

Answer Firepower eXtensible Operating System (FXOS) FAQ

Contents

[Introduction](#)

[Background Information](#)

- [Q. How to Generate Show Tech from the FXOS System?](#)
 - [Q. How to Verify and Change the Chassis Management IP Address, Netmask and Gateway?](#)
 - [Q. How to Run an FXOS Ping Test?](#)
 - [Q. How to Verify the Mac Address of the Out-of-band Management Interface?](#)
 - [Q. How to Verify if the Out-of-band Management Interface is Up?](#)
 - [Q. How to Check the FXOS Routing Table?](#)
 - [Q. How to Check the FXOS ARP Table?](#)
 - [Q. How to Check FXOS Fault Events?](#)
 - [Q. How to Change the Hostname of the System?](#)
 - [Q. What is the "Compute Mismatch" Under the show server status Output?](#)
 - [Q. What is the Meaning of "Token Mismatch" in show slot Output?](#)
 - [Q. How to Set Timezone, NTP, and DNS via CLI?](#)
 - [Q. How to Setup Smart Licensing and HTTP Proxy?](#)
 - [Q. How to Configure Syslog via CLI?](#)
 - [Q. How to Configure SNMP on Firepower Appliances?](#)
 - [Q. How to Install/Replace an SSL Certificate Used by the Chassis Manager?](#)
 - [Q. How to Troubleshoot Traffic Flow Through the FPR9300 Chassis?](#)
 - [Q. How to View the Chassis Mac Address Table?](#)
 - [Q. How to View Chassis Interface MAC Addresses?](#)
 - [Q. How to do Password Recovery on FXOS Supervisor \(MIO\)?](#)
 - [Q. How to do Password Recovery on ASA or FTD Logical Device?](#)
 - [Q. How to Change the Current Password of an FXOS User \(for example admin\)?](#)
 - [Q. How to Downgrade FXOS?](#)
 - [Q. How to Downgrade/Upgrade an ASA Logical Device?](#)
 - [Q. How to Check the FXOS Upgrade Status via CLI?](#)
 - [Q. How to Reload the Logical Device from FXOS CLI?](#)
 - [Q. How to Check the FXOS Chassis Uptime and Last Reload Reason?](#)
 - [Q. How to Check the Available Disk Space on FXOS?](#)
 - [Q. How to Reset the Configuration of FXOS to Factory Defaults?](#)
 - [Q. How to Check the Bootstrap Configuration \(assigned interfaces, version, etc\) of a Logical Device from the FXOS CLI?](#)
 - [Q. How to Check the Status \(port type, state\) of the FXOS Interfaces?](#)
 - [Q. How to Check the CPU and Memory Utilization on the Chassis?](#)
 - [Q. How to Check Chassis Interface Transceiver Type?](#)
 - [Q. How to Check the Module/Blade/Server/Netmod Info \(HW](#)
-

[type/PID/SN/Memory/Cores etc\)?](#)

[Q. How to Delete an ASA or FTD Image from FXOS GUI and CLI?](#)

[Q. How to Check the FXOS Version from the CLI?](#)

[Q. How to Verify Interfaces MTU on FXOS?](#)

[Q. How to Check Installed Applications?](#)

[Q. How to Verify the Port-Channel Configuration from FXOS CLI?](#)

[Q. How to Find the FXOS Bundle Version from the Show Tech Output?](#)

[Q. How the MIO Propagates Interface Information \(Addition/Removal\) to the Blade Application \(FTD, ASA\)?](#)

[Q. What Serial Number \(SN\) Must be Used in the Case of RMA of the Firepower Chassis?](#)

[Q. Can you Swap SSD1 Between 2 Different FXOS Chassis?](#)

[Q. How to Check the Chassis Power Consumption?](#)

[Q. How to Check the Bootloader Version?](#)

[Q. How to Upgrade Bootloader?](#)

[Q. How to Disable the Absolute SSH Timeout?](#)

[Q. How to Capture LACP Packets Destined to Chassis Supervisor \(Control-Plane\)?](#)

[Q. How to Find SSD Information?](#)

[Q. How to Configure Internal Switch \(FXOS\) Captures?](#)

[References](#)

Introduction

This document describes the FAQ related to FXOS platforms.

Background Information

The Firepower eXtensible Operating System (FXOS) is the underlying operating system on Firepower or Secure Firewall platforms. Depending on the platforms FXOS is used to configure features, monitoring chassis status, and accessing advanced troubleshooting features.

FXOS on Firepower 4100/9300 and Firepower 2100 with the Adaptive Secure Appliance software in platform mode allow configuration changes, while in other platforms with the exception of specific features it is read only.

Q. How to Generate Show Tech from the FXOS System?

As from version 2.8.x the fprm deprecated. Thus FXOS 2.8.x supports only chassis and blade show techs.

```
<#root>
```

```
KSEC-FPR4115-2-1(local-mgmt)#
```

```
show tech-support fprm detail
```

```
WARNING: show tech-support fprm detail command is deprecated.  
Please use show tech-support chassis 1 detail command instead.
```

- chassis: Contains log files for the chassis, blade, adaptor, Baseboard Management Controller (BMC) and Cisco Integrated Management Controller (CIMC))
- module: Contains log files for the blade/module where the logical device Adaptive Security Appliance (ASA) or Firepower Threat Defense (FTD) resides. This includes logs for components like appAgent)

In pre-2.8.x releases, the FXOS provides three different show tech outputs. The FPRM bundle contains log files for Management Input/Output (MIO) - the supervisor engine - and the Service Manager)

Usually, you generate all 3 bundles. Use the show tech-support <option> detail to generate the 3 different log bundles for TAC analysis:

```
<#root>
```

```
FPR4140-A# connect local-mgmt
FPR4140-A(local-mgmt)#
```

```
show tech-support fprm detail
```

```
FPR4140-A(local-mgmt)#
```

```
show tech-support chassis 1 detail
```

```
FPR4140-A(local-mgmt)#
```

```
show tech-support module 1 detail
```

- If you do not specify the detail option, you get the output on the screen
- The detail option creates a tar file

To check the generated filenames:

```
<#root>
```

```
FPR4140-A(local-mgmt)#
```

```
dir techsupport/
```

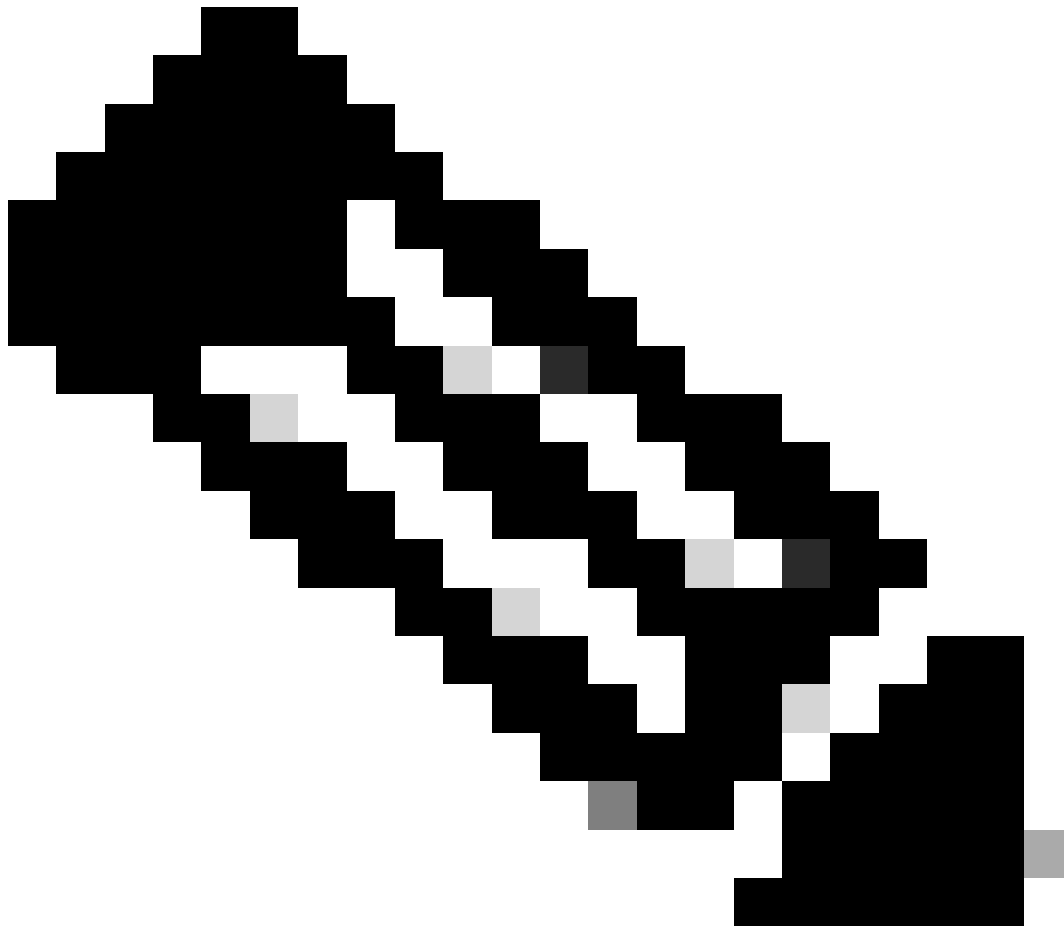
```
1 15595520 Apr 09 17:29:10 2017 20170409172722_FPR4140_FPRM.tar
1 962560 Apr 09 17:32:20 2017 20170409172916_FPR4140_BC1_all.tar
1 7014400 Apr 09 18:06:25 2017 Firepower-Module1_04_09_2017_18_05_59.tar
```

To export a bundle from CLI:

```
<#root>
```

```
FPR4140-A(local-mgmt)#
```

```
copy workspace:///techsupport/20170409172722_FPR4140_FPRM.tar ftp|tftp|scp|sftp://username@192.168.0.1/
```



Note: In addition to the FXOS show tech outputs the logical devices such as ASA and/or FTD have their own separate show tech capability. In the case of Multi-Instance (MI) each instance also has its own separate show-tech bundle. Finally, MI show-techs are not supported on FCM

Starting with FXOS 2.6, the FXOS technical support generation and download is made available from Firepower Chassis Manager (FCM) UI under Tools > Troubleshooting Logs

On FP9300:


```
A 10.62.184.19 10.62.184.1 255.255.255.0 :: :: 64 Operable
```

or

```
<#root>
```

```
FPR4115-2-1#
```

```
scope fabric-interconnect a
```

```
FPR4115-2-1 /fabric-interconnect #
```

```
show
```

```
Fabric Interconnect:
```

ID	OOB IP Addr	OOB Gateway	OOB Netmask	OOB IPv6 Address	OOB IPv6 Gateway	Prefix	Operability
A	10.62.184.19	10.62.184.1	255.255.255.0	::	::	64	Operable

```
FPR4115-2-1 /fabric-interconnect #
```

```
show detail
```

```
Fabric Interconnect:
```

```
ID: A
Product Name: Cisco FPR-4115-SUP
PID: FPR-4115-SUP
VID: V01
Vendor: Cisco Systems, Inc.
Serial (SN): JAD12345NY6
HW Revision: 0
Total Memory (MB): 8074
OOB IP Addr: 10.62.184.19
OOB Gateway: 10.62.184.1
OOB Netmask: 255.255.255.0
OOB IPv6 Address: ::
OOB IPv6 Gateway: ::
Prefix: 64
Operability: Operable
Thermal Status: Ok
Ingress VLAN Group Entry Count (Current/Max): 0/500
Switch Forwarding Path Entry Count (Current/Max): 14/1021
Current Task 1:
Current Task 2:
Current Task 3:
```

To change the IP settings:

```
<#root>
```

```
FPR4115-2-1#
```

```
scope fabric-interconnect a
```

```
FPR4115-2-1 /fabric-interconnect #
```

```
set out-of-band
```

```
gw      Gw
ip      Ip
netmask Netmask
KSEC-FPR4115-2-1 /fabric-interconnect #

set out-of-band ip 10.62.184.19 netmask 255.255.255.0 gw 10.62.184.1

KSEC-FPR4115-2-1 /fabric-interconnect* #

commit-buffer
```

About the commit:

```
FPR4115-2-1 /fabric-interconnect # commit-buffer verify-only    ! verify the change for error
FPR4115-2-1 /fabric-interconnect # commit-buffer              ! commit the change
FPR4115-2-1 /fabric-interconnect # discard-buffer             ! cancel the change
```

For more details check:

[Cisco Firepower 4100/9300 FXOS Command Reference](#)

Q. How to Run an FXOS Ping Test?

Navigate to local-mgmt CLI scope and use the ping command:

```
<#root>

FPR4115-2-1#

connect local-mgmt

FPR4115-2-1(local-mgmt)#

ping 10.62.184.1

PING 10.62.184.1 (10.62.184.1) from 10.62.184.19 eth0: 56(84) bytes of data.
64 bytes from 10.62.184.1: icmp_seq=1 ttl=255 time=0.602 ms
64 bytes from 10.62.184.1: icmp_seq=2 ttl=255 time=0.591 ms
64 bytes from 10.62.184.1: icmp_seq=3 ttl=255 time=0.545 ms
64 bytes from 10.62.184.1: icmp_seq=4 ttl=255 time=0.552 ms
```

Q. How to Verify the Mac Address of the Out-of-band Management Interface?

Navigate to local-mgmt CLI scope and use this command:

```
<#root>

FPR4115-2-1#

connect local-mgmt
```

```
FPR4115-2-1(local-mgmt)#  
show mgmt-ip-debug | begin eth0  
  
eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11  
          inet addr:10.62.184.19 Bcast:10.62.184.255 Mask:255.255.255.0  
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:3420589 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:2551231 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:419362704 (399.9 MiB)  TX bytes:1530147643 (1.4 GiB)
```

Q. How to Verify if the Out-of-band Management Interface is Up?

In addition to Operable under scope fabric-interconnect a > show, you can use this command:

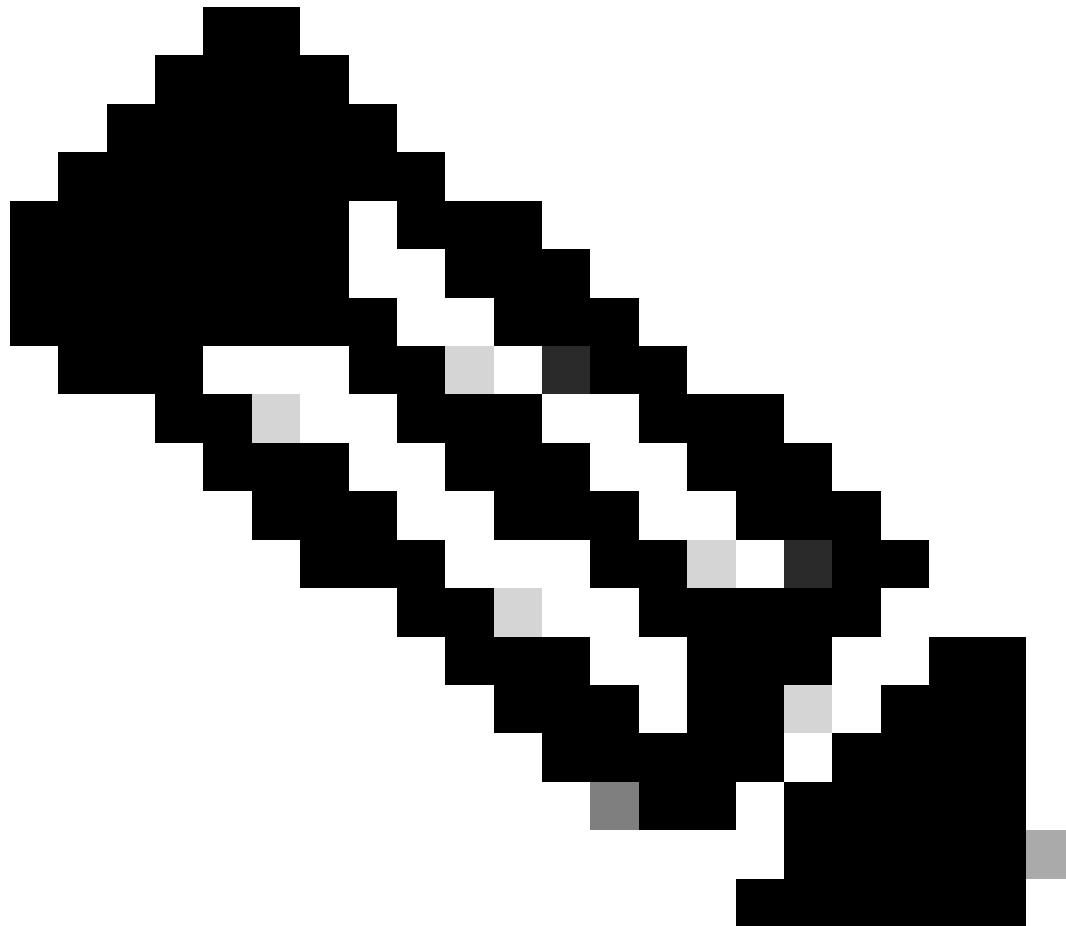
```
<#root>  
FPR4115-2-1#  
connect local-mgmt  
FPR4115-2-1(local-mgmt)#  
show mgmt-port  
  
eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11  
          inet addr:10.62.184.19 Bcast:10.62.184.255 Mask:255.255.255.0  
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:3422158 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:2552019 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:419611452 (400.1 MiB)  TX bytes:1530247862 (1.4 GiB)
```

Alternatively, you can use this command. The Scope part shows Link UP. Note that the UP is shown in the next line:

```
<#root>  
FPR4115-2-1#  
connect local-mgmt  
FPR4115-2-1(local-mgmt)#  
show mgmt-ip-debug | begin eth0  
  
eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11  
          inet addr:10.62.184.19 Bcast:10.62.184.255 Mask:255.255.255.0  
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:3420589 errors:0 dropped:0 overruns:0 frame:0
```



```
TX packets:2551231 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueueLen:1000
RX bytes:419362704 (399.9 MiB) TX bytes:1530147643 (1.4 GiB)
```



Note: The UP state is the admin status of the interface. The status remains UP even if you unplug the physical cable or SFP module. Another important point is the RUNNING status, which means the link is operational (line protocol is up).

