-type: none"> <li>• <b>Cell</b>—When the DSL line type is one of the following: ADSL, ADSL2, or ADSL2+.</li> <li>• <b>Frame</b>—When the DSL line type is one of the following: OTHER, SDSL, VDSL, or VDSL2.</li> </ul> <p>The value is stored in the subscriber session database.</p>
<b>Overhead accounting bytes</b>	Number of bytes added to or subtracted from the actual downstream cell or frame overhead to account for the technology overhead of the DSL line type. The value is determined by the PPPoE daemon based on the received subattribute DSL-Type (0x0091). The value is stored in the subscriber session database.
<b>Actual upstream data rate</b>	Unadjusted upstream data rate for the PPPoE subscriber's access line reported by the PPPoE intermediate agent in a PADI or PADO packet in the Vendor-Specific-Tags TLV in subattribute Actual-Net-Data-Rate-Upstream (0x0081).
<b>Actual downstream data rate</b>	Unadjusted downstream data rate for the PPPoE subscriber's access line reported by the PPPoE intermediate agent in a PADI or PADO packet in the Vendor-Specific-Tags TLV in subattribute Actual-Net-Data-Rate-Downstream (0x0082).
<b>Adjusted downstream data rate</b>	Adjusted downstream data rate for the PPPoE subscriber's access line, calculated by the PPPoE daemon and stored in the subscriber session database.

Table 35: show subscribers Output Fields (Continued)

Field Name	Field Description
<b>Adjusted upstream data rate</b>	Adjusted upstream data rate for the PPPoE subscriber's access line, calculated by the PPPoE daemon and stored in the subscriber session database.
<b>Local TEID-U</b>	<p>Tunnel endpoint identifier on the BNG for the GTP-U user plane tunnel to the eNodeB. The identifier is allocated by the BNG.</p> <p>A fully qualified local TEID-C consists of this identifier and the <b>GTPU Tunnel Local IP address</b> value.</p>
<b>Local TEID-C</b>	<p>Tunnel endpoint identifier on the BNG for the GTP-C control plane tunnel to the MME. The identifier is allocated by the BNG.</p> <p>A fully qualified local TEID-C consists of this identifier and the <b>GTPC Local IP address</b> value.</p>
<b>Remote TEID-U</b>	<p>Tunnel endpoint identifier on the eNodeB for the GTP-U user plane tunnel to the BNG. The identifier is allocated by the eNodeB.</p> <p>A fully qualified remote TEID-U consists of this identifier and the <b>GTPU Tunnel Remote IP address</b> value.</p>
<b>Remote TEID-C</b>	<p>Tunnel endpoint identifier on the MME for the GTP-C control plane tunnel to the BNG. The identifier is allocated by the MME.</p> <p>A fully qualified remote TEID-C consists of this identifier and the <b>GTPC Remote IP address</b> value.</p>
<b>GTPU Tunnel Remote IP address</b>	<p>IP address of the S1-U interface on the eNodeB for the GTP-U tunnel endpoint.</p> <p>A fully qualified remote TEID-U consists of this address and the <b>Remote TEID-U</b> value.</p>
<b>GTPU Tunnel Local IP address</b>	<p>IP address of the S1-U interface on the BNG for the GTP-U tunnel endpoint.</p> <p>A fully qualified local TEID-U consists of this address and the <b>Local TEID-U</b> value</p>

Table 35: show subscribers Output Fields (Continued)

Field Name	Field Description
<b>GTPC Remote IP address</b>	IP address of the S11 interface on the MME for the GTP-C tunnel endpoint.  A fully qualified remote TEID-C consists of this address and the <b>Remote TEID-C</b> value.
<b>GTPC Local IP address</b>	IP address of the S11 interface on the BNG for the GTP-C tunnel endpoint.  A fully qualified local TEID-C consists of this address and the <b>Local TEID-C</b> value.
<b>Access Point Name</b>	Access point name (APN) for the user equipment. The APN corresponds to the connection and service parameters that the subscriber's mobile device can use for connecting to the carrier's gateway to the Internet.
<b>Tenant</b>	Name of the tenant system. You can create multiple tenant system administrators for a tenant system with different permission levels based on your requirements.
<b>Routing instance</b>	Name of the routing instance. When a custom routing instance is created for a tenant system, all the interfaces defined in that tenant system are added to that routing instance.
<b>Dynamic Profile Version Alias</b>	Configured name for a specific variation of a base dynamic profile. IT's presence indicates that the profile configuration is different from that of the base profile. The value is conveyed to the RADIUS server during authentication in the Client-Profile-Name VSA (26-4874-174).

## Sample Output

### show subscribers (IPv4)

```
user@host> show subscribers
Interface                IP Address/VLAN ID   User Name             LS:RI
```

```

ge-1/3/0.1073741824      10                               default:default
demux0.1073741824      203.0.113.10                    WHOLESALER-CLIENT default:default
demux0.1073741825      203.0.113.3                     RETAILER1-CLIENT  test1:retailer1
demux0.1073741826      203.0.113.3                     RETAILER2-CLIENT  test1:retailer2

```

### show subscribers (IPv6)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
ge-1/0/0.0        2001:db8:c0:0:0:0/74  WHOLESALER-CLIENT default:default
*                  2001:db8:1/128       subscriber-25      default:default

```

### show subscribers (IPv4 and IPv6 Dual Stack)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name
LS:RI
demux0.1073741834  0x8100.1002 0x8100.1
default:default
demux0.1073741835  0x8100.1001 0x8100.1
default:default
pp0.1073741836     203.0.113.13      dualstackuser1@example1.com
default:ASP-1
*                  2001:db8:1::/48
*                  2001:db8:1:1::/64
pp0.1073741837     203.0.113.33      dualstackuser2@example1.com
default:ASP-1
*                  2001:db8:1:2:5::/64

```

### show subscribers (Single Session DHCP Dual Stack)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
demux0.1073741364  192.168.10.10      dual-stack-retail35
default:default
2001:db8::100:0:0:0/74

```

```
default:default
                2001:db8:3ffe:0:4::/64
```

### show subscribers (Single Session DHCP Dual Stack detail)

```
user@host> show subscribers id 27 detail
Type: DHCP
User Name: dual-stack-retail33
IP Address: 10.10.0.53
IPv6 Address: 2001:db8:3000:0:0:8003::2
IPv6 Prefix: 2001:db8:3ffe:0:4::/64
Logical System: default
Routing Instance: default
Interface: ae0.3221225472
Interface type: Static
Underlying Interface: ae0.3221225472
Dynamic Profile Name: dhcp-retail-18
MAC Address: 00:00:5E:00:53:02
State: Active
DHCP Relay IP Address: 10.10.0.1
Radius Accounting ID: 27
Session ID: 27
PFE Flow ID: 2
Stacked VLAN Id: 2000
VLAN Id: 1
Login Time: 2014-05-15 10:12:10 PDT
DHCP Options: len 60
00 08 00 02 00 00 00 01 00 0a 00 03 00 01 00 00 64 01 01 02
00 06 00 04 00 03 00 19 00 03 00 0c 00 00 00 00 00 00 00 00
00 00 00 00 00 19 00 0c 00 00 00 00 00 00 00 00 00 00 00 00
```

### show subscribers (LNS on MX Series Routers)

```
user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
si-4/0/0.1        192.0.2.0           user@example.com   default:default
```

**show subscribers (L2TP Switched Tunnels)**

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
si-2/1/0.1073741842 Tunnel-switched     user@example.com
default:default
si-2/1/0.1073741843 Tunnel-switched     user@example.com
default:default

```

**show subscribers aggregation-interface-set-name**

```

user@host> show subscribers aggregation-interface-set-name FRA*

Interface          IP Address/VLAN ID  User Name
LS:RI
ge-1/0/0.3221225472 50
anncp              default:ispl-subscriber

```

**show subscribers client-type dhcp detail**

```

user@host> show subscribers client-type dhcp detail
Type: DHCP
IP Address: 203.0.113.29
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: demux0.1073744127
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux
MAC Address: 00:00:5e:00:53:98
State: Active
Radius Accounting ID: user :2304
Login Time: 2009-08-25 14:43:52 PDT

Type: DHCP
IP Address: 203.0.113.27
IP Netmask: 255.255.0.0
Logical System: default

```

```

Routing Instance: default
Interface: demux0.1073744383
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:00:5e:00:53:f3
State: Active
Radius Accounting ID: 1234 :2560
Login Time: 2009-08-25 14:43:56 PDT

```

### show subscribers client-type dhcp detail (DHCPv6)

```

user@host> show subscribers client-type dhcp detail
Type: DHCP
User Name: DEFAULTUSER
IPv6 Address: 2001:db8::2
IPv6 Prefix: 2001:db8:1::/64
Logical System: default
Routing Instance: default
Interface: demux0.3221225602
Interface type: Static
Underlying Interface: demux0.3221225602
Dynamic Profile Name: client-profile
MAC Address: 00:00:5E:00:53:01
State: Active
Radius Accounting ID: 142
Session ID: 142
PFE Flow ID: 148
Stacked VLAN Id: 1
VLAN Id: 1
Login Time: 2018-03-29 12:27:38 EDT
DHCP Options: len 56
00 08 00 02 00 00 00 01 00 0e 00 01 00 01 22 4f d0 33 00 11
01 00 00 01 00 03 00 0c 00 00 00 0a 00 04 9d 40 00 07 62 00
00 19 00 0c 00 00 00 0b 00 04 9d 40 00 07 62 00
Server DHCPV6 Options: len 94
00 0a 00 06 11 22 33 44 55 66 00 11 00 09 00 00 0c 4c 00 02
00 01 aa 00 11 00 20 00 00 0a 4c 00 02 00 02 32 33 00 03 00
03 34 35 36 00 05 00 06 31 32 33 34 35 36 00 06 00 01 31 00
11 00 09 00 00 0b 4c 00 02 00 01 bb 00 11 00 12 00 00 0d e9
00 01 00 03 aa bb cc 00 02 00 03 dd ee cc

```

```
DHCPV6 Header: len 4
01 fc e4 96
```

### show subscribers client-type dhcp extensive

```
user@host> show subscribers client-type dhcp extensive
Type: DHCP
User Name: user
IP Address: 192.0.2.4
IP Netmask: 255.0.0.0
IPv6 Address: 2001:db8:3::103
IPv6 Prefix: 2001:db8::/68
Domain name server inet6: 2001:db8:1 abcd::2
Logical System: default
Routing Instance: default
Interface: ge-0/0/0.0
Interface type: Static
Underlying Interface: ge-0/0/0.0
MAC Address: 00:00:5e:00:53:01
State: Configured
Radius Accounting ID: 10
Session ID: 10
PFE Flow ID: 2
VLAN Id: 100
Agent Circuit ID: ge-0/0/0:100
Agent Remote ID: ge-0/0/0:100
Login Time: 2017-05-23 12:52:22 IST
DHCPV6 Options: len 69
00 01 00 0e 00 01 00 01 59 23 e3 31 00 10 94 00 00 01 00 08
00 02 00 00 00 19 00 29 00 00 00 00 00 04 9d 40 00 07 62 00
00 1a 00 19 00 09 3a 80 00 27 8d 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00
Server DHCP Options: len 13
3a 04 00 00 00 ff 00 3b 04 00 00 0f 00
Server DHCPV6 Options: len 8
00 0a 00 04 ab cd ef ab
DHCPV6 Header: len 4
01 00 00 04
IP Address Pool: al_pool30
```



```
IPv6 Address Pool: ia_na_pool
IPv6 Delegated Address Pool: prefix_delegate_pool
```

### show subscribers client-type fixed-wireless-access

```
user@host> show subscribers client-type fixed-wireless-access

Interface          IP Address/VLAN ID      User Name
LS:RI
ps1.3221225472     192.0.2.10              505024101215074
default:default
ps1.3221225473     192.0.2.11              505024101215075
default:default
```

### show subscribers client-type fixed-wireless-access detail (Detail)

```
user@host> show subscribers client-type fixed-wireless-access detail
Type: FWA
User Name: 505024101215074
IP Address: 192.0.2.10
IP Netmask: 255.255.0.0
Interface: ps1.3221225472
Interface type: Dynamic
Dynamic Profile Name: fwa-profile
State: Active
Radius Accounting ID: 1
Session ID: 1
PFE Flow ID: 11
Login Time: 2019-04-10 14:10:12 PDT
Local TEID-U: 1
Local TEID-C: 1
Remote TEID-U: 2000000
Remote TEID-C: 1000000
GTPU Tunnel Remote IP Address: 203.0.113.1.3
GTPU Tunnel Local IP Address: 203.0.113.2.5
GTPC Remote IP Address: 203.0.113.1.2
GTPC Local IP Address: 203.0.113.1.1
Access Point Name: user21
```

## show subscribers client-type vlan-oob detail

```
user@host> show subscribers client-type vlan-oob detail
Type: VLAN-OOB
User Name: L2WS.line-aci-1.line-ari-1
Logical System: default
Routing Instance: ISP1
Interface: demux0.1073744127
Interface type: Dynamic
Underlying Interface: ge-1/0/0
Dynamic Profile Name: Prof_L2WS
Dynamic Profile Version: 1
State: Active
Radius Accounting ID: 1234
Session ID: 77
VLAN Id: 126
Core-Facing Interface: ge-2/1/1
VLAN Map Id: 6
Inner VLAN Map Id: 2001
Agent Circuit ID: line-aci-1
Agent Remote ID: line-ari-1
Login Time: 2013-10-29 14:43:52 EDT
```

## show subscribers count

```
user@host> show subscribers count
Total Subscribers: 188, Active Subscribers: 188
```

## show subscribers address detail (IPv6)

```
user@host> show subscribers address 203.0.113.137 detail
Type: PPPoE
User Name: pppoeTerV6User1Svc
IP Address: 203.0.113.137
IP Netmask: 255.0.0.0
IPv6 User Prefix: 2001:db8:0:c88::/32
Logical System: default
Routing Instance: default
Interface: pp0.1073745151
```

```

Interface type: Dynamic
Underlying Interface: demux0.8201
Dynamic Profile Name: pppoe-client-profile
MAC Address: 00:00:5e:00:53:53
Session Timeout (seconds): 31622400
Idle Timeout (seconds): 86400
State: Active
Radius Accounting ID: example demux0.8201:6544
Session ID: 6544
Agent Circuit ID: if13720
Agent Remote ID: if13720
Login Time: 2012-05-21 13:37:27 PDT
Service Sessions: 1

```

### show subscribers detail (IPv4)

```

user@host> show subscribers detail
Type: DHCP
IP Address: 203.0.113.29
IP Netmask: 255.255.0.0
Primary DNS Address: 192.0.2.0
Secondary DNS Address: 192.0.2.1
Primary WINS Address: 192.0.2.3
Secondary WINS Address: 192.0.2.4
Logical System: default
Routing Instance: default
Interface: demux0.1073744127
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:00:5e:00:53:98
State: Active
Radius Accounting ID: example :2304
Idle Timeout (seconds): 600
Login Time: 2009-08-25 14:43:52 PDT
DHCP Options: len 52
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 08 33 04 00 00
00 3c 0c 15 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 36 2f
33 2d 37 2d 30 37 05 01 06 0f 21 2c
Service Sessions: 2

```

**show subscribers detail (IPv6)**

```

user@host> show subscribers detail
Type: DHCP
User Name: pd-user1
IPv6 Prefix: 2001:db8:ffff:1::/32
Logical System: default
Routing Instance: default
Interface: ge-3/1/3.2
Interface type: Static
MAC Address: 00:00:5e:00:53:03
State: Active
Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-08-25 12:12:26 PDT
DHCP Options: len 42
00 08 00 02 00 00 00 01 00 0a 00 03 00 01 00 51 ff ff 00 03
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00
00 00

```

**show subscribers detail (pseudowire Interface for GRE Tunnel)**

```

user@host> show subscribers detail

```

Interface	IP Address/VLAN ID	User Name	LS:RI
ps0.3221225484	192.0.2.2		
ps0.3221225485	192.0.2.3		
demux0.3221225486	1		
default:default			
demux0.3221225487	1		
default:default			
demux0.3221225488	198.51.0.1		
default:default			
demux0.3221225489	198.51.0.2		
default:default			

**show subscribers detail (IPv6 Static Demux Interface)**

```

user@host> show subscribers detail
Type: STATIC-INTERFACE

```

```
User Name: user@example.com
IPv6 Prefix: 2001:db8:3:4:5:6:7:aa/32
Logical System: default
Routing Instance: default
Interface: demux0.1
Interface type: Static
Dynamic Profile Name: junos-default-profile
State: Active
Radius Accounting ID: 185
Login Time: 2010-05-18 14:33:56 EDT
```

### **show subscribers detail (L2TP LNS Subscribers on MX Series Routers)**

```
user@host> show subscribers detail
Type: L2TP
User Name: user@example.com
IP Address: 203.0.113.58
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: si-5/2/0.1073749824
Interface type: Dynamic
Dynamic Profile Name: dyn-lns-profile2
Dynamic Profile Version: 1
State: Active
Radius Accounting ID: 8001
Session ID: 8001
Login Time: 2011-04-25 20:27:50 IST
```

### **show subscribers detail (L2TP Switched Tunnels)**

```
user@host> show subscribers detail
Type: L2TP
User Name: user@example.com
Logical System: default
Routing Instance: default
Interface: si-2/1/0.1073741842
Interface type: Dynamic
Dynamic Profile Name: dyn-lts-profile
```

```

State: Active
L2TP State: Tunnel-switched
Tunnel switch Profile Name: ce-lts-profile
Local IP Address: 203.0.113.51
Remote IP Address: 192.0.2.0
Radius Accounting ID: 21
Session ID: 21
Login Time: 2013-01-18 03:01:11 PST

Type: L2TP
User Name: user@example.com
Logical System: default
Routing Instance: default
Interface: si-2/1/0.1073741843
Interface type: Dynamic
Dynamic Profile Name: dyn-lts-profile
State: Active
L2TP State: Tunnel-switched
Tunnel switch Profile Name: ce-lts-profile
Local IP Address: 203.0.113.31
Remote IP Address: 192.0.2.1
Session ID: 22
Login Time: 2013-01-18 03:01:14 PST

```

### show subscribers detail (Tunneled Subscriber)

```

user@host> show subscribers detail
Type: PPPoE
User Name: user1@example.com
Logical System: default
Routing Instance: default
Interface: pp0.1
State: Active, Tunneled
Radius Accounting ID: 512

```

### show subscribers detail (IPv4 and IPv6 Dual Stack)

```

user@host> show subscribers detail
Type: VLAN

```

Logical System: default  
Routing Instance: default  
Interface: demux0.1073741824  
Interface type: Dynamic  
Dynamic Profile Name: svlanProfile  
State: Active  
Session ID: 1  
Stacked VLAN Id: 0x8100.1001  
VLAN Id: 0x8100.1  
Login Time: 2011-11-30 00:18:04 PST

Type: PPPoE  
User Name: dualstackuser1@example1.com  
IP Address: 203.0.113.13  
IPv6 Prefix: 2001:db8:1::/32  
IPv6 User Prefix: 2001:db8:1:1::/32  
Logical System: default  
Routing Instance: ASP-1  
Interface: pp0.1073741825  
Interface type: Dynamic  
Dynamic Profile Name: dualStack-Profile1  
MAC Address: 00:00:5e:00:53:02  
State: Active  
Radius Accounting ID: 2  
Session ID: 2  
Login Time: 2011-11-30 00:18:05 PST

Type: DHCP  
IPv6 Prefix: 2001:db8:1::/32  
Logical System: default  
Routing Instance: ASP-1  
Interface: pp0.1073741825  
Interface type: Static  
MAC Address: 00:00:5e:00:53:02  
State: Active  
Radius Accounting ID: test :3  
Session ID: 3  
Underlying Session ID: 2  
Login Time: 2011-11-30 00:18:35 PST  
DHCP Options: len 42  
00 08 00 02 0b b8 00 01 00 0a 00 03 00 01 00 00 64 03 01 02  
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00 00

```
00 00
```

### show subscribers detail (ACI Interface Set Session)

```
user@host> show subscribers detail
Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0
Interface Set: aci-1001-ge-1/0/0.2800
Interface Set Session ID: 0
Underlying Interface: ge-1/0/0.2800
Dynamic Profile Name: aci-vlan-set-profile-2
Dynamic Profile Version: 1
State: Active
Session ID: 1
Agent Circuit ID: aci-ppp-dhcp-20
Login Time: 2012-05-26 01:54:08 PDT
```

### show subscribers detail (PPPoE Subscriber Session with ACI Interface Set)

```
user@host> show subscribers detail
Type: PPPoE
User Name: ppphint2
IP Address: 203.0.113.15
Logical System: default
Routing Instance: default
Interface: pp0.1073741825
Interface type: Dynamic
Interface Set: aci-1001-demux0.1073741824
Interface Set Type: Dynamic
Interface Set Session ID: 2
Underlying Interface: demux0.1073741824
Dynamic Profile Name: aci-vlan-pppoe-profile
Dynamic Profile Version: 1
MAC Address: 00:00:5e:00:53:02
State: Active
Radius Accounting ID: 3
```



```
Session ID: 3  
Agent Circuit ID: aci-ppp-dhcp-dvlan-50  
Login Time: 2012-03-07 13:46:53 PST
```

### show subscribers detail (Dynamic Profile Version Alias)

```
user@host> show subscribers detail  
  
Type: PPPoE  
User Name: DEFAULTUSER  
IP Address: 192.0.2.21  
IP Netmask: 255.255.255.255  
IPv6 Address: 2001:db8::17  
Logical System: default  
Routing Instance: default  
Interface: pp0.3221225720  
Interface type: Dynamic  
Underlying Interface: demux0.3221225719  
Dynamic Profile Name: pppoe-client-profile  
Dynamic Profile Version Alias: profile-version1a  
MAC Address: 00:00:5E:00:53:38  
State: Active  
Radius Accounting ID: 288  
Session ID: 288  
PFE Flow ID: 344  
VLAN Id: 1  
Login Time: 2019-09-23 10:40:56 IST
```

### show subscribers extensive

```
user@host> show subscribers extensive  
  
Type: DHCP  
User Name: pd-user1  
IPv6 Prefix: 2001:db8:ffff:1::/32  
Logical System: default  
Routing Instance: default  
Interface: ge-3/1/3.2  
Interface type: Static  
MAC Address: 00:00:5e:00:53:03
```

```

State: Active
Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-08-25 12:12:26 PDT
DHCP Options: len 42
00 08 00 02 00 00 01 00 0a 00 03 00 01 00 51 ff ff 00 03
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00
00 00
IPv6 Address Pool: pd_pool
IPv6 Network Prefix Length: 48

```

### show subscribers extensive (Aggregation Node Interface Set and DSL Forum Attributes)

```

user@host> show subscribers extensive
Type: VLAN-OOB
User Name: ancp
Logical System: default
Routing Instance: ispl-subscriber
Interface: ge-1/0/0.3221225472
Interface type: Dynamic
Interface Set: FRA-DPU-C-100
Underlying Interface: ge-1/0/0
Core IFL Name: ge-1/0/4.0
Dynamic Profile Name: Prof_L2BSA
State: Active
Radius Accounting ID: 1
Session ID: 1
PFE Flow ID: 13
VLAN Id: 50
VLAN Map Id: 20
Inner VLAN Map Id: 1
Inner VLAN Tag Protocol Id: 0x88a8
Agent Circuit ID: circuit 201
Agent Remote ID: remote-id
Aggregation Interface-set Name: FRA-DPU-C-100
Login Time: 2018-05-29 08:43:42 EDT
Accounting interval: 72000
Dynamic configuration:
  junos-cos-scheduler-map: 100m
  junos-inner-vlan-tag-protocol-id: 0x88a8
  junos-vlan-map-id: 20

```

```
Type: PPPoE
IP Address: 192.85.128.1
IP Netmask: 255.255.255.255
Logical System: default
Routing Instance: default
Interface: pp0.3221225474
Interface type: Dynamic
Interface Set: ge-1/0/0
Underlying Interface: demux0.3221225473
Dynamic Profile Name: pppoe-client-profile-with-cos
MAC Address: 00:10:94:00:00:03
State: Active
Radius Accounting ID: 3
Session ID: 3
PFE Flow ID: 16
Stacked VLAN Id: 50
VLAN Id: 7
Agent Circuit ID: circuit 201
Agent Remote ID: remote-id
Aggregation Interface-set Name: FRA-DPU-C-100
Login Time: 2018-05-29 08:43:45 EDT
IP Address Pool: pool-1
Accounting interval: 72000
DSL type: G.fast
Frame/cell mode: Frame
Overhead accounting bytes: 10
Actual upstream data rate: 100000 kbps
Actual downstream data rate: 200000 kbps
Calculated downstream data rate: 180000 kbps
Calculated upstream data rate: 90000 kbps
Adjusted upstream data rate: 80000 kbps
Adjusted downstream data rate: 160000 kbps
DSL Line Attributes
  Agent Circuit ID: circuit 201
  Agent Remote ID: remote-id
  Actual upstream data rate: 100000
  Actual downstream data rate: 200000
  DSL type: G.fast
  Access Aggregation Circuit ID: #FRA-DPU-C-100
  Attribute type: 0xAA, Attribute length: 4
    198 51 100 78
```

