Cable Commands: show d through show i

Revised: August 12, 2013, OL-15510-17

New Commands

Command	Cisco IOS Software Release
show hw-module bay transceiver	12.2(33)SCA
show interface bundle multicast-sessions	12.2(33)SCA
show interface cable multicast-sessions	12.2(33)SCA
show interface modular-cable	12.3(23)BC
show interface modular-cable accounting	12.3(23)BC
show interface modular-cable description	12.3(23)BC
show interface modular-cable downstream	12.3(23)BC
show interface modular-cable intercept	12.3(23)BC
show interface modular-cable stats	12.3(23)BC
show interface modular-cable summary	12.3(23)BC
show interface modular-cable switching	12.3(23)BC
show interface rf-status	12.2(33)SCB
show ipdr collector	12.2(33)SCB
show ipdr exporter	12.2(33)SCB
show ipdr session	12.2(33)SCB
show ipdr session (collector)	12.2(33)SCB
show ipdr session template	12.2(33)SCB
show depi	12.2(33)SCC
show diagnostic bootup	12.2(33)SCC
show diagnostic content	12.2(33)SCC
show diagnostic ood-status	12.2(33)SCC

Command	Cisco IOS Software Release
show diagnostic result	12.2(33)SCC
show diagnostic schedule	12.2(33)SCC
show interface cable upstream debug	12.2(33)SCC
show interface integrated-cable	12.2(33)SCC
show interface modular-cable dlm	12.2(33)SCC
show interface multicast-gcr	12.2(33)SCC
show interface integrated-cable queue	12.2(33)SCD
show interface wideband-cable queue	12.2(33)SCD
show hccp linecard	12.2(33)SCE
show interface gigabitethernet	12.2(33)SCE
show interface cable dynamic-service statistics	12.2(33)SCF
show interface cable packetcable statistics	12.2(33)SCF
show interface gigabitethernet	12.2(33)SCF
show interface wideband-cable queue	12.2(33)SCF
show ip arp vrf	12.2(33)SCF
show hccp channel-switch	12.2(33)SCG

Modified Commands

Command	Cisco IOS Software Release
show hw-module bay	12.3(23)BC
show interface cable modem	12.2(33)SCA
show interface cable sid	12.2(33)SCA, 12.3(23)BC2
show interface cable upstream	12.3(23)BC2
show hw-module all fpd	12.2(33)SCB
show hw-module bay	12.2(33)SCB
show hw-module bay oir	12.2(33)SCB
show hw-module subslot fpd	12.2(33)SCB
show interface cable service-flow	12.2(33)SCB
show interface cable upstream	12.2(33)SCB
show interface modular-cable	12.2(33)SCB
show interface modular-cable accounting	12.2(33)SCB
show interface modular-cable description	12.2(33)SCB
show interface modular-cable downstream	12.2(33)SCB
show interface modular-cable intercept	12.2(33)SCB
show interface modular-cable stats	12.2(33)SCB
show interface modular-cable summary	12.2(33)SCB

Command	Cisco IOS Software Release
show interface modular-cable switching	12.2(33)SCB
show interface wideband-cable	12.2(33)SCB
show interface cable intercept	12.3(23)BC6
show interface cable dsg downstream	12.3(33)SCA
show interface cable dsg downstream	12.3(33)SCB4
show interface cable mac-scheduler	12.3(33)SCC
show interface cable service-flow	12.2(33)SCC
show interface cable upstream	12.2(33)SCC
show hccp	12.3(33)SCC
show interface cable privacy	12.2(33)SCD
show interface cable service-flow	12.2(33)SCD
show interface rf-status	12.2(33)SCD
show interface wideband-cable	12.2(33)SCD
show interface cable mac-scheduler	12.2(33)SCD2
show interface cable upstream	12.2(33)SCD2
show interface cable dsg downstream tg	12.2(33)SCD5
show depi	12.2(33)SCE
show depi session	12.2(33)SCE
show depi tunnel	12.2(33)SCE
show hccp	12.2(33)SCE
show hccp group	12.2(33)SCE
show interface cable	12.2(33)SCE
show interface cable admission-control reservation	12.2(33)SCE
show interface cable cable-monitor	12.2(33)SCE
show interface cable downstream	12.2(33)SCE
show interface cable dsg downstream	12.2(33)SCE
show interface cable dsg downstream tg	12.2(33)SCE
show interface cable intercept	12.2(33)SCE
show interface cable mac-scheduler	12.2(33)SCE
show interface cable modem	12.2(33)SCE
show interface cable multicast-sessions	12.2(33)SCE
show interface cable privacy	12.2(33)SCE
show interface cable qos paramset	12.2(33)SCE
show interface cable service-flow	12.2(33)SCE
show interface cable sid	12.2(33)SCE
show interface cable signal-quality	12.2(33)SCE
show interface cable upstream	12.2(33)SCE

