



Threat Defense Deployment with the Management Center

Is This Chapter for You?

To see all available applications and managers, see [Which Application and Manager is Right for You?](#). This chapter applies to the threat defense with the management center.

This chapter explains how to manage the threat defense with a management center located on your management network. For remote branch deployment, where the management center resides at a central headquarters, see [Threat Defense Deployment with a Remote Management Center](#).

About the Firewall

The hardware can run either threat defense software or ASA software. Switching between threat defense and ASA requires you to reimage the device. You should also reimage if you need a different software version than is currently installed. See [Cisco Secure Firewall ASA and Secure Firewall Threat Defense Reimage Guide](#).

The firewall runs an underlying operating system called the Secure Firewall eXtensible Operating System (FXOS). The firewall does not support the FXOS Secure Firewall chassis manager; only a limited CLI is supported for troubleshooting purposes. See the [Cisco FXOS Troubleshooting Guide for the Firepower 1000/2100 and Secure Firewall 3100/4200 with Firepower Threat Defense](#) for more information.

Privacy Collection Statement—The firewall does not require or actively collect personally identifiable information. However, you can use personally identifiable information in the configuration, for example for usernames. In this case, an administrator might be able to see this information when working with the configuration or when using SNMP.

- [Before You Start, on page 2](#)
- [End-to-End Tasks, on page 2](#)
- [Review the Network Deployment, on page 4](#)
- [Cable the Firewall, on page 6](#)
- [Power on the Firewall, on page 8](#)
- [\(Optional\) Check the Software and Install a New Version, on page 9](#)
- [Complete the Threat Defense Initial Configuration Using the CLI, on page 11](#)
- [Log Into the Management Center, on page 14](#)
- [Obtain Licenses for the Management Center, on page 14](#)
- [Register the Threat Defense with the Management Center, on page 16](#)
- [Configure a Basic Security Policy, on page 19](#)

- [Access the Threat Defense and FXOS CLI, on page 34](#)
- [Power Off the Firewall, on page 35](#)
- [What's Next?, on page 36](#)

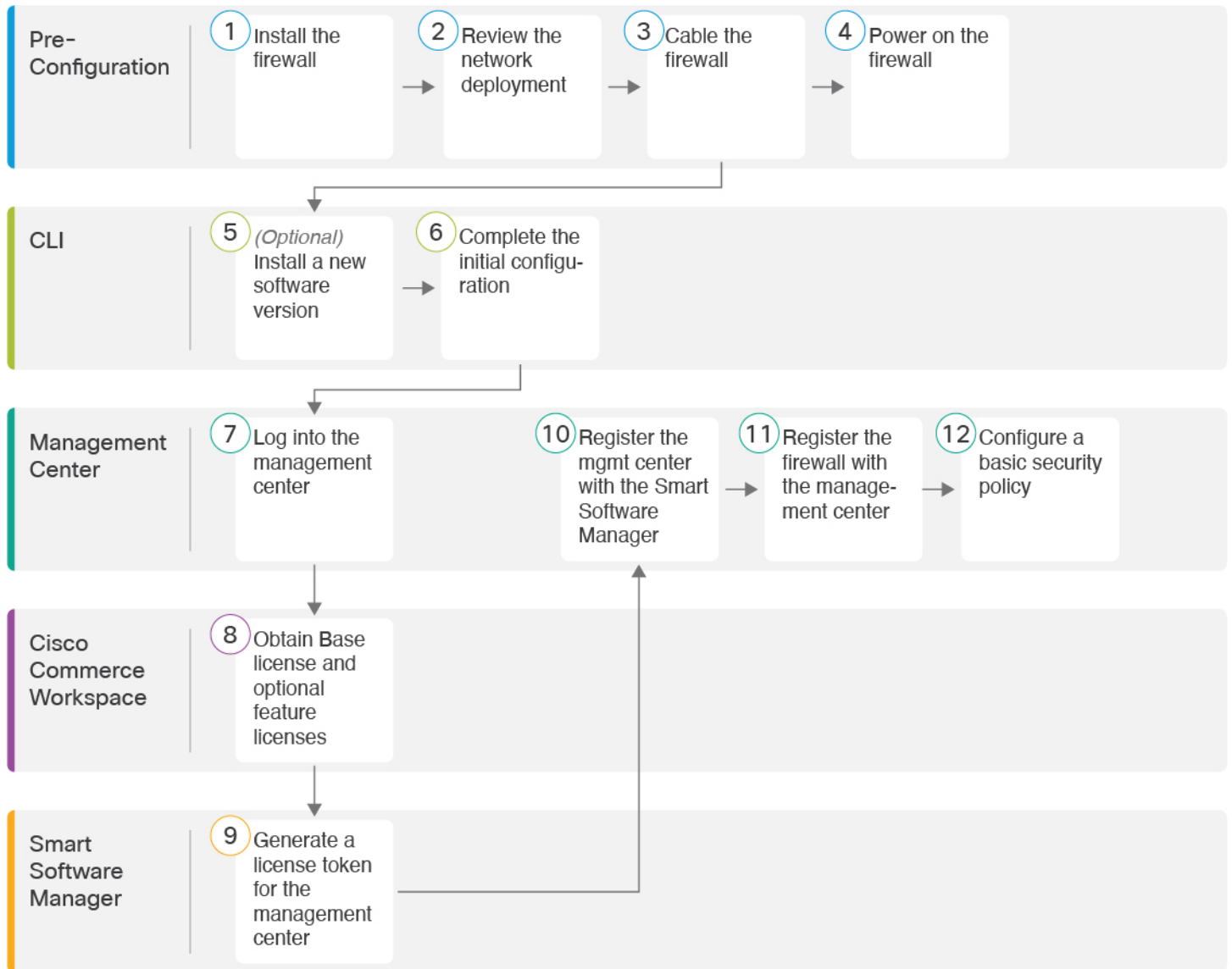
Before You Start

Deploy and perform initial configuration of the management center. See the getting started guide for your model.

End-to-End Tasks

See the following tasks to deploy the threat defense with management center.

Figure 1: End-to-End Tasks



1	Pre-Configuration	Install the firewall. See the hardware installation guide .
2	Pre-Configuration	Review the Network Deployment , on page 4.
3	Pre-Configuration	Cable the Firewall , on page 6.
4	Pre-Configuration	Power on the Firewall , on page 8.
5	CLI	(Optional) Check the Software and Install a New Version , on page 9.

6	CLI	Complete the Threat Defense Initial Configuration Using the CLI, on page 11.
7	Management Center	Log Into the Management Center, on page 14.
8	Cisco Commerce Workspace	Buy Base license and optional feature licenses (Obtain Licenses for the Management Center, on page 14.).
9	Smart Software Manager	Generate a license token for the management center (Obtain Licenses for the Management Center, on page 14.).
10	Management Center	Register the management center with the Smart Licensing server (Obtain Licenses for the Management Center, on page 14.).
11	Management Center	Register the Threat Defense with the Management Center, on page 16.
12	Management Center	Configure a Basic Security Policy, on page 19.

Review the Network Deployment

Management Interface

The management center communicates with the threat defense on the Management interface.

The dedicated Management interface is a special interface with its own network settings:

- By default, the Management 1/1 interface is enabled and configured as a DHCP client. If your network does not include a DHCP server, you can set the Management interface to use a static IP address during initial setup at the console port.
- Both the threat defense and the management center require internet access from their management interfaces for licensing and updates.



Note The management connection is a secure, TLS-1.3-encrypted communication channel between itself and the device. You do not need to run this traffic over an additional encrypted tunnel such as Site-to-Site VPN for security purposes. If the VPN goes down, for example, you will lose your management connection, so we recommend a simple management path.

Data Interfaces

You can configure other interfaces after you connect the threat defense to the management center.

