



Cisco FXOS Troubleshooting for the Firepower 1000/2100 and Secure Firewall 3100/4200 with ASA

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CHAPTER 1

About the FXOS CLI

For the Firepower 1000, 2100, and Secure Firewall 3100 in Appliance mode, only show commands and advanced troubleshooting commands are available from the Secure Firewall eXtensible Operating System (FXOS) CLI.

For the Firepower 2100 in Platform mode, you must use FXOS to configure basic operating parameters and hardware interface settings. For more information about configuring the Secure Firewall ASA with FXOS, see the [Firepower 2100 ASA Platform Mode FXOS Configuration Guide](#).

- [FXOS CLI Managed Object Model, on page 1](#)
- [Access the ASA and FXOS CLI for Appliance Mode, on page 2](#)
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FXOS CLI Managed Object Model

FXOS uses a managed object model, where managed objects are abstract representations of physical or logical entities that can be managed. For example, chassis, network modules, ports, and processors are physical entities represented as managed objects, and licenses, user roles, and platform policies are logical entities represented as managed objects.

Four general commands are available for object management:

- **create** *object*
- **delete** *object*
- **enter** *object*
- **scope** *object*



Note For Appliance mode, **create** and **delete** commands are not available.

You can use the **scope** command with any managed object, whether a permanent object or a user-instantiated object. The other commands allow you to create and manage user-instantiated objects. For every **create object** command, a corresponding **delete object** and **enter object** command exists. You can use the **enter object** command to create new objects and edit existing objects, so you can use it instead of the **create object** command, which will give an error if an object already exists.

At any time, you can enter the ? character to display the options available at the current state of the command syntax.

Access the ASA and FXOS CLI for Appliance Mode

You can use the ASA CLI to troubleshoot or configure the ASA instead of using ASDM. You can access the CLI by connecting to the console port. You can later configure SSH access to the ASA on any interface; SSH access is disabled by default. See the [ASA general operations configuration guide](#) for more information.

You can also access the FXOS CLI from the ASA CLI for troubleshooting purposes.

Procedure

Step 1 Connect your management computer to the console port. Be sure to install any necessary serial drivers for your operating system. Use the following serial settings:

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

You connect to the ASA CLI. There are no user credentials required for console access by default.

Step 2 Access privileged EXEC mode.

enable

You are prompted to change the password the first time you enter the **enable** command.

Example:

```
ciscoasa> enable
Password:
The enable password is not set. Please set it now.
Enter Password: *****
Repeat Password: *****
ciscoasa#
```

The enable password that you set on the ASA is also the FXOS **admin** user password if the ASA fails to boot up, and you enter FXOS failsafe mode.

All non-configuration commands are available in privileged EXEC mode. You can also enter configuration mode from privileged EXEC mode.

To exit privileged EXEC mode, enter the **disable**, **exit**, or **quit** command.

Step 3 Access global configuration mode.

configure terminal

Example:

```
ciscoasa# configure terminal
```

```
ciscoasa(config)#
```

You can begin to configure the ASA from global configuration mode. To exit global configuration mode, enter the **exit**, **quit**, or **end** command.

Step 4 (Optional) Connect to the FXOS CLI.

connect fxos [admin]

- **admin**—Provides admin-level access. Without this option, users have read-only access. Note that no configuration commands are available even in admin mode.

You are not prompted for user credentials. The current ASA username is passed through to FXOS, and no additional login is required. To return to the ASA CLI, enter **exit** or type **Ctrl-Shift-6, x**.

Within FXOS, you can view user activity using the **scope security/show audit-logs** command.

Example:

```
ciscoasa# connect fxos admin
Connecting to fxos.
Connected to fxos. Escape character sequence is 'CTRL-^X'.
firepower#
firepower# exit
Connection with FXOS terminated.
Type help or '?' for a list of available commands.
ciscoasa#
```

Access the ASA and FXOS CLI in Platform Mode

This section describes how to connect to the FXOS and ASA console and how to connect to FXOS using SSH.

Connect to FXOS with SSH

You can connect to FXOS on Management 1/1 with the default IP address, 192.168.45.45. If you configure remote management, you can also connect to the data interface IP address on the non-standard port, by default, 3022.

To connect using SSH to the ASA, you must first configure SSH access according to the [ASA general operations configuration guide](#).

You can connect to the ASA CLI from FXOS, and vice versa.

FXOS allows up to 8 SSH connections.

Procedure

Step 1 On the management computer connected to Management 1/1, SSH to the management IP address (by default https://192.168.45.45, with the username: **admin** and password: **Admin123**).

You can log in with any username if you added users in FXOS. If you configure remote management, SSH to the ASA data interface IP address on port 3022 (the default port).

Step 2 Connect to the ASA CLI.

connect asa

To return to the FXOS CLI, enter **Ctrl+a, d**.

Example:

```
firepower-2110# connect asa
Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.
ciscoasa>
```

Step 3 If you SSH to the ASA (after you configure SSH access in the ASA), connect to the FXOS CLI.

connect fxos

You are prompted to authenticate for FXOS; use the default username: **admin** and password: **Admin123**. To return to the ASA CLI, enter **exit** or type **Ctrl-Shift-6, x**.

Example:

```
ciscoasa# connect fxos
Connecting to fxos.
Connected to fxos. Escape character sequence is 'CTRL-^X'.

FXOS 2.2(2.32) kp2110

firepower-2110 login: admin
Password: Admin123
Last login: Sat Jan 23 16:20:16 UTC 2017 on pts/1
Successful login attempts for user 'admin' : 4
Cisco Firepower Extensible Operating System (FX-OS) Software

[...]

firepower-2110#
firepower-2110# exit
Remote card closed command session. Press any key to continue.
Connection with fxos terminated.
Type help or '?' for a list of available commands.
ciscoasa#
```

Connect to the Console Port to Access FXOS and ASA CLI

The Firepower 2100 console port connects you to the FXOS CLI. From the FXOS CLI, you can then connect to the ASA console, and back again.

You can only have one console connection at a time. When you connect to the ASA console from the FXOS console, this connection is a persistent console connection, not like a Telnet or SSH connection.

Procedure

- Step 1** Connect your management computer to the console port. The Firepower 2100 ships with a DB-9 to RJ-45 serial cable, so you will need a third party serial-to-USB cable to make the connection. Be sure to install any necessary USB serial drivers for your operating system. Use the following serial settings:
- 9600 baud
 - 8 data bits
 - No parity
 - 1 stop bit
- You connect to the FXOS CLI. Enter the user credentials; by default, you can log in with the **admin** user and the default password, **Admin123**. You are prompted to change the **admin** password when you first log in.
- Step 2** Connect to the ASA:
- connect asa**
- Example:**
- ```
firepower-2110# connect asa
Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.
ciscoasa>
```
- Step 3** To return to the FXOS console, enter **Ctrl+a, d**.

## Save and Filter Show Command Output

You can save the output of **show** commands by redirecting the output to a text file. You can filter the output of **show** commands by piping the output to filtering commands.

Saving and filtering output are available with all **show** commands but are most useful when dealing with commands that produce a lot of text. For example, you can show all or parts of the configuration by using the **show configuration** command. Copying the configuration output provides a way to backup and restore a configuration.



**Note** Show commands do not show the secrets (password fields), so if you want to paste a configuration into a new device, you will have to modify the show output to include the actual passwords.

## Filter Show Command Output

To filter the output of a **show** command, use the following subcommands. Note that in the following syntax description, the initial vertical bar **|** after the **show** command is the pipe character and is part of the command, not part of the syntax description. The filtering options are entered after the command's initial **|** character.

**show command** | { **begin** *expression* | **count** | **cut** *expression* | **egrep** *expression* | **end** *expression* | **exclude** *expression* | **grep** *expression* | **head** | **include** *expression* | **last** | **less** | **no-more** | **sort** *expression* | **tr** *expression* | **uniq** *expression* | **wc** }

### Filtering Options

These are the filtering subcommands:

- **begin**—Finds the first line that includes the specified pattern, and display that line and all subsequent lines.
- **count**—Counts the number of lines.
- **cut**—Removes (“cut”) portions of each line.
- **egrep**—Displays only those lines that match the extended-type pattern.
- **end**—Ends with the line that matches the pattern.
- **exclude**—Excludes all lines that match the pattern and show all other lines.
- **grep**—Displays only those lines that match the pattern.
- **head**—Displays the first lines.
- **include**—Displays only those lines that match the pattern.
- **last**—Displays the last lines.
- **less**—Filters for paging.
- **no-more**—Turns off pagination for command output.
- **sort**—Sorts the lines (stream sorter).
- **tr**—Translates, squeezes, and/or deletes characters.
- **uniq**—Discards all but one of successive identical lines.
- **wc**—Displays a count of lines, words, and characters.

*expression*

An expression, or pattern, is typically a simple text string. Do not enclose the expression in single or double-quotes—these will be seen as part of the expression. Also, trailing spaces will be included in the expression.



#### Note

Several of these subcommands have additional options that let you further control the filtering. For example, with **show configuration | head** and **show configuration | last**, you can use the **lines** keyword to change the number of lines displayed; the default is 10. As another example, with **show configuration | sort**, you can add the option **-u** to remove duplicate lines from the output. (Complete descriptions of these options is beyond the scope of this document; refer to the FXOS help output for the various commands, and to the appropriate Linux help, for more information.)

### Examples

The following example shows how to determine the number of lines currently in the system event log:

```
FP9300-A# show sel 1/1 | count
3008
FP9300-A#
```

The following example shows how to display lines from the system event log that include the string “error”:

```
FP9300-A# show sel 1/1 | include error
968 | 05/15/2016 16:46:25 | CIMC | System Event DDR4_P2_H2_EC
C #0x99 | Upper critical - going high | Asserted | Reading 20
000 >= Threshold 20000 error
FP9300-A#
```

### Related Topics

[Save Show Command Output, on page 7](#)

## Save Show Command Output

You can save the output of **show** commands by redirecting the output to a text file.

**show** *command* [ > { **ftp:** | **scp:** | **sftp:** | **tftp:** | **volatile:** | **workspace:** } ] | [ >> { **volatile:** | **workspace:** } ]

### Syntax Description

|                                                                                                      |                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| > { <b>ftp:</b>   <b>scp:</b>   <b>sftp:</b>   <b>tftp:</b>   <b>volatile:</b>   <b>workspace:</b> } | <p>Redirects the <b>show</b> command output to a specified text file using the selected transport protocol.</p> <p>After you enter the command, you are queried for remote server name or IP address, user name, file path, and so on.</p> <p>If you press <b>Enter</b> at this point, the output is saved locally.</p> |
| >> { <b>volatile:</b>   <b>workspace:</b> }                                                          | <p>Appends the <b>show</b> command output to the appropriate text file, which must already exist.</p>                                                                                                                                                                                                                   |

### Example

The following example attempts to save the current configuration to the system workspace; a configuration file already exists, which you can choose to overwrite or not.

```
FP9300-A# show configuration > workspace
File already exists, overwrite (y/n)?[n]n
Reissue command with >> if you want to append to existing file

FP9300-A#
```

### Related Topics

[Filter Show Command Output, on page 5](#)





## CHAPTER 2

# FXOS System Recovery

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This section includes procedures to troubleshoot bootup issues and perform password recovery.

- [Appliance Mode Failsafe, on page 9](#)
- [Cannot Log In \(Password Reset\), on page 9](#)
- [Cannot Boot Up, on page 12](#)
- [SSD File System Corruption \(Firepower 2100\), on page 16](#)
- [Restore the Factory Default Configuration, on page 18](#)
- [Perform a Secure Erase, on page 19](#)
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- [History for System Recovery, on page 24](#)

## Appliance Mode Failsafe

If the Firepower 1100, Firepower 2100, Secure Firewall 3100 or Secure Firewall 4200 in Appliance Mode fails to boot into ASA, it will boot into FXOS failsafe mode. In this mode, FXOS allows minimal configuration to allow diagnosis and recovery of the system. You can configure the management interface with an IP address, DNS, and NTP so you can download and install the ASA image. Only the management interface can be configured in failsafe mode. When you log into FXOS, use the admin user and the ASA enable password that you set previously.

Firepower 2100 Platform mode allows FXOS configuration of chassis functions at all times.

The procedures in this chapter note Appliance Mode and Platform Mode differences.

## Cannot Log In (Password Reset)

If you cannot log into FXOS (either because you forgot the password, or the SSD disk1 file system was corrupted), you can restore the FXOS configuration to the factory default using ROMMON. The admin password is reset to the default **Admin123**. This procedure also resets the ASA configuration. If you know the password, and want to restore the factory default configuration from within FXOS, see [Restore the Factory Default Configuration, on page 18](#).

