



# FXOS CLI Troubleshooting Commands

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## FXOS CLI Chassis Mode Troubleshooting Commands

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

### **show environment**

Displays environment information for the chassis.

For example:

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

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

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

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

Fan 1:
Overall Status: Operable
Operability: Operable
```

```

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

```

**show environmentbasic**

Displays chassis and CPU temperature data.

For example:

```

FPR2100 /chassis # show environment basic
***** Chassis Temps *****
Inlet temperature is 75 degrees Celsius

***** CPU Data *****
Core Temperature 0 is 93 degrees Celsius
Core Temperature 1 is 93 degrees Celsius
Core Temperature 2 is 94 degrees Celsius
Core Temperature 3 is 92 degrees Celsius

```

**scope fan**

Enters the fan mode on Firepower 2110, 2120, Secure Firewall 3100, and Secure Firewall 4200 devices.

**scope fan-module**

Enters the fan mode on Firepower 2130, 2140, Secure Firewall 3100, and Secure Firewall 4200 devices.

From this mode, you can display detailed information about the chassis fan.

For example:

```

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

```

```

Vendor: Cisco Systems, Inc
Fan:
  ID: 1
  Overall Status: Operable
  Operability: Operable
  Power State: On
  Presence: Equipped
  ID: 2
  Overall Status: Operable
  Operability: Operable
  Power State: On
  Presence: Equipped

```

**show inventory**

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

Note: This command only applies to Firepower 2130, 3100, 4200 devices.

For example:

```

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

```

**show inventory expand**

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

For example:

```

FPR2100 /chassis # show inventory expand detail
Chassis 1:
  Product Name: Cisco Firepower 2000 Appliance
  PID: FPR-2130
  VID: V01
  Vendor: Cisco Systems, Inc
  Model: FPR-2130
  Serial (SN): JAD2012091X
  HW Revision: 0.1
  PSU 1:
    Presence: Equipped
    Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
    PID: FPR2K-PWR-AC-400
    VID: V01
    Vendor: Cisco Systems, Inc
    Serial (SN): LIT2010CAFE
    HW Revision: 0
  PSU 2:
    Presence: Equipped
    Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
    PID: FPR2K-PWR-AC-400
    VID: V01
    Vendor: Cisco Systems, Inc
    Serial (SN): LIT2010CAFE
    HW Revision: 0
  Fan Modules:
    Tray 1 Module 1:
      Presence: Equipped
      Product Name: Cisco Firepower 2000 Series Fan Tray
      PID: FPR2K-FAN
      Vendor: Cisco Systems, Inc
  Fans:
    ID Presence
    --
    1 Equipped
    2 Equipped

```

```

        3 Equipped
        4 Equipped
Fabric Card 1:
  Description: Cisco SSP FPR 2130 Base Module
  Number of Ports: 16
  State: Online
  Vendor: Cisco Systems, Inc.
  Model: FPR-2130
  HW Revision: 0
  Serial (SN): JAD2012091X
  Perf: N/A
  Operability: Operable
  Overall Status: Operable
  Power State: Online
  Presence: Equipped
  Thermal Status: N/A
  Voltage Status: N/A
Fabric Card 2:
  Description: 8-port 10 Gigabit Ethernet Expansion Module
  Number of Ports: 8
  State: Online
  Vendor: Cisco Systems, Inc.
  Model: FPR-NM-8X10G
  HW Revision: 0
  Serial (SN): JAD19510AKD
  Perf: N/A
  Operability: Operable
  Overall Status: Operable
  Power State: Online
  Presence: Equipped
  Thermal Status: N/A
  Voltage Status: N/A

```

**scope psu**

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

For example:

```

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

```

```
Type: AC
Fan Status: Ok
```

### scope stats

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

```
FPR2100 /chassis # show stats
Chassis Stats:
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/stats
  Suspect: No
  Outlet Temp1 (C): 43.000000
  Outlet Temp2 (C): 41.000000
  Inlet Temp (C): 30.000000
  Internal Temp (C): 34.000000
  Thresholded: 0
Fan Stats:
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/fan-module-1-1/fan-1/stats
  Suspect: No
  Speed (RPM): 17280
  Thresholded: 0
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/fan-module-1-1/fan-2/stats
  Suspect: No
  Speed (RPM): 17340
  Thresholded: 0
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/fan-module-1-1/fan-3/stats
  Suspect: No
  Speed (RPM): 17280
  Thresholded: 0
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/fan-module-1-1/fan-4/stats
  Suspect: No
  Speed (RPM): 17280
  Thresholded: 0
Psu Stats:
  Time Collected: 2016-11-14T21:19:46.318
  Monitored Object: sys/chassis-1/psu-1/stats
  Suspect: No
  Input Current (A): 0.000000
  Input Power (W): 8.000000
  Input Voltage (V): 0.000000
  Psu Temp1 (C): 32.000000
  Psu Temp2 (C): 36.000000
  Psu Temp3 (C): 32.000000
  Fan Speed (RPM): 0
  Thresholded: 0
  Time Collected: 2016-11-14T21:19:46.318
  Monitored Object: sys/chassis-1/psu-2/stats
  Suspect: No
  Input Current (A): 0.374000
  Input Power (W): 112.000000
  Input Voltage (V): 238.503006
  Psu Temp1 (C): 36.000000
  Psu Temp2 (C): 47.000000
  Psu Temp3 (C): 47.000000
  Fan Speed (RPM): 2240
  Thresholded: 0
CPU Env Stats:
  Time Collected: 2016-11-14T21:19:46.317
  Monitored Object: sys/chassis-1/blade-1/board/cpu-1/env-stats
```

```

Suspect: No
Temperature (C): 46.000000
Thresholded: 0
Time Collected: 2016-11-14T21:19:46.317
Monitored Object: sys/chassis-1/blade-1/npucpu-1/env-stats
Suspect: No
Temperature (C): 38.000000
Thresholded: 0

```

## FXOS CLI Eth-Uplink Mode Troubleshooting Commands

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

### show detail

Displays detailed information about your Firepower 1000/2100, Secure Firewall 3100, or Secure Firewall 4200 device's Ethernet uplink.

For example:

```

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

```

### scope fabric a

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

For example:

```

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

```

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

```
FPR2100 /eth-uplink/fabric # show port-channel
```

```
Port Channel:
```

State	Port Channel Id	Name	Port Type	Admin State	Oper
Link Down	1	Port-channell1	Data	Disabled	

```
FPR2100 /eth-uplink/fabric/port-channel # show stats
```

```
Ether Error Stats:
```

```
Time Collected: 2016-11-14T21:27:16.386
Monitored Object: fabric/lan/A/pc-1/err-stats
Suspect: No
Rcv (errors): 0
Align (errors): 0
Fcs (errors): 0
Xmit (errors): 0
Under Size (errors): 0
Out Discard (errors): 0
Deferred Tx (errors): 0
Int Mac Tx (errors): 0
Int Mac Rx (errors): 0
Thresholded: Xmit Delta Min
```

```
Ether Loss Stats:
```

```
Time Collected: 2016-11-14T21:27:16.386
Monitored Object: fabric/lan/A/pc-1/loss-stats
Suspect: No
Single Collision (errors): 0
Multi Collision (errors): 0
Late Collision (errors): 0
Excess Collision (errors): 0
Carrier Sense (errors): 0
Giants (errors): 0
Symbol (errors): 0
SQE Test (errors): 0
Thresholded: 0
```

```
Ether Pause Stats:
```

```
Time Collected: 2016-11-14T21:27:16.386
Monitored Object: fabric/lan/A/pc-1/pause-stats
Suspect: No
Recv Pause (pause): 0
Xmit Pause (pause): 0
Resets (resets): 0
Thresholded: 0
```

```
Ether Rx Stats:
```

```
Time Collected: 2016-11-14T21:27:16.386
Monitored Object: fabric/lan/A/pc-1/rx-stats
Suspect: No
Total Packets (packets): 0
Unicast Packets (packets): 0
Multicast Packets (packets): 0
Broadcast Packets (packets): 0
Total Bytes (bytes): 0
Jumbo Packets (packets): 0
Thresholded: 0
```