## show subscribers extensive (Passive Optical Network Circuit Interface Set)

```

user@host> show subscribers client-type dhcp extensive
Type: DHCP
IP Address: 192.0.2.136
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: demux0.1073741842
Interface type: Dynamic
Interface Set: ot101.xyz101-202
Underlying Interface: demux0.1073741841
Dynamic Profile Name: dhcp-profile
MAC Address: 00:00:5e:00:53:02
State: Active
Radius Accounting ID: user :19
Session ID: 19
VLAN Id: 1100
Agent Remote ID: ABCD01234|100M|AAAA01234|ot101.xyz101-202

Login Time: 2017-03-29 10:30:46 PDT
DHCP Options: len 97
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 02 33 04 00 00
17 70 0c 15 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 32 2f
32 2d 31 2d 31 37 05 01 06 0f 21 2c 52 2b 02 29 41 42 43 44
30 31 32 33 34 7c 31 30 30 4d 7c 41 41 41 41 30 31 32 33 34
7c 6f 74 6c 30 31 2e 78 79 7a 31 30 31 2d 32 30 32
IP Address Pool: POOL-V4

```

## show subscribers extensive (DNS Addresses from Access Profile or Global Configuration)

```

user@host> show subscribers extensive
Type: DHCP
User Name: test-user@example-com
IP Address: 192.0.2.119
IP Netmask: 255.255.255.255
Domain name server inet: 198.51.100.1 198.51.100.2
IPv6 Address: 2001:db8::1:11
Domain name server inet6: 2001:db8:5001::12 2001:db8:3001::12
Logical System: default

```

```

Routing Instance: default
Interface: ge-2/0/3.0
Interface type: Static
Underlying Interface: ge-2/0/3.0
MAC Address: 00:00:5E:00:53:00
State: Active
Radius Accounting ID: 5
Session ID: 5
Login Time: 2017-01-31 11:16:21 IST
DHCP Options: len 53
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 03 33 04 00 00
00 3c 0c 16 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 35 2f
31 32 2d 30 2d 30 37 05 01 06 0f 21 2c
IP Address Pool: v4-pool

```

### show subscribers extensive (DNS Addresses from RADIUS)

```

user@host> show subscribers extensive
Type: DHCP
User Name: test-user@example-com
IP Address: 192.0.2.119
IP Netmask: 255.255.255.255
Primary DNS Address: 198.51.100.1
Secondary DNS Address: 198.51.100.2
IPv6 Address: 2001:db8::1:11
IPv6 Primary DNS Address: 2001:db8:5001::12
IPv6 Secondary DNS Address: 2001:db8:3001::12
Logical System: default
Routing Instance: default
Interface: ge-2/0/3.0
Interface type: Static
Underlying Interface: ge-2/0/3.0
MAC Address: 00:00:5E:00:53:00
State: Active
Radius Accounting ID: 5
Session ID: 5
Login Time: 2017-01-31 11:16:21 IST
DHCP Options: len 53
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 03 33 04 00 00
00 3c 0c 16 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 35 2f

```

```
31 32 2d 30 2d 30 37 05 01 06 0f 21 2c
IP Address Pool: v4-pool
```

### show subscribers extensive (IPv4 DNS Addresses from RADIUS, IPv6 from Access Profile or Global Configuration)

```
user@host> show subscribers extensive
Type: DHCP
User Name: test-user@example-com
IP Address: 192.0.2.119
IP Netmask: 255.255.255.255
Primary DNS Address: 198.51.100.1
Secondary DNS Address: 198.51.100.2
IPv6 Address: 2001:db8::1:11
Domain name server inet6: 2001:db8:5001::12 2001:db8:3001::12
Logical System: default
Routing Instance: default
Interface: ge-2/0/3.0
Interface type: Static
Underlying Interface: ge-2/0/3.0
MAC Address: 00:00:5E:00:53:00
State: Active
Radius Accounting ID: 5
Session ID: 5
Login Time: 2017-01-31 11:16:21 IST
DHCP Options: len 53
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 03 33 04 00 00
00 3c 0c 16 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 35 2f
31 32 2d 30 2d 30 37 05 01 06 0f 21 2c
IP Address Pool: v4-pool
```

### show subscribers extensive (RPF Check Fail Filter)

```
user@host> show subscribers extensive
...
Type: VLAN
  Logical System: default
  Routing Instance: default
  Interface: ae0.1073741824
```

```

Interface type: Dynamic
Dynamic Profile Name: vlan-prof
State: Active
Session ID: 9
VLAN Id: 100
Login Time: 2011-08-26 08:17:00 PDT
IPv4 rpf-check Fail Filter Name: rpf-allow-dhcp
IPv6 rpf-check Fail Filter Name: rpf-allow-dhcpv6
...

```

### show subscribers extensive (L2TP LNS Subscribers on MX Series Routers)

```

user@host> show subscribers extensive
Type: L2TP
User Name: user@example.com
IP Address: 203.0.113.58
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: si-5/2/0.1073749824
Interface type: Dynamic
Dynamic Profile Name: dyn-lns-profile2
Dynamic Profile Version: 1
State: Active
Radius Accounting ID: 8001
Session ID: 8001
Login Time: 2011-04-25 20:27:50 IST
IPv4 Input Filter Name: classify-si-5/2/0.1073749824-in
IPv4 Output Filter Name: classify-si-5/2/0.1073749824-out

```

### show subscribers extensive (IPv4 and IPv6 Dual Stack)

```

user@host> show subscribers extensive
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlanProfile

```

```
State: Active
Session ID: 1
Stacked VLAN Id: 0x8100.1001
VLAN Id: 0x8100.1
Login Time: 2011-11-30 00:18:04 PST

Type: PPPoE
User Name: dualstackuser1@example1.com
IP Address: 203.0.113.13
IPv6 Prefix: 2001:db8:1::/32
IPv6 User Prefix: 2001:db8:1:1::/32
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Dynamic
Dynamic Profile Name: dualStack-Profile1
MAC Address: 00:00:5e:00:53:02
State: Active
Radius Accounting ID: 2
Session ID: 2
Login Time: 2011-11-30 00:18:05 PST
IPv6 Delegated Network Prefix Length: 48
IPv6 Interface Address: 2001:db8:2016:1:1::1/64
IPv6 Framed Interface Id: 1:1:2:2
IPv4 Input Filter Name: FILTER-IN-pp0.1073741825-in
IPv4 Output Filter Name: FILTER-OUT-pp0.1073741825-out
IPv6 Input Filter Name: FILTER-IN6-pp0.1073741825-in
IPv6 Output Filter Name: FILTER-OUT6-pp0.1073741825-out

Type: DHCP
IPv6 Prefix: 2001:db8:1::/32
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Static
MAC Address: 00:00:5e:00:53:02
State: Active
Radius Accounting ID: test :3
Session ID: 3
Underlying Session ID: 2
Login Time: 2011-11-30 00:18:35 PST
DHCP Options: len 42
00 08 00 02 0b b8 00 01 00 0a 00 03 00 01 00 00 64 03 01 02
```



```

00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00
00 00
IPv6 Delegated Network Prefix Length: 48

```

### show subscribers extensive (ADF Rules )

```

user@host> show subscribers extensive
...
Service Session ID: 12
Service Session Name: SERVICE-PROFILE
State: Active
Family: inet
  ADF IPv4 Input Filter Name: __junos_adf_12-demux0.3221225474-inet-in
    Rule 0: 010101000b0101020b020200201811
      from {
        source-address 203.0.113.232;
        destination-address 198.51.100.0/24;
        protocol 17;
      }
      then {
        accept;
      }

```

### show subscribers extensive (Effective Shaping-Rate)

```

user@host> show subscribers extensive
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.1073741837
Interface type: Dynamic
Interface Set: ifset-1
Underlying Interface: ae1
Dynamic Profile Name: svlan-dhcp-test
State: Active
Session ID: 1
Stacked VLAN Id: 0x8100.201
VLAN Id: 0x8100.201

```

Login Time: 2011-11-30 00:18:04 PST

**Effective shaping-rate: 31000000k**

...

## show subscribers extensive (PPPoE Subscriber Access Line Rates)

```
user@host> show subscribers extensive
```

Type: PPPoE

IP Address: 198.51.100.1

IP Netmask: 255.255.255.255

Logical System: default

Routing Instance: default

Interface: pp0.3221225475

Interface type: Dynamic

Underlying Interface: demux0.3221225474

Dynamic Profile Name: pppoe-client-profile-with-cos

MAC Address: 00:00:5e:00:53:02

State: Active

Radius Accounting ID: 4

Session ID: 4

PFE Flow ID: 14

Stacked VLAN Id: 40

VLAN Id: 1

Agent Circuit ID: circuit0

Agent Remote ID: remote0

Login Time: 2017-04-06 15:52:32 PDT

User Name: DAVE-L2BSA-SERVICE

Logical System: default

Routing Instance: isp-1-subscriber

Interface: ge-1/2/4.3221225472

Interface type: Dynamic

Interface Set: ge-1/2/4

Underlying Interface: ge-1/2/4

Core IFL Name: ge-1/3/4.0

Dynamic Profile Name: L2BSA-88a8-400LL1300VO

State: Active

Radius Accounting ID: 1

Session ID: 1

PFE Flow ID: 14

VLAN Id: 13

```

VLAN Map Id: 102
Inner VLAN Map Id: 1
Agent Circuit ID: circuit-aci-3
Agent Remote ID: remote49-3
Login Time: 2017-04-05 16:59:29 EDT
Service Sessions: 4
IFL Input Filter Name: L2BSA-CP-400LL1300VO-ge-1/2/4.3221225472-in
IFL Output Filter Name: L2BSA-CP-400LL1300VO-ge-1/2/4.3221225472-out
Accounting interval: 900
DSL type: VDSL
Frame/Cell Mode: Frame
Overhead accounting bytes: -10
Actual upstream data rate: 1024 kbps
Actual downstream data rate: 4096 kbps
Adjusted downstream data rate: 3686 kbps
Adjusted upstream data rate: 922 kbps
Dynamic configuration:
  junos-vlan-map-id: 102
  Service Session ID: 5
  Service Session Name: SRL-L1
  State: Active
  Family: inet, inet6
  IFL Input Filter Name: L2BSA-FWF-in-10048-ge-1/2/4.3221225472-in
  IFL Output Filter Name: L2BSA-FWF-out-25088-ge-1/2/4.3221225472-out
  Service Activation time: 2017-04-05 16:59:30 EDT
Dynamic configuration:
  l2bsa-fwf-in: L2BSA-FWF-in-10048
  l2bsa-fwf-out: L2BSA-FWF-out-25088
  rldown: 25088
  rlup: 10048

```

### show subscribers extensive (Subscriber Session Using PCEF Profile)

```

user@host> show subscribers extensive
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.3221225517
Interface type: Dynamic
Underlying Interface: ge-1/0/3
Dynamic Profile Name: svlan-dhcp

```

State: Active  
Session ID: 59  
PFE Flow ID: 71  
Stacked VLAN Id: 0x8100.1  
VLAN Id: 0x8100.2  
Login Time: 2017-03-28 08:23:08 PDT

Type: DHCP  
User Name: pcefuser  
IP Address: 192.0.2.26  
IP Netmask: 255.0.0.0  
Logical System: default  
Routing Instance: default  
Interface: demux0.3221225518  
Interface type: Dynamic  
Underlying Interface: demux0.3221225517  
Dynamic Profile Name: dhcp-client-prof  
MAC Address: 00:00:5e:00:53:01

State: Active  
Radius Accounting ID: 60  
Session ID: 60  
PFE Flow ID: 73  
Stacked VLAN Id: 1  
VLAN Id: 2  
Login Time: 2017-03-28 08:23:08 PDT  
Service Sessions: 1  
DHCP Options: len 9  
35 01 01 37 04 01 03 3a 3b  
IP Address Pool: pool-ipv4  
IPv4 Input Service Set: tdf-service-set  
IPv4 Output Service Set: tdf-service-set  
PCEF Profile: pcef-prof-1  
PCEF Rule/Rulebase: default  
Dynamic configuration:  
  junos-input-service-filter: svc-filt-1  
  junos-input-service-set: tdf-service-set  
  junos-output-service-filter: svc-filt-1  
  junos-output-service-set: tdf-service-set  
  junos-pcef-profile: pcef-prof-1  
  junos-pcef-rule: default

Service Session ID: 61  
Service Session Name: pcef-serv-prof

```

State: Active
Family: inet
IPv4 Input Service Set: tdf-service-set
IPv4 Output Service Set: tdf-service-set
PCEF Profile: pcef-prof-1
PCEF Rule/Rulebase: limit-fb
Service Activation time: 2017-03-28 08:31:19 PDT
Dynamic configuration:
  pcef-prof: pcef-prof-1
  pcef-rule1: limit-fb
  svc-filt: svc-filt-1
  svc-set: tdf-service-set

```

### show subscribers aci-interface-set-name detail (Subscriber Sessions Using Specified ACI Interface Set)

```

user@host> show subscribers aci-interface-set-name aci-1003-ge-1/0/0.4001 detail
Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-set-profile
Dynamic Profile Version: 1
State: Active
Session ID: 13
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:56 PDT

Type: PPPoE
User Name: ppphint2
IP Address: 203.0.113.17
Logical System: default
Routing Instance: default
Interface: pp0.1073741834
Interface type: Dynamic
Interface Set: aci-1003-ge-1/0/0.4001
Interface Set Type: Dynamic
Interface Set Session ID: 13
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-pppoe-profile

```

```

Dynamic Profile Version: 1
MAC Address:
State: Active
Radius Accounting ID: 14
Session ID: 14
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:57 PDT

```

### show subscribers agent-circuit-identifier detail (Subscriber Sessions Using Specified ACI Substring)

```

user@host> show subscribers agent-circuit-identifier aci-ppp-vlan detail

```

```

Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-set-profile
Dynamic Profile Version: 1
State: Active
Session ID: 13
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:56 PDT

```

```

Type: PPPoE
User Name: ppphint2
IP Address: 203.0.113.17
Logical System: default
Routing Instance: default
Interface: pp0.1073741834
Interface type: Dynamic
Interface Set: aci-1003-ge-1/0/0.4001
Interface Set Type: Dynamic
Interface Set Session ID: 13
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-pppoe-profile
Dynamic Profile Version: 1
MAC Address: 00:00:5e:00:53:52
State: Active
Radius Accounting ID: 14
Session ID: 14

```

**Agent Circuit ID: aci-ppp-vlan-10**

Login Time: 2012-03-12 10:41:57 PDT

### **show subscribers id accounting-statistics**

```
user@host> show subscribers id 601 accounting-statistics
```

```
Session ID: 601
```

```
Accounting Statistics:
```

```
Input bytes : 199994
```

```
Output bytes : 121034
```

```
Input packets: 5263
```

```
Output packets: 5263
```

```
IPv6:
```

```
Input bytes : 0
```

```
Output bytes : 0
```

```
Input packets: 0
```

```
Output packets: 0
```

### **show subscribers interface accounting-statistics**

```
user@host> show subscribers interface pp0.3221226949 accounting-statistics
```

```
Session ID: 501
```

```
Accounting Statistics:
```

```
Input bytes : 199994
```

```
Output bytes : 121034
```

```
Input packets: 5263
```

```
Output packets: 5263
```

```
IPv6:
```

```
Input bytes : 0
```

```
Output bytes : 0
```

```
Input packets: 0
```

```
Output packets: 0
```

```
Session ID: 502
```

```
Accounting Statistics:
```

```
Input bytes : 87654
```

```
Output bytes : 72108
```

```
Input packets: 3322
```

```
Output packets: 3322
```

```
IPv6:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0

Session ID: 503
Accounting Statistics:
Input bytes : 156528
Output bytes : 123865
Input packets: 7448
Output packets: 7448
IPv6:
Input bytes : 0
Output bytes : 0
Input packets: 0
Output packets: 0
```

### show subscribers interface extensive

```
user@host> show subscribers interface demux0.1073741826 extensive
Type: VLAN
User Name: user@test.example.com
Logical System: default
Routing Instance: testnet
Interface: demux0.1073741826
Interface type: Dynamic
Dynamic Profile Name: profile-vdemux-relay-23qos
MAC Address: 00:00:5e:00:53:04
State: Active
Radius Accounting ID: 12
Session ID: 12
Stacked VLAN Id: 0x8100.1500
VLAN Id: 0x8100.2902
Login Time: 2011-10-20 16:21:59 EST

Type: DHCP
User Name: user@test.example.com
IP Address: 192.0.2.0
IP Netmask: 255.255.255.0
Logical System: default
```



```

Routing Instance: testnet
Interface: demux0.1073741826
Interface type: Static
MAC Address: 00:00:5e:00:53:04
State: Active
Radius Accounting ID: 21
Session ID: 21
Login Time: 2011-10-20 16:24:33 EST
Service Sessions: 2

Service Session ID: 25
Service Session Name: SUB-QOS
State: Active

Service Session ID: 26
Service Session Name: service-cb-content
State: Active
IPv4 Input Filter Name: content-cb-in-demux0.1073741826-in
IPv4 Output Filter Name: content-cb-out-demux0.1073741826-out

```

### show subscribers logical-system terse

```

user@host> show subscribers logical-system test1 terse

```

Interface	IP Address/VLAN ID	User Name	LS:RI
demux0.1073741825	203.0.113.3	RETAILER1-CLIENT	test1:retailer1
demux0.1073741826	203.0.113.4	RETAILER2-CLIENT	test1:retailer2

### show subscribers physical-interface count

```

user@host> show subscribers physical-interface ge-1/0/0 count
Total subscribers: 3998, Active Subscribers: 3998

```

### show subscribers routing-instance inst1 count

```

user@host> show subscribers routing-instance inst1 count
Total Subscribers: 188, Active Subscribers: 183

```

## show subscribers stacked-vlan-id detail

```
user@host> show subscribers stacked-vlan-id 101 detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

## show subscribers stacked-vlan-id vlan-id detail (Combined Output)

```
user@host> show subscribers stacked-vlan-id 101 vlan-id 100 detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

## show subscribers stacked-vlan-id vlan-id interface detail (Combined Output for a Specific Interface)

```
user@host> show subscribers stacked-vlan-id 101 vlan-id 100 interface ge-1/2/0.* detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

**show subscribers user-name detail**

```

user@host> show subscribers user-name larry1 detail
Type: DHCP
User Name: larry1
IP Address: 203.0.113.37
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.1
Interface type: Static
Dynamic Profile Name: foo
MAC Address: 00:00:5e:00:53:01
State: Active
Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-11-07 08:25:59 PST
DHCP Options: len 52
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 01 33 04 00 00
00 3c 0c 15 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 32 2f
37 2d 30 2d 30 37 05 01 06 0f 21 2c

```

**show subscribers vlan-id**

```

user@host> show subscribers vlan-id 100
Interface          IP Address          User Name
ge-1/0/0.1073741824
ge-1/2/0.1073741825

```

**show subscribers vlan-id detail**

```

user@host> show subscribers vlan-id 100 detail
Type: VLAN
Interface: ge-1/0/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: vlan-prof-tpid
State: Active
VLAN Id: 100
Login Time: 2009-03-11 06:48:54 PDT

```

```
Type: VLAN
Interface: ge-1/2/0.1073741825
Interface type: Dynamic
Dynamic Profile Name: vlan-prof-tpid
State: Active
VLAN Id: 100
Login Time: 2009-03-11 06:48:54 PDT
```

### show subscribers vpi vci extensive (PPPoE-over-ATM Subscriber Session)

```
user@host> show subscribers vpi 40 vci 50 extensive
Type: PPPoE
User Name: testuser
IP Address: 203.0.113.2
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: pp0.0
Interface type: Static
MAC Address: 00:00:5e:00:53:02
State: Active
Radius Accounting ID: 2
Session ID: 2
ATM VPI: 40
ATM VCI: 50
Login Time: 2012-12-03 07:49:26 PST
IP Address Pool: pool_1
IPv6 Framed Interface Id: 200:65ff:fe23:102
```

### show subscribers address detail (Enhanced Subscriber Management)

```
user@host> show subscribers address 203.0.113.111 detail
Type: DHCP
User Name: simple_filters_service
IP Address: 203.0.113.111
IP Netmask: 255.0.0.0
Logical System: default
Routing Instance: default
```

```

Interface: demux0.3221225482
Interface type: Dynamic
Underlying Interface: demux0.3221225472
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:00:5e:00:53:0f
State: Active
Radius Accounting ID: 11
Session ID: 11
PFE Flow ID: 15
Stacked VLAN Id: 210
VLAN Id: 209
Login Time: 2014-03-24 12:53:48 PDT
Service Sessions: 1
DHCP Options: len 3
35 01 01

```

### show subscribers extensive (Tenant Systems)

```

user@host:TSYS1> show subscribers extensive
Type: XAUTH
User Name: userX
+   Tenant: TSYS1
    Routing Instance: TSYS1-ri
IP Address: 192.0.2.0
IP Netmask: 203.0.113.0
Primary DNS Address: 198.51.100.0
Secondary DNS Address: 198.51.100.1
Dynamic Profile Name: radius
State: Active
Session ID: 1
Login Time: 2018-09-18 13:49:00 PDT

```

## Release Information

Command introduced in Junos OS Release 9.3.

**client-type**, **mac-address**, **subscriber-state**, and **extensive** options introduced in Junos OS Release 10.2.

**count** option usage with other options introduced in Junos OS Release 10.2.

Options **aci-interface-set-name** and **agent-circuit-identifier** introduced in Junos OS Release 12.2.

The **physical-interface** and **user-name** options introduced in Junos OS Release 12.3.

Options **vci** and **vpi** introduced in Junos OS Release 12.3R3 and supported in later 12.3Rx releases.

Options **vci** and **vpi** supported in Junos OS Release 13.2 and later releases. (Not supported in Junos OS Release 13.1.)

Enhanced subscriber management supported in Junos OS Release 15.1R3 on MX Series routers.

**accounting-statistics** option added in Junos OS Release 15.1R3 and 17.4R1 on MX Series routers.

**aggregation-interface-set-name** option added in Junos OS Release 18.4R1 on MX Series routers.

## RELATED DOCUMENTATION

*Verifying and Managing Agent Circuit Identifier-Based Dynamic VLAN Configuration*

*Verifying and Managing Configurations for Dynamic VLANs Based on Access-Line Identifiers*

*Verifying and Managing Junos OS Enhanced Subscriber Management*

# show system alarms

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## Syntax

```
show system alarms
```

## Description

Display active system alarms. System alarms are software or operating system software related alarms. System alarms indicate a missing rescue configuration or software license, where valid. System alarms are preset. You cannot modify them, although you can configure them to appear automatically in the J-Web user interface or CLI. They include a *configuration* alarm that appears when no rescue configuration alarm is set and a *license* alarm that appears when a software feature is configured and no valid license is configured for the feature. You can also determine when a license will expire from syslog messages that appear starting from four weeks before expiry of the license. On EX6200 switches, an alarm can be triggered by an internal link error.

Chassis alarms indicate a failure on the device or one of its components. For example, chassis alarms include an alarm for fan tray failure on a device, or if an FPC on a device is unreachable. Chassis alarms are preset and cannot be modified.

## Options

This command has no options.

## Additional Information

The logic for multiple feature licenses is based on the highest validity among the licenses. Also, for capacity non-cumulative, exclusive type licenses (such as for scale), the logic is based on the highest validity of the license.

**NOTE:** As of Junos OS Release 17.3R1, the logic for multiple capacity type licenses and when their expiry raises alarms was changed. Before, the behavior had alarms and syslog messages for expiring licenses raised based on the highest validity, which would mislead users in the case of a

license expiring earlier than the highest validity license. The newer behavior has the about-to-expire logic based on the first expiring license.

In Junos OS release 11.1 and later, alarms for fans also show the slot number of the malfunctioning fans in the CLI output.

Starting with Junos OS Release 13.2, you can view degraded fabric alarms on a routing matrix based on TX Matrix Plus router with 3D SIBs. The alarm indicates that the source FPC is running with a degraded fabric condition. This alarm is an early warning of a possible fabric null route condition. When the degraded fabric alarm is raised on the source FPC, you can take remedial action to avoid a fabric null route condition. The degraded fabric alarm is raised on the source FPC if both the following conditions are met:

- The active Packet Forwarding Engine destinations are reachable on one or no active switching planes.
- At least one of the inactive switching planes has a fault that causes the destination Packet Forwarding Engine to become unreachable.

**NOTE:** On Junos OS Evolved, the **show system alarms** command does not display the error number. Instead, you can use the **show chassis fpc errors detail** and the **show system errors** commands to list the errors that contribute to a failure.

## Required Privilege Level

view

## Output Fields

[Table 36 on page 1056](#) lists the output fields for the **show system alarms** command. Output fields are listed in the approximate order in which they appear.



**Table 36: show system alarms Output Fields**

Field Name	Field Description
<b>Alarm time</b>	Date and time the alarm was first recorded.
<b>Class</b>	Severity class for this alarm: <b>Minor</b> or <b>Major</b> .
<b>Description</b>	Information about the alarm.

## Sample Output

### show system alarms

```

user@host> show system alarms

2 alarms currently active
Alarm time           Class      Description
2005-02-24 17:29:34 UTC  Minor     IPsec VPN tunneling usage requires a
license
2005-02-24 17:29:34 UTC  Minor     Rescue configuration is not sent

```

### show system alarms (Fan Tray)

```

user@host> show system 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 system alarms (QFX Series and OCX Series)**

```

user@switch> show system alarms
2 alarms currently active
Alarm time Class Description
2005-02-24 17:29:34 UTC Minor Rescue configuration is not sent

```

**show system alarms (EX6200)**

```

user@switch> show system alarms
2 alarms currently active
Alarm time          Class Description
2013-04-05 16:51:41 PDT Major FPC 8 internal link errors detected
2013-04-04 18:05:35 PDT Minor Rescue configuration is not set

```

**show system alarms (TX Matrix Plus router with 3D SIBs)**

```

user@router> 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:
-----
1 alarm currently active
Alarm time          Class Description
2013-05-08 18:19:24 UTC Major FPC 1 degraded fabric condition detected

lcc7-re0:
-----
1 alarm currently active
Alarm time          Class Description
2013-05-08 18:19:24 UTC Major FPC 7 degraded fabric condition detected

```

## show system alarms (Junos OS Evolved)

```
user@router> show system alarms
10 alarms currently active
Alarm time           Class  Description
2019-02-01 02:20:09 PST  Major  PCI Corrected error on dev 0000:00:01.0
```

Starting in Junos OS Evolved Release 19.1R1, the alarm string for PCI Corrected error is shown as **PCI Corrected error on dev 0000:00:01.0**. Also, a PCI uncorrectable error does not cause a reboot, but only raises an alarm.

