Cable Commands: show cable m to show cable u

show cable mac-domain cable forwarding

To display all the interfaces (wideband and modular) and statistics belonging to the Mac domain, use the **show cable mac-domain cable forwarding** command in privileged EXEC mode.

show cable mac-domain cable *slot/subslot/port* **forwarding**

Syntax Description

slot	Specifies the chassis slot number of the cable interface line card. The range is from 5 to 8.
subslot	Specifies the secondary slot number of the cable interface line card. The range is from 0 or 1.
port	Specifies the port number. The range is from 0 to 4 (depending on the cable interface).
forwarding	Displays the forwarding statistics for the cable line cards.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced.
12.2(33)SCA	This command is integrated in Cisco IOS Release 12.2(33)SCA.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The **show cable mac-domain cable forwarding** command does not support wideband and modular interfaces. However, if wideband and modular interfaces belong to the Mac domain, the interfaces are listed in the output with the interface state.

Starting with Cisco IOS Release 12.2(33)SCF, for a chassis loaded with the UBR-MC20X20V or uBR-MC3GX60V line cards, and legacy uBR-MC5X20 line cards, the **show cable mac-domain cable forwarding** command shall not display the legacy downstream information for the UBR-MC20X20V and the uBR-MC3GX60V line cards.

Examples

The following is sample output of the **show cable mac-domain cable forwarding** command on the cable interface at 1/0/0:

```
Router# show cable mac-domain cable 1/0/0 forwarding
Interface            Output            Interface     Reserved/    Interface
Name           Packets   Rate          Bandwidth     Reservable   State
               (bytes)   (bits/sec)     (Kbps)       Bandwidth
-------------------------------------------------------------------------------
Ca1/0/0         201358            0        26000     6500/19500         UP
Mo1/0/0:0       344340            0         4160     1040/3120          UP
Mo1/0/0:1       252132            0         7800     1950/5850          UP
Mo1/0/0:2       252132            0         7800     1950/5850          UP
Wi1/0/0:0       198916            0         7803     1951/5852          UP
Wi1/0/0:1         1152            0        10404     2601/7803          UP
```

Table below describes the significant fields shown in the display.

Table 1: show cable mac-domain cable forwarding Field Descriptions

Field	Description
Interface Name	The name of the interface belonging to Mac domain.
Output Packets/Rate	The cumulative packets output and output rate.
Interface Bandwidth	The total interface bandwidth allocated.
Reserved/Reservable Bandwidth	The total reserved and available bandwidth.
Interface State	Indicates whether the interface is up or down.

show cable mac-domain cable cgd-associations

To display a summary of the Channel Grouping Domain (CGD) associations for all cable MAC domains, use the **show cable mac-domain cgd-associations** command in privileged EXEC mode.

Cisco uBR10012 Router
show cable mac-domain cable *slot* / *subslot* / *port* **cgd-associations**

Cisco uBR7225VXR and Cisco uBR7246VXR Routers
show cable mac-domain cable *slot* / *port* **cgd-associations**

Cisco cBR Series Converged Broadband Router
show cable mac-domain cable *slot* / *port* **cgd-associations**

Syntax Description

cable *slot* /*subslot* /*port*	Identifies the cable interface on the Cisco uBR10012 router. • *slot* —Slot where the line card resides. The range is from 5 to 8. • *subslot* —Subslot where the line card resides. The range is from0 or 1. • *port* —Downstream controller number on the line card. The range is from 0 to 4.

cable *slot* /*port*	Identifies the cable interface on the Cisco uBR7246VXR or Cisco uBR7225VXR router.
	• *slot* —Slot where the line card resides.
	  • Cisco uBR7246VXR router: The range is from 3 to 6.
	  • Cisco uBR7225VXR router: The range is from 1 to 2.
	• *port* —Downstream port number on the line card. The range is from 0 or 1.

cable *slot* /*subslot* /*cable-interface-index*	Identifies the cable interface on the Cisco cBR-8 router. • *slot* —Slot where the line card resides. The range is from 0 to 3 and 6 to 9. • *subslot* —Subslot where the line card resides. The value is 0. • *cable-interface-index* —Downstream cable interface index number on the line card. The range is from 0 to 15.

Command Default

None

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. Added support for Cisco uBR7246VXR and Cisco uBR7225VXR routers.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

The **show cable mac-domain cgd-associations** command displays the following information for each cable MAC domain:

- Shared port adapter (SPA) downstream channels that have been added to each MAC domain.
- Upstream channels associated with each SPA downstream channel and the downstream channels of the integrated cable interface line card.

If the All column in the command output indicates Y, then this indicates that all upstream channels associated with the line card downstream channels or SPA downstream channels are configured using the **upstream cable connector** command. If all upstream channels are not configured, then this column will not be displayed.

- The SPA downstream channels that are currently active.

A SPA downstream channel is active when the corresponding modular cable interface, which represents the SPA downstream channel, and its line protocol are up. A SPA downstream channel that is considered active is an operational primary downstream channel in the cable MAC domain.

Note For more information on Channel Grouping Domains, refer to the *Cisco DOCSIS 3.0 Downstream Solution Design and Implementation Guide, Release 2.0* .

Cisco IOS Release 12.3(23)BC

This example shows the output of the **show cable mac-domain cgd-associations** command for the cable interface line card at slot 6, subslot 0, and port 0:

```
Router# show cable mac-domain cable 6/0/0 cgd-associations
CGD Host  SPA    DS Channels             Upstreams (All)   Active Remote DS
Ca6/0/0          Local                   1            Y
          1/0/0 0-1                      0
```

Cisco IOS Release 12.2(33)SCB

This example shows the output of the **show cable mac-domain cgd-associations** command for the cable interface line card at slot 7, subslot 0, and port 0:

```
Router# show
 cable mac-domain Cable7/0/0 cgd-associations
CGD Host  Resource  DS Channels            Upstreams (AllUS)   Active Remote DS
Ca7/0/0   7/0/0     0                      0
          3/1/0     0-2                    0
                                                               0-2
```

Cisco IOS Release 12.2(33)SCG

This example shows the output of the **show cable mac-domain cgd-associations** command for the Cisco uBR-MC3GX60V cable interface line card sharing downstreams with the Cisco Wideband SPA, in Cisco IOS Release 12.2(33)SCG:

```
Router# show cable mac-domain cable 8/0/0 cgd-associations
```

```
CGD Host  Resource  DS Channels            Upstreams (AllUS)   Active Remote DS
Ca8/0/0   1/1/0     0                      0-3                    Yes
```

Table below describes the fields shown in the **show cable mac-domain cgd-associations command** display.

Table 2: show cable cgd-associations Field Descriptions

Field	Description
CGD Host	MAC domain interface for CGD.
Resource	Downstream cable interface line card.
DS Channels	Downstream RF channels.
Upstreams (AllUS)	Upstream channels in the MAC domain.
Active Remote DS	Active downstream channels.

Cisco cBR Series Converged Broadband Router

This example shows the output of the Cisco cBR-8 router

```
Router#show cable mac-domain c1/0/0 cgd-associations
CGD Host  Resource  DS Channels            Upstreams    (ALLUS)   Active DS
Ca1/0/0   1/0/0     8                      0-1          Yes        8
                    16                     0-1          Yes        16
                    24                     0-1          Yes        24
                    32-33                  0-1          Yes        32-33
                    40                     0-1          Yes        40


MD US binding:
Host MD           Controller  US channel    State
Ca1/0/0   U0         1/0/0         0          UP
Ca1/0/0   U1         1/0/0         1          UP
```

Related Commands

Command	Description
show cable mac-domain downstream-service-group	Displays MAC Domain Downstream Service Group information for the primary downstream channel.

show cable mac-domain cable downstream-service-group

To display MAC Domain Downstream Service Group information for a primary downstream channel, use the **show cable mac-domain downstream-service-group** command in privileged EXEC mode.

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers
show cable mac-domain cable *slot* / *port* **downstream-service-group**

Cisco uBR10012 Universal Broadband Router
show cable mac-domain cable *slot* / *subslot* / *port* **downstream-service-group**

Cisco cBR Series Converged Broadband Router
show cable mac-domain cable *slot* / *subslot* / *cable-interface-index* **downstream-service-group**

Syntax Description

slot	Slot where the line card resides. Cisco uBR7246VXR router—The range is from 3 to 6. Cisco uBR7225VXR router—The range is from 1 to 2. Cisco uBR10012 router—The range is from 5 to 8. Cisco cBR-8 router— The range is from 0 to 3 and 6 to 9
subslot	The subslot used for the cable interface line card. Cisco uBR10012 router—The range is from 0 or 1. Cisco cBR-8 router—The value is 0.
port	The downstream port used as a primary downstream channel. Valid values are from 0 to 4 (depending on the cable interface).
cable-interface-index	*cable-interface-index* —Downstream cable interface index number on the line card. Cisco cBR-8 router—The range is from 0 to 15.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced for the Cisco uBR10012 router.
12.3(23)BC	This command displays the MAC Domain Downstream Service Group information for primary downstream channels from the SPA as well as the Cisco uBR10-MC5X20 line card.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.

Release	Modification
12.2(33)SCD	This command was modified. Support was added for Cisco uBR7225VXR and Cisco uBR7246VXR routers.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

Use the **show cable mac-domain downstream-service-group** command to display MAC Domain Downstream Service Group (MD-DS-SG) information for the specified primary downstream channel.

For each fiber node, a traditional DOCSIS downstream channel on a Cisco uBR10-MC5X20 cable interface line card is used to carry MAC management and signaling messages, and the associated traditional DOCSIS upstream channel is used for return data traffic and signaling. The traditional DOCSIS downstream channel used in this way for a MAC domain is called the *primary downstream channel* .

Note Beginning in Cisco IOS Release 12.3(23)BC, either an RF channel from the SPA or a Cisco uBR10-MC5X20 downstream channel can serve as a primary channel in a fiber node. Changes in Cisco IOS Release 12.3(23)BC apply to Cisco IOS Release 12.2(33)SCB but do not apply to Cisco IOS Release 12.2(33)SCA.

Examples

The following two examples display **show cable mac-domain downstream-service-group** output for the primary downstream channel on the cable interface at slot/subslot/port 5/0/0:

Cisco IOS Release 12.3(21)BC

```
Router# show cable mac-domain cable5/0/0 downstream-service-group
Primary  MD-DS-SG         RF
IF       Id        SPA    Chan
C5/0/0   1         1/0/0  0 - 1
```

Cisco IOS Release 12.3(23)BC

```
Router# show cable mac-domain cable5/0/0 downstream-service-group
Cable    MD-DS-SG         RF       Local         Remote
IF       Id        SPA    Chan     Primary Chan  Primary Chan
C5/0/0   1         1/0/0  00-01    Yes
```

In the preceding examples, the MD-DS-SG with ID 1 is used for RF channels 0 and 1 on the Wideband SPA located in slot/subslot/bay 1/0/0.

Cisco IOS Release 12.2(33)SCB

This example shows the output of the **show cable mac-domain downstream-service-group** command for the primary downstream channel on the cable interface at slot/subslot/port 7/0/0:

```
Router# show cable mac-domain Cable7/0/0 downstream-service-group
Cable    MD-DS-SG             RF
IF       Id        Resource   Chan     Primary Chan
```

```
C7/0/0   1         3/1/0       00-02    0 1 2
                   7/0/0       00       0
```

Cisco IOS Release 12.2(33)SCD

This example shows the output of the **show cable mac-domain downstream-service-group** command for the primary downstream channel on the cable interface at slot/port 5/0:

```
Router# show cable mac-domain cable 5/0 downstream-service-group
Cable    MD-DS-SG             RF
IF       Id        Resource   Chan     Primary Chan
C5/0     1         5/0        00-03    0
```

Cisco IOS Release 12.2(33)SCG

This example shows the output of the **show cable mac-domain downstream-service-group** command for the Cisco uBR-MC3GX60V cable interface line card with primary downstream channel hosted on the Cisco Wideband SPA, in Cisco IOS Release 12.2(33)SCG:

```
Router# show cable mac-domain cable 8/0/0 downstream-service-group
Cable    MD-DS-SG             RF
IF       Id        Resource   Chan     Primary Chan
C8/0/0   1         1/1/0      00-03    0
                   1/3/0      00-03
                   7/0/0      00-03
                   8/0/2      00-03
```

Table below describes the fields shown in the **show cable mac-domain downstream-service-group command** display.

Table 3: show cable mac-domain downstream-service-group Field Descriptions

Field	Description
Cable IF	Cable interface.
MD-DS-SG	MAC Domain Downstream Service Group.
Resource	Downstream cable interface line card.
RF Chan	Downstream RF channel.
Primary Chan	Primary downstream channel.

Cisco cBR Series Converged Broadband Router

This example shows the output of the **show cable mac-domain downstream-service-group** command for the Cisco cBR Series Converged Broadband Router:

```
Router#show cable mac-domain c1/0/0 downstream-service-group
Cable    MD-DS-SG             RF
IF       Id        Resource   Chan     Primary Chan
C1/0/0
```

Related Commands

Command	Description
show cable modem	Displays information for registered and unregistered cable modems (including wideband cable modems).
show cable modem wideband	Displays information for registered and unregistered wideband cable modems.

show cable mac-domain cable dpd ocd

To display the MAC domain's OCD or DPD messages, use the **show cable mac-domain dpd | ocd** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable mac-domain cable *slot /subslot /cable-interface-index* {**dpd | ocd**} [**integrated-cable** *slot/card/port ofdm_channel*]

Syntax Description

slot/subslot/cable-interface-index	Identifies the cable interface on the Cisco cBR Series Converged Broadband Router.
slot/card/port	Specifies the integrated-cable interface.
ofdm_channel	Specifies the OFDM channel number.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0SP	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Examples

The following is a sample output of the **show cable mac-domain dpd** command:

```
Router# show cable mac-domain cable 3/0/0 dpd integrated-cable 3/0/0 158

DPD Message
  MAC Header
    Frame Control                  : 0xC2   (MAC specific, MAC msg, EHDR Off)
    MAC Parameters                 : 0x0
    Length                         : 34
    Header Check Sequence          : 0x61FC (25084)
  MAC Management Header
    Destination MAC ADDR           : 01e0.2f00.0001
    Source MAC ADDR                : c414.3c17.d1cb
    Length                         : 16
    Destination SAP                : 0
    Source SAP                     : 0
    Control                        : 3
    Version                        : 5
    Type                           : 50
    Multipart                      : 0    (Sequence number 0, Fragments 0)
  DPD fields
    DCID                           : 159
    Profile ID                     : 0
    CCC                            : 2
    TLV 5 Subcarrier Range/List    : Range (continuous)
      Modulation                   : 1024 (default value)
                                   : 0000 - 4095
DPD Message
```

```
  MAC Header
    Frame Control                  : 0xC2   (MAC specific, MAC msg, EHDR Off)
    MAC Parameters                 : 0x0
    Length                         : 34
    Header Check Sequence          : 0x61FC (25084)
  MAC Management Header
    Destination MAC ADDR           : 01e0.2f00.0001
    Source MAC ADDR                : c414.3c17.d1cb
    Length                         : 16
    Destination SAP                : 0
    Source SAP                     : 0
    Control                        : 3
    Version                        : 5
    Type                           : 50
    Multipart                      : 0    (Sequence number 0, Fragments 0)
  DPD fields
    DCID                           : 159
    Profile ID                     : 255
    CCC                            : 2
    TLV 5 Subcarrier Range/List    : Range (continuous)
      Modulation                   : 16 (default value)
                                   : 0000 - 4095
```

The following is a sample output of the **show cable mac-domain ocd** command:

```
Router# show cable mac-domain cable 3/0/0 dpd integrated-cable 3/0/0 158

OCD Message
  MAC Header
    Frame Control                  : 0xC2   (MAC specific, MAC msg, EHDR Off)
    MAC Parameters                 : 0x0
    Length                         : 132
    Header Check Sequence          : 0x5D3C (23868)
  MAC Management Header
    Destination MAC ADDR           : 01e0.2f00.0001
    Source MAC ADDR                : c414.3c17.d1cb
    Length                         : 114
    Destination SAP                : 0
    Source SAP                     : 0
    Control                        : 3
    Version                        : 5
    Type                           : 49
    Multipart                      : 0    (Sequence number 0, Fragments 0)
  OCD fields
    DCID                           : 159
    CCC                            : 2
    TLV 0 Spacing                  : 50 KHz
    TLV 1 Cyclic Prefix            : 1024 samples
    TLV 2 Rolloff                  : 128 samples
    TLV 3 Spectrum Location        : 572600000 Hz
    TLV 4 Interleave Depth         : 16
    TLV 5 Subcarrier Assignment    : Continuous Pilots (list)
      1164  1236  1308  1380  1452  1524  1596  1668  1740  1817
      1829  1840  1849  1886  1895  1906  1918  1932  2004  2076
      2148  2220  2292  2364  2436  2508  2580  2652  2724  2796
      2868  2940
    TLV 5 Subcarrier Assignment    : Excluded Subcarriers (range)
                                   : 0000 - 1127
    TLV 5 Subcarrier Assignment    : Excluded Subcarriers (range)
                                   : 2969 - 4095
    TLV 5 Subcarrier Assignment    : PLC Subcarriers (range)
                                   : 1864 - 1871
```

show cable mac-domain cable rcc

To display runtime receive channel configuration (RCC) on a cable line card interface, use the **show cable mac-domain rcc** command in privileged EXEC mode.

Cisco uBR7225VXR and Cisco uBR7246VXR Universal Broadband Routers
show cable mac-domain cable *slot* / *port* **rcc**

Cisco uBR10012 Universal Broadband Router
show cable mac-domain cable *slot* / *subslot* / *port* **rcc**

Cisco cBR Series Converged Broadband Router
show cable mac-domain cable *slot* / *subslot* / *cable-interface-index* **rcc**

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. • Cisco cBR-8 router—The valid range is 0 to 3 and 6 to 9.
subslot	Specifies the secondary slot number of the cable interface line card. Cisco uBR Series router—Valid subslots are 0 or 1. Cisco cBR-8 router—The valid value is 0.
port	Specifies the port number. Cisco uBR Series router—Valid values are 0 to 4 (depending on the cable interface). Cisco cBR-8 router—The valid range is 0 to 7.
cable-interface-index	Downstream port on the Cisco cBR router. The valid range is 0 to 15.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCD	This command was modified. Support was added for Cisco uBR7225VXR and Cisco uBR7246VXR routers.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Release	Modification
IOS-XE 3.18.0SP	This command was modified to show which RCC encoding formats are supported by a particular RCC.

Examples

The following is a sample output of the **show cable mac-domain rcc** command on the cable interface with the DOCSIS 3.0 encoding support and DOCSIS 3.1 simplified encoding support columns:

```
Router# show cable mac-domain cable 7/0/0 rcc

RCC-ID   RCP               RCs MD-DS-SG CMs   WB/RCC-TMPL      D3.0 D3.1
4        00 00 00 00 00    16  0        1     WB (Wi7/0/0:0)   Y    Y
5        00 00 00 00 00    25  0        2     WB (Wi7/0/0:1)   N    Y
6        00 10 00 00 08    8   0        0     RCC-TMPL(3:1)    Y    N
7        00 00 00 00 00    4   0        0     WB (Wi7/0/0:4)   Y    Y
```

The following is a sample output of the **show cable mac-domain rcc** command on the cable interface of the cBR-8 router:

```
Router# show cable mac-domain cable 8/0/0 rcc
RCC-ID   RCP               RCs MD-DS-SG CMs   WB/RCC-TMPL
1        00 00 00 00 00    2   0        0     WB (101)
2        00 10 00 00 03    3   2        0     RCC-TMPL (1)
```

The following is a sample output of the **show cable mac-domain rcc** command on the cable interface of the uBR10012 router:

```
Router# show cable mac-domain cable 1/0 rcc
RCC-ID   RCP               RCs MD-DS-SG CMs   WB/RCC-TMPL
1        00 00 00 00 00    3   0        3     WB (25)
```

Table below describes the significant fields shown in the display.

Table 4: Field Descriptions for show cable mac-domain rcc Command

Field	Description
RCC-ID	RCC index per MAC domain. The RCC ID refers to the RCC ID output from the **show cable modem wideband** command.
RCP	The receive channel profile associated with the RCC object.
RCs	Total number of DS channels.
MD-DS-SG	Indicates the MAC domain DS service group for which the RCC is generated.
CM	Total number of CMs associated with the RCC object.
WB/RCC-TMPL	Indicates the wideband interface or the RCC template.
D3.0	DOCSIS 3.0 encoding support details.
D3.1	DOCSIS 3.1 simplified encoding support

Note A zero value in the RCP or MD-DS-SG field indicates that the RCC is generated directly through a wideband interface configuration and not through any RCC templates.

Note The channels in this command output are the subset of channels in the REG-RSP-MP.

Related Commands

Command	Description
show interface resil-rf-status	(On the Cisco cBR-8 router) Displays the logical up and down state for each of the configured RF channels for a wideband interface.
show controller integrated-Cable rf-channel	Displays the RF channel information.
show interface rf-status	(Cisco uBR Series router) Displays the logical up and down state for each of the configured RF channels for a wideband interface.
show cable modem path-sel	Displays the path selection status of a cable modem.
clear cable modem path-sel	Clears the path selection status of a cable modem.
show cable mac domain rcc simplified	Shows detailed information for DOCSIS 3.1 capable RCC.

show cable mac-domain cable rcc simplified

To view a detailed information for only DOCSIS 3.1 capable RCC, use the **show cable mac-domain rcc simplified** command, in privileged EXEC mode.

show cable mac-domain cable *slot* / *subslot* / *cable-interface-index* **rcc** *rcc id* **simplified**

Syntax Description

slot	Slot where the line card resides. The valid range is 0 to 3 and 6 to 9.
subslot	Specifies the secondary slot number of the cable interface line card. The valid value is 0.
cable-interface-index	Downstream port on the Cisco cBR-8 router. The valid range is 0 to 15.
rcc id	RCC ID.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use this command to view a detailed information for only DOCSIS 3.1 capable RCC. If you attempt to display the details of an RCC that is not DOCSIS 3.1 capable, an error message is displayed.

The following is a sample output of the **show cable mac-domain rcc simplified** command.

```
router#show cable mac-domain cable 7/0/0 rcc 5 simplified

RCC ID                  : 5
Created Via             : Wideband - Wi7/0/0:1
CM attribute mask       : 0x80000000

Primary Receive Channel List:
  Chan Idx   RF Chan         DCID  Freq
  1          In7/0/0:0       1     453000000

Non-Primary Receive Channel List:
  Chan Idx   RF Chan         DCID  Freq
  2          In7/0/0:1       2     459000000
  3          In7/0/0:2       3     465000000
  4          In7/0/0:3       4     471000000
  5          In7/0/0:4       5     477000000
  6          In7/0/0:5       6     483000000
  7          In7/0/0:6       7     489000000
  8          In7/0/0:7       8     495000000
  9          In7/0/0:8       9     501000000
  10         In7/0/0:9       10    507000000
  11         In7/0/0:10      11    513000000
  12         In7/0/0:11      12    519000000
  13         In7/0/0:12      13    525000000
```

```
  14          In7/0/0:13      14    531000000
  15          In7/0/0:14      15    537000000
  16          In7/0/0:15      16    543000000
  17          In7/0/0:16      17    549000000
  18          In7/0/0:17      18    555000000
  19          In7/0/0:18      19    561000000
  20          In7/0/0:19      20    567000000
  21          In7/0/0:20      21    573000000
  22          In7/0/0:21      22    579000000
  23          In7/0/0:22      23    585000000
  24          In7/0/0:23      24    591000000
  25          In7/0/0:158     159   663000000

OFDM Receive Channel List:
  Chan Idx    RF Chan         DCID  PLC-Freq        Profiles
  25          In7/0/0:158     159   663000000       0 1 2
```

The following is an example of the error message received when you attempt to display the details of an RCC that is not DOCSIS 3.1 capable

```
router#show cable mac-domain cable 7/0/0 rcc 6 simplified

% RCC ID 6 is not DOCSIS 3.1 applicable.
% Only legacy format is available for this RCC
```

Related Commands

Command	Description
clear cable modem path-sel	Clears the path selection status of a cable modem.
show cable mac-domain rcc	Displays runtime receive channel configuration (RCC) on a cable line card interface.
show cable modem path-sel	Displays the path selection status of a cable modem.

show cable mac-domain cable upstream-service-group

To display runtime statistics of the MAC domain upstream service group on a cable interface line card, use the **show cable mac-domain upstream-service-group** command in privileged EXEC mode.

show cable mac-domain cable *slot /subslot /port* **upstream-service-group**

Syntax Description

slot	Chassis slot number of the cable interface line card. Cisco uBR10012 router—The range is from 0 to 8. Cisco cBR-8 router— The range is from 0 to 3 and 6 to 9
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 router—The range is from 0 or 1. Cisco cBR-8 router—The value is 0.
port	Port number. The range is from 0 to 4 (depending on the cable interface).
cable-interface-index	*cable-interface-index* —Downstream cable interface index number on the line card. Cisco cBR-8 router—The range is from 0 to 15.
upstream-service-group	Specifies the upstream service group number.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays privacy information of a particular CM, identified by its IP address or MAC address.

Examples

The example shows the output of the **show cable mac-domain upstream-service-group** command on the cable interface line card at slot/subslot/port 7/1/0:

```
Router# show cable mac-domain cable 7/1/0 upstream-service-group
Cable MD 7/1/0
US-SG-ID  : 1         US-Chan : U0,1,2,3,4
Primary-DS: 5/1/0:0   US-SG-ID: 1
  MDD US-List   : U0,1,2,3
  MDD Ambiguity : U0,1,2,3
Primary-DS: 3/0/0:0   US-SG-ID: 1
  MDD US-List   : U0,1,2,3,4
  MDD Ambiguity : U0,1,2,3,4
Primary-DS: 3/0/0:1   US-SG-ID: 1
  MDD US-List   : U0,1,2,3,4
```

```
  MDD Ambiguity : U0,1,2,3,4
Primary-DS: 3/0/0:2   US-SG-ID: 1
  MDD US-List   : U0,1,2,3,4
  MDD Ambiguity : U0,1,2,3,4
Primary-DS: 3/0/0:3   US-SG-ID: 1
  MDD US-List   : U0,1,2,3,4
  MDD Ambiguity : U0,1,2,3,4
```

Table below describes the significant fields shown in the display.

Table 5: show cable mac-domain upstream-service-group Field Descriptions

Field	Description
US-SG-ID	Upstream service group ID.
US-chan	Total number of upstream channels on the cable interface line card.
Primary-DS	The primary downstream interface.
MDD US-List	MAC management message: MDD TLV type 7 content, upstream active channel list.
MDD Ambiguity	MAC management message: MDD TLV type 8 content, upstream ambiguity resolution channel list.

This example shows the output of the **show cable mac-domain upstream-service-group** command for the Cisco cBR Series Converged Broadband Router:

```
Router#show cable mac-domain c1/0/0 upstream-service-group
Cable MD 1/0/0
```

Related Commands

Command	Description
show interface rf-status	Displays the logical up and down states for each of the configured RF channels on a wideband interface.

show cable mac-domain fiber-node

To verify the interface associations, use the **show cable mac-domain fiber-node** command.

show cable mac-domain fiber-node *fiber-node id* **md** *mac-domain id* {**downstream-service-group** | **upstream-service-group**}

Syntax Description

fiber-node id	Fiber node ID.
mac-domain id	MAC Domain ID in SG profile.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 3.17.0S	This command was introduced.

Usage Guidelines

Use this command to verify the interface associations of a fiber node and MAC domain downstream or upstream service group.

```
Router#show cable mac-domain fiber-node 1 md 0 downstream-service-group
Cable    MD-DS-SG              RF
IF       Id        Resource    Chan     Primary Chan
C2/0/0   1         2/0/6       0-31     0-15
Router#
```

```
Router#show cable mac-domain fiber-node 1 md 0 upstream-service-group
Cable MD 2/0/0
  US-SG-ID  : 8         US-Chan : U0,1,2,3
  Primary-DS: 2/0/6:0   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:1   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:2   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:3   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:4   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:5   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:6   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:7   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:8   US-SG-ID: 8
```

```
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:9   US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:10  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:11  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:12  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:13  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:14  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 2/0/6:15  US-SG-ID: 8
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
Router#
```

show cable mac-domain docsis-mode

To view detailed information about the DOCSIS mode on cBR-8 routers, use the **show cable mac-domain docsis-mode** command, in privileged EXEC mode.

show cable mac-domain { **cable** *slot / subslot / cable-interface-index* | **all** }

Syntax Description

docsis-mode	DOCSIS Mode Information
cable	CMTS Interface
slot	Slot where the line card resides. The valid range is 0 to 3 and 6 to 9.
subslot	Specifies the secondary slot number of the cable interface line card. The valid value is 0.
cable-interface-index	Downstream port on the Cisco cBR-8 router. The valid range is 0 to 31.
all	Displays DOCSIS Mode for all MAC Domains

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use this command to view detailed information about the DOCSIS mode.

The following is a sample output of the **show cable mac-domain docsis-mode C1/0/0** command. This command displays the DOCSIS mode for the specified interface *C1/0/0*.

```
router#show cable mac-domain docsis-mode C1/0/0
Interface    MRC Mode    MTC Mode         D31 Config   D31 Mode    D40 Config   D40 Mode
Cable1/0/0   enabled     MTC_PERMIT_ALL   enabled      enabled     disabled     disabled
```

The following is a sample output of the **show cable mac-domain docsis-mode all** command which displays DOCSIS mode for all the interfaces.

```
router#show cable mac-domain docsis-mode all
Interface    MRC Mode    MTC Mode         D31 Config   D31 Mode    D40 Config   D40 Mode
Cable0/0/0   enabled     MTC_PERMIT_ALL   enabled      enabled     enabled      enabled

Cable0/0/1   enabled     MTC_PERMIT_ALL   enabled      enabled     enabled      enabled

Cable0/0/2   enabled     MTC_PERMIT_ALL   enabled      enabled     enabled      enabled

Cable0/0/3   enabled     MTC_PERMIT_ALL   enabled      enabled     enabled      enabled

Cable0/0/4   enabled     MTC_PERMIT_ALL   enabled      enabled     enabled      enabled
```

```
Cable0/0/5   enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/6   enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/7   enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/8   enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/9   enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/10  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/11  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/12  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/13  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/14  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable0/0/15  enabled     MTC_PERMIT_ALL   enabled     enabled     enabled     enabled
Cable1/0/0   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/1   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/2   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/3   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/4   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/5   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/6   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/7   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/8   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/9   enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
Cable1/0/10  enabled     MTC_PERMIT_ALL   enabled     enabled     disabled    disabled
```

Related Commands

Command	Description
show cable mac-domain fiber-node	Displays interface associations of a fiber node and MAC domain downstream or upstream service group.

show cable mcast-shadow

To display information about multicast dataplane shadow, use the **show cable mcast-shadow** command in privileged EXEC mode.

show cable mcast-shadow [{**bundle** *bundle interface number* {*source ipv4 address group ipv4 address* }} | {*source ipv6 address group ipv6 address* }}]

Syntax Description

bundle *bundle interface number*	Specifies bundle interface number. The value ranges from 1 to 255.
source ipv4 address	The source ipv4 address.
group ipv4 address	The group ipv4 address.
source ipv6 address	The source ipv6 address.
group ipv6 address	The group ipv6 address.

Command Default

none

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on Cisco cBR8 Series Converged Broadband Routers.

Usage Guidelines

The **show cable mcast-shadow** command is used to display the contents of the multicast data plane shadow.

Examples

The following example shows a typical display for the **show cable mcast-shadowbundle** *bundle interface number* command for all cable interfaces:

```
Router#  show cable mcast-shadow bundle 1 0.0.0.0 225.1.1.1
 Load for five secs: 2%/0%; one minute: 3%; five minutes: 3%
Time source is NTP, 15:49:24.928 CST Mon Mar 16 2015

Source          Group           Interface    VRF PathSetId  Adj-id
-----------------------------------------------------------------
0.0.0.0         225.1.1.1       Bu1          0   2          0x20000099
0x20000011
                000000060EE4E000000000000000000 (00 00 00 0)
                000000060EE4E000000000000000000 (00 00 00 2204106752)
                000000060EE4E400000000000000000 (00 00 00 2204350777)
                                In6/0/0:1    0              0x20000012
                000000060EE4E800000000000000000 (00 00 00 0)
                000000060EE4E800000000000000000 (00 00 00 2204106753)
                000000060EE4EC00000000000000000 (00 00 00 2204350779)
```

Related Commands

Command	Description
show cable multicast db	Displays the contents of the multicast explicit tracking database.

Command	Description
show interface IC multicast-sessions	Displays the contents of multicast sessions created on the interface.
show policy-map target	Displays the contents of policy-map for this multicast session..

show cable metering-status

To display information about the most recent successful usage-based billing operation, use the **show cable metering-status** command in privileged EXEC mode.

show cable metering-status [**verbose**]

Syntax Description

verbose	(Optional) Displays the information in a more readable format.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(9a)BC	This command was introduced.
12.2(33)SCB	SAMIS over Internet Protocol Detail Record (IPDR) was introduced.

Usage Guidelines

The **show cable metering-status** command displays information about the most recent successful usage-based billing operation. If usage-based billing is configured for File mode, this command displays the device and file name for the record that was last written. If usage-based billing is configured for Streaming mode, this command displays the IP address and port number for the external server to which the billing record was sent.

Note This command displays the status of the last successful billing record operation. If a failure occurred, the CMTS sends an SNMP trap to the SNMP manager with that information.

Examples

This example shows a typical output for the **show cable metering-status** command when usage-based billing is configured to write the billing records to a local file system:

```
Router# show cable metering-status
destination                       complete-time   flow cpe  status
                                                  aggr supp
disk0:R7519-UBR7246-200308-004428 Jun 12 09:33:05  No    No  success
```

This example shows a typical output for the **show cable metering-status** command when usage-based billing is configured to stream the billing records to an external server:

```
Router# show cable metering-status

destination                       complete-time   flow cpe  status
                                                  aggr supp
10.11.37.2 :1234                  Jun 12 09:33:05  No   No  success
```

This example shows a typical output for the verbose form of the **show cable metering-status** command:

```
Router# show cable metering-status verbose
```

```
Destination            : disk0:R7519-UBR7246-20000308-004428
Complete Time          : Jun 12 09:33:05
Flow Aggregate         : Yes
Cpe list suppression   : Yes
Status of last export  : success
```

This example shows a typical output for the **show cable metering-status** command when usage-based billing is configured to use the Internet Protocol Detail Record (IPDR) Exporter to stream the billing records to an external server:

```
Router# show cable metering-status
destination                       complete-time   flow cpe  status
                                                  aggr supp
IPDR_Session1         Jun 12 09:33:05  N/A N/A success
```

This example shows a typical output for the verbose form of the **show cable metering-status** command when usage-based billing is configured to use the IPDR Exporter to stream the billing records to an external server:

```
Router# show cable metering-status
 verbose

Last export status
Destination            : IPDR_Session1
Complete Time          : Jun 12 09:36:05
Status of last export  : success
```

This example shows the error message that is displayed when you enter the **show cable metering-status** command but not have enabled usage-based billing:

```
Router# show cable metering-status
CMTS Metering collection not enabled
```

This example shows if the SAMIS report failed, the output displays the details of the failure:

```
Router# show cable metering-status
 verbose
Load for five secs: 0%/0%; one minute: 1%; five minutes: 0%
Time source is NTP, .19:24:53.955 PDT Fri Jun 11 2010
Last export status
Destination            : 20.1.0.2:5959
Complete Time          : Jun11 19:24:40
Flow Aggregate         : No
Full records           : Yes
Cpe list suppression   : No
Source interface       : GigabitEthernet0/1
Status of last export  : write-error (bulk-data)
```

Table below describes the fields displayed by the **show cable metering-status** command.

Table 6: show cable metering-status Field Descriptions

Field	Description
destination, Destination	Destination for the billing records. This is a file system device name and file name, if records are being written to a local file system, or an IP address and TCP port number, if records are being streamed to an external server.

Field	Description
complete_time, Complete Time	Date and time when the last billing record was written to a local file or streamed to an external server.
flow aggr, Flow Aggregate	Indicates whether traffic counters are aggregated in the billing records, so that one total is recorded for the upstream service flows and downstream service flows for each CM.
cpe suppress, CPE list suppression	Indicates whether CPE IP addresses are included or suppressed in the billing records: • Yes — CPE addresses are suppressed and are not included in the billing records. • No— CPE addresses are included in the billing records.
status, Status of last export	Indicates the status of the last billing operation: • success—The billing records were successfully written to the filesystem (file mode) or transferred to the billing collection server (streaming mode). • connect-failed—The CMTS was able to open the proper socket connection to the server but could not connect to the server. • data-incomplete—A failure occurred during the file write or the streaming to the collection server, and the records that were written might be incomplete. • disk-full—The billing records could not be written because the filesystem does not have sufficient free space. • no-memory—The processor had insufficient memory to collect the billing records. • open-failure—The transfer failed because the CMTS could not open a new file on the filesystem (file mode) or open a socket to the destination IP address and port (streaming mode). • unknown—An unknown error occurred. • write-error (*data-type*)—The operating system reported an error when attempting to write the billing records (file mode), or the send to the destination socket failed (streaming mode). • The value of data-type could be *file-header* , *file-end* , *bulk-data* , *sflog* , *bulk-data* , *ipdr-data* , *ipdr-sflog* , or *ipdr-file* .

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the **show cable metering-status** command on the Cisco cBR router for Collector configuration—ipdr-d3, session 1, type 1 collecting full-records, as follows:

```
Router#show cable metering-status
destination                       complete-time   flow  cpe   full  status
                                                  aggr  supp  rec
IPDR_Session1                     May21 13:27:04  No    N/A   Yes  connect-failed

Router#
```

Related Commands

Command	Description
cable metering destination	Enables usage-based billing and streams the billing records to an external server.
cable metering filesystem	Enables usage-based billing and writes the billing records to a file on a local file system.
cable metering source-interface	Enables debugging of usage-based billing operations.
snmp-server enable traps cable	Enables the sending of Simple Network Management Protocol (SNMP) traps for cable-related events.

show cable modem

To display information for the registered and unregistered cable modems, use the **show cable modem** command in privileged EXEC mode.

show cable modem [{*ip-addressmac-address* | **cable** {*slot* /*port* | *slot* /*subslot*/*port* } [**upstream** *port*]}] **queue** [**verbose**] [**cm-status**]

Cisco IOS Release 12.2(33)SCE and later releases
show cable modem [{**ip-address** | **mac-address** | **cable** {*slot* /*cable-interface-index* | *slot* /*subslot* /*cable-interface-index*} [**upstream** *port*]}] [**verbose**] [**cm-status**]

Cisco cBR Series Converged Broadband Router
show cable modem [{**ip-address** | **mac-address** | **cable** {*slot* /*subslot* /*cable-interface-index*} [**upstream** *port*]}] [**verbose**] [**cm-status**]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific cable modem to be displayed. If you specify the IP address for a CPE device behind a cable modem, information for that cable modem is displayed.
mac-address	(Optional) MAC address of a specific cable modem to be displayed. If you specify the MAC address for a CPE device behind a cable modem, information for that cable modem is displayed.
cable	(Optional) Displays the modems on a specific cable interface.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR router—The valid range is 0 to 3 and 6 to 9.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR router—The valid range is 0 to 15.
upstream *port*	(Optional) Displays information for all cable modems using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. Cisco cBR router—The valid range of *port* is 0 to 7.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This keyword is not supported on the Cisco cBR router.
verbose	Displays detailed information of the cable modems.
cm-status	Displays cable modem status events.
cm-status ack	Displays the modems to which cable modem status acknowledgement messages are sent.
queue	Displays the downstream hierarchical queueing framework (HQF) queue information for a cable modem. This keyword is not supported on the Cisco cBR router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This keyword is not supported on the Cisco cBR router.

Command Modes

Privileged EXEC (#)

Command History

BC Release	Modification
12.2(15)BC1	Additional lines were added to the **show cable modem verbose** displays, for one or all cable modems, to show information about the dynamic shared-secret feature. Cable modems that fail the dynamic secret authentication checks and then come online are marked with an exclamation point (!), so that this situation can be investigated.
12.2(4)BC1	Support was added for the Cisco uBR10012 router.

BC Release	Modification
12.2(8)BC2	The output for the Online State field was updated for the **cable tftp-enforce** command. A pound sign (#) appears next to the state value when a cable modem was allowed to come online without attempting to download a DOCSIS configuration file through the cable interface with the Cisco CMTS.
12.2(15)BC1c	The **verbose** option displays whether dynamic service change requests (DSX) are allowed from cable modems.
12.2(15)BC2	Two new states—cc(r1) and cc(r2)—have been added to the cable modem MAC state field to indicate the cable modem status when it has been instructed to change channels and is ranging to obtain a new downstream or upstream channel. Also, three new states—online(pkd), online(ptd), and expire(pkd)—were added to clarify the BPI state when network access has been disabled in the cable modem's DOCSIS configuration file. In addition, the **show cable modem verbose** command now displays the total amount of time that a cable modem has been online since last registering.
12.3(13a)BC	New initialization states were added for the MAC State Field: • init(d)—The Cisco CMTS has seen DHCPDISCOVER • init(io)—The Cisco CMTS has seen DHCPOFFER • init(dr)—The Cisco CMTS has seen DHCPREQUEST • init(i)—The Cisco CMTS has seen DHCPACK • init(o)—The Cisco CMTS has seen first TFTP packet for TFTP request for cable modem configuration file • init(t)—The Cisco CMTS has seen the TOD request
12.3(21)BC	All cable bundles are now automatically converted and configured to be in a virtual bundle, and standalone cable interfaces must be manually configured to be in a virtual bundle to operate properly. Previously, new virtual interface bundles and bundle members required reconfiguration, and there could also be standalone interfaces not part of a bundle at all.
12.3(23)BC	The **verbose** option displays additional information about the cable modem. The following fields have been added to the output of this option: • Host Interface • Primary Downstream • Wideband Capable • Voice Enabled • DS Change Times
C Release	Modification

BC Release	Modification
12.1(4)CX	Support was added for the Cisco uBR10012 router.
12.2(15)CX	The **verbose** option displays the sysDescr field for each cable modem, when the **cable modem remote-query** command has been configured. Other fields have also been added to support DOCSIS 2.0 (ATDMA) operation.
E Release	Modification
12.1(10)EC1	Adds an exclamation point to cable modems that have exceeded the maximum delay/timing offset specified by the **cable map-advance** command.
12.1(11b)EC1	The output for the Online State field was updated for the **cable tftp-enforce** command. A pound sign (#) appears next to the state value when a cable modem was allowed to come online without attempting to download a DOCSIS configuration file through the cable interface with the Cisco CMTS.
12.1(20)EC1	The three new states—online(pkd), online(ptd), and expire(pkd)—were added to the Cisco IOS Release 12.1 EC train.
N Release	Modification
11.3(5)NA	The output was reorganized and the Receive Power field was added.
T Release	Modification
2.1(1a)T1	The output of this command was enhanced to show that the Cisco CMTS has detected an unstable return path for a particular cable modem and has compensated with a power adjustment. An asterisk (*) appears in the power adjustment field for a modem when a power adjustment has been made; an exclamation point (!) appears when the cable modem has reached its maximum power transmit level and cannot increase its power level further.
12.0(7)T	The **detail** option was replaced with the **verbose** option.
X Release	Modification
11.3XA	This command was introduced.
12.0(4)XI	The output was expanded to show the primary service identifier (SID) and the customer premises equipment (CPE) count.
12.0(7)XR	The output of this command was enhanced to show that the Cisco CMTS has detected an unstable return path for a particular cable modem and has compensated with a power adjustment. An asterisk (*) appears in the power adjustment field for a modem when a power adjustment has been made; an exclamation point (!) appears when the cable modem has reached its maximum power transmit level and cannot increase its power level further.
SC Release	Modification

BC 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.
	• Support for specifying the IPv6 address of a cable modem or CPE device was added.
	• The **name** keyword option was added for specifying the fully-qualified domain name of a cable modem.
	• The output column spacing and headings were changed, including some of the following changes:
	  • "BPI Enb" has been changed to "BPI"
	  • "DIP" output field was added to indicate support of dual IP for both IPv4 and IPv6 addressing.
	• The following new initialization states were added to show initialization of cable modems 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)SCB	A new keyword, **cm-status**, was added to display cable modem status events.
12.2(33)SCC	This command was modified with the following changes: • The command output displays the cable modem attribute bitmasks. • The command output provides basic receive-statistics for all event code types of the specified cable modem.
12.2(33)SCD	This command was modified. The cm-status keyword was added to display the cable modem status events and the queue keyword was added to display downstream HQF queue information on the Cisco uBR7225VXR and Cisco uBR7246VXR routers.
12.2(33)SCD2	This command was modified. The command output was modified to display the cable modems that are in upstream and downstream partial service mode.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCE4	This command was modified. The command output displays online time of the modem since the last counter reset, along with the total time online.

BC Release	Modification
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added. The **show cable modem verbose** command output was modified to display the downstream channel information for the cable modems.
12.2(33)SCH	The **show cable modem verbose** command output was modified to display the ranging class ID of a cable modem.
12.2(33)SCG5	The output of the command with the **verbose** keyword was modified to display the status of the Upstream Drop Classifier (UDC) feature. The field "UDC Enabled" was added in the output.
12.2(33)SCH1	The output of the command with the **verbose** keyword was modified to display the following: • The channel IDs for 16 downstream channels and channel information for 4 upstream channels on the Cisco uBR10012 routers using PRE4 or versions later than PRE4, and Cisco uBR7200 series routers using NPE-G2. • The number of IPv6 addresses per cable modem and the maximum values.
12.2(33)SCH2	The output of the command with the **verbose** keyword was modified to display the channel IDs for 24 downstream channels and the channel information for 8 upstream channels on the Cisco uBR10012 routers using PRE4 or versions later than PRE4, and Cisco uBR7200 series routers using NPE-G2.
12.2(33)SCI2	This command was integrated into Cisco IOS Release 12.2(33)SCI2.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **name**, **queue** keyword and the *logical-channel-index* variable were removed.
IOS-XE 3.16.0S	The output of the command was modified to display the battery backup mode for MAC state. The output of the command with **verbose** keyword was modified to display battery mode and battery mode status.
IOS-XE 3.18.0S	The output of the command was modified to display the energy management mode for MAC state. The output of the command with **verbose** keyword was modified to display energy management mode and energy management mode status.
IOS-XE 3.18.0SP	The output of the command with the **verbose** keyword was modified to display the new DOCSIS 3.1 Commanded Power levels per upstream.
IOS-XE 16.6.1	The output of the command with the **verbose** keyword was modified to display the cable modem's CM-STATS-ACK capability. A new keyword, **ack**, was added to display cable modems to which cable modem status acknowledgement messages are sent.
IOS XE Amsterdam 17.3.1w	The output of the command was updated to include the partial mode description.
IOS XE Bengaluru 17.6.1x	The output of the command was updated to display more detailed CM-STATUS event history.

Usage Guidelines

This command displays information for all cable modems, for all cable modems attached to a specific CMTS cable interface, or for a particular cable modem, identified by its IP address, MAC address, or its domain name. The output is sorted by the cable interface and the cable modem's MAC address.

Note The upstream channel list displayed by **show cable modem** *ip-address/mac-address* [**verbose**]command is the subset of upstream service flow forwarding interface channel set of the cable modem.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Tip Several options in the **show cable modem** command do not pause the screen to display the information page by page, even if the **terminal length** command has been used to set the page size of your terminal. Paging and pausing the display could result in outdated or stale information for cable modems, and thus produce an incorrect snapshot of the current cable modem state of the system. To capture or review this information, use your terminal program's capture buffer to save the information to a file, and then review it offline.

Tip You can also specify the MAC address or IP address for a CPE device, and the Cisco CMTS will display the information for the cable modem that is associated with that CPE device in its internal database.

Note If the CPE IP address is no longer associated with a cable modem, the **show cable modem** command might not display information about the cable modem. To display the IP address of the CPE device for the cable modem, use the **clear cable host** *ip-address* command to clear the IP address of the modem from the router database, and then enter the **ping docsis** *mac-address* command, which resolves the MAC address by sending the DOCSIS ping to the CM.

Note When an IPv4 CPE is moved from one bundle interface to another bundle interface, the **show cable modem** command displays duplicate CPE device under the original modem and new modem. CPE ping may also fail. To prevent duplication, use the **clear cable host** command to manually remove the old CPE device entry before moving the IPv4 CPE from one bundle interface to another. Reload the CPE after moving it to another bundle interface.

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*

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

Operation of the show cable modem Commands with Different Cable Interface Line Cards

The **show cable modem** commands display the most current information for standard cable interface line cards. If the card itself is down, the **show cable modem** commands still show whatever information is appropriate (such as offline cable modems and flap list information).

The **show cable modem** commands function slightly different when used on routers that are using Broadband Processing Engine (BPE) cable interface line cards (such as the Cisco uBR-MC16U/X, Cisco uBR-MC28U/X, or Cisco uBR10-MC5X20S/U/H). When BPE cards are the only cable interface cards installed, the **show cable modem** commands do not display any output until at least one BPE card is up and communicating with the router processor. If the BPE cards are not yet up, the **show cable modem** command does not display any output.

Note The **hccp** commands are not supported on the Cisco cBR router for Cisco IOS-XE 3.15.0S.

Example of the show cable modem Command Output for all cable modems

The following sample output from the **show cable modem** command shows the default cable modem displays for individual cable modems.

```
Router# show cable modem

MAC Address    IP Address      I/F     MAC         Prim RxPwr Timing Num  BPI
                                       State       Sid  (db)  Offset CPEs Enbld
0010.7b6b.58c1 0.0.0.0         C4/0/U5 offline     5   -0.25  2285   0    yes
0010.7bed.9dc9 0.0.0.0         C4/0/U5 offline     6   -0.75  2290   0    yes
0010.7bed.9dbb 0.0.0.0         C4/0/U5 offline     7    0.50  2289   0    yes
0010.7b6b.58bb 0.0.0.0         C4/0/U5 offline     8    0.00  2290   0    yes
0010.7bb3.fcd1 10.20.113.2     C5/0/U5 online      1    0.00  1624   0    yes
0010.7bb3.fcdd 0.0.0.0         C5/0/U5 init(r1)    2   -20.00 1624   0    no
0010.7b43.aa7f 0.0.0.0         C5/0/U5 init(r2)    3    7.25  1623   0    no
```

Example of the show cable modem Command for a Specified MAC Address

```
Router# show cable modem 0010.7bb3.fcd1

MAC Address    IP Address      I/F     MAC         Prim RxPwr Timing Num  BPI
                                       State       Sid  (db)  Offset CPEs Enbld
0010.7bb3.fcd1 10.20.113.2     C5/0/U5 online      1    0.00  1624   0    Y
```

Example of the show cable modem Command for all cable modems on a Cisco uBR10012 Router

The following shows a typical display for a Cisco uBR10012 router:

Note The asterisk(*) in the Primary SID (Prim Sid) field indicates that the modem has service flows with zero blaze index in Cisco IOS Release 12.3(23)BC. In Cisco IOS Release 12.2(33)SCB and later, the asterisk that may appear in the Primary SID field does not signify anything.

```
Router# show cable modem
MAC Address    IP Address      I/F       MAC         Prim RxPwr  Timing  Num BPI
                                         State       Sid  (db)   Offset  CPE Enb
0010.9507.01db 144.205.151.130 C5/1/0/U5 online(pt)  1     0.25    938   1    N
0080.37b8.e99b 144.205.151.131 C5/1/0/U5 online      2    -0.25   1268   0    N
0002.fdfa.12ef 144.205.151.232 C6/1/0/U0 online(pt)  13   -0.25   1920   1    N
0002.fdfa.137d 144.205.151.160 C6/1/0/U0 online      *16   -0.50   1920   1    N
0003.e38f.e9ab 144.205.151.237 C6/1/0/U0 online      3    -0.50   1926   1    N
0003.e3a6.8173 144.205.151.179 C6/1/1/U2 offline     *4    0.50    1929   0    N
0003.e3a6.8195 144.205.151.219 C6/1/1/U2 online(pt)  22   -0.50   1929   1    N
0006.28dc.37fd 144.205.151.244 C6/1/1/U2 online(pt)  61    0.00    1925   2    N
0006.28e9.81c9 144.205.151.138 C6/1/1/U2 online(pt)  2    !0.75    1925   1    N
0006.28f9.8bbd 144.205.151.134 C6/1/1/U2 #online     25   -0.25   1924   1    N
0006.28f9.9d19 144.205.151.144 C6/1/1/U2 online(pt)  28    0.25    1924   1    N
0010.7bed.9b6d 144.205.151.228 C6/1/1/U2 online(pt)  59    0.25    1554   1    N
0002.fdfa.12db 144.205.151.234 C7/0/0/U0 online      15   -0.75   1914   1    N
0002.fdfa.138d 144.205.151.140 C7/0/0/U5 online      4     0.00    1917   1    N
0003.e38f.e85b 144.205.151.214 C7/0/0/U5 online      17   *0.25    1919   1    N
0003.e38f.f4cb 144.205.151.238 C7/0/0/U5 online(pt)  16    0.00   !2750   1    N
0003.e3a6.7fd9 144.205.151.151 C7/0/0/U5 online      1     0.25    1922   0    N
0020.4005.3f06 144.205.151.145 C7/0/0/U0 online(pt)  2     0.00    1901   1    N
0020.4006.b010 144.205.151.164 C7/0/0/U5 online(pt)  3     0.00    1901   1    N
0050.7302.3d83 144.205.151.240 C7/0/0/U0 online(pt)  18   -0.25   1543   1    N
00b0.6478.ae8d 144.205.151.254 C7/0/0/U5 online(pt)  44    0.25    1920   21   N
00d0.bad3.c0cd 144.205.151.149 C7/0/0/U5 online      19    0.25    1543   1    N
00d0.bad3.c0cf 144.205.151.194 C7/0/0/U0 online      13    0.00    1546   1    N
00d0.bad3.c0d5 144.205.151.133 C7/0/0/U0 online      12   *0.50    1546   1    N
```

Example of show cable modem Command When no cable modems are Online

The following example shows sample output when the cable interface line cards are up, but no cable modems are yet online:

```
Router# show cable modem
```

```
MAC Address    IP Address      I/F       MAC         Prim RxPwr  Timing  Num BPI
                                         State       Sid  (db)   Offset  CPE Enb
```

Example of show cable modem Command When no Cable Interface Line Cards are Up

The following example shows sample output when the Cisco CMTS router contains only Broadband Processing Engine (BPE) cable interface line cards and none of the cable interface line cards are up:

```
Router# show cable modem
```

Example of the show cable modem Command for all cable modems on a Cisco cBR Series Converged Broadband Router

The following shows a typical display on a Cisco cBR Series Converged Broadband Router:

```
Router#show cable modem
                                                                                 D
MAC Address    IP Address      I/F           MAC             Prim  RxPwr  Timing Num I
                                             State           Sid   (dBmv) Offset CPE P
0025.2eaf.82f4 100.1.2.9       C1/0/0/U1     online          37    -1.00  1802   0   Y
0025.2eaf.82e4 100.1.2.8       C1/0/0/U0     online          38    -1.50  1803   0   Y
0025.2eaf.8302 100.1.2.6       C1/0/0/U1     online          39    -1.00  1817   0   Y
0025.2e2d.74f8 100.1.2.110     C1/0/0/U0     online          40    -1.50  1806   0   Y
0025.2e2d.75be 100.1.2.4       C1/0/0/U0     online          41    -1.00  1806   0   Y
0025.2eaf.7f38 100.1.2.7       C1/0/0/U1     online          42    -1.00  1808   1   Y
c8fb.26a5.5580 100.1.3.28      C1/0/1/U0     online          1     -1.00  1804   0   Y
c8fb.26a5.5814 100.1.3.3       C1/0/1/U0     online          2     -1.00  1803   0   Y
c8fb.26a5.5792 100.1.3.39      C1/0/1/U3     online          3     -1.00  1806   0   Y
c8fb.26a5.5574 100.1.3.40      C1/0/1/U3     online          4     -1.00  1808   0   Y
c8fb.26a5.5936 100.1.3.35      C1/0/1/U3     online          5     -2.00  1806   0   Y
c8fb.26a5.54e0 100.1.3.32      C1/0/1/U0     online          6     -1.00  1808   0   Y
c8fb.26a5.56b6 100.1.3.31      C1/0/1/U0     online          7     -1.00  1804   0   Y
c8fb.26a5.5810 100.1.3.2       C1/0/1/U3     online          8     -1.00  1802   0   Y
c8fb.26a5.52f2 100.1.3.34      C1/0/1/U2     online          9     -1.00  1804   0   Y
c8fb.26a5.57a6 100.1.3.4       C1/0/1/U3     online          10    -1.00  1808   0   Y
c8fb.26a5.56ca 100.1.3.29      C1/0/1/U0     online          11    -1.00  1808   0   Y
c8fb.26a5.5400 100.1.3.36      C1/0/1/U3     online          12    -1.00  1805   0   Y
c8fb.26a5.57f4 100.1.3.33      C1/0/1/U3     online          13    -1.00  1809   0   Y
c8fb.26a5.55ac 100.1.3.38      C1/0/1/U2     online          14    -1.50  1802   0   Y
c8fb.26a5.5866 100.1.3.30      C1/0/1/U3     online          15    -1.00  1804   0   Y
c8fb.26a5.572e 100.1.3.37      C1/0/1/U2     online          16    -1.00  1802   0   Y
c8fb.26a5.5376 100.1.2.37      C1/0/3/U0     online          79    -1.00  1806   0   Y
c8fb.26a5.5428 100.1.2.25      C1/0/3/U3     online          80    -1.00  1809   0   Y
c8fb.26a5.52c8 100.1.2.35      C1/0/3/U2     online          81    -1.00  1809   0   Y
c8fb.26a5.5346 100.1.2.34      C1/0/3/U0     online          82    -1.00  1806   0   Y
c8fb.26a5.5598 100.1.2.27      C1/0/3/U0     online          83    -1.00  1808   0   Y
c8fb.26a5.560a 100.1.2.23      C1/0/3/U0     online          84    -1.00  1809   0   Y
c8fb.26a5.56d8 100.1.2.31      C1/0/3/U0     online          85    -1.00  1808   0   Y
c8fb.26a5.5474 100.1.2.42      C1/0/3/U3     online          86    -1.00  1809   0   Y
c8fb.26a5.54e4 100.1.2.39      C1/0/3/U0     online          87    -1.00  1811   0   Y
c8fb.26a5.5624 100.1.2.38      C1/0/3/U1     online          88    -1.00  1811   0   Y
c8fb.26a5.52fe 100.1.2.28      C1/0/3/U2     online          89    -1.00  1805   0   Y
c8fb.26a5.5384 100.1.2.24      C1/0/3/U0     online          90    -1.00  1807   0   Y
c8fb.26a5.5742 100.1.2.33      C1/0/3/U1     online          91    -1.00  1808   0   Y
c8fb.26a5.52ca 100.1.2.26      C1/0/3/U0     online          92    -1.00  1805   0   Y
c8fb.26a5.56b2 100.1.2.41      C1/0/3/U0     online          93    -1.00  1809   0   Y
```

```
c8fb.26a5.53f6 100.1.2.36      C1/0/3/U1     online            94    -1.00  1806   0    Y
```

Example of show cable modem verbose Command for a Specified MAC Address

The following example shows sample output for the **verbose** option for a particular CM:

```
Router# show cable modem 0010.7bb3.fcd1 verbose

MAC Address                     : 00C0.7bb3.fcd1
IP Address                      : 10.20.113.2
Prim Sid                        : 1
QoS Profile Index               : 6
Interface                       : C5/0/U5
sysDescr                        : Vendor ABC DOCSIS 2.0 Cable Modem
Upstream Power                  : 0 dBmV (SNR = 33.25 dBmV)
Downstream Power                : 0 dBmV (SNR = ----- dBmV)
Timing Offset                   : 1624
Initial Timing Offset           : 2812
Received Power                  : 0.25
MAC Version                     : DOC1.0
Qos Provisioned Mode            : DOC1.0
Enable DOCSIS2.0 Mode           : Y
Phy Operating Mode              : atdma
Capabilities                    : {Frag=N, Concat=N, PHS=N, Priv=BPI}
Sid/Said Limit                  : {Max Us Sids=0, Max Ds Saids=0}
Optional Filtering Support      : {802.1P=N, 802.1Q=N}
Transmit Equalizer Support      : {Taps/Symbol= 0, Num of Taps= 0}
Number of CPE IPs               : 0(Max CPEs = 1)
CFG Max-CPE                     : 1
Flaps                           : 373(Jun 1  13:11:01)
Errors                          : 0 CRCs, 0 HCSes
Stn Mtn Failures                : 0 aborts, 3 exhausted
Total US Flows                  : 1(1 active)
Total DS Flows                  : 1(1 active)
Total US Data                   : 1452082 packets, 171344434 bytes
Total US Throughput             : 0 bits/sec, 0 packets/sec
Total DS Data                   : 1452073 packets, 171343858 bytes
Total DS Throughput             : 0 bits/sec, 0 packets/sec
Active Classifiers              : 0 (Max = NO LIMIT)
DSA/DSX messages                : reject all
Dynamic Secret                  : A3D1028F36EBD54FDCC2F74719664D3F
Total Time Online               : 16:16
```

Note When a DCC occurs, the cable modem US and DS counters are reset. The US and DS counters include counters such as data and throughput seen in the **show cable modem** (**mac-address**) **verbose** command output and packets and bytes seen in the **show cable modem (mac-address) counters** command output.

Note The “Number of CPES” field shows the value set for the CM, not the value for the CMTS that is set by the **cable modem max-cpe** command. In Cisco IOS Release 12.2(15)BC1 and later releases, the **verbose** display also includes information about the dynamic shared-secret feature (see the **cable dynamic-secret** command).

Note An asterisk (*) in the Receive Power column indicates that a power adjustment has been made for that CM. An exclamation point (!) in the Receive Power column indicates that the cable modem has reached its maximum power transmit level and cannot increase its power level further. An exclamation point (!) in the Timing Offset column indicates that the cable modem has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. A pound sign (#) in the MAC State column indicates that the **cable tftp-enforce mark-only** command has been used for the cable modem to attempt a TFTP download of the DOCSIS configuration file before registering, but the cable modem did not do so (Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases).

Tip The **show cable modem** command displays the cable modem timing offset in DOCSIS ticks, while other commands, such as **cable map-advance**, display the offset in microseconds. Use the following method to convert microseconds to DOCSIS ticks: ticks = microseconds*64/6.25 .

Example of the Updated show cable modem verbose Command for a Specified MAC Address in Cisco IOS Release 12.3(23)BC

The following example shows sample output for the **verbose** option for a particular cable modem for the Cisco IOS Release 12.3(23)BC with new output fields:

```
Router# show cable modem 0000.39b9.ac51 verbose
MAC Address                          : 0000.39b9.ac51
IP Address                           : 55.1.176.11
Prim Sid                             : 7
QoS Profile Index                    : 5
Host Interface                       : C8/0/0/U5
Primary Downstream                   : Mo3/0/1:3 (RfId : 27)
Wideband Capable                     : N
sysDescr                             : Toshiba PacketCable 1.0 EMTA ; <<HW_REV: 13.0.0;
VENDOR: Toshiba Corporation; BOOTR: 2.2; SW_REV: 6.1.318; MODEL: PCX3000>>
Upstream Power                       : 29.00 dBmV (SNR = 16.07 dB)
Downstream Power                     : 14.90 dBmV (SNR = 34.30 dB)
Timing Offset                        : 1774
Initial Timing Offset                : 1774
Curr US Timing Adjust                : 272
Prev US Timing Adjust                : 0
Received Power                       :  0.00 dBmV
MAC Version                          : DOC1.1
QoS Provisioned Mode                 : DOC1.0
Enable DOCSIS2.0 Mode                : Y
Phy Operating Mode                   : tdma
Capabilities                         : {Frag=N, Concat=Y, PHS=N, Priv=}
Sid/Said Limit                       : {Max US Sids=0, Max DS Saids=0}
Optional Filtering Support           : {802.1P=N, 802.1Q=N}
Transmit Equalizer Support           : {Taps/Symbol= 0, Num of Taps= 0}
Number of CPE IPs                    : 0(Max CPE IPs = 17)
CFG Max-CPE                          : 3
Flaps                                : 7(Sep 16 20:04:13)
Errors                               : 0 CRCs, 0 HCSes
Stn Mtn Failures                     : 0 aborts, 0 exhausted
Total US Flows                       : 1(1 active)
```

```
Total DS Flows                      : 1(1 active)
Total US Data                       : 3399 packets, 1956063 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 125 packets, 10704 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 10
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Total Time Online                   : 7d22h
```

Note In Cisco IOS Release 12.3(23)BC, the output for this command does not display information about dynamic shared secret.

Example of show cable modem Command for a cable modem or CPE With a Specified IPv6 Address

The following example shows sample output for the **show cable modem** command for a cable modem with the IPv6 address of 2001:ODBA:4321:600:980D:E743:174F:1E48.

Note The IP Address field shows "---" because the IPv6 address is too long for the size of the output field. To view a complete IPv6 address for a device, use the **verbose** form of the command.

```
Router# show cable modem 2001:ODBA:4321:600:980D:E743:174F:1E48
                                                                    B D
MAC Address    IP Address      I/F       MAC         Prim  RxPwr  Timing Num P I
                                         State       Sid   (dBmv) Offset CPE I P
0019.474a.ccd0 ---            C5/0/1/U0 w-online     38    0.00  1580    0   N
```

Example of the show cable modem verbose Command Output That Shows cable modem Attribute Masks in Cisco IOS Release 12.2(33)SCC

The following example shows the sample output for the **verbose** option for a particular cable modem in Cisco IOS Release 12.2(33)SCC:

```
Router# show cable modem 001a.c3ff.ce9e verbose
MAC Address                     : 0019.474a.d396
IP Address                      : 10.10.2.4
IPv6 Address                    : ---
Dual IP                         : N
Prim Sid                        : 1
Host Interface                  : C5/0/0/U2
MD-DS-SG / MD-US-SG             : 1 / N/A
MD-CM-SG                        : 0x100
Primary Downstream              : C5/0/0 (RfId : 240)
Wideband Capable                : Y
RCP Index                       : 2
RCP ID                          : 00 10 18 33 81
Multi-Transmit Channel Mode     : N
Upstream Channel                : US2
Ranging Status                  : sta
```

```
Upstream Power (dBmV)              : 0.00
Upstream SNR (dB)                  : 36.12
Received Power (dBmV)              : 0.00
Timing Offset             (97.6 ns): 1018
Initial Timing Offset              : 1018
Rng Timing Adj Moving Avg(0.381 ns): 0
Rng Timing Adj Lt Moving Avg       : 0
Rng Timing Adj Minimum             : 0
Rng Timing Adj Maximum             : 0
Pre-EQ Good                        : 0
Pre-EQ Scaled                      : 0
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 457865
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC2.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= online(pt), Security=assign(tek)}
Capabilities                       : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities              : {Priv=BPI+, EAE=N, Key_len=56}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 16)
CFG Max-CPE                        : 1
Flaps                              : 0()
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 0 exhausted
Total US Flows                     : 1(1 active)
Total DS Flows                     : 1(1 active)
Total US Data                      : 12937 packets, 1079852 bytes
Total US Throughput                : 0 bits/sec, 0 packets/sec
Total DS Data                      : 6226 packets, 459372 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)       : N/A (N/A)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 2
Number of Multicast DSIDs Support  : 16
MDF Capability Mode                : 0
IGMP/MLD Version                   : IGMPv2
```

```
FCType10 Forwarding Support        : N
Features Bitmask                   : 0x0
Total Time Online                  : 7d4h18m
CFG Max IPv6 CPE Prefix             : 1024 (-1 used)
```

Example of the show cable modem Command Output for a Cable Modem Operating in the MTC Mode

The following example shows the sample output for the **verbose** option for a particular cable modem operating in the MTC mode in Cisco IOS Release 12.2(33)SCC:

Router# **show cable modem 0014.f831.d596 verbose**

```
MAC Address                        : 001e.6bfa.f02e
IP Address                         : 30.10.0.6
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 5
Host Interface                     : C5/1/0/UB
MD-DS-SG / MD-US-SG                : 1 / 1
MD-CM-SG                           : 0xF0101
Primary Wideband Channel ID        : 48
Primary Downstream                 : Mo3/0/0:0 (RfId : 120)
Wideband Capable                   : Y
RCP Index                          : 3
RCP ID                             : 00 10 00 00 04
Multi-Transmit Channel Mode        : Y
Upstream Channel                   : US1        US2        US3        US4
Ranging Status                     : sta        sta        sta        sta
Upstream Power (dBmV)              : 0.00       0.00       0.00       0.00
Upstream SNR (dB)                  : 36.12      36.12      36.12      33.1
Received Power (dBmV)              : 0.00       1.00       0.00       -0.75
Reported Transmit Power (dBmV)     : 45.00      45.00      45.00      54.75
Peak Transmit Power (dBmV)         : 51.00      51.00      56.00      56.00
Minimum Transmit Power (dBmV)      : 24.00      24.00      21.00      18.00
Timing Offset             (97.6 ns): 2312       2281       2282       2282
Initial Timing Offset              : 2314       2058       2058       2058
Rng Timing Adj Moving Avg(0.381 ns): 7          4          0          -94
Rng Timing Adj Lt Moving Avg       : 63         30         11         -144
Rng Timing Adj Minimum             : -512       -256       -256       -512
Rng Timing Adj Maximum             : 256        57088      57344      57344
Pre-EQ Good                        : 0          0          0          0
Pre-EQ Scaled                      : 0          0          0          0
Pre-EQ Impulse                     : 0          0          0          0
Pre-EQ Direct Loads                : 0          0          0          0
Good Codewords rx                  : 5012       4996       4992       4990
Corrected Codewords rx             : 0          0          0          0
Uncorrectable Codewords rx         : 0          0          0          0
Phy Operating Mode                 : atdma*     atdma*     tdma*      tdma*
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC3.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= w-online, Security=disabled}
Capabilities                       : {Frag=N, Concat=N, PHS=Y}
Security Capabilities              : {Priv=, EAE=Y, Key_len=}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=8, Max DS Saids=24}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 16)
```

```
CFG Max-CPE                          : 4
Flaps                                : 0()
Errors                               : 0 CRCs, 0 HCSes
Stn Mtn Failures                     : 0 aborts, 0 exhausted
Total US Flows                       : 2(2 active)
Total DS Flows                       : 1(1 active)
Total US Data                        : 6 packets, 1557 bytes
Total US Throughput                  : 0 bits/sec, 0 packets/sec
Total DS Data                        : 0 packets, 0 bytes
Total DS Throughput                  : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)         : N/A (N/A)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                         : 0
LB policy ID in config file          : 0
LB priority                          : 0
Tag                                  :
Required DS Attribute Mask           : 0x0
Forbidden DS Attribute Mask          : 0x0
Required US Attribute Mask           : 0x0
Forbidden US Attribute Mask          : 0x0
Service Type ID                      :
Service Type ID in config file       :
Active Classifiers                   : 0 (Max = NO LIMIT)
CM Upstream Filter Group             : 0
CM Downstream Filter Group           : 0
CPE Upstream Filter Group            : 0
CPE Downstream Filter Group          : 0
DSA/DSX messages                     : permit all
Voice Enabled                        : NO
DS Change Times                      : 0
Boolean Services                     : 2
Number of Multicast DSIDs Support  : 24
MDF Capability Mode                  : 2
IGMP/MLD Version                     : IGMPv3
FCType10 Forwarding Support          : Y
Features Bitmask                     : 0x0
Total Time Online                    : 1d16h
CM Initialization Reason             : NO_PRIM_SF_USCHAN
CFG Max IPv6 CPE Prefix               : 16 (-1 used)
```

Note An asterisk (*) in the Phy Operating Mode row indicates the type of PHY-layer modulation that the cable modem (operating in the MTC mode) is using: tdma or atdma.