```
Ether Tx Stats:
```

```
Time Collected: 2016-11-14T21:27:16.386
Monitored Object: fabric/lan/A/pc-1/tx-stats
Suspect: No
Total Packets (packets): 0
Unicast Packets (packets): 0
Multicast Packets (packets): 0
Broadcast Packets (packets): 0
Total Bytes (bytes): 0
```

```

Jumbo Packets (packets): 0
FPR2100 /eth-uplink/fabric/interface # show stats
Ether Error Stats:
  Time Collected: 2016-11-14T21:27:46.395
  Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/err-stats
  Suspect: No
  Rcv (errors): 0
  Align (errors): 0
  Fcs (errors): 0
  Xmit (errors): 0
  Under Size (errors): 0
  Out Discard (errors): 0
  Deferred Tx (errors): 0
  Int Mac Tx (errors): 0
  Int Mac Rx (errors): 0
  Thresholded: Xmit Delta Min
Ether Loss Stats:
  Time Collected: 2016-11-14T21:27:46.395
  Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/loss-stats
  Suspect: No
  Single Collision (errors): 0
  Multi Collision (errors): 0
  Late Collision (errors): 0
  Excess Collision (errors): 0
  Carrier Sense (errors): 0
  Giants (errors): 7180
  Symbol (errors): 0
  SQE Test (errors): 0
  Thresholded: 0
Ether Pause Stats:
  Time Collected: 2016-11-14T21:27:46.395
  Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/pause-stats
  Suspect: No
  Recv Pause (pause): 0
  Xmit Pause (pause): 0
  Resets (resets): 0
  Thresholded: 0
Ether Rx Stats:
  Time Collected: 2016-11-14T21:27:46.395
  Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/rx-stats
  Suspect: No
  Total Packets (packets): 604527
  Unicast Packets (packets): 142906
  Multicast Packets (packets): 339031
  Broadcast Packets (packets): 122590
  Total Bytes (bytes): 59805045
  Jumbo Packets (packets): 0
  Thresholded: 0
Ether Tx Stats:
  Time Collected: 2016-11-14T21:27:46.395
  Monitored Object: sys/switch-A/slot-1/switch-ether/port-1/tx-stats
  Suspect: No
  Total Packets (packets): 145018
  Unicast Packets (packets): 145005
  Multicast Packets (packets): 0
  Broadcast Packets (packets): 13
  Total Bytes (bytes): 13442404
  Jumbo Packets (packets): 0
  Thresholded: 0

```



# FXOS CLI Fabric Interconnect Mode Troubleshooting Commands

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

## show card

Displays information on a fabric card.

For example:

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

## show card

Displays information on a fabric card details. This command can be used to display the network module details.

For example:

```
# firepower-4225 /fabric-interconnect # show card detail expand

Fabric Card:
  Id: 2
  Description: 2-port 100 Gigabit Ethernet Expansion Module
  Number of Ports: 2
  Admin State: Enabled
  State: Online
  Vendor: Cisco Systems, Inc.
  Model: FPR-X-NM-2X100G
  Serial (SN): FJZ26390V7D
  Perf: N/A
  Operability: Operable
  Overall Status: Online
  Power State: Online
  Presence: Equipped
  Thermal Status: N/A
  Voltage Status: N/A
  Current Task:
```

## show image

Displays all available images.

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

Name	Type	Version
cisco-ftd.6.2.0.131.csp	Firepower Cspapp	6.2.0.131
cisco-ftd.6.2.0.140.csp	Firepower Cspapp	6.2.0.140
cisco-ftd.6.2.0.175.csp	Firepower Cspapp	6.2.0.175

```

fxos-k8-fp2k-firmware.0.4.04.SPA          Firepower Firmware  0.4.04
fxos-k8-fp2k-lfbff.82.1.1.303i.SSA      Firepower System   82.1(1.303i)
fxos-k8-fp2k-npu.82.1.1.303i.SSA        Firepower Npu      82.1(1.303i)
fxos-k8-fp2k-npu.82.1.1.307i.SSA        Firepower Npu      82.1(1.307i)
fxos-k9-fp2k-manager.82.1.1.303i.SSA    Firepower Manager  82.1(1.303i)

```

**show inventory expand**

Displays all fabric card details. This command can be used to display the network module details.

```

firepower-4225 /fabric-interconnect # show inventory expand
A:

```

Fabric Card:

Slot	Description	Num Ports	State	PID	Serial (SN)
0	Logical Slot for Management Interface	2	N/A	FPR-4225	FJZ26345ZGZ
1	Cisco FPR 4225 Base Module	8	On	FPR-4225	FJZ26345ZGZ
3	4-port 200 Gigabit Ethernet Expansion Module	4	Online	FPR-X-NM-4X200G	FJZ25430132

**show package**

Displays all available packages.

```

firepower /firmware # show package
Name                                     Package-Vers
-----
cisco-ftd-fp2k.6.2.0.131-303i.SSA      6.2(0.131-303i)
cisco-ftd-fp2k.6.2.0.140-307i.SSA      6.2(0.140-307i)
cisco-ftd-fp2k.6.2.0.140-308i.SSA      6.2(0.140-308i)
cisco-ftd-fp2k.6.2.0.175-311i.SSA      6.2(0.175-311i)
cisco-ftd-fp2k.6.2.0.175-314i.SSA      6.2(0.175-314i)
cisco-ftd-fp2k.6.2.0.175-318i.SSA      6.2(0.175-318i)
cisco-ftd-fp2k.6.2.0.175-319i.SSA      6.2(0.175-319i)

```

**show package package name expand**

Displays the package details.

```

firepower /firmware # show package cisco-ftd-fp2k.6.2.0.131-303i.SSA expand
Package cisco-ftd-fp2k.6.2.0.131-303i.SSA:
Images:
  cisco-ftd.6.2.0.131.csp
  fxos-k8-fp2k-firmware.0.4.04.SPA
  fxos-k8-fp2k-lfbff.82.1.1.303i.SSA
  fxos-k8-fp2k-npu.82.1.1.303i.SSA
  fxos-k9-fp2k-manager.82.1.1.303i.SSA

```

**scope auto-install**

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

```

firepower /firmware/auto-install # show
Firmware Auto-Install:
Package-Vers Oper State Upgrade State
-----
6.2(0.175-319i) Scheduled Installing Application

```

**scope firmware**

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

For example:

```

FPR2100 /firmware # show download-task
Download task:

```

File Name	Port	Userid	State	Protocol	Server
cisco-ftd-fp2k.6.2.0.175-314i.SSA	0	danp	Downloaded	Scp	172.29.191.78
cisco-ftd-fp2k.6.2.0.175-318i.SSA	0	danp	Downloaded	Scp	172.29.191.78
cisco-ftd-fp2k.6.2.0.175-319i.SSA	0	danp	Downloaded	Scp	172.29.191.78

**scope download-task**

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

For example:

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

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

**scope psu**

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

For example:

```
FPR2100 /chassis # show psu expand detail
PSU:
  PSU: 1
  Overall Status: Powered Off
  Operability: Unknown
  Power State: Off
  Presence: Equipped
  Voltage Status: Unknown
  Product Name: Cisco Firepower 2000 Series AC 400W Power Supply
  PID: FPR2K-PWR-AC-400
  VID: V01
  Vendor: Cisco Systems, Inc
```

```

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

```

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

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

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

```
FPR3100# connect local-mgmt
```

### **show portmanager**

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

For example:

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