Command	Cisco IOS Software Release
show interface cable upstream debug	12.2(33)SCE
show interface cable upstream	12.2(33)SCE5
show hccp	12.2(33)SCF
show interface cable multicast-session	12.2(33)SCF
show interface cable qos paramset total	12.2(33)SCF
show interface cable service-flow	12.2(33)SCF
show interface integrated-cable	12.2(33)SCF
show interface modular-cable	12.2(33)SCF
show interface modular-cable multicast-session	12.2(33)SCF
show interface wideband-cable	12.2(33)SCF
show interface wideband-cable multicast-session	12.2(33)SCF
show depi session	12.2(33)SCG
show interface cable dsg downstream	12.2(33)SCG
show interface cable modem	12.2(33)SCG
show interface cable qos paramset	12.2(33)SCG
show interface cable service-flow	12.2(33)SCG
show interface cable upstream	12.2(33)SCG
show interface gigabitethernet	12.2(33)SCG

Replaced Commands

Command	Replacement Command	Cisco IOS Software Release
show interface cable monitor	**show interface cable cable-monitor**	12.2(33)SCA

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.

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
```

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.

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 183 describes the major fields shown in the **show depi** command display:

Table 183 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/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.
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.

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 183 describes the major fields shown in the **show depi session** command display.

Table 184 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.
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.

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 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 183 describes the major fields shown in the **show depi tunnel** command display:

Table 185 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).
controller modular-cable	Enters controller configuration mode to configure the SPA controller.

Command	Description
show depi	Displays information about DEPI sessions and tunnels.
show depi session	Displays information about DEPI sessions.

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**}

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.

Usage Guidelines

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

Examples

The following is typical 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 0-186 describes the fields shown in the display.

Table 0-186 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.

Table 0-186 show dhcp lease Field Descriptions (continued)

Field	Description
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.

The following example shows typical 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 0-187 describes the fields shown in the display.

Table 0-187 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.

Table 0-187 show dhcp server Field Descriptions (continued)

Field	Description
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 diagnostic bootup

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

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.

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

The following example shows a sample 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*]

Syntax Description

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.

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 attributes 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).

Attribute	Description
V	Test runs on the entire device (per-device test).
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 bay 1/0** 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 Interval
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 188 describes the fields shown in the **show diagnostic content bay** displays.

Table 188 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.
Test Interval	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.

Command	Description
show diagnostic status	Displays the running diagnostics tests.
diagnostic ondemand	Configures the on-demand diagnostics.
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.

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 189 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.

Table 189 show diagnostic ood-status Field Descriptions (continued)

Field	Description
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 190 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.
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-id* | *test-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.

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.

Command	Description
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.

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 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 [*severity*]

Syntax Description

severity	(Optional) String that identifies the severity of an alarm. The default severity level is info, which shows all alarms. Severity levels are defined as the following: • **critical**—Only critical alarms are shown. • **major**—All major and critical facility alarms are shown. • **minor**—All minor, major, and critical facility alarms are shown. • **info**—All facility alarms are shown. • **phy-index**—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.

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.

Note 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.

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 191 describes the significant fields shown in the outputs.

Table 191 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.

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 0-192 describes the fields displayed by the **show frame-clocks** command:

Table 0-192 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 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) 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.
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.

Release	Modification
12.2(33)SCE	This command was modified. **line card** keyword was added.
12.2(33)SCF	This command supports configuration of a card with a lower license as protect for a working card with a higher license. However, when a switchover occurs, this protect card does not become active until it is upgraded and reloaded with a higher license.

Usage Guidelines

Starting with Cisco IOS Release 12.2(33)SCF, you can configure a card with a lower license as the protect card for a working card with a higher license. This protect card remains in a nonfunctional mode (not in standby mode) and does not become active until it is upgraded and reloaded with a higher license, when a switchover occurs.

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 (1.1.11.3/1, 1.1.11.3/2), 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#
```

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.

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.

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 193 describes the significant fields shown in the display.

Table 193 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.
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 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.

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 (1.1.11.3/1, 1.1.11.3/2), 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 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.