## Release Information

Command introduced before Junos OS Release 7.4.

# show system audit

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## Syntax

```
show system audit  
<root-only>
```

## Syntax (EX Series Switch and MX Series Router)

```
show system audit  
<all-members>  
<local>  
<member member-id>  
<root-only>
```

## Syntax (TX Matrix Router)

```
show system audit  
<all-lcc | lcc number | scc>  
<root-only>
```

## Syntax (TX Matrix Plus Router)

```
show system audit  
<all-chassis | all-lcc | lcc number | sfc number>  
<root-only>
```

## Syntax (QFX Series)

```
show system audit
<infrastructure name | interconnect-device name | node-group name | root-only>
```

## Syntax (OCX Series)

```
show system audit
<root-only>
```

## Description

Display the state and checksum values for file systems.

## Options

<b>none</b>	Display the state and checksum values for all file systems.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display file system MD5 hash and permissions information for all of the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display file system MD5 hash and permissions information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display file system MD5 hash and permissions information for all T1600 or T4000 routers connected to the TX Matrix Plus router.
<b>all-members</b>	(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on all members of the Virtual Chassis configuration.
<b>lcc number</b>	(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display file system MD5 hash and permissions information for a specific T640 router

that is connected to the TX Matrix router. On a TX Matrix Plus router, display file system MD5 hash and permissions information for a specific router 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.

<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for a fabric control Routing Engine or a fabric control Routing Engine.
<b>interconnect- device <i>name</i></b>	(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for the Interconnect device.
<b>local</b>	(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switch, QFX Series, and MX Series routers only) (Optional) Display file system MD5 hash and permissions information on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display file system MD5 hash and permissions information for the Node group
<b>root-only</b>	(Optional) Check only the root (/) file system. On a QFabric system, you can check the root (/) file system on the infrastructure (fabric manager Routing Engine and fabric control Routing Engine), Interconnect device, or Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Display file system MD5 hash and permissions information for the TX Matrix router (or switch-card chassis).

**sfc *number*** (TX Matrix Plus routers only) (Optional) Display file system MD5 hash and permissions information for the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with **0**.

## Additional Information

To redirect the output to a file, issue the following command:

```
ssh device-name 'show system audit root-only' > output-file
```

If you save the output of the **show system audit root-only** command to a file, you can compare it to subsequent output from the command to determine whether anything has changed.

By default, when you issue the **show system audit** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

## Required Privilege Level

admin

## Sample Output

**show system audit root-only**

```
user@host> show system audit root-only
#      user: root
#      machine: host
#      tree: /
date: Fri Feb 11 21:21:46 2000

# .
```

```

/set type=file uid=0 gid=0 mode=0755 nlink=1
.           type=dir nlink=23 size=1024 time=950252640.0
.cshrc      uid=3 gid=7 mode=0644 size=177 time=939182975.0 \
            md5digest=f414e06fea6bd646244b98e13d6e6226
.kernel.jkernel.backup \
            mode=0744 size=1934552 time=944688902.0 \
            md5digest=2c343cf0bd9fea8f04f78604feed7aa4
.profile    uid=3 gid=7 mode=0644 nlink=2 size=173 time=939182975.0 \
            md5digest=55a1e3c6c67789c9d3a1ccea39f670
COPYRIGHT   uid=3 gid=7 mode=0444 size=3425 time=939182975.0 \
            md5digest=7df8bc77dcee71382ea73eb0ec6a9243
boot.config mode=0644 size=3 time=945902618.0 \
            md5digest=93d722493ed38477338a1405d7dcbb40
boot.help   uid=3 gid=7 mode=0444 size=411 time=939182876.0 \
            md5digest=9b7126385734bcae753f4179ab59d8e5
compat      type=link mode=0777 size=11 time=915149058.0 \
            link=/usr/compat
kernel      mode=0444 size=1947607 time=950230892.0 \
            md5digest=1a2a8aff2fec678a918ba0d6bf063980
kernel.avr  uid=1112 size=1947642 time=950252597.0 \
            md5digest=82e1637682d58ec28964dfce7fccb62e
kernel.config \
            mode=0644 size=0 time=915149058.0 \
            md5digest=d41d8cd98f00b204e9800998ecf8427e
sys         type=link mode=0777 size=11 time=915149029.0 \
            link=usr/src/sys

```

### show system audit lcc (TX Matrix Router)

```

user@host> show system audit lcc 2
lcc2-re0:
-----
#           user: root
#           machine: test-lcc2
#           tree: /
#           date: Mon Sep 13 11:55:33 2004

# .
/set type=file uid=0 gid=0 mode=0555 nlink=1 flags=none
.           type=dir nlink=20 size=512 time=1094982121.0
COPYRIGHT   mode=0644 size=4735 time=986012708.0 \

```



```

        md5digest=78396df1404ad742e6eb1be28f0cd63b
kernel      type=link mode=0700 size=17 time=1090266262.0 \
            link=/packages/jkernel

# ./altconfig
altconfig   type=dir nlink=2 size=512 time=1089801320.0
# ./altconfig
..

# ./altroot
altroot     type=dir nlink=2 size=512 time=1089801320.0
# ./altroot
..

# ./b
b           type=dir mode=0755 nlink=2 size=512 time=1093961429.0
# ./b
..

# ./bin
/set type=file uid=0 gid=0 mode=0700 nlink=1 flags=none
bin         type=dir mode=0755 nlink=2 size=512 time=1089843059.0
  [         type=link size=28 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/test
  cat       type=link size=27 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/cat
  chmod     type=link size=29 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/chmod
  cp        type=link size=26 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/cp
  csh       type=link size=27 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/csh
  date      type=link size=28 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/date
  dd        type=link size=26 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/dd
  df        type=link size=26 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/df
  echo      type=link size=28 time=1090266270.0 \
            link=/packages/mnt/jbase/bin/echo
  ed        type=link size=26 time=1090266270.0 \

```

```
    link=/packages/mnt/jbase/bin/ed
expr    type=link size=28 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/expr
hostname type=link size=32 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/hostname
kill    type=link size=28 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/kill
ln      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/ln
ls      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/ls
mkdir  type=link size=29 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/mkdir
mv      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/mv
ps      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/ps
pwd     type=link size=27 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/pwd
rcp     type=link size=27 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/rcp
red     type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/ed
rm      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/rm
rmdir  type=link size=29 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/rmdir
sh      type=link size=26 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/sh
sleep  type=link size=29 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/sleep
stty   type=link size=28 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/stty
sync   type=link size=28 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/sync
tcsh   type=link size=27 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/csh
test   type=link size=28 time=1090266270.0 \
        link=/packages/mnt/jbase/bin/test
# ./bin
..
```

```

# ./boot
/set type=file uid=0 gid=0 mode=0444 nlink=1 flags=none
boot          type=dir mode=0555 nlink=3 size=512 time=1095069935.0
  boot0       size=512 time=1094978286.0 \
              md5digest=6f780822dd4ae482a20462b66e542cca
  boot1       mode=0555 size=512 time=1094978294.0 \
              md5digest=8d112b09df342cd0b60fdb9bdcde8e07
  boot2       mode=0555 size=7680 time=1094978294.0 \
              md5digest=28eb58c4068c6b85717e1484f9e028e4
  cdboot      mode=0555 size=165888 time=1094978298.0 \
              md5digest=1474c6b800dfc82ba552d7c36116d07d
  kgzldr.o    size=5996 time=1094982121.0 \
              md5digest=c53dc948eb07e2ea4eb0413e4c4634a3
  loader      mode=0555 size=163840 time=1094978298.0 \
              md5digest=82d9dc2d31033476bfb61bb7264c4fed
  loader.4th  size=9237 time=986013631.0 \
              md5digest=43144391465ad50267d31e0a320be1de
...

```

### show system audit lcc (TX Matrix Plus Router)

```

user@host> show system audit all-chassis

sfc0-re0:
-----
#          user: root
#          machine: test
#          tree: /
#          date: Mon May 18 00:13:16 2009

# .
/set type=file uid=0 gid=0 mode=0755 nlink=1 flags=none
.          type=dir nlink=23 size=512 time=1242347096.0
  COPYRIGHT mode=0644 size=6196 time=1168587741.0 \
              md5digest=bbad415e1c29bbedd9b383537100412c
  kernel    type=link size=17 time=1242347011.0 link=/packages/jkernel
  staging    type=link mode=0777 size=8 time=1242346935.0 link=/var/tmp

# ./snap
.snap     type=dir mode=0775 nlink=2 size=512 time=1242346922.0
# ./snap

```

```
..

# ./altconfig
altconfig      type=dir mode=0500 nlink=2 size=512 time=1242319843.0
# ./altconfig
..

# ./altroot
altroot        type=dir mode=0500 nlink=2 size=512 time=1242319843.0
# ./altroot
..

# ./bin
bin            type=dir nlink=2 size=512 time=1242346944.0
  \133         type=link size=28 time=1242346942.0 \
               link=/packages/mnt/jbase/bin/test
  cat          type=link size=27 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/cat
  chflags      type=link size=31 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/chflags
  chmod        type=link size=29 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/chmod
  cp           type=link size=26 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/cp
  csh          type=link size=27 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/csh
  date         type=link size=28 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/date
  dd           type=link size=26 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/dd
  df           type=link size=26 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/df
  echo         type=link size=28 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/echo
  ed           type=link size=26 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/ed
  expr         type=link size=28 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/expr
  hostname     type=link size=32 time=1242346941.0 \
               link=/packages/mnt/jbase/bin/hostname
```

```
kill      type=link size=28 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/kill  
ln        type=link size=26 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/ln  
ls        type=link size=26 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/ls  
mkdir     type=link size=29 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/mkdir  
mv        type=link size=26 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/mv  
pax       type=link size=27 time=1242346944.0 \  
          link=/packages/mnt/jbase/bin/pax  
ps        type=link size=26 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/ps  
pwd       type=link size=27 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/pwd  
rcp       type=link size=27 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/rcp  
red       type=link size=26 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/red  
rm        type=link size=26 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/rm  
rmdir     type=link size=29 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/rmdir  
sh        type=link size=26 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/sh  
sleep     type=link size=29 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/sleep  
stty      type=link size=28 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/stty  
sync      type=link size=28 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/sync  
tcsh      type=link size=27 time=1242346941.0 \  
          link=/packages/mnt/jbase/bin/csh  
test      type=link size=28 time=1242346942.0 \  
          link=/packages/mnt/jbase/bin/test  
# ./bin  
...
```

**show system audit root-only (QFX3500 Switch)**

```

user@switch> show system audit root-only
#           user: root
#           machine: test
#           tree: /
date: Fri Feb 11 21:21:46 2000

# .
/set type=file uid=0 gid=0 mode=0755 nlink=1
.           type=dir nlink=23 size=1024 time=950252640.0
.cshrc      uid=3 gid=7 mode=0644 size=177 time=939182975.0 \
            md5digest=f414e06fea6bd646244b98e13d6e6226
.kernel.jkernel.backup \
            mode=0744 size=1934552 time=944688902.0 \
            md5digest=2c343cf0bd9fea8f04f78604feed7aa4
.profile    uid=3 gid=7 mode=0644 nlink=2 size=173 time=939182975.0 \
            md5digest=55a1e3c6c67789c9d3alcce1ea39f670
COPYRIGHT   uid=3 gid=7 mode=0444 size=3425 time=939182975.0 \
            md5digest=7df8bc77dcee71382ea73eb0ec6a9243
boot.config mode=0644 size=3 time=945902618.0 \
            md5digest=93d722493ed38477338a1405d7dcbb40
boot.help   uid=3 gid=7 mode=0444 size=411 time=939182876.0 \
            md5digest=9b7126385734bcae753f4179ab59d8e5
compat      type=link mode=0777 size=11 time=915149058.0 \
            link=/usr/compat
kernel      mode=0444 size=1947607 time=950230892.0 \
            md5digest=1a2a8aff2fec678a918ba0d6bf063980
kernel.avr  uid=1112 size=1947642 time=950252597.0 \
            md5digest=82e1637682d58ec28964dfef7fccb62e
kernel.config \
            mode=0644 size=0 time=915149058.0 \
            md5digest=d41d8cd98f00b204e9800998ecf8427e
sys         type=link mode=0777 size=11 time=915149029.0 \
            link=usr/src/sys

```

**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.

## show system buffers

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### Syntax

```
show system buffers
```

### Syntax (EX Series)

```
show system buffers  
<all-members>
```

```
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system buffers  
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
show system buffers  
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (MX Series Router)

```
show system buffers  
<all-members>  
<local>  
<member member-id>
```

## Syntax (QFX Series)

```
show system buffers  
<infrastructure name | interconnect-device name | node-group name | root-only  
(infrastructure name | interconnect-device name | node-group name)>
```



## Description

Display information about the buffer pool that the Routing Engine uses for local traffic. Local traffic is the routing and management traffic that is exchanged between the Routing Engine and the Packet Forwarding Engine within the router or switch, as well as the routing and management traffic from IP (that is, from OSPF, BGP, SNMP, ping operations, and so on).

## Options

<b>none</b>	Show all buffer statistics.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show buffer statistics for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, show buffer statistics for all routers connected to the TX Matrix Plus router.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show buffer statistics for all of the chassis.
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for all members of the Virtual Chassis configuration.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Show buffer statistics for a fabric control Routing Engine or a fabric control Routing Engine.
<b>interconnect- device <i>name</i></b>	(QFabric systems only) (Optional) Show buffer statistics for the Interconnect device.
<b>lcc <i>number</i></b>	<p>(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show buffer statistics for a specific T640 router (or line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, show buffer statistics for a specific 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> </ul>

- 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Show buffer statistics for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Show buffer statistics for the Node group
<b>sfc</b>	(TX Matrix Plus routers only) (Optional) Show buffer statistics for the TX Matrix Plus router. Replace <i>number</i> with <b>0</b> .

## Additional Information

By default, when you issue the **show system buffers** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

A special type of memory buffer called a *cluster* is 2 KB in size. For more information, see *The Design and Implementation of the 4.4BSD Operation System* by McKusic, Bostic, Karels, and Quarterman.

## Required Privilege Level

view

## Output Fields

Table 37 on page 1074 describes the output fields for the **show system buffers** command. Output fields are listed in the approximate order in which they appear.

**Table 37: show system buffers Output Fields**

Field Name	Field Description
<b>mbufs in use</b>	Memory buffers (mbufs) are 128-byte buffers that are used for various purposes inside the kernel. Each memory buffer has a type, and the output itemizes the amount allocated for each type. Types with no memory buffers allocated are not displayed.
<b>mbufs allocated to packet headers</b>	Number of memory buffers currently holding packet headers
<b>mbufs allocated to control blocks</b>	Number of memory buffers currently holding the state for sockets.
<b>mbufs allocated to send data</b>	Number of memory buffers currently holding socket send data.
<b>mbufs allocated to pfe refill data</b>	Number of memory buffers currently holding Packet Forwarding Engine refill data.
<b>mbufs allocated to fxp data</b>	Number of memory buffers currently holding fxp data.
<b>mbufs allocated to socket names and addresses</b>	Number of memory buffers currently holding addresses for sockets.
<b>mbuf clusters in use</b>	Allocation statistics for memory buffer clusters.

Table 37: show system buffers Output Fields (*Continued*)

Field Name	Field Description
<b>allocated to network</b>	Total amount of memory in use by the networking and interprocess communication (IPC) code.
<b>requests for memory denied</b>	Number of times a memory allocation request within the IPC and networking code failed.
<b>requests for memory delayed</b>	Number of times a memory allocation request within the IPC and networking code was postponed.
<b>calls to protocol drain routines</b>	Number of times a memory allocation request within the IPC and networking code triggered a memory reclamation attempt.

## Sample Output

### show system buffers

```

user@host> show system buffers
397/893/1290 mbufs in use (current/cache/total)
395/331/726/30000 mbuf clusters in use (current/cache/total/max)
384/256 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
889K/885K/1774K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/5/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

**show system buffers scc (TX Matrix Router)**

```

user@host> show system buffers scc
213 mbufs in use:
    11 mbufs allocated to packet headers
    26 mbufs allocated to socket names and addresses
    2 mbufs allocated to socket options
    17 mbufs allocated to socket send data
    2 mbufs allocated to pfe data
    155 mbufs allocated to fxp data (rx)
    511 mbufs allocated to <mbuf type 86>
    256 mbufs allocated to <mbuf type 92>
924/1162 mbuf clusters in use
2788 Kbytes allocated to network (75% in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines

```

**show system buffers sfc (TX Matrix Plus Router)**

```

user@host> show system buffers sfc 0

sfc0-re0:
-----
4363/2807/7170 mbufs in use (current/cache/total)
4358/1968/6326/30000 mbuf clusters in use (current/cache/total/max)
256/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
9806K/4637K/14444K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/10/1024 sfbufs in use (current/peak/max)
0 requests for sfbufs denied
0 requests for sfbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

**show system buffers all-chassis (TX Matrix Plus Router)**

```
user@host> show system buffers all-chassis
```

```
sfc0-re0:
```

```
-----
4363/2807/7170 mbufs in use (current/cache/total)
4358/1968/6326/30000 mbuf clusters in use (current/cache/total/max)
256/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
9806K/4637K/14444K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/10/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

```
lcc0-re0:
```

```
-----
772/2558/3330 mbufs in use (current/cache/total)
772/598/1370/30000 mbuf clusters in use (current/cache/total/max)
768/512 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1737K/1835K/3572K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines
```

```
lcc1-re0:
```

```
-----
773/2437/3210 mbufs in use (current/cache/total)
773/453/1226/30000 mbuf clusters in use (current/cache/total/max)
```

```

768/384 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1739K/1515K/3254K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/7/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
lcc2-re0:
```

```

-----
816/2514/3330 mbufs in use (current/cache/total)
816/554/1370/30000 mbuf clusters in use (current/cache/total/max)
768/512 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1836K/1736K/3572K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile

```

### show system buffers node-group (QFabric System)

```

user@switch> show system buffers node-group
node1
node-group node1:
-----
2/2698/2700 mbufs in use (current/cache/total)
2/1520/1522/30000 mbuf clusters in use (current/cache/total/max)
0/1280 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)

```

```

4K/3714K/3719K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/6/6656 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
re0:
```

```

-----
516/639/1155 mbufs in use (current/cache/total)
515/147/662/30000 mbuf clusters in use (current/cache/total/max)
512/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1159K/453K/1612K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```

```
re1:
```

```

-----
519/771/1290 mbufs in use (current/cache/total)
518/176/694/30000 mbuf clusters in use (current/cache/total/max)
512/128 mbuf+clusters out of packet secondary zone in use (current/cache)
0/0/0/0 4k (page size) jumbo clusters in use (current/cache/total/max)
0/0/0/0 9k jumbo clusters in use (current/cache/total/max)
0/0/0/0 16k jumbo clusters in use (current/cache/total/max)
1165K/544K/1710K bytes allocated to network (current/cache/total)
0/0/0 requests for mbufs denied (mbufs/clusters/mbuf+clusters)
0/0/0 requests for jumbo clusters denied (4k/9k/16k)
0/4/1024 sbufs in use (current/peak/max)
0 requests for sbufs denied
0 requests for sbufs delayed
0 requests for I/O initiated by sendfile
0 calls to protocol drain routines

```



## 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

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system certificate

#### IN THIS SECTION

- [Syntax | 1080](#)
- [Description | 1081](#)
- [Options | 1081](#)
- [Required Privilege Level | 1081](#)
- [Output Fields | 1081](#)
- [Sample Output | 1082](#)
- [Release Information | 1083](#)

## Syntax

```
show system certificate  
<certificate-id>
```

## Description

(Encryption interface on M Series, T Series routers, QFX Series, and OCX Series switches only) Display installed certificates signed by the Juniper Networks certificate authority.

## Options

**none** Display all installed certificates signed by the Juniper Networks certificate authority.

***certificate-id*** (Optional) Display the details of a particular certificate.

## Required Privilege Level

maintenance

## Output Fields

[Table 38 on page 1081](#) lists the output fields for the **show system certificate** command. Output fields are listed in the approximate order in which they appear.

**Table 38: show system certificate Output Fields**

Field Name	Field Description
<b>Certificate identifier</b>	Unique identifier associated with a certificate. The certificate identifier is the common name of the subject.

Table 38: show system certificate Output Fields (Continued)

Field Name	Field Description
<b>Issuer</b> <b>Subject</b>	Information about the certificate issuer and the distinguished name (DN) of the issuer, respectively: <ul style="list-style-type: none"> <li>• <b>Organization</b>—Name of the owner's organization.</li> <li>• <b>Organizational unit</b>—Name of the owner's department.</li> <li>• <b>Country</b>—Two-character country code in which the owner's system is located.</li> <li>• <b>State</b>—State in the USA in which the owner is using the certificate.</li> <li>• <b>Locality</b>—City in which the owner's system is located.</li> <li>• <b>Common name</b>—Name of the owner of the certificate.</li> <li>• <b>E-mail address</b>—E-mail address of the owner of the certificate.</li> </ul>
<b>Validity</b>	When a certificate is valid.
<b>Signature algorithm</b>	Encryption algorithm applied to the installed certificate.
<b>Public key algorithm</b>	Encryption algorithm applied to the public key.

## Sample Output

### show system certificate

```

user@host> show system certificate
Certificate identifier: Dallas-v3
  Issuer:
Organization: Juniper Networks, Organizational unit: Juniper CA,
Country: US, State: CA, Locality: Sunnyvale, Common name: Dallas CA,
E-mail address:ca@example.com
  Subject:

```

```
Organization: Juniper Networks, Organizational unit: Juniper CA,  
Country: US, State: CA, Locality: Sunnyvale, Common name: Dallas-v3,  
E-mail address:ca@example.com  
Validity:  
  Not before: Mar 13 03:23:25 2004 GMT  
  Not after: Mar 24 03:23:25 2014 GMT  
Signature algorithm: sha1WithRSAEncryption  
Public key algorithm: dsaEncryption
```

## show system certificate (QFX Series)