```

firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vtcam-tti
detail
  VTCAM_RULE_ID  VLAN  SRC_PORT  PORTCHANNEL_ID  FLAGS  MODE  REF_COUNT
1                21    0         2                0      2     5         3
2                3078  0         0                0      0     0         1
3                3077  0         0                0      0     0         1
4                3076  0         0                0      0     0         1
5                3075  0         0                0      0     0         1
6                3074  0         0                0      0     0         1
7                3073  0         0                0      0     0         1
8                 1     0         0                0      0     0         1
9                 18    102        0                0     24     8         1
10                5     157        0                0     24     8         1
11                31     0         12               0      2     5         3
12                15    105        0                0     24     8         1
13                 9    111        0                0     24     8         1
14                13    107        0                0     24     8         1
15                26     0         7                0      2     5         3
16                29     0         10               0      2     5         3
17                23     0         4                0      2     5         3
18                19    101        0                0     24     8         1
19                30     0         11               0      2     5         3
20                28     0         9                0      2     5         3
21                4     156        0                0     24     8         1

```

22	34	0	15	0	2	5	3
23	6	158	0	0	24	8	1
24	8	112	0	0	24	8	1
25	24	0	5	0	2	5	3
26	14	106	0	0	24	8	1
27	32	0	13	0	2	5	3
28	25	0	6	0	2	5	3
29	12	0	0	9	6	5	2
30	20	0	1	0	2	5	3
31	11	109	0	0	24	8	1
32	27	0	8	0	2	5	3
33	17	103	0	0	24	8	1
34	22	0	3	0	2	5	3
35	16	104	0	0	24	8	1
36	3	0	19	0	26	8	1
37	35	0	16	0	2	5	3
38	33	0	14	0	2	5	3
39	7	159	0	0	24	8	1
40	2	0	17	0	26	8	1
41	10	110	0	0	24	8	1

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

```
firepower-3140(local-mgmt)# show portmanager switch vlans
VLAN          Ports          Tag          MAC-Learning
  FDB-mode
-----
1             0/17,19        pop_outer_tag Control
  FID
2             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
              0/20          pop_outer_tag
3             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
4             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
5             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
6             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
7             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
8             0/1-16,18     outer_tag0_inner_tag1 Control
  FID
```

The following CLI helps you to to check port-channel interface summary:

```
firepower-3140(local-mgmt)# show por
portchannel portmanager

firepower-3140(local-mgmt)# show portchannel summary
Flags: D - Down          P - Up in port-channel (members)
I - Individual          H - Hot-standby (LACP only)
s - Suspended           r - Module-removed
S - Switched            R - Routed
U - Up (port-channel)
M - Not in use. Min-links not met
-----
Group Port-      Type      Protocol  Member Ports
Channel
Channel
```

```
-----
3   Po3(U)   Eth     LACP    Eth1/3(P)
2   Po2(U)   Eth     LACP    Eth1/2(P)

```

LACP KeepAlive Timer:

```
-----
      Channel  PeerKeepAliveTimerFast
-----
3   Po3(U)    False
2   Po2(U)    False

```

Cluster LACP Status:

```
-----
      Channel  ClusterSpanned  ClusterDetach  ClusterUnitID  ClusterSysID
-----
3   Po3(U)    False           False           0
2   Po2(U)    False           False           0

```

```
</pre>
```

The following CLI displays the port-channel load-balancing method:

```
firepower-3140(local-mgmt)# show portchannel load-balance
PortChannel Load-Balancing Configuration:
  src-dst ip-l4port
PortChannel Load-Balancing Configuration Used Per-Protocol:
Non-IP: src-dst mac
  IP: src-dst ip-l4port
</pre>
```

The following CLI displays the status of FXOS system processes:

```
firepower-3140(local-mgmt)# show pmon state
```

SERVICE NAME	STATE	RETRY (MAX)	EXITCODE	SIGNAL	CORE
svc_sam_dme	running	0 (4)	0	0	no
svc_sam_dcosAG	running	0 (4)	0	0	no
svc_sam_portAG	running	0 (4)	0	0	no
svc_sam_statsAG	running	0 (4)	0	0	no
httpd.sh	running	0 (4)	0	0	no
svc_sam_sessionmgrAG	running	0 (4)	0	0	no
sam_core_mon	running	0 (4)	0	0	no
svc_sam_svcmonAG	running	0 (4)	0	0	no
svc_sam_serviceOrchAG	running	0 (4)	0	0	no
svc_sam_appAG	running	0 (4)	0	0	no
svc_sam_envAG	running	0 (4)	0	0	no
svc_sam_npuAG	running	0 (4)	0	0	no
svc_sam_eventAG	running	0 (4)	0	0	no

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

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vcam-tti
ethernet 1 1
```

RULE_ID	VLAN	SRC_PORT	PC_ID	SRC_ID	MODE	PAK_CNT
1	20	0 1	0	101	0	151

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

```
firepower-3140(local-mgmt)# show portmanager switch forward-rules hardware vcam-tti
vlan 0
```

RULE_ID	VLAN	SRC_PORT	PC_ID	SRC_ID	MODE	PAK_CNT
1	2	0 17	0	17	0	1709
2	3	0 19	0	19	0	1626

3	4	0	16	0	0	0	0
4	5	0	15	0	0	0	0
5	6	0	14	0	0	0	0
6	7	0	13	0	0	0	0
7	8	0	12	0	0	0	0
8	9	0	11	0	0	0	0
9	10	0	10	0	0	0	0
10	11	0	9	0	0	0	0
11	12	0	8	0	0	0	0
12	13	0	7	0	0	0	0
13	14	0	6	0	0	0	0
14	15	0	5	0	0	0	0
15	16	0	4	0	0	0	0
16	17	0	3	0	0	0	0
17	18	0	2	0	0	0	0
18	19	0	1	0	0	0	0
19	20	0	1	0	101	0	166
20	21	0	2	0	102	0	1597
21	22	0	3	0	103	0	0
22	23	0	4	0	104	0	0
23	24	0	5	0	105	0	0
24	25	0	6	0	106	0	0
25	26	0	7	0	107	0	0
26	27	0	8	0	108	0	0
27	28	0	9	0	109	0	0
28	29	0	10	0	110	0	0
29	30	0	11	0	111	0	0
30	31	0	12	0	112	0	0
31	32	0	13	0	159	0	0
32	33	0	14	0	158	0	0
33	34	0	15	0	157	0	0
34	35	0	16	0	156	0	0
35	1	0	17	0	0	0	0

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

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

```
VLAN : 0
SRC_PORT : 17
PC_ID : 0
SRC_ID : 17
DST_PORT : 19
HW_ID : 3072
ACT_CMD : 0
PCL_ID : 1
REDIRECT_CMD : 1
BYPASS_BRG : 1
CND_INDEX : 3074
PACKET_COUNT : 1977
DMAC : 00:00:00:00:00:00
```

```
EM Entry-No : 2
```

```
VLAN : 0
SRC_PORT : 19
PC_ID : 0
SRC_ID : 19
DST_PORT : 17
HW_ID : 3074
```

```

ACT_CMD      : 0
PCL_ID       : 1
REDIRECT_CMD : 1
BYPASS_BRG   : 1
CND_INDEX    : 3075
PACKET_COUNT : 1858
DMAC         : 00:00:00:00:00:00

```

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

```

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

