

# Get Started with Security Director Insights

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# About the Documentation

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Use this guide to understand the architecture and deployment of Security Director Insights. It also includes procedures for configuring Policy Enforcer for mitigation, adding log collector nodes, and HA configuration.

## Documentation and Release Notes

To obtain the most current version of all Juniper Networks<sup>®</sup> technical documentation, see the product documentation page on the Juniper Networks website at <https://www.juniper.net/documentation/>.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

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## Documentation Conventions

[Table 1 on page v](#) defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Table 2 on page v defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
<b>Bold text like this</b>	Represents text that you type.	To enter configuration mode, type the <b>configure</b> command:  user@host> <b>configure</b>
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> <b>show chassis alarms</b>  No alarms currently active
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Introduces or emphasizes important new terms.</li> <li>Identifies guide names.</li> <li>Identifies RFC and Internet draft titles.</li> </ul>	<ul style="list-style-type: none"> <li>A policy <i>term</i> is a named structure that defines match conditions and actions.</li> <li><i>Junos OS CLI User Guide</i></li> <li>RFC 1997, <i>BGP Communities Attribute</i></li> </ul>

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name:  [edit] root@# <b>set system domain-name</b> <i>domain-name</i>
<b>Text like this</b>	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> <li>To configure a stub area, include the <b>stub</b> statement at the [edit <b>protocols ospf area area-id</b>] hierarchy level.</li> <li>The console port is labeled <b>CONSOLE</b>.</li> </ul>
< > (angle brackets)	Encloses optional keywords or variables.	<b>stub &lt;default-metric <i>metric</i>&gt;;</b>
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	<b>broadcast   multicast</b>  <i>(string1   string2   string3)</i>
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	<b>rsvp { # Required for dynamic MPLS only</b>
[ ] (square brackets)	Encloses a variable for which you can substitute one or more values.	<b>community name members [ <i>community-ids</i> ]</b>
Indentation and braces ( { } )	Identifies a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	

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**GUI Conventions**


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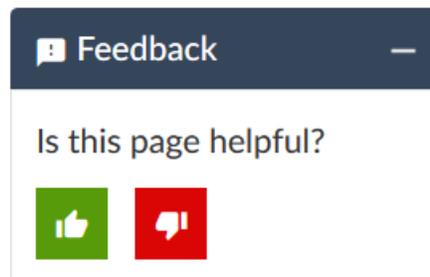
Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
<b>Bold text like this</b>	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> <li>In the Logical Interfaces box, select <b>All Interfaces</b>.</li> <li>To cancel the configuration, click <b>Cancel</b>.</li> </ul>
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select <b>Protocols&gt;Ospf</b> .

## Documentation Feedback

We encourage you to provide feedback so that we can improve our documentation. You can use either of the following methods:

- Online feedback system—Click TechLibrary Feedback, on the lower right of any page on the [Juniper Networks TechLibrary](#) site, and do one of the following:



- Click the thumbs-up icon if the information on the page was helpful to you.
- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide feedback.
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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <https://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

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- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum: <https://www.juniper.net/company/communities/>
- Create a service request online: <https://myjuniper.juniper.net>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

## Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://myjuniper.juniper.net>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://support.juniper.net/support/requesting-support/>.

# 1

CHAPTER

## Get Started

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[Security Director Insights Overview | 10](#)

[Deploy and Configure Security Director Insights with Open Virtualization Appliance \(OVA\) Files | 11](#)

[Add Security Director Insights as a Log Collector | 18](#)

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[Configure Policy Enforcer for Security Director Insights Mitigation | 36](#)

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# Security Director Insights Overview

Security Director Insights is a single virtual appliance (Service VM) that runs on the VMware vSphere infrastructure. It facilitates automated security operations. It enables you to take effective actions on security events logged by Juniper Networks security products. The events that affect a host or events that are impacted by a particular threat source are presented by Security Director Insights from different security modules. These events provide instantaneous information about the extent and stage of an attack. Security Director Insights also detects the hosts and servers under attack by analyzing events that are not severe enough to block. The application contains an option to verify the incidents using your trusted threat intelligence providers. After you have verified the incidents, you can take preventive and remedial actions using the rich capabilities of our security products.

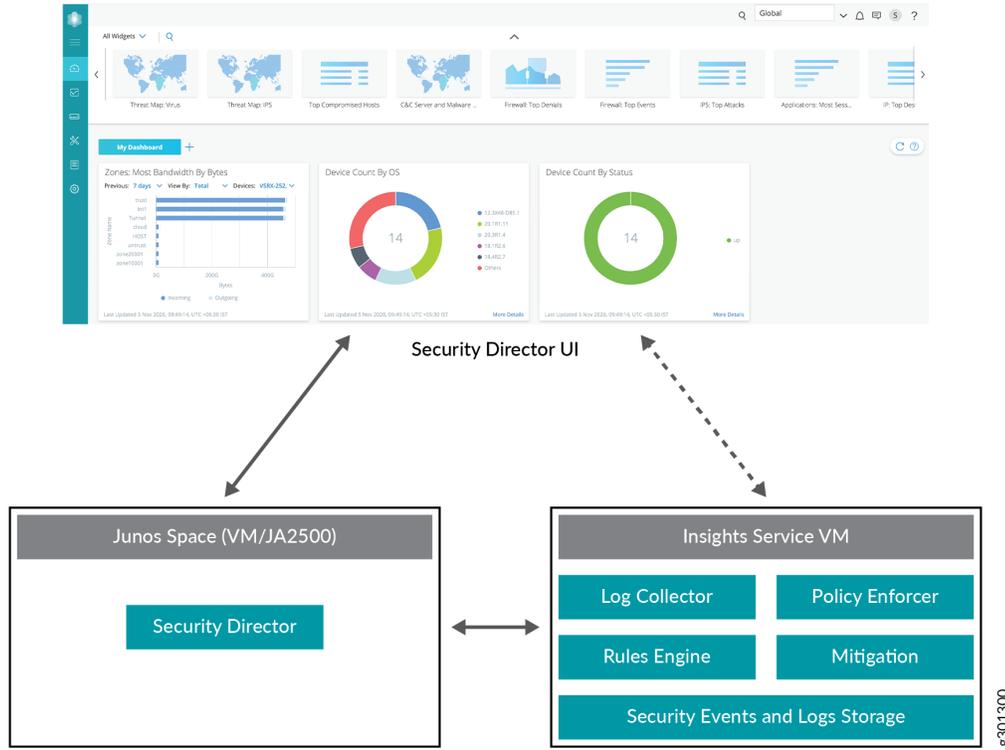
## Benefits

- Reduce the number of alerts across disparate security solutions
- Quickly react to active threats with one-click mitigation
- Improve the security operations center (SOC) teams' ability to focus on the highest priority threats

## Security Director Insights Architecture

The Service VM provides the following functionality, as shown in [Figure 1 on page 11](#).