```
user@host> show system certificate  
Certificate identifier: Dallas-v3  
  Issuer:  
Organization: Juniper Networks, Organizational unit: Juniper CA,  
Country: US, State: CA, Locality: Sunnyvale, Common name: Dallas CA,  
E-mail address:ca@example.com  
  Subject:  
Organization: Juniper Networks, Organizational unit: Juniper CA,  
Country: US, State: CA, Locality: Sunnyvale, Common name: Dallas-v3,  
E-mail address:ca@example.com  
Validity:  
  Not before: Mar 13 03:23:25 2004 GMT  
  Not after: Mar 24 03:23:25 2014 GMT  
Signature algorithm: sha1WithRSAEncryption  
Public key algorithm: dsaEncryption
```

## Release Information

Command introduced before Junos OS Release 7.4.

# show system commit

## IN THIS SECTION

- [Syntax | 1084](#)
- [Description | 1084](#)
- [Options | 1084](#)
- [Required Privilege Level | 1085](#)
- [Output Fields | 1085](#)
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- [Release Information | 1088](#)

## Syntax

```
show system commit
<revision | server | synchronize-server pending-jobs | include-configuration-
revision>
```

## Description

Display the system commit history and pending commit operations.

## Options

- |                 |  |
|-----------------|--|
| <b>none</b>     | Display the last 50 commit operations on the static configuration database, starting with the most recent. |
| <b>revision</b> | (Optional) Display the revision number of the active configuration of the Routing Engine(s).               |

**server** (Optional) Display the commit server status.

**NOTE:** By default, the status of the commit server is “Not running”. The commit server starts running only when a commit job is added to the batch.

**synchronize-server pending-jobs** (Optional) Display the pending commit synchronize operations for all instances of the ephemeral configuration database on an MX Series Virtual Chassis or a device with dual Routing Engines. This option can only be executed on the primary Routing Engine of the Virtual Chassis primary router or the dual Routing Engine system.

**include-configuration-revision** (Optional) Display configuration revision information including the revision identifier string for each commit record.

## Required Privilege Level

view

## Output Fields

Table 39 on page 1085 describes the output fields for the **show system commit** command. Output fields are listed in the approximate order in which they appear.

**Table 39: show system commit Output Fields**

Field Name	Field Description	Level of Output
<i>&lt;number&gt;</i>	Displays the last 50 commit operations listed, most recent to first. The identifier <i>&lt;number&gt;</i> designates a configuration created for recovery using the <b>request system configuration rescue save</b> command.	<b>none</b>
<i>&lt;time-stamp&gt;</i>	Date and time of the commit operation.	<b>none</b>

Table 39: show system commit Output Fields (Continued)

Field Name	Field Description	Level of Output
<code>&lt;root&gt;/ &lt;username&gt;</code>	User who executed the commit operation.	none
<code>&lt;method&gt;</code>	<p>Method used to execute the commit operation:</p> <ul style="list-style-type: none"> <li>• <b>CLI</b>—CLI interactive user performed the commit operation.</li> <li>• <b>Junos XML protocol</b>—Junos XML protocol client performed the commit operation.</li> <li>• <b>synchronize</b>—The <b>commit synchronize</b> command was performed on the other Routing Engine.</li> <li>• <b>snmp</b>—An SNMP <b>set</b> request caused the commit operation.</li> <li>• <b>button</b>—A button on the router or switch was pressed to commit a rescue configuration for recovery.</li> <li>• <b>autoinstall</b>—A configuration obtained through autoinstallation was committed.</li> <li>• <b>other</b>—When there is no login name associated with the session, the values for user and client default to root and other. For example, during a reboot after package installation, mgd commits the configuration as a system commit, and there is no login associated with the commit.</li> </ul>	none

## Sample Output

### show system commit

```

user@host> show system commit
0   2003-07-28 19:14:04 PDT by root via other
1   2003-07-25 22:01:36 PDT by user via cli
2   2003-07-25 22:01:32 PDT by user via cli

```

```

3   2003-07-25 21:30:13 PDT by root via button
4   2003-07-25 13:46:48 PDT by user via cli
5   2003-07-25 05:33:21 PDT by root via autoinstall
...
rescue 2002-05-10 15:32:03 PDT by root via other

```

### show system commit (At a Particular Time)

```

user@host> show system commit
commit requested by root via cli at Tue May 7 15:59:00 2002

```

### show system commit (At the Next Reboot)

```

user@host> show system commit
commit requested by root via cli at reboot

```

### show system commit (Rollback Pending)

```

user@host> show system commit
0 2005-01-05 15:00:37 PST by root via cli commit confirmed, rollback in 3mins

```

### show system commit (QFX Series)

```

user@switch> show system commit
0 2011-11-25 19:17:49 PST by root via cli

```

### show system commit synchronize-server pending-jobs

```

user@host> show system commit synchronize-server pending-jobs

```

Job Id	Commit Synchronize Model
Database	Version
36	Asynchronous Commit
ephemeral	130
37	Asynchronous Commit
ephemeral	131



```

38          Asynchronous Commit
ephemeral          132
39          Asynchronous Commit
ephemeral          133
40          Asynchronous Commit
ephemeral          134
41          Asynchronous Commit
ephemeral          135
42          Asynchronous Commit
ephemeral          2

```

### show system commit include-configuration-revision

```

user@host> show system commit include-configuration-revision
0   2020-08-02 00:42:58 IST by user via cli re0-1596309177-4
1   2020-08-02 00:42:53 IST by user via cli re0-1596309173-3
2   2020-08-02 00:42:50 IST by user via cli re0-1596309170-2
3   2020-08-02 00:42:40 IST by user via other re0-1596309160-1

```

## Release Information

Command introduced before Junos OS Release 7.4.

Option **server** introduced in Junos OS Release 12.1 for the PTX Series router.

Option **revision** introduced in Junos OS Release 14.1.

Option **synchronize-server** introduced in Junos OS Release 17.2R1.

Option **include-configuration-revision** introduced in Junos OS Release 20.4R1 and Junos OS Evolved Release 20.4R1.

### RELATED DOCUMENTATION

*clear system commit*

[show system commit revision](#)

# show system connections

## IN THIS SECTION

- [Syntax | 1089](#)
- [Syntax \(EX Series\) | 1090](#)
- [Syntax \(TX Matrix Router\) | 1090](#)
- [Syntax \(TX Matrix Plus Router\) | 1090](#)
- [Syntax \(MX Series Router\) | 1090](#)
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## Syntax

```
show system connections
<extensive>
<inet | inet6>
<show-routing-instances>
```

## Syntax (EX Series)

```
show system connections
<extensive>
<all-members>
<inet | inet6>
<local>
<member member-id>
<show-routing-instances>
```

## Syntax (TX Matrix Router)

```
show system connections
<extensive>
<all-chassis | all-lcc | lcc number | scc>
<inet | inet6>
<show-routing-instances>
```

## Syntax (TX Matrix Plus Router)

```
show system connections
<extensive>
<all-chassis | all-lcc | lcc number | sfc number>
<inet | inet6>
<show-routing-instances>
```

## Syntax (MX Series Router)

```
show system connections
<extensive>
<all-members>
```

```
<inet | inet6>  
<local>  
<member member-id>  
<show-routing-instances>
```

## Syntax (QFX Series)

```
show system connections  
<extensive>  
<inet>  
<infrastructure name>  
<interconnect-device name>  
<node-group name>  
<show-routing-instances>
```

## Syntax (OCX Series)

```
show system connections  
<extensive>  
<inet>  
<show-routing-instances>
```

## Syntax (Junos OS Evolved)

```
show system connections  
<inet | inet6>  
<node node-name>
```

## Description

Display information about the active IP sockets on the Routing Engine. Use this command to verify which servers are active on a system and what connections are currently in progress.

## Options

<b>none</b>	Display information about all active IP sockets on the Routing Engine.
<b>extensive</b>	(Optional) Display exhaustive system process information, which, for TCP connections, includes the TCP control block. This option is useful for debugging TCP connections.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system connection activity for all the routers in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for all connected T1600 or T4000 LCCs
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for all members of the Virtual Chassis configuration.
<b>inet   inet6</b>	(Optional) Display IPv4 connections or IPv6 connections, respectively.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display system connection activity for the fabric control Routing Engines or fabric manager Routing Engines.
<b>interconnect- device <i>name</i></b>	(QFabric systems only) (Optional) Display system connection activity for the Interconnect device.
<b>lcc <i>number</i></b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for a specific router 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node <i>node-name</i></b>	(Junos OS Evolved only) (Optional) Display system connection activity for the specified node.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display system connection activity for the Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix router (or switch-card chassis).
<b>sfc</b>	(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix Plus router.
<b>show-routing-instances</b>	(Optional) Display routing instances.

## Additional Information

By default, when you issue the **show system connections** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

## Required Privilege Level

view

## Output Fields

Table 40 on page 1094 describes the output fields for the **show system connections** command. Output fields are listed in the approximate order in which they appear.

**Table 40: show system connections Output Fields**

Field Name	Field Description
<b>Proto</b>	Protocol of the socket: <b>IP</b> , <b>TCP</b> , or <b>UDP</b> for IPv4 or IPv6.
<b>Recv-Q</b>	Number of input bytes received by the protocol and waiting to be processed by the application.
<b>Send-Q</b>	Number of output bytes sent by the application and waiting to be processed by the protocol.
<b>Local Address</b>	Local address and port of the socket, separated by a period. An asterisk (*) indicates that the bound address is the wildcard address. Server sockets typically have the wildcard address and a well-known port bound to them.
<b>Foreign Address</b>	Foreign address and port of the socket, separated by a period. An asterisk (*) indicates that the address or port is a wildcard.
<b>Routing Instance</b>	(Displayed only when the <b>show-routing-instance</b> option is used.) Routing instances associated with active IP sockets on the Routing Engine.
<b>(state)</b>	For TCP, the protocol state of the socket.

## Sample Output

### show system connections

```

user@host> show system connections
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         (state)
tcp      0      2 192.0.2.16.513         192.0.2.254.894       ESTABLISHED
tcp      0      0 192.0.2.16.513         192.0.2.195.945       ESTABLISHED
tcp      0      0 *.23                   *.*                     LISTEN
tcp      0      0 *.22                   *.*                     LISTEN
tcp      0      0 *.513                   *.*                     LISTEN
tcp00 *.514          *.*                     LISTEN
tcp 0 0*.21          *.*                     LISTEN
tcp00 *.79          *.*                     LISTEN
tcp 00 *.1023        *.*                     LISTEN
tcp 00 *.111         *.*                     LISTEN
udp00192.192.0.2.1634    192.0.2.249.2049
udp00192.192.0.2.1627    192.0.2.254.2049
udp00192.192.0.2.1371    192.0.2.195.2049
udp00*.*          *.*
udp00*.9999        *.*
udp00 *.161         *.*
udp00192.192.0.2.1039    192.0.2.16.1023
udp00192.192.0.2.1038    192.0.2.16.1023
udp 00 192.0.2.16.1037    192.0.2.16.1023
udp00 192.0.2.16.1036    192.0.2.16.1023
udp00*.1022        *.*
udp00*.1023        *.*
udp00*.111         *.*
udp00*.*           *.*

```

### show system connections extensive

```

user@host> show system connections extensive

Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         (state)
Address                                     (state)
tcp4      0      6 192.0.2.15.23

```



```

192.0.2.138.3013                                ESTABLISHED
  sndsbcc:          6 sndsbmbcnt:          256 sndsbmbmax:    272000
sndsblowat:        2048 sndsbhiwat:        34000
  rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:    533120
rcvsblowat:        1 rcvsbhiwat:          66640
  proc id:          0 proc name:
    iss: 2566994072      sndup: 2566994491
  snduna: 2566994491      sndnxt: 2566994494      sndwnd:    64094
  sndmax: 2566994494      sndcwnd:    6589 sndssthresh:    2720
    irs: 236981199      rcvup: 236981325
  rcvnxt: 236981327      rcvadv: 237046862      rcvwnd:    66640
    rtt: 140058623      srtt:    15519      rttv:    908
  rxtcur:    1200 rxtshift:    0      rtseq: 2566994491
  rttmin:    1000 mss:    1360
    flags: SACK_PERMIT [0x2000200]
tcp4      0      0 10.255.165.93.179
10.255.165.203.65141                            ESTABLISHED
  sndsbcc:          0 sndsbmbcnt:          0 sndsbmbmax:    131072
sndsblowat:        2048 sndsbhiwat:        16384
  rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:    131072
rcvsblowat:        1 rcvsbhiwat:          16384
  proc id:          0 proc name:
    iss: 2555961065      sndup: 2555995917
  snduna: 2555995917      sndnxt: 2555995917      sndwnd:    16384
  sndmax: 2555995917      sndcwnd:    1000 sndssthresh: 1073725440
    irs: 2123825753      rcvup: 2123860681
  rcvnxt: 2123860681      rcvadv: 2123877065      rcvwnd:    16384
    rtt:    0      srtt:    3309      rttv:    72
  rxtcur:    1200 rxtshift:    0      rtseq: 2555995898
  rttmin:    1000 mss:    500
    flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]
tcp4      0      0 10.255.165.203.65141
10.255.165.93.179                              ESTABLISHED
  sndsbcc:          0 sndsbmbcnt:          0 sndsbmbmax:    131072
sndsblowat:        2048 sndsbhiwat:        16384
  rcvsbcc:          0 rcvsbmbcnt:          0 rcvsbmbmax:    131072
rcvsblowat:        1 rcvsbhiwat:          16384
  proc id:          5022 proc name:    rpd
    iss: 2123825753      sndup: 2123860662
  snduna: 2123860681      sndnxt: 2123860681      sndwnd:    16384
  sndmax: 2123860681      sndcwnd:    1000 sndssthresh: 1073725440
    irs: 2555961065      rcvup: 2555995917
  rcvnxt: 2555995917      rcvadv: 2556012301      rcvwnd:    16384

```

```

      rtt:          0      srtt:          3279      rttv:           22
    rxtcur:        1200  rxtshift:         0      rtseq: 2123860662
    rttmin:        1000  mss:           500
      flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x100003e0]
tcp4      0      0  10.255.165.203.179
10.255.165.113.52404      ESTABLISHED
    sndsbcc:         0  sndsbmbcnt:         0  sndsbmbmax:    131072
    sndsblowat:      2048  sndsbhiwat:    16384
    rcvsbcc:         0  rcvsbmbcnt:         0  rcvsbmbmax:    131072
    rcvsblowat:      1  rcvsbhiwat:    16384
    proc id:         0  proc name:
      iss: 1109297190      sndup: 1109332099
    snduna: 1109332118      sndnxt: 1109332118      sndwnd:    16384
    sndmax: 1109332118      sndcwnd:    1000  sndssthresh: 1073725440
    irs: 1476831634      rcvup: 1476866449
    rcvnxt: 1476866449      rcvadv: 1476882833      rcvwnd:    16384
    rtt:          0      srtt:          3235      rttv:           18
    rxtcur:        1200  rxtshift:         0      rtseq: 1109332099
    rttmin:        1000  mss:           500
      flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]

```

### show system connections show-routing-instances

```

user@host> show system connections show-routing-instances
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address          Foreign Address         Routing
Instance      (state)
tcp4          0      0 192.0.2.204.23        192.0.2.19.4267
default      ESTABLISHED
tcp4          0      0 192.0.2.204.58540    10.209.7.138.23
default      ESTABLISHED
tcp4          0      0 192.0.2.204.23        192.0.2.19.1098
default      ESTABLISHED
tcp4          0      0 192.0.2.1.57668      192.0.2.1.179
default      ESTABLISHED
tcp4          0      0 192.0.2.1.179        192.0.2.1.49209
default      ESTABLISHED
tcp4          0      0 192.0.2.1.6234       192.0.2.17.1024
__juniper_private1__ ESTABLISHED
tcp4          0      0 192.0.2.4.9000       192.0.24.59103
__juniper_private1__ ESTABLISHED

```

```

tcp4      0      0 1192.0.2.4.59103      192.0.2.4.9000
__juniper_private1__ ESTABLISHED
tcp4      0      0 *.32012                *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.9000                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33007                 *.*
__juniper_private2__ LISTEN
tcp46     0      0 *.179                   *.*
default                   LISTEN
tcp4      0      0 *.179                   *.*
default                   LISTEN
tcp4      0      0 *.6154                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6153                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.7000                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6152                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6156                  *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33005                 *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.31343                 *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.31341                 *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.32003                 *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.666                   *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.38                     *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.3221                  *.*
default                   LISTEN

```

## 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.

Options **extensive** and **show-routing-instance** deprecated in Junos OS Evolved Release 17.3.

**node** option introduced in Junos OS Evolved Release 18.3R1.

## RELATED DOCUMENTATION

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system core-dumps

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## Syntax

```
show system core-dumps
<re0>
<re1>
<routing-engine>
<satellite [fpc-slot-id | device-alias alias-name]>
```

## Syntax (SRX Series)

```
show system core-dumps
```

## Syntax (Junos OS Evolved)

```
show system core-dumps
```

## Syntax (EX Series Switches)

```
show system core-dumps
<all-members>
<local>
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system core-dumps
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
show system core-dumps
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (QFX Series and OCX Series)

```
show system core-dumps
<component (UUID | serial number | all)>
<display-period (hours | minutes | seconds)>
<display-order>
<kernel-crashinfo component (UUID | serial number)>
<repository (core | log)>
```

## Description

Show core files on all routers or switches running Junos OS. You can use the **show system core-dumps** command to show a list of system core files created when the router or switch has failed. This command can be useful for diagnostic purposes. Each list item includes the file permissions, number of links, owner, group, size, modification date, and path and filename. If dual Routing Engines are present, you can view core-dump files for either routing engine or both routing engines together. On a QFabric system, you can view core-dump files on individual QFabric system devices as well as on the entire QFabric system.

For Junos OS, all cores files are stored at **/var/core/re**. For Junos OS Evolved, a core file created during early bootup is stored in **/var/core/re**. But a core file created later in the bootup, for example, after the Routing Engine slot number can be determined, is stored in **/var/core/re0** or **/var/core/re1**. The command **show system core-dumps** continues to show all cores generated.

The core files are placed in the **/var/tmp/corefiles** on the SPC3 cards. Each PIC of the SPC3 card has five core files quota on the RE. When no more than five core files from one SPC3 PIC are on the RE, and the RE hard drive has more than 5 GB capacity, core file from the specific PIC is saved at the time it arrives. When there are already five core files from one SPC3 PIC on the RE, the newly arrived core file from the specific PIC replaces the last core file created by that PIC on the RE. When 5 GB capacity limit is reached, core file is not copied onto the RE. Only a zero sized shadow file with the same file name suffixed by ".shadow" is created. The core file is reached on the specific SPC3 PIC.

## Options

**none**

Display a list of all existing core-dump files.

**NOTE:** If dual Routing Engines are present, then only the core-dump files for the active Routing Engine are listed. For Junos OS Evolved, core-dump files for all Routing Engines are listed.

**all-chassis**

(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on a TX Matrix router, display system core files for the TX Matrix router switch-card chassis [SCC] and all the T640 routers [LCCs] connected to the TX Matrix router.

On a routing matrix based on a TX Matrix Plus router, display system core files for the TX Matrix Plus router (switch-fabric chassis [SFC]) and all the T1600 routers [LCCs] connected to the TX Matrix Plus router.

**<all-lcc | lcc *number*>**

(TX Matrix and TX Matrix Plus routers only) (Optional) On a routing matrix based on the TX Matrix router, display core dump files for all T640 routers (line-card chassis [LCCs]) or a specific T640 router [LCC] connected to the TX Matrix router.

On a routing matrix based on the TX Matrix Plus router, display logging information for all T1600 routers (line-card chassis [LCCs]) or a specific T1600 router (LCC) connected to the TX Matrix Plus router. When using the **lcc *number*** option, replace ***number*** with a value from **0** through **3**.

**NOTE:** The **all-chassis** option displays system core files for the SCC or SFC and the LCCs connected to the SCC or SFC in the routing matrix while the **all-lcc** option only displays system core files for the LCCs in the routing matrix.

**all-members**

(EX4200 switches) (Optional) Display system core files on all members of the Virtual Chassis configuration.

**component (*UUID* | *serial number* | *all*)**

(QFabric systems only) (Optional) Display a list of core-dump files located on individual QFabric system device or on the entire QFabric system.

<b>display-order</b> ( <b>timestamp-sort</b>   <b>alphanumeric-sort</b> )	(QFabric systems only) (Optional) Display list of debug artifacts generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds—or according to their filename.
<b>display-period</b> ( <i>hours</i>   <i>minutes</i>   <i>seconds</i> )	(QFabric systems only) (Optional) Display core-dump files generated within the specified period—for example, within the last hour, within the last 20 minutes, or within the last 32 seconds.
<b>kernel-crashinfo</b> <b>component</b> ( <i>UUID</i>   <i>serial number</i> )	(QFabric systems only) (Optional) Display kernel crash information from the EEPROM on a QFabric system device.
<b>local</b>	(EX4200 switches only) (Optional) Display system core files on the local Virtual Chassis member.
<b>member</b> <i>member-id</i>	(EX4200 switches only) (Optional) Display system core files on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value from 0 through 9.
<b>node</b> <i>node-name</i>	(Optional) (Junos OS Evolved only) Display system core files generated on the specified node.
<b>re0</b>	(Dual Routing Engines only) Display the core-dump files on re0.
<b>re1</b>	(Dual Routing Engines only) Display the coredump files on re1.
<b>repository</b> ( <b>core</b>   <b>log</b> )	(QFabric systems only) (Optional) Specify either the core or log repository in which to view core-dump files.
<b>routing-engine</b> ( <b>backup</b>   <b>both</b>   <b>local</b>   <b>master</b>   <b>other</b> )	(Dual routing engines only) Display a list of core-dump files for either the backup, local, primary, or other routing engine or both routing engines.
<b>satellite</b> [ <i>fpc-slot-id</i>   <i>device-alias</i> <i>alias-</i> <i>name</i> ]	(Junos Fusion only)(Optional) Display system core files for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.
<b>scc</b>	(TX Matrix routers only) (Optional) Display system core files on the TX Matrix router (or switch-card chassis).
<b>sfc</b>	(TX Matrix Plus routers only) (Optional) Display system core files on the TX Matrix Plus router (or switch-fabric chassis).



## Required Privilege Level

view

## Output Fields

Table 41 on page 1104 describes the output fields for the **show system core-dumps** command. Output fields are listed in the approximate order in which they appear.

**Table 41: show system core-dumps Output Fields**

Field Name	Field Description
<i>Permissions</i>	Read/write permissions for the file named.
<i>Links</i>	Number of links to the file.
<i>Owner</i>	Name of the file owner.
<i>Group</i>	Name of the group with file access.
<i>File size</i>	File size in bytes.
<i>Modified</i>	Last file modification date and time.
<i>Path/filename</i>	File path where the file resides and the filename.  (MX Series routers only) When you display the core files for an MX Series Virtual Chassis, the <b>show system core-dumps</b> command does not display information about files pertaining to the relayd process.

Table 41: show system core-dumps Output Fields (*Continued*)

Field Name	Field Description
<b>Repository scope:</b>	Repository where core-dump files and log files are stored. The core-dump files are located in the <b>core</b> repository, and the log files are located in the <b>log</b> repository. The default <b>Repository scope</b> is shared since both the <b>core</b> and <b>log</b> repositories are shared by all of the QFabric system devices.
<b>Repository head:</b>	Path to the top-level repository location.
<b>Repository name:</b>	Name of the repository: <b>core</b> or <b>log</b> .
<b>List of nodes for core repository:</b>	List of core-dump files associated with a particular QFabric system device located in the core repository.
<b>Node Group</b>	Name of the QFabric system device.
<b>Node Identifier</b>	UUID or serial number of the QFabric system device.
<b>Num</b>	Number of core-dump and log files.
<b>Model</b>	Model number of the QFabric system device.
<b>Usage</b>	Usage of the repository in megabytes.
<b>Total usage of core repository:</b>	Total usage of core-dump files associated with a particular QFabric system device located in the core repository. Usage is specified in megabytes and as a percentage.
<b>Total usage of log repository:</b>	Total usage of log files associated with a particular QFabric system device located in the log repository. Usage is specified in megabytes and as a percentage.

Table 41: show system core-dumps Output Fields (*Continued*)

Field Name	Field Description
<b>List of nodes for core repository:</b>	List of core-dump files associated with a particular QFabric system device located in the core repository.
<b>List of nodes for log repository:</b>	List of log files associated with a particular QFabric system device located in the log repository.
<b>Filename</b>	Name of the core-dump file.
<b>Date</b>	Last core-dump file modification date and time.
<b>Size</b>	Size of the core-dump file.
<b>Core filename</b>	Filename of the core-dump file.
<b>Process name</b>	Name of the process that is generating a core-dump file or log file.
<b>Release</b>	Junos OS release.
<b>Build server</b>	Junos OS build server.
<b>Build date</b>	Junos OS build date.
<b>Stack trace</b>	Stack trace of the core-dump file.