To bring down the logical status of the interface:

```
<#root>
FPR4100-3-A(local-mgmt)#
mgmt-port shut
FPR4100-3-A(local-mgmt)#
show mgmt-ip-debug ifconfig | b eth0
```

```
eth0      Link encap:Ethernet  HWaddr 58:97:BD:B9:76:EB
          inet addr:10.62.148.88  Bcast:10.62.148.127  Mask:255.255.255.128
          BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:3685870 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7068372 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:295216623 (281.5 MiB)  TX bytes:1049391193 (1000.7 MiB)
```

To bring it UP again:

```
<#root>
```

```
FPR4100-3-A(local-mgmt)#
```

```
mgmt-port no-shut
```

```
FPR4100-3-A(local-mgmt)#
```

```
show mgmt-ip-debug ifconfig | b eth0
```

```
eth0      Link encap:Ethernet  HWaddr 58:97:BD:B9:76:EB
          inet addr:10.62.148.88  Bcast:10.62.148.127  Mask:255.255.255.128
          inet6 addr: fe80::5a97:bfff:feb9:76eb/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3685885 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7068374 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:295218130 (281.5 MiB)  TX bytes:1049391353 (1000.7 MiB)
```

Note: There is a show interface brief and show interface mgmt 0 under fxos mode that displays the mgmt0 interface as down and Admin down respectively. Do not use this as reference that it is down.

```
<#root>
FPR-4110-A#
connect fxos
FPR-4110-A(fxos)#
show interface brief | include mgmt0
mgmt0  --          down  172.16.171.83          --          1500
FPR-4110-A(fxos)#
show interface mgmt 0
mgmt0 is down (Administratively down)
  Hardware: GigabitEthernet, address: 5897.bdb9.212d (bia 5897.bdb9.212d)
  Internet Address is 172.16.171.83/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec
```

```
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA
auto-duplex, auto-speed
EtherType is 0x0000
1 minute input rate 3080 bits/sec 2 packets/sec
1 minute output rate 0 bits/sec 0 packets/sec
Rx
  977 unicast packets 12571 multicast packets 5229 broadcast packets
  18777 input packets 2333662 bytes
Tx
  0 unicast packets 0 multicast packets 0 broadcast packets
  0 output packets 0 bytes
```

If you do a show run interface mgmt0 under fxos mode, shutdown force is under that interface. Again, do not use this as reference that it is down:

```
<#root>
FPR4115-2-1(fxos)#
show run interface mgmt0

!Command:
show running-config interface mgmt0

!Time: Tue May  5 14:19:42 2020

version 5.0(3)N2(4.81)

interface mgmt0
  shutdown force
  ip address 10.62.184.19/24
```

Q. How to Check the FXOS Routing Table?

The out-of-band management is dependent only on the default gateway set. Therefore, ensure the chosen default gateway permits connection to clients that requires access to the system. There is a **show ip route vrf all** command under connect fxos, but this is not used for out-of-band management.

Q. How to Check the FXOS ARP Table?

The ARP table is not visible from the FXOS CLI. You can also use packet capture under fxos mode (ethanalyzer) to capture ARP and/or check traffic to/from the management.

This is an example to capture ARP packets. You can change the capture-filter to anything. That filter is similar to tcpdump filter:

```
<#root>
```

```
fp9300-A#
```

```
connect fxos
```

```
fp9300-A(fxos)#
```

```
ethalyzer local interface mgmt capture-filter arp
```

```
Capturing on eth0
```

```
2016-10-14 18:04:57.551221 00:50:56:85:be:44 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.240? Tell 172.16.171.151?
2016-10-14 18:04:57.935562 00:12:80:85:a5:49 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.112? Tell 172.16.171.151?
2016-10-14 18:04:58.167029 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.205? Tell 172.16.171.151?
2016-10-14 18:04:59.156000 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.1? Tell 172.16.171.151?
2016-10-14 18:04:59.165701 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.1? Tell 172.16.171.151?
2016-10-14 18:04:59.166925 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.205? Tell 172.16.171.151?
2016-10-14 18:04:59.268168 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.151? Tell 0.0.0.0
2016-10-14 18:05:00.150217 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.204? Tell 172.16.171.151?
2016-10-14 18:05:00.268369 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.151? Tell 0.0.0.0
2016-10-14 18:05:01.150243 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.204? Tell 172.16.171.151?
```

```
10 packets captured
```

```
Program exited with status 0.
```

```
fp9300-A(fxos)#
```

Additionally, you can save the capture to a file and then export it to a remote server:

```
<#root>
```

```
FPR4140-A#
```

```
connect fxos
```

```
FPR4140-A(fxos)#
```

```
ethalyzer local interface mgmt capture-filter arp limit-captured-frames 0 write workspace:///ARP.pcap
```

```
FPR4140-A#
```

```
connect local-mgmt
```

```
FPR4140-A(local-mgmt)#
```

```
dir
```

```
1 23075 Jan 12 13:13:18 2020 ARP.pcap
```

```
FPR4140-A(local-mgmt)#
```

```
copy workspace:///ARP.pcap ftp://anonymous@10.48.40.70/ARP.pcap
```

Q. How to Check FXOS Fault Events?

Use the show fault command:

<#root>

FPR4115-2-1#

show fault

Severity	Code	Last Transition Time	ID	Description
Major	F0909	2020-04-26T21:19:37.520	554924	default Keyring's certificate is invalid, reason:
Major	F1769	2012-01-19T00:30:02.733	323268	The password encryption key has not been set.
Minor	F1437	2012-01-19T00:30:02.732	32358	Config backup may be outdated

You can also filter the faults based on severity:

<#root>

FPR4115-2-1#

show fault ?

```
0-18446744073709551615 ID
<CR>
> Redirect it to a file
>> Redirect it to a file in append mode
cause Cause
detail Detail
severity Severity
suppressed Fault Suppressed
| Pipe command output to filter
```

FPR4115-2-1#

show fault severity major

Severity	Code	Last Transition Time	ID	Description
Major	F0909	2020-04-26T21:19:37.520	554924	default Keyring's certificate is invalid, reason:
Major	F1769	2012-01-19T00:30:02.733	323268	The password encryption key has not been set.

The same faults are also visible from the FXOS UI Overview > FAULTS dashboard:

The screenshot shows the FXOS UI Overview > FAULTS dashboard. The top navigation bar includes 'Overview', 'Interfaces', 'Logical Devices', 'Security Engine', and 'Platform Settings'. The system information section shows 'KSEC-FPR4115-2-1' with IP '10.62.184.19', model 'Cisco Firepower 4115 Security Appliance', version '2.8(1.105)', and operational state 'Operable'. The dashboard features several status cards: 'CONSOLE MGMT USB', 'Power 1 - Running', 'Power 2 - Running', 'Network Module 1' (ports 1-8), 'Network Module 2: Empty', and 'Network Module 3: Empty'. A 'FAULTS' card is highlighted with an orange border, showing 0(0) CRITICAL and 2(2) MAJOR faults. Below this, a table lists the faults:

Severity	Description	Cause	Occurrence	Time	Acknowledged
MAJOR	The password encryption key has not been set.	password-encryption-key...	1	2012-01-19T00:30:02.733	no
MAJOR	default Keyring's certificate is invalid, reason: expired.	invalid-keyring-certificate	1	2020-04-26T21:19:37.520	no

Q. How to Change the Hostname of the System?

You use the set name command under the system scope:

```
<#root>
KSEC-FPR4115-2-1#
scope system
KSEC-FPR4115-2-1 /system #
set name new-name
Warning: System name modification changes FC zone name and redeploys them non-disruptively
KSEC-FPR4115-2-1 /system* #
commit-buffer
KSEC-FPR4115-2-1 /system #
exit
new-name#
```

Q. What is the "Compute Mismatch" Under the show server status Output?

A newly-installed security module must be acknowledged and reinitialized before it can be used. This is true even when you replace a unit via RMA.

```
<#root>
FPR9300#
show server status
```

Server	Slot	Status	Overall Status	Discovery
1/1		Mismatch	Compute Mismatch	Complete
1/2		Equipped	Ok	Complete
1/3		Empty		

```
FPR9300#
```

The compute mismatch can cause this fault event:

```
Service profile ssp-sprof-1 configuration failed due to compute-unavailable,insufficient-resources
```

The show service-profile status displays Unassociated as if the module is not there.

Steps to acknowledge from the CLI:

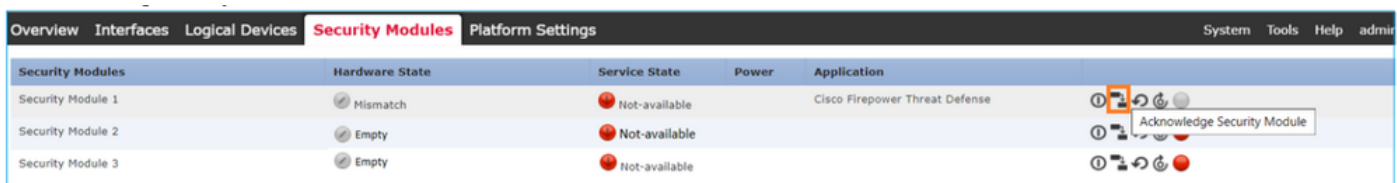
```
<#root>
```

```
scope chassis 1
```

```
acknowledge slot <slot#>
```

```
commit-buffer
```

Alternatively, you use the Chassis Manager UI to acknowledge the module:



Q. What is the Meaning of "Token Mismatch" in show slot Output?

This indicates that the security module has not been reinitialized yet after being acknowledged:

```
<#root>
```

```
FPR9300#
```

```
scope ssa
```

```
FPR9300 /ssa #
```

```
show slot
```

Slot:

Slot ID	Log Level	Admin State	Operational State
1	Info	Ok	Token Mismatch
2	Info	Ok	Online
3	Info	Ok	Not Available

```
FPR9300 /ssa #
```

Steps to reinitialize via CLI:

```
<#root>
```



```
scope ssa
scope slot <#>
reinitialize
commit-buffer
```

On Firepower 41xx, this can also mean the SSD is missing or it is faulty. Check if the SSD still exists via show inventory storage under scope server 1/1:

```
<#root>
```

```
FPR4140-A#
```

```
scope ssa
```

```
FPR4140-A /ssa #
```

```
show slot 1
```

```
Slot:
```

Slot ID	Log Level	Admin State	Oper State
1	Info	Ok	Token Mismatch

```
FPR4140-A /ssa #
```

```
show fault severity critical
```

Severity	Code	Last Transition Time	ID	Description
Critical	F1548	2018-03-11T01:22:59.916	38768	Blade swap detected on slot 1

```
FPR4140-A /ssa #
```

```
scope server 1/1
```

```
FPR4140-A /chassis/server #
```

```
show inventory storage
```

```
Server 1/1:
```

```
Name:
User Label:
Equipped PID: FPR4K-SM-36
Equipped VID: V01
Equipped Serial (SN): FLM12345KL6
Slot Status: Equipped
Acknowledged Product Name: Cisco Firepower 4100 Series Extreme Performance Security Engine
Acknowledged PID: FPR4K-SM-36
Acknowledged VID: V00
Acknowledged Serial (SN): FLM12345KL6
Acknowledged Memory (MB): 262144
Acknowledged Effective Memory (MB): 262144
Acknowledged Cores: 36
Acknowledged Adapters: 2
Motherboard:
    Product Name: Cisco Firepower 4100 Series Extreme Performance Security Engine
```

PID: FPR4K-SM-36
VID: V01
Vendor: Cisco Systems Inc
Serial (SN): FLM12345KL6
HW Revision: 0

RAID Controller 1:

Type: SATA
Vendor: Cisco Systems Inc
Model: CHORLEYWOOD
Serial: FLM12345KL6
HW Revision:
PCI Addr: 00:31.2
Raid Support:
OOB Interface Supported: No
Rebuild Rate: N/A
Controller Status: Unknown

Local Disk 1:

Vendor:
Model:
Serial:
HW Rev: 0
Operability: N/A
Presence: Missing
Size (MB): Unknown
Drive State: Unknown
Power State: Unknown
Link Speed: Unknown
Device Type: Unspecified

Local Disk Config Definition:

Mode: No RAID
Description:
Protect Configuration: No

Q. How to Set Timezone, NTP, and DNS via CLI?

This is configured under the FXOS Platform Settings. Apply the instructions from this document: [FXOS Platform Settings](#).

To verify the chassis time settings:

```
<#root>
```

```
KSEC-FPR4115-2-1#
```

```
show clock
```

```
Tue May 5 21:30:55 CEST 2020
```

```
KSEC-FPR4115-2-1#
```

```
show ntp
```

```
NTP Overall Time-Sync Status: Time Synchronized
```

To verify the module/blade time from the module Boot CLI use these 3 commands:

<#root>

Firepower-module1>

show ntp peerstatus

```
remote          local          st poll reach  delay  offset  disp
=====
*203.0.113.126  203.0.113.1    2  64  377 0.00006  0.000018  0.02789

remote 203.0.113.126, local 203.0.113.1
hmode client, pmode mode#255, stratum 2, precision -20
leap 00, refid [192.0.2.1], rootdistance 0.19519, rootdispersion 0.17641
ppoll 6, hpoll 6, keyid 0, version 4, association 43834
reach 377, unreachable 0, flash 0x0000, boffset 0.00006, ttl/mode 0
timer 0s, flags system_peer, config, bclient, prefer, burst
reference time:      dbef8823.8066c43a  Mon, Dec  5 2016  8:30:59.501
originate timestamp: 00000000.00000000  Mon, Jan  1 1900  2:00:00.000
receive timestamp:   dbefb27d.f914589d  Mon, Dec  5 2016 11:31:41.972
transmit timestamp:  dbefb27d.f914589d  Mon, Dec  5 2016 11:31:41.972
filter delay: 0.00008 0.00006 0.00008 0.00009
                0.00008 0.00008 0.00008 0.00009
filter offset: 0.000028 0.000018 0.000034 0.000036
                0.000033 0.000036 0.000034 0.000041
filter order:  1      2      6      0
                4      5      3      7
offset 0.000018, delay 0.00006, error bound 0.02789, filter error 0.00412
```

Firepower-module1>

show ntp association

```
remote          refid          st t when poll reach  delay  offset  jitter
=====
*203.0.113.126  192.0.2.1     2 u  37  64  377  0.062  0.018  0.017
```

ind assid status conf reach auth condition last_event cnt

```
=====
  1 43834 961d yes yes none sys.peer 1
```

```
associd=43834 status=961d conf, reach, sel_sys.peer, 1 event, popcorn,
srcadr=203.0.113.126, srcport=123, dstadr=203.0.113.1, dstport=123,
leap=00, stratum=2, precision=-20, rootdelay=195.190, rootdisp=176.407,
refid=192.0.2.1,
reftime=dbef8823.8066c43a Mon, Dec  5 2016  8:30:59.501,
rec=dbefb27d.f91541fc Mon, Dec  5 2016 11:31:41.972, reach=377,
unreach=0, hmode=3, pmode=4, hpoll=6, ppoll=6, headway=22, flash=00 ok,
keyid=0, offset=0.018, delay=0.062, dispersion=0.778, jitter=0.017,
xleave=0.011,
filtdelay= 0.08 0.06 0.08 0.10 0.08 0.09 0.08 0.10,
filtoffset= 0.03 0.02 0.03 0.04 0.03 0.04 0.03 0.04,
filtdisp= 0.00 0.03 1.04 1.07 2.06 2.09 3.09 3.12
```

