Cable Commands: show d through show i

show debug

To display current debugging information that includes PacketCable COPS messages on the Cisco CMTS, use the **show debug** command in privileged EXEC mode.

show debug

Syntax Description

No additional keywords or arguments

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(13a)BC	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

For additional information about this feature and related commands, refer to the following document on Cisco.com:

- *COPS Engine Operation on the Cisco CMTS*

Examples

The following example illustrates the use of the show debug command in relation to the COPS Engine Operation feature on the Cisco CMTS.

```
Router# show debug
PacketCable Client:
  Pktcbl COPS msgs debugging is on
PacketCable specific:
  Debugging is on for Subscriber 68.1.2.4, Mask 255.255.255.255
SLOT 6/0: Nov 19 04:57:09.219: %UBR10000-5-UNREGSIDTIMEOUT: CMTS deleted unregistered Cable
 Modem 0002.8a8c.8c1a
SLOT 6/0: Nov 19 04:57:12.279: %UBR10000-5-UNREGSIDTIMEOUT: CMTS deleted unregistered Cable
 Modem 0002.8a8c.92ae
*Nov 19 04:57:19.751: PktCbl(cops): Received callback [code 2, handle: 0x63982B08] from
COPS engine
*Nov 19 04:57:19.751: PktCbl(cops): Received a COPS DEC message, flags is 0x1
*Nov 19 04:57:19.755: PktCbl(cops): Received callback [code 2, handle: 0x63982B08] from
COPS engine
*Nov 19 04:57:19.755: PktCbl(cops): Received a COPS DEC message, flags is 0x1
*Nov 19 04:57:19.755: PktCbl(cops): Received callback [code 2, handle: 0x63982B08] from
COPS engine
*Nov 19 04:57:19.755: PktCbl(cops): Received a COPS DEC message, flags is 0x1
*Nov 19 04:57:19.755: PktCbl(cops): Received callback [code 2, handle: 0x63982B08] from
COPS engine
*Nov 19 04:57:19.755: PktCbl(ndle: 0x63982B08] from COPS engine
```

Examples for Cisco cBR Series Converged Broadband Router

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

```
Router#show debug
network RF:
  network-rf idb-sync-history events debugging is on
IOSXE Conditional Debug Configs:

Conditional Debug Global State: Stop


IOSXE Packet Tracing Configs:



Packet Infra debugs:

Ip Address                                              Port
------------------------------------------------------|----------


                                                ^
% Invalid input detected at '^' marker.
```

Related Commands

Command	Description
cops ip dscp	Specifies the Common Open Policy Service (COPS) Differentiated Services Code Point (DSCP) markings for COPS messages that are transmitted by the Cisco router
cops listeners access-list	Configures access control lists (ACLs) for inbound connections to all COPS listener applications on the Cisco CMTS.
cops tcp window-size	Overrides the default TCP receive window size that is used by COPS processes.
debug packetcable cops	Enables debugging processes for PacketCable with the COPS engine.
debug packetcable gate control	Enables and displays debugging processes for PacketCable gate control.
debug packetcable subscriber	Enables and displays debugging processes for PacketCable subscribers.
show cops servers	Displays COPS server addresses, port, state, keepalives, and policy client information.
show ip rsvp policy	Displays policy server addresses, ACL IDs, and client/server connection status.

show depi

To display Downstream External PHY Interface (DEPI) tunnel and session information, use the **show depi** command in privileged EXEC mode.

show depi

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	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 shows a sample output of the **show depi** command on a Cisco uBR10012 router:

```
Router# show depi
DEPI Tunnel and Session Information Total tunnels 3 sessions 12
LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                          Count
555844637  4037701912 RFGW-10-1     est    11.30.14.100    4     test10
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252048235 1074332337 555844637  717,       est    1w0d     16         P
1252049362 1074332330 555844637  711,       est    1w0d     15         P
1252005266 1074332288 555844637  699,       est    1w0d     13         P
1252000641 1074332316 555844637  705,       est    1w0d     14         P
LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                          Count
1486289361 1394811300 RFGW-10-1     est    12.30.14.100    4     test10
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252014460 1074332279 1486289361 549,       est    1w0d     20         P
1252059306 1074332234 1486289361 531,       est    1w0d     17         P
1252057709 1074332245 1486289361 537,       est    1w0d     18         P
1252006708 1074332262 1486289361 543,       est    1w0d     19         P
LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                          Count
1688275168 1361251901 RFGW-10-1     est    24.30.14.100    4     test10
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252018493 1074332252 1688275168 537,       est    1w0d     22         S
1252054974 1074332286 1688275168 549,       est    1w0d     24         S
1252022230 1074332263 1688275168 543,       est    1w0d     23         S
1252059782 1074332236 1688275168 531,       est    1w0d     21         S
```

Table 1: show depi Field Descriptions

Field	Description
LocTunID	Identifier of the local tunnel.

Field	Description
RemTunID	Identifier of the remote tunnel.
Remote Name	Name of the remote tunnel.
State	State of the tunnel.
Remote Address	IP address of the remote tunnel.
Session Count	Number of sessions.
L2TP Class/VPDN Group	L2TP class name for the tunnel.
LocID	Identifier of the session.
RemID	Identifier of the remote session.
TunID	Identifier of the tunnel.
State	State of the session.
Last Chg	Last state change timestamp.
Uniq ID	Unique identifier of the QAM channel.
Type	Primary or secondary session.

Related Commands

Command	Description
depi-tunnel	Creates a template of DEPI tunnel configuration settings that can be inherited by different pseudowire classes.
rf-channel depi-tunnel	Binds the depi-tunnel to an rf-channel on a shared port adapter (SPA).
controller modular-cable	Enters controller configuration mode to configure the SPA controller.
show depi session	Displays information about DEPI sessions.
show depi tunnel	Displays information about DEPI tunnels.

show depi session

To display information about Downstream External PHY Interface (DEPI) sessions, use the **show depi session** command in privileged EXEC mode.

show depi session[*session-id* | **configured** | **name** *session-name* | **controller** **modular-cable***slot/subslot/unit-number* | **interface** *interface-name* | **primary** | **secondary** | **tsid** *ts-id* | **endpoints**] [**verbose**]

Syntax Description

session-id	(Optional) Local session ID value. The allowed range is from 1 to 4294967295.
verbose	(Optional) Displays detailed DEPI session information.
configured	(Optional) Displays all the DEPI sessions configured and their state. The states are IDLE and ACTIVE.
name *session-name*	(Optional) Specifies the name of the DEPI session.
controller **modular-cable***slot/subslot/unit-number*	(Optional) Specifies the controller modular cable interface. • *slot*—Controller modular cable interface slot. The valid range is from 0 to 8. • *subslot*—Controller modular cable interface subslot. The valid value is 0 or 1. • *unit-number*—Controller unit number. The valid range is from 0 to 2.
interface*interface-name*	(Optional) Specifies the interface type.
primary	(Optional) Specifies the primary DEPI session.
secondary	(Optional) Specifies the backup DEPI session.
tsid *ts-id*	(Optional) Specifies the Transport Stream Identifier (TSID).
endpoints	(Optional) Specifies DEPI session endpoints including tunnel ID and Edge Quadrature Amplitude Modulation (EQAM) RF port.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced.

Release	Modification
12.2(33)SCE	This command was modified. The following keywords were added to this command: • **primary** • **secondary** • **tsid** • **name** • **controller Modular-Cable** • **interface** • **endpoints**
12.2(33)SCG	This command was modified to support **verbose** output with the **tsid** option.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output of the **show depi session** command for all the established DEPI data sessions:

```
Router# show depi session
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252048235 1074332337 555844637  717,       est    3d09h    16         P
1252049362 1074332330 555844637  711,       est    3d09h    15         P
1252005266 1074332288 555844637  699,       est    3d09h    13         P
1252000641 1074332316 555844637  705,       est    3d09h    14         P
1252014460 1074332279 1486289361 549,       est    3d09h    20         P
1252059306 1074332234 1486289361 531,       est    3d09h    17         P
1252057709 1074332245 1486289361 537,       est    3d09h    18         P
1252006708 1074332262 1486289361 543,       est    3d09h    19         P
1252018493 1074332252 1688275168 537,       est    3d09h    22         S
1252054974 1074332286 1688275168 549,       est    3d09h    24         S
1252022230 1074332263 1688275168 543,       est    3d09h    23         S
1252059782 1074332236 1688275168 531,       est    3d09h    21         S
```

The following is a sample output of the **show depi session** command for a specific DEPI data session identified by the session ID in Cisco IOS Release 12.2(33)SCC:

```
Router# show depi session 1252018468 verbose
Session id 1252018468 is up, tunnel id 1834727012
  Remote session id is 1252055513, remote tunnel id 3849925733
  Locally initiated session
Qam Channel Parameters
  Group Tsid is 0
  Frequency is 717000000
  Modulation is 64qam
  Annex is B
  Interleaver Depth I=32 J=4
  Power is 0
  Qam channel status is 0
  Unique ID is 1
Call serial number is 326100007
Remote tunnel name is RFGW-10
  Internet address is 1.3.4.155
Local tunnel name is myankows_ubr10k
  Internet address is 1.3.4.103
IP protocol 115
  Session is L2TP signaled
```

```
  Session state is established, time since change 04:06:24
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
  Last clearing of counters never
  Counters, ignoring last clear:
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
    Receive packets dropped:
      out-of-order:             0
      total:                    0
    Send packets dropped:
      exceeded session MTU:     0
      total:                    0
  DF bit on, ToS reflect enabled, ToS value 0, TTL value 255
  UDP checksums are disabled
  Session PMTU enabled, path MTU is 1492 bytes
  No session cookie information available
  FS cached header information:
    encap size = 28 bytes
    45000014 00004000 FF73706F 01030467
    0103049B 4AA0D9D9 00000000
  Sequencing is on
    Ns 0, Nr 0, 0 out of order packets received
    Packets switched/dropped by secondary path: Tx 0, Rx 0
  Conditional debugging is disabled
```

The following is a sample output of the **show depi session** command that displays EQAM statistics for a specific DEPI data session identified by the session ID in Cisco IOS Release 12.2(33)SCE:

```
Router# show depi session 1252063105 verbose
Session id 1252063105 is up, tunnel id 1867895303
  Remote session id is 1074332253, remote tunnel id 3468518668
  Locally initiated session
  Session Type: Primary
Qam Channel Parameters
  Tsid is 537
  Group Tsid is 57
  Frequency is 537000000
  Modulation is 256qam
  Annex is B
  Interleaver Depth I=32 J=4
  Power is 530
  Qam channel status is 0
  Unique ID is 30
Call serial number is 2801814825
Remote tunnel name is RFGW-10-1
  Internet address is 12.30.14.100
Local tunnel name is prasm_ubr10k
  Internet address is 12.30.14.200
IP protocol 115
  Session is L2TP signaled
  Session state is established, time since change 5d12h
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
  Last clearing of counters never
  Counters, ignoring last clear:
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
    Receive packets dropped:
      out-of-order:             0
      total:                    0
    Send packets dropped:
      exceeded session MTU:     0
```

```
     total:                    0
  DF bit on, ToS reflect enabled, ToS value 0, TTL value 255
  UDP checksums are disabled
  Session PMTU enabled, path MTU is 1492 bytes
  No session cookie information available
  FS cached header information:
    encap size = 28 bytes
    45000014 00004000 FF73460F 0C1E0EC8
    0C1E0E64 4009025D 00000000
  Sequencing is on
    Ns 0, Nr 0, 0 out of order packets received
    Packets switched/dropped by secondary path: Tx 0, Rx 0
Peer Session Details
        Peer Session ID     : 1074332253
        Peer Qam ID         : Qam7/10.2
        Peer Qam State      : ACTIVE
        Peer Qam Type       : Primary
Peer Qam Statistics
        Total Pkts          : 270971
        Total Octets        : 50942548
        Total Discards      : 0
        Total Errors        : 0
        Total In Pkt Rate   : 0
        Bad Sequence Num    : 0
        Total In DLM Pkts   : 0
  Conditional debugging is disabled
```

The following is a sample output of the **show depi session** command for all the configured DEPI data sessions:

```
Router# show depi session configured
Load for five secs: 2%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *17:10:12.309 UTC Sun Jul 4 2010
Session Name                State  Reason                       Time
Modular-Cable5/0/0:0        ACTIVE -
Modular-Cable5/0/0:1        ACTIVE -
Modular-Cable5/0/0:2        ACTIVE -
Modular-Cable5/0/0:3        ACTIVE -
Modular-Cable5/0/1:0        ACTIVE -
Modular-Cable5/0/1:5/1/1:0  ACTIVE -
Modular-Cable5/0/1:1        ACTIVE -
Modular-Cable5/0/1:5/1/1:1  ACTIVE -
Modular-Cable5/0/1:2        ACTIVE -
Modular-Cable5/0/1:5/1/1:2  ACTIVE -
Modular-Cable5/0/1:3        ACTIVE -
Modular-Cable5/0/1:5/1/1:3  ACTIVE -
```

The following is a sample output of the **show depi session** command that displays all primary data sessions on the Cisco uBR10012 router:

```
Router# show depi session primary
Load for five secs: 5%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *17:13:10.389 UTC Sun Jul 4 2010
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252048235 1074332337 555844637  717,       est    3d09h    16         P
1252049362 1074332330 555844637  711,       est    3d09h    15         P
1252005266 1074332288 555844637  699,       est    3d09h    13         P
1252000641 1074332316 555844637  705,       est    3d09h    14         P
1252014460 1074332279 1486289361 549,       est    3d09h    20         P
1252059306 1074332234 1486289361 531,       est    3d09h    17         P
1252057709 1074332245 1486289361 537,       est    3d09h    18         P
1252006708 1074332262 1486289361 543,       est    3d09h    19         P
```

The following is a sample output of the **show depi session** command that displays all secondary data sessions on the Cisco uBR10012 router:

```
Router# show depi session secondary
Load for five secs: 0%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *17:13:56.777 UTC Sun Jul 4 2010
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252018493 1074332252 1688275168 537,       est    3d09h    22         S
1252054974 1074332286 1688275168 549,       est    3d09h    24         S
1252022230 1074332263 1688275168 543,       est    3d09h    23         S
1252059782 1074332236 1688275168 531,       est    3d09h    21         S
```

The following is a sample output of the **show depi session** command that shows details of a particular session identified by the session name:

```
Router# show depi session name Modular-Cable5/0/0:0
Load for five secs: 1%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *17:12:43.281 UTC Sun Jul 4 2010
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252005266 1074332288 555844637  699,       est    3d09h    13         P
```

The following is a sample output of the **show depi session** command that shows all secondary data sessions on the Cisco uBR10012 router:

```
Router# show depi session tsid 537
Load for five secs: 1%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *17:14:29.465 UTC Sun Jul 4 2010
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252057709 1074332245 1486289361 537,       est    3d09h    18         P
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252018493 1074332252 1688275168 537,       est    3d09h    22         S
```

The following is a sample output of the **show depi session** command that shows DEPI session endpoints in Cisco IOS Release 12.2(33)SCE and later:

```
Router# show depi session endpoints
DEPI Tunnel               RF Channel             EQAM rf-port Tsid  State  Type
depi_working_tunnel_8_0_0 Mod8/0/0:0             Qam3/7.1     371   est    P
depi_protect_tunnel_5_1_0 Mod8/0/0:5/1/0:0       Qam3/7.1     371   est    S
non_cisco_eqam_tunnel     Mod8/0/0:6             -            11012 est    P
```

The following is a sample output of the **show depi session** command with the **verbose** keyword in Cisco ISO Release 12.2(33)SCG:

```
Router# show depi session tsid 531 verbose
Load for five secs: 1%/0%; one minute: 2%; five minutes: 2%
Time source is hardware calendar, *10:10:34.349 UTC Thu Aug 18 2011
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252004030 1074332230 4168849253 531       est    1d02h    9          P

Session id 1252004030 is up, tunnel id 4168849253
  Remote session id is 1074332230, remote tunnel id 1302274286
  Locally initiated session
  Session Type: Primary
Qam Channel Parameters
  Tsid is 531
  Group Tsid is 57
  Frequency is 531000000
  Modulation is 256qam
  Annex is B
```

```
  Interleaver Depth I=32 J=4
  Power is 530
  Qam channel status is 0
  Unique ID is 9
Call serial number is 3208000008
Remote tunnel name is RFGW-10-1
  Internet address is 12.30.14.100
Local tunnel name is prasm_ubr10k
  Internet address is 12.30.14.200
IP protocol 115
  Session is L2TP signaled
  Session state is established, time since change 1d02h
   0 Packets sent, 0 received
   0 Bytes sent, 0 received
  Last clearing of counters never
  Counters, ignoring last clear:
   0 Packets sent, 0 received
   0 Bytes sent, 0 received
   Receive packets dropped:
      out-of-order:            0
      total:                   0
   Send packets dropped:
      exceeded session MTU:     0
      total:                   0
  DF bit on, ToS reflect enabled, ToS value 0, TTL value 255
  UDP checksums are disabled
  Session PMTU enabled, path MTU is 1492 bytes
  No session cookie information available
  FS cached header information:
   encap size = 28 bytes
   45000014 00004000 FF73460F 0C1E0EC8
   0C1E0E64 40090246 00000000
  Sequencing is on
   Ns 0, Nr 0, 0 out of order packets received
   Packets switched/dropped by secondary path: Tx 0, Rx 0

Peer Session Details
        Peer Session ID     : 1074332230
        Peer Qam ID        : Qam7/10.1
        Peer Qam State      : ACTIVE
        Peer Qam Type       : Primary
Peer Qam Statistics
        Total Pkts          : 104055078
        Total Octets        : 19562354664
        Total Discards      : 0
        Total Errors        : 0
        Total In Pkt Rate   : 1068
        Bad Sequence Num    : 0
        Total In DLM Pkts   : 0
  Conditional debugging is disabled
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252046589 1074332227 501350688  531        est    1d02h    13         S

Session id 1252046589 is up, tunnel id 501350688
  Remote session id is 1074332227, remote tunnel id 4220074353
  Locally initiated session
  Session Type: Secondary
Qam Channel Parameters
  Tsid is 531
  Group Tsid is 57
  Frequency is 531000000
  Modulation is 256qam
  Annex is B
  Interleaver Depth I=32 J=4
```

```
  Power is 530
  Qam channel status is 0
  Unique ID is 13
Call serial number is 3208000004
Remote tunnel name is RFGW-10-1
  Internet address is 24.30.14.100
Local tunnel name is prasm_ubr10k
  Internet address is 24.30.14.200
IP protocol 115
  Session is L2TP signaled
  Session state is established, time since change 1d02h
   0 Packets sent, 0 received
   0 Bytes sent, 0 received
  Last clearing of counters never
  Counters, ignoring last clear:
   0 Packets sent, 0 received
   0 Bytes sent, 0 received
   Receive packets dropped:
      out-of-order:            0
      total:                   0
   Send packets dropped:
      exceeded session MTU:     0
      total:                   0
  DF bit on, ToS reflect enabled, ToS value 0, TTL value 255
  UDP checksums are disabled
  Session PMTU enabled, path MTU is 1492 bytes
  No session cookie information available
  FS cached header information:
   encap size = 28 bytes
   45000014 00004000 FF732E0F 181E0EC8
   181E0E64 40090243 00000000
  Sequencing is on
   Ns 0, Nr 0, 0 out of order packets received
   Packets switched/dropped by secondary path: Tx 0, Rx 0

Peer Session Details
        Peer Session ID     : 1074332227
        Peer Qam ID        : Qam7/10.1
        Peer Qam State      : ACTIVE
        Peer Qam Type       : Secondary
Peer Qam Statistics
        Total Pkts          : 0
        Total Octets        : 0
        Total Discards      : 0
        Total Errors        : 0
        Total In Pkt Rate   : 8409
        Bad Sequence Num    : 0
        Total In DLM Pkts   : 0
  Conditional debugging is disabled
```

Table 2: show depi Field Descriptions

Field	Description
LocID	Identifier of the session.
RemID	Identifier of the remote session.
TunID	Identifier of the tunnel.
Tsid	Transport Stream Identifier.

Field	Description
State	State of the session.
Last Chg	Last state change timestamp.
Uniq ID	Unique identifier of the QAM channel.
Type	Primary or secondary session.
RF Channel	RF channel interface.
EQAM rf-port	The EQAM RF port used for the DEPI session.

Related Commands

Command	Description
depi-tunnel	Creates a template of DEPI tunnel configuration settings that can be inherited by different pseudowire classes.
rf-channel depi-tunnel	Binds the DEPI tunnel to an RF channel on a shared port adapter (SPA).
controller modular-cable	Enters controller configuration mode to configure the SPA controller.
show depi	Displays information about DEPI sessions and tunnels.
show depi tunnel	Displays information about DEPI tunnels.

show depi tunnel

To display information about Downstream External PHY Interface (DEPI) tunnels, use the **show depi tunnel** command in privileged EXEC mode.

show depi tunnel [*tunnel-id* **verbose** | **endpoints**]

Syntax Description

tunnel-id	(Optional) Name of the DEPI tunnel.
verbose	(Optional) Displays detailed DEPI tunnel or session information.
endpoints	(Optional) Specifies DEPI tunnel endpoints including tunnel ID and Edge Quadrature Amplitude Modulation (EQAM) RF port.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced.
12.2(33)SCE	This command was modified. Support for a new keyword, **endpoints**, was added to provide DEPI tunnel endpoint information.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following example shows a sample output of the **show depi tunnel** command for all the active control connections:

```
Router# show depi tunnel
LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                          Count
555844637  4037701912 RFGW-10-1     est    11.30.14.100    4     test10
1486289361 1394811300 RFGW-10-1     est    12.30.14.100    4     test10
1688275168 1361251901 RFGW-10-1     est    24.30.14.100    4     test10
```

The following example shows a sample output of the **show depi tunnel** command for a specific active control connection identified by the DEPI tunnel name:

```
Router# show depi tunnel 1834727012 verbose
Tunnel id 1834727012 is up, remote id is 3849925733, 1 active sessions
  Locally initiated tunnel
  Tunnel state is established, time since change 04:10:38
  Remote tunnel name is RFGW-10
    Internet Address 1.3.4.155, port 0
  Local tunnel name is myankows_ubr10k
    Internet Address 1.3.4.103, port 0
  L2TP class for tunnel is rf6
  Counters, taking last clear into account:
    0 packets sent, 0 received
```

```
    0 bytes sent, 0 received
    Last clearing of counters never
  Counters, ignoring last clear:
    0 packets sent, 0 received
    0 bytes sent, 0 received
  Control Ns 255, Nr 254
  Local RWS 1024 (default), Remote RWS 8192
  Control channel Congestion Control is enabled
    Congestion Window size, Cwnd 256
    Slow Start threshold, Ssthresh 8192
    Mode of operation is Slow Start
  Retransmission time 1, max 1 seconds
  Unsent queuesize 0, max 0
  Resend queuesize 0, max 2
  Total resends 0, ZLB ACKs sent 252
  Total peer authentication failures 0
  Current no session pak queue check 0 of 5
  Retransmit time distribution: 0 0 0 0 0 0 0 0 0
  Control message authentication is disabled
```

The following is a sample output of the **show depi tunnel** command that shows DEPI tunnel endpoints in Cisco IOS Release 12.2(33)SCE and later:

```
Router# show depi tunnel endpoints
DEPI Tunnel               Modular Controller   State  Remote Address Sessn
                                                                     Count
depi_working_tunnel_8_0_4 Mod8/0/2             est    1.30.84.100     24
depi_protect_tunnel_5_1_0 Mod8/0/0:5/1/0       est    1.30.50.100     24
depi_protect_tunnel_5_1_4 Mod8/0/2:5/1/2       est    1.30.54.100     24
depi_working_tunnel_8_0_0 Mod8/0/0             est    1.30.3.100      24
```

Table 3: show depi Field Descriptions

Field	Description
LocTunID	Identifier of the local tunnel.
RemTunID	Identifier of the remote tunnel.
Remote Name	Name of the remote tunnel.
State	State of the tunnel.
Remote Address	IP address of the remote tunnel.
Session Count	Number of sessions.
L2TP Class	L2TP class name for the tunnel.
Modular Controller	Controller modular cable interface for primary and secondary DEPI tunnels.

Related Commands

Command	Description
depi-tunnel	Creates a template of DEPI tunnel configuration settings that can be inherited by different pseudowire classes.
rf-channel depi-tunnel	Binds the depi-tunnel to an rf-channel on a shared port adapter (SPA).

Command	Description
controller modular-cable	Enters controller configuration mode to configure the SPA controller.
show depi	Displays information about DEPI sessions and tunnels.
show depi session	Displays information about DEPI sessions.

show derived-config interface cable

To display the detailed configuration and channel list information of dynamic bonding group, use the **show derived-config interface cable** *(X/Y/Z)* command in privileged EXEC mode.

show derived-config interface cable*(X/Y/Z)*

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 16.10.1f	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Note

- For legacy DSG, you can see the DSG command by using **show derived-config interface** and **show interface Cable1/0/1** command.
- For OPS DSG, you can see the DSG command by using the **show derived-config interface** command, instead of the **show interface Cable1/0/1** command.

Examples

The following example shows a sample output when the legacy DSG is used:

```
Router# show running interface cable1/0/1
interface Cable1/0/1
cable downstream dsg chan-list 111
 cable downstream dsg timer 2
 cable downstream dsg vendor-param 2
 cable downstream dsg tg 4500 channel 1
 cable mac-domain-profile MD1
 cable bundle 255
 cable managed fiber-node 1
End
Router# show derived-config interface c1/0/
interface Cable1/0/1
......
 cable downstream dsg chan-list 111
 cable downstream dsg timer 2
 cable downstream dsg vendor-param 2
 cable downstream dsg tg 4500 channel 1
end
```

The following example shows a sample output when the OPS DSG command is used. This option hides the DSG configuration under MD when you run the show running command.

```
Router# show running interface cable 1/0/1
interface Cable1/0/1
 cable mac-domain-profile MD1
```

```
 cable bundle 255
 cable managed fiber-node 1
End
```

show derived-config interface wideband-Cable

To display the detailed channel list information of dynamic bonding group, use the **show derived-config interface wideband-Cable** command in privileged EXEC mode.

show derived-config interface wideband-Cable

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 16.7.1	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Examples

The following example shows a sample output of the **show derived-config interface wideband-Cable** command for all the active control connections:

```
Router# show derived-config interface wideband-Cable 3/0/1:1
Building configuration...
Derived configuration: 113 bytes
!
interface Wideband-Cable3/0/1:1
 cable bundle 255
 cable rf-channels channel-list 0-7 bandwidth-percent 1
end
```

For a dynamically created bonding group, the **show derived-config interface wideband-Cable** shows the rf-channel list information as shown above while the **show run interface wideband-cable** does not show the show the rf-channel list details. A sample output for **show run interface wideband-cable** is shown below:

```
BXB-TB8#show run int wideband-Cable 1/0/0:10
Load for five secs: 9%/1%; one minute: 8%; five minutes: 9%
Time source is NTP, 10:46:09.783 EST Fri Dec 15 2017

Building configuration...

Current configuration : 117 bytes
!
interface Wideband-Cable1/0/0:10
cable bundle 1
end
```

Related Commands

Command	Description
show cable modem wideband channel	Displays the cable modem's primary wideband interface.
show cable modem verbose | in DS Tuner	Displays the cable modem's downstream tuner capability.

Command	Description
show cable mac-domain Cable *x/y/z***rcc**	Displays runtime receive channel configuration (RCC) on a cable line card interface.
show cable dynamic-bonding-group summary	Display the details of the dynamically created bonding groups.

show dhcp

To display the current Dynamic Host Configuration Protocol (DHCP) settings on point-to-point interfaces, use the **show dhcp** command in privileged EXEC mode.

Cisco uBR904, uBR905, uBR924, uBR925 cable access routers, Cisco CVA122 Cable Voice Adapter
show dhcp {**lease** | **server**}

Cisco cBR Series Converged Broadband Router
show dhcp {**lease** | **server**}

Syntax Description

lease	Displays DHCP addresses leased from a server.
server	Displays known DHCP servers.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3(4)NA	This command was introduced for the Cisco uBR904 cable access router.
12.0(4)XI1	Support was added for the Cisco uBR924 cable access router.
12.1(3)XL	Support was added for the Cisco uBR905 cable access router.
12.1(5)XU1	Support was added for the Cisco CVA122 Cable Voice Adapter.
12.2(2)XA	Support was added for the Cisco uBR925 cable access router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

You can use this command on any point-to-point type of interface that uses DHCP for temporary IP address allocation.

Examples

This example shows the output from the **show dhcp lease** command:

```
Router# show dhcp lease

Temp IP addr: 188.188.1.40  for peer on Interface: cable-modem0
Temp sub net mask: 0.0.0.0
   DHCP Lease server: 4.0.0.32, state: 3 Bound
   DHCP transaction id: 2431
   Lease: 3600 secs,  Renewal: 1800 secs,  Rebind: 3150 secs
Temp default-gateway addr: 188.188.1.1
   Next timer fires after: 00:58:01
   Retry count: 0   Client-ID: 0010.7b43.aa01
Router#
```

Table 4: show dhcp lease Field Descriptions

Field	Description
Temp IP addr	IP address leased from the DHCP server for the cable interface.
Temp subnet mask	Temporary subnet mask assigned to the cable interface.
DHCP Lease server	IP address of the DHCP server that assigned an IP address to this client.
state	Current state of this client (the cable interface). Possible states are Bound, Renew, or Rebinding. For descriptions of these states, see RFC 2131.
DHCP transaction id	Unique number established by the router before the first request message is sent to the DHCP server. The same transaction ID is used as long as the lease keeps getting renewed and is valid. If a new "discover" message is sent, a new transaction ID is used.
Lease	Time (in seconds) for which the leased IP address is valid; the duration of the lease.
Renewal	Time interval (in seconds) from address assignment until the client transitions to the renewing state. When the renewal (T1) time expires, the client sends a unicast dhcprequest message to the server to extends its lease. The default value of this timer is 0.5 times the duration of the lease.
Rebind	Time interval (in seconds) from address assignment until the client transitions to the rebinding state and sends a broadcast dhcprequest message to any DHCP server to extends its lease. The default value of this timer (T2) is 0.875 times the duration of the lease.
Temp default-gateway addr	IP address of the router closest to this client on the network.
Next timer fires after	Time in hours, minutes, and seconds until the next timer expires.
Retry count	Number of times the client has sent any message to the DHCP server—most likely a request message to extend its lease. When the lease is renewed, the Retry count is reset to 0.
Client-ID	MAC address (with optional media type code) that uniquely identifies the client on the subnet for binding lookups.

This example shows the output for the **show dhcp server** command:

```
Router# show dhcp server

   DHCP server: ANY (255.255.255.255)
    Leases:   1
    Offers:   1      Requests: 2     Acks: 1     Naks: 0
    Declines: 0      Releases: 0     Bad:  0
    TFTP Server Name: SOHOSERVER
    TIME0: 1.2.0.250,  TIME1: 0.0.0.0
    Subnet: 255.255.255.0
Router#
```

Table 5: show dhcp server Field Descriptions

Field	Description
DHCP server	MAC address used by the DHCP server.
Leases	Number of current leased IP addresses.
Offers	Number of offers for an IP address sent to a proxy client from the server.
Requests	Number of requests for an IP address to the server.
Acks	Number of acknowledge messages sent by the server to the proxy client.
Naks	Number of not acknowledge messages sent by the server to the proxy client.
Declines	Number of offers from the server that have been declined by the proxy client.
Releases	Number of times IP addresses have been relinquished gracefully by the client.
Bad	Number of bad packets received due to wrong length, wrong field type, or other causes.
TFTP Server Name	Name (if any) configured for the server providing TFTP downloads to the CM.
TIME0	IP address of the primary Time-of-Day (ToD) server.
TIME1	IP address of the secondary ToD server.
Subnet	Subnet containing the DHCP server.

Tip In Cisco IOS Release 12.2(8)T and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
cable-modem voip best-effort	Allows voice calls to be sent upstream over the cable interface using best effort.
show bridge cable-modem	Displays bridging information for the cable interface.
show interfaces cable-modem	Displays information about the cable interface.

show diag all eeprom detail | include MAC

To display the chassis MAC address information, use the **show diag all eeprom detail | include MAC** command in privileged EXEC mode.

show diag all eeprom detail | include MAC

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command displays the chassis MAC address information.

Examples

The following sample output shows the chassis MAC address information:

```
Router# show diag all eeprom detail | include MAC
Chassis MAC Address      : c414.3c17.1c00
MAC Address block size   : 1024
```

Related Commands

Command	Description
logical-edge-device	Defines a logical edge device.
protocol	Specifies the protocol used in the logical edge device.
mgmt-ip	Defines the local management IP address for a logical edge device.
mac-address	Defines the MAC address for a logical edge device.
vcg	Specifies the virtual carrier group assigned to the logical edge device.
virtual-edge-input-ip	Defines a virtual edge input.
show cable video logical-edge-device	Displays the logical edge device information.
show cable video gqi connections	Displays the GQI connection information of the logical edge device with the Session Resource Manager.

show diagnostic bootup level

To display the currently configured diagnostics level at bootup, use the **show diagnostic bootup** command in user EXEC or privileged EXEC mode.

show diagnostic bootup level

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (>)
Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	The command was introduced in this release to support Generic Online Diagnostics (GOLD) functionality for Cisco uBR10012 Universal Broadband Router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The level of diagnostic tests which run at bootup can be either configured as complete or minimal. To configure the bootup level, use the **diagnostic bootup level** command in global configuration mode. The **show diagnostic bootup level** command is used to display the currently configured bootup diagnostic level.

Examples

This example shows the output of the **show diagnostic bootup level** command on the Cisco uBR10012 Router:

```
Router# show diagnostic bootup level
Current bootup diagnostic level: complete
```

Related Commands

Command	Description
diagnostic bootup level	Configures the level of diagnostic tests which run at booup.

show diagnostic content

To display information about available tests, including test ID, test attributes, test schedule, and supported coverage test levels for each test and for each of the bays and line-cards, use the **show diagnostic content** command in user EXEC or privileged EXEC mode.

show diagnostic content[**all** | **bay** *slot/bay* | **slot** *slot-no* | **subslot** *slot/subslot*]

all	Displays information about available tests for all modules.
bay *slot/bay*	Indicates the card slot and bay number of the SPA for which the available test content details is displayed. The **bay** keyword is used to refer a SPA on the router. The valid range for the slot number is from 1 to 8 and 0 to 3 for the bay number.
slot *slot-no*	Indicates the slot number of the full-height line card for which the available test content details is displayed. The **slot** keyword is used to refer a full-height line card on the router. The valid range for slot is 1 to 8.
subslot *slot/subslot*	Indicates the slot and subslot number of half-height line card for which the available test content details has to be displayed. The **subslot** keyword is used to refer a half-height line card on Cisco uBR10012 Router. The valid range for the slot number is from 1 to 8 and 0 to 1 for the subslot number.

Command Default

None

Command Modes

User EXEC (>)
Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced for the Cisco uBR10012 Router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

For each available diagnostic test, a set of attributes is displayed as a series of characters in the Attributes field of the command output. An asterisk (*) in the character location indicates that the attribute is not applicable to the test. The following set of attribute s is displayed:

Attribute	Description
M	Test runs when the bootup diagnostic level is set to either Minimal or Complete.
C	Test runs when the bootup diagnostic level is set to Complete.
B	Test runs when the **diagnostic ondemand** command is executed. Indicates that the test is a basic ondemand test.
P	Test runs on a port, not the entire device (per-port test).
V	Test runs on the entire device (per-device test).

Attribute	Description
D	Test disrupts the network traffic (disruptive test).
N	Test runs when the system is online without disrupting the network traffic (non disruptive test).
S	If the card under test is a standby card, only the standby card runs the test. The test does not run from the active card. If the card under test is an active card, the active card runs the test on itself.
X	Test is not a health-monitoring test.
F	Monitoring interval of the test cannot be modified by the user (fixed monitoring test).
E	User cannot disable the test (always enabled test).
A	Monitoring is active for this test.
I	Monitoring is inactive for this test.

If a test is configured to run periodically, the interval will be displayed in the Test Interval field of the command output in the format dd hh:mm:ss.ms, indicating days, hours, minutes, seconds, and milliseconds. For example, the test interval of a test that runs every 15 minutes will be displayed as 000 00:15:00.00. The test interval of a test that runs every 14 days will be displayed as 014 00:00:00.00.

Examples

This example shows a sample output of the **show diagnostic content** command that displays the test suite, monitoring interval, and test attributes for bay 1/0 on the Cisco uBR10012 Universal Broadband Router.

```
Router# show diagnostic content bay 1/0
Bay 1/0: 2jacket-1
          Diagnostics test suite attributes:
            M/C/* - Minimal bootup level test / Complete bootup level test / NA
              B/* - Basic ondemand test / NA
            P/V/* - Per port test / Per device test / NA
            D/N/* - Disruptive test / Non-disruptive test / NA
              S/* - Only applicable to standby unit / NA
              X/* - Not a health monitoring test / NA
              F/* - Fixed monitoring interval test / NA
              E/* - Always enabled monitoring test / NA
              A/I - Monitoring is active / Monitoring is inactive
Test In terval
ID   Test Name                                      Attributes      day hh:mm:ss.
==== ========================================== ============    =============
1) TestModenaSample -------------------------> ***N****A       02010:10:10.10 99
2) TestModenaLLQDrops -----------------------> ***N****A       02010:10:10.10 99
```

Table 6: show diagnostic content bay Field Descriptions

Field	Description
ID	The identification number.
Test Name	The name of the test that is run on the specific bay.
Attributes	The test attribute for the specific bay.

Field	Description
Test In terval	The test interval in the dd hh:mm:ss.ms format, indicating days, hours, minutes, seconds, and milliseconds.

This example shows a sample output of the show diagnostic content subslot 8/0 command that displays the test suite, monitoring interval, and test attributes for subslot 8/0 on the Cisco uBR10012 Universal Broadband Router.

```
Router# show diagnostic content subslot 8/0
Subslot 8/0: 5cable-mc520u-d, 5 ports
  Diagnostics test suite attributes:
    M/C/* - Minimal bootup level test / Complete bootup level test / NA
      B/* - Basic ondemand test / NA
    P/V/* - Per port test / Per device test / NA
    D/N/* - Disruptive test / Non-disruptive test / NA
      S/* - Only applicable to standby unit / NA
      X/* - Not a health monitoring test / NA
      F/* - Fixed monitoring interval test / NA
      E/* - Always enabled monitoring test / NA
      A/I - Monitoring is active / Monitoring is inactive
                                                                    Test Interval
  ID   Test Name                                    Attributes      day hh:mm:ss
.
  ==== ========================================== ============    ============
1) TestSampleProxy ---------------------------> ***N****I       not configured  n/a
2) Test520LLQDrops ---------------------------> **PN****A       000 01:00:00.00 1
3) TestBlazeIndexLeak ------------------------> ***N****A       000 08:00:00.00 n/a
4) TestMemLeaks ------------------------------> ***N**F*A       000 02:00:00.00 n/a
```

Related Commands

Command	Description
diagnostic bootup level	Sets the bootup diagnostic level.
diagnostic monitor	Configures the health-monitoring diagnostic testing.
diagnostic ondemand	Configures the on-demand diagnostics.
diagnostic schedule test	Sets the scheduling of test-based diagnostic testing for a specific module or schedules a supervisor engine switchover.
show diagnostic description	Describes the diagnostic tests.
show diagnostic bootup	Displays the configured diagnostics level at bootup.
show diagnostic events	Displays the diagnostic event log.
show diagnostic ondemand settings	Displays the settings for the on-demand diagnostics.
show diagnostic result	Displays the diagnostic test results for a module.
show diagnostic schedule	Displays the current scheduled diagnostic tasks.
show diagnostic status	Displays the running diagnostics tests.
diagnostic ondemand	Configures the on-demand diagnostics.

Command	Description
diagnostic event-log size	Modifies the diagnostic event-log size dynamically.
diagnostic start	Runs the specified diagnostic test.
diagnostic stop	Stops the testing process.

show diagnostic ood-status

To display status information, such as the line card slot and name, Field Diagnostic image status, and overall results from previous diagnostic tests, enter the **show diagnostic ood-status** command.

show diagnostic ood-status [**slot** *slot-number* | **subslot** *slot-number*/*subslot-number*] [**detail**]

Syntax Description

slot	Specifies that the status information will be viewed for a line card in a full slot.
subslot	Specifies that the status information will be viewed for a line card in a subslot.
slot-number	Specifies the slot number of the line card whose status information will appear in the command output.
subslot-number	Specifies the subslot number of the line card whose status information will appear in the command output.
detail	Displays the status information and the detailed test results of the specified line card in the command output.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(33)SCC	This command was introduced.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The **show diagnostic ood-status** output discloses if a line card supports Field Diagnostic testing and if the line card has already downloaded a Field Diagnostic image. Therefore, the **show diagnostic ood-status** command is useful as a reference before loading the Field Diagnostic image onto the line card.

It is important to note that the **show diag** and **show diagnostic** commands produce completely different outputs. Therefore, the **show diagnostic** output cannot be gathered using **show diag** because the autocomplete function will generate the **show diag**, not the **show diagnostic**, output. If you want to abbreviate the **show diagnostic** command, the shortest possible abbreviation is **show diagn**.

Examples

In the following example, the **show diagnostic ood-status** command is used to view status information of all the line card in the uBR10012 router.

```
Router# show diagnostic ood-status
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *05:56:50.835 EDT Thu Nov 5 2009
==== ======================== ======= ========== =========== ==============
                              FDiag   Loaded     Overall     Current
Slot Card Description         Support Image Type Diag Result Card State
---- ------------------------ ------- ---------- ----------- --------------
```

```
A    Active PRE2-RP           YES     IOS        N/A         ONLINE
B    Standby PRE2-RP          YES     N/A        N/A         OFFLINE
1    2jacket-1                YES     LCDOS      N/A         ONLINE
1    2cable-dtcc              NO      LCDOS      N/A         ONLINE
2/1  2cable-tccplus           NO      LCDOS      N/A         ONLINE
3/0  1gigethernet-hh-1        YES     LCDOS      N/A         ONLINE
3/1  1gigethernet-hh-1        YES     LCDOS      N/A         ONLINE
5/0  5cable-mc520h-d          YES     IOS        N/A         ONLINE
6/0  5cable-mc520h-d          YES     Field Diag N/A         DIAG READY
8/1  5cable-mc520u-d          YES     IOS        N/A         ONLINE
==== ======================== ======= ========== =========== ==============
```

Table 7: show diagnostic ood-status Field Descriptions

Field	Description
Slot	Identifies the slot on the router.
Card Description	A text explanation of the line card in the specified slot.
FDiag Support	Indicates whether the line card in the specific slot supports Field Diagnostic testing. • Yes—the line card in the slot supports Field Diagnostic testing. • No—the card in the slot does not support Field Diagnostic testing.
Loaded Image Type	Specifies the run-time image for each line card. • Field Diag—Indicates that the Field Diagnostic image is loaded on the line card. A line card will either have the Field Diagnostic or LCDOS image. • IOS—Specifies that the processor is running Cisco IOS. • LCDOS—Line card DOS. The LCDOS image is the image the line card is running during normal router operation. It is removed temporarily when a Field Diagnostic image is loaded onto the line card and loaded back onto a line card when a Field Diagnostic image is unloaded. **Note** The LCDOS image is not loaded on cable line cards.
Overall Diag Result	Displays the result of the last performed Field Diagnostic test, assuming the Field Diagnostic image has not been removed since the last test. • Pass—This line card passed the last diagnostic test. • Fail—At least one Field Diagnostic test failed during the last diagnostic test. • N/A—This line card has not been tested.
Current Card State	The current card state: • Diag Ready—A diagnostic image is loaded onto the line card and Field Diagnostic tests can be run. • Running Diag—A diagnostic image is loaded on to the line card and is currently being run. • Offline—The line card is not currently passing traffic and no Field Diagnostic image has been downloaded onto the line card. • Online—The line card is active and can pass traffic.

In the following sample output, the test results per line card is displayed when the **show diagnostic ood-status** command is used along with **subslot** and **detail** keywords. The output displays diagnostic status of the line card along with details of the tests being run and their status.

```
Router# show diagnostic ood-status subslot 6/0 detail
==== ======================== ======= ========== =========== ==============
                              FDiag   Loaded     Overall     Current
Slot Card Description         Support Image Type Diag Result Card State
---- ------------------------ ------- ---------- ----------- --------------
6/0  5cable-mc520h-d          YES     Field Diag N/A         RUNNING DIAG
==== ======================== ======= ========== =========== ==============
 Detail testing progress for card in slot 6/0:
 Current card state: RUNNING DIAG
                                                             Test
 ID   Test Name              [Selected To Run (Y/N)] Status
 ==== ========================================== =======
   1) Lookout2 RW test ..... [Y] Passed
   2) Lookout2 R/W Intr bits ..... [Y] Passed
   3) Lookout2 Reset test ..... [Y] Passed
   4) JIB2 PCI ID test ..... [Y] Passed
   5) JIB2 Register read/write test ..... [Y] Passed
   6) JIB2 R/W Intr bits ..... [Y] Passed
   7) JIB2 Reset test ..... [Y] Passed
   8) JIB2 ifa6 SDRAM Test ..... [Y] Running
   9) JIB2 ECC Disabled SDRAM Test ..... [Y] Not Run
  10) JIB2 Data Bus/Address SDRAM Test ..... [Y] Not Run
  11) JIB2 ifa6 SSRAM Test ..... [Y] Not Run
  12) JIB2 Data Bus/Address SSRAM Test ..... [Y] Not Run
  13) Mfpga R/W Intr bits ..... [Y] Not Run
  14) Mfpga Register read/write test ..... [Y] Not Run
  15) Mfpga Reset test ..... [Y] Not Run
  16) Internal Timer Test ..... [Y] Not Run
  17) Random Register Test ..... [Y] Not Run
  18) Processor Id Test ..... [Y] Not Run
  19) Ping Test ..... [Y] Not Run
  20) Core2 Memory Access Test ..... [Y] Not Run
  21) L1 Cache Test ..... [Y] Not Run
  22) core 2 L1 Cache Test ..... [Y] Not Run
  23) System DDR Test ..... [Y] Not Run
  24) Local UART Port 0 Internal Loopback Test . [Y] Not Run
  25) Local UART Port 1 Internal Loopback Test . [Y] Not Run
  26) PCI Bridge R/W Test ..... [Y] Not Run
  27) PCI Bridge ID Test ..... [Y] Not Run
  28) DM Channel Test ..... [Y] Not Run
  29) SMM665 Voltage Test ..... [Y] Not Run
  30) MarchingPattern_nvram ..... [Y] Not Run
  31) DataPins_nvram ..... [Y] Not Run

Router#
```

Table 8: show diagnostic ood-status subslot x/y detail Field Descriptions

Field	Description
Current card state	Specifies the card state.
ID	The test identification number.
Test Name	The name of the test.

Field	Description
Selected to Run	Specifies whether the test was specified to run. Y indicates the test will be run and N indicates the test will not be run.
Test Status	Provides the current test status.

Related Commands

Command	Description
diagnostic event-log size	Sets the size of the event table.
diagnostic load	Loads the Field Diagnostic image onto the line card.
diagnostic ondemand action-on-failure	Sets the number of errors allowed in the Field Diagnostic test before the Field Diagnostic test is stopped.
diagnostic ondemand iterations	Sets the number of times each specific Field Diagnostic test will be run when a Field Diagnostic test is initiated.
diagnostic start	Starts Field Diagnostic testing on the line card.
diagnostic stop	Stops an in-progress Field Diagnostic test.
diagnostic unload	Unloads the Field Diagnostic image from the line card and restores normal line card operation.
show diag	Shows information of all the line cards in the uBR10012 router, per slot, per subslot.
show diagnostic content	Shows the Field Diagnostic test list for a particular line card.
show diagnostic events	Displays the history of Field Diagnostic events since the last system reload.

show diagnostic result

To display the diagnostic test results for a module, use the **show diagnostic result** command in user EXEC or privileged EXEC mode.

show diagnostic result [[**bay** *slot/bay* | **slot** *slot-no* | **subslot** *slot/subslot*] | {**detail** | **test** {*test-idtest-id-range* | **all**}} | **all**]

Syntax Description

bay *slot/bay*	(Optional) Indicates the card slot and bay number for which the diagnostic test results are displayed. The **bay** keyword is used to refer a SPA on Cisco uBR10012 Universal Broadband Router. The valid range to specify slot is 1 to 8 and the valid range for bay is 0 to 3.
slot *slot-no*	(Optional) Indicates the slot number of the full-height line card for which the diagnostic test results have to be displayed. The **slot** keyword is used to refer a full-height line card on Cisco uBR10012 Universal Broadband Router. The valid range for the slot number is from 1 to 8.
subslot *slot/sub-slot*	(Optional) Indicates the slot and subslot number of the half-height line card for which the diagnostic test results have to be displayed. The **subslot** keyword is used to refer a half-height line card on Cisco uBR10012 Router. The valid range to specify slot is 1 to 8 and the valid range for sub-slot is 0 to 1.
all	(Optional) Displays diagnostic test results for all the SPAs, full-height line cards, and half-height line cards.
list	List of modules in the following format: • Entries separated by a comma, for example, 1,4,6-10. • Ranges specified with a hyphen, for example, 1-4,6-10.
slot	Single module by slot number.
slot/subslot	Single sub module by slot number and subslot or bay within the module.
detail	(Optional) Displays the detailed test results. The detail keyword is used along with the bay, slot, or subslot keywords to provide detailed test result information for a SPA, full-height line card, or half-height line card.
test *test-id*	(Optional) Displays test results only for the specified test-ids.
test *test-id-range*	(Optional) Displays test results for the specified range of test ids.
test *all*	(Optional) Displays the test results for all the tests running on the SPA, full-height line card, or half-height line card.

Command Default

None

Command Modes

User EXEC (>)
Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	The command was introduced in this release to support the Generic Online Diagnostics (GOLD) functionality on the Cisco uBR10012 Universal Broadband Router. The keywords **bay**, **slot**, and **subslot** were added for the Cisco uBR10012 Universal Broadband Router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

In the command output, the possible testing results are as follows:

- Passed (.)
- Failed (F)
- Untested (U)

To display the results of a specific diagnostic test, specify the *test-id* number using the **test** *test-id* keyword and argument. The *test-id* numbers for available diagnostic tests are displayed in the output of the **show diagnostic content** command.

You can use the **show diagnostic description** command to see a detailed description of a diagnostic test.

The command syntax to refer a line card or SPAs is different on Cisco uBR10012 Router. The keyword is **slot** *x* for a full-height line card, **slot** *x*/*y* for a half-height card, and **bay** *x*/*y* for a SPA.

Note To view the diagnostic test results for a SPA, full-height line card, or half-height line card use the **show diagnostic result** command along with the **bay**, **slot**, or **subslot** keywords respectively.

The GOLD test cases used to poll for system errors in Cisco IOS Software Release 12.2(33)SCC are Low Latency Queueing (LLQ) drop, Cable Line Card (CLC) memory leak, and Guardian index leak tests.

