



Image Management

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About Image Management

The Firepower 9300 chassis uses two basic types of images:



Note All images are digitally signed and validated through Secure Boot. Do not modify the image in any way or you will receive a validation error.

- **Platform Bundle**—The Firepower platform bundle is a collection of multiple independent images that operate on the Firepower Supervisor and Firepower security module/engine. The platform bundle is a Firepower eXtensible Operating System software package.
- **Application**—Application images are the software images you want to deploy on the security module/engine of the Firepower 9300 chassis. Application images are delivered as Cisco Secure Package files (CSP) and are stored on the supervisor until deployed to a security module/engine as part of logical device creation or in preparation for later logical device creation. You can have multiple different versions of the same application image type stored on the Firepower Supervisor.



Note If you are upgrading both the Platform Bundle image and one or more Application images, you must upgrade the Platform Bundle first.

Downloading Images from Cisco.com

Download FXOS and application images from Cisco.com so you can upload them to the Firepower chassis.

Before you begin

You must have a Cisco.com account.

Procedure

-
- Step 1** Using a web browser, navigate to <http://www.cisco.com/go/firepower9300-software> or <http://www.cisco.com/go/firepower4100-software>.
The software download page for the Firepower 9300 chassis is opened in the browser.
 - Step 2** Find and then download the appropriate software image to your local computer.
-

Downloading a Firepower eXtensible Operating System Software Image to the Firepower 9300 chassis

You can use FTP, SCP, SFTP, or TFTP to copy the FXOS software image to the Firepower 9300 chassis.

Before you begin

Collect the following information that you will need to import a configuration file:

- IP address and authentication credentials for the server from which you are copying the image
- Fully qualified name of the FXOS image file

Procedure

-
- Step 1** Enter firmware mode:
Firepower-chassis # **scope firmware**
 - Step 2** Download the FXOS software image:
Firepower-chassis /firmware # **download image** *URL*
Specify the URL for the file being imported using one of the following syntax:
 - **ftp://username@hostname/path/image_name**
 - **scp://username@hostname/path/image_name**
 - **sftp://username@hostname/path/image_name**
 - **tftp://hostname:port-num/path/image_name**

- Step 3** To monitor the download process:
Firepower-chassis /firmware # **show package image_name detail**

Example

The following example copies an image using the SCP protocol:

```
Firepower-chassis # scope firmware
Firepower-chassis /firmware # download image
scp://user@192.168.1.1/images/fxos-k9.1.1.1.119.SPA
Firepower-chassis /firmware # show package fxos-k9.1.1.1.119.SPA detail
Download task:
  File Name: fxos-k9.1.1.1.119.SPA
  Protocol: scp
  Server: 192.168.1.1
  Userid:
  Path:
  Downloaded Image Size (KB): 5120
  State: Downloading
  Current Task: downloading image fxos-k9.1.1.1.119.SPA from
192.168.1.1 (FSM-STAGE:sam:dme:FirmwareDownloaderDownload:Local)
```

Verifying the Integrity of an Image

The integrity of the image is automatically verified when a new image is added to the Firepower 9300 chassis. If needed, you can use the following procedure to manually verify the integrity of an image.

Procedure

- Step 1** Connect to the FXOS CLI (see [Accessing the FXOS CLI](#)).
- Step 2** Enter firmware mode:
Firepower-chassis# **scope firmware**
- Step 3** List images:
Firepower-chassis /firmware # **show package**
- Step 4** Verify the image:
Firepower-chassis /firmware # **verify platform-pack version version_number**
version_number is the version number of the FXOS platform bundle you are verifying--for example, 1.1(2.51).
- Step 5** The system will warn you that verification could take several minutes.
Enter **yes** to confirm that you want to proceed with verification.
- Step 6** To check the status of the image verification:

Firepower-chassis /firmware # **show validate-task**

Upgrading the Firepower eXtensible Operating System Platform Bundle

Before you begin

Download the platform bundle software image from Cisco.com (see [Downloading Images from Cisco.com, on page 2](#)) and then download that image to the Firepower 9300 chassis (see [Downloading a Logical Device Software Image to the Firepower 9300 chassis, on page 5](#)).