Example of the show cable modem verbose Command Output in Cisco IOS Release 12.2(33)SCE4

The following example shows the sample output for the **verbose** option for a particular cable modem in Cisco IOS Release 12.2(33)SCE4:

```
Router# show cable modem 001a.c3ff.ce9e verbose
MAC Address                          : 0014.e84f.1630
IP Address                           : 50.6.9.4
IPv6 Address                         : ---
Dual IP                              : N
Prim Sid                             : 1
Host Interface                       : C6/1/0/U0
MD-DS-SG / MD-US-SG                  : N/A / N/A
MD-CM-SG                             : 0x2D0000
Primary Downstream                   : C6/1/0 (RfId : 600)
```

```
Wideband Capable                    : N
RCP Index                           : 0
RCP ID                              : 00 00 00 00 00
Downstream Channel DCID RF Channel : 73    6/1/0
Multi-Transmit Channel Mode         : N
Upstream Channel                    : US0
Ranging Status                      : sta
Upstream Power (dBmV)               : 0.00
Upstream SNR (dB)                   : 31.26
Received Power (dBmV)               : 0.50
Timing Offset             (97.6 ns): 1237
Initial Timing Offset               : 1237
Rng Timing Adj Moving Avg(0.381 ns): 503
Rng Timing Adj Lt Moving Avg        : 402
Rng Timing Adj Minimum              : 0
Rng Timing Adj Maximum              : 1024
Pre-EQ Good                         : 0
Pre-EQ Scaled                       : 0
Pre-EQ Impulse                      : 0
Pre-EQ Direct Loads                 : 0
Good Codewords rx                   : 429
Corrected Codewords rx              : 0
Uncorrectable Codewords rx          : 0
Phy Operating Mode                  : tdma
sysDescr                            :
Downstream Power                    : 0.00 dBmV (SNR = ----- dB)
MAC Version                         : DOC2.0
QoS Provisioned Mode                : DOC1.1
Enable DOCSIS2.0 Mode               : Y
Modem Status                        : {Modem= online, Security=disabled}
Capabilities                        : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities               : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                  : {L2VPN=N, eSAFE=N}
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                   : 0(Max CPE IPs = 16)
CFG Max-CPE                         : 1
Flaps                               : 0()
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 0 exhausted
Total US Flows                      : 2(2 active)
Total DS Flows                      : 2(2 active)
Total US Data                       : 20 packets, 6786 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 11255 packets, 720320 bytes
Total DS Throughput                 : 5119 bits/sec, 9 packets/sec
LB group ID assigned (index)        : N/A (N/A)
LB group ID in config file (index)  : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 30
CM Downstream Filter Group          : 29
CPE Upstream Filter Group           : 1
CPE Downstream Filter Group         : 1
```

```
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 0
Number of Multicast DSIDs Support   : 0
MDF Capability Mode                 : 0
IGMP/MLD Version                    : IGMPv2
FCType10 Forwarding Support         : N
Features Bitmask                    : 0x0
Total Time Online                   : 18:53   (18:53    since last counter reset)
!From Cisco IOS Release 12.2(33)SCE4 onwards, the command output shows online time of the
!modem since the last counter reset.
CFG Max IPv6 CPE Prefix             : 16 (-1 used)
```

Example of the show cable modem verbose Command in Cisco IOS Release 12.2(33)SCF

The following is a sample output of the **show cable modem verbose** command in Cisco IOS Release 12.2(33)SCF:

```
Router# show cable modem 10.1.0.2 verbose
MAC Address                         : 001e.6bfb.0a60
IP Address                          : 10.1.0.2
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 43
Host Interface                      : C7/0/0/UB
MD-DS-SG / MD-US-SG                 : 1 / 1
MD-CM-SG                            : 0x3C0101
Primary Wideband Channel ID         : 897 (Wi7/0/0:0)
Primary Downstream                  : In7/0/0:0 (RfId : 720)
Wideband Capable                    : Y
RCP Index                           : 3
RCP ID                              : 00 10 00 00 04
Multi-Transmit Channel Mode         : Y
Upstream Channel                    : US0        US1        US2
Ranging Status                      : sta        sta        sta
Upstream SNR (dB)                   : 33.1       33.1       33.1
Upstream Data SNR (dB)              : 22.78      22.78      22.78
Received Power (dBmV)               : 0.50       0.00       0.00
Reported Transmit Power (dBmV)      : 51.00      51.00      51.00
Peak Transmit Power (dBmV)          : 51.00      51.00      51.00
Minimum Transmit Power (dBmV)       : 24.00      24.00      24.00
Timing Offset              (97.6 ns): 1302       1303       1303
```

The following example is a sample output of the show cable modem verbose command that displays the downstream channel information for a specific cable modem identified by its IP address:

```
Router# show cable modem 80.62.0.4 verbose
MAC Address                         : 0018.6832.0eb2
IP Address                          : 80.62.0.4
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 13
Host Interface                      : C6/1/0/U0
MD-DS-SG / MD-US-SG                 : 3 / N/A
MD-CM-SG                            : 0x2D0300
Primary Downstream                  : In6/1/0:0 (RfId : 600)
Wideband Capable                    : N
RCP Index                           : 0
RCP ID                              : 00 00 00 00 00
```

```
Downstream Channel DCID RF Channel : 193   6/1/0:0
Multi-Transmit Channel Mode        : N
Upstream Channel                   : US0
Ranging Status                     : sta
Upstream Power (dBmV)              : 0.00
Upstream SNR (dB)                  : 36.12
Upstream Data SNR (dB)             : --
Received Power (dBmV)              : 0.00
Timing Offset             (97.6 ns): 1192
Initial Timing Offset              : 1192
Rng Timing Adj Moving Avg(0.381 ns): -1
Rng Timing Adj Lt Moving Avg       : -7
Rng Timing Adj Minimum             : -256
Rng Timing Adj Maximum             : 0
Pre-EQ Good                        : 0
Pre-EQ Scaled                      : 0
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 42
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC2.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= online, Security=disabled}
Flaps                              : 0()
Errors                             : 0 CRCs, 0 HCSes
Capabilities                       : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities              : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 16)
CFG Max-CPE                        : 1
Stn Mtn Failures                   : 0 aborts, 0 exhausted
Total US Flows                     : 2(2 active)
Total DS Flows                     : 2(2 active)
Total US Data                      : 9 packets, 4545 bytes
Total US Throughput                : 0 bits/sec, 0 packets/sec
Total DS Data                      : 9 packets, 3114 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)       : N/A (N/A)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
```

```
DS Change Times                    : 0
Boolean Services                   : 0
Number of Multicast DSIDs Support  : 0
MDF Capability Mode                : 0
IGMP/MLD Version                   : IGMPv2
FCType10 Forwarding Support        : N
Features Bitmask                   : 0x0
Total Time Online                  : 4d14h
CFG Max IPv6 CPE Prefix            : 16 (-1 used)
```

The following example is a sample output of the show cable modem verbose command that displays the downstream channel information for a specific cable interface:

```
Router# show cable modem Cable 6/1/0 verbose
MAC Address                        : 0018.6832.0eb2
IP Address                         : 80.62.0.4
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 13
Host Interface                     : C6/1/0/U0
MD-DS-SG / MD-US-SG                : 3 / N/A
MD-CM-SG                           : 0x2D0300
Primary Downstream                 : In6/1/0:0 (RfId : 600)
Wideband Capable                   : N
RCP Index                          : 0
RCP ID                             : 00 00 00 00 00
Downstream Channel DCID RF Channel : 193   6/1/0:0
Multi-Transmit Channel Mode        : N
Upstream Channel                   : US0
Ranging Status                     : sta
Upstream Power (dBmV)              : 0.00
Upstream SNR (dB)                  : 36.12
Upstream Data SNR (dB)             : --
Received Power (dBmV)              : 0.00
Timing Offset              (97.6 ns): 1192
Initial Timing Offset              : 1192
Rng Timing Adj Moving Avg(0.381 ns): 0
Rng Timing Adj Lt Moving Avg       : 0
Rng Timing Adj Minimum             : 0
Rng Timing Adj Maximum             : 256
Pre-EQ Good                        : 0
Pre-EQ Scaled                      : 0
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 66
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC2.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= online, Security=disabled}
Capabilities                       : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities              : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 16)
CFG Max-CPE                        : 1
Flaps                              : 1(Mar 22 22:39:59)
```

```
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 1 exhausted
Total US Flows                      : 2(2 active)
Total DS Flows                      : 2(2 active)
Total US Data                       : 2 packets, 1010 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 2 packets, 692 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)        : N/A (N/A)
LB group ID in config file (index)  : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 0
Number of Multicast DSIDs Support   : 0
MDF Capability Mode                 : 0
IGMP/MLD Version                    : IGMPv2
FCType10 Forwarding Support         : N
Features Bitmask                    : 0x0
Total Time Online                   : 1d2h33m
CFG Max IPv6 CPE Prefix             : 16 (-1 used)
MAC Address                         : 0018.6832.069e
IP Address                          : 80.62.0.3
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 15
Host Interface                      : C6/1/0/U0
MD-DS-SG / MD-US-SG                 : 3 / N/A
MD-CM-SG                            : 0x2D0300
Primary Downstream                  : In6/1/0:0 (RfId : 600)
Wideband Capable                    : N
RCP Index                           : 0
RCP ID                              : 00 00 00 00 00
Downstream Channel DCID RF Channel  : 193   6/1/0:0
Multi-Transmit Channel Mode         : N
Upstream Channel                    : US0
Ranging Status                      : sta
Upstream Power (dBmV)               : 0.00
Upstream SNR (dB)                   : 36.12
Upstream Data SNR (dB)              : --
Received Power (dBmV)               : 0.50
Timing Offset             (97.6 ns) : 1196
Initial Timing Offset               : 1196
Rng Timing Adj Moving Avg(0.381 ns) : -39
Rng Timing Adj Lt Moving Avg        : -92
Rng Timing Adj Minimum              : -256
Rng Timing Adj Maximum              : 0
Pre-EQ Good                         : 0
Pre-EQ Scaled                       : 0
```

```
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 54
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC2.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= online, Security=disabled}
Capabilities                       : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities              : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 16)
CFG Max-CPE                        : 1
Flaps                              : 3(Mar 20 09:22:20)
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 1 exhausted
Total US Flows                     : 2(2 active)
Total DS Flows                     : 2(2 active)
Total US Data                      : 13 packets, 6565 bytes
Total US Throughput                : 0 bits/sec, 0 packets/sec
Total DS Data                      : 13 packets, 4498 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)       : N/A (N/A)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 0
Number of Multicast DSIDs Support  : 0
MDF Capability Mode                : 0
IGMP/MLD Version                   : IGMPv2
FCType10 Forwarding Support        : N
Features Bitmask                   : 0x0
Total Time Online                  : 6d12h
CFG Max IPv6 CPE Prefix            : 16 (-1 used)
```

The following example is a sample output of the show cable modem verbose command that displays the downstream channel information for all cable modems:

```
Router# show cable modem verbose
MAC Address                        : 0006.2854.740b
```

```
IP Address                          : 0.0.0.0
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 12
QoS Profile Index                   : 2
Host Interface                      : C6/1/0/U0
MD-DS-SG / MD-US-SG                 : 3 / N/A
MD-CM-SG                            : 0x2D0300
Primary Downstream                  : In6/1/0:0 (RfId : 600)
Wideband Capable                    : N
RCP Index                           : 0
RCP ID                              : 00 00 00 00 00
Downstream Channel DCID RF Channel : 193   6/1/0:0
Multi-Transmit Channel Mode         : N
Upstream Channel                    :
Ranging Status                      :
Upstream Power (dBmV)               :
Upstream SNR (dB)                   :
Upstream Data SNR (dB)              :
Received Power (dBmV)               :
Timing Offset             (97.6 ns):
Initial Timing Offset               :
Rng Timing Adj Moving Avg(0.381 ns):
Rng Timing Adj Lt Moving Avg        :
Rng Timing Adj Minimum              :
Rng Timing Adj Maximum              :
Pre-EQ Good                         :
Pre-EQ Scaled                       :
Pre-EQ Impulse                      :
Pre-EQ Direct Loads                 :
Good Codewords rx                   :
Corrected Codewords rx              :
Uncorrectable Codewords rx          :
Phy Operating Mode                  :
sysDescr                            :
Downstream Power                    : 0.00 dBmV (SNR = ----- dB)
MAC Version                         : DOC1.0
QoS Provisioned Mode                : DOC1.0
Enable DOCSIS2.0 Mode               : Y
Modem Status                        : {Modem= offline, Security=disabled}
Capabilities                        : {Frag=N, Concat=N, PHS=N}
Security Capabilities               : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                  : {L2VPN=N, eSAFE=N}
Sid/Said Limit                      : {Max US Sids=0, Max DS Saids=0}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 0, Num of Taps= 0}
Number of CPE IPs                   : 0(Max CPE IPs = 16)
CFG Max-CPE                         : 16
Flaps                               : 8218(Mar 22 03:17:15)
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 222 exhausted
Total US Flows                      : 1(1 active)
Total DS Flows                      : 1(1 active)
Total US Data                       : 454 packets, 32291 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 0 packets, 0 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)        : N/A (N/A)
LB group ID in config file (index)  : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
```

```
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 0
Number of Multicast DSIDs Support  : 0
MDF Capability Mode                : 0
IGMP/MLD Version                   : IGMPv2
FCType10 Forwarding Support        : N
Features Bitmask                   : 0x0
Total Time Online                  : 00:00
CFG Max IPv6 CPE Prefix            : 16 (-1 used)
MAC Address                        : 0018.6832.0eb2
IP Address                         : 80.62.0.4
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 13
Host Interface                     : C6/1/0/U0
MD-DS-SG / MD-US-SG                : 3 / N/A
MD-CM-SG                           : 0x2D0300
Primary Downstream                 : In6/1/0:0 (RfId : 600)
Wideband Capable                   : N
RCP Index                          : 0
RCP ID                             : 00 00 00 00 00
Downstream Channel DCID RF Channel : 193   6/1/0:0
Multi-Transmit Channel Mode        : N
Upstream Channel                   : US0
Ranging Status                     : sta
Upstream Power (dBmV)              : 0.00
Upstream SNR (dB)                  : 36.12
Upstream Data SNR (dB)             : --
Received Power (dBmV)              : 0.00
Timing Offset             (97.6 ns): 1192
Initial Timing Offset              : 1192
Rng Timing Adj Moving Avg(0.381 ns): -1
Rng Timing Adj Lt Moving Avg       : -7
Rng Timing Adj Minimum             : -256
Rng Timing Adj Maximum             : 0
Pre-EQ Good                        : 0
Pre-EQ Scaled                      : 0
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 42
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC2.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= online, Security=disabled}
Capabilities                       : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities              : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
```

```
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                   : 0(Max CPE IPs = 16)
CFG Max-CPE                         : 1
Flaps                               : 0()
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 0 exhausted
Total US Flows                      : 2(2 active)
Total DS Flows                      : 2(2 active)
Total US Data                       : 9 packets, 4545 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 9 packets, 3114 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)        : N/A (N/A)
LB group ID in config file (index)  : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 0
Number of Multicast DSIDs Support   : 0
MDF Capability Mode                 : 0
IGMP/MLD Version                    : IGMPv2
FCType10 Forwarding Support         : N
Features Bitmask                    : 0x0
Total Time Online                   : 4d14h
CFG Max IPv6 CPE Prefix             : 16 (-1 used)
```

Example of the show cable modem Command Output on the Cisco uBR7225VXR and Cisco uBR7246VXR Routers

The following example shows the sample output for the **cm-status** option in Cisco IOS Release 12.2(33)SCD on a Cisco uBR7246VXR router:

Router# **show cable modem cm-status**

I/F MAC Address Event TID Count Error Dups Time

C5/0 001e.6bfb.29a6 Seq out-of-range 1 1 0 1 Jan 18 09:00:19

```
C7/0   001c.ea2b.79b2 MDD timeout      0     0     1     0     Jan 11 11:29:22
                      QAM failure      0     0     1     0     Jan 11 11:29:02
                      MDD recovery     0     0     1     0     Jan 11 11:30:20
                      QAM recovery     0     0     1     0     Jan 11 11:30:13
C7/0   001c.ea2b.78b0 MDD timeout      0     0     1     0     Jan 11 11:29:16
                      QAM failure      0     0     1     0     Jan 11 11:28:53
```

```
                    MDD recovery     0     0     1     0     Jan 11 11:29:59
                    QAM recovery     0     0     1     0     Jan 11 11:29:46
```

The following example shows the sample output of the **queue** option for a particular cable modem in Cisco IOS Release 12.2(33)SCD:

```
Router# show cable modem
40.3.192.2 queue
* idx/gqid Len/Limit Deqs      Drops     CIR       MIR/PR     ForwInt  SFID
            pkts    pkts      pkts      kbps       kbps
BE Queues:
    3/43     0/128   103       0         0           0/0      In5/1:1 Ca5/1:22
CIR Queues:
Low Latency Queues:
```

Example of the show cable modem Command Output for Partial Service Mode

The following example shows the sample output of the show cable modem command that displays the cable modems that are in upstream (indicated by “p” under I/F) and downstream partial service mode (indicated by “p-online” under MAC State):

```
Router# show cable modem
                                                                                  D
MAC Address    IP Address     I/F          MAC            Prim RxPwr  Timing Num I
                                           State          Sid  (dBmv) Offset CPE P
0016.9252.9ac0 2.99.81.4      C7/0/0/U0    online(pt)     1    0.00   1332   0   N
000f.2172.229d 2.99.81.36     C7/0/0/U3    online(pt)     2    0.50   1778   0   N
001e.6bfb.33a0 2.99.81.14     C7/0/0/p     p-online(pt)   3    -0.50  1424   0   N
0022.cef4.3d9a 2.99.81.23     C7/0/0/p     p-online(pt)   4    0.00   1438   0   N
0019.474a.c456 2.99.81.18     C7/0/0/U3    online(pt)     5    0.00   1336   0   N
001e.6bfb.194e 2.99.81.32     C7/0/0/p     p-online(pt)   6    -0.50  1422   0   N
00e0.6f8b.a888 2.99.81.31     C7/0/0/U3    online(pt)     7    0.50   1427   0   N
001e.6bfb.1538 2.99.81.38     C7/0/0/p     p-online(pt)   8    0.00   1423   0   N
001e.6bfb.0d22 2.99.81.29     C7/0/0/p     p-online(pt)   9    0.00   1738   0   N
001e.6bfb.1a7e 2.99.81.30     C7/0/0/p     p-online(pt)   10   0.00   1738   0   N
0019.474a.c418 2.99.81.75     C7/0/0/U1    online(pt)     11   0.00   1335   0   N
001e.6bfa.f58a 2.99.81.9      C7/0/0/p     p-online(pt)   12   0.00   1737   0   N
0022.cef4.3fa2 2.99.81.24     C7/0/0/p     p-online(pt)   13   0.00   1438   0   N
001e.6bfb.1b72 2.99.81.10     C7/0/0/p     p-online(pt)   14   -0.50  1425   0   N
0019.474a.c330 2.99.81.34     C7/0/0/U0    online(pt)     15   0.00   1028   0   N
0023.be50.e578 2.99.81.17     C7/0/0/UB    p-online(pt)   16   0.00   1805   0   N
0025.2e2d.784a 2.99.81.28     C7/0/0/UB    p-online(pt)   17   0.50   1798   0   N
0025.2e2d.748c 2.99.81.26     C7/0/0/UB    p-online(pt)   18   0.00   1798   0   N
001e.6bfa.f070 2.99.81.37     C7/0/0/U3    online(pt)     20   0.50   1735   0   N
0019.474a.c422 2.99.81.20     C8/0/0/U1    online(pt)     1    0.50   1340   0   N
0019.474a.c466 2.99.81.21     C8/0/0/U1    online(pt)     2    0.00   1334   0   N
001e.6bfb.2e96 2.99.81.33     C8/0/0/UB    w-online(pt)   3    0.00   1738   0   N
```

Example of the show cable modem Command Output with a Cable Modem Ranging Class ID

The following example shows the sample output for the **verbose** option that displays the ranging class ID of a cable modem in Cisco IOS Release 12.2(33)SCH:

```
Router# show cable modem 001c.eaa4.b5aa verbose

MAC Address                     : 001c.eaa4.b5aa
IP Address                      : 192.168.0.5
IPv6 Address                    : ---
```

```
Dual IP                              : N
Prim Sid                             : 53
Host Interface                       : C5/1/0/UB
MD-DS-SG / MD-US-SG                  : 1 / 71
MD-CM-SG                             : 0xF0147
Primary Wideband Channel ID          : 417 (Wi5/1/0:0)
Primary Downstream                   : In5/1/0:0 (RfId : 360)
Wideband Capable                     : Y
RCP Index                            : 3
RCP ID                               : 00 10 00 10 04
Downstream Channel DCID RF Channel : 25    5/1/0:0
Downstream Channel DCID RF Channel : 26    5/1/0:1
Downstream Channel DCID RF Channel : 27    5/1/0:2
Downstream Channel DCID RF Channel : 28    5/1/0:3
Multi-Transmit Channel Mode          : Y
Extended Upstream Transmit Power     : 0dB
Upstream Channel                     : US0        US1        US2        US3
Ranging Status                       : sta        sta        sta        sta
Upstream SNR (dB)                    : 36.12      36.12      36.12      36.12
Upstream Data SNR (dB)               : --         --         --         --
Received Power (dBmV)                : 0.50       0.50       0.50       0.50
Reported Transmit Power (dBmV)       : 35.00      35.00      35.00      35.00
Peak Transmit Power (dBmV)           : 53.00      53.00      53.00      53.00
Phy Max Power (dBmV)                 : 53.00      53.00      53.00      53.00
Minimum Transmit Power (dBmV)        : 32.50      32.50      32.50      32.50
Timing Offset              (97.6 ns): 372         372        372        371
Initial Timing Offset                : 372        116        116        116
Rng Timing Adj Moving Avg(0.381 ns): -1         -1         0          -1
Rng Timing Adj Lt Moving Avg         : -4         -3         -3         -4
Rng Timing Adj Minimum               : -4         -4         -4         -4
Rng Timing Adj Maximum               : 164        65671      65600      65516
Pre-EQ Good                          : 0          0          0          0
Pre-EQ Scaled                        : 0          0          0          0
Pre-EQ Impulse                       : 0          0          0          0
Pre-EQ Direct Loads                  : 0          0          0          0
Good Codewords rx                    : 648        515        617        564
Corrected Codewords rx               : 0          0          0          0
Uncorrectable Codewords rx           : 0          0          0          0
Phy Operating Mode                   : scdma*     scdma*     scdma*     scdma*
sysDescr                             : Cisco DPC3000 DOCSIS 3.0 Cable Modem <<HW_REV: 1.1;
VENDOR: Cisco; BOOTR: 1.0.0.4; SW_REV: dpc3000-v303r2392-110520h; MODEL: DPC3000>>
Downstream Power                     : 1.70 dBmV (SNR = 38.90 dB)
MAC Version                          : DOC3.0
QoS Provisioned Mode                 : DOC1.1
Enable DOCSIS2.0 Mode                : Y
Modem Status                         : {Modem= w-online, Security=disabled}
Capabilities                         : {Frag=N, Concat=N, PHS=Y}
Security Capabilities                : {Priv=, EAE=Y, Key_len=}
L2VPN Capabilities                   : {L2VPN=Y, eSAFE=N}
Sid/Said Limit                       : {Max US Sids=8, Max DS Saids=24}
Optional Filtering Support           : {802.1P=N, 802.1Q=N, DUT=Y}
Transmit Equalizer Support           : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                    : 0(Max CPE IPs = 16)
CFG Max-CPE                          : 16
Flaps                                : 0()
Errors                               : 0 CRCs, 0 HCSes
Stn Mtn Failures                     : 0 aborts, 0 exhausted
Total US Flows                       : 1(1 active)
Total DS Flows                       : 1(1 active)
Total US Data                        : 2131 packets, 249036 bytes
Total US Throughput                  : 0 bits/sec, 0 packets/sec
Total DS Data                        : 2137 packets, 197622 bytes
Total DS Throughput                  : 304 bits/sec, 0 packets/sec
LB group ID assigned (index)         : 2148467015 (36608)
```

```
LB group ID in config file (index) : N/A (N/A)
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Ranging Class ID                   : 0x2
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 2
Number of Multicast DSIDs Support  : 24
MDF Capability Mode                : 2
IGMP/MLD Version                   : IGMPv3
FCType10 Forwarding Support        : Y
Features Bitmask                   : 0x0
Total Time Online                  : 1h13m   (1h13m    since last counter reset)
CM Initialization Reason           : NO_PRIM_SF_USCHAN
CFG Max IPv6 CPE Prefix            : 16 (-1 used)
```

Example of the show cable modem Command Output for upstream drop classifier (UDC) feature

Effective from Cisco IOS Release 12.2(33)SCG5, the **verbose** keyword displays the status of the Upstream Drop Classifier (UDC) feature for a specific cable modem. The “UDC Enabled” field displays ‘Y’ if it is enabled.

The following example shows the output of the **show cable modem** command with the **verbose** keyword for the UDC feature:

```
Router# show cable modem 4458.2945.3004 verbose

MAC Address                        : 4458.2945.3004
IP Address                         : 40.101.0.2
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 2
Host Interface                     : C7/1/0/UB
MD-DS-SG / MD-US-SG                : 1 / 1
MD-CM-SG                           : 0x4B0101
Primary Wideband Channel ID        : 1057 (Wi7/1/0:0)
Primary Downstream                 : In7/1/0:2 (RfId : 842)
Wideband Capable                   : Y
RCP Index                          : 3
RCP ID                             : 00 10 00 00 08
Downstream Channel DCID RF Channel : 147   7/1/0:2
Downstream Channel DCID RF Channel : 145   7/1/0:0
Downstream Channel DCID RF Channel : 146   7/1/0:1
UDC Enabled                        : Y
Multi-Transmit Channel Mode        : Y
Extended Upstream Transmit Power   : 0dB
Upstream Channel                   : US2
Ranging Status                     : sta
```

```
Upstream SNR (dB)                  : 36.12
Upstream Data SNR (dB)             : --
Received Power (dBmV)              : -0.50
Reported Transmit Power (dBmV)     : 36.00
Peak Transmit Power (dBmV)         : 58.00
Phy Max Power (dBmV)               : 58.00
Minimum Transmit Power (dBmV)      : 18.00
Timing Offset             (97.6 ns): 1209
Initial Timing Offset              : 1209
Rng Timing Adj Moving Avg(0.381 ns): 255
Rng Timing Adj Lt Moving Avg       : 238
Rng Timing Adj Minimum             : -256
Rng Timing Adj Maximum             : 256
Pre-EQ Good                        : 0
Pre-EQ Scaled                      : 0
Pre-EQ Impulse                     : 0
Pre-EQ Direct Loads                : 0
Good Codewords rx                  : 665
Corrected Codewords rx             : 0
Uncorrectable Codewords rx         : 0
Phy Operating Mode                 : tdma*
sysDescr                           :
sysDescr                           :
Downstream Power                   : 0.00 dBmV (SNR = ----- dB)
MAC Version                        : DOC3.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= w-online(pt), Security=assign(tek)}
Capabilities                       : {Frag=N, Concat=N, PHS=Y}
Security Capabilities              : {Priv=BPI+, EAE=Y, Key_len=56,128}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE IPs                  : 0(Max CPE IPs = 5)
CFG Max-CPE                        : 10
Flaps                              : 1(Jun 4  22:05:34)
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 1 exhausted
Total US Flows                     : 1(1 active)
Total DS Flows                     : 1(1 active)
Total US Data                      : 4 packets, 2502 bytes
Total US Throughput                : 0 bits/sec, 0 packets/sec
Total DS Data                      : 0 packets, 0 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)       : 2152399105 (51969)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Service Type ID                    :
Service Type ID in config file     :
Ranging Class ID                   : 0x1
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
```

```
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 2
Number of Multicast DSIDs Support   : 16
MDF Capability Mode                 : 2
IGMP/MLD Version                    : IGMPv3
FCType10 Forwarding Support         : Y
Features Bitmask                    : 0x0
Total Time Online                   : 1h29m   (1h29m    since last counter reset)
CM Initialization Reason            : NO_PRIM_SF_USCHAN
CFG Max IPv6 CPE Prefix             : 16 (-1 used)
```

Note When the **verbose** keyword is used without a specific MAC address, the UDC Enabled status of each cable modem on the interface is displayed.

Example of show cable modem verbose Command in the Cisco IOS Release 12.2(33)SCH1

The following is a sample output for the **verbose** option that displays the channel IDs for 16 downstream channels and channel information for 4 upstream channels of a cable modem:

```
Router# show cable modem 68b6.fcfe.22e5 verbose
Router# show cable modem 68b6.fcfe.2285 verbose

MAC Address                         : 68b6.fcfe.2285
IP Address                          : 192.168.0.8
IPv6 Address                        : 2001:DB8:10:1:9951:1972:33F9:9867
Dual IP                             : Y
Prim Sid                            : 235
Host Interface                      : C7/0/1/UB
MD-DS-SG / MD-US-SG                 : 1 / 1
MD-CM-SG                            : 0x3D0101
Primary Wideband Channel ID         : 2305 (Wi7/0/0:0)
Primary Downstream                  : In7/0/0:3 (RfId : 1731)
Wideband Capable                    : Y
RCP Index                           : 3
RCP ID                              : 00 10 00 00 18
Downstream Channel DCID RF Channel  : 117   7/0/0:0
Downstream Channel DCID RF Channel  : 118   7/0/0:1
Downstream Channel DCID RF Channel  : 119   7/0/0:2
Downstream Channel DCID RF Channel  : 120   7/0/0:3
Downstream Channel DCID RF Channel  : 121   7/0/1:0
Downstream Channel DCID RF Channel  : 122   7/0/1:1
Downstream Channel DCID RF Channel  : 123   7/0/1:2
Downstream Channel DCID RF Channel  : 124   7/0/1:3
Downstream Channel DCID RF Channel  : 125   7/0/2:0
Downstream Channel DCID RF Channel  : 126   7/0/2:1
Downstream Channel DCID RF Channel  : 127   7/0/2:2
Downstream Channel DCID RF Channel  : 128   7/0/2:3
Downstream Channel DCID RF Channel  : 129   7/0/3:0
Downstream Channel DCID RF Channel  : 130   7/0/3:1
Downstream Channel DCID RF Channel  : 131   7/0/3:2
Downstream Channel DCID RF Channel  : 132   7/0/3:3
Extended Upstream Transmit Power    : 61dB
Multi-Transmit Channel Mode         : Y
Number of US in UBG                 : 4
Upstream Channel                    : US0        US1        US2        US3
Ranging Status                      : sta        sta        sta        sta
Upstream SNR (dB)                   : 36.12      36.12      36.12      36.12
```

```
Upstream Data SNR (dB)              : --          --          --          --
Received Power (dBmV)               : -0.50       -0.50       0.00        -0.50
Reported Transmit Power (dBmV)      : 38.25       38.25       38.25       38.25
Peak Transmit Power (dBmV)          : 61.00       61.00       61.00       61.00
Phy Max Power (dBmV)                : 51.00       51.00       51.00       51.00
Minimum Transmit Power (dBmV)       : 24.00       24.00       24.00       24.00
Timing Offset              (97.6 ns): 1348        1348        1348        1348
Initial Timing Offset               : 1092        1092        1092        1348
Rng Timing Adj Moving Avg(0.381 ns): 0           0           -1          0
Rng Timing Adj Lt Moving Avg        : 644         737         644         0
Rng Timing Adj Minimum              : 0           0           -256        0
Rng Timing Adj Maximum              : 65536       65536       65536       256
Pre-EQ Good                         : 0           0           0           0
Pre-EQ Scaled                       : 0           0           0           0
Pre-EQ Impulse                      : 0           0           0           0
Pre-EQ Direct Loads                 : 0           0           0           0
Good Codewords rx                   : 25          30          36          67
Corrected Codewords rx              : 0           0           0           0
Uncorrectable Codewords rx          : 0           0           0           0
Phy Operating Mode                  : atdma*      atdma*      atdma*      atdma*
sysDescr                            :
Downstream Power                    : 0.00 dBmV (SNR = ----- dB)
MAC Version                         : DOC3.0
QoS Provisioned Mode                : DOC1.1
Enable DOCSIS2.0 Mode               : Y
Modem Status                        : {Modem= w-online, Security=disabled}
Capabilities                        : {Frag=N, Concat=N, PHS=Y}
Security Capabilities               : {Priv=, EAE=Y, Key_len=}
L2VPN Capabilities                  : {L2VPN=Y, eSAFE=Y}
Sid/Said Limit                      : {Max US Sids=8, Max DS Saids=64}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=Y}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE                       : 1(Max CPE = 16)
Number of CPE IPs                   : 0(Max CPE IPs = 16)
CFG Max-CPE                         : 16
Flaps                               : 0()
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 0 exhausted
Total US Flows                      : 1(1 active)
Total DS Flows                      : 1(1 active)
Total US Data                       : 29 packets, 8048 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 1 packets, 275 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)        : 2151481601 (48385)
LB group ID in config file (index)  : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Ranging Class ID                    : 0x2
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
```

```
DS Change Times                    : 0
Boolean Services                   : 2
Number of Multicast DSIDs Support  : 63
MDF Capability Mode                : 2
IGMP/MLD Version                   : MLDv2
FCType10 Forwarding Support        : Y
Features Bitmask                   : 0x0
Total Time Online                  : 08:06   (08:06    since last counter reset)
CM Initialization Reason           : T4_EXPIRED
CFG Max IPv6 CPE Prefix            : 16 (-1 used)
```

Example of show cable modem verbose Command in the Cisco IOS Release 12.2(33)SCH2

The following is a sample output for the **verbose** option that displays the channel IDs for 24 downstream channels and channel information for 8 upstream channels of a cable modem:

```
Router# show cable modem 68b6.fcfe.22e5 verbose
MAC Address                        : 68b6.fcfe.2285
IP Address                         : 192.168.0.8
IPv6 Address                       : 2001:DB8:10:1:9951:1972:33F9:9867
Dual IP                            : Y
Prim Sid                           : 8
Host Interface                     : C8/0/0/UB
MD-DS-SG / MD-US-SG                : 1 / 2
MD-CM-SG                           : 0x5A0102
Primary Wideband Channel ID        : 3073 (Wi8/0/0:0)
Primary Downstream                 : Mo8/0/0:0 (RfId : 2304)
Wideband Capable                   : Y
RCP Index                          : 3
RCP ID                             : 00 10 00 00 18
Downstream Channel DCID RF Channel : 45    8/0/0:0
Downstream Channel DCID RF Channel : 46    8/0/0:1
Downstream Channel DCID RF Channel : 47    8/0/0:2
Downstream Channel DCID RF Channel : 48    8/0/0:3
Downstream Channel DCID RF Channel : 49    8/0/0:4
Downstream Channel DCID RF Channel : 50    8/0/0:5
Downstream Channel DCID RF Channel : 51    8/0/0:6
Downstream Channel DCID RF Channel : 52    8/0/0:7
Downstream Channel DCID RF Channel : 53    8/0/0:8
Downstream Channel DCID RF Channel : 54    8/0/0:9
Downstream Channel DCID RF Channel : 55    8/0/0:10
Downstream Channel DCID RF Channel : 56    8/0/0:11
Downstream Channel DCID RF Channel : 57    8/0/0:12
Downstream Channel DCID RF Channel : 58    8/0/0:13
Downstream Channel DCID RF Channel : 59    8/0/0:14
Downstream Channel DCID RF Channel : 60    8/0/0:15
Downstream Channel DCID RF Channel : 61    8/0/0:16
Downstream Channel DCID RF Channel : 62    8/0/0:17
Downstream Channel DCID RF Channel : 63    8/0/0:18
Downstream Channel DCID RF Channel : 64    8/0/0:19
Downstream Channel DCID RF Channel : 65    8/0/0:20
Downstream Channel DCID RF Channel : 66    8/0/0:21
Downstream Channel DCID RF Channel : 67    8/0/0:22
Downstream Channel DCID RF Channel : 68    8/0/0:23
UDC Enabled                        : N
Extended Upstream Transmit Power   : 61dB
Multi-Transmit Channel Mode        : Y
Number of US in UBG                : 8
Upstream Channel                   : US0        US1        US2        US3
Ranging Status                     : sta        sta        sta        sta
```

```
Upstream SNR (dB)                  : 30.62      32.32      18.25      24.26
Upstream Data SNR (dB)             : --         --         --         --
Received Power (dBmV)              : 0.50       0.00       -0.50      -0.50
Reported Transmit Power (dBmV)     : 30.75      30.75      29.25      29.25
Peak Transmit Power (dBmV)         : 61.00      61.00      61.00      61.00
Phy Max Power (dBmV)               : 48.00      48.00      48.00      48.00
Minimum Transmit Power (dBmV)      : 21.00      21.00      21.00      21.00
Timing Offset             (97.6 ns): 1800       1800       1800       1800
Initial Timing Offset              : 1544       1544       1544       1544
Rng Timing Adj Moving Avg(0.381 ns): -1         0          -1         -1
Rng Timing Adj Lt Moving Avg       : -7         0          -7         -7
Rng Timing Adj Minimum             : -256       0          -256       -256
Rng Timing Adj Maximum             : 65536      65536      65536      65536
Pre-EQ Good                        : 0          0          0          0
Pre-EQ Scaled                      : 0          0          0          0
Pre-EQ Impulse                     : 0          0          0          0
Pre-EQ Direct Loads                : 0          0          0          0
Good Codewords rx                  : 1201       1262       833        656
Corrected Codewords rx             : 0          0          169        117
Uncorrectable Codewords rx         : 0          0          205        335
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
Upstream Channel                   : US4        US5        US6        US7
Ranging Status                     : sta        sta        sta        sta
Upstream SNR (dB)                  : 15.53      31.62      31.1       31.87
Upstream Data SNR (dB)             : --         --         --         --
Received Power (dBmV)              : 0.00       0.00       -0.50      0.50
Reported Transmit Power (dBmV)     : 29.25      30.75      30.75      30.75
Peak Transmit Power (dBmV)         : 61.00      61.00      61.00      61.00
Phy Max Power (dBmV)               : 48.00      48.00      48.00      48.00
Minimum Transmit Power (dBmV)      : 21.00      21.00      21.00      21.00
Timing Offset             (97.6 ns): 1800       1800       1800       1800
Initial Timing Offset              : 1544       1800       1544       1544
Rng Timing Adj Moving Avg(0.381 ns): -1         -1         46         0
Rng Timing Adj Lt Moving Avg       : -7         -7         104        0
Rng Timing Adj Minimum             : -256       -256       0          0
Rng Timing Adj Maximum             : 65536      256        65536      65536
Pre-EQ Good                        : 0          0          0          0
Pre-EQ Scaled                      : 0          0          0          0
Pre-EQ Impulse                     : 0          0          0          0
Pre-EQ Direct Loads                : 0          0          0          0
Good Codewords rx                  : 718        1328       1173       1252
Corrected Codewords rx             : 110        0          0          0
Uncorrectable Codewords rx         : 298        0          0          0
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
sysDescr                           : DOCSIS 3.0 Cable Modem Router
Downstream Power                   : 7.40 dBmV (SNR = 43.30 dB)
MAC Version                        : DOC3.0
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= w-online, Security=disabled}
Capabilities                       : {Frag=N, Concat=N, PHS=Y}
Security Capabilities              : {Priv=, EAE=Y, Key_len=}
L2VPN Capabilities                 : {L2VPN=Y, eSAFE=Y}
Sid/Said Limit                     : {Max US Sids=8, Max DS Saids=64}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=Y}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Number of CPE                      : 0(Max CPE = 16)
Number of CPE IPs                  : 0(Max CPE IPs = 16)
Number of CPE IPv6                 : 0(Max CPE IPv6 = 16)
CFG Max-CPE                        : 16
Flaps                              : 19(Oct 11 04:00:25)
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 12 exhausted
Total US Flows                     : 1(1 active)
```

```
Total DS Flows                      : 1(1 active)
Total US Data                       : 3294 packets, 577031 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 2263 packets, 200777 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned (index)        : 2153382146 (55810)
LB group ID in config file (index) : N/A (N/A)
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Ranging Class ID                    : 0x2
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 2
Number of Multicast DSIDs Support  : 63
MDF Capability Mode                 : 2
IGMP/MLD Version                    : MLDv2
FCType10 Forwarding Support         : Y
Features Bitmask                    : 0x0
Total Time Online                   : 9h27m   (9h27m    since last counter reset)
CM Initialization Reason            : BAD_DHCP_ACK
CFG Max IPv6 CPE Prefix             : 16 (-1 used)
```

Example of show cable modem verbose Command for Displaying the Number of IPv4, IPv6 Addresses and the Maximum Value for a Cable Modem in the Cisco IOS Release 12.2(33)SCH1

The following is a sample output for the **verbose** option that displays the number of IPv4, IPv6 with the maximum value per cable modem:

```
Router# show cable modem 00C0.7bb3.fcd1 verbose | include Max
Phy Max Power (dBmV)                : 57.00
Rng Timing Adj Maximum              : 0
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=15}
Number of CPE                       : 6(Max CPE = 16)
Number of CPE IPs                   : 4(Max CPE IPs = 16)
Number of CPE IPv6                  : 4(Max CPE IPv6 = 10)
CFG Max-CPE                         : 16
Active Classifiers                  : 0 (Max = NO LIMIT)
CFG Max IPv6 CPE Prefix             : 10 (-1 used)
```

Example of show cable modem verbose Command for a Cable Modem on the Cisco cBR Series Converged Broadband Router

The following shows sample output for the **verbose** option for a particular cable modem on a Cisco cBR Series Converged Broadband Router:

```
Router#show cable modem c1/0/0 upstream 0 verbose


MAC Address                          : 0025.2eaf.82e4
IP Address                           : ---
IPv6 Address                         : 2001:DBB:4400:1:D3:BC06:33E9:F77F
Dual IP                              : N
Prim Sid                             : 50
Host Interface                       : C3/0/0/U0
MD-DS-SG / MD-US-SG                  : N/A / N/A
MD-CM-SG                             : 0x900000
Primary Downstream                   : In3/0/0:33 (RfId : 12321)
Wideband Capable                     : Y
RCP Index                            : 5
RCP ID                               : 00 00 00 00 00
Downstream Channel DCID RF Channel : 34    3/0/0:33
UDC Enabled                          : N
US Frequency Range Capability        : Standard (5-42 MHz)
Extended Upstream Transmit Power     : 0dB
Multi-Transmit Channel Mode          : N
Upstream Channel                     : US0
Ranging Status                       : sta
Upstream SNR (dB)                    : 36.12
Upstream Data SNR (dB)               : 36.12
Received Power (dBmV)                : -1.00
Timing Offset              (97.6 ns): 1806
Initial Timing Offset                : 1806
Rng Timing Adj Moving Avg(0.381 ns): 0
Rng Timing Adj Lt Moving Avg         : 0
Rng Timing Adj Minimum               : 0
Rng Timing Adj Maximum               : 0
Pre-EQ Good                          : 0
Pre-EQ Scaled                        : 0
Pre-EQ Impulse                       : 0
Pre-EQ Direct Loads                  : 0
Good Codewords rx                    : 241
Corrected Codewords rx               : 0
Uncorrectable Codewords rx           : 0
Phy Operating Mode                   : atdma
sysDescr                             :
Downstream Power                     : 0.00 dBmV (SNR = ----- dB)
MAC Version                          : DOC3.0
QoS Provisioned Mode                 : DOC1.1
Enable DOCSIS2.0 Mode                : Y
Modem Status                         : {Modem= online, Security=disabled}
Capabilities                         : {Frag=Y, Concat=Y, PHS=Y}
Security Capabilities                : {Priv=, EAE=N, Key_len=}
L2VPN Capabilities                   : {L2VPN=N, eSAFE=N}
L2VPN type                           : {CLI=N, DOCSIS=N}
Sid/Said Limit                       : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support           : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support           : {Taps/Symbol= 1, Num of Taps= 24}
Flaps                                : 3(May 21 10:02:22)
Errors                               : 0 CRCs, 0 HCSes
Stn Mtn Failures                     : 0 aborts, 2 exhausted
Total US Flows                       : 1(1 active)
Total DS Flows                       : 1(1 active)
Total US Data                        : 31 packets, 6084 bytes
Total US Throughput                  : 0 bits/sec, 0 packets/sec
Total DS Data                        : 8 packets, 912 bytes
Total DS Throughput                  : 0 bits/sec, 0 packets/sec
LB group ID assigned                 : 1
LB group ID in config file           : N/A
```

```
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 : d30
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Active Classifiers                  : 0 (Max = 5)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 0
CM Energy Management Capable        : N
CM Enable Energy Management         : N
CM Enter Energy Management          : NO
Battery Mode                        : N
Battery Mode Status                 :
Number of Multicast DSIDs Support   : 16
MDF Capability Mode                 : 2
IGMP/MLD Version                    : MLDv2
FCType10 Forwarding Support         : Y
Features Bitmask                    : 0x0
Total Time Online                   : 07:24   (07:24    since last counter reset)
CM Initialization Reason            : POWER_ON
```

Example of show cable modem verbose Command in Cisco IOS-XE Release 3.16.0S

The following is a sample output for the **verbose** option that displays the battery mode and battery mode status per cable modem in Cisco IOS Release 3.16.0S:

```
Security Capabilities               : {Priv=BPI+, EAE=Y, Key_len=56,128}
L2VPN Capabilities                  : {L2VPN=N, eSAFE=N}
L2VPN type                          : {CLI=N, DOCSIS=N}
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Flaps                               : 0()
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 0 exhausted
Total US Flows                      : 1(1 active)
Total DS Flows                      : 1(1 active)
Total US Data                       : 33 packets, 11496 bytes
Total US Throughput                 : 363 bits/sec, 0 packets/sec
Total DS Data                       : 7 packets, 798 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned                : 2147631104
LB group ID in config file          : N/A
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 : D30
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
```

```
Service Type ID                    :
Service Type ID in config file     :
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 2
CM Energy Management Capable       : N
CM Enable Energy Management        : N
CM Enter Energy Management         : NO
Battery Mode                       : N
Battery Mode Status                : done
Number of Multicast DSIDs Support  : 16
```

Example of show cable modem verbose Command in Cisco IOS-XE Release 3.17.0S

The following is a sample output for the **verbose** option that displays the information after the service flow priority in downstream extended header is enabled in Cisco IOS-XE Release 3.17.0S:

```
Router# show cable modem 80.80.0.12 verbose

MAC Address                        : 5039.558a.69b2
IP Address                         : 80.80.0.12
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 6
Host Interface                     : C1/0/0/UB
MD-DS-SG / MD-US-SG                : 2 / 1
MD-CM-SG                           : 0x300201
Primary Wideband Channel ID        : 4097 (Wi1/0/0:0)
Primary Downstream                 : In1/0/0:1 (RfId : 4097)
Wideband Capable                   : Y
RCP Index                          : 3
RCP ID                             : 00 10 00 00 04
Downstream Channel DCID RF Channel : 2     1/0/0:1
Downstream Channel DCID RF Channel : 1     1/0/0:0
UDC Enabled                        : N
US Frequency Range Capability      : Standard (5-42 MHz)
Extended Upstream Transmit Power   : 0dB
Multi-Transmit Channel Mode        : Y
Number of US in UBG                : 4
Minimum power load in DRW          : 0.00dB
Upstream Channel                   : US0        US1        US2        US3
Ranging Status                     : sta        sta        sta        sta
Upstream SNR (dB)                  : 38.12      38.12      38.12      36.62
Upstream Data SNR (dB)             : 36.12      36.12      36.12      36.12
Received Power (dBmV)              : -0.50      0.00       -0.50      -0.50
Reported Transmit Power (dBmV)     : 45.50      45.50      45.50      45.50
Peak Transmit Power (dBmV)         : 56.00      56.00      56.00      56.00
Phy Max Power (dBmV)               : 56.00      56.00      56.00      56.00
Max Dynamic ranging window (dBmV)  : 56.00      56.00      56.00      56.00
Min Dynamic ranging window (dBmV)  : 44.00      44.00      44.00      44.00
Minimum Transmit Power (dBmV)      : 21.00      21.00      21.00      21.00
Timing Offset              (97.6 ns): 1792      1792       1792       1792
Initial Timing Offset              : 1536       1792       1536       1536
Rng Timing Adj Moving Avg(0.381 ns): 0          0          0          0
Rng Timing Adj Lt Moving Avg       : 0          0          0          0
```

```
Rng Timing Adj Minimum              : 0          0          0          0
Rng Timing Adj Maximum              : 0          0          0          0
Pre-EQ Good                         : 0          0          0          0
Pre-EQ Scaled                       : 0          0          0          0
Pre-EQ Impulse                      : 0          0          0          0
Pre-EQ Direct Loads                 : 0          0          0          0
Good Codewords rx                   : 46         1007       1          1
Corrected Codewords rx              : 0          0          0          0
Uncorrectable Codewords rx          : 0          0          0          0
Phy Operating Mode                  : tdma*      tdma*      tdma*      tdma*
sysDescr                            :
Downstream Power                    : 0.00 dBmV (SNR = ----- dB)
MAC Version                         : DOC3.0
QoS Provisioned Mode                : DOC1.1
Enable DOCSIS2.0 Mode               : Y
Service Flow Priority               : Y
Modem Status                        : {Modem= init(o), Security=disabled}
Capabilities                        : {Frag=N, Concat=N, PHS=Y}
Security Capabilities               : {Priv=, EAE=Y, Key_len=}
L2VPN Capabilities                  : {L2VPN=N, eSAFE=N}
L2VPN type                          : {CLI=N, DOCSIS=N}
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=15}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Flaps                               : 31(Oct 12 14:02:08)
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 10 exhausted
Total US Flows                      : 1(1 active)
Total DS Flows                      : 1(1 active)
Total US Data                       : 0 packets, 0 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 0 packets, 0 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
LB group ID assigned                : 2147508230
LB group ID in config file          : N/A
LB policy ID                        : 0
LB policy ID in config file         : 0
LB priority                         : 0
Tag                                 :
Required DS Attribute Mask          : 0x0
Forbidden DS Attribute Mask         : 0x0
Required US Attribute Mask          : 0x0
Forbidden US Attribute Mask         : 0x0
Service Type ID                     :
Service Type ID in config file      :
Active Classifiers                  : 0 (Max = NO LIMIT)
CM Upstream Filter Group            : 0
CM Downstream Filter Group          : 0
CPE Upstream Filter Group           : 0
CPE Downstream Filter Group         : 0
DSA/DSX messages                    : permit all
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 2
CM Energy Management Capable        : N
CM Enable Energy Management         : N
CM Enter Energy Management          : NO
Battery Mode                        : N
Battery Mode Status                 : done
Number of Multicast DSIDs Support   : 16
MDF Capability Mode                 : 2
IGMP/MLD Version                    : IGMPv3
FCType10 Forwarding Support         : Y
Features Bitmask                    : 0x0
```

```
Total Time Online                  : 00:00   (00:00    since last counter reset)
CM Initialization Reason           : REG_RSP_NOT_OK
```

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.

Example of show cable modem verbose command in Cisco IOS-XE Release 3.18.0SP

The following is a sample output for the **verbose** that displays the DOCSIS 3.1 Commanded Power levels per upstream and data burst resiliency suspended information in Cisco IOS-XE Release 3.18.0SP:

```
Router# show cable modem fc52.8d5e.8c5e verbose
Load for five secs: 9%/1%; one minute: 13%; five minutes: 13%
Time source is NTP, 09:32:29.200 PDT Wed Jun 1 2016

MAC Address                        : fc52.8d5e.8c5e
IP Address                         : 5.67.32.13
IPv6 Address                       : 2001:420:4:EF00::543:25BB
Dual IP                            : Y
Prim Sid                           : 1
Host Interface                     : C3/0/0/UB
MD-DS-SG / MD-US-SG                : 2 / 16
MD-CM-SG                           : 0x900210
Primary Wideband Channel ID        : 12335 (Wi3/0/0:46)
Primary Downstream                 : In3/0/0:4 (RfId : 12292, SC-QAM)
Wideband Capable                   : Y
DS Tuner Capability                : 32
Downstream Channel DCID RF Channel : 5     3/0/0:4 (SC-QAM)
Downstream Channel DCID RF Channel : 1     3/0/0:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     3/0/0:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     3/0/0:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     3/0/0:3 (SC-QAM)
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
Downstream Channel DCID RF Channel : 7     3/0/0:6 (SC-QAM)
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
Downstream Channel DCID RF Channel : 9     3/0/0:8 (SC-QAM)
Downstream Channel DCID RF Channel : 10    3/0/0:9 (SC-QAM)
Downstream Channel DCID RF Channel : 11    3/0/0:10 (SC-QAM)
Downstream Channel DCID RF Channel : 12    3/0/0:11 (SC-QAM)
Downstream Channel DCID RF Channel : 13    3/0/0:12 (SC-QAM)
Downstream Channel DCID RF Channel : 14    3/0/0:13 (SC-QAM)
Downstream Channel DCID RF Channel : 15    3/0/0:14 (SC-QAM)
Downstream Channel DCID RF Channel : 16    3/0/0:15 (SC-QAM)
Downstream Channel DCID RF Channel : 17    3/0/0:16 (SC-QAM)
Downstream Channel DCID RF Channel : 18    3/0/0:17 (SC-QAM)
Downstream Channel DCID RF Channel : 19    3/0/0:18 (SC-QAM)
Downstream Channel DCID RF Channel : 20    3/0/0:19 (SC-QAM)
Downstream Channel DCID RF Channel : 21    3/0/0:20 (SC-QAM)
Downstream Channel DCID RF Channel : 22    3/0/0:21 (SC-QAM)
Downstream Channel DCID RF Channel : 23    3/0/0:22 (SC-QAM)
Downstream Channel DCID RF Channel : 24    3/0/0:23 (SC-QAM)
Downstream Channel DCID RF Channel : 25    3/0/0:24 (SC-QAM)
Downstream Channel DCID RF Channel : 26    3/0/0:25 (SC-QAM)
Downstream Channel DCID RF Channel : 27    3/0/0:26 (SC-QAM)
Downstream Channel DCID RF Channel : 28    3/0/0:27 (SC-QAM)
Downstream Channel DCID RF Channel : 29    3/0/0:28 (SC-QAM)
Downstream Channel DCID RF Channel : 30    3/0/0:29 (SC-QAM)
Downstream Channel DCID RF Channel : 31    3/0/0:30 (SC-QAM)
```

```
Downstream Channel DCID RF Channel : 32    3/0/0:31 (SC-QAM)
Downstream Channel DCID RF Channel : 159   3/0/0:158 (OFDM)
Downstream OFDM DCID               : 159
Downstream OFDM Profile (in-use)   : 0
Downstream OFDM Profile (dwngrd)   : 0
Downstream OFDM Profile (recomm)   : 0
Downstream OFDM Profile (unfit)    : N/A
UDC Enabled                        : N
US Frequency Range Capability      : Extended (5-85 MHz)
Extended Upstream Transmit Power   : 61dB
Max CM Transmit Power (dBmV)       : 65.00
Neq 1.6MHz Transmit Channels       : 16
Max Transmit Channel Power (dBmV)  : 52.96
Multi-Transmit Channel Mode        : Y
Max US SC-QAMs Supported           : 8
Number of US in UBG                : 8
Minimum power load in DRW (dB)     : 3.75
Max Dynamic ranging window (dBmV)  : 49.00
Min Dynamic ranging window (dBmV)  : 37.00
Upstream Channel                   : US8        US9        US10       US11
Ranging Status                     : sta        sta        sta        sta
Upstream SNR (dB)                  : 42.4       42.4       42.4       42.4
Upstream Data SNR (dB)             : 38.12      38.12      40.0       38.12
Received Power (dBmV)              : 3.00       3.00       3.00       3.00
Data Burst resiliency suspended    : N          N          N          N
Reported Transmit Power (dBmV)     : 42.00      42.25      42.25      42.75
Commanded Transmit Power (dBmV)    : 42.00      42.25      42.25      42.75
Minimum Transmit Power (dBmV)      : 17.00      17.00      17.00      17.00
Power Load (dB)                    : 10.96      10.71      10.71      10.21
Timing Offset            (97.6 ns): 2124       2122       2122       2122
Initial Timing Offset              : 1866       1866       1866       1866
Rng Timing Adj Moving Avg(0.381 ns): -512      -1         0          -69
Rng Timing Adj Lt Moving Avg       : -502       -7         0          -71
Rng Timing Adj Minimum             : -512       -256       0          -768
Rng Timing Adj Maximum             : 512        0          0          1024
Pre-EQ Good                        : 386        386        381        381
Pre-EQ Scaled                      : 0          0          0          0
Pre-EQ Impulse                     : 0          0          0          0
Pre-EQ Direct Loads                : 0          0          0          0
Good Codewords rx                  : 409641     244847     111430     77463
Corrected Codewords rx             : 0          0          0          0
Uncorrectable Codewords rx         : 0          0          0          0
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
Upstream Channel                   : US12       US13       US14       US15
Ranging Status                     : sta        sta        sta        sta
Upstream SNR (dB)                  : 42.4       42.4       42.4       42.4
Upstream Data SNR (dB)             : 40.0       39.8       39.8       40.0
Received Power (dBmV)              : 3.00       3.00       3.00       3.00
Data Burst resiliency suspended    : N          N          N          N
Reported Transmit Power (dBmV)     : 46.75      46.50      46.75      47.50
Commanded Transmit Power (dBmV)    : 46.75      46.50      46.75      47.50
Minimum Transmit Power (dBmV)      : 17.00      17.00      17.00      17.00
Power Load (dB)                    : 6.21       6.46       6.21       5.46
Timing Offset            (97.6 ns): 2121       2122       2123       2122
Initial Timing Offset              : 1866       1866       1866       1866
Rng Timing Adj Moving Avg(0.381 ns): 288      0          -119       9
Rng Timing Adj Lt Moving Avg       : 172        0          -169       42
Rng Timing Adj Minimum             : -1024      0          -768       -1024
Rng Timing Adj Maximum             : 1024       0          768        1024
Pre-EQ Good                        : 381        382        381        386
Pre-EQ Scaled                      : 0          0          0          0
Pre-EQ Impulse                     : 0          0          0          0
Pre-EQ Direct Loads                : 0          0          0          0
Good Codewords rx                  : 71496      74165      69571      72989
```

```
Corrected Codewords rx             : 0          0          0          0
Uncorrectable Codewords rx         : 0          0          0          0
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
sysDescr                           : Technicolor DOCSIS Cable Modem <<HW_REV: 1.4; VENDOR:
 Technicolor; BOOTR: 5.0.0; SW_REV: SR01.F3.09.02.01_Git_e9f9c12_DEV; MODEL: ECMXM6>>
Downstream Power                   : -8.70 dBmV (SNR = 42.60 dB)
MAC Version                        : DOC3.1
Operational Version                : DOC3.1
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Service Flow Priority              : Y
Modem Status                       : {Modem= w-online(pt), Security=assign(tek)}
Capabilities                       : {Frag=N, Concat=N, PHS=N}
Security Capabilities              : {Priv=BPI+, EAE=Y, Key_len=56,128}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
L2VPN type                         : {CLI=N, DOCSIS=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=63}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Extended Pkt Len Capability        : Max len of PDU = 2000 bytes, CMTS sent 2000
OFDM MRC Support                   : Max num of DS OFDM channels = 2
OFDM MTC Support                   : Max num of US OFDM channels = 2
DS OFDM Profile Support            : Max num of DS OFDM profile per channel = 5
DS OFDM QAM Modulation Support     : 0x1FD4{|QPSK|16|64|128|256|512|1024|2048|4096 QAM}
US OFDM QAM Modulation Support     : 0x1FFC{|QPSK|8|16|32|64|128|256|512|1024|2048|4096
QAM}
DS Lower Band Edge                 : 0x2{258 MHz}
DS Upper Band Edge                 : 0x1{1218 MHz}
Diplex Upper Band Edge             : 1081(-)
DTP mode                           : 0(DTP Op not supported)
DTP performance                    : 0(DTP mode not supported)
CM Capability Reject               : {1,3,15,22,23,35,36,38,44,46,47}
Flaps                              : 18(May 31 16:50:45)
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 8 exhausted
Total US Flows                     : 8(8 active)
Total DS Flows                     : 8(8 active)
Total US Data                      : 128993 packets, 242458955 bytes
Total US Throughput                : 943 bits/sec, 0 packets/sec
Total DS Data                      : 8607907 packets, 17215304030 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned               : N/A
LB group ID in config file         : N/A
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0xF1
Forbidden US Attribute Mask        : 0x0

Service Type ID                    :
Service Type ID in config file     :
Ranging Class ID                   : 0x6
Active Classifiers                 : 14 (Max = NO LIMIT)
CM Upstream Filter Group           : 4
CM Downstream Filter Group         : 3
CPE Upstream Filter Group          : 2
CPE Downstream Filter Group        : 1
MTA Upstream Filter Group          : 10
MTA Downstream Filter Group        : 9
PS Upstream Filter Group          : 2
PS Downstream Filter Group        : 1
```

```
DSA/DSX messages                    : permit all
Dynamic Secret                      : 8F34CBD44A227651856599EEAB907D42
Voice Enabled                       : NO
DS Change Times                     : 0
Boolean Services                    : 22
CM Energy Management Capable        : Y
CM Enable Energy Management         : N
CM Enter Energy Management          : NO
Battery Mode                        : N

Battery Mode Status                 : AC_POWER_MODE
Number of Multicast DSIDs Support   : 32
MDF Capability Mode                 : 2
IGMP/MLD Version                    : MLDv2
FCType10 Forwarding Support         : Y
Features Bitmask                    : 0x0
Total Time Online                   : 16h41m  (16h41m   since last counter reset)
CM Initialization Reason            : TCS_FAILED_ON_ALL_US
```

Example of show cable modem verbose command in Cisco IOS-XE Release 16.6.1

The following is a sample output for the **verbose** option that displays the cable modem's CM-STATS-ACK capability in Cisco IOS-XE Release 16.6.1:

```
Router# show cable modem 0895.2a9b.2fb2 verbose
Security Capabilities               : {Priv=BPI+, EAE=Y, Key_len=56,128}
L2VPN Capabilities                  : {L2VPN=N, eSAFE=N}
L2VPN type                          : {CLI=N, DOCSIS=N}
Sid/Said Limit                      : {Max US Sids=16, Max DS Saids=63}
Optional Filtering Support          : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support          : {Taps/Symbol= 1, Num of Taps= 24}
Extended Pkt Len Capability         : Max len of PDU = 2000 bytes, CMTS sent 2000
OFDM MRC Support                    : Max num of DS OFDM channels = 2
OFDM MTC Support                    : Max num of US OFDM channels = 2
DS OFDM Profile Support             : Max num of DS OFDM profile per channel = 5
DS OFDM QAM Modulation Support      : 0x1FD4{|QPSK|16|64|128|256|512|1024|2048|4096 QAM}
US OFDM QAM Modulation Support      : 0x1FFC{|QPSK|8|16|32|64|128|256|512|1024|2048|4096
QAM}
DS Lower Band Edge                  : 0x1{108 MHz}
DS Upper Band Edge                  : 0x1{1218 MHz}
Diplex Upper Band Edge              : 569(-)
DTP mode                            : 0(DTP Op not supported)
DTP performance                     : 0(DTP mode not supported)
CM Capability Reject                : {1,3,15,22,23,35,36,38,44,47}
CM STATUS ACK Support               : Y
Flaps                               : 0()
Errors                              : 0 CRCs, 0 HCSes
Stn Mtn Failures                    : 0 aborts, 0 exhausted
Total US Flows                      : 1(1 active)
Total DS Flows                      : 1(1 active)
Total US Data                       : 10 packets, 7192 bytes
Total US Throughput                 : 0 bits/sec, 0 packets/sec
Total DS Data                       : 0 packets, 0 bytes
Total DS Throughput                 : 0 bits/sec, 0 packets/sec
```

Example of show cable modem cm-status command in Cisco IOS-XE Release 16.6.1

The following is a sample output for the **ack** option that displays the cable modems to which CM-STATUS-ACK messages are sent in Cisco IOS XE Everest 16.6.1:

```
Router# show cable modem cm-status ack
I/F     MAC Address    Event            TID   Acks  Time
C3/0/0  0895.2a9b.2f61 MDD timeout      2     1     Jan 18 11:30:46
                       QAM failure      6     1     Jan 18 11:30:41
                       MDD recovery     2     1     Jan 18 11:31:58
                       QAM recovery     2     1     Jan 18 11:31:55
C3/0/0  0895.2a9b.2fb2 MDD timeout      2     1     Jan 18 11:30:44
                       QAM failure      2     1     Jan 18 11:30:41
                       MDD recovery     2     1     Jan 18 11:32:05
                       QAM recovery     2     1     Jan 18 11:32:03
```

Example of show cable modem cm-status command in Cisco IOS XE Amsterdam 17.3.1w

The following is a sample output that displays the partial mode description:

```
Router#show cable modem ver | inc Partial
Partial-Mode Information          : reason 0x21  failed-tcs 0x20 db-tcs 0x20  (RNG, RxMER)
Partial-Mode Information           : reason 0x20  db-tcs 0x20  (RxMER)
```

Example of show cable modem cm-status command in Cisco IOS XE Bengaluru 17.6.1x

```
Router#show cable modem 4800.33ef.1dde cm-status verbose
Load for five secs: 6%/0%; one minute: 5%; five minutes: 5%
Time source is NTP, 14:40:51.438 CST Thu Nov 4 2021
I/F     MAC Address    Event            TID   Time             Description
C1/0/1  4800.33ef.1dde MDD timeout      7     Nov 4  14:40:37  DS Ch ID: 1 2 3
                       QAM failure      6     Nov 4  14:33:22  DS Ch ID: 2
                       QAM failure      5     Nov 4  14:33:18  DS Ch ID: 2
                       QAM failure      4     Nov 4  14:33:14  DS Ch ID: 2
                       QAM failure      3     Nov 4  14:32:01  DS Ch ID: 2
                       MDD timeout      2     Nov 4  14:31:48  DS Ch ID: 1
```

Table 7: show cable modem Field Descriptions

Field	Description
MAC Address	MAC address for the CM.
IP Address	IP address that the DHCP server has assigned to the CM.
IPv6 Address	IPv6 address that the DHCP server has assigned to the CM.
Dual IP	Support of dual IP for both IPv4 and IPv6 addressing.
I/F, Interface	Cable interface line card providing the upstream for this CM.
sysDescr	Vendor and model of the cable modem, as reported by the cable modem. This field displays a value only when the **cable modem remote-query** command is configured.

Field	Description
Upstream Power Downstream Power	Upstream and Downstream Power fields are displayed only if the CM remote-query feature has been enabled using the **cable modem remote-query** command. Upstream Power displays the cable modem transmit level in dBmV, and Downstream Power displays the dBmV level received at the CM, as measured by the CMTS.
MAC State	Current state of the MAC layer.
Prim SID	Primary SID assigned to this CM.
Host Interface	Host interface name.
Primary Wideband Channel ID	Bonding group ID of the wideband interface assigned to the CM.
MD-DS-SG	MAC Domain Downstream Service Group, the downstream channels of a single MAC domain that reach the cable modem.
DSID	Downstream Service Identifier.
Primary Downstream	Primary downstream channel assigned to the CM.
Wideband Capable	Cable modem is wideband-capable or not.
Downstream Channel DCID RF Channel	Downstream channel and channel ID used by a CM.
Multi-Transmit Channel Mode	Cable modem is in MTC mode or not.
UDC Enabled	Upstream Drop Classifier enabled or disabled. Displays ‘Y’ for enabled state and ‘N’ for disabled.
Upstream SNR	Upstream signal-to-noise ratio (SNR) for a particular cable modem (CM), in decibels (dB).
Upstream SM MER (dB)	Upstream station maintenance (SM) modulation error ratio (MER) for a particular cable modem, in decibels (dB).
Upstream Data MER (dB)	Upstream modulation error ratio (MER) for a particular cable modem, in decibels (dB). This field is displayed only when RF adaptation is enabled.

Field	Description
RxPwr, Received Power	Average power in dBmV for the upstream channel symbol rate for the CM. With default settings, 0 dBmV is considered optimal, but a range of -1 to 1 dBmV is allowable. When cable modems exceed this range, older Cisco IOS releases supported a drop to as low as -2 dBmV. Recent Cisco IOS releases support a drop to as low as -4 dBmV. This field supports a resolution of 0.25 dBmV, but the dB resolution level for cable modems and for the Cisco CMTS are slightly higher—approximately 1.0 and 1.4 dB. **Note** An asterisk (*) in the RxPwr column indicates that a power adjustment has been made for that CM. An exclamation point (!) indicates that the cable modem has reached its maximum power transmit level and cannot increase its power level further.
Timing Offset and Initial Timing Offset	Timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the cable modem has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the cable modem (which will include any internal delay between when the cable modem software begins the transmission and when the bits actually appear on the local cable interface).
Reported Transmit Power (dBmV)	Reported Transmit Power level by the cable modem for each upstream channel. This applies only to the cable modems operating in the MTC mode.
Peak Transmit Power (dBmV)	This is the maximum transmit power level that the cable modem in the MTC mode could transmit at for the upstream channel.
Minimum Transmit Power (dBmV)	This is the minimum transmit power level that the cable modem in the MTC mode could transmit at for the upstream channel.
Rng Timing Adj Moving Avg(0.381 ns): Rng Timing Adj Lt Moving Avg: Rng Timing Adj Minimum: Rng Timing Adj Maximum:	A Cisco CMTS router tracking variables to see relative timing offset adjustments.

Field	Description
Pre-EQ Good : Pre-EQ Scaled : Pre-EQ Impulse: Pre-EQ Direct Loads	Equalizer statistics counter.
Good Codewords rx	Good code words for a particular upstream channel. This counter is reset during interface reset.
Corrected Codewords rx	Correctable code words for a particular upstream channel. This counter is reset during interface reset.
Uncorrectable Codewords rx	Uncorrectable code words for a particular upstream channel. This counter is reset during interface reset.
sysDescr	Identifies the vendor and model of the cable modem, as reported by the cable modem. This field displays a value only when the cable modem remote-query.
Num CPEs, CFG Max-CPE	Indicates the number of CPE devices for which the cable modem is providing services.
Number of CPE IPs	Indicates the maximum number of IP addresses assigned to CPE devices behind this CM, as configured by the **cable max-hosts** command.
Ver, MAC Version	Displays the maximum supported version of DOCSIS that the cable modem supports (DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0).
QoS Prov, QoS Provisioned Mode	Displays the version of DOCSIS that the cable modem currently is provisioned for (DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0).
Enable DOCSIS 2.0 Mode	Indicates that the cable modems are allowed to come online when in mixed-mode environments such as DOCSIS 1.0 TDMA, DOCSIS 1.1 TDMA and DOCSIS 2.0 ATDMA. This value is set to Y by default, unless the TLV 39 has been set to disabled (0) in the CM's Registration Request message or in the DOCSIS configuration file.
Phy Operating Mode	Indicates the type of PHY-layer modulation that the cable modem is using: tdma or atdma. Also indicates the TDMA/ATDMA/SCDA mode that the cable modem is operating on a specific channel.
Modem Status	Indicates the overall modem state and the security state of the primary SID.
BPI Enbld, BPI	Indicates whether or not Baseline Privacy Interface (BPI) or BPI Plus (BPI+) encryption is enabled for the CM.
DIP	Dual IP flag. Identifies whether or not ("Y" or "N") the cable modem or CPE supports both IPv4 and IPv6 addressing.
Capabilities	Indicates what the cable modem reported as its capabilities in its Registration Request message: DOCSIS fragmentation, concatenation, packet header suppression (PHS), and BPI encryption.

Field	Description
Security Capabilities	Indicates the privacy mode used by the cable modem (BPI or BPI+), early authentication and encryption (EAE) support, and the Key Length.
Optional Filtering Support	Indicates whether 802.1P or 802.1Q packet filtering is enabled for this CM.
Transmit Equalizer Support	Number of taps being used for transmit equalization.
Flaps	Number of flaps reported by this CM, with the date and time of the last flap within the parentheses.
Errors	Number of frame CRC and HCS errors reported for this CM.
Stn Mtn Failures	Number of station maintenance (cable keepalive) messages that the CMTS sent to this cable modem but did not receive any reply.
Total US Flows	Total number of upstream service flows, with the number of active service flows within the parentheses.
Total DS Flows	Total number of downstream service flows, with the number of active service flows within the parentheses.
Total US Data	Total data this cable modem has transmitted on the upstream, in packets and bytes.
Total US Throughput	Calculated throughput for this cable modem on the upstream, if available.
Total DS Data	Total data this cable modem has received on the downstream, in packets and bytes.
Total DS Throughput	Calculated throughput for this cable modem on the downstream, if available.
Active Classifiers	Current number of active classifiers for this CM, with the maximum number of allowable classifiers for this cable modem within the parentheses.
CM Required Attribute	Indicates the current required attribute-mask value.
CM Forbidden Attribute	Indicates the current forbidden attribute-mask value.
DSA/DSX messages	Indicates whether dynamic service changes (DSX) from the cable modem are permitted (permit all) or disallowed (reject all).
Voice Enabled	Indicates whether the cable modem is voice-enabled.
Number of Multicast DSIDs Support	Indicates the total number of supported multicast DSIDs.
FCType10 Forwarding Support	Indicates FCType10 Forwarding Support.