Examples

The following example shows a sample output of the **show diagnostic result all** command**.** The output displays a summary of test results on all the SPAs, full-height line cards, and half-height line cards on the Cisco uBR10012 Router:

```
Router# show diagnostic result all
Current bootup diagnostic level: minimal
Slot 1: 2jacket-1  SerialNo : CAT1146E05
Overall diagnostic result: UNTESTED
  Diagnostic level at card bootup: minimal
Test results: (. = Pass, F = Fail, U = Untested)
    1) TestJacketSample --------------------------> U
        Bay 1/0: 2jacket-1  SerialNo : N/A
          Overall diagnostic result: PASS
          Diagnostic level at card bootup: minimal
          Test results: (. = Pass, F = Fail, U = Untested)
            1) TestModenaSample --------------------------> U
            2) TestModenaLLQDrops ------------------------> .
Subslot 5/0: 5cable-mc520u-d, 5 ports  SerialNo : CAT10210T9
  Overall diagnostic result: PASS
  Diagnostic level at card bootup: minimal
  Test results: (. = Pass, F = Fail, U = Untested)
    1) TestSampleProxy ---------------------------> U
    2) Test520LLQDrops:
      Port  0  1  2  3  4
      -------------------
```

```
            .  .  .  .  .
3) TestBlazeIndexLeak ------------------------> U
    4) TestMemLeaks -----------------------------> .
Subslot 8/0: 5cable-mc520u-d, 5 ports  SerialNo : CAT08410SS
  Overall diagnostic result: PASS
  Diagnostic level at card bootup: minimal
  Test results: (. = Pass, F = Fail, U = Untested)
    1) TestSampleProxy --------------------------> U
    2) Test520LLQDrops:
      Port  0  1  2  3  4
      -------------------
            .  .  .  .  .
3) TestBlazeIndexLeak ------------------------> .
    4) TestMemLeaks -----------------------------> .
Subslot 8/1: 5cable-mc520u-d, 5 ports  SerialNo : CAT10251S2
  Overall diagnostic result: PASS
  Diagnostic level at card bootup: minimal
  Test results: (. = Pass, F = Fail, U = Untested)
    1) TestSampleProxy --------------------------> U
    2) Test520LLQDrops:
      Port  0  1  2  3  4
      -------------------
            .  .  .  .  .
3) TestBlazeIndexLeak ------------------------> U
    4) TestMemLeaks -----------------------------> .
```

The following example shows a sample output of the **show diagnostic result subslot** *5/0* **detail** command**.** The command output provides useful details such as overall diagnostic results and the time-related values of various important parameters, which help in identifying and resolving the issue:

```
Router# show diagnostic result subslot 5/0 detail
Current bootup diagnostic level: minimal
Subslot 5/0: 5cable-mc520u-d, 5 ports  SerialNo : CAT10210T9
  Overall diagnostic result: PASS
  Diagnostic level at card bootup: minimal
  Test results: (. = Pass, F = Fail, U = Untested)
  ____________________________________________________________________________
    1) TestSampleProxy --------------------------> U
          Error code ----------------------------> 0 (DIAG_SUCCESS)
          Total run count -----------------------> 0
          Last test execution time --------------> n/a
          First test failure time ---------------> n/a
          Last test failure time ----------------> n/a
          Last test pass time -------------------> n/a
          Total failure count -------------------> 0
          Consecutive failure count -------------> 0
  ____________________________________________________________________________
    2) Test520LLQDrops:
      Port  0  1  2  3  4
      -------------------
            .  .  .  .  .
          Error code ----------------------------> 0 (DIAG_SUCCESS)
          Total run count -----------------------> 17
          Last test execution time --------------> Aug 11 2009 09:42:22
          First test failure time ---------------> n/a
          Last test failure time ----------------> n/a
          Last test pass time -------------------> Aug 11 2009 09:42:22
          Total failure count -------------------> 0
          Consecutive failure count -------------> 0
  ____________________________________________________________________________
    3) TestBlazeIndexLeak ------------------------> U
          Error code ----------------------------> 0 (DIAG_SUCCESS)
```

```
        Total run count -----------------------> 1
        Last test execution time --------------> Aug 11 2009 00:42:19
        First test failure time ---------------> n/a
        Last test failure time ----------------> n/a
        Last test pass time -------------------> Aug 11 2009 00:42:19
        Total failure count -------------------> 0
        Consecutive failure count -------------> 0
_____________________________________________________________________________
  4) TestMemLeaks ------------------------------> .
        Error code ----------------------------> 0 (DIAG_SUCCESS)
        Total run count -----------------------> 7
        Last test execution time --------------> Aug 11 2009 06:42:19
        First test failure time ---------------> n/a
        Last test failure time ----------------> n/a
        Last test pass time -------------------> Aug 11 2009 06:42:19
        Total failure count -------------------> 0
        Consecutive failure count -------------> 0
_____________________________________________________________________________
```

Related Commands

Command	Description
show diagnostic content	Displays the available diagnostic tests.
show diagnostic description	Describes the diagnostic tests.
show diagnostic bootup	Displays the configured diagnostics level at bootup.
show diagnostic events	Displays the diagnostic event log.
show diagnostic ondemand settings	Displays the settings for the on-demand diagnostics.
show diagnostic result	Displays the diagnostic test results for a module.
show diagnostic schedule	Displays the current scheduled diagnostic tasks.
show diagnostic status	Displays the running diagnostics tests.
diagnostic start	Runs the specified diagnostic test.
diagnostic stop	Stops the testing process.
show diagnostic content module	Displays the available diagnostic tests.
diagnostic bootup level	Configures the diagnostic bootup level.
diagnostic event-log size	Modifies the diagnostic event-log size dynamically.
diagnostic monitor	Configures the health-monitoring diagnostic testing.
diagnostic ondemand	Configures the on-demand diagnostics.
diagnostic schedule	Sets the scheduling of diagnostic testing for a specific bay, slot, or subslot.

show diagnostic schedule

To display the scheduled diagnostic tasks, use the **show diagnostic schedule** command in user EXEC or privileged EXEC mode.

show diagnostic schedule [**all** | **bay** *slot/bay* | **slot** *slot-no* | **subslot** *slot/subslot*]

Syntax Description

all	Displays the scheduled diagnostic tasks for all the installed SPAs, full-height line cards, and half-height line cards on the Cisco uBR10012 Universal Broadband Router.
bay *slot/bay*	(Optional) Indicates the card slot and bay number for which the scheduled diagnostic tasks is displayed. The **bay** keyword is used to refer a SPA on the router. The valid range for the slot number is from 1 to 8 and 0 to 3 for the bay number.
slot *slot-no*	(Optional) Indicates the slot number of the full-height line card for which the scheduled diagnostic tasks is displayed. The **slot** keyword is used to refer a full-height line card on the router. The valid range for slot is 1 to 8.
subslot *slot/sub-slot*	(Optional) Indicates the slot and subslot number of the half-height line card for which the scheduled diagnostic tasks have to be displayed. The **subslot** keyword is used to refer a half-height line card on the router. The valid range for the slot number is from 1 to 8 and 0 to 1 for the subslot.

Command Default

None

Command Modes

User EXEC (>)
Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	The command was introduced in this release to support Generic Online Diagnostics (GOLD) functionality for Cisco uBR10012 Universal Broadband Router. The keywords **bay**, **slot**, and **subslot** were added for the Cisco uBR10012 Universal Broadband Router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

Diagnostic tests for a specific bay, slot, or subslot can be scheduled daily, weekly, or on specific dates and time using the **diagnostic schedule** command from global configuration mode. The **show diagnostic schedule** command output displays the diagnostic tests that have been scheduled for the bay, slot, or subslot using the command **diagnostic schedule**.

Examples

This example shows a sample output of the show diagnostic schedule slot 1 command that displays diagnostic tasks scheduled for slot 1 on the Cisco uBR10012 Universal Broadband Router:

```
Router# show diagnostic schedule slot 1
Current Time = 13:55:35 EST Tue Aug 11 2009
Diagnostic for Slot 1:
Schedule #1:
```

```
        To be run on September 1 2009 12:00
        Test ID(s) to be executed: 1.
```

This example shows a sample output of how to display the diagnostic tasks scheduled for all the bays, full-height line cards, and half-height line cards installed on the Cisco uBR10012 Universal Broadband Router:

```
Router# show diagnostic schedule all
Current Time = 14:05:41 EST Tue Aug 11 2009
Diagnostic for Slot 1:
Schedule #1:
        To be run on September 1 2009 12:00
        Test ID(s) to be executed: 1.
Diagnostic for Bay 1/0 is not scheduled.
Diagnostic for Subslot 5/0 is not scheduled.
Diagnostic for Subslot 8/0:
Schedule #1:
        To be run daily 12:00
        Test ID(s) to be executed: 2.
Diagnostic for Subslot 8/1:
Schedule #1:
        To be run weekly Sunday 12:00
        Test ID(s) to be executed: 3.
```

Related Commands

Command	Description
diagnostic schedule	Sets the diagnostic test schedule for a particular bay, slot, or subslot.
show diagnostic description	Provides the description for the diagnostic tests.
diagnostic start	Runs the specified diagnostic test.
diagnostic stop	Stops the testing process.
show diagnostic content module	Displays the available diagnostic tests.
diagnostic bootup level	Configures the diagnostic bootup level.
diagnostic event-log size	Modifies the diagnostic event-log size dynamically.
diagnostic monitor	Configures the health-monitoring diagnostic testing.
diagnostic ondemand	Configures the on-demand diagnostics.
show diagnostic bootup	Displays the configured diagnostics level at bootup.
show diagnostic events	Displays the diagnostic event log.
show diagnostic ondemand settings	Displays the settings for the on-demand diagnostics.
show diagnostic result	Displays the diagnostic test results for a module.
show diagnostic schedule	Displays the current scheduled diagnostic tasks.
show diagnostic status	Displays the running diagnostics tests.

show diagnostic status

This command is not supported in the cBR-8 router.

show facility-alarm status

To display the current temperature thresholds that will trigger a facility alarm, use the **show facility-alarm status** command in user EXEC or privileged EXEC mode.

show facility-alarm status [**critical** | **major** | **minor** | **info** | **phy-index**]

Syntax Description

critical	(Optional) Only critical alarms are shown.
major	(Optional) All major and critical facility alarms are shown.
minor	(Optional) All minor, major, and critical facility alarms are shown.
info	(Optional) All facility alarms are shown. The default severity level is info.
phy-index	(Optional) All facility alarms for the specified physical index entity are shown.

Command Default

All alarms are shown.

Command Modes

User EXEC, Privileged EXEC (#)

Command History

Release	Modification
12.2(1)XF1	This command was introduced for the Cisco uBR10012 router.
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. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCE4	This command was modified. The **phy-index** keyword was added to the command for the Cisco uBR7200 series and uBR10012 routers.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

When a severity level is identified, statuses of alarms at that level and higher are shown. For example, when you set a severity of major, all major and critical alarms are shown.

The **show facility-alarm status** command does not show the real status of the upstream channel connector when frequency stacking is configured on the upstream channel.

The **show facility-alarm status** command does not show the critical alarm temperature thresholds. You can display these values using the **show running-config | include facility** command. If this does not display any commands for critical alarms, then the temperature thresholds are set at their default values.

For additional information on Frequency Stacking feature, refer to the Virtual Interfaces and Frequency Stacking Configuration on MC5x20S and MC28U Linecards document on Cisco.com.

Starting from Cisco IOS XE Gibraltar 16.10.1g and 16.12.1w release, if the link redundancy is enabled, **show facility-alarm status** will not report physical port link down on the interface unless both ports assigned to this interface are down, and transceiver missing on either port, active or standby, will be a critical alarm.

Examples

The following example shows a typical display of the **show facility-alarm status** command:

```
Router# show facility-alarm status

Thresholds:
Intake minor 40 major 49 critical 72
Core   minor 45 major 53 critical 85
System Totals  Critical: 0  Major: 0  Minor: 77
Source              Severity      ACO         Description [Index]
------              --------      ---         -------------------
chassis                    MINOR          NORMAL     Core minor temperature limi]
Cable5/0-MAC0              INFO           NORMAL     Physical Port Administrativ]
Cable5/0-MAC1              INFO           NORMAL     Physical Port Administrativ]
Cable5/0-MAC2              INFO           NORMAL     Physical Port Administrativ]
Cable5/0-MAC3              INFO           NORMAL     Physical Port Administrativ]
Cable5/0-MAC4              INFO           NORMAL     Physical Port Administrativ]
Cable5/0-US0               MINOR          NORMAL     Physical Port Link Down [0]
Cable5/0-US1               MINOR          NORMAL     Physical Port Link Down [0]
Cable5/0-US2               MINOR          NORMAL     Physical Port Link Down [0]
Router#
```

The following example shows a typical display of the **show facility-alarm status phy-index** command:

```
Router# show facility-alarm status phy-index

Intake minor 40 major 49 critical 72
Core   minor 45 major 53 critical 85
System Totals  Critical: 4  Major: 1  Minor: 0
PhyIdx    Source                        Severity      ACO        Description [Index]
-----     ------                        --------      ---        -------------------
28        RP A                         MAJOR         NORMAL     Secondary failure [2]
46        GigE1H 3/0/0                 CRITICAL      NORMAL     Physical Port Link Down [0]
48        GigE1H 3/1/0                 CRITICAL      NORMAL     Physical Port Link Down [0]
5510      Cable5/1-US4                 INFO          NORMAL     Physical Port Administrative
 State Down [1]
5511      Cable5/1-US5                 INFO          NORMAL     Physical Port Administrative
 State Down [1]
Router#
```

Table 9: show facility-alarm status Field Descriptions

Field	Description
System Totals	Total number of alarms generated, identified by severity.
PhyIdx	The entity physical index for a specific alarm node.
Source	Interface from which the alarm was generated.
Severity	Severity level of the alarm generated.
ACO	Alarm cutoff. It could be “NORMAL” or “CLEARED”.
Description [Index]	Type of the alarm and the index of the alarm type. The index can be any number based on the number of alarm types that the device supports.

Related Commands

Command	Description
clear facility-alarm	Clears some or all of the facility alarms on the Cisco uBR10012 router.
facility-alarm	Sets the temperature thresholds at which the processor generates a critical, major, or minor alarm to warn of potential equipment damage.

show frame-clocks

To display information about the midplane time-division multiplexing (TDM) clock reference, use the **show frame-clocks** command in privileged EXEC mode.

show frame-clocks

Syntax Description

This command has no keywords or arguments.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(T)	This command was introduced.
12.1(1a)T1	This command was modified to include the cable clock card as the current clock source.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following sample output from the **show frame-clocks** command shows that there are no clock sources configured and the clock card is the default clock source:

```
Router# show frame-clocks

Priority 1 clock source:not configured input:none
Priority 2 clock source:not configured input:none
Priority 3 clock source:not configured input:none
Priority 4 clock source:not configured input:none
Current clock source:Clockcard, input:Primary, priority:5
```

Table 10: show frame-clocks Field Descriptions

Field	Description
Priority 1-4 clock source	The configuration of the four network clock sources.
Current clock source	The current clock source, its input, and priority. In this example, the clock card is providing the clock source.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
show cable clock	Displays status information for the clock card.
show controllers clock-reference	Displays the clock card's hardware information.

show hardware pxf

In Cisco IOS Release 12.2(15)BC2 and later releases, all **show hardware pxf** commands were renamed as **show pxf**, as follows:

- **show pxf cable**
- **show pxf cable interface**
- **show pxf cpu**
- **show pxf dma**
- **show pxf microcode**
- **show pxf xcm**

The functionality of each command remains the same. See the above commands for more information.

In Cisco IOS-XE Release IOS-XE 3.15.0S, the **show hardware pxf** commands are not supported on the Cisco cBR Series Converged Broadband Routers.

show hccp

To display information about HCCP groups associated with cable interfaces, use the **show hccp** command in user EXEC or privileged EXEC mode.

show hccp [*group* | **brief** | **channel-switch** | **detail** | **event-history** | **interface** | **linecard**]

Syntax Description

group	(Optional) Specifies a group number to be displayed. The valid range is 1 to 255. It is a 1-based MAC domain number and hence on a: • Cisco uBR10-MC5X20 and Cisco UBR-MC20X20V line card, the group range is from 1 to 5. • Cisco uBR-MC3GX60V line card, the group range is from 1 to 15.
brief	(Optional) Displays a brief summary of the groups, configuration types, member numbers, and status for cable interfaces. You can also use this option when displaying information for a specific group.
channel-switch	(Optional) Displays information about the channel-switch configuration.
detail	(Optional) Displays a detailed summary of the groups, configuration types, member numbers, and status for cable interfaces, as well as the CLI commands that are being synchronized across interfaces.
event-history	(Optional) Displays information about switchover and sync events.
interface	(Optional) Displays a summary on each interface.
linecard	(Optional) Displays line card-level HCCP information.

Command Modes

User EXEC, Privileged EXEC (#)

Command History

Release	Modification
12.1(3a)EC	This command was introduced.
12.2(4)BC1	The **detail** option was added.
12.2(8)BC2	The current time to resync and current wait to restore values were added to the display for the **brief** option.
12.2(11)BC1	Support was added for the Cisco uBR-RFSW N+1 (1:n) RF Switch with the Cisco uBR7246VXR router and Cisco uBR-MC16C, Cisco uBR-MC16S, and Cisco uBR-MC28C cards.
12.2(15)BC2	The output of the **show hccp detail** command was changed to show separate lists of the critical and non-critical CLI commands that are being synchronized for each Working and Protect interface and subinterface.

Release	Modification
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB and the output of the **show hccp detail** command was changed to show CMTS interface pre-critical config information.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC.
12.2(33)SCE	This command was modified. The **line card** keyword was added.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following examples are from the **show hccp** and **show hccp brief** commands for the entire chassis:

```
Router# show hccp

   Cable4/0 - Group 1 Protect, enabled, blocking
   authentication md5, key-chain "cisco1"
   hello time 2000 msec, hold time 6000 msec
   Member 1 standby
   ip addr: working 10.20.111.11, protect 10.20.111.10
   downstream wavecom (10.1.11.3/1, 10.1.11.3/2), upstream none
Router# show hccp brief

   Interface Config    Grp Mbr Status
   Ca5/0/0   Protect   1   3   standby
   Ca7/0/0   Working   1   3   active
```

In Cisco IOS Release 12.2(8)BC2 and later 12.2 BC releases, the **brief** option also shows the amount of time left before the next resynchronization and the time left before a restore:

```
Router# show hccp brief

   Interface Config    Grp Mbr Status          WaitToResync    WaitToRestore
   Ca5/0/0   Protect   1   3   standby                         00:01:50.892
   Ca7/0/0   Working   1   3   active          00:00:50.892    00:01:50.892
Router#
```

The following example shows a sample output for the **show hccp channel-switch** command, displaying the groups and module numbers for each configured member:

```
Router# show hccp channel-switch

Grp 1 Mbr 1 Working channel-switch:
        "uc" - enabled, frequency 555000000 Hz
        "rfswitch" - module 1, normal
        module 3, normal
        module 5, normal
        module 7, normal
        module 11, normal
Grp 2 Mbr 1 Working channel-switch:
        "uc" - enabled, frequency 555000000 Hz
        "rfswitch" - module 2, normal
        module 4, normal
        module 6, normal
        module 9, normal
        module 13, normal
```

```
Grp 1 Mbr 7 Protect channel-switch:
        "uc" - disabled, frequency 555000000 Hz
        "rfswitch" - module 1, normal
        module 3, normal
        module 5, normal
        module 7, normal
        module 11, normal
Grp 1 Mbr 5 Protect channel-switch:
        "uc" - disabled, frequency 555000000 Hz
        "rfswitch" - module 1, normal
        module 3, normal
        module 5, normal
        module 7, normal
        module 11, normal
Router#
```

The following example shows the first part of the display for the **detail** option of this command, which first displays chassis-wide configuration information. The command then displays the CLI configuration commands that are being synchronized for each subinterface.

```
Router# show hccp detail

HCCP software version 3.0
Cable3/0 - Group 1 Protect, enabled, blocking
  authentication none
  hello time 2000 msec, hold time 6000 msec, revertive
  track interfaces: Cable3/0
  sync time 1000 msec, suspend time 120000 msec
  local state is Learn, tran 54940
  last switch reason is internal
  last HELLO tran 54940, elapsed 672 msec, hello timer expires in 00:00:01.328
  switchover member 1, wait to restore in 00:01:24.580
  control plane relays sync packets
 Fast syncpulse detection is enabled
  statistics:
    standby_to_active 23, active_to_standby 23
    active_to_active 0, standby_to_standby 1
  Member 1 standby
    target ip address: protect 10.10.10.2, working 10.10.10.1
    channel-switch "uc" (wavecom-ma, 10.10.10.3/2, 10.10.10.3/1) enabled
    tran #: SYNC 17209, last SYNC_ACK 46592
    hold timer expires in 00:00:05.328
    interface config:
        mac-address 0000.0000.3030
    cmts config:
        bundle 1 master, resolve sid, dci-response success,
        downstream - frequency 555000000, channel id 0
        downstream - insertion_invl auto min = 60, max = 480
        upstream 0 - frequency 10000000, power level 0
        upstream 0 - modulation-profile 1, channel-width 3200000
        upstream 0 - cnr-profile1 25, cnr-profile2 15
                     corr-fec 1, uncorr-fec 1
        upstream 0 - hop-priority frequency modulation channel-width
        upstream 1 - frequency 12000000, power level 0
        upstream 1 - modulation-profile 1, channel-width 3200000
        upstream 1 - cnr-profile1 25, cnr-profile2 15
                     corr-fec 1, uncorr-fec 1
        upstream 1 - hop-priority frequency modulation channel-width
        upstream 2 - frequency 14000000, power level 0
        upstream 2 - modulation-profile 1, channel-width 3200000
        upstream 2 - cnr-profile1 25, cnr-profile2 15
                     corr-fec 1, uncorr-fec 1
        upstream 2 - hop-priority frequency modulation channel-width
```

```
        upstream 3 - frequency 16000000, power level 0
        upstream 3 - modulation-profile 1, channel-width 3200000
        upstream 3 - cnr-profile1 25, cnr-profile2 15
                     corr-fec 1, uncorr-fec 1
        upstream 3 - hop-priority frequency modulation channel-width
    sub-interface 200 config:
        ip address 10.23.240.1 255.255.255.0
        ip address 213.57.42.254 255.255.255.128 secondary
        ip helper-address 213.57.75.70
        ip helper-address 213.57.75.66, ip access-group 87 in, ip access-group 87 out
        cable helper-address 213.57.75.70
        cable helper-address 213.57.75.66
        cable arp, proxy-arp,
        cable ip-multicast-echo,
        cable dhcp-giaddr policy,
    sub-interface 8 config:
        ip address 10.23.128.1 255.255.240.0
        ip address 62.90.198.254 255.255.255.0 secondary
        ip helper-address 213.57.75.70
       ip helper-address 213.57.75.66, ip access-group BARAK in, ip access-group ANTI_TRACE
 out
        cable helper-address 213.57.75.70
        cable helper-address 213.57.75.66
        cable arp, proxy-arp,
        cable ip-multicast-echo,
        cable dhcp-giaddr policy,
    sub-interface 1 config:
        ip address 3.0.1.1 255.255.0.0
        ip address 99.99.1.1 255.255.255.0 secondary
        ip address 99.99.2.1 255.255.255.0 secondary
        ip address 99.99.3.1 255.255.255.0 secondary
        ip address 99.99.4.1 255.255.255.0 secondary
        ip helper-address 1.9.62.10
        ip helper-address 1.9.62.11, ip access-group no_netbios2 in, ip access-group
no_netbios2 out
        ip pim sparse-dense-mode
        cable arp,
        cable ip-multicast-echo
. . .
Router#
```

In Cisco IOS Release 12.2(15)BC2 and later releases, the **show hccp detail** command shows the critical and non-critical synchronized CLI commands in separate lists for each cable interface and subinterface:

```
Router# show hccp detail

HCCP software version 3.0
Cable5/0/0 - Group 1 Working, enabled, forwarding
  authentication none
  hello time 5000 msec, hold time 15000 msec, revert time 30 min
  track interfaces: Cable5/0/0
  sync time 1000 msec, suspend time 120000 msec
  switch time 240000 msec retries 5
  local state is Teach, tran 9
  in sync, out staticsync, start static sync in never
  last switch reason is internal
  data plane directly sends sync packets
  statistics:
    standby_to_active 2, active_to_standby 1
    active_to_active 0, standby_to_standby 0
  Member 5 active
    target ip address: protect 222.1.1.9, working 222.1.1.9
```

```
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/4) enabled
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/8) enabled
    tran #: SYNC 9, last SYNC_ACK 0, last HELLO_ACK 54
    hold timer expires in 00:00:13.180
Cable6/0/0 - Group 1 Protect, enabled, blocking
  authentication none
  hello time 5000 msec, hold time 15000 msec, revertive
  track interfaces: Cable6/0/0
  sync time 1000 msec, suspend time 120000 msec
  local state is Learn, tran 54
  last switch reason is none
  last HELLO tran 54, elapsed 3928 msec, hello timer expires in 00:00:01.068
  data plane directly sends sync packets
  statistics:
    standby_to_active 0, active_to_standby 0
    active_to_active 0, standby_to_standby 4
  Member 6 standby
    target ip address: protect 222.1.1.9, working 222.1.1.9
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/7) enabled
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/6) enabled
    tran #: SYNC 0, last SYNC_ACK 9
    hold timer expires in 00:00:11.068
    Interface Generic Critical Config
    ========================
int Cable6/0/0
 mac-address 00e0.6666.1288
end
    CMTS interface critical config
    ==============================
int Cable6/0/0
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 441000000
 cable downstream channel-id 60
 cable upstream 0 frequency 11408000
 cable upstream 0 power-level 0
 cable upstream 0 channel-width 1600000
 cable upstream 0 minislot-size 4
 cable upstream 0 modulation-profile 1
 no cable upstream 0 shutdown
 cable upstream 1 power-level 0
 cable upstream 1 channel-width 1600000
 cable upstream 1 minislot-size 4
 cable upstream 1 modulation-profile 1
 cable upstream 1 shutdown
 cable upstream 2 power-level 0
 cable upstream 2 channel-width 1600000
 cable upstream 2 minislot-size 4
 cable upstream 2 modulation-profile 1
 cable upstream 2 shutdown
 cable upstream 3 power-level 0
 cable upstream 3 channel-width 1600000
 cable upstream 3 minislot-size 4
 cable upstream 3 modulation-profile 1
 cable upstream 3 shutdown
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
end
        CMTS subinterface critical config
        =================================
int Cable6/0/0
```

```
end
    Non Critical config
    ===================
int Cable6/0/0
!
 no ip address
 no keepalive
 cable bundle 1
end
  Member 5 standby
    target ip address: protect 222.1.1.9, working 222.1.1.9
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/4) enabled
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/8) enabled
    tran #: SYNC 0, last SYNC_ACK 9
    hold timer expires in 00:00:13.756
    Interface Generic Critical Config
    =========================
int Cable6/0/0
 mac-address 00e0.6666.1270
end
    CMTS interface critical config
    ==============================
int Cable6/0/0
 cable bundle 1 master
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 441000000
 cable downstream channel-id 60
 cable upstream 0 frequency 11408000
 cable upstream 0 power-level 0
 cable upstream 0 channel-width 1600000
 cable upstream 0 minislot-size 4
 cable upstream 0 modulation-profile 1
 no cable upstream 0 shutdown
 cable upstream 1 power-level 0
 cable upstream 1 channel-width 1600000
 cable upstream 1 minislot-size 4
 cable upstream 1 modulation-profile 1
 cable upstream 1 shutdown
 cable upstream 2 power-level 0
 cable upstream 2 channel-width 1600000
 cable upstream 2 minislot-size 4
 cable upstream 2 modulation-profile 1
 cable upstream 2 shutdown
 cable upstream 3 power-level 0
 cable upstream 3 channel-width 1600000
 cable upstream 3 minislot-size 4
 cable upstream 3 modulation-profile 1
 cable upstream 3 shutdown
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
 ip address 12.1.1.1 255.255.255.0 secondary
 ip address 1.6.1.65 255.255.255.0
end
        CMTS subinterface critical config
        =================================
int Cable6/0/0
end
    Non Critical config
    ===================
int Cable6/0/0
```

```
!
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
end
        CMTS subinterface critical config
        =================================
int Cable6/0/0
end
    Non Critical config
    ===================
int Cable6/0/0
!
 no ip address
 no keepalive
end
Router#
```

In Cisco IOS Release 12.2(33)SCB and later releases, the **show hccp detail** command shows CMTS interface pre-critical configuration information as part of the critical and non-critical synchronized CLI commands:

```
Router# show hccp detail

HCCP software version 3.0
Cable5/0/0 - Group 1 Working, enabled, forwarding
  authentication none
  hello time 5000 msec, hold time 15000 msec, revert time 30 min
  track interfaces: Cable5/0/0
  sync time 1000 msec, suspend time 120000 msec
  switch time 240000 msec retries 5
  local state is Teach, tran 9
  in sync, out staticsync, start static sync in never
  last switch reason is internal
  data plane directly sends sync packets
  statistics:
    standby_to_active 2, active_to_standby 1
    active_to_active 0, standby_to_standby 0
  Member 5 active
    target ip address: protect 222.1.1.9, working 222.1.1.9
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/4) enabled
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/8) enabled
    tran #: SYNC 9, last SYNC_ACK 0, last HELLO_ACK 54
    hold timer expires in 00:00:13.180
Cable6/0/0 - Group 1 Protect, enabled, blocking
  authentication none
  hello time 5000 msec, hold time 15000 msec, revertive
  track interfaces: Cable6/0/0
  sync time 1000 msec, suspend time 120000 msec
  local state is Learn, tran 54
  last switch reason is none
  last HELLO tran 54, elapsed 3928 msec, hello timer expires in 00:00:01.068
  data plane directly sends sync packets
  statistics:
    standby_to_active 0, active_to_standby 0
    active_to_active 0, standby_to_standby 4
  Member 6 standby
    target ip address: protect 222.1.1.9, working 222.1.1.9
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/7) enabled
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/6) enabled
    tran #: SYNC 0, last SYNC_ACK 9
    hold timer expires in 00:00:11.068
```

```
    Interface Generic Critical Config
    =================================
int Cable6/0/0
 mac-address 00e0.6666.1288
end
    CMTS interface pre-critical config
    ==================================
int Cable5/0/0
 cable downstream annex B
 cable downstream modulation 256qam
 cable downstream interleave-depth 32
end
    CMTS interface critical config
    ==============================
int Cable6/0/0
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 441000000
 cable downstream channel-id 60
 cable upstream 0 frequency 11408000
 cable upstream 0 power-level 0
 cable upstream 0 channel-width 1600000
 cable upstream 0 minislot-size 4
 cable upstream 0 modulation-profile 1
 no cable upstream 0 shutdown
 cable upstream 1 power-level 0
 cable upstream 1 channel-width 1600000
 cable upstream 1 minislot-size 4
 cable upstream 1 modulation-profile 1
 cable upstream 1 shutdown
 cable upstream 2 power-level 0
 cable upstream 2 channel-width 1600000
 cable upstream 2 minislot-size 4
 cable upstream 2 modulation-profile 1
 cable upstream 2 shutdown
 cable upstream 3 power-level 0
 cable upstream 3 channel-width 1600000
 cable upstream 3 minislot-size 4
 cable upstream 3 modulation-profile 1
 cable upstream 3 shutdown
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
end
        CMTS subinterface critical config
        =================================
int Cable6/0/0
end
    Non Critical config
    ===================
int Cable6/0/0
!
 no ip address
 no keepalive
 cable bundle 1
end
  Member 5 standby
    target ip address: protect 222.1.1.9, working 222.1.1.9
    channel-switch "uc" (wavecom-hd, 1.10.45.11/7, 1.10.45.11/4) enabled
    channel-switch "rfsw" (rfswitch-group, 1.10.52.33/0x40100000/8) enabled
    tran #: SYNC 0, last SYNC_ACK 9
    hold timer expires in 00:00:13.756
```

```
    Interface Generic Critical Config
    =================================
int Cable6/0/0
 mac-address 00e0.6666.1270
end
    CMTS interface pre-critical config
    ==================================
int Cable5/0/0
 cable downstream annex B
 cable downstream modulation 256qam
 cable downstream interleave-depth 32
end
    CMTS interface critical config
    ==============================
int Cable6/0/0
 cable bundle 1 master
 cable downstream annex B
 cable downstream modulation 64qam
 cable downstream interleave-depth 32
 cable downstream frequency 441000000
 cable downstream channel-id 60
 cable upstream 0 frequency 11408000
 cable upstream 0 power-level 0
 cable upstream 0 channel-width 1600000
 cable upstream 0 minislot-size 4
 cable upstream 0 modulation-profile 1
 no cable upstream 0 shutdown
 cable upstream 1 power-level 0
 cable upstream 1 channel-width 1600000
 cable upstream 1 minislot-size 4
 cable upstream 1 modulation-profile 1
 cable upstream 1 shutdown
 cable upstream 2 power-level 0
 cable upstream 2 channel-width 1600000
 cable upstream 2 minislot-size 4
 cable upstream 2 modulation-profile 1
 cable upstream 2 shutdown
 cable upstream 3 power-level 0
 cable upstream 3 channel-width 1600000
 cable upstream 3 minislot-size 4
 cable upstream 3 modulation-profile 1
 cable upstream 3 shutdown
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
 ip address 12.1.1.1 255.255.255.0 secondary
 ip address 1.6.1.65 255.255.255.0
end
        CMTS subinterface critical config
        =================================
int Cable6/0/0
end
    Non Critical config
    ===================
int Cable6/0/0
!
end
    Generic sub-interface master critical config
    ============================================
int Cable6/0/0
end
        CMTS subinterface critical config
        =================================
```

```
int Cable6/0/0
end
    Non Critical config
    ====================
int Cable6/0/0
!
 no ip address
 no keepalive
end
Router#
```

In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

The following example shows a detailed display for the Cisco uBR10-MC5X20S cable interface line card:

```
Router# show hccp detail

    mac-address 0005.00e4.1236
cmts config:
    resolve sid, dci-response success,
    downstream - frequency 441000000, channel id 0
    downstream - insertion_invl auto min = 60, max = 480
    downstream - rf-shutdown, rf-power 48
    upstream 0 - frequency 11408000, power level 0
    upstream 0 - modulation-profile 1, channel-width 3200000
    upstream 0 - cnr-profile1 25, cnr-profile2 15
                 corr-fec 1, uncorr-fec 1
```

Note For cable interfaces with an integrated upconverter, the line showing the RF power will show **rf-shutdown** when the upconverter has been powered off.

Related Commands

Command	Description
show hccp interface	Displays group information for a specific cable interface on which one or more groups and authentication modes have been configured.
show hccp linecard	Displays line card-level HCCP information.
show hccp *group*	Displays group information.

show hccp channel-switch

To display channel-switch hccp information, use the **show hccp channel-switch** command in privileged EXEC mode.

show hccp channel-switch [**command-history local** | **counter** | **image** | **state** | **version**]

Syntax Description

command-history local	Displays the command history on the Cisco CMTS router.
counter	Displays the counters on the Cisco NGRFSW-ADV.
image	Displays the image list on the Cisco NGRFSW-ADV.
state	Displays the current state of the Cisco NGRFSW-ADV.
version	Displays the version of the Cisco NGRFSW-ADV.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCG	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 example is a sample output of the **show hccp channel-switch command-history local** command showing the command history output.

```
Router# show hccp channel-switch command-history local
timestamp            state      command
2010-06-13 07:47:17  Succ       type:FILE_OPEN, slot:1, group:0x00
2010-06-13 07:47:27  Succ       type:FILE_CLOSE, slot:0, group:0x00
2010-06-13 07:48:11  Succ       type:FILE_OPEN, slot:2, group:0x00
2010-06-13 07:48:51  Fail       type:FILE_CLOSE, slot:0, group:0x00
2010-06-13 09:46:01  Succ       type:RESET_SLOT, slot:7, group:0x1F
2010-06-13 09:48:17  Succ       type:RESET_SLOT, slot:7, group:0x1F
2010-06-13 18:47:23  Succ       type:RESET_SLOT, slot:4, group:0x1F
```

The following example is a sample output of the **show hccp channel-switch counter** command showing the counter statistics.

```
Router# show hccp channel-switch counter
The counter of switchover for all slot/group in rf switch.
  slot id group 1 group 2 group 3 group 4 group 5
  0       16491   16491   16491   16491   16491
  1       2383    2383    2383    2383    2383
  2       2360    2360    2360    2360    2360
  3       2351    2351    2351    2351    2351
  4       2348    2348    2348    2348    2348
```

```
  5       2343    2343    2343    2343    2343
  6       2354    2354    2354    2354    2354
  7       2352    2352    2352    2352    2352
```

The following example is a sample output of the show hccp channel-switch image command showing the image information.

```
Router# show hccp channel-switch image
file size     file mode     file state       file name
   6402          Write                          asv3.0
   47246         Write                          acv3.0
   6406          Read          Active           gsv3.0
   47238         Read          Active           gcv3.0
```

The following example is a sample output of the show hccp channel-switch state command showing the state information.

```
Router# show hccp channel-switch state
Current State: RFSW Ready
Current Protected Slot: 7
The switchcard information in RFSW:
    Slot Id Module Id Type       HCCP Conf  State
    0       12        Upstream   Yes        Protecting
    0       11        Upstream   Yes        Protecting
    0       10        Downstream Yes        Protecting
    1       1         Upstream   Yes        Normal
    1       2         Upstream   Yes        Normal
    1       3         Downstream Yes        Normal
    2       4         Upstream   Yes        Normal
    2       5         Upstream   Yes        Normal
    2       6         Downstream Yes        Normal
    3       7         Upstream   Yes        Normal
    3       8         Upstream   Yes        Normal
    3       9         Downstream Yes        Normal
    4       13        Upstream   Yes        Normal
    4       14        Upstream   Yes        Normal
    4       15        Downstream Yes        Normal
    5       16        Upstream   Yes        Normal
    5       17        Upstream   Yes        Normal
    5       18        Downstream Yes        Normal
    6       19        Upstream   Yes        Normal
    6       20        Upstream   Yes        Normal
    6       21        Downstream Yes        Normal
    7       22        Upstream   Yes        In Protecting
    7       23        Upstream   Yes        In Protecting
    7       24        Downstream Yes        In Protecting
Failed Message Number: 21
Hello Message Interval: 3 seconds
AUXRFSW poll state: Succ
```

The following example is a sample output of the **show hccp channel-switch version** command showing the version information.

```
Router# show hccp channel-switch version
Controller:
 Controller Golden Firmware: gcv3.0, Controller Alternate Firmware:acv3.0
 Switch Golden Firmware: gsv3.0, Switch Alternate Firmware:asv3.0
  Ctrl    Switch  Bootload  Watchdog  Temperature Voltage    Uptime      Serial
  Version Version Version   Error                 Monitoring
  3.0     3.0     3.0       255       33          12.2V      46:21       AFL15448001

SwitchCards:
```

```
Type Slot Bootload TotalPower Relay         Coil Fail   Tempe  TotalRelay Uptime Serial
     id   Version  Cycle      pos           Register    rature Cycle
U0   0    1.2      247        -----RSRRSR   -----PPPPPP 0      4457       0d0h   AFL15515020

U10  0    1.2      247        -----RSRRSR   -----PPPPPP 0      4420       0d0h   AFL15515013

DS   0    1.2      250        -----RRRSSR   -----PPPPPP 0      7533       0d0h   AFL15512017

U0   1    1.2      340        SSSSS-SSSSS   PPPPP-PPPPP 33     2472       0d0h   AFL15514160

U10  1    1.2      240        SSSSS-SSSSS   PPPPP-PPPPP 33     2352       0d0h   AFL15514163

DS   1    1.2      265        ------RRRRR   ------PPPPP 33     2382       0d0h   AFL15491025

U0   2    1.2      249        SSSSS-SSSSS   PPPPP-PPPPP 34     2339       0d0h   AFL15514236

U10  2    1.2      257        SSSSS-SSSSS   PPPPP-PPPPP 34     2340       0d0h   AFL15514223

DS   2    1.2      254        ------RRRRR   ------PPPPP 34     2361       0d0h   AFL15431001

U0   3    1.2      262        SSSSS-SSSSS   PPPPP-PPPPP 35     2315       0d0h   AFL15514214

U10  3    1.2      255        SSSSS-SSSSS   PPPPP-PPPPP 36     2316       0d0h   AFL15514215

DS   3    1.2      251        ------RRRRR   ------PPPPP 34     2313       0d0h   AFL15491078

U0   4    1.2      237        SSSSS-SSSSS   PPPPP-PPPPP 35     2324       0d0h   AFL15514213

U10  4    1.2      255        SSSSS-SSSSS   PPPPP-PPPPP 35     2314       0d0h   AFL15514221

DS   4    1.2      245        ------RRRRR   ------PPPPP 37     2326       0d0h   AFL15491092

U0   5    1.2      236        SSSSS-SSSSS   PPPPP-PPPPP 35     2281       0d0h   AFL15514212

U10  5    1.2      279        SSSSS-SSSSS   PPPPP-PPPPP 34     2333       0d0h   AFL15514228

DS   5    1.2      247        ------RRRRR   ------PPPPP 34     2315       0d0h   AFL15491064

U0   6    1.2      256        SSSSS-SSSSS   PPPPP-PPPPP 33     2333       0d0h   AFL15514224

U10  6    1.2      258        SSSSS-SSSSS   PPPPP-PPPPP 34     2314       0d0h   AFL15514230

DS   6    1.2      268        ------RRRRR   ------PPPPP 33     2310       0d0h   AFL15491044

U0   7    1.2      293        RRRRR-RRRRR   PPPPP-PPPPP 33     2369       0d0h   AFL15514227

U10  7    1.2      325        RRRRR-RRRRR   PPPPP-PPPPP 33     2403       0d0h   AFL15514235

DS   7    1.2      315        ------SSSSS   ------PPPPP 33     2383       0d0h   AFL15491108
```

Table 11: show hccp channel-switch Field Descriptions

Field	Description
timestamp	Time at which a command was executed.
State	State of the switch card.
command	List of commands executed on the Cisco CMTS router.
Module Id	Switchover module identifier in the Cisco NGRFSW-ADV.

Field	Description
Ctrl Version	Version of the Controller.
Switch Version	Version of the Switch.
Bootload Version	Version of the bootload in the Cisco NGRFSW-ADV.
Watchdog Error	Watchdog error number.
Temperature	Temperature of the switch card.
Voltage Monitoring	Voltage value.
Uptime	Uptime of the switch card.
Serial	Serial string for the controller and switchover cards.
Type	Type of the switch card (upstream or downstream).
Slot ID	Slot number of the switch card.
TotalPower Cycle	Power cycle number for the switchover card.
Relay pos	Relay position register. It is a 11-bit value, where ‘s’ represents a set bit, ‘R’ represents a reset bit, and ‘-’ is for an unused bit.
Coil Fail Register	Coil failure register in the switchover cards. It is a 11-bit value, where ‘P’ represents a normal bit, ‘F’ represents a failed bit and ‘-’ is for an unused bit.
TotalRelay Cycle	Relay cycle number for the switchover card.

Related Commands

Command	Description
show hccp	Displays Hot Standby Connection-to-Connection Protocol (HCCP) information.

show hccp group

To display information about groups associated with cable interfaces, use the **show hccp group** command in user EXEC or privileged EXEC mode.

show hccp group *member* {**CGD** | *mac-address* {**classifier** | **l2vpn**} | **channel-switch** | **detail** | **event-history** | **host** [**ipv6**] | **mcast sid** | **mlist** | **modem** [**ipv6**] | **multicast-session** | **qosparam** | **service-flow** [*sfid* [**classifier**]] | **sid**}

Syntax Description

group	(Optional) Specifies a group number to be displayed. The valid range is from 1 to 255.
member	(Optional, when displaying information for a particular group) Specifies the member ID of the Inter-database for the specified group. Each *member* denotes a working line card. For example, 50 is the member ID for slot 5/0, 51 is the member ID for slot 5/1, 81 is the member ID for slot 8/1. The valid range is from 1 to 255.
CGD	(Optional) Displays the channel group domain (CGD) information synchronized from the active line card to the standby line card. This information is saved in the Inter-database on the standby line card.
mac-address **classifier**	(Optional) Displays classifier information for the specified MAC address.
mac-address **l2vpn**	(Optional) Displays l2vpn information for the specified MAC address.
channel-switch	(Optional) Displays channel-switch information for this particular group and member.
detail	(Optional) Displays a detailed summary of the groups, configuration types, member numbers, and status for cable interfaces, as well as the CLI commands that are being synchronized across interfaces.
event-history	(Optional) Displays HCCP event history information.
host	(Optional) Displays host information for this particular group and member.
mcast sid	(Optional) Displays the modular or integrated cable interface multicast service ID (SID) information synchronized from the active line card to the standby line card. This information is saved in the Inter-database on the standby line card.
mlist	(Optional) Displays ACL-MSAID information.
modem	(Optional) Displays cable modem information for this particular group and member.
multicast-session	(Optional) Displays multicast session information.
qosparam	(Optional) Displays quality of service (QoS) parameter information for this particular group and member.

service-flow *sfid* **classifier**	(Optional) Displays service flow and classifier information for the specified service flow ID (SFID) for this particular group and member.
sid	(Optional) Displays service ID (SID) information for this particular group and member.

Command Modes

User EXEC, Privileged EXEC (#)

Command History

Release	Modification
12.1(3a)EC	This command was introduced.
12.2(4)BC1	The **detail** option was added.
12.2(8)BC2	The current time to resync and current wait to restore values were added to the display for the **brief** option.
12.2(11)BC1	Support was added for the Cisco uBR-RFSW N+1 (1:n) RF Switch with the Cisco uBR7246VXR router and Cisco uBR-MC16C, Cisco uBR-MC16S, and Cisco uBR-MC28C cards.
12.2(15)BC2	The output of the **show hccp detail** command was changed to show separate lists of the critical and non-critical CLI commands that are being synchronized for each Working and Protect interface and subinterface.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB and the output of the **show hccp detail** command was changed to show CMTS interface pre-critical config information.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following shows an example of the show hccp command to display QoS parameters for a particular member of a particular group:

```
Router# show hccp 1 1 qosparam

Cable5/0/0:
Index Name              Dir   Sched  Prio MaxSusRate  MaxBurst    MinRsvRate
1                       US    BE     0    64000       0           0
2                       DS    BE     0    1000000     0           0
3                       US    BE     7    1024000     1522        0
4                       DS    BE     0    10000000    1522        0
Router#
```

In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

The following example shows the service flow information for a cable interface line card on group 2 member 50:

```
Router# show hccp 2 50 service-flow
Cable8/0/1[grp:2, mem:50, P]:[HCCP inter-db: service flow]
Sfid  Sid   Mac Address     QoS Param Index   Type    Dir    Curr
                          Prov  Adm  Act                  State
8     N/A   001a.c3ff.d198  6     6    6      P       DS     act
7     1     001a.c3ff.d198  4     4    4      P       US     act
16    9     001a.c3ff.d198  5     5    5      S(s)    US     act
10    N/A   001a.c3ff.d59e  6     6    6      P       DS     act
9     2     001a.c3ff.d59e  4     4    4      P       US     act
15    6     001a.c3ff.d59e  5     5    5      S(s)    US     act
14    N/A   001a.c3ff.d6a8  6     6    6      P       DS     act
13    4     001a.c3ff.d6a8  4     4    4      P       US     act
17    12    001a.c3ff.d6a8  5     5    5      S(s)    US     act
19    N/A   0019.474a.d592  6     6    6      P       DS     act
18    14    0019.474a.d592  4     4    4      P       US     act
20    15    0019.474a.d592  5     5    5      S(s)    US     act
12    N/A   001e.6bfa.f5bc  6     6    6      P       DS     act
11    3     001e.6bfa.f5bc  4     4    4      P       US     act
21    17    001e.6bfa.f5bc  5     5    5      S(s)    US     act
```

The following example shows the cable modem information for a cable interface line card on group 2 member 50:

```
Router# show hccp 2 50 modem
Cable8/0/1[grp:2, mem:50, P]:[HCCP inter-db: CM]
MAC Address    IP Address      MAC         Prim Timing Num  BPI   Prio
                               State         Sid  Offset CPEs Enbld
001a.c3ff.d198 10.10.2.1       w-online      1    1978   0    no    Data(0)
001a.c3ff.d59e 10.10.2.2       w-online      2    1978   0    no    Data(0)
001a.c3ff.d6a8 10.10.2.3       w-online      4    1978   0    no    Data(5)
0019.474a.d592 10.10.2.4       w-online      14   1576   0    no    Data(1)
001e.6bfa.f5bc 10.10.2.5       w-online      3    1976   0    no    Data(5)
```

Related Commands

Command	Description
show hccp	Displays HCCP group information for a specific cable interface.
show hccp interface	Displays group information for a specific cable interface on which one or more groups and authentication modes have been configured.

show hccp interface

To display information on all Hot Standby Connection-to-Connection Protocol (HCCP) groups associated with a specific cable interface, use the **show hccp interface** command in user EXEC or privileged EXEC mode.

show hccp interface *interface* [**brief** | **detail**]

Syntax Description

interface	The cable interface for which you want to display HCCP group information. The information presented includes HCCP groups, configuration types, member numbers, status, authentication algorithms, authentication key chains, HCCP timers, Ip address assignments, and downstream switch designations for the specified cable interface.
brief	(Option) Displays a brief summary of the HCCP groups, configuration types, member numbers, and status for a specified cable interface.
detail	(Option) Displays a detailed summary of the HCCP groups, configuration types, member numbers, and status for a specified cable interface.

Command Modes

User EXEC, Privileged EXEC

Command History

Release	Modification
12.1(3a)EC	This command was introduced.
12.2(4)BC1	The **detail** option was added.
12.2(8)BC2	The current time to resync and current wait to restore was added to the **brief** option.
12.2(11)BC1	Support was added for the N+1 (1:n) RF Switch with the Cisco uBR7246VXR router and Cisco uBR-MC16C, Cisco uBR-MC16S, and Cisco uBR-MC28C cards.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following examples are from the **show hccp interface cable 4/0** and **show hccp interface cable 4/0 brief** commands:

```
Router# show hccp interface cable 4/0

   Cable4/0 - Group 1 Protect, enabled, blocking
   authentication md5, key-chain "cisco1"
   hello time 2000 msec, hold time 6000 msec
   Member 1 standby
   ip addr: working 10.20.111.11, protect 10.20.111.10
   downstream wavecom (10.1.11.3/1, 10.1.11.3/2), upstream none
Router# show hccp interface cable 4/0 brief

   Interface Config    Grp Mbr Status
   Ca4/0     Protect   1   1   standby
Router#
```

In Cisco IOS Release 12.2(8)BC2 and later 12.2 BC releases, the **brief** option also shows the amount of time left before the next resynchronization and the time left before a restore:

```
Router# show hccp interface cable 4/0 brief

   Interface Config    Grp Mbr Status          WaitToResync    WaitToRestore
   Ca4/0     Protect   1   1   standby         00:00:50.892    00:01:50.892
Router#
```

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
show hccp	Displays information for all cable interfaces on which one or more HCCP groups and authentication modes have been configured.

show hccp linecard

To display information about groups associated with cable interfaces, use the **show hccp linecard** command in user EXEC or privileged EXEC mode.

show hccp linecard {**brief** | **channel-switch** | **detail** | **fsm** | **nullfsm** | **subslot** *slot/subslot* {**channel-switch** | **detail** | **modem summary total**}}

Syntax Description

brief	(Optional) Displays a brief summary of HCCP for each line card.
channel-switch	(Optional) Displays channel-switch information for each line card.
detail	(Optional) Displays a detailed summary of HCCP for each line card.
fsm	(Optional) Displays the complete state transition flow. Each line card member in an HCCP group is controlled by a state machine, which controls the startup and switchover flow.
nullfsm	(Optional) Displays the HCCP members that received unused or nonmeaningful event. This is used only for debugging.
subslot *slot / subslot*	(Optional) Specifies the subslot for the line card.
channel-switch	(Optional) Displays line card-level channel switch summary.
detail	(Optional) Displays details of the line card-level HCCP.
modem summary total	(Optional) Displays modem information.

Command Default

None.

Command Modes

User EXEC, 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.

Usage Guidelines

The **show hccp linecard subslot** *slot/subslot* **modem summary total** command is used to show the modem summary information in the peer Inter-database and to check if the modem has successfully synchronized with the standby.

Examples

This example shows the **brief** and **fsm** information for a cable interface line card:

```
Router# show hccp linecard brief
Card       Config    Mbr Role       State          WaitToResync    WaitToRestore
card 5/1   Protect   50  Standby    Standby Warm   never
card 5/0   Working   50  Active     Active Warm    never
```

```
Router# show hccp linecard fsm
Oct 26 2010 10:46:32 - Slot(5/0) Member(50): ( Active Sync  ) + < Staticsync Done  > --> (
 Active Warm  ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:46:32 - Slot(5/1) Member(50): ( Standby      ) + < Staticsync Done  > --> (
 Standby Warm ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:46:29 - Slot(5/0) Member(50): ( Active       ) + < Do Staticsync > --> (
Active Sync  ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:59 - Slot(5/1) Member(50): ( Standby      ) + < Data Plane Ready > --> (
 Standby      ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:59 - Slot(5/1) Member(50): ( Standby      ) + < Post Become Stdby> --> (
 Standby      ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:59 - Slot(5/0) Member(50): ( Active Crit  ) + < Data Plane Ready > --> (
 Active       ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:59 - Slot(5/1) Member(50): ( Standby Ready) + < Become Standby > --> (
Standby      ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:59 - Slot(5/1) Member(50): ( Standby Cold ) + < Prepare > --> ( Standby
Ready) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:57 - Slot(5/1) Member(50): ( Init         ) + < LC UP > --> ( Standby
Cold ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:57 - Slot(5/0) Member(50): ( Active Ready ) + < Become Active > --> (
Active Crit  ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:57 - Slot(5/0) Member(50): ( Active Cold  ) + < Prepare > --> ( Active
Ready ) : ( ACTIVE MD:0x7F )
Oct 26 2010 10:45:57 - Slot(5/0) Member(50): ( Init         ) + < LC UP > --> ( Active Cold
  ) : ( ACTIVE MD:0x7F )
```

Related Commands

Command	Description
show hccp	Displays HCCP group information for a specific cable interface.
show hccp interface	Displays group information for a specific cable interface on which one or more groups and authentication modes have been configured.

show hdd-devices summary

To view a summary of all the system HDD devices(SSD), use **show usb-devices summary** command in privileged Exec mode.

show hdd-devices summary

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged Exec (#)

Command History

Release	Modification
Cisco IOS XE Dublin 17.12.1	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows how to display a summary of all the system HDD devices(SSD) on an active SUP. An Active SUP shows both active SSDs and standby SSDs.

```
Router# show hdd-devices summary
Load for five secs: 3%/0%; one minute: 4%; five minutes: 4%
Time source is NTP, 21:37:16.729 EDT Mon Jun 26 2023

[Active Harddisk] Model:Micron P400m-MTFDDAK100MAN SN:MSA192505JN
[Standby Harddisk] Model:Micron_M500DC_MTFDDAK120MBB SN:MSA211203X3
```

Examples

The following example shows how to display a summary of all the system HDD devices(SSD) on a Standby SUP. A Standby SUP shows only local SSDs.

```
Router# show hdd-devices summary
Load for five secs: 3%/0%; one minute: 4%; five minutes: 4%
Time source is NTP, 22:38:16.729 EDT Mon Jun 26 2023

[Local Harddisk] Model:Micron_M500DC_MTFDDAK120MBB SN:MSA211203X3
```

Related Commands

Command	Description
show usb-devices summary	Displays a summary of all the system USB devices (eUSB Flash)

show hw-module bay

To display information about the wideband channels or RF channels on a Wideband SPA, use the **show hw-module bay** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show hw-module bay {*slot*/*subslot*/*bay* | **all**} *show-type* {**wideband-channel** | **rf-channel** | **modular-channel**} [*device-index*] [**verbose**]

Cisco IOS Release 12.2(33)SCB
show hw-module bay {*slot*/*bay*/*port* | **all**} *show-type* {**wideband-channel** | **rf-channel** | **modular-channel**} [*device-index*] [**verbose**]

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
all	Specifies that the displayed information will be for both bay 1 and bay 0 if Wideband SPAs are installed in both bays.
show-type	The type of information to display. Valid values are **association**, **config**, **counters**, and **mapping**. See the Usage Guidelines for more information on show types.
wideband-channel	Displays information for the wideband channel indicated by *device-index*.
rf-channel	Displays information for the RF channel indicated by *device-index*.
modular-channel	Displays information for the narrowband channel indicated by *device-index*.
device-index	(Optional) The wideband channel number or RF channel number or Baseline Privacy Interface (BPI) index number. • When the **wideband-channel** keyword is specified, valid values for *device-index* are 0 to 11. • When the **rf-channel** keyword is specified, valid values for *device-index* are 0 to 23 depending on how the Wideband SPA is configured with the **annex modulation** command.
verbose	(Optional) Used with the **config** keyword. Shows more configuration information on the wideband channel or RF channel.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.3(23)BC	The **modular-channel** keyword was added. MC BW % column was added to the rf-channel keyword output.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a SPA from *slot/subslot/bay* to *slot/bay/port*.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The type of information that **show hw-module** bay displays is determined by the value of the *show-type* argument. The table below describes the information shown for each *show-type*. In the table, the Allowed with Keyword column indicates whether the *show-type* can be used with the keyword wideband-channel, rf-channel or modular-channel.

