



Device Settings

After you add a device, you can edit device-related settings on the **Device** page.

1. Choose **Devices** > **Device Management**.
2. Next to the device you want to modify, click **Edit** (✎).
3. Click **Device**.
 - [Edit General Settings, on page 1](#)
 - [Edit License Settings, on page 8](#)
 - [View System Information, on page 9](#)
 - [View the Inspection Engine, on page 9](#)
 - [View Health Information, on page 9](#)
 - [Edit Management Settings, on page 10](#)
 - [View Inventory Details, on page 47](#)
 - [Edit Applied Policies, on page 47](#)
 - [Edit Advanced Settings, on page 49](#)
 - [Edit Deployment Settings, on page 53](#)
 - [Edit Cluster Health Monitor Settings, on page 56](#)
 - [History for Device Settings, on page 61](#)

Edit General Settings

The **General** section of the **Device** page displays the settings described in the table below.

Figure 1: General






General   	
Name:	Thing1
Transfer Packets:	Yes
Mode:	Routed
Compliance Mode:	None
Performance Profile:	Default
TLS Crypto Acceleration:	Disabled
Device Configuration:	<input type="button" value="Import"/> <input type="button" value="Export"/> <input type="button" value="Download"/>

Table 1: General Section Table Fields

Field	Description
Name	The display name of the device on the management center.
Transfer Packets	This displays whether or not the managed device sends packet data with the events to the management center.
Mode	The displays the mode of the management interface for the device: routed or transparent .
Compliance Mode	This displays the security certifications compliance for a device. Valid values are CC, UCAPL and None.
Performance Profile	This displays the core allocation performance profile for the device, as configured in the platform settings policy.
TLS Crypto Acceleration:	Shows whether TLS crypto acceleration is enabled or disabled.
Device Configuration	Lets you copy, export, or import a configuration. See Copy a Configuration to Another Device, on page 3 and Export and Import the Device Configuration, on page 4 .

You can edit some of these settings from this section.

Procedure

-
- Step 1** Choose **Devices > Device Management**.
 - Step 2** Next to the device you want to modify, click **Edit** ().
 - Step 3** Click **Device**.
 - Step 4** In the **General** section, click **Edit** (.

- a) Enter a **Name** for the managed device.
- b) Check **Transfer Packets** to allow packet data to be stored with events on the management center.
- c) Click **Force Deploy** to force deployment of current policies and device configuration to the device.

Note Force-deploy consumes more time than the regular deployment since it involves the complete generation of the policy rules to be deployed on the threat defense.

Step 5 For **Device Configuration** actions, see [Copy a Configuration to Another Device, on page 3](#) and [Export and Import the Device Configuration, on page 4](#).

Step 6 Click **Deploy**.

What to do next

- Deploy configuration changes; see [Deploy Configuration Changes](#).

Copy a Configuration to Another Device

When a new device is deployed in the network you can easily copy configurations and policies from a pre-configured device, instead of manually reconfiguring the new device.

Before you begin

Confirm that:

- The source and destination threat defense devices are the same model and are running the same version of the software.
- The source is either a standalone Secure Firewall Threat Defense device or a Secure Firewall Threat Defense high availability pair.
- The destination device is a standalone threat defense device.
- The source and destination threat defense devices have the same number of physical interfaces.
- The source and destination threat defense devices are in the same firewall mode - routed or transparent.
- The source and destination threat defense devices are in the same security certifications compliance mode.
- The source and destination threat defense devices are in the same domain.
- Configuration deployment is not in progress on either the source or the destination threat defense devices.

Procedure

Step 1 Choose **Devices > Device Management**.

Step 2 Next to the device you want to modify, click **Edit** (✎).

Step 3 Click **Device**.

- Step 4** In the **General** section, do one of the following:
- Click **Get Device Configuration** (↓) to copy device configuration from another device to the new device. On the **Get Device Configuration** page, select the source device in the **Select Device** drop-down list.
 - Click **Push Device Configuration** (↑) to copy device configuration from the current device to the new device. On the **Push Device Configuration** page, select the destination to which configuration is to be copied in the **Target Device** drop-down list.

- Step 5** (Optional) Check **Include shared policies configuration** check box to copy policies. Shared policies like AC policy, NAT, Platform Settings and FlexConfig policies can be shared across multiple devices.

- Step 6** Click **OK**.
You can monitor the status of the copy device configuration task on **Tasks** in the Message Center.

When the copy device configuration task is initiated, it erases the configuration on the target device and copies the configuration of the source device to the destination device.



Warning When you have completed the copy device configuration task, you cannot revert the target device to its original configuration.

Export and Import the Device Configuration

You can export all of the the device-specific configuration configurable on the Device pages, including:

- Interfaces
- Inline Sets
- Routing
- DHCP
- VTEP
- Associated objects

You can then import the saved configuration for the same device in the following use cases:

- Moving the device to a different management center—First delete the device from the original management center, then add the device to the new management center. Then you can import the saved configuration.
- Moving the device between domains—When you move a device between domains, some device-specific configuration is not retained because supporting objects (such as interface groups for security zones) do not exist in the new domain. By importing the configuration after the domain move, any necessary objects are created for that domain, and the device configuration is restored.

- Restore an old configuration—If you deployed changes that negatively impacted the operation of the device, you can import a backup copy of a known working configuration to restore a previous operational state.
- Reregistering a device—If you delete a device from the management center, but then want to add it back, you can import the saved configuration.

See the following guidelines:

- You can only import the configuration to the same device (the UUID must match). You cannot import a configuration to a different device, even if it is the same model.
- Do not change the version running on the device between exporting and importing; the version must match.
- When moving the device to a different management center, the target management center version must be the same as the source version.
- If an object doesn't exist, it will be created. If an object exists, but the value is different, see below:

Table 2: Object Import Action

Scenario	Import Action
Object exists with the same name and value.	Reuse existing objects.
Object exists with the same name but different value.	Network and Port objects: Create object overrides for this device. See Object Overrides . Interface objects: Create new objects. For example, if both the type (security zone or interface group) and the interface type (routed or switched, for example) do not match, then a new object is created. All other objects: Reuse existing objects even though the values are different.
Object doesn't exist.	Create new object.s

Procedure

-
- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the device you want to edit, click **Edit** (✎).
- Step 3** Click **Device**.
- Step 4** Export the configuration.
- a) In the **General** area, click **Export**.

Figure 2: Export Device Configuration

General	
Name:	192.168.0.197 FTDv
Transfer Packets:	Yes
Mode:	Routed
Compliance Mode:	None
TLS Crypto Acceleration:	Disabled
Device Configuration:	<input type="button" value="Import"/> <input type="button" value="Export"/> <input type="button" value="Download"/>

You are prompted to acknowledge the export; click **OK**.

Figure 3: Acknowledge Export

Device Configuration Export

Device configuration export task initiated. View the progress of task from Tasks view.

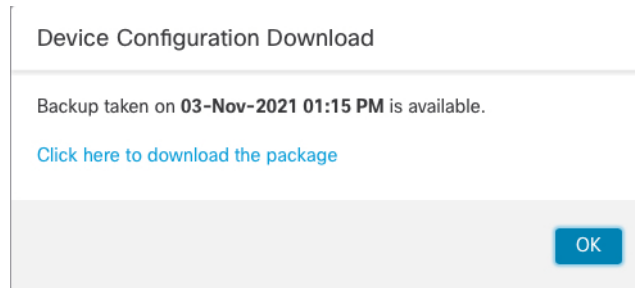
You can view the export progress in the **Tasks** page.

- b) On the **Notifications > Tasks** page, ensure that the export has completed; click **Download Export Package**. Alternatively, you can click the **Download** button in the **General** area.

Figure 4: Export Task

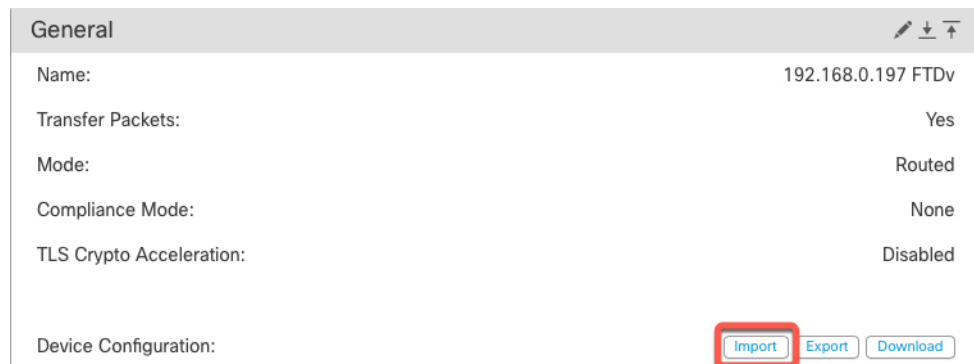
Deployments	Upgrades	Health	Tasks
20+ total	0 waiting	0 running	0 retrying 20+ success
<div style="display: flex; align-items: center;"> ✓ <div> <p>Device Configuration Export</p> <p>Export file created successfully</p> <p>Download Export Package</p> </div> </div>			

You are prompted to download the package; click **Click here to download the package** to save the file locally, and then click **OK** to exit the dialog box.

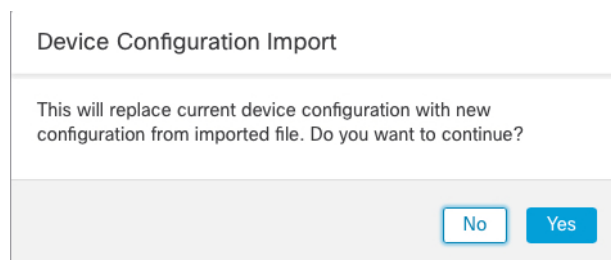
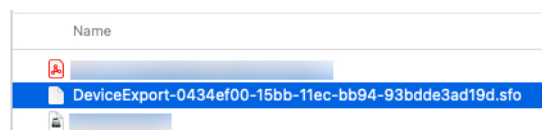
Figure 5: Download Package

Step 5 Import the configuration.

- a) In the **General** area, click **Import**.

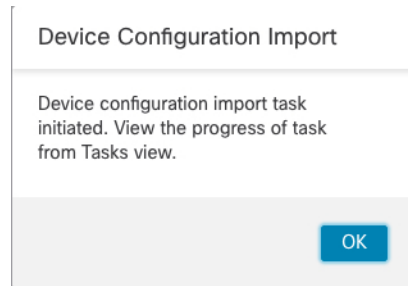
Figure 6: Import Device Configuration

You are prompted to acknowledge that the current configuration will be replaced. Click **Yes**, and then navigate to the configuration package (with the suffix `.sfo`; note that this file is different from the Backup/Restore files).

Figure 7: Import Package**Figure 8: Navigate to Package**

You are prompted to acknowledge the import; click **OK**.

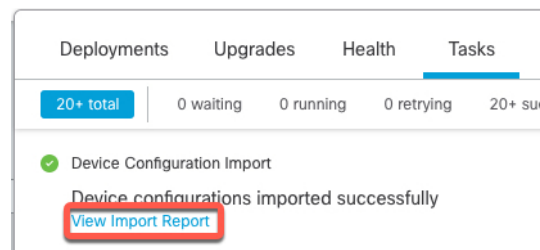
Figure 9: Acknowledge Import



You can view the import progress in the **Tasks** page.

- b) View the import reports so you can see what was imported. On the **Notifications > Tasks** page for the import task, click **View Import Report**.

Figure 10: View Import Report



The **Device Configuration Import Reports** page provides links to available reports.

Cisco Firepower Management Center

Device Configuration Import Reports

Device	Shared Policies	Device Configurations
0434ef00-15bb-11ec-bb94-93bdde3ad19d	Report does not exist	Device configurations import report

Edit License Settings

The **License** section of the **Device** page displays the licenses enabled for the device.

You can enable licenses on your device if you have available licenses on your management center.

Procedure

- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the device where you want to enable or disable licenses, click **Edit** (✎).

- Step 3** Click **Device**.
- Step 4** In the **License** section, click **Edit** (✎).
- Step 5** Check or clear the check box next to the license you want to enable or disable for the managed device.
- Step 6** Click **Save**.

What to do next

- Deploy configuration changes; see [Deploy Configuration Changes](#).

View System Information

The System section of the **Device** page displays a read-only table of system information, as described in the following table.

You can also shut down or restart the device.

Table 3: System Section Table Fields

Field	Description
Model	The model name and number for the managed device.
Serial	The serial number of the chassis of the managed device.
Time	The current system time of the device.
Time Zone	Shows the time zone.
Version	The version of the software currently installed on the managed device.
Time Zone setting for time-based rules	The current system time of the device, in the time zone specified in device platform settings.

View the Inspection Engine

The Inspection Engine section of the **Device** page shows whether your device uses Snort2 or Snort3. To switch the inspection engine, see [Cisco Secure Firewall Management Center Snort 3 Configuration Guide](#).

View Health Information

The **Health** section of the **Device** page displays the information described in the table below.

Table 4: Health Section Table Fields

Field	Description
Status	An icon that represents the current health status of the device. Clicking the icon displays the Health Monitor for the appliance.
Policy	A link to a read-only version of the health policy currently deployed at the device.
Excluded	A link to the Health Exclude page, where you can enable and disable health exclusion modules.