Firepower-module1>

show ntp sysinfo

```
associd=0 status=0618 leap_none, sync_ntp, 1 event, no_sys_peer,  
version="ntpd 4.2.6p5@1.2349-o Fri Oct 7 17:08:03 UTC 2016 (2)",  
processor="x86_64", system="Linux/3.10.62-ltsi-WR6.0.0.27_standard",  
leap=00, stratum=3, precision=-23, rootdelay=195.271, rootdisp=276.641,  
refid=203.0.113.126,  
reftime=dbefb238.f914779b Mon, Dec 5 2016 11:30:32.972,  
clock=dbefb2a7.575931d7 Mon, Dec 5 2016 11:32:23.341, peer=43834, tc=6,  
mintc=3, offset=0.035, frequency=25.476, sys_jitter=0.003,  
clk_jitter=0.015, clk_wander=0.011
```

```
system peer:          203.0.113.126  
system peer mode:    client  
leap indicator:      00  
stratum:             3  
precision:           -23  
root distance:       0.19527 s  
root dispersion:     0.27663 s  
reference ID:        [203.0.113.126]  
reference time:      dbefb238.f914779b Mon, Dec 5 2016 11:30:32.972  
system flags:        auth monitor ntp kernel stats  
jitter:              0.000000 s  
stability:           0.000 ppm  
broadcastdelay:     0.000000 s  
authdelay:          0.000000 s
```

```
time since restart:  1630112  
time since reset:   1630112  
packets received:   157339  
packets processed:  48340  
current version:    48346  
previous version:   0  
declined:           0  
access denied:      0  
bad length or format: 0  
bad authentication: 0  
rate exceeded:      0  
Firepower-module1>
```

For more details about NTP verification and troubleshoot check this document: [Configure, Verify and Troubleshoot Network Time Protocol \(NTP\) Settings on Firepower FXOS Appliances](#)

Q. How to Setup Smart Licensing and HTTP Proxy?

Smart Licensing is needed on FXOS chassis in the case of ASA logical device. Check this document for more details: [License Management for the ASA](#)

Here is a sample output of license status:

```
<#root>  
  
FPR4115-2-1#  
  
scope license
```

FPR4115-2-1 /license #

show license all

Smart Licensing Status
=====

Smart Licensing is ENABLED

Registration:

Status: REGISTERED
Smart Account: BU Production Test
Virtual Account: TAC-BETA
Export-Controlled Functionality: Not Allowed
Initial Registration: SUCCEEDED on Dec 15 14:41:55 2015 PST
Last Renewal Attempt: SUCCEEDED on Dec 23 09:26:05 2015 PST
Next Renewal Attempt: Jun 21 07:00:21 2016 PST
Registration Expires: Dec 23 06:54:19 2016 PST

License Authorization:

Status: AUTHORIZED on Apr 07 15:44:26 2016 PST
Last Communication Attempt: SUCCEEDED on Apr 07 15:44:26 2016 PST
Next Communication Attempt: May 07 15:44:25 2016 PST
Communication Deadline: Jul 06 15:38:24 2016 PST

License Usage
=====

No licenses in use

Product Information
=====

UDI: PID:FPR9K-SUP,SN:JAD123456AB

Agent Version
=====

Smart Agent for Licensing: 1.4.1_rel/31

Or alternatively:

<#root>

fp9300-A#

connect local-mgmt

fp9300-A(local-mgmt)#

show license all

Smart Licensing Status
=====

Smart Licensing is ENABLED

Registration:

Status: REGISTERED
Smart Account: Cisco Internal
Virtual Account: Escalations
Export-Controlled Functionality: Allowed
Initial Registration: SUCCEEDED on Feb 10 18:55:08 2016 CST
Last Renewal Attempt: SUCCEEDED on Oct 09 15:07:25 2016 CST
Next Renewal Attempt: Apr 07 15:16:32 2017 CST
Registration Expires: Oct 09 15:10:31 2017 CST

License Authorization:

Status: AUTHORIZED on Sep 20 07:29:06 2016 CST
Last Communication Attempt: SUCCESS on Sep 20 07:29:06 2016 CST
Next Communication Attempt: None Communication Deadline: None
Licensing HA configuration error:
No Reservation Ha config error

License Usage

=====

No licenses in use

Product Information

=====

UDI: PID:FPR9K-SUP,SN:JAD190800VU

Agent Version

=====

Smart Agent for Licensing: 1.6.7_rel/95

Q. How to Configure Syslog via CLI?

Check these documents:

- [Configure Syslog on Firepower FXOS Appliances](#)
- [FXOS Config Guide: Platform Settings Syslog](#)

Q. How to Configure SNMP on Firepower Appliances?

Check this document: [Configure SNMP on Firepower NGFW Appliances](#)

Q. How to Install/Replace an SSL Certificate Used by the Chassis Manager?

This document can help: [Install a Trusted Certificate for FXOS Chassis Manager](#)

Q. How to Troubleshoot Traffic Flow Through the FPR9300 Chassis?

Check these documents:

- [Firepower Data Path Troubleshooting Phase 1: Packet Ingress](#)

- [Firepower Data Path Troubleshooting: Overview](#)
- [Analyze Firepower Firewall Captures to Effectively Troubleshoot Network Issues](#)

Q. How to View the Chassis Mac Address Table?

For FP41xx and FP93xx platforms use any of these commands:

```
<#root>
```

```
FPR4115-2-1#
```

```
connect fxos
```

```
FPR4115-2-1(fxos)#
```

```
show l2-table
```

Ingress	MAC	Vlan	Class	VlanGrp	Status	Dst
Eth1/1	78bc.1ae7.a45e	101	1	0	present	1
Veth776	78bc.1ae7.a45e	101	1	0	present	1
Po1	0100.5e00.0005	1001	1	0	present	1
Po1	0100.5e00.0006	1001	1	0	present	1
Po1	78bc.1ae7.a44e	1001	1	0	present	1
Po1	ffff.ffff.ffff	1001	63	0	present	1

```
FPR4115-2-1(fxos)#
```

```
show mac address-table
```

Legend:

* - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
age - seconds since first seen,+ - primary entry using vPC Peer-Link

VLAN	MAC Address	Type	age	Secure	NTFY	Ports/SWID.SSID.LID
* 1001	0100.5e00.0005	static	0	F	F	Eth1/1
* 1001	0100.5e00.0006	static	0	F	F	Eth1/1
* 1001	78bc.1ae7.a44e	static	0	F	F	Eth1/1
* 1001	ffff.ffff.ffff	static	0	F	F	Eth1/1
* 101	78bc.1ae7.a45e	static	0	F	F	Eth1/1
* 101	78bc.1ae7.a46f	static	0	F	F	Veth776
* 4047	0015.a501.0100	static	0	F	F	Veth864
* 4047	0015.a501.0101	static	0	F	F	Veth1015
* 4043	78bc.1ae7.b000	static	0	F	F	Eth1/10
* 4043	78bc.1ae7.b00c	static	0	F	F	Eth1/9
* 1	0015.a500.001f	static	0	F	F	Veth887
* 1	0015.a500.002f	static	0	F	F	Veth1018
* 1	0015.a500.01bf	static	0	F	F	Veth905
* 1	0015.a500.01ef	static	0	F	F	Veth1019

Q. How to View Chassis Interface MAC Addresses?

Use this command:

```
<#root>
```

FPR4115-2-1#

connect fxos

FPR4115-2-1(fxos)#

show interface mac-address

Interface	Mac-Address	Burn-in Mac-Address
Ethernet1/1	78bc.1ae7.a417	78bc.1ae7.a418
Ethernet1/2	78bc.1ae7.a417	78bc.1ae7.a419
Ethernet1/3	78bc.1ae7.a417	78bc.1ae7.a41a
Ethernet1/4	78bc.1ae7.a417	78bc.1ae7.a41b
Ethernet1/5	78bc.1ae7.a417	78bc.1ae7.a41c
Ethernet1/6	78bc.1ae7.a417	78bc.1ae7.a41d
Ethernet1/7	78bc.1ae7.a417	78bc.1ae7.a41e
Ethernet1/8	78bc.1ae7.a417	78bc.1ae7.a41f
Ethernet1/9	78bc.1ae7.a417	78bc.1ae7.a420
Ethernet1/10	78bc.1ae7.a417	78bc.1ae7.a421
Ethernet1/11	78bc.1ae7.a417	78bc.1ae7.a422
Ethernet1/12	78bc.1ae7.a417	78bc.1ae7.a423
port-channel1	78bc.1ae7.a417	78bc.1ae7.a41a
port-channel48	78bc.1ae7.a417	0000.0000.0000
mgmt0	78bc.1ae7.a411	78bc.1ae7.a411
Vethernet690	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet691	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet692	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet693	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet694	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet695	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet696	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet697	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet698	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet699	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet700	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet774	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet775	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet776	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet777	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet778	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet779	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet861	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet862	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet863	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet864	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet887	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet905	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet906	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet1015	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet1018	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet1019	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet1020	78bc.1ae7.a417	78bc.1ae7.a417
Vethernet1021	78bc.1ae7.a417	78bc.1ae7.a417

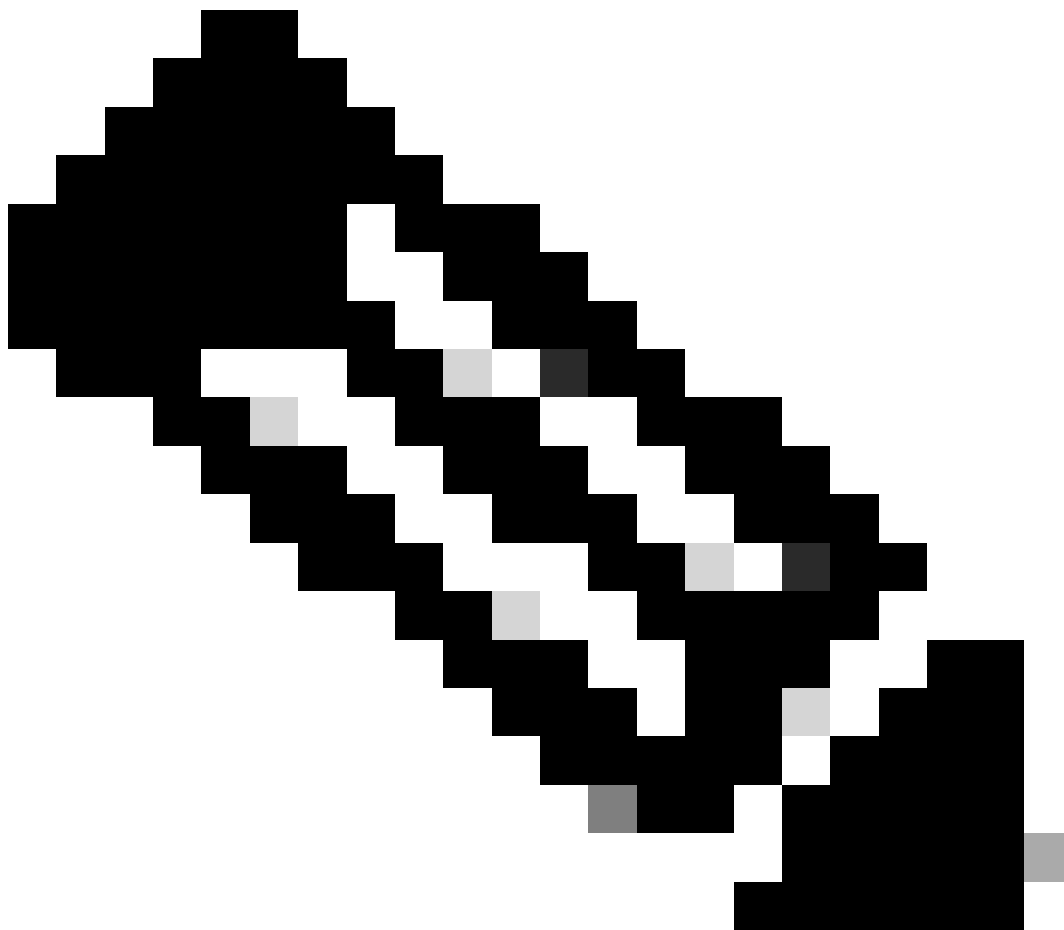
Q. How to do Password Recovery on FXOS Supervisor (MIO)?

For password recovery procedures on FP41xx and FP9300 use this document: [Password Recovery](#)

Q. How to do Password Recovery on ASA or FTD Logical Device?

In order to reset the logical device password you need to bootstrap again the device. With the Bootstrap Disaster Recovery process you can change any of these items:

- ASA/ FTD management IP - IP, netmask, gateway, IPv6, prefix length
 - ASA password
 - FTD registration key, password, FMC IP, Search Domains, Firewall Mode, DNS servers, FQDN
 - ASA cluster IP pool, netmask, gateway, prefix length, virtual IP.
-



Note: The bootstrap recovery process must be executed in a Maintenance Window (MW) because it requires a logical device reload

Example 1

You can use the FXOS UI to edit the bootstrap settings of a logical device. Navigate to Logical Devices tab, Edit a device

Overview Interfaces **Logical Devices** Security Engine Platform Settings System Tools Help admin

Editing - mzafeiro_FTD1 Save Cancel

Standalone | Cisco Firepower Threat Defense | 6.6.0.90

Data Ports

- Ethernet1/4
- Ethernet1/5
- Ethernet1/6
- Ethernet1/7
- Ethernet1/8
- Port-channel1**

Decorators

Port-channel1

FTD - 6.6.0.90
Ethernet1/1
Click to configure

Set the password:

Cisco Firepower Threat Defense - Bootstrap Configuration

General Information **Settings** Agreement

Management type of application instance:

Search domains:

Firewall Mode:

DNS Servers:

Fully Qualified Hostname:

Password: Set: Yes

Confirm Password: Set: Yes

Registration Key: Set: Yes

Confirm Registration Key:

Firepower Management Center IP:

Firepower Management Center NAT ID:

Eventing Interface:

Once you Save this message appears:

Bootstrap Settings Update Confirmation



Updating the bootstrap settings from the Firepower Chassis Manager is for disaster recovery only; we recommend that you instead change bootstrap settings in the application. To update the bootstrap settings from the Firepower Chassis Manager, click **Restart Now**: the old bootstrap configuration will be overwritten, and the application will restart. Or click **Restart Later** so you can manually restart the application at a time of your choosing and apply the new bootstrap settings (**Logical Devices > Restart**).

Note: For FTD, if you change the management IP address, be sure to change the device IP address in **FMC (Devices > Device Management > Device tab > Management area)**. This task is not required if you specified the NAT ID instead of the device IP address in FMC.

Restart Now

Restart Later

Cancel

Example 2

This is an example of ASA enable password change/recovery:

```
<#root>
```

```
FP4110-A#
```

```
scope ssa
```

```
FP4110-A /ssa #
```

```
show logical-device
```

```
Logical Device:
```

Name	Description	Slot ID	Mode	Oper State	Templa
asa		1	Standalone	Ok	asa

```
FP4110-A /ssa #
```

```
scope logical-device asa
```

```
FP4110-A /ssa/logical-device #
```

```
scope mgmt-bootstrap asa
```

```
FP4110-A /ssa/logical-device/mgmt-bootstrap #
```

```
show config
```

```
enter mgmt-bootstrap asa
  create bootstrap-key-secret PASSWORD
  !   set value
  exit
  enter ipv4 1 default
    set gateway 172.16.171.1
    set ip 172.16.171.226 mask 255.255.255.0
  exit
```

exit

FP4110-A /ssa/logical-device/mgmt-bootstrap #

enter bootstrap-key-secret PASSWORD

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret #

set value

Value: <enter new enable password in here>

Warning: Bootstrap changes are not automatically applied to app-instances. To apply the changes, please

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret* #

commit-buffer

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret #

top

FP4110-A#

scope ssa

FP4110-A /ssa #

scope slot 1

FP4110-A /ssa/slot #

scope app-instance asa

FP4110-A /ssa/slot/app-instance #

clear-mgmt-bootstrap

Warning: Clears the application management bootstrap. Application needs to be restarted for this action

FP4110-A /ssa/slot/app-instance* #

commit-buffer

FP4110-A /ssa/slot/app-instance #

restart

FP4110-A /ssa/slot/app-instance* #

commit-buffer

Check if the ASA is online before connecting to it and use the new enable password.