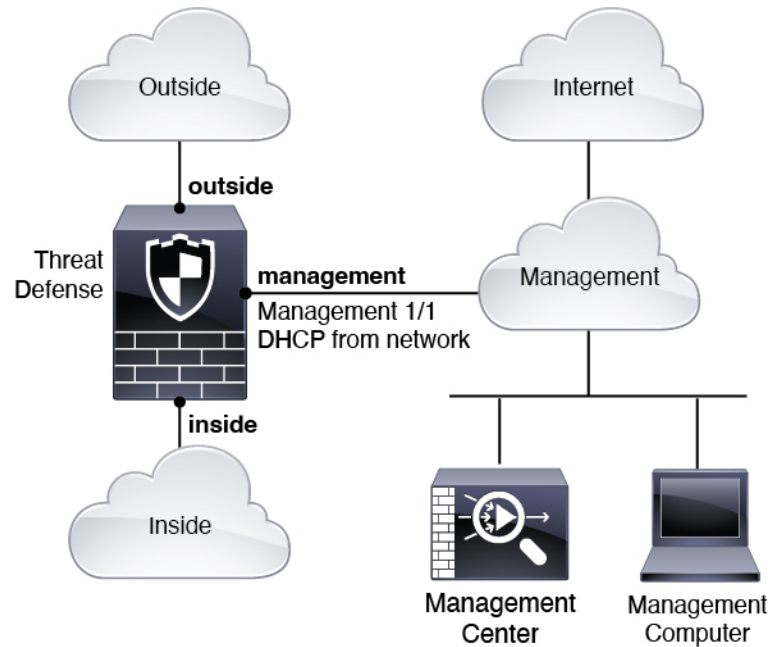
Typical Separate Management Network Deployment

The following figure shows a typical network deployment for the firewall where:

- The threat defense, management center, and management computer connect to the management network

- The management network has a path to the internet for licensing and updates.

Figure 2: Separate Management Network



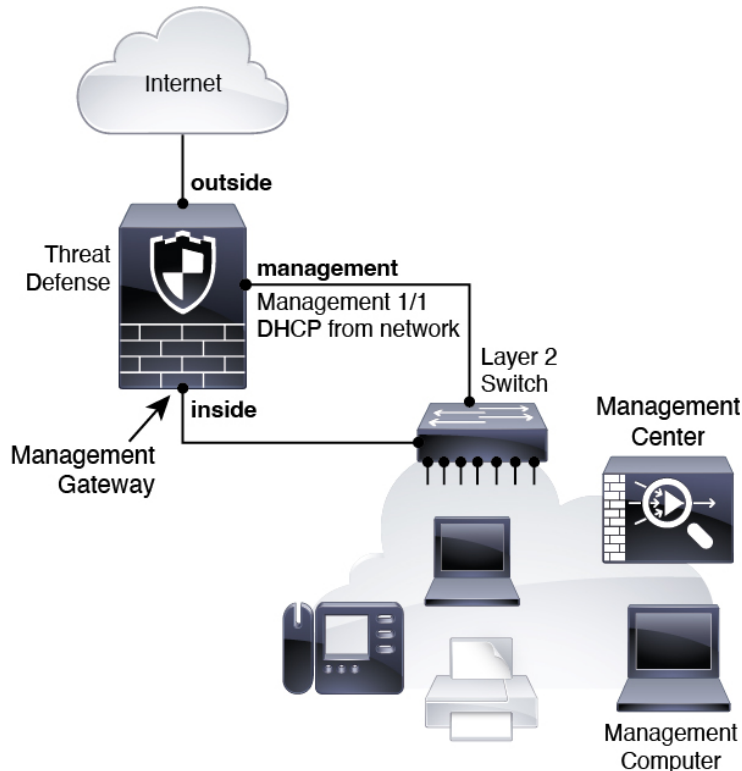
Typical Edge Network Deployment

The following figure shows a typical network deployment for the firewall where:

- The inside interface acts as the internet gateway for Management and for the management center.
- Connects Management 1/1 to an inside interface through a Layer 2 switch.
- Connects the management center and management computer to the switch.

This direct connection is allowed because the Management interface has separate routing from the other interfaces on the threat defense.

Figure 3: Edge Network Deployment



Cable the Firewall

To cable one of the recommended scenarios on the Secure Firewall 4200, see the following steps.



Note Other topologies can be used, and your deployment will vary depending on your basic logical network connectivity, ports, addressing, and configuration requirements.

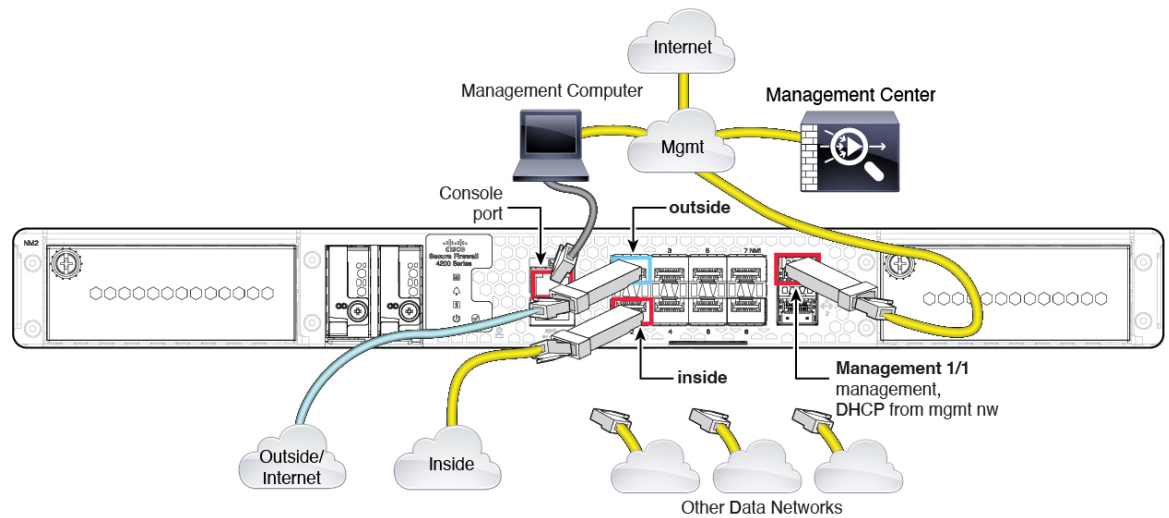
Before you begin

- Install SFPs into the Management and data interface ports—The built-in ports are 1/10/25-Gb SFP ports that require SFP modules.
- Obtain a console cable—The firewall does not ship with a console cable by default, so you will need to buy a third-party USB-to-RJ-45 serial cable, for example.

Procedure

- Step 1** Install the chassis. See the [hardware installation guide](#).
- Step 2** Cable for a separate management network:

Figure 4: Cabling a Separate Management Network



a) Cable the following to your management network:

- Management 1/1 interface

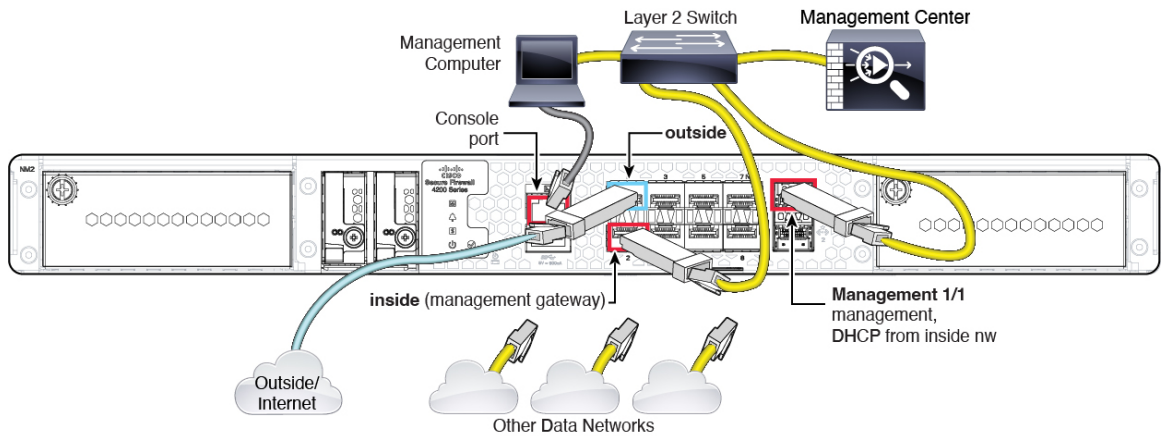
The Management 1/2 interface can be used as a separate eventing interface if the management center has a dedicated eventing interface. See the management center admin and device configuration guides for more information.