## Sample Output

### show system core-dumps

This example shows the command output if core files exist.

```
user@host> show system core-dumps
-rw----- 1 root wheel 268369920 Jun 18 17:59 /var/crash/vmcore.0
-rw-rw---- 1 root field 3371008 Jun 18 17:53 /var/tmp/rpd.core.0
-rw-r--r-- 1 root wheel 27775914 Jun 18 17:59 /var/crash/kernel.0
```

### show system core-dumps

This example shows the command output if core files do not exist.

```
user@host> show system core-dumps
/var/crash/*core*: No such file or directory
/var/tmp/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
```

### show system core-dumps routing-engine both

This example shows the command output if dual Routing Engines are present.

```
user@host> show system core-dumps routing-engine both
re0:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 496776
-rw-rw---- 1 root field 11910589 Nov 8 13:20 chassisd.core.0.201311081320
...

-rw-rw---- 1 root field 11737227 Oct 28 14:21 rpd.core-
```

```

tarball.4.tgz.201310281421.3458162
total files: 10

rel:
-----
/var/crash/*core*: No such file or directory
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory

/var/tmp/cores:
total blocks: 3178420
-rw-rw---- 1 root field 19039721 Nov 8 14:29
chassisd.core.0.201311081429.3485600.gz
-rw-rw---- 1 root field 19039793 Nov 8 14:37
chassisd.core.1.201311081437.3485599.gz
..

-rw-rw---- 1 root field 11710113 Oct 17 15:26 rpd.core-
tarball.1.tgz.201310171526.3430028

```

## show system core-dumps (SRX Series)

```

user@host> show system core-dumps

/var/crash/*core*: No such file or directory
-rw-r--r-- 1 nobody wheel 1439949 Apr 24 10:38 /var/tmp/FPC0_PIC0.localhost.J-
UKERN.23421.1556127502.core.tgz
-rw-r--r-- 1 nobody wheel 1435531 Apr 24 10:44 /var/tmp/FPC0_PIC0.localhost.J-
UKERN.24702.1556127821.core.tgz
-rw-r--r-- 1 nobody wheel 288761042 Apr 24 10:32 /var/tmp/
FPC0_PIC0.localhost.flowd_spc3.elf.31620.1556126342.core.tgz
-rw-r--r-- 1 nobody wheel 35082 Apr 24 10:47 /var/tmp/
FPC0_PIC0.localhost.tnp_hello.20972.1556128038.core.tgz
-rw-r--r-- 1 nobody wheel 35367 Apr 24 10:49 /var/tmp/
FPC0_PIC0.localhost.tnp_hello.27233.1556128140.core.tgz
-rw-r--r-- 1 nobody wheel 35372 Apr 24 11:32 /var/tmp/
FPC0_PIC1.localhost.tnp_hello.22289.1556130737.core.tgz
-rw-r--r-- 1 nobody wheel 35357 Apr 24 10:51 /var/tmp/
FPC0_PIC1.localhost.tnp_hello.22492.1556128268.core.tgz
-rw-r--r-- 1 nobody wheel 34812 Apr 24 11:33 /var/tmp/
FPC0_PIC1.localhost.tnp_hello.24235.1556130795.core.tgz

```

```

-rw-r--r--  1 nobody wheel      35383 Apr 24 11:18 /var/tmp/
FPC0_PIC1.localhost.tnp_hello.27070.1556129899.core.tgz
-rw-r--r--  1 nobody wheel      34675 Apr 24 11:18 /var/tmp/
FPC0_PIC1.localhost.tnp_hello.31621.1556129928.core.tgz
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
/var/jails/rest-api/tmp/*core*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory
total files: 10

```

### show system core-dumps (TX Matrix Plus Router)

```

user@host> show system core-dumps
sfc0-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

/var/tmp/cores:
total 1627592
-rw-r--r--  1 root  field  535346090 May 15 07:36 rpd.core-
tarball.0.090515.0736.tgz
-rw-r--r--  1 root  field  105632057 May 15 07:37 rpd.core-
tarball.1.090515.0737.tgz
-rw-r--r--  1 root  field  101981681 May 15 07:38 rpd.core-
tarball.2.090515.0738.tgz
-rw-r--r--  1 root  field   85854573 May 15 07:40 rpd.core-
tarball.3.090515.0740.tgz
-rw-r--r--  1 root  field   4157845 May 15 08:18 rpd.core-
tarball.4.090515.0818.tgz

lcc0-re0:
-----
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory

/var/crash/cores:
total 8

```

```
/var/tmp/cores:
```

```
total 12
```

```
lcc1-re0:
```

```
-----  
/var/crash/kernel.*: No such file or directory
```

```
/tftpboot/corefiles/*core*: No such file or directory
```

```
/var/crash/cores:
```

```
total 8
```

```
/var/tmp/cores:
```

```
total 10024
```

```
-rw-r--r-- 1 root field 1875794 Apr 22 15:47 chassisd.core-  
tarball.0.090422.1547.tgz
```

```
-rw-r--r-- 1 root field 1894183 Apr 22 19:02 chassisd.core-  
tarball.0.090422.1902.tgz
```

```
-rw-r--r-- 1 root field 1290240 Apr 26 16:01 ksyncd_1558.core.0.090426.1601
```

```
lcc2-re0:
```

```
-----  
/var/crash/kernel.*: No such file or directory
```

```
/tftpboot/corefiles/*core*: No such file or directory
```

```
/var/crash/cores:
```

```
total 21124008
```

```
-rw-r--r-- 1 root wheel 1022376528 May 2 06:43 core-LCC2-  
EGFPC7.core.0.090502.0643
```

```
-rw-r--r-- 1 root wheel 1022376528 May 2 08:13 core-LCC2-  
EGFPC7.core.0.090502.0813
```

```
-rw-r--r-- 1 root wheel 1022376544 May 5 06:15 core-LCC2-  
EGFPC7.core.0.090505.0615
```

```
-rw-r--r-- 1 root wheel 1022376544 May 6 10:59 core-LCC2-  
EGFPC7.core.0.090506.1059
```

```
-rw-r--r-- 1 root wheel 1022376528 May 2 06:58 core-LCC2-  
EGFPC7.core.1.090502.0658
```

```
-rw-r--r-- 1 root wheel 754271232 May 5 06:33 core-LCC2-  
EGFPC7.core.1.090505.0633
```

```
-rw-r--r-- 1 root wheel 264897536 May 6 11:12 core-LCC2-  
EGFPC7.core.1.090506.1112
```

```
-rw-r--r-- 1 root wheel 1022376528 May 2 07:22 core-LCC2-  
EGFPC7.core.2.090502.0722
```

```

-rw-r--r-- 1 root wheel 163633152 May 5 06:52 core-LCC2-
EGFPC7.core.2.090505.0652
-rw-r--r-- 1 root wheel 171312128 May 6 12:13 core-LCC2-
EGFPC7.core.2.090506.1213
-rw-r--r-- 1 root wheel 1022376528 May 2 07:39 core-LCC2-
EGFPC7.core.3.090502.0739
-rw-r--r-- 1 root wheel 1022376528 May 2 07:55 core-LCC2-
EGFPC7.core.4.090502.0755
-rw-r--r-- 1 root wheel 427277312 May 7 04:47 core-LCC2-
STFPC4.core.0.090507.0447
-rw-r--r-- 1 root wheel 419609600 May 7 04:47 core-LCC2-
STFPC5.core.0.090507.0447
-rw-r--r-- 1 root wheel 432356352 May 7 04:47 core-LCC2-
STFPC6.core.0.090507.0447

/var/tmp/cores:
total 2568
-rw-r--r-- 1 root field 1290240 May 14 14:26 ksyncd_1540.core.0.090514.1426
...

```

### show system core-dumps (QFX3500 Switch)

```

user@switch> show system core-dumps
/var/crash/*core*: No such file or directory
-rw-rw---- 1 root field 1545143 Jun 4 2012 /var/tmp/pafxpc.core.0.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.1.gz
-rw-rw---- 1 root field 1545141 Jun 4 2012 /var/tmp/pafxpc.core.2.gz
-rw-rw---- 1 root field 1545146 Jun 4 2012 /var/tmp/pafxpc.core.3.gz
-rw-rw---- 1 root field 1545142 Jun 5 2012 /var/tmp/pafxpc.core.4.gz
/var/tmp/pics/*core*: No such file or directory
/var/crash/kernel.*: No such file or directory
/tftpboot/corefiles/*core*: No such file or directory
total 5

```

### show system core-dumps (QFabric Systems)

```

user@switch> show system core-dumps
Repository scope: shared
Repository head: /pbdata/export

```



List of nodes for core repository: /pbdata/export/rdumps/

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	0	fx-jvre	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	0	fx-jvre	0M
NW-NG-0	BBAK0394	0	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	0	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	0	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	0	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	0	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YW3803	0	qfxc08-3008	0M
IC-WS001	WS001/YN5999	0	qfxc08-3008	0M
node-device1	BBAK0372	0	qfx3500	0M
node-device1	EE3093	0	qfx3500	0M

Total usage of core repository:0M of 70000M (0.0%)

List of nodes for log repository: /pbdata/export/rlogs/

Node Group	Node Identifier	Num	Model	Usage
DG-0	BCF7208D-E44F-E011-802F-4171BAAC781D	0	qfx3100	0M
FM-0	73747cd8-0710-11e1-b6a4-00e081c5297e	1	fx-jvre	0M
DRE-0	77116f18-0710-11e1-a2a0-00e081c5297e	1	fx-jvre	0M
NW-NG-0	BBAK0394	1	qfx3500	0M
NW-NG-0	cd78871a-0710-11e1-878e-00e081c5297e	1	fx-jvre	0M
NW-NG-0	d0afda1e-0710-11e1-a1d0-00e081c5297e	3	fx-jvre	0M
FC-0	d31ab7a6-0710-11e1-ad1b-00e081c5297e	1	fx-jvre	0M
FC-1	d4d0f254-0710-11e1-90c3-00e081c5297e	1	fx-jvre	0M
IC-WS001	WS001	0	-	-
IC-WS001	WS001/YN5999	1	qfxc08-3008	0M
IC-WS001	WS001/YW3803	1	qfxc08-3008	0M
node-device1	BBAK0372	1	qfx3500	0M
node-device1	EE3093	1	qfx3500	0M

Total usage of log repository:0M of 70000M (0.0%)

### show system core-dumps component serial number display-order alphanumeric-sort repository core (QFabric Systems)

```
user@switch> show system core-dumps component BBAK8891 display-order alphanumeric-sort repository core
```

```

Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of core dumps for component BBAK8891
Repository location: /pbdata/export/rdumps/BBAK8891
Filename                               Date                               Size
-----                               -
eswd.core.0.1361.11172011214257.gz     Nov 17 21:43:10 2011      4779553
eswd.core.1.80267.11172011214514.gz     Nov 17 21:45:19 2011      3541648
eswd.core.2.80682.11172011214535.gz     Nov 17 21:45:43 2011      2156683
vccpd.core.0.1195.11182011151131.gz     Nov 18 15:11:35 2011      375617
Number of core dumps in repository:4

```

### show system core-dumps display-period (QFabric Systems)

```

user@switch> show system core-dumps display-period 24h
  show system core-dumps display-period 24h
Repository scope: shared
Repository head: /pbdata/export
List of core dumps at repository: /pbdata/export/rdumps
Delta timespec: Last 24h
Component: BBAK8273
Filename                               Size                               Date
-----                               -
vccpd.core.0.1195.11182011151131.gz     Nov 18 15:11:35 2011      375794
Component: cedb7b0e-0025-11e1-9a5f-00e081c52990
Filename                               Size                               Date
-----                               -
vccpd.core.0.1461.11182011151131.gz     Nov 18 15:11:31 2011      120951
Component: ee19c4f8-0025-11e1-aef6-00e081c52990
Filename                               Size                               Date
-----                               -
vccpd.core.0.1462.11182011151131.gz     Nov 18 15:11:31 2011      109420
Component: BBAK8281
Filename                               Size                               Date
-----                               -
vccpd.core.0.1196.11182011151131.gz     Nov 18 15:11:36 2011      375373
Component: BBAK8891
Filename                               Size                               Date
-----                               -
vccpd.core.0.1195.11182011151131.gz     Nov 18 15:11:35 2011      375617

```

Component: BBAK8276

Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz	Nov 18 15:11:35 2011	375350

Component: BBAK8868

Filename	Size	Date
vccpd.core.0.1196.11182011151130.gz	Nov 18 15:11:34 2011	376211

Component: BBAK8835

Filename	Size	Date
vccpd.core.0.1195.11182011151130.gz	Nov 18 15:11:35 2011	375700

Component: BBAK8283

Filename	Size	Date
vccpd.core.0.1195.11182011151131.gz	Nov 18 15:11:36 2011	368298

Component: YW3781/YW3781

Filename	Size	Date
vccpd.core.0.1220.11182011151131.gz	Nov 18 15:11:38 2011	380002

Component: 09726be2-0026-11e1-82d9-00e081c52990

Filename	Size	Date
vccpd.core.0.1461.11182011151130.gz	Nov 18 15:11:31 2011	119965

Component: BBAK8309

Filename	Size	Date
vccpd.core.0.1196.11182011151131.gz	Nov 18 15:11:36 2011	378930

Component: 303d476a-0026-11e1-abf4-00e081c52990

Filename	Size	Date
vccpd.core.0.1460.11182011151131.gz	Nov 18 15:11:31 2011	118385

Component: YW3798/YW3798

Filename	Size	Date
vccpd.core.0.1219.11182011151131.gz	Nov 18 15:11:36 2011	380455

List of log dumps at repository: /pbdata/export/rlogs

Delta timespec: Last 24h

Component: BBAK8273

Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz	Nov 18 15:11:39 2011	20415

Component: cedb7b0e-0025-11e1-9a5f-00e081c52990

Filename	Size	Date
vccpd.tarball.0.1461.11182011151131.tgz	Nov 18 15:11:33 2011	19651
Component: ee19c4f8-0025-11e1-aef6-00e081c52990		
Filename	Size	Date
vccpd.tarball.0.1462.11182011151133.tgz	Nov 18 15:11:36 2011	24650
Component: BBAK8281		
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz	Nov 18 15:11:41 2011	19445
Component: BBAK8891		
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz	Nov 18 15:11:41 2011	21916
Component: BBAK8276		
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz	Nov 18 15:11:39 2011	20461
Component: BBAK8868		
Filename	Size	Date
vccpd.tarball.0.1196.11182011151137.tgz	Nov 18 15:11:41 2011	21924
Component: BBAK8835		
Filename	Size	Date
vccpd.tarball.0.1195.11182011151137.tgz	Nov 18 15:11:39 2011	19424
Component: BBAK8283		
Filename	Size	Date
vccpd.tarball.0.1195.11182011151138.tgz	Nov 18 15:11:42 2011	31186
Component: YW3781/YW3781		
Filename	Size	Date
vccpd.tarball.0.1220.11182011151141.tgz	Nov 18 15:11:45 2011	27565
Component: 09726be2-0026-11e1-82d9-00e081c52990		
Filename	Size	Date
vccpd.tarball.0.1461.11182011151130.tgz	Nov 18 15:11:34 2011	19613
Component: BBAK8309		
Filename	Size	Date
vccpd.tarball.0.1196.11182011151138.tgz	Nov 18 15:11:46 2011	50362

```

Component: 303d476a-0026-11e1-abf4-00e081c52990
Filename                               Size                               Date
vccpd.tarball.0.1460.11182011151133.tgz  Nov 18 15:11:33 2011      19360
Component: YW3798/YW3798
Filename                               Size                               Date
vccpd.tarball.0.1219.11182011151140.tgz  Nov 18 15:11:49 2011      24473

```

### show system core-dumps kernel-crashinfo component serial number (QFabric Systems)

```

user@switch> show system core-dumps kernel-crashinfo component A0001/YA0197
Node: A0001/YA0197

Information about previous kernel crash:

-- Kernel panic data --

Panic string: kdb_sysctl_panic
System uptime: 3 day 20 hr 59 min 40 sec Kernel crash time: 2011-11-15 Wed
15:25:17 Kernel build linkstamp: JUNOS 11.3I #0: 2011-11-10 20:42:27 UTC

-- Stacktrace of panicing context --
Processor 1 (crash monarch):
savectx+0x0 (c9552800,80214efc,802a7fbc,c88ad05c) ra 801b93a8 sz 0
kdm_kcore_save_crashinfo+0x254 (c9552800,0,802a7fbc,c88ad05c) ra 801b9f44 sz 784
kdm_kcore_kern_panic_event_handler+0x4b0 (c9552800,0,802a7fbc,c88ad05c) ra
8022a9b8 sz 88
panic+0x1d0 (c9552800,0,4,77fed534) ra 802540c0 sz 56
kdb_sysctl_panic+0x70 (c9552800,0,4,77fed534) ra 80237e58 sz 40 sysctl_root
+0x12c (c9552800,0,4,e8bc5cf8) ra 80238e50 sz 48
userland_sysctl+0x164 (c9552800,0,4,e8bc5cf8) ra 8023956c sz 104
__sysctl+0xe4 (c9552800,0,4,e8bc5cf8) ra 806d62e8 sz 160
trap+0xe1c (c9552800,0,4,e8bc5cf8) ra 80896e68 sz 128
MipsUserGenException+0x1a4 (c9552800,0,4,405cd12c) ra 0 sz 0
pid 82340, process: sysctl

Processor 0:
restoreintr+0x14 (1,81bca820,3,0) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,81bca820,3,0) ra 8025d354 sz 24
sleepq_release+0x64 (1,81bca820,3,0) ra 8025e670 sz 24

```

```
sleepq_timeout+0x224 (1,81bca820,3,0) ra 80240294 sz 48
softclock+0x434 (1,81bca820,3,0) ra 802067f8 sz 80
ithread_loop+0x244 (1,81bca820,3,0) ra 80200e28 sz 64 fork_exit+0xc0
(1,81bca820,3,0) ra 80897c28 sz 48
MipsNMIException+0x34 (1,81bca820,3,0) ra 0 sz 0
pid 82340, process: sysctl

Processor 2:
cpu_idle+0x20 (80960000,51bbc,2031df,81bca1b8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2031df,81bca1b8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2031df,81bca1b8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2031df,81bca1b8) ra 0 sz 0
pid 82340, process: sysctl

Processor 3:
cpu_idle+0x20 (80960000,51bbc,2038df,81bca300) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2038df,81bca300) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2038df,81bca300) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2038df,81bca300) ra 0 sz 0
pid 82340, process: sysctl

Processor 4:
cpu_idle+0x20 (80960000,51bbc,2037df,81bca448) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,2037df,81bca448) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,2037df,81bca448) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,2037df,81bca448) ra 0 sz 0
pid 82340, process: sysctl

Processor 5:
restoreintr+0x14 (1,51bbc,203edf,81bca590) ra 806cdc3c sz 0
spinlock_exit+0x30 (1,51bbc,203edf,81bca590) ra 80204a34 sz 24 idle_proc+0x21c
(1,51bbc,203edf,81bca590) ra 80200e28 sz 56 fork_exit+0xc0
(1,51bbc,203edf,81bca590) ra 80897c28 sz 48
MipsNMIException+0x34 (1,51bbc,203edf,81bca590) ra 0 sz 0
pid 82340, process: sysctl

Processor 6:
cpu_idle+0x20 (80960000,51bbc,205cdf,81bca6d8) ra 80204948 sz 24 idle_proc+0x130
(80960000,51bbc,205cdf,81bca6d8) ra 80200e28 sz 56 fork_exit+0xc0
(80960000,51bbc,205cdf,81bca6d8) ra 80897c28 sz 48
MipsNMIException+0x34 (80960000,51bbc,205cdf,81bca6d8) ra 0 sz 0
pid 82340, process: sysctl
```

```

Processor 7:
lockmgr+0x5ac (c97e8484,c8dd9800,0,c8dd9800) ra 8c11c81c sz 48
sal_sem_take+0x134 (c97e8484,c8dd9800,0,c8dd9800) ra 8c351108 sz 56
_bcm_esw_linkscan_thread+0x45c (c97e8484,c8dd9800,0,c8dd9800) ra 8c11cdb4 sz 104
sal_thread_start_wrap+0x74 (c97e8484,c8dd9800,0,c8dd9800) ra 80200e28 sz 32
fork_exit+0xc0 (c97e8484,c8dd9800,0,c8dd9800) ra 80897c28 sz 48
MipsNMIException+0x34 (c97e8484,c8dd9800,0,c8dd9800) ra 0 sz 0
pid 82340, process: sysctl
-- End of stacktrace --

```

## show system core-dumps repository core (QFabric Systems)

```

user@switch> show system core-dumps repository core
Repository scope: shared
Repository head: /pbdata/export
Repository name: core
List of nodes for core repository: /pbdata/export/rdumps/
Node Group      Node Identifier                               Num  Model      Usage
-----
DG-0            BCF7208D-E44F-E011-802F-4171BAAC781D         0    qfx3100    0M
FM-0            73747cd8-0710-11e1-b6a4-00e081c5297e         0    fx-jvre    0M
DRE-0           77116f18-0710-11e1-a2a0-00e081c5297e         0    fx-jvre    0M
NW-NG-0         BBAK0394                                       0    qfx3500    0M
NW-NG-0         cd78871a-0710-11e1-878e-00e081c5297e         0    fx-jvre    0M
NW-NG-0         d0afda1e-0710-11e1-a1d0-00e081c5297e         0    fx-jvre    0M
FC-0            d31ab7a6-0710-11e1-ad1b-00e081c5297e         0    fx-jvre    0M
FC-1            d4d0f254-0710-11e1-90c3-00e081c5297e         0    fx-jvre    0M
IC-WS001        WS001                                           0    -          -
IC-WS001        WS001/YW3803                                    0    qfxc08-3008 0M
IC-WS001        WS001/YN5999                                    0    qfxc08-3008 0M
node-device1    BBAK0372                                       0    qfx3500    0M
node-device1    EE3093                                         0    qfx3500    0M
Total usage of core repository:0M of 70000M (0.0%)

```

## show system core-dumps repository log (QFabric Systems)

```

user@switch> show system core-dumps repository log
Repository scope: shared
Repository head: /pbdata/export

```

```

Repository name: log
List of nodes for log repository: /pbdata/export/rlogs/
Node Group          Node Identifier                               Num  Model          Usage
-----
DG-0                BCF7208D-E44F-E011-802F-4171BAAC781D         0    qfx3100        0M
FM-0                73747cd8-0710-11e1-b6a4-00e081c5297e         1    fx-jvre        0M
DRE-0              77116f18-0710-11e1-a2a0-00e081c5297e         1    fx-jvre        0M
NW-NG-0            BBAK0394                                       1    qfx3500        0M
NW-NG-0            cd78871a-0710-11e1-878e-00e081c5297e         1    fx-jvre        0M
NW-NG-0            d0afda1e-0710-11e1-a1d0-00e081c5297e         3    fx-jvre        0M
FC-0                d31ab7a6-0710-11e1-ad1b-00e081c5297e         1    fx-jvre        0M
FC-1                d4d0f254-0710-11e1-90c3-00e081c5297e         1    fx-jvre        0M
IC-WS001           WS001                                           0    -              -
IC-WS001           WS001/YN5999                                   1    qfxc08-3008   0M
IC-WS001           WS001/YW3803                                   1    qfxc08-3008   0M
node-device1       BBAK0372                                       1    qfx3500        0M
node-device1       EE3093                                         1    qfx3500        0M
Total usage of log repository:0M of 70000M (0.0%)

```

## Release Information

Command introduced before Junos OS Release 8.5.

**sfc** option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

**re0**, **re1**, and **routing-engine** options introduced for dual Routing Engines in Junos OS Release 13.1.

**satellite** option introduced in Junos OS Release 14.2R3.

**core-file-info** option is deprecated in Junos OS Release 16.1R3.

## show system directory-usage

### IN THIS SECTION

● Syntax | 1120



- [Syntax \(EX Series\) | 1120](#)
- [Syntax \(TX Matrix Router\) | 1121](#)
- [Syntax \(TX Matrix Plus Router\) | 1121](#)
- [Syntax \(MX Series Router\) | 1121](#)
- [Syntax \(QFX Series and OCX Series\) | 1121](#)
- [Description | 1122](#)
- [Options | 1122](#)
- [Required Privilege Level | 1123](#)
- [Output Fields | 1123](#)
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- [Release Information | 1125](#)

## Syntax

```
show system directory-usage
<depth number>
<path>
```

## Syntax (EX Series)

```
show system directory-usage
<all-members>
<depth number>
<local>
<member member-id>
<path>
```

## Syntax (TX Matrix Router)

```
show system directory-usage
<all-chassis | all-lcc | lcc number | scc>
<depth number>
<path>
```

## Syntax (TX Matrix Plus Router)

```
show system directory-usage
<all-chassis | all-lcc | lcc number | sfc number>
<depth number>
<path>
```

## Syntax (MX Series Router)

```
show system directory-usage
<all-members>
<depth number>
<local>
<member member-id>
<path>
```

## Syntax (QFX Series and OCX Series)

```
show system directory-usage
<depth number>
<path>
<infrastructure name>
```

```
<interconnect-device name>
<node-group name>
```

## Description

Display directory usage information.