If *device-index* is omitted from **show hw-module** bay, the command displays information for all wideband channels, RF channels, or BPI+ indexes depending on the keywords used.

The **association** *show-type* displays wideband-to-narrowband (traditional DOCSIS) channel association information only when the cable interface line card and Wideband SPA are physically present in the CMTS.

Note If you do not specify the **verbose** keyword, less detailed configuration information is displayed.

- Changes in Cisco IOS release 12.3(23)BC are not supported in Cisco IOS release 12.2(33)SCA.
- Effective with Cisco IOS Release 12.2(33)SCB, the **show hw-module** bay command displays an exclamation point (!) for the RF channels that are suspended by the Cisco CMTS. For more information on the suspended RF channels, see Wideband Modem Resiliency .

Table 12: Values for show-type

show-type	Allowed with Keyword	Description
association	**wideband-channel**	Displays wideband-to-narrowband (traditional DOCSIS) channel association information. The association of a wideband channel to a traditional DOCSIS downstream channel is made when a primary downstream channel for the fiber node is configured with the **downstream** command.
config	**wideband-channel** or **rf-channel**	Displays wideband channel or RF channel configuration information depending on the keyword specified.
counters	**wideband-channel** or **rf-channel**	Displays wideband channel or RF channel statistics depending on the keyword specified.

show-type	Allowed with Keyword	Description
mapping	**wideband-channel**, **rf-channel,** or **modular-channel**	Displays mapping of wideband channels to RF channels depending on the keyword specified.

For additional information, refer to the following documents on Cisco.com:

- *Cisco Cable Wideband Solution Design and Implementation Guide* , Release 1.0
- *Cisco uBR10012 Universal Broadband Router SIP and SPA Software Configuration Guide*
- *Cisco uBR10012 Universal Broadband Router SIP and SPA Hardware Installation Guide*

Examples

The following examples display sample output for the **show hw-module bay** command for wideband channel 0 on the Wideband SPA located in slot 1, subslot 0, bay 0:

```
Router# show hw-module bay 1/0/0 counters wideband-channel 0
SPA      WB channel   Tx packets              Tx octets
1/0/0    0            29069                   4032392
Router# show hw-module bay 1/0/0 mapping wideband-channel 0
SPA      WB       RF         BW %
         channel  channel
1/0/0    0        0          100
                  1          100
                  2          100
                  3          100
                  4          100
                  5          100
                  6          100
Router# show hw-module bay
 1/0/0 association wideband-channel 0
WB                      BG   Bundle  NB          NB chan  Reserved  Total
channel                 ID   num     channel     ID       CIR       CIR
Wideband-Cable1/0/0:0   1    1       Cable6/0/0  251      0         42064200
```

The following example shows sample output for the **show hw-module bay** command in Cisco IOS Release 12.3(21)BC:

```
Router# show hw-module bay 1/0/0 association wideband-channel 0
WB                      BG   Bundle  NB          NB chan  Reserved Avail
channel                 ID   num     channel     ID       CIR       CIR
Wideband-Cable1/0/0:0   1    1       Cable6/0/0  251      0           0
```

The following example shows sample output for the **show hw-module bay** command in Cisco IOS Release 12.3(23)BC:

```
Router# show hw-module bay 1/0/0 association wideband-channel 0
WB                      BG   Bundle  NB          NB chan  Reserved Total
channel                 ID   num     channel     ID       CIR       CIR
Wideband-Cable1/0/0:0   1    140     Cable6/0/0  30       0         42064200
Router# show hw-module bay 3/0/0 mapping rf-channel
SPA      RF         MC          WB          WB
            channel  BW %    channel    BW %
3/0/0     0            2            0              90
                                     1              2
3/0/0     1            2            0              90
                                     1              2
3/0/0     3            0            3              50
3/0/0     4            0            3              100
```

In the preceding example, the following information is displayed for each wideband channel when the **association** keyword is specified.

- WB channel—Wideband-cable interface (wideband channel).
- BG ID— Bonding Group ID for the wideband channel.
- MC BW %—Percentage of rf-channel bandwidth assigned to the corresponding modular-cable interface.
- Bundle num—The number of the virtual bundle interface in which the wideband channel is a member.
- NB channel—The slot/subslot/port of the primary downstream channel (narrowband channel or traditional DOCSIS channel) for the wideband channel.
- NB channel ID—Channel ID for the primary downstream channel.
- Reserved CIR—The reserved committed information rate (CIR).
- Total CIR—The total CIR that is available.

Note For Cisco IOS Release 12.3(21)BC, the descriptions for the Reserved CIR and Available CIR fields are as follows: Reserved CIR—The reserved committed information rate (CIR). Because QoS is currently best effort for wideband traffic, reserved CIR is always 0. Avail CIR—The part of the CIR that is available. Because QoS is currently best effort for wideband traffic, available CIR is always 0.

The following example shows a suspended RF channel in the output of the **show hw-module bay** command in Cisco IOS Release 12.2(33)SCB:

```
Router# show hw-module bay 1/0/0 mapping rf-channel
SPA      RF       MC         MC Rem.    WB         WB         WB Rem.
         channel  BW %       Ratio      channel    BW %       Ratio
1/0/0    0        20         1          3           10        1       4           10
  1
1/0/0    1        20         1          3           10        1       4           10
  1
1/0/0    2        20         1          3           10        1       4           10
  1
1/0/0    3        20         1          3           10        1       4           10
  1
1/0/0    4!       20         1          3           10        1
1/0/0    5        20         1          3           10        1
1/0/0    6        20         1          3           10        1
1/0/0    7        20         1          3           10        1
```

The following examples display **show hw-module bay** command output for wideband channels (0 to 11) on the Wideband SPA located in slot 1, subslot 0, bay 0:

```
Router# show hw-module bay 1/0/0 counters wideband-channel

SPA      WB channel   Tx packets        Tx octets
1/0/0    0            395               31590
1/0/0    1            0                 0
1/0/0    2            0                 0
1/0/0    3            0                 0
1/0/0    4            0                 0
1/0/0    5            0                 0
1/0/0    6            0                 0
1/0/0    7            0                 0
```

```
1/0/0    8            0                0
1/0/0    9            0                0
1/0/0    10           0                0
1/0/0    11           0                0
Router# show hw-module bay 1/0/0 config wideband-channel
WB                      BG    Bundle  WB Host       Primary
channel                 ID    num     Slot/Subslot  BG
Wideband-Cable1/0/0:0   24    123     5/0           Yes
Wideband-Cable1/0/0:1   25    123     5/0           Yes
Wideband-Cable1/0/0:2   26    123     5/0           Yes
Wideband-Cable1/0/0:3   27    123     5/0           Yes
Wideband-Cable1/0/0:4   28    123     5/0           Yes
Wideband-Cable1/0/0:5   29    123     5/0           Yes
Wideband-Cable1/0/0:6   30    123     5/0           Yes
Wideband-Cable1/0/0:7   31    123     5/0           Yes
Wideband-Cable1/0/0:8   32    0       5/0           Yes
Wideband-Cable1/0/0:9   33    0       5/0           Yes
Wideband-Cable1/0/0:10  34    0       5/0           Yes
```

In the preceding example, the following information is displayed for each wideband channel when the **config** keyword is specified.

- WB Channel—Specifies the wideband channel slot, sub-slot, bay and wideband channel number.
- BG ID—Bonding Group ID.
- Bundle num—The number of the virtual bundle interface to which the wideband channel is a member.
- WB Host Slot/Subslot—The cable interface line card that has been configured for Wideband protocol operations. See the command **modular-host**.
- Primary BG—Yes indicates that the wideband channel is a primary bonding group (primary wideband channel).

The following examples display **show hw-module bay** command output for RF channel 0 on the Wideband SPA located in slot 1, subslot 0, bay 0:

```
Router# show hw-module bay 1/0/0 config rf-channel 0
SPA    RF       Freq       Mod     Annex  IP Address       MAC Address     UDP
       channel                                                            port
1/0/0  0        699000000  64qam   B      192.168.200.30   0011.920e.a9ff  49152
```

In the preceding output, these fields provide information on the edge QAM device that is associated with the RF channel:

- IP Address—The IP address of the edge QAM device.
- MAC address—The MAC address of the next-hop device or edge QAM device.
- UDP port—The UDP port number for the edge QAM device that will be used for this RF channel.

```
Router# show hw-module bay 1/0/0 config rf-channel 0 verbose

SPA                                 : Wideband-Cable 1/0/0
RF channel number                   : 0
Frequency                           : 699000000 Hz
Modulation                          : 64qam
Annex                               : B
IP address of next hop              : 192.168.200.30
MAC address of EQAM                 : 000c.3033.2cbf
UDP port number                     : 49152
EQAM headroom                       : 0
```

The following example displays the **show hw-module bay counters rf-channel** command output for the RF channels of a Cisco Wideband SPA. Activity is seen on channels 1,2, and 3 as the MPEG Mbps field shows they are each transmitting at about 29 Mbps. Channel 1 is primary-capable as it is transmitting SYNC packets.

```
Router# show hw-module bay 3/3/0 counters rf-channel
SPA     RF    MPEG                  MPEG       MPEG    Sync          MAP
        Chan  Packets Tx            bps        Mbps    Packets Tx    Packets Tx
3/3/0   0     0                     0          0.000   0             0
3/3/0   1     4612111               29755888   29.755  32042         151486
3/3/0   2     4536949               29720243   29.720  0             154
3/3/0   3     4542709               29688759   29.688  0             154
3/3/0   4     0                     0          0.000   0             0
3/3/0   5     0                     0          0.000   0             0
3/3/0   6     0                     0          0.000   0             0
3/3/0   7     0                     0          0.000   0             0
3/3/0   8     0                     0          0.000   0             0
3/3/0   9     0                     0          0.000   0             0
3/3/0   10    0                     0          0.000   0             0
3/3/0   11    0                     0          0.000   0             0
3/3/0   12    0                     0          0.000   0             0
3/3/0   13    0                     0          0.000   0             0
3/3/0   14    0                     0          0.000   0             0
3/3/0   15    0                     0          0.000   0             0
3/3/0   16    0                     0          0.000   0             0
3/3/0   17    0                     0          0.000   0             0
3/3/0   18    0                     0          0.000   0             0
3/3/0   19    0                     0          0.000   0             0
3/3/0   20    0                     0          0.000   0             0
3/3/0   21    0                     0          0.000   0             0
3/3/0   22    0                     0          0.000   0             0
3/3/0   23    0                     0          0.000   0             0
Router# show hw-module bay 1/0/0 mapping rf-channel 0
SPA      RF       WB         BW %
         channel  channel
1/0/0    0        0          100
```

The following example displays **show hw-module bay** command output for RF channels on the Wideband SPA located at slot 1, subslot 0, bay 0. In the example, the output is for only RF channels 0 to 8 because only those RF channels have been associated with a wideband channel. The BW % column is the percent of the RF channel bandwidth that is assigned to the wideband channel with the **cable rf-channel** command.

```
Router# show hw-module bay 1/0/0 mapping rf-channel

SPA      RF       WB         BW %
         channel  channel
1/0/0    0        0          100
1/0/0    1        0          100
1/0/0    2        0          100
1/0/0    3        0          100
1/0/0    4        0          100
1/0/0    5        0          100
1/0/0    6        0          100
1/0/0    7        2          100
1/0/0    8        1          100
```

Related Commands

Command	Description
show hw-module bay oir	Displays the operational status of a Wideband SPA.

show hw-module bay oir

To display the operational status of a SPA, use the **show hw-module bay oir** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show hw-module bay {*slot*/*subslot*/*bay* | **all**} **oir** [**internal**]

Cisco IOS Release 12.2(33)SCB
show hw-module bay {*slot*/*bay*/*port* | **all**} **oir** [**internal**]

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for a SIP.
subslot	The subslot where the Wideband SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in the SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
all	Displays OIR status for all Wideband SPAs in the system.
internal	(Optional) Displays detailed diagnostic information. This option is intended for internal diagnostic use with Cisco technical support personnel.

Command Default

If you do not specify the **internal** keyword, detailed diagnostic information is not displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(33)SCB	This command was modified to change the addressing format for a SPA from *slot/subslot/bay* to *slot/bay/port*.
IOS-XE 3.15.0S	This command was replaced by the **show hw-module subslot oir** command on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use the **show hw-module bay oir** command to obtain operational status information about a Wideband SPA. To display information for a specific SPA, specify *slot/subslot/bay* for the SPA. To display information for all SPAs in the router, use the **all** keyword.

The optional **internal** keyword displays detailed diagnostic information that is recommended only for use with Cisco technical support personnel.

Table 0-1 describes the possible values for the Operational Status field in the output.

Table 13: Operational Status Field Descriptions

Operational Status	Description
admin down	SPA is administratively disabled by the **hw-module bay shutdown** global configuration command.
booting	SPA is initializing.
missing	SPA is not present in the SIP bay.
ok	SPA is operational.
out of service (*reason*)	The SPA is out of service for one of the following reasons: **Note** The following reasons are not applicable to every SPA and can be platform-specific. • Analyze failed—Failed to create a SPA data structure, most likely due to a memory allocation problem. • Authentication failed—SPA has failed hardware validation. • Data structure create error—Failed to create a SPA data structure, most likely due to a memory allocation problem. • Event corrupt—A SPA online insertion and removal (OIR) event has been corrupted. This could be caused by a corrupted message between the SIP and the Route Processor (RP) or some other software or hardware problem. • Event sequence error—A SPA OIR event was received out of sequence. This could be caused by a corrupted message between the SIP and the Route Processor (RP) or some other software or hardware problem. • Fail code not set—Failure code could not be read from a SPA OIR event message. This could be caused by a corrupted message between the SIP and the RP or some other software or hardware problem. • Failed too many times—SPA is disabled because it has failed more than the allowable limit on the platform. • FPD upgrade failed—A field-programmable device (FPD), such as the Field-Programmable Gate Array (FPGA), failed to automatically upgrade. • H/W signal deasserted—The SPA_OK or PWR_OK hardware signal indicating that the SPA is accessible is no longer asserted. • Heartbeat failed—Occurs when intelligent SPAs encounter heartbeat failures. • Incompatible FPD—An FPGA version mismatch with the Cisco IOS software has been detected for the SPA.

Operational Status	Description
	• Init timeout—Time limit has been reached during initialization of a SPA. • Read SPA type failed—A read from the hardware for the SPA type failed. • Reload request—SPA reload is in progress from the **hw-module subslot reload** command. • SPA h/w error—The SPA software driver has detected a hardware error. • SPA ready timeout—A timeout occurred on the RP while waiting for the SPA to become operational. • SPA type mismatch—Occurs when you have pre-configured a SPA of one type, but have inserted a SPA of a different type. • SPA unrecognized—SPA is not supported by the Cisco IOS software release. • Start failed—Failed to start interfaces on SPA. • Unexpected inserted event—The SPA OIR software has received a SPA insertion event when the OIR software considered the SPA already present. • Wait h/w ok timeout—A timeout occurred while waiting for the SPA_OK and PWR_OK hardware signals to be asserted. • Wait start timeout—A timeout occurred on the SIP while waiting for permission from the RP to bring up the SPA.
stopped	SPA has been gracefully deactivated using the **hw-module subslot** stop privileged EXEC command.

Examples

The following example shows the operational status of a Wideband SPA:

```
Router# show hw-module bay 1/0/0 oir
Module        Model                Operational Status
------------- -------------------- ------------------------
bay 1/0/0     SPA-24XDS-SFP        ok
```

The following example shows the operational status of a Wideband SPA when the **internal** keyword is specified:

```
Router# show hw-module bay 1/0/0 oir  internal

WARNING: This command is not intended for production use
and should only be used under the supervision of
Cisco Systems technical support personnel.
sm(spa_oir_tsm bay 1/0/0 TSM), running yes, state ready
Admin Status: admin enabled,  Operational Status: ok(1)
Last reset Reason: audit failure
TSM Context:
    configured_spa_type 0x4AE
    soft remove fail code 0x0(none)
    last_fail_code 0x0(none)
    fail_count 0
    timed_fail_count 0, failed_spa_type 0x0
    recovery_action 0
    associated_fail_code 0x0(none)
    sequence numbers: next from tsm 1, last to tsm 1
    flags 0x0
Subslot:
    spa type 0x4AE, active spa type 0x4AE
```

```
    subslot flags 0x0, plugin flags 0x0
TSM Parameters:
    wait_psm_ready_timeout 180000 ms, init_timeout 120000 ms
    short_recovery_delay 5000 ms, long_recovery_delay 120000 ms
    ok_up_time 600000 ms, bad_fail_count 10
    fail_time_period 600000 ms, max_fail_count 5
    supports pre-configuration
sm(spa_oir_audit bay 1/0/1), running yes, state sleep
SPA OIR state machine audit statistics
               In-sync poll-count late-resp resp-fail restarts fail-count
bay 1/0/0           yes       2752         0         4        1          0
```

Related Commands

Command	Description
show hw-module bay	Displays information about the wideband channels or RF channels on a Wideband SPA.

show hw-module bay transceiver

To display information about the pluggable transceiver module, use the **show hw-module bay transceiver** command in privileged EXEC mode.

show hw-module bay *slot/subslot/* {*bayport*} **transceiver** *transceiver-port-number* [**idprom** | **status**]

Syntax Description

slot	Slot where a SIP or cable line card resides.
	• Cisco uBR7246VXR router—The valid range is from 3 to 6.
	• Cisco uBR7225VXR router—The valid value is 1 or 2.
	• Cisco uBR10012 router—The valid range for:
	  • Cable line card is from 5 to 8
	  • SIPs is 1 and 3

subslot	Subslot where a SIP or cable line card resides.
	• Cisco uBR10012 router—The valid value for:
	  • Cable line card is 0 or 1
	  • SPAs in a SIP, prior to Cisco IOS Release 12.2(33)SCB is 0 or 1. For Cisco IOS Release 12.2(33)SCB and later releases, the value of subslot is not specified.

bay	Bay in a SIP where a SPA is located. The valid values are 0 (upper bay) and 1 (lower bay).

port	Port number.
	• Cisco uBR7246VXR router and Cisco uBR7225VXR router—The valid value is 0 or 1.
	• Cisco uBR10012 router—The valid value for:
	  • Slots 1 and 3 is 0
	  • Slots 5 to 8 is from 0 to 4

transceiver	Specifies the pluggable transceiver module installed in the *slot* /*subslot* /*bay* .
transceiver-port-number	Transceiver-port-number of the transceiver. The valid value is 0 or 1.
idprom	Displays information for the transceiver identification programmable read only memory (idprom).
status	Displays information for the transceiver initialization status.

Command Default

None

Command Modes

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 Routers.

Examples

The following example is a sample output of the **show hw-module bay transceiver** command for wideband channel 0 on the Wideband SPA located in slot 1, subslot 0, bay 0:

```
Router# show hw-module bay 1/0/0 transceiver 0 idprom
IDPROM for transceiver SPA_TYPE_ETHER_1x10GE_V2:
  Description                              = XFP optics (type 6)
  Transceiver Type:                        = DWDM XFP 1530.33 (138)
  Product Identifier (PID)                 = DWDM-XFP-30.33
  Vendor Revision                          = 04
  Serial Number (SN)                       = FLJ1212G578
  Vendor Name                              = CISCO
  Vendor OUI (IEEE company ID)             = 00.00.0E (14)
  CLEI code                                = IP9IAAZCAA
  Cisco part number                        = 10-2370-01
  Device State                             = Enabled.
  Date code (yy/mm/dd)                     = 08/03/25
  Connector type                           = LC.
  Encoding                                 = 64B/66B
                                             SONET Scrambled
                                             NRZ
  Minimum bit rate                         = 9900 Mbits/s
  Maximum bit rate                         = 11100 Mbits/s
```

Related Commands

Command	Description
show hw-module bay	Displays information about the wideband channels or RF channels on a Wideband SPA.
show hw-module bay oir	Displays the operational status of a Wideband SPA.

show hw-module subslot oir

To display the operational status of a SPA, use the **show hw-module subslot oir** command in privileged EXEC mode.

show hw-module subslot {*slot*/*subslot* | **all**} **oir** [**internal**]

Syntax Description

slot	The slot where a SIP resides. On the Cisco cBR-8 router, slots 0 to 9 can be used for a SIP.
subslot	The subslot where the Wideband SIP resides. On the Cisco cBR-8 router, subslot 1 is always specified.
all	Displays OIR status for all Wideband SPAs in the system.
internal	(Optional) Displays detailed diagnostic information. This option is intended for internal diagnostic use with Cisco technical support personnel.

Command Default

If you do not specify the **internal** keyword, detailed diagnostic information is not displayed.

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 **show hw-module bay oir** command.

Usage Guidelines

Use the **show hw-module bay oir** command to obtain operational status information about a Wideband SPA. To display information for a specific SPA, specify *slot/subslot/bay* for the SPA. To display information for all SPAs in the router, use the **all** keyword.

The optional **internal** keyword displays detailed diagnostic information that is recommended only for use with Cisco technical support personnel.

Table 0-1 describes the possible values for the Operational Status field in the output.

Table 14: Operational Status Field Descriptions

Operational Status	Description
admin down	SPA is administratively disabled by the **hw-module bay shutdown** global configuration command.
booting	SPA is initializing.
missing	SPA is not present in the SIP bay.
ok	SPA is operational.

Operational Status	Description
out of service (*reason*)	The SPA is out of service for one of the following reasons: **Note** The following reasons are not applicable to every SPA and can be platform-specific. • Analyze failed—Failed to create a SPA data structure, most likely due to a memory allocation problem. • Authentication failed—SPA has failed hardware validation. • Data structure create error—Failed to create a SPA data structure, most likely due to a memory allocation problem. • Event corrupt—A SPA online insertion and removal (OIR) event has been corrupted. This could be caused by a corrupted message between the SIP and the Route Processor (RP) or some other software or hardware problem. • Event sequence error—A SPA OIR event was received out of sequence. This could be caused by a corrupted message between the SIP and the Route Processor (RP) or some other software or hardware problem. • Fail code not set—Failure code could not be read from a SPA OIR event message. This could be caused by a corrupted message between the SIP and the RP or some other software or hardware problem. • Failed too many times—SPA is disabled because it has failed more than the allowable limit on the platform. • FPD upgrade failed—A field-programmable device (FPD), such as the Field-Programmable Gate Array (FPGA), failed to automatically upgrade. • H/W signal deasserted—The SPA_OK or PWR_OK hardware signal indicating that the SPA is accessible is no longer asserted. • Heartbeat failed—Occurs when intelligent SPAs encounter heartbeat failures. • Incompatible FPD—An FPGA version mismatch with the Cisco IOS software has been detected for the SPA.
	• Init timeout—Time limit has been reached during initialization of a SPA. • Read SPA type failed—A read from the hardware for the SPA type failed. • Reload request—SPA reload is in progress from the **hw-module subslot reload** command. • SPA h/w error—The SPA software driver has detected a hardware error. • SPA ready timeout—A timeout occurred on the RP while waiting for the SPA to become operational. • SPA type mismatch—Occurs when you have pre-configured a SPA of one type, but have inserted a SPA of a different type. • SPA unrecognized—SPA is not supported by the Cisco IOS software release. • Start failed—Failed to start interfaces on SPA. • Unexpected inserted event—The SPA OIR software has received a SPA insertion event when the OIR software considered the SPA already present. • Wait h/w ok timeout—A timeout occurred while waiting for the SPA_OK and PWR_OK hardware signals to be asserted. • Wait start timeout—A timeout occurred on the SIP while waiting for permission from the RP to bring up the SPA.

Operational Status	Description
stopped	SPA has been gracefully deactivated using the **hw-module subslot** stop privileged EXEC command.

Examples

The following example shows the operational status of a Wideband SPA:

```
Router# show hw-module subslot 4/1 oir
Module        Model               Operational Status
------------- ------------------- ----------------------
subslot 4/1   CBR-SUP-8X10G-PIC    ok
```

The following example shows the operational status of a Wideband SPA when the **internal** keyword is specified:

```
Router# show hw-module subslot 4/1 oir internal

WARNING: This command is not intended for production use
and should only be used under the supervision of
Cisco Systems technical support personnel.

sm(spa_oir_tsm subslot 4/1 TSM), running yes, state ready
Admin Status: admin enabled, Operational Status: ok(1)
Last reset Reason: power up
TSM Context:
configured_spa_type 0xB82
soft remove fail code 0x0(none)
last_fail_code 0x0(none)
timed_fail_count 0, failed_spa_type 0x0
flags 0x10)
Subslot:
spa type 0xB82, active spa type 0xB82
subslot flags 0x0, plugin flags 0x0
TSM Parameters:
wait_psm_ready_timeout 360000 ms, init_timeout 300000 ms
remove_timeout 120000 ms, recovery_delay 5000 ms
fail_time_period 1200000 ms, max_fail_count 5
supports pre-configuration
```

Related Commands

Command	Description
show hw-module bay	Displays information about the wideband channels or RF channels on a Wideband SPA.

show ib statistic

To display the Ironbus statistics information on a SPA interface processor (SIP), use the **show ib statistic** command in privileged EXEC mode.

show ib statistic

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

The following is a sample output of the **show ib statistic** command:

```
Router# show ib statistic

1/0:
fib_pkts_rcvd 176652603       fib_byts_rcvd 14591185846
tib_pkts_sent 447859          tib_byts_sent 57548025
fib_throughput(DS) 1318481 b/s  tib_throughput(US) 7094 b/s
fib bandwidth usage(DS) < 1% tib bandwidth usage(US) < 1%
Current bandwidth threshold 90% message interval 2min
Default bandwidth threshold 90% message interval 2min

3/0:
fib_pkts_rcvd 44773           fib_byts_rcvd 4125566
tib_pkts_sent 3318            tib_byts_sent 388462
fib_throughput(DS) 0 b/s  tib_throughput(US) 0 b/s
fib bandwidth usage(DS) < 1% tib bandwidth usage(US) < 1%
Current bandwidth threshold 90% message interval 2min
Default bandwidth threshold 90% message interval 2min
```

Related Commands

Command	Description
cable sip ib-stats	Configures the Ironbus throughput warning message threshold.

show interface bundle

To display information about a specific virtual cable bundle, use the **show interface bundle** command in privileged EXEC mode.

Cisco uBR Series Router

show interface bundle *number* [**accounting** | **controller** | **counters protocol status** | **crb** | **description** | **fair-queue** | **intercept** | **irb** | **mac-accounting** | **monitor** *interval* | **mpls-exp** | **precedence** | **random-detect** | **stats** | **summary**]

Cisco cBR Series Router

show interface bundle *number* [**accounting** | **controller** | **counters protocol status** | **crb** | **description** | **intercept** | **irb** | **mac-accounting** | **monitor** *interval* | **mpls-exp** | **multicast-sessions** | **precedence** | **stats** | **summary**]

Syntax Description

number	Specific virtual bundle. The valid values range from 1 to 255.
accounting	Displays accounting information for the specified virtual interface bundle.
controller	Displays information about interface status, configuration, and controller status for the specified virtual interface bundle.
protocol	Displays information about interface protocol counters for the specified virtual interface bundle.
status	Displays information about the current status of enabled protocols.
crb	Displays the interface routing and bridging information.
description	Displays the specified virtual interface bundle description.
fair-queue	For uBR series routers, displays the interface bundle Weighted Fair Queueing (WFQ) information.
intercept	Displays the intercept streams information on the specified virtual interface bundle.
irb	Displays the interface bundle routing and bridging information.
mac-accounting	Displays the interface bundle MAC accounting information.
monitor *interval*	Monitors the specified interface bundle continuously at the specified interval.
mpls-exp	Displays the MPLS experimental accounting information on the specified interface bundle.
multicast-sessions	Displays the configuration parameters for multicast sessions on a specific bundle.
precedence	Displays the interface precedence accounting information.

random-detect	For uBR series routers, displays the interface Weighted Random Early Detection (WRED) information.
stats	Displays interface packets and octets, in and out, by the switching path.
summary	Displays the summary of activity on the specified interface bundle.

Command Default

No default behavior or values for this command.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCA	This command was introduced.
12.2(33)SCB	Support for the **multicast-sessions** keyword was removed. Running the command with the **multicast-sessions** keyword does not display an output.
12.2(33)SCE	The **multicast-sessions** keyword was removed.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **fair-queue** and **random-detect** keywords are removed.
IOS-XE 3.15.0S	The **multicast-sessions** keyword was removed. It is not available on the Cisco cBR Series Converged Broadband Routers .

Examples

The following is an example of the **show interface bundle** command for bundle 1:

```
Router# show interface bundle 1
Load for five secs: 2%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:03:45.483 EDT Wed Oct 12 2011
Bundle1 is up, line protocol is up
  Hardware is Cable Virtual-bundle interface, address is 0013.5f03.a4e3 (bia 000
0.0000.0000)
  Internet address is 5.65.0.1/16
  MTU 1500 bytes, BW 26000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:25, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Interface Bundle1 queueing strategy: fifo
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     1676 packets input, 283993 bytes, 0 no buffer
     Received 601 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     51 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     4163 packets output, 379783 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

The following is an example of the **show interface bundle accounting** command for bundle 1:

```
Router# show interface bundle 1 accounting
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:04:41.271 EDT Wed Oct 12 2011
Bundle1
               Protocol    Pkts In   Chars In   Pkts Out  Chars Out
                  Other       1678          0          0          0
                     IP       1406     270933       4209     384390
                    ARP        294      17640          0          0
```

The following is an example of the **show interface bundle controller** command for bundle 1:

```
Router# show interface bundle 1 controller
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:04:58.539 EDT Wed Oct 12 2011
Bundle1 is up, line protocol is up
  Hardware is Cable Virtual-bundle interface, address is 0013.5f03.a4e3 (bia 000
0.0000.0000)
  Internet address is 5.65.0.1/16
  MTU 1500 bytes, BW 26000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:17, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Interface Bundle1 queueing strategy: fifo
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 1 packets/sec
     1707 packets input, 289077 bytes, 0 no buffer
     Received 613 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     51 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     4224 packets output, 386306 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

The following is an example of the **show interface bundle counter protocol** command for bundle 1:

```
Router# show interface bundle 1 counters protocol status
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:05:30.695 EDT Wed Oct 12 2011
Protocols allocated:
 Bundle1: Other, IP, ARP
```

The following is an example of the **show interface bundle crb** command for bundle 1:

```
Router# show interface bundle 1 crb
Load for five secs: 2%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:05:57.267 EDT Wed Oct 12 2011
Bundle1
 Routed protocols on Bundle1:
  ip
```

The following is an example of the **show interface bundle description** command for bundle 1:

```
Router# show interface bundle 1 description
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:06:22.243 EDT Wed Oct 12 2011
```

```
Interface                      Status         Protocol Description
Bu1                            up             up
```

The following is an example of the **show interface bundle intercept** command for bundle 1:

```
Router# show interface bundle 1 intercept
Load for five secs: 2%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:06:56.763 EDT Wed Oct 12 2011
No interception active
```

The following is an example of the **show interface bundle multicast-sessions** command for bundle 1:

```
Router# show interface bundle 1 multicast-sessions
Multicast Sessions on Bundle1
 Group            Interface    GC  SAID SFID  GQC GEn RefCount GC-Interface State
 224.1.1.45       Bundle1.1    1   8193  ---   1   5   1        Bundle1     ACTIVE
 224.1.1.46       Bundle1.1    1   8193  ---   1   5   1        Bundle1     ACTIVE
 224.1.1.47       Bundle1.1    1   8193  ---   1   5   1        Bundle1     ACTIVE
Aggregate Multicast Sessions on Bundle1
 Aggregate Sessions for SAID 8193 GQC 1 CurrSess 3
 Group            Interface    GC  SAID SFID AggGQC GEn RefCount GC-Interface
 224.1.1.45       Bundle1.1    1   8193  ---   1      5   1        Bundle1
 224.1.1.46       Bundle1.1    1   8193  ---   1      5   1        Bundle1
 224.1.1.47       Bundle1.1    1   8193  ---   1      5   1        Bundle1
```

The following is an example of the **show interface bundle stats** command for bundle 1:

```
Router# show interface bundle 1 stats
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:10:18.775 EDT Wed Oct 12 2011
Bundle1
          Switching path    Pkts In   Chars In   Pkts Out  Chars Out
               Processor        661     179549          0          0
            Route cache       1175     130728       4512     414497
                  Total       1836     310277       4512     414497
```

The following is an example of the **show interface bundle summary** command for bundle 1:

```
Router# show interface bundle 1 summary
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:10:28.167 EDT Wed Oct 12 2011
 *: interface is up
 IHQ: pkts in input hold queue     IQD: pkts dropped from input queue
 OHQ: pkts in output hold queue    OQD: pkts dropped from output queue
 RXBS: rx rate (bits/sec)          RXPS: rx rate (pkts/sec)
 TXBS: tx rate (bits/sec)          TXPS: tx rate (pkts/sec)
 TRTL: throttle count
  Interface    IHQ     IQD     OHQ     OQD     RXBS    RXPS   TXBS   TXPS   TRTL
------------------------------------------------------------------------------
  *Bundle1     0         0       0       0        0       0      0      0      0
Router#
```

Related Commands

Command	Description
show interface cable	Displays configuration and status information for the cable interface.
show interface cable modem	Displays information about cable modems and associated customer premises equipment (CPE) devices connected to a particular cable interface.

show interface cable

To display the current configuration and status of a cable interface, use the show interface cable command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} [*options*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} [*options*]

Cisco cBR Series Converged Broadband Router
show interface cable *slot*/*subslot*/*cable-interface-index* [*options*]

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.

options	Cable-specific options are documented in their own command reference pages: • **show interface cable downstream** • **show interface cable intercept** • **show interface cable mac-scheduler** • **show interface cable monitor** • **show interface cable qos paramset** • **show interface cable service-flow** • **show interface cable sid** • **show interface cable signal-quality** • **show interface cable upstream** • **show interface cable** *slot/subslot/port* **mac-scheduler uschan-number-in-mac-domain** A number of non-cable-specific options are also supported (but not all are meaningful for cable interfaces): **accounting**—Displays the number of packets of each protocol type that was sent through the interface. **crb**—Displays routing and bridging information.**description**—Displays the description entered for the interface.**fair-queue**—Displays distributed weighted fair queuing (DWFQ) statistics. **irb**—Displays integrated routing bridge information. **mac-accounting**—Displays Ethernet MAC accounting information.**random-detect**—Displays weighted random early detection (WRED) information.**rate-limit**—Displays rate-limit information.**shape**—Displays Traffic Shape information.**stats**—Displays numbers of packets that were switched.

Note For information on the non-cable specific options, see the Cisco IOS Release 12.2 documentation on Cisco.com and the Customer Documentation CD-ROM.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 XA	This command was introduced.
12.0(3)T	This command was ported to the mainline release.
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.

Release	Modification
IOS XE 16.7.1	This command option was implemented on the Cisco cBR Series Converged Broadband Router: **show interface cable** *slot/subslot/port* **mac-scheduler uschan-number-in-mac-domain**

Examples

This example shows the output for the **show interface cable** command:

```
Router# show interface cable 1/0/0
Cable1/0 is up, line protocol is up
  Hardware is BCM3210 ASIC, address is 000a.13e8.1ca8 (bia 000a.13e8.1a60)
  Internet address is 10.1.1.3/24
  MTU 1500 bytes, BW 27000 Kbit, DLY 1000 usec, rely 255/255, load 1/255
  Encapsulation, loopback not set, keepalive not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 4d07h, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 1834000 bits/sec, 2385 packets/sec
  5 minute output rate 1982000 bits/sec, 2431 packets/sec
      24461542 packets input, 2348214388 bytes, 0 no buffer
      Received 1979 broadcasts, 0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
      24854257 packets output, 2536222931 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 output buffer failures, 0 output buffers swapped out
```

Table 15: show interface cable Field Descriptions

Field	Description
Cable slot/cable-interface-index is up/...administratively down	Indicates whether the interface hardware is currently active or taken down by the administrator.
line protocol is up/...administratively down	Indicates whether the software processes that handle the line protocol believe the interface is usable or if it has been taken down by the administrator.
hardware	Hardware type and address.
Internet address	Internet address followed by subnet mask.
MTU	Maximum transmission unit (MTU) of the interface.
BW	Bandwidth of the interface in kilobits per second.
DLY	Delay of the interface in microseconds.
rely	Reliability of the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is 100 percent reliability.)
load	Load on the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is complete saturation.)

Field	Description
Encapsulation	Encapsulation method assigned to this interface.
ARP type	Type of Address Resolution Protocol (ARP) and timeout value assigned.
Last input	Number of hours, minutes, and seconds since the last packet was successfully received by an interface.
output	Number of hours, minutes, and seconds since the last packet was successfully sent by an interface.
Last clearing of "show interface" counters	Time at which the counters that measure cumulative statistics (such as number of bytes sent and received) were last reset to zero.
Queueing strategy	Displays the type of queueing configured for this interface. In the following example output, the type of queueing configured is first-in first-out (FIFO).
Output queue	Number of packets in the output queue. The format of this number is A/B, where A indicates the number of packets in the queue, and B indicates the maximum number of packets allowed in the queue.
drops	Indicates the number of packets dropped because of a full queue.
input queue/drops	Number of packets in the input queue. The format of this number is A/B, where A indicates the number of packets in the queue, and B indicates the maximum number of packets allowed in the queue.
drops	Indicates the number of packets dropped because of a full queue.
Five minute input rate Five minute output rate	Average number of bits and packets sent per second in the last five minutes. The five-minute interval is the default time period for statistics collection and can be changed for each individual cable interface using the **load-interval** command in interface configuration mode.
Note These statistics are calculated using a decayed averaging method, where only the average is stored over the interval period, not the individual samples. Every time a sample average is taken, a percentage of the sample and a percentage of the average are added together to create the new average. If traffic stops for a time period, these statistics do not immediately go to zero but drop with a decay rate of about 70 percent per time period. For example, if the interface is passing 1,000 packets per second (pps) before traffic stops, the **show interface cable** command shows the rate being 300 pps at the end of the first time interval. The rate then drops to 90 pps at the end of the second time interval, and so forth.	
packets input	Total number of error-free packets received by the system.
bytes input	Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.

Field	Description
Note When using bundled cable interfaces on Cisco uBR7200 series routers, the input packet counters for the primary interface also include the packet counts for subordinate interfaces, except when using a Broadband Processing Engine (BPE) cable interface (such as the Cisco uBR-MC16U/X and Cisco uBR-MC28U/X). On BPE cards and on the Cisco uBR10012 router, the input counters for primary and subordinate cable interfaces are not combined.	
no buffer	Number of received packets discarded because there was no buffer space in the main system.
Received broadcast	Total number of broadcast or multicast packets received by the interface.
runts	Number of packets that are discarded because they are smaller than the medium's minimum packet size.
giants	Number of packets that are discarded because they are bigger than the standard Ethernet Maximum Transmission Unit (MTU) size. For Ethernet packets, RFC 1757 defines giants as "the total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed." **Note** In addition, to account for the different Ethernet and other packet encapsulations on the network, packets are considered giants when they exceed the configured MTU size plus 114 bytes.
input errors	Total number of errors received on the interface. This count includes runts and giants, which are shown above, as well as other errors, such as no buffers, and CRC, frame, overrun, and ignored counts. This count can also include DOCSIS protocol errors such as an invalid SID in the DOCSIS frame, a bad extended header length, corrupted concatenated packets, and invalid bandwidth requests.
CRC	Indicates the number of times the cyclic redundancy checksum (CRC) generated by the originating LAN station or far-end device does not match the checksum calculated from the data received.
frame	Number of packets received incorrectly having a CRC error and a non-integer number of octets.
overrun	Number of times the receiver hardware was unable to forward received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets ignored by the interface because the interface hardware ran low on internal buffers.
packets output	Total number of messages sent by the system.
bytes	Total number of bytes, including data and MAC encapsulation, sent by the system.
underruns	Number of times the sender has been running faster than the receiving device can handle.

Field	Description
output errors	Sum of all errors that prevented the final transmission of packets out of the interface being examined.
collisions	Not applicable.
interface resets	Number of times an interface has been completely reset.
output buffer failures	Number of times the output buffer has failed.
output buffer swapped out	Number of times the output buffer has been swapped out.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output for the **show interface cable** command:

```
Router#show interface cable 1/0/0
Cable1/0/0 is up, line protocol is up
  Hardware is CMTS MD interface, address is c414.3c17.1dcb (bia c414.3c17.1dcb)
  MTU 1500 bytes, BW 26000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 22/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 19500 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 2281000 bits/sec, 2854 packets/sec
     27026 packets input, 2849227 bytes, 26 no buffer
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     36755119 packets output, 3675867584 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
```

Related Commands

Command	Description
show interface cable downstream	Displays information about the downstream on the cable interface.

Command	Description
show interface cable sid	Displays information by service identifier (SID) of each CM on the network.
show interface cable signal-quality	Displays information about the cable signal quality.
show interface cable upstream	Displays information about one or all upstreams on the cable interface.

show interface cable admission-control reservation

To display service flows, categorizations, and bandwidth consumption on the Cisco CMTS, for the specified interface, and the specified service flow direction, use the **show interface cable admission-control reservation** command in privileged EXEC mode.

show interface cable *slot/subslot/port* **admission-control reservation**[**downstream** | **upstream**]*port-no*

Cisco IOS Release 12.2(33)SCE and later
show | **interface** | **cable** | {*slot/cable-interface-indexslot/subslot/cable-interface-index*} | **admission-control** | **reservation** | [**downstream** | **upstream**]*port-no*

Cisco cBR Series Converged Broadband Router
show | **interface** | **cable** | {*slot/cable-interface-indexslot/subslot/cable-interface-index*} | **admission-control** | **reservation** | [**downstream** | **upstream** *port-no* | **us-bonding-group** *upstream -bonding-group-number*]

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
downstream	Displays downstream service flow information for the designated cable interface.
upstream *port-no*	Displays upstream service flow information for the designated cable interface. The port number may be optionally specified here for more limited display.

us-bonding-group *upstream -bonding-group-number*	Displays the upstream bonding group service flow information.

Command Default

No default behavior or values for this command. However, Cisco IOS Release 12.3(21)BC supports default operation and non-default configuration for feature on the Cisco CMTS.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(21)BC	This command was introduced for the Cisco uBR10012 router and the Cisco uBR7246VXR router.
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. The **us-bonding-group** *upstream -bonding-group-number* keyword and variable was added.

Usage Guidelines

For additional information about using this command, refer to the following documents on Cisco.com:

- *Admission Control for the Cisco CMTS*
- *Service Flow Admission Control for the Cisco CMTS*

Use the **us-bonding-group** *upstream -bonding-group-number* keyword and variable to display the upstream bonding group service flow information.

Examples

This example shows the output and status of the Service Flow Admission Control feature, and the **show interface cable admission-control reservation** { **downstream | upstream** } *port-no* command.

```
Router# show interface cable 5/1/1 admission-control reservation downstream.
SfId   Mac Address       Bucket    Bucket Name         State    Current Reserv
4      0000.cad6.f052       8                         act       0
88     0000.cad6.f052       8                         act       2000
6      0000.cad6.eece       8                         act       0
21     0000.cad6.eece       8                         act       2000
8      0000.cad6.eebe       8                         act       0
24     0000.cad6.eebe       8                         act       2000
10     0000.cadb.30a6       8                         act       0
27     0000.cadb.30a6       8                         act       2000
```

This example illustrates further information for the Service Flow Admission Control feature with abbreviated command syntax. This example displays threshold levels and current reservation per bucket, and the oversubscribed bandwidth per bucket. Cisco IOS indicates implicitly calculated threshold with asterisk.

```
Router# sh cable admission-control interface ca 5/1/1 upstream 0
Interface  Cable5/1/1
Upstream Bit Rate (bits per second) = 4096000
```

```
Resource - Upstream Bandwidth
-----------------------------
Bucket Names  Minor # of  Major # of  Excls # of  Non-Ex Curr. Curr. Conf  # of
No            Level Times Level Times Level Times Level  Resv  Ovrsb Level Rejec
1             5     1312  7     1262  45    0     0      31    0     I    36
2             0     0     0     0     0     0     6*     0     0     I     0
3             0     0     0     0     0     0     6*     0     0     I     0
4             0     0     0     0     0     0     6*     0     0     I     0
5             0     0     0     0     0     0     6*     0     0     I     0
6             0     0     0     0     0     0     6*     0     0     I     0
7             0     0     0     0     0     0     6*     0     0     I     0
8             5     31    7     29    49    11    5      79    25    I     0
```

Examples for the Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable admission-control reservation** command with the **downstream** keyword on the Cisco cBR router:

```
Router#show interface cable 3/0/0 admission-control reservation downstream
SfId   Mac Address       Bucket    Bucket Name         State    Current Reserv
16     0025.2e2d.74f8       8                          Active       0
28     0025.2e2d.74f8       8                          Active       0
18     0025.2eaf.7f38       8                          Active       0
21     0025.2eaf.7f38       8                          Active       0
20     0025.2eaf.8302       8                          Active       0
22     0025.2eaf.8302       8                          Active       0
26     0025.2eaf.82f4       8                          Active       0
27     0025.2eaf.82f4       8                          Active       0
30     0025.2e2d.75be       8                          Active       0
32     0025.2e2d.75be       8                          Active       0

Router#
```

This example shows the output of the **show interface cable admission-control reservation** command with the **upstream** keyword on the Cisco cBR router:

```
Router#show interface cable 3/0/0 admission-control reservation upstream 0
Interface Cable3/0/0 Upstream Port 0
SfId   Mac Address       Bucket    Bucket Name         State    Current Reserv
15     0025.2e2d.74f8       8                          Active       0
19     0025.2eaf.8302       8                          Active       0
29     0025.2e2d.75be       8                          Active       0

Router#
```

This example shows the output of the **show interface cable admission-control reservation** command with the **us-bonding-group** keyword on the Cisco cBR router:

```
Router#show interface cable 3/0/0 admission-control reservation us-bonding-group 1
Interface Cable3/0/0 Upstream bonding group 1
SfId   Mac Address       Bucket    Bucket Name         State    Current Reserv

Router#
```

Related Commands

Command	Description
cable admission-control ds-bandwidth	Sets minor, major and exclusive thresholds for downstream voice or data bandwidth for each or all interfaces on the Cisco CMTS
cable admission-control preempt priority-voice	Changes the default PacketCable Emergency 911 call preemption functions on the Cisco CMTS, supporting throughput and bandwidth requirements for Emergency 911 calls above all other buckets on the Cisco CMTS.
cable admission-control us-bandwidth	Configures global or interface-level upstream bandwidth thresholds and exclusive or non-exclusive resources on the Cisco CMTS.
cable application-type include	Associates an application type with a specific and prioritized bucket on the Cisco CMTS.
cable application-type name	Assigns an alpha-numeric name for the specified bucket.
debug cable admission-control flow-categorization	Displays service flow categorization results, enabled when a service flow is classified.
show application-buckets	Displays rules for any or all buckets supporting Service Flow Admission Control on the Cisco CMTS.
show interface cable admission-control reservation	Displays service flows, categorizations, and bandwidth consumption on the Cisco CMTS, for the specified interface, and the specified service flow direction.

show interface cable cable-monitor

To display cable monitor flow information, use the **show interface cable cable-monitor** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **cable-monitor**

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **cable-monitor** [**cam** | **verbose**]

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.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
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.
cam	(Optional) Displays detailed content addressable memory (CAM) information.
verbose	(Optional) Displays detailed monitor flow information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCA	This command is introduced.
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.

Release	Modification
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output from the **show interface cable cable-monitor** command:

```
Router# show interface cable 5/0 cable-monitor
US/ Time Outbound  Flow     Flow Type      Flow  Packet MAC   MAC       Encap
DS  Stmp Interface Type     Identifier     Extn. Type   Extn. Type      Type
us   no    Et1/2   us-port  0              yes   data   no     -        docsis
all  no    Et1/2   acc-list 103            yes   data   no     -        docsis
all  yes   Et1/2   mac-addr 0050.0000.0000 yes   mac    no     -          -
```

The following is a sample output from the **show interface cable cable-monitor cam** command:

```
Router# show interface cable6/0/0 cable-monitor cam
Sniffer Wideband interface = Wi6/0/0:0
Sniff points 0x9
DS Unconditional sniffing for 0 flows. FlowIndex: Total: 0. Hits 0
DS HighPrio Unconditional sniffing for 0 flows. FlowIndex: Total: 0. Hits 0
US Packet Unconditional sniffing
US 0, 1 FlowIndex: 2 Total: 1. Hits 1035
US 1, 0 FlowIndex: Total: 0. Hits 0
US 2, 0 FlowIndex: Total: 0. Hits 0
US 3, 0 FlowIndex: Total: 0. Hits 0
US Frag Unconditional sniffing
US 0, 0 FlowIndex: Total: 0. Hits 0
US 1, 0 FlowIndex: Total: 0. Hits 0
US 2, 0 FlowIndex: Total: 0. Hits 0
US 3, 0 FlowIndex: Total: 0. Hits 0
MAC Address CAM :
Entry 0, MAC 7cb2.1b0f.ea7a Refcount 1 FlowIndex: 1 Total: 1 Hits 401
Entry 1, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 2, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 3, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 4, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 5, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 6, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 7, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 8, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 9, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 10, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 11, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 12, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 13, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 14, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 15, MAC 0000.0000.0000 Refcount 0 FlowIndex: Total: 0 Hits 0
Sid CAM :
Entry 0, Sid 1, US 1 Refcount 1 FlowIndex: 1 Total: 1 Hits 825
Entry 1, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 2, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 3, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 4, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 5, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 6, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 7, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 8, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 9, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 10, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 11, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
```

```
Entry 12, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 13, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 14, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
Entry 15, Sid 0, US 0 Refcount 0 FlowIndex: Total: 0 Hits 0
```

The following is a sample output from the **show interface cable cable-monitor verbose** command:

```
Router# show interface cable6/0/0 cable-monitor verbose
Sniffer Wideband interface = Wi6/0/0:0
Index 0, Direction all
  DS CAM Index 0 (MAC 7cb2.1b0f.ea74), Hits 10
  No US CAM Entry
  No US CAM Entry
  No US CAM Entry
  No US CAM Entry
  10 packets evaluated, 10 output, 0 No buffer
  0 NotData, 0 NotMac, 0 Extn not matched, 0 US MacAddress mismatch
  0 NotMap, 0 No sid in MAP, 0 not REQ, 0 not Grant
  0 Not DSA, 0 not DSC, 0 Not DSD
  0 Sid mismatch in DS Pkts, 0 ACL match failed
  In VCCI 0x5B, Out VCCI 0xFFFF

Index 1, Direction us
  No DS CAM Entry
  No US CAM Entry
  No US CAM Entry
  No US CAM Entry
  582 packets evaluated, 582 output, 0 No buffer
  0 NotData, 0 NotMac, 0 Extn not matched, 0 US MacAddress mismatch
  0 NotMap, 0 No sid in MAP, 0 not REQ, 0 not Grant
  0 Not DSA, 0 not DSC, 0 Not DSD
  0 Sid mismatch in DS Pkts, 0 ACL match failed
  In VCCI 0x5B, Out VCCI 0x56
```

Table 16: show interface cable monitor Field Descriptions

Field	Description
DS	Downstream. Indicates that only downstream flows are monitored.
UP	Upstream. Indicates that only upstream flows are monitored.
ALL	Indicates that all flows are monitored.
Time Stmp	“Yes” indicates that forwarded packets have been time-stamped, with appended 4 bytes. “No” indicates that forwarded packets have not been time-stamped.
Outbound Interface	Identifies the interfaces where the packets have been forwarded to (Ethernet or Fast Ethernet).
Flow Type	Identifies the selected flow type, MAC-address, access-list number, or upstream port number.
Flow Type Identifier	MAC address, access-list number, or service ID.
Flow Extn.	“Yes” indicates that extended filters are configured, and “no” indicates that no extended filters have been configured.
MAC Type	Not applicable.