Figure 1: Security Director Insights Architecture



- The Service VM works with the Security Director ecosystem. The Security Director Insights GUI is integrated into the Security Director GUI.
- The Log Collector and Policy Enforcer are integrated within the Security Director Insights VM.

RELATED DOCUMENTATION

| [Add Insights Nodes](#)

## Deploy and Configure Security Director Insights with Open Virtualization Appliance (OVA) Files

Security Director Insights requires VMware ESXi server version 6.0 or later that can support a virtual machine (VM) with the following configuration:

- 8 CPUs
- 24-GB RAM
- 1.2-TB disk space

If you are not familiar with using VMware ESXi servers, see [VMware Documentation](#) and select the appropriate VMware vSphere version.

To deploy and configure the Security Director Insights with OVA files, perform the following tasks:

1. Download the Security Director Insights VM OVA image from the Juniper Networks software [download page](#).

**NOTE:** Do not change the name of the Security Director Insights VM image file that you download from the Juniper Networks support site. If you change the name of the image file, the creation of the Security Director Insights VM may fail.

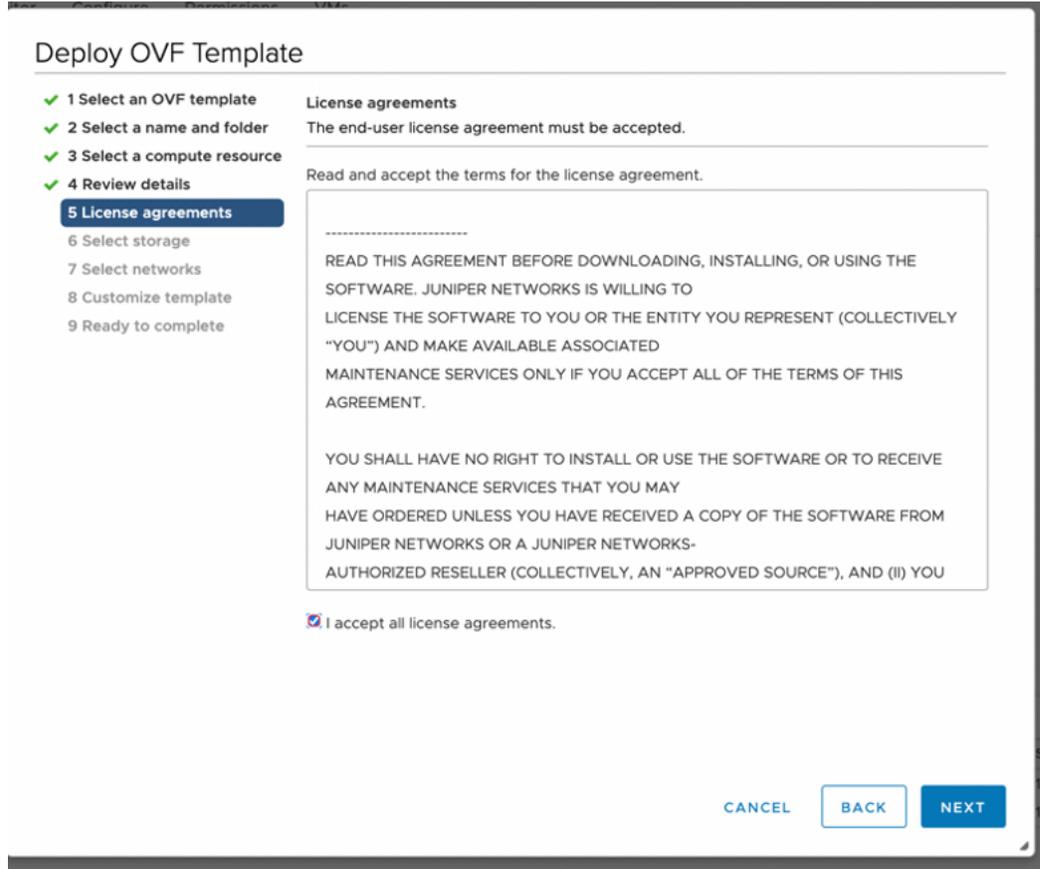
2. Launch the vSphere Client that is connected to the ESXi server, where the Security Director Insights VM is to be deployed.
3. Select **File > Deploy OVF Template**.

The Deploy OVF Template page appears, as shown in [Figure 2 on page 13](#).

Figure 2: Select an OVF Template Page

4. In the Select an OVF template page, select the **URL** option if you want to download the OVA image from the internet or select **Local file** to browse the local drive and upload the OVA image.
5. Click **Next**.  
The Select a name and folder page appears.
6. Specify the OVA name, installation location for the VM, and click **Next**.  
The Select a compute resource page appears.
7. Select the destination compute resource for the VM, and click **Next**.  
The Review details page appears.
8. Verify the OVA details and click **Next**.  
The License agreements page appears, as shown in [Figure 3 on page 14](#).

Figure 3: License Agreement Page



9. Accept the EULA and click **Next**.

The Select storage page appears.

10. Select the destination file storage for the VM configuration files and the disk format. (Thin Provision is for smaller disks and Thick Provision is for larger disks.)

Click **Next**. The Select networks page appears.

11. Select the network interfaces that will be used by the VM.

IP allocation can be configured for DHCP or Static addressing. We recommend using Static IP Allocation Policy.

Click **Next**. The Customize template page appears. For DHCP instructions, see to Step 13.

12. For IP allocation as Static, configure the following parameters for the virtual machine:

- IP address—Enter the Security Director Insights VM IP address.
- Netmask—Enter the netmask.

- Gateway—Enter the gateway address.
- DNS Address 1—Enter the primary DNS address.
- DNS Address 2—Enter the secondary DNS address.

Figure 4: Customize Template Page

### Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- ✓ 6 Select storage
- ✓ 7 Select networks
- 8 Customize template
- 9 Ready to complete

✓ Juniper Security Analytics 8 settings  
 Virtual Appliance Network Settings

IP Allocation Policy	Static ▾
IP address	Ignore this property if the IP allocation policy is DHCP. <input style="width: 100%;" type="text" value="10.0.0.0"/>
Netmask	Ignore this property if the IP allocation policy is DHCP. <input style="width: 100%;" type="text" value="255.255.0.0"/>
Gateway	Ignore this property if the IP allocation policy is DHCP. <input style="width: 100%;" type="text" value="10.0.0.1"/>
DNS address 1	Ignore this property if the IP allocation policy is DHCP. <input style="width: 100%;" type="text" value="10.0.0.1"/>
DNS address 2	Ignore this property if the IP allocation policy is DHCP. <input style="width: 100%;" type="text"/>

CANCEL
BACK
NEXT

13. For IP allocation as DHCP, enter the search domain, hostname, device name, and device description for the virtual machine.

