Cable Commands: show l through show z

show logging slot onboard

To display onboard slot information of logging buffers, use the **show logging onboard slot** *slot* **message** command in privileged EXEC mode.

show logging onboard slot *slot* **message**

Syntax Description

message	Displays OBFL error messages.
slot	Displays slot information.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use **show logging onboard slot** *slot* **message** to check OBFL messages. Use this command to identify the hardware or software-related failures.

Examples

The following is a sample output of the **show logging onboard slot** *slot* **message**   command:

```
Router#  show logging onboard slot 8 message
 timestamp message

_____

03/09/15 18:35:29    US-PHY   1    SN Unknown Mg0 TGC-verify not sampled at frame-sync
pulse 0x4a900046, 520 times
03/09/15 18:35:29    US-PHY   1    SN Unknown Mg1 TGC-verify not sampled at frame-sync
pulse 0x4a900046, 520 times
03/09/15 18:35:29    US-PHY   1    SN Unknown Mg3 TGC-verify not sampled at frame-sync
pulse 0x4a900046, 520 times
03/09/15 18:35:29    US-PHY   1    SN Unknown Mg2 TGC-verify not sampled at frame-sync
pulse 0x4a900046, 520 times
03/09/15 18:41:59    US-PHY   1    SN Unknown Mg2 TGC-verify not sampled at frame-sync
pulse 0x389a0047, 540 times
03/09/15 18:41:59    US-PHY   1    SN Unknown Mg1 TGC-verify not sampled at frame-sync
pulse 0x389a0047, 540 times
```

Related Commands

Command	Description
clear logging onboard slot	Clears the OBFL messages.

show nls

To display the Network Layer Signalling (NLS) functionality state, use the **show nls** command in privileged EXEC mode.

show nls[**ag-id**| **flow**]

Command Default   Information for the NLS state is displayed.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.3(21a)BC3	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples   The following example shows the output of the **show nls** command:

```
Router# show nls
NLS enabled
NLS Authentication enabled
NLS resp-timeout 45
```

Examples   The following example shows the output of the **show nls ag-id**command:

```
Router# show nls ag-id
Auth Group Id
12345
```

The following example shows the output of the **show nls flow** command:

```
Router# show nls flow
NLS flowid CPE IP CR Type CR ID NLS State
4294967295 16.16.1.1 1 1 PEND_B_RESP
```

Examples   This example shows the output of the **show nls** command:

```
Router# show nls
NLS Enabled
NLS Authentication Enabled
NLS resp-timeout 20
```

This example shows the output of the **show nls ag-id** command for the Cisco cBR Series Converged Broadband Router:

```
Router#show nls ag-id
Auth Group Id
100

Router#
```

This example shows the output of the **show nls flow** command for the Cisco cBR Series Converged Broadband Router:

```
Router# show nls flow
NLS flowid CPE IP CR Type CR ID NLS State
4294967295 16.16.1.1 1 1 PEND_B_RESP
```

Related Commands

Command	Description
cpd	Enables CPD.
nls	Enables NLS.

show nls ag-id

To display authorization group ID information, use the **show nls ag-id** command in privileged EXEC mode.

show nls ag-id

Command Default

Authorization group ID information is displayed. The authentication key is saved encrypted and is not displayed.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(21a)BC3	This command was introduced.

Examples

The following example shows the output of the **show nls-sg-id** command:

```
Router# show nls ag-id
Auth Group Id
12345
```

Related Commands

Command	Description
cpd	Enables CPD.

show nls flow

To display NLS active flow information, use the **show nls flow** command in privileged EXEC mode.

show nls flow

Command Default   Information for NLS active flows are displayed.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.3(21a)BC3	This command was introduced.

Examples   The following example shows the output of the show cpd command:

```
Router# show nls flow
NLS flowid CPE IP CR Type CR ID NLS State
4294967295 16.16.1.1 1 1 PEND_B_RESP
```

Related Commands

Command	Description
cpd	Enables CPD.

show packetcable cms

To display all gate controllers that are connected to the PacketCable client, use the **show packetcable cms** command in privileged EXEC mode.

show packetcable cms [**all**| **verbose**]

Syntax Description

all	(Optional) Specifies all gate controllers including the Common Open Policy Service (COPS) servers for which the PacketCable connection is gone down.
verbose	(Optional) Provides detailed output with statistics for all gate controllers that are connected to the PacketCable client.

Command Default   All gate controllers currently connected to the PacketCable client are displayed.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS Release 12.2(33)SCF	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines   The **show packetcable cms** command displays various PacketCable counters including message exchanges and error frequency details to help detect any PacketCable errors. This command output can be periodically monitored to validate the overall health of a PacketCable solution.

In normal circumstances, the output of the **show packetcable cms all** command is not different from the output of the **show packetcable cms** command (default form of the command). However, the **show packetcable cms** command with the all keyword is used to capture all COPS servers including the servers for which the PacketCable connection is gone down.

Examples   The following is a sample output of the **show packetcable cms** command that shows all gate controllers that are currently connected to the PacketCable client in Cisco IOS Release 12.2(33)SCF:

```
Router# show packetcable cms
GC-Addr        GC-Port  Client-Addr    COPS-handle   Version PSID Key PDD-Cfg
1.100.30.2     47236    2.39.34.1      0x2FF9E268/1   4.0    0    0    0
2.39.26.19     55390    2.39.34.1      0x2FF9D890/1   1.0    0    0    2
```

The following is a sample output of the **show packetcable cms** command with the all keyword in Cisco IOS Release 12.2(33)SCF:

```
Router# show packetcable cms all
GC-Addr        GC-Port  Client-Addr     COPS-handle   Version PSID Key PDD-Cfg
1.100.30.2     47236    2.39.34.1       0x2FF9E268/1   4.0    0    0    0
2.39.26.19     55390    2.39.34.1       0x2FF9D890/1   1.0    0    0    2
1.10.30.22     42307    2.39.34.1       0x0       /0   4.0    0    0    0
```

The following is a sample output of the **show packetcable cms** command with the **verbose** keyword. This output provides additional information with statistics for all gate controllers that are connected to the PacketCable client.

```
Router# show packetcable cms verbose
Gate Controller
     Addr         :     1.100.30.2
     Port         :     47236
     Client Addr  :     2.39.34.1
     COPS Handle  :     0x2FF9E268
     Version      :     4.0
     Statistics   :
        gate del =  0  gate del ack =  0   gate del err = 0
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open =  0  gate report state = 0
        gate set =  0  gate set ack =  0   gate set err = 0
        gate alloc = 0 gate alloc ack = 0  gate alloc err = 0
        gate close =  0
Gate Controller
     Addr         :     2.39.26.19
     Port         :     55390
     Client Addr  :     2.39.34.1
     COPS Handle  :     0x2FF9D890
     Version      :     1.0
     Statistics   :
        gate del =  0  gate del ack =  0   gate del err = 0
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open =  0  gate report state = 0
        gate set =  2  gate set ack =  2   gate set err = 0
        PCMM Timers Expired
        Timer T1 =  0   Timer T2 =  0 Timer T3 = 0 Timer T4 = 0
GC-Addr        GC-Port  Client-Addr     COPS-handle   Version PSID Key PDD-Cfg
1.100.30.2     47236    2.39.34.1       0x2FF9E268/1   4.0    0    0    0
2.39.26.19     55390    2.39.34.1       0x2FF9D890/1   1.0    0    0    2
```

Table below describes the significant fields shown in the **show packetcable cms** command display.

Table 1: show packetcable cms Field Descriptions

Field	Description
GC-Addr	Gate controller IP address.
GC-Port	Port number of the gate controller.
Client-Addr	PacketCable client IP address.
COPS-handle	Unique value to identify a Common Open Policy Service (COPS) connection.
PSID	Policy server ID.

Examples   This example shows the output of the **show packetcable cms** command with the **all** keyword:

```
Router#show packetcable cms all
GC-Addr       GC-Port Client-Addr   COPS-handle        Version PSID Key PDD-Cfg
1.100.30.2    45140   2.39.23.23    0x7F07E87170D0/1   4.0     0    0   0
1.100.30.2    45143   2.38.40.14    0x7F07E8717000/1   4.0     0    0   0
2.39.26.19    34934   2.39.23.23    0x7F079F594380/1   4.0     0    0   0
2.39.23.117   44902   2.38.40.14    0x7F079F594318/1   4.0     0    0   2
```

This example shows the output of the **show packetcable cms** command with the **verbose** keyword:

```
Router#show packetcable cms verbose
Gate Controller
     Addr       :      1.100.30.2
     Port       :      50406
     Client Addr :     2.38.40.14
     COPS Handle :     0x7FD926EEAC08
     Version    :      4.0
     Statistics  :
        gate del =  0  gate del ack =  0  gate del err = 0
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open = 0  gate report state = 0
        gate set =  0  gate set ack =  0  gate set err = 0
        gate alloc = 0 gate alloc ack = 0  gate alloc err = 0
        gate close =  0

Gate Controller
     Addr       :      1.100.30.2
     Port       :      50408
     Client Addr :     2.39.23.23
     COPS Handle :     0x7FD926EEABA0
     Version    :      4.0
     Statistics  :
        gate del =  4  gate del ack =  0  gate del err = 4
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open = 0  gate report state = 0
        gate set =  0  gate set ack =  0  gate set err = 0
        gate alloc = 0 gate alloc ack = 0  gate alloc err = 0
        gate close =  0

Gate Controller
     Addr       :      2.39.23.117
     Port       :      50874
     Client Addr :     2.38.40.14
     COPS Handle :     0x7FD92801E148
     Version    :      4.0
     Statistics  :
        gate del =  0  gate del ack =  0  gate del err = 0
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open = 0  gate report state = 0
        gate set =  6  gate set ack =  0  gate set err = 6
        gate error statistics:
          Invalid subscriber = 6
        PCMM Timers Expired
        Timer T1 =  0  Timer T2 =  0 Timer T3 = 0 Timer T4 = 0

Gate Controller
     Addr       :      2.39.26.19
     Port       :      33525
     Client Addr :     2.39.23.23
     COPS Handle :     0x7FD92801DB30
     Version    :      4.0
     Statistics  :
        gate del =  0  gate del ack =  0  gate del err = 0
        gate info = 0  gate info ack = 0  gate info err = 0
        gate open = 0  gate report state = 0
```

```
gate set =  0  gate set ack =  0  gate set err = 0
PCMM Timers Expired
Timer T1 =  0  Timer T2 =  0 Timer T3 = 0 Timer T4 = 0
```

Related Commands

Command	Description
cable dynamic-qos trace	Enables call trace functionality on the Cisco CMTS router for PacketCable or PacketCable Multimedia gates.
debug cable dynamic-qos subscriber	Enables debugging of the call trace functionality on the Cisco CMTS router for a particular subscriber.
debug cable dynamic-qos trace	Enables call trace debugging on the Cisco CMTS router for all the subscribers for whom call trace is configured.
show cable dynamic-qos trace	Displays the number of subscribers for whom call trace is configured on the Cisco CMTS router.

show packetcable event

To display information the PacketCable event message (EM) server, use the **show packetcable event** command in user EXEC or privileged EXEC mode.

show packetcable event {**df-group**| **radius-server**| **rks-group**}

Syntax Description

df-group	Displays information about the Communications Assistance for Law Enforcement Act (CALEA) Delivery Function (DF) server groups that are configured on the router.
radius-server	Displays information about the EM Remote Authentication Dial In User Service (RADIUS) servers that are configured on the router.
rks-group	Displays information about the Record Keeping Server (RKS) groups that are configured on the router.

Command Modes   User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(15)BC2	This command was introduced for the Cisco uBR7246VXR and Cisco uBR10012 universal broadband routers.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines   This command displays information about the authentication, authorization, and accounting (AAA) servers that are configured on the Cisco CMTS router for PacketCable operations. These include DF servers (used for CALEA redirection of event messages and traffic), RADIUS servers (used for authentication), and RKS servers (used for billing).

Examples   The following example shows typical output for the **show packetcable event df-group** command, which shows the IP address and UDP port of the DF server to which event messages are being forwarded for CALEA electronic surveillance.

```
Router# show packetcable event df-group
CDC-address     CDC-port
1.9.62.12       1816
Router#
```

The following example shows a typical display for the **show packetcable event radius-server** command, which shows the IP address for each RADIUS server that is configured on the router for PacketCable operations, along with the UDP port number that it is using.

```
Router# show packetcable event radius-server
'
Server-address Port
10.9.62.12     1816
10.9.62.20     1813
10.9.62.12     1813
Router#
```

The following example shows a typical display for the **show packetcable event rks-group** command.

```
Router# show packetcable event rks-group
Pri-addr       Pri-port Sec-addr       Sec-port Ref-cnt Batch-cnt
1.9.62.12      1813     1.9.62.20      1813     2       0
Router#
```

Table below describes the major fields shown in the **show packetcable event rks-group** display.

Table 2: show packetcable event rks-group Field Display

Field	Description
Pri-addr	IP address for the primary RKS server.
Pri-port	UDP port for the primary RKS server.
Sec-addr	IP address for the secondary RKS server.
Sec-port	UDP port for the secondary RKS server.
Ref-cnt	Number of times that the router send single event messages to the RKS server.
Batch-cnt	Number of times that the router sent batrch messages (multiple Event Messages within a single RADIUS message) to the RKS server.

Tip For complete information about PacketCable event messaging, see the *PacketCable Event Messages Specification,* which is available at the PacketCable Event Messages SpecificationPacketCable web site at the following URL : http://www.packetcable.com

Examples This example shows the output of the **show packetcable event** command:

```
Router# show packetcable event df-group
CDC-address      CDC-port
1.9.62.12        1816
Router#
```

```
Router# show packetcable event radius-server
Server-address Port
10.9.62.12    1816
10.9.62.20    1813
10.9.62.12    1813
Router#
```

```
Router# show packetcable event rks-group
Pri-addr      Pri-port Sec-addr      Sec-port Ref-cnt Batch-cnt
1.9.62.12     1813     1.9.62.20     1813     2        0
Router#
```

Related Commands

Command	Description
clear packetcable gate counter commit	Resets the counters that track the total number of committed gates.
packetcable	Enables PacketCable operations on the Cisco CMTS.
show packetcable gate counter commit	Displays the total number of committed gates since system reset or since the counter was last cleared.
show packetcable global	Displays the current PacketCable configuration.

show packetcable gate

To display information about one or more gates in the gate database, use the **show packetcable gate** command in user EXEC or privileged EXEC mode.

show packetcable gate [**downstream**| **upstream**] {**summary**| *gate-id*}

show packetcable gate [**downstream**| **upstream**| **dqos**| **ipv6** | **multimedia**] {**summary**| *gate-id*}

Syntax Description

downstream	(Optional) Display information only for gates in the downstream direction.
upstream	(Optional) Display information only for gates in the upstream direction.
summary	Display a summary containing the gate ID, subscriber ID, subscriber IP address, and current state information.
gate-id	Display information for a specific gate ID. The valid range is 0 to 4294967295.

Command Default

Displays information about gates on both upstreams and downstreams, if **upstream** or **downstream** is not specified.

Command Modes

User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(8)BC2	This command was introduced for the Cisco uBR7200 series universal broadband router.
12.2(11)BC3	The output for the **summary** option was enhanced to display the cable interface and service flow IDs (SFIDs) associated with each PacketCable gate.
12.2(15)BC1	Support was added for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines   This command displays information about one or more gates in the gate database on the Cisco CMTS. You can display a summary for all currently active gates, for all downstream or all upstream gates, or you can display detailed information about a specific gate.

Examples   The following example shows typical output for the **show packetcable gate summary** command, which displays all current gates on the CMTS:

```
Router# show packetcable gate summary
GateID    Slot SubscriberID  GC-Addr        State   SFID    SFID
                                                    (us)    (ds)
2566     2/0  3.18.1.4       172.22.87.45   COMMIT  9       10
18950    2/0  3.18.1.5       172.22.87.45   COMMIT  7       8
Total number of gates = 2
Total Gates committed(since bootup or clear counter) = 2
```

The following example shows a typical display for a specific gate. Both downstream and upstream gates are shown unless you also specify either the **downstream** or **upstream** option.

```
Router# show packetcable gate 196

GateID              : 196
    Subscriber ID   : 4.4.1.22
    GC Address      : 192.168.80.15
    State           : COMMITTED
    Gate specs [UPSTREAM]
      Gate classifier : [protocol 17,
                          src addr/port 4.4.1.22/0,
                          dest addr/port 3.3.1.3/3456
      diffserv dscp   : 0x6000000
      timer t1(ms)    : 180000
      timer t2(ms)    : 2000
      commit flags    : 0x0
      session class   : 0x1
       flowspec # 1          : [r/b/p/m/M 1176256512/1128792064/1176256512/200/200]
                      [R/S: 1176256512/0]
    Gate specs [DOWNSTREAM]
      Gate classifier : [protocol 17,
                          src addr/port 3.3.1.3/0,
                          dest addr/port 4.4.1.22/0
      diffserv dscp   : 0x9000000
      timer t1(ms)    : 180000
      timer t2(ms)    : 2000
      commit flags    : 0x0
      session class   : 0x1
       flowspec # 1          : [r/b/p/m/M 1176256512/1128792064/1176256512/200/200]
                      [R/S: 1176256512/0]
    Remote Gate
      address/port    : 172.22.79.22/1812
      gate coord flag : 2
      algo            : 100
      security key[16] : 30 31 32 33 34 35 36 37 38 39 30 31 32 33 34 35
    Billing Info
      primary RKS     : [addr/port 1.9.62.12/1813]
      secondary RKS   : [addr/port 255.255.255.255/65535]
      flags           : 0
      billing corr ID     : [3D 38 96 CC 20 20 20 20 31 30 20 30 00 00 00 41 ]
```

Table below describes the major fields shown in the **show packetcable gate** display.

Table 3: show packetcable gate Field Display

Field	Description
GateID	Unique number identifying the local gate.
Slot	Cable interface on the Cisco CMTS.
Subscriber ID	IP address for the subscriber for this service request.
GC-Addr	IP address for the gate controller that is responsible for this gate.
State	Describes the current state of the gate in both the upstream and downstream directions. The possible state values are: • ALLOC = The CMTS has received a Gate-Alloc command from the gate controller and has created the gate in response. The CMTS must now wait for the request to be authorized. • AUTH = The CMTS has received a Gate-Set command from the gate controller that authorizes the resources needed for the gate request. The CMTS must now wait for the actual resources to be reserved. • RSVD = All required resources for the gate have been reserved. • COMMIT = All resources have been committed at both the local CMTS and remote CMTS. The local CMTS has also received a commit notification from the local MTA and has finished all gate coordination with the remote end. The gate can now pass traffic. • INVLD = The gate is invalid, typically because of an error condition or lack of resources. The CMTS will eventually delete the gate. • UNKWN = The gate is an unknown state.
SFID (us)	SFID for the upstream associated with this PacketCable gate.
SFID (ds)	SFID for the downstream associated with this PacketCable gate.
Total number of gates	Displays the total number of gates that are currently allocated, authorized, reserved, or committed.

Field	Description
Total Gates committed	Displays the total number of gates that the CMTS has committed since the CMTS was last reset or since the counters were last cleared.

Tip For complete information about the State field, see section 5.4, Gate Control Protocol Operation, in the *PacketCable Dynamic Quality-of-Service Specification* (PKT-SP-DQOS-I03-020116).

Examples This example shows the output of the **show packetcable gate** command:

```
Router#show packetcable gate summary
GateID     i/f          SubscriberID   GC-Addr        State    Type  SFID(us) SFID(ds)
16383   Ca3/0/1         45.45.0.145    2.39.23.117    COMMIT   MM    815

Total number of gates = 1
Total Gates committed(since bootup or clear counter) = 1
```

This example shows the output of the **show packetcable gate** command for a specific gate ID:

```
Router#show packetcable gate 16383
GateID : 16383
Subscriber ID : 192.0.2.199
COPS connection :
server handle : 0x7F76F046D988
server address : 1.100.30.2
server port : 57437
client address : 2.39.23.23
State : COMMIT
CALEA Version : -
Gate specs [UPSTREAM]
Gate classifier : protocol 17,
src addr/port 192.0.2.199/0,
dest addr/port 192.0.2.208/53456
diffserv dscp : 0xC0
timer t1(s) : 200
timer t7(s) : 300
timer t8(s) : 10
commit flags : 0x0
session class : 0x1
flowspec # 1 : [r/b/p/m/M 10000/200/10000/200/200] [R/S: 10000/800]
Gate specs [DOWNSTREAM]
Gate classifier : protocol 17,
src addr/port 192.0.2.208/0,
dest addr/port 192.0.2.199/53456
diffserv dscp : 0xC0
timer t1(s) : 200
timer t7(s) : 300
timer t8(s) : 10
commit flags : 0x0
session class : 0x1
flowspec # 1 : [r/b/p/m/M 10000/200/10000/200/200] [R/S: 10000/0]
```

Related Commands

Command	Description
clear packetcable gate counter commit	Resets the counters that track the total number of committed gates.
packetcable	Enables PacketCable operations on the Cisco CMTS.
show packetcable gate counter commit	Displays the total number of committed gates since system reset or since the counter was last cleared.
show packetcable global	Displays the current PacketCable configuration.

show packetcable gate counter commit

To display the total number of gates that the CMTS has put into the COMMITTED state since the CMTS was last reset or since the counter was last cleared, use the **show packetcable gate counter commit** command in user EXEC or privileged EXEC mode.

show packetcable gate counter commit

Syntax Description   This command has no keywords or arguments.