<#root>

```
FP4110-A /ssa/slot/app-instance #
```

```
show
```

```
Application Instance:
```

App Name	Admin State	Oper State	Running Version	Startup Version	Profile Name	Cluster State
asa	Enabled	Online	9.9.1.76	9.9.1.76		Not Applicable

```
FP4110-A /ssa/slot/app-instance #
```

Q. How to Change the Current Password of an FXOS User (for example admin)?

Use this procedure:

```
<#root>
```

```
FP4110-1-A#
```

```
scope security
```

```
FP4110-1-A /security #
```

```
show local-user
```

User Name	First Name	Last name
admin		

```
admin
```

```
FP4110-1-A /security #
```

```
enter local-user admin
```

```
FP4110-1-A /security/local-user #
```

```
set password
```

```
Enter a password:
```

```
Confirm the password:
```

```
FP4110-1-A /security/local-user* #
```

```
commit-buffer
```

```
FP4110-1-A /security/local-user #
```

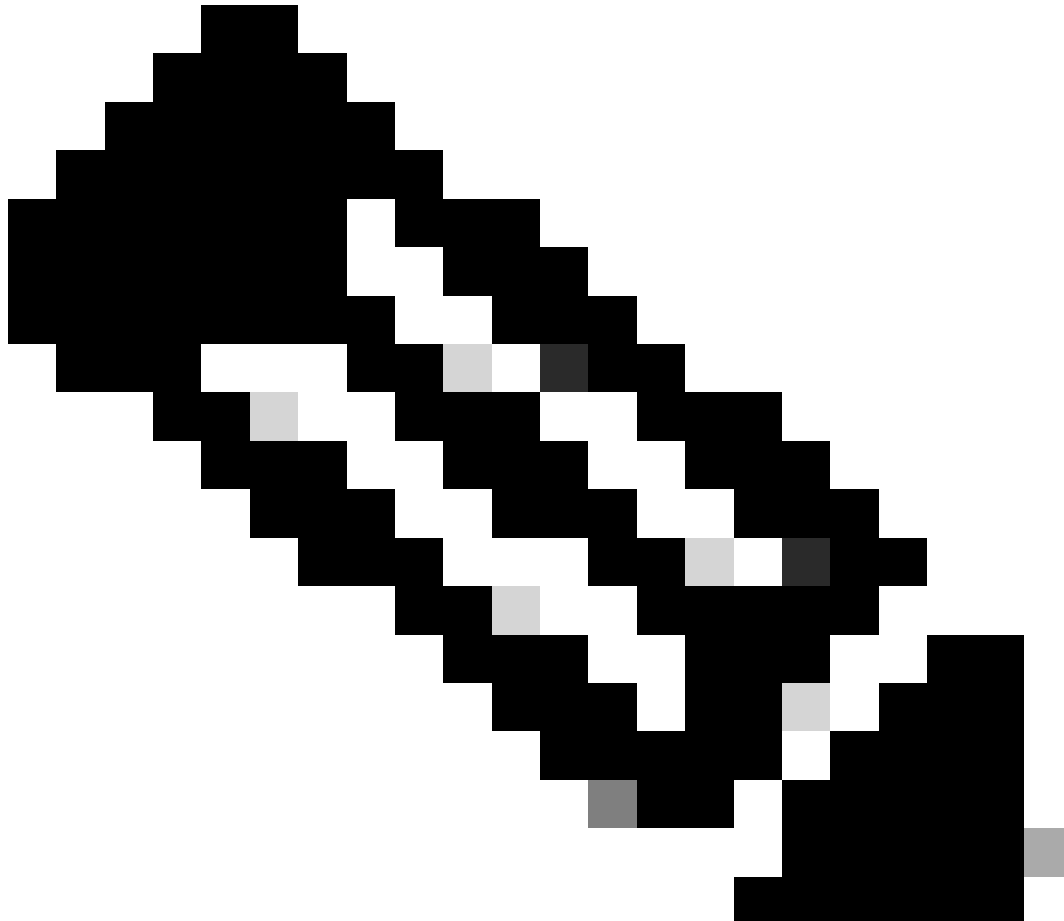
Q. How to Downgrade FXOS?

The downgrade of FXOS images is not officially supported. The only Cisco-supported method of downgrading an image version of FXOS is to perform a complete re-image of the device. This is documented in [Firepower 4100/9300 Upgrade Path](#)

Q. How to Downgrade/Upgrade an ASA Logical Device?

To downgrade/upgrade ASA version via Chassis Manager: [Updating the Image Version for a Logical Device](#)

To change via CLI, use this config guide section: [Updating the Image Version for a Logical Device](#)



Note: As soon as you commit-buffer on CLI, it restarts the module. Similarly on chassis manager, once you hit ok, it restarts the module. There is no need to restart it manually.

Q. How to Check the FXOS Upgrade Status via CLI?

The upgrade is completed once all the components get into Ready status:

```
<#root>
```

```
FP9300#
```

```
scope system
```

```
FP9300 /system #
```

```
show firmware monitor
```

```
FPRM:
```

```
Package-Vers: 2.0(1.37)  
Upgrade-Status: Ready
```

```
Fabric Interconnect A:
```

```
Package-Vers: 2.0(1.23)  
Upgrade-Status: Upgrading
```

```
Chassis 1:
```

```
Server 1:
```

```
Package-Vers: 2.0(1.23)  
Upgrade-Status: Ready
```

```
Server 2:
```

```
Package-Vers: 2.0(1.23)  
Upgrade-Status: Upgrading
```

Other useful commands

```
<#root>
```

```
FP9300 /firmware/auto-install #
```

```
show fsm status
```

```
FP9300 /firmware/auto-install #
```

```
show fsm status expand
```

Q. How to Reload the Logical Device from FXOS CLI?

The preferable way is to use the FCM UI. If for whatever reason the UI is not accessible use these commands:

```
<#root>
```

```
#
```

```
scope chassis 1
```

```
/chassis #
```

```
scope server 1/1
```

```
/chassis/server #
```

```
reset ?
```


`hard-reset-immediate` Perform an immediate hard reset

`hard-reset-wait` Wait for the completion of any pending management oper

`/chassis/server #`

`commit-buffer`

Q. How to Check the FXOS Chassis Uptime and Last Reload Reason?

FXOS uptime check is useful in case there is an FXOS traceback. You can see the FXOS from the UI (FCM) or from CLI:

```
<#root>
```

```
FPR9K-1-A#
```

```
connect fxos
```

```
FPR9K-1-A(fxos)#
```

```
show system uptime
```

```
System start time: Sun Sep 25 09:57:19 2016  
System uptime: 28 days, 9 hours, 38 minutes, 14 seconds  
Kernel uptime: 28 days, 9 hours, 38 minutes, 41 seconds  
Active supervisor uptime: 28 days, 9 hours, 38 minutes, 14 seconds
```

Furthermore, in order to determine the last reload reason use this command:

```
<#root>
```

```
FPR9K-1-A(fxos)#
```

```
show system reset-reason
```

```
----- reset reason for Supervisor-module 1 (from Supervisor in slot 1) ---
```

```
1) At 212883 usecs after Fri Oct 21 22:34:35 2016
```

```
Reason: Kernel Panic
```

```
Service:
```

```
Version: 5.0(3)N2(3.02)
```

```
2) At 106690 usecs after Thu May 26 16:07:38 2016
```

```
Reason: Reset Requested by CLI command reload
```

```
Service:
```

```
Version: 5.0(3)N2(3.02)
```

For FPR2100 uptime do this:

1. Get the 'show tech-support fprm detail' bundle
2. Extract the contents of the bundle
3. Check the file tmp/inventory_manager.xml

There is an entry which shows the uptime in seconds:

```
<#root>
```

```
tmp/inventory_manager.xml:
```

```
<uptime>151</uptime>
```

Q. How to Check the Available Disk Space on FXOS?

Also called 'workspace':

```
<#root>
```

```
FPR9K-1-A#
```

```
connect local-mgmt
```

```
FPR9K-1-A(local-mgmt)#
```

```
dir
```

```
1      29 Sep 25 09:56:22 2016 blade_debug_plugin
1      19 Sep 25 09:56:22 2016 bladelog
1      16 Aug 05 15:41:05 2015 cores
1 2841476 Apr 26 14:13:12 2016 d
2      4096 Dec 01 10:09:11 2015 debug_plugin/
1      31 Aug 05 15:41:05 2015 diagnostics
1 2842049 Feb 23 03:26:38 2016 dp
1 18053120 Feb 23 11:10:19 2016 fpr9k-1-0-sam_logs_all.tar
1 18176000 Feb 23 11:10:43 2016 fpr9k-1-1-sam_logs_all.tar
1 19302400 Feb 23 11:11:07 2016 fpr9k-1-2-sam_logs_all.tar
1 16312320 Feb 23 11:06:53 2016 fpr9k-1-3-sam_logs_all.tar
1 2841476 Feb 22 18:47:00 2016 fxos-dplug.5.0.3.N2.3.13.67g.gSSA
2      4096 Aug 05 15:38:58 2015 lost+found/
1      25 Dec 01 11:11:50 2015 packet-capture
1 18493440 Feb 23 10:44:51 2016 sam_logs_all.tar
2      4096 Sep 14 11:23:11 2016 techsupport/
```

```
Usage for workspace://
4032679936 bytes total
324337664 bytes used
3503489024 bytes free
```

```
<#root>
```

```
FPR9K-1-A(local-mgmt)#
```

```
dir volatile:/
```

```
1 66 Oct 27 08:17:48 2016 xmlout_5816
```

```
Usage for volatile://  
251658240 bytes total  
4096 bytes used  
251654144 bytes free
```

To check the boot flash free space. Note that this output also shows the workspace size and usage:

```
<#root>
```

```
FPR9K-1-A#
```

```
scope fabric-interconnect a
```

```
FPR9K-1-A /fabric-interconnect #
```

```
show storage
```

```
Storage on local flash drive of fabric interconnect:  
  Partition      Size (MBytes)  Used Percentage  
-----  
bootflash      106490         9  
opt             3870           2  
spare          5767           1  
usbdrive       Nothing        Empty  
workspace      3845           9
```

Q. How to Reset the Configuration of FXOS to Factory Defaults?

Use this command:

```
<#root>
```

```
FPR9K-1-A#
```

```
connect local-mgmt
```

```
FPR9K-1-A(local-mgmt)#
```

```
erase configuration
```

Note: This reboots the system and erases the entire configuration, including the mgmt IP address. Therefore, ensure a console is connected. Once the system reboots, the setup application runs and you can re-enter the management configuration information.

Example

```
<#root>
```

```
FPR9K-1#
```

```
connect local-mgmt
```

```
FPR9K-1(local-mgmt)#
```

```
erase configuration
```

```
All configurations are erased and system must reboot. Are you sure? (yes/no):
```

```
yes
```

```
Removing all the configuration. Please wait....
```

```
/bin/rm: cannot remove directory `/bootflash/sysdebug//tftpd_logs': Device or resource busy
```

```
sudo: cannot get working directory
sudo: cannot get working directory
Configurations are cleaned up. Rebooting....
...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
2016 Oct 28 06:31:00  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Starting bcm_attach - bcm_usd
System is coming up ... Please wait ...
2016 Oct 28 06:31:06  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Finished bcm_attach... - bcm_usd
2016 Oct 28 06:31:07  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Enabling Filter on CPU port - bcm_usd
System is coming up ... Please wait ...
2016 Oct 28 06:31:11 switch %$ VDC-1 %$ %VDC_MGR-2-VDC_ONLINE: vdc 1 has come online
System is coming up ... Please wait ...
nohup: appending output to `nohup.out'
    ---- Basic System Configuration Dialog ----
    This setup utility guides you through the basic configuration of
    the system. Only minimal configuration including IP connectivity to
    the Fabric interconnect and its clustering mode is performed through these steps.
    Type Ctrl-C at any time to abort configuration and reboot system.
    To back track or make modifications to already entered values,
    complete input till end of section and answer no when prompted
    to apply configuration.
    You have chosen to setup a new Security Appliance. Continue? (y/n):
```

Q. How to Check the Bootstrap Configuration (assigned interfaces, version, etc) of a Logical Device from the FXOS CLI?

```
<#root>
FPR4100-3-A#
scope ssa
FPR4100-3-A /ssa #
show configuration
scope ssa
  enter logical-device FTD4150-3 ftd 1 standalone
    enter external-port-link Ethernet16_ftd Ethernet1/6 ftd
      set decorator ""
      set description ""
      set port-name Ethernet1/6
    exit
  enter external-port-link Ethernet17_ftd Ethernet1/7 ftd
    set decorator ""
    set description ""
    set port-name Ethernet1/7
  exit
  enter external-port-link Ethernet18_ftd Ethernet1/8 ftd
    set decorator ""
    set description ""
    set port-name Ethernet1/8
  exit
enter mgmt-bootstrap ftd
```

```

    enter bootstrap-key DNS_SERVERS
        set value 192.0.2.100
    exit
    enter bootstrap-key FIREPOWER_MANAGER_IP
        set value 10.62.148.57
    exit
    enter bootstrap-key FIREWALL_MODE
        set value routed
    exit
    enter bootstrap-key FQDN
        set value FTD4150-3.lab.com
    exit
    enter bootstrap-key SEARCH_DOMAINS
        set value lab.com
    exit
!
    enter bootstrap-key-secret PASSWORD
        set value
    exit
!
    enter bootstrap-key-secret REGISTRATION_KEY
        set value
    exit
    enter ipv4 1 firepower
        set gateway 10.62.148.1
        set ip 10.62.148.89 mask 255.255.255.128
    exit
    exit
    set description ""
    set res-profile-name ""
exit
scope slot 1
    enter app-instance ftd
        enable
        set startup-version 6.0.1.1213
    exit
    set log-level info
exit
scope app asa 9.12.4.12
    set-default
exit
scope app ftd 6.0.1.1213
    accept-license-agreement
    set-default
exit
exit

```

This is equivalent to:

Overview Interfaces **Logical Devices** Security Engine Platform Settings

Provisioning - FTD4150-3
Standalone | Cisco Firepower Threat Defense | 6.0.1.1213

Data Ports

- Ethernet1/1
- Ethernet1/2
- Ethernet1/3
- Ethernet1/4
- Ethernet1/5
- Ethernet1/6
- Ethernet1/8

Application	Version	Management IP	Gateway	Management Port	Status
FTD	6.0.1.1213	10.62.148.89	10.62.148.1	Ethernet1/7	

Ports:

Data Interfaces: Ethernet1/6 Ethernet1/8

If you want to see all FXOS configuration then add the keyword 'all' (the output is several pages long):

```
<#root>
FPR4100-3-A /ssa #
show configuration all
```

Q. How to Check the Status (port type, state) of the FXOS Interfaces?

```
<#root>
FPR4100-3-A#
scope eth-uplink

FPR4100-3-A /eth-uplink #
scope fabric a

FPR4100-3-A /eth-uplink/fabric #
show interface
```

Interface:

Port Name	Port Type	Admin State	Oper State	State Reason
Ethernet1/1	Data	Disabled	Admin Down	Administratively down
Ethernet1/2	Data	Disabled	Admin Down	Administratively down
Ethernet1/3	Data	Disabled	Admin Down	Administratively down
Ethernet1/4	Data	Disabled	Sfp Not Present	Unknown
Ethernet1/5	Data	Disabled	Admin Down	Administratively down
Ethernet1/6	Data	Enabled	Up	
Ethernet1/7	Mgmt	Enabled	Up	
Ethernet1/8	Data	Enabled	Up	

FPR4100-3-A /eth-uplink/fabric #

This is equivalent to:

The screenshot shows a network management interface with a top navigation bar (Overview, Interfaces, Logical Devices, Security Engine, Platform Settings) and a right-hand menu (System, Tools, Help, admin). Below the navigation is a hardware status overview for Network Module 1 (ports 1-8), Network Module 2 (Empty), and Network Module 3 (Empty). The main area displays a table of interfaces:

Interface	Type	Admin Speed	Operational Speed	Application	Operation State	Admin State
MGMT	Management					Enabled
Port-channel48	cluster	10gbps	indeterminate		admin-down	Disabled
Ethernet1/1	data	10gbps	10gbps		admin-down	Disabled
Ethernet1/2	data	10gbps	10gbps		admin-down	Disabled
Ethernet1/3	data	10gbps	10gbps		admin-down	Disabled
Ethernet1/4	data	10gbps	10gbps		sfp-not-present	Disabled
Ethernet1/5	data	1gbps	1gbps		admin-down	Disabled
Ethernet1/6	data	1gbps	1gbps	FTD	up	Enabled
Ethernet1/7	mgmt	1gbps	1gbps	FTD	up	Enabled
Ethernet1/8	data	1gbps	1gbps	FTD	up	Enabled

Q. How to Check the CPU and Memory Utilization on the Chassis?

```
<#root>
```

```
FPR9K-2-A#
```

```
connect fxos
```

```
FPR9K-2-A(fxos)#
```

```
show system resources
```

```
Load average: 1 minute: 1.60 5 minutes: 1.30 15 minutes: 1.15
Processes : 967 total, 1 running
CPU states : 1.8% user, 1.1% kernel, 97.1% idle
Memory usage: 16326336K total, 4359740K used, 11966596K free
```

Note: The total shown in the output can be different even for 2 devices that belong to the same model. Specifically, the total is taken from the free command output which in turn is taken from the /proc/meminfo.