- Secure Firewall Management Center
- Management computer

- b) Connect the management computer to the console port. You need to use the console port to access the CLI for initial setup if you do not use SSH to the Management interface.
- c) Connect the inside interface (for example, Ethernet 1/2) to your inside router.
- d) Connect the outside interface (for example, Ethernet 1/1) to your outside router.
- e) Connect other networks to the remaining interfaces.

Step 3 Cable for an edge deployment:

Figure 5: Cabling an Edge Deployment



a) Cable the following to a Layer 2 Ethernet switch:

- Inside interface (for example, Ethernet 1/2)
- Management 1/1 interface

The Management 1/2 interface can be used as a separate eventing interface if the management center has a dedicated eventing interface. See the management center admin and device configuration guides for more information.

- Secure Firewall Management Center
- Management computer

b) Connect the management computer to the console port. You need to use the console port to access the CLI for initial setup if you do not use SSH to the Management interface.

c) Connect the outside interface (for example, Ethernet 1/1) to your outside router.

d) Connect other networks to the remaining interfaces.

Power on the Firewall

System power is controlled by a rocker power switch located on the rear of the firewall. The power switch is implemented as a soft notification switch that supports graceful shutdown of the system to reduce the risk of system software and data corruption.



Note The first time you boot up the threat defense, initialization can take approximately 15 to 30 minutes.

Before you begin

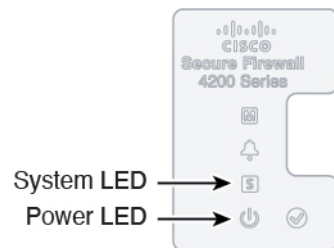
It's important that you provide reliable power for your firewall (for example, using an uninterruptible power supply (UPS)). Loss of power without first shutting down can cause serious file system damage. There are

many processes running in the background all the time, and losing power does not allow the graceful shutdown of your system.

Procedure

- Step 1** Attach the power cord to the firewall, and connect it to an electrical outlet.
- Step 2** Turn the power on using the standard rocker-type power on/off switch located on the rear of the chassis, adjacent to the power cord.
- Step 3** Check the Power LED on the back of the firewall; if it is solid green, the firewall is powered on.

Figure 6: System and Power LEDs



- Step 4** Check the System LED on the back of the firewall; after it is solid green, the system has passed power-on diagnostics.

Note When the switch is toggled from ON to OFF, it may take several seconds for the system to eventually power off. During this time, the Power LED on the front of the chassis blinks green. Do not remove the power until the Power LED is completely off.

(Optional) Check the Software and Install a New Version

To check the software version and, if necessary, install a different version, perform these steps. We recommend that you install your target version before you configure the firewall. Alternatively, you can perform an upgrade after you are up and running, but upgrading, which preserves your configuration, may take longer than using this procedure.

What Version Should I Run?

Cisco recommends running a Gold Star release indicated by a gold star next to the release number on the software download page. You can also refer to the release strategy described in <https://www.cisco.com/c/en/us/products/collateral/security/firewalls/bulletin-c25-743178.html>; for example, this bulletin describes short-term release numbering (with the latest features), long-term release numbering (maintenance releases and patches for a longer period of time), or extra long-term release numbering (maintenance releases and patches for the longest period of time, for government certification).

Procedure

- Step 1** Connect to the console port. See [Access the Threat Defense and FXOS CLI, on page 34](#) for more information.

Log in with the **admin** user and the default password, **Admin123**.

You connect to the FXOS CLI. The first time you log in, you are prompted to change the password. This password is also used for the threat defense login for SSH.

Note If the password was already changed, and you do not know it, you must perform a factory reset to reset the password to the default. See the [FXOS troubleshooting guide](#) for the [factory reset procedure](#).

Example:

```
firepower login: admin
Password: Admin123
Successful login attempts for user 'admin' : 1

[...]

Hello admin. You must change your password.
Enter new password: *****
Confirm new password: *****
Your password was updated successfully.

[...]

firepower#
```

Step 2 At the FXOS CLI, show the running version.

scope ssa

show app-instance

Example:

```
Firepower# scope ssa
Firepower /ssa # show app-instance

Application Name      Slot ID      Admin State      Operational State      Running Version Startup
Version Cluster Oper State
-----
ftd                   1            Enabled           Online                  7.4.0.65             7.4.0.65
                        Not Applicable
```

Step 3 If you want to install a new version, perform these steps.

- a) If you need to set a static IP address for the Management interface, see [Complete the Threat Defense Initial Configuration Using the CLI, on page 11](#). By default, the Management interface uses DHCP. You will need to download the new image from a server accessible from the Management interface.
- b) Perform the [reimage procedure](#) in the [FXOS troubleshooting guide](#). After the firewall reboots, you connect to the FXOS CLI again.

Complete the Threat Defense Initial Configuration Using the CLI

Connect to the threat defense CLI to perform initial setup, including setting the Management IP address, gateway, and other basic networking settings using the setup wizard. The dedicated Management interface is a special interface with its own network settings. If you do not want to use the Management interface for the manager access, you can use the CLI to configure a data interface instead. You will also configure the management center communication settings.

Procedure

Step 1 Connect to the threat defense CLI, either from the console port or using SSH to the Management interface, which obtains an IP address from a DHCP server by default. If you intend to change the network settings, we recommend using the console port so you do not get disconnected.

The console port connects to the FXOS CLI. The SSH session connects directly to the threat defense CLI.

Step 2 Log in with the username **admin** and the password **Admin123**.

At the console port, you connect to the FXOS CLI. The first time you log in to FXOS, you are prompted to change the password. This password is also used for the threat defense login for SSH.

Note If the password was already changed, and you do not know it, you must reimage the device to reset the password to the default. See the [FXOS troubleshooting guide](#) for the [reimage procedure](#).

Example:

```
firepower login: admin
Password: Admin123
Successful login attempts for user 'admin' : 1

[...]

Hello admin. You must change your password.
Enter new password: *****
Confirm new password: *****
Your password was updated successfully.

[...]

firepower#
```

Step 3 If you connected to FXOS on the console port, connect to the threat defense CLI.

connect ftd

Example:

```
firepower# connect ftd
>
```

Step 4 The first time you log in to the threat defense, you are prompted to accept the End User License Agreement (EULA) and, if using an SSH connection, to change the admin password. You are then presented with the CLI setup script.

Note You cannot repeat the CLI setup wizard unless you clear the configuration; for example, by reimaging. However, all of these settings can be changed later at the CLI using **configure network** commands. See [Cisco Secure Firewall Threat Defense Command Reference](#).

Defaults or previously entered values appear in brackets. To accept previously entered values, press **Enter**.