## Options

<b>none</b>	Display all directory usage information.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display directory usage information about all the T640 routers (in a routing matrix based on a TX Matrix router). Display directory usage information about all the T1600 or T4000 routers (in a routing matrix based on a TX Matrix Plus router) in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display directory information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display directory information for all connected T1600 or T4000 LCCs.
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Display directory information for all members of the Virtual Chassis configuration.
<b>depth <i>number</i></b>	(Optional) Depth of the directory to traverse. This option is useful when you want to limit the output shown for a large file system.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display directory information for the fabric control Routing Engines and fabric manager Routing Engines.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display directory information for the Interconnect device.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display directory information for the Node group.
<b>lcc <i>number</i></b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display directory information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display directory information for a specific router 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display directory information for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Display directory information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b><i>path</i></b>	(Optional) Path or root directory to traverse.
<b>scc</b>	(TX Matrix router only) (Optional) Display directory information for the TX Matrix router (or switch-card chassis).
<b><i>sfc number</i></b>	(TX Matrix Plus routers only) (Optional) Display directory information for the TX Matrix Plus router. Replace <i>number</i> with <b>0</b> .

## Required Privilege Level

view

## Output Fields

[Table 42 on page 1124](#) describes the output fields for the **show system directory-usage** command. Output fields are listed in the approximate order in which they appear.

Table 42: show system directory-usage Output Fields

Field Name	Field Description
<i>bytes</i>	Number of bytes used by files in a directory.
<i>directory-name</i>	Name of the directory.

## Sample Output

### show system directory-usage scc (TX Matrix Router)

```

user@host> show system directory-usage /var/tmp
scc
      /var/tmp
1.0K   /var/tmp/vi.recover
2.0K   /var/tmp/instmp.tPMk8u
1.0K   /var/tmp/install
      /var/tmp/instmp.GUMpur
4.8M   /var/tmp/instmp.GUMpur/packages
6.4M   /var/tmp/troy1
297M   /var/tmp/dsw
      /var/tmp/pkg_tmp.2073
83K    /var/tmp/pkg_tmp.2073/bin
      /var/tmp/instmp.oMIDb1
89K    /var/tmp/instmp.oMIDb1/bin
      /var/tmp/instmp.byhMjR
4.6M   /var/tmp/instmp.byhMjR/packages
      /var/tmp/instmp.6fqHf3
1.7M   /var/tmp/instmp.6fqHf3/packages
      /var/tmp/instmp.mljECe
4.6M   /var/tmp/instmp.mljECe/packages

```

## show system directory-usage sfc (TX Matrix Plus Router)

```

user@switch> show system directory-usage /var/tmp
sfc 0
sfc0-re0:
-----
          /var/tmp
46K      /var/tmp/gres-tp
          /var/tmp/sec-download
2.0K    /var/tmp/sec-download/sub-download
2.0K    /var/tmp/vi.recover
2.0K    /var/tmp/install
795M    /var/tmp/cores
766K    /var/tmp/pr440594

```

## show system directory-usage (QFX Series and OCX Series)

```

user@switch> show system directory-usage
          /var/tmp
30K     /var/tmp/gres-tp
2.0K   /var/tmp/rtsdb
2.0K   /var/tmp/vi.recover
2.0K   /var/tmp/install
2.0K   /var/tmp/pics

```

## 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

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system firmware

## IN THIS SECTION

- [Syntax | 1126](#)
- [Description | 1126](#)
- [Options | 1126](#)
- [Required Privilege Level | 1127](#)
- [Output Fields | 1127](#)
- [Sample Output | 1128](#)
- [Release Information | 1130](#)

## Syntax

```
show system firmware  
<compatibility>
```

## Description

(J Series routers, MX240, MX480, MX960, MX2010, and MX2020 routers, PTX3000 and PTX5000 routers, EX8200 switches, QFX10008 switches only) Display firmware information.

## Options

**compatibility** (Optional) Display firmware compatibility information.

## Required Privilege Level

view

## Output Fields

Table 43 on page 1127 lists the output fields for the **show system firmware** command. Output fields are listed in the approximate order in which they appear.

**Table 43: show system firmware Output Fields**

Field Name	Field Description
<b>Part</b>	Physical part on the router or switch affected by the firmware.
<b>Type</b>	Type of firmware on the router or switch.
<b>Tag</b>	Location of the firmware on the interface.
<b>Current version</b>	Firmware version on the affected router or switch parts.
<b>Available version</b>	New versions of firmware for upgrading or downgrading.
<b>Status</b>	Firmware condition on the router or switch.
<b>Action</b>	Whether you can upgrade or downgrade, or if no action is available ( <b>none</b> ). This field is displayed only if the <b>show system firmware</b> command is used with the <b>compatibility</b> option.



## Sample Output

### show system firmware

```
user@host> show system firmware
Part                Type                Tag Current    Available Status
                   Type                version version
FPC 0               ROM Monitor 0      0    6.4.10      OK
Routing Engine 0 RE BIOS          0    0            OK
```

### show system firmware compatibility

```
user@host> show system firmware compatibility
Part                Type                Tag Current    Available Action
                   Type                version version
FPC 0               ROM Monitor 0      0    6.4.10      None
Routing Engine 0 RE BIOS          0    0            None
```

### show system firmware (QFX10008 Switch)

```
user@host>show system firmware
Part                Type                Status
CB 0                FPGA                OK
FPC 0               U-Boot              OK
CTRL                FPGA                PROGRAMMING
PORT                FPGA                PROGRAMMING
FPM                 FPGA                OK
FTC 0               FPGA                OK
FTC 1               FPGA                OK
SIB 0               FPGA                OK
SIB 1               FPGA                OK
SIB 2               FPGA                OK
SIB 3               FPGA                OK
SIB 4               FPGA                OK
SIB 5               FPGA                OK
```

### show system firmware (MX Series Routers with MIC3-100G-DWDM)

```

user@host> show system firmware
Part          Type          Tag Current  Available Status
                                     version  version
FPC 0         ROM Monitor  0 0  10.4.1      OK
FPC 1         ROM Monitor  0 0  10.4.1      OK
FPC 2         ROM Monitor  0 0  10.4.1      OK
  PIC 0       CMIC LTC 2/0  1 .0         1.0         OK
FPC 3         ROM Monitor  0 0  10.4.1      OK
FPC 4         ROM Monitor  0 0  13.3.1      OK
FPC 4         MPCS(0)      2 0.24.0     OK
Routing Engine 0 RE BIOS      0 1.18       OK
Routing Engine 1                0 1.18       OK

```

The current firmware version **.0** does not match the available version **1.0**. This output displays the status before the firmware upgrade.

### show system firmware (MX Series Routers with MIC3-100G-DWDM)

```

user@host> show system firmware
Part          Type          Tag Current  Available Status
                                     version  version
FPC 0         ROM Monitor  0 0  10.4.1      OK
FPC 1         ROM Monitor  0 0  10.4.1      OK
FPC 2         ROM Monitor  0 0  10.4.1      OK
  PIC 0       CMIC LTC 2/0  1 1.0        1.0         UPGRADED SUCCESSFULLY
FPC 3         ROM Monitor  0 0  10.4.1      OK
FPC 4         ROM Monitor  0 0  13.3.1      OK
FPC 4         MPCS(0)      2 0.24.0     OK
Routing Engine 0 RE BIOS      0 1.18       OK
Routing Engine 1                0 1.18       OK

```

The current firmware version **1.0** matches the available version **1.0**. This output displays the status after the firmware upgrade.

### show system firmware (PTX10003-80C Routers)

```

user@router> show system firmware

```

Part	Type	Tag	Current version	Available version	Status
CB 0	MBAM FPGA	0	181011.09	181011.09	OK
FPC 0	PBAM FPGA	0		181011.09	OK
FPC 0	QBAM FPGA	1		181011.0B	OK
FPC 1	PBAM FPGA	0	181011.09	181011.09	OK
FPC 1	QBAM FPGA	1	181011.0B	181011.0B	OK
PSM 0	Psm MCU AC	0	0116.0036	0209.9205	OK
PSM 1	Psm MCU AC	0	255255.255255	0209.9205	OK
RE 0	UBAM FPGA	0	181023.0F	181023.0F	OK
RE 0	i40e	1	6.01	6.01	OK
RE 0	SSD Primary	2	SBR12050	SBR12050	OK
RE 0	SSD Secondary	3	SBR12050	SBR12050	OK
RE 0	BIOS ROM	4	14.1	15.01	OK

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C routers, the **show system firmware** command displays information based on the accessibility of the device and not the FRU state. The firmware information is cached in the FRU online state if the device is accessible. This cached information is displayed even when the FRU is in error or offline condition.

## Release Information

Command introduced in Junos OS Release 7.4.

# show system reboot

### IN THIS SECTION

- [Syntax | 1131](#)
- [Syntax \(EX Series and MX Series\) | 1131](#)
- [Syntax \(TX Matrix Router\) | 1131](#)
- [Syntax \(TX Matrix Plus Router\) | 1132](#)

- [Syntax \(QFX Series and OCX Series\) | 1132](#)
- [Syntax \(Junos OS Evolved\) | 1132](#)
- [Description | 1132](#)
- [Options | 1132](#)
- [Additional Information | 1134](#)
- [Required Privilege Level | 1134](#)
- [Sample Output | 1135](#)
- [Release Information | 1135](#)

## Syntax

```
show system reboot  
<both-routing-engines>
```

## Syntax (EX Series and MX Series)

```
show system reboot  
<all-members>  
<both-routing-engines>  
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system reboot  
<all-chassis | all-lcc | lcc number | scc>  
<both-routing-engines>
```

## Syntax (TX Matrix Plus Router)

```
show system reboot
<all-chassis| all-lcc | lcc number | sfc number>
<both-routing-engines>
```

## Syntax (QFX Series and OCX Series)

```
show system reboot
<both-routing-engines>
<infrastructure name>
<interconnect-device name>
<node-device name>
```

## Syntax (Junos OS Evolved)

```
show system reboot
```

## Description

Display pending system reboots or halts.

## Options

**none** Display pending reboots or halts on the active Routing Engine.

For Junos OS Evolved, the **show system reboot** command is applicable to all nodes (Routing Engines and FPCs). There is no system reboot command for a specific

Routing Engine. Hence, the **show system reboot** command shows the pending reboot for the system and not for a specific Routing Engine.

<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for all the T640 routers in the chassis that are connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all the T1600 or T4000 routers in the chassis that are connected to the TX Matrix Plus router.
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for all members of the Virtual Chassis configuration.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display system halt or reboot request information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all connected T1600 or T4000 LCCs.
<b>both-routing-engines</b>	(Systems with multiple Routing Engines) (Optional) Display halt or reboot request information on both Routing Engines.
<b>infrastructure name</b>	(QFabric systems only) (Optional) Display reboot request information on the fabric manager Routing Engines and fabric control Routing Engines.
<b>interconnect- device name</b>	(QFabric systems only) (Optional) Display reboot request information on the Interconnect device.
<b>lcc number</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for a specific router 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the local Virtual Chassis member.
<b>member</b> <i>member-id</i>	(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node-group</b> <i>name</i>	(QFabric systems only) (Optional) Display reboot request information on the Node group.
<b>scc</b>	(TX Matrix router only) (Optional) Display halt or reboot request information for the TX Matrix router (or switch-card chassis).
<b>sfc</b>	(TX Matrix Plus router only) (Optional) Display halt or reboot request information for the TX Matrix Plus router.

## Additional Information

By default, when you issue the **show system reboot** command on a TX Matrix or TX Matrix Plus primary Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) primary Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) backup Routing Engines that are connected to it.

For Junos OS Evolved, the **show system reboot** command is applicable to all nodes (Routing Engines and FPCs). There is no system reboot command for a specific Routing Engine. Hence, the **show system reboot** command shows the pending reboot for the system and not for a specific Routing Engine.

## Required Privilege Level

maintenance

## Sample Output

### show system reboot

```
user@host> show system reboot
reboot requested by root at Wed Feb 10 17:40:46 1999
[process id 17885]
```

### show system reboot all-lcc (TX Matrix Router)

```
user@host> show system reboot all-lcc
lcc0-re0:
-----
No shutdown/reboot scheduled.

lcc2-re0:
-----
No shutdown/reboot scheduled.
```

### show system reboot sfc (TX Matrix Plus Router)

```
user@host> show system sfc 0
No shutdown/reboot scheduled.
```

### show system reboot (QFX3500 Switch)

```
user@switch> show system reboot
No shutdown/reboot scheduled.
```

## 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

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system software

## IN THIS SECTION

- [Syntax | 1136](#)
- [Syntax \(EX Series Switches\) | 1137](#)
- [Syntax \(TX Matrix Router\) | 1137](#)
- [Syntax \(TX Matrix Plus Router\) | 1137](#)
- [Syntax \(QFX Series\) | 1137](#)
- [Syntax \(Junos OS Evolved\) | 1138](#)
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- [Required Privilege Level | 1139](#)
- [Output Fields | 1140](#)
- [Sample Output | 1140](#)
- [Release Information | 1141](#)

## Syntax

```
show system software  
<detail>
```

## Syntax (EX Series Switches)

```
show system software
<all-members>
<detail>
<local>
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system software
<all-chassis | all-lcc | lcc number | scc>
<detail>
```

## Syntax (TX Matrix Plus Router)

```
show system software
<all-chassis | all-lcc | lcc number | sfc number>
<detail>
```

## Syntax (QFX Series)

```
show system software
<detail>
<infrastructure name>
<interconnect-device name>
<node-group name>
```

## Syntax (Junos OS Evolved)

```
show system software
<add-restart>
<list>
```

## Description

Display the Junos OS extensions loaded on your router or switch.

## Options

<b>none</b>	Display standard information about all loaded Junos OS extensions.
<b>add-restart</b>	(Junos OS Evolved only) (Optional) Display all console messages from the last in-service software upgrade (ISSU).
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system software information for all the T640 routers (TX Matrix Router) or all the routers (TX Matrix Plus Router) in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system software information for all connected T1600 or T4000 LCCs.
<b>all-members</b>	(EX4200 switches only) (Optional) Display the system software running on all members of the Virtual Chassis configuration.
<b>detail</b>	(Optional) Display detailed information about available Junos OS extensions.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display the system software running on the fabric control Routing Engine and the fabric manager Routing Engine.
<b>interconnect- device <i>name</i></b>	(QFabric systems only) (Optional) Display the system software running on the Interconnect device.

<b>lcc <i>number</i></b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system software information for a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(EX4200 switches only) (Optional) Display the system software running on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches only) (Optional) Display the system software running on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value from 0 through 9.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display the system software running on the Node group.
<b>scc</b>	(Routing matrix only) (Optional) Display the system software running on a TX Matrix router (or switch-card chassis).
<b>sfc</b>	(TX Matrix Plus routers only) (Optional) Display system software information for the TX Matrix Plus router.

## Required Privilege Level

maintenance

## Output Fields

When you enter this command, you are provided a list of Junos OS packages installed on the router and their corresponding Junos OS release number.

## Sample Output

### show system software

```
user@host> show system software
Information for jbase:

Comment:
JUNOS Base OS Software Suite [7.2R1.7]

Information for jcrypto:

Comment:
JUNOS Crypto Software Suite [7.2R1.7]
Information for jdocs:

Comment:
JUNOS Online Documentation [7.2R1.7]

Information for jkernel:

Comment:
JUNOS Kernel Software Suite [7.2R1.7]

Information for jpf:

Comment:
JUNOS Packet Forwarding Engine Support (M20/M40) [7.2R1.7]

Information for jroute:
```

```
Comment:  
JUNOS Routing Software Suite [7.2R1.7]
```

```
Information for junos:
```

```
Comment:  
JUNOS Base OS boot [7.2R1.7]
```

## 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

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system statistics

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## Syntax

```
show system statistics
```

## Syntax (EX Series Switches)

```
show system statistics  
<all-members>  
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system statistics  
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
show system statistics  
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (MX Series Router)

```
show system statistics
<all-members>
<local>
<member member-id>
<extended <ipv4 | ipv6>>
```

## Syntax (QFX Series)

```
show system statistics
```

## Description

Display system-wide protocol-related statistics.

## Options

- none** Display system statistics for all the following protocols:
- **arp**—Address Resolution Protocol
  - **bridge**—IEEE 802.1 Bridging
  - **clns**—Connectionless Network Service
  - **esis**—End System-to-Intermediate System
  - **ethoamcfm**—Ethernet OAM protocol for connectivity fault management
  - **ethoamlfm**—Ethernet OAM protocol for link fault management
  - **extended**—System statistics for IPv4 and IPv6 traffic



- **icmp**—Internet Control Message Protocol
- **icmp6**—Internet Control Message Protocol version 6
- **igmp**—Internet Group Management Protocol
- **ip**—Internet Protocol version 4
- **ip6**—Internet Protocol version 6
- **jsr**—Juniper Socket Replication
- **mpls**—Multiprotocol Label Switching
- **rdp**—Reliable Datagram Protocol
- **tcp**—Transmission Control Protocol
- **tnp**—Trivial Network Protocol
- **ttp**—TNP Tunneling Protocol
- **tudp**—Trivial User Datagram Protocol
- **udp**—User Datagram Protocol
- **vpls**—Virtual Private LAN Service

- all-chassis** (TX Matrix and TX Matrix Plus routers only) (Optional) Display system statistics for a protocol for all the routers in the chassis.
- all-lcc** (TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for a protocol for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for a protocol for all routers (line-card chassis) connected to the TX Matrix Plus router
- all-members** (EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for all members of the Virtual Chassis configuration.
- lcc *number*** (TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for a protocol for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for a protocol for a specific router 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for the local Virtual Chassis member.
<b>member</b> <i>member-id</i>	(EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>scc</b>	(TX Matrix routers only) (Optional) Display system statistics for a protocol for the TX Matrix router (or switch-card chassis).
<b>sfc number</b>	(TX Matrix Plus routers only) (Optional) Display system statistics for a protocol for the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0.

## Additional Information

By default, when you issue the **show system statistics** command on a TX Matrix or TX Matrix Plus primary Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) primary Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) backup Routing Engines that are connected to it.

## Required Privilege Level

view

## Sample Output

### show system statistics

```
user@host> show system statistics
ip:
    3682087 total packets received
    0 bad header checksums
    0 with size smaller than minimum
    0 with data size < data length
    0 with header length < data size
    0 with data length < header length
    0 with incorrect version number
    0 packets destined to dead next hop
    0 fragments received
    0 fragments dropped (dup or out of space)
    0 fragments dropped (queue overflow)
    0 fragments dropped after timeout
    0 fragments dropped due to over limit
    0 packets reassembled ok
    3664774 packets for this host
    17316 packets for unknown/unsupported protocol
    0 packets forwarded
    0 packets not forwardable
    0 redirects sent
    6528 packets sent from this host
    0 packets sent with fabricated ip header
    0 output packets dropped due to no bufs
    0 output packets discarded due to no route
    0 output datagrams fragmented
    0 fragments created
    0 datagrams that can't be fragmented
    0 packets with bad options
    1123 packets with options handled without error
    0 strict source and record route options
    0 loose source and record route options
    0 record route options
    0 timestamp options
    0 timestamp and address options
    0 timestamp and prespecified address options
    0 option packets dropped due to rate limit
```

```
1123 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
icmp:
0 drops due to rate limit
0 calls to icmp_error
0 errors not generated because old message was icmp
Output histogram:
    echo reply: 75
0 messages with bad code fields
0 messages less than the minimum length
0 messages with bad checksum
0 messages with bad source address
0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 75
    router advertisement: 130
75 message responses generated
tcp:
3844 packets sent
    3618 data packets (1055596 bytes)
    0 data packets (0 bytes) retransmitted
    0 resends initiated by MTU discovery
    205 ack-only packets (148 packets delayed)
    0 URG only packets
    0 window probe packets
    0 window update packets
    1079 control packets
5815 packets received
    3377 acks (for 1055657 bytes)
    24 duplicate acks
    0 acks for unsent data
    2655 packets (15004 bytes) received in-sequence
    1 completely duplicate packet (0 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    0 out-of-order packets (0 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    7 window update packets
    0 packets received after close
```

```
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
1 connection request
32 connection accepts
0 bad connection attempts
0 listen queue overflows
33 connections established (including accepts)
30 connections closed (including 0 drops)
    27 connections updated cached RTT on close
    27 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
3374 segments updated rtt (of 3220 attempts)
0 retransmit timeouts
    0 connections dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
344 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
1096 correct ACK header predictions
1314 correct data packet header predictions
32 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    32 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
1058 RST packets
```

```
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
udp:
3658884 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
3657342 dropped due to no socket
3657342 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
4291311496 delivered
1551 datagrams output
ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound AH packets considered authentic
0 inbound AH packets failed on authentication
0 inbound ESP packets considered authentic
0 inbound ESP packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route
igmp:
17186 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent
```

arp:

```
44181302 datagrams received
2 ARP requests received
2028 ARP replies received
3156 resolution requests received
0 unrestricted proxy requests
0 received proxy requests
0 proxy requests not proxied
0 with bogus interface
787 with incorrect length
712 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
7611 with multicast target address
0 with my own hardware address
14241699 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
29929250 which were not for me
0 packets discarded waiting for resolution
6 packets sent after waiting for resolution
17812 ARP requests sent
2 ARP replies sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
```

ip6:

```
0 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragments that exceeded limit
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
```

```

0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
icmp6:
0 calls to icmp_error
0 errors not generated because old message was icmp error or so
0 errors not generated because rate limitation
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
Histogram of error messages to be generated:
    0 no route
    0 administratively prohibited
    0 beyond scope
    0 address unreachable
    0 port unreachable
    0 packet too big
    0 time exceed transit
    0 time exceed reassembly
    0 erroneous header field
    0 unrecognized next header
    0 unrecognized option
    0 redirect
    0 unknown
0 message responses generated

```



```
0 messages with too many ND options
ipsec6:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound AH packets considered authentic
0 inbound AH packets failed on authentication
0 inbound ESP packets considered authentic
0 inbound ESP packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route
c1nl:
0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupported protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets
0 total packets sent
0 output packets discarded
0 non-forwarded packets
0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
```

```
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure
esis:
0 total pkts received
0 total packets consumed by protocol
0 pdus received with bad checksum
0 pdus received with bad version number
0 pdus received with bad type field
0 short pdus received
0 bogus sdl size
0 bad header length
0 unknown or unsupported protocol
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 ISO family not configured
tnp:
146776365 unicast packets received
0 broadcast packets received
0 fragmented packets received
0 hello packets dropped
0 fragments dropped
0 fragment reassembly queue flushes
0 hello packets received
0 control packets received
49681642 rdp packets received
337175 udp packets received
96757548 tunnel packets received
0 input packets discarded with no protocol
98397591 unicast packets sent
0 broadcast packets sent
0 fragmented packets sent
0 hello packets dropped
0 fragments dropped
0 hello packets sent
0 control packets sent
49681642 rdp packets sent
337175 udp packets sent
```

```
48378774 tunnel packets sent
0 packets sent with unknown protocol

rdp:
49681642 input packets
0 discards for bad checksum
0 discards bad sequence number
0 refused connections
2031964 acks received
0 dropped due to full socket buffers
49692 retransmits
49681642 output packets
24815968 acks sent
28 connects
0 closes
22783990 keepalives received
22783990 keepalives sent

tudp:
337175 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
337175 delivered
337175 datagrams output

ttp:
398749 packets sent
0 packets sent while unconnected
0 packets sent while interface down
0 packets sent couldn't get buffer
0 packets sent couldn't find neighbor
44696687 L2 packets received
0 unknown L3 packets received
3682087 IPv4 L3 packets received
0 MPLS L3 packets received
0 MPLS->IPv4 L3 packets received
0 IPv4->MPLS L3 packets received
0 VPLS L3 packets received
0 IPv6 L3 packets received
0 ARP L3 packets received
0 CLNP L3 packets received
0 TNP L3 packets received
```