This option is recommended only for the Proof of Concept type of short-term deployments. Do not use this option.

Click **Next**. The Ready to complete page appears, as shown in [Figure 5 on page 16](#).

Figure 5: Ready to Complete Page

### Deploy OVF Template

Click Finish to start creation.

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- ✓ 6 Select storage
- ✓ 7 Select networks
- ✓ 8 Customize template
- 9 Ready to complete**

Provisioning type	Deploy OVF From Remote URL
Name	juniper-ovf-remote-url-20.3R1.s449c42
Template name	juniper-ovf-remote-url-20.3R1.s449c42
Download size	4.3 GB
Size on disk	9.8 GB
Folder	Abhishek_Gandhi
Resource	it-cluster1a.englab.juniper.net
Storage mapping	1
All disks	Datastore: ranch99-vm; Format: Thin provision
Network mapping	2
administrative	Engineering
HA Monitoring	Engineering
IP allocation settings	
IP protocol	IPV4
IP allocation	Static - Manual

CANCEL BACK **FINISH**

14. Verify all the details and click **Finish** to begin the OVA installation.

15. After the OVA is installed successfully, power on the VM and wait for the boot-up to complete.

16. Once the VM powers on, in the CLI terminal, log in as administrator with the default username as "admin" and password as "abc123".

After you log in, you will be prompted to change the default admin password. Enter a new password to change the default password, as shown in [Figure 6 on page 17](#).

Figure 6: Default Admin Password Reset

```
The authenticity of host '10.2.11.46 (10.2.11.46)' can't be established.  
ECDSA key fingerprint is a0:b9:21:1f:0f:54:d6:7e:a7:6b:40:8f:9e:7c:cc:4a.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '10.2.11.46' (ECDSA) to the list of known hosts.  
admin@10.2.11.46's password:  
The CLI admin password needs to be changed from the default.  
Enter the new password of CLI admin: █
```

The Security Director Insights deployment is now complete.

17. You must now add the Security Director Insights node to Junos Space by performing the following steps.

- Log in to Security Director GUI and navigate to **Administration > Insights Management > Insights Nodes**.
- Enter the Security Director Insights IP address and the admin password (from Step 16).
- Click **Save** to complete integrating the Security Director Insights VM into Security Director.

To know more about how to add Security Director Insights nodes, see *Add Insights Nodes*.

**NOTE:** You can use the Security Director Insights VM as a log collector and as an integrated Policy Enforcer.

## RELATED DOCUMENTATION

[Add Security Director Insights as a Log Collector | 18](#)

[Configure Security Director Insights High Availability | 24](#)

[Security Director Insights High Availability Deployment Architecture | 22](#)

[Configure Policy Enforcer for Security Director Insights Mitigation | 36](#)

# Add Security Director Insights as a Log Collector

To use the log collector functionality that comes along with the Security Director Insights installation, add the IP address of the Security Director Insights virtual machine (VM) as a log collector.

**NOTE:** If you prefer to use the legacy Log Collector, then you must configure the SRX Series device to send syslog to both the legacy Log Collector and the Security Director Insights VM. This is to retain Security Director log collector functionality and to provide the Security Director Insights functionalities such as mitigation and incidents verification.

Before you add the log collector node in the GUI, you must set the administrator password. By default, the Security Director log collector is disabled. You must first enable it and then set the administrator password.

To enable the log collector and configure the administrator password:

1. Go to the Security Director Insights CLI.

```
# ssh admin@${security-director-insights_ip}
```

2. Enter the application configuration mode.

```
user:Core# applications
```

3. Enable Security Director log collector.

```
user:Core#(applications)# set log-collector enable on
```

4. Configure the administrator password.

```
user:Core#(applications)# set log-collector password
```

```
Enter the new password for SD Log Collector access:
```

```
Retype the new password:
```

```
Successfully changed password for SD Log Collector database access
```

To add the Security Director Insights VM IP address as a log collector node:

1. From the Security Director user interface, select **Administration > Logging Management > Logging Nodes**, and click the plus sign (+).

The Add Logging Node page appears.

2. Choose the Log Collector type as **Security Director Log Collector**.

3. Click **Next**.

The Add Collector Node page appears.

4. In the Node Name field, enter a unique name for the log collector.

5. In the IP Address field, enter the IP address of the Security Director Insights VM.

The IP address used in the Deploy OVF Template page must be used in the Add Collector Node page, as shown in [Figure 7 on page 20](#) and [Figure 8 on page 21](#).

Figure 7: Deploy OVF Template Page

### Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- ✓ 6 Select storage
- ✓ 7 Select networks
- 8 Customize template**
- 9 Ready to complete

Juniper Security Analytics 8 settings	
Virtual Appliance Network Settings	
IP Allocation Policy	Static ▾
IP address	Ignore this property if the IP allocation policy is DHCP. <input type="text" value="10.0.100.00"/>
Netmask	Ignore this property if the IP allocation policy is DHCP. <input type="text" value="255.255.0.0"/>
Gateway	Ignore this property if the IP allocation policy is DHCP. <input type="text" value="10.0.0.0"/>
DNS address 1	Ignore this property if the IP allocation policy is DHCP. <input type="text" value="10.0.0.0"/>
DNS address 2	Ignore this property if the IP allocation policy is DHCP. <input type="text" value=""/>

CANCEL BACK NEXT

Figure 8: Add Logging Node Page

### Add Logging Node ?

Select Deployment      **Add Collector Node**      Certificate Details

---

#### Add Collector Node

##### Node 1

Node Name\* ?   
**Valid**

IP Address\* ?

User Name\* ?

Password\* ?

[Cancel](#)      [Back](#)      [Next](#)

6. In the User Name field, enter the username of the Security Director Insights VM.
7. In the Password field, enter the password of the Security Director Insights VM.
8. Click **Next**.  
The certificate details are displayed.
9. Click **Finish** and then click **OK** to add the newly created Logging Node.

**NOTE:** The log collector in Security Director Insights supports 25K events per second (eps).

To achieve 25K logs per second, you must have the following configuration:

- 32 CPUs with CPU reservation 40MHz to 45MHz.
- 128-GB RAM

Disable the raw log: **user:Core#(applications)# set log-collector raw-log disable.**

#### RELATED DOCUMENTATION

[Deploy and Configure Security Director Insights with OVA Files | 11](#)

[Configure Security Director Insights High Availability | 24](#)

[Security Director Insights High Availability Deployment Architecture | 22](#)

[Configure Policy Enforcer for Security Director Insights Mitigation | 36](#)

## Security Director Insights High Availability Deployment Architecture

You can deploy Security Director Insights as a single node and as two nodes with high availability (HA).