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#
```

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.

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 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.

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 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*.

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 194 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.
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*.

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 195 describes the possible values for the Operational Status field in the output.

Table 195 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.

Table 195 Operational Status Field Descriptions (continued)

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*/{*bay* | *port*} **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.

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 interface bundle

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

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**]

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	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.
precedence	Displays the interface precedence accounting information.
random-detect	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.

Release	Modification
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.

Usage Guidelines

Starting with Cisco IOS Release 12.2(33)SCB, the **multicast-sessions** keyword does not display any output, although it is available as part of the **show interface bundle** command.

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:

Note The **multicast-sessions** keyword is not available for Cisco IOS Release 12.2(33)SCE and later releases.

```
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*]

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.

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** 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.

Examples

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

```
CMTS01# show interface cable 6/0/0

Cable6/0 is up, line protocol is up
  Hardware is BCM3210 ASIC, address is 000a.13e8.1ca8 (bia 000a.13e8.1a60)
  Internet address is 1.1.1.3/24
  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 0-196 describes the fields shown in the **show interface cable** display.

Table 0-196 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.)
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.

Table 0-196 show interface cable Field Descriptions (continued)

Field	Description
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.
Note When using bundled cable interfaces on Cisco uBR7200 series routers, the input packet counters for the master interface also include the packet counts for slave 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 master and slave 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.

Table 0-196 show interface cable Field Descriptions (continued)

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.

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 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 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/port* | *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-index* | *slot/subslot/cable-interface-index* } **admission-control reservation** { **downstream | upstream** } *port-no*

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.
downstream	Displays downstream service flow information for the designated cable interface.
upstream	Displays upstream service flow information for the designated cable interface. The port number may be specified here for more limited display.
port-no	Optional value allows you to specify the upstream port number for more limited information.

Defaults

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.

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*

Examples

The following example illustrates sample 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
```

The following 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
```

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.

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 0-197 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 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.

Defaults

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.

Release	Modification
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.

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:

```
CMTS01# 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 0-198 describes the fields shown in the **show interface cable downstream** display.

Table 0-198 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.

Table 0-198 show interface cable downstream Field Descriptions (continued)

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*]

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. Table 199 in the Usage Guidelines section lists valid values for these arguments.
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**

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 199 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
```

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*]

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.
channel *channel-id*	(Optional) Specifies the downstream channel 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.

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
```

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

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS Release 12.2(33)SCF	This command was introduced.

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 200 describes the significant fields shown in the **show interface cable dynamic-service statistics** command display.

Table 200 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.

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/port* | *bundle*} **intercept**

Cisco IOS Release 12.2(33)SCE and later

show interface cable {*slot/cable-interface-index* | *slot/subslot/cable-interface-index* | *bundle*} **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.

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*]

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.
n	(Optional) Specific upstream to be displayed. The valid values start with 0 for the first upstream port on the cable interface line card.

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.

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.

Examples

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

The following is a sample output 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 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

The following is a sample 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 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 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

The following is a sample output 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 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

The following is a sample output 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 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
```

Table 201 describes the significant fields shown in the display.

Table 201 show interface cable mac-scheduler Field Descriptions

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

Table 201 show interface cable mac-scheduler Field Descriptions (continued)

Field	Description
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.
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** Table 202 shows 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.

Table 201 show interface cable mac-scheduler Field Descriptions (continued)

Field	Description
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.
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.

Table 202 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 202 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

Table 202 Maximum Potential Upstream Bandwidth

Channel Width (MHz)	Modulation Scheme	Raw Speed (Mbps)	Usable Bandwidth (Mbps)
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**]

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. Table 203 in the Usage Guidelines section lists valid values for these arguments.
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.
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.

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 203 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

The following 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
```

The following 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
```

The following 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
```

The following is a sample 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
```

The following is a sample 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
```

Table 204 show interface cable modem Field Descriptions

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

Table 204 show interface cable modem Field Descriptions (continued)

Field	Description
State	The current state of the MAC layer for this SID and CM (see Table 205 for descriptions of the possible states). 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	Identifies whether or not (“Y” or “N”) the CM or CPE supports both IPv4 and IPv6 addressing.

Table 205 shows the possible values for the MAC state field:

Table 205 Descriptions for the MAC State Field [1]

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.

Table 205 Descriptions for the MAC State Field (continued)[1]

MAC State Value	Description
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.
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).

Table 205 Descriptions for the MAC State Field (continued)[1]

MAC State Value	Description
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.
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	

Table 205 Descriptions for the MAC State Field (continued)[1]

MAC State Value	Description
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.
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.