Field	Description
Dynamic Secret	Dynamically-generated shared secret (a 16-byte hexadecimal value) that was used in the cable modem's previous registration cycle. If the cable modem is currently offline, this field shows all zeroes. If a cable modem has been excluded from being processed by the dynamic shared secret feature, using the **cable dynamic-secret exclude** command, this field shows "Excluded". **Note** This field displays a value only when the **cable dynamic-secret** command has been used on the CMTS interface.
Total Time Online	Amount of time in days, hours, and minutes that this cable modem has been continuously online since it last registered with the CMTS. This field begins incrementing whenever the cable modem enters one of the online(x) MAC states, and is reset to 0 whenever the cable modem enters any other MAC state.
Event	Event type.
TID	Transaction identifier.
Count	Number of valid messages received.
Dups	Number of duplicate messages received.
Time	Time when last valid event was received.
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.
SFID	Service flow identifier.
BE Queues	Best effort queues.
CIR Queues	Committed information rate queues.
Low Latency Queues	Low latency queues.
Ranging Class ID	Upstream ranging class ID.
Upstream SNR	Signal-to-noise ratio of the upstream signal (station maintenance).
Upstream Data SNR	Signal-to-noise ratio for actual data bursts.

The table below shows the possible values for the MAC state field.

Note The CM MAC state field can also be retrieved using SNMP by getting the value of the cdxCmtscable modemstatusValue object in the CISCO-DOCS-EXT-MIB. The following symbols appended to the modem state indicate a special condition:An exclamation mark (!) indicates that the cable dynamic-secret command is used with either the mark or reject keyword and the cable modem has failed the dynamic secret authentication check.An ampersand (and) indicates that the cable modem has registered using a self-signed certificate. This is inherently not secure and can be avoided by negating the cable privacy accept-self-signed-certificate command.The asterisk () indicates that the cable modem does not satisfy the BPI+ policy and the data traffic is blocked. The cable privacy bpi-plus-policy command enforces this requirement.A hash sign () indicates that the cable modem is using an unknown configuration file. To solve this problem, use the cable dynamic-secret command with the reject keyword. This will reject registration for cable modems with DOCSIS configuration files. In Cisco IOS Releases 12.1(20)EC, 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.

Table 8: Descriptions for the MAC State Field

MAC State Value	Description
Ranging Status Conditions for Devices Using IPv4 Addressing	
init(r1)	The cable modem sent initial ranging.
init(r2)	The cable modem is ranging. The CMTS received initial ranging from the cable modem and has sent RF power, timing offset, and frequency adjustments to the CM.
init(rc)	Ranging has completed. **Note** If a cable modem appears to be stuck in this state, it could be that the cable modem 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 cable modem to finish registration and come online. Either manually move one or more cable modems to other upstreams, or enable load balancing on the upstream using the **cable load-balance group** commands.
Registration and Provisioning Status Conditions for Devices Using IPv4 Addressing If early authentication and encryption is used, the letter 's' is appended to these states to indicate secure registration.	
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.

MAC State Value	Description
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 cable modem appears to be stuck in this state, the cable modem 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 cable modem 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 cable modem remains in this state, it indicates that the download has failed.
init(t)	Time-of-day (TOD) exchange has started.
Registration and Provisioning Status Conditions for Devices Using IPv6 Addressing If early authentication and encryption is used, the letter 's' is appended to these states to indicate secure registration.	
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 cable modem 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 cable modem to the TFTP server.
init6(t)	The Cisco CMTS router has seen the REQUEST message from the cable modem to the TOD server.
Non-error Status Conditions	
cc(r1)	The cable modem had registered and was online, but has received a Downstream Channel Change (DCC) or Upstream Channel Change (UCC) request message from the CMTS. The cable modem 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 cable modem is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.

MAC State Value	Description
cc(r2)	This state should normally follow cc(r1) and indicates that the cable modem has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the cable modem 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 cable modem is considered offline (disconnected or powered down).
resetting	The cable modem is being reset and will shortly restart the ranging and registration process.
online	The cable modem has registered and is enabled to pass data on the network.
online(d)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. The cable modem does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the cable modem 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 cable modem is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The cable modem registered, but network access for CPE devices using this cable modem 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 cable modem registered, but network access for CPE devices using this cable modem 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 cable modem registered, BPI is enabled and KEK is assigned.
online(pt)	The cable modem 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.
expire(pk)	The cable modem registered, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value.
expire(pkd)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.

MAC State Value	Description
expire(pt)	The cable modem registered, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value.
expire(ptd)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The cable modem 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 cable modem attempt a TFTP download of the DOCSIS configuration file before registering, but the cable modem did not do so.
reject(c)	The cable modem attempted to register, but registration was refused due to a a number of possible errors: • The cable modem attempted to register with a minimum guaranteed upstream bandwidth that would exceed the limits imposed by the **cable upstream admission-control** command. • The cable modem has been disabled because of a security violation. • A bad class of service (COS) value in the DOCSIS configuration file. • The cable modem attempted to create a new COS configuration but the CMTS is configured to not permit such changes. • The cable modem 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 cable modem and CMTS.)
reject(pk)	KEK key assignment is rejected, and the modem has not been authenticated.
reject(pkd)	The cable modem registered, but network access for CPE devices using this cable modem 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.

MAC State Value	Description
reject(ptd)	The cable modem registered, but network access for CPE devices using this cable modem 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.
reject(ts)	The cable modem attempted to register, but registration failed because the TFTP server timestamp in the cable modem registration request did not match the timestamp maintained by the CMTS. This might indicate that the cable modem attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The cable modem attempted to register, but registration failed because the IP address in the cable modem 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 cable modem attempted to register, but registration failed because the cable modem 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.
Early Authentication and Encryption is Enabled	
assign(epk)	BPI is enabled and KEK is assigned.
assign(ept)	BPI is enabled and TEK is assigned. The registration messages will be encrypted.
expire(epk)	Early authentication and encryption is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value.
expire(ept)	Early authentication and encryption is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value.
reject(epk)	Early authentication and encryption is enabled, KEK key assignment is rejected, and the modem has not been authenticated.
reject(ept)	Early authentication and encryption is enabled, TEK key assignment is rejected, and BPI encryption has not been established.
sinit(d)	Early authentication and encryption is enabled, the DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
sinit6(s)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the DHCPv6 SOLICIT message from the CM.
sinit(io)	Early authentication and encryption is enabled, 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.
sinit6(a)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the ADVERTISE message from the DHCPv6 server to the CM.

MAC State Value	Description
sinit(dr)	Early authentication and encryption is enabled, the DHCP request has been sent to the cable modem.
sinit6(r)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the REQUEST response from the cable modem to the DHCPv6 server.
sinit(i)	Early authentication and encryption is enabled, 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.
sinit6(i)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the REPLY message from the DHCPv6 server to the CM.
sinit(o)	Early authentication and encryption is enabled, the cable modem 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 cable modem remains in this state, it indicates that the download has failed.
sinit6(o)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the REQEST message from the cable modem to the TFTP server.
sinit(t)	Early authentication and encryption is enabled, time-of-day (TOD) exchange has started.
sinit6(t)	Early authentication and encryption is enabled, the Cisco CMTS router has seen the REQUEST message from the cable modem to the TOD server.
sreject(m)	Early authentication and encryption is enabled, the cable modem 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.
sreject(ts)	Early authentication and encryption is enabled, the cable modem attempted to register, but registration failed because the TFTP server timestamp in the cable modem registration request did not match the timestamp maintained by the CMTS. This might indicate that the cable modem attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
sreject(ip)	Early authentication and encryption is enabled, the cable modem attempted to register, but registration failed because the IP address in the cable modem 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.

MAC State Value	Description
sreject(c)	Early authentication and encryption is enabled, the cable modem 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.)
sreject(na)	Early authentication and encryption is enabled, the cable modem attempted to register, but registration failed because the cable modem 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.
Wideband Cable Modem	
w-online	The wideband cable modem has registered and is enabled to pass data on the network.
w-online(d)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the WCMTS can continue to communicate with the WCM using DOCSIS messages and IP traffic (such as SNMP commands).
w-online(pkd)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned.
w-online(pt)	The wideband cable modem is registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.
w-online(ptd)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and TEK is assigned. BPI encryption is now being performed.
w-online(pk)	The wideband cable modem is registered, BPI is enabled and KEK is assigned.
w-expire(pk)	The wideband cable modem is registered, BPI is enabled, KEK was assigned, but the current KEK expired before the WCM could successfully renew a new KEK value.

MAC State Value	Description
w-expire(pkd)	The wideband cable modem is registered, but network access for CPE devices using this WCM 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.
w-expire(pt)	The wideband cable modem is registered, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value.
w-expire(ptd)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value.
w-reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.
w-reject(pkd)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because KEK key assignment was rejected.
w-reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
w-reject(ptd)	The wideband cable modem is registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected.
Cable Modem is in DS Resiliency	
p-online	The cable modem is in DS resiliency, has registered and is enabled to pass data on the network.
p-reject(pk)	The cable modem is in DS resiliency, KEK key assignment is rejected, BPI encryption has not been established.
p-expire(pk)	The cable modem is in DS resiliency, has registered, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value.
p-online(pk)	The cable modem is in DS resiliency, has registered, BPI is enabled and KEK is assigned.
p-reject(pt)	The cable modem is in DS resiliency, TEK key assignment is rejected, BPI encryption has not been established.
p-expire(pt)	The cable modem is in DS resiliency, has registered, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value.
p-online(pt)	The cable modem is in DS resiliency, has registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.

MAC State Value	Description
p-online(d)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. The cable modem does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the cable modem using DOCSIS messages and IP traffic (such as SNMP commands).
p-reject(pkd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because KEK key assignment was rejected.
p-expire(pkd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value.
p-online(pkd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned.
p-reject(ptd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected.
p-expire(ptd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value.
p-online(ptd)	The cable modem is in DS resiliency, has registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and TEK is assigned. BPI encryption is now being performed.
Cable Modem is in Energy Management 1x1 mode	
w-online(em)	The cable modem is in energy management 1x1 mode, has registered and is enabled to pass data on the network.
w-reject(pk)(em)	The cable modem is in energy management 1x1 mode, KEK key assignment is rejected, BPI encryption has not been established.
w-expire(pk)(em)	The cable modem is in energy management 1x1 mode, has registered, BPI is enabled, KEK was assigned, but the current KEK expired before the WCM could successfully renew a new KEK value.
w-online(pk)(em)	The cable modem is in energy management 1x1 mode, has registered, BPI is enabled and KEK is assigned.
w-reject(pt)(em)	The cable modem is in energy management 1x1 mode, TEK key assignment is rejected, BPI encryption has not been established.

MAC State Value	Description
w-expire(pt)(em)	The cable modem is in energy management 1x1 mode, has registered, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value.
w-online(pt)(em)	The cable modem is in energy management 1x1 mode, has registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.
w-online(d)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the WCMTS can continue to communicate with the WCM using DOCSIS messages and IP traffic (such as SNMP commands).
w-reject(pkd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because KEK key assignment was rejected.
w-expire(pkd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM 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.
w-online(pkd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned.
w-reject(ptd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected.
w-expire(ptd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value.
w-online(ptd)(em)	The cable modem is in energy management 1x1 mode, has registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and TEK is assigned. BPI encryption is now being performed.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem access-group	Displays the access groups for the cable modems on a particular cable interface.

Command	Description
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more cable modems.
show cable modem counters	Displays downstream and upstream traffic counters for one or more cable modems.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem domain-name	Updates the cable-specific DNS cache and display the domain name for specified cable modems and CPE behind a cable modem on a Cisco CMTS router.
show cable modem errors	Displays error statistics for one or more cable modems.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem ipv6	Displays IPv6 information for specified cable modems and CPE behind a cable modem on a Cisco CMTS router.
show cable modem mac	Displays MAC layer information for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem offline	Displays a list of the cable modems that are marked as offline with the Cisco CMTS.
show cable modem partial-mode	Displays information about the cable modems that are in upstream and downstream partial service mode.
show cable modem phy	Displays the DOCSIS PHY layer information for one or more cable modems.
show cable modem qos	Displays quality of service (QoS) and service flow information for a particular CM.
show cable modem registered	Displays a list of the cable modems that are marked as registered with the Cisco CMTS.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modem summary	Displays a summary of cable modems on one or more cable interfaces.
show cable modem unregistered	Displays a list of the cable modems that are marked as unregistered with the Cisco CMTS.

Command	Description
show cable modem vendor	Displays the vendor name or Organizational Unique Identifier (OUI) for the cable modems on each cable interface.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem access-group

To display the access groups for the CMs on a particular cable interface, use the **show cable modem access-group** command in privileged EXEC mode.

Cisco uBR7100 series and Cisco uBR7200 series routers:
show cable modem [{*ip-address* | **cable** {*slot* / *subslot* | *slot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]]*mac-address*}] **access-group**

Cisco uBR10012 routers:
show cable modem cable {*slot* / *subslot* / *subslot* | *slot* / *subslot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] **access-group**

Syntax Description

ip-address	(Optional) Access-group information displayed for the CM with the specified IP address. (Cisco uBR7100 series and Cisco uBR7200 series routers only.)
mac-address	(Optional) Access-group information displayed for the CM with the specified MAC address. (Cisco uBR7100 series and Cisco uBR7200 series routers only.)
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 and Cisco uBR7246VXR routers—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.
upstream *port*	(Optional) Displays information for all CMs using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.

access-group	Displays the access groups for the CMs and their associated hosts and other customer premises equipment (CPE) devices.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3XA	This command was introduced.
12.2(4)BC1	Support for this command was added for the Cisco uBR10012 router, but only to display access groups on a per-interface basis.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.

Usage Guidelines

This command displays information only for CMs. To display information for both CMs and their associated hosts and other customer premises equipment (CPE) devices, use the **show cable device access-group** command. To display information only for hosts, use the **show cable host access-group** command.

If an SNMP manager is requesting information about CM or CPE devices at the same time that this command is given, the command displays the following error message:

```
No information is available, please try later.
```

Wait until the SNMP retrieval is done and retry the CLI command.

Note Also see the information about this command's behavior in a Hot Standby Connection-to-Connection Protocol (HCCP) configuration.

Examples

The following example shows sample output for the show cable modem access-group command on a Cisco uBR7200 series router for a particular CM:

```
Router# show cable modem 0010.7bb3.fcd1 access-group

MAC Address    IP Address      Access-group
0010.7bb3.fcd1 10.20.113.2     34
Upstream Power     : 42 dBmV (SNR = 10 dBmV)
Downstream Power   : 15 dBmV (SNR = 15 dBmV)
Router#
```

Note The upstream and downstream power fields will be displayed only if the CM remote-query feature has been enabled using the **cable modem remote-query** command.

The following example shows sample output for the **show cable modem access-group** command for a particular cable interface on a Cisco uBR10012 router:

```
Router# show cable modem c8/1/0 access-group

MAC Address    IP Address      Access-group
0050.7366.1243 22.1.1.11       1
0002.b970.0027 23.1.1.10       1
0006.5314.858d 22.1.1.10       N/A
Router#
```

Table below describes the fields that are shown in the **show cable modem access-group** display:

Table 9: Descriptions for the show cable modem access-group Fields

Field	Description
MAC Address	The MAC address for the CM.
IP Address	The IP address that the DHCP server has assigned to the CM.
Access-group	Displays the access group name or number in use (if any) for this CM.

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 modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable device access-group	Displays a list of CMs and their CPE devices, along with their access groups.
show cable host access-group	Displays a list of hosts and other CPE devices, along with their access groups.
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem errors	Displays error statistics for one or more CMs.

Command	Description
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem asf

To display the Aggregate SF details, use the **show cable modem** *mac-address* **asf** command in privileged EXEC mode.

show cable modem *mac-address* **asf**

Syntax Description

mac-address	(Optional) MAC address of a CM that is displayed. You can also specify the MAC address for a CPE device behind a CM, and information for that CM will be displayed.
asf	Displays the Aggregate SF details.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Cupertino 17.9.1x	This command is introduced.

Examples

The following is a sample output of the **show cable modem** *mac-address* **asf** command.

```
Router# show cable modem 206a.9454.30a4 asf

DOWNSTREAM AGGREGATE SERVICE FLOW DETAIL:


  Aggregate SF
            ASFID:    00049
            ASF Ref:  00101
       / \
                /   \
               /     \
              /       \
   Classic SF          Low Latency SF
   SFID: 0047          SFID: 0048
   SF Ref: 00003       SF Ref: 00005

ASFID                               : 49
ASE Reference                       : 101
Priority                            : 0
Max Rate                            : 0
Max Burst                           : 3044
Min Rate                       : 0
Minimum Reserved Rate Packet Size   : 0
Peak Rate                           : 0
Low Latency SFID                    : 48
Low Latency SF Reference            : 5
Low Latency SF SCN                  :
Classic SFID                        : 47
Classic SF Reference                : 3
Classic SF SCN                      :
```

```
AOM Coupling Factor                : 0
Scheduling Weight                  : 0
Queue Protection Enable            : 0
QP Latency Threshold               : 0
QP Score Threshold                 : 0
QP Drain Rate Exponent             : 0
```

show cable modem asf sup

To display the Aggregate SF details, use the **show cable modem** *mac-address* **asf** command in privileged EXEC mode.

show cable modem *mac-address* **asf sup**

Syntax Description

mac-address	(Optional) MAC address of a CM that is displayed. You can also specify the MAC address for a CPE device behind a CM, and information for that CM will be displayed.
asf	Displays the Aggregate SF details.
asf sup	Displays the Aggregate SF details on Sup.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Cupertino 17.9.1x	This command is introduced.

Examples

The following is a sample output of the **show cable modem** *mac-address* **asf sup** command.

```
Router# show cable modem 206a.9454.30a4 asf sup

DOWNSTREAM AGGREGATE SERVICE FLOW DETAIL:

ASFID                              : 49
Priority                           : 0
Max Rate                           : 0
Max Burst                          : 3044
Low Latency SFID                   : 48
AOM Coupling Factor                : 0
Scheduling Weight                  : 0
Queue Protection Enable            : 0
QP Latency Threshold               : 0
QP Score Threshold                 : 0
QP Drain Rate Exponent             : 0
```

show cable modem auth-profile

To display the multicast authorization profile, and profile group information for a particular IP address or MAC address, use the **show cable modem auth-profile** command in privileged EXEC mode.

show cable modem [{*ip-addressmac-address*}] [**auth-profile**]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a CM that is displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a CM that is displayed. You can also specify the MAC address for a CPE device behind a CM, and information for that CM will be displayed.
auth-profile	(Optional) Displays the multicast authorization profile, and profile group information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use this command to display the multicast authorization profile, and the profile group information.

Examples

The following sample output of the **show cable modem auth-profile** command shows the multicast authorization profile and profile group display for a particular ip-address or mac-address.

```
Router# show cable modem 30.17.2.23 auth-profile
 Multicast Profile Information for 0025.2e34.4377
IP: 30.17.2.121
Multicast Profile Group #           : default
Router#
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the **show cable modem auth-profile** command:

```
Router#show cable modem 209.165.200.225 auth-profile
Multicast Profile Information for 0025.2eaf.8302
IP: 100.1.2.6
Multicast Profile Group #           : default

Router#
```

Related Commands

Command	Description
show cable multicast authorization	Displays the list of defined multicast authorization profiles and all CMs associated with corresponding profiles.
show cable multicast dsid	Displays the entire multicast downstream service identifier (DSID) database content.
show cable multicast qos	Displays the configuration information for MQoS (Group-Config, Group-QoS-Config, Group-Encryption-Config).

show cable modem calls

To display voice call information for a particular CM, use the **show cable modem calls** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *port* | *slot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **calls**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **calls**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot* / *subslot* / *cable-interface-index* }] **calls**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR router—The valid range is 0 to 3 and 6 to 9.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only —The valid subslots are 0 or 1. Cisco cBR router—The valid value is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR router—The valid range is 0 to 15.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. This keyword is not supported on the Cisco cBR router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This keyword is not supported on the Cisco cBR router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This keyword is not supported on the Cisco cBR router.
calls	Display voice call information for a CM.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(13a)BC1	Support for voice call information was added to the **show cable modem** command.
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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **upstreamname**, **queue** keyword and the *logical-channel-index* variable were removed.

Usage Guidelines

Using the keyword options, you can display IPv6 information by IP address (IPv4 or IPv6) of a particular CM, for all CMs associated with a specified cable interface, by MAC address of a CM, or by domain name of a CM.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

This command supports PacketCable and PacketCable MultiMedia (PCMM) information. Additional information for voice call support with PacketCable and PacketCable MultiMedia (PCMM) is available in

the feature document PacketCable and PacketCable Multimedia for the Cisco CMTS available on Cisco.com. See the Cisco cBR Series Converged Broadband Routers PacketCable and PacketCable Multimedia Configuration Guide for Cisco cBR Series Converged Broadband Router.

Examples

This example shows the output for the default **calls** option for a particular CM:

```
Router# show cable modem calls

Cable Modem Call Status Flags:
H: Active high priority calls
R: Recent high priority calls
V: Active voice calls (including high priority)
MAC Address    IP Address      I/F       Prim  CMCallStatus  LatestHiPriCall
                                         Sid                    (min:sec)
000f.66f8.a121 10.8.130.63     C1/0/U0   175   HV                   -
```

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable calls	Displays voice call history information and status for the PacketCable Emergency 911 Services Listing and History feature.
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem classifiers

To display information about the classifiers for a particular CM, use the **show cable modem classifiers** command in privileged EXEC mode.

Cisco uBR Series Router
show cable modem {*ip-addressmac-address*} [**name** *fqdn*] **classifiers** [{**cache** | **verbose**}]

Cisco cBR Series Router
show cable modem {*ip-addressmac-address*} **classifiers** [{**cache** | **verbose**}]

Syntax Description

ip-address	Specifies the IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, classifier information for that CM is displayed.
mac-address	Displays classifier information for the CM with the specified MAC address. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
name *fqdn*	(Optional) For Cisco uBR series router, specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.
cache	(Optional) Displays the classifiers in the cache maintained for each CM. (This cache is based on IP header field values and speeds up classifier lookups and reduces per-packet processing overhead.)
verbose	(Optional) Displays detailed information for the CM classifiers.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 NA	This command was introduced.
12.1(4)CX and 12.2(4)BC1	The number of matches field was added to this command, and the command was restricted to display information for a single CM at a time.
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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **name** keyword was removed.

Release	Modification
cBR 17.3.1z	From Cisco IOS XE Amsterdam 17.3.1z, support for static classifiers increased from 16 downstream and 16 upstream per modem to 32 downstream and 32 upstream per modem. You can view information about the classifiers for a particular Cable Modem, using the show cable modem classifiers command in privileged EXEC mode.

Usage Guidelines

This command displays classifier information for a particular CM, identified either by its IP address, MAC address, or domain name.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Note For information about this command's behavior in a Hot Standby Connection-to-Connection Protocol (HCCP) configuration, see the "Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration" section of the **show cable modem** command.

Note From Cisco IOS XE Amsterdam 17.3.1z and later, support for static classifiers increased from 16 downstream and 16 upstream per modem to 32 downstream and 32 upstream per modem. However, there are no changes to the *static service flows* per modem or the *dynamic classifiers* per modem.

For a full configuration, there are 32 service flows (16 downstream and 16 upstream) and 64 classifiers (32 downstream and 32 upstream). The registration request (REG-REQ) size would exceed 1518 bytes. For *wideband modems*, there would not be issues as they will send REG-REQ-MP fragments. However, for *narrowband modems*, they will be stuck at init(t) because the REG-REQ size is large, and no REG-REQ is received by CMTS. Hence, when increasing the classifiers in modem configuration file of narrowband modems, you need to ensure that the REG-REQ size does not exceed 1518 bytes.

Examples

The following example shows sample output for the default **classifiers** option for a particular CM:

```
Router# show cable modem 10.4.0.81 classifiers

CfrId  SFID     CM Mac Address  Direction  State    Priority  Matches
6431   26120    0000.399f.a44f  upstream   active   128       -
6429   26054    0000.399f.a44f  upstream   active   128       -
6432   26121    0000.399f.a44f  downstream active   128       1182
6430   26055    0000.399f.a44f  downstream active   128       3934
Router#
```

Table below describes the fields that are shown in the **show cable modem classifiers** display:

Table 10: Descriptions for the show cable modem classifiers Fields

Field	Description
CfrID	Classifier ID for the classifier that is being displayed.
SFID	Service flow ID (SFID) for this classifier.
CM MAC Address	MAC address for the CM.
Direction	Identifies whether this classifier applies to the downstream or the upstream direction.
State	Classifier activation state: active or inactive.
Priority	Classifier rule priority value for this classifier.
Matches	Number of packets that have been matched to this 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
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem cnr

To display information about the upstream carrier-to-noise ratio (CNR) or signal-to-noise ratio (SNR) for a particular cable modem (CM), use the **show cable modem** command in privileged EXEC mode.

show cable modem {*ip-addressmac-address* | **name** *fqdn*} **cnr**

Cisco cBR Series Converged Broadband Router
show cable modem {*ip-addressmac-address*} **cnr**

Syntax Description

ip-address	IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a customer premise equipment (CPE) device behind a CM, classifier information for that CM is displayed.
mac-address	Classifier information for the CM with the specified MAC address. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
name *fqdn*	Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable domain name system (DNS) cache on the Cisco CMTS router. This keyword is not supported on the Cisco cBR-8 router.

router

Command Modes

Privileged EXEC (#)

Command History

BC Release	Modification
12.2(4)BC2	The command was changed to its current form of **show cable modem cnr**.
12.2(8)BC2	Support was added for the Cisco uBR-LCP2-MC16S cable interface line card on the Cisco uBR10012 router.
12.2(11)BC3	Support was added for the Cisco uBR10-MC5X20S cable interface line cards on the Cisco uBR10012 router.
12.2(15)BC1	If a cable modem is offline, its CNR value is now shown as "-----".
12.2(15)BC2	Support was added for the Cisco uBR-MC16U/X and Cisco uBR-MC5X20U cable interface line cards.
12.3(17a)BC2	Support was added for the Cisco uBR-MC5X20H cable interface line card.
CX Release	Modification
12.1(7)CX1	This command was introduced (in the form of **show cable modem snr**) for Cisco uBR7200 series routers using the Cisco uBR-MC16S cable interface line card.
12.2(15)CX	Support was added for the Cisco uBR-MC28U/X cable interface line cards on the Cisco uBR7246VXR router.

BC Release	Modification
SC 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.
	• Support for specifying the IPv6 address of a CM or CPE device was added.
	• The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
	• The following new initialization states were added to show initialization of CMs and CPEs supporting IPv6:
	  • init6(s)—Cisco CMTS router has seen SOLICIT message.
	  • init6(a)—Cisco CMTS router has seen ADVERTISE message.
	  • init6(r)—Cisco CMTS router has seen REQUEST message.
	  • init6(i)—Cisco CMTS router has seen REPLY message.
	  • init6(o)—Cisco CMTS router has seen version 6 TFTP request.
	  • init6(t)—Cisco CMTS router has seen version 6 TOD request.

12.2(33)SCC	The output of this command was modified to show the CNR and SNR information for multiple upstream connections providing service to a single CM.
12.2(33)SCF	The output of this command was modified to show expected power level, received carrier power level, and CNR information for all the upstream channels providing services to a CM. The SNR information is no longer displayed in the output of this command.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **name** is removed.

Usage Guidelines

The **show cable modem cnr** command displays information on the current CNR value for cable modems that are using interfaces on the following cable line cards:

- Cisco uBR-MC16U/X
- Cisco uBR-MC28U/X
- Cisco uBR10-MC5X20S/U/H
- Cisco uBR-E-28U
- Cisco uBR-E-16U
- Cisco cBR-8 CCAP line cards

For cable modems on all other interfaces, this command displays information about the current SNR value of the modem.

In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the Cisco CMTS router before any domain name can be used as part of a cable command.

Starting Cisco IOS Release 12.2(33)SCF, carrier-to-noise plus interference ratio (CNiR [CNR]) can be measured for all upstream channels irrespective of whether spectrum management is enabled or not for the upstream channels. Therefore, the output of the **show cable modem cnr** command displays only the CNR (CNiR) values for all the upstream channels for a specific cable modem.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* **cnr** command might not show a particular cable modem until the Cisco CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* **cnr** command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when the HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond with a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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 line configuration mode.

Examples

This example shows the output of the **show cable modem cnr** command for a CM:

```
Router# show cable modem 10.20.114.34 cnr

MAC Address    IP Address      I/F         MAC         Prim  snr/cnr
                                           State       Sid   (db)
00d0.ba77.7595 10.20.114.34    Cable3/0/U5 online      1     45.00
```

This example shows the output of the **show cable modem cnr** command after an HCCP switchover. The CNR value is missing until traffic is sent to the cable modem (in this case using the **ping** command).

```
Router# show cable modem 10.10.10.46 cnr

MAC Address    IP Address      I/F         MAC         Prim  snr/cnr
                                           State       Sid   (db)
0002.fd22.aadf 10.10.10.46     C5/1/0/U5   online      1970  -----
Router# ping 10.10.10.46

Router# show cable modem 10.10.10.46 cnr

MAC Address    IP Address      I/F         MAC         Prim  snr/cnr
                                           State       Sid   (db)
0002.fd22.aadf 10.10.10.46     C5/1/0/U5   online      1970  42.00
```

This example shows the output of the **show cable modem cnr** command for all upstream ports providing service to a specified cable modem in Cisco IOS Release 12.2(33)SCC:

```
Router# show cable modem 0014.f8c1.fd1a cnr
MAC Address    IP Address      I/F         MAC         SID   snr/cnr
```

```
                                          State             (dB)
0014.f8c1.fd1a 10.10.4.1       C5/0/1/U0  online        1        33
001e.6bfb.119a 9.9.9.2         C5/0/1/U1  online        2        33
001e.6bfb.0f9e 9.9.9.3         C5/0/1/U2  online        3        33
0019.474a.d4c4 9.9.9.4         C5/0/1/U3  online        4        33
```

This example shows the output of the **show cable modem cnr** command for an upstream port providing service to a specified cable modem in Cisco IOS Release 12.2(33)SCF:

```
Router# show cable modem 0022.cea4.f0fa cnr
MAC Address    IP Address     I/F         MAC          Prim ExPwr  RxPwr  cnr
                                          State        Sid  (dBmv) (dBmv) (dB)
0022.cea4.f0fa 10.10.1.62     C8/1/14/U3  w-online     78   0.0    -0.50  23
```

Table below describes the significant fields shown in the display:

Table 11: show cable modem cnr Field Descriptions

Field	Description
MAC Address	MAC address of the CM.
IP Address	IP address that the DHCP server has assigned to the CM.
I/F	Cable interface line card providing the upstream for this CM.
MAC State	Current state of the MAC layer.
Prim Sid	Primary Sid assigned to this CM. In Cisco IOS Release 12.2(33)SCC, this field is renamed to SID and represents multiple upstream connections with unique SIDs providing service to a single CM.
ExPwr (dBmv)	Expected carrier power level, in decibel millivolts (dBmv).
RxPwr (dBmv)	Received carrier power level, in decibel millivolts (dBmv).
snr/cnr (db)	The current upstream CNR or SNR for this particular CM, in decibels (dB). In Cisco IOS Release 12.2(15)BC1 and later releases, this field shows "-----" for offline cable modems. **Note** You can also use the **show controllers cable** command to display the SNR or CNR for a cable interface line card, but this value is only an estimate because it uses a random sampling of modems to determine the average for the card at any particular time. The CNR value shown by the **show controllers cable** command can therefore appear to fluctuate compared to the individual values shown by the **show cable modem cnr** command.

Table below shows the possible values for the MAC state field.

Table 12: MAC State Field Descriptions

MAC State Value[1]	Description
Registration and Provisioning Status Conditions for Devices Using IPv4 Addressing	
init(r1)	CM sent initial ranging.

MAC State Value[1]	Description
init(r2)	CM is ranging. The Cisco CMTS received initial ranging from the CM and has sent RF power, timing offset, and frequency adjustments to the CM.
init(rc)	Ranging has completed. **Note** If a CM appears to be stuck in this state, it could be that the CM is able to communicate successfully on the cable network, but that the upstream is at capacity and does not have any additional bandwidth to allow the CM to finish registration and come online. Either manually move one or more CMs to other upstreams, or enable load balancing on the upstream using the **cable load-balance group** commands.
init(d)	DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
init(dr)	Cable modem has broadcast a DHCP REQUEST packet back to the DHCP server.
init(i)	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)	Cisco CMTS learns the DHCP offer that is sent to the cable modem from the DHCP server, which has assigned an IP address to the modem.
init(o)	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	CM is being reset and will shortly restart the registration process.
Registration and Provisioning Status Conditions for Devices Using IPv6 Addressing	
init6(s)	Cisco CMTS router learns the DHCPv6 SOLICIT message from the CM.
init6(a)	Cisco CMTS router learns the ADVERTISE message from the DHCPv6 server to the CM.
init6(r)	Cisco CMTS router learns the REQUEST response from the CM to the DHCPv6 server.
init6(i)	Cisco CMTS router learns the REPLY message from the DHCPv6 server to the CM.
init6(o)	Cisco CMTS router learns the REQUEST message from the CM to the TFTP server.

MAC State Value[1]	Description
init6(t)	Cisco CMTS router learns the REQUEST message from the CM to the ToD server.
Non-error Status Conditions	
cc(r1)	CM had registered and was online, but has received a Downstream Channel Change (DCC) or Upstream Channel Change (UCC) request message from the Cisco CMTS. The CM has begun moving to the new channel, and the Cisco CMTS has received the initial ranging of the CM 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	CM is considered offline (disconnected or powered down).
online	CM has registered and is enabled to pass data on the network.
online(d)	CM is 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 Cisco 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)	CM is 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)	CM is 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)	CM is registered, BPI is enabled and KEK is assigned.
online(pt)	CM is 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.

MAC State Value[1]	Description
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)	CM is registered, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value.
expire(pkd)	CM is 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)	CM is registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	CM is registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	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 Cisco 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)	CM attempted to register, but registration was refused due to a a number of possible errors: • CM attempted to register with a minimum guaranteed upstream bandwidth that would exceed the limits imposed by the **cable upstream admission-control** command. • CM has been disabled because of a security violation. • Bad class of service (CoS) value in the DOCSIS configuration file. • CM attempted to create a new CoS configuration but the Cisco CMTS is configured to not permit such changes. • 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 Cisco CMTS.)
reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.

MAC State Value[1]	Description
reject(pkd)	CM is 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)	CM is 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)	CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	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)	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 Cisco 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.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Examples for Cisco cBR Series Converged Broadband Router

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

```
Router#show cable modem 10.10.2.8 cnr
MAC Address    IP Address     I/F          MAC          Prim ExPwr  RxPwr  cnr
                                           State        Sid  (dBmv) (dBmv) (dB)
0025.2eaf.82e4 100.1.2.8      C1/0/0/U0    online       50   -1.0   -1.00  40
```

```
Router#
```

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modulation-profile	Displays modulation profile group information.
show cable modem remote-query	Displays information collected by the remote-query feature.
show controllers cable	Displays information about the interface controllers for a cable interface on the Cisco CMTS router.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem connectivity

To display connectivity statistics for one or more cable modems , use the **show cable modem connectivity** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot /port* | *slot /cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **connectivity**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot /subslot/port* | *slot /subslot/cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **connectivity**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot /subslot/cable-interface-index* }] **connectivity**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8 router—) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router— The valid range is from 0 to 15.

upstream *port*	(Optional) Displays information for all cable modems using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX and 12.2(4)BC1	This command was introduced (and the **connectivity** option was removed from the **show interface cable sid** command).
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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **upstream** and **name** keywords and *logical-channel-index* variable were removed.

Usage Guidelines

This command displays connectivity information for all cable modems , for all cable modems attached to a specific CMTS cable interface, or for a particular CM, as identified by its IP address or MAC address.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time

a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Note The **show cable modem connectivity** command replaces the **connectivity** option for the **show interface cable sid** command, because the connectivity statistics are better managed on a per-modem basis than on a per-SID basis.

Examples

The following example shows sample output for the **show cable modem connectivity** command for all online cable modems :

```
Router# show cable modem connectivity

Prim  1st time    Times  %online     Online time            Offline time
Sid   online      Online          min     avg     max     min     avg     max
1     Apr 28 2003 1      99.67   00:00   1d1h9m  1d1h9m  05:38   04:58   05:38
2     Apr 28 2003 1      99.66   00:00   1d1h8m  1d1h8m  05:46   05:02   05:46
3     Apr 28 2003 1      99.69   00:00   1d1h7m  1d1h7m  05:18   04:34   05:18
```

The following example shows sample output for the **show cable modem connectivity** command for all online cable modems for a particular cable interface:

```
Router# show cable modem c8/1/0 connectivity

Prim  1st time    Times  %online     Online time            Offline time
Sid   online      Online          min     avg     max     min     avg     max
1     Apr 28 2003 1      99.67   00:00   1d1h12m 1d1h12m 05:38   04:58   05:38
2     Apr 28 2003 1      99.66   00:00   1d1h11m 1d1h11m 05:46   05:02   05:46
3     Apr 28 2003 1      99.69   00:00   1d1h11m 1d1h11m 05:18   04:34   05:18
```

The following example shows sample output for the **show cable modem connectivity** command for a particular CM:

```
Router# show cable modem 0010.7bb3.fcd1 connectivity

Prim  1st time    Times  %online     Online time            Offline time
Sid   online      Online          min     avg     max     min     avg     max
1     May 30 2000 4      99.85   48:20   11h34m  1d2h23m 00:01   00:59   03:00
```

Table below describes the information shown in the **show cable modem connectivity** displays:

Table 13: Descriptions for the show cable modem connectivity Fields

Field	Description
Prim SID	The primary SID assigned to this CM.
1st time online	First 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 days, 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 days, 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.

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 modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered cable modems .
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

Command	Description
show interface cable sid	Displays cable interface information.

show cable modem counters

To display downstream and upstream traffic counters for one or more cable modems (CMs), use the **show cable modem counters** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers

show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *port* | *slot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **counters**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **counters**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot* / *subslot* / *cable-interface-index* }] **counters**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8 router—) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router— The valid range is from 0 to 15.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.
counters	Displays downstream and upstream traffic counters for one or more cable modems.

Command Default

Displays counter information for all CMs.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX and 12.2(4)BC1	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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **upstream** and **name** keywords and *logical-channel-index* variable were removed.

Usage Guidelines

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time

a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Examples

The following example shows sample output for the **show cable modems counters** command for all CMs:

```
Router# show cable modem counters
MAC Address    US Packets   US Bytes   DS Packets   DS Bytes
0050.7366.1243 29           2126       29           2126
0002.b970.0027 1811         116174     29           2126
0006.5314.858d 329154       21071059   134607       9961268
Router#
```

The following example shows sample output for the **show cable modems counters** command for all CMs on a particular cable interface:

```
Router# show cable modem c8/1/0 counters

MAC Address    US Packets   US Bytes   DS Packets   DS Bytes
0050.7366.1243 29           2126       29           2126
0002.b970.0027 1811         116174     29           2126
0006.5314.858d 329154       21071059   134607       9961268
Router#
```

The following example shows sample output for the **show cable modems counters** command for a particular CM, as identified by its MAC address:

```
Router# show cable modem 0010.7bb3.fcd1 counters

MAC Address    US Packets   US Bytes   DS Packets   DS Bytes
0010.7bb3.fcd1 1452082      171344434  1452073      171343858
Router#
```

The following example shows sample output for the **show cable modems counters** command for a particular CM, as identified by its IP address:

```
Router# show cable modem 23.1.1.10 counters

MAC Address    US Packets   US Bytes   DS Packets   DS Bytes
0002.b970.0027 1811         116174     29           2126
Router#
```

Note When a DCC occurs, the cable modem US and DS counters are reset. The US and DS counters include counters such as data and throughput seen in the **show cable modem** (**mac-address**) verbose command output and packets and bytes seen in the **show cable modem** (**mac-address**) **counters** command output.

Table below describes the fields shown in the **show cable modem counters** displays:

Table 14: Descriptions for the show cable modem counters Fields

Field	Description
MAC Address	MAC address for the CM.
US Packets	Number of packets this CM has transmitted on the upstream.
US Bytes	Number of bytes this CM has transmitted on the upstream.
DS Packets	Number of packets this CM has received on the downstream.
DS Bytes	Number of byte this CM has received on the downstream.

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem qos	Displays quality of service (QoS) and service flow information for a particular CM.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modem unregistered	Displays a list of the CMs that are marked as unregistered with the Cisco CMTS.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.

Command	Description
show interface cable sid	Displays cable interface information.

show cable modem cpe

To display the customer premise equipment (CPE) devices accessing the cable interface through a particular cable modem (CM), use the **show cable modem cpe** command in privileged EXEC mode.

show cable modem {*ip-addressmac-address* | **name** *fqdn*} **cpe**

Cisco cBR Series Converged Broadband Router
show cable modem {*ip-addressmac-address*} **cpe**

Syntax Description

ip-address	Displays the CPE devices for the CM with the specified IPv4 or IPv6 address.
mac-address	Displays the CPE devices for the CM with the specified MAC address.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This keyword is not supported on the Cisco cBR-8 router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3XA	This command was introduced.
12.1(4)CX and 12.2(4)BC1	The command was simplified to display only the IP and MAC addresses for the CPE devices.
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. • Support for specifying the IPv6 address of a CM device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCI1	The output of the command is modified. The command output displays the device class information for IPv6 devices.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **name** is removed.

Usage Guidelines

This command lists the CPE devices that are accessing the cable network through a particular CM. You can identify the CM either by its IP address or by its MAC address.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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 example shows sample output for the **show cable modem cpe**command, listing the CPE devices by their MAC and IP addresses:

```
Router# show cable modem 0019.474a.c14a cpe

IP address         MAC address      Dual IP
50.3.37.3         0005.0052.2c1d      Y
```

Table 15: show cable modem cpe Field Descriptions

Field	Description
IP Address	IP address acquired by the CPE.
MAC Address	MAC address of the CPE.
Dual IP	Dual IP flag. Identifies whether or not (“Y” or “N”) the CPE supports both IPv4 and IPv6 addressing.

Effective with Cisco IOS Release 12.2(33)SCI1, the output for the **show cable modem cpe**command lists the device class details as shown by this example:

```
Router#show cable modem 54d4.6ffb.2ddf cpe
IP address         MAC address      Dual IP     Device Class
---                0000.0475.1702     N          MTA
---                0000.0475.1701     N          Host
---                0000.0475.1703     N          Host
```

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

```
Router#show cable modem 0025.2eaf.7f38 cpe
MAC address       IP address       Dual IP     Device Class
b8c7.5dcd.04cd    192.0.2.10       Y           Host
```

Table 16: show cable modem cpe Field Descriptions

Field	Description
IP Address	IP address acquired by the CPE.
MAC Address	MAC address of the CPE.
Dual IP	Dual IP flag. Identifies whether or not (“Y” or “N”) the CPE supports both IPv4 and IPv6 addressing.
Device Class	Device class of the CPE.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.

Command	Description
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem docsis device-class

To display the DOCSIS device-class information for cable modems (CMs) on all or specified cable interfaces and upstreams, use the **show cable modem docsis device-class** command in privileged EXEC configuration mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem docsis device-class [**summary** [**cable** *slot/subslot* [**cable** *slot/subslot*] [**upstream** *port1 port2*]]] [**total**]
show cable modem cable *slot/subslot* **docsis device-class summary**

Cisco uBR10012 Router
show cable modem docsis device-class [**summary** [**cable** *slot/subslot /port* [**cable** *slot/subslot /port*] [**upstream** *port1 port2*]]] [**total**]
show cable modem cable *slot/subslot /port* **docsis device-class summary**

Cisco cBR Series Converged Broadband Router
show cable modem docsis device-class [**summary** [**cable** *slot/subslot /cable-interface-index* [**cable** *slot/subslot /cable-interface-index*]]] [**total**]
show cable modem docsis device-class {*withip*}
show cable modem cable *slot /subslot /cable-interface-index* **docsis device-class** [{**summary**}]

Syntax Description

summary	(Optional) Displays a summary of DOCSIS device class information for cable modems on all or specified cable interfaces on the CMTS router.
cable *slot/subslot* [**cable** *slot /subslot*]	(Optional) Specifies a single cable interface, or a range of cable interfaces on a Cisco uBR7100 or Cisco uBR7200 series router, whose cable modems you want to display information about, where: • *slot* —Specifies the chassis slot number of the cable interface line card. • *subslot* —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.
cable *slot /subslot /port* [**cable** *slot /subslot /port*]	(Optional) Specifies a single cable interface, or a range of cable interfaces on a Cisco uBR10012 router, whose cable modems you want to display information about, 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.

cable *slot /subslot /cable-interface-index*	(Optional) Specifies a single cable interface, or a range of cable interfaces on a Cisco cBR Series Converged Broadband Router, whose cable modems you want to display information about, where: • *slot*—Specifies the chassis slot number of the cable interface line card. Valid slots are 0 to 3 and 6 to 9. • *subslot*—Specifies the secondary slot number of the cable interface line card. Valid subslots is 0. • *cable-interface-index*—Specifies the MAC domain index . Valid index numbers are 0 to 15.
upstream *port1 port2*	(Optional) Specifies a specific upstream port, or a range of upstream ports on the specified cable interface(s), whose cable modems you want to display information about, where: • *port1*—Specify only *port1* if you want to display information about a single upstream. When used with the *port2* argument, specifies the beginning of a range of upstream ports, and *port1* must be a lower-numbered port than *port2*. • *port2*—Specifies the end of a range of upstream ports, and *port2* must be a higher-numbered port than *port1*.
upstream *chan1 chan2*	(Optional for Cisco cBR-8router) Specifies a specific upstream channel, or a range of upstream channels on the specified cable interface(s), whose cable modems you want to display information about, for a Cisco cBR Series Converged Broadband Router where: • *chan1*—Specify only *chan1* if you want to display information about a single upstream. When used with the *chan2* argument, specifies the beginning of a range of upstream ports, and *chan1* must be a lower-numbered port than *chan2*. • *chan2*—Specifies the end of a range of upstream channels, and *chan2* must be a higher-numbered channel than *chan1*.
total	(Optional) Displays a total of DOCSIS device-class information for the cable modems connected to all interfaces, or to the specified cable interfaces.

withip	(Optional) Displays docsis device-class with IP addresses of the cable modems. The following two columns are displayed in the output:
	• DIP—Displays whether the CM is configured with IPv6 and IPv4
	  • Y—CM is configured to dual IP
	  • N—CM is configured with either IPv4 or IPv6
	• IP Address—Displays the IPv6 address if the CM is configured with only IPv6. Otherwise, it displays IPv4 address.

Command Default None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced.
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)SCI1	The output of this command is modified. The output displays the device class of IPv6 single stack cable modems.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.
IOS-XE 3.18.1SP	This command was modified. The *withip* keyword argument was added in this release.

Usage Guidelines

This command displays a summary of DOCSIS device-class information for all cable modems for a single cable interface, or for a range of cable interfaces, and optionally specified upstreams on those cable interfaces.

Examples

The following example shows typical output for the default form of the **show cable modem docsis device-class** command on a Cisco uBR100012 router:

```
Router# show cable modem docsis device-class
MAC Address    I/F       MAC            Prim  Reg      Device Class     Reg
                         State          Sid   Ver  -------------------- Priv
0030.80bc.22b9 C3/0/U0   online(pt)     1     1.0  CM                   BPI
0000.cadb.04b2 C3/0/U0   online(pt)     2     1.1  eCM eMTA             BPI+
0000.cadb.0512 C3/0/U0   online(pt)     3     1.1  eCM eMTA eSTB        BPI+
0003.e38f.f5c7 C3/0/U1   online(pt)     4     1.0  CM                   BPI
0000.cadb.0bae C3/0/U1   online(pt)     5     1.1  eCM           ePS    BPI+
0010.7b6b.77ed C3/0/U2   online         6     1.0  CM
0000.cadb.0356 C4/0/U0   online(pt)     1     1.1  eCM eMTA             BPI+
0000.cadb.02a6 C4/0/U0   init(d)        2     n/a  <unavailable>
0000.cadb.2f7a C4/0/U1   online(pt)     3     2.0  eCM      eSTB        BPI+
0000.cadb.2952 C4/0/U2   online(pt)     4     1.1  eCM      eSTB ePS    BPI+
0000.cadb.0236 C4/0/U2   init(d)        6     n/a  <unavailable>
0003.e3a6.850d C4/0/U3   online(pt)     7     1.1  eCM eMTA      ePS    BPI+
0003.e3a6.85ad C4/0/U3   online(pt)     8     1.0  CM                   BPI
```

The following example shows a typical output of the **show cable modem docsis device-class** *withip* command on a Cisco cBR Series Converged Broadband Router:

```
Router# show cable modem docsis device-class withip
                                                                                D

MAC Address    I/F           MAC               Prim Reg      Device Class      Reg  I IP
Address
                             State             Sid  Ver  --------------------  Priv P

c8fb.26a3.c694 C8/0/0/UB     w-online(pt)      1    3.0  CM                    BPI+ Y
88.22.0.8
c8fb.26a3.bc1e C8/0/0/UB     w-online(pt)      2    3.0  CM                    BPI+ Y
88.22.0.11
c8fb.26a3.c160 C8/0/0/UB     w-online(pt)      3    3.0  CM                    BPI+ Y
88.22.0.37
```

```
c8fb.26a3.c18c C8/0/0/UB      w-online(pt)      4    3.0  CM                   BPI+ Y
88.22.0.134
c8fb.26a3.c6ee C8/0/0/UB      w-online(pt)      14   3.0  CM                   BPI+ Y
88.22.0.38
c8fb.26a3.c25c C8/0/0/UB      w-online(pt)      15   3.0  CM                   BPI+ Y
88.22.0.41
c8fb.26a3.7fd6 C8/0/0/UB      w-online(pt)      16   3.0  CM                   BPI+ Y
88.22.0.15
c8fb.26a3.b8e8 C8/0/0/UB      w-online(pt)      17   3.0  CM                   BPI+ Y
88.22.0.29
c8fb.26a3.c510 C8/0/0/UB      w-online(pt)      18   3.0  CM                   BPI+ Y
88.22.0.10
c8fb.26a3.c524 C8/0/0/UB      w-online(pt)      19   3.0  CM                   BPI+ Y
88.22.0.40
c8fb.26a3.c1ac C8/0/0/UB      w-online(pt)      20   3.0  CM                   BPI+ Y
88.22.0.43
c8fb.26a3.e158 C8/0/0/UB      w-online(pt)      39   3.0  CM                   BPI+ Y
88.22.0.27
c8fb.26a3.c452 C8/0/0/UB      w-online(pt)      76   3.0  CM                   BPI+ Y
88.22.0.7
c8fb.26a3.c722 C8/0/0/UB      w-online(pt)      77   3.0  CM                   BPI+ Y
88.22.0.12
c8fb.26a3.c68a C8/0/0/UB      w-online(pt)      78   3.0  CM                   BPI+ Y
88.22.0.30
c8fb.26a3.c528 C8/0/0/UB      w-online(pt)      151  3.0  CM                   BPI+ Y
88.22.0.45
c8fb.26a3.c6ec C8/0/1/UB      w-online(pt)      1    3.0  CM                   BPI+ Y
88.22.0.95
```

The following example shows sample output for the **show cable modem docsis device-class** command for a particular cable interface, in chassis slot 3 and subslot 0:

```
Router# show cable modem cable3/0 docsis device-class
MAC Address    I/F       MAC            Prim  Reg      Device Class     Reg
                         State          Sid   Ver  -------------------- Priv
0030.80bc.22b9 C3/0/U0   online(pt)     1     1.0  CM                   BPI
0000.cadb.04b2 C3/0/U0   online(pt)     2     1.1  eCM eMTA             BPI+
0000.cadb.0512 C3/0/U0   online(pt)     3     1.1  eCM eMTA eSTB        BPI+
0003.e38f.f5c7 C3/0/U1   online(pt)     4     1.0  CM                   BPI
0000.cadb.0bae C3/0/U1   online(pt)     5     1.1  eCM           ePS    BPI+
0010.7b6b.77ed C3/0/U2   online         6     1.0  CM
```

Table 17: show cable modem docsis device-class Field Descriptions

Field	Description
MAC Address	The MAC address of the CM.
I/F	The cable interface line card providing the upstream for this CM.
MAC State	The current state of the MAC layer.
Prim Sid	The primary SID assigned to this CM.
Reg Ver	Displays the maximum supported version of DOCSIS that the CM supports. The possible values are: DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0, and DOCSIS 3.0. Shows “n/a” if the modem is not online.

Field	Description
Device Class	Displays the device-class information for the PacketCable device. The modem can report its device-class type during registration. The possible values are: • CM or eCM—A standalone cable modem or embedded CM. • ePS—Embedded Portal Services • eMTA—Embedded Multimedia Terminal Adapter • eSTB—Embedded Set Top Box • unavailable—The CM has not reported its device class.
Reg Priv	Indicates whether Baseline Privacy Interface (BPI) or BPI Plus (BPI+) encryption is enabled for the CM.

Examples for Summary and Total Options

The following example shows the corresponding display for the **show cable modem docsis device-class total** command:

```
Router# show cable modem docsis device-class total

             Online  unrep CM    eCM   eMTA  eSTB  ePS
Total:       13      2     4     7     4     3     3
```

The following example shows sample output for the **show cable modem docsis device-class summary** form of the command on a Cisco CMTS router:

```
Router# show cable modem docsis device-class summary
                        DOCSIS Device Class
                     ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Cable4/0/U0   2       1     0     1     1     0     0
Cable4/0/U1   1       0     0     1     0     1     0
Cable4/0/U2   2       1     0     1     0     1     1
Cable4/0/U3   2       0     1     1     1     0     1
```

The following example shows sample output for the **show cable modem docsis device-class summary** command with the **total** option on a Cisco CMTS router:

```
Router# show cable modem docsis device-class summary total
                        DOCSIS Device Class
                     ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Cable4/0/U0   2       1     0     1     1     0     0
Cable4/0/U1   1       0     0     1     0     1     0
Cable4/0/U2   2       1     0     1     0     1     1
Cable4/0/U3   2       0     1     1     1     0     1
```

```
Total:        13      2     4     7     4     3     3
```

The following example shows sample output for the **show cable modem docsis device-class summary total** command for all enabled upstreams on a specific cable interface line card on a Cisco CMTS router:

```
Router# show cable modem docsis device-class summary cable 3/0 total
                        DOCSIS Device Class
                       ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Total:        6       0     3     3     2     1     1
```

The following example shows sample output for the **show cable modem docsis device-class summary total** command for a range of interfaces on a Cisco CMTS router:

```
Router# show cable modem docsis device-class summary cable 3/0 cable 4/0 total
                        DOCSIS Device Class
                       ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Cable4/0/U0   2       1     0     1     1     0     0
Cable4/0/U1   1       0     0     1     0     1     0
Cable4/0/U2   2       1     0     1     0     1     1
Cable4/0/U3   2       0     1     1     1     0     1
Total:        13      2     4     7     4     3     3
```

The following example shows sample output for the **show cable modem docsis device-class summary total** command for a range of interfaces and upstreams on a CMTS router:

```
Router# show cable modem docsis device-class summary cable 3/0 cable 4/0 upstream 0 2 total

                        DOCSIS Device Class
                       ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Cable4/0/U0   2       1     0     1     1     0     0
Cable4/0/U1   1       0     0     1     0     1     0
Cable4/0/U2   2       1     0     1     0     1     1
Total:        11      2     3     6     3     3     2
```

The following example shows sample output for the **show cable modem docsis device-class summary total** command for a range of upstreams on an interface:

```
Router# show cable modem docsis device-class summary cable3/0 upstream 0 1 total

                        DOCSIS Device Class
                       ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
```

```
Total:        5       0     2     3     2     1     1
```

The following example shows sample output for the **show cable modem docsis device-class summary** command for all enabled upstreams on a specific cable interface line card:

```
Router# show cable modem cable3/0 docsis device-class summary
                         DOCSIS Device Class
                        ----------------------------
Interface     Online  unrep CM    eCM   eMTA  eSTB  ePS
Cable3/0/U0   3       0     1     2     2     1     0
Cable3/0/U1   2       0     1     1     0     0     1
Cable3/0/U2   1       0     1     0     0     0     0
Total:        6       0     3     3     2     1     1
```

Table 18: show cable modem docsis device-class summary Field Descriptions

Field	Description
Interface	Name of the cable interface and associated upstreams on the Cisco CMTS router.
Online	Total number of cable modems currently online on this cable interface.
unrep	Total number of cable modems on this interface for which the device-class information is unreported or unavailable.
CM	Total number of cable modems on this interface that have a reported device class as a standalone cable modem.
eCM	Total number of cable modems on this interface that have reported the device class as an embedded cable modem.
eMTA	Total number of cable modems on this interface that have reported the device class as an embedded multimedia terminal adapter.
eSTB	Total number of cable modems on this interface that have reported the device class as an embedded set-top box.
ePS	Total number of cable modems on this interface that have reported the device class as embedded portal services.
eRTR	Total number of cable modems on this interface that have reported the device class as an embedded router.
Total	The total number of all cable modems reported online and for a given DOCSIS device class across all cable interfaces on the Cisco CMTS router.

Effective from Cisco IOS Release 12.2(33)SCI1, the output of the **show cable modem docsis device-class** command displays the device class details for IPv6 single stack cable modems as shown by this example:

```
Router#show cable modem docsis device-class
MAC Address    I/F           MAC             Prim Reg      Device Class     Reg
                             State           Sid  Ver  -------------------- Priv
```

```
e448.c70c.98fd C5/0/0/U1      online(pt)       1    3.0  CM MTA               BPI+
38c8.5cb2.6e3e C5/0/0/U2      online(pt)       2    3.0  CM MTA     PS        BPI+
4458.2945.357e C5/0/0/U2      online(pt)       3    3.0  CM                   BPI+
54d4.6ffb.307f C5/0/1/U3      w-online(pt)     1    3.0  CM MTA               BPI+
4458.2945.48e8 C6/1/0/U3      online(pt)       1    3.0  CM                   BPI+
68ee.96d9.499b C6/1/0/U2      online(pt)       2    3.0  CM            RTR    BPI+
38c8.5cc1.623a C6/1/0/U3      online(pt)       3    2.0  CM                   BPI+
54d4.6ffb.2ddf C6/1/0/U3      online(pt)       4    3.0  CM MTA               BPI+
1859.3356.8578 C6/1/0/U3      online(pt)       5    3.0  CM                   BPI+
```

This example shows the output for a specific IPv6 cable modem, using the **| include** option for extracting specific parts of the output.

```
Router#show cable modem docsis device-class | include 54d4.6ffb.2ddf
MAC Address    I/F            MAC              Prim Reg      Device Class     Reg
                              State            Sid  Ver  -------------------- Priv
54d4.6ffb.2ddf C6/1/0/U3      online(pt)       4    3.0  CM MTA               BPI+
```

Examples for Cisco cBR Series Converged Broadband Router

This example shows the output of the the output of the **show cable modem docsis device-class** command on the Cisco cBR-8router:

```
Router#show cable modem docsis device-class
MAC Address    I/F            MAC          Prim Reg      Device Class     Reg
                              State        Sid  Ver  -------------------- Priv
0025.2e2d.75be C3/0/0         online       42   3.0  CM
0025.2eaf.82f4 C3/0/0         online       43   3.0  CM
0025.2e2d.74f8 C3/0/0         online       44   3.0  CM
0025.2eaf.82e4 C3/0/0         online       45   3.0  CM
0025.2eaf.7f38 C3/0/0         online       46   3.0  CM
0025.2eaf.8302 C3/0/0         online       47   3.0  CM
c8fb.26a5.56ca C3/0/1         online       17   3.0  CM
c8fb.26a5.54e0 C3/0/1         online       18   3.0  CM
c8fb.26a5.5792 C3/0/1         online       19   3.0  CM
c8fb.26a5.5866 C3/0/1         online       20   3.0  CM
c8fb.26a5.52f2 C3/0/1         online       21   3.0  CM
c8fb.26a5.57a6 C3/0/1         online       22   3.0  CM
c8fb.26a5.57f4 C3/0/1         online       23   3.0  CM
c8fb.26a5.55ac C3/0/1         online       24   3.0  CM
c8fb.26a5.572e C3/0/1         online       25   3.0  CM
c8fb.26a5.5936 C3/0/1         online       26   3.0  CM
c8fb.26a5.5400 C3/0/1         online       27   3.0  CM
c8fb.26a5.5814 C3/0/1         online       28   3.0  CM
c8fb.26a5.5574 C3/0/1         online       29   3.0  CM
c8fb.26a5.5810 C3/0/1         online       30   3.0  CM
c8fb.26a5.56b6 C3/0/1         online       31   3.0  CM
c8fb.26a5.5580 C3/0/1         online       32   3.0  CM
c8fb.26a5.5376 C3/0/3         online       105  3.0  CM
c8fb.26a5.5624 C3/0/3         online       106  3.0  CM
c8fb.26a5.560a C3/0/3         online       107  3.0  CM
c8fb.26a5.53f6 C3/0/3         online       108  3.0  CM
c8fb.26a5.5384 C3/0/3         online       109  3.0  CM
c8fb.26a5.5742 C3/0/3         online       110  3.0  CM
c8fb.26a5.5598 C3/0/3         online       111  3.0  CM
c8fb.26a5.56d8 C3/0/3         online       112  3.0  CM
c8fb.26a5.56b2 C3/0/3         online       113  3.0  CM
```

```
c8fb.26a5.52c8 C3/0/3         online       114  3.0  CM
c8fb.26a5.5346 C3/0/3         online       115  3.0  CM
c8fb.26a5.5428 C3/0/3         online       116  3.0  CM
c8fb.26a5.52ca C3/0/3         online       117  3.0  CM
c8fb.26a5.52fe C3/0/3         online       118  3.0  CM
c8fb.26a5.54e4 C3/0/3         online       119  3.0  CM
c8fb.26a5.5474 C3/0/3         online       120  3.0  CM
```

This example shows the output of the the output of the **show cable modem docsis device-class** command with the **summary total** option on the Cisco cBR-8router:

```
Router#show cable modem docsis device-class summary c3/0/0 total
                          DOCSIS Device Class
                         ----------------------------
Interface       Online  unrep CM    eRTR  eMTA  eSTB  ePS
Cable3/0/0      6       0     6     0     0     0     0

Total:          6       0     6     0     0     0     0
```

Related Commands

Command	Description
show cable modem docsis version	Displays the DOCSIS version information for cable modems on one or more cable interfaces and upstreams.

show cable modem docsis version

To display the DOCSIS version information for cable modems (CMs) on one or more cable interfaces and upstreams, use the **show cable modem docsis version** command in privileged EXEC configuration mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem docsis version [**summary** [**cable** {*slot* / *port* | *slot* / *cable-interface-index*} [**cable** {*slot* / *port* | *slot* / *cable-interface-index*}] [**upstream** *port1* *port2* [*logical-channel-index*]]]] [**total**]
show cable modem cable {*slot* / *port* | *slot* / *cable-interface-index*} **docsis version summary**

Cisco uBR10012 Router
show cable modem docsis version [**summary** [**cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index*} [**cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index*}] [**upstream** *port1* *port2* [*logical-channel-index*]]]] [**total**]
show cable modem cable {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index*} **docsis version summary**

Cisco cBR Series Converged Broadband Routers
show cable modem docsis version [**summary** [**cable** *slot* / *subslot* / *cable-interface-index*] [**upstream** *chan1* *chan2*]] [**total**]
show cable modem cable *slot* / *subslot* / *cable-interface-index* **docsis version** [**summary**]

Syntax Description

summary	(Optional) Displays a summary of DOCSIS device class information for CMs on all or specified cable interfaces on the CMTS router.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8—The valid range is 0 to 15.
upstream *port1 port2*	(Optional) Specifies a specific upstream port, or a range of upstream ports on the specified cable interface(s), whose cable modems you want to display information about, where: • *port1*—Specify only *port1* if you want to display information about a single upstream. When used with the *port2* argument, specifies the beginning of a range of upstream ports, and *port1* must be a lower-numbered port than *port2*. • *port2*—Specifies the end of a range of upstream ports, and *port2* must be a higher-numbered port than *port1*.
upstream *chan1 chan2*	(Optional for Cisco cBR-8) Specifies a specific upstream channel, or a range of upstream channels on the specified cable interface(s), whose cable modems you want to display information about, where: • *chan1*—Specify only *chan1* if you want to display information about a single upstream. When used with the *chan2* argument, specifies the beginning of a range of upstream channels, and *chan1* must be a lower-numbered channel than *chan2*. • *chan2*—Specifies the end of a range of upstream channels, and *chan2* must be a higher-numbered channel than *chan1*.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. Not available for Cisco cBR-8
total	(Optional) Displays a total of DOCSIS device-class information for the CMs connected to all interfaces, or to the specified cable interfaces.
docsis version summary	Displays the DOCSIS device class or version information for cable modems on one or more cable interfaces and upstreams.

Command Default

None.

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.

Release	Modification
12.3(23)BC7	The output for the **show cable modem docsis version summary total** forms of the command were modified.
12.2(33)SCD2	This command was modified. The command output was modified to display the cable modems that are in upstream and downstream partial service mode.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

This command displays a summary of DOCSIS version information for all cable modems for a single cable interface or upstream, or for a range of cable interfaces or upstreams.

Use the **device-class** option on Cisco cBR Series Converged Broadband Router to display a summary of the device class information of the devices.

Examples: show cable modem docsis version Command

The following example shows typical output for the default form of the **show cable modem docsis version** command on a Cisco uBR10012 router:

```
Router# show cable modem docsis version
MAC Address    I/F       MAC            Prim  Reg QoS  US Phy DS Chl
                         State          Sid   Ver Prov Mode   Mode
0018.6852.800a C5/1/0/U3 w-online(pt)   166   2.0 1.1  tdma   WB
0018.6852.7f92 C5/1/0/U1 w-online(pt)   167   2.0 1.1  tdma   WB
0014.bfbe.3ea6 C5/1/0/U0 w-online(pt)   168   2.0 1.1  tdma   WB
0018.6852.8022 C5/1/0/U2 w-online(pt)   169   2.0 1.1  tdma   WB
0018.6852.7fa0 C5/1/0/U0 w-online(pt)   170   2.0 1.1  tdma   WB
0018.6852.8016 C5/1/0/U3 w-online(pt)   171   2.0 1.1  tdma   WB
0018.6852.8008 C5/1/0/U2 w-online(pt)   172   2.0 1.1  tdma   WB
0018.6852.800e C5/1/0/U1 w-online(pt)   173   2.0 1.1  tdma   WB
0018.6852.8000 C5/1/0/U1 w-online(pt)   174   2.0 1.1  tdma   WB
0002.8a8c.ed06 C5/1/1/U0 online(pt)     79    2.0 1.1  tdma   NB
0018.6852.801c C5/1/1/U0 w-online(pt)   80    2.0 1.1  tdma   WB
0018.6852.8006 C5/1/1/U0 w-online(pt)   81    2.0 1.1  tdma   WB
00e0.6f2c.6a4e C5/1/1/U0 online(pt)     82    1.1 1.1  tdma   NB
0011.ae02.a63c C5/1/3/U0 online(pt)     37    2.0 1.1  tdma   NB
0011.ae00.c514 C5/1/3/U0 online(pt)     38    2.0 1.1  tdma   NB
```

The following example shows sample output for the **show cable modem docsis version** command for a particular cable interface on a Cisco uBR10012 router:

```
Router# show cable modem cable 5/1/0 docsis version

MAC Address    I/F       MAC            Prim  Reg QoS  US Phy DS Chl
                         State          Sid   Ver Prov Mode   Mode
0018.6852.800a C5/1/0/U3 w-online(pt)   166   2.0 1.1  tdma   WB
0018.6852.7f92 C5/1/0/U1 w-online(pt)   167   2.0 1.1  tdma   WB
0014.bfbe.3ea6 C5/1/0/U0 w-online(pt)   168   2.0 1.1  tdma   WB
0018.6852.8022 C5/1/0/U2 w-online(pt)   169   2.0 1.1  tdma   WB
0018.6852.7fa0 C5/1/0/U0 w-online(pt)   170   2.0 1.1  tdma   WB
```

```
0018.6852.8016 C5/1/0/U3 w-online(pt)   171   2.0 1.1  tdma   WB
0018.6852.8008 C5/1/0/U2 w-online(pt)   172   2.0 1.1  tdma   WB
0018.6852.800e C5/1/0/U1 w-online(pt)   173   2.0 1.1  tdma   WB
0018.6852.8000 C5/1/0/U1 w-online(pt)   174   2.0 1.1  tdma   WB
```

Table below describes the significant fields shown in the display.

Table 19: show cable modem docsis version Field Descriptions

Field	Description
MAC Address	The MAC address of the CM.
I/F	The cable interface line card providing the upstream for this CM.
MAC State	The current state of the MAC layer.
Prim Sid	The primary SID assigned to this CM.
Reg Ver	Displays the maximum supported version of DOCSIS that the CM supports. The possible values are: 1.0, 1.1, 2.0, and 3.0. Shows “n/a” if the modem is not online.
QoS Prov	Displays the version of DOCSIS that the CM currently is provisioned and registered for. The possible values are: 1.0 or 1.1. Shows “n/a” if the modem is not online.
US Phy Mode	Displays the DOCSIS operating mode for the CM, with the following possible values: • tdma—DOCSIS 1.X, Time Division Multiple Access (TDMA)-only mode • atdma—DOCSIS 2.0 Advanced Time Division Multiple Access (A-TDMA) mode • scdma—DOCSIS 2.0 Synchronous Code Division Multiple Access (SCDMA) mode **Note** This field is the same as that returned by the docsIfCmtsCmStatusModulationType object in the DOCS-IF-MIB.
DS Chl Mode	Displays the downstream channel mode for the CM, with the following possible values: • NB—Narrowband • WB—Wideband

Examples: show cable modem version docsis version total Command

The following example shows the corresponding display for the **show cable modem docsis version total** command:

```
Router# show cable modem docsis version total
Total Registered CMs:   15
Total Unregistered CMs: 0
Total DOCSIS 3.0 Operating/Capable/Registered CMs: 0/0/0
Total DOCSIS 2.0 Operating/Capable/Registered CMs: 0/14/14
Total DOCSIS 1.1 Operating/Capable/Registered CMs: 15/15/1
Total DOCSIS 1.0 Operating/Capable/Registered CMs: 0/15/0
Total v1.1 US QoS operating CMs: 15
Total V1.0 US QoS operating CMs: 0
Total Wide Band US operating CMs: 0
Total scdma US Phy operating CMs: 0
Total atdma US Phy operating CMs: 0
```

```
Total tdma US Phy operating CMs:  15
Total Wide Band DS operating CMs:   11
Total Narrow Band DS operating CMs: 4
```

Beginning in Cisco IOS Release 12.2(33)SCD2, the output of the **show cable modem docsis version total** command was modified to display the cable modems that are in partial service mode as shown in the following example:

```
Router# show cable modem docsis version total
Total Registered CMs:   35
Total Unregistered CMs: 1
Total DOCSIS 3.0 Operating/Capable/Registered CMs: 21/22/22
Total DOCSIS 2.0 Operating/Capable/Registered CMs: 0/34/12
Total DOCSIS 1.1 Operating/Capable/Registered CMs: 35/35/1
Total DOCSIS 1.0 Operating/Capable/Registered CMs: 0/35/0
Total v1.1 US QoS operating CMs: 35
Total V1.0 US QoS operating CMs: 0
Total Wide Band US operating CMs: 21
Total Wide Band US partial-mode CMs: 9
Total scdma US Phy operating CMs: 0
Total atdma US Phy operating CMs: 0
Total tdma US Phy operating CMs:  14
Total Wide Band DS operating CMs:   22
Total Wide Band DS partial-mode CMs: 12
Total Narrow Band DS operating CMs: 13
```

Table below describes the fields shown in the show cable modem docsis version total command display.

Table 20: show cable modem docsis version total Field Descriptions

Field	Description
Total Registered CMs	Total number of cable modems currently online in a CMTS router.
Total Unregistered CMs	Total number of cable modems that are either offline and not currently communicating with the CMTS router, or that are attempting to come online but are not yet registered.
Total DOCSIS x.y Operating/Capable/Registered CMs: a/b/c	Total number of cable modems (in a/b/c format) for the specified DOCSIS version (x.y) that have the following status: • Operating—Total number (a) of CMs currently operating in the specified DOCSIS version. • Capable—Total number (b) of CMs that can operate in the specified DOCSIS version, but might not be operating in that version. • Registered—Total number (c) of CMs that are currently registered in the specified DOCSIS version.
Total Vx.y US QoS operating CMs	Total number of cable modems whose upstreams are currently operating in a specified DOCSIS version (x.y) quality of service (QoS).
Total Wide Band US operating CMs	Total number of cable modems with upstreams currently operating in wideband channel mode.
Total Wide Band US partial-mode CMs	Total number of cable modems with upstreams currently operating in partial wideband channel mode.

Field	Description
Total *mode* US Phy operating CMs	Total number of cable modems with upstreams currently operating in a particular wideband channel mode, where *mode* is: • scdma—DOCSIS 2.0 Synchronous Code Division Multiple Access (SCDMA) mode • atdma—DOCSIS 2.0 Advanced Time Division Multiple Access (A-TDMA) mode • tdma—DOCSIS 1.X, Time Division Multiple Access (TDMA) mode **Note** The US Phy Mode counters (scdma, atdma, and tdma) remain 0 on the UB interfaces.
Total Wide Band DS operating CMs	Total number of cable modems with downstreams operating in wideband channel mode.
Total Wide Band DS partial-mode CMs	Total number of cable modems with downstreams operating in partial wideband channel mode.
Total Narrow Band DS operating CMs	Total number of cable modems with downstreams operating in narrowband channel mode.

Examples: show cable modem docsis version summary Command

The following example shows typical output for the default form of the **show cable modem docsis version summary** command on a Cisco uBR10012 router:

```
Router# show cable modem docsis version summary
                              Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
```

Beginning in Cisco IOS Release 12.2(33)SCD2, the output of the **show cable modem docsis version summary** command was modified to display the cable modems that are in full or partial service mode as shown in the following example:

```
Router# show cable modem docsis version summary
                              Cable Modem DOCSIS Version Summary
                  DOCSIS Registered   US QoS     US Phy Mode    DOCSIS Mode
                  ------------------ --------- -------------- ----------------
Interface Online v3.0 v2.0 v1.1 v1.0 v1.1 v1.0 scdm atdm tdma UP  WB   WP  NB
C7/0/0/UB 12     12   0    0    0    12   0    0    0    0    9   12   12  0
C7/0/0/U0 2      0    2    0    0    2    0    0    0    2    0   0    0   2
C7/0/0/U1 1      0    1    0    0    1    0    0    0    1    0   0    0   1
C7/0/0/U3 4      0    4    0    0    4    0    0    0    4    0   0    0   4
C8/0/0/UB 9      9    0    0    0    9    0    0    0    0    0   9    0   0
C8/0/0/U0 1      1    0    0    0    1    0    0    0    1    0   1    0   0
```

```
C8/0/0/U1 5      0    4    1    0    5    0    0    0    5    0   0    0   5
C8/0/0/U3 1      0    1    0    0    1    0    0    0    1    0   0    0   1
```

The following example shows typical output for the **show cable modem docsis version summary** command with the **total** option on a Cisco uBR10012 router:

```
Router# show cable modem docsis version summary total
                            Cable Modem DOCSIS Version Summary
                 DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                 ------------------  ---------  ------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
Total:    15     0    14   1    0     15   0     0    0    0    15    11   4
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem docsis version summary total** command was modified as shown in the following example:

```
Router# show cable modem docsis version summary total
                            Cable Modem DOCSIS Version Summary
                 DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                 ------------------  ---------  ------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
-------------------------------------------------------------------------------
Total:    15     v3.0: 0             v1.1: 15     WB  : 0           WB: 11
                 v2.0: 14            v1.0: 0      scdm: 0           NB: 4
                 v1.1: 1                          atdm: 0
                 v1.0: 0                          tdma: 15
-------------------------------------------------------------------------------
```

Beginning in Cisco IOS Release 12.2(33)SCD2, the output of the **show cable modem docsis version summary total** command was modified to display the cable modems that are in full or partial service mode as shown in the following example:

```
Router# show cable modem docsis version summary total
                            Cable Modem DOCSIS Version Summary
                 DOCSIS Registered   US QoS     US Phy Mode    DOCSIS Mode
                 ------------------ --------- -------------- ----------------
Interface Online v3.0 v2.0 v1.1 v1.0 v1.1 v1.0 scdm atdm tdma UP  WB   WP  NB
C7/0/0/UB 12     12   0    0    0    12   0    0    0    0    9   12   12  0
C7/0/0/U0 2      0    2    0    0    2    0    0    0    2    0   0    0   2
C7/0/0/U1 1      0    1    0    0    1    0    0    0    1    0   0    0   1
C7/0/0/U3 4      0    4    0    0    4    0    0    0    4    0   0    0   4
C8/0/0/UB 9      9    0    0    0    9    0    0    0    0    0   9    0   0
C8/0/0/U0 1      1    0    0    0    1    0    0    0    1    0   1    0   0
C8/0/0/U1 5      0    4    1    0    5    0    0    0    5    0   0    0   5
C8/0/0/U3 1      0    1    0    0    1    0    0    0    1    0   0    0   1
-------------------------------------------------------------------------------
Total:    35     v3.0: 22            v1.1: 35     UB  : 21          WB: 22
                                                 UP  : 9           WP: 12
                 v2.0: 12            v1.0: 0      scdm: 0           NB: 13
                 v1.1: 1                          atdm: 0
```

```
                v1.0: 0                             tdma: 14
--------------------------------------------------------------------------------
```

Examples: show cable modem docsis version summary cable total Command

The following example shows sample output for the **show cable modem docsis version summary cable total** command for all enabled upstreams on a specific cable interface line card on a Cisco uBR10012 router:

```
Router# show cable modem docsis version summary cable 5/1/0 total
                            Cable Modem DOCSIS Version Summary
                 DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                 -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
Total:    9      0    9    0    0     9    0     0    0    0    9     9    0
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem docsis version summary cable total** command was modified as shown in the following example:

```
Router# show cable modem docsis version summary cable 5/1/0 total
                            Cable Modem DOCSIS Version Summary

                 DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                 -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
--------------------------------------------------------------------------------
Total:    9      v3.0: 0             v1.1: 9      WB  : 0           WB: 9
                 v2.0: 9             v1.0: 0      scdm: 0           NB: 0
                 v1.1: 0                          atdm: 0
                 v1.0: 0                          tdma: 9
--------------------------------------------------------------------------------
```

The following example shows sample output for the **show cable modem docsis version summary cable total** command for a range of interfaces on the Cisco uBR10012 router:

```
Router# show cable modem docsis version summary cable 5/1/0 cable 5/1/3 total
                            Cable Modem DOCSIS Version Summary
                 DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                 -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
Total:    15     0    14   1    0     15   0     0    0    0    15    11   4
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem docsis version summary cable total** command for a range of interfaces was modified as shown in the following example:

```
Router# show cable modem docsis version summary cable 5/1/0 cable 5/1/3 total
                              Cable Modem DOCSIS Version Summary

                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
-------------------------------------------------------------------------------
Total:    15     v3.0: 0             v1.1: 15     WB  : 0            WB: 11
                 v2.0: 14            v1.0: 0      scdm: 0            NB: 4
                 v1.1: 1                          atdm: 0
                 v1.0: 0                          tdma: 15
-------------------------------------------------------------------------------
```

The following example shows sample output for the **show cable modem docsis version summary cable upstream total** command for a range of interfaces and upstreams on the Cisco uBR10012 router:

```
Router# show cable modem docsis version summary cable 5/1/0 cable 5/1/3 upstream 0 3 total
                              Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
Total:    15     0    14   1    0     15   0     0    0    0    15    11   4
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem docsis version summary cable upstream total** command for a range of interfaces and upstreams was modified as shown in the following example:

```
Router# show cable modem docsis version summary cable 5/1/0 cable 5/1/3 upstream 0 3 total
                              Cable Modem DOCSIS Version Summary

                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -----------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/1/U0 4      0    3    1    0     4    0     0    0    0    4     2    2
C5/1/3/U0 2      0    2    0    0     2    0     0    0    0    2     0    2
-------------------------------------------------------------------------------
Total:    15     v3.0: 0             v1.1: 15     WB  : 0            WB: 11
                 v2.0: 14            v1.0: 0      scdm: 0            NB: 4
                 v1.1: 1                          atdm: 0
                 v1.0: 0                          tdma: 15
-------------------------------------------------------------------------------
```

The following example shows sample output for the **show cable modem docsis version summary cable upstream total** command for a range of upstreams in an interface on the Cisco uBR10012 router:

```
Router# show cable modem docsis version summary cable 5/1/0 upstream 0 3 total
                            Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -------------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
Total:    9      0    9    0    0     9    0     0    0    0    9     9    0
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem docsis version summary cable upstream total** command for a range of upstreams was modified as shown in the following example:

```
Router# show cable modem docsis version summary cable 5/1/0 upstream 0 3 total
                            Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -------------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C5/1/0/U0 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U1 3      0    3    0    0     3    0     0    0    0    3     3    0
C5/1/0/U2 2      0    2    0    0     2    0     0    0    0    2     2    0
C5/1/0/U3 2      0    2    0    0     2    0     0    0    0    2     2    0
-------------------------------------------------------------------------------
Total:    9      v3.0: 0             v1.1: 9      WB  : 0            WB: 9
                 v2.0: 9             v1.0: 0      scdm: 0            NB: 0
                 v1.1: 0                          atdm: 0
                 v1.0: 0                          tdma: 9
-------------------------------------------------------------------------------
```

The following example shows sample output for the **show cable modem cable docsis version summary** command for all enabled upstreams on a specific cable interface line card on a Cisco uBR10012 router:

```
Router# show cable modem cable 8/0/1 docsis version summary
                            Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -------------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C8/0/1/U0 4      0    2    1    1     0    4     0    0    0    4     0    4
```

Beginning in Cisco IOS Release 12.3(23)BC7, the output for the **show cable modem cable docsis version summary** command for a range of upstreams was modified as shown in the following example:

```
Router# show cable modem cable 8/0/1 docsis version summary
                            Cable Modem DOCSIS Version Summary

                  DOCSIS Registered    US QoS        US Phy Mode       DS Mode
                  -------------------  ---------  -------------------  -------
Interface Online v3.0 v2.0 v1.1 v1.0  v1.1 v1.0  WB   scdm atdm tdma  WB   NB
C8/0/1/U0 4      0    2    1    1     0    4     0    0    0    4     0    4
```

show cable modem docsis version summary command

The following example shows typical output for the default form of the **show cable modem docsis version summary** command on the Cisco cBR Series Converged Broadband Router:

```
Router# show cable modem docsis version summary
                            Cable Modem DOCSIS Version Summary
                  DOCSIS Registered    US QoS        US Phy Mode      DS Mode
                 -------------------  ---------  -------------------  -------
Interface    online v3.1 v3.0 v2.0 v1.1 v1.0 v1.1 v1.0 ofdma atdm tdma UP   WB   WP   NB
C1/0/5/U12   0    0    0    0    0    0    0    0    1    0    0    0    0    0    0
```

Table below describes the significant fields shown in the display.