Edit Management Settings

You can edit management settings in the **Management** area.

Update the Hostname or IP Address in the Management Center

If you edit the hostname or IP address of a device after you added it to the management center (using the device's CLI, for example), you need to use the procedure below to manually update the hostname or IP address on the managing management center.

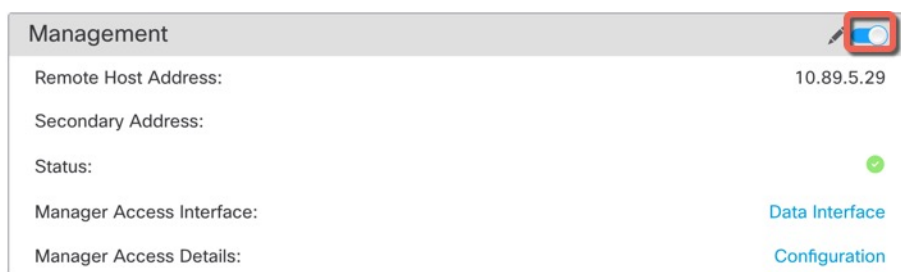
To change the device management IP address on the device, see [Modify Threat Defense Management Interfaces at the CLI, on page 31](#).

If you used only the NAT ID when registering the device, then the IP shows as **NO-IP** on this page, and you do not need to update the IP address/hostname.

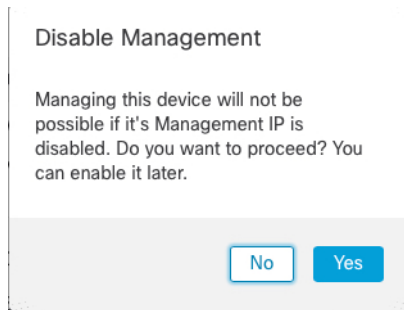
Procedure

- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the device where you want to modify management options, click **Edit** (✎).
- Step 3** Click **Device**, and view the **Management** area.
- Step 4** Disable management temporarily by clicking the slider so it is disabled **Slider disabled** (🔴).

Figure 11: Disable Management



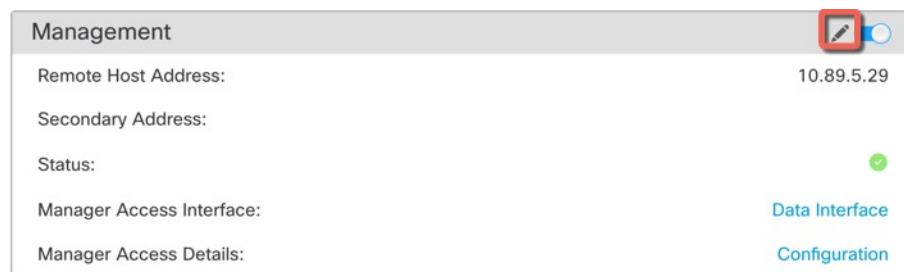
You are prompted to proceed with disabling management; click **Yes**.



Disabling management blocks the connection between the management center and the device, but does **not** delete the device from the management center.

Step 5 Edit the **Remote Host Address** IP address and optional **Secondary Address** (when using a redundant data interface) or hostname by clicking **Edit** (✎).

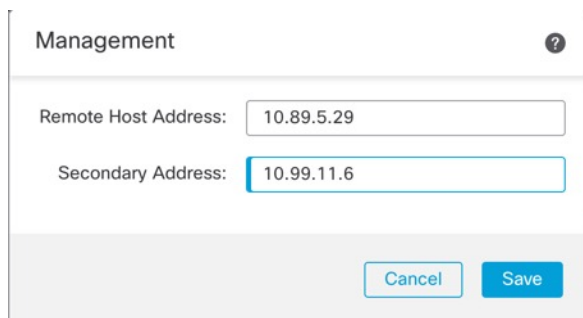
Figure 12: Edit Management Address



Step 6 In the **Management** dialog box, modify the name or IP address in the **Remote Host Address** field and the optional **Secondary Address** field, and click **Save**.

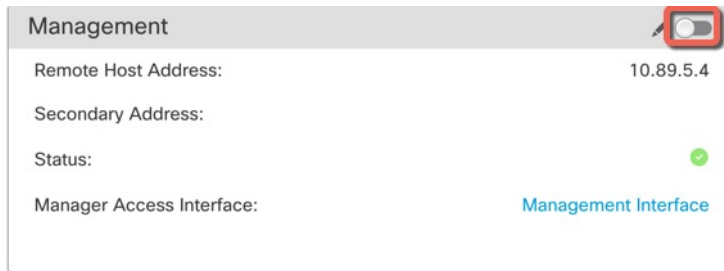
For information about using a secondary manager access data interface, see [Configure a Redundant Manager Access Data Interface, on page 22](#).

Figure 13: Management IP Address



Step 7 Reenable management by clicking the slider so it is enabled **Slider enabled** (☑).

Figure 14: Enable Management Connection



Change Both Management Center and Threat Defense IP Addresses

You might want to change both management center and threat defense IP addresses if you need to move them to a new network.

Procedure

Step 1 Disable the management connection.

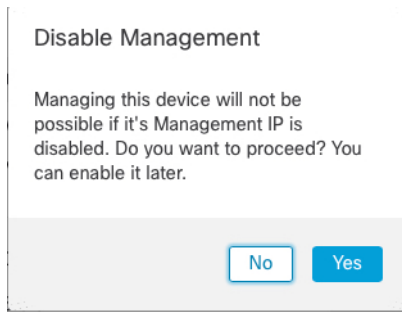
For a high-availability pair or cluster, perform these steps on all units.

- a) Choose **Devices > Device Management**.
- b) Next to the device, click **Edit** (✎).
- c) Click **Device**, and view the **Management** area.
- d) Disable management temporarily by clicking the slider so it is disabled (☐).

Figure 15: Disable Management



You are prompted to proceed with disabling management; click **Yes**.



Step 2 Change the device IP address in the management center to the new device IP address.

You will change the IP address on the device later.

For a high-availability pair or cluster, perform these steps on all units.

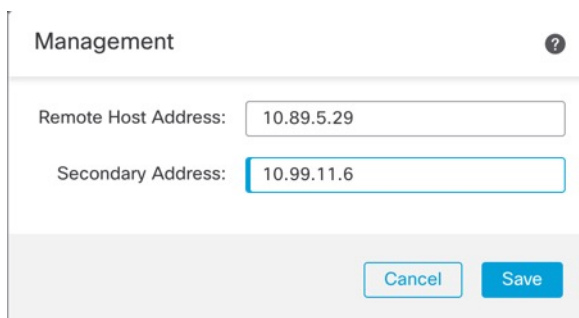
- a) Edit the **Remote Host Address** IP address and optional **Secondary Address** (when using a redundant data interface) or hostname by clicking **Edit** (✎).

Figure 16: Edit Management Address



- b) In the **Management** dialog box, modify the name or IP address in the **Remote Host Address** field and the optional **Secondary Address** field, and click **Save**.

Figure 17: Management IP Address



Step 3 Change the management center IP address.

Caution Be careful when making changes to the management center interface to which you are connected; if you cannot re-connect because of a configuration error, you need to access the management center console port to re-configure the network settings in the Linux shell. You must contact Cisco TAC to guide you in this operation.

- a) Choose **System** (⚙️) > **Configuration**, and then choose **Management Interfaces**.
- b) In the **Interfaces** area, click **Edit** next to the interface that you want to configure.
- c) Change the IP address, and click **Save**.

Step 4 Change the manager IP address on the device.

For a high-availability pair or cluster, perform these steps on all units.

- a) At the threat defense CLI, view the management center identifier.

show managers

Example:

```
> show managers
Type           : Manager
Host           : 10.10.1.4
Display name   : 10.10.1.4
Identifier     : f7ffad78-bf16-11ec-a737-baa2f76ef602
Registration   : Completed
Management type : Configuration
```

- b) Edit the management center IP address or hostname.

configure manager edit *identifier* {hostname {*ip_address* | *hostname*} | **displayname** *display_name*}

If the management center was originally identified by **DONTRESOLVE** and a NAT ID, you can change the value to a hostname or IP address using this command. You cannot change an IP address or hostname to **DONTRESOLVE**.

Example:

```
> configure manager edit f7ffad78-bf16-11ec-a737-baa2f76ef602 hostname 10.10.5.1
```

Step 5 Change the IP address of the manager access interface at the console port.

For a high-availability pair or cluster, perform these steps on all units.

If you use the dedicated Management interface:


configure network ipv4

configure network ipv6

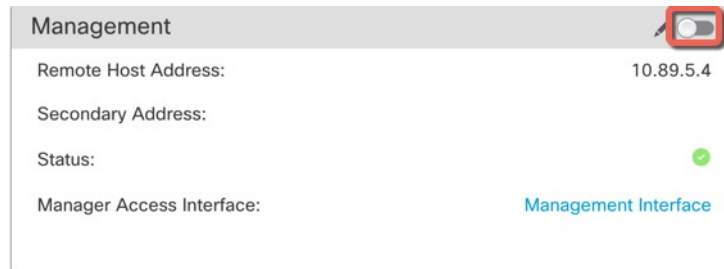
If you use the dedicated Management interface:

configure network management-data-interface disable

configure network management-data-interface

Step 6 Reenable management by clicking the slider so it is enabled (.

For a high-availability pair or cluster, perform these steps on all units.

Figure 18: Enable Management Connection

- Step 7** (If using a data interface for manager access) Refresh the data interface settings in the management center. For a high-availability pair, perform this step on both units.
- Choose **Devices > Device Management > Device > Management > Manager Access - Configuration Details**, and click **Refresh**.
 - Choose **Devices > Device Management > Interfaces**, and set the IP address to match the new address.
 - Return to the **Manager Access - Configuration Details** dialog box, and click **Acknowledge** to remove the deployment block.
- Step 8** Ensure the management connection is reestablished.

In the management center, check the management connection status on the **Devices > Device Management > Device > Management > Manager Access - Configuration Details > Connection Status** page.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status.

The following status shows a successful connection for a data interface, showing the internal "tap_nlp" interface.

Figure 19: Connection Status

Manager access - Configuration Details

Manager access configuration on device is in sync with the manager.

Configuration CLI Output **Connection Status**

sftunnel-status-brief command output from Firewall Threat Defense [\[Refresh \]](#)

```
> sftunnel-status-brief
PEER:10.89.5.35
Peer channel Channel-A is valid type (CONTROL), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Peer channel Channel-B is valid type (EVENT), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Registration: Completed.
IPv4 Connection to peer '10.89.5.35' Start Time: Mon May 23 22:55:01 2022 UTC
Heartbeat Send Time: Mon May 23 22:56:21 2022 UTC
Heartbeat Received Time: Mon May 23 22:55:58 2022 UTC
Last disconnect time : Mon May 23 22:54:39 2022 UTC
Last disconnect reason : Both control and event channel connections with peer went down
```

[Close](#)

- Step 9** (For a high-availability management center pair) Repeat configuration changes on the secondary management center.
- Change the secondary management center IP address.
 - Specify the new peer addresses on both units.
 - Make the secondary unit the active unit.
 - Disable the device management connection.
 - Change the device IP address in the management center.
 - Reenable the management connection.

Change the Manager Access Interface from Management to Data

You can manage the threat defense from either the dedicated Management interface, or from a data interface. If you want to change the manager access interface after you added the device to the management center, follow these steps to migrate from the Management interface to a data interface. To migrate the other direction, see [Change the Manager Access Interface from Data to Management, on page 19](#).

Initiating the manager access migration from Management to data causes the management center to apply a block on deployment to the threat defense. To remove the block, enable manager access on the data interface.

See the following steps to enable manager access on a data interface, and also configure other required settings.

Procedure

Step 1

Initiate the interface migration.

- a) On the **Devices > Device Management** page, click **Edit** (✎) for the device.
- b) Go to the **Device > Management** section, and click the link for **Manager Access Interface**.

The **Manager Access Interface** field shows the current Management interface. When you click the link, choose the new interface type, **Data Interface**, in the **Manage device by** drop-down list.

Figure 20: Manager Access Interface

Manager Access Interface

This is an advanced setting and need to be configured only if needed.
See the [online help](#) for detailed steps.

Manage device by

Data Interface

Switching the manager access interface from Management to Data interface causes the deployment to be blocked. To unblock the deploy, pick a data interface and enable it for manager Access. See the [online help](#) for detailed steps.

Close Save

- c) Click **Save**.

You must now complete the remaining steps in this procedure to enable manager access on the data interface. The **Management** area now shows **Manager Access Interface: Data Interface**, and **Manager Access Details: Configuration**.

Figure 21: Manager Access

Management

Remote Host Address: 10.10.1.12

Secondary Address:

Status: ✓

Manager Access Interface: Data Interface

Manager Access Details: Configuration

If you click **Configuration**, the **Manager Access - Configuration Details** dialog box opens. The **Manager Access Mode** shows a Deploy pending state.

Step 2 Enable manager access on a data interface on the **Devices > Device Management > Interfaces > Edit Physical Interface > Manager Access** page.