Field	Description
Encap	DOCSIS encapsulation.
Type	Forwarded packets with Ethernet encapsulation.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
cable monitor	Enables the forwarding of selected packets on the cable interface to an external LAN analyzer.

show interface cable controller

To display the interface status, configuration and controller status, use the show interface cable controller command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show interface cable *slot/subslot/cable-interface-index* **controller**

Syntax Description

slot/subslot/cable-interface-index	Identifies the cable interface on the Cisco cBR Series Converged Broadband Router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.
IOS-XE 3.18.0SP	This command was modified on the Cisco cBR Series Converged Broadband Router. MD OCD and MD DPD statistics were added in the command output.

Examples

This example shows the output of the show interface cable controller command with the MD DPD statistics:

```
Router# show interface cable 3/0/0 controller | beg MD DPD
*** MD DPD Statistics ****

OFDM port/chan:      0/158

  Profile                     0
  DPD Cache RX good
           messages:          1     fragments:          1
  DPD TX fragments
    PLC:       good:       1159         error:          0
    Data Chan: good:        464         error:          0

  Profile                     1
  DPD Cache RX good
           messages:          1     fragments:          1
  DPD TX fragments
    Data Chan: good:        464         error:          0

  Profile                   255
  DPD Cache RX good
           messages:          1     fragments:          1
  DPD TX fragments
    PLC:       good:       1159         error:          0
    Data Chan: good:        464         error:          0

OFDM port/chan:      7/162

  Profile                     0
  DPD Cache RX good
           messages:          1     fragments:          1
```

```
  DPD TX fragments
    PLC:       good:        123         error:          0
    Data Chan: good:         50         error:          0

  Profile                     1
  DPD Cache RX good
           messages:          1     fragments:          1
  DPD TX fragments
    Data Chan: good:         50         error:          0

  Profile                   255
  DPD Cache RX good
           messages:          1     fragments:          1
  DPD TX fragments
    PLC:       good:        123         error:          0
    Data Chan: good:         50         error:          0

Totals
  DPD Cache RX good
           messages:          6     fragments:          6
  DPD TX fragments
    PLC:       good:       2564         error:          0
    Data Chan: good:       1542         error:          0
  DPD RX errors
           mpart err:          0     queue err:          0
         inv ccc err           0    oos ccc err          0
```

This example shows the output of the show interface cable controller command with the MD OCD statistics:

```
Router# show interface cable 3/0/0 controller | beg MD OCD
*** MD OCD Statistics ****

OFDM port/chan:      0/158
  OCD Cache RX good
           messages:          1     fragments:          1
  OCD TX fragments
    PLC:       good:        727         error:          0
    Data Chan: good:        291         error:          0

OFDM port/chan:      7/162
  OCD Cache RX good
           messages:          1     fragments:          1
  OCD TX fragments
    PLC:       good:         42         error:          0
    Data Chan: good:         17         error:          0

Totals
  OCD Cache RX good
           messages:          2     fragments:          2
  OCD TX fragments
    PLC:       good:        769         error:          0
    Data Chan: good:        308         error:          0
  OCD RX errors
           mpart err:          0     queue err:          0
         inv ccc err           0    oos ccc err          0
```

show interface cable downstream

To display information about the downstreams on a cable interface, use the **show interface cable downstream** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **downstream**

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **downstream**

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.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
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.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3 XA	This command was introduced.
12.0(3)T	Command ported to the mainline release.
12.1(4)CX	Output was expanded for **show interface cable downstream** command for DOCSIS 1.1 operation.
12.2(4)BC1	Support was added to the Release 12.2 BC train.

Release	Modification
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 is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following example is sample output from the show interface cable downstream command for Cisco IOS releases that support only DOCSIS 1.0 or 1.0+ operation:

```
Router# show interface cable 6/0 downstream
Cable6/0: Downstream is up
     111947771 packets output, 1579682655 bytes, 0 discarded
     0 output errors
```

The following is sample output from the show interface cable downstream command for Cisco IOS releases that support only DOCSIS 1.1 operation:

```
Router# show interface cable 4/0 downstream

Cable4/0:Downstream is up
   54335436 packets output, 2854290447 bytes, 0 discarded
   0 output errors
  1 total active devices, 1 active modems
  Total downstream bandwidth: 27000000 bps
  Total downstream reserved bandwidth: 1000000 bps
  Worst case latency for low latency queue: 0 usecs
  Current Upper limit for worst case latency: 0 usecs
Router#
```

Table 17: show interface cable downstream Field Descriptions

Field	Description
Cable	Indicates the location of the downstream interface.
Downstream is up/...administratively down	Indicates the administrative state of the interface.
packets output	Total number of data packets that have been transmitted on this downstream cable interface.
bytes	The number of bytes for data packets that have been transmitted on this downstream cable interface.
discarded	Total number of packets that were not transmitted on the downstream, because of an error, such as a buffer overrun, the Cisco CMTS running out of memory, or the frame being larger than the cable interface's MTU value.
output errors	Total number of packets that could not be transmitted on this downstream cable interface because of all errors.
total active devices	Total number of active cable modems and customer premises equipment (CPE) devices that are connected to this downstream cable interface.

Field	Description
active modems	Total number of active cable modems that are connected to this downstream cable interface.
Total downstream bandwidth	Total bandwidth associated with this downstream cable interface, in bits per second.
Total downstream reserved bandwidth	Total bandwidth on this downstream cable interface that has been reserved by specifying a value for the Min Reserved Traffic Rate field for the downstream service flow in the cable modems' DOCSIS configuration files.
Worst case latency for low latency queue	Worst case latency value, in microseconds, that is allowed on this downstream cable interface, as determined by the Max DS Latency field for the downstream service flow in the cable modems' DOCSIS configuration files.
Current Upper limit for worst case latency	Lowest worst case latency value, in microseconds, that is allowed on this downstream cable interface. The Cisco CMTS uses the lowest specified Max DS Latency value that has been specified for a downstream service flow in any of the DOCSIS configuration files being used by cable modems on this downstream. If a cable modem tries to register a downstream service flow that uses a worst case latency that is greater than this value, the Cisco CMTS will refuse to admit that service flow.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
show interface cable	Displays configuration and status information for the cable interface.
show interface cable sid	Displays information by service identifier (SID) of each CM on the network.
show interface cable signal-quality	Displays information about the cable signal quality.
show interface cable upstream	Displays information about one or all upstreams on the cable interface.

show interface cable dsg downstream

To display interface configuration and status information for Advanced-mode DOCSIS Set-top Gateway (A-DSG) downstreams on a Cisco CMTS router, use the show interface cable dsg downstream command in privileged EXEC mode.

show interface cable {*slot*/*port*|*slot*/*subslot*/*port*} **dsg downstream** [**dcd**|**rule** *rule-id* [**cfr**|**clients**|**verbose**]|**tunnel** *tunnel-id*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index*|*slot*/*subslot*/*cable-interface-index*} **dsg downstream** [**dcd**|**rule** *rule-id* [**cfr**|**clients**|**verbose**]|**tunnel** *tunnel-id*]

Cisco cBR Series Converged Broadband Router
show interface cable {*slot*/*subslot*/*cable-interface-index*} **dsg downstream** [**dcd**|**tunnel** *tunnel-id*]

Syntax Description

cable	*Specifies details of a cable interface line card:* • *slot*—Slot where the line card resides. • *subslot*—(Cisco uBR10012 only) Secondary slot number of the line card. • *port*—Downstream port number of the line card. • *cable-interface-index*—Downstream port or MAC domain index of the line card.
cable*slot/subslot/cable-interface-index*	For the Cisco cBR router— • The valid range for the *slot* is 0 to 3 and 6 to 9. • The valid value for the *subslot* is 0. • The valid range for *cable-interface-index*is 0 to 15.
dcd	(Optional) Displays downstream channel descriptor (DCD) messages for the A-DSG interface.
rule *rule-id*	(Optional) Displays interface-level information for A-DSG rules on the Cisco CMTS router, such as rule state, tunnels, classifiers, client information, upstream channel identifier, and the number of vendors associated to a rule on a given downstream.
cfr	(Optional) Displays the list of classifiers associated to the A-DSG rule, such as classifiers associated with the rule-id under the interface.
clients	(Optional) Displays clients associated with the rule-id under the interface.
verbose	(Optional) Displays A-DSG downstream rule detail information.
tunnel *tunnel-id*	(Optional) Displays interface-level A-DSG downstream tunnel information. The valid range is from 1 to 65535.

Command Default

Displays configuration information for all DSG downstream channels on a cable interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(13a)BC	This command was introduced to support A-DSG 1.1 on the Cisco uBR10012 router and Cisco uBR7200 series routers.
12.3(17a)BC	This command was modified to support A-DSG 1.2 with the following changes: • The **rule** keyword option is obsolete. • The tunnel group ID field ("TG id") was added to the **show interfaces cable dsg downstream tunnel** form of the command. • The output display column headings of the **show interfaces cable dsg downstream tunnel** form of the command were changed.
12.2SCA	This command was integrated into Cisco IOS Release 12.2SCA. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCB4	This command was modified. The show interface cable dsg downstream dcd command output is changed to display interface level DCD statistics for all interfaces in the mac-domain such as cable interfaces, modular cable interfaces, and IC interfaces. The field IF name is added to the output to indicate the interface.
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.
12.2(33)SCG	This command was modified. Support for the following keywords was removed: • **rule** *rule-id* • **cfr** • **clients** • **verbose**
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The following options were removed: • **rule** *rule-id* • **cfr** • **clients** • **verbose**

Usage Guidelines

To use the **show interface cable dsg downstream** command, the tunnel group must be configured globally and also at the cable interface.

Table 18: Interface Density Information

CMTS Router	Line Card	Slot	Subslot	Port	Cable Interface Index
Cisco uBR10012	Cisco uBR-MC3GX60V	5 to 8	0 or 1	0 to 4	0 to 14
	Cisco UBR-MC20X20V				0 to 4
	Cisco uBR10-MC5X20				
Cisco uBR7225VXR	All	1 or 2	—	0 or 1	—
Cisco uBR7246VXR	All	3 to 6	—	0 or 1	—

Examples

Example: Displaying Information for all A-DSG Downstreams on a Cable Interface

The following example illustrates A-DSG downstream configuration information and the number of DSG tunnels, classifiers, clients and vender specific parameters.

```
Router# show interface cable 6/0 dsg downstream
chan chFreq chan timer init    oper    twoWay oneWay num  num    num  num    num
list index  freq index timeout timeout timer  timer  rule tunnel cfr  client vsp
1    2      666  1     1       2       3      4      9    6      4    6      2
     3      500
```

Example: Displaying DCD Information for all A-DSG Downstreams on a Cable Interface

The following example illustrates the DCD statistics for the given downstream channel for A-DSG version 1.1. DCD TLV information displays if the debug cable dsg command is active. This output was changed in Cisco IOS Release 12.3(17a)BC for A-DSG version 1.2.

```
Router# show interface cable 6/0 dsg downstream dcd
dcd   num of dcd           num of dcd           num of dcd           num of
state sent                 fail                 change cnt           fragment
en    282                  0                    1                    1
```

The following example shows the output for A-DSG debugging while running the same command:

```
Router# debug cable dsg
Router# show interface cable 6/0 dsg downstream dcd
dcd   num of dcd           num of dcd           num of dcd           num of
state sent                 fail                 change cnt           fragment
en    2139                 0                    1                    1
Router#
00:35:58: DCD TLV last sent:
32390101 01020102 040E0302 09510100 02061111 11111111 05060100 5E010114
06020001 2B150803 12345612 3456789A BCDEF012 3456789A BCDEF032 26010102
02010104 0E030209 51010002 06111111 11111105 0601005E 01011E06 02000206
02000A32 18010103 02010104 04040200 01050601 005E0101 28060200 03321401
01040201 01040403 02070105 0601005E 01013232 14010105 02010104 04040200
02050601 005E0101 3C321401 01070201 01040404 02000605 0601005E 01011432
1E010108 02010104 0E030209 51010002 06111111 11111105 0601005E 01011432
35010114 02010104 0E030209 51010002 06111111 11111105 0601005E 0101142B
Router# 15080312 34561234 56789ABC DEF01234 56789ABC DEF01715 02020001 05010109
```

```
0C0504E6 6F6F6F03 046F6F6F 6F170F02 02000205 01010906 0504E601 0141170F
02020003 05010109 060504E6 01012817 0F020200 0A050101 09060504 E6010147
33230104 27B25A80 01041DCD 65000202 00010302 00020402 00030502 00042B05
08030022 22
```

Beginning in Cisco IOS Release 12.3(17a)BC, this output was modified to add the "dcd Tx" field in support of A-DSG version 1.2 as shown below:

```
Router# show interfaces cable 5/0 dsg downstream dcd
dcd   dcd
   num of dcd           num of dcd           num of dcd  num of
state Tx
    sent                 fail                 change cnt  fragment
en    on    6502                0                    28          1
```

The following output displays the DCD statistics on all the cable and modular interfaces. The "IF Name" field displays the interface type:

```
Router#show interface cable 5/1/0 dsg downstream dcd
IF         dcd   dcd   num of dcd      num of dcd     num of dcd  num of
Name       state Tx    sent           fail           change cnt  fragment
---------- ----- ----- -------------- -------------- ----------  --------
Ca5/1/0    en    on    70             0              2           1
Mo1/0/0:0  en    on    70             0              2           1
```

Example: Displaying Rule Information for all A-DSG Downstreams on a Cable Interface

Note This command is obsolete beginning in Cisco IOS Release 12.3(17a)BC.

```
Router# show interface cable 6/0 dsg downstream rule
rule rule  rule tunnel tunnel tunnel          cfr   cfr   cfrIn client vsp
id   state pri  id     state  mac-addr        id    state dcd   listId index
1    en    2    1      en     0100.5e01.0114  1     en    yes   2      1
                                              5     en    no
                                              11    en    no
                                              14    en    no
2    en    1    2      en     0100.5e01.011e  2     en    yes   2
                                              10    en    yes
3    en    1    3      en     0100.5e01.0128  3     en    yes   3
4    en    1    4      en     0100.5e01.0132  4     en    no    4
5    en    1    5      en     0100.5e01.013c  9     en    no    5
6    en    1    6      dis    0100.5e01.0146                    6      2
7    en    1    1      en     0100.5e01.0114  1     en    no    10
                                              5     en    no
                                              11    en    no
                                              14    en    no
8    en    1    1      en     0100.5e01.0114  1     en    no    2
                                              5     en    no
                                              11    en    no
                                              14    en    no
20   en    1    1      en     0100.5e01.0114  1     en    no    2      1
                                              5     en    no
                                              11    en    no
                                              14    en    no
                                        65535 dis   yes
```

The following example displays the same information as above for the given rule.

```
Router# show interface cable 6/0 dsg downstream rule 1

rule rule  rule tunnel tunnel tunnel          cfr   cfr   cfrIn client vsp
id   state pri  id     state  mac-addr        id    state dcd   listId index
1    en    2    1      en     0100.5e01.0114  1     en    yes   2      1
                                              5     en    no
                                              11    en    no
                                              14    en    no
Router# show interface cable 6/0 dsg downstream rule 1 cfr

rule cfr cfr   cfrIn cfr destination ip   source ip        srcPre d_port d_port
id   id  state dcd   pri address          address          length start  end
1    1   en    yes   1   230.111.111.111  111.111.111.111  32     0      65535
     5   en    no    1   230.1.1.60       0.0.0.0          32     0      65535
     11  en    no    1   224.25.25.134    0.0.0.0          32     0      65535
     14  en    no    0   230.1.1.20       0.0.0.0          32     1000   2000
Router# show interface cable 6/0 dsg downstream rule 1 clients

rule rule  rule client client client          client
id   state pri  listId id     id type         address
1    en    2    2      1      CA System ID    0951
                     3      Broadcast
                     8      MAC Addr        1111.1111.111
Router# show interface cable 6/0 dsg downstream rule 1 verbose

Rule ID                      : 1
State                        : enable
Priority                     : 2
Tunnel ID                    : 1
State                        : enable
MAC Addr                     : 0100.5e01.0114
Cfr Id                       : 1
State                        : enable
Priority                     : 1
Dest IP                      : 230.111.111.111
Src IP                       : 111.111.111.111
Src Prefix Length            : 32
Dest Port Start              : 0
Dest Port End                : 65535
Forwarded                    : 0
Received                     : 0
Cfr Id                       : 5
State                        : enable
Priority                     : 1
Dest IP                      : 230.1.1.60
Src IP                       : 0.0.0.0
Src Prefix Length            : 32
Dest Port Start              : 0
Dest Port End                : 65535
Forwarded                    : 0
Received                     : 0

Cfr Id                       : 11
State                        : enable
Priority                     : 1
Dest IP                      : 224.25.25.134
Src IP                       : 0.0.0.0
Src Prefix Length            : 32
Dest Port Start              : 0
Dest Port End                : 65535
Forwarded                    : 0
```

```
Received                        : 0
Cfr Id                          : 14
State                           : enable
Priority                        : 0
Dest IP                         : 230.1.1.20
Src IP                          : 0.0.0.0
Src Prefix Length               : 32
Dest Port Start                 : 1000
Dest Port End                   : 2000
Forwarded                       : 0
Received                        : 0
Client List Id                  : 2
Client Id                       : 1
Client Id Type                  : CA System ID    0951
Client Id                       : 3
Client Id Type                  : Broadcast
Client Id                       : 8
Client Id Type                  : MAC Addr        1111.1111.111
vsif index                      : 1
vsif oui                        : 0X123456
vsif value                      : 0X123456789ABCDEF0123456789ABCDEF0
```

Example: Displaying Tunnel Information for all A-DSG Downstream s on a Cable Interface

The following examples shows output for tunnels on A-DSG version 1.1 downstreams. This output was changed in Cisco IOS Release 12.3(17a)BC for A-DSG version 1.2.

```
Router# show interface cable 6/0 dsg downstream tunnel

tunnel tunnel tunnel          cfr  cfr   rule rule  client service
id     state  mac-addr        id   state id   state listId class
1      en     0100.5e01.0114  1    en    1    en    2      SI
                              5    en    7    en    10
                              11   en    8    en    2
                              14   en    20   en    2
2      en     0100.5e01.011e  2    en    2    en    2      NDS-CA
                              10   en
3      en     0100.5e01.0128  3    en    3    en    3      NDS-APP
4      en     0100.5e01.0132  4    en    4    en    4      MOTO-CA
5      en     0100.5e01.013c  9    en    5    en    5      MOTO-APP
6      dis    0100.5e01.0146             6    en    6      SA-CA
```

Beginning in Cisco IOS Release 12.3(17a)BC, this output was modified to add the “TG id” field in support of A-DSG version 1.2, and modifies the output column headings as shown below:

```
Router# show interfaces cable 5/0 dsg downstream tunnel
     tunnel              TG       cfr        rule
   client service
id  state mac-addr       id    id  state id state
 listId class
1      en 0100.5e01.0001 1     1      en 1     en 1      DSG-Rate1
                               6      en
                               7      en
                               8      en
2      en 0100.5e01.0002 1     2      en 2     en 2
3      en 0100.5e01.0003 1     3      en 3     en 3
4      en 0002.0002.0001 2     4      en 4     en 1
5      en 0002.0002.0002 2     5      en 5     en 2      DSG-Rate2
6      en 0002.0002.0003 2     9      en 6     en 21
```

Example: Displaying Information for a Specified Tunnel on A-DSG Downstream s on a Cable Interface

The following examples shows output for a specified tunnel on A-DSG version 1.1 downstreams. This output was changed in Cisco IOS Release 12.3(17a)BC for A-DSG version 1.2.

```
Router# show interface cable 6/0 dsg downstream tunnel 1

tunnel tunnel tunnel          cfr  cfr   rule rule  client service
id     state  mac-addr        id   state id   state listId class
1      en     0100.5e01.0114  1    en    1    en    2      SI
                              5    en    7    en    10
                              11   en    8    en    2
                              14   en    20   en    2
```

Beginning in Cisco IOS Release 12.3(17a)BC, this output was modified to add the “TG id” field in support of A-DSG version 1.2, and modifies the output column headings as shown below:

```
Router# show interfaces cable 5/0 dsg downstream tunnel 1
     tunnel              TG      cfr       rule
  client service
id  state mac-addr       id    id  state id state
 listId class
1      en 0100.5e01.0001 1     1      en 1     en 1      DSG-Rate1
                               6      en
                               7      en
                               8      en
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output for the **show interface cable dsg downstream** command:

```
Router#show interface cable 3/0/0 dsg downstream
chan  chan  chan timer init    oper    twoWay oneWay num  num    num  num    num
list  index freq index timeout timeout timer  timer  rule tunnel cfr  client vsp
----- ----- ---- ----- ------- ------- ------ ------ ---- ------ ---- ------ ---
                                                    0    0      0    0      0

Router#
```

This example shows the output for the **show interface cable dsg downstream dcd** command:

```
Router#show intwerface cable 3/0/0 dsg downstream dcd

IF          dcd   dcd   dsg  num of dcd      num of dcd     num of dcd  num of
Name        state Tx    fwd  sent           fail           change cnt  frag
----------- ----- ----- ---- -------------- -------------- ----------- ------
In3/0/0:8   dis   n/a   en   0              0              0           0
In3/0/0:16  dis   n/a   en   0              0              0           0
In3/0/0:24  dis   n/a   en   0              0              0           0
In3/0/0:32  dis   n/a   en   0              0              0           0
In3/0/0:33  dis   n/a   en   0              0              0           0
In3/0/0:40  dis   n/a   en   0              0              0           0

Router#
```

This example shows the output for the **show interface cable dsg downstream tunnel** command when a tunnel is not associated to an interface:

```
Router#show interface cable 3/0/0 dsg downstream tunnel 1
% DSG tunnel 1 not associated to interface.

Router#
```

Related Commands

Command	Description
debug cable dsg	Enables general, DCD or packet-related debugging.
show interface	Displays general interface information for the specified or all interfaces.
show interface cable dsg downstream tg	Displays information for A-DSG downstream tunnel groups on a Cisco CMTS router.

show interface cable dsg downstream tg

To display information for Advanced-mode DOCSIS Set-top Gateway (A-DSG) downstream tunnel groups on a Cisco CMTS router, use the show interface cable dsg downstream tg command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **dsg downstream tg** [**channel** *channel-id*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **dsg downstream tg** [**channel** *channel-id*]

Cisco cBR Series Converged Broadband Router
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **dsg downstream tg** *tunnel-id*

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
channel *channel-id*	(Optional) Specifies the downstream channel identifier as a number from 1–65535. This option is not supported on the Cisco cBR router.

tunnel-group id	(Optional Cisco cBR router) Specifies the DSG tunnel group identifier as a number from 1–65535.

Command Default

No default behaviors or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(17a)BC	This command was introduced to support A-DSG on the Cisco uBR10012 router and Cisco uBR7200 series routers.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCD5	This command was modified. The output of the **show interface cable dsg downstream tg** command was changed.
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. The **channel** keyword is removed.

Usage Guidelines

To use the **show interface cable dsg downstream tg** command, the tunnel group must be configured globally and also at the cable interface.

Examples

Example: Displaying Information for all A-DSG Downstream Tunnel Groups on a Cable Interface

The following example shows output for all A-DSG downstream tunnel groups:

```
Router# show interfaces cable 5/0 dsg downstream tg
TG: 1     Chan: 1     state: en pri: 16 Vendor: 1     UCID: 1 2 3 4
          rule        tunnel                    cfr                      client
 I/F    id state id state mac-addr       id  state dest-ip         In-DCD listId
 C5/0   1     en 1     en 0101.5e01.0001 1      en 230.1.0.1       yes    1
                                         6      en 231.1.1.6       no
                                         7      en 231.1.1.7       no
                                         8      en 231.1.1.8       no
        2     en 2     en 0101.5e01.0002 2      en 230.1.0.2       yes    2
        3     en 3     en 0101.5e01.0003 3      en 230.1.0.3       yes    3
TG: 2     Chan: 1     state: en pri: 11 Vendor: 2     UCID:
          rule        tunnel                    cfr                      client
 I/F    id state id state mac-addr       id  state dest-ip         In-DCD listId
 C5/0   4     en 4     en 0002.0002.0001 4      en 230.2.2.1       no     1
        5     en 5     en 0002.0002.0002 5      en 230.2.2.2       no     2
        6     en 6     en 0002.0002.0003 9      en 231.1.1.9       no     21
```

Example: Displaying Information for a Specified A-DSG Downstream Tunnel Group on a Cable Interface

The following example shows output for a specified A-DSG downstream tunnel group:

```
Router# show interfaces cable 5/0 dsg downstream tg 1 channel 1
TG: 1     Chan: 1     state: en pri: 16 Vendor: 1     UCID: 1 2 3 4
          rule        tunnel                    cfr                       client
 I/F    id state id state mac-addr       id  state dest-ip         In-DCD listId
 C5/0   1     en 1     en 0101.5e01.0001 1      en 230.1.0.1        yes    1
                                         6      en 231.1.1.6        no
                                         7      en 231.1.1.7        no
                                         8      en 231.1.1.8        no
        2     en 2     en 0101.5e01.0002 2      en 230.1.0.2        yes    2
        3     en 3     en 0101.5e01.0003 3      en 230.1.0.3        yes    3
```

Example: Displaying Information for a Specified A-DSG Downstream Tunnel Group on a Cable Interface for Cisco IOS Release 12.2(33)SCD5

The following example shows the output of the **show interfaces cable dsg downstream tg** command that displays the ignore option, introduced in Cisco IOS Release 12.2(33)SCD5, under the 'In DCD' column.

```
Router# show interfaces cable 7/0/0 dsg downstream tg
TG: 1     Chan: 1     State: en  Pri: 0   Vendor:       UCID:
   rule        tunnel                      cfr              In  clients
 id state id  state mac-addr       id  state dest-ip         DCD listId
 -------- ----------------------- ------------------------- --- -------
 1     en 1      en 0100.5e01.0101 1      en 230.1.1.1       ign  1
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output for the **show interface cable dsg downstream tg** command:

Related Commands

Command	Description
debug cable dsg	Enables general, DCD or packet-related debugging.
show interface	Displays general interface information for the specified or all interfaces.
show interface cable dsg downstream	Displays interface configuration and status information for A-DSG downstreams on a Cisco CMTS router.

show interface cable dynamic-service statistics

To display dynamic service statistics based on the cable interface, use the show interface cable dynamic-service statistics command in privileged EXEC mode.

show interface cable {*slot*/*cable-interface-index*|*slot*/*subslot*/*cable-interface-index*} **dynamic-service statistics**

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.
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 15.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 0.

Command Default

None

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.

Examples

The following is a sample output of the **show interface cable dynamic-service statistics** command that shows dynamic service statistics based on the cable interface specified on the Cisco uBR10012 router in Cisco IOS Release 12.2(33)SCF:

```
Router# show interface cable 7/1/0 dynamic-service statistics
  Upstream        Downstream
```

```
DSA REQ      0               5
DSA RSP      5               0
DSA ACK      0               5
DSC REQ      0               5
DSC RSP      5               0
DSC ACK      0               5
DSD REQ      0               0
DSD RSP      0               0
Retransmission counts
             Upstream        Downstream
DSA REQ      0               0
DSA RSP      0               0
DSA ACK      0               0
DSC REQ      0               5
DSC RSP      5               0
DSC ACK      0               0
DSD REQ      0               0
DSD RSP      0               0
```

Table 19: show interface cable dynamic-service statistics Field Descriptions

Field	Description
Upstream	Dynamic service packets sent in the upstream direction.
Downstream	Dynamic service packets sent in the downstream direction.
DSA RSP	Dynamic service add response.
DSA ACK	Dynamic service add acknowledgement.
DSC REQ	Dynamic service change request.
DSC RSP	Dynamic service change response.
DSC ACK	Dynamic service change acknowledgement.
DSD REQ	Dynamic service delete request.
DSD RSP	Dynamic service delete response.

Examples for Cisco cBR Series Converged Broadband Router

Related Commands

Command	Description
show interface cable packetcable statistics	Displays PacketCable interprocess communication (IPC) statistics based on the specified cable interface.

show interface cable intercept

To display the cable modems for which traffic is currently being intercepted and forwarded to a data collector, use the **show interface cable intercept** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*portbundle*} **intercept**

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-indexbundle*} **intercept**

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.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
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.
bundle	Identifies the bundle ID on the Cisco uBR7100 series, the Cisco uBR7200 series and the Cisco uBR10000 series routers where the interface has been configured to be a member of a virtual interface bundle. The valid range is 1 to 255.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.0(5)T1	This command was introduced.
12.0(6)SC	This command was introduced on the 12.0 SC train.

Release	Modification
12.1(2)EC	This command was introduced on 12.1 EC train.
12.2(4)BC1	This command was introduced on the 12.2 BC train.
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)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 is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following shows a display after a CM has been added to the intercept list:

```
router# configure terminal

router#(config) interface c6/0

router(config-if)# cable intercept 0080.fcaa.aabb 10.12.13.8 512
router(config-if)#  exit

router(config)# exit

router# show interface c6/0 intercept

                Destination   Destination
MAC Address     IP Address    UDP Port
0080.fcaa.aabb  3.12.13.8      512
```

The following shows a display when no CMs have been added to the intercept list:

```
router# show interface c6/0 intercept

No interception active
```

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
cable intercept	Specifies that a copy of all traffic for a particular CM should be forwarded to a data collector.

show interface cable mac-scheduler

To display the current time-slot scheduling state, statistics, and weighted fair queuing (WFQ) parameters, use the **show interface cable mac-scheduler** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **mac-scheduler** [*n*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **mac-scheduler** [*n*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **mac-scheduler** [*n*]

Cisco cBR Series Converged Broadband Router
show interface cable {*slot*/*subslot*/*cable-interface-index*} **mac-scheduler** [*n*]

Syntax Description

slot/port	Cable interface and downstream port on the Cisco uBR7200 series routers:
	• *slot*—Slot where the line card resides:
	  • Cisco uBR7246VXR router—The valid range is from 3 to 6.
	  • Cisco uBR7225VXR router—The valid value is 1 or 2.
	• *port*—Downstream port number:
	  • Cisco uBR7246VXR and Cisco uBR7225VXR routers— The valid value is 0 or 1.

slot/subslot/port	Cable interface on the Cisco uBR10012 router: • *slot* —Chassis slot number of the cable interface line card. The valid range is from 5 to 8. • *subslot* —Secondary slot number of the cable interface line card. The valid range is 0 or 1. • *port* —Downstream port number. The valid ports are from 0 to 4, depending on the cable interface line card.

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20U/H and Cisco uBR-MC28U 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 value is 0 or 1.
	• Cisco uBR10012 router:
	  • Cisco UBR-MC20X20V and Cisco uBR10-MC5X20U/H line cards—The valid range is from 0 to 4.
	  • Cisco uBR-MC3GX60V line card—The valid range is from 0 to 14.

slot/subslot/cable-interface-index	For the Cisco cBR router— • The valid range for the *slot* is 0 to 3 and 6 to 9. • The valid value for the *subslot* is 0. • The valid range for *cable-interface-index*is 0 to 15.
n	(Optional) Specific upstream to be displayed. The valid values start with 0 for the first upstream port on the cable interface line card. For the Cisco cBR router—The valid range is 0 to 7.

Command Default

If no upstream port is identified, the command displays information for all upstreams on the specified cable interface. If no logical-index is identified, the command displays all the logical channels under the physical port.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX	This command was introduced. (Much of the information shown in this command was previously shown by the **show interface cable** and **show interface cable upstream** commands.)
12.2(4)BC1	Support was added to the Cisco IOS Release 12.2 BC train.
12.2(15)CX	Support was added for the Cisco uBR-MC28U/X cable interface line card, including additional information about DOCSIS 2.0 A-TDMA and mixed modulation profiles.
12.2(15)BC2	Additional information was added to the display for DOCSIS 2.0 A-TDMA and mixed modulation profiles on the Cisco uBR10-MC5X20S cable interface line card.
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. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCC	This command was modified. The command output was modified to show logical channels information when multiple logical channels are configured.
12.2(33)SCD2	This command was modified. The command output was modified to show weighted fair queuing (WFQ) parameters configured for upstream service flows.
12.2(33)SCE	This command was modified. The command output was modified to show the upstream scheduler output for a MAC domain configured with DPON. 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.

Usage Guidelines

In releases prior to Cisco IOS Release 12.2 BC, information for the MAC scheduler was displayed using the **show interface cable** and **show interface cable upstream** commands. In Cisco IOS Release 12.2 BC, the MAC scheduler information is moved to this command.

Example of the show interface cable mac-scheduler Command Output for the Cisco uBR7246VXR and Cisco uBR7225VXR Routers

This example shows theoutput of the **show interface cable mac-scheduler** command for the upstream port 0 on the indicated cable interface:

```
Router# show interface cable 3/0 mac-scheduler 0

    DOCSIS 1.1 MAC scheduler for Cable3/0/U0
     Queue[Rng Polls] 0/64, 0 drops
     Queue[CIR Grants] 0/64, 0 drops
     Queue[BE(7) Grants] 0/64, 0 drops
     Queue[BE(6) Grants] 0/64, 0 drops
     Queue[BE(5) Grants] 0/64, 0 drops
     Queue[BE(4) Grants] 0/64, 0 drops
     Queue[BE(3) Grants] 0/64, 2 drops
     Queue[BE(2) Grants] 0/64, 0 drops
     Queue[BE(1) Grants] 0/64, 0 drops
     Queue[BE(0) Grants] 0/64, 0 drops
     Req Slots 21992195, Req/Data Slots 0
     Init Mtn Slots 313764, Stn Mtn Slots 37638
     Short Grant Slots 3739132, Long Grant Slots 512
     Fragmentation count 5
     Fragmentation test disabled
     Avg upstream channel utilization : 2%
     Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
     Avg percent contention slots : 96%
     Avg percent initial ranging slots : 1%
     Avg percent minislots lost on late MAPs : 0%
     Sched Table Adm-State: Grants 1, Reqpolls 0, Util 2%
     UGS    : 1 SIDs, Reservation-level in bps 80000
     UGS-AD : 0 SIDs, Reservation-level in bps 0
     RTPS   : 0 SIDs, Reservation-level in bps 0
     NRTPS  : Not Supported
     BE     : 4 SIDs, Reservation-level in bps 0
Example of the show interface cable
 mac-scheduler
Command Output When Multiple Logical Channels are Configured for the Cisco uBR10012 Routers
```

OFDMA upstreams is calculated based on maximum single modem upstream performance. Actual performance can vary depending upon cable modem capabilities, possible congestion in the network, and other conditions.

This example shows the output of the **show interface cable mac-scheduler** command when multiple logical channels are configured on the indicated cable interface:

```
Router# show interface cable 7/1/0 mac-scheduler 0

 DOCSIS 1.1 MAC scheduler for Cable7/1/0/U0: rate 2560000
     wfq:None Fairness: Off
     Queue[Rng Polls] 0/128, 0 drops, flows 0 fs_demand_ms 0, max 1
     Queue[CIR Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(7) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(6) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(5) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(4) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(3) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(2) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
     Queue[BE(1) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
```

```
      Queue[BE(0) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Req Slots 10348117, Req/Data Slots 10072546
      Init Mtn Slots 298967, Stn Mtn Slots 21926
      Short Grant Slots 24, Long Grant Slots 16
      Adv Phy Short Grant Slots 0, Adv Phy Long Grant Slots 0
      Adv Phy UGS Grant Slots 0
      Awacs Slots 0
      Fragmentation count 0
      Fragmentation test disabled
      Avg upstream channel utilization : 0%
      Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
      Avg percent contention slots : 97%
      Avg percent initial ranging slots : 3%
      Avg percent minislots lost on late MAPs : 0%
      Sched Table Rsv-state: Grants 0, Reqpolls 0
      Sched Table Adm-State: Grants 0, Reqpolls 0, Util 0%
      UGS    : 0 SIDs, Reservation-level in bps 0
      UGS-AD : 0 SIDs, Reservation-level in bps 0
      RTPS   : 0 SIDs, Reservation-level in bps 0
      NRTPS  : 0 SIDs, Reservation-level in bps 0
      BE     : 4 SIDs, Reservation-level in bps 0
      MAP TSS: lch_state 11, init_retries 0
               late_initial_maps 0, late_ucd_maps 0
               mac-phy tss errors 0
      DOCSIS 1.1 MAC scheduler for Cable7/1/0/U8: rate 2560000
      wfq:None Fairness: Off
      Queue[Rng Polls] 0/128, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[CIR Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(7) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(6) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(5) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(4) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(3) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(2) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(1) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Queue[BE(0) Grants] 0/256, 0 drops, flows 0 fs_demand_ms 0, max 0
      Req Slots 0, Req/Data Slots 0
      Init Mtn Slots 0, Stn Mtn Slots 0
      Short Grant Slots 0, Long Grant Slots 0
      Adv Phy Short Grant Slots 0, Adv Phy Long Grant Slots 0
      Adv Phy UGS Grant Slots 0
      Awacs Slots 0
      Fragmentation count 0
      Fragmentation test disabled
      Avg upstream channel utilization : 0%
      Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
      Avg percent contention slots : 0%
      Avg percent initial ranging slots : 0%
      Avg percent minislots lost on late MAPs : 0%
      Sched Table Rsv-state: Grants 0, Reqpolls 0
      Sched Table Adm-State: Grants 0, Reqpolls 0, Util 0%
      UGS    : 0 SIDs, Reservation-level in bps 0
      UGS-AD : 0 SIDs, Reservation-level in bps 0
      RTPS   : 0 SIDs, Reservation-level in bps 0
      NRTPS  : 0 SIDs, Reservation-level in bps 0
      BE     : 0 SIDs, Reservation-level in bps 0
      MAP TSS: lch_state 1, init_retries 0
               late_initial_maps 0, late_ucd_maps 0
               mac-phy tss errors 0
```

Example of the **show interface cable mac-scheduler** Command Output That Displays WFQ Parameters in the Cisco uBR10012 Router

This example shows theoutput of the **show interface cable mac-scheduler command that displays** WFQ parameters configured for upstream service flows in slot 5, subslot 0, and port 1 on a Cisco uBR10012 router:

```
Router# show interface cable 5/0/2 mac-scheduler 0
DOCSIS 1.1 MAC scheduler for Cable5/0/2/U0: rate 10240000
wfq:Class,  weights: 1  2  3  4  5  6  7  8
Queue[Rng Polls] 0/128, 0 drops, flows 0 max 0
Queue[CIR Grants] 0/256, 0 drops, flows 0 max 0
Queue[BE(7) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(6) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(5) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(4) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(3) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(2) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(1) Grants] 0/32, 0 drops, flows 0 max 0
Queue[BE(0) Grants] 0/32, 0 drops, flows 0 max 0
Queue[LLQ Grants] 0/64, 0 drops, flows 0 max 0
BG pending grant list entries: 0
BG delay list entries: 0
Req Slots 265389868, Req/Data Slots 4
Init Mtn Slots 3798558, Stn Mtn Slots 0
Short Grant Slots 0, Long Grant Slots 0
Adv Phy Short Grant Slots 0, Adv Phy Long Grant Slots 0
Adv Phy UGS Grant Slots 0
Awacs Slots 0
Fragmentation count 0
Fragmentation test disabled
Avg upstream channel utilization : 0%
Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
Avg percent contention slots : 97%
Avg percent initial ranging slots : 3%
Avg percent minislots lost on late MAPs : 0%
Sched Table Rsv-state: Grants 0, Reqpolls 0
Sched Table Adm-State: Grants 0, Reqpolls 0, Util 0%
UGS    : 0 SIDs, Reservation-level in bps 0
UGS-AD : 0 SIDs, Reservation-level in bps 0
RTPS   : 0 SIDs, Reservation-level in bps 0
NRTPS  : 0 SIDs, Reservation-level in bps 0
BE     : 0 SIDs, Reservation-level in bps 0
MAP TSS: lch_state 11, init_retries 0
late_initial_maps 0, late_ucd_maps 0
mac-phy tss errors 0
r4k ticks in 1ms 800000
Total scheduling events 0
No search was needed 0
Previous entry free 0
Next entry free 0
Could not schedule 0
Recovery failed 0
Curr time 251 entry 251
Example of the show interface cable
 mac-scheduler
Command Output That Displays Upstream Scheduler Information for a MAC Domain Configured
with D-PON
```

This example shows theoutput of the **show interface cable mac-scheduler** command that displays upstream scheduler related information for a MAC domain configured with D-PON:

```
Router# show interface cable 7/0/2 mac-scheduler 1
```

```
      DOCSIS 1.1 MAC scheduler for Cable7/0/2/U1: rate 15360000
      wfq:None
      Req Slots 124, Req/Data Slots 13
      Init Mtn Slots 2243, Stn Mtn Slots 5
      Short Grant Slots 0, Long Grant Slots 0
      Adv Phy Short Grant Slots 1, Adv Phy Long Grant Slots 0
      Adv Phy UGS Grant Slots 0
      Awacs Slots 0
      Fragmentation count 0
      Fragmentation test disabled
      Avg upstream channel utilization : 0%
      Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
      Avg percent contention slots : 97%
      Avg percent initial ranging slots : 3%
      Avg percent minislots lost on late MAPs : 0%
      Sched Table Rsv-state: Grants 0, Reqpolls 0
      Sched Table Adm-State: Grants 0, Reqpolls 0, Util 0%
      UGS    : 0 SIDs, Reservation-level in bps 0
      UGS-AD : 0 SIDs, Reservation-level in bps 0
      RTPS   : 0 SIDs, Reservation-level in bps 0
      NRTPS  : 0 SIDs, Reservation-level in bps 0
      BE     : 0 SIDs, Reservation-level in bps 0
      MAP TSS: lch_state 13, init_retries 0
               late_initial_maps 0, late_ucd_maps 0
               mac-phy tss errors 0
! Only the DPON reference channel will display the following
Queue[Rng Polls] 0/128, 0 drops, flows 0 max 3
Queue[CIR Grants] 0/256, 0 drops, flows 0 max 1
Queue[BE(7) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(6) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(5) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(4) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(3) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(2) Grants] 0/64, 0 drops, flows 0 max 2
Queue[BE(1) Grants] 0/64, 0 drops, flows 0 max 0
Queue[BE(0) Grants] 0/64, 0 drops, flows 0 max 1
BG pending grant list entries: 0
BG delay list entries: 0
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output for the **show interface cable mac-scheduler** command:

```
Router#show interface  c3/0/0 mac-scheduler

      DOCSIS 1.1 MAC scheduler for Cable3/0/0/U0 : rate 30720000
      wfq:None
      us_balance:OFF
      fairness:OFF
      Queue[Rng Polls] flows 0
      Queue[CIR Grants] flows 0
      Queue[BE(07) Grants] flows 0
      Queue[BE(06) Grants] flows 0
      Queue[BE(05) Grants] flows 0
      Queue[BE(04) Grants] flows 0
      Queue[BE(03) Grants] flows 0
      Queue[BE(02) Grants] flows 0
      Queue[BE(01) Grants] flows 0
      Queue[BE(00) Grants] flows 0
      Req Slots 985995867, Req/Data Slots 1543519
      Init Mtn Slots 14621488, Stn Mtn Slots 40946
      Short Grant Slots 0, Long Grant Slots 0
```

```
     Adv Phy Short Grant Slots 1732, Adv Phy Long Grant Slots 0
     Adv Phy UGS Grant Slots 0
     Avg upstream channel utilization : 0%
     Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
     Avg percent contention slots : 98%
     Avg percent initial ranging slots : 1%
     Avg percent minislots lost on late MAPs : 0%

     MAP TSS: lch_state 9, init_retries 0
              late_initial_maps 0, late_ucd_maps 0
              mac-phy tss errors 0, missed ccc 0
     DOCSIS 1.1 MAC scheduler for Cable3/0/0/U1 : rate 30720000
     wfq:None
     us_balance:OFF
     fairness:OFF
     Queue[Rng Polls] flows 0
     Queue[CIR Grants] flows 0
     Queue[BE(07) Grants] flows 0
     Queue[BE(06) Grants] flows 0
     Queue[BE(05) Grants] flows 0
     Queue[BE(04) Grants] flows 0
     Queue[BE(03) Grants] flows 0
     Queue[BE(02) Grants] flows 0
     Queue[BE(01) Grants] flows 0
     Queue[BE(00) Grants] flows 0
     Req Slots 985976158, Req/Data Slots 1548452
     Init Mtn Slots 14621526, Stn Mtn Slots 45933
     Short Grant Slots 0, Long Grant Slots 0
     Adv Phy Short Grant Slots 11243, Adv Phy Long Grant Slots 0
     Adv Phy UGS Grant Slots 0
     Avg upstream channel utilization : 0%
     Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
     Avg percent contention slots : 98%
     Avg percent initial ranging slots : 1%
     Avg percent minislots lost on late MAPs : 0%

     MAP TSS: lch_state 9, init_retries 0
              late_initial_maps 0, late_ucd_maps 0
              mac-phy tss errors 0, missed ccc 0
Router#
```

This example shows the output for the **show interface cable mac-scheduler** command for specific upstream port:

```
Router#show interface c3/0/0 mac-scheduler 0

     DOCSIS 1.1 MAC scheduler for Cable3/0/0/U0 : rate 30720000
     wfq:None
     us_balance:OFF
     fairness:OFF
     Queue[Rng Polls] flows 0
     Queue[CIR Grants] flows 0
     Queue[BE(07) Grants] flows 0
     Queue[BE(06) Grants] flows 0
     Queue[BE(05) Grants] flows 0
     Queue[BE(04) Grants] flows 0
     Queue[BE(03) Grants] flows 0
     Queue[BE(02) Grants] flows 0
     Queue[BE(01) Grants] flows 0
     Queue[BE(00) Grants] flows 0
     Req Slots 1358971798, Req/Data Slots 2127346
```

```
     Init Mtn Slots 20155580, Stn Mtn Slots 56513
     Short Grant Slots 0, Long Grant Slots 0
     Adv Phy Short Grant Slots 2331, Adv Phy Long Grant Slots 0
     Adv Phy UGS Grant Slots 0
     Avg upstream channel utilization : 0%
     Avg upstream channel utilization in 60 sec(SNMP, excl dps): 0%
     Avg percent contention slots : 98%
     Avg percent initial ranging slots : 1%
     Avg percent minislots lost on late MAPs : 0%

     MAP TSS: lch_state 9, init_retries 0
              late_initial_maps 0, late_ucd_maps 0
              mac-phy tss errors 0, missed ccc 0
Router#
```

This example shows the output for the **show interface cable mac-scheduler** command with **map-stats** keyword:

```
Router#show interface c3/0/0 mac-scheduler 0 map-stats


UBR MAP Proxy U0 for Cable3/0/0/U0:
     mslots_per_frame: 1        frame_in_nsecs: 50000
     Bktwidth:(2000 usecs, 20480 tstamps, 40 mslots) numbkts:150
     Tblwidth:(300000 usecs, 3072000 tstamps, 6000 mslots)
     Vacant bkt interval: 1200 mslots
     Bucket vacancy table (slot_count, used_ms, vacancy_ms)
     (  1,  0,  0) (  0,  4, 36) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  1,  0,  0) (  0,  4, 36) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  1,  0,  0) (  0,  4, 36) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  1,  0,  0) (  0,  4, 36) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39) (  0,  1, 39)
     ReqSlotSz:1  ReqSlotChunkSz:4  ImSlotSz:38   SmSlotsz:2
     MinFragSz:0  AdvMinFragSz:2 MaxUnFragSz:10 TolUfragJitt:0
     Current UCD count: 3
     UnfragSlotJittLimit: 0 usecs, CACEnf:0
     Force fragmentation: Threshold 2000
```