Table 205 Descriptions for the MAC State Field (continued)[1]

MAC State Value	Description
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.

1. 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.

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.

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 206 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-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.
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.

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**

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

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS Release 12.2(33)SCF	This command was introduced.

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
```

Table 200 describes the significant fields shown in the **show interface cable packetcable statistics** command display.

Table 207 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.

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

Cisco IOS Release 12.2(33)SCE and later

show interface cable {*slot/cable-interface-index* | *slot/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.
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.
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.

Usage Guidelines

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

Examples

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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 208 describes the significant fields shown in the **show interface cable privacy** command display:

Table 208 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.

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**]

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.
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.

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 209 describes the significant fields shown in the display.

Table 209 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.

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*/*cable-interface-index* | *slot*/*subslot*/*cable-interface-index*} **service-flow** [*sfid* [**queue** | **classifiers** | **counters** | **phs** | **qos** [**ds** | **service-class** | **us**]] [**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.
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.
classifiers [*clid*]	(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.
qos	(Optional) Displays QoS information for the service flow 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.

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.
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.

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

The following examples show a sample 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 210 shows the descriptions for the significant fields shown in the display:

Table 210 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.

Table 210 show interface cable service-flow Field Descriptions (continued)

Field	Description
MIR/PR Kbps	Maximum information and peak rate.
Forwint	Forwarding interface.
SFID	Service flow identifier.
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 211 shows the significant fields shown in the display for the **phs** option:

Table 211 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.

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*/*port* | *slot*/*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**]

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.
id	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.)
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.

rate-adapt	(Cisco uBR7200 series and Cisco uBR10012 routers only) Displays the local or global upstream utilization optimization configuration parameters.
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.
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.

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.
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.

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.

The following example shows 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
```

The following example shows 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 214 describes the fields displayed by the **show interface cable sid** command.

Table 212 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.
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

The following example shows 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
```

The following example shows 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

The following example shows 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.

The following example shows 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 215 describes the fields displayed by the **show interface cable sid** command.

Table 213 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.
Ratelimit BWReqDrop	Number of bandwidth requests not granted by this SID.
Ratelimit DSPktDrop	Number of downstream packets lost by this SID.

Table 213 show interface cable sid Field Descriptions (continued)

Field	Description
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.
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.

Table 213 show interface cable sid Field Descriptions (continued)

Field	Description
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.)

Related Commands

Command	Description
clear cable secondary-ip	Clears the router's table that links secondary IP addresses to the devices that use them.
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 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*/*port* | *slot*/*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**]

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.
id	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.)
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.

rate-adapt	(Cisco uBR7200 series and Cisco uBR10012 routers only) Displays the local or global upstream utilization optimization configuration parameters.
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.
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.

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.
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.

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.

The following example shows 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
```

The following example shows 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 214 describes the fields displayed by the **show interface cable sid** command.

Table 214 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.
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

The following example shows 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
```

The following example shows 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

The following example shows 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
```

The following example shows 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 215 describes the fields displayed by the **show interface cable sid** command.

Table 215 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.
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.

Table 215 show interface cable sid Field Descriptions (continued)

Field	Description
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.
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.

Table 215 show interface cable sid Field Descriptions (continued)

Field	Description
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.)

Related Commands

Command	Description
clear cable secondary-ip	Clears the router's table that links secondary IP addresses to the devices that use them.
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	(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.
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.

Examples

The following is sample output from the **show interface cable signal-quality** command:

```
CMTS01# show interface cable 6/0 signal-quality

Cable6/0: Upstream 0 is up includes contention intervals: TRUE
```

Table 216 describes the fields shown in the **show interface cable signal-quality** display.

Table 216 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-index* | *slot/subslot/cable-interface-index*} **upstream** [*n*] [**ugs statistics** | **rate-adapt**]

show interface cable {*slot/cable-interface-index* | *slot/subslot/cable-interface-index*} **upstream** [**bonding-group** [*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.
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.
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.
bonding-group	(Optional) Displays the bonding groups configured on an upstream port.
index	(Optional) Bonding group index value. Valid values are from 1 to 65535.

Command Default If no upstream is specified, all upstreams on the given cable interface are shown.

Command Modes Privileged EXEC (#)

Command History This table includes the following release-specific history entries:

- BC Release
- C Release
- SC Release
- T Release
- X Release

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.
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.

Examples

The following is a sample 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
```

The following is a sample 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)
```

The following is a sample 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 217 describes the significant fields shown in the display.

Table 217 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.