See [Configure Routed Mode Interfaces](#). You can enable manager access on one routed data interface, plus an optional secondary interface. Make sure these interfaces are fully configured with a name and IP address and that they are enabled.

If you use a secondary interface for redundancy, see [Configure a Redundant Manager Access Data Interface, on page 22](#) for additional required configuration.

Step 3 (Optional) If you use DHCP for the interface, enable the web type DDNS method on the **Devices > Device Management > DHCP > DDNS** page.

See [Configure Dynamic DNS](#). DDNS ensures the management center can reach the threat defense at its Fully-Qualified Domain Name (FQDN) if the FTD's IP address changes.

Step 4 Make sure the threat defense can route to the management center through the data interface; add a static route if necessary on **Devices > Device Management > Routing > Static Route**.

See [Add a Static Route](#).

Step 5 (Optional) Configure DNS in a Platform Settings policy, and apply it to this device at **Devices > Platform Settings > DNS**.

See [DNS](#). DNS is required if you use DDNS. You may also use DNS for FQDNs in your security policies.

Step 6 (Optional) Enable SSH for the data interface in a Platform Settings policy, and apply it to this device at **Devices > Platform Settings > Secure Shell**.

See [Secure Shell](#). SSH is not enabled by default on the data interfaces, so if you want to manage the threat defense using SSH, you need to explicitly allow it.

Step 7 Deploy configuration changes; see [Deploy Configuration Changes](#).

The management center will deploy the configuration changes over the current Management interface. After the deployment, the data interface is now ready for use, but the original management connection to Management is still active.

Step 8 At the threat defense CLI (preferably from the console port), set the Management interface to use a static IP address and set the gateway to use the data interfaces.

configure network {ipv4 | ipv6} manual ip_address netmask data-interfaces

- *ip_address netmask*—Although you do not plan to use the Management interface, you must set a static IP address, for example, a private address so that you can set the gateway to **data-interfaces** (see the next bullet). You cannot use DHCP because the default route, which must be **data-interfaces**, might be overwritten with one received from the DHCP server.
- **data-interfaces**—This setting forwards management traffic over the backplane so it can be routed through the manager access data interface.

We recommend that you use the console port instead of an SSH connection because when you change the Management interface network settings, your SSH session will be disconnected.

Step 9 If necessary, re-cable the threat defense so it can reach the management center on the data interface.

Step 10 In the management center, disable the management connection, update the **Remote Host Address** IP address and optional **Secondary Address** for the threat defense in the **Devices > Device Management > Device > Management** section, and reenable the connection.

See [Update the Hostname or IP Address in the Management Center, on page 10](#). If you used the threat defense hostname or just the NAT ID when you added the threat defense to the management center, you do not need to update the value; however, you need to disable and reenable the management connection to restart the connection.

Step 11 Ensure the management connection is reestablished.

In the management center, check the management connection status on the **Devices > Device Management > Device > Management > Manager Access - Configuration Details > Connection Status** page.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status.

The following status shows a successful connection for a data interface, showing the internal "tap_nlp" interface.

Figure 22: Connection Status

Manager access - Configuration Details

Manager access configuration on device is in sync with the manager.

Configuration CLI Output **Connection Status**

sftunnel-status-brief command output from Firewall Threat Defense [Refresh]

```
> sftunnel-status-brief
PEER:10.89.5.35
Peer channel Channel-A is valid type (CONTROL), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Peer channel Channel-B is valid type (EVENT), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Registration: Completed.
IPv4 Connection to peer '10.89.5.35' Start Time: Mon May 23 22:55:01 2022 UTC
Heartbeat Send Time: Mon May 23 22:56:21 2022 UTC
Heartbeat Received Time: Mon May 23 22:55:58 2022 UTC
Last disconnect time : Mon May 23 22:54:39 2022 UTC
Last disconnect reason : Both control and event channel connections with peer went down
```

Close

If it takes more than 10 minutes to reestablish the connection, you should troubleshoot the connection. See [Troubleshoot Management Connectivity on a Data Interface, on page 42](#).

Change the Manager Access Interface from Data to Management

You can manage the threat defense from either the dedicated Management interface, or from a data interface. If you want to change the manager access interface after you added the device to the management center,

follow these steps to migrate from a data interface to the Management interface. To migrate the other direction, see [Change the Manager Access Interface from Management to Data, on page 16](#).

Initiating the manager access migration from data to Management causes the management center to apply a block on deployment to the threat defense. You must disable manager access on the data interface to remove the block.

See the following steps to disable manager access on a data interface, and also configure other required settings.

Procedure

Step 1 Initiate the interface migration.

- a) On the **Devices > Device Management** page, click **Edit** (✎) for the device.
- b) Go to the **Device > Management** section, and click the link for **Manager Access Interface**.

The **Manager Access Interface** field shows the current management interface as data. When you click the link, choose the new interface type, **Management Interface**, in the **Manage device by** drop-down list.

Figure 23: Manager Access Interface

Manager Access Interface

This is an advanced setting and need to be configured only if needed.
See the [online help](#) for detailed steps.

Manage device by
Management Interface

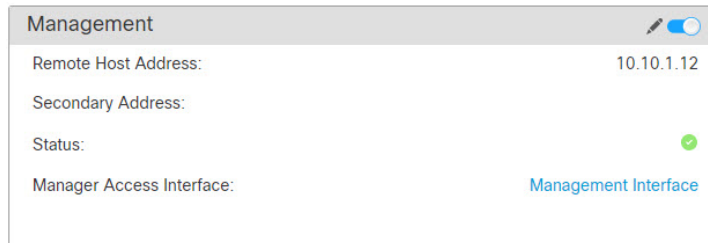
Switching the manager access interface from Data to Management causes the deployment to be blocked. To unblock the deployment, ensure none of the data interfaces are set for manager access. See the [online help](#) for detailed steps.

Close Save

- c) Click **Save**.

You must now complete the remaining steps in this procedure to enable manager access on the Management interface. The **Management** area now shows the **Manager Access Interface: Management Interface**, and **Manager Access Details: Configuration**.

Figure 24: Manager Access



If you click **Configuration**, the **Manager Access - Configuration Details** dialog box opens. The **Manager Access Mode** shows a Deploy pending state.

Step 2 Disable manager access on the data interface(s) on the **Devices > Device Management > Interfaces > Edit Physical Interface > Manager Access** page.

See [Configure Routed Mode Interfaces](#). This step removes the block on deployment.

Step 3 If you have not already done so, configure DNS settings for the data interface in a Platform Setting policy, and apply it to this device at **Devices > Platform Settings > DNS**.

See [DNS](#). The management center deployment that disables manager access on the data interface will remove any local DNS configuration. If that DNS server is used in any security policy, such as an FQDN in an Access Rule, then you must re-apply the DNS configuration using the management center.

Step 4 Deploy configuration changes; see [Deploy Configuration Changes](#).

The management center will deploy the configuration changes over the current data interface.

Step 5 If necessary, re-cable the threat defense so it can reach the management center on the Management interface.

Step 6 At the threat defense CLI, configure the Management interface IP address and gateway using a static IP address or DHCP.

When you originally configured the data interface for manager access, the Management gateway was set to data-interfaces, which forwarded management traffic over the backplane so it could be routed through the manager access data interface. You now need to set an IP address for the gateway on the management network.

Static IP address:

```
configure network {ipv4 | ipv6} manual ip_address netmask gateway_ip
```

DHCP:

```
configure network {ipv4 | ipv6} dhcp
```

Step 7 In the management center, disable the management connection, update the **Remote Host Address** IP address and optional **Secondary Address** for the threat defense in the **Devices > Device Management > Device > Management** section, and reenble the connection.

See [Update the Hostname or IP Address in the Management Center, on page 10](#). If you used the threat defense hostname or just the NAT ID when you added the threat defense to the management center, you do not need to update the value; however, you need to disable and reenble the management connection to restart the connection.

Step 8 Ensure the management connection is reestablished.

In the management center, check the management connection status on the **Devices > Device Management > Device > Management > Status** field or view notifications in the management center.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status.

If it takes more than 10 minutes to reestablish the connection, you should troubleshoot the connection. See [Troubleshoot Management Connectivity on a Data Interface, on page 42](#).

Configure a Redundant Manager Access Data Interface

When you use a data interface for manager access, you can configure a secondary data interface to take over management functions if the primary interface goes down. You can configure only one secondary interface. The device uses SLA monitoring to track the viability of the static routes and an ECMP zone that contains both interfaces so management traffic can use both interfaces.

Before you begin

- The secondary interface needs to be in a separate security zone from the primary interface.
- All of the same requirements apply to the secondary interface as apply to the primary interface. See [Using the Threat Defense Data Interface for Management](#).

Procedure

Step 1 On the **Devices > Device Management** page, click **Edit** (✎) for the device.

Step 2 Enable manager access for the secondary interface.

This setting is in addition to standard interface settings such as enabling the interface, setting the name, setting the security zone, and setting a static IPv4 address.

- a) Choose **Interfaces > Edit Physical Interface > Manager Access**.
- b) Check **Enable management on this interface for the Manager**.
- c) Click **OK**.

Both interfaces show (**Manager Access**) in the interface listing.

Figure 25: Interface Listing

Interface	Logical Name	Type	Security Zones
Diagnostic1/1	diagnostic	Physical	
Ethernet1/1 (Manager Access)	outside	Physical	outside
Ethernet1/2		Physical	
Ethernet1/3		Physical	
Ethernet1/4		Physical	
Ethernet1/5		Physical	
Ethernet1/6		Physical	
Ethernet1/7		Physical	
Ethernet1/8 (Manager Access)	redundant	Physical	mgmt

Step 3 Add the secondary address to the **Management** settings.

- a) Click **Device**, and view the **Management** area.
- b) Click **Edit** (✎).

Figure 26: Edit Management Address

- c) In the **Management** dialog box, modify the name or IP address in the **Secondary Address** field

Figure 27: Management IP Address

- d) Click **Save**.

Step 4 Create an ECMP zone with both interfaces.

- a) Click **Routing**.
- b) From the virtual router drop-down, choose the virtual router in which the primary and secondary interfaces reside.
- c) Click **ECMP**, and then click **Add**.
- d) Enter a **Name** for the ECMP zone.
- e) Select the primary and secondary interfaces under the **Available Interfaces** box, and then click **Add**.

Figure 28: Add an ECMP Zone

The screenshot shows a dialog box titled "Add ECMP". At the top right of the dialog are a help icon (question mark) and a close icon (X). Below the title bar is a text input field labeled "Name" containing the text "redundant-mgmt". The main area of the dialog is divided into two columns. The left column is titled "Available Interfaces" and is currently empty. The right column is titled "Selected Interfaces" and contains two entries: "outside" and "redundant", each with a trash can icon to its right. A blue "Add" button is located between the two columns. At the bottom of the dialog are two buttons: "Cancel" and "OK".

- f) Click **OK**, and then **Save**.

Step 5

Add equal-cost default static routes for both interfaces and enable SLA tracking on both.

The routes should be identical except for the gateway and should both have metric 1. The primary interface should already have a default route that you can edit.

Figure 29: Add/Edit Static Route

Edit Static Route Configuration

Type: IPv4 IPv6

Interface*
outside

(Interface starting with this icon signifies it is available for route leak)

Available Network +

Selected Network

Q Search

10.99.11.1
any-ipv4
IPv4-Benchmark-Tests
IPv4-Link-Local
IPv4-Multicast
IPv4-Private-10.0.0.0-8

any-ipv4

Ensure that egress virtualrouter has route to that destination

Gateway
10.89.5.1 +

Metric:
1
(1 - 254)

Tunneled: (Used only for default Route)

Route Tracking:
 +

- a) Click **Static Route**.
- b) Either click **Add Route** to add a new route, or click **Edit** () for an existing route.
- c) From the **Interface** drop-down, choose the interface.
- d) For the destination network, select **any-ipv4** from the **Available Networks** box and click **Add**.
- e) Enter the default **Gateway**.
- f) For **Route Tracking**, click **Add** () to add a new SLA monitor object.
- g) Enter the required parameters including the following:
 - The **Monitor Address** as the management center IP address.
 - The zone for the primary or secondary management interface in **Available Zones**; for example, choose the outside zone for the primary interface object, and the mgmt zone for the secondary interface object.

See [SLA Monitor](#) for more information.

Figure 30: Add SLA Monitor

New SLA Monitor Object

Name:

Description:

Frequency (seconds):
(1-604800)

SLA Monitor ID*:

Threshold (milliseconds):
(0-60000)

Timeout (milliseconds):
(0-604800000)

Data Size (bytes):
(0-16384)

ToS:

Number of Packets:

Monitor Address*:

Available Zones

- mgmt
- outside

Add

Selected Zones/Interfaces

- mgmt

Cancel Save

- h) Click **Save**, then choose the SLA object you just created in the **Route Tracking** drop-down list.
- i) Click **OK**, and then **Save**.
- j) Repeat for the default route for the other management interface.

Step 6 Deploy configuration changes; see [Deploy Configuration Changes](#).

As part of the deployment for this feature, the management center enables the secondary interface for management traffic, including auto-generated policy-based routing configuration for management traffic to get to the right data interface. The management center also deploys a second instance of the **configure network management-data-interface** command. Note that if you edit the secondary interface at the CLI, you cannot configure the gateway or otherwise alter the default route, because the static route for this interface can only be edited in the management center.