```

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

```

firepower-3140(local-mgmt)# show portmanager switch forward-rules software mac-filter
detail
VLAN  SRC_PORT  PORTCHANNEL_ID  DST_PORT  FLAGS  MODE  DMAC
1      0         17              0         19     26   8 0:0:0:0:0:0
2      0         9               0         1536   2    5 1:80:c2:0:0:2
3      104        0               0         4      24   8 0:0:0:0:0:0
4      0         7               0         1536   2    5 1:80:c2:0:0:2
5      101        0               0         1      24   8 0:0:0:0:0:0
6      0         1               0         1536   2    5 1:80:c2:0:0:2
7      0         3               0         1536   2    5 1:80:c2:0:0:2
8      106        0               0         6      24   8 0:0:0:0:0:0
9      158        0               0         14     24   8 0:0:0:0:0:0
10     0         13              0         1536   2    5 1:80:c2:0:0:2
11     0         14              0         1536   2    5 1:80:c2:0:0:2
12     0         6               0         1536   2    5 1:80:c2:0:0:2
13     0         8               0         1536   2    5 1:80:c2:0:0:2
14     112        0               0         12     24   8 0:0:0:0:0:0
15     107        0               0         7      24   8 0:0:0:0:0:0
16     0         19              0         17     26   8 0:0:0:0:0:0
17     0         12              0         1536   2    5 1:80:c2:0:0:2
18     0         5               0         1536   2    5 1:80:c2:0:0:2
19     102        0               0         2      24   8 0:0:0:0:0:0
20     156        0               0         16     24   8 0:0:0:0:0:0
21     103        0               0         3      24   8 0:0:0:0:0:0
22     0         11              0         1536   2    5 1:80:c2:0:0:2
23     157        0               0         15     24   8 0:0:0:0:0:0
24     111        0               0         11     24   8 0:0:0:0:0:0
25     0         10              0         1536   2    5 1:80:c2:0:0:2
26     108        0               0         8      24   8 0:0:0:0:0:0
27     159        0               0         13     24   8 0:0:0:0:0:0
28     110        0               0         10     24   8 0:0:0:0:0:0
29     105        0               0         5      24   8 0:0:0:0:0:0
30     0         2               0         1536   2    5 1:80:c2:0:0:2
31     0         4               0         1536   2    5 1:80:c2:0:0:2
32     0         16              0         1536   2    5 1:80:c2:0:0:2
33     109        0               0         9      24   8 0:0:0:0:0:0
34     0         15              0         1536   2    5 1:80:c2:0:0:2

```

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

```

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

```



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

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

The following CLI displays details on hardware switch packet counters:

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

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

  

Counter	Source port- 0/0	Destination port- 0/0
goodOctetsRcv	---	---
badOctetsRcv	---	---
Ingress counters		
gtBrgInFrames	6650	6650
gtBrgVlanIngFilterDisc	0	0
gtBrgSecFilterDisc	0	0
gtBrgLocalPropDisc	0	0
dropCounter	2163	Only for source-port
Egress counters		
outUcFrames	0	0
outMcFrames	2524	2524
outBcFrames	1949	1949
brgEgrFilterDisc	14	14
txqFilterDisc	0	0
outCtrlFrames	0	0
egrFrwDropFrames	0	0
goodOctetsSent	---	---

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

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

Dev/RX queue  packets  bytes
-----
```

```

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

```

The following CLI displays details on hardware switch port traffic:

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

```

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

```

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

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

```

firepower-3140(local-mgmt)# show portmanager counters ethernet 1 13
  Good Octets Received          : 2153
  Bad Octets Received           : 0
  MAC Transmit Error           : 0
  Good Packets Received         : 13
  Bad packets Received          : 0
  BRDC Packets Received         : 0
  MC Packets Received           : 13
  .....
  .....
  txqFilterDisc                 : 0
  linkchange                     : 1
  FcFecRxBlocks                 : 217038081
  FcFecRxBlocksNoError          : 217038114
  FcFecRxBlocksCorrectedError   : 0
  FcFecRxBlocksUnCorrectedError : 0
  FcFecRxBlocksCorrectedErrorBits : 0
  FcFecRxBlocksCorrectedError0  : 0

```

```

FcFecRxBlocksCorrectedError1           : 0
FcFecRxBlocksCorrectedError2           : 0
FcFecRxBlocksCorrectedError3           : 0
FcFecRxBlocksUnCorrectedError0         : 0
FcFecRxBlocksUnCorrectedError1         : 0
FcFecRxBlocksUnCorrectedError2         : 0
FcFecRxBlocksUnCorrectedError3         : 0
    
```

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

```

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

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

```

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

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

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

      Environmental Information - raw values
    
```

```

Temperature: 38.84 C
Supply voltage: 33703 in units of 100uVolt
Tx bias: 3499 in units of 2uAmp
Tx power: 0.1 dBm (10251 in units of 0.1 uW)
Rx power: -0.9 dBm (8153 in units of 0.1 uW)
DOM (256 bytes of raw data in hex)
=====
0x0000 : 4b 00 fb 00 46 00 00 00 8d cc 74 04 87 5a 7a 76
0x0010 : 17 70 01 f4 16 76 03 e8 87 72 03 e8 43 e2 09 d0
0x0020 : 87 72 02 19 43 e2 05 45 00 00 00 00 00 00 00
0x0030 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0040 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x0050 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 86
0x0060 : 26 54 83 a7 0d ab 28 0b 1f d9 00 00 00 00 08 00
0x0070 : 00 00 03 00 00 00 00 00 08 f3 00 00 00 00 01
0x0080 : 49 4e 55 49 41 43 53 45 41 41 31 30 2d 33 33 38
0x0090 : 38 2d 30 31 56 30 31 20 01 00 46 00 00 00 00 e3
0x00a0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00b0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x00c0 : 53 46 50 2d 31 30 2f 32 35 47 2d 43 53 52 2d 53
0x00d0 : 20 20 20 20 30 38 00 00 00 00 00 00 00 00 d1
0x00e0 : 1e 20 2a 2a 31 34 29 36 00 00 00 00 00 00 00
0x00f0 : 00 00 00 00 00 56 00 00 ff ff ff 00 00 00 cf
=====
PHY Data:
PAGE IFC OFFSET VALUE | PAGE IFC OFFSET VALUE
-----

```

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

```

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

```

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

```

firepower-3140(local-mgmt)# show portmanager switch pktcap-rules hardware
Hardware DB rule:1
Hw_index= 15372
Rule_id= 10241
Cnc_index= 1
Packet_count= 0
Slot= 1
Interface= 12
Protocol= 6
Ethertype= 0x0000
Vlan= 0

```

```

SrcPort= 0
DstPort= 0
SrcIp= 0.0.0.0
DstIp= 0.0.0.0
SrcIpv6= ::
DestIpv6= ::
SrcMacAddr= 00:00:00:00:00:00
DestMacAddr= 00:00:00:00:00:00

```

The following displays detailed information about the QOS functionality:

```

firepower(local-mgmt)# show portmanager switch qos-rule policer counters
Policer_type  green(pass_count)  yellow(pass_count)  red(drop_count)
-----
OSPF
780
Policer_type  green(pass_count)  yellow(pass_count)  red(drop_count)
-----
CCL_CLU
0
Policer_type  green(pass_count)  yellow(pass_count)  red(drop_count)
-----
BFD
61343307
Policer_type  green(pass_count)  yellow(pass_count)  red(drop_count)
-----
HA
0
Policer_type  green(pass_count)  yellow(pass_count)  red(drop_count)
-----
CCL_CONTROL
0

```

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

```

firepower(local-mgmt)# show portmanager switch qos-rule counters
Rule_no  Rule_id  Rule_type  pass_count
-----
1  9218  SW_QOS_BFD  0
Rule_no  Rule_id  Rule_type  pass_count
-----
2  9216  SW_QOS OSPF  102633941
Rule_no  Rule_id  Rule_type  pass_count
-----
3  9217  SW_QOS_BFD  61343307

```

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

```

firepower(local-mgmt)# show queuing interface ethernet 1 10
Queue  Traffic-type  Scheduler-type  oper-bandwidth  Destination
-----
3  Data  WRR  100  Application
4  CCL-CLU  SP  0  Application
5  BFD  SP  0  Application
6  OSPF  SP  0  Application
7  CCL-CONTROL/HA/LACP_Tx  SP  0  Application
0  packet-capture  N/A  0  CPU
7  LACP_Rx  N/A  0  CPU
Port 1/10 Queue Statistics:
Queue 0:
  Number of packets passed : 0
  Number of packets dropped: 0
Queue 1:
  Number of packets passed : 0
  Number of packets dropped: 0