Table 217 show interface cable upstream Field Descriptions (continued)

Field	Description
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.
corrected	Number of frames received through this upstream interface that had errors that were corrected.

Table 217 show interface cable upstream Field Descriptions (continued)

Field	Description
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.

Table 217 show interface cable upstream Field Descriptions (continued)

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.

Table 217 show interface cable upstream Field Descriptions (continued)

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.

Table 217 show interface cable upstream Field Descriptions (continued)

Field	Description
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.
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 218 describes the significant fields shown in the display:

Table 218 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.

The following is a sample 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.
```

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.

show interface cable *slot*/*subslot*/*port* **upstream debug sid-tracking** *sid-value* start-index *count-number* {**summary** | **verbose**}

show interface cable *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**

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.
sid-tracking *sid-value*	Specifies the SID number for which SID tracking details are displayed. The valid range is from 1 to 8191.
start-index	First event you want to display. Valid values are from 0 to 40000.
count-number	Total number of events you want to display. Valid values are from 0 to 40000.
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 (#)

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.

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
```

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/*{*bay* | *port*}

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 correctly.

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#
```

Starting from 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. 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
s**how 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 interface integrated-cable *slot/subslot/port: interface-number* [*options*]

Cisco uBR7246VXR and Cisco uBR7225VXR Routers

show interface integrated-cable *slot/port: 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.
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.
interface-number	Integrated cable interface number. The valid range is from 0 to 3.

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. • **downstream**—Displays the downstream information. • **fair-queue**—Displays the integrated cable interface Weighted Fair Queuing (WFQ) information. • **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. • **random-detect**—Displays the interface Weighted Random Early Detection (WRED) information. • **stats—**Displays packets that are switched. • **summary**—Displays interface summary information. • **switching**—Displays interface switching information.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced on the Cisco uBR10012 router.
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.

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

The following is a sample output of the **show interface integrated-cable accounting** command:

```
Router# show interface integrated-cable 7/0/0:0 accounting

Protocol    Pkts In   Chars In   Pkts Out  Chars Out
IP          0          0        280      41606
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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

The following is a sample 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
```

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 queueing 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_index* | *priority*] | **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.

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 219 describes the fields shown in the **show interface integrated-cable** command display.

Table 219 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.

Table 219 show interface integrated-cable – Field Description (continued)

Field	Description
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.
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.

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*.

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*/*bay*/*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*.

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.
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.

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 220 describes the significant fields shown in the display.

Table 220 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*/bay/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*.

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*/bay/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*.

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.
show interface modular-cable description	Displays a description for the interface.

Command	Description
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*:*interface-number*} [**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.

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.

Command	Description
show interface modular-cable dsg	Displays the DOCSIS Set-Top Gateway (DSG) information per modular-cable interface.
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*.

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*/*bay*/*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*.

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*/bay/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*.

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**

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
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.

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 221 describes the significant fields shown in the display.

Table 221 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.

Defaults

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.

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 master.
- Member 2 is the final slave 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 master.
- Member 2 is the final slave 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 master.
- Member 3 is the final slave 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.

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 222 describes the significant fields shown in the display.

Table 222 ***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 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*]

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.
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. 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).
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 reserved and reservable bandwidth 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.

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*.
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.

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

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample output for the **show interface wideband-cable downstream** command:

```
Router# show interface wideband-cable 1/0/0:1 downstream

Total downstream bandwidth 3235 Kbps
Total downstream reserved/reservable bandwidth 0/200 Kbps
Total downstream guaranteed/non-guaranteed bonus bandwidth 66618/9972 Kbps
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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
```

The following is a sample 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 223 describes the fields shown in the **show interface wideband-cable** display.

Table 223 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.
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.

Table 223 show interface wideband-cable Field Descriptions

Field	Description
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.
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.

Table 223 show interface wideband-cable Field Descriptions

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.

Table 223 show interface wideband-cable Field Descriptions

Field	Description
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.
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.

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*]]

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	Subslot where a SIP resides. On the Cisco uBR10012 router, the 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	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).
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.
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.

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.

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
```

Table 224 describes the fields shown in the **show interface wideband-cable queue** command display.

Table 224 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.

Command	Description
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 interfaces cable-modem

To display information about the cable interface, use the **show interfaces cable-modem** command in privileged EXEC mode.