Table 21: show cable modem docsis version summary Field Descriptions

Field	Description
Interface	The cable interface line card providing the upstream for this cable modem.
Online	Total number of cable modems currently online on this cable interface.
DOCSIS Registered	Total number of cable modems registered on this cable interface with the specified DOCSIS version (x.y) capabilities.
US QoS	Total number of cable modems whose upstreams are currently operating in a specified DOCSIS version (x.y) quality of service (QoS).
US Phy Mode	Total number of cable modems on this cable interface with upstreams currently operating in a particular wideband channel mode, where: • WB—Total number of upstreams on this cable interface operating in any wideband channel mode. • ofdma—Total number of upstreams on this cable interface operating in DOCSIS 3.1 Orthogonal Frequency Division Multiple Access (OFDMA) mode. • atdma—Total number of upstreams on this cable interface operating in DOCSIS 2.0 Advanced Time Division Multiple Access (A-TDMA) mode. • tdma—Total number of upstreams on this cable interface operating in DOCSIS 1.X, Time Division Multiple Access (TDMA) mode. **Note** The US Phy Mode counters (scdma, atdma, and tdma) remain 0 on the UB interfaces.
DS Mode	Total number of cable modems on this cable interface whose downstreams are operating in the following modes: • WB—Total number of downstreams on this cable interface operating in wideband channel mode. • NB—Total number of downstreams on this cable interface operating in narrowband channel mode.

Field	Description
DOCSIS Mode	• UP—Total number of cable modems in upstream bonding partial service mode (p). • WB—Total number of cable modems in downstream bonding fully-operational mode (w-online). • WP—Total number of cable modems in downstream bonding partial service mode (p-online). • NB—Total number of cable modems in narrowband online mode (online).

Related Commands

Command	Description
show cable modem docsis device-class	Displays the DOCSIS device-class information for cable modems (CMs) on all or specified cable interfaces and upstreams.
show cable modem partial-mode	Displays information about the cable modems that are in upstream and downstream partial service mode.

show cable modem docsis version d31-capable

To display the DOCSIS 3.1 version information for cable modems (CMs) on one or more cable interfaces and upstreams, use the **show cable modem docsis version d31-capable** command in privileged EXEC configuration mode.

show cable modem docsis version d31-capable

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Dublin 17.12.1x	The MRC/MTC column is added to the command output.
Cisco IOS XE Everest 16.6.1	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

This command displays a summary of DOCSIS 3.1 version information for all cable modems for a single cable interface or upstream, or for a range of cable interfaces or upstreams.

Examples: show cable modem docsis version d31-capable command

The following example shows output for the **show cable modem docsis version d31-capable** command on a Cisco cBR Series Converged Broadband Router (Cisco IOS XE Dublin 17.12.1x or later):

```
Router# show cable modem docsis version d31-capable

MAC Address    I/F            MAC              Reg Oper DSxUS DS   RCC   US     MRC/
                              State            Ver Ver        OFDM ID    OFDMA  MTC
4800.33ef.4b66 C1/0/0/UB      w-online(pt)     3.1 3.1  36x6  4    2     2      5/8
4800.33ef.5e4a C1/0/0/UB      w-online(pt)     3.1 3.1  35x6  3    3     2      5/8
4800.33ee.e971 C1/0/0/UB      w-online(pt)     3.1 3.1  32x2  0    5     0      2/2
4800.33e5.f746 C1/0/0/UB      w-online(pt)     3.1 3.1  34x2  4    7     0      2/2
```

Note D4.0 modems registering in D3.1 mode show up in the d31-capable list.

MRC/MTC information can help the operator distinguish these D4.0 modems from traditional D3.1 modems. MRC/MTC is greater than 2/2 for D4.0 modems.

The following example shows output for the **show cable modem docsis version d31-capable** command on a Cisco cBR Series Converged Broadband Router (Releases before Cisco IOS XE Dublin 17.12.1x):

```
Router# show cable modem docsis version d31-capable
```

```
MAC Address    I/F         MAC            Reg    Oper  DSxUS  DS     RCC   US
                           State          Ver    Ver          OFDM   ID    OFDMA
4800.33ea.7012 C1/0/0/UB   w-online(pt)   3.1    3.1   33x4   1      5     1
203d.66ae.4169 C1/0/0/UB   w-online(pt)   3.1    3.1   33x4   1      5     1
```

Table below describes the significant fields that are shown in the display.

Table 22: show cable modem docsis version Field Descriptions

Field	Description
MAC Address	The MAC address of the CM.
I/F	The cable interface line card providing the upstream for this CM.
MAC State	The current state of the MAC layer.
Reg Ver	Displays the maximum supported version of DOCSIS 3.1 that the cable modem supports. Shows n/a if the modem is not online.
Oper Ver	Displays the actual version of DOCSIS protocol that the CM is currently using. Depending upon CMTS capabilities and configuration, this could be lower than the Reg Ver.
DSxUS	State of the downstream and upstream channels on the cable modem.
DS OFDM	Displays the number downstream OFDM channels being actively used by the CM.
RCC ID	Receive channel configuration (RCC) ID of the cable modem.
US OFDMA	Displays the number of upstream OFDMA channels being actively used by the CM. The current CMTS implementation limit is 2 upsteam OFDMA channels, so the value could be 0, 1, or 2.
MRC/MTC	Displays Multiple Receive Channel (MRC) and Multiple Transmit Channel (MTC) capabilities of the modems. For D4.0 modems registering in D3.1 mode, the MRC and MTC values is greater than 2 OFDM and OFDMA channels. The first set of D4.0 modems based on Broadcom chipset advertise a value of 5/8 for MRC/MTC. Traditional D3.1 modems, advertise a MRC/MTC value of 2/2.

Related Commands

Command	Description
show cable modem phy	Displays the DOCSIS PHY layer information for one or more cable modems.
show interface cable mac-scheduler	Displays the OFDMA channel capacity and utilization.

show cable modem docsis version d40-capable

Use the **show cable modem docsis version d40-capable** command in privileged EXEC configuration mode to display the DOCSIS 4.0 version information for cable modems (CMs) on one or more cable interfaces and upstreams.

show cable modem docsis version d40-capable [**operational** | **not-operational**]

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Dublin 17.12.1x	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Syntax Description

operational	Displays a list of DOCSIS 4.0 operational modems.
not-operational	Displays a list of DOCSIS 4.0 capable modems not D4.0 operational.

Usage Guidelines

This command displays a summary of DOCSIS 4.0 version information for all cable modems for a single cable interface or upstream, or for a range of cable interfaces or upstreams.

show cable modem docsis version d40-capable command

The following example shows output for the **show cable modem docsis version d40-capable** command on a Cisco cBR Series Converged Broadband Router:

```
Router# show cable modem docsis version d40-capable
MAC Address    I/F            MAC              Reg Oper DSxUS DS   RCC   US     MRC/
                              State            Ver Ver        OFDM ID    OFDMA  MTC
4800.33ef.3b66 C1/0/0/UB      w-online(pt)     4.0 3.1  36x6  4    2     2      5/8
4800.33ef.3e4a C1/0/0/UB      w-online(pt)     4.0 3.1  35x6  3    3     2      5/8
4800.33ee.f856 C1/0/0/UB      w-online(pt)     4.0 3.1  34x6  2    4     2      5/8
4800.33ee.fc34 C1/0/0/UB      w-online(pt)     4.0 3.1  36x4  4    2     0      5/8
4800.33ee.f971 C1/0/0/UB      w-online(pt)     4.0 3.1  32x4  0    5     0      5/8
4800.33ef.3a79 C1/0/0/UB      w-online(pt)     4.0 4.0  36x6  4    2     2      5/8
4800.33ef.3e4e C1/0/0/UB      w-online(pt)     4.0 4.0  35x6  3    3     2      5/8

Router# show cable modem docsis version d40-capable not-operational
MAC Address    I/F            MAC              Reg Oper DSxUS DS   RCC   US     MRC/
                              State            Ver Ver        OFDM ID    OFDMA  MTC
4800.33ef.3b66 C1/0/0/UB      w-online(pt)     4.0 3.1  36x6  4    2     2      5/8
4800.33ef.3e4a C1/0/0/UB      w-online(pt)     4.0 3.1  35x6  3    3     2      5/8
4800.33ee.f856 C1/0/0/UB      w-online(pt)     4.0 3.1  34x6  2    4     2      5/8
4800.33ee.fc34 C1/0/0/UB      w-online(pt)     4.0 3.1  36x4  4    2     0      5/8
4800.33ee.f971 C1/0/0/UB      w-online(pt)     4.0 3.1  32x4  0    5     0      5/8

Router# show cable modem docsis version d40-capable operational
```

```
MAC Address    I/F           MAC              Reg Oper DSxUS DS   RCC   US     MRC/
                             State            Ver Ver        OFDM ID    OFDMA  MTC
4800.33ef.3a79 C1/0/0/UB     w-online(pt)     4.0 4.0  36x6  4    2     2      5/8
4800.33ef.3e4e C1/0/0/UB     w-online(pt)     4.0 4.0  35x6  3    3     2      5/8
```

The table below describes the significant fields that are shown in the command output:

Table 23: show cable modem docsis version Field Descriptions

Field	Description
MAC Address	The MAC address of the CM.
I/F	The cable interface line card providing the upstream for this CM.
MAC State	The current state of the MAC layer.
Reg Ver	Displays the maximum supported version of DOCSIS 4.0 that the cable modem supports. Shows n/a if the modem is not online.
Oper Ver	Displays the actual version of the DOCSIS protocol that the CM is currently using. Depending upon CMTS capabilities and configuration, this could be lower than the Reg Ver.
DSxUS	State of the downstream and upstream channels on the cable modem.
DS OFDM	Displays the number downstream OFDM channels being actively used by the CM.
RCC ID	Receive channel configuration (RCC) ID of the cable modem.
US OFDMA	Displays the number of upstream OFDMA channels being actively used by the CM. Current CMTS implementation limit is 2 upsteam OFDMA channels, so the value could be 0, 1, or 2.
MRC/MTC	Displays Multiple Receive Channel (MRC) and Multiple Transmit Channel (MTC) capabilities of the modems.

Related Commands

Command	Description
show cable modem phy	Displays the DOCSIS PHY layer information for one or more cable modems.
show interface cable mac-scheduler	Displays the OFDMA channel capacity and utilization.

show cable modem domain-name

To update the cable-specific Domain Name System (DNS) cache and display the domain name for specified cable modems (CMs) and customer premise equipment (CPE) behind a CM on a Cisco CMTS router, use the **show cable modem domain-name** command in privileged EXEC mode.

Cisco uBR7246VXR Router and Cisco uBR7225VXR Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **domain-name**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot* /*port* | *slot*/*subslot* /*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **domain-name**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
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 and Cisco uBR7246VXR routers—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.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.

name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.

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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Router.

Usage Guidelines

Use the **show cable modem domain-name** command without any options to initiate an update to the cable-specific DNS cache on the CMTS router and to enable use of domain names in other CMTS router **cable modem** commands that support a name option.

Note In Cisco IOS Release 12.2(33)SCA, although the **show cable modem domain-name** command accepts an IPv4 address format for a CM, DNS for IPv4-managed cable devices is not supported.

Examples

The following example shows sample output for all CMs and CPE behind a CM for the **show cable modem domain-name** command, listing the devices by their MAC and IP addresses and displaying the associated domain name:

```
Router# show cable modem domain-name
MAC Address    IP Address                              Domain Name
0018.6835.27b3 10.3.37.76
0019.474a.c14a 2001:0DB8:3800:809:A896:1431:75EA:5EA1  cisco-test-cm1.cisco.com
0007.0e03.6851 10.3.37.36
0007.0e01.b085 10.3.37.34
0018.6835.27aa 2001:0DB8:3800:809:E97D:2986:9F37:FFE   cisco-test-cm2.cisco.com
```

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.

Command	Description
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem errors

To display packet header error statistics for one or more cable modems , use the **show cable modem errors** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot /port* | *slot /cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **errors**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot /subslot /port* | *slot /subslot /cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **errors**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot /subslot /cable-interface-index* [**upstream** *port*]}] **errors**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8 router—) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router— The valid range is from 0 to 15.

upstream *port*	(Optional) Displays information for all cable modems using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. Not available on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. Not available on the Cisco cBR-8 router.
errors	Displays packet header error statistics for one or more cable modems .

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX, 12.2(1)XF, and 12.2(4)BC1	This command was introduced for the Cisco uBR7100 series, Cisco uBR7200 series, and Cisco uBR10012 router.
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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **upstream** and **name** keywords and *logical-channel-index* variable were removed.

Usage Guidelines

This command displays packet header error information for all cable modems , for all cable modems attached to a specific CMTS cable interface, or for a particular CM, as identified by its IP address or MAC address.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

Tip In Cisco IOS Release 12.2(15)BC1 and later releases, use the **clear cable modem flap-counters** command to clear these counters.

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

The following example shows sample output for the **show cable modem errors** command for all cable modems on a particular cable interface.

```
Router# show cable modem c8/1/0 errors

MAC Address    I/F          CRC        HCS
0050.7366.1243 C8/1/0/U1    0          1
0002.b970.0027 C8/1/0/U4    0          0
0006.5314.858d C8/1/0/U4    8          3
Router#
```

Table below describes the fields shown in the **show cable modem errors** displays:

Table 24: Descriptions for the show cable modem errors Fields

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface line card, including the upstream, for this CM.
CRC	Number of times the CMTS upstream receiver flagged a packet with a cyclic redundancy check (CRC) error from this CM. CRC errors usually indicate downstream signal interruption or interference noise on a plant. Occasional CRC errors can always be expected, but a high number of CRC errors could indicate plant problems such as intermittent upstream problems, laster clipping, common-path distortion, or impulsive noise or interference.

Field	Description
HCS	Number of times the CMTS upstream receiver flagged a packet with a header checksum (HCS) error from this CM. HCS errors could indicate the same sort of plant problems as CRC errors.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered cable modems .
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more cable modems .
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

show cable modem extended-power

To display the list of cable modems that are transmitting upstream data at extended power level, use the **show cable modem extended-power** command in privilege EXEC mode.

show cable modem extended-power

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCF2	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples

This example shows the output of the **show cable modem extended-power** command that displays all the cable modems that are transmitting upstream data at extended power level:

```
Router# show cable modem extended-power
MAC Address    IP Address      I/F           MAC           Prim  Report  ECN
                                             State         Sid   Power
001e.6bfb.3382 10.50.0.3        C1/0/0/UB     w-online      3     57.00   Y
0022.cea5.0214 10.50.1.102      C1/0/0/UB     w-online      5     54.00   Y
001e.6bfb.1378 10.50.6.83       C1/0/0/UB     w-online      6     54.00   Y
```

Table below describes significant fields shown in the display.

Table 25: show cable modem extended-power Field Descriptions

Field	Description
MAC Address	MAC address of the cable modem.
IP Address	IP address that the DHCP server has assigned to the cable modem.
I/F	Cable interface line card providing the upstream for the cable modem.
MAC State	Current state of the MAC layer.
Prim Sid	Primary Service ID (SID) assigned to the cable modem.
Report Power	Power (in dB) at which cable modems are transmitting upstream data.
ECN	Extended high power at which the CM is operating.

Related Commands

Command	Description
cable upstream ext-power	Enables or disables the DOCSIS extended transmit power support on the Cisco CMTS.

show cable modem fiber-node mac-domain

To display all modems that are available in a specified fiber-node and mac domain in a service group profile, use the **show cablemodem fiber-node mac-domain** command in the privileged EXEC mode.

show cable modem fiber-node *fiber-node id* **mac-domain** *mac-domain id*

Syntax Description

fiber-node	Fiber-node profile information.
fiber-node id	Fiber node ID.
mac-domain	DOCSIS MAC version/capabilities.
mac-domain id	Summary total/active/registered modems with DOCSIS information per interface.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 3.17.0S	This command was introduced.

Example:

```
Router#show cable modem fiber-node 1 mac-domain 0
68ee.96d9.6a6b 30.101.12.24 C2/0/0/UB init(o) 1 3.00 2128 0 N
68ee.96d9.96a8 30.101.12.18 C2/0/0/U1 offline 2 -0.50 2131 0 N
c8fb.2631.0ede 30.101.12.2 C2/0/0/p w-online(pt) 3 3.00 1809 0 N
c8fb.2631.0cf2 30.101.12.3 C2/0/0/p w-online(pt) 4 3.00 1808 0 N
c8fb.2631.0eac 30.101.12.4 C2/0/0/p w-online(pt) 5 3.00 1811 0 N
c8fb.2631.0d3a 30.101.12.5 C2/0/0/p w-online(pt) 6 3.00 1811 0 N
68ee.96d9.7772 30.101.12.14 C2/0/0/p w-online(pt) 7 3.00 2132 1 N
c8fb.2631.0db6 30.101.12.7 C2/0/0/p w-online(pt) 8 3.00 1835 0 N
c8fb.2631.0dc8 30.101.12.6 C2/0/0/p w-online(pt) 9 3.00 1813 0 N
c8fb.2631.0ec2 30.101.12.8 C2/0/0/p w-online(pt) 10 3.00 1811 0 N
c8fb.2631.0b18 30.101.12.9 C2/0/0/p w-online(pt) 11 3.50 1838 0 N
c8fb.2631.0c7a 30.101.12.10 C2/0/0/p w-online(pt) 12 3.00 1813 0 N
c8fb.2631.0d54 30.101.12.11 C2/0/0/p w-online(pt) 13 3.50 1835 0 N
c8fb.2631.0d7a 30.101.12.12 C2/0/0/p w-online(pt) 14 3.00 1810 0 N
c8fb.2631.0c86 30.101.12.13 C2/0/0/p w-online(pt) 15 3.00 1809 0 N
c8fb.2631.0b1c 30.101.12.15 C2/0/0/p w-online(pt) 16 3.50 1812 0 N
c8fb.2631.0c08 30.101.12.16 C2/0/0/p w-online(pt) 17 3.00 1808 0 N
68ee.96d9.7a65 3
```

show cable modem flap

To display flap list statistics for one or more cable modems, use the **show cable modem flap** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot* /*cable-interface-index*} [**upstream** *port logical-channel-index*] | **name** *fqdn*}] **flap**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* /*subslot*/*cable-interface-index*} [**upstream** *port logical-channel-index*] | **name** *fqdn*}] **flap mtc**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* /*subslot*/*cable-interface-index*} [**upstream** *port*]}] **flap**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific cable modem to be displayed. If you specify the IP address for a CPE device behind a cable modem, information for that cable modem is displayed.
mac-address	(Optional) MAC address of a specific cable modem to be displayed. If you specify the MAC address for a CPE device behind a cable modem, information for that cable modem is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router— The valid range is from 0 to 3 and 6 to 9
subslot	Secondary slot number of the cable interface line card. • Cisco uBR10012 —The valid subslots are 0 or 1. • Cisco cBR-8 router— The valid subslot is 0.
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is 0 to 15.

upstream *port*	(Optional) Displays information for all cable modems using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. Cisco cBR-8 router— The valid range is from 0 to 7
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This variable is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This keyword is not supported on the Cisco cBR-8 router.
flap mtc	Displays aggregate data across all upstream channels for each flap detector for cable modems in MTC mode. Displays per channel flap information for a single cable modem in MTC mode. The **mtc** keyword is not supported on the Cisco cBR-8 router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX, 12.2(1)XF, and 12.2(4)BC1	This command was introduced for the Cisco uBR7100 series, Cisco uBR7200 series, and Cisco uBR10012 routers.
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. • Support for specifying the IPv6 address of a cable modem or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a cable modem.
12.2(33)SCC	A new keyword, mtc, was added to provide multiple transmit channel (MTC) information for cable modems in the MTC mode. • The mtc keyword displays aggregate data across all upstream channels for each flap detector for cable modems in the MTC mode. • The show cable modem flap command remains unchanged for non-MTC mode cable modems.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.

Release	Modification
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **name** keyword and *logical-channel-index* variable are removed.

Usage Guidelines

This command displays information about the flap list activity for one or more cable modems. Unlike the **show cable flap-list** command, the **show cable modem flap** command displays flap counters of a cable modem irrespective of the plant condition.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include ip-address** command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

Note 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.

For cable modems in MTC mode, the show cable modem flap command will display aggregate data across all upstream channels for each flap detector. However, for a single MTC cable modem, the show cable modem flap command will display per channel flap information.

Note The output of the **show cable modem flap** command will remain unchanged for non-MTC mode cable modems.

Examples

This example shows the output for the **show cable modem flap** command on a Cisco CMTS router:

```
Router# show cable modem flap
```

```
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0025.2e34.4386 C6/0/0/U0     0     46657 3974  0      0      0     (14212 msec)
0025.2e2f.d4b6 C6/0/0/U0     0     47868 1896  0      0      0     (18000 msec)
0025.2e2f.d4de C6/0/0/U0     0     47960 1883  0      0      0     (19552 msec)
0023.bee1.e96b C6/0/0/U0     0     46537 4333  0      0      0     (22432 msec)
0025.2e2f.d4d8 C6/0/0/U0     0     21891 780   0      0      0     ( -- )
0025.2e2f.d48c C6/0/0/U0     0     47918 1828  0      0      0     ( -- )
0025.2e2f.d490 C6/0/0/U0     0     47900 1812  0      0      0     ( -- )
0019.474e.e46a C8/0/0/U0     0     33424 0     0      0      0     (6372 msec)
0019.474e.e266 C8/0/0/U0     0     33418 0     0      0      0     (8352 msec)
0022.ce89.96f2 C8/0/0/U0     0     33427 0     0      0      0     (11112 msec)
0025.2e2f.d58a C8/0/0/U0     0     33423 0     0     !33420  33420 Oct 5  16:02:16(15252
msec)
001a.c30c.7ef6 C8/0/0/U0     0     33424 2     0      0      0     (17592 msec)
0022.ce89.96b0 C8/0/0/U0     0     33414 0     0      0      0     ( -- )
0025.2e2f.d6de C8/0/0/U0     0     33414 0     0     !33411  33411 Oct 5  16:02:
21( -- )
0025.2e34.43c8 C8/0/0/U0     0     33411 0     0      0      0     ( -- )
0023.bee1.e974 C8/0/0/U0     0     33406 0     0      0      0     ( -- )
0019.474e.e3a7 C8/0/0/U0     0     33324 0     0      0      0     ( -- )
```

This example shows the output for the **show cable modem flap** command for all cable modems on a specific cable interface:

```
Router# show cable modem c6/0/0 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0025.2e34.4386 C6/0/0/U0     0     46778 3980  0      0      0     (14212 msec)
0025.2e2f.d4b6 C6/0/0/U0     0     48002 1899  0      0      0     (18000 msec)
0025.2e2f.d4de C6/0/0/U0     0     48098 1889  0      0      0     (19552 msec)
0023.bee1.e96b C6/0/0/U0     0     46658 4351  0      0      0     (22432 msec)
0025.2e2f.d4d8 C6/0/0/U0     0     21979 781   0      0      0     ( -- )
0025.2e2f.d48c C6/0/0/U0     0     48048 1835  0      0      0     ( -- )
0025.2e2f.d490 C6/0/0/U0     0     48029 1819  0      0      0     ( -- )
```

This example shows the output for the **show cable modem flap** command for a particular cable modem:

```
Router# show cable modem 0010.7bb3.fcd1 flap
MAC Address    I/F       Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0010.7bb3.fcd1 C5/0/U5   0     36278 92    0     369     372   Jun 1 13:05:23 (14212 msec)
```

This example shows the output of the **show cable modem flap** command for all cable modems in the MTC mode on a specific cable interface:

```
Router# show cable modem c5/0/0 flap
MAC Address    I/F       Ins   Hit   Miss  CRC   P-Adj   Flap  Time
000e.5c44.d2f0 C5/0/0/U0 0     3040  0     0     0       0  ( -- )
0019.474a.d542 C5/0/0/U3 0     2930  214   0     0       1     May 27 05:21:26(19552 msec)
001a.c3ff.d578 C5/0/0/UB 0     12195 60    0     0       4     May 25 10:01:03(22432 msec)
```

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

```
Router#show cable modem flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0025.2eaf.82e4 C1/0/0/U0     0     2541  0     0      0      0
0025.2eaf.82f4 C1/0/0/U1     0     2542  0     0      0      0
0025.2e2d.74f8 C1/0/0/U0     0     2535  2     0      0      0
0025.2e2d.75be C1/0/0/U0     0     2539  17    0      0      3     Jan 18 10:25:06
0025.2eaf.7f38 C1/0/0/U1     0     2539  0     0      0      0
```

```
0025.2eaf.8302 C1/0/0/U1     0     2538  0     0      0      0
c8fb.26a5.56ca C1/0/1/U0     0     2542  10    0      0      1      Jan 18 09:43:01
c8fb.26a5.5814 C1/0/1/U0     0     2544  9     0      0      1      Jan 18 09:43:01
c8fb.26a5.56b6 C1/0/1/U0     0     2542  6     0      0      1      Jan 18 09:43:01
c8fb.26a5.5400 C1/0/1/U3     0     2542  9     0      0      2      Jan 18 09:43:16
c8fb.26a5.57a6 C1/0/1/U3     0     2542  10    0      0      2      Jan 18 09:43:16
c8fb.26a5.5574 C1/0/1/U3     0     2542  10    0      0      2      Jan 18 09:43:16
c8fb.26a5.55ac C1/0/1/U2     0     2541  15    0      0      2      Jan 18 09:43:21
c8fb.26a5.54e0 C1/0/1/U0     0     2542  13    0      0      2      Jan 18 09:43:21
c8fb.26a5.572e C1/0/1/U2     0     2541  13    0      0      2      Jan 18 09:43:26
c8fb.26a5.5866 C1/0/1/U3     0     2541  12    0      0      2      Jan 18 09:43:31
c8fb.26a5.57f4 C1/0/1/U3     0     2540  13    0      0      2      Jan 18 09:43:41
c8fb.26a5.5936 C1/0/1/U3     0     2540  12    0      0      2      Jan 18 09:43:41
c8fb.26a5.5810 C1/0/1/U3     0     2540  10    0      0      2      Jan 18 09:43:41
c8fb.26a5.52f2 C1/0/1/U2     0     2540  10    0      0      1      Jan 18 09:43:41
c8fb.26a5.5580 C1/0/1/U0     0     2540  7     0      0      1      Jan 18 09:43:41
c8fb.26a5.5792 C1/0/1/U3     0     2540  4     0      0      0
c8fb.26a5.5474 C1/0/3/U3     0     2542  13    0      0      2      Jan 18 09:42:06
c8fb.26a5.52fe C1/0/3/U2     0     2542  13    0      0      2      Jan 18 09:42:06
c8fb.26a5.52ca C1/0/3/U0     0     2542  13    0      0      2      Jan 18 09:42:11
c8fb.26a5.56d8 C1/0/3/U0     0     2542  10    0      0      1      Jan 18 09:42:11
c8fb.26a5.5376 C1/0/3/U0     0     2542  13    0      0      2      Jan 18 09:42:16
c8fb.26a5.53f6 C1/0/3/U1     0     2420  1404  0      0      187    Jan 18 14:18:21
c8fb.26a5.5428 C1/0/3/U3     0     2422  1293  0      0      180    Jan 18 14:18:31
c8fb.26a5.56b2 C1/0/3/U0     0     2523  19    0      0      3      Jan 18 09:45:21
c8fb.26a5.54e4 C1/0/3/U0     0     2525  23    0      0      3      Jan 18 09:44:56
c8fb.26a5.560a C1/0/3/U0     0     2526  10    0      0      1      Jan 18 09:42:21
c8fb.26a5.5742 C1/0/3/U1     0     2418  1361  0      0      188    Jan 18 14:19:36
c8fb.26a5.52c8 C1/0/3/U2     0     2512  8     0      0      1      Jan 18 09:42:21
c8fb.26a5.5624 C1/0/3/U1     0     2517  5     0      0      1      Jan 18 09:42:31
c8fb.26a5.5384 C1/0/3/U0     0     2520  5     0      0      1      Jan 18 09:42:31
c8fb.26a5.5598 C1/0/3/U0     0     2518  4     0      0      0
c8fb.26a5.5346 C1/0/3/U0     0     2411  1358  0      0      185    Jan 18 14:16:31

Router#
```

This example shows the output for the **show cable modem flap** command for a particular cable modem on the Cisco cBR-8 router:

```
Router#show cable modem c8fb.26a5.5598 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
c8fb.26a5.5598 C3/0/3/U0     0     2525  4     0      0      0

Router#
```

Table below describes the significant fields shown in the display:

Table 26: show cable modem flap Field Descriptions

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface line card, including upstream, for this cable modem.
Ins	The number of times the cable modem comes up and inserts itself into the network. It can indicate intermittent downstream sync loss or DHCP or modem registration problems.

Field	Description
Hit	The number of times the cable modem responds to MAC layer keepalive messages. (The minimum hit rate is once per 30 seconds. It can indicate intermittent upstream, laser clipping, or common-path distortion.
Miss	The number of times the cable modem misses the MAC layer keepalive message. An 8 percent miss rate is normal for the Cisco cable interface line cards. It can indicate intermittent upstream, laser clipping, or common-path distortion.
CRC	The number of cyclic redundancy check (CRC) errors from this cable modem. It can indicate intermittent upstream, laser clipping, or common-path distortion.
P-Adj	The number of times the headend instructed the cable modem to adjust transmit (TX) power more than 3 dB. It can indicate amplifier degradation, poor connections, or thermal sensitivity.
Flap	The sum of P-Adj and Ins values. cable modems with high flap counts have high SIDs and might not register.
Time	The most recent time that the cable modem dropped the connection. The value displayed in the brackets indicates the duration (milliseconds) between the cable interface to become active and the first ranging success after a line card switchover (cable modem recovery time).

Related Commands

Command	Description
cable flap-list aging	Specifies the number of days to keep a cable modem in the flap-list table before aging it out of the table.
cable flap-list insertion-time	Sets the insertion time interval that determines whether a cable modem is placed in the flap list.
cable flap-list miss-threshold	Configures the threshold for recording a flap-list event, in terms of missed Station Maintenance messages.
cable flap-list power-adjust threshold	Specifies the power-adjust threshold for recording a cable modem flap-list event.
cable flap-list size	Specifies the maximum number of cable modems that can be listed in the flap-list table.
clear cable flap-list	Clears all the entries in the flap-list table.
show cable flap-list	Displays the current contents of the flap list.
show cable modem	Displays information for the registered and unregistered cable modems.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

show cable modem internal load-balance

To display the load balance debug information for a cable modem, use the **show cable modem internal load-balance** command in privileged EXEC mode.

showcablemodem*mac-address***internal load-balance**

Syntax Description

mac-address	MAC address of a specific cable modem to be displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE Fuji 16.8.1	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples

This example shows the output for the **show cable modem internal load-balance** command for a particular cable modem:

```
Router# show cable modem c8fb.26a6.c49c internal load-balance
Modem Hardware Information :
----------------------------
CM MAC Address                        : c8fb.26a6.c49c
CM MAC Version                        : DOC3.0
CM Wideband Capable                   : Y
Modem CMTS Status Information :
-------------------------------
Modem Status                        : {Modem= online(pt), Security=assign(tek)}
Modem US Bonding Mode               : Single-Channel
Modem DS Bonding Mode               : Single-Channel
Modem US Channels Information :
-------------------------------
Upstream Host Interface, TCS        : Cable3/0/1 0x4
UDC Enabled                         : N
US Frequency Range Capability       : Standard (5-42 MHz)
Extended Upstream Transmit Power    : 0dB
Multi-Transmit Channel Mode         : N
Upstream Channel                    : US2
Modem DS Channels Information :
-------------------------------
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
Primary Downstream                 : Do3/0/0:5 (RfId : 24581)
Modem Load-Balance Information In CMTS Config :
-----------------------------------------------
CMTS CFG CM Restricted to RLBG          : FALSE
CMTS CFG CM Restricted to RLBG Static   : FALSE
CMTS CFG CM Excluded from Being Assigned to DOSIS LBG  : FALSE
CMTS CFG CM Excluded from Being Assigned to DOSIS LBG  : FALSE
CMTS CFG CM Restricted to RLBG Dynamic  : FALSE
Modem Load-Balance Information In CM Config File :
--------------------------------------------------
CFG LB group ID in config file         : N/A
CFG Service Type ID in config file     :
```

```
CFG LB policy ID in config file        : 0
CFG Required DS Attribute Mask         : 0x0
CFG Forbidden DS Attribute Mask        : 0x0
CFG Required US Attribute Mask         : 0x0
CFG Forbidden US Attribute Mask        : 0x0
Modem Load-Balance Information Applied :
----------------------------------------
LB group ID assigned               : 2147557888
LB Service Type ID                 :
LB Tag                             :
LB policy ID                       : 0
LB priority                        : 0
LB Last CM Operation               : LB_NO_SKIP
LB Last Counts State               : 4
LB Balance Status DS               : LB_NO_SKIP
LB Balance Status US               : LB_NO_SKIP
LB Channel History                 :
Modem D30 LB Status Information :
--------------------------------
LB Failures Info     :
      LB Failures US : 0
      LB Failures DS : 0
LB  Debug Variables     :
     LB triggered dxc : 0
     LB target rcc_id : 0
     LB target rfid   : 4294967295
     LB group id      : 2147557888
     LB reg group id  : 0
     LB priority      : 0
     LB policy_id     : 0
     LB reg_policy_id : 0
```

show cable modem ipv6

To display IPv6 information for specified cable modems (CMs) and customer premise equipment (CPE) behind a CM on a Cisco CMTS router, use the **show cable modem ipv6** command in privileged EXEC mode.

Cisco uBR7246VXR Router and Cisco uBR7225VXR Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **ipv6** [{**cpe** | **prefix** | **registered** | **unregistered**}]

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn*}] **ipv6** [{**cpe** | **prefix** | **registered** | **unregistered**}]

Cisco cBR-8 Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot*/*subslot*/*cable-interface-index* }] **ipv6** [{**prefix** | **registered** | **summary** | **unregistered**}]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
cable	Identifies the cable interface on the Cisco router.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.
cpe	(Optional) Displays IPv6 information for the CPE devices behind the CM with the specified IPv4 or IPv6 address.
prefix	(Optional) Displays the IPv6 prefix of the network.
registered	(Optional) Displays IPv6 information for registered CMs.
summary	(Optional) Displays the summary of the IPv6 information on Cisco cBR-8 Converged Broadband Router.
unregistered	(Optional) Displays IPv6 information for unregistered CMs.

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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
12.2(33)SCG1	The output for the **show cable modem** *mac-address* **ipv6 cpe** has been modified.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The**upstream**, **name** and **cpe** keywords were and *logical-channel-index* variable was removed.

Usage Guidelines

Use the **show cable modem ipv6** command without any options to display IPv6 information for all CMs on the CMTS router.

Using the keyword options, you can display IPv6 information by IP address (IPv4 or IPv6) of a particular CM, for all CMs associated with a specified cable interface, by MAC address of a CM, or by domain name of a CM.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the Cisco CMTS router before any domain name can be used as part of a cable command.

To display the number of CPEs behind a CM, use the **show cable modem ipv6 registered** command.

To display CPE information behind a specific CM, use the **show cable modem** *mac-address* **ipv6 cpe** command.

Examples

IPv6 Information for all CMs

The following example shows sample output for the **show cable modem ipv6** command for all CMs on the Cisco CMTS routers, listing the devices by their MAC and IP addresses and displaying the associated domain name:

```
Router# show cable modem ipv6
MAC Address    Type Interface  Mac State    D/IP IP Address
0004.27a5.b761 B/D  C6/0/2/U1   online        N  ---
0007.0e01.d9a1 B/D  C6/0/2/U0   online        N  ---
0006.2854.7275 R/D  C6/0/2/U1   online        Y  2001:0DB8:3800:80B:7565:5B87:1D7D:5AD5
```

IPv6 prefix information for all CMs

The following example shows sample output for the **show cable modem ipv6 prefix** command for all CMs on the Cisco CMTS routers:

```
Router# show cable modem ipv6 prefix
Device Type: B - CM Bridge, R - CM Router
IP Assignment Method: D - DHCP
MAC Address    Type D/IP IPv6 prefix
0006.2854.7275 R/D  Y    2001:ODB8:3800:80C::/64
```

Starting with Cisco IOS Release12.2(33)SCG1, the output for the **show cable modem ipv6 prefix** command displays multiple IPv6 prefix assigned. The D/IP field is not supported. The following example shows the sample output for the **show cable modem ipv6 prefix** command for all CMs on the Cisco CMTS router:

```
Router#
show cable modem ipv6 prefix
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:36:53.075 UTC Thu Aug 2 2012
Device Type: B - CM Bridge, R - CM Router
IP Assignment Method: D - DHCP
MAC Address    Type IPv6 prefix
0023.bed9.4c91 R/D  2001:40:1012::/64
               R/D  2001:40:2012:1::/64
0000.002e.074c R/D  2001:40:1012:8::/64
               R/D  2001:40:2012:1D::/64
```

```
0000.002e.074b R/D  2001:40:1012:23::/64
               R/D  2001:40:2012:1C::/64
0000.002e.074a R/D  2001:40:1012:22::/64
               R/D  2001:40:2012:1B::/64
```

Starting with Cisco IOS Release12.2(33)SCG1, the following example shows sample output for the **show cable modem** *mac-address* **ipv6 prefi**x command for multiple IPv6 prefixes assigned to CPEs behind a CM with a specific MAC address on the Cisco CMTS router:

```
Router#
show cable modem 0023.bed9.4c8e ipv6 prefix
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:37:22.335 UTC Thu Aug 2 2012
Device Type: B - CM Bridge, R - CM Router
IP Assignment Method: D - DHCP
MAC Address    Type IPv6 prefix
0023.bed9.4c91 R/D  2001:40:1012::/64
               R/D  2001:40:2012:1::/64
```

Example of the show cable modem ipv6 Command for all Registered CMs

The following example shows sample output for the **show cable modem ipv6 registered** command for all registered CMs on the Cisco CMTS router:

```
Router# show cable modem ipv6 registered
Interface Prim Online     CPE IP Address                              MAC Address
          Sid  State
C4/0/U2   1    online     0   ---                                     0018.6835.27b3
C4/0/U2   2    online     0   2001:0DB8:3800:809:A896:1431:75EA:5EA1  0019.474a.c14a
C4/1/U1   2    online     0   ---                                     0007.0e03.6851
C4/1/U1   3    online     0   ---                                     0007.0e01.b085
C4/1/U1   4    online     0   2001:0DB8:3800:809:E97D:2986:9F37:FFE   0018.6835.27aa
```

Example of the show cable modem ipv6 cpe Command for all CMs

The following example shows sample output for the **show cable modem ipv6 cpe** command for all CMs on the Cisco CMTS router:

```
Router# show cable modem 0019.474a.c14a ipv6 cpe
MAC Address    IP Address                              Domain Name
```

0005.0052.2c1d 2001:420:3800:809:48F7:3C33:B774:9185

Starting with Cisco IOS Release12.2(33)SCG1, the following example shows sample output for the **show cable modem** *mac-address* **ipv6 cpe** command for registered CMs on the Cisco CMTS router:

```
Router# show cable modem 0023.bed9.4c8e ipv6 cpe
Load for five secs: 0%/0%; one minute: 1%; five minutes: 1%
Time source is hardware calendar, *06:37:20.439 UTC Thu Aug 2 2012
MAC Address    IP Address
0023.bed9.4c91 2001:40:3:4:200:5EB7:BB6:C759
               2001:40:3:4:210:D73B:7A50:2D05
```

Table below describes the significant fields shown in the display.

Table 27: show cable modem ipv6 Field Descriptions

Field	Description
MAC Address	MAC address of this CM.

Field	Description
Type	Type of device that this CM is functioning as, with the following possible values: • B/D—CM as bridge using DHCP address assignment. • G/D—CPE router using DHCP address assignment. • C/A—CPE using Stateless Address Auto-Configuration (SLAAC) address assignment. **Note** In Cisco IOS Release 12.2(33)SCA, the Cisco CMTS router does not support SLAAC.
Interface	Cable line card interface and upstream associated with this CM.
Mac State	The current state of the MAC layer for this CM .
D/IP	Dual IP flag. Identifies whether or not (“Y” or “N”) the CM or CPE supports both IPv4 and IPv6 addressing. Starting from Cisco IOS Release 12.2(33)SCG1, D/IP field is not supported.
IP Address	IP address acquired by the CM. Prior to acquisition of the IP address, or if the CM fails registration, the following output is shown: • IPv4 address not yet acquired—”0.0.0.0” • IPv6 address not yet acquired—“::” • CM fails IPv6 registration, but online with IPv4 address or CM fails IPv4 registration, but online with IPv6 address: “---” • IPv6 address of IPv4-only CM, or IPv4 address of an IPv6-only CM: “---”
Domain Name	Domain name for the CM.

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

Table 28: Descriptions for the MAC State Field

MAC State Value [2]	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.

MAC State Value [2]	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.

MAC State Value [2]	Description
cc(r2)	This state should normally follow cc(r1) and indicates that the CM has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
offline	The CM is considered offline (disconnected or powered down).
online	The CM has registered and is enabled to pass data on the network.
online(d)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the CM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the CM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the online(d) and online(pk) states.
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.

MAC State Value [2]	Description
expire(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.
expire(pt)	The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The CM attempted to register but registration was refused due to a bad Message Integrity Check (MIC) value. This also could indicate that the shared secret in the DOCSIS configuration file does not match the value configured on the CMTS with the **cable shared-secret** command. In Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases, this could also indicate that the **cable tftp-enforce** command has been used to require that a CM attempt a TFTP download of the DOCSIS configuration file before registering, but the CM did not do so.
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.

MAC State Value [2]	Description
reject(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pt) states.
Note In Cisco IOS Release 12.1(20)EC, Cisco IOS Release 12.2(15)BC1, and earlier releases, when network access is disabled in the DOCSIS configuration file sent to the CM, the network disabled status takes precedence, and the MAC status field shows online(d) even if BPI encryption fails. Use the **show cable modem**mac-address command to confirm whether BPI is enabled or disabled for a particular cable modem.	
reject(ts)	The CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The CM attempted to register, but registration failed because the IP address in the CM request did not match the IP address that the TFTP server recorded when it sent the DOCSIS configuration file to the CM. IP spoofing could be occurring.
reject(na)	The CM attempted to register, but registration failed because the CM did not send a Registration-Acknowledgement (REG-ACK) message in reply to the Registration-Response (REG-RSP) message sent by the CMTS. A Registration-NonAcknowledgement (REG-NACK) is assumed.

[2] 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.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.

show cable modem ipv6 summary

To display the summary of IPv6 information on Cisco cBR Series Converged Broadband Routers, use the **show cable modem ipv6 summary** command in privileged EXEC mode.

show cable modem ipv6 [**prefix** | **registered** | **summary** | **unregistered**]

Syntax Description

prefix	(Optional) Displays the IPv6 prefix of the network.
registered	(Optional) Displays IPv6 information for registered CMs.
summary	(Optional) Displays the summary of the IPv6 information on Cisco cBR Series Converged Broadband Routers.
unregistered	(Optional) Displays IPv6 information for unregistered CMs.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

The **show cable modem ipv6 summary** command displays IPv6 summary information for all IPv6 CM's on the CMTS router. The summary information includes the total number of online IPv6 modems and total number of modems in each different state like init6(s), init6(a), init6(o) and so on.

Examples

The following example shows sample output for the **show cable modem ipv6summary** command for all CMs on the Cisco cBR Series Converged Broadband Routers:

```
Router# show cable modem ipv6 summary
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC init6S init6A init6O
Ca3/0/0       7     6     6     1     1       0        0      0      0      0
Ca3/0/1       16    16    16    0     0       0        0      0      0      0
Ca3/0/3       16    16    16    0     0       0        0      0      0      0

Total:        39    38    38    1     1       0        0      0      0      0
```

Related Commands

Command	Description
show cable modem summary	Displays a summary of CMs on one or more cable interfaces.
show cable modem summary total	Displays a summary and a total for all CMs on the chasis.

show cable load-balance move-history cable x/y/z

To display detailed information of every cable modem movement triggered through load balance, use the **show cable load-balance move-history cablex/y/z** command in privileged EXEC mode.

The detailed information of the modem movement are:

- The mac address of the cable modem that was moved.
- The mac-domain of the cable modem.
- The load balance group ID of cable modem.
- Old downstream information of the cable modem, including the primary downstream channel, RCC ID before moving.
- New downstream information of the cable modem, including the new primary downstream channel, RCC ID after moving.
- Old upstream information of the cable modem including the index of mac-domain, the bitmap of the upstream channel before moving.
- New upstream information of the cable modem including the index of mac-domain, the bitmap of the upstream channel after moving.
- The action of the cable modem movement, such as DBC, DCC, UCC, REINIT(DCC with init-tech 0).
- The trigger of the cable modem movement, such as D2.0 LB, D3.0 static LB, D3.0 dynamic LB.
- The start time of the cable modem movement.
- The elapsed time - how long the cable modem movement spent.
- The result of the action on modem movement - success, faiure, and the internal confirmation code.

show cable load-balance move-history cable x/y/z

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.3.1	This command was implemented on the Cisco cBR Series Converged Broadband Router.

Examples

This example shows the output for the **show cable load-balance move-history cablex/y/z** command for a particular cable modem:

```
Router#show cable load-balance move-history c3/0/1
Modem              Host          Grp Id              Primary RF/RCC
        MD/TCS                      Action Trans-Start         Elapse    Client
  Result
                             Interface                          Src
Target                   Src            Target                  Time
```

```
 Time(ms)
c8fb.26a6.c49c Ca3/0/1    2147557888 Do3/0/0:0/0       Do3/0/0:5/0       145/0x2    145/0x2
    DCC    Aug 11 10:46:28  2101     D2.0 LB         Success(13)
c8fb.26a6.c660 Ca3/0/1    2147557888 Do3/0/0:1/0       Do3/0/0:5/0       145/0x2    145/0x2
    DCC    Aug 11 10:45:55  4693     D2.0 LB         Success(13)
c8fb.26a6.c49a Ca3/0/1    2147557888 Do3/0/0:0/0       Do3/0/0:5/0       145/0x2    145/0x2
    DCC    Aug 11 10:45:55  4682     D2.0 LB         Success(13)
c8fb.26a6.c5c6 Ca3/0/1    2147557888 Do3/0/0:1/0       Do3/0/0:4/0       145/0x2    145/0x2
    DCC    Aug 11 10:45:24  4675     D2.0 LB          Success(13)
```

show cable modem low-latency-capable

To display the Low Latency DOCSIS Capable information, use the **show cable modem low-latency-capable** command in privileged EXEC mode.

show cable modem low-latency-capable

Syntax Description

show cable modem low-latency-capable	To display the Low Latency DOCSIS Capable information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Cupertino 17.9.1x	This command is introduced.

Examples

The following is a sample output of the **show cable modem low-latency-capable** command.

```
Router# show cable modem low-latency-capable
MAC Address     I/F             MAC             Reg  Oper  DSxUS DS   RCC    US
                                State           Ver  Ver        OFDM ID     OFDMA
206a.9454.30a4  C1/0/0/UB       w-online(pt)    3.1  3.1   8x4   0    1      0
a84e.3f37.0e9a  C1/0/6/UB       w-online(pt)    3.1  3.1   8x4   0    1      0
0cb9.3772.7c9c  C1/0/7/UB       w-online(pt)    3.1  3.1   8x4   0    1      0
206a.9454.30a4  C1/0/8/UB       w-online(pt)    3.1  3.1   8x2   0    1      0
```

show cable modem mac

To display MAC layer information for one or more CMs, use the **show cable modem mac** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **mac** [**summary** [**total**]]

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **mac** [**summary** [**total**]]

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot*/*subslot*/*cable-interface-index* }] **mac** [**summary** [**total**]]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. (Cisco cBR-8) The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.
summary [**total**]	(Optional) Displays a summary of MAC layer information for each cable interface. If you add the optional **total** keyword, the display includes a total of CMs that are included in each of the displayed fields.

Command Default

Displays MAC layer information for all CMs.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.1(4)CX and 12.2(4)BC1	This command was introduced for the Cisco uBR7100 series, Cisco uBR7200 series, and Cisco uBR10012 routers.
12.2(8)BC2	This command was enhanced to show whether a CM is capable of operating in DOCSIS 1.0 or DOCSIS 1.1 mode, and the version for which it is currently provisioned.
12.2(11)BC1	The **mac** option was enhanced to support the **summary** and **summary total** options.
12.2(15)CX	This command was enhanced to support DOCSIS 2.0 CMs using Advanced Time Division Multiple Access (A-TDMA) modulation profiles.
12.3(17a)BC	Introduced revised information that is displayed for the following two versions of the show cable modem mac command: **show cable modem mac summary** Refer to “Usage Guidelines.”

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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM. • 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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The**upstream** and **name** keywords were and *logical-channel-index* variable was removed.

Usage Guidelines

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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.

Cisco IOS Release 12.3(17a)BC introduces changes for two versions of the show cable modem mac command.

- **show cable modem mac summary**

The information displayed with this command is revised. The DOCSIS 2.0 column in the Quality of Service (QoS) Provision Mode field has been removed, as this field is not applicable to QoS provisioning in DOCSIS 2.0.

Command Output in Cisco IOS Release 12.3(17a)BC and Later Releases

```
Router# show cable modem mac summary
                           Cable Modem Summary
                           -------------------
                        Mac Version                QoS Provision Mode
Interface       Total   DOC2.0  DOC1.1  DOC1.0   Reg/Online   DOC1.1  DOC1.0
Cable5/1/0/U0   10      0       2       8        10           0       10
```

Command Output in Cisco IOS Release 12.3(13a)BC and Earlier Releases

```
Router# scm mac sum
                           Cable Modem Summary
                           -------------------
                        Mac Version                QoS Provision Mode
Interface       Total   DOC2.0  DOC1.1  DOC1.0   Reg/Online   DOC2.0  DOC1.1  DOC1.0
Cable8/0/0/U0   8       0       5       3        5            0       5       0
```

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Examples

This section contains examples for the different forms of the **show cable modem mac** command.

Default Displays

The following example shows typical output for the default form of the **show cable modem mac** command:

```
Router# show cable modem mac

MAC Address    MAC          Prim  Ver    QoS     Frag Concat PHS Priv  DS    US
               State        Sid          Prov                           Saids Sids
0050.7366.1243 online       1     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0002.b970.0027 online       2     DOC1.1 DOC1.0  no   yes    yes BPI+  0     4
0006.5314.858d online       3     DOC1.1 DOC1.1  yes  yes    yes BPI+  0     4
0010.64ff.e4ad online       1     DOC1.1 DOC1.0  yes  yes    yes BPI+  0     4
0010.f025.1bd9 init(rc)     2     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0010.9659.4447 online(pt)   3     DOC1.0 DOC1.0  no   yes    no  BPI   0     0
0010.9659.4461 online(pt)   4     DOC1.0 DOC1.0  no   yes    no  BPI   0     0
0010.64ff.e459 online       5     DOC1.0 DOC1.0  no   yes    no  BPI   0     0
```

```
0020.4089.7ed6 online      6     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0090.9607.3831 online(pt)  7     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0090.9607.3830 online(pt)  1     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0050.7366.12fb init(i)     2     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0010.fdfa.0a35 online(pt)  3     DOC1.1 DOC1.1  yes  yes    yes BPI+  0     4
```

The following example shows sample output for the **show cable modem mac** command for a particular cable interface:

```
Router# show cable modem c3/0 mac

MAC Address    MAC         Prim  Ver    QoS     Frag Concat PHS Priv  DS    US
               State       Sid          Prov                         Saids Sids
0050.7366.1243 online      1     DOC1.0 DOC1.0  no   no     no  BPI   0     0
0002.b970.0027 online      2     DOC1.1 DOC1.0  no   yes    yes BPI+  0     4
0006.5314.858d online      3     DOC1.1 DOC1.1  yes  yes    yes BPI+  0     4
```

The following example shows sample output for the **show cable modem mac** command for a particular CM, as identified by its MAC address:

```
Router# show cable modem 0010.7bb3.fcd1 mac

MAC Address    MAC         Prim  Ver    QoS     Frag Concat PHS Priv  DS    US
               State       Sid          Prov                         Saids Sids
0010.7bb3.fcd1 online      91    DOC1.1 DOC1.1  yes  yes    yes BPI+  1     4
```

The following example shows a sample output for the **show cable modem mac** command for a CM, as identified by its MAC address:

```
Router# show cable modem xxxx.xxxx.xxxx mac
                                                                          D
MAC Address    IP Address     I/F           MAC           Prim RxPwr  Timing Num I
                                            State         Sid  (dBmv) Offset CPE P
xxxx.xxxx.xxxx x.x.x.x  C6/0/2/U0          *
online        3087 0.50   1037   0   N
```

Note The * in front of the MAC state indicates that the CM did not satisfy the bpi-plus-policy and the data traffic is blocked. The **cable privacy bpi-plus-policy** command enforces this requirement.

Note The ! in front of the MAC state indicates that the CM has attempted to register with a modified cm configuration file. This is possibly a non-compliant CM trying to modify the service it is receiving.

The following example shows sample output for the **show cable modem mac** command for a particular CM, as identified by its IP address:

```
Router# show cable modem 10.1.1.10 mac

MAC Address    MAC         Prim  Ver    QoS     Frag Concat PHS Priv  DS    US
               State       Sid          Prov                         Saids Sids
0002.b970.0027 online      2     DOC1.1 DOC1.0  no   yes    yes BPI+  0     4
```

Table below describes the fields shown in the default forms of the **show cable modem mac** displays:

Table 29: Descriptions for the Default show cable modem mac Fields

Field	Description
MAC Address	The MAC address for the CM.
MAC State	The current state of the MAC layer.
Prim SID	The primary SID assigned to this CM.
Ver	Displays the maximum supported version of DOCSIS that the CM supports (DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0).
QoS Prov	Displays the version of DOCSIS that the CM currently is provisioned and registered for (DOCSIS 1.0 and DOCSIS 1.1).
Frag	Indicates whether DOCSIS 1.1 or 2.0 MAC-layer fragmentation is enabled for this CM.
Concat	Indicates whether DOCSIS 1.1 or 2.0 MAC-layer concatenation is enabled for this CM.
PHS	Indicates whether DOCSIS 1.1 or 2.0 packet header suppression (PHS) is enabled for this CM.
Priv	Indicates whether Baseline Privacy Interface (BPI) or BPI Plus (BPI+) encryption is enabled for the CM.
DS Saids	Number of downstream security association IDs (Saids) used by this CM.
US Sids	Number of upstream service IDs (SIDs) used by this CM.

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

Table 30: Descriptions for the MAC State Field

MAC State Value[3]	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.

MAC State Value[3]	Description
init(rc)	Ranging has completed. **Note** If a CM appears to be stuck in this state, it could be that the CM is able to communicate successfully on the cable network, but that the upstream is at capacity and does not have any additional bandwidth to allow the CM to finish registration and come online. Either manually move one or more CMs to other upstreams, or enable load balancing on the upstream using the **cable load-balance group** commands.
init(d)	The DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
init(dr)	The DHCP request has been sent to the cable modem.
init(i)	The cable modem has received the DHCPOFFER reply (DHCPACK) from the DHCP server that has assigned an IP address to the modem, but the modem has not yet replied with a DHCPREQUEST message requesting that particular IP address, nor has it sent an IP packet with that IP address. **Note** If a CM appears to be stuck in this state, the CM has likely received the DHCPOFFER reply from the DHCP server, but this reply might have contained one or more invalid options for that particular CM.
init(io)	The Cisco CMTS has seen the DHCP offer as sent to the cable modem from the DHCP server that has assigned an IP address to the modem.
init(o)	The CM has begun to download the option file (DOCSIS configuration file) using the Trivial File Transfer Protocol (TFTP), as specified in the DHCP response. If the CM remains in this state, it indicates that the download has failed.
init(t)	Time-of-day (TOD) exchange has started.
resetting	The CM is being reset and will shortly restart the registration process.
Registration and Provisioning Status Conditions for Devices Using IPv6 Addressing	
init6(s)	The Cisco CMTS router has seen the DHCPv6 SOLICIT message from the CM.
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.

MAC State Value[3]	Description
Non-error Status Conditions	
cc(r1)	The CM had registered and was online, but has received a Downstream Channel Change (DCC) or Upstream Channel Change (UCC) request message from the CMTS. The CM has begun moving to the new channel, and the CMTS has received the CM's initial ranging on the new downstream or upstream channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
cc(r2)	This state should normally follow cc(r1) and indicates that the CM has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
offline	The CM is considered offline (disconnected or powered down).
online	The CM has registered and is enabled to pass data on the network.
online(d)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the CM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the CM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the online(d) and online(pk) states.
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.	

MAC State Value[3]	Description
expire(pk)	The CM registered, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value.
expire(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.
expire(pt)	The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The CM attempted to register but registration was refused due to a bad Message Integrity Check (MIC) value. This also could indicate that the shared secret in the DOCSIS configuration file does not match the value configured on the CMTS with the **cable shared-secret** command. In Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases, this could also indicate that the **cable tftp-enforce** command has been used to require that a CM attempt a TFTP download of the DOCSIS configuration file before registering, but the CM did not do so.
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.

MAC State Value[3]	Description
reject(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because KEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pk) states.
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
reject(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pt) states.
Note In Cisco IOS Release 12.1(20)EC, Cisco IOS Release 12.2(15)BC1, and earlier releases, when network access is disabled in the DOCSIS configuration file sent to the CM, the network disabled status takes precedence, and the MAC status field shows online(d) even if BPI encryption fails. Use the **show cable modem**mac-address command to confirm whether BPI is enabled or disabled for a particular cable modem.	
reject(ts)	The CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The CM attempted to register, but registration failed because the IP address in the CM request did not match the IP address that the TFTP server recorded when it sent the DOCSIS configuration file to the CM. IP spoofing could be occurring.
reject(na)	The CM attempted to register, but registration failed because the CM did not send a Registration-Acknowledgement (REG-ACK) message in reply to the Registration-Response (REG-RSP) message sent by the CMTS. A Registration-NonAcknowledgement (REG-NACK) is assumed.

[3] 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.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Summary and Total Options

The following example shows the same display for the **show cable modem mac summary** command:

```
Router# show cable modem mac summary

                           Cable Modem Summary
                           -------------------
                           Mac Version                      QoS Provision Mode
Interface       Total   DOC2.0  DOC1.1  DOC1.0   Reg/Online   DOC2.0  DOC1.1  DOC1.0
Cable8/1/0/U1   1       1       0       0        1            0       0       1
```

```
Cable8/1/0/U4   2       2       0       2       2           1       1       0
Router#
```

The following example shows the summary display when the **total** option is added:

```
Router# show cable modem mac summary total

                          Cable Modem Summary
                          -------------------
                          Mac Version                   QoS Provision Mode
Interface       Total   DOC2.0  DOC1.1  DOC1.0  Reg/Online  DOC2.0  DOC1.1  DOC1.0
Cable5/1/0/U5   1       0       0       1       1           0       0       1
Cable6/1/0/U0   11      0       0       11      8           0       0       8
Cable6/1/1/U2   17      0       1       16      15          0       0       15
Cable7/0/0/U0   2       0       0       2       1           0       0       1
Cable7/0/0/U5   1       0       0       1       0           0       0       0
Total:          32      0       1       31      25          0       0       25
Router#
```

Table below describes the fields shown in the **show cable modem mac summary** displays:

Table 31: Descriptions for the show cable modem mac summary Fields

Field	Description
I/F	The cable interface line card providing the upstream for this CM.
Total	Total number of CMs currently active on this cable interface.
MAC Version DOC 2.0	Total number of CMs on this interface that reported in their registration request as having DOCSIS 2.0 capabilities.
MAC Version DOC 1.1	Total number of CMs on this interface that reported in their registration request as having DOCSIS 1.1 capabilities.
MAC Version DOC 1.0	Total number of CMs on this interface that reported in their registration request as having DOCSIS 1.0 capabilities.
Reg/Online	Total number of CMs on this interface that have completed registration and are currently online.
QoS Provisioned Mode DOC 2.0	Total number of CMs on this interface that have been provisioned and registered for DOCSIS 2.0 operations.
QoS Provisioned Mode DOC 1.1	Total number of CMs on this interface that have been provisioned and registered for DOCSIS 1.1 operations.
QoS Provisioned Mode DOC 1.0	Total number of CMs on this interface that have been provisioned and registered for DOCSIS 1.0 operations.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more CMs.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more CMs.
show cable modem phy	Displays the DOCSIS PHY layer information for one or more CMs.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem maintenance

To display station maintenance (SM) error statistics for one or more cable modems, use the **show cable modem maintenance** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers

show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **maintenance**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **maintenance**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*cable-interface-index*} [**upstream** *port*]}] **maintenance**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router— The valid range is from 0 to 3 and 6 to 9
subslot	Secondary slot number of the cable interface line card. • Cisco uBR10012 —The valid subslots are 0 or 1. • Cisco cBR-8 router— The valid subslot is 0.
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is 0 to 15.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. Cisco cBR-8 router—The valid range is 0 to 7.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This variable is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This keyword is not supported on the Cisco cBR-8 router.
maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3XA	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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The **name** keyword and *logical-channel-index* variable are removed.

Usage Guidelines

This command displays information about the number of times that a CM has exhausted its maximum retry attempts to respond to a Station Maintenance (SM) request, as well as the number of times that the CMTS has canceled ranging with a CM during a Station Maintenance interval. This information can be used to determine whether a particular cable modem or interface is experiencing plant or network difficulties.