See the following guidelines:

- **Do you want to configure IPv4?** and/or **Do you want to configure IPv6?**—Enter **y** for at least one of these types of addresses.
- **Enter the IPv4 default gateway for the management interface** and/or **Enter the IPv6 gateway for the management interface**—Set a gateway IP address for Management 1/1 on the management network. In the edge deployment example shown in the network deployment section, the inside interface acts as the management gateway. In this case, you should set the gateway IP address to be the *intended* inside interface IP address; you must later use the management center to set the inside IP address. The **data-interfaces** setting applies only to the remote management center management.
- **If your networking information has changed, you will need to reconnect**—If you are connected with SSH but you change the IP address at initial setup, you will be disconnected. Reconnect with the new IP address and password. Console connections are not affected.
- **Configure firewall mode?**—We recommend that you set the firewall mode at initial configuration. Changing the firewall mode after initial setup erases your running configuration.

Example:

```
You must accept the EULA to continue.
Press <ENTER> to display the EULA:
End User License Agreement
[...]

Please enter 'YES' or press <ENTER> to AGREE to the EULA:

System initialization in progress. Please stand by.
You must change the password for 'admin' to continue.
Enter new password: *****
Confirm new password: *****
You must configure the network to continue.
Configure at least one of IPv4 or IPv6 unless managing via data interfaces.
Do you want to configure IPv4? (y/n) [y]:
Do you want to configure IPv6? (y/n) [y]:n
Configure IPv4 via DHCP or manually? (dhcp/manual) [manual]:
Enter an IPv4 address for the management interface [192.168.45.45]: 10.10.10.15
Enter an IPv4 netmask for the management interface [255.255.255.0]: 255.255.255.192
Enter the IPv4 default gateway for the management interface [data-interfaces]: 10.10.10.1
Enter a fully qualified hostname for this system [firepower]: ftd-1.cisco.com
Enter a comma-separated list of DNS servers or 'none'
[208.67.222.222,208.67.220.220,2620:119:35::35]:
Enter a comma-separated list of search domains or 'none' []:cisco.com
If your networking information has changed, you will need to reconnect.
Disabling IPv6 configuration: management0
Setting DNS servers: 208.67.222.222,208.67.220.220,2620:119:35::35
Setting DNS domains:cisco.com
Setting hostname as ftd-1.cisco.com
Setting static IPv4: 10.10.10.15 netmask: 255.255.255.192 gateway: 10.10.10.1 on management0
Updating routing tables, please wait...
All configurations applied to the system. Took 3 Seconds.
Saving a copy of running network configuration to local disk.
For HTTP Proxy configuration, run 'configure network http-proxy'
```

```
DHCP server is already disabled
DHCP Server Disabled
Configure firewall mode? (routed/transparent) [routed]:
Configuring firewall mode ...
```

```
Device is in OffBox mode - disabling/removing port 443 from iptables.
Update policy deployment information
- add device configuration
- add network discovery
- add system policy
```

You can register the sensor to a Firepower Management Center and use the Firepower Management Center to manage it. Note that registering the sensor to a Firepower Management Center disables on-sensor Firepower Services management capabilities.

When registering the sensor to a Firepower Management Center, a unique alphanumeric registration key is always required. In most cases, to register a sensor to a Firepower Management Center, you must provide the hostname or the IP address along with the registration key.

```
'configure manager add [hostname | ip address ] [registration key ]'
```

However, if the sensor and the Firepower Management Center are separated by a NAT device, you must enter a unique NAT ID, along with the unique registration key.

```
'configure manager add DONTRESOLVE [registration key ] [ NAT ID ]'
```

Later, using the web interface on the Firepower Management Center, you must use the same registration key and, if necessary, the same NAT ID when you add this sensor to the Firepower Management Center.

```
>
```

Step 5 Identify the management center that will manage this threat defense.

```
configure manager add {hostname | IPv4_address | IPv6_address | DONTRESOLVE} reg_key [nat_id]
```

- {hostname | IPv4_address | IPv6_address | **DONTRESOLVE**}—Specifies either the FQDN or IP address of the management center. If the management center is not directly addressable, use **DONTRESOLVE** and also specify the *nat_id*. At least one of the devices, either the management center or the threat defense, must have a reachable IP address to establish the two-way, SSL-encrypted communication channel between the two devices. If you specify **DONTRESOLVE** in this command, then the threat defense must have a reachable IP address or hostname.
- *reg_key*—Specifies a one-time registration key of your choice that you will also specify on the management center when you register the threat defense. The registration key must not exceed 37 characters. Valid characters include alphanumeric characters (A–Z, a–z, 0–9) and the hyphen (-).
- *nat_id*—Specifies a unique, one-time string of your choice that you will also specify on the management center when you register the threat defense when one side does not specify a reachable IP address or hostname. It is required if you set the management center to **DONTRESOLVE**. The NAT ID must not exceed 37 characters. Valid characters include alphanumeric characters (A–Z, a–z, 0–9) and the hyphen (-). This ID cannot be used for any other devices registering to the management center.

Example:

```
> configure manager add MC.example.com 123456
Manager successfully configured.
```

If the management center is behind a NAT device, enter a unique NAT ID along with the registration key, and specify DONTRESOLVE instead of the hostname, for example:

Example:

```
> configure manager add DONTRESOLVE regk3y78 natid90
Manager successfully configured.
```

If the threat defense is behind a NAT device, enter a unique NAT ID along with the management center IP address or hostname, for example:

Example:

```
> configure manager add 10.70.45.5 regk3y78 natid56
Manager successfully configured.
```

What to do next

Register your firewall to the management center.

Log Into the Management Center

Use the management center to configure and monitor the threat defense.

Before you begin

For information on supported browsers, refer to the release notes for the version you are using (see <https://www.cisco.com/go/firepower-notes>).

Procedure

Step 1 Using a supported browser, enter the following URL.

https://fmc_ip_address

Step 2 Enter your username and password.

Step 3 Click **Log In**.

Obtain Licenses for the Management Center

All licenses are supplied to the threat defense by the management center. You can purchase the following licenses:

- **Essentials**—(Required) Essentials license.
- **IPS**—Security Intelligence and Next-Generation IPS
- **Malware Defense**—Malware defense

- **URL**—URL Filtering
- **Cisco Secure Client**—Secure Client Advantage, Secure Client Premier, or Secure Client VPN Only
- **Carrier**—Diameter, GTP/GPRS, M3UA, SCTP

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide

Before you begin

- Have a master account on the [Smart Software Manager](#).

If you do not yet have an account, click the link to [set up a new account](#). The Smart Software Manager lets you create a master account for your organization.

- Your Smart Software Licensing account must qualify for the Strong Encryption (3DES/AES) license to use some features (enabled using the export-compliance flag).

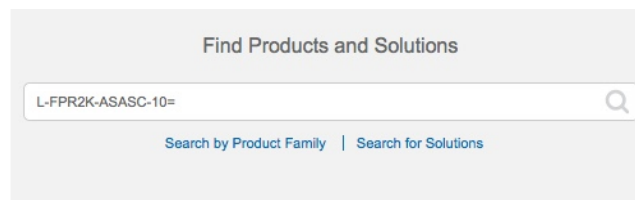
Procedure

Step 1

Make sure your Smart Licensing account contains the available licenses you need.

When you bought your device from Cisco or a reseller, your licenses should have been linked to your Smart Software License account. However, if you need to add licenses yourself, use the **Find Products and Solutions** search field on the [Cisco Commerce Workspace](#). Search for the following license PIDs:

Figure 7: License Search



Note If a PID is not found, you can add the PID manually to your order.