### Before you begin

You must have console access for this procedure.

## Procedure

**Step 1** Connect to the console port, and power on the device. Press **Esc** during the bootup when prompted to reach the ROMMON prompt.

Pay close attention to the monitor.

### Example:

```

Cisco System ROMMON, Version 1.0.06, RELEASE SOFTWARE
Copyright (c) 1994-2018 by Cisco Systems, Inc.
Compiled Thu 04/06/2018 12:16:16.21 by builder

Current image running: Boot ROM0
Last reset cause: ResetRequest
DIMM_1/1 : Present
DIMM_2/1 : Present

Platform FPR-2130 with 32768 MBytes of main memory
BIOS has been successfully locked !!
MAC Address: 0c:75:bd:08:c9:80

Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
```

Press **Esc** at this point.

**Step 2** Perform a factory reset.

rommon 2 > **factory-reset**

**Note** For ROMMON version 1.0.04, use the **password\_reset** command; this command was changed to **factory-reset** in later versions. To verify the ROMMON version, enter **show info**.

```
rommon 1 > show info

Cisco System ROMMON, Version 1.0.06, RELEASE SOFTWARE
Copyright (c) 1994-2018 by Cisco Systems, Inc.
Compiled Wed 11/01/2018 18:38:59.66 by builder
```

You will be prompted multiple times to confirm that you want to erase your configuration, and then boot up the image.

**Note** If you are not prompted to boot the image, enter the **boot** command.

### Example:

#### Firepower 2100 Platform Mode:

```
rommon 2 > factory-reset
Warning: All configuration will be permanently lost with this operation
and application will be initialized to default configuration.
This operation cannot be undone after booting the application image.

Are you sure you would like to continue ? yes/no [no]: yes
Please type 'ERASE' to confirm the operation or any other value to cancel: ERASE
```

```

Performing factory reset...
File size is 0x0000001b
Located .boot_string
Image size 27 inode num 16, bks cnt 1 blk size 8*512

Rommon will continue to boot disk0: fxos-k8-fp2k-lfbff.2.3.1.132.SSB
Are you sure you would like to continue ? yes/no [no]: yes
File size is 0x0817a870
Located fxos-k8-fp2k-lfbff.2.3.1.132.SSB

```

### Firepower 1000, 2100, Secure Firewall 3100 and Secure Firewall 4200 Appliance Mode:

**Note** During bootup, the system prompts you to log into FXOS and to set the admin password; although you will not cause any harm by logging in, you should continue to wait until it boots up the ASA. You should log in at the ASA prompt, where you will be prompted to change the enable password. It is this enable password that the system uses for the FXOS login.

```

rommon 2 > factory-reset
Warning: All configuration will be permanently lost with this operation
and application will be initialized to default configuration.
This operation cannot be undone after booting the application image.

Are you sure you would like to continue ? yes/no [no]: yes
Please type 'ERASE' to confirm the operation or any other value to cancel: ERASE

Performing factory reset...

Execute 'boot' command afterwards for factory-reset to be initiated.
Use of reset/reboot/reload command will cancel the factory-reset request!
rommon 3 > boot
firepower-2140 login:
Cisco ASA: CMD=-start, CSP-ID=cisco-asa.99.13.1.108__asa_001_JAD200900ZRN2001A1, FLAG=''
Cisco ASA starting ...
[...]
firepower-2140 login: admin (automatic login)
Please wait for Cisco ASA to come online...1...
[...]
User enable_1 logged in to ciscoasa
Logins over the last 1 days: 1.
Failed logins since the last login: 0.
Attaching to ASA CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.

ciscoasa> enable
The enable password is not set. Please set it now.
Enter Password: *****
Repeat Password: *****
Note: Save your configuration so that the password can be used for FXOS failsafe access and
persists across reboots
("write memory" or "copy running-config startup-config").
ciscoasa# write memory

```

**Step 3** If you are not prompted to boot the image, enter the **boot** command.

**Step 4** Complete the setup tasks in the getting started guide.

# Cannot Boot Up

If you cannot boot the device, it will boot into ROMMON where you can boot FXOS from a USB or TFTP image. After booting into FXOS, you can then reformat the eMMC (the internal flash device that holds the software images). After you reformat, then you need to re-download the images to the eMMC. This procedure retains all configuration, which is stored on the separate `ssd1`.

The eMMC file system might get corrupted because of a power failure or other rare condition.

## Before you begin

You must have console access for this procedure.

## Procedure

**Step 1** If you cannot boot up, the system will boot into ROMMON.

If it does not automatically boot into ROMMON, press **Esc** during the bootup when prompted to reach the ROMMON prompt. Pay close attention to the monitor.

### Example:

```

Cisco System ROMMON, Version 1.0.06, RELEASE SOFTWARE
Copyright (c) 1994-2018 by Cisco Systems, Inc.
Compiled Thu 04/06/2018 12:16:16.21 by builder

Current image running: Boot ROM0
Last reset cause: ResetRequest
DIMM_1/1 : Present
DIMM_2/1 : Present

Platform FPR-2130 with 32768 MBytes of main memory
BIOS has been successfully locked !!
MAC Address: 0c:75:bd:08:c9:80

Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
```

Press **Esc** at this point.

**Step 2** Boot from an image on a USB drive, or boot over the network using TFTP.

**Note** For 9.12 and earlier, if you boot FXOS from ROMMON, and the currently-installed image is also bootable, make sure you boot the same version as the currently-installed image. Otherwise, an FXOS/ASA version mismatch will cause the ASA to crash. In 9.13 and later, booting FXOS from ROMMON prevents ASA from loading automatically.

### If you want to boot from USB:

**boot disk1:***/path/filename*

The device boots up to the FXOS CLI. Use the **dir disk1:** command to view the disk contents.



**Example:**

```
rommon 1 > dir disk1:

rommon 2 > boot disk1:/cisco-asa-fp2k.9.8.2.SPA
```

**If you want to boot from TFTP:**

Set the network settings for Management 1/1, and load the ASA package using the following ROMMON commands.

**address** *management\_ip\_address*

**netmask** *subnet\_mask*

**server** *tftp\_ip\_address*

**gateway** *gateway\_ip\_address*

**filepath/filename**

**set**

**sync**

**tftp -b**

The FXOS image downloads and boots up to the CLI.

See the following information:

- **set**—Shows the network settings. You can also use the **ping** command to verify connectivity to the server.
- **sync**—Saves the network settings.
- **tftp -b**—Loads FXOS.

**Example:**

```
rommon 1 > address 10.86.118.4
rommon 2 > netmask 255.255.252.0
rommon 3 > server 10.86.118.21
rommon 4 > gateway 10.86.118.1
rommon 5 > file cisco-asa-fp2k.9.8.2.SPA
rommon 6 > set
ROMMON Variable Settings:
 ADDRESS=10.86.118.4
 NETMASK=255.255.252.0
 GATEWAY=10.86.118.21
 SERVER=10.86.118.21
 IMAGE=cisco-asa-fp2k.9.8.2.SPA
 CONFIG=
 PS1="rommon ! > "

rommon 7 > sync
rommon 8 > tftp -b
Enable boot bundle: tftp_reqsize = 268435456

 ADDRESS: 10.86.118.4
 NETMASK: 255.255.252.0
 GATEWAY: 10.86.118.21
 SERVER: 10.86.118.1
 IMAGE: cisco-asa-fp2k.9.8.2.SPA
```

```

MACADDR: d4:2c:44:0c:26:00
VERBOSITY: Progress
RETRY: 40
PKTTIMEOUT: 7200
BLKSIZE: 1460
CHECKSUM: Yes
PORT: GbE/1
PHYMODE: Auto Detect

link up
Receiving cisco-asa-fp2k.9.8.2.SPA from 10.86.118.21!!!!!!!
[...]
```

### Ping to troubleshoot connectivity to the server:

```

rommon 1 > ping 10.86.118.21
Sending 10, 32-byte ICMP Echoes to 10.86.118.21 timeout is 4 seconds
!!!!!!!!!!!!
Success rate is 100 percent (10/10)
rommon 2 >
```

### Step 3 Log in to FXOS using your current admin password.

**Note** If you do not know your credentials, or cannot log in due to disk corruption, you should perform a factory reset using the ROMMON **factory-reset** command (see [Cannot Log In \(Password Reset\), on page 9](#)). After performing the factory reset, restart this procedure to boot into FXOS, and log in with the default credentials (**admin/Admin123**).

### Step 4 Reformat the eMMC.

**connect local-mgmt**

**format emmc**

Enter **yes**.

**Example:**

```

firepower-2110# connect local-mgmt
firepower-2110(local-mgmt)# format emmc
All bootable images will be lost.
Do you still want to format? (yes/no):yes
```

### Step 5 Re-download and boot the ASA package.

**Note** If you previously performed a factory reset because you could not log in, then your configuration was restored to the factory default configuration. This reset means that your network settings were changed to the default. To restore your network settings, perform initial setup according to the getting started guide. After you re-establish network connectivity, continue with this procedure.

- a) Download the package. Because you booted temporarily from USB or TFTP, you must still download the image to the local disk.

**scope firmware**

**download image url**

**show download-task**

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

- **ftp://username@server/[path/]image\_name**
- **scp://username@server/[path/]image\_name**
- **sftp://username@server/[path/]image\_name**
- **tftp://server[:port]/[path/]image\_name**
- **usbA:/path/filename**

#### Example:

```
firepower-2110# scope firmware
firepower-2110 /firmware # download image tftp://10.86.118.21/cisco-asa-fp2k.9.8.2.SPA
Please use the command 'show download-task' or 'show download-task detail' to check
download progress.
firepower-2110 /firmware # show download-task
Download task:
 File Name Protocol Server Port Userid State

 cisco-asa-fp2k.9.8.2.SPA
 Tftp 10.88.29.21 0 Downloaded
```

- b) When the package finishes downloading (**Downloaded** state), boot the package.

**show package**

**scope auto-install**

**install security-pack version** *version*

In the **show package** output, copy the **Package-Vers** value for the **security-pack version** number. The chassis installs the ASA image and reboots.

#### Example:

```
firepower 2110 /firmware # show package
Name Package-Vers

cisco-asa-fp2k.9.8.2.SPA 9.8.2
firepower 2110 /firmware # scope auto-install
firepower 2110 /firmware/auto-install # install security-pack version 9.8.2
The system is currently installed with security software package not set, which has:
- The platform version: not set
If you proceed with the upgrade 9.8.2, it will do the following:
- upgrade to the new platform version 2.2.2.52
- install with CSP asa version 9.8.2
During the upgrade, the system will be reboot
```

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

This operation upgrades firmware and software on Security Platform Components  
 Here is the checklist of things that are recommended before starting Auto-Install  
 (1) Review current critical/major faults  
 (2) Initiate a configuration backup

#### Attention:

If you proceed the system will be re-imaged. All existing configuration will be lost,  
 and the default configuration applied.

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

```
Triggered the install of software package version 9.8.2
```

```
Install started. This will take several minutes.
```

```
For monitoring the upgrade progress, please enter 'show' or 'show detail' command.
```

**Step 6** Wait for the chassis to finish rebooting (5-10 minutes).

Although FXOS is up, you still need to wait for the ASA to come up (5 minutes). Wait until you see the following messages:

```
firepower-2110#
Cisco ASA: CMD=-install, CSP-ID=cisco-asa.9.8.2.2__asa_001_JAD20280BW90MEZR11, FLAG=''
Verifying signature for cisco-asa.9.8.2.2 ...
Verifying signature for cisco-asa.9.8.2.2 ... success

Cisco ASA: CMD=-start, CSP-ID=cisco-asa.9.8.2.2__asa_001_JAD20280BW90MEZR11, FLAG=''
Cisco ASA starting ...
Registering to process manager ...
Cisco ASA started successfully.
...
```

## SSD File System Corruption (Firepower 2100)

If you successfully logged into FXOS, but you see disk corruption error messages, you can reformat SSD1 where the FXOS and ASA configuration is stored. This procedure restores the FXOS configuration to the factory default. For Platform Mode, the admin password is reset to the default **Admin123**. This procedure also resets the ASA configuration.

This procedure does not apply to the Firepower 1000, Secure Firewall 3100 and Secure Firewall 4200, which does not allow you to erase the SSD while still retaining the startup image.