Cisco uBR904, uBR905, uBR924, uBR925 cable access routers, Cisco CVA122 Cable Voice Adapter

show interfaces cable-modem *number* [**accounting** | **counters** | **crb** | **irb** | **type**]

Syntax Description

number	Identifies the cable interface (always **0**).
accounting	(Optional) Displays the number of packets of each protocol type that has been sent through the router interface.
counters	(Optional) Shows MIB counters on the cable interface.
crb	(Optional) Displays concurrent routing and bridging information for each interface that has been configured for routing or bridging. This option does not really apply to the router but is included because it is part of the subsystem that provides DOCSIS-compliant bridging. For more information, see the *Cisco IOS Bridging and IBM Networking Configuration Guide, Release 12.2*.
irb	(Optional) Displays integrated routing and bridging information for each interface that has been configured for routing or bridging. This option does not really apply to the router but is included because it is part of the subsystem that provides DOCSIS-compliant bridging. For more information, see the *Cisco IOS Bridging and IBM Networking Configuration Guide, Release 12.2*.
type	(Optional) Designed to display information about virtual LANs associated with the interface; however, this option is not supported on the router.

Defaults

When this command is entered without a keyword, general information about the cable interface is displayed.

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.

Examples

The following example shows typical output for the cable interface when traffic is passing through the interface:

```
Router# show interfaces cable-modem 0
```

```
  cable-modem0 is up, line protocol is up
  Hardware is BCM3300, address is 0050.7366.2439 (bia 0050.7366.2439)
  Internet address is 5.2.0.11/16
  MTU 1500 bytes, BW 27000 Kbit, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation DOCSIS, loopback not set
  Keepalive set (10 sec)
  ARP type:ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters 00:08:40
  Queueing strategy:fifo
  Output queue 40/40, 52787 drops; input queue 0/75, 0 drops
  5 minute input rate 2000 bits/sec, 2 packets/sec
  5 minute output rate 94000 bits/sec, 154 packets/sec
     1074 packets input, 418472 bytes, 0 no buffer
     Received 19 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     78771 packets output, 6326786 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out

Router#
```

Table 0-225 describes the significant fields shown in the display.

Table 0-225 show interfaces cable-modem Field Descriptions

Field	Description
cable-modem0 is up	Indicates that the interface is currently active. “Disabled” indicates the interface has received more than 5000 errors in one keepalive interval (10 seconds by default if keepalive is set); “administratively down” indicates the interface has been taken down by an administrator.
line protocol is up	Indicates that the software processes that handle the line protocol believe the interface is usable.
Hardware	Hardware type and MAC address.
Internet address	Internet address followed by the shorthand notation for the subnet mask.
MTU	Maximum Transmission Unit (equivalent of the maximum packet size) for the interface.
BW	Bandwidth of the interface in kilobits per second.
DLY	Delay of the interface in microseconds.
reliability	Reliability of the interface, expressed as a fraction of 255, calculated as an exponential average over a 5-minute period. (255/255 equals 100% reliability.)
tx load/rx load	Load on the interface caused by transmitting and receiving, expressed as a fraction of 255, calculated as an exponential average over a 5-minute period.
Encapsulation/loopback/keepalive	Encapsulation method assigned to the interface.
loopback	Indicates whether or not loopback is set.
keepalive	Indicates whether or not keepalives are set.

Table 0-225 show interfaces cable-modem Field Descriptions (continued)

Field	Description
ARP type	Type of Address Resolution Protocol configured for the interface.
ARP Timeout	Number of hours, minutes, and seconds an ARP cache entry will stay in the cache.
Last input/output	Number of hours, minutes, and seconds since the last packet was successfully received/transmitted by the interface.
output hang	Number of hours, minutes, and seconds since the interface was last reset because of a transmission that took too long. When the number of hours in any of the "Last..." fields exceeds 24, the number of days and hours is displayed. If the field overflows, asterisks are printed.
Last clearing of "show interface" counters	Time at which the counters that measure cumulative statistics (such as number of bytes transmitted and received) shown in this report were last reset to zero. Note that variables that might affect routing (for example, load and reliability) are not cleared when the counters are cleared. *** indicates the elapsed time is too large to be displayed. 0:00:00 indicates the counters were cleared more than 2^{31} milliseconds (and less than 2^{32} milliseconds) ago.
Queueing strategy	Type of queueing strategy in effect on the interface.
Output queue/drops	Number of packets in the output queue followed by the size of the queue and the number of packets dropped due to a full queue.
input queue/drops	Number of packets in the input queue followed by the size of the queue and the number of packets dropped due to a full queue.
5 minute input rate 5 minute output rate	Average number of bits and packets received and transmitted per second in the last 5 minutes. If the interface is not in promiscuous mode, it senses network traffic it sends and receives (rather than all network traffic). The 5-minute input and output rates should be used only as an approximation of traffic per second during a given 5-minute period. These rates are exponentially weighted averages with a time constant of 5 minutes. A period of four time constants must pass before the average will be within two percent of the instantaneous rate of a uniform stream of traffic over that period.
packets input	Total number of error-free packets received by the system.
bytes	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. Compare with ignored count. Broadcast storms on Ethernet networks and bursts of noise on serial lines are often responsible for no input buffer events.