To check the memory:

```
<#root>
```

```
FPR4100-8-A /fabric-interconnect #
```

```
show detail
```

```
Fabric Interconnect:
```

```
  ID: A  
  Product Name: Cisco FPR-4140-SUP  
  PID: FPR-4140-SUP  
  VID: V02  
  Vendor: Cisco Systems, Inc.  
  Serial (SN): FLM12345KL6  
  HW Revision: 0
```

```
Total Memory (MB): 8074
OOB IP Addr: 10.62.148.196
OOB Gateway: 10.62.148.129
OOB Netmask: 255.255.255.128
OOB IPv6 Address: ::
OOB IPv6 Gateway: ::
Prefix: 64
Operability: Operable
Thermal Status: Ok
Current Task 1:
Current Task 2:
Current Task 3:
```

To verify the per-process memory utilization check (RES = Physical Memory):

<#root>

FPR4100-2-A-A#

connect local-mgmt

FPR4100-2-A-A(local-mgmt)#

show processes

```
Cpu(s): 8.0%us, 4.2%sy, 3.9%ni, 83.8%id, 0.0%wa, 0.0%hi, 0.1%si, 0.0%st
Mem: 8267648k total, 3866552k used, 4401096k free, 288k buffers
Swap: 0k total, 0k used, 0k free, 1870528k cached
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
5024	root	-2	0	354m	114m	34m	R	43	1.4	7976:51	/isan/bin/bcm_usd
1096	root	20	0	10352	3992	3332	S	0	0.0	0:00.28	sshd: admin@pts/1
1140	root	20	0	117m	78m	53m	S	0	1.0	0:00.42	/isan/bin/ucssh --ucs-mgmt -p admin
1856	root	20	0	2404	632	512	S	0	0.0	2:29.32	/nuova/bin/cmcomon -f /etc/cmcomon.conf
1859	root	20	0	23804	1932	1532	S	0	0.0	1427:47	dmserver -F
1860	root	20	0	2244	472	404	S	0	0.0	0:00.01	/sbin/hotplug2 --persistent --set-rules-fi
1861	root	20	0	57116	10m	6552	S	0	0.1	7:28.76	/isan/sbin/sysmgr -V
1864	root	20	0	14044	4136	1072	S	0	0.1	1:06.19	rsyslogd -c3 -i/var/run/rsyslogd.pid
4909	root	20	0	3568	1100	876	S	0	0.0	0:00.48	/isan/sbin/xinetd -syslog local7 -loop 250
4911	root	20	0	58232	12m	6152	S	0	0.2	18:39.24	/isan/sbin/syslogd -d -n -m 0 -r
4912	root	20	0	20076	3532	2368	S	0	0.0	0:00.02	/isan/bin/sdwrapd
4913	root	21	1	2756	300	192	S	0	0.0	0:00.04	/usr/sbin/in.tftpd -l -c -s /bootflash
4914	root	20	0	58312	17m	8724	S	0	0.2	13:45.34	/isan/bin/pfm
4937	root	20	0	2208	332	272	S	0	0.0	0:00.01	/sbin/klogd -2 -x -c 1
4939	root	20	0	26692	4656	3620	S	0	0.1	0:24.01	/isan/bin/vshd

...

Tip:

1. Collect the show process memory output
2. Paste the output into a file on a Linux machine (cat > top.log)
3. Sort the file based on the RES column

This shows you the GBytes, the MBytes, and so on

<#root>

```
mzafeiro@MZAFEIRO-JA2YS:$
```

```
cat top.log | sort -v -k 6
```

```
1954 root      20   0 1645m 1.6g 1372 S  0.0 20.7 793:32.99 dmserver
7556 root      20   0  207m 9.8m 6184 S  0.0  0.1  73:52.25 udld
5563 root      20   0  333m 9.8m 7032 S  0.0  0.1   5:08.65 cdpd
5523 root      20   0  327m 103m  28m S  0.0  1.3   0:12.38 afm
24040 daemon    23   3  592m 115m  33m S  0.0  1.5  74:56.57 httpd
5329 root      -2   0  384m 132m  29m S  9.4  1.7 27130:09 bcm_usd
5317 root      20   0  401m 150m  35m S  0.0  1.9  33:19.05 fwm
5625 root      24   4  450m 179m  35m S  0.0  2.3 275:38.25 svc_sam_statsAG
5614 root      23   3  495m 247m  54m S  0.0  3.2 355:59.95 svc_sam_dme
21688 root      20   0  2672 1080  880 S  0.0  0.0   3:15.29 ntpd
8819 root      35  15  2408 1084  748 R  5.6  0.0   0:00.06 top
```

Q. How to Check Chassis Interface Transceiver Type?

In Firepower 4100/9300 use this command:

```
<#root>
```

```
FPR9K-2-A#
```

```
connect fxos
```

```
FPR9K-2-A(fxos)#
```

```
show interface e1/3 transceiver details
```

```
Ethernet1/3
```

```
transceiver is present
type is 1000base-T
name is CISCO-METHODE
part number is SP7041-R
revision is
serial number is FLM12345KL6
nominal bitrate is 1300 MBit/sec
Link length supported for copper is 100 m
cisco id is --
cisco extended id number is 4
```

```
DOM is not supported
```

```
FPR9K-2-A(fxos)#
```

In the case of fiber, the output is:

```
<#root>
```

```
FPR4100-1-A(fxos)#
```

```
show interface e1/1 transceiver details
```

```
Ethernet1/1
```

```
transceiver is present
type is 10Gbase-SR
name is CISCO-JDSU
part number is PLRXPL-SC-S43-CS
revision is 1
serial number is FLM12345KL6
nominal bitrate is 10300 MBit/sec
Link length supported for 50/125um OM2 fiber is 82 m
Link length supported for 62.5/125um fiber is 26 m
Link length supported for 50/125um OM3 fiber is 300 m
cisco id is --
cisco extended id number is 4

Calibration info not available
```

In Firepower 1000/2100 use this command:

```
<#root>
FPR2100#
scope fabric-interconnect

FPR2100 /fabric-interconnect #
show inventory expand detail | egrep ignore-case "Port|Xcvr"

...
Slot 1 Port 13:
  Xcvr: 10 Gbase SR
  Xcvr Model: PLRXPL-SC-S43-C
  Xcvr Vendor: Cisco Systems, Inc.
  Xcvr Serial: ABCD1234
Slot 1 Port 14:
  Xcvr: 10 Gbase SR
  Xcvr Model: PLRXPL-SC-S43-C
  Xcvr Vendor: Cisco Systems, Inc.
  Xcvr Serial: VWXY1234
Slot 1 Port 15:
  Xcvr: Non Present
  Xcvr Model:
  Xcvr Vendor:
  Xcvr Serial:
Slot 1 Port 16:
  Xcvr: Non Present
  Xcvr Model:
  Xcvr Vendor:
  Xcvr Serial:
```

Q. How to Check the Module/Blade/Server/Netmod Info (HW type/PID/SN/Memory/Cores etc)?

This command shows the Product ID (PID) and Serial Number (SN) of chassis and modules (netmods)

```
<#root>
```

```
FP4110-7-A#
```

```
connect fxos
```

```
FP4110-7-A(fxos)#
```

```
show inventory
```

```
NAME: "Chassis", DESCR: "Firepower 41xx Security Appliance"  
PID: FPR-4110-SUP      , VID: V02 , SN: FLM12345KL6 <--- Chassis SN
```

```
NAME: "Module 1", DESCR: "Firepower 41xx Supervisor"  
PID: FPR-4110-SUP      , VID: V02 , SN: FLM12345KL6 <--- Embedded module on FPR4100
```

```
NAME: "Module 3", DESCR: "Firepower 6x10G FTW SFP+ SR NM"  
PID: FPR-NM-6X10SR-F   , VID: V00 , SN: FLM12345KL6 <--- FTW Netmode SN
```

FPR4110 has 2 slots for network modules (2 and 3) and the device in the example has an FTW netmod installed in slot 3.

```
<#root>
```

```
FPR9K-1-A#
```

```
scope chassis 1
```

```
FPR9K-1-A /chassis #
```

```
show inventory server
```

```
Chassis 1:
```

```
Servers:
```

```
Server 1/1:
```

```
Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module  
Equipped PID: FPR9K-SM-36  
Equipped VID: V01  
Equipped Serial (SN): FLM12345KL6  
Slot Status: Equipped  
Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module  
Acknowledged PID: FPR9K-SM-36  
Acknowledged VID: V01  
Acknowledged Serial (SN): FLM12345KL6  
Acknowledged Memory (MB): 262144  
Acknowledged Effective Memory (MB): 262144  
Acknowledged Cores: 36  
Acknowledged Adapters: 2
```

```
Server 1/2:
```

```
Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module  
Equipped PID: FPR9K-SM-36  
Equipped VID: V01  
Equipped Serial (SN): FLM12345KL6  
Slot Status: Equipped
```

Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
Acknowledged PID: FPR9K-SM-36
Acknowledged VID: V01
Acknowledged Serial (SN): FLM12345KL6
Acknowledged Memory (MB): 262144
Acknowledged Effective Memory (MB): 262144
Acknowledged Cores: 36
Acknowledged Adapters: 2

Server 1/3:

Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module
Equipped PID: FPR9K-SM-36
Equipped VID: V01
Equipped Serial (SN): FLM12345KL6
Slot Status: Equipped
Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
Acknowledged PID: FPR9K-SM-36
Acknowledged VID: V01
Acknowledged Serial (SN): FLM12345KL6
Acknowledged Memory (MB): 262144
Acknowledged Effective Memory (MB): 262144
Acknowledged Cores: 36
Acknowledged Adapters: 2

Server1/1 = module/blade 1

Server1/2 = module/blade 2

Server1/3 = module/blade 3

FPR41xx model PIDs:

- FPR4K-SM-12 = FPR4110
- FPR4K-SM-24 = FPR4120
- FPR4K-SM-36 = FPR4140
- FPR4K-SM-44 = FPR4150
- FPR4K-SM-24S = FPR4115
- FPR4K-SM-32S = FPR4125
- FPR4K-SM-44S = FPR4145

You can also get other information under scope server <chassis-id/blade-id>:

```
<#root>
```

```
FP9300-A#
```

```
scope server 1/1
```

```
FP9300-A /chassis/server #
```

```
show inventory
```

```
<CR>
```

```
> Redirect it to a file
```

```
>> Redirect it to a file in append mode
```

```
adapter Adapter
```

```
bios Bios
```

board Board
cpu Cpu
detail Detail
expand Expand
memory Memory
mgmt Mgmt
storage Storage
| Pipe command output to filter

FP9300-A /chassis/server #

show inventory storage

Server 1/1:

Name:
User Label:
Equipped PID: FPR9K-SM-36
Equipped VID: V01
Equipped Serial (SN): FLM12345PBD
Slot Status: Equipped
Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
Acknowledged PID: FPR9K-SM-36
Acknowledged VID: 01
Acknowledged Serial (SN): FLM67890PBD
Acknowledged Memory (MB): 262144
Acknowledged Effective Memory (MB): 262144
Acknowledged Cores: 36
Acknowledged Adapters: 2
Motherboard:
Product Name: Cisco Firepower 9000 Series High Performance Security Module
PID: FPR9K-SM-36
VID: V01
Vendor: Cisco Systems Inc
Serial (SN): FLM12345KL6
HW Revision: 0

RAID Controller 1:

Type: SAS
Vendor: Cisco Systems Inc
Model: UCSB-MRAID12G
Serial: FLM12345KL6
HW Revision: C0
PCI Addr: 01:00.0
Raid Support: RAID0, RAID1
OOB Interface Supported: Yes
Rebuild Rate: 30
Controller Status: Optimal

Local Disk 1:

Product Name:
PID:
VID:
Vendor: TOSHIBA
Model: PX02SMF080
Vendor Description:
Serial: FLM12345KL6
HW Rev: 0
Block Size: 512
Blocks: 1560545280
Operability: Operable
Oper Qualifier Reason: N/A

Presence: Equipped
Size (MB): 761985
Drive State: Online
Power State: Active
Link Speed: 12 Gbps
Device Type: SSD

Local Disk 2:

Product Name:
PID:
VID:
Vendor: TOSHIBA
Model: PX02SMF080
Vendor Description:
Serial: FLM12345KL6
HW Rev: 0
Block Size: 512
Blocks: 1560545280
Operability: Operable
Oper Qualifier Reason: N/A
Presence: Equipped
Size (MB): 761985
Drive State: Online
Power State: Active
Link Speed: 12 Gbps
Device Type: SSD

Local Disk Config Definition:

Mode: RAID 1 Mirrored
Description:
Protect Configuration: Yes

Virtual Drive 0:

Type: RAID 1 Mirrored
Block Size: 512
Blocks: 1560545280
Operability: Operable
Presence: Equipped
Size (MB): 761985
Lifecycle: Allocated
Drive State: Optimal
Strip Size (KB): 64
Access Policy: Read Write
Read Policy: Normal
Configured Write Cache Policy: Write Through
Actual Write Cache Policy: Write Through
IO Policy: Direct
Drive Cache: No Change
Bootable: True

FP9300-A /chassis/server #



Note: On FP41xx platforms, since they are not using RAID, the show inventory storage displays the Controller Status as Unknown. The main reason they are not RAID is that the second SSD is used for other functions like MSP (Malware Storage Pack) on an FTD logical device.

Q. How to Delete an ASA or FTD Image from FXOS GUI and CLI?











From FCM GUI:

To delete from the GUI navigate to System > Updates and delete the image:

Overview Interfaces Logical Devices Security Engine Platform Settings **System** Tools Help

Configuration Licensing **Updates** User Man

Available Updates Refresh Upload Image Filter..

Image Name	Type	Version	Status	Build Date	
fxos-k9.2.0.1.23.SPA	platform-bundle	2.0(1.23)	Not-Installed	05/18/2016	 
fxos-k9.2.0.1.37.SPA	platform-bundle	2.0(1.37)	Not-Installed	06/11/2016	 
fxos-k9.2.0.1.86.SPA	platform-bundle	2.0(1.86)	Installed	10/15/2016	
fxos-k9.2.0.1.4.SPA	platform-bundle	2.0(1.4)	Not-Installed	04/06/2016	 
cisco-ftd.6.0.1.1213.csp	ftd	6.0.1.1213	Not-Installed	03/19/2016	
cisco-ftd.6.1.0.330.csp	ftd	6.1.0.330	Installed	08/26/2016	
cisco-asa.9.6.1.csp	asa	9.6.1	Not-Installed	03/18/2016	

From FXOS CLI

```
<#root>
```

```
FPR4100#
```

```
scope ssa
```

```
FPR4100 /ssa #
```

```
show app
```

```
Application:
```

Name	Version	Description	Author	Deploy Type	CSP Type	Is Default App
asa	9.6.1	N/A	cisco	Native	Application	Yes
ftd	6.0.1.1213	N/A	cisco	Native	Application	No
ftd	6.1.0.330	N/A	cisco	Native	Application	Yes

```
FPR4100 /ssa #
```

```
delete app asa 9.6.1
```

```
FPR4100 /ssa* #
```

```
commit
```

```
FPR4100 /ssa #
```

```
show app
```

```
Application:
```

Name	Version	Description	Author	Deploy Type	CSP Type	Is Default App
ftd	6.0.1.1213	N/A	cisco	Native	Application	No
ftd	6.1.0.330	N/A	cisco	Native	Application	Yes

Q. How to Check the FXOS Version from the CLI?

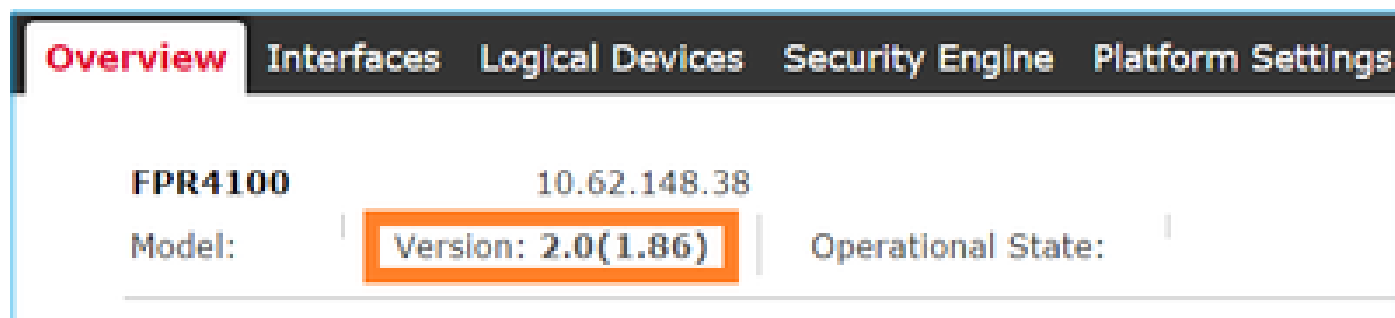
There are a few ways to do this.

Way 1

```
<#root>
FPR4100#
show fabric-interconnect firmware

Fabric Interconnect A:
  Running-Kern-Vers: 5.0(3)N2(4.01.65)
  Running-Sys-Vers: 5.0(3)N2(4.01.65)
  Package-Vers: 2.0(1.86)
  Startup-Kern-Vers: 5.0(3)N2(4.01.65)
  Startup-Sys-Vers: 5.0(3)N2(4.01.65)
  Act-Kern-Status: Ready
  Act-Sys-Status: Ready
  Bootloader-Vers:
```

This is the same as it can be seen from the FCM GUI:



Way 2

```
<#root>
FP4145-1#
show version

Version: 2.6(1.192)
Startup-Vers: 2.6(1.192)
```

Q. How to Verify Interfaces MTU on FXOS?

The Firepower 4100/9300 chassis has support for jumbo frames enabled by default. You can check the interface MTU with this command:

```
<#root>
```

```
FPR9K-1-A#
```

```
connect fxos
```

```
FPR9K-1-A(fxos)# show hardware internal bcm-usd info phy-info all
```

```
+-----+-----+-----+
| port phy info |
+-----+-----+-----+
front-port : 1          asic-port : 125      sfp installed : yes
  enable : ena          speed : 1G           autoneg : on
interface : (10)XFI     duplex: half         linkscan : sw
  pause_tx : 0x0        pause_rx : 0x0
```

```
max frame : 9216
```

```
local_advert : 0x20      remote_advert : 0x420  port_40g_enable : 0
local_fault : 0x1        remote_fault : 0x0
xcvr sfp type : (1)PHY_SFP_1G_COPPER
TSC4 registers:
txfir(0xc252):0x0000    txdrv(0xc017):0x0000    lane(0x9003):0x1b1b
Asic 56846 Registers
signal_detect(1.0x81d0):0x0000    link_status(1.0x81d1):0x0000
rx_link_state(1.0x0):0x0000      pcs_rx_tx_fault(1.0x0008):0x0000
pcs_block_status_0x20(1.0x20) :0x0000
pcs_block_status_0x21(1.0x021) : 0x0000
transmitter_reg(1.0x8000):0x0000    micro_ver(1.0x81f0):0x0000
```

Alternatively, check MTU in the fxos command shell:

```
<#root>
```

```
KSEC-FPR4112-4#
```

```
connect fxos
```

```
<output is skipped>
```

```
KSEC-FPR4112-4(fxos)#
```

```
show interface ethernet 1/1
```

```
Ethernet1/1 is up
Dedicated Interface
Hardware: 1000/10000 Ethernet, address: 14a2.a02f.07c0 (bia 14a2.a02f.07c0)
Description: U: Uplink
```

```
MTU 9216 bytes
```

```
, BW 1000000 Kbit, DLY 10 usec
```

Q. How to Check Installed Applications?

From the chassis CLI use the command `scope ssa` and then `show slot expand detail`.

The same information can be found on file **sam_techsupportinfo** within the chassis show tech bundle.