```

0 NULL L3 packets received
0 cyclotron cycle L3 packets received
0 cyclotron send L3 packets received
0 packets received while unconnected
0 packets received from unknown ifl
0 input packets couldn't get buffer
0 input packets with bad type
0 input packets with discard type
0 Input packets with too many tlvs
0 Input packets with bad tlv header
70633 Input packets with bad tlv type
68877 Input packets dropped based on tlv result
0 input packets for which rt lookup is bypassed
mpls:
0 total mpls packets received
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route
jsr:
Handle-inf:o
0 Handles in use
0 Handles allocated so far
0 Handles freed so far
0 Handles in delayed free state
IHA:
0 IHA invalid subtype messages
0 IHA invalid length messages
0 IHA invalid version messages
0 IHA too short messages
0 IHA invalid dst handle messages
0 IHA invalid src handle messages
0 IHA unmatched src handle messages
0 IHA invalid messages for primary
0 IHA invalid messages for secondary
0 IHA invalid messages for current state

```

```
0 IHA messages sent for subtype init
0 IHA messages rcvd for subytp e init
0 IHA messages sent for subtype init
0 IHA messages rcvd for subytp e init
0 IHA messages sent for subtype init
0 IHA messages rcvd for subytp e init
0 IHA messages sent for subtype init
0 IHA messages rcvd for subytp e init
0 IHA messages sent for subtype init
0 IHA messages rcvd for subytp e init
0 IHA message timeouts
0 IHA socket unreplicate messages
```

SDRL:

```
0 SDRL socket teardowns
0 SDRL socket teardown failures
0 SDRL socket unreplicates
0 SDRL socket unreplicate failures
0 SDRL external timeouts
0 SDRL internal timeouts
0 SDRL ipc messages sent
0 SDRL ipc send failures
0 SDRL ipc messages rcvd
0 SDRL ipc messages rcvd
0 SDRL primary replication messages sent
0 SDRL primary replication message send failures
0 SDRL primary ack messages received
0 SDRL primary ack message receive failures
0 SDRL primary sock replication inits
0 SDRL primary sock replication init failures
0 SDRL primary throttle remove messages
0 SDRL primary throttle remove failures
0 SDRL primary init handshake messages
0 SDRL primary init handshake failures
0 SDRL secondary replication messages received
0 SDRL secondary replication message receive failures
0 SDRL secondary replication acks sent
0 SDRL secondary replication ack send failures
0 SDRL secondary sock splits
0 SDRL secondary sock split failures
0 SDRL secondary sock merges
0 SDRL secondary sock merge failures
0 SDRL secondary sockets closed
0 SDRL secondary rcv snoop fd close failures
```

```
0 SDRL secondary snd snoop fd close failures
0 SDRL secondary init handshake messages
0 SDRL secondary init handshake failures
PRL:
0 PRL packets enqueued
0 PRL packets failed to enqueue
0 PRL packets dequeued
0 PRL packets failed to dequeue
0 PRL queue entry allocations
0 PRL queue entry frees
0 calls to layer 4 input handlers
0 failed calls to layer 4 input handlers
0 PRL queue drains
0 PRL replication timeouts
0 PRL replication messages sent
0 PRL replication message send failures
0 PRL acknowledgment messages sent
0 PRL acknowledgement message send failures
0 PRL replication messages received
0 PRL replication message receive failures
0 PRL acknowledgement messages received
0 PRL acknowledgement receive failures
0 PRL messages with bad IPC type
0 PRL messages with no handler
2 PRL global state initializations
1 PRL global state cleanups
0 PRL per-socket state creations
0 PRL per-socket state creation failures
0 PRL per-socket state cleanups
0 PRL socket closes
0 PRL socket merges
0 PRL socket unreplicates
0 PRL primary socket replication initializations
0 PRL secondary socket replication initializations
0 PRL primary socket replication activations
0 PRL secondary socket replication activations
0 packets received from peers
0 PRL packets receive operations from peer failed
0 PRL buffer pullup failures
0 new pkts dropped on secondary socket
PSRM:
0 PSRM replication timeouts
0 PSRM replication messages sent
```

```

0 PSRM replication message send failures
0 PSRM acknowledgment messages sent
0 PSRM acknowledgement message send failures
0 PSRM flow control messages sent
0 PSRM flow control message send failures
0 PSRM replication messages received
0 PSRM replication message receive failures
0 PSRM acknowledgment messages received
0 PSRM acknowledgment message receive failures
0 PSRM flow control messages received
0 PSRM flow control message receive failures
0 SRM messages with bad IPC type
0 PSRM messages with no handler
2 PSRM global state initializations
1 PSRM global state cleanups
0 PSRM per-socket state creations
0 PSRM per-socket state creation failures
0 PSRM per-socket state cleanups
0 PSRM socket closes
0 PSRM socket merges
0 PSRM socket unreplicates
0 PSRM primary socket replication initializations
0 psrm-secondary-socket-replication-initializations
0 PSRM primary socket replication activations
0 secondary socket replication activations
0 PSRM tcpcb updates
0 PSRM buffer pullup failures
73 PSRM tcp timestamp msg rcv counters
0 PSRM tcp timestamp msg rcv failures
0 PSRM tcp timestamp msg send counters
0 PSRM tcp timestamp msg send failures
TCP:
0 TCP out-of-order packets on JSR sockets
vpls:
0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host
0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry

```

```

0 packets with no CE-facing entry
0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface
0 learning requests over capacity
0 mac routes moved
0 requests to move static route
0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs

```

## Release Information

Command introduced before JUNOS Release 7.4.

**sfc** option introduced for the TX Matrix Plus router in JUNOS Release 9.6.

# show system storage

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## Syntax

```
show system storage
<detail>
<invoke-on (all-routing-engines | other-routing-engine)>
```

## Syntax (EX Series Switches and MX Series Routers)

```
show system storage
<detail>
<all-members>
<local>
<member member-id>
<invoke-on (all-routing-engines | other-routing-engine)>
```

## Syntax

## Syntax (QFX Series)

```
show system storage
<detail>
<infrastructure name>
<interconnect-device name>
<node-group name>
<invoke-on (all-routing-engines | other-routing-engine)>
```

## Syntax (SRX Series)

```
show system storage
<detail>
<partitions>
```

## Syntax (TX Matrix Router)

```
show system storage
<detail>
<all-chassis | all-lcc | lcc number | scc>
<invoke-on (all-routing-engines | other-routing-engine)>
```

## Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs)

```
show system storage
<detail>
<all-chassis | all-lcc | lcc number | sfc number>
<invoke-on (all-routing-engines | other-routing-engine)>
```

## Syntax (Junos OS Evolved)

```
show system storage
<detail>
<node node-name>
```

## Description

Display statistics about the amount of free disk space in the router's or switch's file systems.

## Options

<b>none</b>	Display standard information about the amount of free disk space in the router's or switch's file systems.
<b>detail</b>	(Optional) Display detailed output.
<b>invoke-on all-routing-engines</b>	(Optional) Display the system storage information on all primary and backup Routing Engines on a routing matrix based on the TX Matrix or TX Matrix Plus router or on a router that has dual Routing Engines.
<b>invoke-on other-routing-engines</b>	(Optional) Display the system storage information on the other Routing Engine. For example, if you issue this command on the primary Routing Engine on an M320 router, the JUNOS Software displays the system storage information on the backup Routing Engine. On a routing matrix based on the TX Matrix or TX Matrix Plus router, if you issue this command on the TX Matrix or TX Matrix Plus router's primary Routing Engine, the JUNOS Software displays all the system storage information on all the backup Routing Engines.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system storage statistics for all the routers in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for all routers connected to the TX Matrix Plus router.

<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for all members of the Virtual Chassis configuration.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display system storage statistics for the fabric control Routing Engines or fabric manager Routing Engines.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display system storage statistics for the Interconnect device.
<b>lcc <i>number</i></b>	<p>(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node</b>	(Junos OS Evolved only) (Optional) Display system storage statistics for the specified node.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display system storage statistics for the Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Display system storage statistics for the TX Matrix router (or switch-card chassis).

**sfc *number*** (TX Matrix Plus routers only) (Optional) Display system storage statistics for the TX Matrix Plus router. Replace *number* with 0.

## Additional Information

By default, when you issue the **show system storage** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

## Required Privilege Level

view

## Output Fields

[Table 44 on page 1164](#) describes the output fields for the **show system storage** command. Output fields are listed in the approximate order in which they appear.

**Table 44: show system storage Output Fields**

Field Name	Field Description	Level of Detail
<b>Filesystem</b>	Name of the filesystem.	all
<b>Size</b>	Size of the filesystem. Size is reported in human readable form (GB or MB, etc.).	standard output
1024-blocks	Size of the filesystem. Size is reported in bytes.	<b>detail</b>
<b>Used</b>	Amount of space used in the filesystem.	all (see note)

Table 44: show system storage Output Fields (*Continued*)

Field Name	Field Description	Level of Detail
<b>Avail</b>	Amount of space available in the filesystem.	all (see note)
<b>Capacity</b>	Percentage of the filesystem space that is being used.	all
<b>Mounted on</b>	Directory in which the filesystem is mounted.	all

**NOTE:** In detailed output, the output is in bytes, whereas in regular output, the size is in human-readable form (like GB or MB, etc.).

## Sample Output

### show system storage

```

user@host> show system storage
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     77M       37M       34M    52%      /
devfs           16K       16K       0B     100%    /dev/
/dev/vn0        12M       12M       0B     100%    /packages/mnt/jbase
/dev/vn1        39M       39M       0B     100%    /packages/mnt/
jkernel-7.2R1.7
/dev/vn2        12M       12M       0B     100%    /packages/mnt/jpfe-
M40-7.2R1.7
/dev/vn3        2.3M      2.3M      0B     100%    /packages/mnt/
jdocs-7.2R1.7
/dev/vn4        14M       14M       0B     100%    /packages/mnt/
jroute-7.2R1.7
/dev/vn5        4.5M      4.5M      0B     100%    /packages/mnt/
jcrypto-7.2R1.7
mfs:172         1.5G      4.0K      1.3G    0%      /tmp
/dev/ad0s1e     12M       20K       11M     0%      /config
procfs          4.0K      4.0K      0B     100%    /proc
/dev/ad1s1f     9.4G      4.9G      3.7G    57%     /var

```

**show system storage (SRX Series)**

```

user@host> show system storage

```

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/da0s1a	2.4G	369M	1.9G	16%	/
devfs	1.0K	1.0K	0B	100%	/dev
/dev/md0	20M	11M	6.7M	63%	/junos
/cf/packages	2.4G	369M	1.9G	16%	/junos/cf/packages
devfs	1.0K	1.0K	0B	100%	/junos/cf/dev
/dev/md1	1.2G	1.2G	0B	100%	/junos
/cf	20M	11M	6.7M	63%	/junos/cf
devfs	1.0K	1.0K	0B	100%	/junos/dev/
/cf/packages	2.4G	369M	1.9G	16%	/junos/cf/packages1
procfs	4.0K	4.0K	0B	100%	/proc
/dev/bo0s3e	185M	74K	170M	0%	/config
/dev/bo0s3f	2.1G	1.7G	219M	89%	/cf/var
/dev/md2	1.0G	90M	859M	10%	/mfs
/cf/var/jail	2.1G	1.7G	219M	89%	/jail/var
/cf/var/log	2.1G	1.7G	219M	89%	/jail/var/log
devfs	1.0K	1.0K	0B	100%	/jail/dev
/dev/md3	1.8M	4.0K	1.7M	0%	/jail/mfs

**show system storage node**

```

user@host> show system storage node re1

```

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/root	44M	44M	0	100%	/pivot
devtmpfs	7.8G	0	7.8G	0%	/dev
/dev/sda2	16G	4.9G	11G	33%	/soft
/dev/sda5	3.0G	122M	2.7G	5%	/etc
/dev/sda6	1000M	1.3M	932M	1%	/config
/dev/sda7	16G	9.4G	5.4G	64%	/var
/dev/sda1	189M	5.3M	170M	4%	/boot
/dev/loop0	1.8G	1.8G	0	100%	/pivot/data/junos- install-qfx-x86-64-16.2I20170508115447_evo-builder/ccd-ptx-re64
/dev/loop1	14M	14M	0	100%	/pivot/data/junos- install-qfx-x86-64-16.2I20170508115447_evo-builder/perl-5.20.0
/dev/loop2	94M	94M	0	100%	/pivot/data/junos- install-qfx-x86-64-16.2I20170508115447_evo-builder/java
/dev/loop3	2.4M	2.4M	0	100%	/pivot/data/junos-

```

install-qfx-x86-64-16.2I20170508115447_evo-builder/modules
/dev/loop4          9.4M      9.4M      0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/zookeeper
/dev/loop5          57M       57M       0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/python-2.7
/dev/loop6          14M       14M       0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/python-3.3
/dev/loop7          191M      191M      0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/dev
/dev/loop8          3.8M      3.8M      0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/jimbase
/dev/loop9          103M      103M      0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/osbase
/dev/loop10         44M       44M       0      100% /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/initrd
unionfs             5.2G      2.4G      2.7G    48% /
/tmp                7.8G      4.0K      7.8G    1% /tmp
run                 7.8G      7.1M      7.8G    1% /run
tmpfs               7.8G      1.2G      6.7G    15% /dev/shm
tmpfs               7.8G      0          7.8G    0% /sys/fs/cgroup
tmpfs               1.6G      0          1.6G    0% /run/user/0

```

## show system storage node detail

```

user@host> show system storage node re1 detail
Filesystem      1024-blocks    Used      Avail    Capacity  Mounted on
/dev/root        44376          44376     0        100%     /pivot
devtmpfs        8103560        0          8103560  0%       /dev
/dev/sda2       16513960      5057236   10601480 33%      /soft
/dev/sda5       3055376       124232    2757476  5%       /etc
/dev/sda6       1023892       1308      953772   1%       /config
/dev/sda7       16310696     9809324   5656368  64%      /var
/dev/sda1       193242        5418     173561   4%       /boot
/dev/loop0      1816864       1816864   0        100%     /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/ccd-ptx-re64
/dev/loop1      13432         13432     0        100%     /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/perl-5.20.0
/dev/loop2      95344         95344     0        100%     /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/java
/dev/loop3      2384          2384     0        100%     /pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/modules

```



/dev/loop4	9528	9528	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/zookeeper					
/dev/loop5	57816	57816	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/python-2.7					
/dev/loop6	13320	13320	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/python-3.3					
/dev/loop7	195024	195024	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/dev					
/dev/loop8	3872	3872	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/jimbase					
/dev/loop9	105272	105272	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/osbase					
/dev/loop10	44376	44376	0	100%	/pivot/data/junos-
install-qfx-x86-64-16.2I20170508115447_evo-builder/initrd					
unionfs	5412608	2481464	2757476	48%	/
/tmp	8127388	4	8127384	1%	/tmp
run	8127388	7216	8120172	1%	/run
tmpfs	8127388	1190096	6937292	15%	/dev/shm
tmpfs	8127388	0	8127388	0%	/sys/fs/cgroup
tmpfs	1625480	0	1625480	0%	/run/user/0

## Release Information

Command introduced before Junos OS Release 7.4.

**sfc** option introduced for the TX Matrix Plus router in JUNOS Release 9.6.

Option **invoke-on (all-routing-engines | other-routing-engine)** introduced in Junos OS Release 14.1

**node** option introduced in Junos OS Evolved Release 18.3R1.

### RELATED DOCUMENTATION

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system uptime

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## Syntax

```
show system uptime
```

## Syntax (EX Series Switches)

```
show system uptime  
<all-members>
```

```
<local>  
<member member-id>
```

## Syntax (QFX Series)

```
show system uptime  
<director-group name>  
<infrastructure name>  
<interconnect-device name>  
<node-group name>
```

## Syntax (TX Matrix Router)

```
show system uptime  
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
show system uptime  
<detail>  
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (MX Series Router)

```
show system uptime  
<all-members>  
<invoke-on>
```

```
<local>
<member member-id>
```

## Syntax (Junos OS Evolved)

```
show system uptime
<node node-name>
```

## Description

Display the current time and information about how long the router or switch, router or switch software, and routing protocols have been running.

**NOTE:** Time values computed from differences in timestamps can vary due to the insertion or deletion of leap-seconds between them.

The **show system uptime** command is a little different in how it displays output in Junos OS Evolved. The **show system uptime** command by itself shows system-wide uptime information. Use the **show system uptime node *node-name*** command to see node-specific uptime information, where *node-name* can be **re0 | re1 | fpc0 | all**.

## Options

<b>none</b>	Show time since the system rebooted and processes started.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started on all the routers in the chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for all connected T1600 or T4000 LCCs.

<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on all members of the Virtual Chassis configuration.
<b>director-group <i>name</i></b>	(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Director group.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the fabric control Routing Engine and fabric manager Routing Engine.
<b>interconnect- device <i>name</i></b>	(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Interconnect device.
<b>invoke-on</b>	(MX Series routers only) (Optional) Display the time since the system rebooted and processes started on the primary Routing Engine, backup Routing Engine, or both, on a router with two Routing Engines.
<b>lcc <i>number</i></b>	<p>(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for a specific router 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"> <li>• 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.</li> <li>• 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.</li> <li>• 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> <li>• 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix.</li> </ul>
<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0

through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

<b>node <i>node-name</i></b>	(Junos OS Evolved only) (Optional) Display uptime information for the specified node. When <b>node</b> option is not used, display uptime information for entire system. From the system's point of view, the system booted time is the time when the system was assembled and is available in <code>/var/run/system_boot_time</code> .
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix router (or switch-card chassis).
<b>sfc <i>number</i></b>	(TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix Plus router. Replace <i>number</i> with 0.

## Additional Information

By default, when you issue the **show system uptime** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

## Required Privilege Level

view

## Output Fields

[Table 45 on page 1174](#) describes the output fields for the **show system uptime** command. Output fields are listed in the approximate order in which they appear.

Table 45: show system uptime Output Fields

Field Name	Field Description
<b>System booted</b>	(Only for Junos OS Evolved when <b>node</b> option is not used) Time system was last booted. From the system's point of view, the system booted time is the time when the system was assembled and is available in <code>/var/run/system_boot_time</code> .
<b>System-wide users</b>	(Only for Junos OS Evolved when <b>node</b> option is not used) Number of system-wide users.
<b>Current time</b>	Current system time in UTC.
<b>Time Source</b>	Reference time source that the system is locked to.
<b>System booted</b>	Date and time when the Routing Engine on the router or switch was last booted and how long it has been running.
<b>Protocols started</b>	Date and time when the routing protocols were last started and how long they have been running.
<b>Last configured</b>	Date and time when a configuration was last committed. Also shows the name of the user who issued the last <b>commit</b> command.
<b><i>time and up</i></b>	Current time, in the local time zone, and how long the router or switch has been operational.
<b>users</b>	Number of users logged in to the router or switch.
<b>load averages</b>	Load averages for the last 1 minute, 5 minutes, and 15 minutes.

## Sample Output

### show system uptime

```
user@host> show system uptime
Current time:      2017-10-13 19:45:47 UTC
Time Source:      NTP CLOCK
System booted:    2017-10-12 20:51:41 UTC (22:54:06 ago)
Protocols started: 2017-10-13 19:33:45 UTC (00:12:02 ago)
Last configured:  2017-10-13 19:33:45 UTC (00:12:02 ago) by abc
12:45PM up 22:54, 2 users, load averages: 0.07, 0.02, 0.01
```

### show system uptime node (for Junos OS Evolved)

```
user@host> show system uptime node re0

Current time: 2017-05-16 16:13:18 PDT
Node booted: 2017-05-10 15:45:29 PDT (6d 00:27 ago)
Last configured: 2017-05-10 15:31:46 PDT (6d 00:41 ago) by root
16:13:18 up 6 days, 27 min, 1 user, load averages: 2.69, 2.58, 2.57
```

### show system uptime (QFX Series)

```
user@switch> show system uptime
Current time: 2017-08-27 03:12:30 PDT
Time Source: NTP CLOCK
System booted: 2017-08-13 17:11:54 PDT (1w6d 10:00 ago)
Protocols started: 2017-08-13 17:13:56 PDT (1w6d 09:58 ago)
Last configured: 2017-08-26 05:54:00 PDT (21:18:30 ago) by user
 3:12AM up 13 days, 10:01, 3 users, load averages: 0.00, 0.00, 0.00
```

### show system uptime (Junos OS Evolved)

```
user@router> show system uptime
```



```
System booted: 2019-02-20 19:17:52 PST (02:20:33 ago)
System-wide users: 7 users
```

Starting in Junos OS Evolved 19.1R1 release, the **show system uptime** output displays only the **System booted** and **System-wide users** information. The output does not display the details such as **Current time**, **System booted**, **Protocols started**, and **Last configured parameters**. To see node-specific uptime information, use the **node** option.

### show system uptime node re0 (Junos OS Evolved)

```
user@router> show system uptime node re0
Current time: 2019-07-09 14:24:34 PDT
Time Source: NTP CLOCK
Node booted: 2019-07-03 09:59:58 PDT (6d 04:24 ago)
Protocols started: 2019-07-03 10:01:41 PDT (6d 04:22 ago)
Last configured: 2019-07-03 10:01:10 PDT (6d 04:23 ago) by root
  2:24PM up 6 days, 4:24, 1 user, load averages: 1.25, 0.51, 0.36
```

## Release Information

Command introduced before Junos OS Release 7.4.

**sfc** option introduced for the TX Matrix Plus router in JUNOS Release 9.6.

**node** option introduced in Junos OS Evolved Release 18.3R1.

### RELATED DOCUMENTATION

[10-Gigabit Ethernet LAN/WAN PIC with XFP \(T640 Router\)](#)

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show system virtual-memory

## IN THIS SECTION

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## Syntax

```
show system virtual-memory
```

## Syntax (EX Series)

```
show system virtual-memory  
<all-members>
```

```
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
show system virtual-memory  
<all-chassis | all-lcc | lcc number | scc>
```

## Syntax (TX Matrix Plus Router)

```
show system virtual-memory  
<all-chassis | all-lcc | lcc number | sfc number>
```

## Syntax (MX Series Router)

```
show system virtual-memory  
<all-members>  
<local>  
<member member-id>
```

## Syntax (QFX Series)

```
show system virtual-memory  
<infrastructure name>  
<interconnect-device name>  
<node-group name>
```

## Syntax (Junos OS Evolved)

```
show system virtual-memory
<node node-name>
```

## Description

Display the usage of Junos OS kernel memory listed first by size of allocation and then by type of usage. Use the **show system virtual-memory** command for troubleshooting with Juniper Networks Customer Support.

## Options

<b>none</b>	Display kernel dynamic memory usage information.
<b>all-chassis</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for all chassis.
<b>all-lcc</b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display kernel dynamic memory usage information for all connected T1600 or T4000 LCCs.
<b>all-members</b>	(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for all members of the Virtual Chassis configuration.
<b>infrastructure <i>name</i></b>	(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the fabric control Routing Engine and fabric manager Routing Engine.
<b>interconnect-device <i>name</i></b>	(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Interconnect device.
<b>lcc <i>number</i></b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display

kernel dynamic memory usage information for a specific router 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.

<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node <i>node-name</i></b>	(Junos OS Evolved only) (Optional) Display the kernel memory information for the specified node. If no node is specified, information is displayed for all nodes.
<b>node-group <i>name</i></b>	(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Node group.
<b>scc</b>	(TX Matrix routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix router (or switch-card chassis).
<b>sfc <i>number</i></b>	(TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix Plus router. Replace <i>number</i> with 0.

## Additional Information

By default, when you issue the **show system virtual-memory** command on the primary Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the primary Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on

the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

**NOTE:** The `show system virtual-memory` command with the `| display XML` pipe option now displays XML output for the command in the parent tags: `<vmstat-memstat-malloc>`, `<vmstat-memstat-zone>`, `<vmstat-sumstat>`, `<vmstat-intr>`, and `<vmstat-kernel-state>` with each child element as a separate XML tag. In Junos OS Releases 10.1 and earlier, the `| display XML` option for this command does not have an XML API element and the entire output is displayed in a single `<output>` tag element.

`kernel direct memory map` only displays for the 64-bit platform.

## Required Privilege Level

view

## Output Fields

[Table 46 on page 1181](#) lists the output fields for the `show system virtual-memory` command. Output fields are listed in the approximate order in which they appear.

**Table 46: show system virtual-memory Output Fields**

Field Name	Field Description
<b>Memory statistics by bucket size</b>	
<b>Size</b>	Memory block size (bytes). The kernel memory allocator appropriates blocks of memory whose size is exactly a power of 2.
<b>In Use</b>	Number of memory blocks of this size that are in use (bytes).
<b>Free</b>	Number of memory blocks of this size that are free (bytes).