Command Default   None

Command Modes   User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(8)BC2	This command was introduced for the Cisco uBR7200 series universal broadband router.
12.2(15)BC1	Support was added for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines   This command displays the total number of gates that have been committed since the Cisco uBR7200 series router was restarted or since the counter was last cleared with the **clear packetcable gate counter commit** command.

Note   This command displays only the count of committed gates. It does not include gates that were allocated, authorized, and reserved but that were not put into the COMMITTED state.

Examples   The following example shows that 132 gates have been committed since the Cisco CMTS was last reset or since the counters were last cleared:

```
Router# show packetcable gate counter commit

Total Gates committed (since bootup or clear counter) = 132
Router#
```

Examples   This example shows the output of the **show packetcable gate counter commit** command:

```
Router#show packetcable gate counter commit
Total gates committed(since bootup or clear counter) = 4
```

Related Commands

Command	Description
clear packetcable gate counter commit	Resets the counters that track the total number of committed gates.
packetcable	Enables PacketCable operations on the Cisco CMTS.
show packetcable gate	Displays information about one or more gates in the gate database.
show packetcable global	Displays the current PacketCable configuration.

show packetcable gate ipv6

To display information about one or more PacketCable gates associated with IPv6 subscriber IDs in the gate database, use the **show packetcable gate ipv6** command in privileged EXEC mode.

show packetcable gate ipv6 summary [**downstream** {*gate-id*| **ipv6 summary**}] [**upstream** {*gate-id*| **ipv6 summary**}]

Syntax Description

ipv6	Specifies IPv6 subscriber IDs.
summary	Displays a summary of gates containing the gate ID, subscriber ID, subscriber IPv6 address, and the state information.
downstream *gate-id*	(Optional) Displays information for the specified gate ID in the downstream direction. The valid range is from 0 to 4294967295.
upstream *gate-id*	(Optional) Displays information for the specified gate ID in the upstream direction. The valid range is from 0 to 4294967295.

Command Default

None

Command Modes

Privileged EXEC(#)

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

This command provides a summary of all active gates (downstream or upstream gates) for IPv6 subscribers.

Examples

The following is a sample output of the **show packetcable gateipv6 command that shows a summary of all the active downstream and upstream gates for IPv6** subscribers on a Cisco CMTS router:

```
Router# show packetcable gate ipv6 summary
GateID     i/f                    SubscriberID              State    SFID(us) SFID(ds)
13582      Ca8/1/0    2001:40:1:42:C0B4:84E5:5081:9B5C      COMMIT   74
```

```
29962      Ca8/1/0        2001:40:1:42:C0B4:84E5:5081:9B5C        COMMIT    73
46354      Ca8/1/0        2001:40:1:42:C0B4:84E5:5081:9B5C        COMMIT    72
62738      Ca8/1/0        2001:40:1:42:C0B4:84E5:5081:9B5C        COMMIT            69

TTotal number of  gates = 4
Total Gates committed(since bootup or clear counter) = 8
```

The following is a sample output of the **show packetcable gateipv6 command that shows a summary of all downstream gates for IPv6** subscribers on a Cisco CMTS router:

```
Router# show packetcable gate downstream ipv6 summary
GateID    i/f                  SubscriberID              State    SFID(us) SFID(ds)
62738     Ca8/1/0     2001:40:1:42:C0B4:84E5:5081:9B5C   COMMIT            69

Total number of DS gates = 1
Total Gates committed(since bootup or clear counter) = 8
```

The following is a sample output of the **show packetcable gateipv6 command that shows a summary of all upstream gates for IPv6** subscribers on the Cisco CMTS router:

```
Router# show packetcable gate upstream ipv6 summary
GateID    i/f                  SubscriberID              State    SFID(us) SFID(ds)
13582     Ca8/1/0     2001:40:1:42:C0B4:84E5:5081:9B5C   COMMIT    74
29962     Ca8/1/0     2001:40:1:42:C0B4:84E5:5081:9B5C   COMMIT    73
46354     Ca8/1/0     2001:40:1:42:C0B4:84E5:5081:9B5C   COMMIT    72
Total number of US gates = 3
Total Gates committed(since bootup or clear counter) = 8
```

Table below describes the significant fields shown in the **command** display.

Table 4: show packetcable gate Field Display

Field	Description
GateID	Unique number identifying the local gate.
i/f	Cable interface on the Cisco CMTS.
Subscriber ID	IPv6 address of the subscriber for this service request.

Field	Description
State	Describes the state of the gate in both the upstream and downstream directions. The possible state values are: • ALLOC—The CMTS has received a Gate-Alloc command from the gate controller and has created the gate in response. The CMTS must now wait for the request to be authorized. • AUTH—The CMTS has received a Gate-Set command from the gate controller that authorizes the resources needed for the gate request. The CMTS must now wait for the actual resources to be reserved. • RSVD—All required resources for the gate have been reserved. • COMMIT—All resources are committed at both the local CMTS and remote CMTS. The local CMTS has also received a commit notification from the local MTA and has completed all gate coordination with the remote end. The gate can now pass traffic. • INVLD—The gate is invalid, typically because of an error condition or lack of resources. The CMTS will eventually delete the gate. • UNKWN—The gate is in an unknown state.
SFID (us)	SFID for the upstream associated with this PacketCable gate.
SFID (ds)	SFID for the downstream associated with this PacketCable gate.
Total number of gates	Displays the total number of PCMM gates that are allocated, authorized, reserved, or committed.
Total Gates committed (since bootup or clear counter)	Displays the total number of PCMM gates that the CMTS has committed since the CMTS was last reset or since the counters were last cleared.

Related Commands

Command	Description
packetcable	Enables PacketCable operations on a Cisco CMTS router.

Command	Description
show packetcable gate	Displays information about one or more PacketCable gates in the gate database.
show packetcable gate counter commit	Displays the total number of committed PacketCable gates since system reset or since the counter was last cleared.
show packetcable global	Displays the PacketCable configuration.

show packetcable gate multimedia

On Cisco uBR10012 router, to display information about the total number of PacketCable Multimedia (PCMM) multicast gates, use the **show packetcable gate multimedia** command in privileged EXEC mode.

On Cisco cBR-8 router, to display information about the total number of PacketCable Multimedia (PCMM) gates, use the **show packetcable gate multimedia** command in privileged EXEC mode.

show packetcable gate multimedia [**summary**]

Cisco cBR Series Converged Broadband Router

show packetcable gate multimedia[**downstream** | **upstream**]**summary**

Syntax Description

downstream	(Optional) Display information only for Packetcable multimedia downstream gate.
upstream	(Optional) Display information only for Packetcable multimedia upstream gate.
summary	For Cisco uBR10012 router— Provides a summary of PCMM multicast gate ID, subscriber ID, gate controller address, and current state information. For Cisco cBR-8 router— Provides a summary of PCMM gate ID, subscriber ID, gate controller address, and current state information.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **downstream** and **upstream** keywords were added. PCMM Multicast option is not supported on the Cisco cBR Series Converged Broadband Router.

Examples   The following is a sample output of the **show packetcable gate multimedia** command on a Cisco CMTS router:

```
Router# show packetcable gate multimedia multicast summary
GateID     i/f         SubscriberID   GC-Addr      State     Type  SFID(us) SFID(ds)
134        Ca5/0/0     60.1.1.202     2.39.26.19   COMMIT    MM             4
Total number of Multimedia-MCAST gates = 1
Total Gates committed(since bootup or clear counter) = 1
```

Table below describes the significant fields shown in the display.

Table 5: show packetcable gate multimedia Field Descriptions

Field	Description
GateID	Unique number identifying the local PCMM multicast gate.
i/f	Cable interface on the Cisco CMTS router.
Subscriber ID	IP address of the subscriber for this service request.
GC-Addr	IP address of the gate controller that is responsible for the gate.
State	Describes the current state of the gate in the downstream direction. The possible state values are: • ALLOC—The CMTS has received a Gate-Alloc command from the gate controller and has created the gate in response. The CMTS must now wait for the request to be authorized. • AUTH—The CMTS has received a Gate-Set command from the gate controller that authorizes the resources needed for the gate request. The CMTS must now wait for the actual resources to be reserved. • RSVD—All required resources for the gate have been reserved. • COMMIT—All resources are committed at both the local CMTS and remote CMTS. The local CMTS has also received a commit notification from the local MTA and has completed all gate coordination with the remote end. The gate can now pass traffic. • INVLD—The gate is invalid, typically because of an error condition or lack of resources. The CMTS will eventually delete the gate. • UNKWN—The gate is in an unknown state.

Field	Description
SFID (us)	Service flow ID (SFID) for the upstream associated with this PCMM multicast gate.
SFID (ds)	SFID for the downstream associated with this PCMM multicast gate.
Total number of Multimedia-MCAST gates	Total number of PCMM multicast gates that are currently allocated, authorized, reserved, or committed.
Total Gates committed (since bootup or clear counter)	Total number of PCMM multicast gates that are committed since the Cisco CMTS router was last reset or since the counters were last cleared.

Examples   This example shows the output of the **show packetcable gate multimedia** command with the **summary** option:

```
Router#show packetcable gate multimedia summary
GateID i/f     SubscriberID GC-Addr    State  Type SFID(us) SFID(ds)
81919  Ca1/0/4 24.232.100.16 1.2.0.101 COMMIT MM            363
98303  Ca1/0/4 24.232.100.16 1.2.0.101 COMMIT MM            364
114687 Ca1/0/0 24.232.100.46 1.2.0.101 COMMIT MM            301
131071 Ca1/0/0 24.232.100.46 1.2.0.101 COMMIT MM            302
147455 Ca1/0/4 24.232.100.17 1.2.0.101 COMMIT MM            365
163839 Ca1/0/4 24.232.100.17 1.2.0.101 COMMIT MM            366
180223 Ca1/0/4 24.232.100.32 1.2.0.101 COMMIT MM            367
196607 Ca1/0/4 24.232.100.32 1.2.0.101 COMMIT MM            368
212991 Ca1/0/0 24.232.100.47 1.2.0.101 COMMIT MM            303
229375 Ca1/0/0 24.232.100.47 1.2.0.101 COMMIT MM            304
245759 Ca1/0/0 24.232.100.48 1.2.0.101 COMMIT MM            305
262143 Ca1/0/0 24.232.100.48 1.2.0.101 COMMIT MM            306

Total number of Multimedia gates = 12
Total Gates committed(since bootup or clear counter) = 12
```

This example shows the output of the **show packetcable gate multimedia** command with the **upstream summary** option:

```
Router#show packetcable gate multimedia upstream summary
GateID i/f     SubscriberID GC-Addr    State  Type SFID(us) SFID(ds)
81919  Ca1/0/4 24.232.100.16 1.2.0.101 COMMIT MM            363
131071 Ca1/0/0 24.232.100.46 1.2.0.101 COMMIT MM            302
147455 Ca1/0/4 24.232.100.17 1.2.0.101 COMMIT MM            365
180223 Ca1/0/4 24.232.100.32 1.2.0.101 COMMIT MM            367
229375 Ca1/0/0 24.232.100.47 1.2.0.101 COMMIT MM            304
245759 Ca1/0/0 24.232.100.48 1.2.0.101 COMMIT MM            305

Total number of Multimedia-US gates = 6
Total Gates committed(since bootup or clear counter) = 12
```

This example shows the output of the **show packetcable gate multimedia** command with the **downstream summary** option:

```
Router#show packetcable gate multimedia downstream summary
GateID i/f     SubscriberID GC-Addr    State  Type SFID(us) SFID(ds)
```

```
98303  Ca1/0/4 24.232.100.16 1.2.0.101 COMMIT MM         364
114687 Ca1/0/0 24.232.100.46 1.2.0.101 COMMIT MM         301
163839 Ca1/0/4 24.232.100.17 1.2.0.101 COMMIT MM         366
196607 Ca1/0/4 24.232.100.32 1.2.0.101 COMMIT MM         368
212991 Ca1/0/0 24.232.100.47 1.2.0.101 COMMIT MM         303
262143 Ca1/0/0 24.232.100.48 1.2.0.101 COMMIT MM         306

Total number of Multimedia-DS gates = 6
Total Gates committed(since bootup or clear counter) = 12
```

Table 6: show packetcable gate multimedia Field Descriptions for Cisco cBR Series Converged Broadband Router

Field	Description
GateID	Unique number identifying the local PCMM gate.
i/f	Cable interface on the Cisco CMTS router.
Subscriber ID	IP address of the subscriber for this service request.
GC-Addr	IP address of the gate controller that is responsible for the gate.
State	Describes the current state of the gate in the downstream direction. The possible state values are: • ALLOC—The CMTS has received a Gate-Alloc command from the gate controller and has created the gate in response. The CMTS must now wait for the request to be authorized. • AUTH—The CMTS has received a Gate-Set command from the gate controller that authorizes the resources needed for the gate request. The CMTS must now wait for the actual resources to be reserved. • RSVD—All required resources for the gate have been reserved. • COMMIT—All resources are committed at both the local CMTS and remote CMTS. The local CMTS has also received a commit notification from the local MTA and has completed all gate coordination with the remote end. The gate can now pass traffic. • INVLD—The gate is invalid, typically because of an error condition or lack of resources. The CMTS will eventually delete the gate. • UNKWN—The gate is in an unknown state.

Field	Description
SFID (us)	Service flow ID (SFID) for the upstream associated with this PCMM gate.
SFID (ds)	SFID for the downstream associated with this PCMM gate.
Total number of Multimedia-xx gates	Total number of PCMM gates that are currently allocated, authorized, reserved, or committed. The "Total number of Multimedia-xx gates" depends on the options used. The field is given as: • If no option is used—"Total number of Multimedia gates" , • For option multicast— "Total number of Multimedia-MCAST gates" • For option downstream— "Total number of Multimedia-DS gates" • For option upstream— "Total number of Multimedia-US gates"
Total Gates committed (since bootup or clear counter)	Total number of PCMM gates that are committed since the Cisco CMTS router was last reset or since the counters were last cleared.

Related Commands

Command	Description
cable multicast source	Configures a multicast session range for a PCMM multicast group on a Cisco CMTS router.
show cable multicast db	Displays the contents of the multicast explicit tracking database.

show packetcable global

To display the current PacketCable configuration, including the maximum number of gates, the Element ID, and the DQoS timer values, use the **show packetcable global** command in user EXEC or privileged EXEC mode.

show packetcable global

Syntax Description   This command has no keywords or arguments.

Command Default   None

Command Modes   User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(8)BC2	This command was introduced for the Cisco uBR7200 series universal broadband router.
12.2(11)BC1	Support was added to display the Element ID for the CMTS.
12.2(11)BC2	Support was added to display whether non-PacketCable UGS service flows are authorized or not. The T2 and T5 timers were removed from the display to conform to the requirements of the PacketCable DQoS Engineering Change Notice (ECN) 02148.
12.2(15)BC1	Support was added for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples   The following example shows a typical PacketCable configuration that is enabled and has the default values for all configurable parameters, except for the Element ID:

```
Router# show packetcable global
Packet Cable Global configuration:
Enabled   : Yes
Element ID: 12456
Max Gates : 1048576
Allow non-PacketCable UGS
Default Timer value -
  T0      : 30000 msec
  T1      : 300000 msec
Router#
```
Table below describes the fields shown in the **show packetcable global** display.

Table 7: show packetcable global Field Display

Field	Description
Enabled	Displays whether PacketCable operation is enabled or disabled. (See the **packetcable** command.)
Element ID	Displays the Element ID for the CMTS. If you do not manually configure this parameter with the **packetcable element-id** command, it defaults to a random value between 0 and 99,999 when PacketCable operations is enabled.
Max Gates	Displays the maximum number of gates that the CMTS supports. (See the **packetcable gate maxcount** command.)
Allow non-PacketCable UGS or Not Allow non-PacketCable UGS	Displays whether non-PacketCable, DOCSIS-style UGS service flows are allowed when PacketCable operations are enabled. (See the **packetcable authorize vanilla-docsis-mta** command.)
Default Timer value	Displays the current values of the following DQoS timers that the CMTS maintains. (See the **packetcable timer** command.)
T0	T0 specifies the amount of time that a gate ID can remain allocated without any specified gate parameters. The timer begins counting when a gate is allocated with a Gate-Alloc command. The timer stops when a Gate-Set command marks the gate as Authorized. If the timer expires without a Gate-Set command being received, the gate is deleted. The valid range is 1 to 1,000,000,000 milliseconds, with a default value of 30000 milliseconds (30 seconds).
T1	T1 specifies the amount of time that an authorization for a gate can remain valid. It begins counting when the CMTS creates a gate with a Gate-Set command and puts the gate in the Authorized state. The timer stops when the gate is put into the committed state. If the timer expires without the gate being committed, the CMTS must close the gate and release all associated resources. The valid range is 1 to 1,000,000,000 milliseconds, with a default value of 200000 milliseconds (200 seconds).

Examples   This example shows the output of the **show packetcable gate counter commit** command:

```
Router#show packetcable global
Packet Cable Global configuration:
Packetcable DQOS Enabled : Yes
Packetcable Multimedia Enabled : Yes
Element ID: 49137
Max Gates : 512000
Not Allow non-PacketCable UGS
Default Multimedia Timer value -
T1 : 200000 msec
Persistent gate : 0 hour
Volume Limit : RUNNING
Default DQoS Timer value -
T0 : 30000 msec
T1 : 300000 msec
Client Accept Timer: Disabled
Client Accept Timer Expired: 0
Packetcable DQOS Gate Send SubscriberID Enabled: No
```

Table 8: show packetcable global Field Display

Field	Description
Packetcable DQOS Enabled	For Cisco cBR router— Displays whether PacketCable DQOS operation is enabled or disabled. (See the **packetcable** command.)
Packetcable Multimedia Enabled	For Cisco cBR router— Displays whether PacketCable multimedia operation is enabled or disabled.
Element ID	Displays the Element ID for the CMTS. If you do not manually configure this parameter with the **packetcable element-id** command, it defaults to a random value between 0 and 99,999 when PacketCable operations is enabled.
Max Gates	Displays the maximum number of gates that the CMTS supports. (See the **packetcable gate maxcount** command.)
Allow non-PacketCable UGS or Not Allow non-PacketCable UGS	Displays whether non-PacketCable, DOCSIS-style UGS service flows are allowed when PacketCable operations are enabled. (See the **packetcable authorize vanilla-docsis-mta** command.)
Default Timer value	Displays the current values of the following DQoS timers that the CMTS maintains. (See the **packetcable timer** command.)

Field	Description
T0	T0 specifies the amount of time that a gate ID can remain allocated without any specified gate parameters. The timer begins counting when a gate is allocated with a Gate-Alloc command. The timer stops when a Gate-Set command marks the gate as Authorized. If the timer expires without a Gate-Set command being received, the gate is deleted. The valid range is 1 to 1,000,000,000 milliseconds, with a default value of 30000 milliseconds (30 seconds).
T1	T1 specifies the amount of time that an authorization for a gate can remain valid. It begins counting when the CMTS creates a gate with a Gate-Set command and puts the gate in the Authorized state. The timer stops when the gate is put into the committed state. If the timer expires without the gate being committed, the CMTS must close the gate and release all associated resources. The valid range is 1 to 1,000,000,000 milliseconds, with a default value of 200000 milliseconds (200 seconds).
Client Accept Timer	For Cisco cBR router— Displays whether the Client Accept Timer is enabled.
Client Accept Timer Expired	For Cisco cBR router— Displays the time expired on the Client Accept Timer.
Packetcable DQOS Gate Send SubscriberID Enabled	For Cisco cBR router— Displays whether the Packetcable DQOS Gate Send SubscriberID operation is enabled.

Related Commands

Command	Description
packetcable	Enables PacketCable operations on the Cisco CMTS.
packetcable authorize vanilla-docsis-mta	Allows Unsolicited Grant Service (UGS) service flows without a proper PacketCable gate ID when PacketCable operations are enabled on the Cisco CMTS.
packetcable element-id	Configures the PacketCable Event Message Element ID on the Cisco CMTS.