View Manager Access Details for Data Interface Management

Model Support—Threat Defense

When you use a data interface for management center management instead of using the dedicated Management interface, you must be careful about changing the interface and network settings for the device in the management center so you do not disrupt the connection. You can also change the data interface settings locally on the device, which requires you to reconcile those changes in the management center manually. The **Devices > Device Management > Device > Management > Manager Access - Configuration Details** dialog box helps you resolve any discrepancies between the management center and the threat defense local configuration.

Normally, you configure the manager access data interface as part of initial threat defense setup before you add the threat defense to the management center. When you add the threat defense to the management center, the management center discovers and maintains the interface configuration, including the following settings: interface name and IP address, static route to the gateway, DNS servers, and DDNS server. For the DNS server, the configuration is maintained locally if it is discovered during registration, but it is not added to the Platform Settings policy in management center.

After you add the threat defense to the management center, if you change the data interface settings on the threat defense locally using the **configure network management-data-interface** command, then the management center detects the configuration changes, and blocks deployment to the threat defense. The management center detects the configuration changes using one of the following methods:

- Deploy to the threat defense. Before the management center deploys, it will detect the configuration differences and stop the deployment.
- The **Sync** button in the **Interfaces** page.
- The **Refresh** button on the **Manager Access - Configuration Details** dialog box.

To remove the block, you must go to the **Manager Access - Configuration Details** dialog box and click **Acknowledge**. The next time you deploy, the management center configuration will overwrite any remaining conflicting settings on the threat defense. It is your responsibility to manually fix the configuration in the management center before you re-deploy.

See the following pages on this dialog box.

Configuration

View the configuration comparison of the manager access data interface on the management center and the threat defense.

The following example shows the configuration details of the threat defense where the **configure network management-data-interface** command was entered on the threat defense. The pink highlights show that if you **Acknowledge** the differences but do not match the configuration in the management center, then the threat defense configuration will be removed. The blue highlights show configurations that will be modified on the threat defense. The green highlights show configurations that will be added to the threat defense.

Manager access - Configuration Details



Manager access configuration on device have been updated outside of Manager. Review the differences and update Manager values accordingly.

[Configuration](#) [CLI Output](#) [Connection Status](#)

Last updated: 2022-09-02 at 20:35:58 UTC [\[Refresh \]](#)

	Configuration on Manager	Configuration on Device																		
4. Ethernet1/1 <div style="border: 1px solid #ccc; padding: 5px;"> <p>Interface Configuration</p> <table border="1"> <tr> <td>FMC Access Enabled</td> <td>Disabled</td> <td>Enabled</td> </tr> <tr> <td>FMC Access - Allowed Networks</td> <td></td> <td>any</td> </tr> <tr> <td>Interface Name</td> <td></td> <td>outside</td> </tr> <tr> <td>IPv4/IPv6 Address</td> <td></td> <td>10.89.5.29/26</td> </tr> </table> <p>Static Route Configuration</p> <table border="1"> <tr> <td>IPv4 Gateway</td> <td></td> <td>10.89.5.1</td> </tr> <tr> <td>IPv6 Gateway</td> <td></td> <td></td> </tr> </table> </div>			FMC Access Enabled	Disabled	Enabled	FMC Access - Allowed Networks		any	Interface Name		outside	IPv4/IPv6 Address		10.89.5.29/26	IPv4 Gateway		10.89.5.1	IPv6 Gateway		
FMC Access Enabled	Disabled	Enabled																		
FMC Access - Allowed Networks		any																		
Interface Name		outside																		
IPv4/IPv6 Address		10.89.5.29/26																		
IPv4 Gateway		10.89.5.1																		
IPv6 Gateway																				
5. Ethernet1/8 <div style="border: 1px solid #ccc; padding: 5px;"> <p>Legend: Above configurations will be ■ added, ■ modified or ■ disassociated from manager access interface on next deploy to device.</p> </div>																				

[Close](#)

[Acknowledge](#)

The following example shows this page after configuring the interface in the management center; the interface settings match, and the pink highlight was removed.

Manager access - Configuration Details



Manager access configuration on device is different from Manager. Review the differences and deploy the changes.

[Configuration](#) [CLI Output](#) [Connection Status](#)

Last updated: 2022-09-09 at 07:10:54 UTC [\[Refresh \]](#)

	Configuration on Manager	Configuration on Device																		
Web Update Type																				
4. GigabitEthernet0/0 <div style="border: 1px solid #ccc; padding: 5px;"> <p>Interface Configuration</p> <table border="1"> <tr> <td>FMC Access Enabled</td> <td>Enabled</td> <td>Enabled</td> </tr> <tr> <td>FMC Access - Allowed Networks</td> <td>any</td> <td>any</td> </tr> <tr> <td>Interface Name</td> <td>outside</td> <td>outside</td> </tr> <tr> <td>IPv4/IPv6 Address</td> <td>10.89.5.29 255.255.255.192</td> <td>10.89.5.29 255.255.255.192</td> </tr> </table> <p>Static Route Configuration</p> <table border="1"> <tr> <td>IPv4 Gateway</td> <td></td> <td>10.89.5.1</td> </tr> <tr> <td>IPv6 Gateway</td> <td></td> <td></td> </tr> </table> </div>			FMC Access Enabled	Enabled	Enabled	FMC Access - Allowed Networks	any	any	Interface Name	outside	outside	IPv4/IPv6 Address	10.89.5.29 255.255.255.192	10.89.5.29 255.255.255.192	IPv4 Gateway		10.89.5.1	IPv6 Gateway		
FMC Access Enabled	Enabled	Enabled																		
FMC Access - Allowed Networks	any	any																		
Interface Name	outside	outside																		
IPv4/IPv6 Address	10.89.5.29 255.255.255.192	10.89.5.29 255.255.255.192																		
IPv4 Gateway		10.89.5.1																		
IPv6 Gateway																				
<p>Legend: Above configurations will be ■ added, ■ modified or ■ disassociated from manager access interface on next deploy to device.</p>																				

[Close](#)

CLI Output

View the CLI configuration of the manager access data interface, which is useful if you are familiar with the underlying CLI.

Figure 31: CLI Output

Manager access - Configuration Details
?

Manager access configuration on device is different from Manager. Review the differences and deploy the changes.

Configuration
CLI Output
Connection Status

Show command output of Manager Access associated configuration from Firewall Threat Defense

```

> show running-config dns
DNS server-group DefaultDNS

> show sftunnel interfaces
Physical Interface          Name of the Interface

> show running-config interface

> show version
-----[ 1010-2 ]-----
Model      : Cisco Firepower 1010 Threat Defense (78) Version 7.2.0 (Build 2028)
UUID      : ebf1f518-d0a0-11ec-bb8f-90ce044ba76f
LSP version : lsp-rel-20220519-1116
VDB version  : 354
-----
Cisco Adaptive Security Appliance Software Version 9.18(0)104
        
```

Close

FMC Access - Configuration Details
?
x

FMC Access configuration on device have been updated outside of FMC. Review the differences and update FMC values accordingly.

Configuration
CLI Output
Connection Status

Show command output of FMC Access associated configuration from FTD

```

> show running-config dns
dns domain-lookup outside
DNS server-group DefaultDNS
DNS server-group RBD_DNS
  name-server 72.163.47.11
  name-server 173.37.137.85
  name-server 173.37.142.73
dns-group RBD_DNS

> show sftunnel interfaces
Physical Interface          Name of the Interface
GigabitEthernet1/1        outside

> show running-config route
route outside 0.0.0.0 0.0.0.0 10.89.5.1 1

> show running-config interface
!
interface GigabitEthernet1/1
 nameif outside
 cts manual
 propagate sgt preserve-untag
 policy static sgt disabled trusted
 security-level 0
        
```

Acknowledge
Close

Connection Status

View management connection status. The following example shows that the management connection is still using the Management "management0" interface.

Figure 32: Connection Status

Manager access - Configuration Details ?

Manager access configuration on device is different from Manager. Review the differences and deploy the changes.

Configuration CLI Output **Connection Status**

sftunnel-status-brief command output from Firewall Threat Defense [Refresh]

```

> sftunnel-status-brief
PEER:10.89.5.35
Peer channel Channel-A is valid type (CONTROL), using 'managemen', connected to '10.89.5.35' via '10.89.5.1'
Peer channel Channel-B is valid type (EVENT), using 'managemen', connected to '10.89.5.35' via '10.89.5.18'
Registration: Completed.
IPv4 Connection to peer '10.89.5.35' Start Time: Tue May 10 21:39:06 2022 UTC
Heartbeat Send Time: Mon May 23 22:46:51 2022 UTC
Heartbeat Received Time: Mon May 23 22:47:53 2022 UTC

```

[Close](#)

The following status shows a successful connection for a data interface, showing the internal "tap_nlp" interface.

Figure 33: Connection Status

Manager access - Configuration Details ?

Manager access configuration on device is in sync with the manager.

Configuration CLI Output **Connection Status**

sftunnel-status-brief command output from Firewall Threat Defense [Refresh]

```

> sftunnel-status-brief
PEER:10.89.5.35
Peer channel Channel-A is valid type (CONTROL), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Peer channel Channel-B is valid type (EVENT), using 'tap_nlp', connected to '10.89.5.35' via '169.254.1.3'
Registration: Completed.
IPv4 Connection to peer '10.89.5.35' Start Time: Mon May 23 22:55:01 2022 UTC
Heartbeat Send Time: Mon May 23 22:56:21 2022 UTC
Heartbeat Received Time: Mon May 23 22:55:58 2022 UTC
Last disconnect time : Mon May 23 22:54:39 2022 UTC
Last disconnect reason : Both control and event channel connections with peer went down

```

[Close](#)

See the following sample output for a connection that is down; there is no peer channel "connected to" information, nor heartbeat information shown:

```
> sftunnel-status-brief
PEER:10.10.17.202
Registration: Completed.
Connection to peer '10.10.17.202' Attempted at Mon Jun 15 09:21:57 2020 UTC
Last disconnect time : Mon Jun 15 09:19:09 2020 UTC
Last disconnect reason : Both control and event channel connections with peer went down
```

See the following sample output for a connection that is up, with peer channel and heartbeat information shown:

```
> sftunnel-status-brief
PEER:10.10.17.202
Peer channel Channel-A is valid type (CONTROL), using 'eth0', connected to '10.10.17.202'
via '10.10.17.222'
Peer channel Channel-B is valid type (EVENT), using 'eth0', connected to '10.10.17.202' via
'10.10.17.222'
Registration: Completed.
IPv4 Connection to peer '10.10.17.202' Start Time: Wed Jun 10 14:27:12 2020 UTC
Heartbeat Send Time: Mon Jun 15 09:02:08 2020 UTC
Heartbeat Received Time: Mon Jun 15 09:02:16 2020 UTC
```

Modify Threat Defense Management Interfaces at the CLI

Modify the management interface settings on the managed device using the CLI. Many of these settings are ones that you set when you performed the initial setup; this procedure lets you change those settings, and set additional settings such as enabling an event interface if your model supports it, or adding static routes.



Note This topic applies to the dedicated Management interface. You can alternatively configure a data interface for management. If you want to change network settings for that interface, you should do so within management center and not at the CLI. If you need to troubleshoot a disrupted management connection, and need to make changes directly on the threat defense, see [Modify the Threat Defense Data Interface Used for Management at the CLI, on page 37](#).

For information about the threat defense CLI, see the [Cisco Secure Firewall Threat Defense Command Reference](#).



Note When using SSH, be careful when making changes to the management interface; if you cannot re-connect because of a configuration error, you will need to access the device console port.



Note If you change the device management IP address, then see the following tasks for management center connectivity depending on how you identified the management center during initial device setup using the **configure manager add** command (see [Register With a New Management Center](#)):

- **IP address—No action.** If you identified the management center using a reachable IP address, then the management connection will be reestablished automatically after several minutes. We recommend that you also change the device IP address shown in management center to keep the information in sync; see [Update the Hostname or IP Address in the Management Center, on page 10](#). This action can help the connection reestablish faster. **Note:** If you specified an unreachable management center IP address, then see the procedure for NAT ID below.
 - **NAT ID only—Manually reestablish the connection.** If you identified the management center using only the NAT ID, then the connection cannot be automatically reestablished. In this case, change the device management IP address in management center according to [Update the Hostname or IP Address in the Management Center, on page 10](#).
-



Note In a High Availability management center configuration, when you modify the management IP address from the device CLI or from the management center, the secondary management center does not reflect the changes even after an HA synchronization. To ensure that the secondary management center is also updated, switch roles between the two management centers, making the secondary management center the active unit. Modify the management IP address of the registered device on the device management page of the now active management center.

Before you begin

- You can create user accounts that can log into the CLI using the **configure user add** command; see [Add an Internal User at the CLI](#). You can also configure AAA users according to [External Authentication](#).

Procedure

Step 1 Connect to the device CLI, either from the console port or using SSH.

See [Log Into the Command Line Interface on the Device](#).

Step 2 Log in with the Admin username and password.