Table 0-225 show interfaces cable-modem Field Descriptions (continued)

Field	Description
Received broadcasts	Total number of broadcast or multicast packets received by the interface.
runts	Number of packets discarded because they were smaller than the medium's minimum packet size. For example, any Ethernet packet less than 64 bytes is considered a runt.
giants	Number of packets discarded because they were larger than the medium's maximum packet size. For example, any Ethernet packet larger than 1518 bytes is considered a giant.
throttles	Number of times the receiver on the port was disabled, possibly due to buffer or processor overload.
input errors	Includes runts, giants, no buffer, CRC, frame, overrun, and ignored counts. Other input-related errors can also cause the input errors count to be increased, and some datagrams may have more than one error; therefore, this sum may not balance with the sum of enumerated input error counts.
CRC	Number of cyclic redundancy checks (CRCs) generated by the originating LAN station or far-end device that do not match the checksum calculated from the data received. On a LAN, this field usually indicates noise or transmission problems on the LAN interface or the LAN bus itself. A high number of CRCs is usually the result of collisions or a station sending bad data.
frame	Number of packets received incorrectly, having a CRC error and a noninteger number of octets. On a LAN, this value is usually the result of collisions or a malfunctioning Ethernet device.
overrun	Number of times the receiver hardware was unable to hand 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. These buffers are different from the system buffers mentioned previously in the buffer description. Broadcast storms and bursts of noise can cause the ignored count to be increased.
abort	Number of packets whose receipt was aborted.
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 transmitter has been running faster than the router can handle.
output errors	Sum of all errors that prevented the final transmission of datagrams out of the interface being examined. Note that this may not balance with the sum of the enumerated output errors, as some datagrams might have more than one error, and others might have errors that do not fall into any of the specifically tabulated categories.

Table 0-225 show interfaces cable-modem Field Descriptions (continued)

Field	Description
collisions	Number of messages retransmitted due to an Ethernet collision. Collisions are usually the result of an overextended LAN (Ethernet or transceiver cable too long, more than two repeaters between stations, or too many cascaded multiport transceivers). A packet that collides is counted only once in output packets.
interface resets	Number of times an interface has been completely reset. A reset can happen if packets queued for transmission were not sent within several seconds. On a serial line, this can be caused by a malfunctioning modem that is not supplying the transmit clock signal, or by a cable problem. If the system notices that the carrier detect line of a serial interface is up, but the line protocol is down, it periodically resets the interface in an effort to restart it. Interface resets can also occur when an interface is looped back or shut down.
output buffer failures	Number of times the output buffer has failed.
output buffers swapped out	Number of times the output buffer has been swapped out.

The following example shows typical output of the **show interfaces cable-modem accounting** command, which shows the number of packets and bytes of each protocol type that is passing through the cable interface:

```
Router# show interfaces cable-modem 0 accounting

cable-modem0
                Protocol     Pkts In   Chars In   Pkts Out  Chars Out
                      IP         545     185502        159      90240
           Trans. Bridge        3878     964995      12597    1611142
                     ARP          73       3066         86       4128
Router#
```

Table 0-226 describes the significant fields shown in this display.

Table 0-226 show interfaces cable-modem accounting Field Descriptions

Field	Description
Protocol	List of protocols operating on the cable-modem interface.
Pkts In	Number of packets of each protocol received on the interface.
Chars In	Number of bytes of each protocol received on the interface.
Pkts Out	Number of packets of each protocol sent on the interface.
Chars Out	Number of bytes of cache protocol sent on the interface.

The following example shows typical output for the **show interfaces cable-modem counters** command:

```
Router# show interfaces cable-modem 0 counters

Cable specific counters:
Ranging requests sent  : 50982
Downstream FIFO full   : 0
Re-requests            : 7277
```

```
DS MAC Message Overruns: 0
DS Data Overruns       : 0
Received MAPs          : 254339485
Received Syncs         : 53059555
Message CRC failures   : 0
Header CRC failures    : 1394
Data PDUs              : 5853
DS MAC messages        : 307861745
Valid Headers          : 307869065
Sync losses            : 0
Pulse losses           : 1
BW request failures    : 6

Router#
```

Table 0-227 describes the counters shown in this display.