Command	Description
packetcable gate maxcount	Changes the maximum number of PacketCable gate IDs in the gate database on the Cisco CMTS.
packetcable timer	Changes the value of the different PacketCable DQoS timers.
show packetcable gate	Displays information about one or more gates in the gate database.
show packetcable gate counter commit	Displays the total number of committed gates since system reset or since the counter was last cleared.

show platform hardware qfp active infrastructure punt sbrl

To display and clear the Source-Based Rate Limiting (SBRL) statistics, use the **show platform hardware qfp active infrastructure punt sbrl** command in privileged EXEC mode.

show platform hardware qfp active infrastructure punt sbrl [**sub-mac-addr** | **sub-cm** | **wan-ipv4** | **wan-ipv6**] [**threshold** *threshold_value*] [**clear**]

Syntax Description

sub-mac-addr	(Optional) Displays only the SBRL subscriber-side MAC-address statistics.
sub-cm	(Optional) Displays only the SBRL subscriber-side cable modem statistics.
wan-ipv4	(Optional) Display only the SBRL WAN-side IPv4 statistics.
wan-ipv6	(Optional) Display only the SBRL WAN-side IPv6 statistics.
threshold *threshold_value*	(Optional) Specifies the threshold for displaying SBRL statistics. Rows which have a drop-cnt greater than or equal to the threshold are displayed. The default threshold is 1.
clear	(Optional) Clears the SBRL statistics.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers. This command replaces the **clear pxf statistics drl cable-wan-ip** command.

Usage Guidelines   The SBRL statistics algorithm stores data for the worst offenders. Sources with small drop counts may be overwritten if the *drop-cnt* is not continually increasing. The *evict-cnt* increases in tandem with *drop-cnt*, and decreases when a source is no longer active. When the *evict-cnt* is below 10, the record may be overwritten.

In the WAN-IPv4 and WAN-IPv6 statistics, the *quar value* is either 1 or 0, where 1 indicates that the source is in quarantine. The *quar value* is updated only when a packet from the source is dropped, so if a source enters quarantine but then stops sending packets, the quar value will remain at 1 even after the source exits quarantine. However, the *drop-cnt* fails to increment.

The statistics can be displayed all at once, or individually. The **threshold** and **clear** keywords can be entered in any order. Only non-zero statistics are displayed.

Examples

The following example shows a typical display for the **show platform hardware qfp active infrastructure punt sbrl** command:

```
Router# show platform hardware qfp active infrastructure punt sbrl
SBRL statistics

Subscriber CM
  drop-cnt  evict-cnt   SID  Interface
------------------------------------------------
        1          1     5   Cable3/0/0
      982        982     5   Cable3/0/0

Subscriber MAC-addr
  nothing to report

WAN-IPv4
  drop-cnt  evict-cnt   quar  VRF  cause  IP-address
------------------------------------------------------
    456788     456788     0    0    050   1.2.0.66

WAN-IPv6
  drop-cnt  evict-cnt   quar  VRF  cause  IP-address
---------------------------------------------------------------------
    129334     129334     1    0    011   3046:1829:fefb::ddd1
       965        965     0    0    011   2001:420:2c7f:fc01::3
```

Table 9: show platform hardware qfp active infrastructure punt sbrl Field Descriptions

Field	Description
drop-cnt	Counter for dropped packets.
SID	Service ID.
Interface	Cable interface.
quar	Quarantine status. The value is either 1 or 0, where 1 indicates that the source is in quarantine.
cause	Punt cause.
IP-address	WAN-IPv4 and WAN-IPv6 IP address.

Related Commands

Command	Description
show platform hardware qfp active infrastructure punt summary	Displays the summary of punt-path rate-limiting statistics.

Command	Description
platform punt-sbrl	Rate-limits the packet streams identified by the Source-Based Rate-Limit (SBRL).

show platform hardware qfp active infrastructure punt summary

To display and clear the summary of punt-path rate-limiting statistics, use the **show platform hardware qfp active infrastructure punt summary** command in privileged EXEC mode.

show platform hardware qfp active infrastructure punt summary [**threshold** *threshold_value*] [**clear**]

Syntax Description

threshold *threshold_value*	(Optional) Specifies the threshold for displaying the summary statistics. Rows which have a CPP punt value greater than or equal to the threshold are displayed. The default threshold is 1.
clear	(Optional) Clears the summary statistics.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   The summary statistics provide a fast way to determine the status of punt-path rate-limiting. When the Supervisor is receiving an excessive number of punted packets, **clear** and **show** the summary statistics to determine how to configure SBRL and/or punt-policing. The **threshold** and **clear** keywords can be entered in any order. Only non-zero statistics are displayed.

Examples   The following example shows a typical display for the **show platform hardware qfp active infrastructure punt summary** command:

```
Router#  show platform hardware qfp active infrastructure punt summary threshold 10
Punt Path Rate-Limiting summary statistics
Subscriber-side
ID   punt cause              CPP punt   CoPP drop   SBRL drop   per-cause     global
-------------------------------------------------------------------------------
017  IPv6 Bad hop limit           22          0           0           0          0
050  IPv6 packet                  13          0           0           0          0
080  CM not online               335          0           0           0          0

WAN-side
ID   punt cause              CPP punt   CoPP drop   SBRL drop   per-cause     global
-------------------------------------------------------------------------------
017 IPv6 Bad hop limit          471          0           0           0          0
018 IPV6 Hop-by-hop Options    29901         0           0        1430          0
```

```
024 Glean adjacency          450911        0    308912        0        0
025 Mcast PIM signaling           19        0         0        0        0
050 IPv6 packet                   11        0         0        0        0
```

Related Commands

Command	Description
show platform hardware active qfp infrastructure punt sbrl	Displays and clears the Source-Based Rate Limiting (SBRL) statistics.
platform punt-sbrl	Rate-limits the packet streams identified by the Source-Based Rate-Limit (SBRL).

show platform software ios ipccl

To display information about the IPC Client Library (IPCCL) relative statistics, use the **show platform software ios ipccl** command in privileged EXEC mode.

show platform software ios *slot* **ipccl** { {**outstanding** {**port** [*port_number*] [*peer_slot_number*] } } | {**client** *port_number client_id peer_slot_number* } } | {**statistics** {**port** [*port_number*] [*peer_slot_number*] [**rx-msg-stat**] } | {**client** *port_number peer_slot_number* } | {**service** *port_number service_id peer_slot_number* } } | {**log-history port** *port_number peer_slot_number* } }

Syntax Description

slot	The cable line card Supervisor slot number.
outstanding	Displays statistics of outstanding messages.
port	Displays the port statistics.
port_number	The IPCCL predefined internal port ID.
peer_slot_number	The slot number of IPCCL peer session.
client	Displays the client statistics.
client_id	The IPCCL registered internal client ID.
statistics	Displays statistics on route processor.
rx-msg-stat	(Optional) Specifies the RX message statistics based on TDL message type.
service	Displays the service statistics.
service_id	The IPCCL predefined internal service ID.
log-history	Displays the log history.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   The **show platform software ios** *slot* **ipccl** command displays the IPCCL statistics on Supervisor or line
card.

Note   To enable the log-history feature, use the **platform ipccl log-history** command in global configuration
mode.To enable the rx-msg-stat feature, use the **platform ipccl rx-stat** command in global configuration
mode.

Examples   The following example shows a typical display for the **show platform software ios** *slot* **ipccl** command for
all cable interfaces:

```
 Router# show platform software ios R0 ipccl statistics ?
  client   client statistics
  port     port statistics
  service  service statistics

Router# show platform software ios R0 ipccl statistics por
Router# show platform software ios R0 ipccl statistics port ?
  1  CABLE_IPCCL_PORT_DOCSIS
  |  Output modifiers
  <cr>

Router# show platform software ios R0 ipccl statistics port 1 ?
  0  Cable-Linecard slot 0
  1  Cable-Linecard slot 1
  2  Cable-Linecard slot 2
  3  Cable-Linecard slot 3
  4  SUP-PIC slot 4
  5  SUP-PIC slot 5
  6  Cable-Linecard slot 6
  7  Cable-Linecard slot 7
  8  Cable-Linecard slot 8
  9  Cable-Linecard slot 9

Router# show platform software ios R0 ipccl statistics port 1 7
---------------------------------------------

IPCCL Port 1 Dest CC7 Session 3604558

Session is up      : True
Session Up Cnt     : 1
Session Down Cnt   : 0
Message Flushed Cnt: 0
TX:
Message Send                 : 2964
Message Send Success         : 2964
Current Outstanding Message  : 0
Outstanding High Watermark   : 0
Port Config MAX Outstanding Msg: 10000
Port Current Pending message  : 0
Port MAX Pending message      : 0
Port Configured High Watermark : 3000
Port Configured Low Watermark  : 1000
Port High Watermark Hit Count  : 0
Port Low Watermark  Hit Count  : 0
Outstanding MAX Hit Count      : 0
Ack Received                 : 2
Overdue Ack Received         : 0
Message Send Error           : 0
Port Driver Error Counter    : 0
TX Msg Drop Counter-Invalid Sess  : 0
TX Msg Drop Counter-Invalid App   : 0
```

```
                TX Msg Drop Counter-Invalid SVC    : 0
                RX:
                Message Received             : 894889
                Total Ack Send Counter       : 1
                RX Msg Drop Counter-Invalid Sess  : 0
                RX Msg Drop Counter-Invalid App   : 0
                RX Msg Drop Counter-Invalid SVC   : 0
                RX Msg Drop Counter-Invalid Field : 0
                RX ACK Drop Counter-Invalid Sess  : 0
                RX ACK Drop Counter-Invalid App   : 0
                RX ACK Drop Counter-Invalid Field : 0
                ERR:
                EAGAIN                       : 0
                ETIMEOUT                     : 0
                ENOMEM                       : 0
                EFAULT                       : 0
                ECANCELED                    : 0
                Other Error                  : 0
                Average Latencies in Microseconds:
                Round Trip                   : 28659
                Send                         : 7537
                Onwire                       : 5442
                Total Ctx Switch             : 14275
                Peer Ctx Switch              : 345
                Local Ctx Switch             : 13930
                Router#show platform software ios R1 ipccl log-history 1 3
                IPCCL Port 1 Dest CC3
                : 2015-04-16 16:32:50.090 Msg 191 seq 1113408 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.091 Msg 191 seq 1113409 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.092 Msg 191 seq 1113410 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.093 Msg 191 seq 1113411 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.093 Msg 191 seq 1113412 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.094 Msg 191 seq 1113413 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.095 Msg 191 seq 1113414 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.095 Msg 191 seq 1113415 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.096 Msg 191 seq 1113416 NBK MsgRx port 1 clnt 16 slot 3 E0
                : 2015-04-16 16:32:50.096 Msg 191 seq 1113417 NBK MsgRx port 1 clnt 16 slot 3 E0

                Router# show platform software ios R1 ipccl statistics port 1 3 rx-msg-stat
                  client_id    tdl_msg_type      total_msg_count       last_msg_handle_usec
                aver_msg_handle_usec     max_msg_handle_used
                _____

                3            2                 1603                  33                          39
                                 3518
                3            6                 1618                  44                          36
                                 2758
                3            216               6                     163                         429
                                 1821
                3            243               2                     30                          24
                                 30
                16           191               64395                 37                          39
                                 408
                17           219               1040                  51                          41
                                 108
```

show platform software punt-policer

To display the punt policer settings and statistics, and clear the statistics, use the **show platform software punt-policer** command in privileged EXEC mode.

show platform software punt-policer [**clear** | **drop-only**]

Syntax Description

clear	(Optional) Displays the punt policer configuration and statistics and clears the statistics.
drop-only	(Optional) Displays the punt policer with non-zero drop counters.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers. The **show platform software punt-policer clear** command replaces the **clear pxf statistics drl max-rate** and **clear pxf statistics drl wan-non-ip** commands.

Examples   The following is a sample output of the **show platform software punt-policer** command:

```
Router# show platform software punt-policer

Per Punt-Cause Policer Configuration and Packet Counters

Punt                                Configured (pps)   Conform Packets    Dropped Packets
Cause   Description                 Normal    High     Normal    High     Normal    High

----------------------------------------------------------------------------------------

  2     IPv4 Options                4000      3000     0         0        0         0

  3     Layer2 control and legacy   40000     10000    890       0        0         0

  4     PPP Control                 2000      1000     0         0        0         0

  5     CLNS IS-IS Control          2000      1000     0         0        0         0

  6     HDLC keepalives             2000      1000     0         0        0         0

  7     ARP request or response     2000      1000     0         123      0         0

  8     Reverse ARP request or re...2000      1000     0         0        0         0
```

9	Frame-relay LMI Control	2000	1000	0	0	0	0
10	Incomplete adjacency	2000	1000	0	5	0	0
11	For-us data	40000	5000	1523592	0	211	0
12	Mcast Directly Connected ...	2000	1000	0	0	0	0
13	Mcast IPv4 Options data p...	2000	1000	0	0	0	0
15	MPLS TTL expired	5120	2000	0	0	0	0
16	MPLS Reserved label (ie: ...	5120	2000	0	0	0	0
18	IPV6 Hop-by-hop Options	2000	1000	0	0	0	0
19	Mcast Internal Copy	2000	1000	0	0	0	0
23	Mcast IGMP Unroutable	2000	1000	0	0	0	0
24	Glean adjacency	2000	5000	0	1525432	0	0
25	Mcast PIM signaling	2000	1000	0	0	0	0
27	Subscriber session control	10000	40000	0	0	0	0
. . .							
98	cable arp filter	2000	1000	0	0	0	0
99	Cable L3 mobility	2000	1000	0	0	0	0
100	Source Verify inconclusive	2000	1000	0	0	0	0
101	cable modem pre reg	2000	1000	49	0	0	0
102	mpls receive adj	2000	2000	0	0	0	0
103	MKA EAPoL packet	2000	1000	0	0	0	0
104	ICMP Unreachable	1048	1000	0	0	0	0
105	Cable DHCP	2000	1000	697	0	0	0

The following is a sample output of the **show platform software punt-policer clear** command:

```
Router# show platform software punt-policer clear

Per Punt-Cause Policer Configuration and Packet Counters
```

Punt Cause	Description	Configured (pps)		Conform Packets		Dropped Packets	
		Normal	High	Normal	High	Normal	High
2	IPv4 Options	4000	3000	0	0	0	0
3	Layer2 control and legacy	40000	10000	890	0	0	0
4	PPP Control	2000	1000	0	0	0	0
5	CLNS IS-IS Control	2000	1000	0	0	0	0
6	HDLC keepalives	2000	1000	0	0	0	0
7	ARP request or response	2000	1000	0	123	0	0
8	Reverse ARP request or re...	2000	1000	0	0	0	0
9	Frame-relay LMI Control	2000	1000	0	0	0	0
10	Incomplete adjacency	2000	1000	0	5	0	0

11	For-us data	40000	5000	1523592	0	211	0
12	Mcast Directly Connected ...	2000	1000	0	0	0	0
13	Mcast IPv4 Options data p...	2000	1000	0	0	0	0
15	MPLS TTL expired	5120	2000	0	0	0	0
16	MPLS Reserved label (ie: ...	5120	2000	0	0	0	0
18	IPV6 Hop-by-hop Options	2000	1000	0	0	0	0
19	Mcast Internal Copy	2000	1000	0	0	0	0
23	Mcast IGMP Unroutable	2000	1000	0	0	0	0
24	Glean adjacency	2000	5000	0	1525432	0	0
25	Mcast PIM signaling	2000	1000	0	0	0	0
27	Subscriber session control	10000	40000	0	0	0	0
. . .							
98	cable arp filter	2000	1000	0	0	0	0
99	Cable L3 mobility	2000	1000	0	0	0	0
100	Source Verify inconclusive	2000	1000	0	0	0	0
101	cable modem pre reg	2000	1000	49	0	0	0
102	mpls receive adj	2000	2000	0	0	0	0
103	MKA EAPoL packet	2000	1000	0	0	0	0
104	ICMP Unreachable	1048	1000	0	0	0	0
105	Cable DHCP	2000	1000	697	0	0	0

The following is a sample output of the **show platform software punt-policer drop-only** command:

```
Router# show platform software punt-policer drop-only

Per Punt-Cause Policer Configuration and Packet Counters

Punt                     Configured (pps)  Conform Packets    Dropped Packets
Cause  Description       Normal   High      Normal   High      Normal  High
-------------------------------------------------------------------------
11     For-us data       40000    5000      1523592  0         211     0
```

Table 10: show platform software punt-policer Field Descriptions

Field	Description
Punt Cause	Punt cause number.
Description	Description of the punt cause.
Configured (pps) Normal	Configured punt policing rate limit for normal-priority punts, in packets per second. Corresponds to the **platform punt-policer** *punt-cause punt-rate* command.

Field	Description
Configured (pps) High	Configured punt policing rate limit for high-priority punts, in packets per second. Corresponds to the **platform punt-policer** *punt-cause punt-rate* **high** command.
Conform Packets Normal	Number of packets that conform to the configured rate limit for normal-priority punts.
Conform Packets High	Number of packets that conform to the configure rate limit for high-priority punts.
Dropped Packets Normal	Number of dropped packets for normal-priority punts.
Dropped Packets High	Number of dropped packets for high-priority punts.

Related Commands

Command	Description
platform punt-policer	This command configures punt policing.

show pxf cable

To display information about the multicast echo, packet intercept, or source-verify features for one or all cable interfaces, use the **show pxf cable** command in user EXEC or privileged EXEC mode.

show pxf cable{**feature-table** [**cx/y/z**]| **maptable cx/y/z** [*sid*]| **multicast-echo ds-group**| **multicast-echo** *mcast-addr*| **source-verify** [*ip address*]}

Syntax Description

feature-table [*cx/y/z*]	Displays the multicast echo and packet intercept status on the PXF processor. If given without any options, displays the status for all cable interfaces and subinterfaces. If given with an optional cable interface, displays the status for that particular interface.
maptable *cx/y/z* [*sid*]	Displays memory and service ID (SID) information for a particular cable interface. If the optional *sid* parameter is specified, displays information for that particular SID.
multicast-echo ds-group	Displays the cable interfaces that are associated with each downstream group, where each downstream group is a unique DOCSIS MAC domain. (Interfaces that are bundled together are considered one MAC domain.)
multicast-echo *mcast-addr*	Displays the service flow ID (SFID) information for all multicast addresses that hash to the same index as the specified multicast IP address.
source-verify [*ip-address*]	Displays the interface and SFID mapping tables that are maintained by the source-verify feature. If the optional *ip-address* parameter is specified, displays information only for that particular IP address.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(11)CY, 12.2(11)BC2	This command was introduced as **show hardware pxf cable** for the Cisco uBR10012 router.
12.2(15)BC2	This command was renamed from **show hardware pxf cable** to **show pxf cable**.
12.3BC	This command was integrated into Cisco IOS release 12.3BC.
12.2(33)SCA	This command was integrated into Cisco IOS release 12.2(33)SCA.
12.2(33)SCB	The command was modified and **verbose** option was removed.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The **show pxf cable** command displays information about whether multicast echo and packet intercept are enabled on the cable interfaces. It can also be used to display the service flow ID (SFID) used for each multicast address that is being processed by the router.

> **Note** The **source-verify** option is not supported on the PRE-2 module. Instead, use the **show pxf cpu cef verbose** command to display the primary SID information on the PRE-2 module.