You can display this information for all online cable modems, all online cable modems for a specific cable interface, or for one particular cable modem.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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 example shows the output for the **show cable modem maintenance** command for all online cable modems:

```
Router# show cable modem maintenance

MAC Address    I/F          Prim  SM Exhausted          SM Aborted
                            Sid   Count Time            Count Time
0010.9507.01db C5/1/0/U5    1     0     --- -- 00:00:00 0     --- -- 00:00:00
0002.b96f.fdbb C6/1/0/U0    5     1     Jun 20 13:23:03 0     --- -- 00:00:00
0002.fdfa.129d C6/1/0/U0    6     0     --- -- 00:00:00 0     --- -- 00:00:00
0002.fdfa.137d C6/1/0/U0    7     0     --- -- 00:00:00 0     --- -- 00:00:00
0050.7302.3d73 C6/1/0/U0    8     0     --- -- 00:00:00 0     --- -- 00:00:00
0002.fdfa.12d5 C6/1/0/U0    9     0     --- -- 00:00:00 0     --- -- 00:00:00
0002.fdfa.1163 C6/1/0/U0    10    0     --- -- 00:00:00 0     --- -- 00:00:00
0006.28f9.8bbd C6/1/0/U0    11    0     --- -- 00:00:00 0     --- -- 00:00:00
00d0.bad3.c0cf C6/1/0/U0    12    0     --- -- 00:00:00 0     --- -- 00:00:00
0003.e38f.e85b C6/1/0/U0    14    149   Jun 21 14:24:03 0     --- -- 00:00:00
0001.9659.519f C6/1/0/U0    18    53    Jun 21 14:25:32 0     --- -- 00:00:00
0003.e3a6.8195 C6/1/0/U0    19    10    Jun 21 05:37:54 0     --- -- 00:00:00
0003.e3a6.8173 C6/1/1/U2    15    2     Jun 20 13:41:27 0     --- -- 00:00:00
0002.fdfa.12ef C6/1/1/U2    16    1     Jun 20 13:16:30 0     --- -- 00:00:00
0002.fdfa.12e9 C6/1/1/U2    17    1     Jun 20 13:16:30 0     --- -- 00:00:00
0003.e3a6.7f69 C6/1/1/U2    18    2     Jun 20 13:43:10 0     --- -- 00:00:00
0030.80bc.3095 C6/1/1/U2    19    2     Jun 20 13:45:00 0     --- -- 00:00:00
0003.e38f.e9ab C6/1/1/U2    20    1     Jun 20 13:43:47 0     --- -- 00:00:00
0006.28f9.9d19 C6/1/1/U2    22    0     --- -- 00:00:00 0     --- -- 00:00:00
```

```
0003.e3a6.7fe3 C6/1/1/U2   23    0     --- -- 00:00:00 0     --- -- 00:00:00
0020.4005.3f06 C6/1/1/U2   24    0     --- -- 00:00:00 0     --- -- 00:00:00
Router#
```

This example shows the output for the **show cable modem maintenance** command for all cable modems on a specific cable interface:

```
Router# show cable modem c8/1/0 maintenance

MAC Address    I/F          Prim  SM Exhausted          SM Aborted
                            Sid   Count Time            Count Time
0050.7366.1243 C8/1/0/U1    1     1     Apr 28 13:06:11 0     --- -- 00:00:00
0002.b970.0027 C8/1/0/U4    2     0     --- -- 00:00:00 0     --- -- 00:00:00
0006.5314.858d C8/1/0/U4    3     2     Apr 28 13:07:28 0     --- -- 00:00:00
Router#
```

This example shows the output for the **show cable modem maintenance** command for a particular CM:

```
Router# show cable modem 0010.7bb3.fcd1 maintenance

MAC Address    I/F          Prim  SM Exhausted          SM Aborted
                            Sid   Count Time            Count Time
0010.7bb3.fcd1 C5/0/U5      1     3     Jun 1  10:24:52 0     Jan 1  00:00:00
Router#
```

This example shows the output for the **show cable modem maintenance** command for all online cable modems:

```
Router#show cable modem maintenance
MAC Address    I/F           Prim  SM    Exhausted       SM    Aborted
                             Sid   Count Time            Count Time
0025.2e2d.75be C1/0/0/U1     1     0     --- -- 00:00:00 0     --- -- 00:00:00
0025.2e2d.74f8 C1/0/0/U0     2     1     Jan 18 18:54:14 0     --- -- 00:00:00
0025.2eaf.8302 C1/0/0/U0     3     0     --- -- 00:00:00 0     --- -- 00:00:00
0025.2eaf.82e4 C1/0/0/U0     4     1     Jan 18 18:54:56 0     --- -- 00:00:00
0025.2eaf.82f4 C1/0/0/U1     5     1     Jan 18 18:55:01 0     --- -- 00:00:00
0025.2eaf.7f38 C1/0/0/U1     6     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.56b6 C1/0/1/U0     1     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5792 C1/0/1/U3     2     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.57a6 C1/0/1/U3     3     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5574 C1/0/1/U3     4     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5936 C1/0/1/U3     5     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5810 C1/0/1/U3     6     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5400 C1/0/1/U3     7     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.572e C1/0/1/U2     8     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.56ca C1/0/1/U0     9     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.52f2 C1/0/1/U2     10    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.57f4 C1/0/1/U3     11    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5866 C1/0/1/U3     12    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5814 C1/0/1/U0     13    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.55ac C1/0/1/U2     14    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5580 C1/0/1/U0     15    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.54e0 C1/0/1/U0     16    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.560a C1/0/3/U0     1     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5384 C1/0/3/U0     2     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5376 C1/0/3/U0     3     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5598 C1/0/3/U0     4     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.52fe C1/0/3/U2     5     0     --- -- 00:00:00 0     --- -- 00:00:00
```

```
c8fb.26a5.56d8 C1/0/3/U0     6     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.53f6 C1/0/3/U1     7     5     May 22 10:05:31 0     --- -- 00:00:00
c8fb.26a5.56b2 C1/0/3/U0     8     1     Jan 18 18:56:33 0     --- -- 00:00:00
c8fb.26a5.52ca C1/0/3/U0     9     0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.52c8 C1/0/3/U2     10    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5474 C1/0/3/U3     11    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5742 C1/0/3/U1     12    5     May 22 10:01:45 0     --- -- 00:00:00
c8fb.26a5.5346 C1/0/3/U0     13    5     May 22 10:03:34 0     --- -- 00:00:00
c8fb.26a5.54e4 C1/0/3/U0     14    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5624 C1/0/3/U1     15    0     --- -- 00:00:00 0     --- -- 00:00:00
c8fb.26a5.5428 C1/0/3/U3     16    6     May 22 10:03:24 0     --- -- 00:00:00

Router#
```

This example shows the output for the **show cable modem maintenance** command for all cable modems on a specific cable interface:

```
Router#show cable modem C1/0/0 maintenance
MAC Address    I/F           Prim  SM    Exhausted       SM    Aborted
                             Sid   Count Time            Count Time
0025.2e2d.75be C1/0/0/U1     1     0     --- -- 00:00:00 0     --- -- 00:00:00
0025.2e2d.74f8 C1/0/0/U0     2     1     Jan 18 18:54:14 0     --- -- 00:00:00
0025.2eaf.8302 C1/0/0/U0     3     0     --- -- 00:00:00 0     --- -- 00:00:00
0025.2eaf.82e4 C1/0/0/U0     4     1     Jan 18 18:54:56 0     --- -- 00:00:00
0025.2eaf.82f4 C1/0/0/U1     5     1     Jan 18 18:55:01 0     --- -- 00:00:00
0025.2eaf.7f38 C1/0/0/U1     6     0     --- -- 00:00:00 0     --- -- 00:00:00

Router#
```

This example shows the output for the **show cable modem maintenance** command for a particular CM:

```
Router#show cable modem 0025.2eaf.7f38 maintenance
MAC Address    I/F           Prim  SM    Exhausted       SM    Aborted
                             Sid   Count Time            Count Time
0025.2eaf.7f38 C1/0/0/U1     6     0     --- -- 00:00:00 0     --- -- 00:00:00

Router#
```

Table below describes the fields shown in the **show cable modem maintenance** displays:

Table 32: Descriptions for the show cable modem maintenance Fields

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface line card, including upstream, for this CM.
Prim SID	The primary SID assigned to this CM.
SM Exhausted Count	Number of times this CM has repeatedly timed out and exhausted the maximum allowable retry attempts when it was sent a Station Maintenance request. The CMTS responds by taking the CM offline, forcing the CM to reinitialize and reregister.

Field	Description
SM Exhausted Time	The last time that this CM repeatedly timed out and exhausted the maximum allowable retry attempts when it was sent a Station Maintenance request.
SM Aborted Count	Number of times the CMTS has canceled ranging for a CM during a Station Maintenance period, typically because the CM has been reset.
SM Aborted Time	The last time the CMTS canceled ranging for a CM during a Station Maintenance period, typically because the CM has been reset.

Related Commands

Command	Description
cable flap-list miss-threshold	Configures the threshold for recording a flap-list event, in terms of missed Station Maintenance messages.
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem domain-name	Updates the cable-specific DNS cache and display the domain name for specified CMs and CPE behind a CM on a Cisco CMTS router.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem offline

To display a list of the cable modems (CMs) that are marked as offline with the Cisco CMTS router, use the **show cable modem offline** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **offline**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **offline**

Cisco cBR-8 Converged Broadband Router
show cable modem offline

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
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 and Cisco uBR7246VXR routers—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.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router.
offline	Displays a list of the cable modems that are marked as offline.

Command Default

Displays a list of all offline CMs known by the Cisco CMTS router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.0(7)XR and 12.1(1a)T1	This command was introduced.
12.2(4)BC1	Support for the Cisco uBR10012 router 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.
	• Support for specifying the IPv6 address of a CM or CPE device was added.
	• The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
	• 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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. All the keywords and variables were removed.

Usage Guidelines

This command displays a list of CMs that had either been online previously or had attempted to register with the CMTS, but that are now considered offline. Offline cable modems remain in the CMTS databases for 24 hours and then are deleted.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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

The following example shows sample output for the default form of the **show cable modem offline** command.

```
Router# show cable modem offline

Interface   MAC address    Prim Previous  Offline          Rx     Rx    SM
                           Sid  State     Time             Power  SNR   Exhaust
                                                                      Count
Cable5/0/U0 0030.946a.5d61 1    init(i)   Jun 14 21:31:57   0.00  31.86 162
Cable5/0/U0 0030.946a.5d85 2    init(i)   Jun 14 22:47:39  -0.25  31.26 156
Cable5/0/U0 0030.946a.5b6d 3    init(i)   Jun 14 14:20:11   1.00  30.56 166
```

The following example shows sample output for the **show cable modem offline** command for a particular upstream on a cable interface:

```
Router# show cable modem c3/0 upstream 0 offline

Interface MAC address    Prim Previous    Offline          Rx     Rx    SM
                         Sid  State       Time             Power  SNR   Exhaust
                                                                       Count
C3/0/U0   0050.7366.1c69 58   init(rc)    Jan 7  16:46:49   4.50  26.72 2
```

```
C3/0/U0   0050.7366.1c53 59   init(rc)    Jan 7  16:47:09   5.25  25.10 1
C3/0/U0   0050.7366.1ca7 60   init(rc)    Jan 7  16:47:11   5.00  25.57 1
C3/0/U0   0050.7366.1c45 61   init(rc)    Jan 7  16:49:27   5.00  26.74 2
C3/0/U0   0050.7366.1c95 62   init(rc)    Jan 7  16:51:29   5.50  31.82 1
C3/0/U0   0050.7366.1c99 64   init(rc)    Jan 7  16:52:55   5.25  26.76 2
```

The following example shows sample output for the **show cable modem offline** command for a single CM, as identified by its IP address:

```
Router# show cable modem 22.1.1.10 offline

Interface   MAC address     Prim Previous  Offline          Rx     Rx    SM
                            Sid  State     Time             Power  SNR   Exhaust
                                                                        Count
Cable5/0/U0 0030.946a.5b6d 3    init(i)   Jun 14 14:20:11   1.00  30.56 166
```

The following example shows sample output for the **show cable modem offline** command for a single CM, as identified by its MAC address:

```
Router# show cable modem 0030.946a.5d61 offline

Interface   MAC address     Prim Previous  Offline          Rx     Rx    SM
                            Sid  State     Time             Power  SNR   Exhaust
                                                                        Count
Cable5/0/U0 0030.946a.5d61 1    init(i)   Jun 14 21:31:57   0.00  31.86 162
```

Table below describes the major fields shown in the **show cable modem offline** displays:

Table 33: Descriptions for the show cable modem offline Fields

Field	Description
Interface	The cable interface line card that this CM last used when it was online.
MAC address	Hardware MAC address for this CM.
Prim SID	The primary SID that had been last assigned to this CM before it went offline.
Previous State	The last known state of the MAC layer for this CM before it went offline. **Note** A pound sign (#) in the Previous State column indicates that the c**able tftp-enforce mark-only** 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 (Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases).
Offline Time	The time and date that this CM last went offline.

Field	Description
Rx Power	The last known received power level (in dB) for the CM before it went offline. **Note** An asterisk (*) in the Rx Power column indicates that a power adjustment was made for that CM. An exclamation point (!) indicates that the CM had reached its maximum power transmit level and could not increase its power level further.
Rx SNR	The last known signal-to-noise ratio (SNR) value for this CM before it went offline.
SM Exhaust Count	Number of times that this CM has exhausted the maximum allowable retries for not responding to the regular Station Maintenance (SM) messages sent to it by the CMTS.
Note Using the **clear counters** command to reset a cable interface's counters also resets the SM Exhaust Count field for all offline CMs to zero and resets the Offline Time field for all offline CMs to the current time.	

Table below shows the possible values for the Previous State field:

Table 34: Descriptions for the Previous State Field

MAC State Value [4]	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.

MAC State Value [4]	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.

MAC State Value [4]	Description
cc(r2)	This state should normally follow cc(r1) and indicates that the CM has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
offline	The CM is considered offline (disconnected or powered down).
online	The CM has registered and is enabled to pass data on the network.
online(d)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the CM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the CM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the online(d) and online(pk) states.
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 **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.

MAC State Value [4]	Description
expire(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.
expire(pt)	The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The CM attempted to register but registration was refused due to a bad Message Integrity Check (MIC) value. This also could indicate that the shared secret in the DOCSIS configuration file does not match the value configured on the CMTS with the **cablecable 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.

MAC State Value [4]	Description
reject(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI encryption was not established because TEK key assignment was rejected. **Note** This state is equivalent to the online(d) and reject(pt) states.
Note In Cisco IOS Release 12.1(20)EC, Cisco IOS Release 12.2(15)BC1, and earlier releases, when network access is disabled in the DOCSIS configuration file sent to the CM, the network disabled status takes precedence, and the MAC status field shows online(d) even if BPI encryption fails. Use the **show cable modem** *mac-address* command to confirm whether BPI is enabled or disabled for a particular cable modem.	
reject(ts)	The CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The CM attempted to register, but registration failed because the IP address in the CM request did not match the IP address that the TFTP server recorded when it sent the DOCSIS configuration file to the CM. IP spoofing could be occurring.
reject(na)	The CM attempted to register, but registration failed because the CM did not send a Registration-Acknowledgement (REG-ACK) message in reply to the Registration-Response (REG-RSP) message sent by the CMTS. A Registration-NonAcknowledgement (REG-NACK) is assumed.

[4] 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.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
clear counters	Clears counters for one or all interfaces.
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.

Command	Description
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem unregistered	Displays a list of the CMs that are marked as unregistered with the Cisco CMTS.
show cable modem vendor	Displays the vendor name or Organizational Unique Identifier (OUI) for the CMs on each cable interface.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem partial-mode

To display information about cable modems that are in upstream and downstream partial service mode, use the **show cable modem partial-mode** command in privileged EXEC mode.

show cable modem partial-mode

Cisco cBR-8 Converged Broadband Router
show cable modem partial-mode [ofdma]

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCD2	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.
Cisco IOS XE Amsterdam 17.3.1w	This command was updated to include the new partial mode reason.

Usage Guidelines

If all cable modems are in full service mode (all downstream and upstream channels of the cable modems are online and operational), then the show cable modem partial-mode command does not provide any output. This command provides output only when the cable modems register in partial service mode (one or more downstream or upstream channels of the downstream or upstream bonded cable modems are not operational).

Examples

The following is a sample output of the show cable modem partial-mode command that displays all the cable modems in partial service mode:

```
Router# show cable modem partial-mode
MAC Address    IP Address      I/F         MAC           Prim  RCC  UP-reason/
                                           State         Sid   ID   Failed-tcs
001e.6bfb.33a0 2.99.81.14      C7/0/0/p    p-online(pt)  3     2     0x1 / 0x4
0022.cef4.3d9a 2.99.81.23      C7/0/0/p    p-online(pt)  4     2     0x1 / 0x4
001e.6bfb.194e 2.99.81.32      C7/0/0/p    p-online(pt)  6     2     0x1 / 0x4
001e.6bfb.1538 2.99.81.38      C7/0/0/p    p-online(pt)  8     2     0x1 / 0x4
001e.6bfb.0d22 2.99.81.29      C7/0/0/p    p-online(pt)  9     1     0x1 / 0x4
001e.6bfb.1a7e 2.99.81.30      C7/0/0/p    p-online(pt)  10    1     0x1 / 0x4
001e.6bfa.f58a 2.99.81.9       C7/0/0/p    p-online(pt)  12    1     0x1 / 0x4
0022.cef4.3fa2 2.99.81.24      C7/0/0/p    p-online(pt)  13    2     0x1 / 0x4
001e.6bfb.1b72 2.99.81.10      C7/0/0/p    p-online(pt)  14    2     0x1 / 0x4
0023.be50.e578 2.99.81.17      C7/0/0/UB   p-online(pt)  16    2     N/A
0025.2e2d.784a 2.99.81.28      C7/0/0/UB   p-online(pt)  17    2     N/A
0025.2e2d.748c 2.99.81.26      C7/0/0/UB   p-online(pt)  18    2     N/A
```

Table below describes the significant fields shown in the display.

Table 35: show cable modem partial-mode Field Descriptions

Field	Description
MAC Address	MAC address of the cable modem.
IP Address	IP address that the DHCP server has assigned to the cable modem.
I/F	Cable interface line card providing the upstream for the cable modem.
MAC State	Current state of the MAC layer.
Prim Sid	Primary Service ID (SID) assigned to the cable modem.
RCC ID	Receive channel configuration (RCC) ID of the cable modem.
UP-reason/Failed-tcs	• UP-reason—Upstream partial service reason. This is a bitmap defined in upstream resiliency. • Failed-tcs—Transmit channel set (TCS) bitmap of the cable modem, which is not available.

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

```
Router# show cable modem partial-mode
MAC Address    IP Address      I/F         MAC           Prim  RCC  UP-reason/
                                           State         Sid   ID   Failed-tcs
001e.6bfb.33a0 2.99.81.14      C7/0/0/p    p-online(pt)  3     2     0x1 / 0x4
0022.cef4.3d9a 2.99.81.23      C7/0/0/p    p-online(pt)  4     2     0x1 / 0x4
001e.6bfb.194e 2.99.81.32      C7/0/0/p    p-online(pt)  6     2     0x1 / 0x4
001e.6bfb.1538 2.99.81.38      C7/0/0/p    p-online(pt)  8     2     0x1 / 0x4
001e.6bfb.0d22 2.99.81.29      C7/0/0/p    p-online(pt)  9     1     0x1 / 0x4
001e.6bfb.1a7e 2.99.81.30      C7/0/0/p    p-online(pt)  10    1     0x1 / 0x4
001e.6bfa.f58a 2.99.81.9       C7/0/0/p    p-online(pt)  12    1     0x1 / 0x4
0022.cef4.3fa2 2.99.81.24      C7/0/0/p    p-online(pt)  13    2     0x1 / 0x4
001e.6bfb.1b72 2.99.81.10      C7/0/0/p    p-online(pt)  14    2     0x1 / 0x4
0023.be50.e578 2.99.81.17      C7/0/0/UB   p-online(pt)  16    2     N/A
0025.2e2d.784a 2.99.81.28      C7/0/0/UB   p-online(pt)  17    2     N/A
0025.2e2d.748c 2.99.81.26      C7/0/0/UB   p-online(pt)  18    2     N/A
```

Thisexample shows the output of the **show cable modem partial-mode** command on the Cisco cBR-8 router:

```
Router#show cable modem partial-mode
MAC Address     IP Address   I/F           MAC           Prim  RCC     UP-reason/
                                           State         Sid   ID      Failed-tcs
f81d.0f01.1e10  9.2.0.46     C1/0/0/p      w-online      1     1       0x21/0x20  (RNG,
RxMER)
4800.33ef.0cca  9.2.0.35     C1/0/0/p      w-online      41    1       0x20/0x20  (RxMER)


Router#show cable modem f81d.0f01.1e10 partial-mode
MAC Address    IP Address      I/F           MAC          Prim  RCC   UP-reason/

                                             State        Sid   ID    Failed-tcsf
81d.0f01.1e10  9.2.0.46        C1/0/0/p      w-online     1     1     0x20 / 0x20

        0x01 = Ranging
```

```
        0x10 = CWErr Partial Mode
        0x20 = RxMER downgrade
        0x21 = Rng, RxMER
```

Thisexample shows the output of the **show cable modem partial-mode ofdma** command on the Cisco cBR-8 router:

```
Router#show cable modem partial-mode ofdma
MAC Address    IP Address      I/F           MAC           Prim  RCC    UP-reason/
                                             State         Sid   ID     Failed-tcs
f81d.0f01.1e10 9.2.0.46        C1/0/0/p      w-online      1     1      0x21/0x20  (RNG,
RxMER)
4800.33ef.0cca 9.2.0.35        C1/0/0/p      w-online      41    1      0x20/0x20  (RxMER)
```

Related Commands

Command	Description
show cable modem	Displays information about the registered and unregistered cable modems.
show cable modem docsis-version	Displays information about the DOCSIS version of cable modems on one or more cable interfaces.

show cable modem partial-service

To display the impaired state of the cable modems on the Cisco CMTS router, use the **show cable modem partial-service** command in privileged EXEC mode.

show cable modem [*interface*] **partial-service** [**us-partial**] [**ds-partial**] [**ds-suspended**]

Cisco cBR-8 Converged Broadband Router
show cable modem [*interface*] **partial-service** [**us-partial**] [**ds-partial**] [**ds-suspended**]

Syntax Description

(Optional) *interface*	The cable mac-domain interface.
(Optional) **us-partial**	Show only CMs in DS partial-service.
(Optional) **ds-partial**	Show only CMs in US partial-service.
(Optional) **ds-suspended**	List all CMs that include one or more suspended channels in their RCC. This includes both p-online and w-online CMs. Also, a list of suspended channels is printed for each CM.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCG	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.
Cisco IOS XE Cupertino 17.9.1w	The **us-partial** , **ds-partial** , and **ds-suspended** options are introduced.

Examples

The following is a sample output of the **show cable modem partial-service** :

```
Router#show cable modem partial-service
MAC Address    IP Address   I/F         MAC           DSxUS  Impaired   Impaired  Forwarding

                                        State          State  DS         US        Interface

4800.33ef.3c42 9.38.8.4     C1/0/0/UB    p-online(pt)   33x6   1/0/0:9              In1/0/0:8
4800.33ef.3ee6 9.38.8.15    C1/0/0/UB    p-online(pt)   33x6   1/0/0:4              Wi1/0/0:3
4800.33ef.0d1a 9.38.8.11    C9/0/0/p     p-online(pt)   33x5   9/0/0:9     1        Do9/0/0:0
4800.33ef.3e92 9.38.8.7      C9/0/1/p     w-online(pt)   34x5                1           N/A
4800.33ef.0666 9.38.8.2      C9/0/8/p     w-online(pt)   34x5                1           N/A
4800.33ef.3f3e 9.38.8.16    C9/0/9/p     w-online(pt)   34x5                1           N/A

Router#
```

Examples

The following is a sample output of the **show cable modem partial-service ds-partial**:

```
Router#show cable modem partial-service ds-partial
MAC Address    IP Address   I/F          MAC          DSxUS  Impaired   Impaired  Forwarding

                                         State         State  DS         US        Interface

4800.33ef.3c42 9.38.8.4     C1/0/0/UB     p-online(pt)  33x6   1/0/0:9              In1/0/0:8
4800.33ef.3ee6 9.38.8.15    C1/0/0/UB     p-online(pt)  33x6   1/0/0:4              Wi1/0/0:3
4800.33ef.0d1a 9.38.8.11    C9/0/0/p      p-online(pt)  33x5   9/0/0:9     1        Do9/0/0:0

Router#
```

Examples

The following is a sample output of the **show cable modem partial-service us-partial**:

```
Router#show cable modem partial-service us-partial
MAC Address    IP Address   I/F          MAC          DSxUS  Impaired   Impaired  Forwarding

                                         State         State  DS          US       Interface

4800.33ef.0d1a 9.38.8.11    C9/0/0/p       p-online(pt)  33x5              1         N/A
4800.33ef.3e92 9.38.8.7     C9/0/1/p       w-online(pt)  34x5              1         N/A
4800.33ef.0666 9.38.8.2     C9/0/8/p       w-online(pt)  34x5              1         N/A
4800.33ef.3f3e 9.38.8.16    C9/0/9/p       w-online(pt)  34x5              1         N/A

Router#
```

Examples

The following is a sample output of the **show cable modem partial-service ds-suspended** command:

```
Router#show cable modem partial-service ds-suspended
Load for five secs: 10%/1%; one minute: 15%; five minutes: 17%
Time source is NTP, *21:14:34.590 EDT Fri Sep 16 2022
MAC Address    IP Address      I/F           MAC               DSxUS  Suspended DS
                                             State             State

c8fb.26a3.b9cc 9.9.0.119       C1/0/4/UB     p-online(pt)      4x1    1/0/4:11
                                                                      1/0/4:12
                                                                      1/0/4:13
                                                                      1/0/4:14
c8fb.26a3.ba5c 9.9.0.66        C1/0/4/UB     p-online(pt)      4x1    1/0/4:11
                                                                      1/0/4:12
                                                                      1/0/4:13
                                                                      1/0/4:14
c8fb.26a3.bb3c 9.9.0.142       C1/0/4/UB     w-online(pt)      8x4    1/0/4:11
                                                                      1/0/4:12
                                                                      1/0/4:13
                                                                      1/0/4:14
c8fb.26a3.d032 9.9.1.66        C1/0/4/UB     p-online(pt)      4x1    1/0/4:11
                                                                      1/0/4:12
                                                                      1/0/4:13
                                                                      1/0/4:14
c8fb.26a3.b980 9.9.1.197       C1/0/5/UB     w-online(pt)      8x4    1/0/5:12
                                                                      1/0/5:13
c8fb.26a3.b056 9.9.2.186       C1/0/5/UB     w-online(pt)      8x4    1/0/5:12
                                                                      1/0/5:13
c8fb.26a3.bb42 9.9.0.88        C1/0/5/UB     p-online(pt)      7x1    1/0/5:12
                                                                      1/0/5:13
c8fb.26a3.7bbc 9.9.2.215       C1/0/5/UB     p-online(pt)      7x1    1/0/5:12
                                                                      1/0/5:13
c8fb.26a3.bbd0 9.9.2.170       C1/0/5/UB     p-online(pt)      6x1    1/0/5:12
```

```
                                                                        1/0/5:13
c8fb.26a3.b9e6 9.9.3.242       C1/0/5/UB     w-online(pt)       8x4    1/0/5:12
                                                                        1/0/5:13
c8fb.26a3.6ef6 9.9.2.88        C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.9264 9.9.2.7         C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.8f74 9.9.0.176       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.7bd2 9.9.0.136       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.8df4 9.9.1.255       C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.7fda 9.9.0.110       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.9480 9.9.1.123       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.727c 9.9.4.60        C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.8092 9.9.3.181       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.74aa 9.9.1.112       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.7278 9.9.3.157       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.9516 9.9.0.234       C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.9490 9.9.0.78        C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.6f94 9.9.2.123       C2/0/6/UB     p-online(pt)       7x4    2/0/6:33
c8fb.26a3.8e96 9.9.1.82        C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.7eb0 9.9.3.174       C2/0/6/UB     p-online(pt)       7x1    2/0/6:33
c8fb.26a3.947e 9.9.2.173       C2/0/6/UB     p-online(pt)       7x1    2/0/6:33

Router#
```

The following table below describes the significant fields shown in the display:

Table 36: show cable modem partial-service Field Descriptions

Field	Description
MAC Address	MAC address of the cable modem.
IP Address	IP address of the cable modem.
I/F	Interface on the cable modem.
MAC State	State of the cable modem.
DSxUS State	State of the downstream and upstream channels on the cable modem.
Impaired DS	Name of the impaired downstream RF channel.
Impaired US	Port number of the impaired upstream RF channel.
Forwarding Interface	DS SF forwarding interface

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered cable modems.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

show cable modem path-sel

To display the path selection status of a cable modem, use the **show cable modem path-sel** command in the privileged EXEC mode.

show cable modem [*ip address* | *mac address*] **path-sel** [**verbose**]

Syntax Description

ip address	(Mandatory if there is no MAC address specified) IPv4 or IPv6 address of a CM that is displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac address	(Mandatory if there is no IP address specified) MAC address of a CM that is displayed. You can also specify the MAC address for a CPE device behind a CM, and information for that CM is displayed.
verbose	(Optional) Displays detailed information for the CM classifiers.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use this command to display the path selection status of a cable modem.

The following example shows a sample output for the **path-sel** option for a particular cable modem:

```
router#show cable modem 38c8.5cfe.efa6 path-sel

CM 38c8.5cfe.efa6 Path-Sel Info: 07:20

RCS Filter Result: Succeed
Candidate RCS List: 2
  RCC-Id   Owner-Id   Preliminary  RCP      TLV-56   LBG      SF-Attr   CM-Attr
  1        1 :12289   Pass         Pass      --      Pass     Pass      Pass
  2        1 :12290   Pass         Pass      --      Pass     Pass      Pass

TCS Filter Result: Succeed
TCS Info:
  TCS in CGD            : 0x7         UCID: 1 2 3
  TCS in Freq Range     : 0x7         UCID: 1 2 3
  TCS Impaired          : 0x0
TCS Passed filters:
  Preliminary           : 0x7         UCID: 1 2 3
  LB Group              : 0x7         UCID: 1 2 3
  SF Attr Mask          : 0x7         UCID: 1 2 3
  CM Attr Mask          : 0x7         UCID: 1 2 3

Candidate US-BG List: 4
  UBG-Id   Chan-Mask    Preliminary  TLV-56   LBG      SF-Attr   CM-Attr
  1        0x7          Pass          --      Pass     Pass      Pass
```

```
  65537    0x2          Pass          --      Pass     Pass      Pass
  65538    0x4          Pass          --      Pass     Pass      Pass
  65536    0x1          Pass          --      Pass     Pass      Pass

Primary DS Chan Result: Skipped
Candidate Primary DS Chan List: 0

Primary US Chan Result: Skipped
Candidate Primary US Chan List: 0
```

The following example shows a sample output for the **path-sel verbose** option for a particular cable modem:

```
router#show cable modem 38c8.5cfe.efa6 path-sel verbos

CM 38c8.5cfe.efa6 Path-Sel Info: 07:40

MAC-Domain Cable3/0/0 Capability:
  D3.1-Mode             : Y
  MRC-Mode              : Y
  MTC-Mode              : 2

MAC-Domain Cable3/0/0 Service-Group:
  MD-DS-SG              : 3
  MD-US-SG              : 1 (TCS 0x7)

Modem Capability:
  DOCSIS Version        : DOC3.0
  D3.1 Initial Ranging  : N
  MRC-SC-QAM Chan       : 8
  MRC-OFDM Chan         : 0
  MTC-SC-QAM Chan       : 4
  MTC-OFDMA Chan        : 0

Modem Attribute Mask:
  DS Required           : 0x00000000
  DS Forbidden          : 0x00000000
  US Required           : 0x00000000
  US Forbidden          : 0x00000000

RX/TX Chan Enforcement:
  TLV-1  DS Freq        : N/A
  TLV-56 DS Freqs       : N/A
  TLV-56 US Chans       : N/A

Candidate Load-Balance Groups: 2
  Grp-Id       LBG-Type   Weight   Sanity-Chk
  30011        RLBG       6        Pass - LBG is subset of MD-SG
  30012        RLBG       6        Fail - LBG is not in any FN

RCS Filter Result: Succeed
Candidate RCS List: 2
  RCC-Id   Owner-Id   Preliminary  RCP      TLV-56   LBG      SF-Attr   CM-Attr
  1        1 :12289   Pass         Pass      --      Pass     Pass      Pass
  2        1 :12290   Pass         Pass      --      Pass     Pass      Pass

TCS Filter Result: Succeed
TCS Info:
  TCS in CGD            : 0x7         UCID: 1 2 3
  TCS in Freq Range     : 0x7         UCID: 1 2 3
  TCS Impaired          : 0x0
TCS Passed filters:
  Preliminary           : 0x7         UCID: 1 2 3
```

```
  LB Group              : 0x7         UCID: 1 2 3
  SF Attr Mask          : 0x7         UCID: 1 2 3
  CM Attr Mask          : 0x7         UCID: 1 2 3

Candidate US-BG List: 4
  UBG-Id   Chan-Mask    Preliminary  TLV-56   LBG      SF-Attr   CM-Attr
  1        0x7          Pass          --      Pass     Pass      Pass
  65537    0x2          Pass          --      Pass     Pass      Pass
  65538    0x4          Pass          --      Pass     Pass      Pass
  65536    0x1          Pass          --      Pass     Pass      Pass

Primary DS Chan Result: Skipped
Candidate Primary DS Chan List: 0

Primary US Chan Result: Skipped
Candidate Primary US Chan List: 0
```

Related Commands

Command	Description
clear cable modem path-sel	Clears the path selection status of a cable modem.
show cable mac-domain rcc	Displays runtime receive channel configuration (RCC) on a cable line card interface.
show cable mac domain rcc simplified	Shows detailed information for DOCSIS 3.1 capable RCC.

show cable modem phy normalized

To display DOCSIS PHY layer information for one or more cable modems (CMs), use the **show cable modem phy normalized** command in privileged EXEC mode.

The **show cable modem phy normalized** command is only supported on cBR-8.

Cisco cBR-8 Converged Broadband Router
show cable modem [{ *ip-address* | *mac-address* | **cable** *slot* / *subslot* / *cable-interface-index* }] **phy normalized**
show cable modem phy normalized

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
phy normalized	Shows the power level normalized to the actual channel width to provide for an equal comparison between DOCSIS 3.1 SC-QAMs and DOCSIS 3.0 or earlier SC-QAMs. **Note** By default, DOCSIS 3.1 modems report transmit power for 1.6 Mhz equivalent bandwidth for both SC-QAM and OFDMA channels. In comparison, DOCSIS 3.0 and earlier modems report transmit power based on the actual channel width. To compare equivalent reported power levels between DOCSIS 3.1 and legacy modems, ensure that the **show cable modem <> phy normalized** command is used.

Command Default

Displays PHY information for all CMs.

Command Modes

Privileged EXEC (#)

Command History

This table includes the following release-specific history entries:

- CX and BC Releases
- SC Release

CX and BC Releases	Modification
12.2(15)BC2	The service ID (SID) and Mode fields were added to the default display.
12.3(17a)BC	Enhanced the **show cable modem phy normalized** command. The MicroReflec column (MicroReflections) has been removed, and the DOCSIS Prov (DOCSIS Provider) column has been added in its place. This new column contains DOCSIS version information. See updated examples.
SC 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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCC	For DOCSIS 3.0-certified cable modems with multiple upstream channels, the command output was modified to display PHY layer details of each upstream channel. In this case, the output may contain multiple results for the same MAC address. The asterix (*) that appears beside the DOCSIS operating mode under the Mode column identifies that the CM is operating in the MTC mode.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
Cisco cBR-8 Converged Broadband Router	
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** and **name** keywords were removed. The *logical-channel-index* is removed.
Cisco IOS XE Everest 16.6.1	This command was modified. The **ofdma** keyword was added.

Usage Guidelines

This command displays information about the DOCSIS PHY layer for one or more CMs. You can display information for all CMs, for all CMs on a particular cable interface, or for a particular CM, as identified by its IP or MAC address.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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

The following is a sample output of the **show cable modem phy normalized** command:

```
Router# show cable mode c1/0/0 phy normalized

MAC Address I/F Sid USPwr USMER Timing DSPwr DSMER Mode DOCSIS
(dBmV) (SNR) Offset (dBmV) (SNR) Prov
(dB) (dB)
4800.33ef.0cca C1/0/0/U0 1 45.00 38.16 2306 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U1 1 45.00 39.13 2305 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U2 1 45.50 39.13 2306 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U5 1 55.00 ----- 2416 0.00 ----- ofdma 1.1
4800.33ef.3dd2 C1/0/0/U0 2 48.50 39.13 2178 0.00 ----- atdma* 1.1
4800.33ef.3dd2 C1/0/0/U1 2 49.00 39.13 2177 0.00 ----- atdma* 1.1
4800.33ef.3dd2 C1/0/0/U2 2 49.00 39.13 2178 0.00 ----- atdma* 1.1
4800.33ef.3dd2 C1/0/0/U5 2 55.25 ----- 2288 0.00 ----- ofdma 1.1
f81d.0f01.1e10 C1/0/0/U0 22 44.00 39.13 2076 0.00 ----- atdma* 1.1
f81d.0f01.1e10 C1/0/0/U1 22 45.00 38.16 2075 0.00 ----- atdma* 1.1
f81d.0f01.1e10 C1/0/0/U2 22 45.25 38.16 2075 0.00 ----- atdma* 1.1
f81d.0f01.1e10 C1/0/0/U5 22 62.50 ----- 2399 0.00 ----- ofdma 1.1
f81d.0f01.6040 C1/0/0/U0 23 28.50 38.16 2078 0.00 ----- atdma* 1.1
f81d.0f01.6040 C1/0/0/U1 23 29.00 42.14 2078 0.00 ----- atdma* 1.1
f81d.0f01.6040 C1/0/0/U2 23 29.50 39.13 2077 0.00 ----- atdma* 1.1
f81d.0f01.6040 C1/0/0/U5 23 36.25 ----- 2400 0.00 ----- ofdma 1.1


Router# show cable modem 4800.33ef.0cca phy normalized

MAC Address I/F Sid USPwr USMER Timing DSPwr DSMER Mode DOCSIS
(dBmV) (SNR) Offset (dBmV) (SNR) Prov
(dB) (dB)
4800.33ef.0cca C1/0/0/U0 1 45.00 39.13 2306 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U1 1 45.00 39.13 2305 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U2 1 45.50 39.13 2306 0.00 ----- atdma* 1.1
4800.33ef.0cca C1/0/0/U5 1 55.00 ----- 2416 0.00 ----- ofdma 1.1
```

The following example shows sample output for the **show cable modem phy normalized** command for all CMs on the Cisco CMTS router:

```
Router# show cable modem phy normalized

MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                               (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0008.0e09.81f8 C3/0        1    50.00  28.40  1705     26          -3.4   36.02 tdma
```

```
0003.6b3c.1aa7 C3/0        2     0.00  28.27  3643      0           0.00  ----- tdma
0008.0e09.7fe2 C4/0        3    35.00  28.44  1760     27          12.00  35.03 tdma
```

The following example shows sample output for the **show cable modem phy normalized** command for all CMs on a particular cable interface:

```
Router# show cable modem cable 3/0
 phy normalized
MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                            (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0008.0e09.81f8 C3/0        1    50.00  28.40  1705     26          -3.4   36.02 tdma
0003.6b3c.1aa7 C3/0        2     0.00  28.27  3643      0           0.00  ----- tdma
```

The following example shows sample output for the **show cable modem phy normalized** command for a particular CM:

```
Router# show cable modem 0050.7366.1243 phy normalized

MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                            (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0050.6736.4124 C3/0        14   38.00  24.58  1651     0           8.00  35.41  tdma
```

Example from Cisco IOS Release 12.2(33)SCD

The following example shows a sample output of the **show cable modem phy normalized** command for all CMs on the Cisco CMTS router:

```
Router# show cable modem phy normalized
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
001c.ea37.9b5c C3/0/U2.0     27     0.00  36.12 5394    0.00  -----  tdma   1.1
001c.ea37.9b78 C3/0/U2.0     29     0.00  36.12 5396    0.00  -----  tdma   1.1
001c.ea37.9b5a C3/0/U3.0     31     0.00  36.12 5394    0.00  -----  tdma   1.1
001c.ea37.9ba4 C3/0/U2.0     32     0.00  36.12 5393    0.00  -----  tdma   1.1
001c.ea37.9aac C3/1/U2.1     28     0.00  36.12 5620    0.00  -----  tdma   1.1
001a.c3ff.d1a4 C3/1/U0.0     29    43.50  36.12 6020    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U1.0     29    43.50  36.12 6020    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U2.0     29    43.50  36.12 6019    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U3.0     29    43.50  36.12 6021    0.00  -----  tdma*  1.1
```

Table below describes the fields shown in the **show cable modem phy normalized** displays:

Table 37: Descriptions for the show cable modem phy normalized fields

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface on the CMTS that is providing services for this CM.
SID	Service ID that this CM is using.

Field	Description
USPwr (dBmV)	Displays the CM transmit level in dBmV, as measured by the CMTS.
USSNR (dBmV)	Upstream signal-to-noise ratio (SNR) or carrier-to-noise ratio (CNR), in dB, as measured by the CMTS. This field shows the CNR value for cable interfaces that support onboard hardware-based spectrum management, such as the Cisco uBR-MC16S card, and shows the SNR value for other cable interfaces. **Note** Although the field name shows the value as being given in dBmV, the actual value should be interpreted in dB.
Timing Offset	The timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the CM (which will include any internal delay between when the CM software begins the transmission and when the bits actually appear on the local cable interface).

Field	Description
Microreflec (dBc)	The approximate value of microreflections on the downstream, measured in dBc below the signal level, as seen by the CM. 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.
DSPwr (dBmV)	Downstream receive power level, in dBmV, as reported by the CM.
DSSNR (dBmV) **Note** This command displays values for the downstream power and SNR values only if you have configured the **cable modem remote-query** command on the CMTS, and if the CM supports providing those options.	Downstream signal-to-noise ratio (SNR), in dB, as reported by the CM.
Mode	DOCSIS operating mode for the CM: • tdma=DOCSIS 1.X, TDMA-only mode • atdma=DOCSIS 2.0 A-TDMA mode A hyphen (-) indicates the mode is unknown or the CM has not yet registered. For DOCSIS 3.0-certified cable modems with multiple upstream channels, the output may contain multiple results for the same MAC address. In Cisco IOS Release 12.2(33)SCC, the asterix (*) that appears beside the DOCSIS operating mode under the Mode column identifies that the CM is operating in the MTC mode. **Note** This field is the same as that returned by the docsIfCmtsCmStatusModulationType object in the DOCS-IF-MIB.

Cisco cBR-8 Converged Broadband Router

This example shows the output of the **show cable modem phy normalized** command:

```
Router# show cable modem phy normalized
Load for five secs: 2%/0%; one minute: 2%; five minutes: 2%
Time source is NTP, 10:47:07.255 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                 (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.09e0 C1/0/0/U0     2     55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.09e0 C1/0/0/U1     2     56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.051a C1/0/0/U0     3     57.00  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.051a C1/0/0/U1     3     55.75  35.18 1775    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U0     5     37.75  36.12 3306    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U1     5     38.25  36.12 1782    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U0     6     52.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U1     6     53.50  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U0     7     52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U1     7     53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09f8 C1/0/0/U0     8     52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09f8 C1/0/0/U1     8     53.00  36.12 1773    0.00  -----  tdma*  1.1
0023.bee1.eb54 C1/0/0/U0     9     38.50  36.12 1777    0.00  -----  tdma*  1.1
0023.bee1.eb54 C1/0/0/U1     9     38.50  36.12 1777    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U0     10    55.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U1     10    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd78 C1/0/0/U0     11    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd78 C1/0/0/U1     11    53.00  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a7.ef0e C1/0/0/U0     12    55.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0e C1/0/0/U1     12    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b6 C1/0/0/U0     13    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05b6 C1/0/0/U1     13    56.50  36.12 1770    0.00  -----  tdma*  1.1
54d4.6f88.5cd8 C1/0/0/U0     14    43.75  36.12 2089    0.00  -----  tdma*  1.1
54d4.6f88.5cd8 C1/0/0/U1     14    43.75  36.12 2090    0.00  -----  tdma*  1.1
c8fb.26a8.0a0c C1/0/0/U1     15     0.00  36.12 1771    0.00  -----  tdma   1.0
c8fb.26a7.ef20 C1/0/0/U0     16    53.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef20 C1/0/0/U1     16    52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09e2 C1/0/0/U0     17    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.09e2 C1/0/0/U1     17    55.50  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U0     18    55.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U1     18    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U0     19    55.50  35.18 1773    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U1     19    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef0a C1/0/0/U0     20    53.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0a C1/0/0/U1     20    52.75  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.04fe C1/0/0/U0     21    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.04fe C1/0/0/U1     21    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0684 C1/0/0/U0     22    55.50  36.12 1775    0.00  -----  tdma*  1.1
c8fb.26a8.0684 C1/0/0/U1     22    56.75  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U0     24    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U1     24    55.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U0     25    52.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U1     25    53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.067c C1/0/0/U0     26    52.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.067c C1/0/0/U1     26    53.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.e636 C1/0/0/U0     27    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e636 C1/0/0/U1     27    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.fd76 C1/0/0/U0     28    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd76 C1/0/0/U1     28    53.50  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.09ec C1/0/0/U0     29    53.00  36.12 1771    0.00  -----  tdma*  1.1
```

```
c8fb.26a8.09ec C1/0/0/U1     29    52.75  35.18 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U0     30    56.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U1     30    57.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U0     31    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U1     31    55.50  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a8.067a C1/0/0/U0     32    53.00  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.067a C1/0/0/U1     32    52.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.08c4 C1/0/0/U0     33    56.50  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.08c4 C1/0/0/U1     33    56.25  35.18 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e680 C1/0/0/U0     34    53.00  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e680 C1/0/0/U1     34    53.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6da C1/0/0/U0     35    55.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6da C1/0/0/U1     35    56.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U0     36    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U1     36    56.50  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U0     37    55.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U1     37    56.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U0     38    52.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U1     38    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a0a C1/0/0/U0     39    55.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0a0a C1/0/0/U1     39    56.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05bc C1/0/0/U0     40    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05bc C1/0/0/U1     40    52.75  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U0     41    55.50  35.18 1767    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U1     41    56.75  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a8.0690 C1/0/0/U0     42    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0690 C1/0/0/U1     42    56.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0678 C1/0/0/U0     43    56.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0678 C1/0/0/U1     43    56.25  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U0     44    55.75  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U1     44    56.50  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U0     46    55.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U1     46    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U0     47    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U1     47    56.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U0     48    57.00  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U1     48    56.25  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U0     49    55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U1     49    56.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef10 C1/0/0/U0     50    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef10 C1/0/0/U1     50    56.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U0     51    56.00  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U1     51    55.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U0     52    53.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U1     52    52.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U0     53    56.50  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U1     53    56.25  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U0     54    53.00  34.77 1768    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U1     54    52.75  35.18 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0610 C1/0/0/U0     55    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0610 C1/0/0/U1     55    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6d8 C1/0/0/U0     56    53.25  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e6d8 C1/0/0/U1     56    52.00  35.18 1774    0.00  -----  tdma*  1.1
c8fb.26a8.0676 C1/0/0/U0     57    52.50  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0676 C1/0/0/U1     57    53.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.067e C1/0/0/U0     58    52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.067e C1/0/0/U1     58    53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0a04 C1/0/0/U0     59    56.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0a04 C1/0/0/U1     59    57.00  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0674 C1/0/0/U0     60    52.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0674 C1/0/0/U1     60    53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a02 C1/0/0/U0     61    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a02 C1/0/0/U1     61    56.00  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6fe C1/0/0/U0     62    55.75  36.12 1770    0.00  -----  tdma*  1.1
```

```
c8fb.26a7.e6fe C1/0/0/U1     62    56.50  36.12 1770    0.00  -----  tdma*  1.1
0019.474a.d5ae C1/0/0/U1     4      0.00  36.12 1774    0.00  -----  tdma   1.1
0016.924f.8200 C1/0/0/U0     23     0.00  36.12 1764    0.00  -----  tdma   1.1

Router#
```

This example shows the output for a specific MAC Address for the **show cable modem phy normalized** command:

```
Router# show cable modem c8fb.26a8.05b2 phy normalized
Load for five secs: 2%/0%; one minute: 3%; five minutes: 2%
Time source is NTP, 10:57:17.773 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                 (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  34.77 1772    0.00  -----  tdma*  1.1

Router#
```

This example shows the output for a specific cable interface for the **show cable modem phy normalized** command:

```
Router# show cable modem cable modem 1/0/1 phy normalized

Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 11:40:05.265 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                 (dB)
c8fb.26a7.e6fe C1/0/0/U0     1     55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.e6fe C1/0/0/U1     1     56.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U0     2     55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U1     2     56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U0     4     55.50  34.77 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U1     4     56.75  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U0     6     56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U1     6     55.50  33.97 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U0     7     55.50  34.77 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U1     7     56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U0     8     55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U1     8     56.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U0     9     52.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U1     9     53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U0     10    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U1     10    57.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U0     11    52.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U1     11    53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U0     12    52.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U1     12    53.50  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U0     13    55.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U1     13    56.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U0     14    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U1     14    56.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U0     15    55.75  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U1     15    56.50  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U0     16    57.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     16    56.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U0     17    57.25  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U1     17    56.00  35.18 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U0     18    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U1     18    56.50  35.18 1771    0.00  -----  tdma*  1.1
```

```
c8fb.26a8.0a0c C1/0/0/U0     20    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0a0c C1/0/0/U1     20    57.25  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U0     21    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U1     21    56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U0     22    37.75  36.12 3304    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U1     22    38.25  35.18 1781    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U0     23    52.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U1     23    54.00  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U0     24    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U1     24    55.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U0     25    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U1     25    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U0     26    53.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U1     26    52.75  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U0     27    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U1     27    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U0     28    55.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U1     28    55.75  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U0     29    57.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U1     29    56.00  34.77 1770    0.00  -----  tdma*  1.1

Router#
```

This example shows the output for a specific IP Address for the **show cable modem phy normalized** command:

```
Router# show cable modem 209.165.200.227 phy normalized
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 11:12:23.912 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  36.12 1772    0.00  -----  tdma*  1.1

Router#
```

Related Commands

Command	Description
cable modem remote-query	Enables and configures the remote-query feature to gather CM performance statistics on the CMTS.
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem errors	Displays error statistics for one or more CMs.

Command	Description
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem mac	Displays MAC layer information for one or more CMs.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem phy

To display DOCSIS PHY layer information for one or more cable modems (CMs), use the **show cable modem phy** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **phy**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **phy**

Cisco cBR-8 Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot*/*subslot*/*cable-interface-index*}]**phy**
show cable modem phy | **include ofdma**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface). This option is not supported on the Cisco cBR-8 router.

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.
phy	Displays DOCSIS PHY layer information for one or more cable modems.

Command Default

Displays PHY information for all CMs.

Command Modes

Privileged EXEC (#)

Command History

This table includes the following release-specific history entries:

- CX and BC Releases
- SC Release

CX and BC Releases	Modification
12.1(4)CX and 12.2(4)BC1	This command was introduced for the Cisco uBR7100 series, Cisco uBR7200 series, and CIsco uBR10012 routers.
12.2(15)BC2	The service ID (SID) and Mode fields were added to the default display.
12.3(17a)BC	Enhanced the **show cable modem phy** command. The MicroReflec column (MicroReflections) has been removed, and the DOCSIS Prov (DOCSIS Provider) column has been added in its place. This new column contains DOCSIS version information. See updated examples.
SC Release	**Modification**

CX and BC Releases	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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCC	For DOCSIS 3.0-certified cable modems with multiple upstream channels, the command output was modified to display PHY layer details of each upstream channel. In this case, the output may contain multiple results for the same MAC address. The asterix (*) that appears beside the DOCSIS operating mode under the Mode column identifies that the CM is operating in the MTC mode.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
Cisco cBR-8 Converged Broadband Router	
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** and **name** keywords were removed. The *logical-channel-index* is removed.
Cisco IOS XE Everest 16.6.1	This command was modified. The **ofdma** keyword was added.

Usage Guidelines

This command displays information about the DOCSIS PHY layer for one or more CMs. You can display information for all CMs, for all CMs on a particular cable interface, or for a particular CM, as identified by its IP or MAC address.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands

might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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

The following is a sample output of the **show cable modem phy** command with the**ofdma** keyword.

```
Router# show cable modem phy | include ofdma
5039.5584.5bbe C1/0/0/U0 15 38.75 ----- 2282 0.00 ----- ofdma 1.1
0895.2a9b.26f1 C1/0/0/U0 16 28.00 ----- 2146 0.00 ----- ofdma 1.1
```

Examples from Cisco IOS Release 12.3(13a)BC and Earlier Releases

```
Router# show cable modem phy
MAC Address    I/F         Sid  USPwr  USSNR  Timing MicroReflec DSPwr  DSSNR  Mode
                                (dBmV)  (dB)   Offset (dBc)       (dBmV)   (dB)
0008.0e06.7b14 C8/0/0/U0   1    0.00   30.36  1938   0           0.00  -----  tdma
0050.f112.5977 C8/0/0/U0   2    0.00   30.36  1695   0           0.00  -----  tdma
0090.837b.b0b9 C8/0/0/U0   3    0.00   30.64  1187   0           0.00  -----  tdma
0007.0e03.6e99 C8/0/0/U0   5    0.00   30.36  2747   0           0.00  -----  tdma
0007.0e04.5091 C8/0/0/U0   6    0.00   30.94  2746   0           0.00  -----  tdma
0006.5314.81d9 C8/0/0/U0   7    0.00   30.36  2745   0           0.00  -----  tdma
0003.6b1b.ee63 C8/0/0/U0   8    0.00   31.26  2745   0           0.00  -----  tdma
0030.eb15.84e7 C8/0/0/U0   12   0.00   30.36  1157   0           0.00  -----  tdma
```

The following example shows sample output for the **show cable modem phy** command for all CMs on the Cisco CMTS router:

```
Router# show cable modem phy

MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                                (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0008.0e09.81f8 C3/0        1    50.00  28.40  1705     26          -3.4   36.02 tdma
0003.6b3c.1aa7 C3/0        2     0.00  28.27  3643      0           0.00  ----- tdma
0008.0e09.7fe2 C4/0        3    35.00  28.44  1760     27          12.00  35.03 tdma
```

The following example shows sample output for the **show cable modem phy** command for all CMs on a particular cable interface:

```
Router# show cable modem cable 3/0
 phy
MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                                (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0008.0e09.81f8 C3/0        1    50.00  28.40  1705     26          -3.4   36.02 tdma
0003.6b3c.1aa7 C3/0        2     0.00  28.27  3643      0           0.00  ----- tdma
```

The following example shows sample output for the **show cable modem phy** command for a particular CM:

```
Router# show cable modem 0050.7366.1243 phy

MAC Address    I/F         Sid  USPwr  USSNR  Timing  MicroReflec DSPwr  DSSNR  Mode
                                (dBmV) (dBmV) Offset  (dBc)       (dBmV) (dBmV)
0050.6736.4124 C3/0        14   38.00  24.58  1651     0           8.00  35.41  tdma
```

Example from Cisco IOS Release 12.2(33)SCD

The following example shows a sample output of the **show cable modem phy** command for all CMs on the Cisco CMTS router:

```
Router# show cable modem phy
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
001c.ea37.9b5c C3/0/U2.0     27     0.00  36.12 5394    0.00  -----  tdma   1.1
001c.ea37.9b78 C3/0/U2.0     29     0.00  36.12 5396    0.00  -----  tdma   1.1
001c.ea37.9b5a C3/0/U3.0     31     0.00  36.12 5394    0.00  -----  tdma   1.1
001c.ea37.9ba4 C3/0/U2.0     32     0.00  36.12 5393    0.00  -----  tdma   1.1
001c.ea37.9aac C3/1/U2.1     28     0.00  36.12 5620    0.00  -----  tdma   1.1
001a.c3ff.d1a4 C3/1/U0.0     29    43.50  36.12 6020    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U1.0     29    43.50  36.12 6020    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U2.0     29    43.50  36.12 6019    0.00  -----  tdma*  1.1
001a.c3ff.d1a4 C3/1/U3.0     29    43.50  36.12 6021    0.00  -----  tdma*  1.1
```

Table below describes the fields shown in the **show cable modem phy** displays:

Table 38: Descriptions for the show cable modem phy fields

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface on the CMTS that is providing services for this CM.
SID	Service ID that this CM is using.
USPwr (dBmV)	Displays the CM transmit level in dBmV, as measured by the CMTS.
USSNR (dBmV)	Upstream signal-to-noise ratio (SNR) or carrier-to-noise ratio (CNR), in dB, as measured by the CMTS. This field shows the CNR value for cable interfaces that support onboard hardware-based spectrum management, such as the Cisco uBR-MC16S card, and shows the SNR value for other cable interfaces. **Note** Although the field name shows the value as being given in dBmV, the actual value should be interpreted in dB.

Field	Description
Timing Offset	The timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the CM (which will include any internal delay between when the CM software begins the transmission and when the bits actually appear on the local cable interface).
Microreflec (dBc)	The approximate value of microreflections on the downstream, measured in dBc below the signal level, as seen by the CM. 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.
DSPwr (dBmV)	Downstream receive power level, in dBmV, as reported by the CM.
DSSNR (dBmV) **Note** This command displays values for the downstream power and SNR values only if you have configured the **cable modem remote-query** command on the CMTS, and if the CM supports providing those options.	Downstream signal-to-noise ratio (SNR), in dB, as reported by the CM.

Field	Description
Mode	DOCSIS operating mode for the CM: • tdma=DOCSIS 1.X, TDMA-only mode • atdma=DOCSIS 2.0 A-TDMA mode A hyphen (-) indicates the mode is unknown or the CM has not yet registered. For DOCSIS 3.0-certified cable modems with multiple upstream channels, the output may contain multiple results for the same MAC address. In Cisco IOS Release 12.2(33)SCC, the asterix (*) that appears beside the DOCSIS operating mode under the Mode column identifies that the CM is operating in the MTC mode. **Note** This field is the same as that returned by the docsIfCmtsCmStatusModulationType object in the DOCS-IF-MIB.

Cisco cBR-8 Converged Broadband Router

This example shows the output of the **show cable modem phy** command:

```
Router#show cable modem phy
Load for five secs: 2%/0%; one minute: 2%; five minutes: 2%
Time source is NTP, 10:47:07.255 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.09e0 C1/0/0/U0     2     55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.09e0 C1/0/0/U1     2     56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.051a C1/0/0/U0     3     57.00  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.051a C1/0/0/U1     3     55.75  35.18 1775    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U0     5     37.75  36.12 3306    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U1     5     38.25  36.12 1782    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U0     6     52.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U1     6     53.50  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U0     7     52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U1     7     53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09f8 C1/0/0/U0     8     52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09f8 C1/0/0/U1     8     53.00  36.12 1773    0.00  -----  tdma*  1.1
0023.bee1.eb54 C1/0/0/U0     9     38.50  36.12 1777    0.00  -----  tdma*  1.1
0023.bee1.eb54 C1/0/0/U1     9     38.50  36.12 1777    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U0     10    55.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U1     10    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd78 C1/0/0/U0     11    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd78 C1/0/0/U1     11    53.00  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a7.ef0e C1/0/0/U0     12    55.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0e C1/0/0/U1     12    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b6 C1/0/0/U0     13    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05b6 C1/0/0/U1     13    56.50  36.12 1770    0.00  -----  tdma*  1.1
54d4.6f88.5cd8 C1/0/0/U0     14    43.75  36.12 2089    0.00  -----  tdma*  1.1
```

```
54d4.6f88.5cd8 C1/0/0/U1     14    43.75  36.12 2090    0.00  -----  tdma*  1.1
c8fb.26a8.0a0c C1/0/0/U1     15     0.00  36.12 1771    0.00  -----  tdma   1.0
c8fb.26a7.ef20 C1/0/0/U0     16    53.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef20 C1/0/0/U1     16    52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.09e2 C1/0/0/U0     17    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.09e2 C1/0/0/U1     17    55.50  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U0     18    55.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U1     18    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U0     19    55.50  35.18 1773    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U1     19    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef0a C1/0/0/U0     20    53.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0a C1/0/0/U1     20    52.75  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.04fe C1/0/0/U0     21    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.04fe C1/0/0/U1     21    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0684 C1/0/0/U0     22    55.50  36.12 1775    0.00  -----  tdma*  1.1
c8fb.26a8.0684 C1/0/0/U1     22    56.75  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U0     24    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U1     24    55.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U0     25    52.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U1     25    53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.067c C1/0/0/U0     26    52.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.067c C1/0/0/U1     26    53.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.e636 C1/0/0/U0     27    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e636 C1/0/0/U1     27    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.fd76 C1/0/0/U0     28    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd76 C1/0/0/U1     28    53.50  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.09ec C1/0/0/U0     29    53.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.09ec C1/0/0/U1     29    52.75  35.18 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U0     30    56.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U1     30    57.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U0     31    56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U1     31    55.50  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a8.067a C1/0/0/U0     32    53.00  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.067a C1/0/0/U1     32    52.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.08c4 C1/0/0/U0     33    56.50  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a8.08c4 C1/0/0/U1     33    56.25  35.18 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e680 C1/0/0/U0     34    53.00  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e680 C1/0/0/U1     34    53.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6da C1/0/0/U0     35    55.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.e6da C1/0/0/U1     35    56.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U0     36    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U1     36    56.50  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U0     37    55.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U1     37    56.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U0     38    52.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U1     38    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a0a C1/0/0/U0     39    55.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0a0a C1/0/0/U1     39    56.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05bc C1/0/0/U0     40    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05bc C1/0/0/U1     40    52.75  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U0     41    55.50  35.18 1767    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U1     41    56.75  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a8.0690 C1/0/0/U0     42    56.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0690 C1/0/0/U1     42    56.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0678 C1/0/0/U0     43    56.00  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0678 C1/0/0/U1     43    56.25  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U0     44    55.75  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U1     44    56.50  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U0     46    55.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U1     46    56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U0     47    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U1     47    56.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U0     48    57.00  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U1     48    56.25  35.18 1769    0.00  -----  tdma*  1.1
```

```
c8fb.26a7.ef08 C1/0/0/U0     49    55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U1     49    56.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef10 C1/0/0/U0     50    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef10 C1/0/0/U1     50    56.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U0     51    56.00  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U1     51    55.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U0     52    53.75  35.18 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U1     52    52.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U0     53    56.50  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U1     53    56.25  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U0     54    53.00  34.77 1768    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U1     54    52.75  35.18 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0610 C1/0/0/U0     55    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0610 C1/0/0/U1     55    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6d8 C1/0/0/U0     56    53.25  36.12 1774    0.00  -----  tdma*  1.1
c8fb.26a7.e6d8 C1/0/0/U1     56    52.00  35.18 1774    0.00  -----  tdma*  1.1
c8fb.26a8.0676 C1/0/0/U0     57    52.50  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0676 C1/0/0/U1     57    53.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.067e C1/0/0/U0     58    52.75  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.067e C1/0/0/U1     58    53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.0a04 C1/0/0/U0     59    56.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0a04 C1/0/0/U1     59    57.00  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0674 C1/0/0/U0     60    52.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0674 C1/0/0/U1     60    53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a02 C1/0/0/U0     61    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0a02 C1/0/0/U1     61    56.00  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6fe C1/0/0/U0     62    55.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6fe C1/0/0/U1     62    56.50  36.12 1770    0.00  -----  tdma*  1.1
0019.474a.d5ae C1/0/0/U1     4      0.00  36.12 1774    0.00  -----  tdma   1.1
0016.924f.8200 C1/0/0/U0     23     0.00  36.12 1764    0.00  -----  tdma   1.1

Router#
```

This example shows the output for a specific MAC Address for the **show cable modem phy** command:

```
Router#show cable modem c8fb.26a8.05b2 phy
Load for five secs: 2%/0%; one minute: 3%; five minutes: 2%
Time source is NTP, 10:57:17.773 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  34.77 1772    0.00  -----  tdma*  1.1

Router#
```

This example shows the output for a specific cable interface for the **show cable modem phy** command:

```
Router#show cable modem cable modem 1/0/1 phy

Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 11:40:05.265 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
c8fb.26a7.e6fe C1/0/0/U0     1     55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.e6fe C1/0/0/U1     1     56.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U0     2     55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef06 C1/0/0/U1     2     56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08ca C1/0/0/U0     4     55.50  34.77 1771    0.00  -----  tdma*  1.1
```

```
c8fb.26a8.08ca C1/0/0/U1     4     56.75  35.18 1770    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U0     6     56.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08d6 C1/0/0/U1     6     55.50  33.97 1773    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U0     7     55.50  34.77 1771    0.00  -----  tdma*  1.1
c8fb.26a7.ef0c C1/0/0/U1     7     56.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U0     8     55.50  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a7.fd72 C1/0/0/U1     8     56.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U0     9     52.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0688 C1/0/0/U1     9     53.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U0     10    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a7.e6dc C1/0/0/U1     10    57.25  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U0     11    52.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.08b8 C1/0/0/U1     11    53.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U0     12    52.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.060a C1/0/0/U1     12    53.50  34.77 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U0     13    55.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef00 C1/0/0/U1     13    56.75  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U0     14    55.75  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.ef08 C1/0/0/U1     14    56.50  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U0     15    55.75  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a7.eef6 C1/0/0/U1     15    56.50  36.12 1767    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U0     16    57.00  36.12 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     16    56.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U0     17    57.25  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0606 C1/0/0/U1     17    56.00  35.18 1768    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U0     18    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0682 C1/0/0/U1     18    56.50  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0a0c C1/0/0/U0     20    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0a0c C1/0/0/U1     20    57.25  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U0     21    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.0604 C1/0/0/U1     21    56.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U0     22    37.75  36.12 3304    0.00  -----  tdma*  1.1
c8fb.2633.8c94 C1/0/0/U1     22    38.25  35.18 1781    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U0     23    52.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05c0 C1/0/0/U1     23    54.00  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U0     24    56.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a7.eefc C1/0/0/U1     24    55.75  36.12 1768    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U0     25    52.75  36.12 1769    0.00  -----  tdma*  1.1
c8fb.26a8.09ee C1/0/0/U1     25    53.50  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U0     26    53.50  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05c6 C1/0/0/U1     26    52.75  35.18 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U0     27    55.75  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.08d4 C1/0/0/U1     27    56.00  36.12 1771    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U0     28    55.50  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b8 C1/0/0/U1     28    55.75  35.18 1772    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U0     29    57.25  36.12 1770    0.00  -----  tdma*  1.1
c8fb.26a8.05c4 C1/0/0/U1     29    56.00  34.77 1770    0.00  -----  tdma*  1.1

Router#
```

This example shows the output for a specific IP Address for the **show cable modem phy** command:

```
Router#show cable modem 209.165.200.227 phy
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 11:12:23.912 PST Thu May 7 2015
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
c8fb.26a8.05b2 C1/0/0/U0     1     57.25  36.12 1773    0.00  -----  tdma*  1.1
c8fb.26a8.05b2 C1/0/0/U1     1     56.00  36.12 1772    0.00  -----  tdma*  1.1

Router#
```

Related Commands

Command	Description
cable modem remote-query	Enables and configures the remote-query feature to gather CM performance statistics on the CMTS.
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem mac	Displays MAC layer information for one or more CMs.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem phy ofdm

To display the CM count per downstream or upstream profile, use the **show cable modem phy ofdm** command in privileged EXEC mode.

show cable modem phy ofdm [{ **downstream prof-count** | **upstream iuc-count** }]

Syntax Description

downstream prof-count	Displays the CM count per downstream channel and profile.
upstream iuc-count	Displays the CM count per upstream port and IUC.

Command Modes

Privileged EXEC (#)

Command History

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1x	This command was introduced on the Cisco cBR Series Converged Broadband Router.

Examples

The following example shows sample output for the **show cable modem phy ofdm** command for Cisco cBR Series Converged Broadband Routers:

```
Router#show cable modem phy ofdm upstream iuc-count
                        |<----------- CM Count per profile ----------->|
I/F           IF-INDX  IUC-5  IUC-6  IUC-9 IUC-10 IUC-11 IUC-12 IUC-13
-----------   ------- ------ ------ ------ ------ ------ ------ ------
C1/0/0/U6     488046       3      0      0      0      0      0      3
C1/0/0/U7     488047       3      0      0      0      0      0      3
C9/0/0/U6     501870       1      0      0      0      0      0      1
C9/0/0/U7     501871       1      0      0      0      0      0      1
C9/0/1/U6     501918       1      0      0      0      0      0      2
C9/0/1/U7     501919       1      0      0      0      0      0      2

Router#show cable modem phy ofdm downstream prof-count
                        |<----------------------------- CM Count per profile
-------------------------->|
Channel       IF-INDX  P-0  P-1  P-2  P-3  P-4  P-5  P-6  P-7  P-8  P-9 P-10 P-11 P-12 P-13
 P-14 P-15
------------- ------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
 ---- ----
In0/0/0:158   264134     0    0    0    3    0    0    -    -    -    0    -    -    -
-    -    -
In0/0/0:159   264135     0    0    0    3    0    0    -    -    -    0    -    -    -
-    -    -
Do9/0/0:158   321478     1    0    0    0    4    0    -    -    -    0    -    -    -
-    -    -
```

show cable modem phy ofdm-profile

To display the OFDM profiles associated with the cable modems (CMs), use the **show cable modem phy ofdm-profile** command in privileged EXEC mode.

Cisco cBR-8 Converged Broadband Router
show cable modem [*ip-address* | *mac-address* | **Cable** {*slot* / *subslot* / *cable-interface-index*}] **phy ofdm-profile**[{*downstreamupstream*}]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	(Optional) Slot where the line card resides. For Cisco cBR-8 Converged Broadband Router, the valid range is from 0 to 3 and 6 to 9.
subslot	(Optional) Secondary slot number of the cable interface line card. The valid subslot is 0.
cable-interface-index	(Optional) Downstream port or MAC domain index of the line cards. For Cisco cBR-8 Converged Broadband Router, the valid range is from 0 to 15.
upstream	Displays the OFDM profiles associated with a CM for upstream channel.
downstream	Displays the OFDM profiles associated with a CM for downstream channel.

Command Default

Displays the profile information for all CMs.

Command Modes

Privileged EXEC (#)

Command History

Command History

Release	Modification
IOS-XE 3.18.0SP	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 3.18.1SP	This command was modified. The output format was updated.
Cisco IOS XE Everest 16.6.1	This command was modified. The **upstream** and **downstream** keywords were added.
Cisco IOS XE Amsterdam 17.3.1w	This command was modified. The output format was updated.

Examples

The following example shows sample output for the **show cable modem phy ofdm-profile upstream** command for Cisco cBR Series Converged Broadband Routers:

```
Router# show cable modem phy ofdm-profile upstream
MAC Address    I/F          UCID  Curr  Recm    Assigned Update Last Update
```

```
                                    IUC   IUC     IUCs     cnt    (ago)
0895.2a9b.2916 C1/0/0/UB     13     5     5       5, 13    2      0h:01m:37s
4800.33ef.3e26 C1/0/0/UB     13     5     5       5, 13    2      0h:02m:36s
fc52.8d5e.9eee C1/0/2/UB     13     11    11      11, 13   1      0h:01m:27s
4800.33ef.0c8e C1/0/2/UB     13     5     5       5, 13    2      0h:02m:36s
4800.33ef.0d06 C1/0/6/UB     13     5     5       5, 13    2      0h:04m:01s
fc52.8d5e.8b3e C1/0/8/UB     13     5     5       5, 13    1      0h:01m:37s
```

The following example shows sample output for the **show cable modem phy ofdm-profile downstream** command for Cisco cBR Series Converged Broadband Routers:

```
Router# show cable modem phy ofdm-profile downstream
MAC Address       I/F          Chan         DCID      Curr   Recm   Dwngd   Unfit
                                                      Prof   Prof   Prof    Prof
4800.33ea.70c2    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.6e12    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ef.0c5e    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.6e3e    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.70a6    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.6fce    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ef.0c82    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ef.0c96    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.704e    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
4800.33ea.6c36    C1/0/3/UB    In1/0/1:158 159        5      5      4       N/A
```

The following example shows sample output for the **show cable modem phy ofdm-profile** command in Cisco IOS-XE Release 3.18.1SP with the updated output format:

```
router# show cable modem fc52.8d5e.84bd phy ofdm-profile
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
fc52.8d5e.84bd C1/0/0/UB     In1/0/0:158   159   5     5     4      N/A
```

The following example shows sample output for the **show cable modem phy ofdm-profile** command withthe updated output format:

```
Router#show cable modem phy ofdm upstream
MAC Address      I/F           UCID  Curr  Recm  Assigned Update Last Update  Curr IUC
                                     IUC   IUC   IUCs     cnt    (ago)        Mod
f81d.0f01.1e10   C1/0/0/U5     6     13    13    13       0      1h:02m:47s   QPSK
f81d.0f01.6040   C1/0/0/U5     6     5     5     5, 13    1      0h:02m:31s   1024-QAM
4800.33ef.0cca   C1/0/0/U5     6     13    13    13       0      0h:01m:45s   QPSK
4800.33ef.3dd2   C1/0/0/U5     6     5     5     5, 13    1      0h:01m:39s   1024-QAM
```

Table 39: Descriptions for the show cable modem phy ofdm-profile fields

Field	Description
MAC Address	The MAC address for the CM.
I/F	The cable interface on the CMTS that is providing services for this CM.
Chan	Downstream channel assigned to the CM.
UCID	Upstream channel ID used by a CM.
DCID	Downstream channel ID used by a CM.
Curr Prof	Current profile ID.
Recm Prof	Recommended profile ID.

Field	Description
Unfit Prof	Unfit profile ID.
Dwngd Prof	Downgrade profile ID.
Curr IUC	Indicates the Interval Usage Code (IUC) that is currently in use.
Recm IUC	Indicates the IUC that is recommended for use based on the channel MER data.
Assigned IUCs	Indicates the IUCs that have been assigned to the cable modem. Up to two IUCs can be assigned.
Update cnt	Indicates the number of times an IUC update has occurred.
Last Update	Indicates the time of the last IUC update.