Procedure

- Step 1** Connect to the FXOS CLI (see [Accessing the FXOS CLI](#)).
- Step 2** Enter firmware mode:
Firepower-chassis# **scope firmware**
- Step 3** Enter auto-install mode:
Firepower-chassis /firmware # **scope auto-install**
- Step 4** Install the FXOS platform bundle:
Firepower-chassis /firmware/auto-install # **install platform platform-vers** *version_number*
version_number is the version number of the FXOS platform bundle you are installing--for example, 1.1(2.51).
- Step 5** The system will first verify the software package that you want to install. It will inform you of any incompatibility between currently installed applications and the specified FXOS platform software package. It will also warn you that any existing sessions will be terminated and that the system will need to be rebooted as part of the upgrade.
Enter **yes** to confirm that you want to proceed with verification.
- Step 6** Enter **yes** to confirm that you want to proceed with installation, or enter **no** to cancel the installation.
The Firepower eXtensible Operating System unpacks the bundle and upgrades/reloads the components.
- Step 7** To monitor the upgrade process:
a) Enter **scope firmware**.
b) Enter **scope auto-install**.
c) Enter **show fsm status expand**.
-

Downloading a Logical Device Software Image to the Firepower 9300 chassis

You can use FTP, SCP, SFTP, or TFTP to copy the logical device software image to the Firepower 9300 chassis.

Before you begin

Collect the following information that you will need to import a configuration file:

- IP address and authentication credentials for the server from which you are copying the image
- Fully qualified name of the software image file

Procedure

- Step 1** Enter Security Services mode:
Firepower-chassis # **scope ssa**
- Step 2** Enter Application Software mode:
Firepower-chassis /ssa # **scope app-software**
- Step 3** Download the logical device software image:
Firepower-chassis /ssa/app-software # **download image** *URL*
Specify the URL for the file being imported using one of the following syntax:
- **ftp://username@hostname/path**
 - **scp://username@hostname/path**
 - **sftp://username@hostname/path**
 - **tftp://hostname:port-num/path**
- Step 4** To monitor the download process:
Firepower-chassis /ssa/app-software # **show download-task**
- Step 5** To view the downloaded applications:
Firepower-chassis /ssa/app-software # **up**
Firepower-chassis /ssa # **show app**
- Step 6** To view details for a specific application:
Firepower-chassis /ssa # **scope app** *application_type image_version*

```
Firepower-chassis /ssa/app # show expand
```

Example

The following example copies an image using the SCP protocol:

```
Firepower-chassis # scope ssa
Firepower-chassis /ssa # scope app-software
Firepower-chassis /ssa/app-software # download image
scp://user@192.168.1.1/images/cisco-asa.9.4.1.65.csp
Firepower-chassis /ssa/app-software # show download-task
```

Downloads for Application Software:

File Name	Protocol	Server	Userid	State
cisco-asa.9.4.1.65.csp	Scp	192.168.1.1	user	Downloaded

```
Firepower-chassis /ssa/app-software # up
```

```
Firepower-chassis /ssa # show app
```

Application:

Name	Version	Description	Author	Deploy Type	CSP Type	Is Default	App
asa	9.4.1.41	N/A		Native	Application	No	
asa	9.4.1.65	N/A		Native	Application	Yes	

```
Firepower-chassis /ssa # scope app asa 9.4.1.65
```

```
Firepower-chassis /ssa/app # show expand
```

Application:

```
Name: asa
Version: 9.4.1.65
Description: N/A
Author:
Deploy Type: Native
CSP Type: Application
Is Default App: Yes
```

App Attribute Key for the Application:

App Attribute Key	Description
cluster-role	This is the role of the blade in the cluster
mgmt-ip	This is the IP for the management interface
mgmt-url	This is the management URL for this application

Net Mgmt Bootstrap Key for the Application:

Bootstrap Key	Key Data	Type	Is the Key Secret	Description
PASSWORD		String	Yes	The admin user password.