```
     fwd_tbl_sz:0 adv_fwd_tbl_sz:1630

UBR MAP Builder pch 12, lch 0 status 1
     MAP Calndr Variables: Numbkts:150
     Bktwidth:(2000 usecs, 20480 tstamps, 40 mslots)
     Tblwidth:(300000 usecs, 3072000 tstamps, 6000 mslots)
     Vacant bkt interval: 1200 mslots
     Bucket table (map_bkt_idx, total_rsvd_ms)
     (0  ,0  ) (1  ,0  ) (2  ,0  ) (3  ,0  ) (4  ,0  )
     (5  ,0  ) (6  ,0  ) (7  ,0  ) (8  ,0  ) (9  ,0  )
     (10 ,0  ) (11 ,0  ) (12 ,0  ) (13 ,0  ) (14 ,0  )
     (15 ,0  ) (16 ,0  ) (17 ,0  ) (18 ,0  ) (19 ,0  )
     (20 ,0  ) (21 ,0  ) (22 ,0  ) (23 ,0  ) (24 ,0  )
     (25 ,0  ) (26 ,0  ) (27 ,0  ) (28 ,0  ) (29 ,0  )
     (30 ,0  ) (31 ,0  ) (32 ,0  ) (33 ,0  ) (34 ,0  )
     (35 ,0  ) (36 ,0  ) (37 ,0  ) (38 ,0  ) (39 ,0  )
     (40 ,0  ) (41 ,0  ) (42 ,0  ) (43 ,0  ) (44 ,0  )
     (45 ,0  ) (46 ,0  ) (47 ,0  ) (48 ,0  ) (49 ,0  )
     (50 ,0  ) (51 ,0  ) (52 ,0  ) (53 ,0  ) (54 ,0  )
     (55 ,0  ) (56 ,0  ) (57 ,0  ) (58 ,0  ) (59 ,0  )
     (60 ,0  ) (61 ,0  ) (62 ,0  ) (63 ,0  ) (64 ,0  )
     (65 ,0  ) (66 ,0  ) (67 ,0  ) (68 ,0  ) (69 ,0  )
     (70 ,0  ) (71 ,0  ) (72 ,0  ) (73 ,0  ) (74 ,0  )
     (75 ,0  ) (76 ,0  ) (77 ,0  ) (78 ,0  ) (79 ,0  )
     (80 ,0  ) (81 ,0  ) (82 ,0  ) (83 ,0  ) (84 ,0  )
     (85 ,0  ) (86 ,0  ) (87 ,0  ) (88 ,0  ) (89 ,0  )
     (90 ,0  ) (91 ,0  ) (92 ,0  ) (93 ,0  ) (94 ,0  )
     (95 ,0  ) (96 ,0  ) (97 ,0  ) (98 ,0  ) (99 ,0  )
     (100,0  ) (101,0  ) (102,0  ) (103,0  ) (104,0  )
     (105,0  ) (106,0  ) (107,0  ) (108,0  ) (109,0  )
     (110,0  ) (111,0  ) (112,0  ) (113,0  ) (114,0  )
     (115,0  ) (116,0  ) (117,0  ) (118,0  ) (119,0  )
     (120,0  ) (121,0  ) (122,0  ) (123,0  ) (124,0  )
     (125,0  ) (126,0  ) (127,0  ) (128,0  ) (129,0  )
     (130,0  ) (131,0  ) (132,0  ) (133,0  ) (134,0  )
     (135,0  ) (136,0  ) (137,0  ) (138,0  ) (139,0  )
     (140,0  ) (141,0  ) (142,0  ) (143,0  ) (144,0  )
     (145,0  ) (146,0  ) (147,0  ) (148,0  ) (149,0  )
     ReqSlotSz:1  ReqSlotChunkSz:4  ImSlotSz:38   SmSlotsz:2
     MinFragMSlots:33 AdvMinFragMSlots: 2
     MaxUnFragSz:33  MaxUnFragSzNoJumbo:33, TolUfragJitt:0
     Current UCD count: 4
     UnfragSlotJittLimit: 0 usecs, CACEnf:1
     Force fragmentation: Threshold 2000
     MAP BD Varaibles
     last_sid 16383, last_iuc 1, next_ie_offset 0
     nonzero_len 0, zero_len 0
     map_cycle_usecs 2000, map_size_mslots 40
     sm_mslot_nopad 4, sm_mslot_pad 4 giant_map_check_mslot 80
     nom_map_adv_usecs 2757, max_map_adv_usecs 3880

     fwd_tbl_sz:0 adv_fwd_tbl_sz:1630

Router#
```

Table 20: show interface cable mac-scheduler Field Descriptions

Field	Description
wfq	WFQ parameters: class, activity, and custom weights for service flow priorities.

Field	Description

Queue...	State of the first-in, first-out (FIFO) priority queues for each scheduler. For each queue, the command displays the following:
	• Name of the queue. The following queues are available:
	  • Rng Polls—Queue used for ranging requests.
	  • CIR Grants—Queue used for committed information rate (CIR) grants, which is used for Unsolicited Grant Service (UGS) and UGS with Activity Detection (UGS-AD) service flows.
	  • BE(x) Grants—One of the eight queues used for Best-Effort(BE) service flows.
	• Number of currently occupied slots over the total number of slots available (which is hardcoded to 64 for each queue). For example, 3/64 indicates that the queue has a depth of 64 slots available and that 3 are currently in use.
	• Number of packets dropped because the queue already had 64 requests pending and a free slot was therefore not available.

Req Slots	Counter showing the number of slots advertised on this upstream port for bandwidth request opportunities since the last reset of the router or the counter.
Req/Data	Counter showing the number of slots advertised on this upstream port for request and data transmission opportunities since the last reset of the router or the counter.
Init Mtn Slots	Number of slots granted on this upstream port for initial maintenance requests (initial ranging) since the last reset of the router or the counter.
Stn Mtn Slots	Number of slots granted on this upstream port for station maintenance requests (unicast ranging) since the last reset of the router or the counter.
Short Grant Slots	Number of slots granted on this upstream port for short data requests since the last reset of the router or the counter.
Long Grant Slots	Number of slots granted on this upstream port for long data requests since the last reset of the router or the counter.
Adv Phy Short Grant Slots	Number of slots granted on this upstream port for short advanced physical data requests.
Adv Phy Long Grant Slots	Number of slots granted on this upstream port for long advanced physical data requests.
Adv Phy UGS Grant Slots	Number of UGS slots granted on this upstream port.
Awacs Slots	Number of awacs slots granted on this upstream port.
Fragmentation count	Number of frames received on this upstream port fragmented according to the DOCSIS 1.1 fragmentation technique.

Field	Description
Fragmentation test	Fragmentation statistics. If fragmentation is disabled, no statistics are available. If fragmentation is enabled, the fragmentation mode is displayed (multiple grant mode or piggyback mode), and the display shows the fragmentation threshold in the number of bytes and minislots.
Avg upstream channel utilization	Total upstream bandwidth currently used for upstream data traffic and DOCSIS management traffic, expressed as a short-term average percentage of total minislots used. **Note** See table below for the theoretical maximum possible bandwidth for an upstream, based on the channel width and modulation scheme.
Avg percent contention slots	Approximate average unused capacity in the network. This field shows the total upstream bandwidth that is currently dedicated to providing bandwidth request opportunities, expressed as an average percentage of total minislots used. This value is calculated by dividing the number of scheduled contention slots by the total number of minislots. **Note** This value is approximately 100 percent minus the percentage of slots being used for upstream data, management traffic, and initial ranging slots.
Avg percent initial ranging slots	Total upstream bandwidth currently used on an average for initial ranging requests for cable modems coming online, expressed as an average percentage of total minislots used.
Avg percent minislots lost on late MAPs	Total upstream bandwidth currently lost and unused because the bandwidth allocation MAP message was sent late. This field shows how often allocation gaps occur in the MAP scheduler, where the Cisco CMTS allows significant amounts of time to pass before it schedules a new MAP. Ideally, the CMTS should schedule MAPs consecutively, so that no gaps occur between the MAPs. However, when a large number of cable modems are using different service flow schedules, gaps can appear in the MAP scheduler, resulting in wasted scheduling time. **Tip** A typical value is only a few percentage points. If this field shows larger values than this, use the **debug cable startalloc** command to display the number of minislots that are skipped every time the Cisco CMTS has to adjust its MAP scheduler timer.
Sched Table Rsv-State	Current status of reserved service flows (which typically indicates the number of voice grants): • Grants—Number of admitted UGS style upstream service flows. • Reqpolls—Number of admitted Real Time Polling Service (RTPS) style upstream service flows.

Field	Description
Sched Table Adm-State	Current status of admitted service flows (which typically indicates the number of voice grants): • Grants—Number of admitted UGS style upstream service flows. • Reqpolls—Number of admitted RTPS style upstream service flows. • Percentage of channel utilization that is associated with these service flows.
UGS	Number of service IDs (SIDs) used for UGS service flows, and the current bandwidth reserved by these SIDs, in bits per second.
UGS-AD	Number of SIDs used for UGS with Activity Detection (UGS-AD) service flows, and the current bandwidth reserved by these SIDs, in bits per second.
RTPS	Number of SIDs used for RTPS service flows, and the current bandwidth reserved by these SIDs, in bits per second.
NRTPS	Number of SIDs used for non-RTPS (NRTPS) service flows, and the current bandwidth reserved by these SIDs, in bits per second.
BE	Number of SIDs used for best-effort (BE) service flows, and the current bandwidth reserved by these SIDs, in bits per second.
MAP TSS	MAP timestamp snapshot.

Note The sum of *Avg upstream channel utilization* and *Avg percent contention slots* need not be 100 percentage when rate-adapt is configured. These parameters may be in single digit when the remaining contention slots are assigned to other users and are not using any bandwidth.

The table below shows the maximum usable bandwidth (total bandwidth minus header and MAC-layer overhead) for an upstream that is using a specific channel width and modulation scheme combination.

Table 21: Maximum Potential Upstream Bandwidth

Channel Width (MHz)	Modulation Scheme	Raw Speed (Mbps)	Usable Bandwidth (Mbps)
1.6	QPSK	2.56	2.2
1.6	16 QAM	5.12	4.4
3.2	16 QAM	10.24	8.9
3.2	64 QAM	15.36	13.5
6.4	16 QAM	20.48	18
6.4	64 QAM	30.72	27.2

For example, if the upstream is configured for a 3.2 MHz channel width and is using 16 QAM modulation, its maximum usable bandwidth is 8.9 Mbps. If the average channel utilization field

shows that the upstream is at 50 percent, it indicates that cable modems on that upstream are currently using 0.5 * 8.9 Mbps or 4.45 Mbps.

Tip In Cisco IOS Release 12.1(12)EC, Cisco IOS Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in the line configuration mode.

Related Commands

Command	Description
show interface cable	Displays the configuration and status information for the cable interface.
show interface cable sid	Displays SID information of each CM on the network.
show interface cable signal-quality	Displays the cable signal quality information.
show interface cable upstream	Displays one or all of the cable interface upstream information.

show interface cable modem

To display information about cable modems (CMs) and customer premise equipment (CPE) behind a CM on a specified cable interface, use the **show interface cable modem** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **modem** [*sid* | **ipv6**]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **modem** [*sid* | **ipv6**]

Cisco cBR Series Converged Broadband Router
show interface cable {*slot*/*subslot*/*cable-interface-index*} **modem** [*sid* | **ipv6**]

Syntax Description

cable*slot*/*subslot*/*cable-interface-index*	*Specifies details of a cable interface line card:* • *slot*—Slot where the line card resides. • *subslot*—(Cisco uBR10012 and Cisco cBR-8) Secondary slot number of the line card. • *port*—Downstream port number of the line card. • *cable-interface-index*—Downstream port or MAC domain index of the line card. For the Cisco cBR series router: • *slot*—Slot where the card resides. The valid range is from 0 to 3 and 6 to 9 on the Cisco cBR-8 router. • *subslot*—Subslot where the card resides. The valid value is 0 on the Cisco cBR-8 router. • *cable-interface-index*—cable interface index number. The valid values are from 0 to 15 on the Cisco cBR-8 router.
sid	(Optional) Specifies the service ID (SID) to be displayed. The valid range is from 0 to 8176.
ipv6	(Optional) Specifies an IPv6 cable modem and connected host state.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(11)BC2	This command was introduced.

Release	Modification

12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:
	• Support for the Cisco uBR7225VXR router was added.
	• The "Dual IP" output field was added to indicate support of both IPv4 and IPv6 addressing.
	• Multicast information was added to the output.
	• The following new initialization states were added to show initialization of CMs and CPEs supporting IPv6:
	  • init6(s)—CMTS router has seen SOLICIT message
	  • init6(a)—CMTS router has seen ADVERTISE message
	  • init6(r)—CMTS router has seen REQUEST message
	  • init6(i)—CMTS router has seen REPLY message
	  • init6(o)—CMTS router has seen version 6 TFTP request
	  • init6(t)—CMTS router has seen version 6 TOD request

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.
12.2(33)SCG	The **ipv6** keyword was added to this command.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The **show interface cable modem** command displays the cable modems that are known to be using or were last using the specified cable interface. When a cable modem goes offline, it remains associated with its last known cable interface and is shown as "offline" in the command's display for 24 hours.

The CPE devices associated with offline cable modems remain in the command's display either until their cable modem has been offline for 24 hours or until the device's Address Resolution Protocol (ARP) entry times out (the default value is 4 hours), whichever comes first.

The **show interface cable modem** command shows similar information to the **show cable modem** command, but adds information about the privacy bits and IP addressing method.

The **show interface cable modem** command with the **ipv6** keyword also displays the IPv4 CM in the output if an IPv6 or dual stack CPE is behind the IPv4-only cable modem. In all other cases, only IPv6 data of a CM or CPE is displayed.

The IPv6 output of the **show interface cable modem** command differs from the IPv4 command. The privacy bits and the dual IP flag of the IPv4 command output are not present in the output of the **show interface cable modem** command.

Table 22: Interface Density Information

CMTS Router	Line Card	Slot	Subslot	Port	Cable Interface Index
Cisco uBR10012	Cisco uBR-MC3GX60V	5 to 8	0 or 1	0 to 4	0 to 14
	Cisco UBR-MC20X20V				0 to 4
	Cisco uBR10-MC5X20				
Cisco uBR7225VXR	All	1 or 2	—	0 or 1	—
Cisco uBR7246VXR	All	3 to 6	—	0 or 1	—

Examples

This example shows output from the **show interface cable modem** command for all SIDs on a particular cable interface on a Cisco 7200 series router.

```
Router# show interface cable 6/0 modem
SID   Priv bits  Type      State       IP address      method    MAC address
1     11         modem     online(pt)  1.2.3.2         dhcp      0050.7366.1837
2     11         modem     online(pt)  1.2.3.3         dhcp      0010.7b6b.71fd
3     11         modem     online(pt)  1.2.3.4         dhcp      0010.7bb3.fc3d
4     00         modem     init(r1)    1.2.3.238       dhcp      0010.7b6b.71a9
5     11         modem     online(pt)  1.2.3.5         dhcp      0010.7bed.a731
6     11         modem     online(pt)  1.2.3.20        dhcp      0010.7bed.ab4b
7     11         modem     online(pt)  1.2.3.18        dhcp      0010.7b6b.71e3
8     11         modem     online(pt)  1.2.3.13        dhcp      0010.7bed.ab6f
9     11         modem     online(pt)  1.2.3.21        dhcp      0010.7bed.a52f
10    11         modem     online(pt)  1.2.3.14        dhcp      0010.7b6b.7191
11    11         modem     online(pt)  1.2.3.6         dhcp      0010.7bed.ab57
```

This example shows output from the **show interface cable modem** command for an individual SID on a particular cable interface on a Cisco 7200 series router.

```
Router# show interface cable 6/0 modem 9
SID   Priv bits  Type      State       IP address      method    MAC address
9     11         modem     online(pt)  1.2.3.21        dhcp      0010.7bed.a52f
```

This example shows output from the **show interface cable modem** command in Cisco IOS release 12.2(33)SCA on a particular cable interface on a Cisco uBR10012 router. None of the CMs or CPEs are supporting both IPv4 and IPv6 addressing, which is indicated by the “N” in the Dual IP output field.

```
Router# show interface cable 8/0/0 modem 0

SID   Priv Type      State          IP address      method  MAC address     Dual
      bits                                                                  IP
1     11   modem     online(pt)     10.3.134.12     dhcp    0008.0da6.1c47  N
1     11   host      unknown        10.3.134.74     static  000b.bf95.f555  N
2     00   modem     init(o)        10.3.225.26     dhcp    0007.0e07.27d7  N
3     00   modem     init(i)        10.3.225.19     dhcp    0007.0e06.c769  N
4     11   modem     online(pt)     10.3.134.3      dhcp    0008.0da6.3447  N
5     11   modem     online(pt)     10.3.134.38     dhcp    0011.8065.e78e  N
6     00   modem     init6(i)       unavailable             0018.6835.27dd  N
7     11   modem     online(pt)     10.3.134.10     dhcp    0011.8065.e7a6  N
8     00   modem     init(i)        10.3.134.9      dhcp    0006.53b6.57f5  N
9     11   modem     online(pt)     10.3.134.27     dhcp    0006.53b6.581d  N
10    11   modem     online(pt)     10.3.134.5      dhcp    0007.0e04.ebfd  N
```

This example shows the output from the **show interface cable modem** command that shows multicast information:

```
Router# show interface cable 6/1/0 modem
SID    Priv Type      State          IP address      method  MAC address     Dual
       bits                                                                  IP
9      11   modem     online(pt)     101.1.0.6       dhcp    0006.28f9.8c79   N
9      11   host      unknown        111.1.1.45      dhcp    0018.1952.a859   N
10     10   modem     online(pt)     101.1.0.5       dhcp    0006.5305.ac19   N
10     10   host      unknown        111.1.0.3       dhcp    0018.1952.a85a   N
13     10   modem     online(pt)     101.1.0.3       dhcp    0014.f8c1.fd1c   N
8195   10   multicast unknown        224.1.1.51      static  0000.0000.0000   N
8195   10   multicast unknown        224.1.1.49      static  0000.0000.0000   N
8195   10   multicast unknown        224.1.1.50      static  0000.0000.0000   N
```

This example shows the output of the **show interface cable modem** command with the **ipv6** keyword in Cisco IOS Release 12.2(33)SCG:

```
Router# show interface cable 7/0/0 modem ipv6
SID  Type State         IPv6 Address                              M MAC address
11   CM  online        2001:420:3800:809:3519:5F9C:B96A:D31      D 0025.2e2d.743a
11   CPE unknown       2001:420:3800:809:3DB2:8A6C:115F:41D8     D 0011.2544.f33b
```

This example shows the output of the **show interface cable modem** on the Cisco cBR-8 router:

```
Router#show interface cable 1/0/0 modem
                                                                          D
SID    Priv Type      State          IP address      method  MAC address      I
       bits                                                                  P
1      00   modem     online         10.10.20.8       dhcp    0025.2eaf.82e4  Y
2      00   modem     online         10.10.20.9       dhcp    0025.2eaf.82f4  Y
3      00   modem     online         10.10.20.110     dhcp    0025.2e2d.74f8  Y
4      00   modem     online         10.10.20.4       dhcp    0025.2e2d.75be  Y
5      00   modem     online         10.10.20.7       dhcp    0025.2eaf.7f38  Y
5      00   host      unknown        10.10.20.10      dhcp    b8c7.5dcd.04cd  N
6      00   modem     online         10.10.20.6       dhcp    0025.2eaf.8302  Y


Active modems        : 6
Total active devices : 7
```

Table 23: show interface cable modem Field Descriptions

Field	Description
SID	Identifies a SID currently defined and in use on this particular cable interface.

Field	Description
Priv bits	Identifies the current settings of the two privacy bits in the Extended Header (EH) that is used for BPI-encrypted packets. • First bit—Enable bit. Set to 1 when BPI or BPI+ is enabled. • Second bit—Toggle bit. Matches the least significant bit (LSB) of the Key Sequence Number (KSN) in the EH. For example, a value of "00" indicates that BPI is not enabled. A value of "10" indicates that BPI is enabled and that the KSN is an even number. A value of "11" indicates that BPI is enabled and that the KSN is an odd number. **Note** For more information on these bits, see the DOCSIS Baseline Privacy Interface Plus Interface Specification (SP-BPI+-I08-020301 or later).
Type	Identifies the use for this SID: • host—SID is used for a CPE device. • modem—SID is used for a CM. • multicast—SID is used for a multicast broadcast.
State	The current state of the MAC layer for this SID and CM. For hosts or multicast broadcasts, the state will always be unknown.
IP address	IP address for the CM using this SID.
IPv6 Address	IPv6 address of the CM or CPE.
method or m	Identifies the way that the IP address was assigned: • dhcp—The Cisco CMTS first learned of this IP address through a DHCP packet that assigned the address to this device. This IP address is therefore assumed to have been dynamically assigned to the cable modem or CPE device by a DHCP server. (Per the DOCSIS specifications, DHCP is the only valid method for cable modems.) • pppoe—(CPE device only) IP addressing for the CPE device was handled by the Point-to-Point Protocol over Ethernet (PPPoE) protocol. • static—(CPE device only) The Cisco CMTS first learned of this IP address from non-DHCP traffic sent to or from this CPE device. This IP address is therefore assumed to be statically assigned to this particular CPE device. **Note** The Cisco CMTS could identify a CPE device as having a static IP address, if the Cisco CMTS has been rebooted after the CPE device received its IP address from the DHCP server.
MAC address	Identifies the hardware (MAC) address for the CM using this SID.
Dual IP (On Cisco cBR series router) DIP	Identifies whether or not ("Y" or "N") the CM or CPE supports both IPv4 and IPv6 addressing.
Active modems	Total number of active cable modems that are connected to the cable interface.

Field	Description
Total active devices	Total number of active cable modems and customer premises equipment (CPE) devices that are connected to the cable interface.

Table 24: Descriptions for the MAC State Field The CM MAC state field can also be retrieved using SNMP by getting the value of the cdxCmtsCmStatusValue object in the CISCO-DOCS-EXT-MIB.

MAC State Value	Description
Registration and Provisioning Status Conditions for Devices Using IPv4 Addressing	
init(r1)	The CM sent initial ranging.
init(r2)	The CM is ranging. The CMTS received initial ranging from the Cm and has sent RF power, timing offset, and frequency adjustments to the CM.
init(rc)	Ranging has completed. **Note** If a CM appears to be stuck in this state, it could be that the CM is able to communicate successfully on the cable network, but that the upstream is at capacity and does not have any additional bandwidth to allow the CM to finish registration and come online. Either manually move one or more CMs to other upstreams, or enable load balancing on the upstream using the **cable load-balance group** commands.
init(d)	The DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
init(dr)	The DHCP request has been sent to the cable modem.
init(i)	The cable modem has received the DHCPOFFER reply (DHCPACK) from the DHCP server that has assigned an IP address to the modem, but the modem has not yet replied with a DHCPREQUEST message requesting that particular IP address, nor has it sent an IP packet with that IP address. **Note** If a CM appears to be stuck in this state, the CM has likely received the DHCPOFFER reply from the DHCP server, but this reply might have contained one or more invalid options for that particular CM.
init(io)	The Cisco CMTS has seen the DHCP offer as sent to the cable modem from the DHCP server that has assigned an IP address to the modem.
init(o)	The CM has begun to download the option file (DOCSIS configuration file) using the Trivial File Transfer Protocol (TFTP), as specified in the DHCP response. If the CM remains in this state, it indicates that the download has failed.
init(t)	Time-of-day (TOD) exchange has started.
resetting	The CM is being reset and will shortly restart the registration process.
Registration and Provisioning Status Conditions for Devices Using IPv6 Addressing	
init6(s)	The Cisco CMTS router has seen the DHCPv6 SOLICIT message from the CM.

MAC State Value	Description
init6(a)	The Cisco CMTS router has seen the ADVERTISE message from the DHCPv6 server to the CM.
init6(r)	The Cisco CMTS router has seen the REQUEST response from the CM to the DHCPv6 server.
init6(i)	The Cisco CMTS router has seen the REPLY message from the DHCPv6 server to the CM.
init6(o)	The Cisco CMTS router has seen the REQEST message from the CM to the TFTP server.
init6(t)	The Cisco CMTS router has seen the REQUEST message from the CM to the TOD server.
Non-error Status Conditions	
cc(r1)	The CM had registered and was online, but has received a Downstream Channel Change (DCC) or Upstream Channel Change (UCC) request message from the CMTS. The CM has begun moving to the new channel, and the CMTS has received the CM's initial ranging on the new downstream or upstream channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
cc(r2)	This state should normally follow cc(r1) and indicates that the CM has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
offline	The CM is considered offline (disconnected or powered down).
online	The CM has registered and is enabled to pass data on the network.
online(d)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the CM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the CM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the online(d) and online(pk) states.

MAC State Value	Description
online(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and TEK is assigned. BPI encryption is now being performed. **Note** This state is equivalent to the online(d) and online(pt) states.
online(pk)	The CM registered, BPI is enabled and KEK is assigned.
online(pt)	The CM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed. **Note** If network access was disabled in the DOCSIS configuration file sent to the CM, the network disabled status takes precedence, and the MAC status field shows online(d) instead of online(pt) even when BPI encryption is enabled and operational.
Note If an exclamation point (!) appears in front of one of the online states, it indicates that the **cable dynamic-secret** command has been used with either the **mark** or **reject** option, and that the cable modem has failed the dynamic secret authentication check.	
expire(pk)	The CM registered, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value.
expire(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.
expire(pt)	The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The CM attempted to register but registration was refused due to a bad Message Integrity Check (MIC) value. This also could indicate that the shared secret in the DOCSIS configuration file does not match the value configured on the CMTS with the **cable shared-secret** command. In Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases, this could also indicate that the **cable tftp-enforce** command has been used to require that a CM attempt a TFTP download of the DOCSIS configuration file before registering, but the CM did not do so.

MAC State Value	Description
reject(c)	The CM attempted to register, but registration was refused due to a a number of possible errors: • The CM attempted to register with a minimum guaranteed upstream bandwidth that would exceed the limits imposed by the **cable upstream admission-control** command. • The CM has been disabled because of a security violation. • A bad class of service (COS) value in the DOCSIS configuration file. • The CM attempted to create a new COS configuration but the CMTS is configured to not permit such changes. • The CM failed the timestamp check for its DOCSIS configuration file. (This could indicate a possible theft-of-service attempt, or a problem with the synchronization of the clocks on the CM and CMTS.)
reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.
reject(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because KEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pk) states.
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
reject(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pt) states.
Note In Cisco IOS Release 12.1(20)EC, Cisco IOS Release 12.2(15)BC1, and earlier releases, when network access is disabled in the DOCSIS configuration file sent to the CM, the network disabled status takes precedence, and the MAC status field shows online(d) even if BPI encryption fails. Use the **show cable modem** *mac-address* command to confirm whether BPI is enabled or disabled for a particular cable modem.	
reject(ts)	The CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The CM attempted to register, but registration failed because the IP address in the CM request did not match the IP address that the TFTP server recorded when it sent the DOCSIS configuration file to the CM. IP spoofing could be occurring.
reject(na)	The CM attempted to register, but registration failed because the CM did not send a Registration-Acknowledgement (REG-ACK) message in reply to the Registration-Response (REG-RSP) message sent by the CMTS. A Registration-NonAcknowledgement (REG-NACK) is assumed.

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.

show interface cable monitor

Note Effective with Cisco IOS Release 12.2(33)SCA the **show interface cable monitor** command is replaced by the **show interface cable cable-monitor** command.

To display cable monitor information, use the **show interface cable monitor** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **monitor**

Syntax Description

slot/port	Displays information for all CMs on the specified cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers, where: • *slot*—Specifies the chassis slot number of the cable interface line card. • *port*—Specifies the downstream port number. Valid values for these arguments are dependent on your CMTS router and cable interface line card. Refer to the hardware documentation for your router chassis and cable interface line card for supported slot and port numbering.
slot/subslot/port	Displays information for all CMs on the specified cable interface on a Cisco uBR10012 router, where: • *slot* —Specifies the chassis slot number of the cable interface line card. Valid slots are 5 to 8. • *subslot* —Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • *port* —Specifies the downstream port number. Valid ports are 0 to 4, depending on the cable interface line card.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(3a)EC	This command was introduced.
12.2(4)XF	Support was added for the Cisco uBR10012 universal broadband router.
12.2(4)BC1	Support was added to the Release 12.2 BC train.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.2(33)SCA	This command is replaced by the **show interface cable-monitor** command.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface cable monitor** command:

```
Router# show interface cable 5/0 monitor
US/ Time Outbound  Flow     Flow Type      Flow  Packet MAC   MAC       Encap
DS  Stmp Interface Type     Identifier     Extn. Type   Extn. Type      Type
us   no    Et1/2   us-port  0              yes   data   no     -        docsis
all  no    Et1/2   acc-list 103            yes   data   no     -        docsis
all  yes   Et1/2   mac-addr 0050.0000.0000 yes   mac    no     -          -
```

Table 25: show interface cable monitor Field Descriptions

Field	Description
DS	Downstream. Indicates that only downstream flows are monitored.
UP	Upstream. Indicates that only upstream flows are monitored.
ALL	Indicates that all flows are monitored.
Time Stmp	“Yes” indicates that forwarded packets have been time-stamped, with appended 4 bytes. “No” indicates that forwarded packets have not been time-stamped.
Outbound Interface	Identifies the interfaces where the packets have been forwarded to (Ethernet or Fast Ethernet).
Flow Type	Identifies the selected flow type, MAC-address, access-list number, or upstream port number.
Flow Type Identifier	MAC address, access-list number, or service ID.
Flow Extn.	“Yes” indicates that extended filters are configured, and “no” indicates that no extended filters have been configured.
MAC Type	Not applicable.
Encap	DOCSIS encapsulation.
Type	Forwarded packets with Ethernet encapsulation.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
cable monitor	Enables the forwarding of selected packets on the cable interface to an external LAN analyzer.

show interface cable multicast-sessions

To display information about the multicast sessions on a specific cable interface, use the **show interface cable multicast-sessions** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **multicast-sessions**

Cisco IOS Release 12.2(33)SCE and later releases
show interface cable {*slot*/*cable-interface-index*|*slot*/*subslot*/*cable-interface-index*} **multicast-sessions** [**group** [*ipv4-MQoS-groupipv6-MQoS-group*] | **latency** | **sid** [*MQoS-sid*]]

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.
subslot	(Cisco uBR10012 only) Secondary slot of the cable interface line card. The valid subslots are 0 or 1.
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 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.
group [*ipv4-MQoS-group* | *ipv6-MQoS-group*]	Displays information about the specified IPv4 or IPv6 multicast quality of service (MQoS) group.
latency	Displays information about the multicast session latency.
sid [*MQoS-sid*]	Displays information about the MQoS service identifier (SID). The value of the SID ranges from 8192 to 12272.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCA	This command was introduced.
12.2(33)SCE	This command was modified. The port parameter was changed to cable-interface-index to indicate the downstream port of the Cisco uBR10-MC5X20 or the MAC domain index for the Cisco uBR-MC20X20V and Cisco uBR-MC3GX60V cable interface line cards.
12.2(33)SCF	This command was modified. The **latency** keyword was added.
IOS-XE 3.15.0S	This command was removed. It is not available on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example is a sample output from the **show interface cable multicast-sessions** command:

```
Router# show interface cable 7/0/0 multicast-sessions
Default Multicast Service Flow 3 on Cable7/0/0
Multicast Sessions on Cable7/0/0
 Group            Interface    GC  SAID SFID  GQC GEn RefCount GC-Interface State
 224.1.1.45       Bundle1.1    1   8193 24     1   5   1        Bundle1     ACTIVE
 224.1.1.46       Bundle1.1    1   8193 24     1   5   1        Bundle1     ACTIVE
 224.1.1.47       Bundle1.1    1   8193 24     1   5   1        Bundle1     ACTIVE
Aggregate Multicast Sessions on Cable7/0/0
 Aggregate Sessions for SAID 8193 SFID 24 GQC 1 CurrSess 3
 Group            Interface    GC  SAID SFID AggGQC GEn RefCount GC-Interface
 224.1.1.45       Bundle1.1    1   8193 24     1      5   1        Bundle1
 224.1.1.46       Bundle1.1    1   8193 24     1      5   1        Bundle1
 224.1.1.47       Bundle1.1    1   8193 24     1      5   1        Bundle1
```

The following example is a sample output from the **show interface cable multicast-sessions latency** command:

```
Router# show interface cable 5/0/0 multicast-sessions latency
Session (S,G) : (*,230.1.2.4)
Fwd Intfc     : Ca5/0/0
MQoS Entered at        MQoS Exit at
Mar 6 23:13:14.387     Mar 6 23:13:14.387
GC   SAID   SFID   SF req               SF rsp
1    8197   17     Mar 6 23:13:14.387  Mar 6 23:13:14.391
```

The following example is a sample output from the **show interface cable multicast-sessions group** command:

```
Router# show interface cable 5/0/0 multicast-sessions group 230.1.2.4
Multicast Group    : 230.1.2.4
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8197    17      0     1      0
```

The following example is a sample output from the **show interface cable multicast-sessions sid** command:

```
Router# show interface cable 5/0/0 multicast-sessions sid 8197
Multicast Group    : 230.1.2.4
```

```
Source    : N/A
Act GCRs  : 1
Interface : Bu1                    State: A      GI: Bu1         RC: 0
GCR       : GC   SAID    SFID    Key   GQC    GEn
            1    8197    17      0     1      0
```

Related Commands

Command	Description
show interface cable	Displays configuration and status information for the cable interface.
show interface cable modem	Displays information about cable modems and associated customer premises equipment (CPE) devices connected to a particular cable interface.
show interface bundle multicast-sessions	Displays information about the multicast sessions on a specific virtual cable bundle.
show interface modular-cable multicast-sessions	Displays information about multicast sessions on a specific modular-cable interface.
show interface wideband-cable multicast-sessions	Displays information about the multicast sessions on a specific wideband-cable interface.

show interface cable packetcable statistics

To display PacketCable interprocess communication (IPC) statistics based on the cable interface, use the **show interface cable packetcable statistics** command in privileged EXEC mode.

show interface cable {*slot*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **packetcable statistics**

Cisco cBR Series Converged Broadband Router
show interface cable *slot*/*subslot*/*cable-interface-index* **packetcable statistics**

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.
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 15.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 0.

Command Default

None

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 interface cable packetcable statistics**command provides IPC statistics for the PacketCable module for debugging purpose.

Examples

The following is a sample output of the **show interface cable packetcable statistics** command that shows PacketCable IPC statistics based on the cable interface specified on the Cisco uBR10012 router in Cisco IOS Release 12.2(33)SCF:

```
Router# show interface cable 7/1/0 packetcable statistics
Packetcable IPC Statistics on RP
Msg   create     gate       gate       gate set   dsd
      gie        set        del        notify     notify
Sent  0          10         0          0          0
Rcvd  0          0          0          10         0
Packetcable IPC Statistics on LC
Msg   create     gate       gate       gate set   dsd
      gie        set        del        notify     notify
Sent  0          0          0          10         0
Rcvd  0          10         0          0          0
```

The table describes the significant fields shown in the show interface cable packetcable statistics command display.

Table 26: show interface cable packetcable statistics Field Descriptions

Field	Description
Msg	IPC messages sent and received.
create gie	Gate create request.
gate set	Gate set request.
gate del	Gate delete request.
gate set notify	Gate set notification.
dsd notify	Dynamic service delete notification.

Examples for the Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable packetcable statistics** command on the Cisco cBR router:

```
Router#show interface cable 1/0/0 packetcable statistics
Packetcable IPC Statistics on RP
Msg   create     gate       gate       gate set   dsd
      gie        set        del        notify     notify
Sent  0          0          0          0          0
Rcvd  0          0          0          0          0

Router#
```

Related Commands

Command	Description
show interface cable dynamic-qos statistics	Displays dynamic service statistics based on the specified cable interface.

show interface cable privacy

To display the baseline privacy information, use the show interface cable privacy command in privileged EXEC mode.

show interface cable {*slot/portslot/subslot/port*}**privacy** {**all** | **eae-policy** | **tek** | **kek** | **hotlist**}

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot/cable-interface-indexslot/subslot/cable-interface-index*}**privacy** {**all** | **eae-policy** | **tek** | **kek**}

Cisco cBR Series Converged Broadband Router
show interface cable {*slot/cable-interface-indexslot/subslot/cable-interface-index*}**privacy** {**all** | **eae-policy** | **tek** | **kek**}

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only—The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
all	Displays all privacy configuration details.
eae-policy	Displays early authentication and encryption (EAE) configuration details.
tek	Displays the traffic encryption key (tek) values.
kek	Displays the key encryption key (kek) values.

hotlist	Displays a list of cable modems detected as clones.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced.
12.2(33)SCD	A new keyword, **hotlist**, was added to display the cable modems detected as clones.
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. The hotlist keyword was removed from this command and added to the **show cable privacy** command.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The show interface cable privacy command is available only in IOS images that support Baseline Privacy Interface (BPI) and BPI+ encryption.

Examples

This example shows the output of the show interface cable privacy command with the **tek** keyword:

```
Router#
 show interface cable 3/0 privacy tek
Configured TEK life-time value = 56000
```

This example shows the output of the show interface cable privacy command with the **kek** keyword:

```
Router#
 show interface cable 3/0 privacy kek
Configured KEK life-time value = 750000
```

This example shows the output of the show interface cable privacy command with the hotlist keyword:

```
Router#
 show interface cable 5/1/0 privacy hotlist
                        Last
MAC Address             Ranged On               Type
00a0.73b0.4c43          Oct 27 21:57:39         Permanent
001a.c3ff.d2d4          Oct 27 21:57:40         Permanent
0018.6852.7746          Never                   Permanent
000e.9bb3.b946          Never                   Permanent
```

This example shows the output of the show interface cable privacy command with the eae-policy keyword:

```
Router#
 show interface cable 5/1/0 privacy eae-policy
EAE Configuration
 Policy: EAE Ranging Enforcement
```

This example shows the output of the **show interface cable privacy** command with the **all** keyword:

```
Router#
 show interface cable 5/1/0 privacy all
EAE Configuration
 Policy: EAE Ranging Enforcement
KEK Configuration
 KEK lifetime: 604800
 Auth Infos: 0
 Auth Requests: 0, Auth Replies: 0
 Auth Rejects: 0, Auth Invalids: 0
 Packet Buffer Failures: 0
 Unrecoverable SPA Key Failures: 0
TEK Configuration
 TEK lifetime: 43200
 TEK Requests: 0, TEK Replies: 0
 TEK Rejects: 0, TEK Invalids: 0
 SAMap Requests: 0, SAMap Replies: 0
 SAMap Rejects: 0
Interface Configuration
 SelfSigned Trust: Untrusted
 Check Cert Validity Periods: True
```

Table 27: show interface cable privacy Command Field Description

Field	Description
Configured TEK life-time value =	Number of seconds defining the length of the traffic encryption key lifetime. The valid range is from 1,800 to 6,048,000 seconds. The default value is 43,200 seconds (12 hours).
Configured KEK life-time value =	Number of seconds defining the length of the key encryption key lifetime. The valid range is from 86,400 to 6,048,000 seconds. The default value is 604,800 seconds (7 days).
MAC Address	MAC address of the cloned cable modem.
Last Ranged On	Displays the time stamp when the cable modem last attempted registration on that interface. This value helps gauge the frequency with which the MAC address is attempting to be cloned, and manage the hotlist accordingly.
Type	• Permanent—The cable modem entry can be configured as a permanent clone from the CLI by executing the **cable privacy hotlist cable modem** command. A cable modem marked as a permanent clone can only be removed from the hotlist by executing the **no** form of the **cable privacy hotlist cable modem** command. • Temporary—The Cisco CMTS detects a duplicate cable modem MAC address. This duplicate MAC address is flagged as a clone and is prevented from coming online for 180 seconds.

This example shows the output of the **show interface cable privacy** command with the **all** keyword:

```
Router#show interface  cable 1/0/0 privacy all
EAE Configuration
 Policy: EAE Enforcement disabled

KEK Configuration
 KEK lifetime: 604800
 Auth Infos: 0
```

```
 Auth Requests: 0, Auth Replies: 0
 Auth Rejects: 0, Auth Invalids: 0

 Packet Buffer Failures: 0
 Unrecoverable Key Failures: 0

TEK Configuration
 TEK lifetime: 43200
 TEK Requests: 0, TEK Replies: 0
 TEK Rejects: 0, TEK Invalids: 0
 SAMap Requests: 0, SAMap Replies: 0
 SAMap Rejects: 0

Interface Configuration
 BPI Plus Policy: disabled
 Check Cert Validity Periods: True
 DSx Support: True
 OAEP Support: True
 Privacy Mandatory: False
 Retain Failed Certificate: False
 SelfSigned Trust: Trusted

LC Information
 Encryption Algorithm: aes128-des56-des40

Router#
```

Related Commands

Command	Description
cable privacy	Enables the operation of BPI/BPI+ encryption on the Cisco CMTS router.
cable privacy eae-exclude	Forces a cable modem to register without an early authentication and encryption (EAE) policy.
cable privacy eae-policy	Enables an early authentication and encryption policy for a cable modem registraion.
cable privacy hotlist	Marks a CA certificate or cable modem certificate of a manufacturer as untrusted and adds it to the Cisco CMTS hotlist of invalid certificates.
cable privacy kek	Sets the KEK lifetime values for baseline privacy.
cable privacy tek	Sets the TEK lifetime values for baseline privacy.
show cable privacy	Displays the BPI certificate information.

show interface cable qos paramset

To display the attributes of the service flow quality of service (QoS) parameter set, use the **show interface cable qos paramset** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **qos paramset** [*paramset-index*] [**verbose**]

Cisco IOS Release 12.2(33)SCE and later releases
show interface cable {*slot*/*cable-interface-index* | **slot**/**subslot**/**cable-interface-index**} **qos paramset** [**paramset-index** | **total**] [**verbose**]

Cisco cBR Series Converged Broadband Router
show interface cable slot/**subslot**/**cable-interface-index qos paramset** [**paramset-index** | **total**] [**verbose**]

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
paramset-index	(Optional) Service template index (1 to 255).
total	(Optional) Displays the total number of service flows per service template.
verbose	(Optional) Displays full details about the QoS parameter set.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX	This command replaces the **show cable qos profile** command for DOCSIS 1.1 operation.
12.2(4)BC1	Support was added to the Release 12.2 BC train.
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.
12.2(33)SCF	This command was modified. The total keyword was added to display the total number of service flows per service template.
12.2(33)SCG	The command output was modified to display the scheduling type as "N/A" for all downstream service flows.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The **show interface cable qos paramset** command displays the QoS parameter set for all the service flows on a particular cable interface.

Note Parameter sets that contain a service-class name string are not in an "expanded" state and serve as provisioning envelopes of class-based service flows. The actual attributes of such parameter sets depend on the service class that is referenced at the time the parameter sets are expanded.

Note Starting with Cisco IOS Release 12.2(33)SCG, the output of the **show interface cable qos paramset** command displays the scheduling type of all downstream service flows (DS-SF) as "N/A" to indicate that the DS-SFs do not have any scheduling type.

Examples

Example of the show interface cable qos paramset Command Output

The following is a sample output of the **show interface cable qos paramset** command:

```
Router# show interface c6/0 qos paramset

Index Name             Dir   Sched  Prio MaxSusRate  MaxBurst    MinRsvRate
1                      US    BE     0    64000       0           0
2                      DS    BE     0    1000000     0           0
3                      US    BE     7    1000000     1522        0
4                      DS    BE     0    10000000    3044        0
128                    US    BE     7    1000000     1522        0
129                    DS    BE     0    10000000    3044        0
```

Note In Cisco IOS Release 12.2(11)BC3 and later releases, the Cisco CMTS automatically maps the non-default DOCSIS 1.0 QoS profiles to profile numbers starting at 128, to facilitate their use in DOCSIS 1.1 networks.

Example of the show interface cable qos paramset verbose Command Output

The following is a sample output for the **verbose** form of the **show interface cable qos paramset** command:

```
Router# show interface c6/0 qos paramset 1 verbose


Index:                                  1
Name:
Direction:                              Upstream
Traffic Priority:                       0
Maximum Sustained Rate:                 64000 bits/sec
Max Burst:                              0 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     0 bytes
Maximum Concatenated Burst:             1522
Scheduling Type:                        Best Effort
Request/Transmission Policy:            0x0
Nominal Polling Interval:               0
Tolerated Poll Jitter:                  0
Unsolicited Grant Size:                 0 bytes
Nominal Grant Interval:                 0 usecs
Tolerated Grant Jitter:                 0 usecs
Grants per Interval:                    0
IP ToS Overwrite [AND-mask,OR-mask]:    0x0,0x0
```

Example of the show interface cable qos paramset total Command in Cisco IOS Release 12.2(33)SCF

The following is a sample output for the **total** option of the **show interface cable qos paramset** command:

```
Router# show interfaces cable 6/1/0 qos paramset total
Index SrvClassName     Dir   Sched  MaxSusRate  MaxBurst    MinRsvRate  Total
1                      US    BE     64000       0           0           50669
2                      DS    BE     1000000     0           0           50669
3     def_sclass       DS    BE     10000000    3044        0           6
4     us_srvclass_ts1  US    BE     0           3044        0           4
5     us_srvclass_ts1  US    BE     0           3044        0           8
6     us_srvclass_ts2  US    BE     0           3044        0           4
7     us_srvclass_ts2  US    BE     0           3044        0           8
8     ds_srvclass_ts1  DS    BE     0           3044        0           12
9     ds_srvclass_ts2  DS    BE     0           3044        0           12
```

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Table 28: show interface cable qos paramset Field Descriptions

Field	Description
Dir	Downstream (DS) or upstream (US) service flow.
Sched	Identifies scheduling type of the service flow: • BE—Best-Effort • N/A—Scheduling type is not applicable to a service flow. • NRTPS—Non-Real-Time Polling Service • RTPS—Real-Time Polling Service • RSVD—Reserved but not yet in use • UGS_AD—Unsolicited Grant Service with Activity Detection • UGS—Unsolicited Grant Service • UNDEF—Not yet defined.
Prio	Traffic priority (0 to 7) given to this service flow.
MaxSusRate	Maximum sustained rate value, in bits per second.
MaxBrst	Maximum burst value, in bytes.
MinRsvRate	Minimum reserved rate, in bits per second.
SrvClassName	Service class name associated with the service flow.
Total	Total number of service flows per service template.

Examples for Cisco cBR Series Converged Broadband Router

Related Commands

show cable qos permission	Displays the status of permissions for changing QoS tables.
show cable modem qos	Displays quality of service (QoS) and service flow information for a particular CM.
show cable qos profile	Displays the QoS profiles that have been defined.

show interface cable service-flow

To display the attributes of DOCSIS service flows on a cable interface, use the **show interface cable service-flow** command in privileged EXEC mode.

show interface cable {*slot*/*port* | *slot*/*subslot*/*port*} **service-flow** [*sfid* [**queue** | **classifiers** | **counters** | **phs** | **qos** [**ds** | **us**]] [**verbose**]]

Cisco IOS Release 12.2(33)SCE and later releases
show interface cable {*slot*/*subslot*/*cable-interface-index*} **service-flow** [*sfid* [**qos** [**ds** | **service-class** | **us**] | [**zero-hwflow-index**]]]

Cisco cBR Series Converged Broadband Router
show interface cable *slot*/*subslot*/*cable-interface-index* **service-flow** [*sfid* [**classifiers** *classifier-id* | **counters** | **qos** | **verbose**][**qos** [**ds** | **service-class** | **us**]]] [**zero-hwflow-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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
sfid	(Optional) Identifies the service flow index (1 to 65535).

queue	(Optional, Cisco 7100 and 7200 series routers only) Displays the downstream hierarchical queueing framework (HQF) queue information associated with this interface. To display detailed information of all the queues under this service flow, use the verbose option with this queue. This keyword is not supported on the Cisco cBR router.
classifiers *classifier-id*]	(Optional) Displays all classifiers associated with this service flow or optionally display information only for the specified classifier ID (*clid* , 1 to 65535).
counters	(Optional) Displays the real-time counters for the service flow for a specific SFID, to include the number of matches when used with the verbose keyword. This counter remains initialized for upstream service flows. The match count for upstream classifiers is not supported and is replaced with null value - in such cases.
phs	(Optional) Displays packet header suppression rules and packet counters for the service flow for a specific SFID. The PHS packet counters are not supported on the Cisco uBR10-MC5X20 card and always shows 0 or N/A, depending on the software release. This keyword is not supported on the Cisco cBR router.
qos	(Optional) Displays QoS information for the service flow for all service flows or for a specific SFID.
ds	(Optional) Displays QoS information for all the downstream service flows on the interface.
service-class	(Optional) Displays service class names, along with other QoS information, for all the service flows on the interface.
us	(Optional) Displays QoS information for all the upstream service flows on the interface.
verbose	(Optional) Displays detailed information on the service flow for a specific SFID.
zero-hwflow-index	Displays the service flows with zero hardware flow index.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX	This command was introduced.
12.2(4)BC1	The command was changed so that the optional keywords are supported only when displaying information for a specific service flow index.
12.2(8)BC1	The command was changed to remove the ability to display all service flows, and a service flow index must now be specified.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.

Release	Modification
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCB	This command was modified to display either the downstream (DS) channel ID or the bonding group (BG) ID of the forwarding interface assigned to the downstream service flow.
12.2(33)SCC	This command was modified to display bonded service flow information.
12.2(33)SCD	This command was modified. The queue keyword was added to display downstream HQF queue information for the interface.
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, Cisco uBR-MC5X20 and Cisco uBR-MC3GX60V cable interface line cards.
12.2(33)SCF	This command was modified. The service-class keyword was added to display service class names for all the service flows on an interface.
12.2(33)SCG	The command output was modified to display the scheduling type as "N/A" for all downstream service flows.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The following keywords were removed: • **queue** • **phs**

Usage Guidelines

In Cisco IOS Release 12.2(4)BC1 and later, the optional keywords **classifiers**, **counters**, **phs**, **qos**, and **verbose** can be used only when requesting information for a specific service flow ID. When a service flow ID is specified, the **verbose** keyword can be used by itself or by any of the other optional keywords.

Note When using the **counters** keyword with the **verbose** keyword, this command displays the number of matches for the classifier match counter. However, this counter remains initialized for upstream service flows when using the **verbose** keyword. The match count for upstream classifiers is not supported and is replaced with null value - in such cases.

Note Starting with Cisco IOS Release 12.2(33)SCG, the output of the **show interface cable service-flow qos** command displays the scheduling type of all downstream service flows (DS-SF) as "N/A" to indicate that the DS-SFs do not have any scheduling type.

The following two **show** command examples illustrate counter information, with null value for the number of matches for the upstream service flow, when the **show interface cable service-flow** command is used with **verbose** keyword:

```
Router# show interface cable 6/0 service-flow 30191 verbose
```

```
Sfid : 30191
Mac Address : 000a.739e.140a
Type : Secondary(Dynamic)
Direction : Upstream
Current State : Active
Current QoS Indexes [Prov, Adm, Act] : [0, 24, 24]
Active Time : 00:55
Sid : 7140
Admitted QoS Timeout : 200 seconds
Active QoS Timeout : 0 seconds
Packets : 1824
Bytes : 466944
Rate Limit Delayed Grants : 0
Rate Limit Dropped Grants : 0
Current Throughput : 68356 bits/sec, 32 packets/sec
Classifiers:
Classifier Id : 41
Service Flow Id : 30191
CM Mac Address : 000a.739e.140a
Direction : upstream
Activation State : active
Classifier Matching Priority : 128
PHSI : 1
Number of matches : -
IP Classification Parameters:
 IP Source Address : 10.8.230.3
 Source IP Address Mask : 255.255.255.255
 Destination IP Address : 172.16.2.35
 Destination IP Address Mask : 255.255.255.255
 IP Protocol Type : 17
 Source Port Low : 53456
 Source Port High : 53456
 Destination Port Low : 7052
 Destination Port High : 7052
Router# show interface c6/0 service-flow 30191 phs verbose
Sfid : 30191
PHSI : 1
PHSS : 42
PHSV : Off
PHSM : FF FF FF FF FF C0
PHSF : 00 03 E3 31 65 A8 00 0A 73 9E 14 0C 08 00 45 A0 01 18 BE EF
 00 00 40 11 1C 07 0A 08 E6 03 AC 10 02 23 D0 D0 1B 8C 01 04
 00 00
Packet : 1844
```

Examples

This example shows the output of the **show interface cable service-flow** command.

```
Router# show interface c3/0 service-flow

Sfid  Sid   Mac Address     QoS Param Index Type  Dir  Curr  Active  BG / CH
                           Prov  Adm  Act             State Time
12    N/A   0014.0496.3f9e   4     4    4   prim  DS   act   3h17m   CH 1
11    5     0014.0496.3f9e   3     3    3   prim  US   act   3h17m
14    N/A   0014.0496.3f76   4     4    4   prim  DS   act   3h17m   BG 102
13    6     0014.0496.3f76   3     3    3   prim  US   act   3h17m
16    N/A   0007.0e07.24af   4     4    4   prim  DS   act   3h17m   CH 1
15    7     0007.0e07.24af   3     3    3   prim  US   act   3h17m
18    N/A   0007.0e06.e1b5   4     4    4   prim  DS   act   3h17m   CH 3
17    8     0007.0e06.e1b5   3     3    3   prim  US   act   3h17m
```

Per normal operation, the counter in the Number of Matches field is not initialized for working dynamic service flows. For upstream service flows, the classifier match count is not updated for upstream packet classifiers, and displays no results.

```
Router# show interface c6/0 service-flow 30191 verbose
Sfid : 30191
Mac Address : 000a.739e.140a
Type : Secondary(Dynamic)
Direction : Upstream
Current State : Active
Current QoS Indexes [Prov, Adm, Act] : [0, 24, 24]
Active Time : 00:55
Sid : 7140
Admitted QoS Timeout : 200 seconds
Active QoS Timeout : 0 seconds
Packets : 1824
Bytes : 466944
Rate Limit Delayed Grants : 0
Rate Limit Dropped Grants : 0
Current Throughput : 68356 bits/sec, 32 packets/sec
Classifiers:
Classifier Id : 41
Service Flow Id : 30191
CM Mac Address : 000a.739e.140a
Direction : upstream
Activation State : active
Classifier Matching Priority : 128
PHSI : 1
Number of matches : -
IP Classification Parameters:
 IP Source Address : 10.8.230.3
 Source IP Address Mask : 255.255.255.255
 Destination IP Address : 172.16.2.35
 Destination IP Address Mask : 255.255.255.255
 IP Protocol Type : 17
 Source Port Low : 53456
 Source Port High : 53456
 Destination Port Low : 7052
 Destination Port High : 7052
```

Note Per the DOCSIS 1.1 specification, the **show interface cable service-flow** command uses bytes allocated for a UGS service flow when calculating the throughput values for the service flow (see the Assumed Minimum Reserved Rate Packet Size parameter, TLV 11 in the upstream and downstream service flow configurations). Depending on the value of this parameter and the packet sizes of the actual traffic, this could result in throughput values that appear to be greater than the maximum sustained rate. You can use the **stats** option with the **show interface cable** command to display the actual byte counts.

Sample Downstream Flow

```
Router# show interface c4/0 service-flow 12 qos verbose

Sfid                                    : 12
Current State                           : Active
Sid                                     : N/A
```

```
Traffic Priority                        : 0
Maximum Sustained rate                  : 1000000 bits/sec
Maximum Burst                           : 0 bytes
Mimimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Maximum Latency                         : 0 usecs
Current Throughput                      : 0 bits/sec, 0 packets/sec
```

Sample Upstream Flow

```
Router# show interface c4/0 service-flow 11 qos verbose

Sfid                                    : 11
Current State                           : Active
Sid                                     : 5
Traffic Priority                        : 0
Maximum Sustained rate                  : 64000 bits/sec
Maximum Burst                           : 0 bytes
Mimimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Maximum Concatenated Burst              : 1522
Scheduling Type                         : Best Effort
Unsolicited Grant Size                  : 0 bytes
Nominal Grant Interval                  : 20000 usecs
Grants per interval                     : 0
Tolerated Grant Jitter                  : 0 usecs
Nominal Polling Interval                : 0 usecs
Tolerated Polling Jitter                : 0 usecs
Request/Transmission policy             : 0x0
IP ToS Overwrite[AND-mask, OR-mask]     : 0x0, 0x0
Current Throughput                      : 0 bits/sec, 0 packets/sec
```

Tip When PacketCable services are enabled to allow PacketCable-based Voice over IP (VoIP) traffic, the Nominal Grant Interval reflects the packetization interval that is configured on the VoIP call agent.

```
Router# show interface c4/0 service-flow counters

Sfid  Packets     Bytes       PacketDrops Bits/Sec    Packets/Sec
12    0           0           0           0           0
11    8           128         0           0           0
14    0           0           0           0           0
13    2           128         0           0           0
16    0           0           0           0           0
15    2           128         0           0           0
18    5           128         0           0           0
17    2           128         0           0           0
Router# show interface c4/0 service-flow 12 counters verbose

Sfid                   : 12
Packets                : 154
Octets                 : 51656
RateLimit Delayed Pkts : 0
RateLimit Dropped Pkts : 0
Bits/sec               : 0
Packets/Sec            : 0
Router# show interface c4/0 service-flow 14 classifiers
```

```
CfrId  SFID     cable modem Mac Address  Direction  State    Priority  Matches
2      14       00d0.bad3.c46b  upstream   active   8         0
1      14       00d0.bad3.c46b  upstream   inactive 5         0
Router# show interface c4/0 service-flow 14 classifiers verbose

Sfid                                : 14
Classifier Id                      : 2
Service Flow Id                    : 14
cable modem Mac Address                      : 00d0.bad3.c46b
Direction                          : upstream
Activation State                   : active
Classifier Matching Priority       : 8
PHSI                               : 0
Number of matches                  : 0
IP Classification Parameters:
        Destination Port Low       : 1024
        Destination Port High      : 65535
Router# show interface cable 3/0 service-flow 9 phs

Sfid  PHSI  PHSS  PHSM                    PHSF                      PHSV  Packet
20    1     22    00 00 FF                08 00 45 00 00 56 00 00  On    N/A
Router# show interface cable 3/0 service-flow 9 phs verbose

Sfid         : 20
PHSI         : 1
PHSS         : 22
PHSV         : On
PHSM         : 00 00 FF
PHSF         : 08 00 45 00 00 56 00 00 00 00 3C 00 67 A7 0B 00 00 01 0C 00
               00 01
Packet       : N/A
Router# show interface c6/0 service-flow 30191 phs verbose
Sfid : 30191
PHSI : 1
PHSS : 42
PHSV : Off
PHSM : FF FF FF FF FF C0
PHSF : 00 03 E3 31 65 A8 00 0A 73 9E 14 0C 08 00 45 A0 01 18 BE EF
 00 00 40 11 1C 07 0A 08 E6 03 AC 10 02 23 D0 D0 1B 8C 01 04
 00 00
Packet : 1844
```

Example of the show interface cable service-flow Command Output in Cisco IOS Release 12.2(33)SCD

The following example shows sample output for the **show interface cable service-flow** command.