Related Commands

Command	Description
show controllers integrated-Cable rf-channel prof-order	Displays information about the profile downgrade ordering on a given OFDM channel.
show cable modem prof-mgmt	Displays detailed profile management data associated with each cable modem.

show cable modem primary-channel

To display the primary-channel and host interface for all modems or for modems on a MAC domain host interface, use the **show cable modem primary-channel** command.

show cable modem [**cable** {*slot* / *subslot* / *port* | *slot*/*subslot* / *cable-interface-index*} [**upstream** *port* [*logical-channel-index*]]] **primary-channel** [**non-bonding-capable** [**legacy-ranging**]] [**wideband** [**registered-traditional-docsis**]]

Cisco cBR-8 Converged Broadband Router
show cable modem [**cable** *slot*/*subslot* / *cable-interface-index*] **primary-channel**
show cable modem primary-channel [**non-bonding-capable** [**legacy-ranging**]] [**wideband** [**registered-traditional-docsis**]]

Syntax Description

slot	Slot where the line card resides. The valid range is from 5 to 8. Cisco cBR-8 router—The valid range is 0.
subslot	Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid value is from 0 to 3 and 6 to 9.
port	Downstream port number. The valid range is from 0 to 4 (depending on the cable interface). This interface is not supported on the Cisco cBR-8 router.
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 uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
non-bonding-capable	Displays the cable modems and primary downstreams of the cable modems that are not capable of bonding.
legacy-initial-ranging	Displays modems that access with legacy INIT-RNG-REQ.
wideband	Displays wideband online modems.

registered-traditional-docsis	Displays wideband cable modems registered in traditional pre-DOCSIS3.0 mode.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** keyword was removed. The *logical-channel-index* is removed.

Usage Guidelines

Use this command to display the primary downstream channel information of modems for different modem categories in terms of bonding capability, such as, non-bonding-capable modems accessed with legacy initial ranging or wideband cable modems registered via traditional DOCSIS.

Examples

The following **show cable modem primary-channel non-bonding-capable** command shows the individual cable modems displays and the primary downstream channel for each cable modem.

```
Router# show cable modem primary-channel non-bonding-capable

MAC Address IP Address Host MAC Prim Num Primary DS

Interface State Sid CPE Downstream RfId

000f.66f9.aa73 80.17.1.3 C6/0/0/U0 online(pt) 1 0 C6/0/0 255

0007.0e02.d7e9 80.17.1.7 C6/0/0/U0 online(pt) 5 0 Mo3/0/0:1 1

0013.10bb.22f9 80.17.1.2 C6/0/0/U0 online(pt) 2 0 Mo3/0/0:1 1

000f.66f9.b193 80.17.1.6 C6/0/0/U0 online(pt) 22 0 C6/0/0 255

0012.17ea.f3fb 80.17.1.4 C6/0/0/U0 online(pt) 23 0 C6/0/0 255

0013.10bb.23d1 80.17.1.5 C6/0/1/U1 online(pt) 5 0 C6/0/1 255
```

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem voice	Displays detected voice-enabled modems.
show cable service-voice downstream type	Shows the current enforced downstream type on the uBR10-MC5x20 line card.

show cable modem primary-channel summary total

To display the number of cable modems grouped by primary downstream channels information under a Channel Grouping Domain (CGD), use the **show cable modem primary-channel summary total** command in privileged EXEC mode.

show cable modem primary-channel [**cable** *slot* /*subslot* /**port**] **summary total**

Cisco cBR-8 Converged Broadband Router
show cable modem primary-channel [**cable** *slot* /*subslot* /*cable-interface-index*] **summary total**

Syntax Description

slot	The slot used for the cable interface line card. Valid values are 5 to 8.
subslot	The subslot used for the cable interface line card. Valid values are 0 to 1.
port	The downstream port used as a MAC domain host interface port. Valid values are 0 to 4.
cable-interface-index	MAC domain host interface. The valid range is from 0 to 15. This option is supported on the Cisco cBR-8 router.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.

Usage Guidelines

Use the **show cable modem primary-channel summary total** command to display the number of cable modems grouped by primary downstream channels. You can also use this command to display information for narrowband and wideband modems and group the information based on a SPA or a uBR10-MC 5x20 primary downstream. You can also display information on modems based on a specific cable MAC domain.

Examples

The following example shows attributes of the primary channels to which the various modems are hosted under the CGD domain c6/0/0.

```
Router#show cable modem primary-channel
MAC Address    IP Address      Host      MAC          Prim  Num  Primary    DS
                               Interface State        Sid   CPE  Downstream RfId
000f.66f9.aa73 80.17.1.2       C6/0/0/U0 online       13    0    C6/0/0     255
000f.66f9.b193 80.17.1.3       C6/0/0/U0 online       14    0    C6/0/0     255
0012.17ea.f3fb 80.17.1.5       C6/0/0/U0 online       15    0    C6/0/0     255
0019.474a.d4f8 80.17.1.13      C6/0/0/U0 online       16    0    C6/0/0     255
0000.cab7.7f1c 80.17.1.8       C6/0/0/U0 online       17    1    C6/0/0     255
0019.474a.d3d4 80.17.1.11      C6/0/0/U0 online       18    0    C6/0/0     255
0007.0e02.d7e9 80.17.1.10      C6/0/0/U0 online       19    0    C6/0/0     255
0019.474a.cd82 80.17.1.20      C6/0/0/U0 online       20    0    C6/0/0     255
```

```
0019.474a.d3fa 80.17.1.7       C6/0/0/U0 online       22    0    C6/0/0     255
0018.6852.82ea 80.17.1.6       C6/0/0/U0 online       24    0    C6/0/0     255
0013.10bb.23d1 80.17.1.12      C6/0/0/U0 online       23    1    Mo3/0/0:0  0
```

The following example shows modems grouped according to their capability, indicating whether they are wideband or narrowband modems. The command also displays the local of the primary downstreams of the modem, indicating whether the primary downstream is a SPA downstream (Remote) or a uBR10-MC 5x20 downstream (Local). The Wideband column indicates if the status of the modem is online or wideband-online.

```
Router#show cable modem primary-channel summary total
                                Cable Modem
            Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO 0-Blaze
Local Primary Narrowband:
C6/0/0      5     5     5     0     0       0        0      0     0      0     0
C6/0/1      0     0     0     0     0       0        0      0     0      0     0
Subtotal:   5     5     5     0     0       0        0      0     0      0     0
Local Primary Wideband:
C6/0/0      5     5     5     0     0       0        0      0     0      0     0
C6/0/1      0     0     0     0     0       0        0      0     0      0     0
Subtotal:   5     5     5     0     0       0        0      0     0      0     0
Remote Primary Narrowband:
Mo3/0/0:0   1     1     1     0     0       0        0      0     0      0     0
Subtotal:   1     1     1     0     0       0        0      0     0      0     0
Remote Primary Wideband:
Subtotal:   0     0     0     0     0       0        0      0     0      0     0
Total:      11    11    11    0     0       0        0      0     0      0     0
```

The example below shows the modems grouped by primary downstream channels for the cable MAC domain c6/0/0.

```
Router#show cable modem primary-channel summary c6/0/0 total
                                Cable Modem
            Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO 0-Blaze
Local Primary Narrowband:
C6/0/0      5     5     5     0     0       0        0      0     0      0     0
Local Primary Wideband:
C6/0/0      5     5     5     0     0       0        0      0     0      0     0
Remote Primary Narrowband:
Mo3/0/0:0   1     1     1     0     0       0        0      0     0      0     0
Subtotal:   1     1     1     0     0       0        0      0     0      0     0
Remote Primary Wideband:
Subtotal:   0     0     0     0     0       0        0      0     0      0     0
Total:      11    11    11    0     0       0        0      0     0      0     0
```

This example shows the output of the **show cable modem primary-channel summary total** command on the Cisco cBR-8 router:

```
Router#show cable modem primary-channel summary C6/0/1 total
Load for five secs: 2%/0%; one minute: 2%; five minutes: 1%
Time source is NTP, 11:47:37.535 PST Thu May 7 2015
                                Cable Modem
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO

Local Primary Narrowband:
In6/0/1:0     1     1     1     0     0       0        0      0     0      0
In6/0/1:1     1     0     0     1     1       0        0      0     0      0
Subtotal:     2     1     1     1     1       0        0      0     0      0
```

```
Local Primary Wideband:
In6/0/1:0     22    22    22    0     0       22       0       0       0       0
In6/0/1:1     37    37    37    0     0       37       0       0       0       0
Subtotal:     59    59    59    0     0       59       0       0       0       0

Total:        61    60    60    1     1       59       0       0       0       0
```

Related Commands

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

show cable modem privacy

To display the privacy information for the registered and unregistered CMs, use the **show cable modem privacy** command in privileged EXEC mode.

Cisco uBR7200 Series Routers
show cable modem {*ip-addressmac-address*} **privacy** [**verbose**]

Cisco uBR10012 Router
show cable modem {*ip-addressmac-address*} **privacy** [**verbose**]

Cisco cBR-8 Converged Broadband Router
show cable modem {*ip-addressmac-address*} **privacy** [**verbose**]

Syntax Description

ip-address	IPv4 or IPv6 address of a specific cable modem to be displayed. If you specify the IP address for a CPE device behind a cable modem, information for that cable modem is displayed.
mac-address	MAC address of a specific cable modem to be displayed. If you specify the MAC address for a CPE device behind a cable modem, information for that cable modem is displayed.
privacy	Displays the privacy information for the CMs.
verbose	Displays detailed information for the CMs.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.

Usage Guidelines

This command displays privacy information of a particular cable modem, identified by its IP address or MAC address.

Examples

The following sample output from the **show cable modem privacy** command shows the privacy information for a particular cable modem using a specified MAC address.

```
Router# show cable modem 0018.6835.2987 privacy
MAC Address             : 0018.6835.2987
Primary SID             : 10
BPI Mode                : BPI+
BPI State               : assign(tek)
Security Capabilities   :
 Encryption             : DES-56
 EAE                    : Unsupported
Latest Key Sequence     : 2
 Key Status             : Active
```

```
 Remaining Lifetime     : 294 sec
 Key Gracetime          : 60 sec
Current Key Sequence    : 2
CA Certificate Details   :
 Certificate Serial       : 57BF2DF60E9FFBECF8E69709DE34BC26
 Certificate Self-Signed  : False
 Certificate State        : Chained
CM Certificate Details   :
 cable modem Certificate Serial    : 010244AF1A135202
 cable modem Certificate State     : Chained
KEK Reject Code         : None
KEK Reject Reason       : No Information
KEK Invalid Code        : None
KEK Invalid Reason      : No Information

Primary SID Information   :
SID                     : 10
Encryption Algorithm    : 56-bit DES
Latest Sequence Number  : 5
 Key Status             : Active
 Remaining Lifetime     : 144 sec
 Key Gracetime          : 60 sec
Current Sequence Number : 4
 Key Status             : Active
 Remaining Lifetime     : 54 sec
 Key Gracetime          : 60 sec
TEK Reject Code         : None
TEK Reject Reason       : No Information
TEK Invalid Code        : None
TEK Invalid Reason      : No Information
```

Example of **show cable modem privacy verbose** Command Output for a Specified MAC Address

The following example shows sample output for the **verbose** option for a particular CM:

```
Router# show cable modem 0018.6835.2987 privacy verbose


MAC Address             : 0018.6835.2987
Primary SID             : 10
BPI Mode                : BPI+
BPI State               : assign(tek)
Security Capabilities   :
 Encryption             : DES-56
 EAE                    : Unsupported
Latest Key Sequence     : 2
 Key Status             : Active
 Remaining Lifetime     : 256 sec
 Key Gracetime          : 60 sec
 Authorization Key      : 2004065504831967119C16051FD722C5209E165F
 Key Encryption Key     : F14EFC15118B6B06
 Upstream HMAC Key      : 150E3F56451F6E033DEB79BCF819A9D8EAF6B95D
 Downstream HMAC Key    : 9AA3EC8869D64927560589692CCE4C21F3DA9029
Current Key Sequence    : 2
Authorization Counters  :
 Authorization Infos     : 4
 Authorization Requests  : 2
 Authorization Replies   : 2
 Authorization Rejects   : 0
 Authorization Invalids  : 0
Traffic Key Counters     :
 Traffic Key Requests    : 4
 Traffic Key Replies     : 4
```

```
 Traffic Key Rejects     : 0
 Traffic Key Invalids    : 0
Certificate Counters      :
 Untrusted Manufacturer   : 0
 Untrusted cable modem Certificate : 0
 Issuer Not Found         : 0
 Invalid Signature        : 0
 Expired Certificate      : 0
 Certificate Not Activated: 0
 Certificate in Hotlist   : 0
 Public Key Mismatch      : 0
 Invalid MAC              : 0
 Invalid cable modem Certificate   : 0
CA Certificate Details   :
 Certificate Serial       : 57BF2DF60E9FFBECF8E69709DE34BC26
 Certificate Self-Signed  : False
 Certificate State        : Chained
CM Certificate Details   :
 cable modem Certificate Serial    : 010244AF1A135202
 cable modem Certificate State     : Chained
KEK Reject Code          : None
KEK Reject Reason        : No Information
KEK Invalid Code         : None
KEK Invalid Reason       : No Information
Primary SID Information   :
SID                      : 10
Encryption Algorithm     : 56-bit DES
Latest Sequence Number   : 5
 Key Status              : Active
 Remaining Lifetime      : 106 sec
 Key Gracetime           : 60 sec
 Hardware Keys Match     : True
 DES Key                 : 156819BF016E139B
 DES IV                  : 07291CAE15AD0845
Current Sequence Number : 4
 Key Status              : Active
 Remaining Lifetime      : 16 sec
 Key Gracetime           : 60 sec
 Hardware Keys Match     : True
 DES Key                 : 23EF1C9801F40EE3
 DES IV                  : 163D19831AFB25DC
TEK Requests             : 4
TEK Replies              : 4
TEK Rejects              : 0
TEK Invalids             : 0
TEK Receive Errors       : 0
TEK Reject Code          : None
TEK Reject Reason        : No Information
TEK Invalid Code         : None
TEK Invalid Reason       : No Information
```

Table below describes the major fields shown in the **show cable modem privacy** command display:

Table 40: show cable modem privacy Field Descriptions

Field	Description
MAC Address	MAC address for the CM.
Prim SID	Primary SID assigned to the CM.
BPI Mode	Baseline Privacy Interface (BPI) mode used.

Field	Description
BPI State	Displays the BPI state.
Security Capabilities	Security capabilities of the modem like encryption algorithm and Early Authentication and Encryption (EAE).
Encryption	Encryption method used.
EAE	EAE support.
Latest Key Sequence	Latest key sequence number.
Key Status	Status of the key; whether active or not.
Remaining Lifetime	Remaining lifetime of the key in seconds.
Key Gracetime	Grace time available for the key in seconds.
Authorization Key	Authorization key code.
Key Encryption Key	Key used to encrypt the traffic key.
Upstream HMAC Key	Upstream Hashed Message Authentication Code (HMAC) key.
Downstream HMAC Key	Downstream Hashed Message Authentication Code (HMAC) key.
Current Key Sequence	Current key sequence number.
Authorization Counters	Authorization counter information.
Authorization Infos	Authorization information.
Authorization Requests	Number of authorized requests.
Authorization Replies	Number of authorized replies.
Authorization Rejects	Rejected authorization.
Authorization Invalids	Invalid authorization.
Traffic Key Counters	Traffic key counter informayion.
Traffic Key Requests	Number of traffic key requests.
Traffic Key Replies	Number of traffic key replies.
Traffic Key Rejects	Number of traffic key rejects.
Traffic Key Invalids	Number of invalid traffic keys.
Certificate Counters	Certificate counter information.
Untrusted Manufacturer	Count of untrusted manufacturers.
Untrusted cable modem Certificate	Count of untrusted cable modem certificates.

Field	Description
Issuer Not Found	Count of certificate issuers not found in the database.
Invalid Signature	Count of invalid signatures.
Expired Certificate	Number of expired certificates.
Certificate Not Activated	Count of certificates not activated.
Certificate in Hotlist	Number of certificates in hotlist.
Public Key Mismatch	Number of public key mismatch.
Invalid MAC	Number of invalid MACs.
Invalid cable modem Certificate	Number of invalid cable modem certificates.
CA Certificate Details	CA certificate information.
Certificate Serial	CA certificate serial number.
Certificate Self-Signed	Self-signed CA certificate.
Certificate State	Current state of the CA certificate.
CM Certificate Details	CM certificate information.
CM Certificate Serial	CM certificate serial number.
CM Certificate State	Current state of the cable modem certificate.
KEK Reject Code	Key Encryption Key (KEK) reject code.
KEK Reject Reason	KEK reject reason.
KEK Invalid Code	KEK invalid code.
KEK Invalid Reason	Reason for the invalid KEK.
Primary SID Information	Primary SID assigned to this CM.
SID	SID used by the CM.
Encryption Algorithm	Encryption algorithm used.
Latest Sequence Number	Latest sequence number.
Current Sequence Number	Current sequence number.
Hardware Keys Match	Hardware key match.
DES Key	Data Encryption Standard (DES) key number.
DES IV	Initialization vector. This can be AES or DES.
TEK Requests	Displays the number of Traffic Exchange Key (TEK) requests.

Field	Description
TEK Replies	Number of TEK requests.
TEK Rejects	Number of TEK rejects.
TEK Invalids	Number of invalid TEKs.
TEK Receive Errors	Number of TEK receive errors.
TEK Reject Code	TEK reject code.
TEK Reject Reason	TEK reject reason.
TEK Invalid Code	TEK invalid code.
TEK Invalid Reason	TEK invalid reason.

Related Commands

Command	Description
cable privacy	Enables and configures BPI+ encryption on a cable interface.
cable privacy kek	Sets KEK and timeout periods.
cable privacy tek	Sets TEK and timeout periods.
show cable privacy	Displays information about BPI status and operation.

show cable modem prof-mgmt

To display detailed profile management data associated with a specific cable modem, use the **show cable modem prof-mgmt** command in privileged EXEC mode.

Cisco cBR-8 Converged Broadband Router
show cable modem [{ *ip-address mac-address* }] **prof-mgmt** [{ **upstream** | **graph** | **counts** | **downstream** }] [{ **ignored** | **verbose** }]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of the cable modem (CM). If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
upstream	Displays upstream ODFM profile management data.
downstream	Displays downstream OFDM profile management data.
graph	Displays the DOCSIS 3.1 upstream OFDMA RxMER data in graphical format. The x-axis represents the subcarrier frequency in megahertz (MHz) and the y-axis represents decibels (dB). The standard graph (without the CLI count option) shows all data points as `+`. As the number of subcarriers per frequency column is more, there can be range of data points. The `+` symbol is used to indicate that one or more subcarriers has RxMER dB at that level. The vertical bar (`|`) indicates range where no subcarrier has that specific dB level, but there are subcarriers with dB values high and low.
counts	Displays the graph with the actual number of subcarriers at that dB level. The `counts` option displays one of the following values: `1,2,3,4,5,6,7,8,9,0,*`, where `*` indicates any value more than 10.
ignored	Displays the `ping docsis pnm` data without the results affecting the DOCSIS upstream OFDMA profile management IUC selection.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Command History

Release	Modification
IOS-XE 3.18.0SP	This command is introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 3.18.1SP	This command is modified. The output of the command with the **verbose** keyword is modified to display detailed profile information.
Cisco IOS XE Everest 16.6.1	This command is modified. The **upstream** keyword is added.
Cisco IOS XE Gibraltar 16.10.1c	This command is modified. The **ignored**, **count**, **graph**, and **verbose** keywords are added.
Cisco IOS XE Amsterdam 17.3.1w	This command is modified. New modulation is added to the recommended, current, and downgrade IUC.
Cisco IOS XE Cupertino 17.9.1y	The output for **show cable modem prof-mgmt upstream [graph | verb | raw]** command is updated so that the output begins at the starting subcarrier. In releases before Cisco IOS XE Cupertino 17.9.1y, the output begins at subcarrier 0.

The following example shows output for the **show cable modem 4800.33ef.0d2a prof-mgmt upstream graph** command for Cisco cBR Series Converged Broadband Routers starting from Cisco IOS XE Cupertino 17.9.1y.

```
router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream graph
Upstream Profile Management Data (Verbose):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 2

Ucid                    : 7
MD US Chan              : Cable9/0/0/U6
Ctlr US Chan            : UC9/0/0:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 1507
Num RxMER Measurement   : 1360
Tx Time                 : 0h:00m:42s ago   (Mar 23 13:52:38.373)
Rx Time                 : 0h:00m:42s ago   (Mar 23 13:52:38.387)
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
Downgrade IUC           : 6  (512-QAM)

0x0094  AAB0B7BD  A8A8B5AC  B2B7B5A8  BBAEBBB3  B9AAB7B4  B6AEB4BE  B7AAB8A7  B3A8A9AA
0x00B4  B5B0AEA8  AAB1BCAA  B4C4AFAC  BFAFACAA  AEB7B5B5  B2AAAAA9  A7B4B2B8  A1BFB1B0
0x00D4  B4AEB4B1  B8A9B0B8  B1B6B3AF  B0ADABB3  AEABAAB1  B3B1ABAE  B6B1ABBF  AEA6B2B1
0x00F4  AFADB0AF  B6AFACB6  BAA9A3B3  A8A3BAB4  ADAEA8B4  A5ACA8A6  BCB4ADB1  B1ABB8B8
0x0114  B9ACB3A9  B2ACABAE  ADA8B0A5  B1AEB3BD  B6B0B6A8  B3AEA5AA  B4ACC2B5  B5A9ACAE
0x0134  A9B0A9B0  D2BFB2AE  A9B9B8AA  AAB3BBAB  B2AFB3B4  B9B2B3A9  B3C3C1B6  BDA8ACB4
0x0154  B7B7B5AB  B5B2B2B6  AEACB3B2  B7B2B9B1  ACBEA6A9  B5B0A3B3  A3B1A8AD  B9B3B1AC
```

```
0x0174  A5ACA4AD  A7AEC6B9  A1B0ACBC  B4ABB4AD  A8B9B4AF  B8BCB2AB  AFBCABAC  ABB6B1B4
0x0194  A8AFADA7  B1AFABAB  A5AFB7B2  B0B0A9B7  A6A2ACAF  B4B8A9AB  ABC7A1B2  B5B9ABBB
0x01B4  B6AFACB5  B1AEADB3  B4AFABAB  B3ABB6A9  B9BDAEA8  B2ADA7A5  A7AAAEA7  B3B0ADAE
0x01D4  B2ABB4A4  A9ABA8A7  B0ABB4AE  A4B9AFB6  ADAEA8B2  ADA2B4B1  B0AFADB0  ADABACAB
0x01F4  AD9FACAF  BBB3A8B6  AEA0B3A6  BCB2A5A3  B6B3ABAF  B5A5A8A9  B0B4ADB2  xxxxxxxx
0x0214  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0234  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0254  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0274  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0294  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x02B4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x02D4  xxxxxxxx  xxACAEA8  B6AE9EAB  A7A5AEB4  AFA4B2A6  AFA8AAB5  AAABA8A2  AEAEA9B5
0x02F4  ABB1AAB1  A9ACACA4  ABB6ABA7  A6ADB0A6  B4B4A5A6  B0A9B1AE  A7AFABA8  B3A8AEAC
0x0314  ADAFB2AF  AFB3A6AF  A6ADA5AB  ACB0B8A8  AEA6A6A7  A9AAB1B4  A7A8ADA7  ABACA7A1
0x0334  A7B0ADBB  A0A5ACAC  A8B5B2B0  BCA8B3A4  A3ADAEAC  ADA4B1BD  BCA8BAA9  ADA8AEB7
0x0354  A4AEA8AC  A6AEB2AC  A5B1B4AD  C1A4B9A7  A7A5A6B0  C1ADAAA5  B1A9AEA5  A9A9A3AF
0x0374  BEAFAAAD  AB9FA7AD  AEB1AFA2  ABB8AAAB  A7B5BBAE  A3A9B4A5  AABAADAA  B7A5C1AF
0x0394  A4B4A7A6  A6A6A5A5  AEA4ABAA  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x03B4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x03D4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxA5B8B4
0x03F4  ABA8ACAC  A2ADC3B0  ACB2B1B0  A5A4B0B1  B2B0BCB1  B0AEB1AA  B0ACAEA7  ABB7A9BF
0x0414  ADABB3BB  B1A9B2B1  A5A8AAAA  BBAEAEAD  A4A8AFAA  B0AAACA7  B3A8A9AE  A4C0B6B0
0x0434  B8B2B0B5  A9AAABA6  A2AAB0BC  AAAAAEAD  ABAFACB4  A5B1A5B0  ADA9A9AA  BCA9ACA7
0x0454  A5A8A6AF  A8B5B4A9  C2ADA5AF  A8A8ABAD  AEB5BAA9  A9AFA5B8  9BAAB2A3  ACAEB0B0
0x0474  B1ADB4A4  A5BBACA8  B4AEB0AE  A8B7A8A5  9DA9A3B2  B0AAB2AB  BBB6A6B0  AFB2A3A9
0x0494  B1B1BCBE  A9A8B0AE  AAA5AEAD  B5B1AAA9  BABDAEB8  ACAFABAE  9FA9ABB1  B2A0ABB7
0x04B4  B2AEACB2  ABA4A9A7  A9AAA3B5  A6B8A9BB  C7AEAFA9  A4B1A8A3  B6B3C4C1  A8BBA8AB
0x04D4  A8ACADC7  A2B5AAAF  A8B2ADAB  B0A6A5A9  B0B0AEB7  ABA6A7A4  B8B0AFAB  AAA7A9B8
0x04F4  B0A5B7B7  A6B3B6AB  ABC0A8B0  ACAAA8A7  B5BEABB7  B1B3BCA9  ABB6AFB8  B5B8B6A8
0x0514  A7B8B4AF  B5B1ADAA  AFB3B2A8  A8A7B2AC  A8B1B1AA  B7A5BBAD  AFABAFAC  B7B1B5A8
0x0534  BFA9B7AA  B2A5B1B1  B6A8B0A8  AAA9ABB2  A0B8AEAE  ACA8ABB4  A6A4A7B2  ADACA5AE
0x0554  BCB7B4AB  B2AEB5AC  AAADADBA  B2B7B4B6  B3B3AFAE  ACBAB0AC  B1AFAEBD  AEB0A4B0
0x0574  AFB1B1A9  BCACABB7  AEAFAABB  B5AAACA6  B9ADBAA9  B3B2ACBB  B7B2ADA9  AFBAB5AC
0x0594  B3B2A3B1  AFB6B1A3  ABA3B1B8  AFACAAAE  A7A6B1B0  B5B6B2B1  A9AE9EB7  A6ADABAE
0x05B4  ACBFA9B1  AFB3AFC0  BBB1A7B0  B5B2B5B6  B5AEACAB  B7AAA4B4  A8B8ABBB  ADBDA8AB
0x05D4  A9B7AEAD  B9AFACAE  ACACA3AA  B4B2A7B0

mslot RxMER(in 1/4 dB):

# msMer    0  : B1B1B1B0 B1AFAFAF AFB0B2B4 B2AEAEB1 ADAFAFAD ADADADAB ACABADAB ABACADAE
# msMer    32 : ABACADAE AEAFABAF ACACACAE ACAEAEAB B1AEACAF B1AFAEAF ABB0B1AF AFAFADB1
# msMer    64 : B0AE

                                                RxMER vs Subcarrier
      |
52.25 |           +

49.50 |           |    +   +                                                                ++

46.75 |+++++ + + +++++ ++  ++   ++                    ++ ++++       +++ ++++ ++++ ++  ++
++ + +++  +++
44.00 |+++++++++++++++++++++++++++            ++++++++++++++
++++++++++++++++++++++++++++++++++
41.25 |++++++++++++++++++++++++++            ++++++++++++++++
++++++++++++++++++++++++++++++++++++
38.50 |    +  +       ++  ++  ++++              +++   +++++++++      +  ++   ++++++++++
  ++  + +++ ++
35.75 |

33.00 |

30.25 |

  dB  |
```

```
24.75 |

22.00 |

19.25 |

16.50 |

13.75 |

11.00 |

08.25 |

05.50 |

02.75 |

00.00 |                          xxxxxxxxxxxxxxx             xxxxxxx

+-------------------------------------------------------------------------------------------------

      3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 5 6 6 6 6 6 6 6 6
      0 1 1 2 3 4 4 5 6 6 7 8 8 9 0 1 1 2 3 3 4 5 5 6 7 8 8 9 0 0 1 2 2 3 4 5 5 6 7 7 8 9
 9 0 1 2 2 3 4 4
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 . . . . . . . .
      5 2 9 6 3 0 7 4 1 8 5 2 9 6 3 0 7 4 1 8 5 2 9 6 3 0 7 4 1 8 5 2 9 6 3 0 7 4 1 8 5 2
 9 6 3 0 7 4 1 8
                                                Subcarrier Frequency
```

```
router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream ver
Upstream Profile Management Data (Verbose):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 2

Ucid                    : 7
MD US Chan              : Cable9/0/0/U6
Ctlr US Chan            : UC9/0/0:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 1507


0x0094  AAB0B7BD  A8A8B5AC  B2B7B5A8  BBAEBBB3  B9AAB7B4  B6AEB4BE  B7AAB8A7  B3A8A9AA
0x00B4  B5B0AEA8  AAB1BCAA  B4C4AFAC  BFAFACAA  AEB7B5B5  B2AAAAA9  A7B4B2B8  A1BFB1B0
0x00D4  B4AEB4B1  B8A9B0B8  B1B6B3AF  B0ADABB3  AEABAAB1  B3B1ABAE  B6B1ABBF  AEA6B2B1
0x00F4  AFADB0AF  B6AFACB6  BAA9A3B3  A8A3BAB4  ADAEA8B4  A5ACA8A6  BCB4ADB1  B1ABB8B8
0x0114  B9ACB3A9  B2ACABAE  ADA8B0A5  B1AEB3BD  B6B0B6A8  B3AEA5AA  B4ACC2B5  B5A9ACAE
0x0134  A9B0A9B0  D2BFB2AE  A9B9B8AA  AAB3BBAB  B2AFB3B4  B9B2B3A9  B3C3C1B6  BDA8ACB4
0x0154  B7B7B5AB  B5B2B2B6  AEACB3B2  B7B2B9B1  ACBEA6A9  B5B0A3B3  A3B1A8AD  B9B3B1AC
0x0174  A5ACA4AD  A7AEC6B9  A1B0ACBC  B4ABB4AD  A8B9B4AF  B8BCB2AB  AFBCABAC  ABB6B1B4
0x0194  A8AFADA7  B1AFABAB  A5AFB7B2  B0B0A9B7  A6A2ACAF  B4B8A9AB  ABC7A1B2  B5B9ABBB
0x01B4  B6AFACB5  B1AEADB3  B4AFABAB  B3ABB6A9  B9BDAEA8  B2ADA7A5  A7AAAEA7  B3B0ADAE
0x01D4  B2ABB4A4  A9ABA8A7  B0ABB4AE  A4B9AFB6  ADAEA8B2  ADA2B4B1  B0AFADB0  ADABACAB
0x01F4  AD9FACAF  BBB3A8B6  AEA0B3A6  BCB2A5A3  B6B3ABAF  B5A5A8A9  B0B4ADB2  xxxxxxxx
0x0214  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0234  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
```

```
0x0254  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0274  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x0294  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x02B4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x02D4  xxxxxxxx  xxACAEA8  B6AE9EAB  A7A5AEB4  AFA4B2A6  AFA8AAB5  AAABA8A2  AEAEA9B5
0x02F4  ABB1AAB1  A9ACACA4  ABB6ABA7  A6ADB0A6  B4B4A5A6  B0A9B1AE  A7AFABA8  B3A8AEAC
0x0314  ADAFB2AF  AFB3A6AF  A6ADA5AB  ACB0B8A8  AEA6A6A7  A9AAB1B4  A7A8ADA7  ABACA7A1
0x0334  A7B0ADBB  A0A5ACAC  A8B5B2B0  BCA8B3A4  A3ADAEAC  ADA4B1BD  BCA8BAA9  ADA8AEB7
0x0354  A4AEA8AC  A6AEB2AC  A5B1B4AD  C1A4B9A7  A7A5A6B0  C1ADAAA5  B1A9AEA5  A9A9A3AF
0x0374  BEAFAAAD  AB9FA7AD  AEB1AFA2  ABB8AAAB  A7B5BBAE  A3A9B4A5  AABAADAA  B7A5C1AF
0x0394  A4B4A7A6  A6A6A5A5  AEA4ABAA  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x03B4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx
0x03D4  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxxxxxxx  xxA5B8B4
0x03F4  ABA8ACAC  A2ADC3B0  ACB2B1B0  A5A4B0B1  B2B0BCB1  B0AEB1AA  B0ACAEA7  ABB7A9BF
0x0414  ADABB3BB  B1A9B2B1  A5A8AAAA  BBAEAEAD  A4A8AFAA  B0AAACA7  B3A8A9AE  A4C0B6B0
0x0434  B8B2B0B5  A9AAABA6  A2AAB0BC  AAAAAEAD  ABAFACB4  A5B1A5B0  ADA9A9AA  BCA9ACA7
0x0454  A5A8A6AF  A8B5B4A9  C2ADA5AF  A8A8ABAD  AEB5BAA9  A9AFA5B8  9BAAB2A3  ACAEB0B0
0x0474  B1ADB4A4  A5BBACA8  B4AEB0AE  A8B7A8A5  9DA9A3B2  B0AAB2AB  BBB6A6B0  AFB2A3A9

0x0594  B3B2A3B1  AFB6B1A3  ABA3B1B8  AFACAAAE  A7A6B1B0  B5B6B2B1  A9AE9EB7  A6ADABAE
0x05B4  ACBFA9B1  AFB3AFC0  BBB1A7B0  B5B2B5B6  B5AEACAB  B7AAA4B4  A8B8ABBB  ADBDA8AB
0x05D4  A9B7AEAD  B9AFACAE  ACACA3AA  B4B2A7B0
```

```
router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream raw
Upstream Profile Management Data (Verbose):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 2

Ucid                    : 7
MD US Chan              : Cable9/0/0/U6
Ctlr US Chan            : UC9/0/0:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 1507
Num RxMER Measurement   : 1360
Tx Time                 : 0h:02m:19s ago   (Mar 23 13:57:42.393)
Rx Time                 : 0h:02m:19s ago   (Mar 23 13:57:42.400)
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
Downgrade IUC           : 6  (512-QAM)
RxMER Recommended IUC   : 5  (1024-QAM)
Min Data IUC            : 13
RxMER send/recv count   : 2/2
RxMER retries curr/total: 0/0
DBC                     : 1/1/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Enabled
Profile Downgrade count : 0
Profile Downgrade Partial count : 0
Int  tot/good/cor/uncor : 109/109/0/0  (3/1)
Aggr tot/good/cor/uncor : 203/203/0/0
Downgrade Check Time    : 0h:00m:15s ago

0x0094  A8B2B9C3  C3AEB6B0  AFACAEB0  BBB7B5AB  ABBBB6B9  B0B3BABB  AEAAABAD  B8B1B4B2
0x00B4  AEAFABB5  BFB9A8B6  B9ADC5B6  B1B8B5B2  B4B2B8AB  AFAEA7A9  B2A8BAB3  AFACB0B4
```

```
0x00D4  A9BBB2AF  B5ABB0B2  A8B1B6B1  AAB3B0AC  A6AEB2AF  B6B0B2A8  B5B6A9AF  AFAEB3B8
0x00F4  AFB4B9AC  B7AEB1AF  B9B4B2B9  BBAFB9B4  B7BCB0B5  BBB4ACB7  B0C0B7BB  BBBABBBB
0x0114  AEB6BBB3  AEC5B5B4  AFB4C3AB  AEACAFB6  B1B5A8A8  C4AFBBB2  A4A8ADB2  AFB1B0B1
0x0134  AEB5ABB1  B1AFB2B6  A8B1B1B4  BDA6B3A8  A8ADB2B3  AFBEB5C4  AEB6B0BC  AAAEAFAA
0x0154  AFAEB4BA  B7ADB4B4  B6B0B6BD  A7B0B3B8  B0B7B4A9  B6B8B9BE  BCB6BBAD  A8B6A5BA
0x0174  B9B3ABB9  ABACB4B3  B8ACADAF  C4B6BCB4  BAAFAAB1  AFB0ADA2  ABB4B0B4  B4AEC5B5
0x0194  BAB3B5B7  BFB8A3AB  B0C0B2A6  B0AEB9AC  BBB0B1B5  C1BAA9AF  BFB5B1AE  B4B5B3B5
0x01B4  B9ABB9B2  B1B4B9AC  B2ADAAAF  B6B2AEAC  ABB4AEAF  B2B7A6B3  C1B1B1B0  B1A8B3B2
0x01D4  B3BFA8BB  AEABB1BB  B2AFB1B1  B3B3ACBA  B7B6BDA8  B0ADB0B2  AFB3ADB4  B5B4AEAD
0x01F4  B0B8C0A9  B0AFB4AA  B2B0ABB4  B5B0BAAD  B2B6B1AC  B3AFADB8  BAB7B4B7  00000000
0x0214  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0234  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0254  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0274  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0294  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x02B4  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x02D4  00000000  00B5B7B4  B0AFB1BC  B4BAB4B8  B1ADB4AF  B4A9B2AD  B1AEC0A8  AEBAB1A5
0x02F4  AEC1B6AC  BCB6B9BB  A6B3AFB9  BAAEB6B3  B5A3AEB2  B4AEBBAD  C0A9B2B0  AEBBB9BD
0x0314  B7B4B2B4  B1ADA5A9  B7B2B2B8  B1C1AFB1  A7BCBCB9  B4B6B6B2  B0BBAEB2  B1B3BCBB
0x0334  ABB1B1BC  ABC2B6BA  BDB0B5A5  C6B4C0B2  AABFB2A4  ABA7ADB4  AAB3B2AD  B9BEA9B8
0x0354  C4B3AFAC  AEAFB1B5  AAB0B5BA  AAB0B1B4  BFB5ABAF  B0B4AAA9  BBACAFB1  B5A9B9B7
0x0374  B5B8C1B7  B5B1A9B0  ADBCBAAE  B4AFA8A9  ACB1B8AB  C1ABB7AD  ABB1B3BF  B0BDB7BD
0x0394  BAADC3B4  B3BEB0B2  B0BFB6AD  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF
0x03B4  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF
0x03D4  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFFFFFFF  FFA8B8AE
0x03F4  B1AFBFBA  ABC0BBAD  AEB7B2BA  B0B3AEBC  AEB1C6A9  B7B1B4AE  AAAFB9AD  A4B0AEB6
0x0414  BAB8B8B5  B3BDA9B5  B2BAAFC2  AFAEB2A9  B9B1B0B1  B5B4B3AB  B6A8C8BF  BEB4BBB7
0x0434  B0B0A8B4  B7C0AAB9  B3A9B4BE  B9B7BAB1  A4B1B7C5  C0B5AFB8  B7ABB1B6  C4B8BCAE
0x0454  C2ADB6B0  B5B5ADBA  B4B1A9BD  B2AFA6AF  B6AFAFAE  B6ADB5AB  AEB8BCB9  B4AEAFB1

0x0534  BBB4B2B4  AFB2B4B5  ADA9B3B0  AEA7B1AE  B2B4B5C6  B1B7C2AA  B1B6B0AD  BAB2B7B3
0x0554  AEB8A9BA  B8B1B1B1  ABB7C1B3  B2B5BAB2  B8B0ADC0  A8AFABB5  B0B6B4B2  A3B2B4B1
0x0574  AEB4BBAF  AFB5ABBB  A9ABAFB7  ACB8B4B3  B2B5ADBE  BAB0B2B7  B2B0B2B7  A5B6B2BD
0x0594  A7C0B5B2  C6B2AEA8  B0B4ACB8  AEAEADB8  AFB3AEC3  AEB6B1B4  B0ADBEB1  B5B7B7AB
0x05B4  B2B5B0AF  B2B6C1A9  C0ADBEAB  B6B0A9BC  B6BAA9B6  B6ACB4AE  B1A9B6BB  BBACADB1
0x05D4  B2BAB0AC  ABB3BABF  B8ADBDC0  B0B7C0AE
```

The following example shows sample output for the **show cable modem prof-mgmt upstream** command for Cisco cBR Series Converged Broadband Routers:

```
router# show cable modem XXXX.XXXX.XXXX prof-mgmt upstream
Upstream Profile Management Data :
MAC Address             : XXXX.XXXX.XXXX
Number of US Chan       : 1

Ucid                     : 7
MD US Chan               : Cable9/0/0/U6
Ctlr US Chan             : UC9/0/0:U12
RxMer Exempt Percent     : 0
RxMer Margin qDB         : 0
RxMer Threshold Percent  : 2
Start Sc                 : 148
End Sc                   : 1507
Num RxMER Measurement    : 1360
Tx Time                  : 0h:02m:33s ago   (Apr 13 17:10:04.883)
Rx Time                  : 0h:02m:33s ago   (Apr 13 17:10:04.890)
MER Poll Period   (min)  : 5
Auto Profile Upgrade     : Yes
Upgrd Dly Cnt (cur/cfg)  : 0/1
Upgrd Dly rcmd IUC       : none
Recommended IUC          : 5  (1024-QAM)
Current IUC              : 5  (1024-QAM)
Downgrade IUC            : 6  (512-QAM)
```

```
RxMER Recommended IUC   : 5  (1024-QAM)
Min Data IUC            : 13
RxMER send/recv count   : 55/55
RxMER retries curr/total: 0/0
DBC                     : 1/1/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Enabled
Profile Downgrade count : 0
Profile Downgrade Partial count : 0
Int  tot/good/cor/uncor : 104/104/0/0  (3/1)
Downgrade Check Time    : 0h:00m:05s ago


SC RxMER Distribution (Excluded SCs are ignored):
*: 2%
>44dB: ******************************** 64.93%
>42dB: ***************** 34.69%
>39dB:   0.37%
>36dB:
 >33dB:
 >30dB:
 >27dB:
 >24dB:
 >21dB:
 >18dB:
 >15dB:
 <15dB:
        ---------------------------------------------------100
                    Percent of Subcarriers

Active SC RxMER Statistics                      : (dB)      (1/4 dB hex)
Active Subcarrier RxMER Mean                    : 44.50     0xB2
Active Subcarrier RxMER Standard Deviation      :  1.50     0x06
Active Subcarrier RxMER Threshold Value         : 41.50     0xA6
Active Subcarrier RxMER Threshold Frequency (Hz): 63250000
```

Examples

The following example shows sample output for the **show cable modem prof-mgmt upstream verbose** command for Cisco cBR Series Converged Broadband Routers. This command shows the results of both periodic RxMER probes and RxMER probes that are triggered via **ping docsis pnm** or **ping docsis pnm upstream** command.

```
router# show cable modem XXXX.XXXX.XXXX prof-mgmt upstream verbose
Upstream Profile Management Data (Verbose):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 1

Ucid                    : 6
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 3307
Num RxMER Measurement   : 3308
Tx Time                 : 0h:03m:16s ago
Rx Time                 : 0h:03m:16s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
New rcmd IUC            : none
Recommended IUC         : 5
Downgrade IUC           : 12
```

```
RxMER send/recv count   : 214/214
DBC                     : 3/3/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
0x0000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0020  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0040  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0060  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0080  00000000 00000000 00000000 00000000 00000000 BDB4AEB1 B4B0B1AD ACABB0BC
0x00A0  A4B2ACAB B7B0B4B8 B2B198B9 BBB7B0B1 B291AB99 B3B2ACB3 B8BAB5B0 B2ACBBB1
0x00C0  BBA7A0B1 B0AEBAB9 B7B1B4BA BCB1B1B6 B2B099A9 B1B1B5B1 AFACB5A6 B9B7B1B5
0x00E0  B6B0AE93 A9B3B7AC B0B7B4B1 BDBFB8AC BDB1B299 A6B5A8AE B1B3B7B4 B1AEAFB9
0x0100  CCBEB2AE A8B6B1B5 B3B1B297 B5B6B1B5 B7BBB7AC ABA3ADBD B1C1B2B1 AEB2AFB1
0x0120  B6B7AC9E A7A7AFB7 B7B3A5B5 B7B1B7A5 A0AFB8AC B4B4B0BB B7B9B09A 9EACA6B3
0x0140  B4B4AFB3 B1B2A7B4 B9BAADB7 ABB6AFBF B1B7B8A9 B2B8AEA2 AFABB2B5 B9BABBB6
0x0160  B4B3B4B2 B5AFAAA7 A1ABACAC 91BEBEB2 BAB1B1AC B1BDB5AB 8EB5B6B7 B2B4BDB3
0x0180  B2B7B0B0 A2ADB9B5 B19CB1B2 B4B0ACAE BDACB2B0 C0B8AFBA A48FA8B8 A9ADB4AE
0x01A0  B6ABACB2 B1B3B9B5 B8B388B4 A9BAA9BE AEBAAEAF B3ADB1B5 B3B29A9C A7ABB5B3
0x01C0  B0AFBDB1 AFAFB1C0 B4ABA787 AEA3B1B4 B2B3B3B7 B2BBBAB9 B4B6ABA9 88A6B0A9
0x01E0  A6B1A9B7 B8ACBAB1 B8ACB0AC 9AAFAFB5 B3B5B2B4 B5B3B1B0 B3BEB6B2 B77DB5B3
0x0200  BDAEB1AF B5C5B5B5 B6B6B9B2 AA949AAA ACAFBAAD B2B0B6B6 B0AFBBB1 ADB494B6
0x0220  B1BAB5B9 B6ACB6AA BAADB9B1 A9A49889 ACAFB2AB B3B3A9BB B2BCB5B5 B3ADB194
0x0240  A8AEB4B7 B2B4A6B1 B8AFAAB1 ABB3B4B7 9CB1ACB5 B6B7BFB0 AEB6B8AD B1B08AAE
0x0260  9392ABAD B5B5BCB2 B9A8A6B9 B0ADB4B6 B19BB4AE B5BAA1AF ABB5ADB0 AEB2B2AB
0x0280  B3ADA3B4 AAB5BBBA B4B5B0B8 BCA9A29C ACAE8DA7 B5B5BBB6 B2AFB7B2 B7B8B6AE
0x02A0  B9B6B6A4 B1B4B3B1 BAB3B7B5 B7B1B2B3 B1BFACAA B4B1B8B4 A9AFB1B6 C0B5B59F
0x02C0  B5B7B6B2 8FAAB4B6 B0C0B6B2 B0B4B4B2 B6AEB1B6 AEA5B8B4 B0B7B3B1 C0B4AEB2
0x02E0  ADBDB0B2 B8A1ACAA BAB7B1AD B8ABBAC0 B2BBB7B0 B2B391AA BBAEB2AF B9BAB6AF
0x0300  BCBEB6AD B8B6A5A3 B8B5B6B1 BFB4BAC1 BCB2BDB4 BCB8B8A2 B8AEB4B6 A7A7B6B1
0x0320  9AB1B5AC B8AEB0A2 8AA9A7B2 B5B4B8C5 B4B1C1B3 ADB7BEAD 93A7B5AD B1B3B9B2
0x0340  A7B5B0BC BBAEBCB3 AA96AFB1 B3ABB0AE 8DA7B9B0 B5B7ABA5 A38C90B1 ABB1B0B5
0x0360  A5AEB6B8 ACABB7BD ABB496B4 AEB5BBB4 B0B3B2AA B8B2ADB6 B3A9A6A0 B1B4B3A8
0x0380  988CAAB1 B3ACB8B2 AAB9B683 A5AEB5BD BAB3B2AE BAA9B4B7 B0A1B6AB 95B3B2BD
0x03A0  B5B1B1B4 B7B4B4B3 BBB0ADB2 9B98B6AA B395ADAB B3B1B1B4 B7ACB6B1 B281B7B6
0x03C0  B9AEB4AD BCA9B2BA BDAEA9B5 B7ADA4B7 B3B2B3BA B3BAB6B0 B8B1B4AE B5B493B1
0x03E0  B8BBADB8 B0B4ADB4 ADB8B0B6 B2B5AA89 B1ACADB6 B2B8B5AF B4B8B4BD B0B4B3A6
0x0400  A5AEADB1 B2ACADB4 B2ACB5BC AEBAB3BA 9AB7ABBF BDB1ACBA B5B1B0AD B1B6BFAF
0x0420  A692AAB7 BCACBBC0 B2AEBCAF B1AAADC7 AD96ACB2 BBB8B7AE ACADBCC1 B2B8B4AF
0x0440  B6B8A2AE ABB3B2AE ABAFB0AB B2B5B3B7 B7AFA1A4 B1B4ABB1 B7B3A9AF BAB5B3BD
0x0460  B4B1AD8A B1BCB3BC B8B6ADAF B3C2B9B4 AFADB6A3 A3B8ACB2 AEB6AEB2 B9BAACAA
0x0480  ADB9B9AE 97A7B8B3 B3AFB8A8 B8B1B6B9 B8C6AEB6 AE8AA9B2 B2BAB8AA B2AABFBB
0x04A0  ADB8B3C0 B29AA9B4 B9ACBAB3 B5AEAFB3 B3B7ADB6 B1B999B5 B0A8AFB8 B4B1AFB6
0x04C0  B0AEACB3 AEAA978A AAB5A8BB B2B7AFAF BCB2BAAE B4B3B489 A8AFBEB8 BABAAEB5
0x04E0  B0B6AFB1 B4B3B0B2 97AFACB4 B0B0B2B1 AEBBB4AE BDB4ACAC 8490A6AE B1B5C0B4
0x0500  B1B9BAAD ADB2B6B4 B789B1B0 B5C3B8AE B4A9B4B2 B3B9BCAF B5AC9AAA B9B4B4B4
0x0520  B9B1B1BA B6BAB4BA B8A8799B B1BAB5B6 B7AAACB3 AEB4BAB4 B0B5AC96 AEB4B4B6
0x0540  B2B9B0AB B3B2BFBA B0AEAF85 94A5B0B9 B3B1A8A7 ABB5B9B8 B3BEBFAE 76AEB4B7
0x0560  CDB7BBB3 B3ACAEBB B5BEADB6 A5A1B1B4 BEB6B8B1 BCBBAEB5 BAB2B7B1 AF7A9FB5
0x0580  B6AFB4B4 B0B5B7B3 B2BABDBA B29981A7 A5B1AFAD B8B8AFB1 ACB3ACB3 B2B6889C
0x05A0  ACB0BFB4 BCB8B3C2 B7B4B4B2 B4B2A976 B7B9AEB5 B2B8B6B1 BBB8B8B0 B9B0B496
0x05C0  91A8B3B8 AFB4B4B4 B7B5B7BA B5B4ABA6 8DB2B1B5 BDB5B1B8 B6B3B6B7 B2B7B2B6
0x05E0  A18DB0B1 B4B4AEBA B1BDBEB7 B8ACBAB6 B4A0ABB3 B5B3B9B4 B8BEB0BD B7B9B8B7
0x0600  B1A89FB3 B4ADB4AF B9B9B6B7 B9B6B2B9 B0ABA59F B8B3B9B8 BAB6BAB7 BABAABBB
0x0620  B2B6AB89 A5BFB3C0 BEAFB2B8 B5B2BBB5 B4C4B3A5 8AACA4B4 AEB7B4AC B4B3BCAB
0x0640  AFAEAAAB 7A8DABB7 B3B5B5BC BBB5B6B6 B6B2B1B4 B47EB1B6 BEB4BCAD B3B4B2B0
0x0660  ADA8B1AF A68A86A5 A5BDB7AE B3B3B1B1 B7B3B2B0 B3AB739F AEACB0B0 BCB2B2B1
0x0680  B1B3B6B4 B0AFA08A A6B8B1B5 B9B5AFA9 B3B1ACA9 A8A69F78 92AEA8B3 B5B9B4A9
0x06A0  AEB4BEB5 B4B1A7A4 71A8B3BA B4AEB4A9 AAB5A9B4 AEBBA9B0 8D8DACB2 B0B1ABB8
0x06C0  BEAEB9B3 AFB3ADB2 9F6DA1B2 BBB1B7B3 A5AAAAB4 B5ABB0B6 AB8A739E A6B1ACB3
0x06E0  B0BBB4AD AFADAFB1 AEA27C92 A8A8BDB2 A6B6B6AC B3B1B3BA B1B39E68 AAA7B5B3
0x0700  B2B1BAAA B0B1B1B6 ABAC9F78 7A9DA9B5 AEB0AEB9 ABAEAEAC B4A7ACA2 6FA3B8B2
0x0720  B1B5B9B0 ADAEAFAF B2ACA3A3 806B95A0 ADAEB6B0 A8ACB1B8 73AEA8AB A3708DA2
0x0740  AEB1B1B7 B4ADA9AB BDB5C0A8 B5A573A7 B2B0ADB7 ACA9ADB3 AFABA8A9 9B9B7076
0x0760  909FABAC ADAEACA6 ACBBB8AF B3B2B179 A6AAABAB B2AEC0A1 9CACB0AF B2AEA589
```

```
0x0780  739BA6AB B0AFACA7 B0B6B6AD B1B0AF9C 6C86A8A1 ACA4ACAD A8B4AFAF AFB5BABB
0x07A0  AD85B3C3 AEB9B6B5 B0AFA3A9 B2B2A8AE 987C7FA9 ABA7B6B0 ABAEA8B8 B7BBB7B0
0x07C0  B7A977A4 B4B8B8C5 B9AEA7B3 B9B8B3AA B6AC988A A5B2ACB0 B3B4AFAD B5B8ACAD
0x07E0  AFAFA57B 96A8ABBB B8BAB0BD B7B8B4BB B0B9B99C 83A8B9B6 BCB0B5B0 A8AEAEB3
0x0800  B7B1B0B2 8E94B4B5 B7BBAEAC B0B0BCBF BFB8B8B1 B27AB4B5 BABAB9B6 AEACBDB3
0x0820  BBBFB7B4 AE9D91A9 B5B6C1B7 BDBABDA6 B1B1BEB9 B6B491AD BBAEB3B1 B8AEB7B4
0x0840  B5B7B1BD B4B3A481 AEB9AFB4 B4B1B5B7 B3B6BAB1 B8AEB39C A5A8B6AF B7BFB6BE
0x0860  B1ABB2B4 B5B3B3B5 8DACBAC1 AFBCB2BC AEB4BAAF B4B7AFAA 9288B4AE B7B1B8B5
0x0880  B8B4B0B6 B2B4B8B0 B29DAAB3 BAB9C0BE B7AAB0B6 B6B7C5B5 B6AE91B1 B0ACBABB
0x08A0  B5ABBEB3 B7BEC5B5 B2B3909E BAAEB4BA BBC0B5B8 B6B0B4B7 BABDB7A2 B1B7BCB4
0x08C0  B4B4B8B5 B2B1ADB1 AFB6AF9C 93A8AFB3 AEB4AFB3 B4B0BAB4 B4B6B2AB 96ACB6B6
0x08E0  B7AFB7AF B0AFADB9 BAC6B6B7 B39FB2B2 B6BDAFB8 BCB4BAB0 B8BCADB6 A9999FAE
0x0900  ACAFA9BB B5C4B9B4 B8B5BCB9 ADAC8CAE B9B1B9B9 B5ABB2AB BCBEBEB6 A9B3AE9E
0x0920  B6B7B7B4 B4B3B0B3 AFB7BDBD B2B9AA93 AFB9B5B2 B1B1B3BD C1C0B8BA B5B1AEA9
0x0940  94B5C1B9 B2B9B5B8 B4B6AFB9 B9C2B1B8 A7AEBAB8 BCB3B4B4 B2B0BAB7 B7BAB5B9
0x0960  B98CB1B1 BAB6B5BA B0BBB5BE BAC0BDBE B49F97B0 B4B3BCAD B2B2BAAC BCB6B7BD
0x0980  B3B499B9 B6B9BFBD C1B8BDB7 B2B9BAB7 A9B7A38C ACB5B3B0 ACBBB1B5 B9BDB8BC
0x09A0  B7B6B39E AAA8B3B2 B0B6B3B7 BBB5BAB6 B9B7B2B1 94B7C1B4 B5B9B6B4 BAB7B7B8
0x09C0  ABBBB5B7 9298B2AD B2C7BAB8 B1B6B0B9 C0B6BFBD AE94ABAB BAB3BDA9 B4B3B9C0
0x09E0  AEBDB5B3 B1A794AA B2B8B2B9 B2B4AAB3 B0B4B7BD B9B496A4 B4B0B2BB B4BAB6B9
0x0A00  B1ADABB3 ADC2A790 AAAFB4BA B3B0B7B2 B3BEB8B8 BBB6B39F 99B5BAB5 AEB4B6B6
0x0A20  B7B4B4BF BCB3B6BF 96AABCB3 BBB0ADB2 B8BAB8B4 B2B2BAB0 AB94B0B1 B5B2B6BF
0x0A40  ACC3B3BB B8B7B6BF AF9CA3B4 B5B0BFB9 BCB1B8B7 B3B7AFBE B7AF91B2 B6B7C2B4
0x0A60  B8B2B2AE B7C3AFB1 B2AE9F9B B4B6B1B4 B8B2C4B4 B2B3B1B3 B1B7AD95 A3BBB7B8
0x0A80  B5B9B7B8 BCB8B7B7 BCB6BAAF 94BCB3B8 B9BBBBC3 BCC0BABF ABB6B9B4 A5B2BABC
0x0AA0  BEB6B6B3 BCB9B2B9 B9BCB4B6 B29DAFB2 B9AAB7B8 B9B4B9B3 B8B6BDB9 B7ABA3BE
0x0AC0  B3B3B6AE AFB8C1B5 ADB2B4B3 B3B49BB3 B6B2C2B1 BCBAB8AD B2B4C1B9 B9B5AE9C
0x0AE0  ABB3BEAD B1B7B6B8 B3BBC4B6 B9B3AB9C ACB2B0B7 B3B5B8BE B3ADACB4 B7BCBFB0
0x0B00  92B2B8AE ABBAB8BE BCB4B6B4 C2B5B8AE 9293B0B9 AEB9B1BA B3B8B3B8 AFB1BABC
0x0B20  B08FA8B3 B0BAB7BE AFABA8AD B5B6B1B6 B3A58EAE B4ADBFBE B4BEB3B7 B5B9B9B3
0x0B40  ACAC90A2 BFB9B3B7 BFB3B4B9 ACBFB5B9 B6B7AE8E ACBBB7BA B8B5ACB3 AAB1B6B4
0x0B60  B7B6A992 94ABB2B7 B7B0B3AE BDBDB9BF C0B0BFB3 8AAEB2B8 B6B2BEB5 B1BEB6AF
0x0B80  B4B4B5AC 9A8DAFB3 B4B2BDB4 BAB3B7C3 B3B3B5C0 AD889AB3 B7B5B5C6 B3B1AEB8
0x0BA0  C5B6AFB1 B3B08DB1 ABB5B1AC B6ACBAB6 BCC3C3B4 ADAA8F98 B2B6ABBF B5B0B3B2
0x0BC0  B7B4B8C0 B3B6BC8A A6BCB9BD B5BFB4B9 B4BCB9B1 B6BAAF9F 8FB4AFBA B6B8B4B3
0x0BE0  B1B9B1B3 B3B0ADB6 8F9CB5B7 ACB8C2AE BEB4B7AB BCB8B1B1 AC8AA8A9 BAAFB5C0
0x0C00  BDBBB9BC ADB7B3C0 B49291AB B2ADB9B0 BEC3B9BC C2B1B1CA BDAC8CB4 A8B4B2AE
0x0C20  BAB6B5B6 BAB7BBC2 B5BB9B8E B0ABB4AB B3ACB8B6 B3BCB6AF B4B3B18E A0B5BEB2
0x0C40  B8B8B7AD B7BCAFB0 B7B1B9AC 89A9B7BB B3B1C5B8 B8B8B7B3 B9AEB4AD 8F94AEB2
0x0C60  B3B3BFAB B8C1B6BB B5B3BCBA B28AB1B7 B2BDBCB2 B4B4B7BA B6B8B8B4 A8A08DAD
0x0C80  BAC5AFB8 B4B7AEB1 ADB1ADAF B8AD859C AEACBFB2 B4BBB7BC B2B6B3BF B9B3B487
0x0CA0  ABBEB4AF B3B2C0B6 B6B7B1B3 B5A8AB8E 90ABBFB1 ACBEB0BC B3B1BEAC AFB1B7AD
0x0CC0  839CB2B7 B1B6BAB8 BCB2BFB6 B9AFB3AD 9788B1BE B1B8B9B8 B1B4B7B7 ADB7B2AD
0x0CE0  AB859DB7 B2BBB7C0 B6A5B6AE 00000000 00000000 00000000 00000000 00000000
0x0D00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

0x0E60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

```
0x0F60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

mslot RxMER(in 1/4 dB):

# msMer    0  : B0AEB1B1 AFB2B3B1 B0AEAFB2 B2AEB1AF AEB0AEAE ADB0B0AF B1ABB0AF ABB0AFAD
# msMer    32 : B4B3B2B1 B2B2B1B5 AFB0B0AD AAB0AAAF B0ACAFB2 B2AEB1B1 B0B1B3AE AFB3B1B2
# msMer    64 : B0B0AFAD B0AFADB0 B2AEB0AC B3B2AFAD AEB1B0B0 B1B3B4B1 B3B5ADAE AFABACAC

# msMer    96 : AAABADAA A8A9ABA7 AAA3A3AC A0ABA5A6 AEA7ACAF ABB1AEB1 B2B1B2AF B1B2AEB3
# msMer    128: B2B4B4AD B1B4AFB3 B2B2B4B5 B3B4B3B4 B3B3B4B3 B1B0B1B1 B2B3B2B3 B2B2B1B6
# msMer    160: B6B4B4B3 B3B3B2B2 B1AFB1B4 B1B4B1B2 B0B2AFB4 B0B0B2B1 B2B0B1B2 AFB4B1AD
# msMer    192: B2AEAFB1 AF

SC RxMER Distribution (Excluded SCs counted as 0):
*: 2%
>44dB: ******************************** 67.05%
  44dB: ******* 14.11%
  43dB: ***  6.80%
  42dB: *  2.72%
  41dB:   1.42%
  40dB:   1.36%
  39dB:   1.10%
  38dB:   1.01%
  37dB:   1.04%
  36dB:   1.01%
  35dB:   0.85%
  34dB:   0.28%

  33dB:
 <33dB:   1.20%
        ---------------------------------------------------100
                   Percent of Subcarriers

Active SC RxMER Statistics (in 1/4 dB):
Active Subcarrier RxMER Mean                    : 0xB0
Active Subcarrier RxMER Standard Deviation      : 0x1A
Active Subcarrier RxMER Threshold Value         : 0x8A
Active Subcarrier RxMER Threshold Frequency (Hz): 81325000
```

Examples

The following example shows sample output for the **show cable modem prof-mgmt upstream ingored** command for Cisco cBR Series Converged Broadband Routers. This command is used along with the **ping docsis pnm ignore** command. The **verbose** version of the command shows the collected RxMER data for the modem. Using the **ping docsis pnm ignore** command to collect a new set of RxMER data without using **verbose** in the profile management and the **show cable modem prof-mgmt upstream ignored** command displays the collected RxMER data.