```
<#root>
```

```
~scope ssa~
```

```
~show slot expand detail~
```

Slot:

Slot ID: 1
Log Level: Info
Admin State: Ok
Operational State: Online
Disk State: Ok
Clear Log Data: Available

Application Instance:

Application Name: asa
Admin State: Enabled
Operational State: Online
Running Version: 9.6.2
Startup Version: 9.6.2
Hotfixes:
Externally Upgraded: No
Cluster Oper State: Not Applicable
Current Job Type: Start
Current Job Progress: 100
Current Job State: Succeeded
Clear Log Data: Available
Error Msg:
Current Task:

App Attribute:

App Attribute Key: mgmt-ip
Value: 0.0.0.0

App Attribute Key: mgmt-url
Value: https://0.0.0.0/

Heartbeat:

Last Received Time: 2017-03-15T10:25:02.220
Heartbeat Interval: 1
Max Number of Missed heartbeats Permitted: 3

Resource:

Allocated Core NR: 46
Allocated RAM (KB): 233968896
Allocated Data Disk (KB): 20971528
Allocated Binary Disk (KB): 174964
Allocated Secondary Disk (KB): 0

Heartbeat:

Last Received Time: 2017-03-15T10:25:00.447
Heartbeat Interval: 5
Max Number of Missed heartbeats Permitted: 3

Monitor:

OS Version: 9.6(1.150)
CPU Total Load 1 min Avg: 48.110001
CPU Total Load 5 min Avg: 48.110001
CPU Total Load 15 min Avg: 48.110001

Memory Total (KB): 264377600
Memory Free (KB): 236835112
Memory Used (KB): 27542488
Memory App Total (KB): 233968896
Disk File System Count: 5
Blade Uptime: up 1 day, 6:56
Last Updated Timestamp: 2017-03-15T10:24:10.306

Disk File System:

File System: /dev/sda1
Mount Point: /mnt/boot
Disk Total (KB): 7796848
Disk Free (KB): 7694456
Disk Used (KB): 102392

File System: /dev/sda2
Mount Point: /opt/cisco/config
Disk Total (KB): 1923084
Disk Free (KB): 1734420
Disk Used (KB): 90976

File System: /dev/sda3
Mount Point: /opt/cisco/platform/logs
Disk Total (KB): 4805760
Disk Free (KB): 4412604
Disk Used (KB): 149036

File System: /dev/sda5
Mount Point: /var/data/cores
Disk Total (KB): 48061320
Disk Free (KB): 43713008
Disk Used (KB): 1906892

File System: /dev/sda6
Mount Point: /opt/cisco/csp
Disk Total (KB): 716442836
Disk Free (KB): 714947696
Disk Used (KB): 1495140

Q. How to Verify the Port-Channel Configuration from FXOS CLI?

Port-Channel verification commands

Check 1

To verify which Port-Channels are currently configured on the chassis:

```
<#root>
```

```
FPR9K-1-A#
```

```
connect fxos
```

```
FPR9K-1-A(fxos)# show port-channel 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(SU)	Eth	LACP	Eth1/4(P)	Eth1/5(P)
15	Po15(SD)	Eth	LACP	Eth1/6(D)	
48	Po48(SU)	Eth	LACP	Eth1/2(P)	Eth1/3(P)

```
-----
```

Check 2

To verify the Port-Channels allocated to a logical device:

```

<#root>
FPR9K-1-A#
scope ssa
FPR9K-1-A /ssa #
show configuration

scope ssa
  enter logical-device ftd_682021968 ftd "1,2,3" clustered
    enter cluster-bootstrap
      set chassis-id 1
      set ipv4 gateway 0.0.0.0
      set ipv4 pool 0.0.0.0 0.0.0.0
      set ipv6 gateway ::
      set ipv6 pool :: ::
      set virtual ipv4 0.0.0.0 mask 0.0.0.0
      set virtual ipv6 :: prefix-length ""
    !
      set key
      set mode spanned-etherchannel
      set name 682021968
      set site-id 0
    exit
  enter external-port-link Ethernet11_ftd Ethernet1/1 ftd
    set decorator ""
    set description ""
    set port-name Ethernet1/1
  exit
  enter external-port-link PC11_ftd Port-channel11 ftd
    set decorator ""
    set description ""
    set port-name Port-channel11
  exit
  enter external-port-link PC48_ftd Port-channel48 ftd
    set decorator ""
    set description ""
    set port-name Port-channel48
  exit

```

Check 3

To check the Port-Channel traffic statistics per port:

```
<#root>
FPR9K-1-A(fxos)#
show port-channel traffic interface port-channel 11
```

ChanId	Port	Rx-Ucst	Tx-Ucst	Rx-Mcst	Tx-Mcst	Rx-Bcst	Tx-Bcst
11	Eth1/4	62.91%	0.0%	58.90%	49.99%	100.00%	0.0%
11	Eth1/5	37.08%	0.0%	41.09%	50.00%	0.0%	0.0%

Check 4

To check the details of a specific Port-Channel:

```
<#root>
FPR9K-1-A(fxos)#
show port-channel database interface port-channel 11
```

```
port-channel11
  Last membership update is successful
  2 ports in total, 2 ports up
  First operational port is Ethernet1/4
  Age of the port-channel is 0d:20h:26m:27s
  Time since last bundle is 0d:18h:29m:07s
  Last bundled member is Ethernet1/5
  Ports:  Ethernet1/4    [active ] [up] *
          Ethernet1/5    [active ] [up]
```

Check 5

To check the local LACP system-id:

```
<#root>
FPR9K-1-A(fxos)#
show lacp system-identifier
```

```
32768,b0-aa-77-2f-81-bb
```

Check 6

To check the LACP system-ID of the upstream devices along with the LACP status flags:

```
<#root>
```


FPR9K-1-A(fxos)#

show lacp neighbor

Flags: S - Device is sending Slow LACPDUs F - Device is sending Fast LACPDUs
A - Device is in Active mode P - Device is in Passive mode

port-channel11 neighbors

Partner's information

Port	Partner System ID	Partner Port Number	Age	Partner Flags
Eth1/4	32768,4-62-73-d2-65-0	0x118	66828	FA
	LACP Partner Port Priority	Partner Oper Key		Partner Port State
	32768	0xb		0x3d

Partner's information

Port	Partner System ID	Partner Port Number	Age	Partner Flags
Eth1/5	32768,4-62-73-d2-65-0	0x119	66826	FA
	LACP Partner Port Priority	Partner Oper Key		Partner Port State
	32768	0xb		0x3d

Check 7

To check the Port-Channel event history:

<#root>

FPR9K-1-A(fxos)#

show port-channel internal event-history all

Low Priority Pending queue: len(0), max len(1) [Thu Apr 6 11:07:48 2017]
High Priority Pending queue: len(0), max len(16) [Thu Apr 6 11:07:48 2017]
PCM Control Block info:
pcm_max_channels : 4096
pcm_max_channel_in_use : 48
pc count : 3
hif-pc count : 0
Max PC Cnt : 104
Load-defer timeout : 120

=====

PORT CHANNELS:

2LvPC PO in system : 0

port-channel11

channel : 11
bundle : 65535
ifindex : 0x1600000a
admin mode : active
oper mode : active
fop ifindex : 0x1a003000
nports : 2
active : 2
pre cfg : 0
l1l : 0x0 (0)
lif : 0x0

```

iod          : 0x78 (120)
global id   : 3
flag        : 0
lock count  : 0
num. of SIs: 0
ac mbrs     : 0 0
lacp graceful conv disable : 0
lacp suspend indiv disable : 1
pc min-links      : 1
pc max-bundle     : 16
pc max active members : 32
pc is-suspend-minlinks : 0
port load defer enable : 0
lacp fast-select-hot-standby disable : 0
ethpm bundle lock count : 0
bundle res global id   : 2
Members:
Ethernet1/4 [bundle_no = 0]
Ethernet1/5 [bundle_no = 0]
port-channel external lock:
Lock Info: resource [eth-port-channel 11]
  type[0] p_gwrap[(nil)]
    FREE @ 246108 usecs after Wed Apr  5 14:18:10 2017
  type[1] p_gwrap[(nil)]
    FREE @ 436471 usecs after Wed Apr  5 16:15:30 2017
  type[2] p_gwrap[(nil)]
    FREE @ 436367 usecs after Wed Apr  5 16:15:30 2017
0x1600000a
internal (ethpm bundle) lock:
Lock Info: resource [eth-port-channel 11]
  type[0] p_gwrap[(nil)]
    FREE @ 246083 usecs after Wed Apr  5 14:18:10 2017
  type[1] p_gwrap[(nil)]
    FREE @ 610546 usecs after Wed Apr  5 16:19:04 2017
  type[2] p_gwrap[(nil)]
    FREE @ 610437 usecs after Wed Apr  5 16:19:04 2017
0x1600000a

```

>>>>FSM: <eth-port-channel 11> has 194 logged transitions<<<<<

- 1) FSM:<eth-port-channel 11> Transition at 557291 usecs after Wed Apr 5 16:04:27 2017
 Previous state: [PCM_PC_ST_WAIT_REL_RESRC]
 Triggered event: [PCM_PC_EV_REL_RESRC_DONE]
 Next state: [PCM_PC_ST_INIT]
- 2) FSM:<eth-port-channel 11> Transition at 49036 usecs after Wed Apr 5 16:07:18 2017
 Previous state: [PCM_PC_ST_INIT]
 Triggered event: [PCM_PC_EV_L2_CREATE]
 Next state: [PCM_PC_ST_WAIT_CREATE]
- 3) FSM:<eth-port-channel 11> Transition at 49053 usecs after Wed Apr 5 16:07:18 2017
 Previous state: [PCM_PC_ST_WAIT_CREATE]
 Triggered event: [PCM_PC_EV_L2_CREATED]
 Next state: [PCM_PC_ST_CREATED]

Check 8

Debug lacp all produces a very big output:

<#root>

FPR9K-1-A(fxos)#

debug lACP all

```
2017 Jul 11 10:42:23.854160 lACP: lACP_pkt_parse_pdu(569): lACP_pkt_parse_pdu: got packet from actorpor
2017 Jul 11 10:42:23.854177 lACP: lACP_pkt_compute_port_params(1163): Ethernet1/3(0x1a002000): pa aggre
2017 Jul 11 10:42:23.854190 lACP: lACP_pkt_compute_port_params(1170): p_e1=(8000, 2-0-0-0-0-1, 136, 800
2017 Jul 11 10:42:23.854198 lACP: lACP_pkt_compute_port_params(1172): p_e1_pkt=(8000, 2-0-0-0-0-1, 136,
2017 Jul 11 10:42:23.854207 lACP: lACP_utils_get_obj_type_from_ifidx(390): lACP_utils_get_obj_type_from
2017 Jul 11 10:42:23.854218 lACP: Malloc in fu_fsm_event_new@./utils/fsmutils/fsm.c[5317]-ty[1]0x9bf71
2017 Jul 11 10:42:23.854228 lACP: lACP_utils_cr_fsm_event(572): Called from lACP_utils_create_fsm_event
2017 Jul 11 10:42:23.854237 lACP: Malloc in fu_fsm_event_pair_new@./utils/fsmutils/fsm.c[5327]-ty[2]0x
2017 Jul 11 10:42:23.854248 lACP: fu_fsm_execute_all: match_msg_id(0), log_already_open(0)
2017 Jul 11 10:42:23.854257 lACP: Malloc in fu_fsm_event_new@./utils/fsmutils/fsm.c[5317]-ty[1]0x9bf71
2017 Jul 11 10:42:23.854268 lACP: fu_fsm_execute: (Ethernet1/3)
2017 Jul 11 10:42:23.854275 lACP:     current state [LACP_ST_PORT_MEMBER_COLLECTING_AND_DISTRIBUTING_EN
2017 Jul 11 10:42:23.854283 lACP:     current event [LACP_EV_PARTNER_PDU_IN_SYNC_COLLECT_ENABLED_DISTRI
2017 Jul 11 10:42:23.854291 lACP:     next state      [FSM_ST_NO_CHANGE]
2017 Jul 11 10:42:23.854304 lACP: lACP_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:23.854314 lACP: lACP_proto_record_pdu(2266): Recording PDU for LACP pkt on IF Etherne
2017 Jul 11 10:42:23.854325 lACP: lACP_proto_set_state(900): IF Ethernet1/3(0x1a002000): Set end ActorE
2017 Jul 11 10:42:23.854335 lACP: lACP_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:23.854344 lACP: lACP_proto_update_ntt(2211): updateNTT called for IF Ethernet1/3(0x1a
2017 Jul 11 10:42:23.854355 lACP: lACP_proto_get_state(969): IF Ethernet1/3(0x1a002000): end ActorEnd(1
2017 Jul 11 10:42:23.854362 lACP: lACP_timer_start_w_chgd_time(681): lACP_timer_start_w_chgd_time: star
2017 Jul 11 10:42:23.854377 lACP: lACP_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if
2017 Jul 11 10:42:23.854386 lACP: lACP_timer_start(638): Timer period=15 seconds
2017 Jul 11 10:42:23.854396 lACP: Free ptr in fu_fsm_execute@./utils/fsmutils/fsm.c[1091] for addr 0x9
2017 Jul 11 10:42:23.854408 lACP: fu_fsm_execute_all: done processing event LACP_EV_PARTNER_PDU_IN_SYNC
2017 Jul 11 10:42:23.854419 lACP: fu_mts_drop ref 0x9bf7320 opc 90117
2017 Jul 11 10:42:23.854434 lACP: fu_fsm_execute_all: MTS_OPC_NET_L2_RX_DATA_HDR(msg_id 2623696) droppe
2017 Jul 11 10:42:23.854445 lACP: fu_fsm_engine_post_event_processing
2017 Jul 11 10:42:23.854453 lACP: end of while in fu_fsm_engine
2017 Jul 11 10:42:23.854461 lACP: fu_handle_process_hot_plugin_msg: Entered the function line 143
2017 Jul 11 10:42:23.854468 lACP: begin fu_fsm_engine: line[2357]
2017 Jul 11 10:42:24.361501 lACP: lACP_pkt_encode_pdu_helper(770): lACP_pkt_encode_pdu_helper: pkt_len=
2017 Jul 11 10:42:24.361530 lACP: lACP_pkt_encode_pdu_helper(797): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361542 lACP: lACP_debug_wrapper_tl(1718): Executing [mcecm_api_is_pc_mcec]
2017 Jul 11 10:42:24.361551 lACP: lACP_debug_wrapper_tl(1718): input: if_index = [0x16000000]
2017 Jul 11 10:42:24.361559 lACP: lACP_debug_wrapper_tl(1718): Executing [mcecm_cache_is_pc_mcec]
2017 Jul 11 10:42:24.361568 lACP: lACP_debug_wrapper_tl(1718): output:0
2017 Jul 11 10:42:24.361589 lACP: lACP_pkt_encode_pdu_helper(842): 0x1a002000: Set short_timeout to per
2017 Jul 11 10:42:24.361599 lACP: lACP_pkt_encode_pdu_helper(879): lACP_pkt_encode_pdu_helper: actor-po
2017 Jul 11 10:42:24.361612 lACP: lACP_pkt_encode_pdu_helper(906): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361624 lACP: lACP_pkt_encode_pdu_helper(910): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361636 lACP: lACP_net_tx_data(206): lACP_net_tx_data: Sending buffer with length 1
2017 Jul 11 10:42:24.361648 lACP: lACP_net_tx_data(215): 01 01 01 14 ffff
2017 Jul 11 10:42:24.361658 lACP: lACP_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361668 lACP: lACP_net_tx_data(215): 00 00 00 02 14 ffff
2017 Jul 11 10:42:24.361678 lACP: lACP_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361689 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361700 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361710 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361721 lACP: lACP_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 10:42:24.361753 lACP: lACP_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:24.361764 lACP: lACP_proto_restart_tx_timer(1802): lACP_proto_restart_tx_timer: got e
2017 Jul 11 10:42:24.361773 lACP: lACP_proto_restart_tx_timer(1825): lACP_proto_restart_tx_timer: flag
2017 Jul 11 10:42:24.361782 lACP: lACP_timer_start_w_chgd_time(681): lACP_timer_start_w_chgd_time: star
2017 Jul 11 10:42:24.361798 lACP: lACP_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if
2017 Jul 11 10:42:24.361807 lACP: lACP_timer_start(638): Timer period=1 seconds
2017 Jul 11 10:42:24.361820 lACP: lACP_pkt_encode_pdu_helper(770): lACP_pkt_encode_pdu_helper: pkt_len=
```

```

2017 Jul 11 10:42:24.361833 lACP: lACP_pkt_encode_pdu_helper(797): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361841 lACP: lACP_debug_wrapper_tl(1718): Executing [mcecm_api_is_pc_mcec]
2017 Jul 11 10:42:24.361849 lACP: lACP_debug_wrapper_tl(1718): input: if_index = [0x16000000]
2017 Jul 11 10:42:24.361857 lACP: lACP_debug_wrapper_tl(1718): Executing [mcecm_cache_is_pc_mcec]
2017 Jul 11 10:42:24.361865 lACP: lACP_debug_wrapper_tl(1718): output:0
2017 Jul 11 10:42:24.361879 lACP: lACP_pkt_encode_pdu_helper(842): 0x1a003000: Set short_timeout to per
2017 Jul 11 10:42:24.361888 lACP: lACP_pkt_encode_pdu_helper(879): lACP_pkt_encode_pdu_helper: actor-po
2017 Jul 11 10:42:24.361899 lACP: lACP_pkt_encode_pdu_helper(906): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361910 lACP: lACP_pkt_encode_pdu_helper(910): lACP_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361920 lACP: lACP_net_tx_data(206): lACP_net_tx_data: Sending buffer with length 1
2017 Jul 11 10:42:24.361930 lACP: lACP_net_tx_data(215): 01 01 01 14 ffff
2017 Jul 11 10:42:24.361940 lACP: lACP_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361950 lACP: lACP_net_tx_data(215): 00 00 00 02 14 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361960 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 03 10 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361971 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361981 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.361991 lACP: lACP_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
2017 Jul 11 10:42:24.362001 lACP: lACP_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 10:42:24.362022 lACP: lACP_proto_get_state(969): IF Ethernet1/4(0x1a003000): end PartnerEnd
2017 Jul 11 10:42:24.362032 lACP: lACP_proto_restart_tx_timer(1802): lACP_proto_restart_tx_timer: got e
2017 Jul 11 10:42:24.362042 lACP: lACP_proto_restart_tx_timer(1825): lACP_proto_restart_tx_timer: flag
2017 Jul 11 10:42:24.362050 lACP: lACP_timer_start_w_chgd_time(681): lACP_timer_start_w_chgd_time: star
2017 Jul 11 10:42:24.362062 lACP: lACP_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if