### Procedure

**Step 1** Connect to the FXOS CLI from the console port.

- Firepower 2100 in Appliance Mode—You connect to ASA initially at the console port. To connect to FXOS, enter the **connect fxos admin** command.
- Firepower 2100 in Platform Mode—You connect to FXOS initially at the console port. Login as **admin** and the admin password.

**Step 2** Reformat SSD1.

```
connect local-mgmt
```

```
format ssd1
```

**Example:**

**Firepower 2100 Appliance Mode:**

**Note** During bootup, the system prompts you to log into FXOS and to set the admin password; although you will not cause any harm by logging in, you should continue to wait until it boots up the ASA. You should log in at the ASA prompt, where you will be prompted to change the enable password. It is this enable password that the system uses for the FXOS login.

```
firepower-2110# connect local-mgmt
firepower-2110(local-mgmt)# format ssd1
All configuration will be lost.
Do you still want to format? (yes/no):yes
Broadcast message from root@firepower-2140 (Fri Aug 16 19:53:45 2019):
All shells being terminated due to system /sbin/reboot
[457.119988] reboot: Restarting system

[...]

Cisco System ROMMON, Version 1.0.12, RELEASE SOFTWARE
Copyright (c) 1994-2019 by Cisco Systems, Inc.
Compiled Mon 06/17/2019 16:23:23.36 by builder

Current image running: Boot ROM0
Last reset cause: ResetRequest (0x00001000)
DIMM_1/1 : Present
DIMM_2/1 : Present

Platform FPR-2140 with 65536 MBytes of main memory
BIOS has been successfully locked !!
MAC Address: 70:7d:b9:75:23:00

Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
Located '.boot_string' @ cluster 98101.

[...]

Primary SSD discovered
Primary SSD has incorrect partitions
Skipping prompt because disk is blank
Formating Primary SSD...
Creating config partition: START: 1MB END: 1001MB

[...]

firepower-2140 login:
Waiting for Application infrastructure to be ready...
Verifying the signature of the Application image...
Cisco ASA: CMD=-start, CSP-ID=cisco-asa.9.13.0.33__asa_001_JMX2134Y38S4F4RBT1, FLAG=''
Cisco ASA starting ...
Cisco ASA started successfully.

[...]

INFO: Unable to read firewall mode from flash
 Writing default firewall mode (single) to flash

INFO: Unable to read cluster interface-mode from flash
 Writing default mode "None" to flash
The 3DES/AES algorithms require a Encryption-3DES-AES entitlement.
The 3DES/AES algorithms require a Encryption-3DES-AES entitlement.
Cisco Adaptive Security Appliance Software Version 9.13.0.33
```

```

User enable_1 logged in to ciscoasa
Logins over the last 1 days: 1.
Failed logins since the last login: 0.
firepower-2140 login: admin (automatic login)

Successful login attempts for user 'admin' : 1
Attaching to ASA CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.

ciscoasa> enable
The enable password is not set. Please set it now.
Enter Password: *****
Repeat Password: *****

```

**Step 3** Complete the setup tasks in the getting started guide.

---

## Restore the Factory Default Configuration

You can restore the FXOS configuration to the factory default. This procedure also resets the ASA deployment and configuration. The admin password is also reset to the default **Admin123**; but because you perform this procedure in FXOS, you must know the current admin password. If you do not know the admin password, use the procedure in [Cannot Log In \(Password Reset\), on page 9](#).

For Appliance Mode, the admin password is the same as the ASA enable password.

### Before you begin

You must have console access for this procedure.

### Procedure

---

**Step 1** Connect to the FXOS CLI from the console port.

**Step 2** Connect to local management:

**connect local-mgmt**

**Example:**

```

firepower-2120# connect local-mgmt
firepower-2120(local-mgmt)#

```

**Step 3** Erase all FXOS configuration, and restore the chassis to its original factory default configuration.

**erase configuration**

**Example:**

```

firepower-2120(local-mgmt)# erase configuration
All configurations will be erased and system will reboot. Are you sure? (yes/no):

```

**Step 4** Confirm that you want to erase the configuration by entering **yes** at the command prompt.

The system erases all configuration from your chassis and then reboots.

**Note** For the Firepower 1000, 2100, Secure Firewall 3100, and Secure Firewall 4200 in Appliance mode, during bootup, the system prompts you to log into FXOS and to set the admin password; although you will not cause any harm by logging in, you should continue to wait until it boots up the ASA. You should log in at the ASA prompt, where you will be prompted to change the enable password. It is this enable password that the system uses for the FXOS login.

---

## Perform a Secure Erase

The secure erase feature erases all data on the SSDs so that data cannot be recovered even by using special tools on the SSD itself. You should perform a secure erase when decommissioning the device.

For the Firepower 2100, the software image is not erased, so you can still boot into the ASA. For the Firepower 1000, Secure Firewall 3100 and Secure Firewall 4200, the software image is erased, so the device will boot into ROMMON, where you can download a new image.

### Before you begin

- For the Firepower 1000, if you reimage from an threat defense to an ASA, you may need to power cycle the device to allow the Secure Erase feature. The Secure Erase feature requires a power cycle after you upgrade to threat defense 6.5 or later, or if you reimage to ASA from threat defense 6.4; a reboot alone is not sufficient.
- You must have console access for this procedure.

### Procedure

---

**Step 1** Enter local management.

**local-mgmt**

**Example:**

```
Firepower# connect local-mgmt
Firepower(local-mgmt) #
```

**Step 2** Secure erase the SSDs.

**erase secure {all | ssd1 | ssd2}**

- **all**—Erases all SSDs. The Firepower 2100 or Secure Firewall 3100 includes 2 SSDs, while the Firepower 1000 includes only SSD1.
- **ssd1**—Erases only SSD1.
- **ssd2**—Erases only SSD2.

- Step 3** (Firepower 1000, Secure Firewall 3100, and Secure Firewall 4200) You boot into ROMMON. Boot a new image according to [Cannot Boot Up, on page 12](#).

## Perform a Complete Reimage

This procedure reformats the device, and returns it to its factory default settings. After performing this procedure, you must download the new software images. You might want to perform a complete reimage if you are repurposing the device and want to remove both configuration and software images.

### Before you begin

- You must have console access for this procedure.
- Download the ASA package to a TFTP server or a USB drive.

### Procedure

- Step 1** Unregister the ASA from the Smart Software Licensing server, either from the ASA CLI/ASDM or from the Smart Software Licensing server.

- Step 2** Connect to the FXOS CLI from the console port.

- Firepower 1000, 2100, Secure Firewall 3100 and Secure Firewall 4200 in Appliance Mode—You connect to ASA initially at the console port. To connect to FXOS, enter the **connect fxos admin** command.
- Firepower 2100 in Platform Mode—You connect to FXOS initially at the console port. Login as **admin** and the admin password.

- Step 3** Reformat the system.

**connect local-mgmt**

**format everything**

Enter **yes**, and the device reboots.

#### Example:

```
firepower-2110# connect local-mgmt
firepower-2110(local-mgmt)# format everything
All configuration and bootable images will be lost.
Do you still want to format? (yes/no):yes
```

- Step 4** Press **Esc** during the bootup when prompted to reach the ROMMON prompt. Pay close attention to the monitor.

#### Example:

```

Cisco System ROMMON, Version 1.0.03, RELEASE SOFTWARE
Copyright (c) 1994-2017 by Cisco Systems, Inc.
Compiled Thu 04/06/2017 12:16:16.21 by builder

```



```
Current image running: Boot ROM0
Last reset cause: ResetRequest
DIMM_1/1 : Present
DIMM_2/1 : Present

Platform FPR-2130 with 32768 MBytes of main memory
BIOS has been successfully locked !!
MAC Address: 0c:75:bd:08:c9:80

Use BREAK or ESC to interrupt boot.
Use SPACE to begin boot immediately.
```

Press **Esc** at this point.

**Step 5** Boot from the ASA package on a USB drive, or boot over the network using TFTP.

**If you want to boot from Firepower 1000/2100 USB:**

**boot disk1:***/path/filename*

Use the **dir disk1:** command to view the disk contents in Firepower 1000 and 2100.

**Example:**

```
rommon 1 > dir disk1:

rommon 2 > boot disk1:/cisco-asa-fp2k.9.8.2.SPA
```

**If you want to boot from Secure Firewall 3100 USB:**

**boot usb:***/path/filename*

Use the **dir usb:** command to view the disk contents in Secure Firewall 3100.

**Example:**

```
rommon 1 > dir usb:

rommon 2 > boot usb:/cisco-asa-fp3k.9.17.1.SPA
```

**If you want to boot from TFTP:**

Set the network settings for Management 1/1, and load the ASA package using the following ROMMON commands.

**address** *management\_ip\_address*

**netmask** *subnet\_mask*

**server** *tftp\_ip\_address*

**gateway** *gateway\_ip\_address*

**filepath***/filename*

**set**

**sync**

**tftp -b**

See the following information:

- **set**—Shows the network settings. You can also use the **ping** command to verify connectivity to the server.
- **sync**—Saves the network settings.
- **tftp -b**—Loads the ASA package.

#### Example:

```
rommon 1 > address 10.86.118.4
rommon 2 > netmask 255.255.252.0
rommon 3 > server 10.86.118.21
rommon 4 > gateway 10.86.118.1
rommon 5 > file cisco-asa-fp2k.9.8.2.SPA
rommon 6 > set
ROMMON Variable Settings:
 ADDRESS=10.86.118.4
 NETMASK=255.255.252.0
 GATEWAY=10.86.118.21
 SERVER=10.86.118.21
 IMAGE=cisco-asa-fp2k.9.8.2.SPA
 CONFIG=
 PS1="rommon ! > "

rommon 7 > sync
rommon 8 > tftp -b
Enable boot bundle: tftp_reqsize = 268435456

 ADDRESS: 10.86.118.4
 NETMASK: 255.255.252.0
 GATEWAY: 10.86.118.21
 SERVER: 10.86.118.1
 IMAGE: cisco-asa-fp2k.9.8.2.SPA
 MACADDR: d4:2c:44:0c:26:00
 VERBOSITY: Progress
 RETRY: 40
 PKTTIMEOUT: 7200
 BLKSIZE: 1460
 CHECKSUM: Yes
 PORT: GbE/1
 PHYMODE: Auto Detect

link up
Receiving cisco-asa-fp2k.9.8.2.SPA from 10.86.118.21!!!!!!!
[...]
```

#### Ping to troubleshoot connectivity to the server:

```
rommon 1 > ping 10.86.118.21
Sending 10, 32-byte ICMP Echoes to 10.86.118.21 timeout is 4 seconds
!!!!!!!!!!!!
Success rate is 100 percent (10/10)
rommon 2 >
```

### Step 6 Log in to FXOS using the default username: **admin** and password: **Admin123**.

Your configuration was restored to the factory default configuration. This reset means that your network settings were changed to the default. To restore your network settings, perform initial setup according to the getting started guide. After you re-establish network connectivity, continue with this procedure.

**Step 7** Download and boot the ASA package. Because you booted temporarily from USB or TFTP, you must still download the image to the local disk.

a) Download the package.

**scope firmware**

**download image url**

**show download-task**

You can download the package from the same TFTP server or USB drive you used earlier, or another server reachable on Management 1/1. Specify the URL for the file being imported using one of the following:

- **ftp://username@server/[path/]image\_name**
- **scp://username@server/[path/]image\_name**
- **sftp://username@server/[path/]image\_name**
- **tftp://server[:port]/[path/]image\_name**
- **usbA:/path/filename**

**Example:**

```
firepower-2110# scope firmware
firepower-2110 /firmware # download image tftp://10.86.118.21/cisco-asa-fp2k.9.8.2.SPA
Please use the command 'show download-task' or 'show download-task detail' to check
download progress.
firepower-2110 /firmware # show download-task
Download task:
 File Name Protocol Server Port Userid State

 cisco-asa-fp2k.9.8.2.SPA
 Tftp 10.88.29.21 0 Downloaded
```

b) When the package finishes downloading (**Downloaded** state), boot the package.

**show package**

**scope auto-install**

**install security-pack version version**

In the **show package** output, copy the **Package-Vers** value for the **security-pack version** number. The chassis installs the ASA package and reboots.