```
router# show cable modem XXXX.XXXX.XXXX prof-mgmt upstream ignored
Upstream Profile Management Data (Ignored):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 1

Ucid                    : 6
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 3307
```

```
Num RxMER Measurement   : 3308
Tx Time                 : 0h:00m:18s ago
Rx Time                 : 0h:00m:18s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
New rcmd IUC            : none
Recommended IUC         : 5
Downgrade IUC           : 12
RxMER send/recv count   : 215/215
DBC                     : 3/3/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
0x0000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0020  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0040  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0060  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0080  00000000 00000000 00000000 00000000 00000000 B5B7A9B2 B9B4B6BF BDADB1B1
0x00A0  A8B2B0BA ADB4ABB2 AFBDA2BD C2AFB6A7 AE92B7AE B6B0A8B4 B9BEBEBE B2ADB8B3
0x00C0  B6B3ABBC B2B4AEB4 A9B8C4B2 BCB4B5AE B5B196A5 B1B1B3B3 B4AFA5AA B2BBB8B3
0x00E0  B1AFAB99 A7B9C3B4 B4B5BDB4 B6B8B8B2 B4ABAC9A A4A6A6AE B7B2B7BE BBABB2BA
0x0100  B0B6B4AD ABBCABB4 AEB3A29F B0B0ADB3 B9B2B2AF AF9FB1B4 B6B3B0B3 B1B2BCB6
0x0120  B3B7A6A0 A8A9BCB2 ADABB4B9 ACB4B4B3 9EAFB6C0 B1BAADB6 B2BAA98D A7B9B3BA
0x0140  B2B6B0B4 B5B2A7B7 B2ADBEB4 AABEB1B7 B2B8A7A8 A9B4B4AA B2B4B7B2 B8B2B3BD
0x0160  AFBAA8B6 ACA9AAAE A5ABA89B A2B4BAB2 B9B5B1B4 AEB4B9B5 8AAFB1AC BFBCA8B1
0x0180  B4ACBAB2 B5B9B6B7 B59CAFB6 B3B6AAB0 B8B7B9B0 B3AFADB0 AA8DA2AF 98ACBAB4
0x01A0  BBBFB3BB B2B0B8AA BCB987B0 BDB4B4B7 ADB9B2AD BABBB4B7 B4A8A09B B1B0BAB4
0x01C0  AAAEB3AE BAACB2B5 B6BAAB86 A7A6B6AC B0B6ADB6 AFAFB7B4 B8B1B4A2 8CB7B9B2
0x01E0  BAB6BEB5 ABB6B4B4 B8B1BAA7 99ABABB4 B4B5B4B3 B7AAB6B1 BABAB2BD A481ACB3
0x0200  B7B2B6AD B2B9BBB4 AFC0B9B6 A7979EA5 B4ACB0B1 B0ACB8B2 B8BAB1B6 BAB894B3
0x0220  B8B1BAC1 B1B5B3B0 B7ABB7B3 B8A6AB8C A8B4ADBA BFBAB1AD B4B6BBB3 B0B1AC91
0x0240  A8A8B0B8 B3A3B1AE B3AFB4B2 BCB3BAB7 99B3B3B4 B2B2AAB1 B2AEB3B0 B398A8B4
0x0260  9E98ABAD ACB6B3A9 B1B2ADAE A6C0B4AF B19BB4B6 B2B3ABB3 B6B4B5C0 AFB2AEAA
0x0280  C4AD9BC6 BAADBDB5 BAB3AFB1 B8B4ADB4 B6B58EA8 B0B0B1B3 B9B1B8B2 B2AFB3B3
0x02A0  B1AAB5A2 B3B2AEB4 B6B9B5AB AEB4B5B7 B4B1AFA8 A7ABB0A8 B1BDBAB4 AEB3A8B5
0x02C0  B2B6B2B4 8CAFAEB3 AFB7B3B3 B8B7B2AD ABBAB1B1 B3A8B8AE B8B3B3B8 BBB8B2BA
0x02E0  B7B6B6B3 AEA2B1AA B9B4B8B2 BAB2ABB0 B8B7C3B8 B3B58EBE BFACACC0 B7B5B7AD
0x0300  B6C1B4C0 B5B1A6A0 ADB9B4B9 B1B8B6B9 B3BCBEAC B4B6B7A3 B1ADADBC AFB1B395
0x0320  BFB2B3B1 AFB7A9A5 88AEABB3 B1B8AEB6 B0ACB7B3 B3ADB1A6 98AEB1B4 B5ACB1B1
0x0340  ABA9B6AD B4A7BEAC A797B0B1 B1A7A48A A7B4A8B6 B3A8B6AD A78E95B0 ACBEB2B1
0x0360  B6B3ADBF B1BAB5AA ACB193B6 C3B2B0B4 B1ACACB0 B7AEB5B6 B4ADA495 B2A9A594
0x0380  8DA9B7B5 AFABBCB8 BBAAB383 A2B9B1C2 B9ACAEAB ACB2B0B2 ABB1B8B4 9EB1B4B8
0x03A0  B1B7B0AD ABBDB0B0 B7B4B1B6 94A2B5A9 8CB7ABB6 B7B3BEC0 AFAEB8B9 B981B0BD
0x03C0  B2B7BDB2 B6B8AEB4 AFACB5BE B8ABA6B2 C1B1BCB5 ACB4B6B9 B9AAB8B6 BEAE90B0
0x03E0  ADBEB7B3 B4AEADB4 B0B5BCB4 BDB3AB87 A7ABB1BA B5C0B3AB AEBBB2B4 BCACBBAB
0x0400  ADB6BABA B7C0BFB9 A8A9B7B6 B1B1B1B1 A0ABB6BD B2B1BBB8 B1B1BCB1 B4B5B6AF
0x0420  A496A6B5 BEB4B4AB BDB2B7B5 B9B3A8B2 B199B2B8 B5B4B2BC AFABB1B4 B3BABAB9
0x0440  AB9EA9B1 B7B0B4B7 B5B2B0B5 B3B6AEB2 B7AF90A1 B2B2BBB3 AEAFADB3 A8A6AEB1
0x0460  B8B0B386 BDB5B3AF B6B4B6AD B1B2AFAF B7AFABB0 9CB1BAB4 B7BDC2B9 AEB2AEB1
0x0480  AEABABB4 94B3B7B6 B9B3A9B8 B6ABBDB7 B5B6AFB3 AA84B4B4 BCB7B0B3 B4A4B9B3
0x04A0  B3B3B2B0 B49599B2 B7B7BAB3 B1B7A9AC B8BAB2B5 B5AE9BB9 BBB8B3BA B3B5B4B1
0x04C0  BDBCABB2 AEAF938C A8B9B3BD AFB1B7AC B2B6B9BD AEB1B488 A8C4B3B2 B6B3B2A9
0x04E0  ACB4B1B2 B3B0B8AD 9EB2B1B6 BCB9B1B0 BDADB0AF B7B5A5B0 8494ACAD AAB1BAB5
0x0500  B1AFBCB5 BDB6B3B7 B88CB9B2 B2B7ACB1 B9B0B0C0 B9BCBBB1 B49C98AF B6B8ADB3
0x0520  BAB2A7AB B3B5AEB9 C2A877A4 B2BAB5B7 B0AFB2A5 B2B7B6B4 BFBEB79B B4B4B2B7
0x0540  B6AFB0B3 C0B6B4AE ABBBAD86 92ABB4B1 C0B3B2B3 B3A9BBAF B8B3B3B3 7BB6B5BA
0x0560  B1B4BCB6 ABB4ABB1 B4B8ADB7 A0A0B4B1 BAB0ADB8 BCBAB5BA BCBAB0B0 AB7CA5B1
0x0580  B9BBB9BB B3B3AEB8 AAB5B9AC B3A781A8 B4B4AEB0 B6B7B8B4 B1B7AAB5 B4B390A1
0x05A0  B4B4B1B0 B9C0BDBF ACB0B4BE B0B3B778 B8BBB7BB B0BAB4B1 B4B6B9B6 BCB7B79C
0x05C0  91ADB5AD AEB7BAC1 ACB7BCB4 B3B7B5AB 8CB7ABB4 C1B7C5B4 BEBAB7B3 B4BDB7BF
0x05E0  AD8BAAB0 C1B2BAB5 B0B1B7B1 B5BAB1B8 B59DB3B3 ABB8BAB2 B2BBB7B3 B9BDB6B6
0x0600  BAB799B7 B1B6B1BD B3B1C0A7 B5B3B3B7 C0B19D90 B1AEB6B2 B3B6C0B8 ACA7B2B6
0x0620  B9B7AC86 B4B3ADBC B7AFB1B5 B1C0B0C0 B3BEB6A6 869EB4B4 B2B3B9B6 B1AFB0B3
0x0640  AEB0A9A3 7C92A2AE B2B0B2BC B5B8B8AE C0B2ADB8 BA7FAEC9 B4B0BEB0 B0AEB3AE
```

```
0x0660  B6AEB0B1 AC8F85A5 A7B5B5B8 ADB3AEBD B5B5AEB4 AEA474A4 B5B3B3BB B4C3ABAC
0x0680  B1AEB0B3 B8B6A88A A9B0B1B9 B8B1ADB6 B8B3BAB5 ACADA579 8FA8A8B6 B7B1ACAD
0x06A0  ABB4B6AE B0B7B3B9 70AAB4BE B3B9AFB3 A8B6B2BC ABB5A6AB 9188A9AA B6AFB6AC
0x06C0  AEBEB3B3 BCB6BFA8 AB6AA2AE B3B7B1B7 ABACAFBA BBABB1AC A594749E AAADB1BB
0x06E0  B4B3A7AC B6B5B1AF A6A17B91 ACB2B2B3 B1B4A5AD BDB4C0B2 BEBC9E6A A9A7A8B3
0x0700  B4B0B2AB B6B4BAB9 B9A39D7A 7CA6B1AB B1B3B6B2 A8B7B1B1 B1B2B6A6 71A6B5BB
0x0720  B4B4B7B5 B5ABB2B3 B2B4A8A5 876794A3 ADB1ADAD AEAAAEB3 72ADAEA1 9F728FA6
0x0740  A9AFADB9 B5ADB0AE B1B8ADB8 B6A774A4 A9AABAB6 B8AEB1A9 B7AFA9AD A2947173
0x0760  989DA2BA B8AAB6AC B7B0B0AD B8BCAD79 AEBDB7B4 B7AEB0AF A3B6B8AC B9AD9F8E
0x0780  759EAEB1 AEB5AEA5 ADB5B3A8 A7ACA59B 6C8C9DB2 ADB5B3B7 AE9CBCB9 AEBDB9B5
0x07A0  B288ADC0 B4B7ADB8 A6AFA8AC BCAFB4A4 A3797F9E AAADB1BC B5A8B1AF B0ACAAB2
0x07C0  A9AF75AC B2B0B3BF B4B5B1B2 B5B5BDBD B4ADA18D ABB8B5B1 A8ADB4BD AFB8B2AF
0x07E0  B5B1A57A 99A8A7B6 BEB2B7C2 B8B7AEB5 B9B2AFAD 82B4B8B7 B3BABFBF ACB0B8B6
0x0800  B2B7A9A8 9594A9BB B7ADB6B2 B5B6BAB1 B9B2C2AE B279AEB0 B9B7BAB5 B6B0B1B2
0x0820  B7B3B1AA ACA291B4 B5B2ABB0 B8AFB1B4 BEADB8B8 B9A692AE B2B1B2C0 C1B8B6B4
0x0840  B0BBC1B6 B9AFAA7D AFADBBB3 B5B5B9AA BAB1B8B4 B1B4B69C 9CBAB4B7 B6B1ACB8
0x0860  B6ADBBBF B1B8B9B3 8DAFAFB4 B4C4B9B5 C0B4B5B3 AFAEB6AB 9786A9AF B1B6B7AD
0x0880  B4B3ACAF BDB1BBB5 B5A3BBB9 BAADB8BE B3B6B1AD BAB9C0B8 BAAB90B7 B8B3B3AD
0x08A0  B1B3B7B3 BFB8B8AD B3B29694 ABB8B3BC B8A9ADB7 B0B3B4B3 B5B4B59F B6B9BDB5
0x08C0  C1B8B7B1 B7B1ACC2 B1B6AE9C 95B2B2B5 B3BBB1B7 B7BDBBB3 BDBAACB3 93A8B7B8
0x08E0  BAB3B7B1 B7B6B6B9 C3C3BEBB B79EB8BA B5B6B7B7 B3B1AEBD BFB0B7AC B29FA4B6
0x0900  B4BBB5AD B2BEACB8 B4BCBFB7 BAB68EAE B4ABB6AB BCB4B1BB B8B4B3C2 AFB4AF9B
0x0920  B1BDB6BE B4B3AEAF BBB4B8B2 B2B7BC8D B0AEB7BB B8C3BAB8 B4B8BFB4 B8B7BAB6
0x0940  8EB4ACAE BAB7B2B3 B4B8B3BA AFBAB2AF A6A6B1B7 B6B9B4AC B2B9B2B5 B1B5B7B8
0x0960  B088B7B8 BDACB5B7 BEBDB3AF BAB7B9B2 B4A897AA B1B6B6BF ADBDB0B4 B4B1B9B6
0x0980  A9AE9AB6 AFB8B8AF B7B8BAB1 B4B1ACB1 B3AEAD87 ACB4AFB3 B2BEB4B3 B3BDB2BE
0x09A0  B3BAAC9C A2B6B0B3 BBB5B3B0 AEB4AEB8 B5BABBAA 90B5BDAA B1B7AAC5 ADB4B3B5
0x09C0  B1AABBB2 9E92B1B3 AAC2BDC4 B1AEB0C0 BEBAB2B4 A898ACB5 B8B9BABC B1BDB2B4
0x09E0  BDB7B8B4 B0AA8FB1 B2B9BAB2 B4ACB6B4 B2ADB6B4 B5AC94A2 AEB1B8C6 B1C0B5B9
0x0A00  B3C0B6AC ABA9BA90 B1C8BEBF B7B0B7B4 B7C0B2B9 B2B1A6A7 96B6B1AB B9AFC0BD
0x0A20  B9B9BFBB B6B3BEB1 96B7ADC0 B4B7B6B4 B6B8B8C0 B6ABB1B0 AE96BABD B1B0ABB8
0x0A40  C1C0B5B2 B2C1B0BD B69EA5B7 BAAFAEBC B6BEB4B4 BAB1BCC2 BAAD92B3 BEB8B5B6
0x0A60  BCB9BAB3 C0AFAEB7 BBB6A59E B1BFB3AF BDB6B5B3 BAB2B4B5 BEBAB391 ACB4B3B2
0x0A80  B6B0B6B9 B8ADB3AB B7B6B1B1 90B0B4B1 B7C4B8B8 B6C0B4B5 B6C2BAB2 A49FB6B6
0x0AA0  B7B3BFB0 B2B9B5A9 B7B4B8B7 B893B2B7 B8B5BDB7 BDBEB2AE BABDBABC AFA69CB2
0x0AC0  B6BABCB3 B7B5B1B2 AFB2B0BE B4B199B3 BCB1B4B0 B3BBBAB4 B6BDB7C4 B4B7AB93
0x0AE0  B0B3B9B8 B5BDBEB5 BDB5BEBB BAB3AC98 A2B1B0B5 BAB4B3A7 BEB4B4B6 B3B6BBB5
0x0B00  8FB2B5AE B5AEB7B0 B8BBBFBD AFB9B3AF 9C94ACBA B0BBB1BC C3B1ADC6 ADB5B7B9
0x0B20  B194BAB5 B6B6B5B0 B0ACB5BA B7C7B2BD B8A58EB0 BBB7B7B5 BAB8B8B2 B1BBA8B1
0x0B40  ADB392A2 C1B9B8BB B4B1BAB9 B2C0C3B4 BEB7A989 B6B0B1B3 B2BEAEAF ACB4B8B7
0x0B60  B7B0AA96 93A9B4B8 AEB4B5B9 BAB3B8B9 B4B3AFB7 87AEB4B9 B7B4B7AA B4B0B8B8
0x0B80  BAB3BAB3 AA89ADA8 B1AEB7B4 B5B4B4BB B9B2BAB6 A78C9DA9 B4B4AAC3 B2AEB5B4
0x0BA0  B1ADBDBA B4BF87BB ADBDBCB3 B8B7B6B6 BFB9B2AD B7B19792 ACB1B2BE B6BDBCB4
0x0BC0  B5B9B4B3 B6ADAB85 B1AEB1B7 B1B3B9BF B5BEB3BA BBB3ABA2 8BA7B2B3 B7BABFB2
0x0BE0  BBB5BBB3 B3BCABA5 8E9BB6B2 C2AFB5B6 B3B8C0A8 AFBFB7BA B186B0B4 B1B1B6B0
0x0C00  C0ACB7B3 B0BAC1B1 B19792AB B3B6B4B9 B4B8AEB7 BDB6B2AC B6A787AE B3B8B6BA
0x0C20  B0B8B1B5 BFBCB3C2 B3B69D89 AAAAB6B3 B7B7BAB2 BBB5BBB8 BAB7A689 A2ABB2B0
0x0C40  BBB8B8B6 C1AEAFB5 B4B3B1A7 87AEB4C0 B6BEB0B2 B7B7B7BD B4BEAAAE 9192A6BB
0x0C60  B8BCB4AC B8B1BBB6 B6ADACB6 B187B4B2 B3B3B9B4 B2B5B1B2 B4B4B3AF B89B8ABB
0x0C80  ABB0B2B3 B1BCB4AF B3AFB8B9 B6B2849C AFB6BBAC B3B8B8B9 B1C8B8B9 B1B2B685
0x0CA0  A5B9B1B4 B7BDBCB9 B4B4B7B5 B3C2B393 8DAAAEB3 B7BEB3B9 BBBCC0C1 B4B3B7B2
0x0CC0  81AAB8BB ABB8B9AA B5B8BCBC B7B4B3AB 9986A8B2 B0B1AEB1 BCAEB3AC B3B7B8AA
0x0CE0  A7849EB2 B5BAB1B6 B6AFB7B6 00000000 00000000 00000000 00000000 00000000
0x0D00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

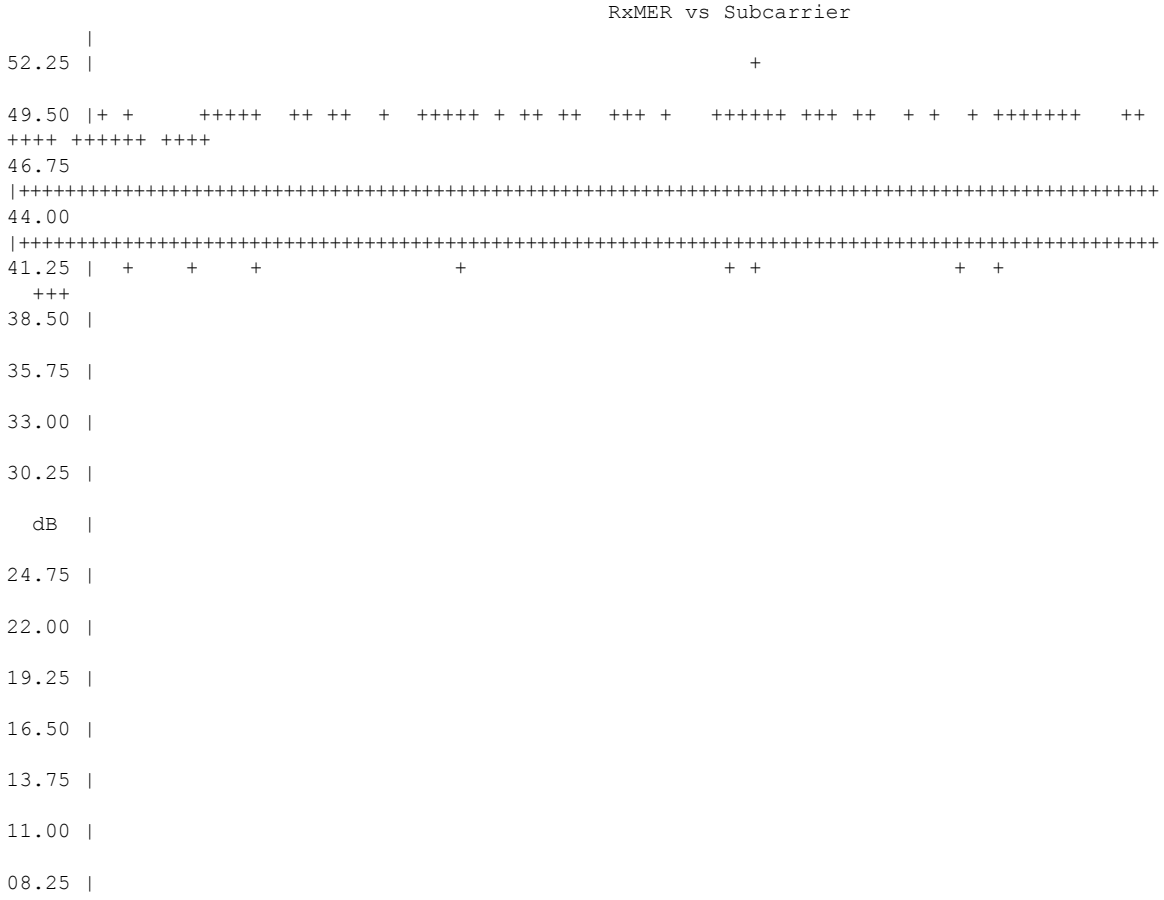
```
0x0E60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000


SC RxMER Distribution (Excluded SCs counted as 0):
*: 2%
>44dB: ********************************** 69.68%
  44dB: ****** 12.59%
  43dB: ***  6.32%
  42dB: *  2.43%
  41dB:   1.55%

  40dB:   1.07%
  39dB:   0.75%
  38dB:   1.13%
  37dB:   1.01%
  36dB:   0.85%
  35dB:   0.94%
  34dB:   0.41%
  33dB:
 <33dB:   1.20%
        ---------------------------------------------------100
                  Percent of Subcarriers

Active SC RxMER Statistics (in 1/4 dB):
Active Subcarrier RxMER Mean                    : 0xB0
Active Subcarrier RxMER Standard Deviation      : 0x1D
Active Subcarrier RxMER Threshold Value         : 0x89
Active Subcarrier RxMER Threshold Frequency (Hz): 81325000
```

The following example shows the output for the **show cable modem** *mac address* **prof-mgmt upstream graph ignored** command.

```
Router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream graph ignored
Upstream Profile Management Data (Verbose)(Ignored):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 1

Ucid                    : 7
MD US Chan              : Cable9/0/31/U6
Ctlr US Chan            : UC9/0/31:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 2507
Num RxMER Measurement   : 2360
Tx Time                 : 0h:00m:44s ago
Rx Time                 : 0h:00m:44s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
```

```
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
Downgrade IUC           : 6  (512-QAM)
RxMER send/recv count   : 1916/1916
DBC                     : 1/1/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Disabled
0x0000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0020  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0040  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0060  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0080  00000000  00000000  00000000  00000000  00000000  BAB8BABB  B4BCB9BB  C4C1BEC2
0x00A0  BDBAB4C1  C3B9BBC3  BEC1BDC8  B1B0B9B5  BDC4C1B6  BEC0BEBD  B7B6C0B9  B6B3BEC5
0x00C0  B5BABAC1  C7B5C7B2  B9B7B0C1  B2BDB4B5  C0B8C2B7  BBBFBDC2  B2AEB5C2  BEBABAC0
0x00E0  B1BDBDB9  B7B5B7B8  B4BBC1C0  C0B9B8BE  BBBEC2C4  BEC3BFB4  BCB7BAC3  B6BDB1BC
0x0100  C0B9B7B5  BCBEBAC0  B9BBBFC3  BCBEBAB9  B6BCC0BE  BBC1C0B7  C0B9B6B9  BFB8C0B8
0x0120  BABDBAB5  C1B1C1B9  C0C5B7BF  B8C3BDBB  C2BBBCC1  BCC4B8B5  BFBABFBD  C0BAB7B5
0x0140  BCBEB7B9  C0B4B2B5  BEAEBDC0  BDB6B5BD  B2BFC4C0  C1C6C5C0  BABCC1B7  BDBDBDC0
0x0160  C2B9B7BA  C5BFB8BD  BEC2BDB7  B8BABDB4  C3BCB7B8  B7BEC1BA  B6BBB6C0  BABAC7B0
0x0180  BEBAB8B7  C0B8C0B9  B6C3B3BF  C9BFB6C8  BAB7B9BC  BCC1B1B4  B7BBC0BE  B8B9B7C1
0x01A0  C1C1BDB9  BFB7BDBC  BAC0BBB6  BFBCB1BC  BACAB5BA  B6C0C1B7  BAB4BDCF  BAC2B3B3
0x01C0  C0B7B2BA  B9B8ADBD  BEB6B7B8  BEB7B4B7  C0B6BDBE  B5B9B8B4  C5BEB3B5  BCBFB6BB
0x01E0  B4BCB8C5  BFB8C0B0  B7BBB7BD  BFB7C0BE  B9BDBDB7  C0BCB5BC  C3C0C2C0  B5BDBFB9
0x0200  B5BBC6C0  C0BFBAC0  B3C3BDC2  B2B9BAB5  BABDC6BE  BAB9B5BB  C7C1B7C3  BAB8BABE
0x0220  BFC1B5C6  BDB5C3C0  BBB9B9B4  BDB8BAB8  BCBABEB5  BCBCB8BC  BDBFBDC0  BBB7BDC0
0x0240  C0B4BEBD  B6B9BEBA  BFBABAC0  C2BDB8B8  BEB2C2BB  CCB8BABB  C0BAC4B4  BCB3C2CC

0x0260  C1B8B9BD  C6C2B6C1  B8B9B7B0  C9BABCC5  BBC0B9C1  BBB9BAB6  B8BABCBC  C1B8BAB9
0x0280  BFBEBDBC  BAB3BDC0  BABCBBBE  BDC0B5B6  BCBEC3BA  BDBDC0BA  C0BEB4B9  BAC1B9C0
0x02A0  BABAB4B5  C0BFBAB6  C8BEBDC1  B8BCC0BE  C0CAC8C2  C0C1B8B4  C9C0BFBF  BCC0C0BD
0x02C0  C0BCC3BD  B7BFB8BB  C1B5C0B7  BBBAC0BD  B8B9C2BC  B4BDB6B6  BEBEBCBF  BDB7B8B5
0x02E0  BEB7BDBD  B9BDC5BB  BEB9BCBB  B4BEB3B9  B6BDB9BE  BBBEC0BD  C0B6BAB7  BDC7B6B7
0x0300  BCBCB9BF  B9B5C3C3  BFC1BEC5  BCC4B7B4  B2C6B7B8  C2C0C8B8  B8BBB5BC  B6BDB9C0
0x0320  C6B3C1BE  BDB5C9BD  C1B8BABA  CEBDBDB7  B8BDB8B4  B7C6B2BC  B9C0B6BE  BFBFB6BC
0x0340  BEC2B9C0  BEC0BAAF  BEBEBDBC  BEBAB8BD  B1B9BCC3  B8BFB8BD  BFBCBDBE  C1B4B6BF
0x0360  C1CCB7C0  B5BABFB9  C4B7BCBA  BCB7BEBC  BFB1B9BC  B8BBC4BF  BCBEBCC4  BCC3C1CB
0x0380  B2BCBDBA  C2BBBCBF  BEC1C2BD  BCC2B8BF  B9BEBAB8  BEB9BCBD  BEC0BABA  B4B6BABD
0x03A0  BFC0BDB7  BBBAC2C3  BBBEBFC0  BFCBC1B7  B9BDB8C2  BBC2BAC0  B4BFB0BC  C9BEB3BE
0x03C0  C4BAB9BE  C5C0BBC5  B8C3BDC2  B9C6BCBE  BDBEC6C0  BAC5C3B4  B9C4B9BA  B6BFC1BE
0x03E0  BBC5C2BC  B8BDB8BD  B8BDB4BB  BFB8B6BE  BCBBB8C1  BDBDB8BD  C1C0BCBE  B7BEBBB7
0x0400  B4C5C6BE  BDB8B8B9  B7BFBAB8  B6BDC0C1  BDB9C2B6  C4BBB9B6  BAC9B4BA  C1B5C1B7
0x0420  B4C4C3C4  B4BCBFC2  BEB9BDBE  C5BCBEB9  BEBABCC0  BCB6C0BF  C1BAC1B7  B6BDB6BD
0x0440  C2C1BDBB  B9B4C0B0  BEB8C1BD  C4BBBFBB  BBBEC3B4  BEBECCBC  B7B7B3B8  BABECABB
0x0460  BFC0BEB9  B3BCB9B8  BDB6BBB4  C7C2B8BB  BDBEB7C1  B4BBBDBE  BDBABEBA  C4C2B7B8
0x0480  BBB7B3B4  BABFBEC5  BCB7BBBD  B4C2B7C9  C1BDC3B4  B9CDBDBA  BCCBB7BA  B9B7BBB8
0x04A0  BBB8BBB0  BFBEBEB4  C2B8BAB9  BBB9BFBB  C3C0B7BB  C3B7BEC5  BBB9C6B8  C0BDC2BE
0x04C0  CAB7C3B7  C4BDBACB  C0BAB9BF  BEC3BFC2  B8BFBCBC  BDBDBBC0  C1C2B8BA  BABDC1C0
0x04E0  B9BBB9B7  C0B5C3BC  BFBCB8B9  B8C3BEBD  B9B5BFB7  BCB2BABA  B7BCC1B7  B8C3C3BA
0x0500  C0B7B7BC  C3B6B8C3  BFBBBDC2  B7BCC2BD  B7BEB7BE  C0BAB3BF  BAC6BEB3  C6BEC3BF
0x0520  B8B4B6BA  BCBFB8C1  BEBFBFBC  BABBB8BF  BCBCB9B4  B7C0BABA  BDC5B9C0  C6BAAEC2
0x0540  B7BFB3BC  BCBEBBBC  B9B8B3B4  B7C0C4BC  B6C1BBB3  B4BDBEC9  B9C3BCB5  BFC1B6B9
0x0560  C3C2BFBE  BABEB8BB  C6BDAFBA  C2C4C3D5  BFBFBDC1  C5BABBBA  B8BAC7B8  BEB8BAB5
0x0580  BAB9BFB4  CBBCBCC0  BDB9B7C0  B9BAC3C2  C3C1BAC5  C0BEBDB9  BCC6BDBD  C3B7BABA
0x05A0  C1B3BAB8  B3B4B8BE  C0B6C0B5  B9B6B8B9  BAB7B4BC  BABCBAC4  B9BFBDB9  B8BEB4C2
0x05C0  BCBCBDBE  BEC1B9C0  BEBCBCC6  C7BBC5B9  BAC1BEBB  C4C7B3BD  BCC2C3C6  BDBFB7BA
0x05E0  B9B7B9BD  B9C1C2BD  BBBCB4BE  BDB9C4BD  C5B9C0B9  B9B9B9BF  C2BABFC0  C0C0BDC8
0x0600  BDBFB9C2  BFB7C4BF  C1C5B7BC  B8C1B2B7  B9BEB8BC  B2BFBFB9  B9B5BDBA  C0C2BFBD
0x0620  C7B7BDB8  BBC1BEC0  B7B5C4B9  B5C3BFC3  C2BBB7C3  B8BDB8BE  C6C0BFC4  BDBAB8BC
0x0640  B9C0BDBD  BFBCBAC5  B9BBBBBC  BFB4BDBB  B2BBB9C1  B7B5BAB7  BEBEBBBD  B7BEB7BB
0x0660  BEBAB9B8  BDC0B7BD  BCC0BAB8  BCBABEC4  B8B6BFB6  C0B4BFC3  BBBCBDC0  B9BBC9B9
0x0680  BEBAC3BE  BEBDC1B5  BEBEC3BB  BDBFBBB8  B9BEC2BF  C4C2BCC3  BCC1BFBB  BFBABEB5
0x06A0  BBBDC0B6  C1C4B5BF  C2BCBDBC  BEC5B1B7  C2BBBCB6  C1BBBABF  B7C7BDC6  C5BAC0C3
```

```
0x06C0  C5BDBFB8  C0C2C2B6  BFBDC3B2  C0C4B1BE  C0C2BAB6  BAB3C1B4  B6BEBCBF  BCB8C4BC
0x06E0  B7BDBCBD  BFB6B7B9  C1B7C0BD  B8BAAFC4  BEB6B4BE  B5B9B9CB  BDBBC2BA  BFBEC2BC
0x0700  C3BBBFBE  B8BFC1B5  B1BEB7B5  B9BDBDC1  BFBBBDBF  BDC3BCBE  B5BCB4BE  C4B9C0BC
0x0720  B7BABFBB  B2BEC4C0  C9BEC3B3  B7BEB3C6  AFBAC3C5  B9BEBEC1  BCBFB9BE  C2C2B3C3
0x0740  BAB9BBB5  B7C6BDB4  B8B7BCBA  BDB9C3BC  BFC1BFB9  B6BBB6C8  B9C0BEBF  BCC0C1B7
0x0760  BAB5BFBE  C1B9BEC8  B4C3BEB8  C6CBBDC1  BBC1BAC1  B8B8C0B7  BBC3C0BF  BBB7C3BD
0x0780  BCBEC0CC  C3BFBDBA  BFC1BFC3  CBBCBBBF  BEB6B4B7  B7BBC0BF  B9C0BBBF  C5C5C0B7
0x07A0  BCBABAC0  BEB7B6C0  B8BCBAC3  C8C4CAB9  B7C1C3B4  B8C5C2BE  BABABCC5  C0B8BAB4
0x07C0  B9BDB4BC  C0C1B8B8  C1C6BEB7  B9B5C3C1  B8B9BCBE  BFB8C1BA  C2C0B7C4  BFBBBBB9
0x07E0  B6C1BCC0  BDBCC1C4  B9BFBEBF  B4BBC1BD  BFBEB7BE  BCBDBFBB  C1B8B9BF  C3C2C0C2

0x0800  BEBCBABE  C1C3B6BC  BDBFBABA  BEC1BFB6  C3C4BFBE  C3BBBFB7  BEBDC5CB  BABEB4BC
0x0820  BDBEC0BF  BDBCBCBA  BBBFBBB8  B9BDBBBF  BEB7CABD  BEBAB5B8  C9B7B9BA  C0B4BFC5
0x0840  B4BCB4B6  BBB5B9BF  BFC4C1C2  C0BFB9C4  BFBDB2BC  B3B8B6C0  B4BAC2C5  BAC8BAC0
0x0860  BBBDB1BE  C2B6B7C3  BBC2BDB9  B8BAC3C0  BFB7B8BD  C5BDC0BF  B8BEB6C0  C0C6C1C1
0x0880  B8BEB7C0  C2CCC0C4  BDC1C6C8  BFC1B6B9  BEC1C5BE  B5C4BABC  CBAFC6C3  B8C2BAC3
0x08A0  BCBAB5BF  B6BBBFBF  BCBABAB8  C0C7C0C0  B9C8BBB9  BABBBBB1  C7B8B7AF  BDB2BAB7
0x08C0  C0BBB8BA  BEBCAFB7  C2B9C1BB  BAB9BBC2  B8BABCC3  BAB9B4C3  BBB8BCC1  B5B7B6B9
0x08E0  BAB7B7BB  C0BFC5CA  BEBCBDBD  C3BAC0B9  C2C0BDB4  C8CCB7C7  C9C3BEB6  C0BEC6C0
0x0900  C4B8B7BF  CABBB9C0  B8B4B8BE  BBBDBFC9  B4BDB9C0  C0B6B7C5  BFBEBFC1  BDC0B5B3
0x0920  BDBBB8B5  BEC9C1B5  B8BDC1B1  BDBCB3BA  C3BBB4BC  B7B7C0BC  C8B8B5C4  B9C3C4C2
0x0940  BAC0BBBA  BEBABCC0  BCC3B5B7  BCBDB8C6  B7BEBAC1  BDBFC2C2  BCBCC3BF  BCB7BEBB
0x0960  B6C4B6BC  C0BEB6C0  BCBFBEBA  B9BFBBC1  C1BAC0BE  BEBEC3C3  BFBFB9BE  C0BABFBD
0x0980  BABDB7BA  BECABFBC  C1B8B9CB  BCB3C0B7  BBC9C3BA  C4C2C0BB  C2C4B9BF  B8C4B4BF
0x09A0  C3C0BABD  C6BCC0BE  BDC0BCBB  BFBBC4B3  B1B9C3BC  BCCABCC0  B9BEBDC6  B4BABAC2
0x09C0  C0BEC3B9  B4CDC5B6  B7BEC1BB
```



```
05.50 |

02.75 |

00.00 |

+-----------------------------------------------------------------------------------------------

      2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6
 7 7 7 7 7 7 7 7
      0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9 0 2 3 4 5 6 8 9 0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9
 0 2 3 4 5 6 8 9
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 . . . . . . . .
      5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7
 9 1 3 5 7 9 1 3
                                                Subcarrier Frequency


Active SC RxMER Statistics                      : (dB)      (1/4 dB hex)
Active Subcarrier RxMER Mean                    : 47.00     0xBC
Active Subcarrier RxMER Standard Deviation      :  5.25     0x15
Active Subcarrier RxMER Threshold Value         : 44.50     0xB2
Active Subcarrier RxMER Threshold Frequency (Hz): 78825000
```

The following example shows output for the **show cable modem prof-mgmt upstream** command for Cisco cBR Series Converged Broadband Routers starting from Cisco IOS XE Amsterdam 17.3.1w release.

```
Router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream
Upstream Profile Management Data :
MAC Address                     : XXXX.XXXX.XXXX
Num RxMER Measurement           : 1160
Tx Time                         : 0h:01m:18s ago
Rx Time                         : 0h:01m:18s ago
MER Poll Period   (min)         : 5
Recommended IUC                 : 5  (1024-QAM)
Current IUC                     : 5  (1024-QAM)
Downgrade IUC                   : 6  (512-QAM)
RxMER send/recv count           : 14/14
```

The following example shows the output for the **show cable modem** *mac address* **prof-mgmt upstream graph** command.

```
Router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream graph
Upstream Profile Management Data (Verbose):
MAC Address           : XXXX.XXXX.XXXX
Number of US Chan     : 1

Ucid                   : 7
MD US Chan             : Cable9/0/43/U6
Ctlr US Chan           : UC9/0/31:U12
RxMer Exempt Percent   : 0
RxMer Margin qDB       : 0
RxMer Threshold Percent : 2
Start Sc               : 148
End Sc                 : 2507
Num RxMER Measurement  : 2360
Tx Time                : 0h:04m:45s ago
```

```
Rx Time                 : 0h:04m:44s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
Downgrade IUC           : 6  (512-QAM)
RxMER send/recv count   : 1915/1915
DBC                     : 1/1/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Disabled
0x0000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0020  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0040  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0060  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0080  00000000  00000000  00000000  00000000  00000000  BAB9B9B8  BFCCBEB9  B6BDBCB4
0x00A0  BABAB8BD  B3B8B5B3  BCBABFBA  BCB6C0BD  BABEB8B3  B6BDBDBD  B8B9C9BD  B3ADBDB9
0x00C0  BDBCBDBD  BEC1BDB3  BCC3BBB6  BDB3BDBB  BCB5B3BD  B9BDBCB8  C4C0BBBA  BFB1C0BE
0x00E0  BFBBC4B7  BBBDBDBF  B8B7BEB7  C0BABDC0  B9BABABA  C0B8BDB5  C5C3BEB9  BCBEBAB1
0x0100  BBB9BDB9  C8C1BCBD  BCBEB6B8  BFB5BEBD  BEB9BEC2  BEC4BEB7  B8B8BFC1  BEB7B6BE
0x0120  B9BBBCBD  B2C1BDBA  B4BBB8C1  BDC3BFB9  ACC4BBC2  C3B7B3BD  BCB4BFBB  B9C2C8BF
0x0140  B4C2C2BD  BCC0BABD  B9B5BFC0  C0C3BCC1  BBBCBBC4  AEB9B9BD  C6C1BEB4  B5C7C5BB
0x0160  C4BEB8B9  BFB2BBC4  BBB7BAB8  B6C6B5BC  BDB6BEB4  B3C7C3B8  BBC2C0B9  B9B4BAB1
0x0180  B4B3C0BD  B8BFB6C3  B2B7B8B7  BDBAC3C5  BAC4B9C3  B8BBC1B8  BDBABCBB  B8C0B9B2
0x01A0  C1BDBCBE  BDB6C0BC  BFBEC4B9  C0B4BCBA  B7C1B6BC  B8B5B9B7  BAB6BCB7  B7B7B7BA
0x01C0  C1B0BFB6  BBC2B2B8  B5BABEB9  B8BCC4BA  BBB3B8C1  BABBBDB7  B5B9B9BA  BBBFB9B4
0x01E0  C3B4B9BA  BFB0C0C0  C2B8BDC1  BEBABBB9  C4B6BFB6  C3BEC1B3  BCBAC4BF  C0BBC3C2
0x0200  B2B9B9BA  B8B4C0C2  C5B4B6B5  BEC4BEB9  C1B8C5BC  C4C0B6B9  BEC0BDBF  BAB8BFC2
0x0220  BAB9B4BB  BDBDC5C3  B9C2B9B3  B6B8B9C6  BAB7CAB9  B5B9B9BD  BBC2B4BF  B3BCB6BE
0x0240  C1BAC3C1  BBBABBBE  C5BCBBBB  C2C0BCC1  B8B9B6BA  C3B7C6B9  C2BABEBE  BABDC9B8

0x0260  C4C1BCB7  B7BEB8BA  B3B8BAB4  BDC3C5BD  BDB5BDB9  B9BCBCBF  BEBDC5B7  BBC1B5BD
0x0280  B9BCB4B7  BFB3BDCB  BBBECCBE  B6BABABB  C8B1B9BD  BFBAC1BC  B9C1BFB7  C0BDBFBA
0x02A0  BCB1B8BA  C9BEC4BF  B4C2B7BC  B8BDB8BC  C5C2B8B7  C4BBC6BA  BCB6B9B9  C4BEBABF
0x02C0  B6AFBAB6  C5BCB8BB  BDC3B6BC  B4BAB4BC  C7C6C6BB  C6C2BAB4  BABDBBBB  BDC3BAC1
0x02E0  C5BEB3C0  BDC1B3BE  C9CBB8BF  C8BEC1BF  B4B4BFBE  BCCABEBE  B4BAB5BD  AEB0BCBC
0x0300  B9BCBDBD  B8C0C2C0  BAB5C3BB  B6C2B4BE  C0BEBEB4  C0BEBEB1  BDBBB7C9  BBBFBBBE
0x0320  C5B9BEBB  B6C3B7B7  BEBBBCB7  BEB9BABE  B8BEC2BC  BFC0C0BA  BEBCBABB  B4B7B8C2
0x0340  BCB1B7BC  B6B5BDBA  B3BAB8B8  C1C1C2B2  BFB7BBC0  BEC8BBB5  BBB5B7B7  BABBC3BC
0x0360  B9C5BCBA  C0BCB8BD  B4BFBDB8  B5BCC3BF  C3C6C5C1  BCBDBDC0  BCB9BDB9  B7B6C0C3
0x0380  C2BDC1BE  BFBDBAB9  BEBCB6BB  C4C0C0C2  C5BBBDC9  BCC2BEBA  BEC3BEC0  C5B8BCC0
0x03A0  C4BCBABA  B7B7BEB7  B5B9B7B3  BCB7AFB9  BABBB6B8  BABBC0B9  BCB3BFBC  BEBCBBC0
0x03C0  B2BFBEBB  BAAEC3B8  C4BFBCC0  C1BBC1B9  C4C0B4B5  BFBAB9BF  BEC1B4BA  B7C1BDBE
0x03E0  C6BFBEC6  C8BFBBC6  C0B6B9C3  BBC7BCBF  BFB7BFC0  C8BEC3BA  BEC5C2B4  C0C5BAC0
0x0400  BEBCB4C1  BDB4C7B9  B7BABAC3  BDB9C1C5  C4B7BCB7  BBBFBABA  BCC6BDC0  B9B8BFB7
0x0420  C2C2C0B6  B8BEB9BF  C5BEC0BD  B5C2BBB7  C0B4B7B8  B8BEC6BF  BBB6B4C5  BCB9C1C0
0x0440  BAC3BEBA  BEBBC0BB  B6B8C0B5  BCB5B9B4  BFBDB4B8  BEB6C5BC  B9BCBFB8  C4BABABD
0x0460  BFB9C5B9  C2BBBABA  BAB5BDBB  C2C4BCBC  BBB5B7C0  B8C0B7C9  C1BCBEC0  BCC4B7C0
0x0480  B4BABDBF  B3C2B8C0  B8B6BFC1  BABDBEC0  C7C1B5BC  BCBABFBE  CBBDBFB4  B7C3BDBB
0x04A0  BCBABFBA  B8B3B8B6  C0C2C3B6  BCB9C0B9  BDC4BCBB  BEB5B6B3  BAB8BEBA  C3C5B7B7
0x04C0  BCC0B6B7  B9BCC1BE  C1BDBAC0  BBBABEC0  C1C0B9B6  BBBBBABD  B6BBC0B5  B5B7B4BC
0x04E0  B8CBBBBA  B8BFC0BA  B8BEB5BD  B7C1B8C0  B5C5BCC1  BBCBBCBA  CAB9BEBD  C6C0BABC
0x0500  CCB9B9C4  C9BBBFB3  BAC0BABE  C6BCC3B0  B6C9BBB8  BFBAC2BB  B6BAC3C4  B4C2BCB9
0x0520  B8C2BDB9  B9C6B9BB  C4BABBBC  B7BDBDB7  BBB6B9BF  BDBCB7BC  C5BFBDB3  BDBAC1C1
0x0540  C9BAC0B3  BDBEC5BD  BBB8B9BA  BCC5C2B8  BFC2BAB9  B7B7BDCB  C4BDC1BC  BABAC3B9
0x0560  C5C4C0B9  BEC0BEBD  BCBBBDB5  BAC4BBC5  BBB7BCBD  BABFC5B9  BFBBBAC2  B8BCBCBC
0x0580  C5BCBFC2  BDB7BABC  BBC2C6C8  BFB6BEB5  B9C0B9BF  B7BFC0BD  C1BEB6C0  B8B7B9BE
0x05A0  C2B3BDBB  C4C7C1C2  C0BABAB7  BCB7B9B6  B9CBBEBA  C4BFBFB7  B7BDBAC9  C4C1C0B7
0x05C0  BDC8B2BC  BCC0B7B7  C8BBC0CF  B7BAC1BD  BCBCC5C8  C4BEC1C1  BABFB7C0  B7BBBEB9
0x05E0  C0BDBBB9  C2B4C3BC  BDB3C1C3  B4B3C4B9  BDBFC0B5  B6B4BBBF  BAB9C3C0  C0BEBCB6
0x0600  BDBFBEBD  C0C0BEBE  BDC2B7B4  C2BEC2B7  B5BEC6BE  BFB8B9BF  B0BBB8BC  B5C5BDBB
0x0620  BEC1B7B6  BEB7B9CA  BDBCC0BD  C3BABCBA  BABBBCBF  B9BDBCBD  BAC6BDBA  C6B9BFC1
```

```
0x0640  BEB8BFBD  BDC0BCBB  BAB8C8C3  C5C0BAB8  C0C0BEC4  CAC4BEBE  C3B5C5B9  B8C3CCBE
0x0660  B6C3C0B8  BABBB4BA  B8BDBCB8  B9BBBCBC  C5B8C0B8  BFB9B7B9  C0BFB3AF  CDB8BEC6
0x0680  C1B9C5BF  BAB5C8BC  BAB2B7C2  BEBCBCC1  BDC1C4BE  B7C0B9BB  C7C1B8B8  BBB9B1BB
0x06A0  C4B9BCC0  B6B8BFB7  C4C2BFBD  C5BFC0C4  C2BEBBBB  CEB3B1B8  C7B7B9B7  C1B4C6BF
0x06C0  BDBDBDB7  C1C1BBBD  C3BCBDB7  C0B5BCB9  BFB9C2C1  BABDB8B5  B7BABAC3  C1B8BFB2
0x06E0  BBB9C0B5  BEBCC4C2  B4BDC8C0  C4BDBDBD  BDC1B8C2  B9B6C5C4  BFB8BBBF  B8BBC2C4
0x0700  BFBAC5BE  B0BBBDBD  B9BEBBB4  C0BCC3B9  BABEBCB9  C3C0B8BA  BBBFBDBD  C3C3BFC6
0x0720  B8BCB7BC  C4B7BEBC  B4C2C0B9  B5BDBCC3  B6B3C9C3  B6CFBFC1  B9BEBCB8  BBB9C8BA
0x0740  BABDBCC1  BBC0BCBE  C0BDBBC3  BEBAC6C4  CABEC3B8  C6BAC3BD  C9BABEBD  BDB8C8BC
0x0760  BFC3BDB9  B6CCB6B5  BFB7B4BE  C1C9BDB9  C1BCBEC3  B8BCB9BD  C6BCBEC5  BABABCC1
0x0780  B4C1B8C2  B8C2C1BE  B9BAB8BC  B8C3BDBC  B9BAD3C0  BCC6C6C1  C5BDB7B3  C3B9B8B2
0x07A0  BBC3BCBD  BEC0B6BD  BBC0BCC0  BDBBC2BE  BDBCBCC0  B9BCB8C0  B2C2B8B6  C3C0BDC4
0x07C0  BEB6BCBA  B6BDBCBF  B8BCBEB6  C8BCC3B5  BDBFBEC3  BBBAC9BE  BAC4BDB8  C5C0D0C5
0x07E0  BBC0BDBD  BBC1B6BF  B8BBC3B4  BAB7B5CC  B4C1B9B6  BCB8C0C0  BBBFC1BF  C1B3C2BD

0x0800  C3BFC9BD  B5B7B8B5  BDBBB8BB  BCC2C2BE  B6C0BEBD  BFBEB8C1  B8B6BFBF  B9C5C3BD
0x0820  C8BEC6BA  BDC1B7BF  AEC1C4BE  BCBEC0C0  BEBBC0BA  BCB9B5B8  B9C0BCBD  C4BBB5C1
0x0840  C0BBC2BD  C7B6C2BA  BFB7BEC5  BEBAC1C8  B9BFC1C0  BAC4B3BD  B7B4C9C0  BEB9C8BC
0x0860  C7BFBABC  C1BFBFB7  B4BEC5B8  BEC5BDC2  C2B3C0C4  BFC0B5C0  BCC1BAC1  BEC4B6C5
0x0880  BBBCBCBF  C7BBBEC2  B8BCC1B3  B8BBB8BC  B2B4B6BA  BBC0B7BA  B5C8B8BF  B8B8B8C1
0x08A0  C5BFBBC0  B8C0BBC0  BDC3BFBC  C3BAB5B7  B8BABABF  C3BABCC9  CCC3BCBE  BEBEBEBF
0x08C0  B7BEBCC2  BABDBFBF  BFB9CAC1  C1BBB8BC  C9C5C3C9  C5B4BCBD  B8C4BEB8  BDBEC5C3
0x08E0  BABEB8C4  B6B7B7BA  B5C2BBBD  BCC3BBB6  BDBDBFC2  B8BCC7C1  C1B6BCBE  BFBCBDB1
0x0900  BAC4B4BC  BDBEB8B1  BBC1B8C2  B9BFBCBB  C2BFB9C0  BFBBC3B5  C1B7C0B8  B8C3C0C2
0x0920  C2BAB8BE  B9BFC4BF  BACAB7C1  BABCB0BB  C1BCC3B9  BBC0BAB4  BCB6C5BA  BDB4BBBE
0x0940  BABCB8C0  BEB7BEBB  B7BEBFC2  B7B9BFC5  BBBBBFBE  B9BFCBBF  C3C1BDC2  BEBEB8BD
0x0960  BABFC1B4  BABABBC2  BBBEBFB5  C4BBBEB9  C3C1BEC0  BCBDBDC0  C1C3C3C3  C4BCCCBF
0x0980  BEBCC0B8  C3BDC3C2  B9C3BABD  BFBEC1C2  B7C0B5BB  BFBFC2C2  C1C1BBBA  BAB4B5B2
0x09A0  BDB7BABB  C6BBBCB8  B9B8BDB1  B9B8BCBF  BEB9C5C0  BFC3C9BE  C2B5B4B6  C4B6C0BD
0x09C0  B7BBBCC0  C3B4C5BE  BFBEBBB7

mslot RxMER(in 1/4 dB):

# msMer    0  : BBB9BABA BCBBBBBD BBBBBCBD BCBABABC BBBBB8BA B9BCBCBC BCBCBBBC BEBABBBD
# msMer    32 : BBBDBBBD BDBEBABC BCBBBABA BBBDBCBE BEB7BBBC BDBEBEBC BCBBBDB9 BCBBBDBC
# msMer    64 : BCBBBABC BABCBFBC BCBBBCBD BEBCBDBC BBBDBDBF BCBBBCBD BABDBDBE BFBABDBC
# msMer    96 : BBBEBCBD BABEBDBB BDBCBDBF BEBDBCBD BDBDBBBC BFBBBEBB BEBDBCBE BDBEBDBA
# msMer    128: BCBCBFC0 BDBBBCBC BDBDBBBC BEBDBFBD BBBBBC

                                          RxMER vs Subcarrier
      |
52.25 |                                                                          +

49.50 |++  +  +++       ++++++++++  +++   ++++  ++  ++++++ + ++  ++++ +++ + ++++++  ++++
++++++ + + + +++
46.75
|++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
44.00
|++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
41.25 | +    + +              + +       ++                            +                 +

38.50 |                          |

35.75 |                          |

33.00 |                          +

30.25 |

  dB  |

24.75 |

22.00 |
```

```
19.25 |

16.50 |

13.75 |

11.00 |

08.25 |

05.50 |

02.75 |


00.00 |


+-----------------------------------------------------------------------------------------------------
       2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6
 7 7 7 7 7 7 7 7
       0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9 0 2 3 4 5 6 8 9 0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9
 0 2 3 4 5 6 8 9
       . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 . . . . . . . .
       5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7
 9 1 3 5 7 9 1 3
                                                 Subcarrier Frequency


Active SC RxMER Statistics                      : (dB)      (1/4 dB hex)
Active Subcarrier RxMER Mean                    : 47.00     0xBC
Active Subcarrier RxMER Standard Deviation      :  5.50     0x16
Active Subcarrier RxMER Threshold Value         : 44.75     0xB3
Active Subcarrier RxMER Threshold Frequency (Hz): 71475000

Router#
```

The following example shows the output for the **show cable modem** *mac address* **prof-mgmt upstream graph counts** command.

```
Router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream graph counts
Upstream Profile Management Data (Verbose):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 1

Ucid                    : 7
MD US Chan              : Cable9/0/31/U6
Ctlr US Chan            : UC9/0/31:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 2507
Num RxMER Measurement   : 2360
Tx Time                 : 0h:04m:56s ago
Rx Time                 : 0h:04m:56s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
```

```
Downgrade IUC           : 6  (512-QAM)
RxMER send/recv count   : 1915/1915
DBC                     : 1/1/0/0/0
                           (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Disabled
0x0000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0020  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0040  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0060  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0080  00000000  00000000  00000000  00000000  00000000  BAB9B9B8  BFCCBEB9  B6BDBCB4
0x00A0  BABAB8BD  B3B8B5B3  BCBABFBA  BCB6C0BD  BABEB8B3  B6BDBDBD  B8B9C9BD  B3ADBDB9
0x00C0  BDBCBDBD  BEC1BDB3  BCC3BBB6  BDB3BDBB  BCB5B3BD  B9BDBCB8  C4C0BBBA  BFB1C0BE
0x00E0  BFBBC4B7  BBBDBDBF  B8B7BEB7  C0BABDC0  B9BABABA  C0B8BDB5  C5C3BEB9  BCBEBAB1
0x0100  BBB9BDB9  C8C1BCBD  BCBEB6B8  BFB5BEBD  BEB9BEC2  BEC4BEB7  B8B8BFC1  BEB7B6BE
0x0120  B9BBBCBD  B2C1BDBA  B4BBB8C1  BDC3BFB9  ACC4BBC2  C3B7B3BD  BCB4BFBB  B9C2C8BF
0x0140  B4C2C2BD  BCC0BABD  B9B5BFC0  C0C3BCC1  BBBCBBC4  AEB9B9BD  C6C1BEB4  B5C7C5BB
0x0160  C4BEB8B9  BFB2BBC4  BBB7BAB8  B6C6B5BC  BDB6BEB4  B3C7C3B8  BBC2C0B9  B9B4BAB1
0x0180  B4B3C0BD  B8BFB6C3  B2B7B8B7  BDBAC3C5  BAC4B9C3  B8BBC1B8  BDBABCBB  B8C0B9B2
0x01A0  C1BDBCBE  BDB6C0BC  BFBEC4B9  C0B4BCBA  B7C1B6BC  B8B5B9B7  BAB6BCB7  B7B7B7BA
0x01C0  C1B0BFB6  BBC2B2B8  B5BABEB9  B8BCC4BA  BBB3B8C1  BABBBDB7  B5B9B9BA  BBBFB9B4
0x01E0  C3B4B9BA  BFB0C0C0  C2B8BDC1  BEBABBB9  C4B6BFB6  C3BEC1B3  BCBAC4BF  C0BBC3C2
0x0200  B2B9B9BA  B8B4C0C2  C5B4B6B5  BEC4BEB9  C1B8C5BC  C4C0B6B9  BEC0BDBF  BAB8BFC2
0x0220  BAB9B4BB  BDBDC5C3  B9C2B9B3  B6B8B9C6  BAB7CAB9  B5B9B9BD  BBC2B4BF  B3BCB6BE
0x0240  C1BAC3C1  BBBABBBE  C5BCBBBB  C2C0BCC1  B8B9B6BA  C3B7C6B9  C2BABEBE  BABDC9B8
0x0260  C4C1BCB7  B7BEB8BA  B3B8BAB4  BDC3C5BD  BDB5BDB9  B9BCBCBF  BEBDC5B7  BBC1B5BD
0x0280  B9BCB4B7  BFB3BDCB  BBBECCBE  B6BABABB  C8B1B9BD  BFBAC1BC  B9C1BFB7  C0BDBFBA
0x02A0  BCB1B8BA  C9BEC4BF  B4C2B7BC  B8BDB8BC  C5C2B8B7  C4BBC6BA  BCB6B9B9  C4BEBABF
0x02C0  B6AFBAB6  C5BCB8BB  BDC3B6BC  B4BAB4BC  C7C6C6BB  C6C2BAB4  BABDBBBB  BDC3BAC1
0x02E0  C5BEB3C0  BDC1B3BE  C9CBB8BF  C8BEC1BF  B4B4BFBE  BCCABEBE  B4BAB5BD  AEB0BCBC
0x0300  B9BCBDBD  B8C0C2C0  BAB5C3BB  B6C2B4BE  C0BEBEB4  C0BEBEB1  BDBBB7C9  BBBFBBBE
0x0320  C5B9BEBB  B6C3B7B7  BEBBBCB7  BEB9BABE  B8BEC2BC  BFC0C0BA  BEBCBABB  B4B7B8C2
0x0340  BCB1B7BC  B6B5BDBA  B3BAB8B8  C1C1C2B2  BFB7BBC0  BEC8BBB5  BBB5B7B7  BABBC3BC
0x0360  B9C5BCBA  C0BCB8BD  B4BFBDB8  B5BCC3BF  C3C6C5C1  BCBDBDC0  BCB9BDB9  B7B6C0C3
0x0380  C2BDC1BE  BFBDBAB9  BEBCB6BB  C4C0C0C2  C5BBBDC9  BCC2BEBA  BEC3BEC0  C5B8BCC0
0x03A0  C4BCBABA  B7B7BEB7  B5B9B7B3  BCB7AFB9  BABBB6B8  BABBC0B9  BCB3BFBC  BEBCBBC0
0x03C0  B2BFBEBB  BAAEC3B8  C4BFBCC0  C1BBC1B9  C4C0B4B5  BFBAB9BF  BEC1B4BA  B7C1BDBE
0x03E0  C6BFBEC6  C8BFBBC6  C0B6B9C3  BBC7BCBF  BFB7BFC0  C8BEC3BA  BEC5C2B4  C0C5BAC0
0x0400  BEBCB4C1  BDB4C7B9  B7BABAC3  BDB9C1C5  C4B7BCB7  BBBFBABA  BCC6BDC0  B9B8BFB7
0x0420  C2C2C0B6  B8BEB9BF  C5BEC0BD  B5C2BBB7  C0B4B7B8  B8BEC6BF  BBB6B4C5  BCB9C1C0
0x0440  BAC3BEBA  BEBBC0BB  B6B8C0B5  BCB5B9B4  BFBDB4B8  BEB6C5BC  B9BCBFB8  C4BABABD
0x0460  BFB9C5B9  C2BBBABA  BAB5BDBB  C2C4BCBC  BBB5B7C0  B8C0B7C9  C1BCBEC0  BCC4B7C0
0x0480  B4BABDBF  B3C2B8C0  B8B6BFC1  BABDBEC0  C7C1B5BC  BCBABFBE  CBBDBFB4  B7C3BDBB
0x04A0  BCBABFBA  B8B3B8B6  C0C2C3B6  BCB9C0B9  BDC4BCBB  BEB5B6B3  BAB8BEBA  C3C5B7B7
0x04C0  BCC0B6B7  B9BCC1BE  C1BDBAC0  BBBABEC0  C1C0B9B6  BBBBBABD  B6BBC0B5  B5B7B4BC
0x04E0  B8CBBBBA  B8BFC0BA  B8BEB5BD  B7C1B8C0  B5C5BCC1  BBCBBCBA  CAB9BEBD  C6C0BABC
0x0500  CCB9B9C4  C9BBBFB3  BAC0BABE  C6BCC3B0  B6C9BBB8  BFBAC2BB  B6BAC3C4  B4C2BCB9
0x0520  B8C2BDB9  B9C6B9BB  C4BABBBC  B7BDBDB7  BBB6B9BF  BDBCB7BC  C5BFBDB3  BDBAC1C1
0x0540  C9BAC0B3  BDBEC5BD  BBB8B9BA  BCC5C2B8  BFC2BAB9  B7B7BDCB  C4BDC1BC  BABAC3B9
0x0560  C5C4C0B9  BEC0BEBD  BCBBBDB5  BAC4BBC5  BBB7BCBD  BABFC5B9  BFBBBAC2  B8BCBCBC
0x0580  C5BCBFC2  BDB7BABC  BBC2C6C8  BFB6BEB5  B9C0B9BF  B7BFC0BD  C1BEB6C0  B8B7B9BE
0x05A0  C2B3BDBB  C4C7C1C2  C0BABAB7  BCB7B9B6  B9CBBEBA  C4BFBFB7  B7BDBAC9  C4C1C0B7
0x05C0  BDC8B2BC  BCC0B7B7  C8BBC0CF  B7BAC1BD  BCBCC5C8  C4BEC1C1  BABFB7C0  B7BBBEB9
0x05E0  C0BDBBB9  C2B4C3BC  BDB3C1C3  B4B3C4B9  BDBFC0B5  B6B4BBBF  BAB9C3C0  C0BEBCB6
0x0600  BDBFBEBD  C0C0BEBE  BDC2B7B4  C2BEC2B7  B5BEC6BE  BFB8B9BF  B0BBB8BC  B5C5BDBB
0x0620  BEC1B7B6  BEB7B9CA  BDBCC0BD  C3BABCBA  BABBBCBF  B9BDBCBD  BAC6BDBA  C6B9BFC1
0x0640  BEB8BFBD  BDC0BCBB  BAB8C8C3  C5C0BAB8  C0C0BEC4  CAC4BEBE  C3B5C5B9  B8C3CCBE
0x0660  B6C3C0B8  BABBB4BA  B8BDBCB8  B9BBBCBC  C5B8C0B8  BFB9B7B9  C0BFB3AF  CDB8BEC6
0x0680  C1B9C5BF  BAB5C8BC  BAB2B7C2  BEBCBCC1  BDC1C4BE  B7C0B9BB  C7C1B8B8  BBB9B1BB
0x06A0  C4B9BCC0  B6B8BFB7  C4C2BFBD  C5BFC0C4  C2BEBBBB  CEB3B1B8  C7B7B9B7  C1B4C6BF
0x06C0  BDBDBDB7  C1C1BBBD  C3BCBDB7  C0B5BCB9  BFB9C2C1  BABDB8B5  B7BABAC3  C1B8BFB2
0x06E0  BBB9C0B5  BEBCC4C2  B4BDC8C0  C4BDBDBD  BDC1B8C2  B9B6C5C4  BFB8BBBF  B8BBC2C4
0x0700  BFBAC5BE  B0BBBDBD  B9BEBBB4  C0BCC3B9  BABEBCB9  C3C0B8BA  BBBFBDBD  C3C3BFC6
0x0720  B8BCB7BC  C4B7BEBC  B4C2C0B9  B5BDBCC3  B6B3C9C3  B6CFBFC1  B9BEBCB8  BBB9C8BA
```

```
0x0740  BABDBCC1  BBC0BCBE  C0BDBBC3  BEBAC6C4  CABEC3B8  C6BAC3BD  C9BABEBD  BDB8C8BC
0x0760  BFC3BDB9  B6CCB6B5  BFB7B4BE  C1C9BDB9  C1BCBEC3  B8BCB9BD  C6BCBEC5  BABABCC1
0x0780  B4C1B8C2  B8C2C1BE  B9BAB8BC  B8C3BDBC  B9BAD3C0  BCC6C6C1  C5BDB7B3  C3B9B8B2
0x07A0  BBC3BCBD  BEC0B6BD  BBC0BCC0  BDBBC2BE  BDBCBCC0  B9BCB8C0  B2C2B8B6  C3C0BDC4
0x07C0  BEB6BCBA  B6BDBCBF  B8BCBEB6  C8BCC3B5  BDBFBEC3  BBBAC9BE  BAC4BDB8  C5C0D0C5
0x07E0  BBC0BDBD  BBC1B6BF  B8BBC3B4  BAB7B5CC  B4C1B9B6  BCB8C0C0  BBBFC1BF  C1B3C2BD
0x0800  C3BFC9BD  B5B7B8B5  BDBBB8BB  BCC2C2BE  B6C0BEBD  BFBEB8C1  B8B6BFBF  B9C5C3BD
0x0820  C8BEC6BA  BDC1B7BF  AEC1C4BE  BCBEC0C0  BEBBC0BA  BCB9B5B8  B9C0BCBD  C4BBB5C1
0x0840  C0BBC2BD  C7B6C2BA  BFB7BEC5  BEBAC1C8  B9BFC1C0  BAC4B3BD  B7B4C9C0  BEB9C8BC
0x0860  C7BFBABC  C1BFBFB7  B4BEC5B8  BEC5BDC2  C2B3C0C4  BFC0B5C0  BCC1BAC1  BEC4B6C5
0x0880  BBBCBCBF  C7BBBEC2  B8BCC1B3  B8BBB8BC  B2B4B6BA  BBC0B7BA  B5C8B8BF  B8B8B8C1
0x08A0  C5BFBBC0  B8C0BBC0  BDC3BFBC  C3BAB5B7  B8BABABF  C3BABCC9  CCC3BCBE  BEBEBEBF
0x08C0  B7BEBCC2  BABDBFBF  BFB9CAC1  C1BBB8BC  C9C5C3C9  C5B4BCBD  B8C4BEB8  BDBEC5C3
0x08E0  BABEB8C4  B6B7B7BA  B5C2BBBD  BCC3BBB6  BDBDBFC2  B8BCC7C1  C1B6BCBE  BFBCBDB1
0x0900  BAC4B4BC  BDBEB8B1  BBC1B8C2  B9BFBCBB  C2BFB9C0  BFBBC3B5  C1B7C0B8  B8C3C0C2
0x0920  C2BAB8BE  B9BFC4BF  BACAB7C1  BABCB0BB  C1BCC3B9  BBC0BAB4  BCB6C5BA  BDB4BBBE
0x0940  BABCB8C0  BEB7BEBB  B7BEBFC2  B7B9BFC5  BBBBBFBE  B9BFCBBF  C3C1BDC2  BEBEB8BD
0x0960  BABFC1B4  BABABBC2  BBBEBFB5  C4BBBEB9  C3C1BEC0  BCBDBDC0  C1C3C3C3  C4BCCCBF
0x0980  BEBCC0B8  C3BDC3C2  B9C3BABD  BFBEC1C2  B7C0B5BB  BFBFC2C2  C1C1BBBA  BAB4B5B2
0x09A0  BDB7BABB  C6BBBCB8  B9B8BDB1  B9B8BCBF  BEB9C5C0  BFC3C9BE  C2B5B4B6  C4B6C0BD
0x09C0  B7BBBCC0  C3B4C5BE  BFBEBBB7

mslot RxMER(in 1/4 dB):

# msMer    0  : BBB9BABA BCBBBBBD BBBBBCBD BCBABABC BBBBB8BA B9BCBCBC BCBCBBBC BEBABBBD
# msMer    32 : BBBDBBBD BDBEBABC BCBBBABA BBBDBCBE BEB7BBBC BDBEBEBC BCBBBDB9 BCBBBDBC
# msMer    64 : BCBBBABC BABCBFBC BCBBBCBD BEBCBDBC BBBDBDBF BCBBBCBD BABDBDBE BFBABDBC
# msMer    96 : BBBEBCBD BABEBDBB BDBCBDBF BEBDBCBD BDBDBBBC BFBBBEBB BEBDBCBE BDBEBDBA
# msMer    128: BCBCBFC0 BDBBBCBC BDBDBBBC BEBDBFBD BBBBBC

                                              RxMER vs Subcarrier
      |
52.25 |                                                                              1

49.50 |11  1  122       2112123321  111   5211  12  125111 2 34  1132 313 1 123422  3112
321123 1 1 1 111
46.75
|7********9**69***9**********0*****************0******0****************************0***********6
44.00
|*98098850**9**8*0*8*7*097788*965*994990**780**99098760*6798877*7080687959794040766965*8406899645*81
41.25 | 1    1 1              1 1       11                            1                 1

38.50 |

35.75 |

33.00 |

30.25 |

  dB  |

24.75 |

22.00 |

19.25 |

16.50 |

13.75 |

11.00 |
```

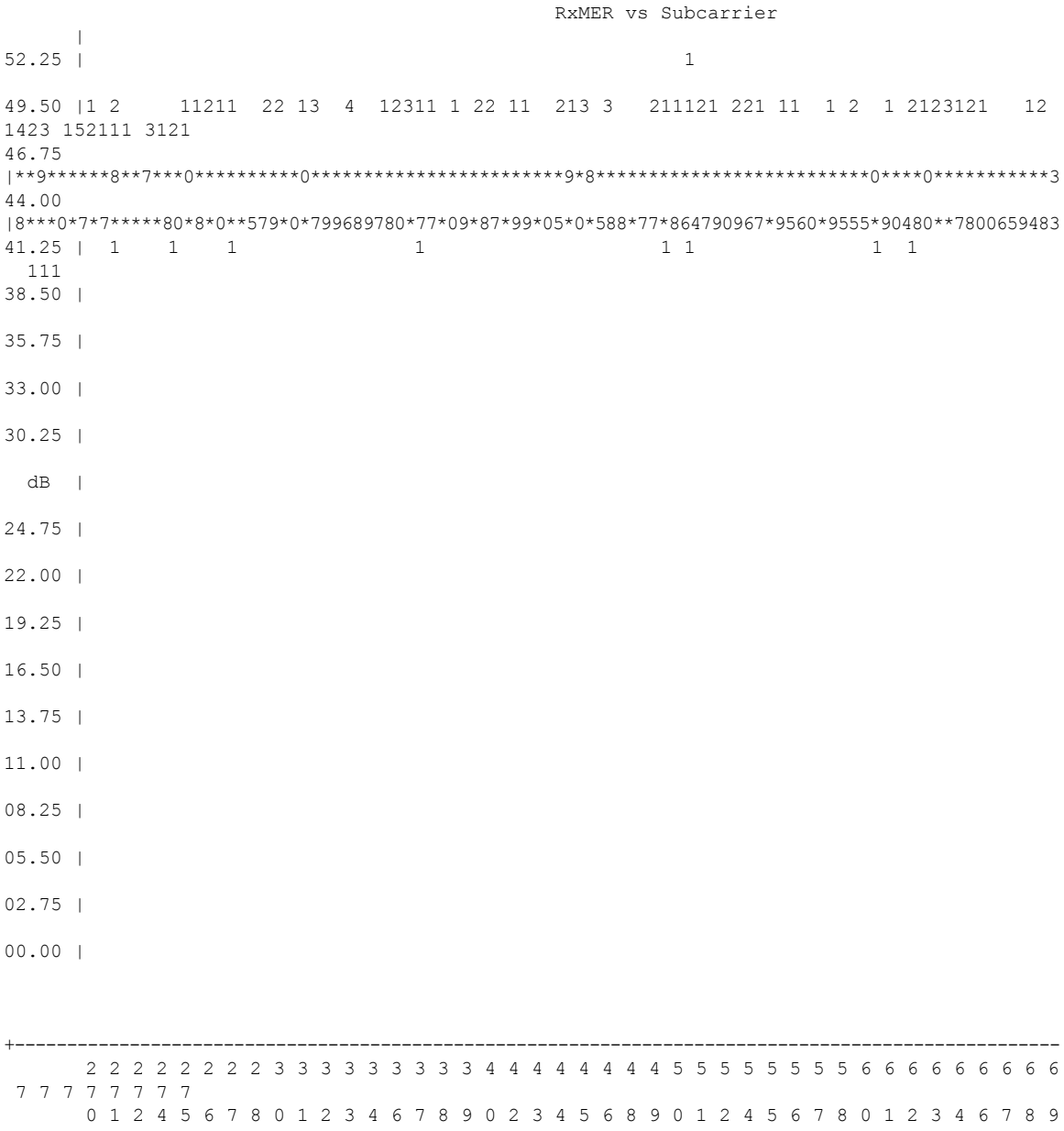
```
08.25 |

05.50 |

02.75 |

00.00 |


+-----------------------------------------------------------------------------------------------------

      2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6
 7 7 7 7 7 7 7 7
      0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9 0 2 3 4 5 6 8 9 0 1 2 4 5 6 7 8 0 1 2 3 4 6 7 8 9
 0 2 3 4 5 6 8 9
      . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 . . . . . . . .
      5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7
 9 1 3 5 7 9 1 3
                                                Subcarrier Frequency


Active SC RxMER Statistics                      : (dB)      (1/4 dB hex)
Active Subcarrier RxMER Mean                    : 47.00     0xBC
Active Subcarrier RxMER Standard Deviation      :  5.50     0x16
Active Subcarrier RxMER Threshold Value         : 44.75     0xB3
Active Subcarrier RxMER Threshold Frequency (Hz): 71475000

Router#
```