- Essentials license:
 - L-FPR4215-BSE=
 - L-FPR4225-BSE=
 - L-FPR4245-BSE=
- IPS, Malware Defense, and URL license combination:
 - L-FPR4215T-TMC=
 - L-FPR4225T-TMC=
 - L-FPR4245T-TMC=

When you add one of the above PIDs to your order, you can then choose a term-based subscription corresponding with one of the following PIDs:

- L-FPR4215T-TMC-1Y
 - L-FPR4215T-TMC-3Y
 - L-FPR4215T-TMC-5Y
 - L-FPR4225T-TMC-1Y
 - L-FPR4225T-TMC-3Y
 - L-FPR4225T-TMC-5Y
 - L-FPR4245T-TMC-1Y
 - L-FPR4245T-TMC-3Y
 - L-FPR4245T-TMC-5Y
- Carrier license:
 - L-FPR4200-FTD-CAR=
 - Cisco Secure Client—See the [Cisco Secure Client Ordering Guide](#).

- Step 2** If you have not already done so, register the management center with the Smart Licensing server. Registering requires you to generate a registration token in the Smart Software Manager. See the [Cisco Secure Firewall Management Center Administration Guide](#) for detailed instructions.
-

Register the Threat Defense with the Management Center

Register the threat defense to the management center manually using the device IP address or hostname.

Before you begin

- Gather the following information that you set in the threat defense initial configuration:
 - The threat defense management IP address or hostname, and NAT ID
 - The management center registration key

Procedure

- Step 1** In the management center, choose **Devices > Device Management**.
- Step 2** From the **Add** drop-down list, choose **Add Device**.
The **Registration Key** method is selected by default.

Figure 8: Add Device Using a Registration Key

Add Device ?

Select the Provisioning Method:

Registration Key Serial Number

CDO Managed Device

Host:†

Display Name:

Registration Key:*

Group:

Access Control Policy:*

Smart Licensing

Note: All virtual Firewall Threat Defense devices require a performance tier license. Make sure your Smart Licensing account contains the available licenses you need. It's important to choose the tier that matches the license you have in your account. Click [here](#) for information about the Firewall Threat Defense performance-tiered licensing. Until you choose a tier, your Firewall Threat Defense virtual defaults to the FTDv50 selection.

Performance Tier (only for Firewall Threat Defense virtual 7.0 and above):

Carrier

Malware Defense

IPS

URL

Advanced

Unique NAT ID:†

Transfer Packets

Set the following parameters:

- **Host**—Enter the IP address or hostname of the threat defense you want to add. You can leave this field blank if you specified both the management center IP address and a NAT ID in the threat defense initial configuration.

Note In an HA environment, when both the management centers are behind a NAT, you can register the threat defense without a host IP or name in the primary management center. However, for registering the threat defense in a secondary management center, you must provide the IP address or hostname for the threat defense.

- **Display Name**—Enter the name for the threat defense as you want it to display in the management center.
- **Registration Key**—Enter the same registration key that you specified in the threat defense initial configuration.
- **Domain**—Assign the device to a leaf domain if you have a multidomain environment.
- **Group**—Assign it to a device group if you are using groups.
- **Access Control Policy**—Choose an initial policy. Unless you already have a customized policy you know you need to use, choose **Create new policy**, and choose **Block all traffic**. You can change this later to allow traffic; see [Allow Traffic from Inside to Outside](#), on page 31.

Figure 9: New Policy

The screenshot shows a 'New Policy' configuration window. It contains the following elements:

- Name:** A text input field containing 'ftd-ac-policy'.
- Description:** An empty text input field.
- Select Base Policy:** A dropdown menu currently set to 'None'.
- Default Action:** Three radio button options:
 - Block all traffic (highlighted with a red box)
 - Intrusion Prevention
 - Network Discovery
- Buttons:** 'Cancel' and 'Save' buttons located at the bottom right of the form.

- **Smart Licensing**—Assign the Smart Licenses you need for the features you want to deploy. **Note:** You can apply the Secure Client remote access VPN license after you add the device, from the **System > Licenses > Smart Licenses** page.
- **Unique NAT ID**—Specify the NAT ID that you specified in the threat defense initial configuration.
- **Transfer Packets**—Allow the device to transfer packets to the management center. When events like IPS or Snort are triggered with this option enabled, the device sends event metadata information and packet data to the management center for inspection. If you disable it, only event information will be sent to the management center, but packet data is not sent.

Step 3 Click **Register**, and confirm a successful registration.

If the registration succeeds, the device is added to the list. If it fails, you will see an error message. If the threat defense fails to register, check the following items:

- Ping—Access the threat defense CLI, and ping the management center IP address using the following command:

```
ping system ip_address
```

If the ping is not successful, check your network settings using the **show network** command. If you need to change the threat defense Management IP address, use the **configure network {ipv4 | ipv6} manual** command.

- Registration key, NAT ID, and the management center IP address—Make sure you are using the same registration key, and if used, NAT ID, on both devices. You can set the registration key and NAT ID on the management center using the **configure manager add** command.

For more troubleshooting information, see <https://cisco.com/go/fmc-reg-error>.

Configure a Basic Security Policy

This section describes how to configure a basic security policy with the following settings:

- Inside and outside interfaces—Assign a static IP address to the inside interface, and use DHCP for the outside interface.
- DHCP server—Use a DHCP server on the inside interface for clients.
- Default route—Add a default route through the outside interface.
- NAT—Use interface PAT on the outside interface.
- Access control—Allow traffic from inside to outside.

To configure a basic security policy, complete the following tasks.

1	Configure Interfaces, on page 20.
2	Configure the DHCP Server, on page 24.
3	Add the Default Route, on page 26.
4	Configure NAT, on page 28.
5	Allow Traffic from Inside to Outside, on page 31.
6	Deploy the Configuration, on page 32.

Configure Interfaces

Enable the threat defense interfaces, assign them to security zones, and set the IP addresses. Also configure breakout ports. Typically, you must configure at least a minimum of two interfaces to have a system that passes meaningful traffic. Normally, you would have an outside interface that faces the upstream router or internet, and one or more inside interfaces for your organization's networks. Some of these interfaces might be "demilitarized zones" (DMZs), where you place publically-accessible assets such as your web server.

A typical edge-routing situation is to obtain the outside interface address through DHCP from your ISP, while you define static addresses on the inside interfaces.

The following example configures a routed mode inside interface with a static address and a routed mode outside interface using DHCP.

Procedure

Step 1 Choose **Devices > Device Management**, and click the **Edit** (✎) for the firewall.

Step 2 Click **Interfaces**.

Figure 10: Interfaces

Interface	Logical Name	Type	Security Zones	MAC Address (Active/Standby)	IP Address	Path Monitoring	Virtual Router	
● Management0/0	management	Physical				Disabled	Global	🔍 ↶
☑ GigabitEthernet0/0		Physical				Disabled		✎
☑ GigabitEthernet0/1		Physical				Disabled		✎
☑ GigabitEthernet0/2		Physical				Disabled		✎
☑ GigabitEthernet0/3		Physical				Disabled		✎
☑ GigabitEthernet0/4		Physical				Disabled		✎
☑ GigabitEthernet0/5		Physical				Disabled		✎
☑ GigabitEthernet0/6		Physical				Disabled		✎
☑ GigabitEthernet0/7		Physical				Disabled		✎

Step 3 To create breakout ports from a 40-Gb or larger interface, click the **Break** icon for the interface.

If you already used the full interface in your configuration, you will have to remove the configuration before you can proceed with the breakout.

Step 4 Click **Edit** (✎) for the interface that you want to use for *inside*.

The **General** tab appears.

Figure 11: General Tab

Edit Physical Interface

General IPv4 IPv6 Path Monitoring

Name:

Enabled
 Management Only

Description:

Mode:

Security Zone:

Interface ID:

MTU:

(64 - 9000)

Priority:
 (0 - 65535)

Propagate Security Group Tag:

NVE Only:

- a) Enter a **Name** up to 48 characters in length.
For example, name the interface **inside**.
- b) Check the **Enabled** check box.
- c) Leave the **Mode** set to **None**.
- d) From the **Security Zone** drop-down list, choose an existing inside security zone or add a new one by clicking **New**.