```
Router# show interface c3/0 service-flow

Sfid  Sid   Mac Address     QoS  Param Index Type  Dir  Curr  Active  DS-ForwIf/
                           Prov Adm   Act             State Time    US-BG/CH
17    4     001c.ea37.9aac  3    3     3     P     US   act   13h21m  CH 3
18    N/A   001c.ea37.9aac  4    4     4     P     DS   act   13h21m  Wi3/0:0
21    6     001c.ea37.9b5a  3    3     3     P     US   act   13h21m  CH 4
22    N/A   001c.ea37.9b5a  4    4     4     P     DS   act   13h21m  Wi3/0:0
23    7     0016.925e.654c  3    3     3     P     US   act   13h21m  CH 3
24    N/A   0016.925e.654c  4    4     4     P     DS   act   13h21m  In3/0:0
```

Example of the show interface cable service-flow queue Command Output That Shows Downstream HQF Queue Information in Cisco IOS Release 12.2(33)SCD

```
The following example shows a sample output of the show interface cable service-flow queue
 command displaying downstream HQF queue information for an interface:
Router# show interface cable 3/0 service-flow 8 queue

*   idx/gqid   Len/Limit Deqs      Drops    CIR         MIR/PR
                 pkts    pkts      pkts     kbps         kbps
      0/53       0/128   0         0        100       15000/0
 I: Cable Interface Queue
 $: Low Latency Queue
 ~: Low Latency Policing Queue
```

Example of the show interface cable service flow queue verbose Command Output That Shows Detailed Downstream HQF Queue Information in Cisco IOS Release 12.2(33)SCD

```
The following example shows a sample output of the show interface cable service-flow queue
 verbose command displaying detailed downstream HQF queue information for an interface:
Router# show interfaces c3/0 service-flow 8 queue verbose
   blt (0x19FA93C0, index 6, qid 53, fast_if_number 20) layer CLASS_HIER0
   scheduling policy: FIFO (110)
   classification policy: NONE (120)
   drop policy: TAIL (141)
   packet size fixup policy: NONE (0)   no of global policers: 0
   D/Traffic Shaping enabled
   blt flags: 0x22A208C    scheduler: 0x1A015D80
   total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 9500 total
active 1
   D/Traffic Shaping enabled
   txcount 0 txqbytes 0 drops 0 qdrops 0 nobuffers 0 flowdrops 0
   qsize 0 aggregate limit/bytes 128/375000 availbuffers 128
   holdqueue_out 0 perc 0.00 remaining_ratio/perc 20
   visible_bw 100 max_rate 15000 allocated_bw 100 vc_encap 0 ecn_threshold NONE
   weight A 1 quantum A 1500 credit A 1500
   weight B 1 quantum B 1500 credit B 1500
   min-rate tokens: 1500, credit: 0, depth: 1500
   backpressure_policy 0 scheduler_flags C03F
   last_sortq[A/B] 0/0, remaining pak/particles 0/0
   leaf_blt[P1] 0x1A015D80 burst packets/bytes[P1] 0/0
   leaf_blt[P2] 0x1A015D80 burst packets/bytes[P2] 0/0
   leaf_blt[NOTP] 0x1A015D80 burst packets/bytes[NOTP] 0/0

   OUTPUT Shaping
     Bc internal 0 Be internal 0 Time interval 4
     increment 15000 increment_lower 0 increment_limit 15000
     last visit 0 credit 0 outstanding_tokens 0 maxtokens 32000000
     system timer delayed 0 restart timer 0
     timer set 0 hqf_shape_running 562
     nextexpire_system_time 0 nextexpire_time_qindex -1
```

Example of the show interface cable service-flow qos Command

The following is a sample output of the **show interface cable service-flow** qos command:

```
Router# show interfaces cable 6/1/0 service-flow qos
Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
```

```
5     DS  act   N/A   BE     0    10000000    3044        0           0
30    DS  act   N/A   BE     0    10000000    3044        0           0
31    US  act   12    BE     0    64000       0           0           0
32    DS  act   N/A   BE     0    1000000     0           0           0
33    US  act   13    BE     0    0           3044        0           0
35    US  act   14    BE     0    0           3044        0           0
34    DS  act   N/A   BE     0    0           3044        0           0
36    DS  act   N/A   BE     0    0           3044        0           0
37    US  act   15    BE     0    0           3044        0           0
45    US  act   19    BE     0    0           3044        0           0
38    DS  act   N/A   BE     0    0           3044        0           0
46    DS  act   N/A   BE     0    0           3044        0           0
39    US  act   16    BE     0    0           3044        0           0
47    US  act   20    BE     0    0           3044        0           0
40    DS  act   N/A   BE     0    0           3044        0           0
48    DS  act   N/A   BE     0    0           3044        0           0
41    US  act   17    BE     0    0           3044        0           0
43    US  act   18    BE     0    0           3044        0           0
42    DS  act   N/A   BE     0    0           3044        0           0
44    DS  act   N/A   BE     0    0           3044        0           0
```

Example of the show interface cable service-flow qos us Command Output

The following is a sample output for the us option of the **show interface cable service-flow** qos command:

```
Router# show interfaces cable 6/1/0 service-flow qos us
Sfid  Dir Curr   Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
31    US  act   12    BE     0    64000       0           0           0
33    US  act   13    BE     0    0           3044        0           0
35    US  act   14    BE     0    0           3044        0           0
37    US  act   15    BE     0    0           3044        0           0
45    US  act   19    BE     0    0           3044        0           0
39    US  act   16    BE     0    0           3044        0           0
47    US  act   20    BE     0    0           3044        0           0
41    US  act   17    BE     0    0           3044        0           0
43    US  act   18    BE     0    0           3044        0           0
```

Example of the show interface cable service-flow qos service-class Command in Cisco IOS Release 12.2(33)SCF

The following is a sample output for the service-class option of the **show interface cable service-flow** qos command:

```
Router# show interfaces cable 6/1/0 service-flow qos service-class
Sfid  Dir Sched  MaxSusRate  MaxBrst     MinRsvRate  SrvClassName
          Type
5     DS  BE     10000000    3044        0           def_sclass
30    DS  BE     10000000    3044        0           def_sclass
31    US  BE     64000       0           0
32    DS  BE     1000000     0           0
33    US  BE     0           3044        0           us_srvclass_ts1
35    US  BE     0           3044        0           us_srvclass_ts2
34    DS  BE     0           3044        0           ds_srvclass_ts1
36    DS  BE     0           3044        0           ds_srvclass_ts2
37    US  BE     0           3044        0           us_srvclass_ts1
45    US  BE     0           3044        0           us_srvclass_ts2
```

```
38     DS  BE      0           3044        0          ds_srvclass_ts1
46     DS  BE      0           3044        0          ds_srvclass_ts2
39     US  BE      0           3044        0          us_srvclass_ts1
47     US  BE      0           3044        0          us_srvclass_ts2
40     DS  BE      0           3044        0          ds_srvclass_ts1
48     DS  BE      0           3044        0          ds_srvclass_ts2
41     US  BE      0           3044        0          us_srvclass_ts1
43     US  BE      0           3044        0          us_srvclass_ts2
42     DS  BE      0           3044        0          ds_srvclass_ts1
44     DS  BE      0           3044        0          ds_srvclass_ts2
```

Table 29: show interface cable service-flow Field Descriptions

Field	Description
Sfid	Service flow identification number. **Note** Primary service flow IDs are displayed even for offline CMs because they are needed for modem re-registration.
Sid	Service identification number (upstream service flows only).
Mac Address	MAC address of the CM.
QoS Parameter Index Prov	QoS parameter index for the Provisioned state of this flow.
QoS Parameter Index Adm	QoS parameter index for the Admitted state of this flow.
QoS Parameter Index Act	QoS parameter index for the Active state of this flow.
Type	Indicates if the service flow is the primary flow or a secondary service flow. Secondary service flows are also identified by an “S” (created statically at the time of registration, using the DOCSIS configuration file) or “D” (created dynamically by the exchange of dynamic service messages between the CM and CMTS).
Dir	Downstream (DS) or upstream (US) service flow.
Curr State	Current run-time state of the service flow.
Active Time	Length of time this service flow has been active.
BG/CH	BGID or the DS channel ID of the forwarding interface assigned to the downstream service flow.
Len/Limit Pkts	Length or limit of the packets.
Deqs Pkts	Dequeue packets
Drops Pkts	Dropped packets.
CIR Kbps	Committed information rate.
MIR/PR Kbps	Maximum information and peak rate.
Forwint	Forwarding interface.
SFID	Service flow identifier.

Field	Description
Sched Type	Identifies scheduling type of this service flow: • BE—Best-Effort • N/A—Scheduling type is not applicable to a service-flow. • NRTPS—Non-Real-Time Polling Service • RTPS—Real-Time Polling Service • RSVD—Reserved but not yet in use • UGS_AD—Unsolicited Grant Service with Activity Detection • UGS—Unsolicited Grant Service • UNDEF—Not yet defined.
Prio	Traffic priority (0 to 7) given to this service flow.
MaxSusRate	Maximum sustained rate value, in bits per second.
MaxBrst	Maximum burst value, in bytes.
MinRsvRate	Minimum reserved rate, in bits per second.
Throughput	Current throughput for this service flow, in packets per second.
SrvClassName	Service class name associated with the service flow.

Note The PHS packet counters are not supported on the Cisco uBR10-MC5X20 card and always shows 0 or N/A, depending on the software release.

```
The following example shows upstream bonding information on a cable interface line card in
 Cisco IOS Release 12.2(33)SCC:
Routeru# show interface cable 5/0/1 service-flow 3070 verbose

Sfid                                  : 3070
Mac Address                           : 001a.c3ff.d59c
Type                                  : Secondary(Static)
Direction                             : Upstream
Current State                         : Active
Current QoS Indexes [Prov, Adm, Act]  : [6, 6, 6]
Active Time                           : 07:48
Required Attributes                   : 0x00000000
Forbidden Attributes                  : 0x00000000
Aggregate Attributes                  : 0x00000000
Sid                                   : 720
Traffic Priority                      : 0
Maximum Sustained rate                : 1000000 bits/sec
Maximum Burst                         : 1522 bytes
Minimum Reserved Rate                 : 0 bits/sec
Minimum Packet Size                   : 0 bytes
Admitted QoS Timeout                  : 200 seconds
Active QoS Timeout                    : 0 seconds
Packets                               : 58381
Bytes                                 : 29891072
Rate Limit Delayed Grants             : 63
Rate Limit Dropped Grants             : 29058
```

```
Current Throughput                      : 1108314 bits/sec, 270 packets/sec
Application Priority                    : 0
US Bonded                               : YES
Upstream Bonding Group                  : UBG-1
Transmit Channel Set                    : 0xF
Sid Cluster                             : SC-0, Sid [ 720 720 720 720 ]
Segments Valid                          : 24201
Segments Discarded                      : 0
Segments Lost                           : 0
SID Cluster Switching Information
Total Bytes Requested                   : 0
Total Time                              : 0
Outstanding Bytes                       : 0
Max Requests                            : 1
Classifiers:
Classifier Id                       : 1
Service Flow Id                     : 3070
CM Mac Address                      : 001a.c3ff.d59c
Direction                           : upstream
Activation State                    : active
Classifier Matching Priority        : 1
PHSI                                : 0
Number of matches                   : 58381
IP Classification Parameters:
        Destination IP Address      : 192.168.24.0
        Destination IP Address Mask : 255.255.255.0 Chicago10k#
```

The following example shows the output of the show interface cable service-flow counters command displaying the service flow counters on the cable interface at slot/subslot/port 7/1/0:

```
Router# show interface cable 7/1/0 service-flow 7 counters
Sfid  Packets              Bytes                PacketDrop Bits/Sec   Packet/Sec
7     16                   8384                 0          0          0
```

Table 30: show interface cable service-flow phs Field Descriptions

Field	Description
Sfid	Service flow identification number. **Note** Primary service flow IDs are displayed even for offline CMs because they are needed for modem re-registration.
PHSI	PHS Index. Number that uniquely references the PHS rule.
PHSS	PHS Size. 8-bit value specifying the number of header bytes to be suppressed.
PHSV	PHS Verify. Indicates whether PHS verification is enabled.
PHSM	PHS Mask. 5-bit PHS mask that defines the header bytes that should be suppressed.
PHSF	PHS Field. 8-bit values that defines the header bytes that should be suppressed.

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable service-flow** command.

```
Router#show interface cable 3/0/0 service-flow
```

```
Sfid  Sid   Mac Address     QoS Param Index Type  Dir Curr   Active  DS-ForwIf/
                           Prov  Adm  Act            State  Time    US-BG/CH
15    1     0025.2e2d.75be   3     3    3   P     US  act    1h34m   CH 1
16    N/A   0025.2e2d.75be   4     4    4   P     DS  act    1h34m   In3/0/0:32
35    N/A   0025.2e2d.75be   5     5    5   S(s)  DS  act    1h34m   In3/0/0:32
17    2     0025.2eaf.7f38   3     3    3   P     US  act    1d1h7m  CH 2
18    N/A   0025.2eaf.7f38   4     4    4   P     DS  act    1d1h7m  In3/0/0:33
19    N/A   0025.2eaf.7f38   5     5    5   S(s)  DS  act    1d1h7m  In3/0/0:33
21    3     0025.2eaf.82f4   3     3    3   P     US  act    1d1h7m  CH 2
22    N/A   0025.2eaf.82f4   4     4    4   P     DS  act    1d1h7m  In3/0/0:40
27    N/A   0025.2eaf.82f4   5     5    5   S(s)  DS  act    1d1h7m  In3/0/0:40
23    4     0025.2eaf.8302   3     3    3   P     US  act    1d1h7m  CH 1
24    N/A   0025.2eaf.8302   4     4    4   P     DS  act    1d1h7m  In3/0/0:33
29    N/A   0025.2eaf.8302   5     5    5   S(s)  DS  act    1d1h7m  In3/0/0:33
25    5     0025.2e2d.74f8   3     3    3   P     US  act    10:54   CH 2
26    N/A   0025.2e2d.74f8   4     4    4   P     DS  act    10:54   In3/0/0:32
36    N/A   0025.2e2d.74f8   5     5    5   S(s)  DS  act    10:54   In3/0/0:32
```

This example shows the output of the **show interface cable service-flow** command with the **zero-hwflow-index** keyword:

```
Router#show interface cable 3/0/0 service-flow zero-hwflow-index

Sfid  Sid   Mac Address     QoS Param Index Type  Dir Curr   Active  DS-ForwIf/
                           Prov  Adm  Act            State  Time    US-BG/CH
```

This example shows the output of the **show interface cable service-flow qos** command with the **ds** keyword:

```
Router#show interface cable 3/0/0 service-flow qos ds

Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
16    DS  act   N/A   N/A    2    2000000     3044        0           0
35    DS  act   N/A   N/A    3    3000000     3044        0           0
18    DS  act   N/A   N/A    2    2000000     3044        0           62
19    DS  act   N/A   N/A    3    3000000     3044        0           0
22    DS  act   N/A   N/A    2    2000000     3044        0           0
27    DS  act   N/A   N/A    3    3000000     3044        0           0
24    DS  act   N/A   N/A    2    2000000     3044        0           0
29    DS  act   N/A   N/A    3    3000000     3044        0           0
26    DS  act   N/A   N/A    2    2000000     3044        0           0
36    DS  act   N/A   N/A    3    3000000     3044        0           0
```

This example shows the output of the **show interface cable service-flow qos** command with the **us** keyword:

```
Router#show interface cable 3/0/0 service-flow qos us

Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
15    US  act   1     BE     1    1000000     1566        0           0
17    US  act   2     BE     1    1000000     1566        0           65
21    US  act   3     BE     1    1000000     1566        0           261
23    US  act   4     BE     1    1000000     1566        0           0
25    US  act   5     BE     1    1000000     1566        0           0
```

This example shows the output of the **show interface cable service-flow qos** command with the **service-class** keyword:

```
Router#show interface cable 1/0/0 service-flow qos service-class

Sfid  Dir Sched  MaxSusRate  MaxBrst     MinRsvRate  SrvClassName
          Type
15    US  BE     1000000     1566        0
16    DS  N/A    2000000     3044        0
35    DS  N/A    3000000     3044        0
17    US  BE     1000000     1566        0
18    DS  N/A    2000000     3044        0
19    DS  N/A    3000000     3044        0
21    US  BE     1000000     1566        0
22    DS  N/A    2000000     3044        0
27    DS  N/A    3000000     3044        0
23    US  BE     1000000     1566        0
24    DS  N/A    2000000     3044        0
29    DS  N/A    3000000     3044        0
25    US  BE     1000000     1566        0
26    DS  N/A    2000000     3044        0
36    DS  N/A    3000000     3044        0
```

Related Commands

Command	Description
cable service class	Sets the parameters for DOCSIS 1.1 cable service class.
cable service flow inactivity-threshold	Sets the inactivity threshold value for service flows using Unsolicited Grant Service with Activity Detection (UGS-AD).
cable service-flow inactivity-timeout	Sets the amount of time a dynamic service-flow can be present in the system without any activity.
show cable qos permission	Displays the status of permissions for changing QoS tables.
show cable qos profile	Displays the QoS profiles that have been defined.

show interface cable sid

To display the service identifier (SID) information for a cable modem (CM), use the **show interface cable sid** command in privileged EXEC mode.

show interface cable {*slot/portslot/subslot/port*}**sid id**[**association** | **connectivity** | **counters** | **qos** | **secondary-ip** | **rate-adapt**][**verbose**]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot/cable-interface-index slot/subslot/cable-interface-index* }**sid id**[**association** | **connectivity** | **counters** | **qos** | **secondary-ip** | **rate-adapt**][**verbose**]

Cisco cBR Series Converged Broadband Router
show interface cable *slot/subslot/cable-interface-index* **sid** *sid*[**association** | **counters** | **qos**][**verbose**]

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	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
sid	The service identification information number. The valid range is 1-8176.
association	Displays the virtual interfaces (VRF) or Interface Descriptor Blocks (IDBs).

connectivity	Displays the values of the per-SID connectivity statistics. (This option appears only in DOCSIS 1.0 and 1.0+ releases. Use the **show cable modem connectivity** command in DOCSIS 1.1 releases.) This keyword is not supported on the Cisco cBR router.
counters	Displays the values of the per-SID usage counters. Same as the keyword **stats** that appeared in Cisco IOS Release 11.3(5)NA and earlier releases.
qos	Displays the QoS characteristics received by each SID.
secondary-ip	Displays the secondary IP addresses associated with each SID. This keyword is not supported on the Cisco cBR router.
rate-adapt	(Cisco uBR7200 series and Cisco uBR10012 routers only) Displays the local or global upstream utilization optimization configuration parameters. This keyword is not supported on the Cisco cBR router.
verbose	Displays detailed information for the **counters** and **qos** options. **Note** The **verbose** option is supported by itself or with any of the other options, but it displays additional information only for the **counters** and **qos** options.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 XA	This command was introduced.
11.3(6)NA	The keyword **stats** was changed to **counters**.
12.0(4)XI	The primary SID information was added.
12.0(5)T	The command output was modified to identify secondary SIDs.
12.0(7)XR and 12.0(7)T	The **verbose** keyword was added to display additional information for the **counters** option.
12.1(4)CX, 12.2(1)XF, and 12.2(4)BC1	The **qos** keyword was added to display information on the QoS values received by the SID from the MAC scheduler. You an also use the **verbose** option with the **qos** keyword to display detailed information. Also, the **connectivity** option was removed and replaced by the **show cable modem connectivity** command.
12.1(11b)EC, 12.2(8)BC1	The **association** keyword was added.
12.2(8)BC2	An explicit error message was added if this command is used with a cable subinterface, instructing the user to use the main interface instead.
12.1(13)EC	The **secondary-ip** keyword was added for the Cisco uBR7100 series and Cisco uBR7200 series universal broadband routers.

Release	Modification
12.2(11)BC1	Support for the **secondary-ip** keyword was added for the Cisco uBR10012 universal broadband router.
12.2(11)CY, 12.2(11)BC3	Three codeword fields were added to the **verbose** counters display to support the Cisco uBR10-MC5X20S cable interface line card. These fields always display zero for the other cable interface line cards.
12.2(11)BC3	The **counters** option now displays the following counters: • Concatenated headers received • Fragmentation headers received • Fragmentation headers discarded **Note** The Cisco uBR10-MC5X20S cable interface line card does not currently support these particular counters.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes: • Support for the Cisco uBR7225VXR router was added. • The "Dual IP" output field was added to indicate support of both IPv4 and IPv6 addressing.
12.3(23)BC2	This command was modified to add two rate-adapt output fields to the **counters verbose** form of the command.
12.2(33)SCB	The two rate-adapt output fields in the **counters verbose** form of the command were integrated into Cisco IOS Release 12.2(33)SCB.
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. The following keywords were removed: • **connectivity** • **secondary-ip** • **rate-adapt**

Usage Guidelines

Data transport over the radio frequency (RF) link uses the registered SID address rather than the Ethernet address. This allows multiple hosts to access the network via a single CM.

The **verbose** keyword can be used with any of the other options or by itself, but it displays additional information only when used with the **counters**, **qos**, and **rate-adapt** options.

Note You can specify only a main interface with this command, not a subinterface.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Examples

This section shows the output from the different forms of the **show interface cable sid** command.

This example shows the the error message that is displayed when you attempt to use this command on a subinterface:

```
Router# show interface cable 6/0.1 sid
Command not allowed on sub-interface
Please use main interface C6/0
```

show interface cable sid Examples

```
Router# show interface cable 4/0 sid

Sid  Prim  MAC Address    IP Address        Type Age      Admin   Sched  Sfid
                                                          State   Type
5          0010.7b6b.58c1 10.20.114.34      stat 2d1h36m  enable  BE     1
6          0010.7bed.9dc9 10.20.114.37      stat 2d1h36m  enable  BE     13
7          0010.7bed.9dbb 10.20.114.38      stat 2d1h36m  enable  BE     15
8          0010.7b6b.58bb 10.20.114.112     stat 2d1h34m  enable  BE     17
9          0010.7b6b.58bb 10.20.114.112     dyna 2d1h34m  enable  BE     19
```

This example shows the output from the **show interface cable modem** command in Cisco IOS Release 12.2(33)SCA for all SIDs on a particular cable interface on a Cisco uBR10012 router. None of the CMs or CPEs are supporting both IPv4 and IPv6 addressing, which is indicated by the "N" in the Dual IP output field.:

```
Router# show interface cable 8/0/0 sid
Sid  Prim  MAC Address    IP Address      Type Age      Admin   Sched  Sfid  Dual
                                                       State   Type         IP
1          0008.0da6.1c47 50.3.134.12     stat 41:58    enable  BE     3     N
2          0008.0da5.6e48 50.3.134.2      stat 41:58    enable  BE     5     N
3          0008.0da6.0447 50.3.134.13     stat 41:55    enable  BE     7     N
4          0008.0da6.3447 50.3.134.3      stat 41:56    enable  BE     9     N
5          0011.8065.e78e 50.3.134.38     stat 40:52    enable  BE     11    N
6          0000.cab7.8620 50.3.134.8      stat 41:25    enable  BE     13    N
7          0011.8065.e7a6 50.3.134.10     stat 40:52    enable  BE     15    N
8          0006.53b6.57f5 50.3.134.9      stat 41:34    enable  BE     17    N
9          0006.53b6.581d 50.3.134.27     stat 41:08    enable  BE     19    N
10         0007.0e04.ebfd 50.3.134.5      stat 41:04    enable  BE     21    N
```

Table 31: show interface cable sid Field Descriptions

Field	Description
Sid	Service identification number.
Prim	The primary service identifier (SID) assigned to the modem.
MAC address	MAC address of the modem owning this SID.

Field	Description
IP address	IP address of the modem owning this SID.
Type	Indicates whether this SID was created statically (“stat”) at the time of registration, or dynamically (“dyna”) by the exchange of dynamic service messages between the CM and CMTS.
Age	Length of time that the SID has been enabled.
Admin State	Adminstrative state of the SID, where “Disable” means that the SID has been turned off. “Enable” is the normal state.
Sched Type	The service class schedule type, where: 2–Best-Effort Schedule Type 3–Non-Real-Time Polling Service Schedule Type 4–Real-Time Polling Service Schedule Type 5–Unsolicited Grant Service with Activity Detection Schedule Type 6–Unsolicited Grant Service Schedule Type
Sfid	Service flow identifier.
Dual IP	Identifies whether or not (“Y” or “N”) the CM or CPE supports both IPv4 and IPv6 addressing.

show interface cable sid qos Examples

```
Router# show interface cable 4/0 sid qos

Sid  Pr MaxSusRate MinRsvRate Sched  Grant Grant  GPI Poll   Thrput
                              Type   Size  Intvl      Intvl
5    0  64000      0          BE     0     0      0   0      0
6    0  64000      0          BE     0     0      0   0      0
7    0  64000      0          BE     0     0      0   0      0
8    0  64000      0          BE     0     0      0   0      0
Router# show interface cable 4/0 sid 5 qos

Sid  Pr MaxSusRate MinRsvRate Sched  Grant Grant  GPI Poll   Thrput
                              Type   Size  Intvl      Intvl
5    0  64000      0          BE     0     0      0   0      0
```

show interface cable sid qos verbose Examples

```
Router# show interface cable 4/0 sid 5 qos verbose

Sid                                  : 5
Traffic Priority                     : 0
Maximum Sustained Rate               : 64000
Maximum Burst                        : 0
Minimum Reserved Rate                : 0
Minimum Packet Size                  : 0
Maximum Concatenated Burst           : 1522
Scheduling Type                      : Best Effort
Nominal Grant Interval               : 0
Tolerated Grant Jitter               : 0
Nominal Polling Interval             : 0
```

```
Tolerated Polling Jitter                : 0
Unsolicited Grant Size                  : 0
Grants per Interval                     : 0
Request/Transmission Policy             : 0x0
IP ToS Overwrite [AND-mask, OR-mask]    : 0x0, 0x0
Current Throughput                      : 0 bits/sec, 0 packets/sec
```

show interface cable sid counter Examples

When using DOCSIS 1.1 software, such as Cisco IOS Release 12.2 BC, the **show interface sid counter** command provides the following display:

```
Router# show interface cable 5/0 sid counter

Sid  Req-polls  BW-reqs    Grants     Packets    Frag       Concatpkts
     issued     received   issued     received   complete   received
1    0          22         22         22         0          0
2    0          3          3          2          0          0
3    0          0          0          0          0          0
```

When using DOCSIS 1.0 software, such as Cisco IOS Release 12.1 EC, the **show interface sid counter** command provides the following display:

```
Router# show interface cable 5/0 sid counter

Sid   Inpackets  Inoctets   Outpackets Outoctets  Ratelimit  Ratelimit
                                                  BWReqDrop  DSPktDrop
6     51         6559       42         3580       0          0
7     47         5993       40         3428       0          0
8     47         6136       36         3122       0          0
9     0          0          0          0          0          0
```

show interface cable sid counter verbose Examples

This example shows the typical verbose output for the SID counters on a Cisco uBR-MCxxC cable interface line card:

```
Router# show interface cable 4/0 sid 3 counter verbose

Sid                           : 3
Request polls issued          : 0
BW requests received          : 1
No grant buf BW request drops  : 0
Rate exceeded BW request drops : 0
Grants issued                 : 1
Packets received              : 0
Bytes received                : 0
Fragment reassembly completed  : 0
Fragment reassembly incomplete : 0
Concatenated packets received  : 0
Queue-indicator bit statistics : 0 set, 0 granted
Good Codewords rx             : 0
Corrected Codewords rx        : 0
Uncorrectable Codewords rx    : 0
Concatenated headers received  : 0
Fragmentation headers received : 0
Fragmentation headers discarded: 0
```

This example shows the typical verbose output for the SID counters on the Cisco uBR10-MC5X20S cable interface line card:

```
Router# show interface cable 4/0 sid 3 counters verbose

Sid                             : 1
Request polls issued            : 0
BWReqs {Cont,Pigg,RPoll,Other} : 0, 1052, 1052, 0
No grant buf BW request drops  : 0
Rate exceeded BW request drops : 0
Grants issued                   : 1052
Packets received                : 0
Bytes received                  : 0
Fragment reassembly completed  : N/A
Fragment reassembly incomplete : N/A
Concatenated packets received  : N/A
Queue-indicator bit statistics : 0 set, 0 granted
Good Codewords rx               : 53
Corrected Codewords rx          : 6110
Uncorrectable Codewords rx      : 8540896
Concatenated headers received  : 235
Fragmentation headers received : 0
Fragmentation headers discarded: 0
```

Note Because the Cisco uBR-MC16U/X, Cisco uBR-MC28U/X, and Cisco uBR10-MC5X20S/U/H cable interface line cards do not support the fragmentation and concatenation packet counters, these counters always show zero for these particular cable interfaces. However, these interfaces do accurately count the number of concatenation headers, as shown above.

show interface cable sid association Example

This example shows the typical output for the **association** keyword:

```
Router# show interface cable 5/0 sid association

Sid  Prim Online     IP Address      MAC Address    Interface     VRF Name
1         online     192.168.129.20  0003.e38f.e993 Ca5/0.50      green
2         online     192.168.129.17  0003.e38f.e89d Ca5/0.50      green
3         init(t)    192.168.129.12  00d0.baa2.fb93 Ca5/0.50      green
```

Note The output of the **show interface cable sid association** command output will not display the updated interface name immediately after deleting a VRF. This is because the SID is not re-mapped automatically to the interface on which the CM comes online. If you want to view the updated interface name, reset the cable modem to re-map the interface name and then execute this show command.

This example shows the sample output for the **secondary-ip** keyword:

```
Router# show interface cable 5/0 sid secondary-ip

For sid 1 secondary ip list contains 2 address(es)
```

```
        192.168.129.20
        192.168.81.123
For sid 2 secondary ip list contains 2 address(es)
        192.168.129.17
        10.10.11.3
```

Tip One possible situation that might occur is if a CM first assigns a secondary IP address to one CPE device, but later that same IP address is assigned to another CPE device behind a different CM. If this happens, the IP address will continue to show up as a secondary IP address for the original CM until that CM renews its public keys. This will not affect network connectivity for either CPE or CM. You can, however, clear the unneeded secondary IP address from the CMTS database using the **clear cable secondary-ip** command.

Table 32: show interface cable sid Field Descriptions

Field	Description
Sid	Service identification number.
Prim Sid	The primary service identifier (SID) assigned to the modem.
Type	Indicates that this SID was created statically at the time of registration or dynamically by the exchange of dynamic service messages between the CM and CMTS.
Online State Offline State	“Online” means that the modem owning this SID is processing traffic. “Offline” means that the modem owning this SID is not processing traffic.
Admin Status	“Disable” means that the SID has been turned off. “Enable” is the normal state.
QoS	Quality of service.
Create time	When the SID was created, number of seconds since the system booted.
Input octets (In octets)	Number of octets received by using this SID.
Input packets (In packets)	Number of packets received by using this SID.
Output octets (Out octets)	Number of octets sent from this SID.
Output packets (Out packets)	Number of packets sent from this SID.
IP address	IP address of the modem owning this SID.
MAC address	MAC address of the modem owning this SID.
BW requests received	Number of bandwidth requests received by this SID.
Grants issued	Number of bandwidth requests granted by this SID.
Rate exceeded BW request drops	Number of bandwidth requests not granted by this SID.
Rate exceeded DS packet drops	Number of downstream packets lost by this SID.

Field	Description
Ratelimit BWReqDrop	Number of bandwidth requests not granted by this SID.
Ratelimit DSPktDrop	Number of downstream packets lost by this SID.
1st time online	Time at which the modem with this SID connected.
Times online	Number of times the modem with this SID connected.
% online	Percentage of time the modem with this SID has been connected.
Online time	The minimum, average, and maximum number of hours and minutes the modem with this SID has been connected. **Note** A CM is considered online when it has completed the registration process and has communicated with the DHCP, TFTP, and TOD servers.
Offline time	The minimum, average, and maximum number of hours and minutes the modem with this SID has been disconnected. **Note** A CM is considered offline after it has missed 16 consecutive station maintenance messages.
MaxSusRate	The maximum rate (0 to 4,294,967,295 bps).
MinRsvRate	The minimum guaranteed rate (0 to 4,294,967,295 bps).
Sched Type	The service class schedule type: 2–Best-Effort Schedule Type 3–Non-Real-Time Polling Service Schedule Type 4–Real-Time Polling Service Schedule Type 5–Unsolicited Grant Service with Activity Detection Schedule Type 6–Unsolicited Grant Service Schedule Type
Grant Size	The grant size (0 to 65535 bytes).
Grant Interval	The grant interval (0 to 4294967295 microseconds).
GPI	The grants per interval (0 to 127 grants).
Poll Interval	The poll interval (0 to 4294967295 microseconds).
Throughput	The overall throughput for this SID.
VRF Name	Name of the virtual interface that has been configured for Multiprotocol Label Switching (MPLS) Virtual Private Network (VPN) operation.
Fragment reassembly completed	Number of packets that were subject to DOCSIS fragmentation that were successfully reassembled. **Note** This counter is not supported on the Cisco uBR10-MC5X20 card and always shows 0 or N/A, depending on the software release.

Field	Description
Fragment reassembly incomplete	Number of packets that were subject to DOCSIS fragmentation that have not yet been successfully reassembled. **Note** This counter is not supported on the Cisco uBR10-MC5X20 card and always shows 0 or N/A, depending on the software release.
Concatenated packets received	Number of packets that were subject to DOCSIS concatenation that were successfully received. **Note** This counter is not supported on the Cisco uBR10-MC5X20 card and always shows 0 or N/A, depending on the software release.
Good Codewords rx	Number of FEC codewords received without error.
Corrected Codewords rx	Number of FEC codewords received with errors that could be corrected.
Uncorrectable Codewords rx	Number of FEC codewords received with errors that could not be corrected.
Concatenated packets received	Number of concatenation headers received on an upstream service flow. (This field always shows 0 for the Cisco uBR10012 router, but you can use the docsQosUpstreamConcatBursts attribute in DOCS-QOS-MIB to get a current count.)
Fragmentation headers received	Number of fragmentation headers received on an upstream service flow, regardless of whether the fragment was correctly reassembled into a valid packet. (See docsQosUpstreamFragments in DOCS-QOS-MIB.)
Fragmentation headers discarded	Number of upstream fragments discarded and not assembled into a valid upstream packet. (See docsQosUpstreamFragDiscards in DOCS-QOS-MIB.)

Examples for the Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable sid** command on the Cisco cBR router:

```
Router#show interface cable 1/0/0 sid
Sid  Prim  MAC Address    IP Address      Type Age      Admin   Sched  Sfid Dual
                                                       State   Type        IP
1          0025.2e2d.74f8 10.1.2.110      BE   8h55m    enable  BE     15    Y
2          0025.2eaf.7f38 10.1.2.7        BE   20h26m   enable  BE     17    Y
3          0025.2eaf.8302 10.1.2.6        BE   20h26m   enable  BE     19    Y
4          0025.2eaf.82f4 10.1.2.9        BE   20h18m   enable  BE     25    Y
5          0025.2e2d.75be 10.1.2.4        BE   10h13m   enable  BE     29    Y

Router#
```

This example shows the output of the **show interface cable sid** command with the **association** on the Cisco cBR router:

```
Router#show interface cable 1/0/0 sid association
```

```
Sid  Prim Online        IP Address      MAC Address    Interface        VRF Name       MPLS
 TC
1          online        10.1.2.4        0025.2e2d.75be Bu1                            N/A
2          online        10.1.2.110      0025.2e2d.74f8 Bu1                            N/A
3          online        10.1.2.7        0025.2eaf.7f38 Bu1                            N/A
4          online        10.1.2.6        0025.2eaf.8302 Bu1                            N/A
5          online        10.1.2.9        0025.2eaf.82f4 Bu1                            N/A

Router#
```

This example shows the output of the **show interface cable sid** command with the **counters** on the Cisco cBR router:

```
Router#show interface cable 1/0/0 sid counters
Sid  Req-polls  BW-reqs    Grants     Packets        Frag       Concatpkts
     issued     received   issued     received       complete   received
1    0          18         18         29             0          1
2    0          14         14         26             0          1
3    0          103        103        125            0          11
4    0          23         23         37             0          1
5    0          25         25         39             0          0

Router#
```

This example shows the output of the **show interface cable sid** command with the **qos** on the Cisco cBR router:

```
Router#show interface cable 1/0/0 sid qos
Sid  Pr MaxSusRate MinRsvRate Sched  Grant Grant  GPI Poll   Thrput
                              Type   Size  Intvl      Intvl
1    1  1000000    0          BE     N/A   N/A    N/A N/A    0
2    1  1000000    0          BE     N/A   N/A    N/A N/A    0
3    1  1000000    0          BE     N/A   N/A    N/A N/A    0
4    1  1000000    0          BE     N/A   N/A    N/A N/A    0
5    1  1000000    0          BE     N/A   N/A    N/A N/A    261

Router#
```

This example shows the output of the **show interface cable sid** command with the **verbose** on the Cisco cBR router:

```
Router#show interface cable 1/0/0 sid verbose
Sid  Prim  MAC Address    IP Address      Type Age      Admin   Sched  Sfid Dual
                                                       State   Type        IP
1          0025.2e2d.75be 100.1.2.4       BE   12:36    enable  BE     15    Y
2          0025.2e2d.74f8 100.1.2.110     BE   12:11    enable  BE     17    Y
3          0025.2eaf.7f38 100.1.2.7       BE   11:26    enable  BE     19    Y
4          0025.2eaf.8302 100.1.2.6       BE   13:20    enable  BE     21    Y
5          0025.2eaf.82f4 100.1.2.9       BE   11:33    enable  BE     28    Y

Router#
```

Related Commands

Command	Description
clear cable secondary-ip	Clears the router's table that links secondary IP addresses to the devices that use them.

Command	Description
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show interface cable signal-quality	Displays information about the cable signal quality.

show interface cable signal-quality

To display information about the signal quality of a downstream port on a cable interface line card in a Cisco CMTS, use the **show interface cable signal-quality** command in privileged EXEC mode.

show interface cable {*slot* */port* | *slot* */subslot* */port*} **signal-quality** [*n*]

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot* */cable-interface-index* | *slot* */subslot* */cable-interface-index*} **signal-quality** [*n*]

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.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1.
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.
n	(Optional) Identifies a particular upstream on the selected interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 XA	This command was introduced.
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.

Release	Modification
IOS-XE 3.15.0S	This command is not supported on Cisco cBR Series Converged Broadband Router.

Examples

This example shows the output from the **show interface cable signal-quality** command:

```
Router# show interface cable 6/0 signal-quality
Cable6/0: Upstream 0 is up includes contention intervals: TRUE
```

This table describes the fields shown in the **show interface cable signal-quality** display.

Table 33: show interface cable signal-quality Field Descriptions

Field	Description
Cable	Interface name.
Upstream is up includes contention intervals	States whether this statement is true.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Related Commands

Command	Description
show interface cable downstream	Displays cable interface information.
show interface cable sid	Displays information by SID of each cable access router on the network.

show interface cable upstream

To display information about an upstream on a cable interface, use the **show interface cable upstream** command in privileged EXEC mode.

show interface cable {*slot/port slot/subslot/port*}**upstream** [*n*][**ugs statistics** | **rate-adapt**]
show interface cable {*slot/port slot/subslot/port*}**upstream** [**bonding-group**]

Cisco IOS Release 12.2(33)SCE and later releases
show interface cable {*slot/cable-interface-indexslot/subslot/cable-interface-index*}**upstream** [*n*][**ugs statistics** | **rate-adapt**]
show interface cable {*slot/cable-interface-indexslot/subslot/cable-interface-index*}**upstream** [**bonding-group**]

Cisco cBR Series Converged Broadband Router
show interface cable *slot/subslot/cable-interface-index***upstream** [*n*][**ugs statistics**]

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	Secondary slot number of the cable interface line card. Cisco uBR10012 —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
n	(Optional) Specific upstream to be displayed. Valid values start with 0 for the first upstream port on the cable interface line card.
ugs statistics	(Optional) Displays statistics related to Unsolicited Grant Service (UGS) flows on the upstream.

rate-adapt	(Optional) Displays whether a specific upstream is enabled or disabled for upstream utilization optimization. This keyword is not supported on the Cisco cBR router
bonding-group	(Optional) Displays the bonding groups configured on an upstream port. This keyword is not supported on the Cisco cBR router
index	(Optional) Bonding group index value. Valid values are from 1 to 65535. This variable is not supported on the Cisco cBR router

Command Default

If no upstream is specified, all upstreams on the given cable interface are shown.

Command Modes

Privileged EXEC (#)

Command History

BC Release	Modification
12.2(4)BC1	The MAC-related information in this command was moved to the **show interface cable mac-scheduler** command for DOCSIS 1.1 operations.
12.2(15)BC1a	The **ugs statistics** keywords were added to Cisco IOS Release 12.2BC.
12.3BC	This command was integrated into Cisco IOS Release 12.3BC.
12.3(23)BC2	The **rate-adapt** keyword was added.
C Release	Modification
12.1(4)CX1	The MAC-related information in this command was moved to the **show interface cable mac-scheduler** command for DOCSIS 1.1 operations.
SC Release	Modification
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.
12.2(33)SCB	The **rate-adapt** keyword was integrated into Cisco IOS Release 12.2(33)SCB.
12.2(33)SCC	This command was modified. The **bonding-group** keyword was added in Cisco IOS Release 12.2(33)SCC.
12.2(33)SCD2	This command was modified. The command output was modified to display the multiple transmit channel (MTC) mode cable modems that share a particular upstream channel in their transmit channel set (TCS).
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.
12.2(33)SCE5	This command was modified. The show interface cable upstream command output was modified to display a warning message when no ports are configured on an upstream.

BC Release	Modification
12.2(33)SCG	This command was modified. The *index* argument was added to the **bonding-group** keyword.
T Release	Modification
12.0(3)T	This command was integrated into Cisco IOS Release 12.0(3)T.
X Release	Modification
11.3XA	This command was introduced.
12.0(7)XR	The output was expanded.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **rate-adapt**and the **bonding-group** keywords were removed.

Examples

This example shows the output of the **show interface cable upstream** command (DOCSIS 1.0 Cisco IOS software releases) for the upstream cable interface located in slot 6 and port 0:

```
Router# show interface cable 6/0 upstream 0
Cable6/0: Upstream 0 is up
Received 855 broadcasts, 147 multicasts, 408833 unicasts
0 discards, 925 errors, 0 unknown protocol
409835 packets input, 20 uncorrectable
884 noise, 0 microreflections
Total Modems On This Upstream Channel : 51 (51 active)
Default MAC scheduler
Queue[Rng Polls]  0/64, fifo queueing, 0 drops
Queue[Cont Mslots]  0/52, fifo queueing, 1 drops
Queue[CIR Grants]  0/64, fair queueing, 0 drops
Queue[BE Grants]  0/64, fair queueing, 0 drops
Queue[Grant Shpr]   0/64, calendar queueing, 0 drops
Reserved slot table currently has 0 CBR entries
Req IEs 8296144, Req/Data IEs 0
Init Mtn IEs 57962, Stn Mtn IEs 14413
Long Grant IEs 133168, Short Grant IEs 67845
Avg upstream channel utilization : 6%
Avg percent contention slots : 89%
Avg percent initial ranging slots : 2%
Avg percent minislots lost on late MAPs : 0%
Total channel bw reserved 0 bps
CIR admission control not enforced
Admission requests rejected 0
Current minislot count   : 6788097    Flag: 0
Scheduled minislot count : 6788190    Flag: 0
```

This example shows the output of the **show interface cable upstream** command (DOCSIS 1.1 Cisco IOS software releases) for the upstream cable interface located in slot 6 and port 0:

```
Router# show interface cable 6/0 upstream 0

Upstream 0 is up
     Received 38085 broadcasts, 5758 multicasts, 17257229 unicasts
     0 discards, 1451132592 errors, 0 unknown protocol
     17301072 packets input, 48239157 uncorrectable
```

```
     1071719720 noise, 0 microreflections
     Total Modems On This Upstream Channel : 147 (142 active)
```

This example shows the output for the upstream cable interface located for the Cisco uBR10-MC5X20S and Cisco uBR-MC28U/X line cards, which provides information about the error counters maintained by the card onboard MAC controller for each upstream interface:

```
Router# show interface cable 6/1/0 upstream 0

Cable6/1/0: Upstream 3 is up
    Received 140 broadcasts, 2075 multicasts, 134502 unicasts
    0 discards, 144954 errors, 0 unknown protocol
    136717 packets input, 0 uncorrectable
    0 noise, 0 microreflections
    Total Modems On This Upstream Channel : 37 (35 active)
  JIB counters for ifInErrors:
      us_error_frame_drop 72477
      us_crc_error 4
      us_hcs_error 72473
      us_cont_collision 0
      us_uncorr_cw_rcvd 14
```

The following shows the sample output for the **ugs statistics** option:

```
Router# show interface cable 6/1/0 upstream 3 ugs statistics

UGS Statistics for Upstream 3
# of Active UGS on the Upstream : 4
                      UGS Allocation Statistics
                     max         min         avg
Last 1 Hour          14          3           4
Last 5 Min           12          5           5
```

The following shows the sample output for the **rate-adapt** option:

```
Router# show interface cable 6/1/0 upstream 0 rate-adapt

Global:Enabled US[0]:Enabled rate-adapt_total: 0
local:maps 500 pri 6, rate 150000 bcs 10 (10) fcms Off
```

The following example shows the segment information for upstream ports on cable interface 7/0/1:

```
Router#show interface cable 7/1/0 upstream
Cable7/1/0: Upstream 0 is up
     Received 1236 broadcasts, 0 multicasts, 312274 unicasts
     0 discards, 37623 errors, 0 unknown protocol
     313510 packets input
     Codewords: 315034 good 82 corrected 1 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 3 (3 active)
     Segments: 0 valid, 0 discarded
Cable7/1/0: Upstream 1 is up
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
```

Beginning in Cisco IOS Release 12.2(33)SCD2, the output of the **show interface cable upstream** command was modified to display the MTC mode cable modems that share a particular upstream channel in their TCS as shown in the following example:

```
Router# show interface cable 7/1/0 upstream 1
Cable7/1/0: Upstream 1 is up
     Received 1236 broadcasts, 0 multicasts, 312274 unicasts
     0 discards, 37623 errors, 0 unknown protocol
     313510 packets input
     Codewords: 315034 good 82 corrected 1 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0(0 active)
  Total MTC Modems On This Upstream Channel : 3 (3 active)
     Segments: 0 valid, 0 discarded
```

The following example shows the bonding groups configured for upstream ports on the cable interface 7/0/1:

```
Router# show interface cable 7/1/0 upstream bonding-group
Cable7/1/0: Upstream Bonding Group 2
     0 packets input, 0 octets input
     Segments: 0 valid, 0 discarded, 0 lost
     Reserved Bandwidth Max : 0 bits/sec
     Reserved Bandwidth     : 0 bits/sec
     Available Bandwidth    : 2560000 bits/sec
     Total Service Flows On This Bonding Group: 0
Cable7/1/0: Upstream Bonding Group 12
     0 packets input, 0 octets input
     Segments: 0 valid, 0 discarded, 0 lost
     Reserved Bandwidth Max : 0 bits/sec
     Reserved Bandwidth     : 0 bits/sec
     Available Bandwidth    : 2560000 bits/sec
     Total Service Flows On This Bonding Group: 0
Cable7/1/0: Upstream Bonding Group 235
     0 packets input, 0 octets input
     Segments: 0 valid, 0 discarded, 0 lost
     Reserved Bandwidth Max : 0 bits/sec
     Reserved Bandwidth     : 0 bits/sec
     Available Bandwidth    : 15360000 bits/sec
     Total Service Flows On This Bonding Group: 0
```

Example of show interface cable upstream Command for Cisco IOS Release 12.2(33)SCE5

Starting with Cisco IOS Release 12.2(33)SCE5, the show interface cable upstream command output is modified to display a warning message when no ports are configured on an upstream.

The following example displays the output of the show interface cable upstream command for upstream 0:

```
Router# show interface cable 7/0/0 upstream 0
No upstream configured on mac-domain Cable7/0/0
```

The following example displays the output of the show interface cable upstream command with ugs statistics option:

```
Router# show interface cable 7/0/0 upstream 0 ugs statistics
No upstream configured on mac-domain Cable7/0/0
```

The following example displays the output of the show interface cable upstream command with rate-adapt option:

```
Router# show interface cable 7/0/0 upstream 0 rate-adapt
No upstream configured on mac-domain Cable7/0/0
```

Table 34: show interface cable upstream Field Descriptions

Field	Description
Cable	Location of the upstream interface.
Upstream is up/ ...administratively down	Administrative state of the upstream interface.
Received broadcasts	Number of broadcast packets received through this upstream interface.
multicasts	Number of multicast packets received through this upstream interface.
unicasts	Number of unicast packets received through this interface.
discards	Number of packets discarded by this interface, typically because of buffer overruns.
errors	Total of all packets with errors that prevented the transmission of the packets through this upstream interface. This figure could include the following error packets: • Collisions of request and request/data packets • Damaged frames received during request and request data requests or slots, typically because they had bad forward error correction (FEC) header checksums (HCS) • Damaged frames received from ranging requests • Data packets with unique word, collision, or no energy • Number of upstream bursts whose preamble or unique word could not be correctly received • Packets with at least one frame with an uncorrectable error On Broadband Processing Engine (BPE) cable interface line cards, such as the Cisco uBR-MC16U/X, Cisco uBR-MC28U/X, and Cisco uBR10-MC5X20S/U line cards, this counter also counts conditions such as HCS/CRC errors and collisions that occur during initial ranging requests and bandwidth requests. Compare this counter with the uncorrectable error counter from the **show cable hop** command to determine whether a problem with noise exists, or whether the counter is high only because a large number of CMs are trying to register.
unknown protocol	Number of packets received that were using an unknown protocol (the packet was not an IP, ARP, or PPPoE packet). This counter also includes DOCSIS frames that could not be identified as DOCSIS frames because of malformed headers or invalid header options.
packets input	Number of frames received (broadcast, multicast, and unicast) through this upstream interface that were free from errors.

Field	Description
corrected	Number of frames received through this upstream interface that had errors that were corrected.
uncorrectable	Number of frames received through this upstream interface that had errors that could not be corrected. This means the frame had at least one uncorrectable FEC block, making the whole frame uncorrectable. Nominally, you should expect at most 1 uncorrectable error per 10,000 packets, and typically, the uncorrectable error rate is much less in good environments. **Note** This counter is not supported on Broadband Processing Engine (BPE) cable interface line cards, such as the Cisco uBR-MC16U/X, Cisco uBR-MC28U/X, and Cisco uBR10-MC5X20S/U/H line cards, because these line cards count only uncorrectable codewords, not frames. As a result, this field always shows 0 or N/A for these line cards, depending on the software release. Instead of this field, use the **show cable hop** command to display the number of uncorrectable errors per codeword.
noise	Number of upstream packets of any type that were corrupted by line noise.
microreflections	Approximate number of upstream packets corrupted by microreflections. Microreflections are a type of impairment that is caused by impedance mismatches between amplifiers, couples, cables, and other equipment in the cable plant. Microreflections create copies of a signal that arrive at the receiver with different amounts of delay and attenuation, generating intersymbol interference (ISI) that can cause the receiver to improperly detect the amplitude and phase of the incoming signal. **Note** This value is not exact but provides an approximate indication of the microreflections that have been received.
Guaranteed-rate service queue depth	Number of bandwidth requests queued up in the Guarantee-rate queue. This queue is available only to CMs that have a reserved minimum upstream rate in their class of service (CoS).
Best-effort service queue depth	Number of bandwidth requests queued up in the Best-effort queue. This queue is available to all CMs that do not have any reserved rate on the upstream.
Total Modems On This Upstream Channel	Number of CMs currently sharing this upstream channel. This field also shows how many of these CMs are active.
Total NON-MTC Modems On This Upstream Channel	Number of non-MTC cable modems currently sharing this upstream channel. This field also shows how many of these CMs are active.
Total MTC Modems On This Upstream Channel	Number of MTC cable modems currently sharing this upstream channel. This field also shows how many of these CMs are active.
Segments	Valid segments and discarded segments transmitted on a logical channel interface will be added.

Field	Description
JIB counters for ifInErrors	Error counters for the upstream interface that are maintained by the MAC controller that is onboard certain cable interface line cards (such as the Cisco uBR10-MC5X20S and Cisco uBR-MC28U/X line cards): • us_error_frame_drop = Number of frames dropped from the upstream frame queue because the queue was already full with packets with various errors, such as cyclic redundancy check (CRC), header checksum (HCS), fragmentation, concatenation, and unrecognized frame errors. • us_crc_error = Number of packets with CRC errors that were received on the upstream. • us_hcs_error = Number of packets with HCS errors that were received on the upstream. • us_cont_collision = Number of packets that were received with a collision detected during contention transmit opportunity. • us_uncorr_cw_rcvd = Number of packets with uncorrectable codewords that were received on the upstream.
Rng Polls	MAC scheduler queue showing number of ranging polls.
Cont Mslots	MAC scheduler queue showing number of forced contention request slots in MAP.
CIR Grants	MAC scheduler queue showing number of CIR grants pending.
BE Grants	MAC scheduler queue showing number of Best-Effort grants pending.
Grant Shpr	MAC scheduler queue showing number of grants buffered for traffic shaping.
Reserved slot table	Number of slots that the MAC scheduler has placed in the reserved slot table at the time that the command was made.
Req IEs	Counter of Request IEs sent in MAP.
Req/Data IEs	Counter of Request/Data IEs sent in MAP.
Init Mtn IEs	Counter of Initial Maintenance IEs.
Stn Mtn IEs	Number of station maintenance (ranging poll) IEs.
Long Grant IEs	Number of long grant IEs.
ShortGrmg IEs	Number of short grant IEs.
Avg upstream channel utilization	Average percent of the upstream channel bandwidth being used for user (Ethernet) traffic. This does not include DOCSIS MAC-layer packets.
Avg percent contention slots	Average percent of slots available for CMs to request bandwidth using contention mechanisms. Also indicates the amount of unused capacity in the network.
Avg percent initial ranging slots	Average percent of slots in the initial ranging state.

Field	Description
Avg percent minislots lost on late MAP	Average percent of slots that were lost because a MAP interrupt was too late.
Current Total Bandwidth Reserved	Total amount of bandwidth reserved by all CMs sharing this upstream channel that require bandwidth reservation. The CoS for these CMs specifies some nonzero value for the guaranteed-upstream rate. When one of these CMs is admitted on the upstream, this field value is incremented by this guaranteed-upstream rate value.
CIR admission control	Status of admission control on the upstream channel. ENFORCED status allows users to enable admission control on a per-port basis. This controls how limited bandwidth is allocated. NOT ENFORCED status indicates that there is no admission control. Every modem that registers with a class of service (COS) specifying a minimum upstream rate is admitted by the CMTS, regardless of how much aggregate bandwidth is actually available. Users enable admission control via the admission control command-line interface (CLI).
Subscription Level	Amount of oversubscription to allow on this upstream channel, as configured with the **cable upstream admission-control** command. Oversubscription is expressed as a percentage of the raw capacity of the channel.
Reservation Limit (with Oversubscription)	Maximum cumulative bandwidth reservation allowable before rejecting new CMs.
Admission requests rejected	Number of CMs that attempted to register on this interface but were rejected because of the admission control policy that has been configured with the **cable upstream admission-control** command.
Virtual channel bw	Maximum virtual bandwidth of this capacity, in bits per second (b/s), when admission control is enabled.
Last Minislot Stamp (current_time_base)	Current minislot count at the CMTS. FLAG indicates the timebase reference. This field is used only by developers.
Last Minislot Stamp (scheduler_time_base)	Furthest minislot count allocated at the indicated time. FLAG indicates the timebase reference. This field is used by developers.
# of Active UGS on the Upstream	Number of Unsolicited Grant Service (UGS) flows that are currently active on the upstream.
UGS Allocation Statistics (max, min, avg)	Maximum number of UGS service flows, minimum number of UGS service flows, and average number of UGS service flows that have been allocated on the upstream over the last hour and last five minute period.

Field	Description
Rate-adapt	Rate-adapt is enabled and any local upstream (US) configuration information: • global–Rate-adapt is enabled globally. • US–Rate-adapt is enabled locally on a specific US. • pri–Indicates the priority setting for the local US. • rate–Indicates the minimum max-rate setting for the local US. • bcs–Indicates the number of broadcast contention minislots.

Table 35: show interface cable upstream bonding-group Field Descriptions

Field	Description
packets input	Number of drops, errors, and total number of packets received on each upstream.
octets input	Number of octets received on the upstream.
Segments	Number of valid segments, discarded segments and lost segments transmitted on a bonding group.
Reserved Bandwidth Max	Maximum amount of bandwidth reserved for a bonding group.
Reserved Bandwidth	Amount of bandwidth reserved by all CMs sharing this upstream channel.
Available Bandwidth	Amount of bandwidth available on a bonding group.
Total Service Flows on this Bonding Group	Number of service flows assigned to a particular bonding group.

Tip In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a time stamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

This example shows the output of the **show interface cable upstream bonding-group** command showing bonding group 2 configuration on the cable interface 7/0/1 in Cisco IOS Release 12.2(33)SCG:

```
Router# show interface cable 7/1/0 upstream bonding-group 2
30 seconds input rate 515470 bits/sec, 1000 packets/sec.
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable upstream** command on the Cisco cBR router:

```
Router#show interface cable 1/0/0 upstream

MAC domain upstream impairment report: 0x0
```

```
Cable1/0/0: Upstream 0  is up
     Description: UC3/0/0:U0
     Received 20 broadcasts, 1710 multicasts, 10882 unicasts
     0 discards, 0 errors, 0 unknown protocol
     12612 packets input
     Codewords: 15234 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 3 (3 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 1  is up
     Description: UC3/0/0:U1
     Received 28 broadcasts, 3916 multicasts, 12806 unicasts
     0 discards, 0 errors, 0 unknown protocol
     16750 packets input
     Codewords: 30419 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 2 (2 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 2  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 3  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 4  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 5  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 6  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
```

```
     Segments: 0 valid, 0 discarded
Cable1/0/0: Upstream 7  is down
     Received 0 broadcasts, 0 multicasts, 0 unicasts
     0 discards, 0 errors, 0 unknown protocol
     0 packets input
     Codewords: 0 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 0 (0 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Router#
```

This example shows the output of the **show interface cable upstream** command for a specific upstream port on the Cisco cBR router:

```
Router#show interface cable 1/0/0 upstream 1

MAC domain upstream impairment report: 0x0
Cable1/0/0: Upstream 1  is up
     Description: UC1/0/0:U1
     Received 28 broadcasts, 3949 multicasts, 12906 unicasts
     0 discards, 0 errors, 0 unknown protocol
     16883 packets input
     Codewords: 30658 good 0 corrected 0 uncorrectable
     0 noise, 0 microreflections
     Total NON-MTC Modems On This Upstream Channel : 2 (2 active)
     Total MTC Modems On This Upstream Channel : 0 (0 active)
     Segments: 0 valid, 0 discarded
Router#
```

This example also shows the output of the **show interface cable upstream** command for a specific upstream port on the Cisco cBR router:

```
Router#show interfaces cable1/0/0 upstream 0

MAC domain upstream impairment report: 0x0
Cable1/0/0: Upstream 0 is up
Description: UC1/0/0:U0
Received 3807 broadcasts, 0 multicasts, 750999 unicasts
0 discards, 0 errors, 0 unknown protocol
754806 packets input
Codewords: 1394549 good 0 corrected 0 uncorrectable
0 noise, 0 microreflections
Total NON-MTC Modems On This Upstream Channel : 14 (14 active)
Total MTC Modems On This Upstream Channel : 52 (52 active)
Segments: 199946 valid, 0 discarded
```

This example shows the output of the **show interface cable upstream** command with the **ugs statistics** keyword on the Cisco cBR router:

```
Router#show interface cable 1/0/0 upstream 1 ugs statistics

UGS Statistics for Upstream 1
# of Active UGS on the Upstream : 0

                     UGS Allocation Statistics
                    max         min         avg
Last 1 Hour         0           0           0
Last 5 Min          0           0           0
```

```
Router#
```

Related Commands

Command	Description
show interface cable	Displays configuration and status information for the cable interface.
show interface cable downstream	Displays information about the downstream cable interface.
show interface cable sid	Displays information by service identifier (SID) of each cable modem on the network.
show interface cable signal-quality	Displays information about the cable signal quality.

show interface cable upstream debug

To display information about the Service ID (SID) tracking on a cable interface, use the **show interface cable upstream debug** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

On the Cisco cBR router, use the **show interface cable upstream debug** command with the **sf-tracking** keyword on the Cisco line card to display the Service Flow (SF) tracking information.

show interface cable {*slot/port slot/subslot/port*} **upstream debug sid-tracking** *sid-value* **start-index** *count-number* {**summary** | **verbose**}
show interface cable {*slot/port slot/subslot/port*} **upstream debug sid-tracking** *sid-value* **clear**

Cisco IOS Release 12.2(33)SCE and later
show interface cable {*slot/subslot/cable-interface-index*} **upstream debug sid-tracking** *sid-value* **start-index** *count-number* {**summary** | **verbose**}
show interface cable {*slot/subslot/cable-interface-index*} **upstream debug sid-tracking** *sid-value* **clear**

Cisco cBR Series Converged Broadband Router
show interface cable {*slot/subslot/cable-interface-index*} **upstream debug sf-tracking** *sfid-value* **start-index** *count-number* [**summary** | **verbose**]
show interface cable {*slot/subslot/cable-interface-index*} **upstream debug sid-tracking** *sfid-value* **clear**

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	Secondary slot number of the cable interface line card. Cisco uBR10012 —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 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 15.
sid-tracking *sid-value*	Specifies the SID number for which SID tracking details are displayed. The valid range is from 1 to 8191.
sf-tracking *sfid-value*	On the Cisco cBR router— Specifies the SFID number for which the tracking details are required to be displayed. The valid range is from 1 to 65536.
start-index	First event you want to display. Cisco uBR10012 router—The valid range is from 0 to 40000 Cisco cBR router—Valid values are from 0 to 4294967295.
count-number	Total number of events you want to display. Cisco uBR10012 router—The valid range is from 0 to 40000 Cisco cBR router—Valid values are from 0 to 4294967295.
summary	(Optional) Displays the summary of events.
verbose	(Optional) Displays queuing and token bucket information for bandwidth requests.
clear	Clears the SID tracking data.

Command Modes

Privileged EXEC (#)

Line card slot (Slot-x-0#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced in Cisco IOS Release 12.2(33)SCC.
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.

Usage Guidelines

The **show interface cable upstream debug** command with the **sf-tracking** keyword must be used on the Cisco cBR line card. To enter the line card mode, do the following:

In the Privileged EXEC (#) mode, use the **request platform software console attach** *slot/subslot* command. This example displays how to go to the line card Slot mode:

```
Router#request platform software console attach 1/0

#
# Connecting to the CLC console on 1/0.
# Enter Control-C to exit the console connection.
#
Slot-1-0> en
Slot-1-0#
```

See the examples for information on how to use the **show interface cable upstream debug sf-tracking** command in the line card Slot mode.

Examples

The following is a sample output of the show interface cable upstream debug command on a cable interface line card in slot 5, subslot 0, and port 1:

```
Router# show cable 5/0/1 upstream debug sid-tracking 35 0 40000 [19   ]:BWREQ_2
  2662273505  4594-usecs bytes:2987       req_id:0          sid:35
[63   ]:BWREQ_2  2662361817  4905-usecs bytes:2987       req_id:0          sid:35
[108  ]:BWREQ_2  2662450105  5190-usecs bytes:2987       req_id:0          sid:35
[151  ]:BWREQ_2  2662535807  4893-usecs bytes:2987       req_id:0          sid:35
[196  ]:BWREQ_2  2662624956  4043-usecs bytes:2987       req_id:0          sid:35
[240  ]:BWREQ_2  2662713320  4407-usecs bytes:2987       req_id:0          sid:35
[284  ]:BWREQ_2  2662801603  4682-usecs bytes:2987       req_id:0          sid:35
[328  ]:BWREQ_2  2662889928  5006-usecs bytes:2987       req_id:0          sid:35
[373  ]:BWREQ_2  2662978229  5304-usecs bytes:2987       req_id:0          sid:35
[417  ]:BWREQ_2  2663067305  4381-usecs bytes:2987       req_id:0          sid:35
[461  ]:BWREQ_2  2663155618  4694-usecs bytes:2987       req_id:0          sid:35
[505  ]:BWREQ_2  2663243945  5020-usecs bytes:2987       req_id:0          sid:35
```

Examples for the Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface cable upstream debug sf-tracking** command with the **summary** keyword on the Cisco cBR line card:

```
Slot-1-0#show interface cable 1/0/0 upstream debug sf-tracking 1 1 10 summary
Show tracking (1 .. 11) for SFID 1 in Cable1/0/0
cmts_mac_sched_sfid_track_show: md 0 sfid 1 start 1 count 10, tx-status 1
Slot-1-0#
```

This example shows the output of the **show interface cable upstream debug sf-tracking** command with the **verbose** keyword on the Cisco cBR line card:

```
Slot-1-0#show interface cable 1/0/0 upstream debug sf-tracking 1 1 10 verbose
Show tracking (1 .. 11) for SFID 1 in Cable1/0/0
cmts_mac_sched_sfid_track_show: md 0 sfid 1 start 1 count 10, tx-status 1
Slot-1-0#
```

Related Commands

Command	Description
debug cable interface	Displays debugging messages for a specific cable interface, or for traffic related to a specific MAC address or Service ID on that cable interface.
show interface cable	Displays configuration and status information for the cable interface.

show interface gigabitethernet

To display status of the gigabitethernet interface, its MAC and IP address details, and information about the Downstream External PHY Interface (DEPI) traffic, use the **show interface gigabitethernet** command in privilege EXEC mode.

show interface gigabitethernet *slot/subslot/* {*bayport*}

Syntax Description

slot	The slot where a SIP or cable line card resides.
	• Cisco uBR7246VXR router—The valid range is from 3 to 6.
	• Cisco uBR7225VXR router—The valid range is from 1 to 2.
	• Cisco uBR10012 router—The valid range for:
	  • Cable line card is from 5 to 8
	  • SIP is 1 and 3

subslot	The subslot where a SIP or cable line card resides.
	• Cisco uBR10012 router—The valid value for:
	  • Cable line card in slot 5 to 8 is 0 or 1
	  • SPAs in a SIP in slot 1 or 3, prior to Cisco IOS Release 12.2(33)SCB is 0 or 1. For Cisco IOS Release 12.2(33)SCB and later, subslot is not specified.

bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).

port	Specifies the port number.
	• Cisco uBR7246VXR router and Cisco uBR7225VXR router—The valid range is from 0 to 1.
	• Cisco uBR10012 router—The valid value for:
	  • Slot 1 and 3 is 0
	  • Slot 5 to 8 is from 0 to 4

Command Default

None

Command Modes

Privilege EXEC

Command History

Release	Modification
12.2(33)SCE	This command was introduced.
12.2(33)SCG	This command was modified. The status of the output flow-control and input flow-control in the output is displayed as on or off.

Examples

This is a sample output for the **show interface gigabitethernet** command:

```
Router# show interface gigabitethernet 6/1/0
GigabitEthernet6/1/0 is up, line protocol is up
Hardware is Gigabit Ethernet MAC Controller, address is 0013.5f06.7f74 (bia 0013.5f06.7f74)
Internet address is 56.1.1.1/24
MTU 1500 bytes, BW 10000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Full Duplex, 1000Mbps, link type is auto, media type is SX
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:01, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 8
  Interface GigabitEthernet6/1/0 queueing strategy: PXF Class-based
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     2557 packets input, 541995 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     723 packets output, 52113 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier, 0 pause output
     0 output buffer failures, 0 output buffers swapped out
Router#
```

Effective with Cisco IOS Release 12.2(33)SCG, the **show interface gigabitethernet** command was modified to display the correct status of the output and input flow-control parameters as on or off. This change is applicable only to Cisco SPA-5X1G and Cisco SPA-1X10G shared port adapters.

The following example shows the changed output of the **show interface gigabitethernet** command:

```
Router# show interface gigabitethernet1/2/3
Load for five secs: 5%/0%; one minute: 8%; five minutes: 8%
Time source is NTP, 14:25:51.761 CST Wed Feb 20 2013
GigabitEthernet1/2/3 is down, line protocol is down
Hardware is GigEther SPA, address is 649e.f366.b71d (bia 649e.f366.b71d)
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
 reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full Duplex, 1000Mbps, link type is auto, media type is LX
output flow-control is on, input flow-control is on
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Interface GigabitEthernet1/2/3 queueing strategy: PXF Class-based
30 second input rate 0 bits/sec, 0 packets/sec
30 second output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts (0 IP multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog, 0 multicast, 0 pause input
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier, 0 pause output
```

```
0 output buffer failures, 0 output buffers swapped out
Router#
```

Related Commands

Command	Description
show controller gigabitethernet	Displays information about the Gigabit Ethernet interface used by the DEPI.

show interface integrated-cable

To display the current configuration and status for an integrated channel, use the **show interface integrated-cable** command in privileged EXEC mode.

Cisco uBR10012 Router
show integrated interface-cable *slot/subslot/port: interface-number*[*options*]

Cisco uBR7246VXR and Cisco uBR7225VXR Routers
show integrated interface-cable *slot/port: interface-number*[*options*]

Cisco cBR Series Converged Broadband Router
show integrated interface-cable *slot/subslot/port: integrated-Cable-interface-number*[*options*]

Syntax Description

slot/subslot/port	• *slot*—Slot where the line card resides. The valid range is from 5 to 8. • *subslot*—Subslot where the line card resides. The available slots are 0 or 1. • *port*—Downstream controller number on the line card. The valid *port* values are 0 to 4. Cisco cBR router— • *slot*—The valid range is 0 to 3 and 6 to 9. • *subslot*—Subslot where the line card resides. The valid value is 0. • *port*—Downstream controller number on the line card. The valid range is from 0 to 7.

slot/port	On the Cisco uBR7225VXR or Cisco uBR7246VXR routers:
	• *slot*—Slot where the line card resides.
	  • Cisco uBR7225VXR router—The valid range is from 1 to 2.
	  • Cisco uBR7246VXR router—The valid range is from 3 to 6.
	• *port*—Downstream controller number on the line card. The valid values are 0 or 1.

integrated-Cable-interface-number	Integrated cable interface number. The valid range is from 0 to 3. Cisco cBR router—The valid range is from 0 to 162.

options	The following non-cable specific options generate information for integrated cable interfaces: • **accounting**—Displays the number of packets of each protocol type that is sent through the interface. • **controller**—Displays the status of the interface, configuration, and controller. • **counters**—Displays the integrated cable interface counters. • **crb**—Displays the interface routing and bridging information. • dbs—Displays the Dynamic Bandwidth Sharing (DBS) scheduler information. • **description**—Displays the description entered for the interface. • **dlm**—Displays the DEPI Latency Measurement (DLM) statistics. This keyword is not supported on the Cisco cBR router. • **downstream**—Displays the downstream information. • **history**—Displays the interface history on the Cisco cBR router. • **human-readable**—Displays the interfaces output with larger numbers separated by comma(s) on the Cisco cBR router. • **fair-queue**—Displays the integrated cable interface Weighted Fair Queuing (WFQ) information. This keyword is not supported on the Cisco cBR router. • **irb**—Displays the interface routing and bridging information. • **mac-accounting**—Displays the interface MAC accounting information. • **monitor**—Displays the status of the interface continuously. • **mpls-exp**—Displays the interface Multiprotocol Label Switching (MPLS) experimental accounting information. • **multicast-gcr**—Displays the multicast QoS (MQoS) GCR details. • **multicast-sessions**—Displays information about the multicast sessions on the integrated-cable interface. • **precedence**—Displays interface precedence accounting information. • **privacy**—Displays privacy group information. This keyword is not supported on the Cisco cBR router. • **random-detect**—Displays the interface Weighted Random Early Detection (WRED) information. This keyword is not supported on the Cisco cBR router. • **stats—**Displays packets that are switched. • **summary**—Displays interface summary information. • **switching**—Displays interface switching information. This keyword is not supported on the Cisco cBR router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced on the Cisco uBR10012 router.

Release	Modification
12.2(33)SCD	This command was integrated on the Cisco uBR7246VXR and Cisco uBR7225VXR routers.
12.2(33)SCF	This command was modified. The downstream keyword was enhanced to capture fairness across DOCSIS interfaces related information.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The following keywords were removed: • **dlm** • **fair-queue** • **privacy** • **random-detect** • **switching** The following keywords were added: • **history** • **human-readable**

Usage Guidelines

Some other non-cable specific options do not generate any meaningful information for integrated-cable interfaces. For information on the non-cable specific options, see the Cisco IOS Release 12.3 documentation on Cisco.com .

In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to the **show** commands using the **exec prompt timestamp** command in line configuration mode.

Examples

This example shows the output of the **show interface integrated-cable accounting** command:

```
Router# showshow interface integrated-cable 7/0/0:0 accounting
Protocol    Pkts In   Chars In   Pkts Out  Chars Out
IP          0          0        280      41606
```

This example shows the output of the **show interface integrated-cable dbs** command:

```
Router# show interface integrated-cable 3/0:0 dbs
Dynamic Bandwidth Sharing is enabled
active 0
RF 0: tokens 23342, active 0, policer 4687 KB/s, max_tokens 23435
      deficit counter 0, quantum 6000
      ticks_limit: 62500, max_ticks:625000, policer(ticks): 312
```

The following is the sample output of the **show interface integrated-cable description** command:

```
Router# show interface integrated-cable 7/0/0:0 description
Interface                      Status         Protocol Description
In7/0/0:0                      up             up
tfchan_ubr10k_1#show interface integrated-cable 7/0/0:0  downstream
In7/0/0:0: Downstream is up
 Total Modems 5 (5 active), Total Flows 6
 Total downstream bandwidth: 18750 Kbps
 Total downstream reserved/reservable bandwidth: 2002/15000 Kbps
```

The following is the sample output of the **show interface integrated-cable downstream** command:

```
Router# show interface integrated-cable 7/0/0:0 downstream
In7/0/0:0: Downstream is up
 Total Modems 5 (5 active), Total Flows 6
 Total downstream bandwidth: 18750 Kbps
 Total downstream reserved/reservable bandwidth: 2002/15000 Kbps
```

The following is the sample output of the **show interface integrated-cable irb** command:

```
Router# show interface integrated-cable 7/0/0:0 irb
Integrated-Cable7/0/0:0
tfchan_ubr10k_1#show interface integrated-cable 7/0/0:0  multicast-gcr
Group Classifier Rules on Integrated-Cable7/0/0:0:
Classifier_id  Group_id  Group_Qos_id  Sid   SFID   ref_count  Key
1              1         1             8196  16     1          0
```

This example shows the output of the **show interface integrated-cable multicast-gcr** command:

```
Router# show interface integrated-cable 5/1/2:0 multicast-gcr
Group Classifier Rules on Integrated-Cable7/0/0:0:
Classifier_id  Group_id  Group_Qos_id  Sid   SFID   ref_count  Key
1              1         1             8196  16     1          0
```

This example shows the output of the **show interface integrated-cable multicast-sessions** command:

```
Router# show interface integrated-cable 5/1/2:0 multicast-sessions
Default Multicast Service Flow 53 on Integrated-Cable 5/1/2:0
Multicast Group    : 230.1.2.3
         Source    : N/A
         Act GCRs  : 2
         Interface : Bu123                State: A      GI: Bu123       RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     2    8252    64      31    2      1
                     1    8253    65      32    1      1
```

Example of the Updated show interface integrated-cable downstream Command Output in Cisco IOS Release 12.2(33)SCF

This example shows the output of the **show interface integrated-cable downstream** command:

```
Router# show interface integrated-cable 6/1/0:0 downstream
In6/1/0:0: Downstream is up
 Total Modems 1 (1 active), Total Flows 2
 Total downstream bandwidth: 375 Kbps
 Total downstream reserved/reservable bandwidth: 0/300 Kbps
 Total downstream guaranteed/non-guaranteed bonus bandwidth: 20025/10012 Kbps
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the **show interface integrated-cable accounting** command:

```
Router#show interface integrated-Cable 1/0/0:0 accounting
Integrated-Cable1/0/0:0
               Protocol    Pkts In   Chars In   Pkts Out  Chars Out
No traffic sent or received on this interface.
```

```
Router#
```

This example shows the output of the **show interface integrated-cable controller** command:

```
Router#show interface integrated-Cable 1/0/0:0 controller
Integrated-Cable1/0/0:0 is down, line protocol is down
  Hardware is CMTS IC interface, address is c414.3c17.1dcb (bia c414.3c17.1dcb)
  MTU 1500 bytes, BW 37500 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 28125 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out


IC controller details
In1/0/0:0 RFID: 12288
Inject header:
    DOCSIS DATA HDR Byte dump:
00 00 00 03
00 14 64 00
00 00 00 00
00 00 00 00


---------------------------------------
DOCSIS DATA HDR Decode, hdr Size: 16
---------------------------------------
HEADER FIELDS
---------------------------------------
Pkt-Len             : 0 (0x0)
Jib-hdr-ver         : 0 (0x0)
pkt-type            : 0 (0x0)
pkt-subtype         : 0 (0x0)
Dest                : 3 (0x3)
Src                 : 0 (0x0)
ilk                 : 0 (0x0)
sf-idx              : 1305 (0x519)
Qos                 : 0 (0x0)
Control             : 0 (0x0)
dbg_control         : 0 (0x0)
bpi_idx             : 0 (0x0)
timestamp           : 0 (0x0)
---------------------------------------

Flow control Id: 0x3000 [slot: 3 (0x3), JIB chan no: 0 (0x0)]
```

```
---------------------------------------------
State info (DSNB if and its underlying states)
---------------------------------------------
DSNB IF state                          : DOWN
RF Chan state                          : UP
RF Chan Mod Type                       : SC-QAM
RF Chan frequency                      : 93000000
Bandwidth configured on DSNB IF        : YES
Inject Header/HW flow creation status  : DSNB_IF_SM_UP
MD state                               : DSNB i/f is NOT part of a MD
*DSNB i/f Line State                   : DOWN
---------------------------------------------
Router#
```

This example shows the output of the **show interface integrated-cable counters protocol status** command:

```
Router#show interface integrated-Cable 1/0/0:0 counters protocol status
Protocols allocated:
 Integrated-Cable1/0/0:0: Other, IP
Router#
```

This example shows the output of the **show interface integrated-cable crb** command:

```
Router#show interface integrated-Cable 1/0/0:0 crb

Integrated-Cable1/0/0:0

 Routed protocols on Integrated-Cable1/0/0:0:
  ipv6
Router#
```

This example shows the output of the **show interface integrated-cable human-readable** command:

```
Router#show interface integrated-Cable 1/0/0:0 human-readable
Integrated-Cable1/0/0:0 is down, line protocol is down
  Hardware is CMTS IC interface, address is c414.3c17.1dcb (bia c414.3c17.1dcb)
  MTU 1500 bytes, BW 37500 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 28125 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
```

```
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
Router#
```

Related Commands

Command	Description
show interface integrated-cable queue	Displays the downstream hierarchical queueing framework (HQF) queue information for an integrated cable interface.

show interface integrated-cable queue

To display the downstream hierarchical queuing framework (HQF) queue information for an integrated cable interface, use the **show interface integrated-cable queue** command in privileged EXEC mode.

show interface integrated-cable *slot/port:sub-interface* **queue** [**verbose** | **cblt** [*cblt_indexpriority*] | **pblt**]

Syntax Description

slot/port	• *slot*—Slot where the line card resides. • Cisco uBR7225VXR router—The valid range is from 1 to 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • *port*—Downstream controller number on the line card. The valid *port* values are 0 or 1.
verbose	(Optional) Displays detailed information for all queues
cblt	(Optional) Displays detailed class layer bandwidth limited traffic (CBLT) stream information for normal downstream HQF queues.
cblt_index	CBLT index information.
priority	Displays CBLT information for priority HQF queues. Priority queues do not have any indexes.
pblt	(Optional) Displays detailed physical layer bandwidth limited traffic (PBLT) stream information for this interface.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCD	This command was introduced for the Cisco uBR7246VXR and Cisco uBR7225VXR routers.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output of the **show interface integrated-cable queue** command:

```
Router> show interface integrated-cable 3/0:0 queue

*   idx/gqid   Len/Limit     Deqs      Drops    CIR         MIR/PR    SFID         ForwInt
                    pkts           pkts      pkts     kbps         kbps
BE Queues:
I     0/1          0/128          700       0        0              0/0          C5/0:11
     In5/0:0
      1/44        0/128              0         0        0            10000/0    C5/0:11
   In5/0:0

CIR Queues:
     33/97       0/128   1      14374    0        100       15000/0      C5/0:15
In5/0:0
```

```
Low Latency Queues:
~     51/124     0/128   1      14374    0        100        100/0       C5/0:15
In5/0:0
$     0/0          0/128   1      14374    0        100        100/0          -
    In5/0:0
 I: Cable Interface Queue
 $: Low Latency Queue
 ~: Low Latency Policing Queue
Router>
```

The following is a sample output of the **show interface integrated-cable queue verbose** command:

```
Router> show interface integrated-cable 3/0:0 queue verbose
Interface Number 5 (type 25) Integrated Cable 3/0:0
 OUTPUT FEATURES
   blt (0x63D90FA0, index 0, qid 0, fast_if_number 5) layer PHYSICAL
   scheduling policy: WFQ (111)
   classification policy: CLASS_BASED (122)
   drop policy: TAIL (141)
   packet size fixup policy: NONE (0)   no of global policers: 0
   blt flags: 0x220000    scheduler: 0x63DFDBE0
  total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total active
 0
   txcount 26131 txqbytes 2030784 drops 0 qdrops 0 nobuffers 0 flowdrops 0
   qsize 0 aggregate limit/bytes 1000/0 availbuffers 1000
   holdqueue_out 1000 perc 0.00 remaining_ratio/perc 0
   visible_bw 37500 max_rate 37500 allocated_bw 37500 vc_encap 0 ecn_threshold NONE
   weight A 1 quantum A 1500 credit A 1500
   weight B 1 quantum B 1500 credit B 1500
   min-rate tokens: 13000, credit: 0, depth: 13000
   backpressure_policy 0 scheduler_flags C03B
   last_sortq[A/B] 0/0, remaining pak/particles 0/0
   leaf_blt[P1] 0x63DFDBE0 burst packets/bytes[P1] 0/0
   leaf_blt[P2] 0x63DFDBE0 burst packets/bytes[P2] 0/0
   leaf_blt[NOTP] 0x63DFDBE0 burst packets/bytes[NOTP] 0/0
 (max entries 1000)
     next layer HQFLAYER_CLASS_HIER0 (max entries 1000)
     blt (0x63D90EE0, index 0, qid 1, fast_if_number 5) layer CLASS_HIER0
     scheduling policy: FIFO (110)
     classification policy: NONE (120)
     drop policy: TAIL (141)
     packet size fixup policy: NONE (0)   no of global policers: 0
     blt flags: 0x220000    scheduler: 0x63DFDB20
     total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total
active 1
     txcount 167 txqbytes 12912 drops 0 qdrops 0 nobuffers 0 flowdrops 0
     qsize 0 aggregate limit/bytes 1000/0 availbuffers 1000
     holdqueue_out 0 perc 100.00 remaining_ratio/perc 0
     visible_bw 37500 max_rate 37500 allocated_bw 37500 vc_encap 0 ecn_threshold NONE
     weight A 1 quantum A 1500 credit A 1500
     weight B 1 quantum B 1500 credit B 1500
     min-rate tokens: 18750, credit: 0, depth: 18750
     backpressure_policy 0 scheduler_flags C03B
     last_sortq[A/B] 55/11, remaining pak/particles 0/0
     leaf_blt[P1] 0x63DFDB20 burst packets/bytes[P1] 0/0
     leaf_blt[P2] 0x63DFDB20 burst packets/bytes[P2] 0/0
     leaf_blt[NOTP] 0x63DFDB20 burst packets/bytes[NOTP] 1/80
Router>
```

The following is a sample output of the **show interface integrated-cable queue cblt** *cblt_index* command:

```
Router> show interface integrated-cable 3/0:0 queue cblt 1
```

```
    blt (0x65CE3EA0, index 1, qid 45, fast_if_number 19) layer CLASS_HIER0
    scheduling policy: FIFO (110)
    classification policy: NONE (120)
    drop policy: TAIL (141)
    packet size fixup policy: NONE (0)   no of global policers: 0
    D/Traffic Shaping enabled
    blt flags: 0x22A208C    scheduler: 0x65D504C0
    total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 1000 total
active 1
    D/Traffic Shaping enabled
    txcount 890 txqbytes 63900 drops 0 qdrops 0 nobuffers 0 flowdrops 0
    qsize 0 aggregate limit/bytes 128/100000 availbuffers 128
    holdqueue_out 0 perc 0.00 remaining_ratio/perc 11
    visible_bw 0 max_rate 4000 allocated_bw 0 vc_encap 0 ecn_threshold NONE
    weight A 1 quantum A 1500 credit A 1500
    weight B 1 quantum B 1500 credit B 1500
    min-rate tokens: 1500, credit: 0, depth: 1500
    backpressure_policy 0 scheduler_flags C03F
    last_sortq[A/B] 0/0, remaining pak/particles 0/0
    leaf_blt[P1] 0x65D504C0 burst packets/bytes[P1] 0/0
    leaf_blt[P2] 0x65D504C0 burst packets/bytes[P2] 0/0
    leaf_blt[NOTP] 0x65D504C0 burst packets/bytes[NOTP] 0/0
    OUTPUT Shaping
      Bc internal 0 Be internal 0 Time interval 4
      increment 4000 increment_lower 0 increment_limit 4000
      last visit 87456736 credit 0 outstanding_tokens 23760 maxtokens 24352
      peak_rate_credit 0 peak_rate_tokens 0 peak_rate_increment 0
      system timer delayed 0 restart timer 0
      timer set 0 hqf_shape_running 17254
      nextexpire_system_time 0 nextexpire_time_qindex -1
Router>
```

The following is a sample output of the **show interface integrated-cable queue cblt** *priority* command:

```
Router# show interface integrated-cable 3/0:0 queue cblt priority
    blt (0x19FA9300, index 0, qid 52, fast_if_number 20) layer CLASS_HIER0
    scheduling policy: FIFO (110)
    classification policy: NONE (120)
    drop policy: TAIL (141)
    packet size fixup policy: NONE (0)   no of global policers: 0
    blt flags: 0x200800    scheduler: 0x1A015CC0
    total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 9500 total
active 1

    txcount 114 txqbytes 12864 drops 0 qdrops 0 nobuffers 0 flowdrops 0
    qsize 0 aggregate limit/bytes 128/0 availbuffers 128
    holdqueue_out 0 perc 0.00 remaining_ratio/perc 0
    visible_bw 0 max_rate 37500 allocated_bw 0 vc_encap 0 ecn_threshold NONE
    weight A 1 quantum A 1500 credit A 1500
    weight B 1 quantum B 1500 credit B 1500
    min-rate tokens: 1500, credit: 0, depth: 1500
    backpressure_policy 0 scheduler_flags C83F
    last_sortq[A/B] 0/0, remaining pak/particles 0/0
    leaf_blt[P1] 0x1A015CC0 burst packets/bytes[P1] 0/0
    leaf_blt[P2] 0x1A015CC0 burst packets/bytes[P2] 0/0
    leaf_blt[NOTP] 0x1A015CC0 burst packets/bytes[NOTP] 0/0
PRIORITY LEVEL 1: total bandwidth 500 kbps, total percent 0%
Router#
```

The following is a sample output of the **show interface integrated-cable queue pblt** command:

```
Router# show interface integrated-cable 3/0:0 queue pblt
```

```
   blt (0x19FB4700, index 0, qid 0, fast_if_number 20) layer PHYSICAL
   scheduling policy: WFQ (111)
   classification policy: CLASS_BASED (122)
   drop policy: TAIL (141)
   packet size fixup policy: NONE (0)   no of global policers: 0
   blt flags: 0x220000    scheduler: 0x1A0210C0
  total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total active
 0
   txcount 67743 txqbytes 6281007 drops 2 qdrops 0 nobuffers 0 flowdrops 0
   qsize 0 aggregate limit/bytes 8000/0 availbuffers 8000
   holdqueue_out 1000 perc 0.00 remaining_ratio/perc 0
   visible_bw 37500 max_rate 37500 allocated_bw 18000 vc_encap 0 ecn_threshold NONE
   weight A 1 quantum A 1500 credit A 1500
   weight B 1 quantum B 1500 credit B 1500
   min-rate tokens: 13000, credit: 0, depth: 13000
   backpressure_policy 1 scheduler_flags C03F
   last_sortq[A/B] 0/0, remaining pak/particles 0/0
   leaf_blt[P1] 0x1A0210C0 burst packets/bytes[P1] 0/0
   leaf_blt[P2] 0x1A0210C0 burst packets/bytes[P2] 0/0
   leaf_blt[NOTP] 0x1A0210C0 burst packets/bytes[NOTP] 0/0
Router#
```

Table 36: show interface integrated-cable – Field Description

Field	Description
Len/Limit Pkts	Queue length and limit in packets.
Deqs Pkts	Dequeue packets
Drops Pkts	Dropped packets.
CIR Kbps	Committed information rate, in kilobytes per second.
MIR/PR Kbps	Maximum information and peak rate, in kilobytes per second.
Forwint	Forwarding interface.
BE Queues	Best effort queues.
CIR Queues	Committed information rate queues.
Low Latency Queues	Low latency queues.
sfid	Service flow identification number.

Related Commands

Command	Description
show interface cable downstream	Displays information about the downstream on the cable interface.
show interface cable sid	Displays the service identifier (SID) information of each CM on the network.
show interface cable signal-quality	Displays information about the cable signal quality.
show interface cable upstream	Displays information about one or all upstreams on the cable interface.

Command	Description
show interface wideband-cable	Displays information about wideband channels.

show interface modular-cable

To display the current configuration and status of a modular cable interface, use the **show interface modular-cable** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number*

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/bay/port:nb-channel-number*

Cisco IOS Release 12.2(33)SCF
show interface modular-cable *slot/subslot/port:nb-channel-number*

Syntax Description

slot	Slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	Subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	Bay in a SIP where a SPA is located. The valid values are 0 (upper bay) and 1 (lower bay).
port	Interface number on the SPA.
unit	Controller unit number.
nb-channel-number	Narrowband channel number.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port.*
12.2(33)SCF	This command was modified. The downstream keyword was enhanced to capture fairness across DOCSIS interfaces related information.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output of the **show interface modular-cable** command:

```
Router# show interface modular-cable 1/0/0:0
Modular-Cable3/0/0:0 is up, line protocol is up
  Hardware is CMTS MC interface, address is 0011.9221.84be (bia 0011.9221.84be)
```

```
MTU 1500 bytes, BW 539 Kbit, DLY 1000 usec,
   reliability 255/255, txload 1/255, rxload 1/255
Encapsulation MCNS, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output 00:09:57, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: PXF First-In-First-Out
Output queue 0/64, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
   0 packets input, 0 bytes, 0 no buffer
   Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
   107 packets output, 16302 bytes, 0 underruns
   0 output errors, 0 collisions, 0 interface resets
   0 output buffer failures, 0 output buffers swapped out
```

The following is sample output of the **show interface modular-cable** command with downstream keyword:

```
Router# show interface modular-cable 1/0/0:1 downstream
Mo1/0/0:1: Downstream is up
 Total Modems 0 (0 active), Total Flows 1
 Total downstream bandwidth: 3750 Kbps
 Total downstream reserved/reservable bandwidth: 0/3000 Kbps
 Total downstream guaranteed/non-guaranteed bonus bandwidth: 10644/10643 Kbps
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg	Displays DOCSIS Set-Top Gateway (DSG) information per interface.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable summary	Displays interface summary information.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable accounting

To display interface accounting information, use the **show interface modular-cable accounting** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable {*slot/subslot/bay:nb-channel-number* } **accounting**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable {*slot/bay/port:nb-channel-number* } **accounting**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default values or behavior

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port.*
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable accounting** command for the modular-cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 accounting
Modular-Cable1/0/0:0
                Protocol    Pkts In   Chars In   Pkts Out  Chars Out
                      IP          0          0       1286     131092
```

Related Commands

Command	Description
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable summary	Displays interface summary information.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable description

To display a description for the interface, use the **show interface modular-cable description** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **description**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/subslot/port:nb-channel-number* **description**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port.*
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable description** command for the modular cable interface in slot 1, subslot 0, bay 0 and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 description
Interface                      Status         Protocol Description
Mo1/0/0:0                      up             up
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.

Command	Description
show interface modular-cable downstream	Displays dowstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable summary	Displays interface summary information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable dlm

To display DEPI Latency Measurement (DLM) information, use the **show interface modular-cable dlm** command in privileged EXEC mode.

show interface modular-cable *slot/bay/port:interface-number* **dlm**

Syntax Description

slot	Slot where a SIP resides. On the Cisco uBR10012 universal broadband router, slots 1 and 3 can be used for SIPs.
bay	Bay in a SIP where a SPA is located. The valid values are 0 (upper bay) and 1 (lower bay).
port	Interface number on the SPA.
interface-number	Modular-cable interface number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	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 is sample output of the **show interface modular-cable dlm** command for the modular cable interface in slot 1, bay 0, port 0, and modular-cable interface number 6:

```
Router# show interface Modular-Cable 1/0/0:6 dlm
DEPI Latency Measurements for Modular-Cable1/0/0:6
Current CIN Delay: 146 usecs
Current DLM: 4566
Average DLM (last 10): 1514
Max DLM: 5115
Min DLM: 913
Ingress DLM
#           SysUpTime           Delay (Ticks)
x-----------x-------------------x------------
0           831149              949
1           831159              1168
2           831170              4566
3           831076              1005
4           831087              983
5           831097              1185
6           831108              1139
7           831118              1144
8           831128              2013
9           831139              996
```

Table 37: show interface modular-cable Field Descriptions

Field	Description
Current CIN Delay	Current CIN delay value.
Current DLM	Current DLM value.
Average DLM (last 10)	Average DLM value.
Max DLM	Maximum DLM .
Min DLM	Minimum DLM.
SysUpTime	The system up or active time.
Delay (Ticks)	The delay measured as number of ticks.

Related Commands

Command	Description
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable summary	Displays interface summary information.
rf-channel network-delay	Configures the network delay for an RF channel on a Wideband SPA.

show interface modular-cable downstream

To display downstream information for the narrowband channel, use the show interface modular-cable downstream command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **downstream**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/subslot/port:nb-channel-number* **downstream**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port.*
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable downstream** command for the modular cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 downstream
Mo1/0/0:0: Downstream is up
 Total Modems 5 (5 active), Total Flows 6
 Total downstream bandwidth: 1940 Kbps
 Total downstream reserved bandwidth: 200 Kbps
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable summary	Displays interface summary information.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable intercept

To display intercept stream information, use the **show interface modular-cable intercept** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **intercept**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/subslot/port:nb-channel-number* **intercept**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port.*
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable intercept** command for the modular cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 intercept
Interface Modular-Cable1/0/0:0 is a member of bundle 2. Reenter the command on t
he virtual bundle interface.
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.

Command	Description
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable summary	Displays interface summary information.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable multicast-sessions

To display information about multicast sessions on a specific modular-cable interface, use the **show interface modular-cable multicast-sessions** command in privileged EXEC mode.

show interface modular-cable *slot/ {subslot bay}/port:wideband-channel* [**group** | [*ipv4-MQoS-group ipv6-MQoS-group*] | **latency** | **sid** [*MQoS-sid*]]

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.
subslot	(Cisco uBR10012 only) Secondary slot of the cable interface line card. The valid subslots are 0 or 1.
bay	Bay where the Cisco Wideband SPA is located. The valid range is from 0 to 3.
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).
interface-number	Modular-cable interface number. The valid range is from 0 to 23.
group [*ipv4-MQoS-group* | *ipv6-MQoS-group*]	Displays information about the specified IPv4 or IPv6 multicast quality of service (MQoS) group.
latency	Displays information about the multicast session latency.
sid [*MQoS-sid*]	Displays information about the MQoS service identifier (SID). The value of the SID ranges from 8192 to 12272.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port* .
12.2(33)SCF	This command was modified. The **latency** keyword was added.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output from the **show interface modular-cable multicast-sessions** command:

```
Router# show interface modular-cable 1/1/0:0 multicast-sessions
Default Multicast Service Flow 7 on Modular-Cable1/1/0:0
Multicast Group    : 230.1.2.5
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8198    18      0     1      0
```

The following is a sample output from the **show interface modular-cable multicast-sessions group** command:

```
Router# show interface modular-cable 1/1/0:0 multicast-sessions group 230.1.2.5
Multicast Group    : 230.1.2.5
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8198    18      0     1      0
```

The following is a sample output from the **show interface modular-cable multicast-sessions latency** command:

```
Router# show interface modular-cable 1/1/0:0 multicast-sessions latency
Session (S,G) : (*,230.1.2.5)
Fwd Intfc     : Mo1/1/0:0
MQoS Entered at        MQoS Exit at
Mar 6 23:13:16.223     Mar 6 23:13:16.223
GC   SAID   SFID   SF req               SF rsp
1    8198   18     Mar 6 23:13:16.223  Mar 6 23:13:16.283
```

The following is a sample output from the **show interface modular-cable multicast-sessions sid** command:

```
Router# show interface modular-cable 1/1/0:0 multicast-sessions sid 8198
Multicast Group    : 230.1.2.5
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8198    18      0     1      0
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface modular-cable accounting information.
show interface modular-cable description	Displays the description of the modular-cable interface.
show interface modular-cable downstream	Displays the downstream information for the narrowband channel.
show interface modular-cable dsg	Displays the DOCSIS Set-Top Gateway (DSG) information per modular-cable interface.

Command	Description
show interface modular-cable intercept	Displays the intercept stream information of the interface modular-cable.
show interface modular-cable stats	Displays the interface modular-cable packets and octets that were switched.
show interface modular-cable summary	Displays the interface modular-cable summary information.
show interface modular-cable switching	Displays the interface modular-cable switching information.
show interface wideband-cable multicast-sessions	Displays the information about multicast sessions on a specific wideband-cable interface.
show interface cable multicast-sessions	Displays the information about the multicast sessions on a specific cable interface.

show interface modular-cable stats

To display interface packets and octets that were switched, use the **show interface modular-cable stats** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **stats**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/bay/port:nb-channel-number* **stats**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port*.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable stats** command for the modular cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 stats
Modular-Cable1/0/0:0
          Switching path    Pkts In   Chars In   Pkts Out  Chars Out
               Processor          0          0          0          0
            Route cache           0          0        509      41582
                  Total           0          0        509      41582
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable switching	Displays interface switching information.
show interface modular-cable summary	Displays interface summary information.

show interface modular-cable summary

To display interface summary information, use the **show interface modular-cable summary** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **summary**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/subslot/port:nb-channel-number* **summary**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default values or behavior

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced in the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port*.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable summary** command for the modular cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 summary
 *: interface is up
 IHQ: pkts in input hold queue     IQD: pkts dropped from input queue
 OHQ: pkts in output hold queue    OQD: pkts dropped from output queue
 RXBS: rx rate (bits/sec)          RXPS: rx rate (pkts/sec)
 TXBS: tx rate (bits/sec)          TXPS: tx rate (pkts/sec)
 TRTL: throttle count
  Interface              IHQ   IQD  OHQ   OQD  RXBS RXPS  TXBS TXPS TRTL
```

```
--------------------------------------------------------------------------
* Modular-Cable1/0/0:0     0     0    0     2     0    0     0    0    0
NOTE:No separate counters are maintained for subinterfaces
     Hence Details of subinterface are not shown
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable switching	Displays interface switching information.

show interface modular-cable switching

To display interface switching information, use the **show interface modular-cable switching** command in privileged EXEC mode.

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA
show interface modular-cable *slot/subslot/bay:nb-channel-number* **switching**

Cisco IOS Release 12.2(33)SCB
show interface modular-cable *slot/subslot/port:nb-channel-number* **switching**

Syntax Description

slot	The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
subslot	The subslot where a SIP resides. On the Cisco uBR10012 router, subslot 0 is always specified.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the interface number on the SPA.
nb-channel-number	Represents the narrowband channel number.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a modular cable interface from *slot/subslot/bay* to *slot/bay/port*.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is sample output from the **show interface modular-cable switching** command for the modular cable interface in slot 1, subslot 0, bay 0, and narrowband channel number 0:

```
Router# show interface modular-cable 1/0/0:0 switching
Modular-Cable1/0/0:0
    Protocol  IP
          Switching path    Pkts In   Chars In   Pkts Out  Chars Out
                 Process          0          0          0          0
           Cache misses           0          -          -          -
                   Fast           0          0        457      37670
```

```
            Auton/SSE          0          0          0          0
NOTE: all counts are cumulative and reset only after a reload.
```

Related Commands

Command	Description
show interface modular-cable accounting	Displays interface accounting information.
show interface modular-cable description	Displays a description for the interface.
show interface modular-cable downstream	Displays downstream information for the narrowband channel.
show interface modular-cable dsg downstream	Displays DOCSIS Set-Top Gateway (DSG) information.
show interface modular-cable intercept	Displays intercept stream information.
show interface modular-cable stats	Displays interface packets and octets that were switched.
show interface modular-cable summary	Displays interface summary information.

show interface multicast-gcr

To display the details of the Group Classifier Rule, use the **show interface multicast-gcr** command in privileged EXEC mode.

show interface {**cable** *slot/subslot/port* | **modular-cable** *slot/bay/port:channel* | **wideband-cable** *slot/bay/port:channel* } **multicast-gcr**

Cisco cBR Series Converged Broadband Router
show interface {**cable** *slot/subslot/cable-interface-index* | **wideband-cable** *slot/bay/port:channel* } **multicast-gcr**

Syntax Description

cable *slot/subslot/port*	Identifies the cable interface for which information should be displayed, where: • slot—0 to 8 • subslot—0 or 1 • port—0 to 4
cable *slot/subslot/cable-interface-index*	On the Cisco cBR Series Converged Broadband Router: • *slot*—0 to 3, and 6 to 9. • *subslot*—0 • *cable-interface-index*—0 to 15.
modular-cable *slot/bay/port:channel*	Identifies the cable interface for which information should be displayed, where: • slot—0 to 8 • bay—0 or 1 • port—0 • channel—0
wideband-cable *slot/bay/port:channel*	Identifies the wideband cable interface for which information should be displayed, where: • slot—0 to 8 • bay—0 or 1 • port—0 • channel—0

Command Default

No default behavior or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced.

Release	Modification
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **modular-cable** keyword was removed.

Usage Guidelines

Use this command to display the details of the Group Classifier Rule.

Examples

The following example shows a sample output for the **show interface multicast-gcr** command:

```
Router# show interface wideband-cable 1/1/0:0 multicast-gcr
Group Classifier Rules on Wideband-Cable1/1/0:0:
Classifier_id  Group_id  Group_Qos_id  Sid   SFID   ref_count
7              1         1             8196  10     1
8              2         1             8197  11     1
```

Table 38: show interface multicast-gcr Field Descriptions

Field	Description
Classifier_id	Displays group classifier ID.
Group_id	Displays group ID number of the Group Classifier Rules.
Group_Qos_id	Displays group QoS ID number of the Group Classifier Rules.
Sid	Displays information for the service identifier on the cable interface.
SFID	Displays service flow identifier (SFID).
ref_count	Displays the reference count.

Related Commands

Command	Description
show interface cable service-flow	Displays the attributes of DOCSIS service flows on a given cable interface.
show cable multicast db	Displays the contents of multicast explicit tracking database.
show cable multicast qos	Displays the configuration information for MQoS, (Group-Config, Group-QoS-Config, and Group-Encryption-Config).

show interface port-channel

To display the EtherChannel interfaces and channel identifiers, with their mode and operational status, use the **show interface port-channel** command in privileged EXEC mode.

show interface port-channel *number*

Syntax Description

number	Optional value enables the display of information for one port channel interface number. The range is from 1 to 64.

Command Default

No default behaviors or values.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(11)BC3	This command was introduced on the Cisco uBR7246VXR router.
12.2(9a)BC	This command was introduced on 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 illustrates Gigabit EtherChannel (GEC) information for the port-channel interface of 2 as configured on a Cisco uBR10012 router with the PRE2 performance routing engine model.

This configuration is comprised of three GEC port channels as follows:

Member 0 is the GEC interface bundle primary.

Member 2 is the final subordinate interface in this GEC group.

These three port-channel interfaces (members) comprise one GEC group that is set up with a GEC peer on the network.

```
Router# show interface port-channel 2
Port-channel2 is up, line protocol is up
  Hardware is GEChannel, address is 8888.8888.8888 (bia 0000.0000.0000)
  Internet address is 101.101.101.1/16
  MTU 1500 bytes, BW 3000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
    No. of members in this channel: 3
    No. of configured  members in this channel: 3
    No. of passive members in this channel: 0
    No. of active members in this channel: 3
        Member 0 : GigabitEthernet1/0/0 , Full-duplex, 1000Mb/s
        Member 1 : GigabitEthernet3/0/0 , Full-duplex, 1000Mb/s
        Member 2 : GigabitEthernet2/0/0 , Full-duplex, 1000Mb/s
    No. of Non-active members in this channel: 0
```

```
  Last input 00:00:02, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/225/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/120 (size/max)
  30 second input rate 17292000 bits/sec, 9948 packets/sec
  30 second output rate 17315000 bits/sec, 9935 packets/sec
     866398790 packets input, 3324942446 bytes, 0 no buffer
     Received 2 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     866394055 packets output, 3323914794 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier, 0 pause output
     0 output buffer failures, 0 output buffers swapped out
```

The following example illustrates GEC information for the port-channel interface of 2 as configured on a Cisco uBR7246VXR router.

This configuration is comprised of three port-channel interfaces (members) as follows:

Member 0 is the GEC interface bundle primary.

Member 2 is the final subordinate interface in this GEC group.