Table 46: show system virtual-memory Output Fields (*Continued*)

Field Name	Field Description
<b>Requests</b>	Number of memory allocation requests made.
<b>HighWater</b>	Maximum value the free list can have. Once the system starts reclaiming physical memory, it continues until the free list is increased to this value.
<b>Couldfree</b>	Total number of times that the free elements for a bucket size exceed the high-water mark for that bucket size.
<b>Memory usage type by bucket size</b>	
<b>Size</b>	Memory block size (bytes).
<b>Type(s)</b>	Kernel modules that are using these memory blocks. For a definition of each type, refer to a FreeBSD book.
<b>Memory statistics by type</b>	
<b>Type</b>	Kernel module that is using dynamic memory.
<b>InUse</b>	Number of memory blocks used by this type. The number is rounded up.
<b>MemUse</b>	Amount of memory in use, in kilobytes (KB).
<b>HighUse</b>	Maximum memory ever used by this type.
<b>Limit</b>	Maximum memory that can be allocated to this type.
<b>Requests</b>	Total number of dynamic memory allocation requests this type has made.
<b>Type Limit</b>	Number of times requests were blocked for reaching the maximum limit.

Table 46: show system virtual-memory Output Fields *(Continued)*

Field Name	Field Description
<b>Kern Limit</b>	Number of times requests were blocked for the kernel map.
<b>Size(s)</b>	Memory block sizes this type is using.
<b>Memory Totals</b>	
<b>In Use</b>	Total kernel dynamic memory in use (bytes, rounded up).
<b>Free</b>	Total kernel dynamic memory free (bytes, rounded up).
<b>Requests</b>	Total number of memory allocation requests.
<b>ITEM</b>	Kernel module that is using memory.
<b>Size</b>	Memory block size (bytes).
<b>Limit</b>	Maximum memory that can be allocated to this type.
<b>Used</b>	Number of memory blocks used by this type. The number is rounded up.
<b>Free</b>	Number of memory blocks available to this type.
<b>Requests</b>	Total number of memory allocation requests this type has made.
<b>interrupt</b>	Timer events and scheduling interruptions.
<b>total</b>	Total number of interruptions for each type.
<b>rate</b>	Interruption rate.



Table 46: show system virtual-memory Output Fields (Continued)

Field Name	Field Description
<b>Total</b>	Total for all interruptions.

## Sample Output

### show system virtual-memory

```

user@host> show system virtual-memory
Memory statistics by bucket size
Size   In Use   Free    Requests  HighWater  Couldfree
 16     906     118     154876    1280       0
 32     455     313     209956    640        0
 64    4412     260     75380     320        20
128    3200     32      19361     160        81
256    1510     10      8844      80         4
512     446      2       5085      40         0
1K      18       2       5901      20         0
2K    1128      2       4445      10        1368
4K     185      1        456       5         0
8K       5       1       2653       5         0
16K    181      0        233       5         0
32K     2       0       1848       5         0
64K    20       0        22        5         0
128K    5       0         5         5         0
256K    2       0         2         5         0
512K    1       0         1         5         0

Memory usage type by bucket size
Size  Type(s)
 16  uc_devlist, nexusdev, iftable, temp, devbuf, atexit, COS, BPF,
    DEVFS mount, DEVFS node, vnodes, mount, pcb, soname, proc-args, kld,
    MD disk, rman, ATA generic, bus, sysctl, ippool, pfestat, ifstate,
    pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode
 32  atkbddev, dirrem, mkdir, diradd, freefile, freefrag, indirdep,
    bmsafemap, newblk, temp, devbuf, COS, vnodes, cluster_save buffer,

```

```

pcb, soname, proc-args, sigio, kld, Gzip trees, taskqueue, SWAP,
eventhandler, bus, sysctl, uidinfo, subproc, pgrp, pfeostat, itable32,
ifstate, pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode, rtnexthop
64 isadev, iftable, MFS node, allocindir, allocdirect, pagedep, temp,
devbuf, lockf, COS, NULLFS hash, DEVFS name, vnodes,
cluster_save buffer, vfscache, pcb, soname, proc-args, file,
AR driver, AD driver, Gzip trees, rman, eventhandler, bus, sysctl,
subproc, pfeostat, pic, ifstate, pfe_ipc, mkey, ifaddr, rtable, ipfw
128 ZONE, freeblks, inodedep, temp, devbuf, zombie, COS, DEVFS node,
vnodes, mount, vfscache, pcb, soname, proc-args, ttys, dev_t,
timecounter, kld, Gzip trees, ISOFS node, bus, uidinfo, cred,
session, pic, itable16, ifstate, pfe_ipc, rtable, ifstat, metrics,
rtnexthop, iffamily
256 iflogical, iftable, MFS node, FFS node, newblk, temp, devbuf,
NFS daemon, vnodes, proc-args, kqueue, file desc, Gzip trees, bus,
subproc, itable16, ifstate, pfe_ipc, sysctl, rtnexthop
512 UFS mount, temp, devbuf, mount, BIO buffer, ptys, ttys, AR driver,
Gzip trees, ISOFS mount, msg, ioctlops, ATA generic, bus, proc,
pfeostat, lr, ifstate, pfe_ipc, rtable, ipfw, ifstat, rtnexthop
1K iftable, temp, devbuf, NQNFS Lease, kqueue, kld, AD driver,
Gzip trees, sem, MD disk, bus, ifstate, pfe_ipc, ipfw
2K uc_devlist, UFS mount, temp, devbuf, BIO buffer, pcb, AR driver,
Gzip trees, ioctlops, bus, ipfw, ifstat, rcache
4K memdesc, iftable, UFS mount, temp, devbuf, kld, Gzip trees, sem, msg
8K temp, devbuf, syncache, Gzip trees
16K indirdep, temp, devbuf, shm, msg
32K pagedep, kld, Gzip trees
64K VM pgdata, devbuf, MSDOSFS mount
128K UFS ihash, inodedep, NFS hash, kld, ISOFS mount
256K mbuf, vfscache
512K SWAP

```

## Memory statistics by type

Type	InUse	MemUse	HighUse	Limit	Requests	Limit	Limit	Size(s)
isadev	13	1K	1K127753K	13	0	0	64	
atkbddev	2	1K	1K127753K	2	0	0	32	
uc_devlist	24	3K	3K127753K	24	0	0	16,2K	
nexusdev	3	1K	1K127753K	3	0	0	16	
memdesc	1	4K	4K127753K	1	0	0	4K	
mbuf	1	152K	152K127753K	1	0	0	256K	
iflogical	6	2K	2K127753K	6	0	0	256	
iftable	17	9K	9K127753K	18	0	0	16,64,256,1K,4K	
ZONE	15	2K	2K127753K	15	0	0	128	

VM pgdata	1	64K	64K127753K	1	0	0	64K
UFS mount	12	26K	26K127753K	12	0	0	512,2K,4K
UFS ihash	1	128K	128K127753K	1	0	0	128K
MFS node	6	2K	3K127753K	35	0	0	64,256
FFS node	906	227K	227K127753K	1352	0	0	256
dirrem	0	0K	4K127753K	500	0	0	32
mkdir	0	0K	1K127753K	38	0	0	32
diradd	0	0K	6K127753K	521	0	0	32
freefile	0	0K	4K127753K	374	0	0	32
freeblks	0	0K	8K127753K	219	0	0	128
freefrag	0	0K	1K127753K	193	0	0	32
allocindir	0	0K	25K127753K	1518	0	0	64
indirdep	0	0K	17K127753K	76	0	0	32,16K
allocdirect	0	0K	10K127753K	760	0	0	64
bmsafemap	0	0K	1K127753K	72	0	0	32
newblk	1	1K	1K127753K	2279	0	0	32,256
inodedep	1	128K	175K127753K	2367	0	0	128,128K
pagedep	1	32K	33K127753K	47	0	0	64,32K
temp	1239	92K	96K127753K	8364	0	0	16,32,64K
devbuf	1413	5527K	5527K127753K	1535	0	0	16,32,64,128,256
lockf	38	3K	3K127753K	2906	0	0	64
atexit	1	1K	1K127753K	1	0	0	16
zombie	0	0K	2K127753K	3850	0	0	128
NFS hash	1	128K	128K127753K	1	0	0	128K
NQNFS Lease	1	1K	1K127753K	1	0	0	1K
NFS daemon	1	1K	1K127753K	1	0	0	256
syncache	1	8K	8K127753K	1	0	0	8K
COS	353	44K	44K127753K	353	0	0	16,32,64,128
BPF	189	3K	3K127753K	189	0	0	16
MSDOSFS mount	1	64K	64K127753K	1	0	0	64K
NULLFS hash	1	1K	1K127753K	1	0	0	64
DEVFS mount	2	1K	1K127753K	2	0	0	16
DEVFS name	487	31K	31K127753K	487	0	0	64
DEVFS node	471	58K	58K127753K	479	0	0	16,128
vnodes	28	7K	7K127753K	429	0	0	16,32,64,128,256
mount	15	8K	8K127753K	18	0	0	16,128,512
cluster_save buffer	0	0K	1K127753K	55	0	0	32,64
vfscache	1898	376K	376K127753K	3228	0	0	64,128,256K
BIO buffer	49	98K	398K127753K	495	0	0	512,2K
pcb	159	16K	17K127753K	399	0	0	16,32,64,128,2K
soname	82	10K	10K127753K	42847	0	0	16,32,64,128
proc-args	57	2K	3K127753K	2105	0	0	16,32,64,128,256
ptys	32	16K	16K127753K	32	0	0	512

ttys	254	33K	33K127753K	522	0	0	128,512
kqueue	5	3K	4K127753K	23	0	0	256,1K
sigio	1	1K	1K127753K	27	0	0	32
file	383	24K	24K127753K	16060	0	0	64
file desc	76	19K	20K127753K	3968	0	0	256
shm	1	12K	12K127753K	1	0	0	16K
dev_t	286	36K	36K127753K	286	0	0	128
timecounter	10	2K	2K127753K	10	0	0	128
kld	11	117K	122K127753K	34	0	0	16,32,128,1K,4K
AR driver	1	1K	3K127753K	5	0	0	64,512,2K
AD driver	2	2K	3K127753K	2755	0	0	64,1K
Gzip trees	0	0K	46K127753K	133848	0	0	32,64,128,256
ISOFS node	1136	142K	142K127753K	1189	0	0	128
ISOFS mount	9	132K	132K127753K	10	0	0	512,128K
sem	3	6K	6K127753K	3	0	0	1K,4K
MD disk	2	2K	2K127753K	2	0	0	16,1K
msg	4	25K	25K127753K	4	0	0	512,4K,16K
rman	59	4K	4K127753K	461	0	0	16,64
ioctlops	0	0K	2K127753K	992	0	0	512,2K
taskqueue	2	1K	1K127753K	2	0	0	32
SWAP	2	413K	413K127753K	2	0	0	32,512K
ATA generic	6	3K	3K127753K	6	0	0	16,512
eventhandler	17	1K	1K127753K	17	0	0	32,64
bus	340	30K	31K127753K	794	0	0	16,32,64,128,256
sysctl	0	0K	1K127753K	130262	0	0	16,32,64
uidinfo	4	1K	1K127753K	10	0	0	32,128
cred	22	3K	3K127753K	3450	0	0	128
subproc	156	10K	10K127753K	7882	0	0	32,64,256
proc	2	1K	1K127753K	2	0	0	512
session	12	2K	2K127753K	34	0	0	128
pgrp	16	1K	1K127753K	45	0	0	32
ippool	1	1K	1K127753K	1	0	0	16
pfestat	0	0K	1K127753K	47349	0	0	16,32,64,512
pic	5	1K	1K127753K	5	0	0	64,128
lr	1	1K	1K127753K	1	0	0	512
itable32	110	4K	4K127753K	110	0	0	32
itable16	161	26K	26K127753K	161	0	0	128,256
ifstate	694	159K	160K127753K	1735	0	0	16,32,64,128,1K
pfe_ipc	0	0K	1K127753K	56218	0	0	16,32,64,128,1K
mkey	250	4K	4K127753K	824	0	0	16,32,64
ifaddr	9	1K	1K127753K	9	0	0	64
sysctl	0	0K	1K127753K	30	0	0	256
rtable	49	6K	6K127753K	307	0	0	16,32,64,128,512

ifmaddr	22	1K	1K127753K	22	0	0	16,32
ipfw	23	10K	10K127753K	48	0	0	16,32,64,512,2K
ifstat	698	805K	805K127753K	698	0	0	128,512,2K
rcache	4	8K	8K127753K	4	0	0	2K
rnode	27	1K	1K127753K	285	0	0	16,32
metrics	1	1K	1K127753K	3	0	0	128
rtnexthop	57	9K	9K127753K	312	0	0	32,128,256,512
iffamily	12	2K	2K127753K	12	0	0	128

Memory Totals:	In Use	Free	Requests
	9311K	54K	489068

ITEM	SIZE	LIMIT	USED	FREE	REQUESTS
PIPE:	192,	0,	4,	81,	4422
SWAPMETA:	160,	95814,	0,	0,	0
unpcb:	160,	0,	114,	36,	279
ripcb:	192,	25330,	5,	37,	5
syncache:	128,	15359,	0,	64,	5
tcpcb:	576,	25330,	23,	12,	32
udpcb:	192,	25330,	14,	28,	255
socket:	256,	25330,	246,	26,	819
KNOTE:	96,	0,	27,	57,	71
NFSNODE:	352,	0,	0,	0,	0
NFSMOUNT:	544,	0,	0,	0,	0
VNODE:	224,	0,	2778,	43,	2778
NAMEI:	1024,	0,	0,	8,	40725
VMSPACE:	192,	0,	57,	71,	3906
PROC:	448,	0,	73,	17,	3923
DP fakepg:	64,	0,	0,	0,	0
PV ENTRY:	28,	499566,	44530,	152053,	1525141
MAP ENTRY:	48,	0,	1439,	134,	351075
KMAP ENTRY:	48,	35645,	179,	119,	10904
MAP:	108,	0,	7,	3,	7
VM OBJECT:	92,	0,	2575,	109,	66912

792644 cpu context switches  
 9863474 device interrupts  
 286510 software interrupts  
 390851 traps  
 3596829 system calls  
 16 kernel threads created  
 3880 fork() calls  
 27 vfork() calls

```

    0 rfork() calls
    0 swap pager pageins
    0 swap pager pages paged in
    0 swap pager pageouts
    0 swap pager pages paged out
  380 vnode pager pageins
  395 vnode pager pages paged in
  122 vnode pager pageouts
 1476 vnode pager pages paged out
    0 page daemon wakeups
    0 pages examined by the page daemon
   101 pages reactivated
161722 copy-on-write faults
    0 copy-on-write optimized faults
 84623 zero fill pages zeroed
 83063 zero fill pages prezeroed
    7 intransit blocking page faults
535606 total VM faults taken
    0 pages affected by kernel thread creation
238254 pages affected by fork()
   2535 pages affected by vfork()
    0 pages affected by rfork()
283379 pages freed
    0 pages freed by daemon
190091 pages freed by exiting processes
  17458 pages active
  29166 pages inactive
    0 pages in VM cache
  10395 pages wired down
134610 pages free
   4096 bytes per page
183419 total name lookups
      cache hits (90% pos + 7% neg) system 0% per-directory
      deletions 0%, falsehits 0%, toolong 0%

```

interrupt	total	rate
ata0 irq14	113338	3
mux irq7	727643	21
fxp1 irq10	1178671	34
sio0 irq4	833	0
clk irq0	3439769	99
rtc irq8	4403221	127
Total	9863475	286

```
Kernel direct memory map:  
    4423  pages used  
 4057340  pages maximum
```

## 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.

**node** option introduced in Junos OS Evolved Release 18.3R1.

### RELATED DOCUMENTATION

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

# show version

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## Syntax

```
show version  
<brief | detail>
```

## Syntax (EX Series Switches)

```
show version  
<all-members>  
<brief | detail>  
<local>  
<member member-id>
```

## Syntax (TX Matrix Router)

```
show version  
<brief | detail>  
<all-chassis | all-lcc | lcc number | scc>
```



## Syntax (TX Matrix Plus Router)

```
show version
<all-chassis | all-lcc | lcc number | sfc number>
<brief | detail>
```

## Syntax (MX Series Router)

```
show version
<brief | detail>
<all-members>
<local>
<member member-id>
```

## Syntax (QFX Series)

```
show version
<brief | detail>
<component component-name | all>
```

## Syntax (Junos OS Evolved)

```
show version
<brief | detail>
<node (all | node-name)>
```

## Description

Display the hostname and version information about the software running on the router or switch.

Beginning in Junos OS Release 13.3, the **show version** command output includes the **Junos** field that displays the Junos OS version running on the device. This field provides a consistent means of identifying the Junos OS version, rather than extracting that information from the list of installed sub-packages.

The output for the **show version** command for Junos OS Evolved includes a **Junos Package** field that indicates the installation package name. From the prefix of this package name, you can decode which Junos OS architecture the device is running.

**Table 47: Common Package Prefixes for Junos OS**

Junos OS Package Prefix	Junos OS Architecture
jinstall-*	Junos OS for M Series, MX Series, T Series, TX Matrix, and TX Matrix Plus routers
junos-install-*	Junos OS based on an upgraded FreeBSD kernel instead of older versions of FreeBSD
junos-vmhost-install-*	Junos OS with upgraded FreeBSD on a VM Host
junos-evo-install-*	Junos OS Evolved

## Options

- none** Display standard information about the hostname and version of the software running on the router or switch.
- brief | detail** (Optional) Display the specified level of output.
- all-members** (EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on all members of the Virtual Chassis configuration.

<b>component all</b>	(QFabric systems only) (Optional) Display the host name and version information about the software running on all the components on the QFabric system.
<b>component <i>component-name</i></b>	(QFabric systems only) (Optional) Display the host name and version information about the software running on a specific QFabric system component. Replace <i>component-name</i> with the name of the QFabric system component. The <i>component-name</i> can be the name of a diagnostics Routing Engine, Director group, fabric control Routing Engine, fabric manager Routing Engine, Interconnect device, or Node group.
<b>local</b>	(EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on the local Virtual Chassis member.
<b>member <i>member-id</i></b>	(EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace <i>member-id</i> with a value from 0 through 9. For an MX Series Virtual Chassis, replace <i>member-id</i> with a value of 0 or 1.
<b>node (all   <i>node-name</i>)</b>	(Optional) Display version information for the specified node or all nodes.
<b>scc</b>	(TX Matrix routers only) (Optional) Display the hostname and version information about the software running on the TX Matrix router (or switch-card chassis).
<b>lcc <i>number</i></b>	(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the host name and version information about the software running on 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 the host name and version information about the software running 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.

**sfc *number*** (TX Matrix Plus routers only) (Optional) Display the hostname and version information about the software running on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

## Additional Information

By default, when you issue the **show version** command on a TX Matrix or TX Matrix Plus primary Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 or T4000 (in a routing matrix based on a TX Matrix Plus router) primary Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 or T4000 (in a routing matrix based on a TX Matrix Plus router) backup Routing Engines that are connected to it.

## Required Privilege Level

view

## Sample Output

### show version (Devices Running Junos OS Release 13.3 and Later)

The following output is from the MX240 Router and shows the **Junos** field introduced in Junos OS 13.3. Depending on the platform running Junos OS 13.3, you might see different installed sub-packages, but the **Junos** field is common across all platforms that run Junos OS 13.3 and later.

```
user@host > show version
Hostname: lab
Model: mx240
Junos: 13.3R1.4
JUNOS Base OS boot [13.3R1.4]
JUNOS Base OS Software Suite [13.3R1.4]
JUNOS Kernel Software Suite [13.3R1.4]
JUNOS Crypto Software Suite [13.3R1.4]
JUNOS Packet Forwarding Engine Support (M/T/EX Common) [13.3R1.4]
```

```
JUNOS Packet Forwarding Engine Support (MX Common) [13.3R1.4]
JUNOS Online Documentation [13.3R1.4]
JUNOS Services ACL Container package [13.3R1.4]
JUNOS Services Application Level Gateways [13.3R1.4]
JUNOS AppId Services [13.3R1.4]
JUNOS Border Gateway Function package [13.3R1.4]
JUNOS Services Captive Portal and Content Delivery Container package [13.3R1.4]
JUNOS Services HTTP Content Management package [13.3R1.4]
JUNOS IDP Services [13.3R1.4]
JUNOS Services Jflow Container package [13.3R1.4]
JUNOS Services LL-PDF Container package [13.3R1.4]
JUNOS Services MobileNext Software package [13.3R1.4]
JUNOS Services Mobile Subscriber Service Container package [13.3R1.4]
JUNOS Services NAT [13.3R1.4]
JUNOS Services PTSP Container package [13.3R1.4]
JUNOS Services RPM [13.3R1.4]
JUNOS Services Stateful Firewall [13.3R1.4]
JUNOS Voice Services Container package [13.3R1.4]
JUNOS Services Crypto [13.3R1.4]
JUNOS Services SSL [13.3R1.4]
JUNOS Services IPSec [13.3R1.4]
JUNOS platform Software Suite [13.3R1.4]
JUNOS Runtime Software Suite [13.3R1.4]
JUNOS Routing Software Suite [13.3R1.4]
JUNOS py-base-i386 [13.3R1.4]
```

## show version

```
user@host> show version
Hostname: router1
Model: m20
JUNOS Base OS boot [7.2-20050312.0]
JUNOS Base OS Software Suite [7.2-20050312.0]
JUNOS Kernel Software Suite [7.2R1.7]
JUNOS Packet Forwarding Engine Support (M20/M40) [7.2R1.7]
JUNOS Routing Software Suite [7.2R1.7]
JUNOS Online Documentation [7.2R1.7]
JUNOS Crypto Software Suite [7.2R1.7]
```

**command-name**

```
{master}
user@host> show version psd 1
psd1-re0:
-----
Hostname: china
Model: t640
JUNOS Base OS boot [9.1I20080311_1959_builder]
JUNOS Base OS Software Suite [9.1-20080321.0]
JUNOS Kernel Software Suite [9.1-20080321.0]
JUNOS Crypto Software Suite [9.1-20080321.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.1-20080321.0]
JUNOS Packet Forwarding Engine Support (T-series) [9.1-20080321.0]
JUNOS Online Documentation [9.1-20080321.0]
JUNOS Routing Software Suite [9.1-20080321.0]
labpkg [7.0]
```

**show version (Junos OS Evolved with third-party application installed)**

```
user@host> show version
Model: ptx10003-160c
Junos: 20.1-201910240713.0-EVO
Junos Package: junos-evo-install-ptx-fixed-x86-64-20.1-201910240713.0-EVO.iso
Yocto: 2.2.1
Linux Kernel: 4.8.28-WR2.2.1_standard-g21fb4b9
SDK version: 5.6.7
External Software:
    acmeMonitor-1.2.3 [sdk 5.6.7]
    acmeLoadShare-3.4.5 [sdk 5.6.8]
```

**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.

**node** option introduced in Junos OS Evolved Release 18.3R1.

# start shell

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## Syntax

```
start shell (csh | sh)
<user username>
```

## Description

Exit from the CLI environment and create a UNIX-level shell. To return to the CLI, type **exit** from the shell.

### NOTE:

- To issue this command, the user must have the required login access privileges configured by including the **permissions** statement at the **[edit system login class *class-name*]** hierarchy level.

- UNIX wheel group membership or permissions are no longer required to issue this command.

## Options

<code>cs</code>	Create a UNIX C shell.
<code>sh</code>	Create a UNIX Bourne shell.
<code>user <i>username</i></code>	(Optional) Start the shell as another user.

## Additional Information

When you are in the shell, the shell prompt has the following format:

```
username@hostname%
```

An example of the prompt is:

```
root@host%
```

## Required Privilege Level

shell or maintenance

## Output Fields

When you enter this command, you are provided feedback on the status of your request.



## Sample Output

### start shell csh

```
user@host> start shell csh
%

exit
%

username@hostname% start shell sh
%

exit
user@host>
```

## Release Information

Command introduced before Junos OS Release 7.4.

## test configuration

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## Syntax

```
test configuration filename  
syntax-only
```

## Description

Verify that the syntax of a configuration file is correct. If the configuration contains any syntax or commit check errors, a message is displayed to indicate the line number and column number in which the error was found. When using the *filename* option, this command only accepts text files.

## Options

***filename*** Name of the configuration file. This file must be a text file and no other type.

**syntax-only** (Optional) Check the syntax of a partial configuration file, without checking for commit errors.

## Required Privilege Level

view

## Output Fields

When you enter this command, you are provided feedback on the status of your request.

## Sample Output

### test configuration

```
user@host> test configuration terminal
[Type ^D to end input]
system {
host-name host;
test1;
login;
}
terminal:3:(8) syntax error: test
  [edit system]
    'test;'
      syntax error
terminal:4:(11) statement must contain additional statements: ;
  [edit system login]
    'login ;'
      statement must contain additional statements
configuration syntax failed
```

## Release Information

Command introduced before Junos OS Release 7.4.

**syntax-only** option introduced in Junos OS Release 12.1.