```

```

Queue 2:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 3:
  Number of packets passed :          466420167
  Number of packets dropped:          0
Queue 4:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 5:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 6:
  Number of packets passed :          41536261
  Number of packets dropped:          0
Queue 7:
  Number of packets passed :           912
  Number of packets dropped:          0
CPU Statistics:
Queue 2:
  Number of packets passed :          180223
  Number of packets dropped:          0
Queue 7:
  Number of packets passed :           1572
  Number of packets dropped:          0

```

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

```

firepower(local-mgmt)# show queuing interface internal 1 1
Queue      Traffic-type      Scheduler-type  oper-bandwidth  Destination
-----
3          Data              WRR             100             Application
4          CCL-CLU           SP              0               Application
5          BFD               SP              0               Application
6          OSPF              SP              0               Application
7          CCL-CONTROL/HA/LACP_Tx  SP              0               Application
0          packet-capture    N/A             0               CPU
7          LACP_Rx          N/A             0               CPU
Port 1/18 Queue Statistics:
Queue 0:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 1:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 2:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 3:
  Number of packets passed :          17
  Number of packets dropped:          0
Queue 4:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 5:
  Number of packets passed :          0
  Number of packets dropped:          0
Queue 6:
  Number of packets passed :          5151
  Number of packets dropped:          0
Queue 7:
  Number of packets passed :          17345

```

```

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

```

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

```

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

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

```

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

```

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

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

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

```

The following CLI displays detailed information on port-based packet drops for eight traffic classes/queues:

```

firepower-3110(local-mgmt)# show portmanager switch tail-drop-allocated buffers all
-----

```

Per Port and Traffic Class									
Port	Per port	TC0	TC1	TC2	TC3	TC4	TC5	TC6	TC7
0/1	10	10	10	10	10	10	10	10	10
0/2	15	15	15	15	10	10	10	10	10
0/3	10	10	10	10	10	10	10	10	10
0/4	180	10	10	10	10	10	10	10	10
0/5	10	10	10	10	10	10	10	10	10
0/6	10	10	10	10	10	10	10	10	10
0/7	1200	125	125	150	10	10	125	150	150
0/8	10	10	10	10	10	10	10	10	10

```

-----

```

The following CLI displays dropped packet counts due to tti-lookup0:

```
firepower-3110(local-mgmt)# show portmanager switch default-rule-drop-counter tti-lookup0
```

Rule_id	cnc_index	packet_count
1	1	4

The following CLI displays dropped packet counts due to ipcl-lookup0:

```
firepower-3110(local-mgmt)# show portmanager switch default-rule-drop-counter ipcl-lookup0
```

Rule_id	cnc_index	packet_count
4096	0	114

## Connect Local-Mgmt Troubleshooting Commands for the Secure Firewall 4200 in Appliance Mode

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

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

FPR 4200# **connect local-mgmt**

### show portmanager

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

For example:

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

```
firepower(local-mgmt)# show portmanager switch forward-rules hardware vtcam-tti
```

	RULE_ID	VLAN	NUM_MPLS_LABELS	SRC_PORT	PC_ID	SRC_ID	MODE	PAK_CNT
1	2	0	0	10	0	10	0	1951
2	3	0	0	14	0	14	0	19
3	4	0	0	9	0	9	0	227505
4	5	0	0	13	0	13	0	103587
5	6	0	0	8	0	0	0	0
6	7	0	0	7	0	0	0	0
7	8	0	0	6	0	0	0	0
8	9	0	0	5	0	0	0	0
9	10	0	0	4	0	0	0	0
10	11	0	0	3	0	0	0	0
11	12	0	0	2	0	0	0	0
12	13	0	0	1	0	0	0	607
13	14	0	0	44	0	0	0	0
14	15	0	0	40	0	0	0	0
15	16	0	0	36	0	0	0	0
16	17	0	0	32	0	0	0	0
17	30	0	0	1	0	101	1	2120
18	18	0	0	1	0	101	0	306
19	19	0	0	2	0	102	0	2429
20	20	0	0	3	0	103	0	0



21	21	0	0	4	0	104	0	0
22	22	0	0	5	0	105	0	0
23	23	0	0	6	0	106	0	0
24	24	0	0	7	0	107	0	0
25	25	0	0	8	0	108	0	0
26	26	0	0	32	0	117	0	0
27	27	0	0	36	0	121	0	0
28	28	0	0	40	0	125	0	0
29	29	0	0	44	0	129	0	0
30	1	0	0	9	0	0	0	1875
31	8193	0	1	0	0	0	0	0
32	8194	0	2	0	0	0	0	0
33	8195	0	3	0	0	0	0	0
34	8196	0	4	0	0	0	0	0
35	8197	0	5	0	0	0	0	0
36	8198	0	6	0	0	0	0	0

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

```
firepower(local-mgmt)# show portmanager switch forward-rules hardware vcam-tti
```

	RULE_ID	VLAN	NUM_MPLS_LABELS	SRC_PORT	PC_ID	SRC_ID	MODE	PAK_CNT
1	2	0	0	10	0	10	0	1961
2	3	0	0	14	0	14	0	19
3	4	0	0	9	0	9	0	227517
4	5	0	0	13	0	13	0	103683
5	6	0	0	8	0	0	0	0
6	7	0	0	7	0	0	0	0
7	8	0	0	6	0	0	0	0
8	9	0	0	5	0	0	0	0
9	10	0	0	4	0	0	0	0
10	11	0	0	3	0	0	0	0
11	12	0	0	2	0	0	0	0
12	13	0	0	1	0	0	0	617
13	14	0	0	44	0	0	0	0
14	15	0	0	40	0	0	0	0
15	16	0	0	36	0	0	0	0
16	17	0	0	32	0	0	0	0
17	30	0	0	1	0	101	1	2156
18	18	0	0	1	0	101	0	306
19	19	0	0	2	0	102	0	2466
20	20	0	0	3	0	103	0	0
21	21	0	0	4	0	104	0	0
22	22	0	0	5	0	105	0	0
23	23	0	0	6	0	106	0	0
24	24	0	0	7	0	107	0	0
25	25	0	0	8	0	108	0	0
26	26	0	0	32	0	117	0	0
27	27	0	0	36	0	121	0	0
28	28	0	0	40	0	125	0	0
29	29	0	0	44	0	129	0	0
30	1	0	0	9	0	0	0	1875
31	8193	0	1	0	0	0	0	0
32	8194	0	2	0	0	0	0	0
33	8195	0	3	0	0	0	0	0
34	8196	0	4	0	0	0	0	0
35	8197	0	5	0	0	0	0	0
36	8198	0	6	0	0	0	0	0

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

```
firepower(local-mgmt)# show portmanager switch forward-rules hardware mac-filter
```