These three port-channel interfaces (members) comprise one GEC group that is set up with a GEC peer on the network.

```
Router# show interfaces port-channel 2
Port-channel2 is up, line protocol is up
  Hardware is GEChannel, address is 000b.bf7d.9c01 (bia 000b.bf7d.9c00)
  Internet address is 101.101.101.2/16
  MTU 1500 bytes, BW 3000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
    No. of members in this channel: 3
    No. of configured  members in this channel: 3
    No. of passive members in this channel: 0
    No. of active members in this channel: 3
        Member 0 : GigabitEthernet0/3 , Full-duplex, 1000Mb/s
        Member 1 : GigabitEthernet0/2 , Full-duplex, 1000Mb/s
        Member 2 : GigabitEthernet0/1 , Full-duplex, 1000Mb/s
    No. of Non-active members in this channel: 0
  Last input 00:13:48, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/225/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/120 (size/max)
  30 second input rate 17358000 bits/sec, 9999 packets/sec
  30 second output rate 17359000 bits/sec, 10000 packets/sec
     868633935 packets input, 3809968911 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     868642883 packets output, 3811242413 bytes, 0 underruns
     2 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     2 lost carrier, 0 no carrier, 0 pause output
```

```
     0 output buffer failures, 0 output buffers swapped out
```

The following example illustrates FastEtherChannel (FEC) information for the specified port channel interface as configured on a Cisco uBR7246VXR router.

This configuration is comprised of four port channel interfaces (members) as follows:

Member 0

Member 0 is the GEC interface bundle primary.

Member 3 is the final subordinate interface in this FEC group.

These four port-channel interfaces (members) comprise one FEC group that is set up with an FEC peer on the network.

```
Router# show interfaces port-channel 1
Port-channel1 is up, line protocol is up
  Hardware is FEChannel, address is 000b.bf7d.9c1c (bia 000b.bf7d.9c00)
  Description: test
  Internet address is 100.100.100.1/24
  MTU 1500 bytes, BW 400000 Kbit, DLY 100 usec,
     reliability 255/255, txload 11/255, rxload 11/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
    No. of members in this channel: 4
    No. of configured  members in this channel: 4
    No. of passive members in this channel: 0
    No. of active members in this channel: 4
        Member 0 : FastEthernet2/1 , Full-duplex, 100Mb/s
        Member 1 : FastEthernet2/0 , Full-duplex, 100Mb/s
        Member 2 : FastEthernet1/1 , Full-duplex, 100Mb/s
        Member 3 : FastEthernet1/0 , Full-duplex, 100Mb/s
    No. of Non-active members in this channel: 0
  Last input 00:14:48, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/300/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/160 (size/max)
  30 second input rate 17358000 bits/sec, 9998 packets/sec
  30 second output rate 17357000 bits/sec, 9998 packets/sec
     869366601 packets input, 3968956491 bytes
     Received 3 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog
     0 input packets with dribble condition detected
     868944538 packets output, 3876736548 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
```

show interface rf-status

To display the logical UP and DOWN state for each of the configured RF channels for a wideband interface, use the **show interface rf-status** command in privileged EXEC mode.

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers
show interface wideband-cable *slot/port:wideband-channel* **rf-status**

Cisco uBR10012 Universal Broadband Router
show interface wideband-cable *slot/bay/port:wideband-channel* **rf-status**

Syntax Description

slot	Slot where the line card resides. Cisco uBR7246VXR router—The valid range is from 3 to 6. Cisco uBR7225VXR router—The valid range is from 1 to 2. Cisco uBR10012 router—The valid range is from 5 to 8. Slots 1 and 3 can be used for SIPs.
bay	The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the downstream port number.
wideband-channel	Represents the wideband channel number.

Command Default

The default logical state of each channel is UP.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCD	This command was modified. Support was added for Cisco uBR7225VXR and Cisco uBR7246VXR routers.
IOS-XE 3.15.0S	This command was replaced by the **show interfaces resil-rf-status** command on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The default logical state of each channel is UP. The state is set to DOWN when the threshold configured using **cable rf-change-trigger** command is reached.

Examples

The following is a sample output of the **show interface rf-status** command on a wideband cable interface on a Cisco uBR10012 router:

```
Router# show interface wideband-cable 1/0/0:3 rf-status
 Logical
```

```
RF  Status
--  ------
17  UP
18  UP
19  UP
```

The following is a sample output of the **show interface rf-status** command on a wideband cable interface on a Cisco uBR7225VXR router:

```
Router# show interface Wideband-Cable 5/1:0 rf-status
               Logical
Resource    RF  Status
----------------------
5/1         0   UP
            1   UP
            2   UP
```

Table 39: show interface rf-status Field Descriptions

Field	Description
Resource	The interface information.
RF	Cable interface line card or SPA downstream channel number.
Logical Status	The logical status of the RF channel. Default is UP.

Related Commands

Command	Description
show cable rf-status	Displays the logical state of all RF channels.

show interface resil-rf-status

To display the logical UP and DOWN state for each of the configured RF channels for a wideband interface, use the **show interface resil-rf-status** command in privileged EXEC mode.

show interface wideband-cable *slot/bay/port:wideband-channel* **resil-rf-status**

Syntax Description

slot	Slot where the line card resides. The valid range is 0 to 3 and 6 to 9.
bay	The bay in a SIP where a SPA is located. Valid value is 0.
port	Specifies the downstream port number. Valid range is 0 to 7
wideband-channel	Represents the wideband channel number. The valid range is 0-63.

Command Default

The default logical state of each channel is UP.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Router. This command replaces the **show interface rf-status** command.

Usage Guidelines

The default logical state of each channel is UP. The state is set to DOWN when the threshold configured using **cable rf-change-trigger** command is reached.

Examples

This example show the output of the **show interface rf-status** command on a wideband cable interface on Cisco cBR-8 router:

```
Router# show interfaces Wideband-Cable 1/0/0:0 resil-rf-status
 Load for five secs: 1%/0%; one minute: 3%; five minutes: 2%
Time source is user configuration, 04:21:17.800 EDT Wed May 20 2015

                Logical
Resource    RF  Resil Status
-----------------------
3/0/0       0   UP
            1   UP
            2   UP
            3   UP
            4   UP
            5   UP
            6   UP
            7   UP
```

Table 40: show interface rf-status Field Descriptions

Field	Description
Resource	The interface information.
RF	Cable interface line card or SPA downstream channel number.
Logical Status	The logical status of the RF channel. Default is UP.

show interfaces tengigabitethernet

To display the ten gigabit ethernet interface information, use the **show interface tengigabitethernet** command in privileged EXEC mode.

show interface tengigabitethernet *interface/port/-adapter/interface*
[**accounting** | **controller** | **counters protocol status** | **crb** | **dampening** | **description** | **etherchannel** | **history** [**60min** | **60sec** | **72hour** | **all** | **both** | **input** | **output**] | **human-readable** | **irb** | **mac-accounting** | **monitor interval** *seconds* | **mpls-exp** | **plim qos** | **precedence** | **stats** | **summary**]

Syntax Description

slot/port/interface	Slot where the line card resides. *slot*—The valid range is from 0 to 9. *port*—The valid range is from 0 to 1. *interface*—The valid range is from 0 to 63.
accounting	Displays the interface accounting.
controller	Displays the interface status, configuration and controller status.
counters protocol status	Displays the interface counters.
crb	Displays the interface routing or bridging information.
dampening	Displays the interface dampening information.
description	Displays the interface description.
etherchannel	Displays the interface etherchannel information.
history	Displays the interface history.
human-readable	Displays the output interfaces information.
irb	Displays the interface routing/bridging information.
mac-accounting	Displays the interface MAC accounting information.
monitor interval *seconds*	Displays the interfaces with the specified interval.
mpls-exp	Displays the interface MPLS experimental accounting information.
plim qos	Displays the tenGiga eth module plim commands.
precedence	Displays the interface precedence accounting information.
stats	Displays the interface packets and octets by switching path.
summary	Displays the interface summary.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command displays the ten gigabit ethernet interface information.

Examples

The following is a sample output of the**show interface tengigabitethernet** command on a Cisco cBR-8 router:

```
Router# show interfaces tengigabitethernet 4/1/0 accounting
TenGigabitEthernet 4/1/0
                Protocol    Pkts In   Chars In   Pkts Out  Chars Out
                   Other         15       1155       1814     109078
                      IP 8038262210 9404766785700       0          0
                 DEC MOP         15       1155         14       1078
                     ARP          0          0          1         60
```

Related Commands

Command	Description
logical-edge-device	Define a logical edge device.
protocol	Specifies the protocol used in the logical edge device.
vei-bundle	Bundles the virtual edge inputs for a particular LED.
vcg	Specifies the virtual carrier group assigned to the logical edge device

show interfaces video accounting

To display the video service interface information, use the **show interface video accounting** command in privileged EXEC mode.

show interface video *slot/port/interface* **accounting**

Syntax Description

slot	Slot where the line card resides. The valid range is from 0 to 15.
port	The bay in a SIP where a SPA is located. The valid values are 0 and 1.
interface	Specifies the video interface number. The valid range is from 0 to 63.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command displays the video service interface information.

Examples

The following is a sample output of the**show interface video accounting** command on a Cisco cBR-8 router:

```
Router# show interface video 3/0/0 accounting
Video3/0/0
                Protocol    Pkts In   Chars In   Pkts Out  Chars Out
                      IP          0          0       8849     857276
                 DEC MOP          0          0        269      16947
                     ARP          0          0          4        112
```

Related Commands

Command	Description
logical-edge-device	Define a logical edge device.
protocol	Specifies the protocol used in the logical edge device.
vei-bundle	Bundles the virtual edge inputs for a particular LED.

show interfaces VirtualPortGroup

To verify the VirtualPortGroup interface state, use the **show interfaces VirtualPortGroup** command in privileged EXEC mode.

show interfaces VirtualPortGroup *number*

Syntax Description

number	Displays the information of the VirtualPortGroup with this number.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.18.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command is used to verify the VirtualPortGroup interface state.

The following sample output shows the VirtualPortGroup interface state:

```
show interfaces VirtualPortGroup0
VirtualPortGroup0 is up, line protocol is up
Hardware is Virtual Port Group, address is badb.ad09.7077 (bia badb.ad09.7077)
Internet address is 1.22.2.1/24
MTU 1500 bytes, BW 2500000 Kbit/sec, DLY 1000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive not supported
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output 00:24:14, output hang never
Last clearing of "show interface" counters never
Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts (0 IP multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
0 input packets with dribble condition detected
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 unknown protocol drops
Cisco Converged Broadband Routers Software Configuration Guide For Video
42
How to Configure the Management IP Interface
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier
0 output buffer failures, 0 output buffers swapped out
```

Related Commands

Command	Description
interface	Defines a VirtualPortGroup interface.
show run interface VirtualPortGroup	Displays the VirtualPortGroup interface configuration.
show run | include mgmt-intf	Displays the cable video management interface configuration.
mgmt-intf	Defines a cable video management interface.

show interface wideband-cable

To display the current configuration and status for a wideband channel, use the **show interface wideband-cable** command in privileged EXEC mode.

Cisco uBR10012 Universal Broadband Router

Cisco IOS Releases 12.3(23)BC and 12.2(33)SCA

show interface wideband-cable *slot/subslot/bay:wideband_channel*[*options*]
Cisco IOS Release 12.2(33)SCB

show interface wideband-cable *slot/bay/port:wideband_channel* [*options*]
Cisco IOS Release 12.2(33)SCC

show interface wideband-cable *slot/subslot/port:wideband_channel* [*options*]

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers

Cisco IOS Release 12.2(33)SCD

show interface wideband-cable *slot/port:wideband_channel* [*options*]

Cisco cBR Series Converged Broadband Router
show integrated wideband-cable *slot/subslot/port: wideband-Cable-interface-number*[*options*]

Syntax Description

slot	Slot where a SIP or line card resides. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR7225VXR router—The valid range is from 1 to 2. • Cisco uBR10012 router—The valid range is from 5 to 8, and slots 1 and 3 can be used for SIP. • Cisco cBR router—The valid range is 0 to 3 and 6 to 9.
subslot	Secondary slot number of the SIP or a cable interface line card. Cisco uBR10012 —The valid subslots is 0. Cisco cBR router—The valid value is 0.
bay	Bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	Specifies the port number. • Cisco uBR7246VXR router and Cisco uBR7225VXR router—The valid range is from 0 to 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface). • Cisco cBR router—The valid range is 0 to 15.
wideband-channel	Represents the wideband channel number. Valid values are from 0 to 31. On the Cisco uBR7246VXR and Cisco uBR7225VXR routers, the valid values are from 0 to 5.

options	The following non-cable specific options generate information for wideband cable interfaces: • **accounting**—Displays the number of packets of each protocol type that was sent through the interface. • **description**—Displays the description entered for the interface. • dbs—Displays DBS scheduler information. The dbs option is available only on the Cisco uBR7225VXR and Cisco uBR7246VXR routers. • **downstream**—Displays the downstream information. • **multicast-sessions**—Displays information about the multicast sessions on a specific wideband-cable interface. • **privacy**—Displays privacy group information. • service-flow—Displays the attribute-based assignment of service flows on a cable interface. • **stats**—Displays packets that were switched. • **summary**—Displays interface summary information. The following additional non-cable specific options generate information for wideband cable interfaces on the Cisco cBR router: • **controller**—Displays the status of the interface, configuration, and controller. • **counters**—Displays the wideband cable interface counters. • **crb**—Displays the interface routing and bridging information. • dbs—Displays the Dynamic Bandwidth Sharing (DBS) scheduler information. • **history**—Displays the interface history on the Cisco cBR router. • **human-readable**—Displays the interfaces output with larger numbers separated by comma(s) on the Cisco cBR router. • **irb**—Displays the interface routing and bridging information. • **mac-accounting**—Displays the interface MAC accounting information. • **monitor**—Displays the status of the interface continuously. • **mpls-exp**—Displays the interface Multiprotocol Label Switching (MPLS) experimental accounting information. • **multicast-gcr**—Displays the multicast QoS (MQoS) GCR details. • **precedence**—Displays interface precedence accounting information. • **stats—**Displays packets that are switched. • **summary**—Displays interface summary information.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced on the Cisco uBR10012 router.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(33)SCB	This command was modified to change the addressing format for a wideband cable interface from *slot/subslot/bay* to *slot/bay/port*.

Release	Modification
12.2(33)SCD	This command was modified. Support was added for Cisco uBR7225VXR and Cisco uBR7246VXR routers. The dbs, and service-flow keywords were added.
12.2(33)SCF	This command was modified. The downstream keyword was enhanced to capture fairness across DOCSIS interfaces related information.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The following keywords were added: • **controller** • **counters** • **crb** • **history** • **human-readable** • **irb** • **mac-accounting** • **monitor** • **mpls-exp** • **multicast-gcr** • **precedence** • **stats—** • **summary**

Usage Guidelines

Some of the non-cable specific options do not generate any meaningful information for wideband cable interfaces. For information on the non-cable specific options, see the Cisco IOS Release 12.3 documentation on Cisco.com .

In Cisco IOS Release 12.1(12)EC, Release 12.2(8)BC1, and later releases, you can add a timestamp to **show** commands using the **exec prompt timestamp** command in line configuration mode.

Examples

This example shows the output for the **show interface wideband-cable** command:

```
Router# show interface wideband-cable 1/0/0:1

Wideband-Cable1/0/0:1 is up, line protocol is up
  Hardware is Wideband CMTS Cable interface, address is 0012.001a.8897 (bia 0012.001a.8897)

  MTU 1500 bytes, BW 74730 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output 00:00:09, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  30 second input rate 0 bits/sec, 0 packets/sec
  30 second output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
```

```
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     24224 packets output, 1222002 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

This example shows the output for the **show interface wideband-cable accounting** command:

```
Router# show interface wideband-cable 1/0/0:0 accounting
Wideband-Cable1/0/0:1
               Protocol    Pkts In   Chars In   Pkts Out  Chars Out
                     IP          0          0   56493807 7909133546
```

This example shows the output for the **show interface wideband-cable description** command:

```
Router# show interface wideband-cable 1/0/0:0 description
Interface                      Status         Protocol Description
Wi1/0/0:1                      up             up
```

This example shows the output for the **show interface wideband-cable dbs** command:

```
Router# show interface wideband-cable 3/0:0 dbs
Dynamic Bandwith Sharing is enabled
bg_rf_channel_bitmap_local B, active 0
RF 0: tokens 23254, active 0, policer 4687 KB/s, max_tokens 23435
      deficit counter 0, quantum 2000
      ticks_limit: 62500, max_ticks:625000, policer(ticks): 312
RF 1: tokens 23249, active 0, policer 4687 KB/s, max_tokens 23435
      deficit counter 0, quantum 5000
      ticks_limit: 62500, max_ticks:625000, policer(ticks): 312
RF 3: tokens 23249, active 0, policer 4687 KB/s, max_tokens 23435
      deficit counter 0, quantum 10000
```

This example shows the output for the **show interface wideband-cable service-flow** command:

```
Router# show interface wideband-cable 3/0:0 service-flow
Sfid  Sid   Mac Address     QoS Param Index Type  Dir Curr   Active  DS-ForwIf/
                           Prov  Adm  Act            State  Time    US-BG/CH
3     8193  ffff.ffff.ffff   3     3    3   S(s)  DS  act    2h06m   Wi5/1:0
```

This example shows the output for the **show interface wideband-cable privacy** command:

```
Router# show interface wideband-cable 1/0/0:1 privacy all
EAE Configuration
 Policy: EAE Enforcement disabled
KEK Configuration
 KEK lifetime: 604800
 Auth Infos: 0
 Auth Requests: 0, Auth Replies: 0
 Auth Rejects: 0, Auth Invalids: 0
 Packet Buffer Failures: 0
TEK Configuration
 TEK lifetime: 43200
 TEK Requests: 0, TEK Replies: 0
 TEK Rejects: 0, TEK Invalids: 0
 SAMap Requests: 0, SAMap Replies: 0
 SAMap Rejects: 0
Interface Configuration
 SelfSigned Trust: Untrusted
 Check Cert Validity Periods: True
```

This example shows the output for the **show interface wideband-cable stats** command:

```
Router# show interface wideband-cable 1/0/0:1 stats
Wideband-Cable1/0/0:1
          Switching path    Pkts In   Chars In   Pkts Out  Chars Out
               Processor          0          0          0          0
             Route cache          0          0   56493807 7909133546
                   Total          0          0   56493807 7909133546
```

This example shows the output for the **show interface wideband-cable summary** command:

```
Router# show interface wideband-cable 1/0/0:1 summary
*: interface is up
 IHQ: pkts in input hold queue     IQD: pkts dropped from input queue
 OHQ: pkts in output hold queue    OQD: pkts dropped from output queue
 RXBS: rx rate (bits/sec)          RXPS: rx rate (pkts/sec)
 TXBS: tx rate (bits/sec)          TXPS: tx rate (pkts/sec)
 TRTL: throttle count
  Interface                   IHQ       IQD       OHQ       OQD      RXBS      R
XPS      TXBS      TXPS      TRTL
------------------------------------------------------------------------------
---------------------------------
*Wideband-Cable1/0/0:1          0         0         0         0         0
  0         0         0         0
```

This example shows the output for the **show interface wideband-cable multicast-sessions** command:

```
Router# show interface wideband-cable 7/0/0:0 multicast-sessions
Default Multicast Service Flow 3 on Wideband-Cable7/0/0:0
Multicast Group    : 230.1.1.1
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8200    4       30    1      1
```

Table 41: show interface wideband-cable Field Descriptions

Field	Description
Wideband-Cable slot/subslot/bay:wb-channel is up/...administratively down	Indicates whether the interface hardware is currently active or taken down by the administrator.
line protocol is up/...administratively down	Indicates whether the software processes that handle the line protocol believe the interface is usable or if it has been taken down by the administrator.
hardware	Hardware type and address.
Internet address	Internet address followed by subnet mask.
MTU	Maximum transmission unit (MTU) of the interface.
BW	Bandwidth of the interface in kilobits per second.
DLY	Delay of the interface in microseconds.

Field	Description
rely	Reliability of the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is 100 percent reliability.)
load	Load on the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is complete saturation.)
Encapsulation	Encapsulation method assigned to this interface.
Keepalive set	Keepalive time interval.
ARP type	Type of Address Resolution Protocol (ARP) and timeout value assigned.
Last input	Number of hours, minutes, and seconds since the last packet was successfully received by an interface.
output	Number of hours, minutes, and seconds since the last packet was successfully sent by an interface.
Last clearing of "show interface" counters	Time at which the counters that measure cumulative statistics (such as number of bytes sent and received) were last reset to zero.
Queueing strategy	Displays the type of queueing configured for this interface. In the following example output, the type of queueing configured is first-in first-out (FIFO).
Output queue	Number of packets in the output queue. The format of this number is A/B, where A indicates the number of packets in the queue, and B indicates the maximum number of packets allowed in the queue.
drops	Indicates the number of packets dropped because of a full queue.
input queue/drops	Number of packets in the input queue. The format of this number is A/B, where A indicates the number of packets in the queue, and B indicates the maximum number of packets allowed in the queue.
drops	Indicates the number of packets dropped because of a full queue.
Five minute input rate Five minute output rate	Average number of bits and packets sent per second in the last five minutes. The five-minute interval is the default time period for statistics collection and can be changed for each individual cable interface using the **load-interval** command in interface configuration mode.

Field	Description
Note These statistics are calculated using a decayed averaging method, where only the average is stored over the interval period, not the individual samples. Every time a sample average is taken, a percentage of the sample and a percentage of the average are added together to create the new average. If traffic stops for a time period, these statistics do not immediately go to zero but drop with a decay rate of about 70 percent per time period. For example, if the interface is passing 1,000 packets per second (pps) before traffic stops, the **show interface cable** command shows the rate being 300 pps at the end of the first time interval. The rate then drops to 90 pps at the end of the second time interval, and so forth.	
packets input	Total number of error-free packets received by the system.
bytes input	Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.
no buffer	Number of received packets discarded because there was no buffer space in the main system.
Received broadcast	Total number of broadcast or multicast packets received by the interface.
runts	Number of packets that are discarded because they are smaller than the medium's minimum packet size.

Field	Description
giants	Number of packets that are discarded because they are bigger than the standard Ethernet Maximum Transmission Unit (MTU) size. For Ethernet packets, RFC 1757 defines giants as "the total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed." **Note** In addition, to account for the different Ethernet and other packet encapsulations on the network, packets are considered giants when they exceed the configured MTU size plus 114 bytes.
input errors	Total number of errors received on the interface. This count includes runts and giants, which are shown above, as well as other errors, such as no buffers, and CRC, frame, overrun, and ignored counts. This count can also include DOCSIS protocol errors such as an invalid SID in the DOCSIS frame, a bad extended header length, corrupted concatenated packets, and invalid bandwidth requests.
CRC	Indicates the number of times the cyclic redundancy checksum (CRC) generated by the originating LAN station or far-end device does not match the checksum calculated from the data received.
frame	Number of packets received incorrectly having a CRC error and a non-integer number of octets.
overrun	Number of times the receiver hardware was unable to forward received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets ignored by the interface because the interface hardware ran low on internal buffers.
packets output	Total number of messages sent by the system.
bytes	Total number of bytes, including data and MAC encapsulation, sent by the system.
underruns	Number of times the sender has been running faster than the receiving device can handle.
output errors	Sum of all errors that prevented the final transmission of packets out of the interface being examined.
collisions	Not applicable.
interface resets	Number of times an interface has been completely reset.
output buffer failures	Number of times the output buffer has failed.
output buffer swapped out	Number of times the output buffer has been swapped out.
sfid	Service flow identification number.

Field	Description
sid	Service identification number (upstream service flows only).
QoS Prov	QoS parameter index for the provisioned state of this flow.
Param Adm	QoS parameter index for the Admitted state of this flow.
Index Act	QoS parameter index for the Active state of this flow.
Type	Indicates if the service flow is the primary flow or a secondary service flow. Secondary service flows are identified by an "S" (created statically at the time of registration, using the DOCSIS configuration file) or "D" (created dynamically by the exchange of dynamic service messages between the CM and CMTS).
Dir	Indicates if this service flow is downstream (DS) or upstream (US).
Curr State	Current run-time state of the service flow.
Active Time	Length of time this service flow has been active.
DS-ForwIf/US-BG/CH	Bonding group ID or the downstream RFID of the forwarding interface assigned to the downstream service flow.

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output for the **show interface wideband-cable human-readable** command:

```
Router#show interface wideband-cable 3/0/0:0 human-readable
Wideband-Cable3/0/0:0 is up, line protocol is up
  Hardware is CMTS WB interface, address is c414.3c17.1dcb (bia c414.3c17.1dcb)
  MTU 1500 bytes, BW 150000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation MCNS, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/0/256 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 112500 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     0 packets output, 0 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
Router#
```

Related Commands

Command	Description
show interface cable downstream	Displays information about the downstream on the cable interface.
show interface cable sid	Displays information by service identifier (SID) of each CM on the network.
show interface cable signal-quality	Displays information about the cable signal quality.
show interface cable upstream	Displays information about one or all upstreams on the cable interface.

show interface wideband-cable multicast-sessions

To display information about multicast sessions on a specific wideband-cable interface, use the **show interface wideband-cable multicast-sessions** command in privileged EXEC mode.

show interface wideband-cable *slot/* {*subslot bay*}*/port:wideband-channel* [**group** | [*ipv4-MQoS-group ipv6-MQoS-group*] | **latency** | **sid** [*MQoS-sid*]]

Cisco cBR Series Converged Broadband Router
show interface wideband-cable *slot/* {*subslot bay*}*/port:wideband-channel*

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	Subslot where a SIP resides. On the Cisco uBR10012 router, the subslot 0 is always specified. On the Cisco cBR router, the subslot is always 0.
bay	Bay in a SIP where a SPA is located. The valid values are 0 (upper bay) and 1 (lower bay).
port	Downstream port number. • Cisco uBR7246VXR router and Cisco uBR7225VXR router—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface). • Cisco cBR router—The valid range is 0 to 7.
wideband-channel	Wideband channel number. The valid range is from 0 to 11. On the Cisco uBR7246VXR and Cisco uBR7225VXR routers, the valid range is from 0 to 5.
wideband-cable-interface	Wideband cable interface On the Cisco cBR router, the valid range is 0 to 63.
group [*ipv4-MQoS-group* | *ipv6-MQoS-group*]	Displays information about the specified IPv4 or IPv6 multicast quality of service (MQoS) group.
latency	Displays information about the multicast session latency.
sid [*MQoS-sid*]	Displays information about the MQoS service identifier (SID). The value of the SID ranges from 8192 to 12272.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. This command was modified to change the addressing format for a wideband cable interface from *slot/subslot/bay* to *slot/bay/port* .
12.2(33)SCF	This command was modified. The **latency** keyword was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The *wideband-channel* variable was removed and the *wideband-cable-interface* was added. The **group** , **latency** and **sid** keywords was also removed.

Examples

The following is a sample output from the **show interface wideband-cable multicast-sessions** command:

```
Router# show interface wideband-cable 1/0/0:0 multicast-sessions
Default Multicast Service Flow 3 on Wideband-Cable1/1/0:0
Multicast Group    : 230.1.2.3
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8196    4       0     1      0
```

The following is a sample output from the **show interface wideband-cable multicast-sessions group** command:

```
Router# show interface wideband-cable 1/0/0:0 multicast-sessions group 230.1.2.3
Multicast Group    : 230.1.2.3
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
                     1    8196    4       0     1      0
```

The following is a sample output from the **show interface wideband-cable multicast-sessions latency** command:

```
Router# show interface wideband-cable 1/0/0:0 multicast-sessions latency
Session (S,G) : (*,230.1.2.3)
Fwd Intfc     : Wi1/1/0:0
MQoS Entered at        MQoS Exit at
Mar 6 23:13:12.383     Mar 6 23:13:12.383
GC   SAID   SFID   SF req               SF rsp
1    8196   4      Mar 6 23:13:12.383  Mar 6 23:13:12.387
```

The following is a sample output from the **show interface wideband-cable multicast-sessions sid** command:

```
Router# show interface wideband-cable 1/0/0:0 multicast-sessions sid 8196
Multicast Group    : 230.1.2.3
         Source    : N/A
         Act GCRs  : 1
         Interface : Bu1                   State: A      GI: Bu1         RC: 0
         GCR       : GC   SAID    SFID    Key   GQC    GEn
```

```
1     8196     4        0      1       0
```

Related Commands

Command	Description
show interface modular-cable multicast-sessions	Displays the information about multicast sessions on a specific modular-cable interface.
show interface cable multicast-sessions	Displays the information about the multicast sessions on a specific cable interface.
show interface wideband-cable	Displays the current configuration and status for a wideband channel.

show interface wideband-cable queue

To display the downstream hierarchical queueing framework (HQF) queue information for a wideband channel, use the **show interface wideband-cable queue** command in privileged EXEC mode.

show interface wideband-cable *slot/port:wideband-channel* [**queue** | [**cblt** | {*cblt-index* | **priority** } | **pblt** | **verbose**]]

Syntax Description

slot/port	• Slot on the Cisco uBR7246VXR router. The valid values are:
	  • slot—3 to 6
	  • port—0 or 1 (depending on the cable interface)
	• Slot on the Cisco uBR7225VXR router. The valid values are:
	  • slot—1 and 2
	  • port—0 or 1 (depending on the cable interface)

wideband-channel	Wideband channel number. Valid values range from 0 to 7.
queue	(Optional) Displays downstream HQF queue information.
cblt	(Optional) Displays detailed class layer bandwidth limited traffic (CBLT) stream information for normal downstream HQF queues.
cblt-index	CBLT index information.
priority	Displays CBLT information for priority HQF queues. Priority queues do not have any indexes.
pblt	(Optional) Displays detailed physical layer bandwidth limited traffic (PBLT) stream information for normal HQF queues.
verbose	(Optional) Displays detailed information for all queues.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCD	This command was introduced for the Cisco uBR7246VXR and Cisco uBR7225VXR routers.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output of the **show interface wideband-cable queue** command:

```
Router# show interface wideband-cable 3/0:0 queue
*   idx/gqid   Len/Limit     Deqs      Drops    CIR       MIR/PR    SFID        ForwInt
               pkts           pkts      pkts     kbps       kbps
```

```
BE Queues:
I     0/1      0/128          700       0        0           0/0    C5/0:11     In5/0:0
      1/44     0/128            0       0        0       10000/0    C5/0:11     In5/0:0

CIR Queues:
     33/97     0/128   1      14374     0        100     15000/0    C5/0:15     In5/0:0

Low Latency Queues:
~     51/124   0/128   1      14374     0        100       100/0    C5/0:15     In5/0:0
$     0/0      0/128   1      14374     0        100       100/0          -     In5/0:0
```

The following is a sample output of the **show interface wideband-cable queue verbose** command:

```
Router# show interface wideband-cable 3/0:0 queue verbose
Interface Number 5 (type 25) Integrated Cable 3/0:0
 OUTPUT FEATURES
   blt (0x63D90FA0, index 0, qid 0, fast_if_number 5) layer PHYSICAL
   scheduling policy: WFQ (111)
   classification policy: CLASS_BASED (122)
   drop policy: TAIL (141)
   packet size fixup policy: NONE (0)   no of global policers: 0
   blt flags: 0x220000    scheduler: 0x63DFDBE0
  total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total active
 0
   txcount 26131 txqbytes 2030784 drops 0 qdrops 0 nobuffers 0 flowdrops 0
   qsize 0 aggregate limit/bytes 1000/0 availbuffers 1000
   holdqueue_out 1000 perc 0.00 remaining_ratio/perc 0
   visible_bw 37500 max_rate 37500 allocated_bw 37500 vc_encap 0 ecn_threshold NONE
   weight A 1 quantum A 1500 credit A 1500
   weight B 1 quantum B 1500 credit B 1500
   min-rate tokens: 13000, credit: 0, depth: 13000
   backpressure_policy 0 scheduler_flags C03B
   last_sortq[A/B] 0/0, remaining pak/particles 0/0
   leaf_blt[P1] 0x63DFDBE0 burst packets/bytes[P1] 0/0
   leaf_blt[P2] 0x63DFDBE0 burst packets/bytes[P2] 0/0
   leaf_blt[NOTP] 0x63DFDBE0 burst packets/bytes[NOTP] 0/0
 (max entries 1000)
     next layer HQFLAYER_CLASS_HIER0 (max entries 1000)
     blt (0x63D90EE0, index 0, qid 1, fast_if_number 5) layer CLASS_HIER0
     scheduling policy: FIFO (110)
     classification policy: NONE (120)
     drop policy: TAIL (141)
     packet size fixup policy: NONE (0)   no of global policers: 0
     blt flags: 0x220000    scheduler: 0x63DFDB20
     total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total
active 1
     txcount 167 txqbytes 12912 drops 0 qdrops 0 nobuffers 0 flowdrops 0
     qsize 0 aggregate limit/bytes 1000/0 availbuffers 1000
     holdqueue_out 0 perc 100.00 remaining_ratio/perc 0
     visible_bw 37500 max_rate 37500 allocated_bw 37500 vc_encap 0 ecn_threshold NONE
     weight A 1 quantum A 1500 credit A 1500
     weight B 1 quantum B 1500 credit B 1500
     min-rate tokens: 18750, credit: 0, depth: 18750
     backpressure_policy 0 scheduler_flags C03B
     last_sortq[A/B] 55/11, remaining pak/particles 0/0
     leaf_blt[P1] 0x63DFDB20 burst packets/bytes[P1] 0/0
     leaf_blt[P2] 0x63DFDB20 burst packets/bytes[P2] 0/0
     leaf_blt[NOTP] 0x63DFDB20 burst packets/bytes[NOTP] 1/80
```

The following is a sample output of the **show interface wideband-cable queue cblt cblt-index** command:

```
Router# show interface wideband-cable 3/0:0 queue cblt 1
```

```
    blt (0x65CE3EA0, index 1, qid 45, fast_if_number 19) layer CLASS_HIER0
    scheduling policy: FIFO (110)
    classification policy: NONE (120)
    drop policy: TAIL (141)
    packet size fixup policy: NONE (0)   no of global policers: 0
    D/Traffic Shaping enabled
    blt flags: 0x22A208C    scheduler: 0x65D504C0
    total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 1000 total
active 1
    D/Traffic Shaping enabled
    txcount 890 txqbytes 63900 drops 0 qdrops 0 nobuffers 0 flowdrops 0
    qsize 0 aggregate limit/bytes 128/100000 availbuffers 128
    holdqueue_out 0 perc 0.00 remaining_ratio/perc 11
    visible_bw 0 max_rate 4000 allocated_bw 0 vc_encap 0 ecn_threshold NONE
    weight A 1 quantum A 1500 credit A 1500
    weight B 1 quantum B 1500 credit B 1500
    min-rate tokens: 1500, credit: 0, depth: 1500
    backpressure_policy 0 scheduler_flags C03F
    last_sortq[A/B] 0/0, remaining pak/particles 0/0
    leaf_blt[P1] 0x65D504C0 burst packets/bytes[P1] 0/0
    leaf_blt[P2] 0x65D504C0 burst packets/bytes[P2] 0/0
    leaf_blt[NOTP] 0x65D504C0 burst packets/bytes[NOTP] 0/0
    OUTPUT Shaping
      Bc internal 0 Be internal 0 Time interval 4
      increment 4000 increment_lower 0 increment_limit 4000
      last visit 87456736 credit 0 outstanding_tokens 23760 maxtokens 24352
      peak_rate_credit 0 peak_rate_tokens 0 peak_rate_increment 0
      system timer delayed 0 restart timer 0
      timer set 0 hqf_shape_running 17254
      nextexpire_system_time 0 nextexpire_time_qindex -1
```

The following is a sample output of the **show interface wideband-cable queue cblt priority** command:

```
Router# show interface wideband-cable 3/0:0 queue cblt priority
    blt (0x19FA9300, index 0, qid 52, fast_if_number 20) layer CLASS_HIER0
    scheduling policy: FIFO (110)
    classification policy: NONE (120)
    drop policy: TAIL (141)
    packet size fixup policy: NONE (0)   no of global policers: 0
    blt flags: 0x200800    scheduler: 0x1A015CC0
    total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 9500 total
active 1

    txcount 114 txqbytes 12864 drops 0 qdrops 0 nobuffers 0 flowdrops 0
    qsize 0 aggregate limit/bytes 128/0 availbuffers 128
    holdqueue_out 0 perc 0.00 remaining_ratio/perc 0
    visible_bw 0 max_rate 37500 allocated_bw 0 vc_encap 0 ecn_threshold NONE
    weight A 1 quantum A 1500 credit A 1500
    weight B 1 quantum B 1500 credit B 1500
    min-rate tokens: 1500, credit: 0, depth: 1500
    backpressure_policy 0 scheduler_flags C83F
    last_sortq[A/B] 0/0, remaining pak/particles 0/0
    leaf_blt[P1] 0x1A015CC0 burst packets/bytes[P1] 0/0
    leaf_blt[P2] 0x1A015CC0 burst packets/bytes[P2] 0/0
    leaf_blt[NOTP] 0x1A015CC0 burst packets/bytes[NOTP] 0/0
PRIORITY LEVEL 1: total bandwidth 500 kbps, total percent 0%
```

The following is a sample output of the **show interface wideband-cable queue pblt** command:

```
Router# show interface wideband-cable 3/0:0 queue pblt
   blt (0x19FB4700, index 0, qid 0, fast_if_number 20) layer PHYSICAL
   scheduling policy: WFQ (111)
```

```
  classification policy: CLASS_BASED (122)
  drop policy: TAIL (141)
  packet size fixup policy: NONE (0)   no of global policers: 0
  blt flags: 0x220000    scheduler: 0x1A0210C0
 total guarantee percent 0 total remaining perc 0 total bandwidth guarantee 0 total active
0
  txcount 67743 txqbytes 6281007 drops 2 qdrops 0 nobuffers 0 flowdrops 0
  qsize 0 aggregate limit/bytes 8000/0 availbuffers 8000
  holdqueue_out 1000 perc 0.00 remaining_ratio/perc 0
  visible_bw 37500 max_rate 37500 allocated_bw 18000 vc_encap 0 ecn_threshold NONE
  weight A 1 quantum A 1500 credit A 1500
  weight B 1 quantum B 1500 credit B 1500
  min-rate tokens: 13000, credit: 0, depth: 13000
  backpressure_policy 1 scheduler_flags C03F
  last_sortq[A/B] 0/0, remaining pak/particles 0/0
  leaf_blt[P1] 0x1A0210C0 burst packets/bytes[P1] 0/0
  leaf_blt[P2] 0x1A0210C0 burst packets/bytes[P2] 0/0
  leaf_blt[NOTP] 0x1A0210C0 burst packets/bytes[NOTP] 0/0
```

The table below describes the fields shown in the **show interface wideband-cable queue command** display.

Table 42: show interface wideband-cable queue Field Descriptions

Field	Description
Len/Limit Pkts	Queue length and limit in packets.
Deqs Pkts	Dequeue packets
Drops Pkts	Dropped packets.
CIR Kbps	Committed information rate.
MIR/PR Kbps	Maximum information and peak rate.
Forwint	Forwarding interface.
BE Queues	Best effort queues.
CIR Queues	Committed information rate queues.
Low Latency Queues	Low latency queues.

Related Commands

Command	Description
show interface cable	Displays the configuration and status of a cable interface.
show interface modular-cable	Displays the configuration and status of a modular cable interface.
show interface wideband-cable	Displays the configuration and status of a wideband channel.

show ip arp vrf

To view which virtual routing and forwarding (VRF) instance contains a specific cable modem in the Address Resolution Protocol (ARP) cache table, use the **show ip arp vrf** command in privileged EXEC mode.

show ip arp vrf WORD

Syntax Description

WORD	VRF name.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
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.

Examples

The following is sample output from the **show ip arp vrf** command:

```
Router # show ip arp vrf vrfa

Protocol  Address             Age (min)  Hardware Addr   Type   Interface
Internet  203.0.113.1                0   0018.742c.6e00  ARPA   FastEthernet0/0/0
Internet  203.0.113.2                -   0014.f1e4.fb58  ARPA   FastEthernet0/0/0
Internet  198.51.100.1               -   0014.f1e4.fc31  ARPA   Bundle1.2
Internet  198.51.100.2               0   001e.6bfb.34e8  ARPA   Bundle1.2
Internet  198.51.100.3               0   0007.0e07.9f1f  ARPA   Bundle1.2
Internet  198.51.100.5               0   0025.2eaf.6bea  ARPA   Bundle1.2
Internet  198.51.100.6               0   001a.c3ff.d1a4  ARPA   Bundle1.2
Internet  198.51.100.7               0   001e.6bfb.1c7e  ARPA   Bundle1.2
```

The table describes the significant fields shown in the display.

Table 43: show ip arp vrf Field Descriptions

Field	Description
Protocol	Protocol for network address in the Address field.
Address	The network address that corresponds to the IPv4 address.
Age (min)	Age of the cache entry (in minutes). A hyphen (-) means the address is local.
Hardware Addr	LAN hardware address of a MAC address that corresponds to the network address.

Field	Description
Type	Encapsulation type for the network address. The valid values include: • ARPA • SNAP • SAP
Interface	Interface associated with the specified network address.

This example shows the output of the **show ip arp vrf** command for the Cisco cBR router.

```
Router#show ip arp vrf Tennis 112.59.130.96
Load for five secs: 13%/3%; one minute: 18%; five minutes: 18%
Time source is NTP, 13:42:16.864 CST Tue May 12 2015

Protocol  Address          Age (min)  Hardware Addr   Type   Interface
Internet  112.59.130.96           1   c0c6.872f.a512  ARPA   Bundle255.5

interface Bundle255.5
vrf forwarding Tennis
ip dhcp relay information option-insert
 ip address 112.61.0.1 255.255.0.0 secondary
ip address 112.60.0.1 255.255.0.0 secondary
ip address 112.59.0.1 255.255.0.0
ip pim sparse-mode
ip rip authentication mode md5
ip rip authentication key-chain ubr-rip
ip verify unicast reverse-path allow-self-ping
ip access-group HSI-RCM-OUT in
ip access-group HSI-RCM-OUT out
ip policy route-map RouteISP
no cable nd
no cable arp
cable ipv6 source-verify dhcp
cable source-verify dhcp
cable dhcp-insert hostname
cable dhcp-insert upstream-description
cable dhcp-insert downstream-description
cable dhcp-giaddr policy
cable dhcp-giaddr policy mta 112.61.0.1
cable helper-address 20.11.0.62 cable-modem
cable helper-address 20.11.0.62 host
cable helper-address 20.11.0.62 stb
cable helper-address 20.11.0.62 ps
cable helper-address 20.1.0.5 mta
cable helper-address 20.11.0.162
ipv6 address 2001:100:112:B009::1/64
```

Related Commands

Command	Description
cable source-route	Configures the VRF source route on the cable modem in subinterface configuration mode.
cable vrf-steering cable-modem	Steers or directs the cable modems to the specified VRF.
ip vrf	Defines a VRF instance and enters the interface configuration mode.

show ip interface brief

To display a brief summary of an interface's IP information and status, to include virtual interface bundle information, use the **show ip interface brief** command in privileged EXEC mode.

show ip interface brief

Syntax Description

This command has no additional keywords or arguments.

Command Default

Virtual Interface Bundling is enabled by default in Cisco IOS Release 12.3(21)BC and later releases.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(21)BC	Support was added for virtual interface bundling configured with upgrade to Cisco IOS Release 12.3(21)BC and later releases.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

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 a virtual interface bundle with the **show ip interface brief** command:

```
Router# show ip interface brief
Interface                  IP-Address        OK? Method Status                Protocol
FastEthernet0/0/0          209.165.200.225   YES NVRAM  up                    up
POS1/0/0                   unassigned        YES NVRAM  up                    up
GigabitEthernet2/0/0       209.165.201.1     YES NVRAM  up                    up
GigabitEthernet1/0/0       209.165.201.2     YES NVRAM  up                    up
GigabitEthernet4/0/0       209.165.201.6     YES NVRAM  down                  down
Cable8/1/0                 unassigned        YES NVRAM  up                    up
Cable8/1/1                 unassigned        YES NVRAM  up                    up
Cable8/1/2                 unassigned        YES NVRAM  up                    up
Cable8/1/3                 unassigned        YES NVRAM  up                    up
Cable8/1/4                 unassigned        YES NVRAM  up                    up
Bundle1                    209.165.202.129   YES TFTP   up                    up
Router#
```

This example shows the output of the **show ip interface brief** command on the Cisco cBR Series Converged Broadband Router:

```
Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
Cable1/0/0             unassigned      YES unset  initializing          down
Video1/0/0             unassigned      YES unset  up                    up
Cable1/0/1             unassigned      YES unset  initializing          down
Cable1/0/2             unassigned      YES unset  initializing          down
Cable1/0/3             unassigned      YES unset  initializing          down
```

```
Cable1/0/4             unassigned      YES unset  initializing          down
Cable1/0/5             unassigned      YES unset  initializing          down
Cable1/0/6             unassigned      YES unset  initializing          down
Cable1/0/7             unassigned      YES unset  initializing          down
Cable1/0/8             unassigned      YES unset  initializing          down
Cable1/0/9             unassigned      YES unset  initializing          down
Cable1/0/10            unassigned      YES unset  initializing          down
Cable1/0/11            unassigned      YES unset  initializing          down
Cable1/0/12            unassigned      YES unset  initializing          down
Cable1/0/13            unassigned      YES unset  initializing          down
Cable1/0/14            unassigned      YES unset  initializing          down
Cable1/0/15            unassigned      YES unset  initializing          down
Te4/1/0                209.165.202.129 YES NVRAM  up                    up
Te4/1/1                unassigned      YES unset  administratively down down
Te4/1/2                unassigned      YES unset  administratively down down
Te4/1/3                unassigned      YES unset  administratively down down
Te4/1/4                unassigned      YES unset  administratively down down
Te4/1/5                unassigned      YES unset  administratively down down
Te4/1/6                unassigned      YES unset  administratively down down
Te4/1/7                unassigned      YES unset  administratively down down
Te5/1/0                unassigned      YES unset  administratively down down
Te5/1/1                unassigned      YES unset  administratively down down
```

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 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.
show running-config interface cable	Displays the configuration for the specified cable interface.

show ipdr collector

To display the list of sessions that the Collector is associated, use the show ipdr collector command in the privileged EXEC mode.

show ipdr collector collector_name

Syntax Description

collector_name	The name of the Collector.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCB	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 ipdr collector** command displays the collector information, message statistics and event for all the sessions that are associated with the collector .

Examples

The following example shows the sample output for the **show ipdr collector** command.

```
Router#show ipdr collector federal
Collector Name: federal, IP: 192.0.2.0, Port: 0
2001-07-05T19:28:22 Collector in session 1 Statistics:
 Transmitted 12658 Acknowledged 12658 Enqueued 12658 Lost 0
 Last Event: Event Id 1 IPDR_EVENT_SERVER_CONNECTED - INCOMING
Router(config)#
```

This example shows the output of the **show ipdr collector** command for the Cisco cBR router.

```
Router#show ipdr collector doc_test
Collector Name: doc_test, IP: 209.165.202.129, Port: 1
2012-01-13T21:08:27 Collector in session 1 Statistics:
 Transmitted 0 Acknowledged 0 Enqueued 0 Lost 0
 Last Event: N/A
Router#
```

Related Commands

Command	Description
show ipdr exporter	Displays information about the IPDR Exporter state.
ipdr collector	Configures the Internet Protocol Detail Record (IPDR) Collector details.

show ipdr exporter

To display information about the state of the IPDR Exporter, use the **show ipdr exporter** command in the privileged EXEC mode.

show ipdr exporter

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.
IOS XE Gibraltar 16.12.1	The output of this command was update to indicate the active or passive mode.

Usage Guidelines

The **show ipdr exporter** command displays information about the IPDR Exporter state. The information displayed indicates the Exporter states that are listed below.

- started
- not started
- not initialized

Starting from Cisco IOS XE Gibraltar 16.12.1, the output of this command is updated to include active and passive mode for IPDR exporter.

Examples

The following example shows the sample output for the **show ipdr exporter**command.

```
Router#show ipdr exporter
IPDR exporter is started.
```

This example shows the sample output for the **show ipdr exporter**command on the Cisco cBR router:

```
Router#show ipdr exporter
IPDR exporter is not started.
```

This example shows the sample output for the show ipdr exporter command on the Cisco cBR router starting from Cisco IOS XE Gibraltar 16.12.1:

```
Router# show ipdr exporter
Load for five secs: 7%/0%; one minute: 7%; five minutes:
7%
No time source, *15:52:25.468 CST Thu May 23 2019
IPDR exporter is started in passive
mode. Current parameters:
KeepAliveInterval :300
AckTimeInterval 60
AckSequenceInterval :200
```

Related Commands

Command	Description
show ipdr collector	Displays the collector information, message statistics and event for all the sessions that are associated with the collector.
ipdr exporter start	Starts the IPDR Exporter and connects to the collector.

show ipdr session

To display the list of sessions and session details, use the show ipdr session command in the privileged EXEC mode.

show ipdr session {**all***session_id*}

Syntax Description

all	Displays all the associated sessions and session details such as the session ID, description, and the session state.
session_id	Displays session details for a specific session ID. The valid range is 1 to 255.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCB	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 ipdr session** command displays the session details such as the session ID, description, and the session state for all sessions as well as for a specific session.

Examples

The following example shows the sample output for the all option for the **show ipdr session** command.

```
Router#show ipdr session all
Session ID: 1, Name: utilsta, Descr: test, Started: False
```

The following example shows the sample output for the *session_id* option for the **show ipdr session** command.

```
Router#show ipdr session 1
Session ID: 1, Name: utilsta, Descr: test, Started: False
2001-07-05T19:36:28 Statistics:
Transmitted 0 Acknowledged 0 Enqueued 0 Lost 0
queuedOutstanding 0 queuedUnacknowledged 0
1 Collectors in the session:
Name: federal, IPAddr: 192.0.2.0, Port: 0, Priority: 1
```

This example shows the sample output for the **show ipdr session** command on the Cisco cBR router:

```
Router#show ipdr session 1
Session ID: 1, Name: doc_test, Descr: DOC TEST, Started: False

Session Type: Ad-hoc.
```

```
Session Wrapper PID: N/A. Exporting not started.

2012-01-13T21:13:34 Statistics:
Transmitted 0 Acknowledged 0 Enqueued 0 Lost 0
queuedOutstanding 0 queuedUnacknowledged 0

1 Collectors in the session:
Name: doc_test, IPAddr: 10.12.0.210, Port: 1, Priority: 1[DISCONNECTED]


Router#show ipdr session all
Session ID: 1, Name: doc_test, Descr: DOC TEST, Started: False
Router#
```

Related Commands

Command	Description
show ipdr exporter	Displays information about the IPDR Exporter state.
ipdr collector	Configures the Internet Protocol Detail Record (IPDR) Collector details.
ipdr session	Adds a session to the IPDR Exporter.
ipdr exporter start	Starts the IPDR Exporter and connects to the collector.

show ipdr session collector

To display the details of a collector that is associated with a specific session, use the show ipdr session collector command in the privileged EXEC mode.

show ipdr session *session_id* **collector** *collector_name*

Syntax Description

session_id	The IPDR session ID. The valid range is 1 to 255.
collector_name	The name of the Collector.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCB	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 ipdr session collector** command displays the details of a collector that is associated with a specific session. Since there can be multiple collectors associated to a session, this command is used to show a specific session-collector pair.

Examples

This example shows the output for the **show ipdr session collector** command.

```
Router#show ipdr session 1 collector federal
Session ID: 1, Name: utilsta, Descr: test, Started: False
Collecotr Name: federal, IP: 192.0.2.0, Port: 0
2001-07-05T19:38:02 Collector in session 1 Statistics:
 Transmitted 0 Acknowledged 0 Enqueued 0 Lost 0
 Last Event: Event Id 0 WRONG_EVENT_ID
```

This example shows the output for the **show ipdr session collector** command on the Cisco cBR router:

```
Router#show ipdr session 1 collector collector 1
Session ID: 1, Name: TI-CM-STATUS, Descr: TI-CM-STATUS, Started: True
Collector Name: collector1, IP: 20.1.0.6, Port: 4737

2015-05-23T01:22:38 Collector in session 1 Statistics:
 Transmitted 0 Acknowledged 0 Enqueued 0 Lost 0
 Last Event: N/A
```

Related Commands

Command	Description
show ipdr session	Displays the list of sessions and session details.
show ipdr collector	Displays the list of sessions that the Collector is associated.
ipdr session	Adds a session to the IPDR Exporter.

show ipdr session template

To display the list of all active templates supported by a specific session, use the **show ipdr session template** command in the privileged EXEC mode.

show ipdr session *session_id* **template**

Syntax Description

session_id	The IPDR session ID. The valid range is 1 to 255.

Command Default

None

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCB	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 ipdr session template** command displays the list of all active templates supported by a specific session.

Examples

This example shows the output for the **show ipdr session template** command.

```
Router#show ipdr session 1 template
Template ID: 2, Name: , Type: DOCSIS-Type, KeyNumber: 22
Session 1 has totally 1 templates.
```

This example shows the output for the **show ipdr session template** command on the Cisco cBR router:

```
Router#show ipdr session 1 template
Template ID: 8, Name:
http://www.cablelabs.com/namespaces/DOCSIS/3.0/xsd/ipdr/DOCSIS-CMTS-CM-REG-STATUS-TYPE/DOCSIS-CMTS-CM-REG-STATUS-TYPE_3.5.1-A.1.xsd,

Type: CMTS-CM-REG-STATUS-TYPE, KeyNumber: 18
Session 1 has a total of 1 templates.
```

Related Commands

Command	Description
show ipdr session	Displays the list of sessions and session details.
ipdr template	Adds an IPDR template to the IPDR Session.
ipdr session	Adds a session to the IPDR Exporter.