```

Tip

Check if you receive LACP packets from the peer. For example, the Ethernet1/3 interface receives LACP packets, but Ethernet1/4 no:

```

2017 Jul 11 10:42:25.641920 lACP: lACP_net_get_pkt_info(746): Packet received on phy_if_idx Ethernet1/3
2017 Jul 11 10:42:25.641937 lACP: lACP_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU 1

```

Check 9

In this output the interface Ethernet1/4 is a member of Port-Channel, but is in Individual mode (Suspended on the switch side):

```
<#root>
```

```
ciscofcm01-A(fxos)#
```

```
show lACP internal event-history interface ethernet 1/4
```

```
>>>>FSM: <Ethernet1/4> has 549 logged transitions<<<<<
```

- 1) FSM:<Ethernet1/4> Transition at 385779 usecs after Wed Jul 5 13:13:03 2017
Previous state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
Triggered event: [LACP_EV_CLNUP_PHASE_II]
Next state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
- 2) FSM:<Ethernet1/4> Transition at 955546 usecs after Wed Jul 5 13:13:03 2017
Previous state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
Triggered event: [LACP_EV_LACP_ENABLED_AND_PORT_UP]

Next state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]

- 3) FSM:<Ethernet1/4> Transition at 962224 usecs after Wed Jul 5 13:13:10 2017
Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT]
Next state: [FSM_ST_NO_CHANGE]
- 4) FSM:<Ethernet1/4> Transition at 963838 usecs after Wed Jul 5 13:13:13 2017
Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT]
Next state: [FSM_ST_NO_CHANGE]
- 5) FSM:<Ethernet1/4> Transition at 964002 usecs after Wed Jul 5 13:13:13 2017
Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT_II_INDIVIDUAL]
Next state: [LACP_ST_INDIVIDUAL_OR_DEFAULT]
- 6) FSM:<Ethernet1/4> Transition at 735923 usecs after Wed Jul 5 13:13:36 2017
Previous state: [LACP_ST_INDIVIDUAL_OR_DEFAULT]
Triggered event: [LACP_EV_UNGRACEFUL_DOWN]
Next state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]

Check 10

In this output the interface Ethernet1/3 is operational and member of PortChannel1 while Ethernet1/4 although is member of PortChannel1 is in Individual mode. Note that Ethernet1/3 sends (tx) and receives (rx) packets, but Ethernet1/4 only sends (rx) no tx:

<#root>

ciscofcm01-A(fxos)#

debug lacp pkt

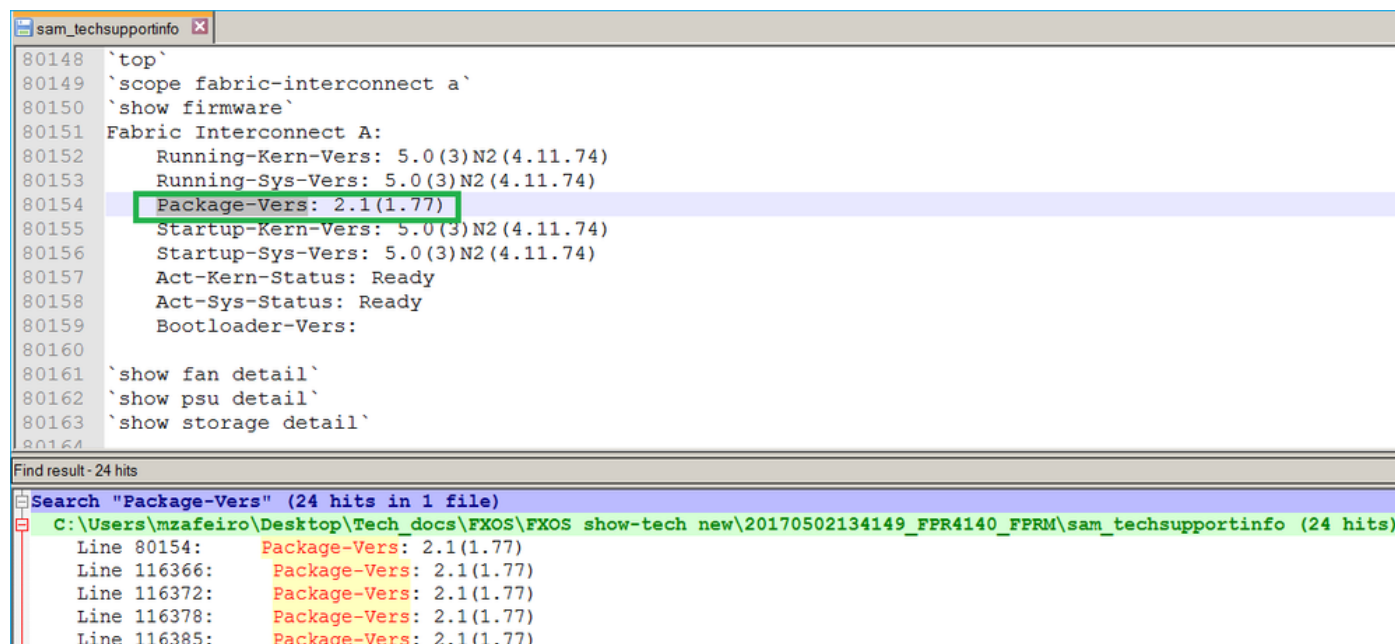
```
ciscofcm01-A(fxos)# 2017 Jul 11 11:04:05.278736 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:05.602855 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:05.983134 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:06.249929 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:06.602815 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:06.992812 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:07.163780 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:07.602814 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:08.002817 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:08.102006 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:08.612810 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:09.002811 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:09.091937 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:09.622810 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:10.002807 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:10.004411 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:10.632806 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:10.854094 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
2017 Jul 11 11:04:11.002789 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:11.642807 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110
2017 Jul 11 11:04:11.714199 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU len: 110
```

For additional information check this document:

Q. How to Find the FXOS Bundle Version from the Show Tech Output?

Way 1

In FPRM tar file extract the contents of FPRM_A_TechSupport.tar.gz file. Then open the sam_techsupportinfo file and search for Package-Vers:



The screenshot shows a terminal window with the following content:

```
80148 `top`
80149 `scope fabric-interconnect a`
80150 `show firmware`
80151 Fabric Interconnect A:
80152   Running-Kern-Vers: 5.0(3)N2(4.11.74)
80153   Running-Sys-Vers: 5.0(3)N2(4.11.74)
80154   Package-Vers: 2.1(1.77)
80155   Startup-Kern-Vers: 5.0(3)N2(4.11.74)
80156   Startup-Sys-Vers: 5.0(3)N2(4.11.74)
80157   Act-Kern-Status: Ready
80158   Act-Sys-Status: Ready
80159   Bootloader-Vers:
80160
80161 `show fan detail`
80162 `show psu detail`
80163 `show storage detail`
80164
```

Below the terminal output, a search window is open showing 24 hits for the search term "Package-Vers". The search results are as follows:

```
Find result - 24 hits
Search "Package-Vers" (24 hits in 1 file)
C:\Users\mzafeiro\Desktop\Tech_docs\FXOS\FXOS show-tech new\20170502134149_FPR4140_FPRM\sam_techsupportinfo (24 hits)
Line 80154:   Package-Vers: 2.1(1.77)
Line 116366:  Package-Vers: 2.1(1.77)
Line 116372:  Package-Vers: 2.1(1.77)
Line 116378:  Package-Vers: 2.1(1.77)
Line 116385:  Package-Vers: 2.1(1.77)
```

<#root>

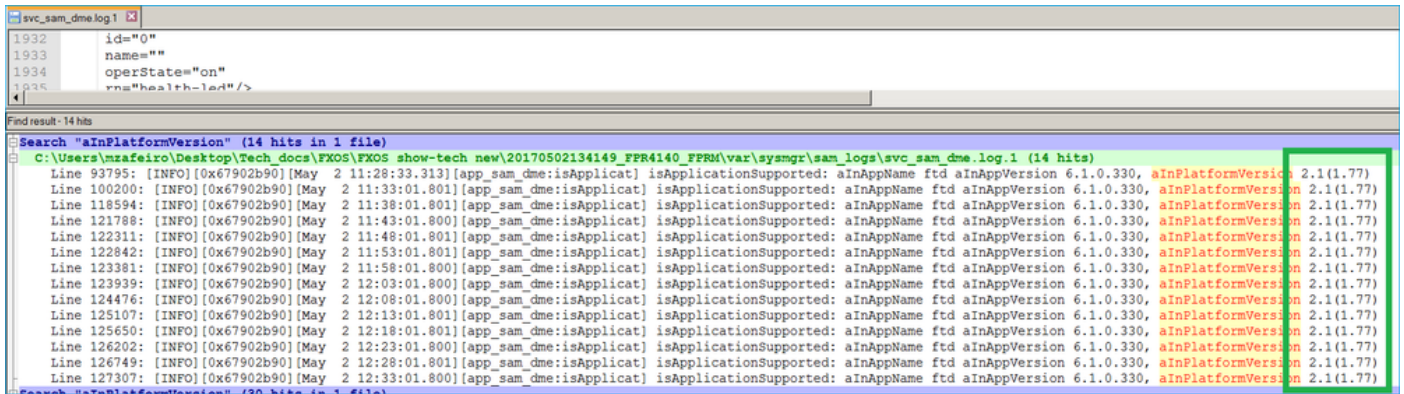
FPR4140-A#

show fabric-interconnect firmware

```
Fabric Interconnect A:
  Running-Kern-Vers: 5.0(3)N2(4.11.74)
  Running-Sys-Vers: 5.0(3)N2(4.11.74)
  Package-Vers: 2.1(1.77)
  Startup-Kern-Vers: 5.0(3)N2(4.11.74)
  Startup-Sys-Vers: 5.0(3)N2(4.11.74)
  Act-Kern-Status: Ready
  Act-Sys-Status: Ready
  Bootloader-Vers:
```

Way 2

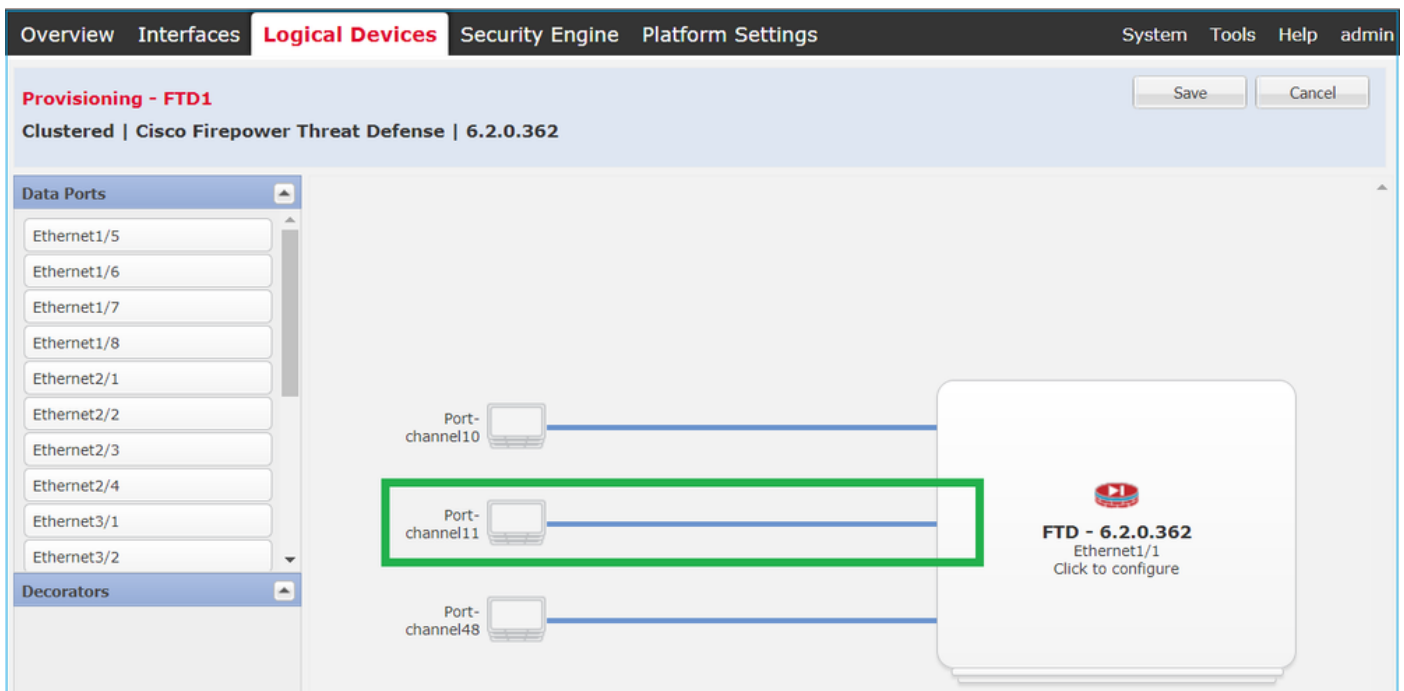
In FRPM tar file extract the contents of FPRM_A_TechSupport.tar.gz file. Then open the /var/sysmgr/sam_logs/svc_sam_dme.log file and search for aInPlatformVersion keyword:



Q. How the MIO Propagates Interface Information (Addition/Removal) to the Blade Application (FTD, ASA)?

It uses the MIO app-agent component.