Step 3 (Firepower 4100/9300 only) Enable the second management interface as an event-only interface.

configure network management-interface enable management1

configure network management-interface disable-management-channel management1

You always need a management interface for management traffic. If your device has a second management interface, you can enable it for event-only traffic.

You can optionally disable events for the main management interface using the **configure network management-interface disable-events-channel** command. In either case, the device will try to send events

on the event-only interface, and if that interface is down, it will send events on the management interface even if you disable the event channel.

You cannot disable both event and management channels on an interface.

To use a separate event interface, you also need to enable an event interface on the management center. See the [Cisco Secure Firewall Management Center Administration Guide](#).

Example:

```
> configure network management-interface enable management1
Configuration updated successfully

> configure network management-interface disable-management-channel management1
Configuration updated successfully

>
```

Step 4

Configure the IP address of the management interface and/or event interface:

If you do not specify the *management_interface* argument, then you change the network settings for the default management interface. When configuring an event interface, be sure to specify the *management_interface* argument. The event interface can be on a separate network from the management interface, or on the same network. If you are connected to the interface you are configuring, you will be disconnected. You can re-connect to the new IP address.

a) Configure the IPv4 address:

- Manual configuration:

```
configure network ipv4 manual ip_address netmask gateway_ip [management_interface]
```

Note that the *gateway_ip* in this command is used to create the default route for the device. If you configure an event-only interface, then you must enter the *gateway_ip* as part of the command; however, this entry just configures the default route to the value you specify and does not create a separate static route for the eventing interface. If you are using an event-only interface on a different network from the management interface, we recommend that you set the *gateway_ip* for use with the management interface, and then create a static route separately for the event-only interface using the **configure network static-routes** command.

Example:

```
> configure network ipv4 manual 10.10.10.45 255.255.255.0 10.10.10.1 management1
Setting IPv4 network configuration.
Network settings changed.

>
```

- DHCP (supported on the default management interface only):

```
configure network ipv4 dhcp
```

b) Configure the IPv6 address:

- Stateless autoconfiguration:

```
configure network ipv6 router [management_interface]
```

Example:

```
> configure network ipv6 router management0
Setting IPv6 network configuration.
Network settings changed.

>
```

- Manual configuration:

```
configure network ipv6 manual ip6_address ip6_prefix_length [ip6_gateway_ip]
[management_interface]
```

Note that the *ipv6_gateway_ip* in this command is used to create the default route for the device. If you configure an event-only interface, then you must enter the *ipv6_gateway_ip* as part of the command; however, this entry just configures the default route to the value you specify and does not create a separate static route for the eventing interface. If you are using an event-only interface on a different network from the management interface, we recommend that you set the *ipv6_gateway_ip* for use with the management interface, and then create a static route separately for the event-only interface using the **configure network static-routes** command.

Example:

```
> configure network ipv6 manual 2001:0DB8:BA98::3210 64 management1
Setting IPv6 network configuration.
Network settings changed.

>
```

- DHCPv6 (supported on the default management interface only):

```
configure network ipv6 dhcp
```

Step 5

For IPv6, enable or disable ICMPv6 Echo Replies and Destination Unreachable messages. These messages are enabled by default.

```
configure network ipv6 destination-unreachable {enable | disable}
```

```
configure network ipv6 echo-reply {enable | disable}
```

You might want to disable these packets to guard against potential denial of service attacks. Disabling Echo Reply packets means you cannot use IPv6 ping to the device management interfaces for testing purposes.

Example:

```
> configure network ipv6 destination-unreachable disable
> configure network ipv6 echo-reply disable
```

Step 6

Enable a DHCP server on the default management interface to provide IP addresses to connected hosts:

```
configure network ipv4 dhcp-server-enable start_ip_address end_ip_address
```

Example:

```
> configure network ipv4 dhcp-server-enable 10.10.10.200 10.10.10.254
DHCP Server Enabled
```

```
>
```

You can only configure a DHCP server when you set the management interface IP address manually. This command is not supported on the management center virtual. To display the status of the DHCP server, enter **show network-dhcp-server**:

```
> show network-dhcp-server
DHCP Server Enabled
10.10.10.200-10.10.10.254
```

Step 7

Add a static route for the event-only interface if the management center is on a remote network; otherwise, all traffic will match the default route through the management interface.

configure network static-routes {ipv4 | ipv6} add management_interface destination_ip netmask_or_prefix gateway_ip

For the *default* route, do not use this command; you can only change the default route gateway IP address when you use the **configure network ipv4** or **ipv6** commands (see [Step 4, on page 33](#)).

Example:

```
> configure network static-routes ipv4 add management1 192.168.6.0 255.255.255.0 10.10.10.1
Configuration updated successfully
```

```
> configure network static-routes ipv6 add management1 2001:0DB8:AA89::5110 64
2001:0DB8:BA98::3211
Configuration updated successfully
```

```
>
```

To display static routes, enter **show network-static-routes** (the default route is not shown):

```
> show network-static-routes
-----[ IPv4 Static Routes ]-----
Interface           : management1
Destination          : 192.168.6.0
Gateway              : 10.10.10.1
Netmask              : 255.255.255.0
[...]
```

Step 8

Set the hostname:

configure network hostname name

Example:

```
> configure network hostname farscape1.cisco.com
```

Syslog messages do not reflect a new hostname until after a reboot.

Step 9

Set the search domains:

configure network dns searchdomains domain_list

Example:

```
> configure network dns searchdomains example.com,cisco.com
```

Set the search domain(s) for the device, separated by commas. These domains are added to hostnames when you do not specify a fully-qualified domain name in a command, for example, **ping system**. The domains are used only on the management interface, or for commands that go through the management interface.

Step 10 Set up to 3 DNS servers, separated by commas:

```
configure network dns servers dns_ip_list
```

Example:

```
> configure network dns servers 10.10.6.5,10.20.89.2,10.80.54.3
```

Step 11 Set the remote management port for communication with the management center:

```
configure network management-interface tcpport number
```

Example:

```
> configure network management-interface tcpport 8555
```

The management center and managed devices communicate using a two-way, TLS-1.3-encrypted communication channel, which by default is on port 8305.

Note Cisco **strongly** recommends that you keep the default settings for the remote management port, but if the management port conflicts with other communications on your network, you can choose a different port. If you change the management port, you must change it for **all** devices in your deployment that need to communicate with each other.

Step 12 (Threat Defense only) Set the management or eventing interface MTU. The MTU is 1500 bytes by default.

```
configure network mtu [bytes] [interface_id]
```

- *bytes*—Sets the MTU in bytes. For the management interface, the value can be between 64 and 1500 if you enable IPv4, and 1280 to 1500 if you enable IPv6. For the eventing interface, the value can be between 64 and 9000 if you enable IPv4, and 1280 to 9000 if you enable IPv6. If you enable both IPv4 and IPv6, then the minimum is 1280. If you do not enter the *bytes*, you are prompted for a value.
- *interface_id*—Specifies the interface ID on which to set the MTU. Use the **show network** command to see available interface IDs, for example management0, management1, br1, and eth0, depending on the platform. If you do not specify an interface, then the management interface is used.

Example:

```
> configure network mtu 8192 management1
MTU set successfully to 1500 from 8192 for management1
Refreshing Network Config...
NetworkSettings::refreshNetworkConfig MTU value at start 8192

Interface management1 speed is set to '10000baseT/Full'
NetworkSettings::refreshNetworkConfig MTU value at end 8192
>
```

Step 13 Configure an HTTP proxy. The device is configured to directly-connect to the internet on ports TCP/443 (HTTPS) and TCP/80 (HTTP). You can use a proxy server, to which you can authenticate via HTTP Digest. After issuing the command, you are prompted for the HTTP proxy address and port, whether proxy authentication is required, and if it is required, the proxy username, proxy password, and confirmation of the proxy password.

Note For proxy password on threat defense, you can use A-Z, a-z, and 0-9 characters only.

configure network http-proxy

Example:

```
> configure network http-proxy
Manual proxy configuration
Enter HTTP Proxy address: 10.100.10.10
Enter HTTP Proxy Port: 80
Use Proxy Authentication? (y/n) [n]: Y
Enter Proxy Username: proxyuser
Enter Proxy Password: proxypassword
Confirm Proxy Password: proxypassword
```

Step 14 If you change the device management IP address, then see the following tasks for management center connectivity depending on how you identified the management center during initial device setup using the **configure manager add** command (see [Register With a New Management Center](#)):

- **IP address—No action.** If you identified the management center using a reachable IP address, then the management connection will be reestablished automatically after several minutes. We recommend that you also change the device IP address shown in management center to keep the information in sync; see [Update the Hostname or IP Address in the Management Center, on page 10](#). This action can help the connection reestablish faster. **Note:** If you specified an unreachable management center IP address, then you must manually reestablish the connection using [Update the Hostname or IP Address in the Management Center, on page 10](#).
- **NAT ID only—Manually reestablish the connection.** If you identified the management center using only the NAT ID, then the connection cannot be automatically reestablished. In this case, change the device management IP address in management center according to [Update the Hostname or IP Address in the Management Center, on page 10](#).

Modify the Threat Defense Data Interface Used for Management at the CLI

If the management connection between the threat defense and the management center was disrupted, and you want to specify a new data interface to replace the old interface, use the threat defense CLI to configure the new interface. This procedure assumes you want to replace the old interface with a new interface on the same network. If the management connection is active, then you should make any changes to an existing data interface using the management center. For initial setup of the data management interface, see the **configure network management-data-interface** command in [Complete the Threat Defense Initial Configuration Using the CLI](#).



Note This topic applies to the data interface that you configured for Management, not the dedicated Management interface. If you want to change network settings for the Management interface, see [Modify Threat Defense Management Interfaces at the CLI, on page 31](#).

For information about the threat defense CLI, see the [Cisco Secure Firewall Threat Defense Command Reference](#).

Before you begin

You can create user accounts that can log into the CLI using the **configure user add** command; see [Add an Internal User at the CLI](#). You can also configure AAA users according to [External Authentication](#).

Procedure

Step 1 If you are changing the data management interface to a new interface, move the current interface cable to the new interface.

Step 2 Connect to the device CLI.

You should use the console port when using these commands. If you are performing initial setup, then you may be disconnected from the Management interface. If you are editing the configuration due to a disrupted management connection, and you have SSH access to the dedicated Management interface, then you can use that SSH connection.

See [Log Into the Command Line Interface on the Device](#).

Step 3 Log in with the Admin username and password.

Step 4 Disable the interface so you can reconfigure its settings.

configure network management-data-interface disable

Example:

```
> configure network management-data-interface disable
```

```
Configuration updated successfully.!!
```

```
Configuration disable was successful, please update the default route to point to a gateway
on management interface using the command 'configure network'
```

Step 5 Configure the new data interface for manager access.

configure network management-data-interface

You are then prompted to configure basic network settings for the data interface.

When you change the data management interface to a new interface on the same network, use the same settings as for the previous interface except the interface ID. In addition, for the **Do you wish to clear all the device configuration before applying ? (y/n) [n]:** option, choose **y**. This choice will clear the old data management interface configuration, so that you can successfully reuse the IP address and interface name on the new interface.

```

> configure network management-data-interface
Data interface to use for management: ethernet1/4
Specify a name for the interface [outside]: internet
IP address (manual / dhcp) [dhcp]: manual
IPv4/IPv6 address: 10.10.6.7
Netmask/IPv6 Prefix: 255.255.255.0
Default Gateway: 10.10.6.1
Comma-separated list of DNS servers [none]: 208.67.222.222,208.67.220.220
DDNS server update URL [none]:
Do you wish to clear all the device configuration before applying ? (y/n) [n]: y

Configuration done with option to allow manager access from any network, if you wish to
change the manager access network
use the 'client' option in the command 'configure network management-data-interface'.

Setting IPv4 network configuration.
Network settings changed.

>

```

Step 6 (Optional) Limit data interface access to the management center on a specific network.

```
configure network management-data-interface client ip_address netmask
```

By default, all networks are allowed.

Step 7 The connection will be reestablished automatically, but disabling and reenabling the connection in the management center will help the connection reestablish faster. See [Update the Hostname or IP Address in the Management Center, on page 10](#).

Step 8 Check that the management connection was reestablished.

```
sftunnel-status-brief
```

See the following sample output for a connection that is up, with peer channel and heartbeat information shown:

```

> sftunnel-status-brief
PEER:10.10.17.202
Peer channel Channel-A is valid type (CONTROL), using 'eth0', connected to '10.10.17.202'
via '10.10.17.222'
Peer channel Channel-B is valid type (EVENT), using 'eth0', connected to '10.10.17.202' via
'10.10.17.222'
Registration: Completed.
IPv4 Connection to peer '10.10.17.202' Start Time: Wed Jun 10 14:27:12 2020 UTC
Heartbeat Send Time: Mon Jun 15 09:02:08 2020 UTC
Heartbeat Received Time: Mon Jun 15 09:02:16 2020 UTC

```

Step 9 In the management center, choose **Devices > Device Management > Device > Management > Manager Access - Configuration Details**, and click **Refresh**.

The management center detects the interface and default route configuration changes, and blocks deployment to the threat defense. When you change the data interface settings locally on the device, you must reconcile those changes in the management center manually. You can view the discrepancies between the management center and the threat defense on the **Configuration** tab.