**Example:**

```
firepower 2110 /firmware # show package
Name Package-Vers

cisco-asa-fp2k.9.8.2.SPA 9.8.2
firepower 2110 /firmware # scope auto-install
firepower 2110 /firmware/auto-install # install security-pack version 9.8.2
The system is currently installed with security software package not set, which has:
- The platform version: not set
If you proceed with the upgrade 9.8.2, it will do the following:
- upgrade to the new platform version 2.2.2.52
- install with CSP asa version 9.8.2
```

During the upgrade, the system will be reboot

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

This operation upgrades firmware and software on Security Platform Components  
Here is the checklist of things that are recommended before starting Auto-Install  
(1) Review current critical/major faults  
(2) Initiate a configuration backup

Attention:

If you proceed the system will be re-imaged. All existing configuration will be lost,

and the default configuration applied.

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

Triggered the install of software package version 9.8.2

Install started. This will take several minutes.

For monitoring the upgrade progress, please enter 'show' or 'show detail' command.

**Note** Ignore the message, "All existing configuration will be lost, and the default configuration applied." The configuration will not be erased, and the default configuration is not applied.

**Step 8** Wait for the chassis to finish rebooting (5-10 minutes), and log in to FXOS as admin.

Although FXOS is up, you still need to wait for the ASA to come up (5 minutes). Wait until you see the following messages:

```
firepower-2110#
Cisco ASA: CMD=-install, CSP-ID=cisco-asa.9.8.2__asa_001_JAD20280BW90MEZR11, FLAG=''
Verifying signature for cisco-asa.9.8.2 ...
Verifying signature for cisco-asa.9.8.2 ... success

Cisco ASA: CMD=-start, CSP-ID=cisco-asa.9.8.2__asa_001_JAD20280BW90MEZR11, FLAG=''
Cisco ASA starting ...
Registering to process manager ...
Cisco ASA started successfully.
[...]
```

## History for System Recovery

| Feature      | Version | Details                                                                                                                                                                                                                                                                |
|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Secure Erase | 9.13(1) | The secure erase feature erases all data on the SSDs so that data cannot be recovered even by using special tools on the SSD itself. You should perform a secure erase when decommissioning the device.<br><br>New/Modified commands: <b>erase secure</b> (local-mgmt) |



## CHAPTER 3

# FXOS Troubleshooting Commands

This section includes common troubleshooting commands.

- [Chassis Mode Troubleshooting Commands, on page 25](#)
- [Eth-Uplink Mode Troubleshooting Commands, on page 30](#)
- [Fabric Interconnect Mode Troubleshooting Commands, on page 32](#)
- [Connect Local-Mgmt Troubleshooting Commands for the Firepower 2100 in Platform Mode, on page 35](#)
- [Connect Local-Mgmt Troubleshooting Commands for the Secure Firewall 3100, on page 40](#)
- [Security Services Mode Troubleshooting Commands, on page 50](#)

## Chassis Mode Troubleshooting Commands

Use the following chassis mode FXOS CLI commands to troubleshoot issues with your system.

### show environment

Displays environment information for the chassis.

For example:

```
FPR2100 /chassis # show environment expand detail
Chassis 1:
Overall Status: Power Problem
Operability: Operable
Power State: Ok
Thermal Status: Ok

PSU 1:
Overall Status: Powered Off
Operability: Unknown
Power State: Off
Voltage Status: Unknown

PSU 2:
Overall Status: Operable
Operability: Operable
Power State: On
Voltage Status: Ok

Tray 1 Module 1:
Overall Status: Operable
Operability: Operable
Power State: On

Fan 1:
Overall Status: Operable
Operability: Operable
Power State: On
```

```

Fan 2:
 Overall Status: Operable
 Operability: Operable
 Power State: On
Fan 3:
 Overall Status: Operable
 Operability: Operable
 Power State: On
Fan 4:
 Overall Status: Operable
 Operability: Operable
 Power State: On
Server 1:
 Overall Status: Ok
 Memory Array 1:
 Current Capacity (MB): 32768
 Populated: 2
 DIMMs:
 ID Overall Status Capacity (MB)
 --- -
 1 Operable 16384
 2 Operable 16384
 CPU 1:
 Presence: Equipped
 Cores: 8
 Product Name: Intel(R) Xeon(R) CPU D-1548 @ 2.00GHz
 Vendor: GenuineIntel
 Thermal Status: OK
 Overall Status: Operable
 Operability: Operable

```

**scope fan**

Enters the fan mode on Firepower 2110, 2120, and Secure Firewall 3100 series devices.

**scope fan-module**

Enters the fan mode on Firepower 2130, 2140, and Secure Firewall 3100 devices. From this mode, you can display detailed information about the chassis fan.

For example:

```

FPR2100 /chassis # show fan-module expand detail
Fan Module:
 Tray: 1
 Module: 1
 Overall Status: Operable
 Operability: Operable
 Power State: On
 Presence: Equipped
 Product Name: Cisco Firepower 2000 Series Fan Tray
 PID: FPR2K-FAN
 Vendor: Cisco Systems, Inc
 Fan:
 ID: 1
 Overall Status: Operable
 Operability: Operable
 Power State: On
 Presence: Equipped
 ID: 2
 Overall Status: Operable
 Operability: Operable
 Power State: On
 Presence: Equipped

```

**show inventory**

Displays inventory information such as the chassis number, vendor, and serial number.

Note: This command only applies to Firepower 2130 and 3100 devices.

For example:

```
FPR2100 /chassis # show inventory
Chassis PID Vendor Serial (SN) HW Revision
----- -
1 FPR-2140 Cisco Systems, In JAD201005FC 0.1
```

### show inventory expand

Displays detailed inventory information about FRUable components such as the chassis, PSU, and network modules.

For example:

```
FPR2100 /chassis # show inventory expand detail
Chassis 1:
 Product Name: Cisco Firepower 2000 Appliance
 PID: FPR-2130
 VID: V01
 Vendor: Cisco Systems, Inc
 Model: FPR-2130
 Serial (SN): JAD2012091X
 HW Revision: 0.1
 PSU 1:
 Presence: Equipped
 Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
 PID: FPR2K-PWR-AC-400
 VID: V01
 Vendor: Cisco Systems, Inc
 Serial (SN): LIT2010CAFE
 HW Revision: 0
 PSU 2:
 Presence: Equipped
 Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
 PID: FPR2K-PWR-AC-400
 VID: V01
 Vendor: Cisco Systems, Inc
 Serial (SN): LIT2010CAFE
 HW Revision: 0
 Fan Modules:
 Tray 1 Module 1:
 Presence: Equipped
 Product Name: Cisco Firepower 2000 Series Fan Tray
 PID: FPR2K-FAN
 Vendor: Cisco Systems, Inc
 Fans:
 ID Presence
 --
 1 Equipped
 2 Equipped
 3 Equipped
 4 Equipped
Fabric Card 1:
 Description: Cisco SSP FPR 2130 Base Module
 Number of Ports: 16
 State: Online
 Vendor: Cisco Systems, Inc.
 Model: FPR-2130
 HW Revision: 0
 Serial (SN): JAD2012091X
 Perf: N/A
 Operability: Operable
 Overall Status: Operable
 Power State: Online
 Presence: Equipped
```

```

 Thermal Status: N/A
 Voltage Status: N/A
Fabric Card 2:
 Description: 8-port 10 Gigabit Ethernet Expansion Module
 Number of Ports: 8
 State: Online
 Vendor: Cisco Systems, Inc.
 Model: FPR-NM-8X10G
 HW Revision: 0
 Serial (SN): JAD19510AKD
 Perf: N/A
 Operability: Operable
 Overall Status: Operable
 Power State: Online
 Presence: Equipped
 Thermal Status: N/A
 Voltage Status: N/A

```

### scope psu

Enters the power supply unit mode. From this mode, you can view detailed information about the power supply unit.

For example:

```

FPR2100 /chassis # show psu expand detail
PSU:
 PSU: 1
 Overall Status: Powered Off
 Operability: Unknown
 Power State: Off
 Presence: Equipped
 Voltage Status: Unknown
 Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
 PID: FPR2K-PWR-AC-400
 VID: V01
 Vendor: Cisco Systems, Inc
 Serial (SN): LIT2010CAFE
 Type: AC
 Fan Status: Ok
 PSU: 2
 Overall Status: Operable
 Operability: Operable
 Power State: On
 Presence: Equipped
 Voltage Status: Ok
 Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
 PID: FPR2K-PWR-AC-400
 VID: V01
 Vendor: Cisco Systems, Inc
 Serial (SN): LIT2010CAFE
 Type: AC
 Fan Status: Ok

```

### scope stats

Enters the stats mode. From this mode, you can view detailed information about the chassis statistics.

For example:

```

FPR2100 /chassis # show stats
Chassis Stats:
 Time Collected: 2016-11-14T21:19:46.317
 Monitored Object: sys/chassis-1/stats
 Suspect: No
 Outlet Temp1 (C): 43.000000
 Outlet Temp2 (C): 41.000000
 Inlet Temp (C): 30.000000

```



```
Internal Temp (C): 34.000000
Thresholded: 0
Fan Stats:
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/fan-module-1-1/fan-1/stats
Suspect: No
Speed (RPM): 17280
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/fan-module-1-1/fan-2/stats
Suspect: No
Speed (RPM): 17340
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/fan-module-1-1/fan-3/stats
Suspect: No
Speed (RPM): 17280
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/fan-module-1-1/fan-4/stats
Suspect: No
Speed (RPM): 17280
Thresholded: 0
Psu Stats:
Time Collected: 2016-11-14T21:19:46.318
Monitored Object: sys/chassis-1/psu-1/stats
Suspect: No
Input Current (A): 0.000000
Input Power (W): 8.000000
Input Voltage (V): 0.000000
Psu Temp1 (C): 32.000000
Psu Temp2 (C): 36.000000
Psu Temp3 (C): 32.000000
Fan Speed (RPM): 0
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.318
Monitored Object: sys/chassis-1/psu-2/stats
Suspect: No
Input Current (A): 0.374000
Input Power (W): 112.000000
Input Voltage (V): 238.503006
Psu Temp1 (C): 36.000000
Psu Temp2 (C): 47.000000
Psu Temp3 (C): 47.000000
Fan Speed (RPM): 2240
Thresholded: 0
CPU Env Stats:
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/blade-1/board/cpu-1/env-stats
Suspect: No
Temperature (C): 46.000000
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/blade-1/npu/cpu-1/env-stats
Suspect: No
Temperature (C): 38.000000
Thresholded: 0
```

# Eth-Uplink Mode Troubleshooting Commands

Use the following eth-uplink mode FXOS CLI commands to troubleshoot issues with your system.

## show detail

Displays detailed information about your device's Ethernet uplink.

For example:

```
FPR2100 /eth-uplink # show detail
Ethernet Uplink:
 Mode: Security Node
 MAC Table Aging Time (dd:hh:mm:ss): 00:04:01:40
 VLAN Port Count Optimization: Disabled
 Current Task:
```

## scope fabric a

Enters the eth-uplink interface mode. From this mode, you can view port channel, statistics, and interface information.