Port Requirement for the Application:

```
Port Type: Data
Max Ports: 120
Min Ports: 1
```

```
Port Type: Mgmt
Max Ports: 1
Min Ports: 1
```

```

Mgmt Port Sub Type for the Application:
Management Sub Type
-----
Default

Port Type: Cluster
Max Ports: 1
Min Ports: 0
Firepower-chassis /ssa/app #

```

Updating the Image Version for a Logical Device

Use this procedure to upgrade the ASA application image to a new version, or set the Firepower Threat Defense application image to a new startup version that will be used in a disaster recovery scenario.

When you change the startup version on an ASA logical device, the ASA upgrades to that version and all configuration is restored. Use the following workflows to change the ASA startup version, depending on your configuration:

ASA High Availability -

1. Change the logical device image version(s) on the standby unit.
2. Make the standby unit active.
3. Change the application version(s) on the other unit.

ASA Inter-Chassis Cluster -

1. Change the startup version on the slave unit.
2. Make the slave unit the master unit.
3. Change the startup version on the original master unit (now slave).

Before you begin

Download the application image you want to use for the logical device from Cisco.com (see [Downloading Images from Cisco.com, on page 2](#)) and then download that image to the Firepower 9300 chassis (see [Downloading a Logical Device Software Image to the Firepower 9300 chassis, on page 5](#)).

If you are upgrading both the Platform Bundle image and one or more Application images, you must upgrade the Platform Bundle first.

Procedure

-
- Step 1** Enter Security Services mode:
Firepower-chassis # **scope ssa**
- Step 2** Set the scope to the security module you are updating:
Firepower-chassis /ssa # **scope slot slot_number**

Step 3 Set the scope to the application you are updating:
 Firepower-chassis /ssa/slot # **scope app-instance** *app_template*

Step 4 Set the Startup version:
 Firepower-chassis /ssa/slot/app-instance # **set startup-version** *version_number*

Step 5 Commit the configuration:
commit-buffer

Commits the transaction to the system configuration. The application image is updated and the application restarts.

Example

The following example updates the software image for an ASA running on security module 1. Notice that you can use the **show** command to view the update status.

```
Firepower-chassis# scope ssa
Firepower-chassis /ssa # scope slot 1
Firepower-chassis /ssa/slot # scope app-instance asa
Firepower-chassis /ssa/slot/app-instance # set startup-version 9.4.1.65
Firepower-chassis /ssa/slot/app-instance* # show configuration pending
  enter app-instance asa
+   set startup-version 9.4.1.65
  exit
Firepower-chassis /ssa/slot/app-instance* # commit-buffer
Firepower-chassis /ssa/slot/app-instance # show
```

Application Instance:

Application Name	Admin State	Operational State	Running Version	Startup Version
asa	Enabled	Updating	9.4.1.41	9.4.1.65

```
Firepower-chassis /ssa/slot/app-instance #
Firepower-chassis /ssa/slot/app-instance # show
```

Application Instance:

Application Name	Admin State	Operational State	Running Version	Startup Version
asa	Enabled	Online	9.4.1.65	9.4.1.65

```
Firepower-chassis /ssa/slot/app-instance #
```

Firmware Upgrade

Use the following procedure to upgrade the firmware on your Firepower 9300 chassis.

Procedure

Step 1 Using a web browser, navigate to <http://www.cisco.com/go/firepower9300-software> or <http://www.cisco.com/go/firepower4100-software>.

The software download page for the Firepower 9300 chassis is opened in the browser.

Step 2 Find and then download the appropriate firmware package from Cisco.com to a server that you can access from the Firepower 9300 chassis.