Security Director Insights requires the following system and network configurations for the HA deployment:

- Two Security Director Insights systems for two nodes HA.
- Each system must have two network interfaces: one for management and another for HA monitoring.
- The IP addresses of the management interface of the two systems must be in the same subnet.
- The IP addresses of the HA monitoring interface of the two systems must be in the same subnet.

The management and HA monitoring interfaces must be in different subnets.

- Virtual IP addresses for each subnet.

The following example shows the network configuration for the HA deployment:

- System 1:
  - Management IP: 10.1.1.2/24

- HA monitoring IP: 20.1.1.2/24
- System 2:
  - Management IP: 10.1.1.3/24
  - HA monitoring IP: 20.1.1.3/24
- Virtual IP address for data traffic: 10.1.1.4/24
- Virtual IP address for HA monitoring: 20.1.1.4/24

The virtual IP addresses are used when you configure HA in the Security Director Insights GUI. The virtual IP addresses are automatically assigned to one of the systems, which becomes the active node. When failover occurs, the virtual IP addresses are automatically assigned to the other system, which is the standby node.

You can configure the HA monitoring IP address using a CLI command, as shown in [Figure 9 on page 23](#).

Figure 9: HA Monitoring IP Address Configuration

```
*****
*           Juniper Security Director Insights           *
*                                                         *
*****

Welcome admin. It is now Fri Oct 16 08:10:07 PDT 2020
[chrisliu-ha-test-11:Core# server
Entering the server configuration mode...
[chrisliu-ha-test-11:Core#(server)# set ip address 20.1.1.2 netmask 255.255.255.0 gateway 20.1.1.1 interface ha-monitoring]
```

## RELATED DOCUMENTATION

[Deploy and Configure Security Director Insights with OVA Files | 11](#)

[Configure Security Director Insights High Availability | 24](#)

[Configure Policy Enforcer for Security Director Insights Mitigation | 36](#)

[Add Security Director Insights as a Log Collector | 18](#)

# Configure Security Director Insights High Availability

## IN THIS SECTION

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- [Enable HA | 26](#)
- [Manually Trigger Failover | 29](#)
- [Disable HA | 32](#)
- [Upgrade HA | 34](#)

Security Director Insights supports two-node high availability (HA) with the following specifications:

- Once you enable HA, one Security Director Insights virtual machine (VM) becomes the active node and another Security Director Insights VM becomes the standby node.
- You must specify the virtual IP address assigned to the HA system to inject logs through the virtual IP address.
- If the active node is abnormal or down, the failover to the standby node occurs automatically. You need not change anything when you inject logs.

This topic explains how to setup Security Director Insights HA.

## Before You Begin

Before you enable HA:

1. Read [“Security Director Insights High Availability Deployment Architecture”](#) on page 22.

**NOTE:** If you are using Policy Enforcer inside Security Director Insights and Policy Enforcer is not in HA, you must not deploy Security Director Insights in HA.

2. The two Security Director Insights VMs must have the same Security Director Insights software versions. In each Security Director Insights VM, configure the following network interfaces to enable HA:
  - Eth0—For normal Security Director Insights data and management

- Eth1—For HA monitoring

Without the HA feature, Security Director Insights VM requires only a single network interface, eth0, for data and management. The standard Security Director Insights OVA deployment configures only the eth0 interface.

3. Use the following procedure to configure IP addresses for the network interfaces:

- Go to Security Director Insights CLI.

```
# ssh admin@${security-director-insights_ip}
```

- Enter the Settings menu.

```
# server
```

- View already configured IP addresses.

```
# show ip
```

- Configure the eth0 IP address.

```
# set ip interface management address ${eth0_ip} gateway ${eth0_gateway} netmask ${eth0_netmask}
```

- Configure the eth1 IP address.

```
# set ip interface ha-monitoring address ${eth1_ip} gateway ${eth1_gateway} netmask  
${eth1_netmask}
```

- Verify the configured IP addresses.

```
# show ip
```

**NOTE:**

You must ensure that:

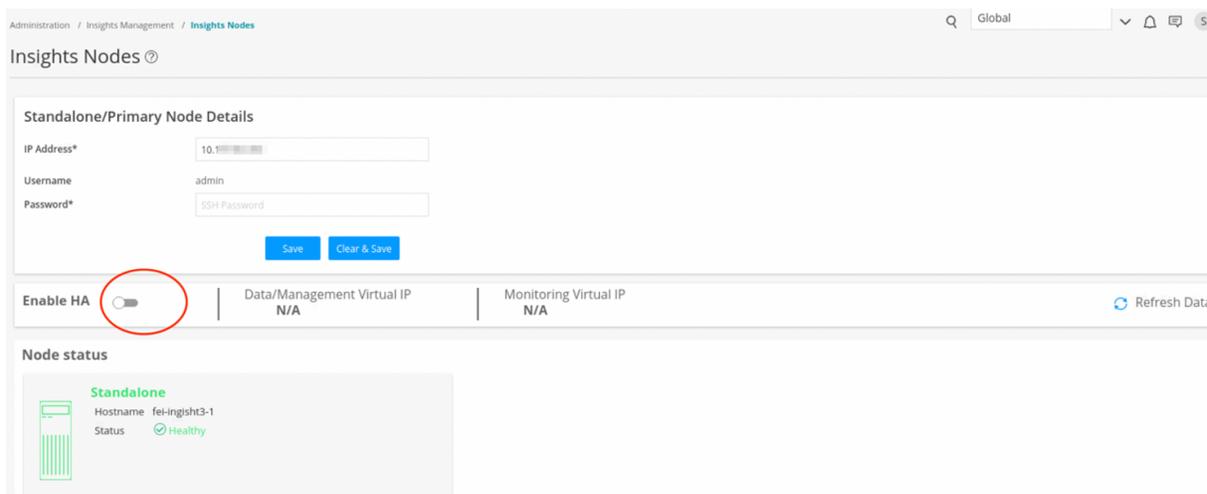
- On each node, the IP addresses of the eth0 and eth1 interfaces are in different subnets.
- The IP address of the eth0 interface of the active and standby nodes are in the same subnet.
- The IP address of the eth1 interface of the active and standby nodes are in the same subnet.

## Enable HA

Before you enable HA, you must add the active node.

1. To add the active node:
  - Select **Security Director > Administration > Insights Management > Insights Nodes**.  
The Insights Nodes page appears.
  - Enter the IP address of the active node, admin password, and click **Save**.
2. Once the active node is added successfully, toggle the Enable HA option on, as shown in [Figure 10 on page 26](#).

Figure 10: Enable HA



The HA Setup page appears.

3. Complete the configuration according to the guidelines provided in [Table 3 on page 26](#), and click **Save & Enable**.

Table 3: Fields on the HA Setup Page

Setting	Guideline
<i>Secondary Node Details</i>	
Secondary system IP	Enter the IP address of the eth0 interface of the standby node.
Username	Username is “admin” and you cannot modify it.
Password	Enter the Security Director Insights VM password.