Step 10 Choose **Devices > Device Management > Interfaces**, and make the following changes.

a) Remove the IP address and name from the old data management interface, and disable manager access for this interface.

- b) Configure the new data management interface with the settings of the old interface (the ones you used at the CLI), and enable manager access for it.

Step 11 Choose **Devices > Device Management > Routing > Static Route** and change the default route from the old data management interface to the new one.

Step 12 Return to the **Manager Access - Configuration Details** dialog box, and click **Acknowledge** to remove the deployment block.

The next time you deploy, the management center configuration will overwrite any remaining conflicting settings on the threat defense. It is your responsibility to manually fix the configuration in the management center before you re-deploy.

You will see expected messages of "Config was cleared" and "Manager access changed and acknowledged."

Edit the Management Center IP Address/Hostname on the Device

If you change the management center IP address or hostname, you should also change the value at the device CLI so the configurations match. Although in most cases, the management connection will be reestablished without changing the management center IP address or hostname on the device, in at least one case, you must perform this task for the connection to be reestablished: when you added the device to the management center and you specified the NAT ID only. Even in other cases, we recommend keeping the management center IP address or hostname up to date for extra network resiliency.

Procedure

Step 1 At the threat defense CLI, view the management center identifier.

show managers

Example:

```
> show managers
Type                : Manager
Host                : 10.10.1.4
Display name       : 10.10.1.4
Identifier          : f7ffad78-bf16-11ec-a737-baa2f76ef602
Registration        : Completed
Management type    : Configuration
```

Step 2 At the threat defense CLI, edit the management center IP address or hostname.

configure manager edit identifier {hostname {ip_address | hostname} | displayname display_name}

If the management center was originally identified by **DONTRESOLVE** and a NAT ID, you can change the value to a hostname or IP address using this command. You cannot change an IP address or hostname to **DONTRESOLVE**.

The management connection will go down, and then reestablish. You can monitor the state of the connection using the **sftunnel-status** command.

Example:


```
> configure manager edit f7ffad78-bf16-11ec-a737-baa2f76ef602 hostname 10.10.5.1
```

Manually Roll Back the Configuration if the Management Center Loses Connectivity

If you use a data interface on the threat defense for manager access, and you deploy a configuration change from the management center that affects the network connectivity, you can roll back the configuration on the threat defense to the last-deployed configuration so you can restore management connectivity. You can then adjust the configuration settings in management center so that the network connectivity is maintained, and re-deploy. You can use the rollback feature even if you do not lose connectivity; it is not limited to this troubleshooting situation.

Alternatively, you can enable auto rollback of the configuration if you lose connectivity after a deployment; see [Edit Deployment Settings, on page 53](#).

See the following guidelines:

- Only the previous deployment is available locally on the threat defense; you cannot roll back to any earlier deployments.
- Rollback is supported for high availability but not supported for clustering deployments.
- The rollback only affects configurations that you can set in the management center. For example, the rollback does not affect any local configuration related to the dedicated Management interface, which you can only configure at the threat defense CLI. Note that if you changed data interface settings after the last management center deployment using the **configure network management-data-interface** command, and then you use the rollback command, those settings will not be preserved; they will roll back to the last-deployed management center settings.
- UCAPL/CC mode cannot be rolled back.
- Out-of-band SCEP certificate data that was updated during the previous deployment cannot be rolled back.
- During the rollback, connections will drop because the current configuration will be cleared.

Procedure

Step 1 At the threat defense CLI, roll back to the previous configuration.

configure policy rollback

After the rollback, the threat defense notifies the management center that the rollback was completed successfully. In the management center, the deployment screen will show a banner stating that the configuration was rolled back.

Note If the rollback failed and the management center management is restored, refer to <https://www.cisco.com/c/en/us/support/docs/security/firepower-ngfw-virtual/215258-troubleshooting-firepower-threat-defense.html> for common deployment problems. In some cases, the rollback can fail after the management center management access is restored; in this case, you can resolve the management center configuration issues, and redeploy from the management center.

Example:

For the threat defense that uses a data interface for manager access:

```
> configure policy rollback

The last deployment to this FTD was on June 1, 2020 and its status was Successful.
Do you want to continue [Y/N]?

Y

Rolling back complete configuration on the FTD. This will take time.
.....
Policy rollback was successful on the FTD.
Configuration has been reverted back to transaction id:
Following is the rollback summary:
.....
.....
>
```

Step 2 Check that the management connection was reestablished.

In management center, check the management connection status on the **Devices > Device Management > Device > Management > Manager Access - Configuration Details > Connection Status** page.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status.

If it takes more than 10 minutes to reestablish the connection, you should troubleshoot the connection. See [Troubleshoot Management Connectivity on a Data Interface, on page 42](#).

Troubleshoot Management Connectivity on a Data Interface

When you use a data interface for manager access instead of using the dedicated Management interface, you must be careful about changing the interface and network settings for the threat defense in the management center so you do not disrupt the connection. If you change the management interface type after you add the threat defense to the management center (from data to Management, or from Management to data), if the interfaces and network settings are not configured correctly, you can lose management connectivity.

This topic helps you troubleshoot the loss of management connectivity.

View management connection status

In the management center, check the management connection status on the **Devices > Device Management > Device > Management > Manager Access - Configuration Details > Connection Status** page.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status. You can also use **sftunnel-status** to view more complete information.

See the following sample output for a connection that is down; there is no peer channel "connected to" information, nor heartbeat information shown:

```
> sftunnel-status-brief
PEER:10.10.17.202
Registration: Completed.
Connection to peer '10.10.17.202' Attempted at Mon Jun 15 09:21:57 2020 UTC
Last disconnect time : Mon Jun 15 09:19:09 2020 UTC
Last disconnect reason : Both control and event channel connections with peer went down
```

See the following sample output for a connection that is up, with peer channel and heartbeat information shown:

```
> sftunnel-status-brief
PEER:10.10.17.202
Peer channel Channel-A is valid type (CONTROL), using 'eth0', connected to '10.10.17.202'
via '10.10.17.222'
Peer channel Channel-B is valid type (EVENT), using 'eth0', connected to '10.10.17.202'
via '10.10.17.222'
Registration: Completed.
IPv4 Connection to peer '10.10.17.202' Start Time: Wed Jun 10 14:27:12 2020 UTC
Heartbeat Send Time: Mon Jun 15 09:02:08 2020 UTC
Heartbeat Received Time: Mon Jun 15 09:02:16 2020 UTC
```

View the threat defense network information

At the threat defense CLI, view the Management and manager access data interface network settings:

show network

```
> show network
===== [ System Information ] =====
Hostname           : FTD-4
Domains            : cisco.com
DNS Servers        : 72.163.47.11
DNS from router    : enabled
Management port    : 8305
IPv4 Default route
  Gateway           : data-interfaces

===== [ management0 ] =====
Admin State        : enabled
Admin Speed        : 1gbps
Operation Speed    : 1gbps
Link               : up
Channels           : Management & Events
Mode               : Non-Autonegotiation
MDI/MDIX           : Auto/MDIX
MTU                : 1500
MAC Address        : 68:87:C6:A6:54:80
----- [ IPv4 ] -----
Configuration      : Manual
Address            : 10.89.5.4
Netmask            : 255.255.255.192
Gateway            : 169.254.1.1
----- [ IPv6 ] -----
Configuration      : Disabled

===== [ Proxy Information ] =====
```

```

State                : Disabled
Authentication       : Disabled

=====[ System Information - Data Interfaces ]=====
DNS Servers          : 72.163.47.11
Interfaces           : Ethernet1/1

===== [ Ethernet1/1 ] =====
State                : Enabled
Link                 : Up
Name                 : outside
MTU                  : 1500
MAC Address          : 68:87:C6:A6:54:A4
----- [ IPv4 ] -----
Configuration        : Manual
Address               : 10.89.5.6
Netmask              : 255.255.255.192
Gateway              : 10.89.5.1
----- [ IPv6 ] -----
Configuration        : Disabled

```

Check that the threat defense registered with the management center

At the threat defense CLI, check that the management center registration was completed. Note that this command will not show the *current* status of the management connection.

show managers

```

> show managers
Type                : Manager
Host                : 10.10.1.4
Display name        : 10.10.1.4
Identifier           : f7ffad78-bf16-11ec-a737-baa2f76ef602
Registration         : Completed
Management type     : Configuration

```

Ping the management center

At the threat defense CLI, use the following command to ping the management center from the data interfaces:

ping *fmc_ip*

At the threat defense CLI, use the following command to ping the management center from the Management interface, which should route over the backplane to the data interfaces:

ping system *fmc_ip*

Capture packets on the threat defense internal interface

At the threat defense CLI, capture packets on the internal backplane interface (nlp_int_tap) to see if management packets are being sent:

capture *name* interface nlp_int_tap trace detail match ip any any

show capture*name* trace detail

Check the internal interface status, statistics, and packet count

At the threat defense CLI, see information about the internal backplane interface, nlp_int_tap:

show interface detail

```

> show interface detail
[...]
Interface Internal-Data0/1 "nlp_int_tap", is up, line protocol is up
  Hardware is en_vtun rev00, BW Unknown Speed-Capability, DLY 1000 usec
  (Full-duplex), (1000 Mbps)
  Input flow control is unsupported, output flow control is unsupported
  MAC address 0000.0100.0001, MTU 1500
  IP address 169.254.1.1, subnet mask 255.255.255.248
  37 packets input, 2822 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  0 pause input, 0 resume input
  0 L2 decode drops
  5 packets output, 370 bytes, 0 underruns
  0 pause output, 0 resume output
  0 output errors, 0 collisions, 0 interface resets
  0 late collisions, 0 deferred
  0 input reset drops, 0 output reset drops
  input queue (blocks free curr/low): hardware (0/0)
  output queue (blocks free curr/low): hardware (0/0)
  Traffic Statistics for "nlp_int_tap":
  37 packets input, 2304 bytes
  5 packets output, 300 bytes
  37 packets dropped
    1 minute input rate 0 pkts/sec,  0 bytes/sec
    1 minute output rate 0 pkts/sec,  0 bytes/sec
    1 minute drop rate, 0 pkts/sec
    5 minute input rate 0 pkts/sec,  0 bytes/sec
    5 minute output rate 0 pkts/sec,  0 bytes/sec
    5 minute drop rate, 0 pkts/sec
  Control Point Interface States:
  Interface number is 14
  Interface config status is active
  Interface state is active

```

Check routing and NAT

At the threat defense CLI, check that the default route (S*) was added and that internal NAT rules exist for the Management interface (nlp_int_tap).

show route

```

> show route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, V - VPN
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route
       SI - Static InterVRF

Gateway of last resort is 10.89.5.1 to network 0.0.0.0

S*      0.0.0.0 0.0.0.0 [1/0] via 10.89.5.1, outside
C       10.89.5.0 255.255.255.192 is directly connected, outside
L       10.89.5.29 255.255.255.255 is directly connected, outside

>

```

show nat

```
> show nat

Auto NAT Policies (Section 2)
1 (nlp_int_tap) to (outside) source static nlp_server_0_sftunnel_intf3 interface service
  tcp 8305 8305
  translate_hits = 0, untranslate_hits = 6
2 (nlp_int_tap) to (outside) source static nlp_server_0_ssh_intf3 interface service
  tcp ssh ssh
  translate_hits = 0, untranslate_hits = 73
3 (nlp_int_tap) to (outside) source static nlp_server_0_sftunnel_ipv6_intf3 interface
  ipv6 service tcp 8305 8305
  translate_hits = 0, untranslate_hits = 0
4 (nlp_int_tap) to (outside) source dynamic nlp_client_0_intf3 interface
  translate_hits = 174, untranslate_hits = 0
5 (nlp_int_tap) to (outside) source dynamic nlp_client_0_ipv6_intf3 interface ipv6
  translate_hits = 0, untranslate_hits = 0
>
```

Check other settings

See the following commands to check that all other settings are present. You can also see many of these commands on the management center's **Devices > Device Management > Device > Management > Manager Access - Configuration Details > CLI Output** page.

show running-config sftunnel

```
> show running-config sftunnel
sftunnel interface outside
sftunnel port 8305
```

show running-config ip-client

```
> show running-config ip-client
ip-client outside
```

show conn address *fmc_ip*

```
> show conn address 10.89.5.35
5 in use, 16 most used
Inspect Snort:
  preserve-connection: 0 enabled, 0 in effect, 0 most enabled, 0 most in effect

TCP nlp_int_tap 10.89.5.29(169.254.1.2):51231 outside 10.89.5.35:8305, idle 0:00:04,
  bytes 86684, flags UxIO
TCP nlp_int_tap 10.89.5.29(169.254.1.2):8305 outside 10.89.5.35:52019, idle 0:00:02,
  bytes 1630834, flags UIO
>
```

Check for a successful DDNS update

At the threat defense CLI, check for a successful DDNS update:

debug ddns

```
> debug ddns
DDNS update request = /v3/update?hostname=domain.example.org&myip=209.165.200.225
Successfully updated the DDNS sever with current IP addresses
DDNS: Another update completed, outstanding = 0
```

```
DDNS: IDB SB total = 0
```

If the update failed, use the **debug http** and **debug ssl** commands. For certificate validation failures, check that the root certificates are installed on the device:

```
show crypto ca certificates trustpoint_name
```

To check the DDNS operation:

```
show ddns update interface fmc_access_ifc_name
```

```
> show ddns update interface outside
```

```
Dynamic DNS Update on outside:
  Update Method Name Update Destination
  RBD_DDNS not available
```

```
Last Update attempted on 04:11:58.083 UTC Thu Jun 11 2020
Status : Success
FQDN : domain.example.org
IP addresses : 209.165.200.225
```


Check management center log files


See <https://cisco.com/go/fmc-reg-error>.