Table 0-227 Counters Shown in show interfaces cable-modem counters Display

Field	Description
Ranging requests sent	Number of ranging requests sent by the router to the CMTS.
Downstream FIFO full	Number of times the downstream input first-in first-out (FIFO) buffer became full on the router.
Re-requests	Number of times a bandwidth request generated by the router was not responded to by the CMTS.
DS MAC Message Overruns	Number of times the DMA controller had a downstream MAC message and there were no free MAC message buffer descriptors to accept the message.
DS Data Overruns	Number of times the DMA controller had downstream data and there were no free data PDU buffer descriptors to accept the data.
Received MAPs	Number of times a MAP message passed all filtering requirements and was received by the router.
Received Syncs	Number of times a time-stamp message was received by the router.
Message CRC failures	Number of times a MAC message failed a cyclic redundancy check (CRC).
Header CRC failures	Number of times a MAC header failed its 16-bit CRC check. The MAC header CRC is a 16-bit Header Check Sequence (HCS) field that ensures the integrity of the MAC header even in a collision environment.
Data PDUs	Total number of data PDUs (protocol data units) of all types received by the router.
DS MAC messages	Number of MAC messages received by the router.
Valid Headers	Number of valid headers received by the router, including PDU headers, MAC headers, and headers only.
Sync losses	Number of times the router lost timebase sync with the CMTS.
Pulse losses	Number of times the router did not receive expected timestamp messages from the CMTS.
BW request failures	Number of times the router sent the maximum number of re-requests for bandwidth allocation and the request was still not granted.

The following example shows typical output for the **show interfaces cable-modem crb** command, which displays information about the bridging and routing protocols being used on the cable interface:

```
Router# show interfaces cable-modem 0 crb

cable-modem0

 Bridged protocols on cable-modem0:
  ip

 Software MAC address filter on cable-modem0
  Hash Len    Address      Matches  Act      Type
  0x00:  0 ffff.ffff.ffff      3877 RCV Physical broadcast
  0x2A:  0 0900.2b01.0001         0 RCV DEC spanning tree
  0x7A:  0 0010.7b43.aa01       573 RCV Interface MAC address
  0xC2:  0 0180.c200.0000         0 RCV IEEE spanning tree
  0xC2:  1 0180.c200.0000         0 RCV IBM spanning tree
Router#
```

Table 0-228 describes the fields shown in this display.

Table 0-228 show interfaces cable-modem crb Field Descriptions

Field	Description
Hash	Hash key/relative position in the keyed list for this MAC address filter.
Len	Length of this entry to the beginning element of this hash chain.
Address	Canonical (Ethernet ordered) MAC address of this filter.
Matches	Number of received packets that match this MAC address.
Act	Action to be taken when this address is looked up; choices are to receive or discard the packet.
Type	MAC address type.

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
show bridge cable-modem	Displays bridging information for the cable interface.

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.

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
```

Table 1 describes the significant fields shown in the display.

Table 229 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.
Type	Encapsulation type for the network address. The valid values include: • ARPA • SNAP • SAP
Interface	Interface associated with the specified network address.

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.

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          1.8.44.1        YES NVRAM  up                    up
POS1/0/0                   unassigned      YES NVRAM  up                    up
GigabitEthernet2/0/0       11.0.0.2        YES NVRAM  up                    up
GigabitEthernet3/0/0       10.1.1.101      YES NVRAM  up                    up
GigabitEthernet4/0/0       1.1.1.1         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                    10.44.50.1      YES TFTP   up                    up
Router#
```

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.

Command	Description
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.

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#configure terminal
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)#
```

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.

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

Examples

The following example shows the sample output for the **show ipdr exporter** command.

```
Router#configure terminal
Router#show ipdr exporter
IPDR exporter is started.
```

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.

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#configure terminal
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#configure terminal
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
```

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.

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

The following example shows the sample output for the **show ipdr session collector** command.

```
Router#configure terminal
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
```

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

No default behavior or values.

Command Modes

Privileged EXEC mode

Command History

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

Usage Guidelines

The **show ipdr session template** command displays the list of all active templates supported by a specific session.

Examples

The following example shows the sample output for the **show ipdr session template** command.

```
Router#configure terminal
Router#show ipdr session 1 template
Template ID: 2, Name: , Type: DOCSIS-Type, KeyNumber: 22
Session 1 has totally 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.