For example:

```
FPR2100 /eth-uplink/fabric # show interface
Interface:
```

| Port Name    | Port Type | Admin State | Oper State | State Reason |
|--------------|-----------|-------------|------------|--------------|
| Ethernet1/1  | Data      | Enabled     | Up         | Up           |
| Ethernet1/2  | Data      | Enabled     | Link Down  | Down         |
| Ethernet1/3  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/4  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/5  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/6  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/7  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/8  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/9  | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/10 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/11 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/12 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/13 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/14 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/15 | Data      | Disabled    | Link Down  | Down         |
| Ethernet1/16 | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/1  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/2  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/3  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/4  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/5  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/6  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/7  | Data      | Disabled    | Link Down  | Down         |
| Ethernet2/8  | Data      | Disabled    | Link Down  | Down         |

```
FPR2100 /eth-uplink/fabric # show port-channel
Port Channel:
```

| Port Channel Id | Name          | Port Type | Admin State | Oper State | State Reason |
|-----------------|---------------|-----------|-------------|------------|--------------|
| 1               | Port-channell | Data      | Disabled    | Link Down  | Down         |

```
FPR2100 /eth-uplink/fabric/port-channel # show stats
Ether Error Stats:
 Time Collected: 2016-11-14T21:27:16.386
 Monitored Object: fabric/lan/A/pc-1/err-stats
 Suspect: No
 Rcv (errors): 0
 Align (errors): 0
 Fcs (errors): 0
 Xmit (errors): 0
 Under Size (errors): 0
 Out Discard (errors): 0
 Deferred Tx (errors): 0
 Int Mac Tx (errors): 0
 Int Mac Rx (errors): 0
 Thresholded: Xmit Delta Min
Ether Loss Stats:
 Time Collected: 2016-11-14T21:27:16.386
 Monitored Object: fabric/lan/A/pc-1/loss-stats
 Suspect: No
 Single Collision (errors): 0
 Multi Collision (errors): 0
 Late Collision (errors): 0
 Excess Collision (errors): 0
 Carrier Sense (errors): 0
 Giants (errors): 0
 Symbol (errors): 0
 SQE Test (errors): 0
 Thresholded: 0
Ether Pause Stats:
 Time Collected: 2016-11-14T21:27:16.386
 Monitored Object: fabric/lan/A/pc-1/pause-stats
 Suspect: No
 Recv Pause (pause): 0
 Xmit Pause (pause): 0
 Resets (resets): 0
 Thresholded: 0
Ether Rx Stats:
 Time Collected: 2016-11-14T21:27:16.386
 Monitored Object: fabric/lan/A/pc-1/rx-stats
 Suspect: No
 Total Packets (packets): 0
 Unicast Packets (packets): 0
 Multicast Packets (packets): 0
 Broadcast Packets (packets): 0
 Total Bytes (bytes): 0
 Jumbo Packets (packets): 0
 Thresholded: 0
Ether Tx Stats:
 Time Collected: 2016-11-14T21:27:16.386
 Monitored Object: fabric/lan/A/pc-1/tx-stats
 Suspect: No
 Total Packets (packets): 0
 Unicast Packets (packets): 0
 Multicast Packets (packets): 0
 Broadcast Packets (packets): 0
 Total Bytes (bytes): 0
 Jumbo Packets (packets): 0
FPR2100 /eth-uplink/fabric/interface # show stats
Ether Error Stats:
 Time Collected: 2016-11-14T21:27:46.395
 Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/err-stats
 Suspect: No
 Rcv (errors): 0
```

```

Align (errors): 0
Fcs (errors): 0
Xmit (errors): 0
Under Size (errors): 0
Out Discard (errors): 0
Deferred Tx (errors): 0
Int Mac Tx (errors): 0
Int Mac Rx (errors): 0
Thresholded: Xmit Delta Min
Ether Loss Stats:
Time Collected: 2016-11-14T21:27:46.395
Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/loss-stats
Suspect: No
Single Collision (errors): 0
Multi Collision (errors): 0
Late Collision (errors): 0
Excess Collision (errors): 0
Carrier Sense (errors): 0
Giants (errors): 7180
Symbol (errors): 0
SQE Test (errors): 0
Thresholded: 0
Ether Pause Stats:
Time Collected: 2016-11-14T21:27:46.395
Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/pause-stats
Suspect: No
Recv Pause (pause): 0
Xmit Pause (pause): 0
Resets (resets): 0
Thresholded: 0
Ether Rx Stats:
Time Collected: 2016-11-14T21:27:46.395
Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/rx-stats
Suspect: No
Total Packets (packets): 604527
Unicast Packets (packets): 142906
Multicast Packets (packets): 339031
Broadcast Packets (packets): 122590
Total Bytes (bytes): 59805045
Jumbo Packets (packets): 0
Thresholded: 0
Ether Tx Stats:
Time Collected: 2016-11-14T21:27:46.395
Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/tx-stats
Suspect: No
Total Packets (packets): 145018
Unicast Packets (packets): 145005
Multicast Packets (packets): 0
Broadcast Packets (packets): 13
Total Bytes (bytes): 13442404
Jumbo Packets (packets): 0
Thresholded: 0

```

## Fabric Interconnect Mode Troubleshooting Commands

Use the following fabric-interconnect mode FXOS CLI commands to troubleshoot issues with your system.

### **show card**

Displays information on a fabric card.

For example:

```
FPR2100 /fabric-interconnect # show card detail expand
Fabric Card:
 Id: 1
 Description: Cisco SSP FPR 2130 Base Module
 Number of Ports: 16
 State: Online
 Vendor: Cisco Systems, Inc.
 Model: FPR-2130
 HW Revision: 0
 Serial (SN): JAD2012091X
 Perf: N/A
 Operability: Operable
 Overall Status: Operable
 Power State: Online
 Presence: Equipped
 Thermal Status: N/A
 Voltage Status: N/A
```

### show image

Displays all available images.

```
firepower /firmware # show image
```

| Name                                 | Type               | Version      |
|--------------------------------------|--------------------|--------------|
| cisco-asa-9.10.1.csp                 | Firepower Cspapp   | 9.10.1       |
| cisco-asa-9.9.2.csp                  | Firepower Cspapp   | 9.9.2        |
| fxos-k8-fp2k-firmware.0.4.04.SPA     | Firepower Firmware | 0.4.04       |
| fxos-k8-fp2k-lfbff.82.1.1.303i.SSA   | Firepower System   | 82.1(1.303i) |
| fxos-k8-fp2k-npu.82.1.1.303i.SSA     | Firepower Npu      | 82.1(1.303i) |
| fxos-k8-fp2k-npu.82.1.1.307i.SSA     | Firepower Npu      | 82.1(1.307i) |
| fxos-k9-fp2k-manager.82.1.1.303i.SSA | Firepower Manager  | 82.1(1.303i) |

### show package

Displays all available packages.

```
firepower /firmware # show package
```

| Name                      | Package-Vers |
|---------------------------|--------------|
| cisco-ftd-fp2k.9.10.1.SSA | 9.10.1       |
| cisco-ftd-fp2k.9.9.2.SSA  | 9.9.2        |

### show package *package\_name* expand

Displays the package details.

```
firepower /firmware # show package cisco-ftd-fp2k.9.10.1.SSA expand
Package cisco-ftd-fp2k.9.10.1.SSA:
 Images:
 cisco-asa.9.10.1.csp
 fxos-k8-fp2k-firmware.0.4.04.SPA
 fxos-k8-fp2k-lfbff.82.1.1.303i.SSA
 fxos-k8-fp2k-npu.82.1.1.303i.SSA
 fxos-k9-fp2k-manager.82.1.1.303i.SSA
```

### scope auto-install

Enters the auto-install mode. From this mode, you can view the current FXOS upgrade state.

```
firepower /firmware/auto-install # show
Firmware Auto-Install:
 Package-Vers Oper State Upgrade State

 9.10.1 Scheduled Installing Application
```

**scope firmware**

Enters the firmware mode. From this mode, you can view download task information.

For example:

```
FPR2100 /firmware # show download-task
Download task:
 File Name Protocol Server Port
 Userid State

 cisco-ftd-fp2k.9.10.1.SSA Scp 172.29.191.78
0 danp Downloaded
 cisco-ftd-fp2k.9.9.1.SSA Scp 172.29.191.78
0 danp Downloaded
```

**scope download-task**

Enters the download-task mode. From this mode, you can view additional details about each download task and restart the download task.

For example:

```
Download task:
 File Name: test.SSA
 Protocol: Scp
 Server: 172.29.191.78
 Port: 0
 Userid: user
 Path: /tmp
 Downloaded Image Size (KB): 0
 Time stamp: 2016-11-15T19:42:29.854
 State: Failed
 Transfer Rate (KB/s): 0.000000
 Current Task: deleting downloadable test.SSA on
local(FSM-STAGE:sam:dme:FirmwareDownloaderDownload:DeleteLocal)
firepower /firmware/download-task # show fsm status
File Name: test.SSA
FSM 1:
 Remote Result: End Point Failed
 Remote Error Code: ERR MO Illegal Iterator State
 Remote Error Description: End point timed out. Check for IP, port, password,
disk space or network access related issues.#
 Status: Download Fail
 Previous Status: Download Fail
 Timestamp: 2016-11-15T19:42:29.854
 Try: 2
 Progress (%): 0
 Current Task: deleting downloadable test.SSA on
local(FSM-STAGE:sam:dme:FirmwareDownloaderDownload:DeleteLocal)

firepower /firmware/download-task # restart
Password:
```

**scope psu**

Enters the power supply unit mode. From this mode, you can view detailed information about the power supply unit.

For example:

```
FPR2100 /chassis # show psu expand detail
PSU:
 PSU: 1
 Overall Status: Powered Off
 Operability: Unknown
 Power State: Off
```

```

Presence: Equipped
Voltage Status: Unknown
Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
PID: FPR2K-PWR-AC-400
VID: V01
Vendor: Cisco Systems, Inc
Serial (SN): LIT2010CAFE
Type: AC
Fan Status: Ok
PSU: 2
Overall Status: Operable
Operability: Operable
Power State: On
Presence: Equipped
Voltage Status: Ok
Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
PID: FPR2K-PWR-AC-400
VID: V01
Vendor: Cisco Systems, Inc
Serial (SN): LIT2010CAFE
Type: AC
Fan Status: Ok

```

## Connect Local-Mgmt Troubleshooting Commands for the Firepower 2100 in Platform Mode

Use the following connect local-mgmt mode FXOS CLI commands to troubleshoot issues with your Firepower 2100 in Platform mode. To access connect local-mgmt mode, enter:

**FPR2100# connect local-mgmt**

### **show lacp**

Displays detailed information about EtherChannel LACP.

For example:

```

FPR2100(local-mgmt)# show lacp neighborFlags: S - Device is requesting Slow LACPDUs
F - Device is requesting Fast LACPDUs
A - Device is in Active mode P - Device is in Passive mode

```

Channel group: 11

Partner (internal) information:

| Port   | Partner System ID    | Partner Port Number | Age  | Partner Flags |
|--------|----------------------|---------------------|------|---------------|
| Eth1/1 | 32768,286f.7fec.5980 | 0x10e               | 13 s | FA            |

| LACP Partner Port Priority | Partner Oper Key | Partner Port State |
|----------------------------|------------------|--------------------|
| 32768                      | 0x16             | 0x3f               |

Port State Flags Decode:

| Activity: | Timeout: | Aggregation: | Synchronization: |
|-----------|----------|--------------|------------------|
| Active    | Long     | Yes          | Yes              |

| Collecting: | Distributing: | Defaulted: | Expired: |
|-------------|---------------|------------|----------|
| Yes         | Yes           | No         | No       |

```

Port Partner
System ID Partner
Eth1/2 32768,286f.7fec.5980 0x10f Age Partner
 5 s Flags
 FA

LACP Partner Partner
Port Priority Oper Key Partner
32768 0x16 Port State
 0x3f

Port State Flags Decode:
Activity: Timeout: Aggregation: Synchronization:
Active Long Yes Yes

Collecting: Distributing: Defaulted: Expired:
Yes Yes No No

```

```
FP2100(local-mgmt)# show lacp counters
```

| Port              | LACPDUs |      | Marker |      | Marker Response |      | LACPDUs |     |
|-------------------|---------|------|--------|------|-----------------|------|---------|-----|
|                   | Sent    | Recv | Sent   | Recv | Sent            | Recv | Pkts    | Err |
| Channel group: 11 |         |      |        |      |                 |      |         |     |
| Eth1/1            | 4435    | 3532 | 0      | 0    | 0               | 0    | 0       |     |
| Eth1/2            | 4566    | 3532 | 0      | 0    | 0               | 0    | 0       |     |

### show portchannel

Displays detailed information about EtherChannels.

For example:

```

FPR2100(local-mgmt)# show portchannel summary
Flags: D - Down P - Up in port-channel (members)
I - Individual H - Hot-standby (LACP only)
s - Suspended r - Module-removed
S - Switched R - Routed
U - Up (port-channel)
M - Not in use. Min-links not met

```

| Group | Port-Channel | Type | Protocol | Member Ports          |
|-------|--------------|------|----------|-----------------------|
| 11    | Po11(U)      | Eth  | LACP     | Eth1/1 (P) Eth1/2 (P) |

### show portmanager

Displays detailed information about physical interfaces.