Examples

The following example shows a typical display for the **show pxf cable feature-table** command for all cable interfaces:

```
Router# show pxf cable feature-table

Interface       SWInterface    VCCI   McastEcho   Intercept   DSGroup   InterceptGroup
Cable5/0/0      Cable5/0/0     3      On          On          0         0
Cable5/0/0.1    Cable5/0/0     9      On          On          0         0
Cable5/0/1      Cable5/0/1     4      On          Off         255       -
Cable6/0/0      Cable6/0/0     5      On          Off         255       -
Cable6/0/1      Cable6/0/1     6      On          Off         255       -
Cable7/0/0      Cable7/0/0     7      On          Off         1         -
Cable7/0/1      Cable7/0/1     8      On          Off         2         -
```

The following example shows a typical display for the **show pxf cable feature-table** option for a particular cable interface:

```
Router# show pxf cable feature-table c5/0/0

Interface       SWInterface    VCCI   McastEcho   Intercept   DSGroup   InterceptGroup
Cable5/0/0      Cable5/0/0     3      On          On          0         0
Cable5/0/0.1    Cable5/0/0     9      On          On          0         0
```

The following example shows a typical display for the **show pxf cable feature-table** option when a cable interface has a bundle interface configured without a corresponding master interface:

```
Router# show pxf cable feature-table
```

```
Interface   SWInterface   VCCI   McastEcho   Intercept   DSGrp   InterceptGrp
Cable5/0/0  <No Cable Bundle Master Configured>
Cable5/0/1  Cable5/0/1    4         On          Off        11        -
Cable5/1/0  <No Cable Bundle Master Configured>
Cable5/1/1  Cable5/1/1    6         On          Off        15        -
Cable6/0/0  Cable6/0/0    7         On          Off        0         -
Cable6/0/1  Cable6/0/1    8         On          Off        1         -
Cable6/1/0  Cable6/1/0    9         On          Off        6         -
Cable6/1/1  Cable6/1/1    10        On          Off        7         -
Cable7/0/0  Cable7/0/0    11        On          Off        8         -
Cable7/0/1  Cable7/0/1    12        On          Off        9         -
Cable7/1/0  Cable7/1/0    13        On          Off        4         -
Cable7/1/1  Cable7/1/1    14        On          Off        5         -
Cable8/0/0  Cable8/0/0    15        On          Off        255       -
Cable8/0/1  Cable8/0/1    16        On          Off        3         -
Cable8/1/0  Cable8/1/0    17        On          Off        12        -
Cable8/1/1  Cable8/1/1    18        On          Off        13        -
```

Table below describes the fields shown by both forms of the **show pxf cable feature-table** command:

Table 11: show pxf cable feature-table Field Descriptions

Field	Description
Interface	Identifies the cable interface or subinterface.
SWInterface	Identifies the master cable interface for bundled interfaces.
McastEcho	Displays whether multicast echo is enabled (On) or disabled (Off).
VCCI	Displays the Virtually Cool Common Index (VCCI) for this cable interface or subinterface. The VCCI is an index that uniquely identifies every interface or subinterface on the PXF processor, and that quickly maps that interface to the appropriate set of services and features.
Intercept	Displays whether packet intercept, as per the Communications Assistance of Law Enforcement Act (CALEA), is enabled (On) or disabled (Off).
DSGroup	Displays the downstream group (unique MAC domain) that is associated with this interface or subinterface. Interfaces that are bundled together are considered one MAC domain. **Note** A downstream group number of 255 indicates that the CMTS has not assigned the interface to a MAC domain, typically because the interface is shutdown.
InterceptGroup	Displays the intercept packet group assigned to this cable interface.

The following example shows a typical display for the **show pxf cable maptable** command for a particular cable interface:

```
Router# show pxf cable maptable c5/1/0
SID   VCCI   FIB Index   SrcVfy   Pri SID   CM IP Address
1     3      0           On       1         10.10.11.31
2     3      0           On       2         10.10.11.129
```

Table below describes the fields shown by the **show pxf cable maptable** command:

Table 12: show pxf cable maptable Field Descriptions

Field	Description
SID	Identifies the service ID (SID).
VCCI	Displays the Virtually Cool Common Index (VCCI) for this cable interface or subinterface. The VCCI is an index that uniquely identifies every interface or subinterface on the PXF processor, and that quickly maps that interface to the appropriate set of services and features.
FIB Index	Identifies the forwarding information base (FIB) being used.
SrcVfy	Identifies whether the source-verify feature (enabled with the **cable source-verify** command) is On or Off for this SID and interface.
Pri SID	Identifies the primary SID associated with this SID, in case this SID is a secondary or dynamic SID.
CM IP Address	Displays the IP address for the CM that is associated with this SID.

The following example shows a typical display for the **show pxf cable multicast-echo ds-group** command, listing each downstream multicast group and its associated cable interface:

```
Router# show pxf cable multicast-echo ds-group

DS Group       Interface
0              Cable5/0/0
1              Cable7/0/0
2              Cable7/0/1
```

The following example shows a typical display for the **show pxf cable multicast-echo** command for a particular multicast address:

```
Router# show pxf cable multicast-echo 230.1.1.1

Src         I/f         SFID    DS Jib Header                    Packets    Bytes
230.1.1.1   Cable7/0/1  16385   0x0000 0000 1000 0001 1000       321        2160
```

Table below describes the fields shown by the **show pxf cable multicast-echo** command:

Table 13: show pxf cable multicast-echo Field Descriptions

Field	Description
Src	Multicast address being displayed.
I/F	Cable interface being used for this multicast address.
SFID	Displays the service flow ID (SFID) for this particular multicast address.

Field	Description
DS Jib Header	Shows the bitmask used for this multicast address on the PRE's MAC-layer processor. The bitmask consists of ten hexadecimal bytes in the following format (reading left to right, from most significant to least significant bit): • Bytes 9:8 = Specifies the key index for the downstream. • Bytes 7:6 = Identifies the rule number used for packet header suppression (if enabled) • Byte 5 = Bitmask that defines the type of packet transmitted: ◦ Bit 4 = 1 if padding CRC for data packets, 0 if not padding the CRC ◦ Bit 3 = 1 if inserting an extended header (EH) for PHS processing ◦ Bit 2 = 1 if inserting an extended header (EH) for BPI+ processing ◦ Bits 1:0 = Specifies the packet type: 00 = Data packet 01 = MAC management message for transmitted packets 10 = Internal MAP message on upstream 11 = Special packet • Byte 4 = Bitmask that identifies the type of map control and key sequence for the packet: ◦ Bits 6:4 = Destination upstream for the MAP message ◦ Bits 3:0 = BPI Key Sequence number • Bytes 3:2 = Index to obtain the downstream modem statistics. • Byte 1 = Specifies the assumed minimum size of a packet data unit. Multiply this byte by 4 to get the actual minimum size in bytes. • Byte 0 = Specifies the DOCSIS header size, with a maximum value of 0xE0 (248 decimal).
Packets	Number of packets sent to this address.
Bytes	Number of bytes sent to this address.

The following example shows a typical display for the **show pxf cable source-verify** command:

```
Router# show pxf cable source-verify
IP Address     Interface      Fib Index     Mac-Domain    SID
50.1.1.3       Cable5/0/0     0             0             1
50.1.1.29      Cable5/0/0     0             0             2
50.1.1.32      Cable5/0/0     0             0             2
50.1.2.6       Cable8/0/0     0             6             1
50.1.2.19      Cable8/0/0     0             6             1
```

Table below describes the fields shown by the **show pxf cable source-verify** command:

Table 14: show pxf cable source-verify Field Descriptions

Field	Description
IP Address	Identifies the IP addresses that have been verified by the source-verify feature.
Interface	Identifies the cable interface or subinterface used for this IP address.
FIB Index	Identifies the forwarding information base (FIB) being used.
Mac-Domain	Identifies the MAC DOCSIS downstream domain for this IP address.
SID	Identifies the service ID (SID).

Related Commands

Command	Description
cable source-verify	Enables verification of IP addresses for CMs and CPE devices on the upstream.
clear pxf	Clears the direct memory access (DMA) and error checking and correcting (ECC) error counters on the PXF processor.
debug pxf	Enables debugging of the PXF subsystems on the active PRE1 module on the Cisco uBR10012 router.
show pxf cable interface	Displays display DOCSIS-related information about a particular service ID (SID) on a particular cable interface.
show pxf cpu	Displays the display different statistics about the operation of the CPU processor during PXF processing.

Command	Description
show pxf microcode	Displays identifying information for the microcode being used on the processor.
show pxf xcm	Displays the current state of error checking and correcting (ECC) for the External Column Memory (XCM) on the PXF processor.

show pxf cable controller

To display information about radio frequency (RF) channel Versatile Traffic Management System (VTMS) links and link queues, use the **show pxf cable controller** command in privileged EXEC mode.

show pxf cable controller modular-cable *slot* /*subslot* /*unit* **rf-channel** *channel* **link queues**

Syntax Description

modular-cable	Specifies the modular cable interface.
slot/subslot/unit	Identifies a cable interface on the Cisco uBR10012 router. The following are valid values: • *slot* = 1 or 3 • *subslot* = 0 or 1 • *unit* = 0
rf-channel	Specifies the RF channel physical port on the Wideband SPA field-programmable gate array (FPGA).
channel	Specifies the number of the RF channel. The range is 0 to 23.
link queues	(Optional) Displays the link queue information for the specified RF channel.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC1	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   The **show pxf cable controller** command displays information about VTMS link queues only on the Cisco uBR10012 universal broadband router.

Examples   The following example using the **show pxf cable controller** command, omitting the **link queues** option, displays only VTMS-related output:

```
Router# show pxf cable controller modular-cable 1/0/0 rf-channel 3
Link ID is 32259
            link next_send:     0x00000000   channel number:      0
            temporary bgbw:     0x00000000    reserved bgbw:       0x00000000
col.6 link bandwidth mult:      55778                    shift:   18
col.7 link bandwidth mult:      55778                    shift:   18
        link aggregate cir:     0x00000000   aggregate eir:        0x00000000
   bw reclaimed/trunc eir:      0/0              link cir_max:     0xFFFF
            link cir_sum:       70               link eir_sum:     2
             link bw_sum:       0            act. link q_num:      0
```

The following example using the **show pxf cable controller** command including the **link queues** option, displays VTMS-related output as well as link queue-related output:

```
Router# show pxf cable controller modular-cable 1/0/0 rf-channel 3 link-queues
Link ID is 32259
            link next_send:     0x00000000   channel number:      0
            temporary bgbw:     0x00000000    reserved bgbw:       0x00000000
col.6 link bandwidth mult:      55778                    shift:   18
col.7 link bandwidth mult:      55778                    shift:   18
        link aggregate cir:     0x00000000   aggregate eir:        0x00000000
   bw reclaimed/trunc eir:      0/0              link cir_max:     0xFFFF
            link cir_sum:       70               link eir_sum:     2
             link bw_sum:       0            act. link q_num:      0

Link Queues :
 QID    CIR(act/conf)      EIR           MIR          WB Chan.   Status
  420   13107/13107        1/1         65535/65535       0       Inactive
  423   32768/32768        1/1         65535/65535       2       Inactive
```

See Table below for descriptions of link queue fields.

Table 15: show pxf cable controller Link Queue Field Descriptions

Field	Description
QID	Displays the identification number of the link queue.
CIR (act/conf)	Displays the information for the committed information rate (CIR) of link queues on this RF channel. • The first number, *act* , indicates the parameter that a link queue is actually using. • The second number, *conf* , indicates the parameter that is configured for a link queue.
EIR	Displays the information for the excess information rate (EIR) of link queues on this RF channel. • The first number in the output indicates the parameter that a link queue is actually using. • The second number in the output indicates the parameter that is configured for a link queue.

Field	Description
MIR	Displays the information for the maximum information rate (MIR) of link queues on this RF channel. • The first number in the output indicates the parameter that a link queue is actually using. • The second number in the output indicates the parameter that is configured for a link queue.
WB Chan	The number of the wideband cable channel.
Status	Displays the state of the link queue.

Related Commands

Command	Description
debug cr10k-rp dbs-queue	Displays debug information for dynamic bandwidth sharing (DBS) on the Cisco uBR10012 universal broadband router.
show pxf cpu queue	Displays parallel express forwarding (PXF) queueing and link queue statistics.

show pxf cable feature

To display multicast echo, packet intercept, or source-verify features for one or all cable interfaces, to include information for virtual interface bundles, use the **show pxf cable feature** command in privileged EXEC mode.

show pxf cable feature

Syntax Description

This command has no additional arguments or keywords.

Command Default

Display output without page breaks and remove passwords and other security information.

Command Modes

User EXEC, Privileged EXEC

Command History

Release	Modification
12.3(21)BC	This command was introduced to support Multicast with Virtual Interface Bundling on the Cisco CMTS.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Refer to the following document on Cisco.com for additional information about cable interface bundling and virtual interface bundling on the Cisco CMTS:

• *Cable Interface Bundling and Virtual Interface Bundling on the Cisco CMTS*

Examples

The following example illustrates Multicast Echo and virtual interface bundling information on the Cisco uBR10012 router.

```
Router# show pxf cable feature
Interface   SWInterface   VCCI   McastEcho   Intercept   SrcVfy   DHCP   DSGrp   InterceptGrp
Cable5/0/0  Bundle1       36     On          Off         On       On     0
Cable5/0/1  Cable5/0/1    15     On          Off         Off      Off    11
Cable5/1/0  Bundle1       36     On          Off         On       On     0
Cable5/1/1  Cable5/1/1    17     On          Off         Off      Off    9
Cable6/0/0  Bundle1       36     On          Off         On       On     0
Cable6/0/1  Cable6/0/1    19     On          Off         Off      Off    12
Cable6/1/0  Cable6/1/0    20     On          Off         Off      Off    7
Cable6/1/1  Cable6/1/1    21     On          Off         Off      Off    8
Cable7/0/0  Cable7/0/0    22     On          Off         Off      Off    255
Cable7/0/0  Cable7/0/0.1  42     On          Off         Off      Off    255
Cable7/0/1  Bundle200     38     On          Off         Off      Off    3
```

Related Commands

Command	Description
cable bundle	Configures a cable interface to belong to an interface bundle or virtual interface bundle.
show arp	Displays the entries in the router's ARP table.
show cable bundle forwarding-table	Displays the MAC forwarding table for the specified bundle, showing the MAC addresses of each cable modem in a bundle and the physical cable interface that it is currently using.
show cable modem	Displays the cable modems that are online both before and after cable interface bundling has been configured.
show running-config interface cable	Displays the configuration for the specified cable interface.

show pxf cable interface

To display information about a particular service ID (SID) on a particular cable interface, use the **show pxf cable** command in user EXEC or privileged EXEC mode.

show pxf cable interface cable *x/y/z* **sid classifiers| mac-rewrite| queue| service-flow ds| service-flow us**

Syntax Description

cable *x/y/z*	Identifies the cable interface for which information should be displayed.
sid	Identifies the service ID (SID) for which information should be displayed. The valid range is 1 to 8191.
classifiers	Displays the packet classifiers used for this SID.
mac-rewrite	Displays the CPE MAC information for this SID.
queue	Displays the status of the queues being used by this SID.
service-flow ds	Displays the service flow IDs (SFID) associated with the given SID on the downstream for the given cable interface.
service-flow us	Displays the SFIDs associated with the given SID on the upstream for the given cable interface.

Command Default   None

Command Modes   User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(11)BC2	This command was introduced as **show hardware pxf cable** for the Cisco uBR10012 router.
12.2(15)BC2	This command was renamed from **show hardware pxf cable interface** to **show pxf cable interface**.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   The **show pxf cable interface** command displays the DOCSIS-related information for a particular service ID (SID) on a particular cable interface.

Examples   The following example shows a typical display for SID 1 on cable interface c8/0/0 for the **show pxf cable interface classifiers** command:

```
Router# show pxf cable interface c8/0/0 1 classifiers

CM Classifiers:
Mac Rw Index: 18        CCB Index: 47
id=1, sfid=91 CFR Index 16461 RP sfindex 16461,
  prio=7, sip=0.0.0.0, sip mask=0.0.0.0
  dip=0.0.0.0, dip mask=0.0.0.0, prot=17, tos=0,FF
  sport = 0,65535, dport = 0,65535 matches = 0
id=2, sfid=92 CFR Index 16462 RP sfindex 16462,
  prio=6, sip=0.0.0.0, sip mask=0.0.0.0
  dip=1.11.22.2, dip mask=255.255.255.255, prot=256, tos=0,FF
  sport = 0,65535, dport = 0,65535 matches = 0
id=0, sfid=0 CFR Index 0 RP sfindex 0,
  prio=0, sip=0.0.0.0, sip mask=0.0.0.0
  dip=0.0.0.0, dip mask=0.0.0.0, prot=0, tos=2,1
  sport = 1000,500, dport = 1000,500 matches = 0
id=0, sfid=0 CFR Index 0 RP sfindex 0,
  prio=0, sip=0.0.0.0, sip mask=0.0.0.0
  dip=0.0.0.0, dip mask=0.0.0.0, prot=0, tos=2,1
  sport = 1000,500, dport = 1000,500 matches = 0
--------------------------------------------------------
Router#
```

Note   For a description of the fields that are displayed by this command, see section C.2.1., Packet Classification Encodings, in Appendix C of the DOCSIS 1.1 specification (*Data-Over-Cable Service Interface Specifications Radio Frequency Interface Specification* , SP-RFIv1.1-I08-020301).

The following example shows a typical display for SID 1 on cable interface c8/0/0 for the **show pxf cable interface mac-rewrite** command:

```
Router# show pxf cable interface c8/0/0 1 mac-rewrite

CPE Information for Interface Cable8/0/0 SID 1:
       Link Table Slot: 18  Mac-rw-index: 18
Router#
```

The following example shows a typical display for SID 1 on cable interface c8/0/0 for the **show pxf cable interface queue** command:

```
Router# show pxf cable interface c8/0/0 1 queue

RP SFID 16460 LC SFID 4
Queue Index: 281        QID 281 VCCI 6161      ClassID 9      Refcount 1
       Priority: Lo    Rates:(Act/Conf) CIR 0/0 MIR 0/16383 EIR 0/431
       Statistics: Length 0 Pkts 0 Octets 0 TailDrops 0 BufferDrops 0
RP SFID 16461 LC SFID 91
Queue Index: 282        QID 282 VCCI 6161      ClassID 10     Refcount 1
       Priority: Lo    Rates:(Act/Conf) CIR 0/0 MIR 0/16383 EIR 0/431
       Statistics: Length 0 Pkts 0 Octets 0 TailDrops 0 BufferDrops 0
RP SFID 16462 LC SFID 92
Queue Index: 283        QID 283 VCCI 6161      ClassID 11     Refcount 1
       Priority: Lo    Rates:(Act/Conf) CIR 0/0 MIR 0/16383 EIR 0/431
       Statistics: Length 0 Pkts 0 Octets 0 TailDrops 0 BufferDrops 0
RP SFID 16463 LC SFID 93
Queue Index: 284        QID 284 VCCI 6161      ClassID 12     Refcount 1
```

```
           Priority: Lo    Rates:(Act/Conf) CIR 0/0 MIR 0/16383 EIR 0/431
           Statistics: Length 0 Pkts 0 Octets 0 TailDrops 0 BufferDrops 0
RP SFID 16464 LC SFID 94
Queue Index: 285        QID 285 VCCI 6161        ClassID 13      Refcount 1
           Priority: Lo    Rates:(Act/Conf) CIR 0/0 MIR 0/16383 EIR 0/431
           Statistics: Length 0 Pkts 0 Octets 0 TailDrops 0 BufferDrops 0
Router#
```

The following example shows a typical display for SID 1 on cable interface c8/0/0 for the **show pxf cable interface service-flow ds** command:

```
Router# show pxf cable interface c8/0/0 1 service-flow ds

RP SFID       LC SFID       Bytes         Packets       QID
16460         4             0             0             281
16461         91            0             0             282
16462         92            0             0             283
16463         93            0             0             284
16464         94            0             0             285
Router#
```

The following example shows a typical display for SID 1 on cable interface c8/0/0 for the **show pxf cable interface service-flow us** command:

```
Router# show pxf cable interface c8/0/0 1 service-flow us
SFID          SID
3             1
90            21
Router#
```

Related Commands

Command	Description
clear pxf	Clears the direct memory access (DMA) and error checking and correcting (ECC) error counters on the PXF processor.
debug pxf	Enables debugging of the PXF subsystems on the active PRE1 module on the Cisco uBR10012 router.
show pxf cable	Displays information about the multicast echo and packet intercept features for one or all cable interfaces.
show pxf cpu	Displays the display different statistics about the operation of the CPU processor during PXF processing.
show pxf microcode	Displays identifying information for the microcode being used on the processor.
show pxf xcm	Displays the current state of error checking and correcting (ECC) for the External Column Memory (XCM) on the PXF processor.

show pxf cable multicast

To display information about multicast routes (mroute) in the PXF processor for a specified group, use the **show pxf cable multicast** command in privileged EXEC mode.

show pxf cable multicast [*multicast-group*]

Syntax Description

multicast-group	(Optional) Displays the name of the multicast group.

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(33)SCB	The command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The **show pxf cable multicast** command displays information about whether routes are enabled on the cable interfaces.