For example, when a new Port-Channel is assigned to the FTD from MIO:



FTD app-agent debug shows:

```
<#root>
```

```
firepower#
```

```
debug app-agent 255
```

```
appagent : part 0 : ftd_001_JAD19500BAB0Z690F2.interfaceMapping.update
```

```
appagent : part 1 : ssp-xml:3
```

```
appagent : part 2 : 7
```

```
appagent : part 3 : appAG
```

```
appagent : part 4 : <interfaceMappingConfigUpdateRequest><interfaceMapping action="insert"><externalPort
<bladeVNIC>22</bladeVNIC></internalPort></interfaceMapping></interfaceMappingConfigUpdateRequest>
```

```
appagent : Process the request message
```

```

appagent : It is an update request command
appagent : Invoke request msg handler for cmd interfaceMapping.update
appagent : Processing InterfaceMapping Update Message
appagent : Creating Interface Mapping Structure.
appagent : Processing the tag externalPort.
appagent : =====
appagent : PortName=Port-channel11
appagent : ftw capability=0
appagent : no available ftw peers
appagent : cleaning external_port_ftw_peers_t
appagent : Sending Response message for Interface Mapping update Message
appagent : Send response message to appAG
appagent : resp_msg->cmdName =appAG.interfaceMapping.update
appagent : resp_msg->content_version =ssp-xml:3
appagent : resp_msg->msgId =7
appagent : resp_msg->statusCode =100
appagent : resp_msg->data =<interfaceMappingConfigUpdateResponse>
    <response>
        <code>100</code>
        <message>Request success</message>
    </response>
</interfaceMappingConfigUpdateResponse>
appagent : part 0 : ftd_001_JAD19500BAB0Z690F2.interfaceStatus.update
appagent : part 1 : ssp-xml:3
appagent : part 2 : 8
appagent : part 3 : appAG
appagent : part 4 : <interfaceStatusUpdateRequest><interface><interfaceName>Port-channel11</interfaceName>
appagent : Process the request message
appagent : It is an update request command
appagent : Invoke request msg handler for cmd interfaceStatus.update
appagent : Processing Interface Status Update Request.
appagent : The Fxos version is 2.1.1 or newer
appagent : Parsing interface status update request message for FXOS > 211
appagent : Parsing Interface Status Req.
appagent : Interface Status Successfully Updated.
appagent : Sending Response for Interface Status Update Request
appagent : Send response message to appAG
appagent : resp_msg->cmdName =appAG.interfaceStatus.update
appagent : resp_msg->content_version =ssp-xml:3
appagent : resp_msg->msgId =8
appagent : resp_msg->statusCode =100
appagent : resp_msg->data =<interfaceStatusUpdateResponse>
    <response>
        <code>100</code>
        <message>Request success</message>
    </response>
</interfaceStatusUpdateResponse>

```

Q. What Serial Number (SN) Must be Used in the Case of RMA of the Firepower Chassis?

The firepower chassis has multiple SNs. The one used for an RMA request can be taken from these outputs:

```
<#root>
```

```
FP4120-5-A#
```


scope chassis 1

```
FP4120-5-A /chassis # show inventory
Chassis  PID          Vendor          Serial (SN) HW Revision
-----
          1 FPR-4120-K9    Cisco Systems Inc FLM12345KL6 0
```

Or:

<#root>

FP4120-5-A#

connect local-mgmt

FP4120-5-A(local-mgmt)#

show license all

Smart Licensing Status

=====

Smart Licensing is ENABLED

Registration:

Status: UNREGISTERED

Export-Controlled Functionality: Not Allowed

License Authorization:

Status: No Licenses in Use

License Usage

=====

No licenses in use

Product Information

=====

UDI: PID:FPR-4120-SUP,SN:JAD19500BAB

Or:

<#root>

FP4120-5-A#

scope license

FP4120-5-A /license #

show license all

Smart Licensing Status

=====

Smart Licensing is ENABLED

Registration:
Status: UNREGISTERED
Export-Controlled Functionality: Not Allowed

License Authorization:
Status: No Licenses in Use

License Usage
=====

No licenses in use

Product Information
=====

UDI: PID:FPR-4120-SUP,SN:JAD19500BAB

Q. Can you Swap SSD1 Between 2 Different FXOS Chassis?

The short answer is no. The SSD1 contains the Application Image (for example FTD or ASA). If you take the SSD1 out of the chassis and plug it into a different chassis the module does not come UP and these errors appear:

Critical F1548 2017-11-08T11:36:40.095 427280 Blade swap detected on slot 1

Severity	Description	Cause	Occurrence	Time	Acknowledged
CRITICAL	Blade swap detected on slot 1	blade-swap	1	2017-11-08T11:36:40.095	no

Security module image mismatch

Logical Device List

Application	Version	Management IP	Gateway	Management Port	Status
FTD	6.2.2.81	10.62.148.194	10.62.148.129	Ethernet1/1	Security module image mismatch

Ports: Ethernet3/1, Ethernet3/2, Port-channel15

Attributes: Cluster Operational Status: not-applicable, Firepower Management IP: 10.62.148.194, Management URL: https://10.62.148.75/, HA-ROLE: standalone, UUID: 8b8557b2-ba50-11e7-85f9-958a43b079fe

Local disk 1 missing on server 1/1

MAJOR	Local disk 1 missing on server 1/1	equipment-missing	2	2017-11-08T10:40:43.122	no
-------	------------------------------------	-------------------	---	-------------------------	----

Q. How the Check the Chassis Power Consumption?

As from FXOS 2.2.1 version, you can use the command show environment summary:

```
<#root>
```

```
FPR4100-1 /chassis #
```

```
show environment summary
```

```
Chassis INFO :
```

```
Total Power Consumption: 440.000000  
Inlet Temperature (C): 21.000000  
CPU Temperature (C): 39.000000  
Last updated Time: 2018-07-01T09:39:55.157
```

```
PSU 1:
```

```
Type: AC  
Input Feed Status: Ok  
12v Output Status: Ok  
Overall Status: Operable
```

```
PSU 2:
```

```
Type: AC  
Input Feed Status: N/A  
12v Output Status: N/A  
Overall Status: Removed
```

```
FAN 1
```

```
Fan Speed RPM (RPM): 12110  
Speed Status: Ok  
Overall Status: Operable
```

```
FAN 2
```

```
Fan Speed RPM (RPM): 12110  
Speed Status: Ok  
Overall Status: Operable
```

```
FAN 3
```

```
Fan Speed RPM (RPM): 12100  
Speed Status: Ok  
Overall Status: Operable
```

For additional info check:

[Monitoring Chassis Health](#)

Q. How to Check the Bootloader Version?

```
<#root>
```

```
FPR-4110-7-A#
```

```
scope chassis 1
```

```
FPR-4110-7-A /chassis #
```

```
scope server 1
```

```
FPR-4110-7-A /chassis/server #
```

```
scope adapter 1
```

```
FPR-4110-7-A /chassis/server/adapter #
```

```
show version detail
```

Adapter 1:
Running-Vers: 5.3(1.91)
Package-Vers: 2.3(1.88)
Update-Status: Ready
Activate-Status: Ready
Bootloader-Update-Status: Ready
Startup-Vers: 5.3(1.91)
Backup-Vers: 5.3(1.48)
Bootloader-Vers: MF-111-234949

Q. How to Upgrade Bootloader?

After the FXOS 2.3.1.58 installation or later, system may show receive a critical fault on your security appliance indicating adapter firmware upgrade is required:

```
Critical F1715 2017-05-11T11:43:33.121 339561 Adapter 1 on Security Module 1 requires a critical firmwa
```

The procedure of the Bootloader upgrade is described on this link:

https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/fxos231/release/notes/fxos231_rn.html#pgfId-173826

If you face his below error during bootloader upgrade, you can try to use 'force' option.

```
<#root>
```

```
FPR-4110-7-A#
```

```
scope chassis 1
```

```
FPR-4110-7-A /chassis #
```

```
scope server 1
```

```
FPR-4110-7-A /chassis/server #
```

```
scope adapter 1/1/1
```

```
FPR-4110-7-A /chassis/server/adapter #
```

```
show image
```

```
Name Type Version
```

```
-----  
fxos-m83-8p40-cruzboot.4.0.1.62.bin Adapter Boot 4.0(1.62)
```

```
fxos-m83-8p40-vic.4.0.1.51.bin Adapter 4.0(1.51)
```

```
fxos-m83-8p40-vic.5.3.1.2.bin Adapter 5.3(1.2)
```

```
fxos-m83-8p40-vic.5.3.1.48.bin Adapter 5.3(1.48)
```

```
fxos-m83-8p40-vic.5.3.1.91.bin Adapter 5.3(1.91)
```

```
FPR-4110-7-A /chassis/server/adapter #
```

```
update boot-loader 4.0(1.62)
```

Warning: Please DO NOT reboot blade or chassis during upgrade, otherwise, it may cause adapter UNUSABLE
After upgrade completed, blade must be power cycled automatically
FPR-4110-7-A /chassis/server/adapter* #

`commit-buffer`

Error: Update failed: [This adaptor is not applicable for boot-loader upgrade.]

Q. How to Disable the Absolute SSH Timeout?

This is helpful during lab testing and troubleshooting. Note that this absolute timeout is a security best practice to be non-zero therefore be mindful if this is temporarily done in the user environment.

```
<#root>
```

```
FPR-4115-A#
```

```
scope security
```

```
FPR-4115-A /security #
```

```
scope default-auth
```

```
FPR-4115-A /security/default-auth #
```

```
show detail
```

```
Default authentication:
```

```
Admin Realm: Local
```

```
Operational Realm: Local
```

```
Web session refresh period(in secs): 600
```

```
Idle Session timeout(in secs) for web, ssh, telnet sessions: 3600
```

```
Absolute Session timeout(in secs) for web, ssh, telnet sessions: 3600
```

```
Serial Console Idle Session timeout(in secs): 3600
```

```
Serial Console Absolute Session timeout(in secs): 3600
```

```
Admin Authentication server group:
```

```
Operational Authentication server group:
```

```
Use of 2nd factor: No
```

```
FPR-4115-A /security/default-auth #
```

```
set absolute-session-timeout 0
```

```
FPR-4115-A /security/default-auth* #
```

```
commit-buffer
```

```
FPR-4115-A /security/default-auth #
```

```
show detail
```

```
Default authentication:
Admin Realm: Local
Operational Realm: Local
Web session refresh period(in secs): 600
Idle Session timeout(in secs) for web, ssh, telnet sessions: 3600

Absolute Session timeout(in secs) for web, ssh, telnet sessions: 0

Serial Console Idle Session timeout(in secs): 3600
Serial Console Absolute Session timeout(in secs): 3600
Admin Authentication server group:
Operational Authentication server group:
Use of 2nd factor: No
```

Q. How to Capture LACP Packets Destined to Chassis Supervisor (Control-Plane)?

LACP packets destined to the Firepower 4100/9300 chassis supervisor (control-plane) are **encapsulated** inside the data section of specific packets and can be captured on the internal **inbound-hi** interface using the **ethanalyzer** command. The LACP PDU bytes are embedded starting from bytes with values **01 80 C2 00 00 02 (IEEE 802.3 Slow_Protocols_Multicast address)** until the end of the data section:

```
<#root>
firepower#

connect fxos

...
firepower(fxos)#

ethanalyzer local interface inbound-hi limit-captured-frames 10000 limit-frame-size 9000 detail

Capturing on 'eth4'

Frame 1: 188 bytes on wire (1504 bits), 188 bytes captured (1504 bits) on interface 0
  Interface id: 0 (eth4)
    Interface name: eth4
    Encapsulation type: Ethernet (1)
    Arrival Time: Dec  5, 2023 09:16:06.736180828 UTC
    [Time shift for this packet: 0.000000000 seconds]
    Epoch Time: 1701767766.736180828 seconds
    [Time delta from previous captured frame: 0.000000000 seconds]
    [Time delta from previous displayed frame: 0.000000000 seconds]
    [Time since reference or first frame: 0.000000000 seconds]
    Frame Number: 1
    Frame Length: 188 bytes (1504 bits)
    Capture Length: 188 bytes (1504 bits)
    [Frame is marked: False]
    [Frame is ignored: False]
    [Protocols in frame: eth:ethertype:vlan:ethertype:data]
Ethernet II, Src: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5), Dst: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
  Destination: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
    Address: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
      .... ..0. .... .. = LG bit: Globally unique address (factory default)
```

```

.... ..0 .... .. = IG bit: Individual address (unicast)
Source: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5)
Address: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5)
.... ..1. .... .. = LG bit: Locally administered address (this is NOT the factory d
.... ..0 .... .. = IG bit: Individual address (unicast)
Type: 802.1Q Virtual LAN (0x8100)
802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 4048
000. .... .. = Priority: Best Effort (default) (0)
...0 .... .. = DEI: Ineligible
.... 1111 1101 0000 = ID: 4048
Type: Unknown (0xde08)

```

Data (170 bytes)

```

0000 b8 50 20 04 00 00 00 00 00 00 00 00 00 81 00 .P .....
0010 00 00 00 00 00 04 09 04 cd 00 00 00 00 00 00 .....
0020 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

```
01 80 .....
```

0030

```
c2 00 00 02 58 97 bd b9 36 51 88 09 01 01 01 14 ....X...6Q.....
```

0040

```
80 00 58 97 bd b9 36 4d 00 28 80 00 00 44 3f 00 ..X...6M.(...D?.
```

0050

```
00 00 02 14 80 00 00 17 df d6 ec 00 00 33 80 00 .....3..
```

0060

```
02 2c 3d 00 00 00 03 10 00 00 00 00 00 00 00 ..,=.....
```

0070

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
```

0080

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
```

0090

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
```

00a0

```
00 00 00 00 00 00 00 00 00 00
```

```

.....
Data: b8502004000000000000000000000000081000000000000040904...
```

The hex dump can be converted to PCAP using online tools.

Q. How to Find SSD Information?

The chassis supervisor internal SSD information is available in all FXOS version mentioned in the **step 1**, section **Workaround/Solution** in [FN72077](#):

```
<#root>
```

```
KSEC-FPR4112-4 #
```

```
scope chassis 1
```

```
KSEC-FPR4112-4 /chassis #
```

```
show sup version detail
```

```
SUP FIRMWARE:
```

```
ROMMON:
```

```
Running-Vers: 1.0.15
```

```
Package-Vers: 1.0.18
```

```
Activate-Status: Ready
```

```
Upgrade Status: SUCCESS
```

```
FPGA:
```

```
Running-Vers: 2.00
```

```
Package-Vers: 1.0.18
```

```
Activate-Status: Ready
```

```
SSD:
```

```
Running-Vers: MU03
```

```
Model: Micron_M500IT_MTFDDAT128MBD
```

Security engine (blade) SSD:

```
<#root>
```

```
KSEC-FPR4112-4#
```

```
show server storage detail
```

```
Server 1/1:
```

```
<output skipped>
```

```
RAID Controller 1:
```

```
Type: SATA
```

```
Vendor: Cisco Systems Inc
```

```
Model: FPR4K-PT-01
```

```
Serial: JAD260508TZ
```

```
HW Revision:
```

```
PCI Addr: 00:31.2
```

```
Raid Support:
```

```
OOB Interface Supported: No
```

```
Rebuild Rate: N/A
```

```
Controller Status: Unknown
```


Local Disk 1:

Vendor: INTEL

Model: SSDSC2KG48

Serial: PHYG109603PA480BGN

HW Rev: 0

Operability: Operable

Presence: Equipped

Size (MB): 400000

Drive State: Online

Power State: Active

Link Speed: 6 Gbps

Device Type: SSD

Local Disk 2:

Vendor: INTEL

Model: SSDSC2KG96

Serial: PHYG143301JG960CGN

HW Rev: 0

Operability: Operable

Presence: Equipped

Size (MB): 800000

Drive State: Online

Power State: Active

Link Speed: 6 Gbps

Device Type: SSD

Local Disk Config Definition:
Mode: No RAID
Description:
Protect Configuration: No

Q. How to Configure Internal Switch (FXOS) Captures?

Refer to the article [Configure and Verify Secure Firewall and Firepower Internal Switch Captures](#).

References

- [Cisco Firepower 4100/9300 FXOS Secure Firewall Chassis Manager Configuration Guide, 2.14\(1\)](#)
- [Cisco Secure FXOS for Firepower 4100/9300 CLI Configuration Guide, 2.14\(1\)](#)
- [Cisco Firepower 4100/9300 FXOS Command Reference](#)
- [Configure and Verify Secure Firewall and Firepower Internal Switch Captures](#)