View Inventory Details

The **Inventory Details** section of the **Device** page shows chassis details such as the CPU and memory.

Figure 34: Inventory Details

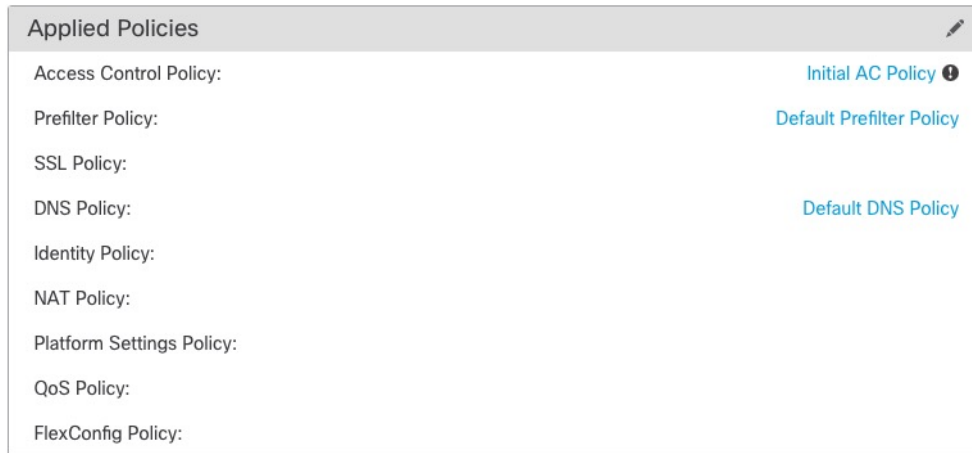
Inventory Details 	
CPU Type:	CPU Xeon E5 series 2300 MHz
CPU Cores:	1 CPU (4 cores)
Memory:	8192 MB RAM
Storage:	N/A
Chassis URL:	N/A
Chassis Serial Number:	N/A
Chassis Module Number:	N/A
Chassis Module Serial Number:	N/A

To update information, click **Refresh** .

Edit Applied Policies

The **Applied Policies** section of the **Device** page displays the following policies applied to your firewall:

Figure 35: Applied Policies



For policies with links, you can click the link to view the policy.

For the Access Control Policy, view the **Access Policy Information for Troubleshooting** dialog box by clicking the **Exclamation** (ⓘ) icon. This dialog box shows how access rules are expanded into access control entries (ACEs).

Figure 36: Access Policy Information for Troubleshooting



You can assign policies to an individual device from the **Device Management** page.

Procedure

- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the device where you want to assign policies, click **Edit** (✎).
- Step 3** Click **Device**.
- Step 4** In the **Applied Policies** section, click **Edit** (✎).

Figure 37: Policy Assignments

Policy Assignments ?

Access Control Policy: Initial AC Policy

NAT Policy: None

Platform Settings Policy: None

QoS Policy: None

FlexConfig Policy: None

Cancel Save

- Step 5** For each policy type, choose a policy from the drop-down menu. Only existing policies are listed.
- Step 6** Click **Save**.

What to do next

- Deploy configuration changes; see [Deploy Configuration Changes](#).

Edit Advanced Settings

The **Advanced Settings** section of the **Device** page displays a table of advanced configuration settings, as described below. You can edit any of these settings.

Table 5: Advanced Section Table Fields

Field	Description
Application Bypass	The state of Automatic Application Bypass on the device.
Bypass Threshold	The Automatic Application Bypass threshold, in milliseconds.

Field	Description
Object Group Search	<p>The state of object group search on the device. While operating, the FTD device expands access control rules into multiple access control list entries based on the contents of any network or interface objects used in the access rule. You can reduce the memory required to search access control rules by enabling object group search. With object group search enabled, the system does not expand network or interface objects, but instead searches access rules for matches based on those group definitions. Object group search does not impact how your access rules are defined or how they appear in Firepower Management Center. It impacts only how the device interprets and processes them while matching connections to access control rules.</p> <p>Note By default, the Object Group Search is enabled when you add threat defense for the first time in the management center.</p>
Interface Object Optimization	<p>The state of interface object optimization on the device. During deployment, interface groups and security zones used in the access control and prefilter policies generate separate rules for each source/destination interface pair. If you enable interface object optimization, the system will instead deploy a single rule per access control/prefilter rule, which can simplify the device configuration and improve deployment performance. If you select this option, also select the Object Group Search option to reduce memory usage on the device.</p>

The following topics explain how to edit the advanced device settings.



Note For information about the Transfer Packets setting, see [Edit General Settings, on page 1](#).

Configure Automatic Application Bypass

Automatic Application Bypass (AAB) allows packets to bypass detection if Snort is down or, for a Classic device, if a packet takes too long to process. AAB causes Snort to restart within ten minutes of the failure, and generates troubleshooting data that can be analyzed to investigate the cause of the Snort failure.



Caution AAB activation partially restarts the Snort process, which temporarily interrupts the inspection of a few packets. Whether traffic drops during this interruption or passes without further inspection depends on how the target device handles traffic. See [Snort Restart Traffic Behavior](#) for more information.

See the following behavior:

Threat Defense Behavior: If Snort is down, then AAB is triggered after the specified timer duration. If Snort is up, then AAB is never triggered, even if packet processing exceeds the configured timer.

Classic Device Behavior: AAB limits the time allowed to process packets through an interface. You balance packet processing delays with your network's tolerance for packet latency.

The feature functions with any deployment; however, it is most valuable in inline deployments.

Typically, you use Rule Latency Thresholding in the intrusion policy to fast-path packets after the latency threshold value is exceeded. Rule Latency Thresholding does not shut down the engine or generate troubleshooting data.

If detection is bypassed, the device generates a health monitoring alert.

By default the AAB is disabled; to enable AAB follow the steps described.

Procedure

-
- Step 1** Choose **Devices > Device Management**.
 - Step 2** Next to the device where you want to edit advanced device settings, click **Edit** (✎).
 - Step 3** Click **Device**, then click **Edit** (✎) in the **Advanced Settings** section.
 - Step 4** Check **Automatic Application Bypass**.
 - Step 5** Enter a **Bypass Threshold** from 250 ms to 60,000 ms. The default setting is 3000 milliseconds (ms).
 - Step 6** Click **Save**.
-

What to do next

- Deploy configuration changes; see [Deploy Configuration Changes](#).

Configure Object Group Search

While operating, the threat defense device expands access control rules into multiple access control list entries based on the contents of any network or interface objects used in the access rule. You can reduce the memory required to search access control rules by enabling object group search. With object group search enabled, the system does not expand network or interface objects, but instead searches access rules for matches based on those group definitions. Object group search does not impact how your access rules are defined or how they appear in management center. It impacts only how the device interprets and processes them while matching connections to access control rules.

Enabling object group search reduces memory requirements for access control policies that include network or interface objects. However, it is important to note that object group search might also decrease rule lookup performance and thus increase CPU utilization. You should balance the CPU impact against the reduced memory requirements for your specific access control policy. In most cases, enabling object group search provides a net operational improvement.

By default, the object group search is enabled for the threat defense devices that are added for the first time in the management center. In the case of upgraded devices, if the device is configured with disabled object group search, then you need to manually enable it. You can enable it on one device at a time; you cannot enable it globally. We recommend that you enable it on any device to which you deploy access rules that use network or interface objects.



Note If you enable object group search and then configure and operate the device for a while, be aware that subsequently disabling the feature might lead to undesirable results. When you disable object group search, your existing access control rules will be expanded in the device's running configuration. If the expansion requires more memory than is available on the device, your device can be left in an inconsistent state and you might see a performance impact. If your device is operating normally, you should not disable object group search once you have enabled it.

Before you begin

- Model Support—Threat Defense
- We recommend that you also enable transactional commit on each device. From the device CLI, enter the **asp rule-engine transactional-commit access-group** command.
- Changing this setting can be disruptive to system operation while the device recompiles the ACLs. We recommend that you change this setting during a maintenance window.
- You can use FlexConfig to configure the **object-group-search threshold** command to enable a threshold to help prevent performance degradation. When operating with a threshold, for each connection, both the source and destination IP addresses are matched against network objects. If the number of objects matched by the source address times the number matched by the destination address exceeds 10,000, the connection is dropped. Configure your rules to prevent an excessive number of matches.

Procedure

-
- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the threat defense device where you want to configure the rule, click the **Edit** (✎).
- Step 3** Click the **Device** tab, then click the **Edit** (✎) in the **Advanced Settings** section.
- Step 4** Check **Object Group Search**.
- Step 5** To have object group search work on interface objects in addition to network objects, check **Interface Object Optimization**.
- If you do not select **Interface Object Optimization**, the system deploys separate rules for each source/interface pair, rather than use the security zones and interface groups used in the rules. This means the interface groups are not available for object group search processing.
- Step 6** Click **Save**.
-

Configure Interface Object Optimization

During deployment, interface groups and security zones used in the access control and prefilter policies generate separate rules for each source/destination interface pair. If you enable interface object optimization, the system will instead deploy a single rule per access control/prefilter rule, which can simplify the device configuration and improve deployment performance. If you select this option, also select the **Object Group Search** option to reduce memory usage on the device.

Interface object optimization is disabled by default. You can enable it on one device at a time; you cannot enable it globally.



Note If you disable interface object optimization, your existing access control rules will be deployed without using interface objects, which might make deployment take longer. In addition, if object group search is enabled, its benefits will not apply to interface objects, and you might see expansion in the access control rules in the device's running configuration. If the expansion requires more memory than is available on the device, your device can be left in an inconsistent state and you might see a performance impact.

Before you begin

Model Support—Threat Defense

Procedure

- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the threat defense device where you want to configure the rule, click the **Edit** (✎).
- Step 3** Click the **Device** tab, then click **Edit** (✎) in the **Advanced Settings** section.
- Step 4** Check **Interface Object Optimization**.
- Step 5** Click **Save**.

Edit Deployment Settings

The **Deployment Settings** section of the **Device** page displays the information described in the table below.

Figure 38: Deployment Settings

Deployment Settings	
Auto Rollback Deployment if Connectivity fails	Disabled
Connectivity Monitor Interval (in Minutes)	20 Mins.

Table 6: Deployment Settings

Field	Description
Auto Rollback Deployment if Connectivity Fails	Enabled or Disabled. You can enable auto rollback if the management connection fails as a result of the deployment; specifically if you use data for management center access, and then you misconfigure the data interface.
Connectivity Monitor Interval (in Minutes)	Shows the amount of time to wait before rolling back the configuration.

You can set deployment settings from the **Device Management** page. Deployment settings include enabling auto rollback of the deployment if the management connection fails as a result of the deployment; specifically if you use data for management center access, and then you misconfigure the data interface. You can alternatively manually roll back the configuration using the **configure policy rollback** command (see [Manually Roll Back the Configuration if the Management Center Loses Connectivity, on page 41](#)).

See the following guidelines:

- Only the previous deployment is available locally on the threat defense; you cannot roll back to any earlier deployments.
- Rollback is supported for high availability but not supported for clustering deployments.
- The rollback only affects configurations that you can set in the management center. For example, the rollback does not affect any local configuration related to the dedicated Management interface, which you can only configure at the threat defense CLI. Note that if you changed data interface settings after the last management center deployment using the **configure network management-data-interface** command, and then you use the rollback command, those settings will not be preserved; they will roll back to the last-deployed management center settings.
- UCAPL/CC mode cannot be rolled back.
- Out-of-band SCEP certificate data that was updated during the previous deployment cannot be rolled back.
- During the rollback, connections will drop because the current configuration will be cleared.

Procedure

- Step 1** Choose **Devices > Device Management**.
- Step 2** Next to the device where you want to assign policies, click **Edit** (✎).
- Step 3** Click **Device**.
- Step 4** In the **Deployment Settings** section, click **Edit** (✎).

Figure 39: Deployment Settings

Deployment Settings

Auto Rollback Deployment if Connectivity Fails:

Connectivity Monitor Interval (in Minutes):

The connectivity failure timeout will be applicable from next deployment incase, the deployment for this device is already in progress.

Cancel Save

- Step 5** Check **Auto Rollback Deployment if Connectivity Fails** to enable auto rollback.

Step 6 Set the **Connectivity Monitor Interval (in Minutes)** to set the amount of time to wait before rolling back the configuration. The default is 20 minutes.

Step 7 If a rollback occurs, see the following for next steps.

- If the auto rollback was successful, you see a success message instructing you to do a full deployment.
- You can also go to the **Deploy > Advanced Deploy** screen and click the **Preview** (📄) icon to view the parts of the configuration that were rolled back (see [Deploy Configuration Changes](#)). Click **Show Rollback Changes** to view the changes, and **Hide Rollback Changes** to hide the changes.