Examples

The following example shows a typical display for the **show pxf cable multicast** command for all cable interfaces:

```
Router# show pxf cable multicast multicast-group

MDB Flags: L - Local, F - Register flag, T - SPT-bit set, J - Join SPT
Z - Multicast Tunnel, N- No FastSwitching
OIF Flags: P - Prune Flag, A - Assert Flag
PXF multicast switching for vrf default is enabled.
Mdb at index= 3 hash= 0xE9F7:
next_mdb_idx: 0, fib_root: 0x0001, source_addr: 0.0.0.0, group_addr: 230.1.1.1
uses: 0, bytes: 0, vcci_in: 0, oif: 0x000002
rpf_failed: 0, drop_others: 0
rp_bit_mask:0x00, flags: [0xA0]
Ref Count=0, MDB Flags=0x0082, MDB FastFlags=0x10
```

Related Commands

Command	Description
show pxf cable interface	Displays display DOCSIS-related information about a particular service ID (SID) on a particular cable interface.
show pxf cpu	Displays the display different statistics about the operation of the CPU processor during PXF processing.

show pxf cpu

To display the different statistics about the operation of the CPU on the Performance Routing Engine (PRE1) module during Parallel eXpress Forwarding (PXF) processing, use the **show pxf cpu** command in user EXEC or privileged EXEC mode.

show pxf cpu {**access-lists** {**qos**| **security**}| **buffers**| **cef** [**mem**| **verbose**| **vrf** *ip-address mask*]| **context**| **mroute** [*ipaddress1*] [*ipaddress2*]| **queue** [*interface*]| **schedule** [*interface*| **summary**]| **statistics** [**diversion**| **drop** [*interface*]| **ip**| **mlp**]| **subblocks** [*interface*]}

Syntax Description

access-lists {**qos** | **security**}	Displays information for either quality of service (QoS) access lists (ACLs) or security access lists. **Note** The PRE module automatically compiles all access lists into the turbo ACL format, so that they can be efficiently processed by the PXF processors. The only exception are very simple access lists that would require more processing time to be compiled than to be executed.
buffers	Displays information about buffer usage on the processor.
cef [**mem** | **verbose** | **vrf** *ip-address mask*]	Displays information about the memory usage and routing tables in the PXF processors for Cisco Express Forwarding (CEF) operation. Optionally displays detailed information about memory usage and about a particular entry in the virtual private network (VPN) routing/forwarding (VRF) tables.
context	Displays performance statistics on the processing of contexts on the processors. (A context is a unit of packet processing time on the PXF processor.) **Note** The **show pxf cpu context** command displays more useful information on the PXF processor's performance than the **show processor cpu command** that is used on other platforms.
mroute [*ipaddress1*] [*ipaddress2*]	Displays multicast static route (mroute) information for all groups, for one particular group, or for a range of groups. Displays information about IP multicast routes in the PXF processor for a specified IP prefix. For a more user-friendly display of the same information, use the **show ip mroute** command.

queue [*interface*]	Displays queue drop counters for all interfaces, or optionally for one selected interface. This can be useful in determining if traffic is being properly distributed among the correct interfaces.
schedule [*interface*	**summary**]	Displays the timing wheel dequeue schedule counters for all interfaces, or optionally for one interface, or optionally a summary of all interfaces.
statistics [**diversion**	**drop** [*interface*]	**ip**	**mlp**]	Displays statistics for the packets that the PXF has processed. The default is to display all packet statistics, or you can optionally specify one of the following keywords to display a particular type of statistics: • **diversion**—(Optional) Displays packets that the PXF diverted to the main route processor for special handling. • **drop** [*interface*]—(Optional) Displays dropped packets and bytes. You can also optionally display the dropped packets for a particular interface. • **ip**—(Optional) Displays statistics for the processing of IP and ICMP packets. • **mlp**—(Optional) Displays statistics for multilink point-to-point protocol (MLPPP) packets.
subblocks [*interface*]	Displays subblocks information for all interfaces, or optionally for one interface.

Command Default

No default behavior or values

Command Modes

User EXEC, Privileged EXEC

Command History

Release	Modification
12.2(1)XF1	This command was introduced as **show hardware pxf cpu** for the Cisco uBR10012 router.
12.2(11)BC2	The MAC domain was added to the display of the **show pxf cpu subblocks** command for a particular cable interface.

Release	Modification
12.2(15)BC2	This command was renamed from **show hardware pxf cpu** to **show pxf cpu**. In addition, the **cef** option was enhanced to display CEF tag adjacency information. The **verbose** option was also added to the **cef** option to display more detailed information about the Forwarding Information Base (FIB) tables being maintained by the CEF subsystem.
12.2(15)BC2	The **detail** option and additional counters were added to the **show pxf cpu statisticsdiversion** command.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples   See the following sections for typical displays for the different forms of the **show pxf cpu** command.

Examples   The following example shows a typical display for the **access-list qos** option, which displays information about the processing of quality-of-service (QoS) access-lists:

```
Router# show pxf cpu access qos

PXF QoS ACL statistics:
 ACL         State    Tables  Entries  Config  Fragment  Redundant  Memory
101         Operational   1       9        1        0          0       1Kb
First level lookup tables:
Block     Use             Rows      Columns   Memory used
  0    TOS/Protocol         1/128     0/32      16384
  1    IP Source (MS)       1/128     0/32      16384
  2    IP Source (LS)       1/128     0/32      16384
  3    IP Dest (MS)         1/128     0/32      16384
  4    IP Dest (LS)         1/128     0/32      16384
  5    TCP/UDP Src Port     1/128     0/32      16384
  6    TCP/UDP Dest Port    1/128     0/32      16384
  7    TCP Flags/Fragment   1/128     0/32      16384
Banknum   Heapsize    Freesize   %Free
  0       4172800     4172800     100
  1       4128768     4128768     100
  2       2818048     2818048     100
  3       4194304     4194304     100
  4       3342336     3309568      99
  5       3670016     3637248      99
  6       3342336     3309568      99
  7       3342336     3309568      99
Router#
```
The following example shows a typical display for the **access-list security** option:

```
Router# show pxf cpu access security

PXF Security ACL statistics:
 ACL         State    Tables  Entries  Config  Fragment  Redundant  Memory
104         Operational   5     536      514      46         29      818Kb
105         Operational   1       4        6       0          3        7Kb
190         Operational   1      27       26       0          0        8Kb
cit01       Operational   1      26       24      12         11        9Kb
130         Unneeded
131         Unneeded
First level lookup tables:
Block     Use             Rows      Columns   Memory used
  0    TOS/Protocol        18/128     5/32      16384
```

```
    1   IP Source (MS)         27/128    5/32     16384
    2   IP Source (LS)         36/128    5/32     16384
    3   IP Dest (MS)           29/128    5/32     16384
    4   IP Dest (LS)           37/128    5/32     16384
    5   TCP/UDP Src Port       12/128    5/32     16384
    6   TCP/UDP Dest Port      10/128    5/32     16384
    7   TCP Flags/Fragment     13/128    5/32     16384
Banknum   Heapsize    Freesize   %Free
    0    4156416     3451904     83
    1    4194304     4180992     99
    2    4194304     4161536     99
    3    4194304     4107264     97
    4    3670016     3637248     99
    5    3670016     3637248     99
    6    3670016     3637248     99
    7    3670016     3637248     99
Router#
```

Table below describes the fields shown in the **show pxf cpu access-list** command:

Table 16: Field Descriptions for the show pxf cpu access-list Command

Field	Description
ACL	Identifies the access list (ACL) in use, by either name or number.
State	Displays the current state of the access list: • Copying—The ACL is in the process of being created or compiled. • Operational—ACL is active and filtering packets. • Out of acl private mem—ACL has run out of the private memory that was allocated exclusively to it. • Out of shared mem—ACL has run out of the memory that it shares with other ACLs. • Unknown Failure—ACL has failed because of an uncategorized reason. • Unneeded—ACL was allocated but is not currently in use.
Tables	Displays the number of tables that the ACL is currently using.
Entries	Displays the number of table entry slots for the fields or values that the ACL is currently using to match packets.
Config	Displays the number of simple or extended entries for this ACL.

Field	Description
Fragment	Displays the number of entries that were configured with the **fragments** keyword.
Redundant	Displays the number of duplicate entries for this ACL.
Memory	Displays the total amount of memory, rounded up to the nearest kilobyte, that the ACL is currently using.
First level lookup tables	Describes the blocks of memory that store the IP fields that are used to match packets for access list processing.
Block	Identifies the block of memory used for this particular lookup table.
Use	Describes the IP packet field that is being matched.
Rows	Describes the number of table rows currently in use and the total number of rows.
Columns	Describes the number of table columns currently in use and the total number of columns.
Memory used	Describes the total amount of memory, in bytes, currently being used by the memory block.
Banknum	Identifies the block of memory used for this particular lookup table.
Heapsize	Identifies the total amount of memory, in bytes, allocated for this block of memory.
Freesize	Identifies the amount of memory, in bytes, that is currently available for use by this block of memory.
%Free	Identifies the percentage of memory that is free and available for use for this block of memory.

Examples   The following example shows a typical display for the **buffers** option:

```
Router# show pxf cpu buffers

FP buffers
    pool    size    # buffer    available    allocate failures
    -----------------------------------------------------------
    0       9216     3203        3203          0
    1       1536     6406        6406          0
    2       640      89432       89432         0
    3       256      76872       76872         0
```

```
     4      64      128120      128120      0
Router#
```
Table below describes the fields shown in the **show pxf cpu buffers** command:

Table 17: Field Descriptions for the show pxf cpu buffers Command

Field	Description
pool	Identifies the buffer pool.
size	Displays the size, in bytes, of each buffer in this particular pool.
# buffer	Displays the total number of buffers in this particular pool.
available	Displays the number of buffers that are currently available.
allocate failures	Displays the number of attempts to allocate a buffer that have failed since the last reset.

Examples

The following example shows a typical display for the **cef** option:

```
Router# show pxf cpu cef

Shadow 10-9-5-8 Toaster Mtrie:
  97 leaves, 3104 leaf bytes, 40 nodes, 41056 node bytes
  141 invalidations
  233 prefix updates
  refcounts:  10293 leaf, 10144 node
Prefix/Length         Refcount    Parent
0.0.0.0/0             4512
1.10.0.0/16           1665        0.0.0.0/0
1.10.0.2/32           4           1.10.0.0/16
1.10.0.3/32           4           1.10.0.0/16
1.10.37.22/32         4           1.10.0.0/16
1.10.45.16/32         4           1.10.0.0/16
1.10.85.0/24          259         1.10.0.0/16
1.10.85.0/32          4           1.10.85.0/24
1.11.0.0/16           42          0.0.0.0/0
1.11.37.0/24          4           1.11.0.0/16
127.0.0.0/8           1601        0.0.0.0/0
127.0.0.0/32          4           127.0.0.0/8
144.205.188.0/24      259         0.0.0.0/0
144.205.188.0/32      4           144.205.188.0/24
144.205.188.1/32      4           144.205.188.0/24
144.205.188.2/32      4           144.205.188.0/24
144.205.188.255/32  4             144.205.188.0/24
164.120.151.128/25  131           0.0.0.0/0
164.120.151.128/32    4           164.120.151.128/25
164.120.151.129/32    4           164.120.151.128/25
166.135.216.255/32  4             166.135.216.128/25
221.222.140.0/22    772           0.0.0.0/0
221.222.140.0/32      4           221.222.140.0/22
221.222.141.1/32      4           221.222.140.0/22
221.222.143.255/32  4             221.222.140.0/22
223.255.254.0/24    4             0.0.0.0/0
=======================================
26 routes with less specific overlapping parent route
```

```
FP CEF/MFIB/TFIB XCM Type usage:
Type Name Col Total  Alloc  Size   Start     End       BitMap0   BitMap1  Error
  0  Root 1   1000   1000   4096   50003100  503EB100  713AC814  61DFB48C 0
  1  Node 1   2048   2009   2048   53000000  53400000  713AC8C0  61DFB538 0
  2  Node 1   32768  2013   128    50864000  50C64000  713AC9F0  61DFB668 0
  3  Node 1   4096   1021   1024   53864000  53C64000  713ADA20  61DFC698 0
  4  Leaf 1   524288 8107   8      51064000  51464000  713ADC50  61DFC8C8 0
  5  Adj  1   524288 3046   8      51820000  51C20000  713BDC80  61E0C8F8 0
  6  Mac  5   524288 2040   8      58400000  58800000  713D12C4  61E1FF3C 0
  7  Load 1   110376 4052   76     52000000  527FFFE0  713CDCB0  61E1C928 0
  8  Mdb  1   65536  1      4      53440000  53480000  61E66AAC  714168CC 0
  9  Midb 1   262144 1      4      51C20000  51D20000  61E68ADC  714188FC 0
 10  TagI 1   51200  1008   68     53480000  537D2000  714012EC  61E4FF64 0
 11  TagR 1   102400 2010   4      50800000  50864000  61E51894  71412C18 0
FP CEF state: 2
```

Note   If the value in the Alloc column is equal to the number in the Total column, then the PXF has run out of its allocated memory for that level and the CEF entries for that particular level have been exhausted.

Table below describes the fields shown in the **show pxf cpu cef** command:

Table 18: Field Descriptions for the show pxf cpu cef Command

Field	Description
Shadow 10-9-5-8 Toaster Mtrie	Header for the memory used by the CEF switching tables, which use the optimized multiway tree (Mtrie) data structure format.
leaves	Number of leaves in the CEF Mtrie table.
leaf bytes	Number of bytes used by the leaves in the Mtrie table.
nodes	Number of nodes in the Mtrie table.
node bytes	Number of bytes used by the nodes in the Mtrie table.
invalidations	Number of times an existing entry in the adjacency table was invalidated because of updated information.
prefix updates	Number of updates made to the adjacency table.
refcounts	Number of references (leaves and nodes) to an adjacency that are currently stored in the adjacency table. There is one reference for each corresponding entry in the CEF table, plus a few others for maintenance and system purposes.
Prefix/Length	IP prefix and length (IP network or host number, with subnet) that is in the CEF adjacency table.
Refcount	Number of times this prefix is referenced in the adjacency table.

Field	Description
Parent	Parent of this prefix's leaf or node entry in the adjacency table.
FP CEF/MFIB/TFIB XCM Type usage—The following fields display the memory usage of the shadow forwarding information base (FIB).	
Type	Level number of this particular memory block.
Name	Identifier for this particular memory block.
Total	Total number of nodes available on each level and changes to other data structures.
Alloc	Number of nodes currently allocated.
Start, End	Starting and ending addresses for the memory block.
Error	Number of errors discovered in the memory block.

Examples

The following example shows a typical display for the **context** option, which displays performance statistics for the PXF processors over the past 1-minute, 5-minute, and 60-minute periods:

```
Router# show pxf cpu context

 FP context statistics  count       rate
 --------------------  ----------  ----------
     feed_back         2002946946  645161
     new_work          3992307360  1293715
     null              2261726736  708206
                                   ----------
                                   2647082

 FP average context/sec 1min       5min        60min
 --------------------  ----------  ----------  ----------
     feed_back         679377      707217      191844      cps
     new_work          1358758     1414842     391367      cps
     null              587560      520274      2171829     cps
 --------------------  ----------  ----------  ----------
     Total             2625695     2642333     2755040     cps

 FP context utilization 1min       5min        60min
 --------------------  ----------  ----------  ----------
     Actual            77  %       80  %       21  %
     Theoretical       65  %       67  %       18  %
     Maximum           84  %       84  %       88  %
Router#
```

Note The **show pxf cpu context** command displays more useful information on the processor's performance than the **show processor cpu command** that is used on other platforms.

This display shows statistics that are based on three counters on the PXF processors:

- feed_back—Incremented each time the processor requires another processor cycle to process a packet. Each PXF processor contains 8 columns that perform different packet header processing tasks, such as ACL processing or QoS processing. A typical IP packet passes through all 8 columns only once, but some types of packets can require more than one pass through these columns, and each additional pass through the PXF processor is referred to as feedback. This counter represents the amount of traffic that cannot be processed in an optimal manner.

- new_work—Incremented for new packets that come into the PXF pipeline. This counter represents a snapshot of the amount of incoming traffic being processed by the processor.

- null—Incremented for every context during which the PXF pipe is not processing traffic. This counter represents the processor's potential to handle additional traffic. As the processor becomes more busy, the value for null decreases until it becomes 0, at which point the processor has reached its maximum usage.

Table below describes the fields shown in the **show pxf cpu context** command:

Table 19: Field Descriptions for the show pxf cpu context Command

Field	Description
FP context statistics	
feed_back	Displays the current value for the feed_back counter and the rate that the counter is increasing per second (the difference between the current value and the previous value divided by the time period between the two).
new_work	Displays the current value for the new_work counter and the rate that the counter is increasing per second (the difference between the current value and the previous value divided by the time period between the two).
null	Displays the current value for the null counter and the rate that the counter is increasing per second (the difference between the current value and the previous value divided by the time period between the two).
FP average context/sec	
feed_back	Displays the rate, in terms of the number of contexts per second (cps) for the feed_back counter for the last 1-minute, 5-minute, and 60-minute time periods.
new_work	Displays the rate, in terms of the number of contexts per second (cps) for the new_work counter for the last 1-minute, 5-minute, and 60-minute time periods.

Field	Description
null	Displays the rate, in terms of the number of contexts per second (cps) for the null counter for the last 1-minute, 5-minute, and 60-minute time periods.
FP context utilization	
Actual	Displays the actual percentage of processor usage per second, compared to the theoretical maximum, for the last 1-minute, 5-minute, and 60-minute time periods. The value for Actual = (new_work+feed_back)*100/(new_work+feed_back+null).
Theoretical	Displays the percentage of processor usage compared to the ideal theoretical capacities for the last 1-minute, 5-minute, and 60-minute time periods. The value for Theoretical = (new_work+feed_back)*100/3125000. (The theoretical maximum for the PXF processors is 3,125,000 contexts per second.)
Maximum	Displays the actual maximum percentage of processor usage that has occurred for the last 1-minute, 5-minute, and 60-minute time periods. The value for Actual = (new_work+feed_back+null)*100/3125000.

Examples

The following example shows a typical display for the **mroute** option:

```
Router# show pxf cpu mroute

Shadow G/SG[5624]: s: 0.0.0.0 g: 224.0.1.40 uses: 0 bytes 0 flags: [D ] LNJ
Interface                   vcci   offset    rw_index mac_header
In :                        0      0x000004
Shadow G/SG[3195]: s: 0.0.0.0 g: 234.5.6.7 uses: 0 bytes 0 flags: [5 ] NJ
Interface                   vcci   offset    rw_index mac_header
In :                        0      0x000008
Out: Cable5/1/0             5      0x00002C 1B         00000026800001005E05060700010
Out: Cable6/1/1             9      0x000028 1A         00000026800001005E05060700010
Out: Cable6/0/0             6      0x000024 19         00000026800001005E05060700010
Out: Cable5/0/0             3      0x000020 18         00000026800001005E05060700010
Out: Cable7/0/0             A      0x00001C 17         00000026800001005E05060700010
Out: Cable7/1/1             C      0x000018 16         00000026800001005E05060700010
Out: Cable7/1/0             B      0x000014 15         00000026800001005E05060700010
Out: Cable6/1/0             8      0x000010 14         00000026800001005E05060700010
Out: Cable6/0/1             7      0x00000C 13         00000026800001005E05060700010
Out: Cable5/0/1             4      0x000008 12         00000026800001005E05060700010
Router#
```

Table below describes the fields shown in the **show pxf cpu mroute** command:

Table 20: Field Descriptions for the show pxf cpu mroute Command

Field	Description
Interface	Cable interface or subinterface.

Field	Description
vcci	Virtually Cool Common Index (VCCI) for this cable interface or subinterface. The VCCI is an index that uniquely identifies every interface or subinterface on the PXF processor, and that quickly maps that interface to the appropriate set of services and features.
rw index	Index used to read and write into the multicast table for this entry.
mac_header	MAC header that is used when rewriting the packet for output.