For example, add a zone called **inside_zone**. Each interface must be assigned to a security zone and/or interface group. An interface can belong to only one security zone, but can also belong to multiple interface groups. You apply your security policy based on zones or groups. For example, you can assign the inside interface to the inside zone; and the outside interface to the outside zone. Then you can configure your access control policy to enable traffic to go from inside to outside, but not from outside to inside. Most policies only support security zones; you can use zones or interface groups in NAT policies, prefilter policies, and QoS policies.

- e) Click the **IPv4** and/or **IPv6** tab.
 - **IPv4**—Choose **Use Static IP** from the drop-down list, and enter an IP address and subnet mask in slash notation.
For example, enter **192.168.1.1/24**

Figure 12: IPv4 Tab

The screenshot shows the 'Edit Physical Interface' window with the 'IPv4' tab selected. The 'IP Type' dropdown is set to 'Use Static IP'. The 'IP Address' field contains '192.168.1.1/24'. Below the field, there is a note: 'eg. 192.0.2.1/255.255.255.128 or 192.0.2.1/25'.

- **IPv6**—Check the **Autoconfiguration** check box for stateless autoconfiguration.

Figure 13: IPv6 Tab

The screenshot shows the 'Edit Physical Interface' window with the 'IPv6' tab selected. The 'Basic' sub-tab is active. The 'Enable IPV6' checkbox is unchecked. The 'Enforce EUI 64' checkbox is unchecked. The 'Link-Local address' field is empty. The 'Autoconfiguration' checkbox is checked. The 'Obtain Default Route' checkbox is unchecked.

f) Click **OK**.

- Step 5** Click the **Edit** (✎) for the interface that you want to use for *outside*. The **General** tab appears.

Figure 14: General Tab

Edit Physical Interface

General IPv4 IPv6 Path Monitoring Hardware

Name:

Enabled
 Management Only

Description:

Mode:

Security Zone:

Interface ID:

MTU:

(64 - 9000)

Priority:
 (0 - 65535)

Propagate Security Group Tag:

NVE Only:

- a) Enter a **Name** up to 48 characters in length.
 For example, name the interface **outside**.
- b) Check the **Enabled** check box.
- c) Leave the **Mode** set to **None**.
- d) From the **Security Zone** drop-down list, choose an existing outside security zone or add a new one by clicking **New**.
 For example, add a zone called **outside_zone**.
- e) Click the **IPv4** and/or **IPv6** tab.
 - **IPv4**—Choose **Use DHCP**, and configure the following optional parameters:
 - **Obtain default route using DHCP**—Obtains the default route from the DHCP server.
 - **DHCP route metric**—Assigns an administrative distance to the learned route, between 1 and 255. The default administrative distance for the learned routes is 1.

Figure 15: IPv4 Tab

Edit Physical Interface

General IPv4 IPv6 Path Monitoring

IP Type:
Use DHCP

Obtain default route using DHCP:

DHCP route metric:
1
(1 - 255)

- **IPv6**—Check the **Autoconfiguration** check box for stateless autoconfiguration.

Figure 16: IPv6 Tab

Edit Physical Interface

General IPv4 IPv6 Path Monitoring Hardware Configuration

Basic Address Prefixes Settings DHCP

Enable IPv6:

Enforce EUI 64:

Link-Local address:

Autoconfiguration:

Obtain Default Route:

f) Click **OK**.

Step 6 Click **Save**.

Configure the DHCP Server

Enable the DHCP server if you want clients to use DHCP to obtain IP addresses from the threat defense.

Procedure

- Step 1** Choose **Devices > Device Management**, and click the **Edit** (✎) for the device.
- Step 2** Choose **DHCP > DHCP Server**.

Figure 17: DHCP Server

The screenshot shows the DHCP configuration interface. On the left, there is a sidebar with options: DHCP Server (selected), DHCP Relay, and DDNS. The main area contains the following settings:

- Ping Timeout:** 50 (10 - 10000 ms)
- Lease Length:** 3600 (300 - 10,48,575 sec)
- Auto-Configuration
- Interface:** (empty dropdown)
- Override Auto Configured Settings:**
 - Domain Name:** (empty text field)
 - Primary DNS Server:** (empty dropdown) +
 - Secondary DNS Server:** (empty dropdown) +
 - Primary WINS Server:** (empty dropdown) +
 - Secondary WINS Server:** (empty dropdown) +

At the bottom, there are tabs for 'Server' and 'Advanced'. A table below the tabs is currently empty, with a '+ Add' button highlighted in a red box in the top right corner of the table area.

Step 3 On the **Server** page, click **Add**, and configure the following options:

Figure 18: Add Server

The 'Add Server' dialog box contains the following configuration options:

- Interface*:** inside (selected in dropdown)
- Address Pool*:** 10.9.7.9-10.9.7.25 (with a note below: (2.2.2.10-2.2.2.20))
- Enable DHCP Server

At the bottom of the dialog, there are 'Cancel' and 'OK' buttons.

- **Interface**—Choose the interface from the drop-down list.
- **Address Pool**—Set the range of IP addresses from lowest to highest that are used by the DHCP server. The range of IP addresses must be on the same subnet as the selected interface and cannot include the IP address of the interface itself.
- **Enable DHCP Server**—Enable the DHCP server on the selected interface.

Step 4 Click **OK**.

Step 5 Click **Save**.

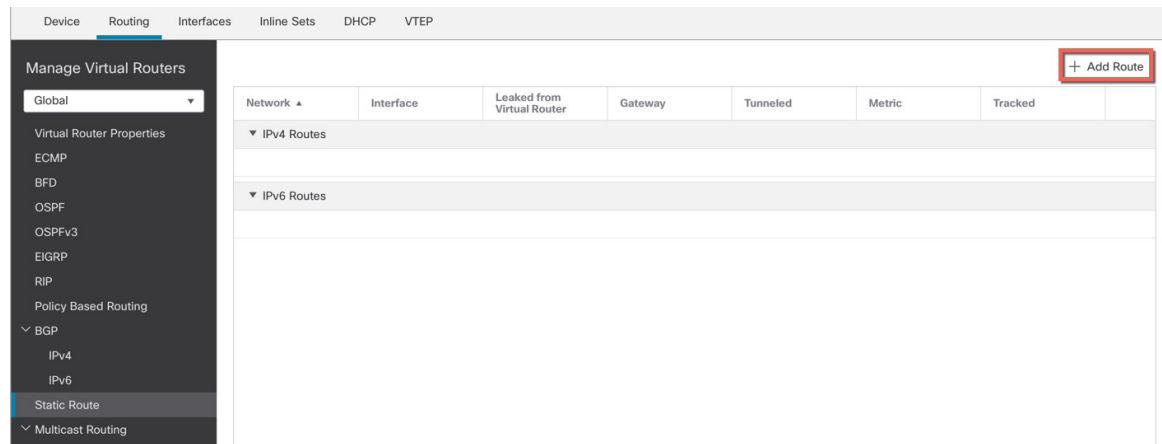
Add the Default Route

The default route normally points to the upstream router reachable from the outside interface. If you use DHCP for the outside interface, your device might have already received a default route. If you need to manually add the route, complete this procedure. If you received a default route from the DHCP server, it will show in the **IPv4 Routes** or **IPv6 Routes** table on the **Devices > Device Management > Routing > Static Route** page.

Procedure

- Step 1** Choose **Devices > Device Management**, and click the **Edit** (✎) for the device.
- Step 2** Choose **Routing > Static Route**.