Table 3: Fields on the HA Setup Page (continued)

Setting	Guideline
<i>HA Settings</i>	
Data Virtual IP/Netmask	Enter the virtual IP address of the HA management interface.
HA monitor Virtual IP/Netmask	Enter the virtual IP address of the HA monitoring interface.
Ping IPs	(Optional) Enter one or more IP addresses that both nodes can reach to check the connectivity.

You are taken back to the Insights Nodes page. You will see the status messages, as shown in [Figure 11 on page 27](#). Note that the HA enabling takes several minutes.

Figure 11: Enable HA in Progress

Insights Nodes

Action enable HA is in progress

Action: enable HA Status: task has been started

Standalone/Primary Node

IP Address\*

Username admin

Password\* SSH Password

Save Clear & Save

Enable HA

Data/Management Virtual IP N/A

Monitoring Virtual IP N/A

Refresh Data

Node status

Standalone

Hostname fel-insight3-1

Status ✔ Healthy

#### 4. Click **Refresh Data**.

You will see intermittent status messages, as shown in [Figure 12 on page 28](#).

Figure 12: Enable HA Intermittent Status

Insights Nodes ⓘ

Action enable HA is in progress

### Standalone/Primary Node Details

IP Address\*

Username

Password\*

Enable HA  | Data/Management Virtual IP  | Monitoring Virtual IP

### Node status

**Active : fei-insights3-2**

Hostname fei-insights3-2

Pgsqj data N/A

Pgsqj status N/A

Status 🔴 Services offline

**Standby : fei-ingisht3-1**

Hostname fei-ingisht3-1

Pgsqj data N/A

Pgsqj status N/A

Status 🟢 Healthy

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-insights3-2	██.██.██.██	██.██.██.██	N/A	N/A	—	Active	<span style="color: red;">🔴 Services offline</span>
fei-ingisht3-1	██.██.██.██	██.██.██.██	0.73 %	30.03 %	false	Standby	<span style="color: green;">🟢 Healthy</span>

2 Rows

5. Keep clicking the **Refresh Data** option until you see that:

- Both nodes are healthy.
- Data and management virtual IP addresses are the same as the ones configured on the HA Setup page.

Figure 13 on page 28 shows the status of the nodes once the HA is enabled successfully.

Figure 13: HA Enabled

Insights Nodes ⓘ

Enable HA  | Data/Management Virtual IP  | Monitoring Virtual IP

### Node status

**Active : fei-ingisht3-1**

Hostname fei-ingisht3-1

Pgsqj data LATEST

Pgsqj status PRI

Status 🟢 Healthy

**Standby : fei-insights3-2**

Hostname fei-insights3-2

Pgsqj data STREAMING|SYNC

Pgsqj status HS:sync

Status 🟢 Healthy

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-ingisht3-1	██.██.██.██	██.██.██.██	0.73 %	40.03 %	true	Active	<span style="color: green;">🟢 Healthy</span>
fei-insights3-2	██.██.██.██	██.██.██.██	0.58 %	40.31 %	true	Standby	<span style="color: green;">🟢 Healthy</span>

2 Rows

## Manually Trigger Failover

You can initialize the HA failover if the active node encounters any issues.

To enable failover to the standby node:

1. In the Insights Node page, click **Failover** under the active node, as shown in [Figure 14 on page 29](#).

**Figure 14: Initiate Failover**

The screenshot shows the 'Insights Nodes' page with the following details:

- Enable HA:**
- Data/Management Virtual IP:** 10.1
- Monitoring Virtual IP:** 192.1
- Refresh Data:**
- Node status:**
  - Active : fei-ingsht3-1**
    - Hostname: fei-ingsht3-1
    - Pgsq data: LATEST
    - Pgsq status: PRI
    - Status: ✔ Healthy
    - (highlighted with a red circle)
  - Standby : fei-ingsht3-2**
    - Hostname: fei-ingsht3-2
    - Pgsq data: STREAMING|SYNC
    - Pgsq status: HS:sync
    - Status: ✔ Healthy
    -
- Table:**

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-ingsht3-1			0.73 %	40.03 %	true	Active	<span style="color: green;">✔ Healthy</span>
fei-ingsht3-2			0.58 %	40.31 %	true	Standby	<span style="color: green;">✔ Healthy</span>

A confirmation message appears, as shown in [Figure 15 on page 29](#).

**Figure 15: Failover Confirmation Message**

The dialog box contains the following text:

**Failover**

This will trigger a task Failover

2. Click **OK**.

The failover action takes several minutes to complete. During the process, you will see intermittent status messages, as shown in [Figure 16 on page 30](#).

**Figure 16: Failover Intermittent Status**

Administration / Insights Management / Insights Nodes

Insights Nodes ⓘ

Enable HA

Action failover is in progress

Success: task has been started

Refresh Data

**Node status**

**Active : fei-ingisht3-1**

Hostname fei-ingisht3-1  
Pgsql data LATEST  
Pgsql status PRI  
Status ✔ Healthy

**Standby : fei-ingisht3-2**

Hostname fei-ingisht3-2  
Pgsql data STREAMING|SYNC  
Pgsql status HS:sync  
Status ✔ Healthy

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-ingisht3-1	10.137.102.241	192.168.100.113	0.8 %	38.07 %	true	Active	<span style="color: green;">✔ Healthy</span>
fei-ingisht3-2	10.137.102.242	192.168.100.114	0.71 %	39.04 %	true	Standby	<span style="color: red;">⊘ Out of Sync</span>

2 Rows

Once the failover is enabled, the original standby node becomes the new active node and the original active node is put in an offline mode, as shown in [Figure 17 on page 30](#).

**Figure 17: Standby Node Offline**

Administration / Insights Management / Insights Nodes

Insights Nodes ⓘ

Enable HA

Data/Management Virtual IP 10.137.102.241

Monitoring Virtual IP 192.168.100.113

Refresh Data

**Node status**

**Active : fei-ingisht3-2**

Hostname fei-ingisht3-2  
Pgsql data LATEST  
Pgsql status PRI  
Status ✔ Healthy

Original standby node becomes active node

**Standby : fei-ingisht3-1**

Hostname fei-ingisht3-1  
Pgsql data N/A  
Pgsql status N/A  
Status ⊘ Services offline

Original active node become standby and is put offline

Rebuild Start More Info...