For example:

```

FPR2100(local-mgmt)# show portmanager counters ethernet 1 1
Good Octets Received : 105503260
Bad Octets Received : 0
MAC Transmit Error : 0
Good Packets Received : 1376050
Bad Packets Received : 0
BRDC Packets Received : 210
MC Packets Received : 1153664
Size 64 : 1334830
Size 65 to 127 : 0
Size 128 to 255 : 0
Size 256 to 511 : 41220
Size 512 to 1023 : 0
Size 1024 to Max : 0

```



```

Good Octets Sent : 0
Good Packets Sent : 0
Excessive Collision : 0
MC Packets Sent : 0
BRDC Packets Sent : 0
Unrecognized MAC Received : 0
FC Sent : 0
Good FC Received : 0
Drop Events : 0
Undersize Packets : 0
Fragments Packets : 0
Oversize Packets : 0
Jabber Packets : 0
MAC RX Error Packets Received : 0
Bad CRC : 0
Collisions : 0
Late Collision : 0
bad FC Received : 0
Good UC Packets Received : 222176
Good UC Packets Sent : 0
Multiple Packets Sent : 0
Deferred Packets Sent : 0
Size 1024 to 15180 : 0
Size 1519 to Max : 0
txqFilterDisc : 0
linkChange : 1

```

```

FPR2100(local-mgmt)# show portmanager port-info ethernet 1 1
port_info:
 if_index: 0x1081000
 type: PORTMGR_IPC_MSG_PORT_TYPE_PHYSICAL
 mac_address: 2c:f8:9b:1e:8f:d6
 flowctl: PORTMGR_IPC_MSG_FLOWCTL_NONE
 role: PORTMGR_IPC_MSG_PORT_ROLE_NPU
 admin_state: PORTMGR_IPC_MSG_PORT_STATE_ENABLED
 oper_state: PORTMGR_IPC_MSG_PORT_STATE_UP
 admin_speed: PORTMGR_IPC_MSG_SPEED_AUTO
 oper_speed: PORTMGR_IPC_MSG_SPEED_1GB
 admin_mtu: 9216
 admin_duplex: PORTMGR_IPC_MSG_PORT_DUPLEX_AUTO
 oper_duplex: PORTMGR_IPC_MSG_PORT_DUPLEX_FULL
 pc_if_index: 0x0
 pc_membership_status: PORTMGR_IPC_MSG_MMBR_NOT_MEMBER
 pc_protocol: PORTMGR_IPC_MSG_PORT_CHANNEL_PRTCL_NONE
 native_vlan: 101
 num_allowed_vlan: 1
 allowed_vlan[0]: 101
 PHY Data:
 PAGE IFC OFFSET VALUE | PAGE IFC OFFSET VALUE
 ---- - - - - - - - - - - | ---- - - - - - - - - - -
 0 0 0x0000 0x1140 | 0 0 0x0001 0x796d
 0 0 0x0002 0x0141 | 0 0 0x0003 0x0ee1
 0 0 0x0004 0x03e3 | 0 0 0x0005 0xc1e1
 0 0 0x0006 0x000f | 0 0 0x0007 0x2001
 0 0 0x0008 0x4f08 | 0 0 0x0009 0x0f00
 0 0 0x000a 0x3800 | 0 0 0x000f 0x3000
 0 0 0x0010 0x3070 | 0 0 0x0011 0xac08
 0 0 0x0012 0x0000 | 0 0 0x0013 0x1c40
 0 0 0x0014 0x8020 | 0 0 0x0015 0x0000
 18 0 0x001b 0x0000 |

```

| Item                          | Description                                                                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Good Octets Received          | Number of ethernet frames received that are not bad ethernet frames                                                                                                |
| Bad Octets Received           | Sum of lengths of all bad ethernet frames received                                                                                                                 |
| MAC Transmit Error            | Number of frames not transmitted correctly or dropped due to internal MAC Tx error                                                                                 |
| Good Packets Received         | The number of bad frames received                                                                                                                                  |
| Bad Packets Received          | The number of bad frames received                                                                                                                                  |
| BRDC Packets Received         | The number of good frames received that have a Broadcast destination MAC address                                                                                   |
| MC Packets Received           | The number of good frames received that have a Multicast destination MAC address                                                                                   |
| Good Octets Sent              | The sum of lengths of all Ethernet frames sent                                                                                                                     |
| Good Packets Sent             | The number of good frames sent                                                                                                                                     |
| Excessive Collision           | The number of collision events seen by the MAC not including those counted in Single, Multiple, Excessive, or Late. This counter is applicable in half-duplex only |
| MC Packets Sent               | The number of good frames send that have a Multicast destination MAC address                                                                                       |
| BRDC Packets Sent             | The number of good frames send that have a Broadcast destination MAC address                                                                                       |
| Unrecognized MAC Received     | Number of received MAC Control frames that are not Flow control frames.                                                                                            |
| FC sent                       | Number of Flow Control frames sent.                                                                                                                                |
| Good FC Received              | Number of good IEEE 802.3x Flow Control packets received.                                                                                                          |
| Drop Events                   | Number of packets dropped                                                                                                                                          |
| Undersize Packets             | Number of undersize packets received                                                                                                                               |
| Fragments Packets             | Number of fragments received.                                                                                                                                      |
| Oversize Packets              | Number of oversize packets received                                                                                                                                |
| Jabber Packets                | Number of jabber packets received                                                                                                                                  |
| MAC RX Error Packets Received | Number of Rx Error events seen by the receive side of the MAC                                                                                                      |

| Item                     | Description                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bad CRC                  | Number of packets received with bad CRC                                                                                                                              |
| Collisions               | Number of late collisions seen by the MAC                                                                                                                            |
| Late collison            | Total number of late collisions seen by the MAC                                                                                                                      |
| Bad FC Received          | Number of bad IEEE 802.3x Flow Control packets received                                                                                                              |
| Good UC Packets Received | Number of Ethernet Unicast frames received                                                                                                                           |
| Good UC Packets Sent     | Number of Ethernet Unicast frames sent                                                                                                                               |
| Multiple Packets Sent    | Valid Frame transmitted on half-duplex link that encountered more then one collision. Byte count and cast are valid.                                                 |
| Deferred Packets Sent    | Valid frame transmitted on half-duplex link with no collisions, but where the frame transmission was delayed due to media being busy. Byte count and cast are valid. |
| Size 1024 to 15180       | The number of received and transmitted, good and bad frames that are 1024 to 1518 bytes in size                                                                      |
| Size 1519 to Max         | The number of received and transmitted, good and bad frames that are more than 1519 bytes in size                                                                    |
| txqFilterDisc            | Number of IN packets that were filtered due to TxQ                                                                                                                   |
| linkChange               | number of link up or link down changes for the port                                                                                                                  |

```
FPR2100(local-mgmt)# show portmanager switch mac-filters
```

| port | ix  | MAC               | mask              | action  | packets | bytes    |
|------|-----|-------------------|-------------------|---------|---------|----------|
| 00   | 0ba | 2C:F8:9B:1E:8F:D7 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0c9 | 01:80:C2:00:00:02 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0cc | 2C:F8:9B:1E:8F:F7 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0cf | FF:FF:FF:FF:FF:FF | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | b70 | 00:00:00:00:00:00 | 01:00:00:00:00:00 | DROP    | 222201  | 14220864 |
|      | bb8 | 01:00:00:00:00:00 | 01:00:00:00:00:00 | DROP    | 1153821 | 91334968 |
| 01   | 0bd | 2C:F8:9B:1E:8F:D6 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0c0 | 01:80:C2:00:00:02 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0c3 | 2C:F8:9B:1E:8F:F6 | FF:FF:FF:FF:FF:FF | FORWARD |         |          |
|      | 0c6 | FF:FF:FF:FF:FF:FF | FF:FF:FF:FF:FF:FF | FORWARD | 210     | 13440    |
|      | b73 | 00:00:00:00:00:00 | 01:00:00:00:00:00 | DROP    | 222201  | 14220864 |
|      | bbb | 01:00:00:00:00:00 | 01:00:00:00:00:00 | DROP    | 1153795 | 91281055 |

```
<...>
```

```
FPR2100(local-mgmt)# show portmanager switch status
```

| Dev/Port | Mode  | Link  | Speed | Duplex | Loopback | Mode  |
|----------|-------|-------|-------|--------|----------|-------|
| -----    | ----- | ----- | ----- | -----  | -----    | ----- |

|      |        |      |     |      |      |
|------|--------|------|-----|------|------|
| 0/0  | QSGMII | Up   | 1G  | Full | None |
| 0/1  | QSGMII | Up   | 1G  | Full | None |
| 0/2  | QSGMII | Down | 1G  | Half | None |
| 0/3  | QSGMII | Down | 1G  | Half | None |
| 0/4  | QSGMII | Down | 1G  | Half | None |
| 0/5  | QSGMII | Down | 1G  | Half | None |
| 0/6  | QSGMII | Up   | 1G  | Full | None |
| 0/7  | QSGMII | Down | 1G  | Half | None |
| 0/48 | QSGMII | Down | 1G  | Half | None |
| 0/49 | QSGMII | Down | 1G  | Half | None |
| 0/50 | QSGMII | Down | 1G  | Half | None |
| 0/51 | QSGMII | Down | 1G  | Half | None |
| 0/52 | KR     | Up   | 40G | Full | None |
| 0/56 | SR_LR  | Down | 10G | Full | None |
| 0/57 | SR_LR  | Down | 10G | Full | None |
| 0/58 | SR_LR  | Down | 10G | Full | None |
| 0/59 | SR_LR  | Down | 10G | Full | None |
| 0/64 | SR_LR  | Down | 10G | Full | None |
| 0/65 | SR_LR  | Down | 10G | Full | None |
| 0/66 | SR_LR  | Down | 10G | Full | None |
| 0/67 | SR_LR  | Down | 10G | Full | None |
| 0/68 | SR_LR  | Down | 10G | Full | None |
| 0/69 | SR_LR  | Down | 10G | Full | None |
| 0/70 | SR_LR  | Down | 10G | Full | None |
| 0/71 | SR_LR  | Down | 10G | Full | None |
| 0/80 | KR     | Up   | 10G | Full | None |
| 0/81 | KR     | Down | 10G | Full | None |
| 0/83 | KR     | Up   | 10G | Full | None |

## Connect Local-Mgmt Troubleshooting Commands for the Secure Firewall 3100

In addition to the existing debugging commands, CLIs specific to Secure Firewall 3100 are explained in this section below.

Use the following connect local-mgmt mode FXOS CLI commands to troubleshoot issues with your Secure Firewall 3100. To access connect local-mgmt mode, enter:

**FPR3100# connect local-mgmt**

### **show portmanager**

Displays detailed information about switched, packets, SFP-FEC counters, digital optical monitoring, QOS functionality, CPSS AP, and Cyclic log dumps.

For example:

The following CLI displays the FXOS port manager switch hardware TCAM rules dump in vtcam-tti:

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vtcam-tti
detail
VTCAM_RULE_ID VLAN SRC_PORT PORTCHANNEL_ID FLAGS MODE REF_COUNT
1 21 0 2 0 2 5 3
2 3078 0 0 0 0 0 1
3 3077 0 0 0 0 0 1
4 3076 0 0 0 0 0 1
5 3075 0 0 0 0 0 1
6 3074 0 0 0 0 0 1
7 3073 0 0 0 0 0 1
8 1 0 0 0 0 0 1
```

|    |    |     |    |   |    |   |   |
|----|----|-----|----|---|----|---|---|
| 9  | 18 | 102 | 0  | 0 | 24 | 8 | 1 |
| 10 | 5  | 157 | 0  | 0 | 24 | 8 | 1 |
| 11 | 31 | 0   | 12 | 0 | 2  | 5 | 3 |
| 12 | 15 | 105 | 0  | 0 | 24 | 8 | 1 |
| 13 | 9  | 111 | 0  | 0 | 24 | 8 | 1 |
| 14 | 13 | 107 | 0  | 0 | 24 | 8 | 1 |
| 15 | 26 | 0   | 7  | 0 | 2  | 5 | 3 |
| 16 | 29 | 0   | 10 | 0 | 2  | 5 | 3 |
| 17 | 23 | 0   | 4  | 0 | 2  | 5 | 3 |
| 18 | 19 | 101 | 0  | 0 | 24 | 8 | 1 |
| 19 | 30 | 0   | 11 | 0 | 2  | 5 | 3 |
| 20 | 28 | 0   | 9  | 0 | 2  | 5 | 3 |
| 21 | 4  | 156 | 0  | 0 | 24 | 8 | 1 |
| 22 | 34 | 0   | 15 | 0 | 2  | 5 | 3 |
| 23 | 6  | 158 | 0  | 0 | 24 | 8 | 1 |
| 24 | 8  | 112 | 0  | 0 | 24 | 8 | 1 |
| 25 | 24 | 0   | 5  | 0 | 2  | 5 | 3 |
| 26 | 14 | 106 | 0  | 0 | 24 | 8 | 1 |
| 27 | 32 | 0   | 13 | 0 | 2  | 5 | 3 |
| 28 | 25 | 0   | 6  | 0 | 2  | 5 | 3 |
| 29 | 12 | 0   | 0  | 9 | 6  | 5 | 2 |
| 30 | 20 | 0   | 1  | 0 | 2  | 5 | 3 |
| 31 | 11 | 109 | 0  | 0 | 24 | 8 | 1 |
| 32 | 27 | 0   | 8  | 0 | 2  | 5 | 3 |
| 33 | 17 | 103 | 0  | 0 | 24 | 8 | 1 |
| 34 | 22 | 0   | 3  | 0 | 2  | 5 | 3 |
| 35 | 16 | 104 | 0  | 0 | 24 | 8 | 1 |
| 36 | 3  | 0   | 19 | 0 | 26 | 8 | 1 |
| 37 | 35 | 0   | 16 | 0 | 2  | 5 | 3 |
| 38 | 33 | 0   | 14 | 0 | 2  | 5 | 3 |
| 39 | 7  | 159 | 0  | 0 | 24 | 8 | 1 |
| 40 | 2  | 0   | 17 | 0 | 26 | 8 | 1 |
| 41 | 10 | 110 | 0  | 0 | 24 | 8 | 1 |

The following CLI displays the FXOS port manager switch VLANs output:

```
firepower-3140(local-mgmt)# show portmanager switch vlans
```

| VLAN | FDB-mode | Ports     | Tag                   | MAC-Learning |
|------|----------|-----------|-----------------------|--------------|
| 1    | FID      | 0/17,19   | pop_outer_tag         | Control      |
| 2    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
|      |          | 0/20      | pop_outer_tag         |              |
| 3    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
| 4    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
| 5    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
| 6    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
| 7    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |
| 8    | FID      | 0/1-16,18 | outer_tag0_inner_tag1 | Control      |

The following CLI displays switch hardware TCAM rules dump in vtcam-tti stage matching ethernet 1/1 port:

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vtcam-tti
ethernet 1 1
RULE_ID VLAN SRC_PORT PC_ID SRC_ID MODE PAK_CNT
1 20 0 1 0 101 0 151
```

The following CLI displays switch hardware TCAM rules dump in vtcam-tti stage matching vlan 0:

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vtcam-tti
vlan 0
RULE_ID VLAN SRC_PORT PC_ID SRC_ID MODE PAK_CNT
1 2 0 17 0 17 0 1709
2 3 0 19 0 19 0 1626
3 4 0 16 0 0 0 0
4 5 0 15 0 0 0 0
5 6 0 14 0 0 0 0
6 7 0 13 0 0 0 0
7 8 0 12 0 0 0 0
8 9 0 11 0 0 0 0
9 10 0 10 0 0 0 0
10 11 0 9 0 0 0 0
11 12 0 8 0 0 0 0
12 13 0 7 0 0 0 0
13 14 0 6 0 0 0 0
14 15 0 5 0 0 0 0
15 16 0 4 0 0 0 0
16 17 0 3 0 0 0 0
17 18 0 2 0 0 0 0
18 19 0 1 0 0 0 0
19 20 0 1 0 101 0 166
20 21 0 2 0 102 0 1597
21 22 0 3 0 103 0 0
22 23 0 4 0 104 0 0
23 24 0 5 0 105 0 0
24 25 0 6 0 106 0 0
25 26 0 7 0 107 0 0
26 27 0 8 0 108 0 0
27 28 0 9 0 109 0 0
28 29 0 10 0 110 0 0
29 30 0 11 0 111 0 0
30 31 0 12 0 112 0 0
31 32 0 13 0 159 0 0
32 33 0 14 0 158 0 0
33 34 0 15 0 157 0 0
34 35 0 16 0 156 0 0
35 1 0 17 0 0 0 0
```

The following CLI displays detailed information about hardware MAC-filter / EM stage rules:

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware mac-filter
detail
EM Entry-No : 1

VLAN : 0
SRC_PORT : 17
PC_ID : 0
SRC_ID : 17
DST_PORT : 19
HW_ID : 3072
ACT_CMD : 0
PCL_ID : 1
REDIRECT_CMD : 1
BYPASS_BRG : 1
CND_INDEX : 3074
```

```

PACKET_COUNT : 1977
DMAC : 00:00:00:00:00:00

```

```
EM Entry-No : 2

```

```

VLAN : 0
SRC_PORT : 19
PC_ID : 0
SRC_ID : 19
DST_PORT : 17
HW_ID : 3074
ACT_CMD : 0
PCL_ID : 1
REDIRECT_CMD : 1
BYPASS_BRG : 1
CND_INDEX : 3075
PACKET_COUNT : 1858
DMAC : 00:00:00:00:00:00

```

The following CLI displays switch hardware TCAM rules dump in mac-filter stage matching ethernet 1/9 port:

```

firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware mac-filter
ethernet 1 9
VLAN SRC_PORT PC_ID SRC_ID DST_PORT PKT_CNT DMAC
1 0 9 0 109 1536 0 1:80:c2:0:0:2

```

The following CLI displays detailed information about software MAC-filter:

```

firepower-3140(local-mgmt)# show portmanager switch forward-rules software mac-filter
detail
VLAN SRC_PORT PORTCHANNEL_ID DST_PORT FLAGS MODE DMAC
1 0 17 0 19 26 8 0:0:0:0:0:0
2 0 9 0 1536 2 5 1:80:c2:0:0:2
3 104 0 0 4 24 8 0:0:0:0:0:0
4 0 7 0 1536 2 5 1:80:c2:0:0:2
5 101 0 0 1 24 8 0:0:0:0:0:0
6 0 1 0 1536 2 5 1:80:c2:0:0:2
7 0 3 0 1536 2 5 1:80:c2:0:0:2
8 106 0 0 6 24 8 0:0:0:0:0:0
9 158 0 0 14 24 8 0:0:0:0:0:0
10 0 13 0 1536 2 5 1:80:c2:0:0:2
11 0 14 0 1536 2 5 1:80:c2:0:0:2
12 0 6 0 1536 2 5 1:80:c2:0:0:2
13 0 8 0 1536 2 5 1:80:c2:0:0:2
14 112 0 0 12 24 8 0:0:0:0:0:0
15 107 0 0 7 24 8 0:0:0:0:0:0
16 0 19 0 17 26 8 0:0:0:0:0:0
17 0 12 0 1536 2 5 1:80:c2:0:0:2
18 0 5 0 1536 2 5 1:80:c2:0:0:2
19 102 0 0 2 24 8 0:0:0:0:0:0
20 156 0 0 16 24 8 0:0:0:0:0:0
21 103 0 0 3 24 8 0:0:0:0:0:0
22 0 11 0 1536 2 5 1:80:c2:0:0:2
23 157 0 0 15 24 8 0:0:0:0:0:0
24 111 0 0 11 24 8 0:0:0:0:0:0
25 0 10 0 1536 2 5 1:80:c2:0:0:2
26 108 0 0 8 24 8 0:0:0:0:0:0
27 159 0 0 13 24 8 0:0:0:0:0:0
28 110 0 0 10 24 8 0:0:0:0:0:0
29 105 0 0 5 24 8 0:0:0:0:0:0

```

```

30 0 2 0 1536 2 5 1:80:c2:0:0:2
31 0 4 0 1536 2 5 1:80:c2:0:0:2
32 0 16 0 1536 2 5 1:80:c2:0:0:2
33 109 0 0 9 24 8 0:0:0:0:0:0
34 0 15 0 1536 2 5 1:80:c2:0:0:2

```

The following CLI displays switch software DB rules in mac-filter stage matching ethernet1/9 port:

```

firepower-3140(local-mgmt)# show portmanager switch forward-rules software mac-filter
ethernet 1 9
VLAN SRC_PORT PORTCHANNEL_ID DST_PORT FLAGS MODE DMAC
1 0 9 0 1536 2 5 1:80:c2:0:0:2

```

The following CLI displays detailed information about switch bridge engine packet drops:

```

firepower-3140(local-mgmt)# show portmanager switch counters bridge
Bridge Ingress Drop Counter: 2148
No Bridge Ingress Drop

```

The following CLI displays details on hardware switch packet counters:

```

firepower-3140(local-mgmt)# show portmanager switch counters packet-trace

```

| Counter                | Description                                                                                                                       |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| goodOctetsRcv          | Number of ethernet frames received that are not bad ethernet frames or MAC Control pkts                                           |
| badOctetsRcv           | Sum of lengths of all bad ethernet frames received                                                                                |
| gtBrgInFrames          | Number of packets received                                                                                                        |
| gtBrgVlanIngFilterDisc | Number of packets discarded due to VLAN Ingress Filtering                                                                         |
| gtBrgSecFilterDisc     | Number of packets discarded due to Security Filtering measures                                                                    |
| gtBrgLocalPropDisc     | Number of packets discarded due to reasons other than VLAN ingress and Security filtering                                         |
| dropCounter            | Ingress Drop Counter                                                                                                              |
| outUcFrames            | Number of unicast packets transmitted                                                                                             |
| outMcFrames            | Number of multicast packets transmitted. This includes registered multicasts, unregistered multicasts and unknown unicast packets |
| outBcFrames            | Number of broadcast packets transmitted                                                                                           |
| brgEgrFilterDisc       | Number of IN packets that were Bridge Egress filtered                                                                             |
| txqFilterDisc          | Number of IN packets that were filtered due to TxQ congestion                                                                     |
| outCtrlFrames          | Number of out control packets (to cpu, from cpu and to analyzer)                                                                  |
| egrFrwDropFrames       | Number of packets dropped due to egress forwarding restrictions                                                                   |
| goodOctetsSent         | Sum of lengths of all good ethernet frames sent from this MAC                                                                     |

  

| Counter                | Source port- 0/0 | Destination port- 0/0 |
|------------------------|------------------|-----------------------|
| goodOctetsRcv          | ---              | ---                   |
| badOctetsRcv           | ---              | ---                   |
| Ingress counters       |                  |                       |
| gtBrgInFrames          | 6650             | 6650                  |
| gtBrgVlanIngFilterDisc | 0                | 0                     |
| gtBrgSecFilterDisc     | 0                | 0                     |
| gtBrgLocalPropDisc     | 0                | 0                     |
| dropCounter            | 2163             | Only for source-port  |
| Egress counters        |                  |                       |
| outUcFrames            | 0                | 0                     |
| outMcFrames            | 2524             | 2524                  |
| outBcFrames            | 1949             | 1949                  |



```

brgEgrFilterDisc 14 14
txqFilterDisc 0 0
outCtrlFrames 0 0
egrFrwDropFrames 0 0
goodOctetsSent --- --- #

```

The following CLI displays detailed informatin about the switch traffic for CPU:

```
firepower-3140(local-mgmt)# show portmanager switch traffic cpu
```

```

Dev/RX queue packets bytes

0/0 0 0
0/1 0 0
0/2 0 0
0/3 0 0
0/4 0 0
0/5 0 0
0/6 0 0
0/7 0 0 #

```

The following CLI displays details on hardware switch port traffic:

```
firepower-3140(local-mgmt)# show portmanager switch traffic port
```

```

max-rate - pps that the port allow with packet size=64
actual-tx-rate - pps that egress the port (+ % from 'max')
actual-rx-rate - pps that ingress the port(+ % from 'max')

```

```

Dev/Port max-rate actual-tx-rate actual-rx-rate

0/1 1488095 (0%)--- (0%)---
0/2 1488095 (0%)--- (0%)---
0/3 14880 (0%)--- (0%)---
0/4 14880 (0%)--- (0%)---
0/5 14880 (0%)--- (0%)---
0/6 14880 (0%)--- (0%)---
0/7 14880 (0%)--- (0%)---
0/8 14880 (0%)--- (0%)---
0/9 14880952 (0%)--- (0%)---
0/10 14880952 (0%)--- (0%)---
0/11 14880952 (0%)--- (0%)---
0/12 14880952 (0%)--- (0%)---
0/13 14880952 (0%)--- (0%)---
0/14 14880952 (0%)--- (0%)---
0/15 1488095 (0%)--- (0%)---
0/16 1488095 (0%)--- (0%)---
0/17 14880952 (0%)--- (0%)---
0/18 74404761 (0%)--- (0%)---
0/19 37202380 (0%)--- (0%)---
0/20 37202380 (0%)--- (0%)---

```

The following CLI displays detailed information about SFP-FEC Counters matching ethernet 1/13 port:

```

firepower-3140(local-mgmt)# show portmanager counters ethernet 1 13
 Good Octets Received : 2153
 Bad Octets Received : 0
 MAC Transmit Error : 0
 Good Packets Received : 13
 Bad packets Received : 0