Figure 40: Rollback Changes

Change Log: 10.10.35.97

⚠ This device requires a full deployment as auto rollback operation is performed in the device. [see more](#)
[Hide Rollback Changes](#)

Preview Changes | Rollback Changes

Legend: ■ Added ■ Edited ■ Removed

Changed Policies	Deployed Version	Version on FMC	Modified By
<ul style="list-style-type: none"> Routing <ul style="list-style-type: none"> Virtual Router (Global) <ul style="list-style-type: none"> Static Route IPv4 Static Route IPv6 	Routing: Virtual Router: Virtual Router (Global) Static Route IPv4: IPv4 Route: admin Static Route Interface(Unchanged): outside outside Static Route Network(Unchanged): any-ipv4 any-ipv4 Gateway: literal:10.10.35.63 literal:10.10.35.64 Static Route IPv6: IPv6 Route: admin IPv6 Static Route Interface(Unchanged): inside inside IPv6 Static Route Network(Unchanged): any-ipv6 any-ipv6 IPv6 Static Route gateway: literal:20::20 literal:20::23		

Download as PDF OK

- In the Deployment History Preview, you can view the rollback changes. See [View Deployment History](#).

Step 8 Check that the management connection was reestablished.

In management center, check the management connection status on the **Devices > Device Management > Device > Management > FMC Access Details > Connection Status** page.

At the threat defense CLI, enter the **sftunnel-status-brief** command to view the management connection status.

If it takes more than 10 minutes to reestablish the connection, you should troubleshoot the connection. See [Troubleshoot Management Connectivity on a Data Interface, on page 42](#).

Edit Cluster Health Monitor Settings

The **Cluster Health Monitor Settings** section of the **Cluster** page displays the settings described in the table below.

Figure 41: Cluster Health Monitor Settings


Cluster Health Monitor Settings 			
Timeouts			
Hold Time			3 s
Interface Debounce Time			9000 ms
Monitored Interfaces			
Service Application			Enabled
Unmonitored Interfaces			None
Auto-Rejoin Settings			
	Attempts	Interval Between Attempts	Interval Variation
Cluster Interface	-1	5	1
Data Interface	3	5	2
System	3	5	2

Table 7: Cluster Health Monitor Settings Section Table Fields

Field	Description
Timeouts	
Hold Time	Between .3 and 45 seconds; The default is 3 seconds. To determine node system health, the cluster nodes send heartbeat messages on the cluster control link to other nodes. If a node does not receive any heartbeat messages from a peer node within the hold time period, the peer node is considered unresponsive or dead.
Interface Debounce Time	Between 300 and 9000 ms. The default is 500 ms. The interface debounce time is the amount of time before the node considers an interface to be failed, and the node is removed from the cluster.
Monitored Interfaces	The interface health check monitors for link failures. If all physical ports for a given logical interface fail on a particular node, but there are active ports under the same logical interface on other nodes, then the node is removed from the cluster. The amount of time before the node removes a member from the cluster depends on the type of interface and whether the node is an established node or is joining the cluster.
Service Application	Shows whether the Snort and disk-full processes are monitored.

Field	Description
Unmonitored Interfaces	Shows unmonitored interfaces.
Auto-Rejoin Settings	
Cluster Interface	Shows the auto-rejoin settings after a cluster control link failure.
<i>Attempts</i>	Between -1 and 65535. The default is -1 (unlimited). Sets the number of rejoin attempts.
<i>Interval Between Attempts</i>	Between 2 and 60. The default is 5 minutes. Defines the interval duration in minutes between rejoin attempts.
<i>Interval Variation</i>	Between 1 and 3. The default is 1x the interval duration. Defines if the interval duration increases at each attempt.
Data Interfaces	Shows the auto-rejoin settings after a data interface failure.
<i>Attempts</i>	Between -1 and 65535. The default is 3. Sets the number of rejoin attempts.
<i>Interval Between Attempts</i>	Between 2 and 60. The default is 5 minutes. Defines the interval duration in minutes between rejoin attempts.
<i>Interval Variation</i>	Between 1 and 3. The default is 2x the interval duration. Defines if the interval duration increases at each attempt.
System	Shows the auto-rejoin settings after internal errors. Internal failures include: application sync timeout; inconsistent application statuses; and so on.
<i>Attempts</i>	Between -1 and 65535. The default is 3. Sets the number of rejoin attempts.
<i>Interval Between Attempts</i>	Between 2 and 60. The default is 5 minutes. Defines the interval duration in minutes between rejoin attempts.
<i>Interval Variation</i>	Between 1 and 3. The default is 2x the interval duration. Defines if the interval duration increases at each attempt.



Note If you disable the system health check, fields that do not apply when the system health check is disabled will not show.

You can change these settings from this section.

You can monitor any port-channel ID, single physical interface ID, as well as the Snort and disk-full processes. Health monitoring is not performed on VLAN subinterfaces or virtual interfaces such as VNIs or BVIs. You cannot configure monitoring for the cluster control link; it is always monitored.

Procedure

Step 1 Choose **Devices > Device Management**.

- Step 2** Next to the cluster you want to modify, click **Edit** (✎).
- Step 3** Click **Cluster**.
- Step 4** In the **Cluster Health Monitor Settings** section, click **Edit** (✎).
- Step 5** Disable the system health check by clicking the **Health Check** slider .

Figure 42: Disable the System Health Check

The screenshot shows a dialog box titled "Edit Cluster Health Monitor Settings" with a close button (X) in the top right corner. At the top, there is a "Health Check" toggle switch which is currently turned off. Below this is a section titled "Timeouts" with a downward arrow. Under "Timeouts", there are two input fields: "Hold Time" with a value of "3" and a range of "0.3 to 45 seconds", and "Interface Debounce Time" with a value of "9000" and a range of "300 to 9000 milliseconds". Below these are two expandable sections: "Auto-Rejoin Settings" and "Monitored Interfaces", each with a right-pointing arrow. At the bottom of the dialog, there are three buttons: "Reset to Defaults" (light blue), "Cancel" (light blue), and "Save" (dark blue).

When any topology changes occur (such as adding or removing a data interface, enabling or disabling an interface on the node or the switch, or adding an additional switch to form a VSS or vPC) you should disable the system health check feature and also disable interface monitoring for the disabled interfaces. When the topology change is complete, and the configuration change is synced to all nodes, you can re-enable the system health check feature and monitored interfaces.

- Step 6** Configure the hold time and interface debounce time.
- **Hold Time**—Set the hold time to determine the amount of time between node heartbeat status messages, between .3 and 45 seconds; The default is 3 seconds.
 - **Interface Debounce Time**—Set the debounce time between 300 and 9000 ms. The default is 500 ms. Lower values allow for faster detection of interface failures. Note that configuring a lower debounce time increases the chances of false-positives. When an interface status update occurs, the node waits the number of milliseconds specified before marking the interface as failed, and the node is removed from the cluster. In the case of an EtherChannel that transitions from a down state to an up state (for example, the switch reloaded, or the switch enabled an EtherChannel), a longer debounce time can prevent the interface from appearing to be failed on a cluster node just because another cluster node was faster at bundling the ports.

- Step 7** Customize the auto-rejoin cluster settings after a health check failure.

Figure 43: Configure Auto-Rejoin Settings

▼ Auto-Rejoin Settings

Cluster Interface

Attempts Range: 0-65535 (-1 for unlimited number of attempts)

Interval Between Attempts Range: 2-60 minutes between rejoin attempts

Interval Variation Range: 1-3. Defines if the interval duration increases. 1 (no change); 2 (2 x the previous duration), or 3 (3 x the previous duration).

Data Interface

Attempts Range: 0-65535 (-1 for unlimited number of attempts)

Interval Between Attempts Range: 2-60 minutes between rejoin attempts

Interval Variation Range: 1-3. Defines if the interval duration increases. 1 (no change); 2 (2 x the previous duration), or 3 (3 x the previous duration).

System

Attempts Range: 0-65535 (-1 for unlimited number of attempts)

Interval Between Attempts Range: 2-60 minutes between rejoin attempts

Interval Variation Range: 1-3. Defines if the interval duration increases. 1 (no change); 2 (2 x the previous duration), or 3 (3 x the previous duration).

Set the following values for the **Cluster Interface**, **Data Interface**, and **System** (internal failures include: application sync timeout; inconsistent application statuses; and so on):

- **Attempts**—Sets the number of rejoin attempts, between -1 and 65535. **0** disables auto-rejoining. The default for the **Cluster Interface** is -1 (unlimited). The default for the **Data Interface** and **System** is 3.
- **Interval Between Attempts**—Defines the interval duration in minutes between rejoin attempts, between 2 and 60. The default value is 5 minutes. The maximum total time that the node attempts to rejoin the cluster is limited to 14400 minutes (10 days) from the time of last failure.
- **Interval Variation**—Defines if the interval duration increases. Set the value between 1 and 3: **1** (no change); **2** (2 x the previous duration), or **3** (3 x the previous duration). For example, if you set the interval duration to 5 minutes, and set the variation to 2, then the first attempt is after 5 minutes; the 2nd attempt is 10 minutes (2 x 5); the 3rd attempt 20 minutes (2 x 10), and so on. The default value is **1** for the **Cluster Interface** and **2** for the **Data Interface** and **System**.

Step 8

Configure monitored interfaces by moving interfaces in the **Monitored Interfaces** or **Unmonitored Interfaces** window. You can also check or uncheck **Enable Service Application Monitoring** to enable or disable monitoring of the Snort and disk-full processes.

Figure 44: Configure Monitored Interfaces

▼ Monitored Interfaces

Monitored Interfaces

- GigabitEthernet0/0
- GigabitEthernet0/1
- GigabitEthernet0/2
- GigabitEthernet0/3
- GigabitEthernet0/4
- GigabitEthernet0/5
- GigabitEthernet0/6
- GigabitEthernet0/7
- Diagnostic0/0

Unmonitored Interfaces ⓘ

Enable Service Application Monitoring

The interface health check monitors for link failures. If all physical ports for a given logical interface fail on a particular node, but there are active ports under the same logical interface on other nodes, then the node is removed from the cluster. The amount of time before the node removes a member from the cluster depends on the type of interface and whether the node is an established node or is joining the cluster. Health check is enabled by default for all interfaces and for the Snort and disk-full processes.

You might want to disable health monitoring of non-essential interfaces, for example, the Diagnostic interface.

When any topology changes occur (such as adding or removing a data interface, enabling or disabling an interface on the node or the switch, or adding an additional switch to form a VSS or vPC) you should disable the system health check feature and also disable interface monitoring for the disabled interfaces. When the topology change is complete, and the configuration change is synced to all nodes, you can re-enable the system health check feature and monitored interfaces.

Step 9 Click **Save**.

Step 10 Deploy configuration changes; see [Deploy Configuration Changes](#).

History for Device Settings

Feature	Minimum Management Center	Minimum Threat Defense	Details
Cluster health monitor settings.	7.3.0	Any	<p>You can now edit cluster health monitor settings.</p> <p>New/modified screens: Devices > Device Management > Cluster > Cluster Health Monitor Settings</p> <p>Note If you previously configured these settings using FlexConfig, be sure to remove the FlexConfig configuration before you deploy. Otherwise the FlexConfig configuration will overwrite the management center configuration.</p>
Redundant manager access data interface.	7.3.0	7.3.0	<p>When you use a data interface for manager access, you can configure a secondary data interface to take over management functions if the primary interface goes down. The device uses SLA monitoring to track the viability of the static routes and an ECMP zone that contains both interfaces so management traffic can use both interfaces.</p> <p>New/modified screens:</p> <ul style="list-style-type: none"> • Devices > Device Management > Device > Management • Devices > Device Management > Device > Interfaces > Manager Access
Policy rollback support for high availability devices.	7.2.0	7.2.0	<p>The configure policy rollback command is supported for high availability devices.</p>
Auto rollback of a deployment that causes a loss of management connectivity.	7.2.0	7.2.0	<p>You can now enable auto rollback of the configuration if a deployment causes the management connection between the management center and the threat defense to go down. Previously, you could only manually rollback a configuration using the configure policy rollback command.</p> <p>New/modified screens:</p> <ul style="list-style-type: none"> • Devices > Device Management > Device > Deployment Settings • Deploy > Advanced Deploy > Preview • Deploy > Deployment History > Preview
Object group search is enabled by default for access control rules.	7.2.0	7.2.0	<p>The Object Group Search setting is enabled by default for managed devices starting with Version 7.2.0. This option is in the Advanced Settings section when editing device settings on the Device Management page.</p>

Feature	Minimum Management Center	Minimum Threat Defense	Details
Import and export device configurations.	7.1.0	7.1.0	<p>You can export the device-specific configuration, and you can then import the saved configuration for the same device in the following use cases:</p> <ul style="list-style-type: none"> • Moving the device to a different FMC. • Restore an old configuration. • Reregistering a device. <p>New/modified screens: Devices > Device Management > Device > General</p>
Update the FMC IP address on FTD.	6.7.0	6.7.0	<p>If you change the FMC IP address, you can now use the FTD CLI to update the device.</p> <p>New/modified commands: configure manager edit</p>