Examples   The following example shows a typical display for the **queue** option, which displays the chassis-wide counters for the PXF pipeline counters that show drops on the output side of the processor:

```
Router# show pxf cpu queue

FP queue statistics for RP
  Queue number 0    Shared
    wq_avg_qlen               0              wq_flags_pd_offset      1B48001
    wq_drop_factor            74
    wq_buffer_drop            0              wq_limit_drop           0
    wq_invalid_enq_wqb_drop 0              wq_invalid_deq_wqb_drop 0
    wq_rnd_pkt_drop           0              wq_rnd_byte_drop        0
    wq_static_qlen_drop       0
    wq_len                    0
    Packet xmit               804833         Byte xmit               487438911
  Queue number 15   Shared  High priority
    wq_avg_qlen               0              wq_flags_pd_offset      1BC8001
    wq_drop_factor            174
    wq_buffer_drop            0              wq_limit_drop           0
    wq_invalid_enq_wqb_drop 0              wq_invalid_deq_wqb_drop 0
    wq_rnd_pkt_drop           0              wq_rnd_byte_drop        0
    wq_static_qlen_drop       0
    wq_len                    0
    Packet xmit               69647          Byte xmit               41230926
Router#
```
The following example shows a typical display for the **queue** option for a particular cable interface:

```
Router# show pxf cpu queue c6/0/0

FP queue statistics for Cable5/0/0
FP queue statistics for Cable6/0/0
  Queue algorithm 0x0
  Queue number 0    Shared
    wq_avg_qlen               0              wq_flags_pd_offset      18A0001
    wq_drop_factor            40
    wq_buffer_drop            0              wq_limit_drop           0
    wq_invalid_enq_wqb_drop 0              wq_invalid_deq_wqb_drop 0
    wq_rnd_pkt_drop           0              wq_rnd_byte_drop        0
    wq_static_qlen_drop       0
    wq_len                    0
    Packet xmit               56414          Byte xmit               14322357
  Queue number 15   Shared  High priority
    wq_avg_qlen               0              wq_flags_pd_offset      18A8001
    wq_drop_factor            1000
    wq_buffer_drop            0              wq_limit_drop           0
```

```
        wq_invalid_enq_wqb_drop 0          wq_invalid_deq_wqb_drop 0
        wq_rnd_pkt_drop         0          wq_rnd_byte_drop        0
        wq_static_qlen_drop     0
        wq_len                  0
        Packet xmit             0          Byte xmit               0
Router#
```

Examples   The following example shows a typical display for the **schedule summary** option:

```
Router# show pxf cpu schedule summary

FP average dequeue schedule rate in pps
Interface          Level 1     Level 2     maximum   1min      5min      60min
------------------ ---------   ---------   --------  --------  --------  -----
Total              32  / 32    1   / 1     3125000   0     %   0     %   0    %
Router#
```

The following example shows a typical display for the **schedule** option for a particular interface:

```
Router# show pxf cpu schedule c5/0/0

FP average dequeue schedule rate in pps
Interface          Level 1     Level 2     maximum   1min      5min      60min
------------------ ---------   ---------   --------  --------  --------  -----
Cable5/0/0         1   / 32    1   / 1     97656     0     %   0     %   0    %
Router#
```

Table below describes the fields shown in the **show pxf cpu schedule** command:

Table 21: Field Descriptions for the show pxf cpu schedule Command

Field	Description
Interface	Identifies the cable interface or subinterface.
Level 1	Displays the number of occupied level 1 (port) wheel slots and the total number of wheel slots for this interface or subinterface.
Level 2	Displays the number of occupied level 2 (channel) wheel slots and the total number of wheel slots for this interface or subinterface.
maximum	Displays the maximum number of packet dequeues per second.
1 min	Displays the dequeue rate for the last 1-minute period.
5 min	Displays the dequeue rate for the last 5-minute period.
60 min	Displays the dequeue rate for the last 60-minute period.

Examples   The following example shows a typical display for the **statistics diversion** option, which shows chassis-wide statistics for PXF diversions, which occur whenever the PXF processor sends a packet to the main route

processor for special processing (such as errored packets, address resolution protocol (ARP) packets, point-to-point protocol (PPP) control packets, an unsupported Layer 2 packet header, and so forth).

```
Router#  show pxf cpu statistics diversion

Diversion Cause Stats:
  local     = 263171
  dest      = 0
  option    = 0
  protocol  = 0
  encap     = 541943
  oam f5 seg= 0
  oam f5 ete= 0
  oam f4 seg= 0
  oam f4 ete= 0
  atm ilmi  = 0
  fr_term   = 0
  comp      = 0
  ip_sanity = 0
  ip_bcast  = 0
  ip_dest   = 0
  fib_punt  = 0
  mtu       = 0
  arp       = 127
  rarp      = 0
  icmp      = 0
  dsap_ssap = 0
  acl       = 0
  divert    = 0
  no_group  = 0
  direct    = 0
  local_mem = 0
  p2p_prune = 0
  assert    = 0
  dat_prune = 0
  join_spt  = 0
  null_out  = 0
  igmp      = 69
  register  = 0
  no_fast   = 136
  ipc_resp  = 0
  keepalive = 0
  min_mtu   = 0
  icmp_frag = 0
  icmp_bad  = 0
  mpls_ttl  = 0
  tfib      = 0
  multicast = 69656
  clns_isis = 0
  fr_lmi    = 0
  ppp_cntrl = 0
Router#
```

Note   As shown in this display, the majority of dropped packets should typically be either local (sent to the router for routing), encap (encapsulated for another protocol), or multicast (IP multicast traffic).

The following example shows a typical display for the **statistics drop** option, which shows chassis-wide PXF drop statistics:

```
Router# show pxf cpu statistics drop

FP drop statistics
                      packets          bytes
    icmp_on_icmp      0                0
    ipc_cmd_invalid   0                0
    icmp_unrch_interval 294            31164
    bad_tag_opcode    0                0
    bad_ch_handle     0                0
```

```
no_touch_from_rp      0                     0
dst_ip_is_mcast       0                     0
ib_re_bit             0                     0
encap_too_big         0                     0
no_tfib_route         0                     0
mc_disabled           0                     0
mc_rpf_failed         0                     0
mc_prune_rate_limit   0                     0
mc_null_oif           0                     0
bad_drop_code         0                     0
 cobalt_re[00]        0                     0
          [01]        0                     0
          [02]        0                     0
          [03]        0                     0
          [04]        0                     0
          [05]        0                     0
          [06]        0                     0
          [07]        0                     0
          [08]        0                     0
          [09]        0                     0
          [10]        0                     0
          [11]        0                     0
          [12]        0                     0
          [13]        0                     0
          [14]        0                     0
          [15]        0                     0
          [16]        0                     0
          [17]        0                     0
null_config[00]       0                     0
          [01]        0                     0
          [02]        0                     0
          [03]        0                     0
          [04]        0                     0
          [05]        0                     0
          [06]        0                     0
          [07]        1                     362
          [08]        0                     0
          [09]        0                     0
          [10]        0                     0
          [11]        0                     0
          [12]        0                     0
          [13]        0                     0
          [14]        0                     0
          [15]        0                     0
          [16]        0                     0
          [17]        0                     0
inval_ib_resource[00] 0                     0
              [01] 0                        0
              [02] 0                        0
              [03] 0                        0
              [04] 0                        0
              [05] 0                        0
              [06] 0                        0
              [07] 0                        0
              [08] 0                        0
              [09] 0                        0
              [10] 0                        0
              [11] 0                        0
              [12] 0                        0
              [13] 0                        0
              [14] 0                        0
              [15] 0                        0
              [16] 0                        0
              [17] 0                        0
              [18] 0                        0
              [19] 0                        0
              [20] 0                        0
              [21] 0                        0
              [22] 0                        0
              [23] 0                        0
              [24] 0                        0
              [25] 0                        0
              [26] 0                        0
```

```
                                     [27] 0                   0
                                     [28] 0                   0
                                     [29] 0                   0
                                     [30] 0                   0
                                     [31] 0                   0
         master drop count   794
Router#
```

The following example shows a typical display for the **statistics drop** option for a particular cable interface, which shows the input-side drop statistics for that particular interface:

```
Router# show pxf cpu statistics drop c7/1/0

FP drop statistics for Cable7/1/0
                                packets            bytes
      vcci undefined            0                  0
   vcci B
      bad hdlc addr             0                  0
      mac length mismatch       0                  0
      bad ip checksum           0                  0
      ip length mismatch        0                  0
      ip length short           0                  0
      ip length long            0                  0
      ip version mismatch       0                  0
      bad rpf                   0                  0
      acl failure               0                  0
      police                    0                  0
      ttl                       0                  0
      unreachable               0                  0
      mlp_frag_received         0                  0
      mlp_unexpected_pkt        0                  0
      df_multicast              0                  0
      encap_not_supported       0                  0
      mtu_too_wee               0                  0
      mtu_too_big               0                  0
      atm_fp_rx_cell_size_err 0                    0
      Data Received             0                  0
Router#
```

The following example shows a typical display for the **statistics ip** option, which displays chassis-wide PXF forwarding statistics for IP, multicast, fragmented, and ICMP packets:

```
ROuter# show pxf cpu statistics ip

FP ip statistics
    dropped        0
    forwarded      1291
    punted         11393
    input_packets  14049
    icmps_created  1365
    noadjacency    0
    noroute        300
    unicast_rpf    0
    unresolved     0
FP ip multicast statistics
    mcast total    69665
    mcast drops    0
    mcast rpf      0
    mcast inputacl 0
    mcast outptacl 0
    mcast punts    69665
    mcast switched 0
    mcast failed   0
FP ip frag statistics
    packets        0
    fragments      0
    fragfail       0
    dontfrag       0
    mcdontfrag     0
FP icmp statistics
    unreachsent    0
    ttlsent        0
```

```
      echorepsent    0
      echorcv        0
      checksumerr    0
Router#
```

Note   The noroute counter increases whenever the router drops a packet because its destination IP address is 0.0.0.0. This counter also increases whenever the Cisco Express Forwarding (CEF) adjacency tables drop a packet because it has a null, discard, or drop adjacency.

Examples   The following example shows a typical display for the **subblocks** option for all interfaces:

```
Router# show pxf cpu subblocks

Interface           Status   ICB   WQB_ID Fwding  Encap  VCCI map  VCCI
POS1/0/0            initiali 6000  6146   disable 5      81800000  E
GigabitEthernet3/0/0 reset   E000  6148   disable 1      81800004  1
GigabitEthernet4/0/0 up      12000 6150   PXF     1      81800008  2
Cable5/0/0          down     14000 4096   disable 59     81805400  3
Cable5/0/1          down     14100 4097   disable 59     81805C00  4
Cable5/1/0          up       16000 4098   PXF     59     81806400  5
Cable6/0/0          up       18000 4099   PXF     59     81806C00  6
Cable6/0/1          up       18100 4100   PXF     59     81807400  7
Cable6/1/0          up       1A000 4101   PXF     59     81807C00  8
Cable6/1/1          up       1A100 4102   PXF     59     81808400  9
Cable7/0/0          up       1C000 4103   PXF     59     81808C00  A
Cable7/1/0          up       1E000 4104   PXF     59     81809400  B
Cable7/1/1          up       1E100 4105   PXF     59     81809C00  C
Cable7/1/1.1        up       1E100 4105   PXF     59     8180A400  D
Router#
```

The following example shows a typical display for the **subblocks** option for a particular cable interface:

```
Router# show pxf cpu subblocks c7/1/1

Cable7/1/1 is up
  ICB = 1E100,  WQB_ID = 4105, interface PXF, enabled
  MAC Domain = 2
  IOS encapsulation type 59  MCNS
  Min mtu: 18     Max mtu: 1538
  VCCI maptable location = 81809C00
  VCCI C
    icmp ipaddress 0.0.0.0          timestamp 0
Router#
```

Table below describes the fields shown in the display for the **show pxf cpu subblocks** command.

Table 22: show pxf cpu subblocks Field Descriptions

Field	Description
Interface	Identifies the interface or subinterface.

Field	Description
Status	Displays the status of the interface: • Administ—The interface has been shut down and is in the administrative down state. • Deleted—The subinterface has been removed from the router's configuration. • Down—The interface is down because of a cable or other connectivity problem. • Initiali—The interface is in the process of initializing. • Reset—The interface is currently being reset. • Up—The interface is up and passing traffic.
ICB	Displays the Interface Control Block (ICB) that is mapped to this interface.
MAC Domain	Displays the DOCSIS-layer domain for this interface or subinterface.
WQB_ID	Displays the Work Queue Block (WQB) identifier for this interface.
Fwding	Displays whether traffic is being forwarded (PXF) or not (disable).
Encap	Identifies the type of encapsulation being used on the interface. The most common types of encapsulation are: 0 = None 1 = Ethernet ARPA 2 = Ethernet SAP 3 = 802.2 SNAP 5 = Serial, raw HDLC 8 = Serial, LAPB 9 = Serial, X.25 20 = Frame Relay 21 = SMDS 22 = MAC level packets 27 = LLC 2 28 = Serial, SDLC (primary) 30 = Async SLIP encapsulation 33 = ATM interface 35 = Frame Relay with IETF encapsulation 42 = Dialer encapsulation 46 = Loopback interface 51 = ISDN Q.921 59 = DOCSIS (previously known as MCNS) 61 = Transparent Mode 62 = TDM clear channel 64 = PPP over Frame Relay 65 = IEEE 802.1Q 67 = LAPB terminal adapter 68 = DOCSIS Cable Modem

Field	Description
VCCI map	Displays the memory address for the Virtually Cool Common Index (VCCI) map table for this particular VCCI. The VCCI is an index that uniquely identifies every interface or subinterface on the PXF processor and that quickly maps that interface to the appropriate set of services and features.
VCCI	Identifies the VCCI (in hexadecimal) that is assigned to the interface or subinterface.

Related Commands

Command	Description
clear pxf	Clears the direct memory access (DMA) and error checking and correcting (ECC) error counters on the PXF processor.
debug pxf	Enables debugging of the PXF subsystems on the active PRE1 module on the Cisco uBR10012 router.
show pxf cable	Displays information about the multicast echo and packet intercept features for one or all cable interfaces.
show pxf cable interface	Displays information about a particular service ID (SID) on a particular cable interface.
show pxf dma	Displays information for the current state of the PXF DMA buffers, error counters, and registers.
show pxf microcode	Displays identifying information for the microcode being used on the processor.
show pxf xcm	Displays the current state of ECC for the External Column Memory (XCM) on the PXF processor.
show ip mroute	Displays the contents of the IP multicast routing table.

show pxf cpu drl-trusted-sites

To display the configured Divert-Rate-Limit (DRL) trusted sites, use the **show pxf cpu drl-trusted-sites** command in privileged EXEC mode.

show pxf cpu drl-trusted-sites

Syntax Description

This command has no keywords or arguments.

Command Default   None

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   Use this command to display the configured DRL trusted sites.

Examples   The following example shows sample output for the **show pxf cpu drl-trusted-sites** command:

```
Router# show pxf cpu drl-trusted-sites
Divert-Rate-Limit Trusted-Site list
 IP-addr          IP-addr mask     ToS    ToS mask  VRF
 50.0.0.0         255.255.255.0    0x18   0xF8      global internet
 50.0.1.0         255.255.0.0      0x01   0xFF      all
 60.0.1.0         255.255.255.0    0x18   0xF8      blue
```
Table below describes the significant fields shown in the display.

Table 23: show pxf cpu drl-trusted-sites Field Descriptions

Field	Description
IP-addr	The IP address of the host or CM.
IP-addr mask	The IP address mask of the host or CM.
ToS	Type of Service value to be matched by the filter.

Field	Description
ToS Mask	Type of Service mask to be matched by the filter.
VRF	Name of the virtual interface that has been configured for DRL trusted sites.

Related Commands

Command	Description
show pxf cpu statistics drl cable-wan-ip	This command displays the PXF DRL cable/wan-ip statistics table.
show pxf cpu statistics drl wan-non-ip	This command displays the PXF DRL wan-non-ip statistics.

show pxf cpu queue wb-spa

To send queue and service flow information to and from the uBR10-MC 5x20 line cards, use the **show pxf cpu queue wb-spa** command in privileged EXEC mode.

show pxf cpu queue wb-spa

Syntax Description   This command has no arguments or keywords.

Command Default   None

Command Modes   Privileged EXEC

Command History

Release	Modification
12.3(23)BC	This command was introduced for the uBR10012 router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines   A virtual time management system (VTMS) link and two queues are set up for each Wideband SPA allowing MAC Management Messages (MMM) to be sent from the uBR10-MC 5x20 line card to the Wideband SPA, which in turn sends the messages to the appropriate RF channels.

In addition to this, another VTMS link and two queues are set up for each uBR10-MC 5x20 line card so that the SIP can send statistics IPC messages and cable monitor packets to the uBR10-MC 5x20 line card. The queue and service flow information for these data paths can be displayed by using the **show pxf cpu queue wb-spa** command.

The output of this command shows the two RP service flows for each SPA, including the RP service flow index and the associated queue ID. Refer to the **show pxf cpu queue** *qid* command for more information.

Examples   The following is a sample output of the **show pxf cpu queue wb-spa** command for the Cisco Wideband SPA port 1, slot 1, and bay 0:

```
Router# show pxf cpu queue wb-spa
SPA 1/0/0
MAP/UCD Service Flow Index: 32926
  Ironbus Channel: 0x8000  Queue ID: 266  Queue Flags: 0x2
LP-MMM  Service Flow Index: 32768
  Ironbus Channel: 0x8000  Queue ID: 264  Queue Flags: 0x0
CableInternal5/1
Statistics Service Flow Index: 32887
  Ironbus Channel: 0x500  Queue ID: 504  Queue Flags: 0x0
Cable Monitor Service Flow Index: 129
  Ironbus Channel: 0x500  Queue ID: 505  Queue Flags: 0x0
CableInternal6/0
```

```
Statistics Service Flow Index: 32893
  Ironbus Channel: 0x500  Queue ID: 516  Queue Flags: 0x0
Cable Monitor Service Flow Index: 135
  Ironbus Channel: 0x500  Queue ID: 517  Queue Flags: 0x0
```

The following is a sample output of the **show pxf cpu queue wb-spa** command for the Cisco Wideband SPA sharing downstreams with the Cisco uBR-MC3GX60V line card, in Cisco IOS Release 12.2(33)SCG:

```
Router# show pxf cpu queue wb-spa
SPA 1/1/0
MAP/UCD and LP-MMM Flow (IronBus Channel: 0xC020):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
8        0/255   251121646    0            0      1/10000     0        32771  hi-pri
131100   0/255   9634685      0            0      1/10000     0        32770  lo-pri
SPA 1/3/0
MAP/UCD and LP-MMM Flow (IronBus Channel: 0xC030):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
66       0/255   0            0            0      1/10000     0        32775  hi-pri
131216   0/255   4596528      0            0      1/10000     0        32774  lo-pri
Fauna6/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x1FFF):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
131441   0/255   0            0            0      1/240       0        205    def
CableInternal6/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x7000):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
178      0/255   0            0            0      1/10000     0        32789  hi-pri
131440   0/255   2303963      0            0      1/10000     0        32788  lo-pri
131439   0/255   0            0            0      1/240       0        20     def
CableInternal6/1
Statistics and Cable Monitor Flow (IronBus Channel: 0x0500):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
185      0/255   0            0            0      1/10000     0        32791  hi-pri
131454   0/255   2394164      0            0      1/10000     0        32790  lo-pri
131453   0/255   0            0            0      1/240       0        21     def
Fauna7/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x1FFF):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
131557   0/255   0            0            0      1/240       0        266    def

CableInternal7/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x7000):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
236      0/255   4596556      0            0      1/10000     0        32793  hi-pri
131556   0/255   2377280      0            0      1/10000     0        32792  lo-pri
131555   0/255   0            0            0      1/240       0        22     def

Fauna8/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x1FFF):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
131903   0/255   0            0            0      1/240       0        453    def

CableInternal8/0
Statistics and Cable Monitor Flow (IronBus Channel: 0x7000):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
409      0/255   0            0            0      1/10000     0        32797  hi-pri
131902   0/255   3350878      0            0      1/10000     0        32796  lo-pri
131901   0/255   0            0            0      1/240       0        24     def

Fauna8/1
Statistics and Cable Monitor Flow (IronBus Channel: 0x1FFF):
QID     Len/Max  Dequeues     TailDrops    MinRt  Wt/Quantum  ShapeRt  FlowId
                                           (Kbps)             (Kbps)
```

```
132261    0/255  0           0           0         1/240   0        697   def

CableInternal8/1
Statistics and Cable Monitor Flow (IronBus Channel: 0x7000):
QID     Len/Max  Dequeues   TailDrops   MinRt  Wt/Quantum  ShapeRt FlowId
                                        (Kbps)             (Kbps)
582        0/255  0           0           0       1/10000  0      32799  hi-pri
132260     0/255  0           0           0       1/10000  0      32798  lo-pri
132259     0/255  0           0           0       1/240    0      25     def
```

Table below describes the fields shown in the **show pxf cpu queue wb-spa** command display.

Table 24: show pxf cpu queue WB-SPA Field Descriptions

Field	Description
QID	CPU Queue ID.
Len/Max	Current CPU queue length/ CPU maximum queue length.
TailDrops	Number of CPU queue packet drops.
ShapeRt (Kbps)	Queue packet rate shaping.
FlowId	Service flow ID.