Step 3 On the Firepower 9300 chassis, enter firmware mode:

```
Firepower-chassis # scope firmware
```

Step 4 Download the FXOS firmware image to the Firepower 9300 chassis:

```
Firepower-chassis /firmware # download image URL
```

Specify the URL for the file being imported using one of the following syntax:

- **ftp:// username@hostname / path**
- **scp:// username@hostname / path**
- **sftp:// username@hostname / path**
- **tftp:// hostname : port-num / path**

Step 5 To monitor the download process:

```
Firepower-chassis /firmware # show download-task image_name detail
```

Step 6 After the download has completed, you can enter the following command to view the contents of the firmware package:

```
Firepower-chassis /firmware # show package image_name expand
```

Step 7 You can enter the following command to view the version number of the firmware package:

```
Firepower-chassis /firmware # show package
```

This version number is used in the following step when installing the firmware package.

Step 8 To install the firmware package:

a) Enter firmware-install mode:

```
Firepower-chassis /firmware # scope firmware-install
```

b) Install the firmware package:

```
Firepower-chassis /firmware/firmware-install # install firmware pack-version version_number
```

The system will verify the firmware package and will notify you that the verification process can take several minutes to complete.

c) Enter **yes** to proceed with the verification.

After verifying the firmware package, the system will notify you that the installation process can take several minutes to complete and that the system will reboot during the update process.

d) Enter **yes** to proceed with the installation. Do not power cycle the Firepower 9300 chassis during the upgrade process.

Step 9 To monitor the upgrade process:

```
Firepower-chassis /firmware/firmware-install # show detail
```

Step 10 After the installation has completed, you can enter the following commands to view the current firmware version:

```
Firepower-chassis /firmware/firmware-install # top
```

```
Firepower-chassis # scope chassis 1
```

```
Firepower-chassis /firmware # show sup version
```

Example

The following example upgrades the firmware to version 1.0.10:

```
Firepower-chassis# scope firmware
Firepower-chassis /firmware # download image
tftp://10.10.10.1/fxos-k9-fpr9k-firmware.1.0.10.SPA
Firepower-chassis /firmware # show download-task fxos-k9-fpr9k-firmware.1.0.10.SPA detail
```

Download task:

```
File Name: fxos-k9-fpr9k-firmware.1.0.10.SPA
Protocol: Tftp
Server: 10.10.10.1
Port: 0
Userid:
Path:
Downloaded Image Size (KB): 2104
Time stamp: 2015-12-04T23:51:57.846
State: Downloading
Transfer Rate (KB/s): 263.000000
Current Task: unpacking image fxos-k9-fpr9k-firmware.1.0.10.SPA on primary(
FSM-STAGE:sam:dme:FirmwareDownloaderDownload:UnpackLocal)
```

```
Firepower-chassis /firmware # show package fxos-k9-fpr9k-firmware.1.0.10.SPA expand
```

```
Package fxos-k9-fpr9k-firmware.1.0.10.SPA:
Images:
  fxos-k9-fpr9k-fpga.1.0.5.bin
  fxos-k9-fpr9k-rommon.1.0.10.bin
```

```
Firepower-chassis /firmware # show package
```

Name	Version
fxos-k9-fpr9k-firmware.1.0.10.SPA	1.0.10

```
Firepower-chassis /firmware # scope firmware-install
Firepower-chassis /firmware/firmware-install # install firmware pack-version 1.0.10
```

```
Verifying FXOS firmware package 1.0.10. Verification could take several minutes.
Do you want to proceed? (yes/no):yes
```

```
FXOS SUP ROMMON: Upgrade from 1.0.10 to 1.0.10
FXOS SUP FPGA : Upgrade from 1.04 to 1.05
```

This operation upgrades SUP firmware on Security Platform.
Here is the checklist of things that are recommended before starting the install operation

- (1) Review current critical/major faults
- (2) Initiate a configuration backup

Attention:

```
The system will be reboot to upgrade the SUP firmware.
The upgrade operation will take several minutes to complete.
PLEASE DO NOT POWER RECYCLE DURING THE UPGRADE.
```

Do you want to proceed? (yes/no):yes

Upgrading FXOS SUP firmware software package version 1.0.10

command executed