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-ingisht3-2	10.137.102.242	192.168.100.114	0.79 %	38.98 %	true	Active	<span style="color: green;">✔ Healthy</span>
fei-ingisht3-1	10.137.102.241	192.168.100.113	N/A	N/A	—	Standby	<span style="color: red;">⊘ Services offline</span>

2 Rows

3. To bring the new standby node back online, click **Start**, as shown in [Figure 18 on page 31](#).

Figure 18: Start Standby Node

The screenshot shows the 'Insights Nodes' management page. At the top, there are controls for 'Enable HA' (a toggle switch), 'Data/Management Virtual IP' (10.1...), and 'Monitoring Virtual IP' (192.1...), along with a 'Refresh Data' button. Below this is the 'Node status' section, which displays two nodes:

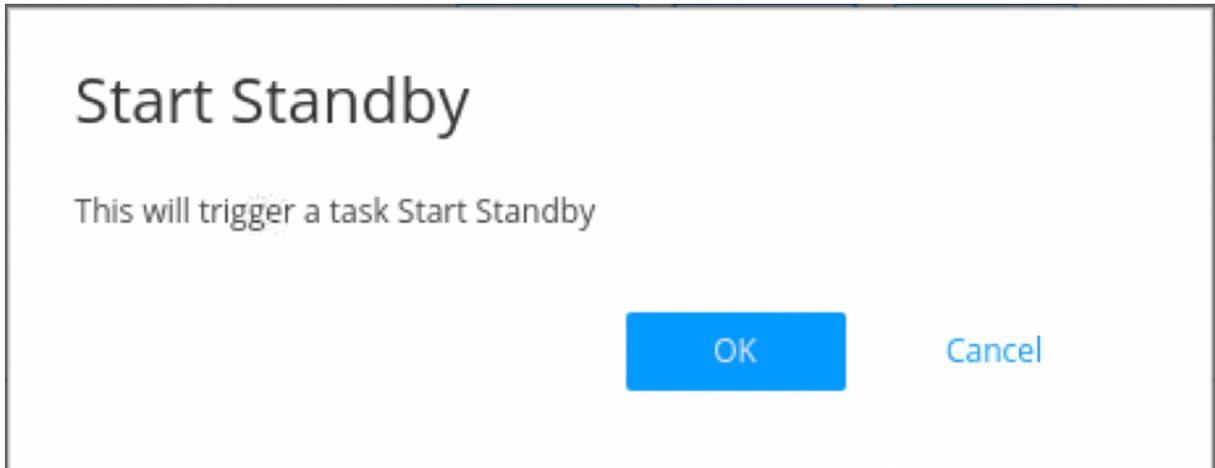
- Active : fei-ingsht3-2**: Hostname fei-ingshts3-2, Pgsq data LATEST, Pgsq status PRI, Status Healthy.
- Standby : fei-ingsht3-1**: Hostname fei-ingsht3-1, Pgsq data N/A, Pgsq status N/A, Status Services offline. A red circle highlights the 'Start' button.

At the bottom, a table lists the nodes with their respective metrics:

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-ingshts3-2	10.1...	10.1...	0.79 %	38.98 %	true	Active	Healthy
fei-ingsht3-1	10.1...	10.1...	N/A	N/A	—	Standby	Services offline

A confirmation message appears, as shown in [Figure 19 on page 31](#).

Figure 19: Start Standby Confirmation



4. Click **OK** to continue.

The Start action takes several minutes to complete.

Once the Start action is complete, the status of both the nodes shows online and healthy. The original active node is now online as a standby node, as shown in [Figure 20 on page 32](#).

Figure 20: Standby Start Action

Insights Nodes ⓘ

Enable HA  | Data/Management Virtual IP 10.10.10.10 | Monitoring Virtual IP 192.168.1.1 | Refresh Data

**Node status**

**Active : fei-insights3-2**

Hostname fei-insights3-2

Pgsq data LATEST

Pgsq status PRI

Status ✔ Healthy

[Failover](#)

**Standby : fei-ingisht3-1**

Hostname fei-ingisht3-1

Pgsq data STREAMING|SYNC

Pgsq status HS:sync

Status ✔ Healthy

[Stop](#)

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-insights3-2	10.10.10.10	10.10.10.10	0.84 %	39.23 %	true	Active	<span style="color: green;">✔ Healthy</span>
fei-ingisht3-1	10.10.10.10	10.10.10.10	0.91 %	39.93 %	true	Standby	<span style="color: green;">✔ Healthy</span>

2 Rows

5. If the standby node encounters any synchronization issues with the active node, click **Stop** under the Standby node.
6. Click **Rebuild** to synchronize data between the two nodes.

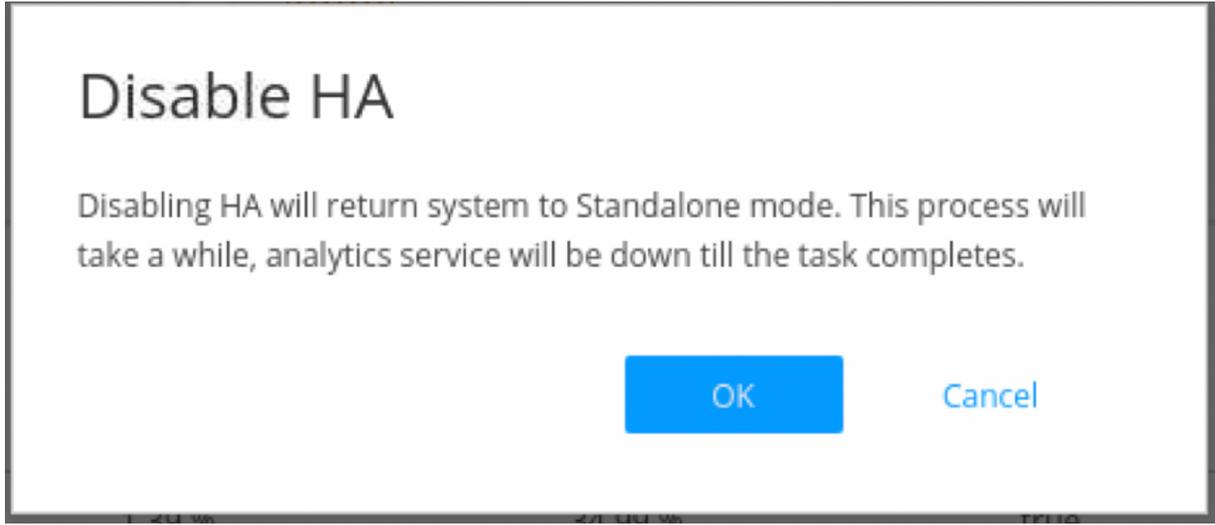
## Disable HA

To disable HA:

1. In the Insights Nodes page, toggle the Enable HA option off.

A confirmation message appears before HA is disabled, as shown in [Figure 21 on page 33](#).

Figure 21: Disable HA Confirmation



2. Click **OK** to confirm the HA disabling.

Disabling HA takes several minutes. During the process, intermittent status messages are displayed, as shown in [Figure 22 on page 33](#). Keep clicking **Refresh Data** until HA is disabled successfully.