Figure 19: Static Route



- Step 3** Click **Add Route**, and set the following:

Figure 20: Add Static Route Configuration

- **Type**—Click the **IPv4** or **IPv6** radio button depending on the type of static route that you are adding.
- **Interface**—Choose the egress interface; typically the outside interface.
- **Available Network**—Choose **any-ipv4** for an IPv4 default route, or **any-ipv6** for an IPv6 default route and click **Add** to move it to the **Selected Network** list.
- **Gateway** or **IPv6 Gateway**—Enter or choose the gateway router that is the next hop for this route. You can provide an IP address or a Networks/Hosts object.
- **Metric**—Enter the number of hops to the destination network. Valid values range from 1 to 255; the default value is 1.

Step 4 Click **OK**.
The route is added to the static route table.

Step 5 Click **Save**.

Configure NAT

A typical NAT rule converts internal addresses to a port on the outside interface IP address. This type of NAT rule is called *interface Port Address Translation (PAT)*.

Procedure

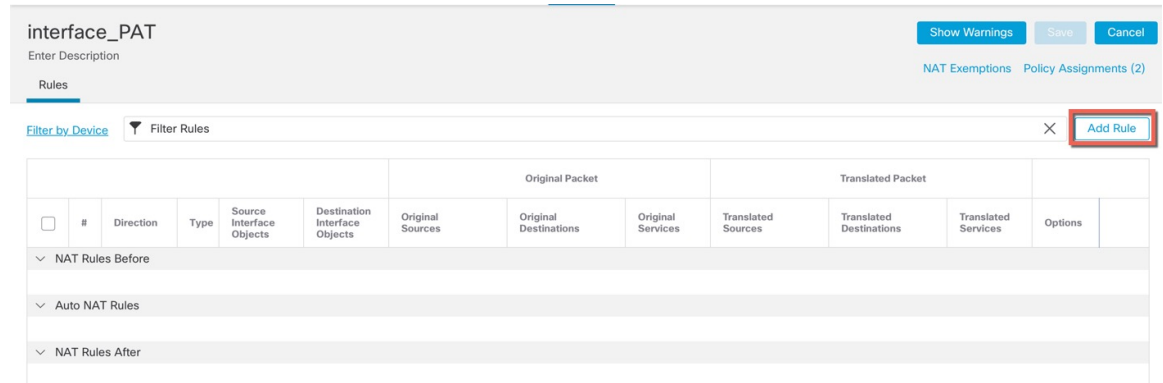
- Step 1** Choose **Devices > NAT**, and click **New Policy > Threat Defense NAT**.
- Step 2** Name the policy, select the device(s) that you want to use the policy, and click **Save**.

Figure 21: New Policy

The screenshot shows a 'New Policy' configuration window. The 'Name' field contains 'interface_PAT'. The 'Description' field is empty. Under 'Targeted Devices', there is a section for 'Available Devices' with a search bar and a list containing '10.10.0.6' and '10.10.0.7'. To the right is a 'Selected Devices' section with a list containing '10.10.0.6' and '10.10.0.7'. An 'Add to Policy' button is positioned between the two lists. At the bottom right, there are 'Cancel' and 'Save' buttons.

The policy is added the management center. You still have to add rules to the policy.

Figure 22: NAT Policy

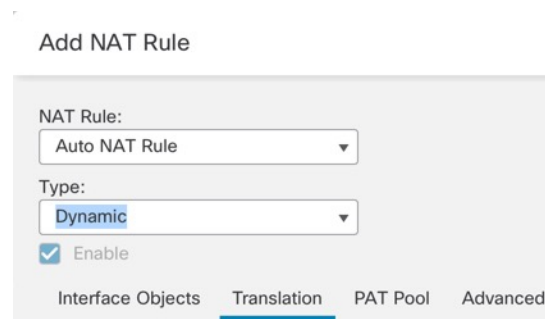


Step 3 Click **Add Rule**.

The **Add NAT Rule** dialog box appears.

Step 4 Configure the basic rule options:

Figure 23: Basic Rule Options



- **NAT Rule**—Choose **Auto NAT Rule**.
- **Type**—Choose **Dynamic**.

Step 5 On the **Interface Objects** page, add the outside zone from the **Available Interface Objects** area to the **Destination Interface Objects** area.

Figure 24: Interface Objects

Add NAT Rule

NAT Rule: Auto NAT Rule

Type: Dynamic

Enable

Interface Objects Translation PAT Pool Advanced

Available Interface Objects

- inside_zone
- 1** outside_zone **2** Add to Destination
- wfxAutomationZone

Add to Source

Source Interface Objects (0)

Destination Interface Objects (1)

- 3** outside_zone

Step 6 On the **Translation** page, configure the following options:

Figure 25: Translation

Add NAT Rule

NAT Rule: Auto NAT Rule

Type: Dynamic

Enable

Interface Objects **Translation** PAT Pool Advanced

Original Packet

Original Source:* all-ipv4 +

Original Port: TCP

Translated Packet

Translated Source: Destination Interface IP

1 The values selected for Destination Interface Objects in 'Interface Objects' tab will be used

Translated Port:

- **Original Source**—Click **Add (+)** to add a network object for all IPv4 traffic (0.0.0.0/0).

Figure 26: New Network Object

Note You cannot use the system-defined **any-ipv4** object, because Auto NAT rules add NAT as part of the object definition, and you cannot edit system-defined objects.

- **Translated Source**—Choose **Destination Interface IP**.

Step 7 Click **Save** to add the rule.

The rule is saved to the **Rules** table.

Step 8 Click **Save** on the **NAT** page to save your changes.

Allow Traffic from Inside to Outside

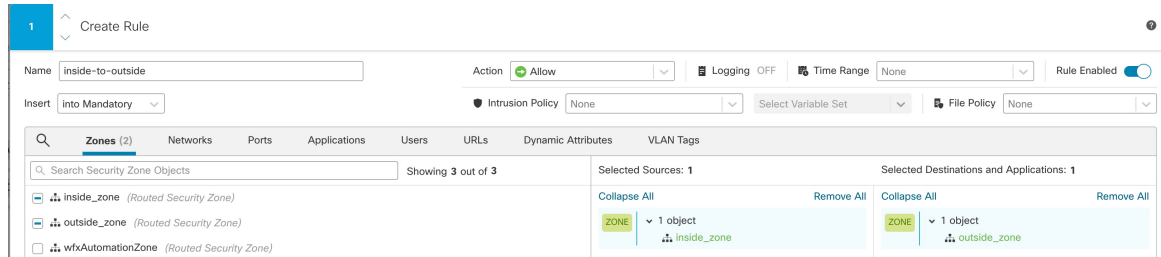
If you created a basic **Block all traffic** access control policy when you registered the threat defense, then you need to add rules to the policy to allow traffic through the device. The following procedure adds a rule to allow traffic from the inside zone to the outside zone. If you have other zones, be sure to add rules allowing traffic to the appropriate networks.

Procedure

Step 1 Choose **Policy > Access Policy > Access Policy**, and click the **Edit** (✎) for the access control policy assigned to the threat defense.

Step 2 Click **Add Rule**, and set the following parameters:

Figure 27: Add Rule



- **Name**—Name this rule, for example, **inside-to-outside**.
- **Selected Sources**—Select the inside zone from **Zones**, and click **Add Source Zone**.
- **Selected Destinations and Applications**—Select the outside zone from **Zones**, and click **Add Destination Zone**.

Leave the other settings as is.

Step 3 Click **Apply**.

The rule is added to the **Rules** table.

Step 4 Click **Save**.

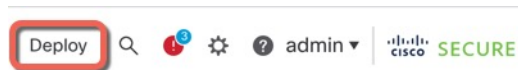
Deploy the Configuration

Deploy the configuration changes to the threat defense; none of your changes are active on the device until you deploy them.

Procedure

Step 1 Click **Deploy** in the upper right.

Figure 28: Deploy



Step 2 Either click **Deploy All** to deploy to all devices or click **Advanced Deploy** to deploy to selected devices.