	VLAN	SRC_PORT	PC_ID	SRC_ID	DST_PORT	PKT_CNT	DMAC
1	0	44	0	129	1536	0	1:80:c2:0:0:2
2	0	44	0	129	1536	0	ff:ff:ff:ff:ff:ff
3	0	2	0	102	1536	0	ba:db:ad:f0:2:8f
4	0	4	0	104	1536	0	ff:ff:ff:ff:ff:ff
5	0	4	0	104	1536	0	1:80:c2:0:0:2
6	0	5	0	105	1536	0	1:80:c2:0:0:2
7	0	5	0	105	1536	0	ff:ff:ff:ff:ff:ff
8	0	13	0	13	9	103735	0:0:0:0:0:0
9	0	32	0	117	1536	0	ba:db:ad:f0:2:9e
10	0	7	0	107	1536	0	ff:ff:ff:ff:ff:ff
11	0	7	0	107	1536	0	1:80:c2:0:0:2
12	0	6	0	106	1536	0	1:80:c2:0:0:2
13	0	6	0	106	1536	0	ff:ff:ff:ff:ff:ff
14	0	14	0	14	10	19	0:0:0:0:0:0
15	0	10	0	10	14	1979	0:0:0:0:0:0
16	0	44	0	129	1536	0	ba:db:ad:f0:2:a1
17	0	9	0	9	13	1227537	0:0:0:0:0:0
18	0	8	0	108	1536	0	1:80:c2:0:0:2
19	0	8	0	108	1536	0	ff:ff:ff:ff:ff:ff
20	0	1	0	101	1536	0	ff:ff:ff:ff:ff:ff
21	0	1	0	101	1536	0	1:80:c2:0:0:2
22	0	3	0	103	1536	0	1:80:c2:0:0:2
23	0	1	0	101	1536	2183	1:0:0:0:0:0
24	0	3	0	103	1536	0	ff:ff:ff:ff:ff:ff
25	0	2	0	102	1536	23	ff:ff:ff:ff:ff:ff
26	0	2	0	102	1536	0	1:80:c2:0:0:2
27	0	32	0	117	1536	0	ff:ff:ff:ff:ff:ff
28	0	32	0	117	1536	0	1:80:c2:0:0:2
29	0	40	0	125	1536	0	ff:ff:ff:ff:ff:ff
30	0	40	0	125	1536	0	1:80:c2:0:0:2
31	0	7	0	107	1536	0	ba:db:ad:f0:2:94
32	0	5	0	105	1536	0	ba:db:ad:f0:2:92
33	0	36	0	121	1536	0	1:80:c2:0:0:2
34	0	4	0	104	1536	0	ba:db:ad:f0:2:91
35	0	36	0	121	1536	0	ff:ff:ff:ff:ff:ff
36	0	8	0	108	1536	0	ba:db:ad:f0:2:95
37	0	6	0	106	1536	0	ba:db:ad:f0:2:93
38	0	3	0	103	1536	0	ba:db:ad:f0:2:90
39	0	36	0	121	1536	0	ba:db:ad:f0:2:9f
40	0	1	0	101	1536	32	ba:db:ad:f0:2:8e
41	0	40	0	125	1536	0	ba:db:ad:f0:2:a0

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

```
firepower-4225(local-mgmt)# show portmanager switch forward-rules software mac-filter
```

	NATIVE_VLAN	VLAN	SRC_PORT	PORTCHANNEL_ID	DST_PORT	FLAGS	MODE	DMAC
1	0	106	6	0	1536	2	5	
1:80:c2:0:0:2								
2	0	105	5	0	1536	2	5	
ff:ff:ff:ff:ff:ff								
3	0	105	5	0	1536	2	5	
1:80:c2:0:0:2								
4	0	121	0	0	36	24	8	
0:0:0:0:0:0								
5	0	106	6	0	1536	2	5	
ff:ff:ff:ff:ff:ff								
6	0	121	36	0	1536	2	5	
1:80:c2:0:0:2								
7	0	117	32	0	1536	2	5	
1:80:c2:0:0:2								
8	0	125	40	0	1536	2	5	
ff:ff:ff:ff:ff:ff								

9	0	129	0	0	44	24	8
0:0:0:0:0:0							
10	0	117	32	0	1536	2	5
ff:ff:ff:ff:ff:ff							
11	0	103	3	0	1536	2	5
1:80:c2:0:0:2							
12	0	102	2	0	1536	2	5
ff:ff:ff:ff:ff:ff							
13	0	117	0	0	32	24	8
0:0:0:0:0:0							
14	0	107	0	0	7	24	8
0:0:0:0:0:0							
15	0	101	1	0	1536	2	5
ba:db:ad:f0:2:8e							
16	0	107	7	0	1536	2	5
ff:ff:ff:ff:ff:ff							
17	0	106	6	0	1536	2	5
ba:db:ad:f0:2:93							
18	0	105	0	0	5	24	8
0:0:0:0:0:0							
19	0	102	0	0	2	24	8
0:0:0:0:0:0							
20	0	104	4	0	1536	2	5
ba:db:ad:f0:2:91							
21	0	107	7	0	1536	2	5
ba:db:ad:f0:2:94							
22	0	129	44	0	1536	2	5
1:80:c2:0:0:2							
23	0	102	2	0	1536	2	5
1:80:c2:0:0:2							
24	0	121	36	0	1536	2	5
ff:ff:ff:ff:ff:ff							
25	0	1	13	0	9	26	8
0:0:0:0:0:0							
26	0	108	8	0	1536	2	5
1:80:c2:0:0:2							
27	0	101	1	0	1536	2	5
ff:ff:ff:ff:ff:ff							
28	0	2	10	0	14	26	8
0:0:0:0:0:0							
29	0	101	1	0	1536	2	5
1:80:c2:0:0:2							
30	0	1	9	0	13	26	8
0:0:0:0:0:0							
31	0	129	44	0	1536	2	5
ff:ff:ff:ff:ff:ff							
32	0	125	0	0	40	24	8
0:0:0:0:0:0							
33	0	108	8	0	1536	2	5
ba:db:ad:f0:2:95							
34	0	2	14	0	10	26	8
0:0:0:0:0:0							
35	0	129	44	0	1536	2	5
ba:db:ad:f0:2:a1							
36	0	103	0	0	3	24	8
0:0:0:0:0:0							
37	0	104	0	0	4	24	8
0:0:0:0:0:0							
38	0	104	4	0	1536	2	5
ff:ff:ff:ff:ff:ff							
39	0	107	7	0	1536	2	5
1:80:c2:0:0:2							
40	0	104	4	0	1536	2	5
1:80:c2:0:0:2							

```

41          0      101      1          0      1536      18      8
0:0:0:0:0:0
42          0      101      0          0          1      24      8
0:0:0:0:0:0
43          0      108      8          0      1536      2       5
ff:ff:ff:ff:ff:ff
44          0      121      36         0      1536      2       5
ba:db:ad:f0:2:9f
45          0      117      32         0      1536      2       5
ba:db:ad:f0:2:9e
46          0      105      5          0      1536      2       5
ba:db:ad:f0:2:92
47          0      125      40         0      1536      2       5
ba:db:ad:f0:2:a0
48          0      125      40         0      1536      2       5
1:80:c2:0:0:2
49          0      108      0          0          8      24      8
0:0:0:0:0:0
50          0      106      0          0          6      24      8
0:0:0:0:0:0
51          0      103      3          0      1536      2       5
ba:db:ad:f0:2:90
52          0      102      2          0      1536      2       5
ba:db:ad:f0:2:8f
53          0      103      3          0      1536      2       5
ff:ff:ff:ff:ff:ff

```

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

```

firepower-4225(local-mgmt)# show portmanager switch counters bridge
Bridge Ingress Drop Counter: 4688
No Bridge Ingress Drop

```

The following CLI displays details on hardware switch packet counters:

```

how portmanager switch counters packet-trace

```

```

firepower-4225(local-mgmt)# show portmanager switch counters packet-trace

```

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

```

goodOctetsSent          Sum of lengths of all good ethernet
                        frames sent from this MAC

-----
Counter                Source port- 0/0    Destination port- 0/0
-----
goodOctetsRcv          ---
badOctetsRcv           ---

                                Ingress counters
gtBrgInFrames          1341132            1341132
gtBrgVlanIngFilterDisc 0                    0
gtBrgSecFilterDisc     0                    0
gtBrgLocalPropDisc     0                    0
dropCounter            4699                Only for source-port

                                Egress counters
outUcFrames            1329593            1329593
outMcFrames            4594                4594
outBcFrames            2237                2237
brgEgrFilterDisc      9                    9
txqFilterDisc          0                    0
outCtrlFrames          0                    0
egrFrwDropFrames      0                    0
mcFifoDropPkts        0                    0
mcFilterDropPkts      0                    0

goodOctetsSent          ---
    
```

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

```

firepower-4225(local-mgmt)# show portmanager switch traffic cpu

Dev/RX queue  packets  bytes
-----
Dev/RX queue  packets  bytes
-----

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

The following CLI displays details on hardware switch port traffic:

```

firepower-4225(local-mgmt)# show portmanager switch traffic port

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

Dev/Port      max-rate  actual-tx-rate  actual-rx-rate
-----
0/1           1488095   (0%)---         (0%)---
0/2           1488095   (0%)---         (0%)---
0/3           14880     (0%)---         (0%)---
0/4           14880     (0%)---         (0%)---
    