Figure 22: HA Disabling Status



Once HA is disabled successfully, you can see only the active node VM in the Insights Nodes page, as shown in [Figure 23 on page 34](#).

Figure 23: HA Disabled

Insights Nodes ⓘ

---

**Standalone/Primary Node Details**

IP Address\*

Username

Password\*

---

Enable HA  | Data/Management Virtual IP **N/A** | Monitoring Virtual IP **N/A**

---

**Node status**

**Standalone**

Hostname fei-english3-1

Status ✔ Healthy

Hostname	Data traffic IP	HA Monitor IP	CPU usage	Memory usage	Online	Role	Status
fei-english3-1	10.0.0.1	—	0.79 %	39.07 %	true	Standalone	<span style="color: green;">✔ Healthy</span>

## Upgrade HA

When a new Security Director Insights software version is available, perform the following procedure to upgrade the HA nodes. You must upgrade HA only from the active node for both the nodes to be upgraded.

1. Go to Security Director Insights CLI.

```
ssh admin@${active_node_ip}
```

2. Enter the Settings menu.

```
#server
```

3. Obtain the software upgrade package.

```
#set system-update copy user@${pkg_location_ip}:${package_file_path/name}
```

4. View the software upgrade package version.

```
# show system-update versions
```

5. Initiate the upgrade.

```
# set system-update start software ${new_version}
```

```

feiyeezy-s448-1:Core#(server)# show system-update versions
Type          Version      Size      OK to upgrade
software      20.3R1.449  1.97 GB   OK
feiyeezy-s448-1:Core#(server)# set system-update start software 20.3R1.449

```

6. Verify the HA upgrade status.

```
# ha system-update status
```

Wait until the upgrade is finished successfully in both active and standby nodes, as shown in [Figure 24 on page 35](#).

Figure 24: HA Upgrade

```

feiyeezy-s448-1:Core#(server)# ha system-update status
Upgrade Started at: Tue Oct 13 15:22:26 2020

2020-10-13 15:22:26.106006 - Step 1: Preparing system for system update

2020-10-13 15:22:26.106818 - Step 2: Gathering information for software update
2020-10-13 15:22:30.990068 - standby updating from 20.3R1.448 to 20.3R1.449
2020-10-13 15:22:31.013218 - active updating from 20.3R1.448 to 20.3R1.449

2020-10-13 15:22:31.014280 - Step 3: Prepare HA services for update

2020-10-13 15:24:16.590442 - Step 4: Prepare active configuration for update

2020-10-13 15:24:16.610089 - Step 5: Prepare standby for system update

2020-10-13 15:25:41.349251 - Step 6: Start system update on standby
2020-10-13 15:28:37.047819 - Update on standby finished at 2020-10-13 15:28:37.047805

2020-10-13 15:28:40.196587 - Step 7: Start system update on active

2020-10-13 15:30:23.083680 - Step 8: Reconfigure active after system update
2020-10-13 15:33:37.719841 - Waiting for database to be ready for writes...
2020-10-13 15:33:37.733428 - Database is ready for writing
2020-10-13 15:33:37.734353 - Waiting for active HA services

2020-10-13 15:33:47.740471 - Step 9: Reconfigure standby after system update

2020-10-13 15:33:50.713489 - Step 10: Synchronize data from active to standby
2020-10-13 15:33:50.714044 - Waiting until the database is ready...
2020-10-13 15:33:50.721523 - Database is ready to sync up active and standby
2020-10-13 15:34:00.819802 - Waiting for standby HA services to start
2020-10-13 15:34:13.465276 - Restarting services...
2020-10-13 15:35:16.930596 - Upgrade successfully completed

```

RELATED DOCUMENTATION

[Deploy and Configure Security Director Insights with OVA Files | 11](#)

[Configure Policy Enforcer for Security Director Insights Mitigation | 36](#)

[Add Security Director Insights as a Log Collector | 18](#)

[Security Director Insights High Availability Deployment Architecture | 22](#)

## Configure Policy Enforcer for Security Director Insights Mitigation

### IN THIS SECTION

- [Add Security Director Insights Nodes | 36](#)
- [Configure Security Director Insights as Integrated Policy Enforcer | 37](#)
- [Create Custom Feeds for Mitigation | 41](#)
- [Configure Security Director Insights Mitigation Using Policy Enforcer | 41](#)
- [Monitor Mitigation Through Policy Enforcer | 42](#)

Security Director Insights performs mitigation using Juniper<sup>®</sup> Advanced Threat Prevention Cloud (Juniper ATP Cloud) or Policy Enforcer. This topic explains how to configure Policy Enforcer for mitigation. Policy Enforcer is integrated within the Security Director Insights virtual machine (VM). You can mitigate the IP addresses with either the Security Director Insights integrated Policy Enforcer or the legacy standalone Policy Enforcer. If you are using the integrated Policy Enforcer for mitigation, use the IP address of the Security Director Insights VM wherever Policy Enforcer details need to be entered.

### Add Security Director Insights Nodes

To add the Security Director Insights node:

1. Log in to the Security Director GUI and navigate to **Administration > Insights Management > Insights Nodes**.
2. Enter the Security Director Insights IP address and the admin password.

3. Click **Save**.

The Security Director Insights VM is added to Security Director. To know more about adding Security Director Insights nodes, see *Add Insights Nodes*.

## Configure Security Director Insights as Integrated Policy Enforcer

To configure the integrated Policy Enforcer:

1. Select **Security Director > Administration > Policy enforcer > Settings**.

The Settings page appears.

2. In the IP Address field, enter the IP address of the Security Director Insights VM.

The IP address used in the Deploy OVF Template page must be used in the Settings page, as shown in [Figure 25 on page 38](#) and [Figure 26 on page 39](#).

Figure 25: Deploy OVF Template Page

### Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- ✓ 6 Select storage
- ✓ 7 Select networks
- 8 Customize template**
- 9 Ready to complete

Juniper Security Analytics 8 settings	
Virtual Appliance Network Settings	
IP Allocation Policy	Static ▾
IP address	Ignore this property if the IP allocation policy is DHCP. <u>10.0.100.00</u>
Netmask	Ignore this property if the IP allocation policy is DHCP. <u>255.255.0.0</u>
Gateway	Ignore this property if the IP allocation policy is DHCP. <u>10.</u>
DNS address 1	Ignore this property if the IP allocation policy is DHCP. <u>10.</u>
DNS address 2	Ignore this property if the IP allocation policy is DHCP.

CANCEL BACK NEXT

Figure 26: Policy Enforcer Settings Page

3. In the Username field, enter “admin” as the username for the integrated Policy Enforcer.
4. In the Password field, enter the admin password that you used to bring up the Security Director Insights VM.
5. In the SkyATP Configuration Type field, select **Sky ATP/JATP with Juniper Connected Security** from the list and click **OK**.