Figure 29: Deploy All

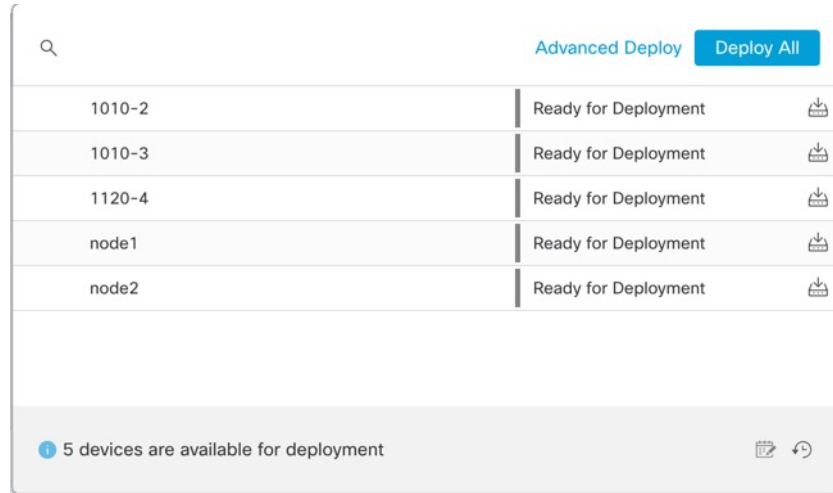
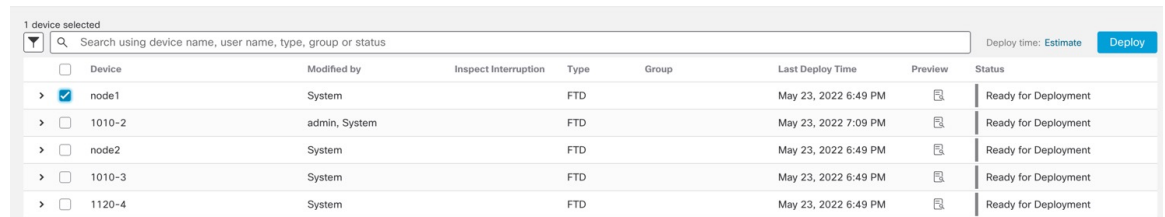


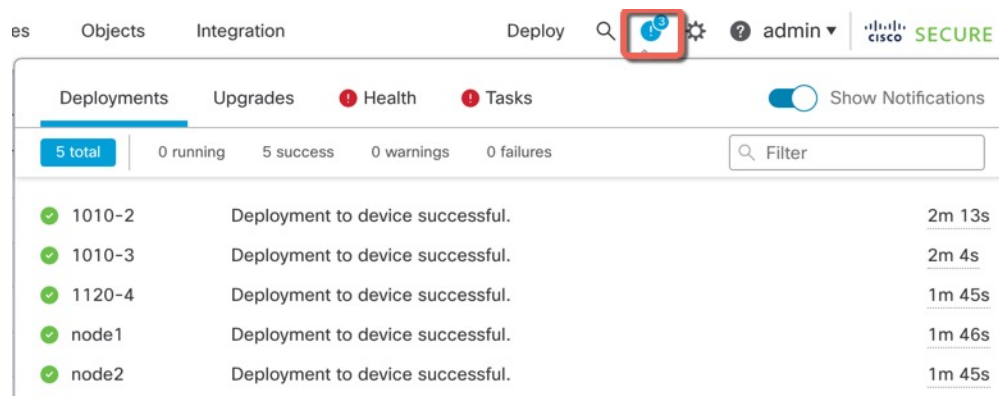
Figure 30: Advanced Deploy



Step 3

Ensure that the deployment succeeds. Click the icon to the right of the **Deploy** button in the menu bar to see status for deployments.

Figure 31: Deployment Status



Access the Threat Defense and FXOS CLI

Use the command-line interface (CLI) to set up the system and do basic system troubleshooting. You cannot configure policies through a CLI session. You can access the CLI by connecting to the console port.

You can also access the FXOS CLI for troubleshooting purposes.



Note You can alternatively SSH to the Management interface of the threat defense device. Unlike a console session, the SSH session defaults to the threat defense CLI, from which you can connect to the FXOS CLI using the **connect fxos** command. You can later connect to the address on a data interface if you open the interface for SSH connections. SSH access to data interfaces is disabled by default. This procedure describes console port access, which defaults to the FXOS CLI.

Procedure

Step 1 To log into the CLI, connect your management computer to the console port. The Secure Firewall 4200 does not ship with a console cable by default, so you will need to buy a third-party USB-to-RJ-45 serial cable, for example. Be sure to install any necessary USB serial drivers for your operating system. The console port defaults to the FXOS CLI. Use the following serial settings:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit

You connect to the FXOS CLI. Log in to the CLI using the **admin** username and the password you set at initial setup (the default is **Admin123**).

Example:

```
firepower login: admin
Password:
Last login: Thu May 16 14:01:03 UTC 2019 on ttyS0
Successful login attempts for user 'admin' : 1

firepower#
```

Step 2 Access the threat defense CLI.

connect ftd

Example:

```
firepower# connect ftd
>
```

After logging in, for information on the commands available in the CLI, enter **help** or **?**. For usage information, see [Cisco Secure Firewall Threat Defense Command Reference](#).

Step 3 To exit the threat defense CLI, enter the **exit** or **logout** command.

This command returns you to the FXOS CLI prompt. For information on the commands available in the FXOS CLI, enter **?**.

Example:

```
> exit
firepower#
```

Power Off the Firewall

It's important that you shut down your system properly. Simply unplugging the power or pressing the power switch can cause serious file system damage. Remember that there are many processes running in the background all the time, and unplugging or shutting off the power does not allow the graceful shutdown of your firewall system.

You can power off the device using the management center device management page, or you can use the FXOS CLI.

Power Off the Firewall Using the Management Center

It's important that you shut down your system properly. Simply unplugging the power or pressing the power switch can cause serious file system damage. Remember that there are many processes running in the background all the time, and unplugging or shutting off the power does not allow the graceful shutdown of your firewall.

You can shut down your system properly using the management center.

Procedure

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

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

Step 3 Click the **Device** tab.

Step 4 Click **Shut Down Device** (✕) in the **System** section.

Step 5 When prompted, confirm that you want to shut down the device.

Step 6 If you have a console connection to the firewall, monitor the system prompts as the firewall shuts down. You will see the following prompt:

```
System is stopped.
It is safe to power off now.

Do you want to reboot instead? [y/N]
```

If you do not have a console connection, wait approximately 3 minutes to ensure the system has shut down.

- Step 7** You can now turn off the power switch and unplug the power to physically remove power from the chassis if necessary.
-

Power Off the Firewall at the CLI

You can use the FXOS CLI to safely shut down the system and power off the device. You access the CLI by connecting to the console port; see [Access the Threat Defense and FXOS CLI, on page 34](#).

Procedure

- Step 1** In the FXOS CLI, connect to local-mgmt:

```
firepower # connect local-mgmt
```

- Step 2** Issue the **shutdown** command:

```
firepower(local-mgmt) # shutdown
```

Example:

```
firepower(local-mgmt)# shutdown
This command will shutdown the system. Continue?
Please enter 'YES' or 'NO': yes
INIT: Stopping Cisco Threat Defense.....ok
```

- Step 3** Monitor the system prompts as the firewall shuts down. You will see the following prompt:

```
System is stopped.
It is safe to power off now.
Do you want to reboot instead? [y/N]
```

- Step 4** You can now turn off the power switch and unplug the power to physically remove power from the chassis if necessary.
-

What's Next?

To continue configuring your threat defense, see the documents available for your software version at [Navigating the Cisco Firepower Documentation](#).

For information related to using the management center, see the [Firepower Management Center Configuration Guide](#).