Related Commands

Command	Description
show pxf cpu queue *qid*	Displays parallel express forwarding queue statistics.

show pxf cpu statistics drl ipv4

To verify drop counters for WAN-IPv4 packets, use the **show pxf cpu statistics drl ipv4** command in the privileged EXEC mode.

show pxf cpu statistics drl ipv4 [*threshold*| *output modifiers*]

Syntax Description

threshold	The packet threshold value. The valid range is 0 to 4294967295.
output modifiers	The following output modifiers are used. • append—Appends the redirected output to URL (URLs supporting append operation only) • begin—Begins with the line that matches. • exclude—Excludes the lines that match. • include—Includes the lines that match. • redirect—Redirects the output to the URL. • section—Filters a specific section of the output. • tee—Copies the output to the URL.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples   The following examples indicate the drop counters for WAN-IPv4 packets.

```
Router# show pxf cpu statistics drl ipv4
Divert-Rate-Limit WAN-IPv4 statistics
   dropped   identifier
      460   11.12.13.10  VRF: global  divert_code: fib_rp_dest
      150   11.12.13.10  VRF: global  divert_code: fib_limited_broadcast
Router#
Router# show pxf cpu statistics drl ipv4 threshold 400
Divert-Rate-Limit WAN-IPv4 statistics :: threshold = 400
```

```
dropped   identifier
    460   11.12.13.10  VRF: global  divert_code: fib_rp_dest
```

Related Commands

Command	Description
clear pxf statistics drl ipv4	Clears all the entries in the WAN IPv4 statistics table.
service divert-rate-limit trusted-site-ipv6	Adds IPv6-specific entries to the trusted site list.
show pxf cpu statistics drl us-cable	Displays the number of upstream cable packets that are dropped from the CMTS.
show pxf cpu statistics drlipv6	Verifies the drop counters for WAN-IPv4 packets.

show pxf cpu statistics drl ipv6

To verify drop counters for WAN-IPv6 packets, use the **show pxf cpu statistics drl ipv6** command in the privileged EXEC mode.

show pxf cpu statistics drl ipv6 [*threshold*| *output modifiers*]

Syntax Description

threshold	The packet threshold value. The valid range is 0 to 4294967295.
output modifiers	The following output modifiers are used. • append—Appends the redirected output to URL (URLs supporting append operation only) • begin—Begins with the line that matches. • exclude—Excludes the lines that match. • include—Includes the lines that match. • redirect—Redirects the output to the URL. • section—Filters a specific section of the output. • tee—Copies the output to the URL.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples   The following examples indicate the drop counters for WAN-IPv6 packets.

```
Router# show pxf cpu statistics drl ipv6
Divert-Rate-Limit WAN-IPv6 statistics
   dropped   identifier
      460   10FA:6604:8136:6502::/64  VRF: global  divert_code: ipv6_rp_dest
      150   10FA:6604:8136:6502::/64  VRF: global  divert_code: ipv6_rp_punt
Router#
Router# show pxf cpu statistics drl ipv6 threshold 400
Divert-Rate-Limit Cable/WAN-IP statistics :: threshold = 400
   dropped   identifier
```

```
      460   10FA:6604:8136:6502::/64  VRF: global  divert_code: ipv6_rp_dest
Router#
```

Related Commands

Command	Description
clear pxf statistics drl ipv6	Clears all the entries in the WAN IPv6 statistics table.
service divert-rate-limit trusted-site-ipv6	Adds IPv6-specific entries to the trusted site list.
show pxf cpu statistics drlus-cable	Displays the number of upstream cable packets that are dropped from the CMTS.
show pxf cpu statistics drl ipv4	Verifies the drop counters for WAN-IPv4 packets.

show pxf cpu statistics drl max-rate

To verify drop counters for the DRL max-rate on the WAN interface, use the **show pxf cpu statistics drlmax-rate** command in the privileged EXEC mode.

show pxf cpu statistics drl max-rate wan threshold [*threshold-value| output modifiers*]

Syntax Description

threshold	The packet threshold value. The valid range is 0 to 4294967295.
output modifiers	The following output modifiers are used.
	• begin—Begins with the line that match.
	• exclude—Excludes the lines that match.
	• include—Includes the lines that match.
	• redirect—Redirects the output to the URL.
	• section—Filters a section of the output.
	• tee—Copies output to the URL.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCH3	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following examples indicate the drop counters for max-rate on the WAN interface.

```
Router#show pxf cpu  statistics drl max-rate wan threshold 10
   dropped   divert_code
        18   fib_rp_dest
```

Related Commands

Command	Description
service divert-rate-limit max-rate	Sets per-divert-code rate limit on the WAN interface
clear pxf statistics drl max-rate	Clears the DRL max-rate statistics on the WAN interface.

show pxf cpu statistics drl us-cable

To view and verify the number of upstream cable packets that are dropped from the CMTS, use the **show pxf cpu statistics drl us-cable** command in the privileged EXEC mode.

show pxf cpu statistics drl us-cable [*threshold*| *output modifiers*]

Syntax Description

threshold	The packet threshold value. The valid range is 0 to 4294967295.
output modifiers	The following output modifiers are used. • append—Appends the redirected output to URL (URLs supporting append operation only) • begin—Begins with the line that matches. • exclude—Excludes the lines that match. • include—Includes the lines that match. • redirect—Redirects the output to the URL. • section—Filters a specific section of the output. • tee—Copies the output to the URL.

Command Default

Disabled

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following examples indicate the statistics of upstream cable packets that are dropped from the CMTS.

```
Router# show pxf cpu statistics drl us-cable
Divert-Rate-Limit US-cable statistics
   dropped   identifier
       361   interface: Cable6/0/1   SID: 28
      2457   interface: Cable6/0/0   SID: 1
```

```
Router# show pxf cpu statistics drl us-cable threshold 400
Divert-Rate-Limit US-cable statistics :: threshold = 400
   dropped   identifier
      2457   interface: Cable6/0/0   SID: 1
Router#
```

Related Commands

Command	Description
clear pxf statistics drl us-cable	Clears all the entries in the US-cable statistics table.
service divert-rate-limit trusted-site-ipv6	Adds IPv6-specific entries to the trusted site list.
show pxf cpu statistics drl ipv6	Verifies the drop counters for WAN-IPv6 packets.
show pxf cpu statistics drl ipv4	Verifies the drop counters for WAN-IPv4 packets.

show redundancy

To display the current redundancy status, use the **show redundancy** command in user EXEC or privileged EXEC mode.

Cisco uBR10012 Router

show redundancy [**clients**| **counters**| **history**| **states**]

Cisco cBR Series Converged Broadband Router

show redundancy [**application**| **clients**| **config-sync**| **counters**| **domain**| **history**| **ibd-sync-history**| **lincecard**| **rii**| **states**| **switchover history**| **trace history**]

Syntax Description

application	(Optional on Cisco cBR router) Displays box to box application information
clients	(Optional) Displays the Redundancy Facility (RF) client list.
counters	(Optional) Displays RF operational counters.
domain	(Optional on Cisco cBR router) Specifies the RF domain.
history	(Optional) Summarizes RF history.
idb-sync-history	(Optional on Cisco cBR router) Displays the Redundancy Facility (RF) IDB sync history
states	(Optional) Displays RF states for active and standby modules.
switchover history	(Optional on Cisco cBR router) Displays the redundancy Facility (RF) switchover history.

Command Default   None

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(4)XF1	This command was introduced for the Cisco uBR10012 router.

Release	Modification
12.2(11)BC3	The **clients**, **counters**, **history**, and **states** option were added, and the default display was enhanced to show the version of Cisco IOS software that is running on the standby PRE module.
12.2(15)BC2	The default display includes additional information about the history of switchovers, as well as a stack trace from the secondary PRE module's ROMMON for when it last crashed, if ever.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(44)SQ	This command was integrated into Cisco IOS Release 12.2(44)SQ. Support for the Cisco RF Gateway 10 was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **application**, **domain**, **idb-sync-history**, and **switchover** keywords were added.

Usage Guidelines

The **show redundancy** command shows whether the PRE A slot or PRE B slot contains the active (primary) Performance Routing Engine (PRE1) module, the status of the standby (secondary) PRE1 module, and the values for the standby PRE1 module's boot variables and configuration register. In Cisco IOS Release 12.2(13)BC1 and later releases, it also shows the version of Cisco IOS software that is running on the standby PRE module.

Note The **show redundancy** command always shows the correct location of the active PRE1 module. The other PRE slot will always be marked as **Secondary**, even if a standby PRE1 module is not installed.

Cisco RF Gateway 10

The **show redundancy** command shows whether the Supervisor A slot or Supervisor B slot contains the active (primary) Supervisor card, the status of the standby (secondary) Supervisor card, and the values for the standby Supervisor card's boot variables and configuration register.

Note The **show redundancy** command always shows the correct location of the active Supervisor card. The other Supervisor slot will always be marked as **secondary**, even if a standby Supervisor card is not installed.

Cisco cBR Series Converged Broadband Router

The Cisco cBR Series Converged Broadband Router supports redundancy of Supervisor card and line cards. The **show redundancy** command shows whether the Supervisor A slot or Supervisor B slot contains the active (primary) Supervisor card, the status of the standby (secondary) Supervisor card, and the values for the standby Supervisor card's parameters

Examples

This section contains examples of typical displays for each of the options that are available for the **show redundancy** command.

Examples   The following example shows a typical display from the **show redundancy** command in Cisco IOS Release 12.2(15)BC2 and later releases:

```
PRE A             : Secondary
PRE B (This PRE)  : Primary
Uptime since this PRE switched to active : 5 minutes
Total system uptime from reload       : 37 minutes
Switchovers this system has experienced : 5
Secondary failures since this PRE active  : 0
The secondary PRE has been up for    : 1 minute
The reason for last switchover:  ACTIVE RP CRASHED
Secondary PRE information....
Secondary is up.
Secondary has 524288K bytes of memory.
Secondary BOOT variable = slot0:ubr10k-k8p6-mz.122-11.CY,12;
Secondary CONFIG_FILE variable = bootflash:030227.config
Secondary BOOTLDR variable =
Secondary Configuration register is 0x0
Secondary version:
Cisco Internetwork Operating System Software
IOS (tm) 10000 Software (UBR10K-K8P6-M), Experimental Version 12.2(15)BC2
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 01-Mar-04 12:01 by anxrana
Primary version:
Cisco Internetwork Operating System Software
IOS (tm) 10000 Software (UBR10K-K8P6-M), Released Version 12.2(15)BC2
Copyright (c) 1986-2004 by cisco Systems, Inc.
Compiled Mon 01-Mar-04 12:01 by anxrana
Redundant RP last failure info as reported by Standby:
bus error at PC 0x605C8B24, address 0xFF012345
10000 Software (UBR10K-K8P6-M), Experimental Version 12.3(20040211:230003) [narana-geo_cable
 123]
Compiled Mon 01-Mar-04 12:01 by anxrana
Image text-base: 0x60008CB8, data-base: 0x61F80000
Stack trace from system failure:
FP: 0x7234C8C8, RA: 0x605C8B24
FP: 0x7234CA30, RA: 0x604940F4
FP: 0x7234CA90, RA: 0x60151FF0
FP: 0x7234CAB0, RA: 0x604A5554
FP: 0x7234CB40, RA: 0x6051F638
FP: 0x7234CB58, RA: 0x6051F61C
```

The following example shows a typical display from the **show redundancy** command in Cisco IOS Release 12.2(15)BC1 and earlier releases. The active PRE1 module is in PRE slot A, and the standby PRE1 module is in PRE slot B:

```
Router# show redundancy

 PRE A (This PRE)   : Primary
 PRE B             : Secondary

 Redundancy state is REDUNDANCY_PEERSECONDARY_INITED

 Secondary PRE information....
 Secondary is up.
 Secondary has 524288K bytes of memory.
 Secondary BOOT variable = bootflash:ubr10k-k8p6-mz
 Secondary CONFIG_FILE variable =
 Secondary BOOTLDR variable = bootflash:c10k-eboot-mz
 Secondary Configuration register is 0x2102
 Secondary version:
 Cisco Internetwork Operating System Software
 IOS (tm) 10000 Software (UBR10K-K8P6-M), Released Version 12.2(11)BC3
 Copyright (c) 1986-2003 by cisco Systems, Inc.
 Compiled Mon 03-Mar-03 11:28 by texbnt
Router#
```

The following example shows the same display but after a switchover has occurred. The **show redundancy** command now shows that the active (primary) PRE has changed slots (in this case, moving from slot A to slot B):

```
Router# show redundancy

 PRE A               : Secondary
 PRE B (This PRE)    : Primary

 Redundancy state is REDUNDANCY_PEERSECONDARY_INITED

 Secondary PRE information....
 Secondary is up.
 Secondary BOOT variable = bootflash:ubr10k-k8p6-mz
 Secondary CONFIG_FILE variable =
 Secondary BOOTLDR variable = bootflash:c10k-eboot-mz
 Secondary Configuration register is 0x2
 Secondary version:
 Cisco Internetwork Operating System Software
 IOS (tm) 10000 Software (UBR10K-K8P6-M), Released Version 12.2(13)BC2
 Copyright (c) 1986-2003 by cisco Systems, Inc.
 Compiled 26 08-Feb-03 11:28 by texbnt
Router#
```

The following example shows a typical display when the standby PRE1 module is not installed or is not operational. The standby (secondary) PRE1 module is shown as not up, and its boot variables and configuration register are not shown.

```
Router# show redundancy

 PRE A (This PRE)    : Primary
 PRE B               : Secondary
 Redundancy state is REDUNDANCY_PEERSECONDARY_NONOPERATIONAL
 Secondary PRE information....
 Secondary PRE is not up
Router#
```

This example shows the output of the **show redundancy** command on the Cisco cBR router:

```
Router#show redundancy
Redundant System Information :
------------------------------
       Available system uptime = 1 day, 17 hours, 50 minutes
Switchovers system experienced = 0
             Standby failures = 0
       Last switchover reason = none

               Hardware Mode = Simplex
  Configured Redundancy Mode = sso
   Operating Redundancy Mode = Non-redundant
            Maintenance Mode = Disabled
               Communications = Down     Reason: Failure

Current Processor Information :
------------------------------
               Active Location = slot 4
        Current Software state = ACTIVE
      Uptime in current state = 1 day, 17 hours, 50 minutes
               Image Version = Cisco IOS Software, cBR  Software
(X86_64_LINUX_IOSD-UNIVERSALK9-M)
, Experimental Version 15.5(20150504:162424)
[mcp_docsis31_ds3_ios-japatel-mcp_docsis31_ds3_ios_0504
-ds3-20 105]
Copyright (c) 1986-2015 by Cisco Systems, Inc.
Compiled Mon 04-May-15 14:24 by japatel
                    BOOT =
               CONFIG_FILE =
       Configuration register = 0x0
```

```
Peer (slot: 5) information is not available because it is in 'DISABLED' state

Router#
```

Examples   The following example shows a typical display for the **show redundancy clients** command:

```
Router# show redundancy clients
 clientID = 0        clientSeq = 0          RF_INTERNAL_MSG
 clientID = 25       clientSeq = 130        CHKPT RF
 clientID = 5        clientSeq = 170        RFS client
 clientID = 50       clientSeq = 530        Slot RF
 clientID = 65000    clientSeq = 65000      RF_LAST_CLIENT
```

This example shows the output on the Cisco cBR router:

```
Router#show redundancy clients
 clientID = 29       group_id = 1      clientSeq = 60        Redundancy Mode RF
 clientID = 139      group_id = 1      clientSeq = 61        IfIndex
 clientID = 25       group_id = 1      clientSeq = 68        CHKPT RF
 clientID = 3062     group_id = 1      clientSeq = 70        UBRCCE PLFM RF Client
 clientID = 77       group_id = 1      clientSeq = 84        Event Manager
 clientID = 1340     group_id = 1      clientSeq = 101       RP Platform RF
 clientID = 1501     group_id = 1      clientSeq = 102       Cat6k CWAN HA
 clientID = 78       group_id = 1      clientSeq = 106       TSPTUN HA
 clientID = 305      group_id = 1      clientSeq = 107       Multicast ISSU Consolidation
 RF
 clientID = 304      group_id = 1      clientSeq = 108       IP multicast RF Client
 clientID = 22       group_id = 1      clientSeq = 109       Network RF Client
 clientID = 88       group_id = 1      clientSeq = 110       HSRP
 clientID = 114      group_id = 1      clientSeq = 111       GLBP
 clientID = 225      group_id = 1      clientSeq = 112       VRRP
 clientID = 4700     group_id = 1      clientSeq = 114       COND_DEBUG RF
 clientID = 1341     group_id = 1      clientSeq = 115       IOSXE DPIDX
 clientID = 1505     group_id = 1      clientSeq = 116       Cat6k SPA TSM
 clientID = 75       group_id = 1      clientSeq = 126       Tableid HA
 clientID = 1344     group_id = 1      clientSeq = 127       IOSXE RP SBC RF
 clientID = 227      group_id = 1      clientSeq = 128       SBC-RF RF Client
 clientID = 1345     group_id = 1      clientSeq = 129       VOIP RF CLIENT
 clientID = 71       group_id = 1      clientSeq = 135       XDR RRP RF Client
 clientID = 24       group_id = 1      clientSeq = 136       CEF RRP RF Client
 clientID = 146      group_id = 1      clientSeq = 138       BFD RF Client
 clientID = 301      group_id = 1      clientSeq = 142       MRIB RP RF Client
 clientID = 306      group_id = 1      clientSeq = 146       MFIB RRP RF Client
 clientID = 3064     group_id = 1      clientSeq = 150       UBRCCE SUP RF Client
 clientID = 3065     group_id = 1      clientSeq = 151       PKTCBL RF client
 clientID = 1504     group_id = 1      clientSeq = 153       Cat6k CWAN Interface Events
 clientID = 401      group_id = 1      clientSeq = 155       NAT HA
 clientID = 404      group_id = 1      clientSeq = 156       NAT64 HA
 clientID = 402      group_id = 1      clientSeq = 157       TPM RF client
 clientID = 520      group_id = 1      clientSeq = 158       RFS RF
 clientID = 5        group_id = 1      clientSeq = 160       Config Sync RF client
 clientID = 68       group_id = 1      clientSeq = 191       Virtual Template RF Client
 clientID = 23       group_id = 1      clientSeq = 194       Frame Relay
 clientID = 49       group_id = 1      clientSeq = 195       HDLC
 clientID = 72       group_id = 1      clientSeq = 196       LSD HA Proc
 clientID = 113      group_id = 1      clientSeq = 197       MFI STATIC HA Proc
 clientID = 290      group_id = 1      clientSeq = 198       MPLS TP HA
 clientID = 209      group_id = 1      clientSeq = 202       L2FIB
 clientID = 199      group_id = 1      clientSeq = 205       ELB RF
```

Examples   The following example shows a typical display for the **show redundancy counters** command:

```
Router# show redundancy counters
Redundancy Facility OMs
```

```
                comm link up = 1
        comm link down down = 0
           invalid client tx = 0
          null tx by client = 0
                  tx failures = 0
        tx msg length invalid = 0
        client not rxing msgs = 0
 rx peer msg routing errors = 0
            null peer msg rx = 0
          errored peer msg rx = 0
                  buffers tx = 1009
        tx buffers unavailable = 0
                  buffers rx = 1006
        buffer release errors = 0
  duplicate client registers = 0
  failed to register client = 0
          Invalid client syncs = 0
```

This example shows the output on the Cisco cBR router:

```
Router#show redundancy counters
Redundancy Facility OMs
                comm link up = 0
              comm link down = 0

          invalid client tx = 0
          null tx by client = 0
                  tx failures = 0
        tx msg length invalid = 0

        client not rxing msgs = 0
 rx peer msg routing errors = 0
            null peer msg rx = 0
          errored peer msg rx = 0

                  buffers tx = 0
        tx buffers unavailable = 0
                  buffers rx = 0
        buffer release errors = 0

  duplicate client registers = 0
  failed to register client = 0
          Invalid client syncs = 0


Router#
```

Examples

The following example shows a typical display for the **show redundancy history** command:

```
Router# show redundancy history
00:00:00 client added: RF_INTERNAL_MSG(0) seq=0
00:00:00 client added: RF_LAST_CLIENT(65000) seq=65000
00:00:00 client added: CHKPT RF(25) seq=130
00:00:01 client added: Slot RF(50) seq=530
00:00:15 client added: RFS client(5) seq=170
00:00:16 *my state = INITIALIZATION(2) *peer state = DISABLED(1)
00:00:16 RF_PROG_INITIALIZATION(100) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) CHKPT RF(25) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) Slot RF(50) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) RF_LAST_CLIENT(65000) op=0 rc=11
00:00:16 *my state = NEGOTIATION(3) peer state = DISABLED(1)
00:00:16 RF_EVENT_GO_ACTIVE(512) op=0 rc=0
00:00:16 *my state = ACTIVE-FAST(9) peer state = DISABLED(1)
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) CHKPT RF(25) op=0 rc=0
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) RFS client(5) op=0 rc=0
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) Slot RF(50) op=0 rc=0
00:00:16 RF_PROG_ACTIVE_FAST(200) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) CHKPT RF(25) op=0 rc=11
```

```
00:00:16 RF_PROG_ACTIVE_FAST(200) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) Slot RF(50) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) RF_LAST_CLIENT(65000) op=0 rc=11
00:00:16 *my state = ACTIVE-DRAIN(10) peer state = DISABLED(1)
00:00:16 RF_PROG_ACTIVE_DRAIN(201) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) CHKPT RF(25) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) Slot RF(50) op=0 rc=11
```