A confirmation page appears displaying the Policy Enforcer configuration success message and to confirm setting up the threat prevention policy.

6. Click **OK**.

The Threat Prevention Policy Guided Setup page appears.

7. Click **Start Setup**.

8. In the Tenants page, do not create any tenants. Skip this step and click **Next**.

The Security Fabric page appears.

9. In the Security Fabric page, perform the following configuration:

- Select an existing site or click + to create a new site.

- In the Enforcement Point column, click **Add Enforcement Point** to add the SRX Series device as an enforcement point. This enables the SRX Series device to receive feeds from Security Director Insights.
- Click **Next**.

The Policy Enforcement Group page appears.

10. In the Policy Enforcement Group page, perform the following configuration:

- Click + to create a new policy enforcement group or use an existing group.
- Click **Next**.

The SkyATP Realm page appears.

11. In the SkyATP Realm page, perform the following configuration:

- Click + and enter the existing ATP Cloud realm credentials. If you do not have the credentials, you will get an option to create the ATP Cloud realm credentials.
- Click **OK**.

If the ATP Cloud realm is added successfully, assign a site in the Sites Assigned column.

- Click **Next**.

The Policies page appears.

12. In the Policies page, perform the following configuration:

- Click + to create a threat prevention policy.
- In the Name field, enter a name for the policy and description in the Description field.
- In the Profiles section, select the following profiles: Include C&C profile in policy, Include infected host profile in policy, and Include malware profile in policy.
- Click **OK**.

You are taken back to the Policies page.

- Click **Next**.

The Geo IP page appears.

13. In the Geo IP page, skip the configuration and click **Finish**.

The Summary page appears.

14. Review the configuration summary and click **OK**.

A new threat prevention policy is created.

## Create Custom Feeds for Mitigation

To mitigate incidents through Policy Enforcer, you must create custom feeds for blocklist and infected host.

To create the Policy Enforcer custom feeds:

1. Select **Security Director > Configure > Threat Prevention > Feed Sources > Custom Feeds**.

2. Click **Create** and select **Feeds with local files** from the drop-down list.

The Create local custom feed page appears.

3. In the Name field, enter a name for the custom feed and description in the Description field.

4. From the Feed Type drop-down list, select **Blacklist**.

5. From the Zones/Realms drop-down list, select the Juniper ATP Cloud realm you created using the Guided Setup.

6. From the User Input Type drop-down list, select **IP, Subnet and Range**.

7. Click **OK**.

A new custom feed for blocklist is created and you are taken back to the Custom Feeds page.

8. Repeat Steps 1 to 7 to create another custom feed for the infected host. In the Feed Type field, select **Infected-Hosts** from the list.

You will see two new custom feeds listed on the Custom Feeds page: one for blocklist and one for infected host.

## Configure Security Director Insights Mitigation Using Policy Enforcer

To configure mitigation settings using Policy Enforcer:

1. Select **Security Director > Administration > Insights Management > Mitigation Settings**.

The Mitigation Settings page appears.

2. Select the **Policy Enforcer** tab.

3. Complete the configuration by using the guidelines in [Table 4 on page 42](#).
4. Click **Save**.

If all the parameters are correct, mitigation is enabled.

**Table 4: Policy Enforcer Mitigation Guidelines**

Setting	Guideline
Policy Enforcer Hostname	The Policy Enforcer virtual machine IP address automatically appears. This is the IP address that you configure in the Policy Enforcer > Settings page.
Policy Enforcer SSH User Name	The SSH username automatically appears. This is the same username that you configure in the Policy Enforcer > Settings page.
Policy Enforcer SSH Password	Enter the Policy Enforcer SSH password. This is the same password that you enter in the Policy Enforcer > Settings page.
API User Name	If you have the credentials for the Policy Enforcer Controller APIs, enter the existing API username. Else, enter a name and Security Director Insights will create a new username.
API Password	If you have the credentials for the Policy Enforcer Controller APIs, enter the existing API password. Else, enter a password and Security Director Insights will create a new password.
Blocklist Feed Name	Enter the blocklist custom feed name that you created in the Configure > Threat Prevention > Feed Sources > Custom Feeds page.
Infected-Host Feed Name	Enter the infected host custom feed name that you created in the Configure > Threat Prevention > Feed Sources > Custom Feeds page.

**NOTE:** Security Director Insights supports mitigation using Juniper ATP Cloud and Policy Enforcer. Only one plugin can be active at a given time. Before you enable Policy Enforcer mitigation settings, ensure to disable the Juniper ATP Cloud plugin if it is enabled.

## Monitor Mitigation Through Policy Enforcer

The following example shows how to mitigate incidents through Policy Enforcer.

To monitor the mitigation:

1. Select **Security Director > Monitor > Insights > Mitigation**.

The Mitigation page appears.

2. Select one or more IP addresses and click **Enable Mitigation**.

If the mitigation is Successful, the status column displays Successful, as shown in [Figure 27 on page 43](#).

**Figure 27: Mitigation Successful**

Mitigation ⓘ

Source IP Filtering Endpoint IP Filtering

Search: Enable Mitigation Disable Mitigation

<input type="checkbox"/>	Mitigation	Threat Source IP	Detection Date	Status
<input type="checkbox"/>	Enabled	122.1.1.10	Oct 8 14:14:00	Successful 10.157.82.230: Success
<input type="checkbox"/>	Disabled	22.1.1.10	Oct 8 14:14:00	
<input type="checkbox"/>	Disabled	24.1.1.10	Oct 14 12:14:00	
<input type="checkbox"/>	Disabled	32.1.1.10	Oct 8 14:14:00	
<input type="checkbox"/>	Disabled	42.1.1.10	Oct 8 14:14:00	
<input type="checkbox"/>	Disabled	82.1.1.10	Oct 8 14:14:00	
<input type="checkbox"/>	Disabled	92.1.1.10	Oct 13 12:30:00	
<input type="checkbox"/>	Disabled	93.1.1.10	Oct 13 12:39:00	
<input type="checkbox"/>	Disabled	97.1.1.10	Oct 13 12:39:00	

The mitigated IP addresses listed under the Source IP Filtering tab are added to the custom blacklist feed.

The mitigated IP addresses listed under the Endpoint IP Filtering tab are added to the infected host custom feed.

3. Verify the blacklisted IP addresses in the SRX Series device that was added as an endpoint in Policy Enforcer. The device receives one blacklist feed with the IP address that you mitigated in Step 2, as shown in [Figure 28 on page 43](#).

**Figure 28: Blacklisted IP Address**

```

root@: show security dynamic-address category-name Blacklist
No.    IP-start      IP-end        Feed          Address
1      122.1.1.10   122.1.1.10   Blacklist/1   ID-fffc0410
Instance default Total number of matching entries: 1

```

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