```

```

BRDC Packets Received : 0
MC Packets Received : 13
.....
txqFilterDisc : 0
linkchange : 1
FcFecRxBlocks : 217038081
FcFecRxBlocksNoError : 217038114
FcFecRxBlocksCorrectedError : 0
FcFecRxBlocksUnCorrectedError : 0
FcFecRxBlocksCorrectedErrorBits : 0
FcFecRxBlocksCorrectedError0 : 0
FcFecRxBlocksCorrectedError1 : 0
FcFecRxBlocksCorrectedError2 : 0
FcFecRxBlocksCorrectedError3 : 0
FcFecRxBlocksUnCorrectedError0 : 0
FcFecRxBlocksUnCorrectedError1 : 0
FcFecRxBlocksUnCorrectedError2 : 0
FcFecRxBlocksUnCorrectedError3 : 0

```

The following CLI displays detailed information about SFP-FEC Counters matching ethernet 1/14 port:

```

firepower-3140(local-mgmt)# show portmanager counters ethernet 1 14
Good Octets Received : 2153
Bad Octets Received : 0
MAC Transmit Error : 0
Good Packets Received : 13
Bad packets Received : 0
BRDC Packets Received : 0
MC Packets Received : 13
.....
txqFilterDisc : 0
linkchange : 1
RsFeccorrectedFecCodeword : 0
RsFecuncorrectedFecCodeword : 10
RsFecsymbolError0 : 5
RsFecsymbolError1 : 0
RsFecsymbolError2 : 0
RsFecsymbolError3 : 0

```

The following CLI displays detailed information on the Digital Optical Monitoring information matching ethernet 1/5 port:

```

firepower-4245(local-mgmt)# show portmanager port-info ethernet 1 5
....
....
DOM info:
=====:

Status/Control Register: 0800
 RX_LOS State: 0
 TX_FAULT State: 0
Alarm Status: 0000
No active alarms
Warning Status: 0000
No active warnings

THRESHOLDS
high alarm high warning low warning low alarm

```

|                |    |          |          |          |          |
|----------------|----|----------|----------|----------|----------|
| Temperature    | C  | +075.000 | +070.000 | +000.000 | -05.000  |
| Voltage        | V  | 003.6300 | 003.4650 | 003.1350 | 002.9700 |
| Bias Current   | mA | 012.0000 | 011.5000 | 002.0000 | 001.0000 |
| Transmit power | mW | 034.6740 | 017.3780 | 002.5120 | 001.0000 |
| Receive power  | mW | 034.6740 | 017.3780 | 001.3490 | 000.5370 |

```

Environmental Information - raw values
Temperature: 38.84 C
Supply voltage: 33703 in units of 100uVolt
Tx bias: 3499 in units of 2uAmp
Tx power: 0.1 dBm (10251 in units of 0.1 uW)
Rx power: -0.9 dBm (8153 in units of 0.1 uW)
DOM (256 bytes of raw data in hex)

```

```

=====
0x0000 : 4b 00 fb 00 46 00 00 00 8d cc 74 04 87 5a 7a 76
0x0010 : 17 70 01 f4 16 76 03 e8 87 72 03 e8 43 e2 09 d0
0x0020 : 87 72 02 19 43 e2 05 45 00 00 00 00 00 00 00 00
0x0030 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0040 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0050 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 86
0x0060 : 26 54 83 a7 0d ab 28 0b 1f d9 00 00 00 00 08 00
0x0070 : 00 00 03 00 00 00 00 00 08 f3 00 00 00 00 00 01
0x0080 : 49 4e 55 49 41 43 53 45 41 41 31 30 2d 33 33 38
0x0090 : 38 2d 30 31 56 30 31 20 01 00 46 00 00 00 00 e3
0x00a0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00b0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00c0 : 53 46 50 2d 31 30 2f 32 35 47 2d 43 53 52 2d 53
0x00d0 : 20 20 20 20 30 38 00 00 00 00 00 00 00 00 00 d1
0x00e0 : 1e 20 2a 2a 31 34 29 36 00 00 00 00 00 00 00 00
0x00f0 : 00 00 00 00 00 56 00 00 ff ff ff ff 00 00 00 cf
=====

```

PHY Data:

| PAGE | IFC | OFFSET | VALUE | PAGE | IFC | OFFSET | VALUE |
|------|-----|--------|-------|------|-----|--------|-------|
| ---- | --- | -----  | ----- | ---- | --- | -----  | ----- |

The following CLI displays detailed information about the parameters set for the packet capture:

```

firepower-3140(local-mgmt)# show portmanager switch pktpcap-rules software
Software DB rule:1
Slot= 1
Interface= 12
Breakout-port= 0
Protocol= 6
Ethertype= 0x0000
Filter_key= 0x00000040
Session= 1
Vlan= 0
SrcPort= 0
DstPort= 0
SrcIp= 0.0.0.0
DstIp= 0.0.0.0
SrcIpv6= ::
DestIpv6= ::
SrcMacAddr= 00:00:00:00:00:00
DestMacAddr= 00:00:00:00:00:00

```

The following CLI displays detailed information on the FXOS port manager switch hardware TCAM rules:

```

firepower-3140(local-mgmt)# show portmanager switch pktpcap-rules hardware
Hardware DB rule:1
 Hw_index= 15372
 Rule_id= 10241
 Cnc_index= 1
 Packet_count= 0
 Slot= 1
 Interface= 12
 Protocol= 6
 Ethertype= 0x0000
 Vlan= 0
 SrcPort= 0
 DstPort= 0
 SrcIp= 0.0.0.0
 DstIp= 0.0.0.0
 SrcIpv6= ::
 DestIpv6= ::
 SrcMacAddr= 00:00:00:00:00:00
 DestMacAddr= 00:00:00:00:00:00

```

The following displays detailed information about the QOS functionality:

```

firepower(local-mgmt)# show portmanager switch qos-rule policer counters
Policer_type green(pass_count) yellow(pass_count) red(drop_count)

OSPF
780
Policer_type green(pass_count) yellow(pass_count) red(drop_count)

CCL_CLU
Policer_type green(pass_count) yellow(pass_count) red(drop_count)

BFD
Policer_type green(pass_count) yellow(pass_count) red(drop_count)

HA
Policer_type green(pass_count) yellow(pass_count) red(drop_count)

CCL_CONTROL

```

| Category    | green(pass_count) | yellow(pass_count) | red(drop_count) |
|-------------|-------------------|--------------------|-----------------|
| OSPF        | 102025351         | 17832              | 590             |
| CCL_CLU     | 0                 | 0                  | 0               |
| BFD         | 61343307          | 0                  | 0               |
| HA          | 0                 | 0                  | 0               |
| CCL_CONTROL | 0                 | 0                  | 0               |

The following CLI verifies if the high priority traffic is hitting the TCAM:

```

firepower(local-mgmt)# show portmanager switch qos-rule counters
Rule_no Rule_id Rule_type pass_count

1 9218 SW_QOS_BFD 0
Rule_no Rule_id Rule_type pass_count

2 9216 SW_QOS_OSPF 102633941
Rule_no Rule_id Rule_type pass_count

3 9217 SW_QOS_BFD 61343307

```

The following CLI displays the CPU statistics as per queue per device matching ethernet 1/10 port:

```

firepower(local-mgmt)# show queuing interface ethernet 1 10
Queue Traffic-type Scheduler-type oper-bandwidth Destination

3 Data WRR 100 Application
4 CCL-CLU SP 0 Application

```

```

5 BFD SP 0 Application
6 OSPF SP 0 Application
7 CCL-CONTROL/HA/LACP_Tx SP 0 Application
0 packet-capture N/A 0 CPU
7 LACP_Rx N/A 0 CPU
Port 1/10 Queue Statistics:
Queue 0:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 1:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 2:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 3:
 Number of packets passed : 466420167
 Number of packets dropped: 0
Queue 4:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 5:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 6:
 Number of packets passed : 41536261
 Number of packets dropped: 0
Queue 7:
 Number of packets passed : 912
 Number of packets dropped: 0
CPU Statistics:
Queue 2:
 Number of packets passed : 180223
 Number of packets dropped: 0
Queue 7:
 Number of packets passed : 1572
 Number of packets dropped: 0

```

The following CLI displays the CPU statistics as per queue per device matching internal 1/1 port:

```

firepower(local-mgmt)# show queuing interface internal 1 1
Queue Traffic-type Scheduler-type oper-bandwidth Destination

3 Data WRR 100 Application
4 CCL-CLU SP 0 Application
5 BFD SP 0 Application
6 OSPF SP 0 Application
7 CCL-CONTROL/HA/LACP_Tx SP 0 Application
0 packet-capture N/A 0 CPU
7 LACP_Rx N/A 0 CPU
Port 1/18 Queue Statistics:
Queue 0:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 1:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 2:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 3:
 Number of packets passed : 17

```

```

 Number of packets dropped: 0
Queue 4:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 5:
 Number of packets passed : 0
 Number of packets dropped: 0
Queue 6:
 Number of packets passed : 5151
 Number of packets dropped: 0
Queue 7:
 Number of packets passed : 17345
 Number of packets dropped: 0
CPU Statistics:
Queue 2:
 Number of packets passed : 180223
 Number of packets dropped: 0
Queue 7:
 Number of packets passed : 1572
 Number of packets dropped: 0
Note:The CPU statistics are per Queue per Device

```

The following CLI displays detailed information about dump AP log option :

```

firepower-3110(local-mgmt)# dump portmanager switch ap-log
requested log has been dumped to /opt/cisco/platform/logs/portmgr.out*

firepower-3110(local-mgmt)# dump portmanager switch cyclic-log
requested log has been dumped to /opt/cisco/platform/logs/portmgr.out*

```

The following CLI displays detailed information on enabling or disabling verbose logging for port manager:

```

firepower-3110(local-mgmt)# debug portmanager switch
all Enable or Disable verbose logging for switch

firepower-3110(local-mgmt)# debug portmanager switch all
firepower-3110(local-mgmt)#

firepower-3110(local-mgmt)# no debug portmanager switch all
firepower-3110(local-mgmt)#

```

## Security Services Mode Troubleshooting Commands

Use the following security services (ssa) mode FXOS CLI commands to troubleshoot issues with your system.

### show app

Displays information about the applications attached to you Firpower device.  
For example:

```

firepower /ssa # show app
Application:
 Name Version Description Author Deploy Type CSP Type Is Default
App

```

```

 asa 9.10.1 N/A cisco Native Application Yes
 asa 9.9.2 N/A cisco Native Application No

```

**showapp-instance**

Displays information about the verified app-instance status

```

firepower-2120 /ssa # show app-instance
Application Name Slot ID Admin State Operational State Running Version Startup
Version Cluster Oper State

asa 1 Enabled Online 9.14.2 9.14.2
 Not Applicable

```

**showfault**

Displays information about the fault message

```

firepower-2120 /ssa # show fault
Severity Code Last Transition Time ID Description

Cleared F16589 2021-10-11T21:58:53.200 25140 [FSM:STAGE:RETRY:]: Waiting for chassis
object ready(FSM-STAGE:sam:dme:SmSecSvcAutoDeployCSP:WaitForChassisM
oReady)

```

**show failsafe-params**

The fail-safe mode for an threat defense application on Firepower 1000/2100 or Secure Firewall 3100 is activated due to continuous boot loop, traceback, etc. The following parameters control the activation of the fail-safe mode:

- Max Restart—maximum number of times that an application should restart in order to activate the fail-safe mode.
- Current Reboot Count—number of times the application continuously restarted.
- Restart Time Interval (secs)—the amount of time in seconds, during which the Max Restart counter should be reached in order to trigger the fail-safe mode. If the application restarts 'Max Restart' or more times within this interval, the fail-safe mode is enabled.

For example:

```

firepower-2120-failed(local-mgmt)# show failsafe-params
Max Restart: 8
Current Reboot Count: 0
Restart Time Interval(secs): 3600

```

When the system is in the fail-safe mode:

- The system name is appended with the "-failed" string:

```
firepower-2120-failed /ssa #
```

- The output of the "show failsafe-params" command in the local-mgmt command shell contains a warning message:

```

firepower-2120-failed(local-mgmt)# show failsafe-params
Max Restart: 1
Current Reboot Count: 1
Restart Time Interval(secs): 3600
WARNING: System in Failsafe mode. Applications are not running!

```

- Operation State of the application is Offline:

```

firepower-2120-failed /ssa # show app-instance
Application Name Slot ID Admin State Operational State Running Version
Startup Version Cluster Oper State Cluster Role

asa 1 Enabled Offline <===== 9.16.2.3
9.16.2.3 Not Applicable None

```