```

```

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

```

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

```

firepower-4225(local-mgmt)# show portmanager counters ethernet 1 13
  Good Octets Received           : 2153
  Bad Octets Received            : 0
  MAC Transmit Error             : 0
  Good Packets Received          : 13
  Bad packets Received           : 0
  BRDC Packets Received          : 0
  MC Packets Received            : 13
  .....
  .....
  txqFilterDisc                  : 0
  linkchange                      : 1
  FcFecRxBlocks                  : 217038081
  FcFecRxBlocksNoError           : 217038114
  FcFecRxBlocksCorrectedError    : 0
  FcFecRxBlocksUnCorrectedError  : 0
  FcFecRxBlocksCorrectedErrorBits : 0
  FcFecRxBlocksCorrectedError0   : 0
  FcFecRxBlocksCorrectedError1   : 0
  FcFecRxBlocksCorrectedError2   : 0
  FcFecRxBlocksCorrectedError3   : 0
  FcFecRxBlocksUnCorrectedError0  : 0
  FcFecRxBlocksUnCorrectedError1  : 0
  FcFecRxBlocksUnCorrectedError2  : 0
  FcFecRxBlocksUnCorrectedError3  : 0

```

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

```

firepower-4225(local-mgmt)# show portmanager counters ethernet 1 14
  Good Octets Received           : 2153
  Bad Octets Received            : 0
  MAC Transmit Error             : 0
  Good Packets Received          : 13
  Bad packets Received           : 0
  BRDC Packets Received          : 0
  MC Packets Received            : 13
  .....
  .....
  txqFilterDisc                  : 0
  linkchange                      : 1
  RsFeccorrectedFecCodeword      : 0
  RsFecuncorrectedFecCodeword    : 10

```

```
RsFecsymbolError0      : 5
RsFecsymbolError1     : 0
RsFecsymbolError2     : 0
RsFecsymbolError3     : 0
```

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

```
firepower-4245(local-mgmt)# show portmanager port-info ethernet 1 5
```

```
....
....
```

```
DOM info:
=====

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

THRESHOLDS

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

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

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

```
PHY Data:
PAGE IFC OFFSET VALUE | PAGE IFC OFFSET VALUE
-----|-----
```

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

```
firepower-4225(local-mgmt)# show portmanager switch pktcap-rules software
Software DB rule:1
  Slot= 1
  Interface= 12
  Breakout-port= 0
  Protocol= 6
  Ethertype= 0x0000
  Filter_key= 0x00000040
  Session= 1
  Vlan= 0
  SrcPort= 0
  DstPort= 0
  SrcIp= 0.0.0.0
  DstIp= 0.0.0.0
  SrcIpv6= ::
  DestIpv6= ::
  SrcMacAddr= 00:00:00:00:00:00
  DestMacAddr= 00:00:00:00:00:00
```

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

```
firepower-4225(local-mgmt)# show portmanager switch pktcap-rules hardware
Hardware DB rule:1
  Hw_index= 15372
  Rule_id= 10241
  Cnc_index= 1
  Packet_count= 0
  Slot= 1
  Interface= 12
  Protocol= 6
  Ethertype= 0x0000
  Vlan= 0
  SrcPort= 0
  DstPort= 0
  SrcIp= 0.0.0.0
  DstIp= 0.0.0.0
  SrcIpv6= ::
  DestIpv6= ::
  SrcMacAddr= 00:00:00:00:00:00
  DestMacAddr= 00:00:00:00:00:00
```

The following CLI displays detailed information on port-based packet drops for eight traffic classes/queues:

```
firepower-4225(local-mgmt)# show portmanager switch tail-drop-allocated buffers all
-----
```

Per Port and Traffic Class								
Port	Per port	TC0	TC1	TC2	TC3	TC4	TC5	TC6
TC7								
0/1	10	10	10	10	10	10	10	10
0								
0/2	15	15	15	15	10	10	10	10
0								
0/3	0	10	10	10	10	10	10	10
0								
0/4	80	10	10	10	10	10	10	10
80								



0/5	10	10	10	10	10	10	10	10
10								
0/6	10	10	10	10	10	10	10	10
10								
0/7	1200	125	125	150	10	10	125	150
125								
0/8	10	10	10	10	10	10	10	10
10								

The following CLI displays dropped packet counts due to tti-lookup0:

```
firepower-4225(local-mgmt)# show portmanager switch default-rule-drop-counter tti-lookup0
```

Rule_id	cnc_index	packet_count
1	1	4

## FXOS CLI Security Services Mode Troubleshooting Commands

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

### show app

Displays information about the applications attached to your Firepower 1000/2100 or Secure Firewall 3100 device.

For example:

```
firepower /ssa # show app
```

Application Name	Version	Description	Author	Deploy Type	CSP Type	Is Default App
ftd	6.2.0.131	N/A	cisco	Native	Application	No
ftd	6.2.0.140	N/A	cisco	Native	Application	No
ftd	6.2.0.175	N/A	cisco	Native	Application	Yes

### showapp-instance

Displays information about the verified app-instance status

```
firepower-2120 /ssa # show app-instance
```

Application Name	Slot ID	Admin State	Operational State	Running Version	Startup Version
asa	1	Enabled	Online	9.14.2	9.14.2
	Not Applicable				

### showfault

Displays information about the fault message

```
firepower-2120 /ssa # show fault
```

Severity	Code	Last Transition Time	ID	Description
Cleared	F16589	2021-10-11T21:58:53.200	25140	[FSM:STAGE:RETRY:]: Waiting for chassis object ready (FSM-STAGE:sam:dme:SmSecSvcAutoDeployCSP:WaitForChassisMReady)

**show failsafe-params**

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

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

For example:

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

When the system is in the fail-safe mode:

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

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

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

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

- Operation State of the application is Offline:

```
firepower-2120-failed /ssa # show app-instance
Application Name      Slot ID  Admin State  Operational State  Running Version
Startup Version Cluster Oper State  Cluster Role
-----
asa                   1        Enabled      Offline <=====  9.16.2.3
9.16.2.3              Not Applicable  None
```

## Secure Firewall 3100 and 4200 CLI Monitoring Mode Troubleshooting Commands

Use the following CLI commands to troubleshoot issues.

**show**

Displays the state of memory leak, process wise.

For example:

```
FPR3100 /monitoring/sysdebug/mem-leak-logging # show detail
Process      Status      Stacktrace
-----
```

statsAG	Disabled	Off
dcosAG	Disabled	Off
portAG	Disabled	Off
appAG	Disabled	Off
eventAG	Disabled	Off
npuAG	Disabled	Off
sessionmgrAG	Disabled	Off
svcmongAG	Disabled	Off
serviceOrchAG	Disabled	Off
dme	Disabled	Off
envAG	Disabled	Off



**Note** By default, mem-leak is disabled for all UCSM processes, and stacktrace is disabled. You must enable mem-leak for the specified process to debug the memory leak issues, and enable the stacktrace for more information on the issue.

## Packet Capture for Secure Firewall 3100/4200

The Packet Capture tool is a valuable asset for use in debugging connectivity and configuration issues and for understanding traffic flows through your devices. You can now use the Packet Capture CLIs to log traffic that is going through specific interfaces on your Secure Firewall 3100/4200 devices.

You can create multiple packet capture sessions, and each session can capture traffic on multiple interfaces. For each interface included in a packet capture session, a separate packet capture (PCAP) file will be created.

### Guidelines and Limitations for Packet Capture

The Packet Capture tool has the following limitations:

- Packet Capture on Secure Firewall 3100/4200 series devices can capture up to 300 Mbps.
- Packet capture sessions can be created even when there is not enough storage space available to run the packet capture session. You should verify that you have enough storage space available before you start a packet capture session.
- For packet capture sessions on a single-wide 4x100Gbps or 2x100Gbps network module (part numbers FPR-NM-4X100G and FPR-NM-2X100G respectively), if the module `adminstate` is set to `off`, the capture session is automatically disabled with an “Oper State Reason: Unknown Error.” You will have to restart the capture session after the module `adminstate` is set to `on` again.