This example shows the output on the Cisco cBR router:

```
Router#show redundancy history
00:00:05 client added: Redundancy Mode RF(29) seq=60
00:00:05 client added: IfIndex(139) seq=61
00:00:05 client added: CHKPT RF(25) seq=68
00:00:05 client added: Event Manager(77) seq=84
00:00:05 client added: RP Platform RF(1340) seq=101
00:00:05 client added: Cat6k CWAN HA(1501) seq=102
00:00:05 client added: Network RF Client(22) seq=109
00:00:05 client added: Cat6k SPA TSM(1505) seq=116
00:00:05 client added: IOSXE RP SBC RF(1344) seq=127
00:00:05 client added: SBC-RF RF Client(227) seq=128
00:00:05 client added: XDR RRP RF Client(71) seq=135
00:00:05 client added: CEF RRP RF Client(24) seq=136
00:00:05 client added: MFIB RRP RF Client(306) seq=146
00:00:05 client added: UBRCCE SUP RF Client(3064) seq=150
00:00:05 client added: Cat6k CWAN Interface Events(1504) seq=153
00:00:05 client added: RFS RF(520) seq=158
00:00:05 client added: Config Sync RF client(5) seq=160
00:00:05 client added: DHCPC(100) seq=225
00:00:05 client added: DHCPD(101) seq=226
00:00:05 client added: SNMP RF Client(34) seq=238
00:00:05 client added: CWAN APS HA RF Client(1502) seq=239
00:00:05 client added: History RF Client(35) seq=248
00:00:05 client added: REDSSOC(91) seq=269
00:00:05 client added: Dialer(48) seq=270
00:00:05 client added: ARP(57) seq=278
00:00:05 client added: IOSXE SpaFlow(1342) seq=297
00:00:05 client added: IOSXE IF Flow(1343) seq=298
00:00:05 client added: IOS STILE RF Client(1111) seq=299
00:00:05 client added: Call-Home RF(1510) seq=342
00:00:05 client added: IP Tunnel RF(151) seq=349
00:00:05 client added: Config Verify RF client(94) seq=350
00:00:05 client added: SISF table(515) seq=359
00:00:05 client added: IKE RF Client(135) seq=363
00:00:05 client added: IPSEC RF Client(136) seq=364
00:00:05 client added: CRYPTO RSA(130) seq=365
00:00:05 client added: PKI RF Client(131) seq=366
00:00:05 client added: GKM RF Client(157) seq=367
00:00:05 client added: DHCPv6 Relay(148) seq=372
00:00:05 client added: DHCPv6 Server(149) seq=373
00:00:05 client added: ISSU Test Client(4005) seq=381
00:00:05 client added: Network RF 2 Client(93) seq=385
00:00:05 client added: FEC Client(205) seq=387
00:00:05 client added: DATA DESCRIPTOR RF CLIENT(141) seq=395
00:00:05 client added: CTS HA(1000) seq=405
00:00:05 client added: UBRCCE DB(4040) seq=412
00:00:05 client added: VIDEO RPHA(4042) seq=413
00:00:05 client added: CBR LCHA(4044) seq=415
00:00:05 client added: IOS Config ARCHIVE(4020) seq=425
00:00:05 client added: IOS Config ROLLBACK(4021) seq=426
00:00:05 client added: ANCP(4031) seq=427
00:00:05 client added: Smart_Agent_RF_Client(1376) seq=448
00:00:05 client added: Flow Metadata(255) seq=471
00:00:07 *my state = INITIALIZATION(2) peer state = DISABLED(1)
00:00:07 RF_PROG_INITIALIZATION(100) First Slave(0) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) Slave(3) op=0 rc=23
00:00:07 RF_PROG_INITIALIZATION(100) Redundancy Mode RF(29) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) IfIndex(139) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) CHKPT RF(25) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) Event Manager(77) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) RP Platform RF(1340) op=0 rc=11
```

```
00:00:07 RF_PROG_INITIALIZATION(100) Cat6k CWAN HA(1501) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) Network RF Client(22) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) Cat6k SPA TSM(1505) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) IOSXE RP SBC RF(1344) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) SBC-RF RF Client(227) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) XDR RRP RF Client(71) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) CEF RRP RF Client(24) op=0 rc=11
00:00:07 RF_PROG_INITIALIZATION(100) MFIB RRP RF Client(306) op=0 rc=11
```

Examples

The following example shows a typical display for the **show redundancy states** command:

```
Router# show redundancy states
       my state = 13 -ACTIVE
     peer state = 8  -STANDBY HOT
           Mode = Duplex
           Unit = Primary
        Unit ID = 0
 Redundancy Mode = Hot Standby Redundancy
Maintenance Mode = Disabled
    Manual Swact = Enabled
  Communications = Up
           client count = 5
 client_notification_TMR = 30000 milliseconds
         RF debug mask = 0x0
```

This example shows the output on the Cisco cBR router:

```
Router#show redundancy states
       my state = 13 -ACTIVE
     peer state = 1  -DISABLED
           Mode = Simplex
           Unit = Primary
        Unit ID = 48

Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured)  = sso
Redundancy State              = Non Redundant
    Maintenance Mode = Disabled
    Manual Swact = disabled (system is simplex (no peer unit))
 Communications = Down      Reason: Simplex mode

  client count = 120
 client_notification_TMR = 30000 milliseconds
         RF debug mask = 0x0

Router#
```

Examples

Examples

Examples

```
Router#show redundancy
Redundant System Information :
------------------------------
       Available system uptime = 3 minutes
Switchovers system experienced = 0
             Standby failures = 0
      Last switchover reason = none
               Hardware Mode = Simplex
    Configured Redundancy Mode = Stateful Switchover
     Operating Redundancy Mode = Stateful Switchover
             Maintenance Mode = Disabled
                Communications = Down      Reason: Simplex mode
Current Processor Information :
```

```
------------------------------
          Active Location = slot 1
   Current Software state = ACTIVE
 Uptime in current state = 2 minutes
           Image Version = Cisco IOS Software, Catalyst 4500 L3 Switch So
tware (rfgw-ENTSERVICES-M), Version 12.2(FLO_RFGW_NIGHT_MON.2008-08-11) UBUILDI
 Image, CISCO DEVELOPMENT TEST VERSION
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Mon 11-Aug-08 04:54 by aswitzer
                    BOOT =
  Configuration register = 0x2100
Peer (slot: 2) information is not available because it is in 'DISABLED' state
Router
```

Examples   The following example shows a typical display for the **show redundancy clients** command:

```
Router# show redundancy clients
 clientID = 0       clientSeq = 0        RF_INTERNAL_MSG
 clientID = 25      clientSeq = 130      CHKPT RF
 clientID = 5       clientSeq = 170      RFS client
 clientID = 50      clientSeq = 530      Slot RF
 clientID = 65000   clientSeq = 65000    RF_LAST_CLIENT
```
Table below describes the significant fields shown in the display.

Table 25: show redundancy clients Field Descriptions

Field	Description
clientID	Displays the client ID number.
clientSeq	Displays the client notification sequence number.

Examples   The following example shows a typical display for the **show redundancy counters** command:

```
Router# show redundancy counters
Redundancy Facility OMs
               comm link up = 1
        comm link down down = 0
          invalid client tx = 0
           null tx by client = 0
                 tx failures = 0
       tx msg length invalid = 0
        client not rxing msgs = 0
 rx peer msg routing errors = 0
            null peer msg rx = 0
          errored peer msg rx = 0
                 buffers tx = 1009
      tx buffers unavailable = 0
                 buffers rx = 1006
        buffer release errors = 0
 duplicate client registers = 0
  failed to register client = 0
          Invalid client syncs = 0
```

Examples   The following example shows a typical display for the **show redundancy history** command:

```
Router# show redundancy history
```

```
00:00:00 client added: RF_INTERNAL_MSG(0) seq=0
00:00:00 client added: RF_LAST_CLIENT(65000) seq=65000
00:00:00 client added: CHKPT RF(25) seq=130
00:00:01 client added: Slot RF(50) seq=530
00:00:15 client added: RFS client(5) seq=170
00:00:16 *my state = INITIALIZATION(2) *peer state = DISABLED(1)
00:00:16 RF_PROG_INITIALIZATION(100) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) CHKPT RF(25) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) Slot RF(50) op=0 rc=11
00:00:16 RF_PROG_INITIALIZATION(100) RF_LAST_CLIENT(65000) op=0 rc=11
00:00:16 *my state = NEGOTIATION(3) peer state = DISABLED(1)
00:00:16 RF_EVENT_GO_ACTIVE(512) op=0 rc=0
00:00:16 *my state = ACTIVE-FAST(9) peer state = DISABLED(1)
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) CHKPT RF(25) op=0 rc=0
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) RFS client(5) op=0 rc=0
00:00:16 RF_STATUS_MAINTENANCE_ENABLE(403) Slot RF(50) op=0 rc=0
00:00:16 RF_PROG_ACTIVE_FAST(200) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) CHKPT RF(25) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) Slot RF(50) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_FAST(200) RF_LAST_CLIENT(65000) op=0 rc=11
00:00:16 *my state = ACTIVE-DRAIN(10) peer state = DISABLED(1)
00:00:16 RF_PROG_ACTIVE_DRAIN(201) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) CHKPT RF(25) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) RFS client(5) op=0 rc=11
00:00:16 RF_PROG_ACTIVE_DRAIN(201) Slot RF(50) op=0 rc=11
```

Examples   The following example shows a typical display for the **show redundancy state** command:

```
Router# show redundancy states
       my state = 13 -ACTIVE
     peer state = 8  -STANDBY HOT
           Mode = Duplex
           Unit = Primary
        Unit ID = 0
 Redundancy Mode = Hot Standby Redundancy
Maintenance Mode = Disabled
    Manual Swact = Enabled
  Communications = Up
          client count = 5
client_notification_TMR = 30000 milliseconds
        RF debug mask = 0x0
```

Related Commands

Command	Description
associate	Associates two line cards for Automatic Protection Switching (APS) redundancy protection.
clear redundancy	Clears the counters and history information that are used by the Redundancy Facility (RF) subsystem.
mode (redundancy)	Configures the redundancy mode of operation.
redundancy	Enters redundancy configuration mode.
redundancy force-failover main-cpu	Forces a manual switchover between the active and standby PRE1 modules or Supervisor cards.
redundancy force-switchover	Forces the standby PRE or Supervisor card to assume the role of the active PRE or Supervisor card.

Command	Description
show redundancy config-sync	Displays failure information generated during a bulk synchronization from the active PRE to the standby PRE.
show redundancy platform	Displays active and standby PRE and software information.

show redundancy config-sync

To display failure information generated during a bulk synchronization from the active Performance Routing Engine (PRE) to the standby PRE, use the **show redundancy config-sync** command in user EXEC or privileged EXEC modes.

show redundancy config-sync {failures {bem| mcl| prc}| ignored failures mcl}

Syntax Description

failures	Displays failures related to bulk synchronisation of the standby PRE.
bem	Displays Best Effort Method (BEM) failure list.
mcl	Displays Mismatched Command List (MCL) failure list.
prc	Displays Parser Return Code (PRC) failure list.
ignored failures mcl	Displays mismatched commands in the MCL that are ignored.

Command Default None

Command Modes User EXEC (>) Privilieged EXEC (#)

Command History

Release	Modification
12.2(33)SCA	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines This command is used on the active PRE only.

If there are mismatched commands between the active and standby PRE, remove the configuration lines that are not supported on the standby image. If it is not possible to remove the mismatched lines, or it has been determined that the mismatched lines are not critical to the operation of the system, use the command **redundancy config-sync ignore mismatched-commands** to temporarily ignore them.

Examples The examples in this section are supported on the Cisco cBR Series Converged Broadband Router.

The following example displays a mismatched command list:

```
Router# show redundancy config-sync failures mcl
Mismatched Command List
-----------------------
- tacacs-server host 209.165.200.225 timeout 5
```
The following example shows that no mismatched commands are ignored:

```
router# show redundancy config-sync ignored failures mcl
Ignored Mismatched Command List
-------------------------------
The list is Empty
```
The following example displays a Parser Return Code failure list:

```
router# show redundancy config-sync failures prc
PRC Failed Command List
-----------------------
router bgp 999
address-family ipv4 vrf TEST2
- bgp dampening 44 66 66 44
! </submode> "address-family"
address-family ipv4 vrf TEST1
- bgp dampening 44 66 66 44
! </submode> "address-family"
```
The following example displays a Best Effort Method failure list:

```
router# show redundancy config-sync failures bem
BEM Failed Command List
-----------------------
interface Tunnel0
- tunnel mpls traffic-eng priority 7 7
! </submode> "interface"
- next-address loose 10.165.202.158
- next-address loose 10.165.202.129
```

Related Commands

Command	Description
redundancy force-switchover	Forces the standby PRE to assume the role of the active PRE.
show redundancy	Displays current active and standby PRE redundancy status.
show redundancy platform	Displays active and standby PRE and software information.

show redundancy platform

To display active and standby Performance Routing Engine (PRE) and software information, use the **show redundancy platform** command in user EXEC or privileged EXEC modes.

show redundancy platform

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes User EXEC (>) Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCA	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples The following example displays active and standby PRE information such as PRE states, reason for last failover, total system uptime, Cisco IOS release version, and so on:

```
Router# show redundancy platform

PRE A (This PRE)   : Active
PRE B              : Standby
                                 Operating mode : SSO
Uptime since this PRE became active from reload : 13 minutes
        Standby failures since this PRE active : 0
                The standby PRE has been up for : 3 minutes
Previous rp_cre_redun_reg bits    - 1057h
Current  rp_cre_redun_reg bits    - 1041h
Previous peer_ready_reg - 0l
Current  peer_ready_reg - 1l
Standby PRE information....
Standby is up
Standby has 1044480K bytes of memory
Standby BOOT variable = disk1:ubr10k2-k9p6u2-mz.Prednld-prototype-2,12;
Standby CONFIG_FILE variable =
Standby BOOTLDR variable =
Standby Configuration register is 0x0
Standby version:
Cisco IOS Software, 10000 Software (UBR10K2-K9P6U2-M), Version 12.2(122_33_SCA.2008-02-15)
 UBUILDIT Image, CISCO DEVELOPMENT TEST VERSION
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Sat 16-Feb-08 03:12 by jdkerr
Active version:
Cisco IOS Software, 10000 Software (UBR10K2-K9P6U2-M), Version 12.2(122_33_SCA.2008-02-15)
 UBUILDIT Image, CISCO DEVELOPMENT TEST VERSION
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Sat 16-Feb-08 03:12 by jdkerr
```

Related Commands

Command	Description
debug ehsa	Enables debug information on the EHSA module.
redundancy force-switchover	Forces the standby PRE to assume the role of the active PRE.
show redundancy (ubr10012)	Displays the current redundancy status.
show redundancy config-sync	Displays failure information generated during a bulk synchronization from the active PRE to the standby PRE.

show running-config interface cable

To display the bundles that are configured on a Cisco CMTS router and display the running configuration for each of the cable interfaces, use the **show running-config interface cable** command in privileged EXEC mode.

Cisco IOS Release 12.2(33)SCE and later

show running-config interface cable *{slot/cable-interface-index | slot/subslot/cable-interface-index }*

showrunning-configinterfacecable*slot*/| *subslot* /| *port* /

Cisco IOS Release 12.2(33)SCE and later

show running-config interface cable*slot*/*cable-interface-index*| *slot*/*subslot* /*cable-interface-index*

Cisco cBR Series Converged Broadband Router

show running-config interface cable*slot*/*subslot* /*cable-interface-index*

Syntax Description

slot	Slot where the line card resides. - Cisco uBR7225VXR router—The valid value is 1 or 2. - Cisco uBR7246VXR router—The valid range is from 3 to 6. - Cisco uBR10012 router—The valid range is from 5 to 8. - Cisco cBR router—The valid range is 0 to 3, and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. On the Cisco cBR router, the subslot is always 0.
port	Downstream port number. - Cisco uBR7225VXR router and Cisco uBR7246VXR router—The valid value is 0 or 1. - Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco uBR-MC20X20V and Cisco uBR-MC3GX60V line cards.
	Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1.
	Cisco uBR10012 router—The valid range for the Cisco uBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14.
	Cisco cBR router—The valid range is 0 to 7.

Command Default   Displays screen output without page breaks, removes passwords and other security information.

Command Modes   User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
10.0	This command was introduced.
12.3(21)BC	This command was enhanced to support cable interface bundling and virtual interface bundling.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(33)SCC	The command output was modified to display profile description for the specified profile.
12.2(33)SCE	This command was modified. The port parameter was changed to cable-interface-index to indicate the MAC domain index for the Cisco uBR-MC20X20V and Cisco uBR-MC3GX60V cable interface line cards.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples   The following example displays typical output for the show running-config command for a specified cable interface:

```
Router# show running-config interface cable 8/1/0

Building configuration...
Current configuration : 1563 bytes
!
interface Cable8/1/0
```

```
downstream Modular-Cable 1/3/0 rf-channel 0 upstream 0-4
no cable packet-cache
cable bundle 1
cable downstream channel-id 203
cable downstream annex B
cable downstream modulation 64qam
cable downstream interleave-depth 32
cable downstream frequency 525000000
cable downstream rf-shutdown
cable upstream max-ports 4
cable upstream 0 connector 0
cable upstream 0 frequency 5800000
cable upstream 0 channel-width 1600000 1600000
cable upstream 0 docsis-mode tdma
cable upstream 0 minislot-size 4
cable upstream 0 range-backoff 3 6
cable upstream 0 modulation-profile 21
cable upstream 0 attribute-mask 20000000
no cable upstream 0 shutdown
cable upstream 1 connector 1
cable upstream 1 channel-width 1600000 1600000
cable upstream 1 docsis-mode tdma
cable upstream 1 minislot-size 4
cable upstream 1 range-backoff 3 6
cable upstream 1 modulation-profile 21
cable upstream 1 attribute-mask 20000000
no cable upstream 1 shutdown
cable upstream 2 connector 2
cable upstream 2 channel-width 1600000 1600000
cable upstream 2 docsis-mode tdma
cable upstream 2 minislot-size 4
cable upstream 2 range-backoff 3 6
cable upstream 2 modulation-profile 21
cable upstream 2 attribute-mask 20000000
cable upstream 2 shutdown
cable upstream 3 connector 3
cable upstream 3 channel-width 1600000 1600000
cable upstream 3 docsis-mode tdma
cable upstream 3 minislot-size 4
cable upstream 3 range-backoff 3 6
cable upstream 3 modulation-profile 21
cable upstream 3 attribute-mask 20000000
cable upstream 3 shutdown
end
```

The following example displays the virtual bundle information for the specified bundle:

```
Router# show running-config interface Bundle 1
Building configuration...
Current configuration : 158 bytes
!
interface Bundle1
 ip address 1.60.0.1 255.255.255.0
 cable arp filter request-send 3 2
 cable arp filter reply-accept 3 2
 no cable ip-multicast-echo
end
```

The following examples displays subinterface information for the specified bundle on a Cisco uBR10012 router:

```
Router# show ip interface brief | include Bundle
Wideband-Cable8/0/0:0  Bundle2       YES unset  up                      up
In8/0/0:0              Bundle2       YES unset  up                      up
Bundle1                1.60.0.1      YES NVRAM  up                      up
Bundle2                1.80.0.1      YES NVRAM  up                      up
Bundle5                unassigned    YES NVRAM  up                      up
Router# show rununning interface Bundle150.1
Building configuration...
Current configuration : 93 bytes
```

```
!
interface Bundle150.1
 ip address 30.0.0.1 255.0.0.0
 cable helper-address 1.8.35.200
end
```

The following example displays the profile description specified for a interface on a Cisco uBR10012 router:

```
Router#show running-config | include gold
cable multicast auth profile gold
   profile-description gold profile for higher bandwidth
   bootfile gold11_bpi.cm
tftp-server disk0:gold2.cm alias gold2.cm
tftp-server disk0:gold11_bpi.cm alias gold11_bpi.cm
tftp-server disk0:gold11_bpi.cm
```

Related Commands

Command	Description
cable bundle	Configures a cable interface to belong to an interface bundle or virtual interface bundle.
profile description	Configures profile descriptions for each profile in the selected cable multicast authorization profile.
show arp	Displays the entries in the router's ARP table.
show cable bundle *number* **forwarding-table**	Displays the MAC forwarding table for the specified bundle, showing the MAC addresses of each cable modem in a bundle and the physical cable interface that it is currently using.
show cable modem	Displays the cable modems that are online both before and after cable interface bundling has been configured.