With all other network modules, packet capture sessions continue across module `adminstate` changes.

- Does not support multiple active packet capturing sessions.
- There is no option to filter based on source or destination IPv6 address.
- Filters are not effective on packets that cannot be understood by the internal switch (for example Security Group Tag and Network Service Header packets).
- You cannot capture packets for an EtherChannel as a whole. However, for an EtherChannel allocated to a logical device, you can capture packets on each member interface of the EtherChannel.

- You cannot copy or export a PCAP file while the capture session is still active.
- When you delete a packet capture session, all packet capture files associated with that session are also deleted.

## Creating or Editing a Packet Capture Session

### Procedure

**Step 1** Enter packet capture mode:

```
firepower-4215 # scope packet-capture
```

**Step 2** Create a filter.

```
firepower-4215 /packet-capture/filter* # set <filterprop filterprop_value
```

**Table 1: Supported Filter Properties**

ivlan	Inner VLAN ID (vlan of packet while ingressing port)
ovlan	Outer VLAN ID
srcip	Source IP Address (IPv4)
destip	Destination IP Address (IPv4)
srcport	Source Port Number
destport	Destination Port Number
protocol	IP Protocol [IANA defined Protocol values in decimal format]
ethertype	Ethernet Protocol type [IANA defined Ethernet Protocol type value in decimal format. For eg: IPv4 = 2048, IPv6 = 34525, ARP = 2054, SGT = 35081]
srcmac	Source Mac Address
destmac	Destination Mac Address

You can apply filters to any of the interfaces included in a packet capture session.

**Step 3** To create or edit a packet capture session:

```
firepower-4215 /packet-capture # enter session session_name
```

**Step 4** Specify the length of the packet that you want to capture for this packet capture session:

```
firepower-4215 /packet-capture/session* # set session-pcap-snaplength session_snap_length_in_bytes
```

The specified snap length must be between 64 and 9006 bytes. If you do not configure the session snap length, the default capture length is 1518 bytes.

**Step 5** Specify the physical source ports that should be included in this packet capture session.

You can capture from multiple ports and can capture from both physical ports and application ports during the same packet capture session. A separate packet capture file is created for each port included in the session. You cannot capture packets for an EtherChannel as a whole. However, for an EtherChannel allocated to a logical device, you can capture packets on each member interface of the EtherChannel.

**Note** To remove a port from the packet capture session, use **delete** instead of **create** in the commands listed below.

- a) Specify the physical port.

```
firepower-4215 /packet-capture/session* # create {phy-port | phy-aggr-port} port_id
```

**Example:**

**Example:**

```
firepower-4215 /packet-capture/session* # create phy-port Ethernet1/1
firepower-4215 /packet-capture/session/phy-port* #
```

- b) Capture packets on a subinterface.

```
firepower-4215 /packet-capture/session/phy-port* # set subinterface id
```

You can only capture packets for one subinterface per capture session, even if you have multiple subinterfaces on one or more parents. Subinterfaces for EtherChannels are not supported. If the parent interface is also allocated to the instance, you can either choose the parent interface or a subinterface; you cannot choose both.

**Example:**

```
firepower-4215 /packet-capture/session/phy-port* # set subinterface 100
firepower-4215 /packet-capture/session/phy-port* #
```

- c) For container instances, specify the container instance name.

```
firepower-4215 /packet-capture/session/phy-port* # set app-identifier instance_name
```

**Example:**

```
firepower-4215 /packet-capture/session/phy-port* # set app-identifier ftd-instancel
firepower-4215 /packet-capture/session/phy-port* #
```

- d) (Optional) For capturing the mac-filter dropped packets from switch, specify the mac-filter drop.

```
firepower-4215 /packet-capture/session/phy-port* # set drop {mac-filter | disable}
```

- **disable**—To disable capture of packets dropped from switch.
- **mac-filter**—To capture switch mac-filter drop

**Note** The mac-filter option is supported only for the ingress packet capture direction and the default option is always **disable**.

- e) (Optional) Apply the desired filter.

```
firepower-4215 /packet-capture/session/phy-port* # set {source-filter} filtername
```

**Note** To remove a filter from a port, use **set source-filter ""**.

- f) Repeat the steps above as needed to add all desired ports.

**Step 6** Specify the application source ports that should be included in this packet capture session.

You can capture from multiple ports and can capture from both physical ports and application ports during the same packet capture session. A separate packet capture file is created for each port included in the session.

**Note** To remove a port from the packet capture session, use **delete** instead of **create** in the commands listed below.

a) Specify the application port.

```
firepower-4215 /packet-capture/session* # create app_port module_slot link_name interface_name
app_name
```

---

#### Syntax Description

<b>module_slot</b>	Security module in which the application is installed.
<b>link_name</b>	Any user descriptive name referring to the interface, for example, link1, inside_port1, etc.
<b>interface_name</b>	Interface attached to the application where packets need to be captured from, for example, Ethernet1/1, Ethernet2/2
<b>app_name</b>	Application installed on the module - ftd

b) (Optional) Apply the desired filter.

```
firepower-4215 /packet-capture/session/phy-port* # set {source-filter} filename
```

---

#### Syntax Description

<b>filename</b>	The filter name from the 'create filter' command under packet-capture scope
-----------------	-----------------------------------------------------------------------------

**Note** To remove a filter from a port, use **set source-filter ""**.

c) Repeat the steps above as needed to add all desired application ports.

**Step 7** If you want to start the packet capture session now:

```
firepower-4215 /packet-capture/session* # enable
```

Newly created packet-capture sessions are disabled by default. Explicit enabling of a session activates the packet capture session when the changes are committed. If another session is already active, enabling a session will generate an error. You must disable the already active packet-capture session before you can enable this session.

**Step 8** Commit the transaction to the system configuration:

```
firepower-4215 /packet-capture/session* # commit-buffer
```

If you enabled the packet capture session, the system will begin capturing packets. You will need to stop capturing before you can download the PCAP files from your session.

---

#### Example

```
firepower-4215 # scope packet-capture
firepower-4215 /packet-capture # create session ftdinside
firepower-4215 /packet-capture* # create filter interfacelvlan100
```

```
firepower-4215 /packet-capture/filter* # set ivlan 100
firepower-4215 /packet-capture/filter* # set srcIP 6.6.6.6
firepower-4215 /packet-capture/filter* # set destIP 10.10.10.10
firepower-4215 /packet-capture/filter* # exit
firepower-4215 /packet-capture/session* # create phy-port Ethernet1/1
firepower-4215 /packet-capture/session/phy-port* # set drop mac-filter
firepower-4215 /packet-capture/session/phy-port* # set src-filter interfacevlan100
firepower-4215 /packet-capture/session/phy-port* # exit
firepower-4215 /packet-capture/session* # enable
firepower-4215 /packet-capture/session* # commit-buffer
firepower-4215 /packet-capture/session #
```

## Deleting Packet Capture Sessions

You can delete an individual packet capture session if it is not currently running or you can delete all inactive packet capture sessions.

### Procedure

---

- Step 1** Enter packet capture mode:
- ```
firepower-4215 # scope packet-capture
```
- Step 2** To delete a specific packet capture session:
- ```
firepower-4215 /packet-capture # delete session session_name
```
- Step 3** To delete all inactive packet capture sessions:
- ```
firepower-4215/packet-capture # delete-all-sessions
```
- Step 4** Commit the transaction to the system configuration:
- ```
firepower-4215 /packet-capture* # commit-buffer
```
- 

### Example

```
firepower-4215 # scope packet-capture
firepower-4215 packet-capture # delete session asalinside
firepower-4215 packet-capture* # commit-buffer
firepower-4215 packet-capture #
```