The following example shows the output for the **show cable modem** *mac address* **prof-mgmt upstream graph ignored counts** command.

```
Router#show cable modem XXXX.XXXX.XXXX prof-mgmt upstream graph ignored counts
Upstream Profile Management Data (Verbose)(Ignored):
MAC Address            : XXXX.XXXX.XXXX
Number of US Chan      : 1

Ucid                    : 7
MD US Chan              : Cable9/0/31/U6
Ctlr US Chan            : UC9/0/31:U12
RxMer Exempt Percent    : 0
RxMer Margin qDB        : 0
RxMer Threshold Percent : 2
Start Sc                : 148
End Sc                  : 2507
Num RxMER Measurement   : 2360
Tx Time                 : 0h:01m:25s ago
Rx Time                 : 0h:01m:25s ago
MER Poll Period   (min) : 5
Auto Profile Upgrade    : Yes
Upgrd Dly Cnt (cur/cfg) : 0/1
Upgrd Dly rcmd IUC      : none
Recommended IUC         : 5  (1024-QAM)
Current IUC             : 5  (1024-QAM)
Downgrade IUC           : 6  (512-QAM)
RxMER send/recv count   : 1916/1916
DBC                     : 1/1/0/0/0
                          (send/succeed/err/reject/timeout)
State                   : Ready
Profile Downgrade       : Disabled
0x0000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
```

```
0x0020  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0040  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0060  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
0x0080  00000000  00000000  00000000  00000000  00000000  BAB8BABB  B4BCB9BB  C4C1BEC2
0x00A0  BDBAB4C1  C3B9BBC3  BEC1BDC8  B1B0B9B5  BDC4C1B6  BEC0BEBD  B7B6C0B9  B6B3BEC5
0x00C0  B5BABAC1  C7B5C7B2  B9B7B0C1  B2BDB4B5  C0B8C2B7  BBBFBDC2  B2AEB5C2  BEBABAC0
0x00E0  B1BDBDB9  B7B5B7B8  B4BBC1C0  C0B9B8BE  BBBEC2C4  BEC3BFB4  BCB7BAC3  B6BDB1BC
0x0100  C0B9B7B5  BCBEBAC0  B9BBBFC3  BCBEBAB9  B6BCC0BE  BBC1C0B7  C0B9B6B9  BFB8C0B8
0x0120  BABDBAB5  C1B1C1B9  C0C5B7BF  B8C3BDBB  C2BBBCC1  BCC4B8B5  BFBABFBD  C0BAB7B5
0x0140  BCBEB7B9  C0B4B2B5  BEAEBDC0  BDB6B5BD  B2BFC4C0  C1C6C5C0  BABCC1B7  BDBDBDC0
0x0160  C2B9B7BA  C5BFB8BD  BEC2BDB7  B8BABDB4  C3BCB7B8  B7BEC1BA  B6BBB6C0  BABAC7B0
0x0180  BEBAB8B7  C0B8C0B9  B6C3B3BF  C9BFB6C8  BAB7B9BC  BCC1B1B4  B7BBC0BE  B8B9B7C1
0x01A0  C1C1BDB9  BFB7BDBC  BAC0BBB6  BFBCB1BC  BACAB5BA  B6C0C1B7  BAB4BDCF  BAC2B3B3
0x01C0  C0B7B2BA  B9B8ADBD  BEB6B7B8  BEB7B4B7  C0B6BDBE  B5B9B8B4  C5BEB3B5  BCBFB6BB
0x01E0  B4BCB8C5  BFB8C0B0  B7BBB7BD  BFB7C0BE  B9BDBDB7  C0BCB5BC  C3C0C2C0  B5BDBFB9
0x0200  B5BBC6C0  C0BFBAC0  B3C3BDC2  B2B9BAB5  BABDC6BE  BAB9B5BB  C7C1B7C3  BAB8BABE
0x0220  BFC1B5C6  BDB5C3C0  BBB9B9B4  BDB8BAB8  BCBABEB5  BCBCB8BC  BDBFBDC0  BBB7BDC0
0x0240  C0B4BEBD  B6B9BEBA  BFBABAC0  C2BDB8B8  BEB2C2BB  CCB8BABB  C0BAC4B4  BCB3C2CC
0x0260  C1B8B9BD  C6C2B6C1  B8B9B7B0  C9BABCC5  BBC0B9C1  BBB9BAB6  B8BABCBC  C1B8BAB9
0x0280  BFBEBDBC  BAB3BDC0  BABCBBBE  BDC0B5B6  BCBEC3BA  BDBDC0BA  C0BEB4B9  BAC1B9C0
0x02A0  BABAB4B5  C0BFBAB6  C8BEBDC1  B8BCC0BE  C0CAC8C2  C0C1B8B4  C9C0BFBF  BCC0C0BD
0x02C0  C0BCC3BD  B7BFB8BB  C1B5C0B7  BBBAC0BD  B8B9C2BC  B4BDB6B6  BEBEBCBF  BDB7B8B5
0x02E0  BEB7BDBD  B9BDC5BB  BEB9BCBB  B4BEB3B9  B6BDB9BE  BBBEC0BD  C0B6BAB7  BDC7B6B7
0x0300  BCBCB9BF  B9B5C3C3  BFC1BEC5  BCC4B7B4  B2C6B7B8  C2C0C8B8  B8BBB5BC  B6BDB9C0
0x0320  C6B3C1BE  BDB5C9BD  C1B8BABA  CEBDBDB7  B8BDB8B4  B7C6B2BC  B9C0B6BE  BFBFB6BC
0x0340  BEC2B9C0  BEC0BAAF  BEBEBDBC  BEBAB8BD  B1B9BCC3  B8BFB8BD  BFBCBDBE  C1B4B6BF
0x0360  C1CCB7C0  B5BABFB9  C4B7BCBA  BCB7BEBC  BFB1B9BC  B8BBC4BF  BCBEBCC4  BCC3C1CB
0x0380  B2BCBDBA  C2BBBCBF  BEC1C2BD  BCC2B8BF  B9BEBAB8  BEB9BCBD  BEC0BABA  B4B6BABD
0x03A0  BFC0BDB7  BBBAC2C3  BBBEBFC0  BFCBC1B7  B9BDB8C2  BBC2BAC0  B4BFB0BC  C9BEB3BE
0x03C0  C4BAB9BE  C5C0BBC5  B8C3BDC2  B9C6BCBE  BDBEC6C0  BAC5C3B4  B9C4B9BA  B6BFC1BE
0x03E0  BBC5C2BC  B8BDB8BD  B8BDB4BB  BFB8B6BE  BCBBB8C1  BDBDB8BD  C1C0BCBE  B7BEBBB7
0x0400  B4C5C6BE  BDB8B8B9  B7BFBAB8  B6BDC0C1  BDB9C2B6  C4BBB9B6  BAC9B4BA  C1B5C1B7
0x0420  B4C4C3C4  B4BCBFC2  BEB9BDBE  C5BCBEB9  BEBABCC0  BCB6C0BF  C1BAC1B7  B6BDB6BD
0x0440  C2C1BDBB  B9B4C0B0  BEB8C1BD  C4BBBFBB  BBBEC3B4  BEBECCBC  B7B7B3B8  BABECABB
0x0460  BFC0BEB9  B3BCB9B8  BDB6BBB4  C7C2B8BB  BDBEB7C1  B4BBBDBE  BDBABEBA  C4C2B7B8
0x0480  BBB7B3B4  BABFBEC5  BCB7BBBD  B4C2B7C9  C1BDC3B4  B9CDBDBA  BCCBB7BA  B9B7BBB8
0x04A0  BBB8BBB0  BFBEBEB4  C2B8BAB9  BBB9BFBB  C3C0B7BB  C3B7BEC5  BBB9C6B8  C0BDC2BE
0x04C0  CAB7C3B7  C4BDBACB  C0BAB9BF  BEC3BFC2  B8BFBCBC  BDBDBBC0  C1C2B8BA  BABDC1C0
0x04E0  B9BBB9B7  C0B5C3BC  BFBCB8B9  B8C3BEBD  B9B5BFB7  BCB2BABA  B7BCC1B7  B8C3C3BA
0x0500  C0B7B7BC  C3B6B8C3  BFBBBDC2  B7BCC2BD  B7BEB7BE  C0BAB3BF  BAC6BEB3  C6BEC3BF
0x0520  B8B4B6BA  BCBFB8C1  BEBFBFBC  BABBB8BF  BCBCB9B4  B7C0BABA  BDC5B9C0  C6BAAEC2
0x0540  B7BFB3BC  BCBEBBBC  B9B8B3B4  B7C0C4BC  B6C1BBB3  B4BDBEC9  B9C3BCB5  BFC1B6B9
0x0560  C3C2BFBE  BABEB8BB  C6BDAFBA  C2C4C3D5  BFBFBDC1  C5BABBBA  B8BAC7B8  BEB8BAB5
0x0580  BAB9BFB4  CBBCBCC0  BDB9B7C0  B9BAC3C2  C3C1BAC5  C0BEBDB9  BCC6BDBD  C3B7BABA
0x05A0  C1B3BAB8  B3B4B8BE  C0B6C0B5  B9B6B8B9  BAB7B4BC  BABCBAC4  B9BFBDB9  B8BEB4C2
0x05C0  BCBCBDBE  BEC1B9C0  BEBCBCC6  C7BBC5B9  BAC1BEBB  C4C7B3BD  BCC2C3C6  BDBFB7BA
0x05E0  B9B7B9BD  B9C1C2BD  BBBCB4BE  BDB9C4BD  C5B9C0B9  B9B9B9BF  C2BABFC0  C0C0BDC8
0x0600  BDBFB9C2  BFB7C4BF  C1C5B7BC  B8C1B2B7  B9BEB8BC  B2BFBFB9  B9B5BDBA  C0C2BFBD
0x0620  C7B7BDB8  BBC1BEC0  B7B5C4B9  B5C3BFC3  C2BBB7C3  B8BDB8BE  C6C0BFC4  BDBAB8BC
0x0640  B9C0BDBD  BFBCBAC5  B9BBBBBC  BFB4BDBB  B2BBB9C1  B7B5BAB7  BEBEBBBD  B7BEB7BB
0x0660  BEBAB9B8  BDC0B7BD  BCC0BAB8  BCBABEC4  B8B6BFB6  C0B4BFC3  BBBCBDC0  B9BBC9B9
0x0680  BEBAC3BE  BEBDC1B5  BEBEC3BB  BDBFBBB8  B9BEC2BF  C4C2BCC3  BCC1BFBB  BFBABEB5
0x06A0  BBBDC0B6  C1C4B5BF  C2BCBDBC  BEC5B1B7  C2BBBCB6  C1BBBABF  B7C7BDC6  C5BAC0C3
0x06C0  C5BDBFB8  C0C2C2B6  BFBDC3B2  C0C4B1BE  C0C2BAB6  BAB3C1B4  B6BEBCBF  BCB8C4BC
0x06E0  B7BDBCBD  BFB6B7B9  C1B7C0BD  B8BAAFC4  BEB6B4BE  B5B9B9CB  BDBBC2BA  BFBEC2BC
0x0700  C3BBBFBE  B8BFC1B5  B1BEB7B5  B9BDBDC1  BFBBBDBF  BDC3BCBE  B5BCB4BE  C4B9C0BC
0x0720  B7BABFBB  B2BEC4C0  C9BEC3B3  B7BEB3C6  AFBAC3C5  B9BEBEC1  BCBFB9BE  C2C2B3C3
0x0740  BAB9BBB5  B7C6BDB4  B8B7BCBA  BDB9C3BC  BFC1BFB9  B6BBB6C8  B9C0BEBF  BCC0C1B7
0x0760  BAB5BFBE  C1B9BEC8  B4C3BEB8  C6CBBDC1  BBC1BAC1  B8B8C0B7  BBC3C0BF  BBB7C3BD
0x0780  BCBEC0CC  C3BFBDBA  BFC1BFC3  CBBCBBBF  BEB6B4B7  B7BBC0BF  B9C0BBBF  C5C5C0B7
0x07A0  BCBABAC0  BEB7B6C0  B8BCBAC3  C8C4CAB9  B7C1C3B4  B8C5C2BE  BABABCC5  C0B8BAB4
0x07C0  B9BDB4BC  C0C1B8B8  C1C6BEB7  B9B5C3C1  B8B9BCBE  BFB8C1BA  C2C0B7C4  BFBBBBB9
0x07E0  B6C1BCC0  BDBCC1C4  B9BFBEBF  B4BBC1BD  BFBEB7BE  BCBDBFBB  C1B8B9BF  C3C2C0C2
0x0800  BEBCBABE  C1C3B6BC  BDBFBABA  BEC1BFB6  C3C4BFBE  C3BBBFB7  BEBDC5CB  BABEB4BC
```

```
0x0820  BDBEC0BF  BDBCBCBA  BBBFBBB8  B9BDBBBF  BEB7CABD  BEBAB5B8  C9B7B9BA  C0B4BFC5
0x0840  B4BCB4B6  BBB5B9BF  BFC4C1C2  C0BFB9C4  BFBDB2BC  B3B8B6C0  B4BAC2C5  BAC8BAC0
0x0860  BBBDB1BE  C2B6B7C3  BBC2BDB9  B8BAC3C0  BFB7B8BD  C5BDC0BF  B8BEB6C0  C0C6C1C1
0x0880  B8BEB7C0  C2CCC0C4  BDC1C6C8  BFC1B6B9  BEC1C5BE  B5C4BABC  CBAFC6C3  B8C2BAC3
0x08A0  BCBAB5BF  B6BBBFBF  BCBABAB8  C0C7C0C0  B9C8BBB9  BABBBBB1  C7B8B7AF  BDB2BAB7
0x08C0  C0BBB8BA  BEBCAFB7  C2B9C1BB  BAB9BBC2  B8BABCC3  BAB9B4C3  BBB8BCC1  B5B7B6B9
0x08E0  BAB7B7BB  C0BFC5CA  BEBCBDBD  C3BAC0B9  C2C0BDB4  C8CCB7C7  C9C3BEB6  C0BEC6C0
0x0900  C4B8B7BF  CABBB9C0  B8B4B8BE  BBBDBFC9  B4BDB9C0  C0B6B7C5  BFBEBFC1  BDC0B5B3
0x0920  BDBBB8B5  BEC9C1B5  B8BDC1B1  BDBCB3BA  C3BBB4BC  B7B7C0BC  C8B8B5C4  B9C3C4C2
0x0940  BAC0BBBA  BEBABCC0  BCC3B5B7  BCBDB8C6  B7BEBAC1  BDBFC2C2  BCBCC3BF  BCB7BEBB
0x0960  B6C4B6BC  C0BEB6C0  BCBFBEBA  B9BFBBC1  C1BAC0BE  BEBEC3C3  BFBFB9BE  C0BABFBD
0x0980  BABDB7BA  BECABFBC  C1B8B9CB  BCB3C0B7  BBC9C3BA  C4C2C0BB  C2C4B9BF  B8C4B4BF
0x09A0  C3C0BABD  C6BCC0BE  BDC0BCBB  BFBBC4B3  B1B9C3BC  BCCABCC0  B9BEBDC6  B4BABAC2
0x09C0  C0BEC3B9  B4CDC5B6  B7BEC1BB
```



```
 0 2 3 4 5 6 8 9
       . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
 . . . . . . . .
       5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7 9 1 3 5 7
 9 1 3 5 7 9 1 3
                                        Subcarrier Frequency


Active SC RxMER Statistics                     : (dB)      (1/4 dB hex)
Active Subcarrier RxMER Mean                   : 47.00     0xBC
Active Subcarrier RxMER Standard Deviation     :  5.25     0x15
Active Subcarrier RxMER Threshold Value        : 44.50     0xB2
Active Subcarrier RxMER Threshold Frequency (Hz): 78825000

Router#
```

Examples

The following example shows sample output for the **show cable modem prof-mgmt downstream** command for Cisco cBR Series Converged Broadband Routers:

```
router# show cable modem XXXX.XXXX.XXXX prof-mgmt downstream
MAC Address             : XXXX.XXXX.XXXX
IP Address              : ---
IPv6 Address            : xxxx:XXX:XXXX:XXXX:XXXX:XXX:XXXX:XXX

RxMer Exempt Percent    : 11
RxMer Margin qDB        : 20
Automatic Prof Dwngrd   : Active

DCID                                   : 159
  Configured Profile(s)                : 0 1 2 3 4 5
  Profile(s) in REG-RSP-MP             : 0 1 2 3
  Profile(s) in DBC-REQ                : 0 3 4 5
  Current profile                      : 5  [4096-QAM]
  Percentages of ideal BL vs Curr Prof : 90 (better)  0 (equal)
  Downgrade profile                    : 4
  Recommend profile                    : 5
  Unfit profile(s)                     : N/A
  Recommend profile (Expired)          : N/A
  Unfit profile(s)  (Expired)          : N/A
Number of SubCarriers   : 4096
1st Active SubCarrier   : 1126
# of Active SubCarriers: 1844
Tx Time                 : 0h:03m:47s ago

Rx Time                 : 0h:03m:47s ago
OFDM Profile Failure Rx: N/A
MER Poll Period   (min): 60
Recommend Timeout (min): 120
Unfit Timeout     (min): 60
Source             : OPT
Sub-    RxMER
Carrier
0x0000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0020  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0040  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0060  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0080  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0100  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

```
0x0120  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0140  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0160  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0180  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0200  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0220  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0240  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0260  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0280  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0300  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0320  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0340  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0360  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0380  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x03A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x03C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x03E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0400  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0420  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0440  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0460  00000000 0000AFB8 ACB1B3B3 B5B100B0 B5B6B6B3 B2B2B6B4 B2B5B7B2 B2B6B3B6

0x0480  B3B6B5B5 B1B4B6B1 B3B1B4B2 B4B2B9B2 ADB6B0B5 B2B4B4B6 B4B4B1B4 B4B4B4B4
0x04A0  B3B5B2B1 B4B1B4B6 B5B8B7B6 B5B6B3B4 B5B6B5B0 B3B100B6 B1B0B7B3 B2B1AFB1
0x04C0  B5B0B3B7 B5B0B4B5 B1B7B3B4 AFB2B4B0 B4AEB3B5 B2B1B4B3 B2B4B3B4 B6B5B2B2
0x04E0  B0B1B5B4 B6B6B3B4 B2B1AFB3 B1B1B7B4 B3B6B8B4 B0B6B1B5 B6B3B8B5 B6B500B4
0x0500  B9B2B6B6 B4B5B1B1 B0B3B6B7 B2B4B7B3 B2AFB8B5 B0B4B4B1 B5B5B4B2 B4B0AFB2
0x0520  B5B5B1B6 B5B5B4B5 B7B5B5B4 B7B6B5B4 B4B6B1B4 B5B5B2B6 B5B5B4B5 B0B0B4B4
0x0540  B5B3B6B2 B2B200B0 AFB2B1B1 B2B7B4B3 B6B6B5B6 B2B3B1B5 B8B7AFB1 B6B5B6B3
0x0560  B8B4B2B2 B2B5B4B6 B0B4B4B4 B3B2B2AD B9B6B4B2 B5B2B0B9 B4B5B4B1 B3B3B3B5
0x0580  B3B1B6B3 B3B8B3B2 B2B4B3B6 B6B200B4 B0B1B8B6 B0B6B6B2 B0B0B3AF B5B6B1B4
0x05A0  B1B3B4B5 B3B5B4B4 B1B6B5B5 B5B8B4B2 B2B2B4B2 B2B3B6B2 B1B0B5B2 B2B2B1B3
0x05C0  B5B5B5B5 B5B8B3B1 B4B4B4B4 B5B4B7B4 B5B3B7B3 B3B300AF B7B1B1B0 B3B4B3B8
0x05E0  B7B8B3B3 B4B6B6B5 B4B4B3B4 B5B4B2B2 B0B5B2B3 B2B5B2B6 B5B0B4B5 B4B7B2B3
0x0600  B3B5B8B7 B3B4B7B3 B5B3B3BA B5AFB7B7 B3B3B2B4 B5B6B2B7 B3B3B3B2 B3AE00B3
0x0620  B0B5B3B3 B6B1B5B4 B3B8B3B8 B4B4B5B3 B2B6B4B2 B2B5B7B9 B6B3B5B3 B2B0AFB4
0x0640  B1B3B8B3 B5B2B5B6 B5B7B0B3 B8B3BAB7 B5B6B9B6 B5B2B4B3 B7B4B3B2 B2B3B3B5
0x0660  B6B1B2B8 B3B300B4 B1B3B1B3 B4B4B0B3 B5B5B1AF B6B4B7B5 B4B3B6B4 B4B4B6B4
0x0680  B2B1B6B5 B3B7B3B2 B4B5B1AF B2B3B5B2 B0B2B7B0 B4B4B4B1 B3B0B5B1 B3B2B1B7
0x06A0  B2B3B4B7 B2AFB4B5 B3B7B8B4 B5AF00B4 AFB2B2B3 B4AFB5B4 B5B9BAB5 B2B2B4B1
0x06C0  B6B4B3B5 B5B5B4B3 B2AEB3B1 B0B4B5B6 B2B7B5B4 B2B3B5B2 B4B4B5B5 BAB2B1B2
0x06E0  B3B4B3B2 B8B3B3B6 B6AFB4B2 B4B4B4B6 B3B5AFB4 B1B600B6 B7B2B3B3 B3B1B6B8
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0x0720  B1B1B4B2 B1B3B5B6 B4B6B5B2 B5B3B4B3 B4B4B0B4 B4B4B5B4 B1B0B5B2 B2AE00B1
0x0740  AEB0B4B3 B6B1B3B4 B4B1B5B1 B4B3B5AD B4B1B2B4 B2B4B9B2 B9B1B2B2 AFB8B1B8
0x0760  AFB4B3B1 B4B1B3B5 B3B1B5B3 B1B4B5B5 B5B0B6B5 B0B0B5B7 B2B5B2B5 B2AFB6B4
0x0780  B5B1B3B2 B5B300B0 B6B2B1B4 B1B0B3B1 B3B1B2B3 B4B3B2B2 B1B7B0B2 B3B1B1B3
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0x07C0  B0B0B4B4 B6B1B2B1 B0B0B3B0 B3B500B4 B4B1B3B2 B0B3B1B1 B4B2AEB3 B1B4B6AF
0x07E0  B4B1B1B5 B4B2B7B3 B1B4B5B1 B2AFB2B6 B5B3B1B0 B5B5B4B2 B1B3B5B3 B1B3B3B4
0x0800  B2B4B3B2 B7B4B5B7 B6B3B4B4 B3B3B6B2 B2AFB0B1 B4B300B4 B3B0B4AF B3B1B3B3
0x0820  B3B0B4B3 B0B0B1B7 B4B2B3B1 B5B4B3B5 B3B6B5B3 AEB1B4B3 B3B0B0B2 B3B1B3B1
0x0840  B1AFB2B0 B2B2B3B2 B2B5B4B3 B2B3B3B3 B4AEB0B2 B3B6B4B6 B1B4B4B5 B1B300B5
0x0860  B0AEB2B3 B5B4B3B0 B2B6B3B1 B1AFB2B6 B2B5B3B2 B7B5B0B5 B4B2B2B2 B2B3B2B4
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0x08E0  B1B3B3B1 B3B3AEB6 B0B4B1AF B4B000B0 B3B2B4AF B1B3B1B3 B3B4B2B1 B5B2B4B3
```

```
0x0900  B3B3B3B4 B5B2AFB5 AEB0AFB5 B3B2B2B1 B5B4B2B5 AFB6B0B2 B2B2B2B0 B1AFAFB3
0x0920  B1ADB0AF B2B0B2B5 B1B1B2B3 B3B5B4B1 B1B0AEAD B3AF00AF B0B6B1B1 AFAEAFB2
0x0940  B2B1B4B4 B3B2B1B3 AFB0B1B4 B4B1B2B3 B5B3B4B5 B1AFB1B0 AFB1ABB3 AFB1B1B1
0x0960  B2AFB2B0 B1B2B4B3 B2AEAFB3 B1B0B2B0 B3B3AEAE B6B3B2B1 AEB3AEAD B1B000B2
0x0980  B4AEB1B3 B3B0B5B0 B1B1B0B3 B2B2B0B3 AFAEB3B2 AFB2AFB4 B4B1B3AF B1B0AEB0
0x09A0  AFB1B1B1 B4B1B3AF B2B5B3B1 B1B1B2B5 B1B4B1AC B1B4AFB3 AFB7AFAE B1B2ACAF
0x09C0  B4AFB0B7 B3B000B2 AFB1B3B0 B1B3B2B3 B0B0B0B4 B0B2B5B1 B2AEB6AF B1B6AFAF
0x09E0  B3AFB2B0 B4B2B1B0 B1B2B6AF B2AFAEB3 B2B0B1B1 B0B3B1AF B0B3B6B3 B0B4B1B2

0x0A00  AFB0B0B3 B6B1B2B3 B0B3B3B1 B1AF00B3 AFB0B1B5 B3B4B1B1 B0B1B1B1 B3ADACB1
0x0A20  AFB3B6B6 B4B1B0AD B0ADB4B2 B3B0B2AD B8B2B1B0 AFB4B4B1 B5B2B7B6 ABB5AEAF
0x0A40  B2B3B0B5 B3B1AFAF B4B6B2B3 B2B2B5B3 B1B2B0B1 B4B100B0 B3AFB3AF B0AEB2AF
0x0A60  B1B3AEB0 B4ACAFB0 AFB3AFAF B0B4AFB0 B3B1ADB5 B6B1B0B3 B2AEB3B0 B0AFB1AE
0x0A80  B2B2B1B1 B0AFB2B1 AEAFB0B3 B2B2B1B3 AEADB5AF B0AFB1B2 B5B1ADAD B3B100B0
0x0AA0  ADB3B1B4 B5B0AEB3 B1B2B0B2 B1B3B0B2 B4B4B1B1 B0B5B0B1 B0B4B3B1 AFB3B0B0
0x0AC0  B2AFB2B4 B4B4AFAE AFB1B1B0 ADB0B2B0 B4AEAFB3 B2AEB4B2 B0B3B1B2 AEB1B3B0
0x0AE0  B0AEB0B2 B4AC00B0 B0AFB2B0 B2AFB4B2 AFACAAB1 AEB6B2B1 B3B4B1B0 B4AFB3B5
0x0B00  B3B0B3B0 B1B10000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0BA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0BC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0BE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

0x0F80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

Examples

The following example shows sample output for the **show cable modem prof-mgmt downstream** command for Cisco cBR Series Converged Broadband Routers:

```
router# show cable modem XXXX.XXXX.XXXX prof-mgmt downstream
MAC Address            : XXXX.XXXX.XXXX
IP Address             : ---
IPv6 Address           : xxxx:XXX:XXXX:XXXX:XXXX:XXX:XXXX:XXX

RxMer Exempt Percent   : 11
RxMer Margin qDB       : 20
Automatic Prof Dwngrd  : Active

DCID                                  : 159
  Configured Profile(s)               : 0 1 2 3 4 5
  Profile(s) in REG-RSP-MP            : 0 1 2 3
  Profile(s) in DBC-REQ               : 0 3 4 5
  Current profile                     : 5  [4096-QAM]
  Percentages of ideal BL vs Curr Prof : 90 (better)  0 (equal)
  Downgrade profile                   : 4
  Recommend profile                   : 5
  Unfit profile(s)                    : N/A
  Recommend profile (Expired)         : N/A
  Unfit profile(s)  (Expired)         : N/A
Number of SubCarriers  : 4096
1st Active SubCarrier  : 1126
# of Active SubCarriers: 1844
Tx Time                : 0h:03m:47s ago

Rx Time                : 0h:03m:47s ago
OFDM Profile Failure Rx: N/A
MER Poll Period   (min): 60
Recommend Timeout (min): 120
Unfit Timeout     (min): 60
Source              : OPT
Sub-    RxMER
Carrier
0x0000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0020  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0040  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0060  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0080  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x00E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0100  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0120  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0140  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0160  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0180  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x01E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0200  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0220  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0240  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0260  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0280  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x02E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0300  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0320  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0340  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0360  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0380  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x03A0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x03C0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

```
0x03E0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0400  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0420  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0440  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0460  00000000 0000AFB8 ACB1B3B3 B5B100B0 B5B6B6B3 B2B2B6B4 B2B5B7B2 B2B6B3B6

0x0480  B3B6B5B5 B1B4B6B1 B3B1B4B2 B4B2B9B2 ADB6B0B5 B2B4B4B6 B4B4B1B4 B4B4B4B4
0x04A0  B3B5B2B1 B4B1B4B6 B5B8B7B6 B5B6B3B4 B5B6B5B0 B3B100B6 B1B0B7B3 B2B1AFB1
0x04C0  B5B0B3B7 B5B0B4B5 B1B7B3B4 AFB2B4B0 B4AEB3B5 B2B1B4B3 B2B4B3B4 B6B5B2B2
0x04E0  B0B1B5B4 B6B6B3B4 B2B1AFB3 B1B1B7B4 B3B6B8B4 B0B6B1B5 B6B3B8B5 B6B500B4
0x0500  B9B2B6B6 B4B5B1B1 B0B3B6B7 B2B4B7B3 B2AFB8B5 B0B4B4B1 B5B5B4B2 B4B0AFB2
0x0520  B5B5B1B6 B5B5B4B5 B7B5B5B4 B7B6B5B4 B4B6B1B4 B5B5B2B6 B5B5B4B5 B0B0B4B4
0x0540  B5B3B6B2 B2B200B0 AFB2B1B1 B2B7B4B3 B6B6B5B6 B2B3B1B5 B8B7AFB1 B6B5B6B3
0x0560  B8B4B2B2 B2B5B4B6 B0B4B4B4 B3B2B2AD B9B6B4B2 B5B2B0B9 B4B5B4B1 B3B3B3B5
0x0580  B3B1B6B3 B3B8B3B2 B2B4B3B6 B6B200B4 B0B1B8B6 B0B6B6B2 B0B0B3AF B5B6B1B4
0x05A0  B1B3B4B5 B3B5B4B4 B1B6B5B5 B5B8B4B2 B2B2B4B2 B2B3B6B2 B1B0B5B2 B2B2B1B3
0x05C0  B5B5B5B5 B5B8B3B1 B4B4B4B4 B5B4B7B4 B5B3B7B3 B3B300AF B7B1B1B0 B3B4B3B8
0x05E0  B7B8B3B3 B4B6B6B5 B4B4B3B4 B5B4B2B2 B0B5B2B3 B2B5B2B6 B5B0B4B5 B4B7B2B3
0x0600  B3B5B8B7 B3B4B7B3 B5B3B3BA B5AFB7B7 B3B3B2B4 B5B6B2B7 B3B3B3B2 B3AE00B3
0x0620  B0B5B3B3 B6B1B5B4 B3B8B3B8 B4B4B5B3 B2B6B4B2 B2B5B7B9 B6B3B5B3 B2B0AFB4
0x0640  B1B3B8B3 B5B2B5B6 B5B7B0B3 B8B3BAB7 B5B6B9B6 B5B2B4B3 B7B4B3B2 B2B3B3B5
0x0660  B6B1B2B8 B3B300B4 B1B3B1B3 B4B4B0B3 B5B5B1AF B6B4B7B5 B4B3B6B4 B4B4B6B4
0x0680  B2B1B6B5 B3B7B3B2 B4B5B1AF B2B3B5B2 B0B2B7B0 B4B4B4B1 B3B0B5B1 B3B2B1B7
0x06A0  B2B3B4B7 B2AFB4B5 B3B7B8B4 B5AF00B4 AFB2B2B3 B4AFB5B4 B5B9BAB5 B2B2B4B1
0x06C0  B6B4B3B5 B5B5B4B3 B2AEB3B1 B0B4B5B6 B2B7B5B4 B2B3B5B2 B4B4B5B5 BAB2B1B2
0x06E0  B3B4B3B2 B8B3B3B6 B6AFB4B2 B4B4B4B6 B3B5AFB4 B1B600B6 B7B2B3B3 B3B1B6B8
0x0700  AFB5B6B7 B6B4B3B2 B1B2B3B3 B3B1B1B3 B1B0B3B2 B3B3B5B3 B7B1B3B2 B6B2AFB1
0x0720  B1B1B4B2 B1B3B5B6 B4B6B5B2 B5B3B4B3 B4B4B0B4 B4B4B5B4 B1B0B5B2 B2AE00B1
0x0740  AEB0B4B3 B6B1B3B4 B4B1B5B1 B4B3B5AD B4B1B2B4 B2B4B9B2 B9B1B2B2 AFB8B1B8
0x0760  AFB4B3B1 B4B1B3B5 B3B1B5B3 B1B4B5B5 B5B0B6B5 B0B0B5B7 B2B5B2B5 B2AFB6B4
0x0780  B5B1B3B2 B5B300B0 B6B2B1B4 B1B0B3B1 B3B1B2B3 B4B3B2B2 B1B7B0B2 B3B1B1B3
0x07A0  B0B7B5B3 B5B2ADB5 B4B8B6B5 B4B6B4B1 B3B1B1B4 B0B4B6B2 B2B2B2B4 B0B3B4B0
0x07C0  B0B0B4B4 B6B1B2B1 B0B0B3B0 B3B500B4 B4B1B3B2 B0B3B1B1 B4B2AEB3 B1B4B6AF
0x07E0  B4B1B1B5 B4B2B7B3 B1B4B5B1 B2AFB2B6 B5B3B1B0 B5B5B4B2 B1B3B5B3 B1B3B3B4
0x0800  B2B4B3B2 B7B4B5B7 B6B3B4B4 B3B3B6B2 B2AFB0B1 B4B300B4 B3B0B4AF B3B1B3B3
0x0820  B3B0B4B3 B0B0B1B7 B4B2B3B1 B5B4B3B5 B3B6B5B3 AEB1B4B3 B3B0B0B2 B3B1B3B1
0x0840  B1AFB2B0 B2B2B3B2 B2B5B4B3 B2B3B3B3 B4AEB0B2 B3B6B4B6 B1B4B4B5 B1B300B5
0x0860  B0AEB2B3 B5B4B3B0 B2B6B3B1 B1AFB2B6 B2B5B3B2 B7B5B0B5 B4B2B2B2 B2B3B2B4
0x0880  B1B6B3B6 B2B7B1B2 B2B0B6AE B3B4B3B1 B0B1B5B3 B2B2B3B2 AFB3B3B3 B1B1ADB2
0x08A0  B5B4B1B2 B1AD00AC B2B5B1B1 B2B6B4B2 B3B4AFAF AFB5B3B7 B1B5B1B0 B1AFB1B7
0x08C0  B0AFB7B5 B5B2AFB2 B3B2B4AC B4B4B6B2 B2B2B2B3 B6B0B5B2 B6B1B5B0 B6B5ABB2
0x08E0  B1B3B3B1 B3B3AEB6 B0B4B1AF B4B000B0 B3B2B4AF B1B3B1B3 B3B4B2B1 B5B2B4B3
0x0900  B3B3B3B4 B5B2AFB5 AEB0AFB5 B3B2B2B1 B5B4B2B5 AFB6B0B2 B2B2B2B0 B1AFAFB3
0x0920  B1ADB0AF B2B0B2B5 B1B1B2B3 B3B5B4B1 B1B0AEAD B3AF00AF B0B6B1B1 AFAEAFB2
0x0940  B2B1B4B4 B3B2B1B3 AFB0B1B4 B4B1B2B3 B5B3B4B5 B1AFB1B0 AFB1ABB3 AFB1B1B1
0x0960  B2AFB2B0 B1B2B4B3 B2AEAFB3 B1B0B2B0 B3B3AEAE B6B3B2B1 AEB3AEAD B1B000B2
0x0980  B4AEB1B3 B3B0B5B0 B1B1B0B3 B2B2B0B3 AFAEB3B2 AFB2AFB4 B4B1B3AF B1B0AEB0
0x09A0  AFB1B1B1 B4B1B3AF B2B5B3B1 B1B1B2B5 B1B4B1AC B1B4AFB3 AFB7AFAE B1B2ACAF
0x09C0  B4AFB0B7 B3B000B2 AFB1B3B0 B1B3B2B3 B0B0B0B4 B0B2B5B1 B2AEB6AF B1B6AFAF
0x09E0  B3AFB2B0 B4B2B1B0 B1B2B6AF B2AFAEB3 B2B0B1B1 B0B3B1AF B0B3B6B3 B0B4B1B2

0x0A00  AFB0B0B3 B6B1B2B3 B0B3B3B1 B1AF00B3 AFB0B1B5 B3B4B1B1 B0B1B1B1 B3ADACB1
0x0A20  AFB3B6B6 B4B1B0AD B0ADB4B2 B3B0B2AD B8B2B1B0 AFB4B4B1 B5B2B7B6 ABB5AEAF
0x0A40  B2B3B0B5 B3B1AFAF B4B6B2B3 B2B2B5B3 B1B2B0B1 B4B100B0 B3AFB3AF B0AEB2AF
0x0A60  B1B3AEB0 B4ACAFB0 AFB3AFAF B0B4AFB0 B3B1ADB5 B6B1B0B3 B2AEB3B0 B0AFB1AE
0x0A80  B2B2B1B1 B0AFB2B1 AEAFB0B3 B2B2B1B3 AEADB5AF B0AFB1B2 B5B1ADAD B3B100B0
0x0AA0  ADB3B1B4 B5B0AEB3 B1B2B0B2 B1B3B0B2 B4B4B1B1 B0B5B0B1 B0B4B3B1 AFB3B0B0
0x0AC0  B2AFB2B4 B4B4AFAE AFB1B1B0 ADB0B2B0 B4AEAFB3 B2AEB4B2 B0B3B1B2 AEB1B3B0
0x0AE0  B0AEB0B2 B4AC00B0 B0AFB2B0 B2AFB4B2 AFACAAB1 AEB6B2B1 B3B4B1B0 B4AFB3B5
0x0B00  B3B0B3B0 B1B10000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0B80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

```
0x0BA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0BC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0BE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0C80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0CE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0D80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0DE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0E80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0EE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F00  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F20  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F40  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0F60  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

0x0F80  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FA0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FC0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
0x0FE0  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
```

Related Commands

Command	Description
show controllers integrated-cable rf-channel prof-order	Displays information about the profile downgrade ordering on a given OFDM channel.
show cable modem phy ofdm-profile	Displays information about the profiles that are associated with the cable modems (CMs).

show cable modem qos

To display the quality of service (QoS) and service flow information for a particular cable modem (CM), use the **show cable modem qos** command in privileged EXEC mode.

show cable modem {*ip-addressmac-address* | **name** *fqdn*} **qos** [{**service-class** | **verbose**}]

Cisco cBR-8 Converged Broadband Router
show cable modem {*ip-addressmac-address*} **qos** [{**service-class** | **verbose**}]

Syntax Description

ip-address	IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.
service-class	(Optional) Displays the service class names associated with each service flow for a specific cable modem.
verbose	(Optional) Displays detailed information for each service flow ID (SFID) for the CM.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3XA	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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCC	The command output was modified to display the traffic peak rate value for a specific service flow.
12.2(33)SCF	This command was modified. The service-class keyword was added to display the service class names for each service flow for a specific cable modem.
12.2(33)SCG	The command output was modified to display the scheduling type as “N/A” for all downstream service flows.

Release	Modification
12.2(33)SCI1	The command output was modified to display the IP ToS Overwrite [AND-mask, OR-mask] for the downstream service flow.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **name** variable was removed.

Usage Guidelines

This command displays the service flows currently in use by a CM. The default form of the display shows one service flow per line, while the **verbose** keyword displays complete information for each flow.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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.

Note Starting with Cisco IOS Release 12.2(33)SCG, the output of the show cable modem 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.

Examples

The following example is a sample output of the **show cable modem qos** command for a specific CM identified by its MAC address:

```
Router# show cable modem 0010.7bb3.fcd1 qos
```

```
Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst   MinRsvRate  Throughput
          State       Type
3     US  act   1     BE     7    2000000     1522      100000      0
4     DS  act   N/A   BE     0    4000000     1522      0           0
```

Example of the show cable modem qos Command for a Cable Modem Specified by IP Address

The following example is a sample output of the **show cable modem qos** command for a specific CM identified by its IP address:

```
Router# show cable modem 22.1.1.10 qos

Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst   MinRsvRate  Throughput
          State       Type
7     US  act   3     BE     0    0           3044      0           0
9     US  act   4     BE     0    1000000     65224     0           0
10    US  act   5     BE     0    1000000     65224     0           0
8     DS  act   N/A   BE     0    0           3044      0           0
```

Example of the show cable modem qos verbose Command for a Cable Modem Specified by IP Address

The following example is a sample output for the **verbose** form of the **show cable modem qos** command for a specific CM identified by its IP address:

```
Router# show cable modem 22.1.1.10 qos verbose

Sfid                                  : 7
Current State                         : Active
Sid                                   : 3
Traffic Priority                      : 0
Maximum Sustained rate                : 0 bits/sec
Maximum Burst                         : 3044 bytes
Mimimum Reserved rate                 : 0 bits/sec
Minimum Packet Size                   : 64 bytes
Admitted QoS Timeout                  : 200 seconds
Active QoS Timeout                    : 0 seconds
Maximum Concatenated Burst            : 1522 bytes
Scheduling Type                       : Best Effort
Request/Transmission policy           : 0x0
IP ToS Overwrite[AND-mask, OR-mask]   : 0xFF, 0x0
Current Throughput                    : 0 bits/sec, 0 packets/sec
Sfid                                  : 9
Current State                         : Active
Sid                                   : 4
Traffic Priority                      : 0
Maximum Sustained rate                : 1000000 bits/sec
Maximum Burst                         : 65224 bytes
Mimimum Reserved rate                 : 0 bits/sec
Minimum Packet Size                   : 64 bytes
Admitted QoS Timeout                  : 0 seconds
Active QoS Timeout                    : 0 seconds
Maximum Concatenated Burst            : 1522 bytes
Scheduling Type                       : Best Effort
Request/Transmission policy           : 0x0
IP ToS Overwrite[AND-mask, OR-mask]   : 0xFF, 0x0
Current Throughput                    : 0 bits/sec, 0 packets/sec
Sfid                                  : 10
```

```
Current State                           : Active
Sid                                     : 5
Traffic Priority                        : 0
Maximum Sustained rate                  : 1000000 bits/sec
Maximum Burst                           : 65224 bytes
Mimimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 64 bytes
Admitted QoS Timeout                    : 0 seconds
Active QoS Timeout                      : 0 seconds
Maximum Concatenated Burst              : 1522 bytes
Scheduling Type                         : Best Effort
Request/Transmission policy             : 0x0
IP ToS Overwrite[AND-mask, OR-mask]     : 0xFF, 0x0
Current Throughput                      : 0 bits/sec, 0 packets/sec
Sfid                                    : 8
Current State                           : Active
Sid                                     : N/A
Traffic Priority                        : 0
Maximum Sustained rate                  : 0 bits/sec
Maximum Burst                           : 3044 bytes
Mimimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 64 bytes
Admitted QoS Timeout                    : 200 seconds
Active QoS Timeout                      : 0 seconds
Maximum Latency                         : 0 usecs
Current Throughput                      : 0 bits/sec, 0 packets/sec
```

The following example is a sample output for the **verbose** form of the **show cable modem qos** command indicating the traffic peak rate value for a specific service flow.

```
Router# show cable modem 22.1.1.10 qos verbose

Sfid                                    : 40
Current State                           : Active
Sid                                     : 35
Traffic Priority                        : 4
Maximum Sustained rate                  : 20000000 bits/sec
Maximum Burst                           : 20000000 bytes
Minimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Admitted QoS Timeout                    : 200 seconds
Active QoS Timeout                      : 0 seconds
Maximum Concatenated Burst              : 65535 bytes
Scheduling Type                         : Best Effort
Request/Transmission policy             : 0x0
IP ToS Overwrite[AND-mask, OR-mask]     : 0xFF, 0x0
Peak Rate                               : 50000000 bits/sec
Current Throughput                      : 0 bits/sec, 0 packets/sec
```

Example of the show cable modem qos service-class Command for a Cable Modem in Cisco IOS Release 12.2(33)SCF

Effective from Cisco IOS Release 12.2(33)SCF, the **service-class** keyword is supported.

The following example is a sample output of the **service-class** option of the **show cable modem qos** command for a specific CM identified by its IP address:

```
Router# show cable modem 22.1.1.10 qos service-class
Sfid  Dir Sched  MaxSusRate  MaxBrst     MinRsvRate  SrvClassName
          Type
```

```
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
```

Table below describes the major fields shown in the **show cable modem qos** displays:

Table 41: Descriptions for the show cable modem qos Fields

Field	Description
Sfid	Identifies the Service Flow ID (SFID) for this service flow.
Dir	Identifies whether the service flow applies to the downstream (DS) or upstream (US) direction.
Curr State	Current State—Identifies the current state of the service flow: Active or Inactive.
Sid	Identifies the Service ID (SID) associated with this SFID.
Sched Type	Identifies this service flow's scheduling type: • BE—Best-Effort • NRTPS—Non-Real-Time Polling Service • N/A—Scheduling type is not applicable to a service flow. • 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 this service flow.
Minimum Packet Size	Assumed minimum reserved rate packet size on this service flow, in bytes.
Admitted QoS Timeout	Timeout for admitted QoS parameters, in seconds, which specifies the length of time that the CMTS must reserve resources for a service flow's admitted Qos parameter set, when they exceed the resources allowed by the active QoS parameter set.
Active QoS Timeout	Timeout for active Qos parameters, in seconds, which specifies the maximum amount of time that resources can remained unused on an active service flow.
Maximum Latency	Maximum downstream latency allowed for packets using this service flow, in microseconds.

Examples for Cisco cBR-8 Converged Broadband Router

This example shows the output of the**show cable modem qos service-class** command on the Cisco cBR-8 router:

```
Router#show cable modem 209.165.200.227 qos service-class
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 12:54:01.136 PST Thu May 7 2015

Sfid  Dir Sched  MaxSusRate  MaxBrst     MinRsvRate  SrvClassName
          Type
7     US  BE     0           3044        0
8     DS  N/A    0           3044        0

Router#
```

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

```
Router#show cable modem 209.165.200.227 qos verbose
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 12:58:21.820 PST Thu May 7 2015

Sfid                                    : 7
Current State                           : Active
Sid                                     : 1
Service Class Name                      :
Traffic Priority                        : 7
Maximum Sustained rate                  : 0 bits/sec
Maximum Burst                           : 3044 bytes
Minimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Admitted QoS Timeout                    : 0 seconds
Active QoS Timeout                      : 0 seconds
Maximum Concatenated Burst              : 1522 bytes
Scheduling Type                         : Best Effort
Request/Transmission policy             : 0x0
IP ToS Overwrite[AND-mask, OR-mask]     : 0xFF, 0x0
Peak Rate                               : 0 bits/sec
Current Throughput                      : 308 bits/sec, 0 packets/sec

Sfid                                    : 8
Current State                           : Active
Sid                                     : N/A
Low Latency App                         : No
Service Class Name                      :
Traffic Priority                        : 0
Maximum Sustained rate                  : 0 bits/sec
Maximum Burst                           : 3044 bytes
Minimum Reserved rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Admitted QoS Timeout                    : 200 seconds
Active QoS Timeout                      : 0 seconds
Maximum Latency                         : 0 usecs
Peak Rate                               : 0 bits/sec
Current Throughput                      : 0 bits/sec, 0 packets/sec

Router#
```

Related Commands

Command	Description
cable qos permission	Specifies permission for updating the cable router QoS table.
cable qos profile	Configures a QoS profiles.
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 modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS router.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modem unregistered	Displays a list of the CMs that are marked as unregistered with the Cisco CMTS router.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable qos paramset	Displays the DOCSIS 1.1 QoS parameter sets.
show interface cable sid	Displays cable interface information.
show cable qos profile	Displays quality-of-service (QoS) profiles for a Cisco CMTS router.

show cable modem reduction-mode energy-management-mode

To verify which CM is in EM mode and to get the original wideband and upstream channel information, use the **show cable modem reduction-mode energy-management-mode** command in the privileged EXEC mode.

show cable modem reduction-mode energy-management-mode

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

The **show cable modem reduction-mode energy-management-mode** command shows which CM is in energy management mode and provides the original wideband and upstream channel information.

```
show cable modem reduction-mode energy-management-mode

                                Orig BG     Orig US                    Curr BG
I/F     MAC Address    ID        I/F        bitmap   RFs     ID          I/F        Upstream
------- -------------- ---------------- -------- ----------------------------------------
C7/0/0  0025.2eaf.843e 897  Wi7/0/0:0     0x3B     4      252        Wi7/0/0:1      US0
C7/0/0  0025.2eaf.8356 897  Wi7/0/0:0     0x3B     4      252        Wi7/0/0:1      US0

C7/0/0  0015.d176.5199 897  Wi7/0/0:0     0x3B     4      252        Wi7/0/0:1      US0
```

show cable modem reduction-mode energy-management-param

To verify the configuration parameters used in the CM configuration file, use the **show cable modem reduction-mode energy-management-param** command.

show cable modem *mac_address* **reduction-mode energy-management-param**

Syntax Description

mac_address	MAC address of the cable modem.

Command Default

None.

Command Modes

Privileged EXEC (#).

Command History

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

Usage Guidelines

The **show cable modem reduction-mode energy-management-param** command is used to verify the configuration parameters used in the cable modem configuration file.

```
show cable modem 54d4.6ffb.2e21 reduction-mode energy-management-param

Energy Management feature enable : Y
DS entry bitrate threshold(bps)  : 100000
DS entry time threshold(s)       : 120
DS exit bitrate threshold(bps)   : 200000
DS exit time threshold(s)        : 2
US entry bitrate threshold(bps)  : 100000
US entry time threshold(s)       : 120
US exit bitrate threshold(bps)   : 200000
US exit time threshold(s)        : 2
cycle period(s)                  : 300
```

show cable modem reduction-mode energy-management-status

To view the basic statistics for all energy management receive request events for a specific cable modem, use the **show cable modem reduction-mode energy-management-status** command.

show cable modem {*cable if* | *mac_address* | *ip_address*} **reduction-mode energy-management-status**

Syntax Description

cable if	I/F of the cable modem.
mac address	MAC address of the cable modem.
ip address	IP address of the cable modem.

Command Default

None.

Command Modes

Privileged EXEC (#).

Command History

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

Usage Guidelines

The **show cable modem reduction-mode energy-management-status** command shows the basic statistics for all energy management receive request events for a specific cable modem.

```
show cable modem c8/0/0 reduction-mode energy-management-status

I/F    MAC Address    Event          TID Count Error Dups   Time
C8/0/0 54d4.6ffb.2e21 Enter EM mode   1   1     0     1    Jul 16 21:38:18
                      Exit EM mode    1   1     0     0    Jul 16 21:38:39
C8/0/0 602a.d07c.4ec6 Enter EM mode   1   1     0     0    Jul 16 21:40:57
                      Exit EM mode    1   1     0     0    Jul 16 21:41:17
```

show cable modem reduction-mode mta-battery

To display the channel bonding downgrade information for cable modems in battery backup mode, use **show cable modem reduction-mode mta-battery** command in privileged EXEC mode.

show cable modem reduction-mode mta-battery

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command Modes

Privileged EXEC(#)

Command History

Release	Modification
12.2(33)SCI2	This command was introduced.
IOS-XE 3.16.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use the **show cable modem reduction-mode mta-battery** command to verify the configuration for channel bonding downgrade in battery backup mode. This command will display channel bonding downgrade information for cable modems in battery backup mode.

Examples

The following example displays the channel bonding downgrade information for cable modems in battery backup mode:

```
Router# show cable modem reduction-mode mta-battery
Load for five secs: 2%/0%; one minute: 3%; five minutes: 2%
Time source is NTP, *13:36:15.619 CST Thu Jul 16 2015
Orig BG Curr BG
I/F MAC Address ID I/F RFs ID I/F Upstream
------- -------------- ---- ----------- --- ---- ----------- --------
C8/0/1 7cb2.1b0f.ea58 6146 Wi8/0/0:1 8 6165 Wi8/0/0:20 US0
C8/0/1 7cb2.1b9c.8ed4 6146 Wi8/0/0:1 8 6173 Wi8/0/0:28 US1
C8/0/1 0025.2eaf.6f44 6146 Wi8/0/0:1 8 6173 Wi8/0/0:28 US0

Router#
```

Related Commands

Command	Description
cable reduction-mode mta-battery	Configures channel bonding downgrade for cable modems in battery backup mode.

show cable modem registered

To display a list of the cable modems (CMs) that have registered with the Cisco CMTS, use the **show cable modem registered** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **registered**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **registered**

Cisco cBR-8 Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot*/*subslot*/*cable-interface-index* }] **registered**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. For Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Displays the logical channel index. Valid values are 0 and 1. This option is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.
registered	Displays a list of the cable modems that have registered with the Cisco CMTS.

Command Default

Displays a list of all registered CMs on the Cisco CMTS router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 NA	This command was introduced.
12.2(4)BC1	Support for the Cisco uBR10012 router 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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM. • The alignment of output fields has been changed.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** and **upstream** keywords were removed. The *logical-channel-index* is removed.

Usage Guidelines

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address*

command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Examples

The following example shows sample output for the default form of the **show cable modem registered** command in Cisco IOS Release 12.2(33)SCA:

```
Router# show cable modem registered
Interface Prim Online       Timing  Rec   QoS CPE IP address      MAC address
          Sid  State        Offset Power
C3/0/U0   1    online(pt)   2024    0.00  5   0   10.74.1.60      0000.cadb.0bae
C3/0/U0   2    online(pt)   2032    0.00  5   0   10.74.1.58      0000.cadb.0512
C3/0/U0   3    online(pt)   2024    0.50  5   0   10.74.1.61      0000.cadb.04b2
C3/0/U0   4    online(pt)   3079    0.00  5   0   10.74.1.48      0003.e3a6.7f71
C3/0/U0   5    online(pt)   2558    -1.00 5   0   10.74.1.50      0010.7b6b.77ed
C3/0/U0   6    online(pt)   3083    -0.50 5   0   10.74.1.42      0030.80bc.22b9
```

The following example shows sample output for the default form of the **show cable modem registered** command for Cisco IOS Release 12.2(33)BC.

```
Router# show cable modem registered

Interface   Prim Online    Timing Rec    QoS CPE IP address      MAC address
            Sid  State     Offset Power
Cable3/0/U0 1    online     2812   -0.25  5   1   10.18.1.5       0030.80bc.2303
Cable3/0/U0 2    online     2804    0.50  5   0   10.18.1.9       0006.2854.73f5
```

The following example shows sample output for the **show cable modem registered** command for a particular cable interface:

```
Router# show cable modem c8/1/0 registered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U1 1    online       1548   0.00   5   0   10.1.1.11       0050.7366.1243
```

```
C8/1/0/U4 2    online       1925   0.00   5   0   10.1.1.10       0002.b970.0027
C8/1/0/U4 3    online       1918   -0.50  2   0   10.1.1.10       0006.5314.858d
```

The following example shows sample output for the **show cable modem registered** command for a single CM, as identified by its IP address:

```
Router# show cable modem 22.1.1.10 registered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U4 3    online       1918   -0.75  2   0   10.1.1.10       0006.5314.858d
```

The following example shows sample output for the **show cable modem registered** command for a single CM, as identified by its MAC address:

```
Router# show cable modem 0006.5314.858d registered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U4 3    online       1918   -0.25  2   0   10.1.1.10       0006.5314.858d
```

Note An asterisk (*) in the Receive Power column indicates that a power adjustment has been made for that CM. An exclamation point (!) in the Receive Power column indicates that the CM has reached its maximum power transmit level and cannot increase its power level further. An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. A pound sign (#) in the MAC State column indicates that the **cable tftp-enforce mark-only** 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 (Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases).

Tip The **show cable modem** command displays the CM timing offset in DOCSIS ticks, while other commands, such as **cable map-advance**, display the offset in microseconds. Use the following method to convert microseconds to DOCSIS ticks: ticks = microseconds*64/6.25 .

Table below describes the major fields shown in the **show cable modem registered** displays:

Table 42: Descriptions for the show cable modem registered Fields

Field	Description
Interface	The cable interface line card providing the upstream for this CM.
Prim SID	The primary SID assigned to this CM.
Online State	The current state of the MAC layer. Should show “online” for registered CMs.

Field	Description
Timing Offset	The timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the CM (which will include any internal delay between when the CM software begins the transmission and when the bits actually appear on the local cable interface).
Rec Power	The received power level (in dB) for the CM. **Note** An asterisk (*) in the RxPwr column indicates that a power adjustment has been made for that CM. An exclamation point (!) indicates that the CM has reached its maximum power transmit level and cannot increase its power level further.
QoS	Displays the QoS profile assigned to the CM (DOCSIS 1.1 and DOCSIS 2.0 CMs only).
CPE	Indicates the number of CPE devices for which the CM is providing services.
IP Address	The IP address that the DHCP server has assigned to the CM.
MAC Address	The MAC address for the CM.

The following examples show the output of the **show cable modem registered** command with specific IP Address, MAC Address and cable interface.

```
Router#show cable modem 192.180.2.26 reg
Router#show cable modem 192.180.2.26 registered
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 13:24:27.869 PST Thu May 7 2015
Interface    Prim Online        Timing Rec   QoS CPE IP address      MAC address
             Sid  State         Offset Power
C6/0/1/UB    1    w-online(pt)  1769   -1.50 2   0   192.180.2.26    c8fb.26a7.e6fe


Router#show cable modem c8fb.26a7.e6fe registered
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 13:24:02.590 PST Thu May 7 2015
Interface    Prim Online        Timing Rec   QoS CPE IP address      MAC address
             Sid  State         Offset Power
C6/0/1/UB    1    w-online(pt)  1769   -1.50 2   0   192.180.2.26    c8fb.26a7.e6fe


Router#show cable modem c6/0/1 registered
Load for five secs: 1%/0%; one minute: 1%; five minutes: 1%
Time source is NTP, 13:24:58.402 PST Thu May 7 2015
Interface    Prim Online        Timing Rec   QoS CPE IP address      MAC address
             Sid  State         Offset Power
C6/0/1/UB    1    w-online(pt)  1769   -1.50 2   0   192.180.2.26    c8fb.26a7.e6fe
```

```
C6/0/1/UB    2    w-online(pt)  1771   -1.00 2   0   192.180.2.24    c8fb.26a7.ef06
C6/0/1/UB    3    w-online(pt)  1772   -0.50 2   0   192.180.2.34    c8fb.26a8.067c
C6/0/1/UB    4    w-online(pt)  1771   -2.00 2   0   192.180.2.11    c8fb.26a8.08ca
C6/0/1/UB    6    w-online(pt)  1773   -1.50 2   0   192.180.2.68    c8fb.26a8.08d6
C6/0/1/UB    7    w-online(pt)  1771   -1.50 2   0   192.180.2.23    c8fb.26a7.ef0c
C6/0/1/UB    8    w-online(pt)  1769   -1.50 2   0   192.180.2.50    c8fb.26a7.fd72
C6/0/1/UB    9    w-online(pt)  1770   -1.50 2   0   192.180.2.48    c8fb.26a8.0688
C6/0/1/UB    10   w-online(pt)  1771   -1.50 2   0   192.180.2.14    c8fb.26a7.e6dc
C6/0/1/UB    11   w-online(pt)  1773   -1.00 2   0   192.180.2.64    c8fb.26a8.08b8
C6/0/1/UB    12   w-online(pt)  1770   -0.50 2   0   192.180.2.56    c8fb.26a8.060a
C6/0/1/UB    13   w-online(pt)  1770   -1.50 2   0   192.180.2.20    c8fb.26a7.ef00
C6/0/1/UB    14   w-online(pt)  1772   -1.00 2   1   192.180.2.16    c8fb.26a7.ef08
C6/0/1/UB    15   w-online(pt)  1767   -1.00 2   0   192.180.2.27    c8fb.26a7.eef6
C6/0/1/UB    16   w-online(pt)  1772   -0.50 2   0   192.180.2.43    c8fb.26a8.05b2
C6/0/1/UB    17   w-online(pt)  1768   -1.50 2   0   192.180.2.39    c8fb.26a8.0606
C6/0/1/UB    18   w-online(pt)  1771   -1.00 2   0   192.180.2.49    c8fb.26a8.0682
C6/0/1/UB    20   w-online(pt)  1771   -1.50 2   0   192.180.2.55    c8fb.26a8.0a0c
C6/0/1/UB    21   w-online(pt)  1771   -1.00 2   0   192.180.2.59    c8fb.26a8.0604
C6/0/1/UB    22   w-online(pt)  1781   -1.00 2   0   192.180.2.7     c8fb.2633.8c94
C6/0/1/UB    23   w-online(pt)  1771   -0.50 2   0   192.180.2.46    c8fb.26a8.05c0
C6/0/1/UB    24   w-online(pt)  1770   -0.50 2   0   192.180.2.19    c8fb.26a7.eefc
C6/0/1/UB    25   w-online(pt)  1770   -1.00 2   0   192.180.2.69    c8fb.26a8.09ee
C6/0/1/UB    26   w-online(pt)  1771   -0.50 2   0   192.180.2.31    c8fb.26a8.05c6
C6/0/1/UB    27   w-online(pt)  1771   -1.50 2   0   192.180.2.70    c8fb.26a8.08d4
C6/0/1/UB    28   w-online(pt)  1773   -1.50 2   0   192.180.2.57    c8fb.26a8.05b8
C6/0/1/UB    29   w-online(pt)  1770   -1.50 2   0   192.180.2.42    c8fb.26a8.05c4
C6/0/1/UB    30   w-online(pt)  2087   -0.50 2   0   192.180.2.9     54d4.6f88.5cd8
C6/0/1/UB    31   w-online(pt)  1772   -1.50 2   0   192.180.2.36    c8fb.26a8.0678
C6/0/1/UB    32   w-online(pt)  1771   -0.50 2   0   192.180.2.67    c8fb.26a8.09ec
C6/0/1/UB    33   w-online(pt)  1768   -1.00 2   0   192.180.2.41    c8fb.26a8.05b6
C6/0/1/UB    34   w-online(pt)  1773   -0.50 2   0   192.180.2.45    c8fb.26a8.051a
C6/0/1/UB    35   w-online(pt)  1771   -1.00 2   0   192.180.2.52    c8fb.26a8.067a
C6/0/1/UB    36   w-online(pt)  1773   -1.00 2   0   192.180.2.51    c8fb.26a8.0684
C6/0/1/UB    37   w-online(pt)  1770   -1.50 2   0   192.180.2.47    c8fb.26a7.fd76
C6/0/1/UB    38   w-online(pt)  1773   -1.00 2   0   192.180.2.35    c8fb.26a8.0a04
C6/0/1/UB    39   w-online(pt)  1770   -1.50 2   0   192.180.2.72    c8fb.26a8.0a0a
C6/0/1/UB    40   w-online(pt)  1769   -0.50 2   0   192.180.2.38    c8fb.26a8.05bc
C6/0/1/UB    41   w-online(pt)  1773   -0.50 2   0   192.180.2.33    c8fb.26a8.0674
C6/0/1/UB    42   w-online(pt)  1773   -1.00 2   0   192.180.2.40    c8fb.26a8.067e
C6/0/1/UB    43   w-online(pt)  1772   -1.50 2   0   192.180.2.66    c8fb.26a8.09f8
C6/0/1/UB    44   w-online(pt)  1768   -1.50 2   0   192.180.2.12    c8fb.26a8.0610
C6/0/1/UB    45   w-online(pt)  1768   -2.00 2   0   192.180.2.21    c8fb.26a7.ef0e
C6/0/1/UB    46   w-online(pt)  1768   -2.00 2   0   192.180.2.25    c8fb.26a7.e6d8
C6/0/1/UB    47   w-online(pt)  1771   -2.00 2   0   192.180.2.15    c8fb.26a7.e6da
C6/0/1/UB    48   w-online(pt)  1772   -1.00 2   0   192.180.2.29    c8fb.26a7.e636
C6/0/1/UB    49   w-online(pt)  1770   -1.50 2   0   192.180.2.44    c8fb.26a8.0676
C6/0/1/UB    50   w-online(pt)  1769   -1.00 2   0   192.180.2.28    c8fb.26a7.ef20
C6/0/1/UB    51   w-online(pt)  1770   -1.50 2   0   192.180.2.71    c8fb.26a8.09e2
C6/0/1/UB    52   w-online(pt)  1769   -1.00 2   0   192.180.2.6     c8fb.26a8.09e0
C6/0/1/UB    53   w-online(pt)  1769   -1.00 2   0   192.180.2.37    c8fb.26a8.0690
C6/0/1/UB    54   w-online(pt)  1771   -1.00 2   0   192.180.2.22    c8fb.26a7.e680
C6/0/1/UB    55   w-online(pt)  1772   -1.50 2   0   192.180.2.58    c8fb.26a8.0a02
C6/0/1/UB    56   w-online(pt)  1769   -1.00 2   0   192.180.2.53    c8fb.26a8.04fe
C6/0/1/UB    57   w-online(pt)  1768   -2.00 2   0   192.180.2.32    c8fb.26a7.fd78
C6/0/1/UB    58   w-online(pt)  1771   -1.00 2   0   192.180.2.13    c8fb.26a8.08c4
C6/0/1/UB    61   w-online(pt)  1777   -1.00 2   0   192.180.2.119   0023.bee1.eb54
C6/0/1/UB    62   w-online(pt)  1772   -1.50 2   0   192.180.2.17    c8fb.26a7.ef10
C6/0/1/UB    63   w-online(pt)  1772   -1.50 2   0   192.180.2.30    c8fb.26a7.ef0a
C6/0/1/U1    19   w-online(pt)  1772   -1.00 0   0   192.180.2.18    0019.474a.d5ae
C6/0/1/U0    5    online(pt)    1769   -1.00 0   0   192.180.2.8     0016.924f.8200

Router#
```

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem offline	Displays a list of the CMs that are marked as offline with the Cisco CMTS.
show cable modem unregistered	Displays a list of the CMs that are marked as unregistered with the Cisco CMTS.
show cable modem vendor	Displays the vendor name or Organizational Unique Identifier (OUI) for the CMs on each cable interface.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem remote-query

To display information collected by the remote-query feature, use the **show cable modem remote-query** command in privileged EXEC mode.

show cable modem remote-query

Syntax Description

This command has no keywords or arguments.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XR, 12.1(2)T	This command was introduced.
12.1(2)EC1	Support for this command was added to the 12.1 EC train.
12.2(4)BC1b	Support for this command was added to the 12.2 BC train.
12.3(23)BC	Support was added for displaying status of modems during an SNMP request.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command shows the statistics collected when the remote-query feature has been enabled and configured by the **cable modem remote-query** command.

Note In Cisco IOS Release 12.1 CX, Cisco IOS Release 12.2 BC, and later, use the **show cable modem phy** command instead of the **show cable modem remote-query** command.

Tip The information shown by this command can also be displayed by querying the attributes in the CISCO-DOCS-REMOTE-QUERY-MIB.

Note Also see the information about this command's behavior in a Hot Standby Connection-to-Connection Protocol (HCCP) configuration.

Examples

The following example shows typical output from the **show cable modem remote-query** command. In this example, the final CM (IP address of 10.200.71.2) has not been configured with an SNMP community string that allows access to the remote-query feature.

```
Router# show cable modem remote-query
Remote Query Polling State : Active
```

```
IP address      MAC address     S/N    US     DS    Tx Time  Micro (dB) Modem
                                Ratio  Power  Power Offset   Reflection  State
10.200.71.8     0001.9659.47af  36.6   31.0    0.0  12352     17         online
10.200.71.4     0001.9659.47c7  36.6   37.0    0.0  12352     17         online
10.200.71.6     0001.9611.b9a3  36.6   37.0    0.0  12353     15         online
10.200.71.3     0001.9659.47a9  36.6   37.0    0.0  12351     16         online
10.200.71.2     0001.9659.47c1   0.0    0.0    0.0  0         0          online
```

In the following example, the SNMP Request column shows cable modems being offline when an SNMP request using the cable modem remote query command is not received. The modems are either offline or are not responding to the SNMP request.

```
Router# show cable modem remote-query
Remote Query Polling State : Inactive
IP address      MAC address     S/N    US     DS    Tx Time SNMP
                                Ratio  Power  Power Offset  Request
80.51.1.4       0018.f826.3453   0.0    0.0    0.0  0        CM offline
80.51.1.2       000c.e5f6.0c40   0.0    0.0    0.0  0        CM offline
80.51.1.8       0019.474a.d4fe   0.0    0.0    0.0  0        CM offline
80.51.1.3       0018.6852.82fa   0.0    0.0    0.0  0        CM offline
80.51.1.5       0019.474a.c1ae   0.0    0.0    0.0  0        CM offline
```

Table below shows the fields displayed by the **show cable modem remote-query** command.

Table 43: Descriptions for the show cable modem remote-query Fields

Field	Description
IP Address	The IP address that the DHCP server has assigned to the CM.
MAC Address	The MAC address for the CM.
S/N Ratio	The current signal-to-noise ratio (SNR) on the downstream, as seen by the CM.
US Power	The current operational transmit power level, in dBmV, as seen by the CM.
DS Power	The received power level, in dBmV, as seen by the CM. This field is set to zero if the CM does not support power level measurements.
TX Time Offset	The timing offset for the CM, in ticks, as recognized on the CM. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. The CM value includes any internal delay between when the CM software begins the transmission and when the bits actually appear on the local cable interface. **Note** The timing offset shown here is typically larger than the Time Offset value shown by the **show cable modem** command, because the latter value is the offset as recognized on the CMTS (which does not include the internal delay on the CM).

Field	Description
Micro (dB) Reflection	The approximate number of total microreflections (including in-channel responses) on the downstream, measured in dBc below the signal level, as seen by the CM. 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.
Modem State	The current state of the MAC layer for the CM.

The following example shows typical output from the **show cable modem remote-query** command.

```
Router# show cable modem remote-query

IP address      MAC address     S/N    US     DS    Tx Time Micro (dB) Modem
                                Ratio  Power  Power Offset  Reflection State
10.118.4.194    0007.0e04.5ba9  33.4   42.3  - 1.0  8794    1          online
10.118.4.156    0003.6b1b.e8c9  34.0   44.0  - 1.0  8795    3          online(d)
Router#
```

The following example shows typical output from the **show cable modem remote-query** command when the remote-query feature has not been configured.

```
Router# show cable modem remote-query

Remote Query Polling State : Inactive
IP address      MAC address     S/N    US     DS    Tx Time  Micro (dB) Modem
                               Ratio  Power  Power Offset   Reflection  State
10.200.71.8     0001.9659.47af   0.0    0.0    0.0  0          0          online
10.200.71.4     0001.9659.47c7   0.0    0.0    0.0  0          0          online
10.200.71.6     0001.9611.b9a3   0.0    0.0    0.0  0          0          online
10.200.71.3     0001.9659.47a9   0.0    0.0    0.0  0          0          online
10.200.71.2     0001.9659.47c1   0.0    0.0    0.0  0          0          online
10.200.71.10    00d0.5904.5321   0.0    0.0    0.0  0          0          offline
10.200.71.11    0050.f112.5123   0.0    0.0    0.0  0          0          offline
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.

Examples for Cisco cBR-8 Converged Broadband Router

This example shows the output of the **show cable modem remote-query** command:

```
Router#show cable modem  remote-query
Remote Query Polling State : Inactive
```

```
MAC address     S/N    US     DS    Tx Time SNMP       IP address/IPv6 address
                Ratio  Power  Power Offset  Request
1859.334d.6622  0.0    0.0    0.0   0        NO        10.10.0.4
1859.334d.7cd2  0.0    0.0    0.0   0        NO        10.10.0.9
1859.334d.7db2  0.0    0.0    0.0   0        NO        10.10.0.10
1859.334d.7e64  0.0    0.0    0.0   0        NO        10.10.0.17
1859.334d.f658  0.0    0.0    0.0   0        NO        10.10.0.20
1859.334d.f9d0  0.0    0.0    0.0   0        NO        10.10.0.23
1859.334d.774c  0.0    0.0    0.0   0        NO        10.10.0.25
1859.334d.f628  0.0    0.0    0.0   0        NO        10.10.0.28
1859.334d.f60e  0.0    0.0    0.0   0        NO        10.10.0.33
1859.334d.fa36  0.0    0.0    0.0   0        NO        10.10.0.35
1859.334d.667e  0.0    0.0    0.0   0        NO        10.10.0.36
1859.334d.fb1e  0.0    0.0    0.0   0        NO        10.10.0.37
1859.334d.7d8e  0.0    0.0    0.0   0        NO        10.10.0.42
1859.334d.f604  0.0    0.0    0.0   0        NO        10.10.0.52
1859.334d.fc64  0.0    0.0    0.0   0        NO        10.10.0.57
1859.334d.f696  0.0    0.0    0.0   0        NO        10.10.0.61
1859.334d.fce6  0.0    0.0    0.0   0        NO        10.10.0.78
1859.334d.f9b0  0.0    0.0    0.0   0        NO        10.10.0.97
1859.334d.fa8c  0.0    0.0    0.0   0        NO        10.10.0.116
1859.334d.71e0  0.0    0.0    0.0   0        NO        10.10.0.123
1859.334d.7e34  0.0    0.0    0.0   0        NO        10.10.0.134
1859.334d.7e9e  0.0    0.0    0.0   0        NO        10.10.0.150
1859.334d.7cf0  0.0    0.0    0.0   0        NO        10.10.0.164
1859.334d.f96e  0.0    0.0    0.0   0        NO        10.10.0.167
1859.334d.7b68  0.0    0.0    0.0   0        NO        10.10.0.188
1859.334d.7aec  0.0    0.0    0.0   0        NO        10.10.0.176
1859.334d.fce8  0.0    0.0    0.0   0        NO        10.10.0.180
1859.334d.f62a  0.0    0.0    0.0   0        NO        10.10.0.191
1859.334d.fabc  0.0    0.0    0.0   0        NO        10.10.0.217
1859.334d.7d00  0.0    0.0    0.0   0        NO        10.10.0.224
1859.334d.6778  0.0    0.0    0.0   0        NO        10.10.0.247
1859.334d.7306  0.0    0.0    0.0   0        NO        10.10.1.18
1859.334d.65d4  0.0    0.0    0.0   0        NO        10.10.1.5
1859.334d.6604  0.0    0.0    0.0   0        NO        10.10.1.49
1859.334d.7a10  0.0    0.0    0.0   0        NO        10.10.1.51
1859.334d.7d38  0.0    0.0    0.0   0        NO        10.10.1.75
1859.334d.6434  0.0    0.0    0.0   0        NO        10.10.1.55
1859.334d.7ace  0.0    0.0    0.0   0        NO        10.10.1.78
1859.334d.7b5a  0.0    0.0    0.0   0        NO        10.10.1.61
1859.334d.7d16  0.0    0.0    0.0   0        NO        10.10.1.60
1859.334d.7c78  0.0    0.0    0.0   0        NO        10.10.1.93
1859.334d.65b0  0.0    0.0    0.0   0        NO        10.10.1.81
1859.334d.7c40  0.0    0.0    0.0   0        NO        10.10.1.82
1859.334d.804a  0.0    0.0    0.0   0        NO        10.10.1.87
1859.334d.7b2a  0.0    0.0    0.0   0        NO        10.10.1.98
1859.334d.7d04  0.0    0.0    0.0   0        NO        10.10.1.100
1859.334d.7e42  0.0    0.0    0.0   0        NO        10.10.1.107
1859.334d.6e1a  0.0    0.0    0.0   0        NO        10.10.1.109
1859.334d.7be8  0.0    0.0    0.0   0        NO        10.10.1.113
1859.334d.7a5a  0.0    0.0    0.0   0        NO        10.10.1.129
1859.334d.6584  0.0    0.0    0.0   0        NO        10.10.1.128
1859.334d.7ad2  0.0    0.0    0.0   0        NO        10.10.1.130
1859.334d.660e  0.0    0.0    0.0   0        NO        10.10.1.132
1859.334d.7b4c  0.0    0.0    0.0   0        NO        10.10.1.134
1859.334d.6688  0.0    0.0    0.0   0        NO        10.10.1.136
1859.334d.7cc0  0.0    0.0    0.0   0        NO        10.10.1.141
1859.334d.6742  0.0    0.0    0.0   0        NO        10.10.1.153
1859.334d.7aac  0.0    0.0    0.0   0        NO        10.10.1.172
1859.334d.f968  0.0    0.0    0.0   0        NO        10.10.1.177
1859.334d.7908  0.0    0.0    0.0   0        NO        10.10.1.187
1859.334d.7aa8  0.0    0.0    0.0   0        NO        10.10.1.197
1859.334d.7d14  0.0    0.0    0.0   0        NO        10.10.1.214
```

```
1859.334d.6602   0.0    0.0   0.0   0        NO        10.10.1.216
1859.334d.7c7e   0.0    0.0   0.0   0        NO        10.10.1.217
1859.334d.f97a   0.0    0.0   0.0   0        NO        10.10.1.219
```

Related Commands

Command	Description
cable modem remote-query	Enables and configures the remote-query feature to gather CM performance statistics on the CMTS.
debug cable remote-query	Turns on debugging to gather information from remote CMs.
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
snmp-server enable traps cable	Enables traps that are sent when the remote polling of CMs has been completed.

show cable modem resiliency

To display the resiliency status of the cable modems in resiliency mode on the Cisco CMTS router, use the **show cable modem resiliency** command in privileged EXEC mode.

show cable modem resiliency

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCG	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.

Examples

The following example shows a sample output of the **show cable modem resiliency** command:

```
Router# show cable modem resiliency
                                 Orig BG                 Curr BG
I/F     MAC Address    ID   I/F            RFs ID   I/F            RFs
------- -------------- ---- ---------------------- ----------------------
C7/0/0  0025.2eaf.843e 897  Wi7/0/0:0      4   898  Wi7/0/0:1      3
C7/0/0  0025.2eaf.8356 897  Wi7/0/0:0      4   899  Wi7/0/0:2      3
C7/0/0  0015.d176.5199 897  Wi7/0/0:0      4   720  In7/0/0:0
```

Table below describes the significant fields shown in the display.

Table 44: show cable modem resiliency Field Descriptions

Field	Description
I/F	Modem host interface.
MAC Address	MAC address of the cable modem.
Orig BG ID	Original wideband (WB) interface bonding group ID.
I/F	Original bonding group (BG) WB interface.
RFs	Number of RFs originally assigned.
Curr BG ID	Currently assigned bonding group ID.
I/F	Assigned interface (dynamic WB or narrowband).
RFs	Number of RFs in the interface (if assigned to a WB interface).

This example shows the output of the **show cable modem resiliency** command on the Cisco cBR router:

```
Router# show cable modem resiliency
                                Orig BG                 Curr BG
I/F     MAC Address    ID    I/F           RFs ID    I/F           RFs
------- -------------- ----------------------- ----------------------
c1/0/0  0025.2eaf.843e 897  Wi7/0/0:0     4   898  Wi7/0/0:1     3
C1/0/0  0025.2eaf.8356 897  Wi7/0/0:0     4   899  Wi7/0/0:2     3
C1/0/0  0015.d176.5199 897  Wi7/0/0:0     4   720  In7/0/0:0
```

Related Commands

Command	Description
cable resiliency ds-bonding	Enables the Downstream Resiliency Bonding Group feature on the Cisco CMTS router.
cable ds-resiliency	Reserves a resiliency bonding group for a line card on the Cisco CMTS router.
show cable resiliency	Displays all information about resiliency bonding groups on the Cisco CMTS router.

show cable modem rogue

To display a list of cable modems that have been marked, locked, or rejected because they failed the dynamic shared-secret authentication checks, use the **show cable modem rogue** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **rogue**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **rogue**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot*/*subslot*/*cable-interface-index* }] **rogue**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).
cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.

upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.
rogue	Displays a list of cable modems that have been marked, locked, or rejected.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(15)BC1	This command was introduced for Cisco uBR7100 series, Cisco uBR7200 series, and Cisco uBR10012 routers.
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. • Support for specifying the IPv6 address of a CM or CPE device was added. • The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** and **name** keywords, and the *logical-channel-index* variable were removed.

Usage Guidelines

This command displays a list of cable modems that attempted to register with a DOCSIS configuration file that does not pass the authentication required by the **cable dynamic-secret** command. After a cable modem is added to the rogue list, it remains in the rogue list until one of the following occurs:

- The cable modem remains offline, without attempting to reregister, for 24 hours. It is then removed from all of the CMTS internal databases, including the rogue list.
- An administrator manually deletes the cable modem from the CMTS internal databases, using the **clear cable modem delete** command.
- An administrator unlocks the cable modem using the **clear cable modem lock** command.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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

The following sample output from the **show cable modem rogue** command.

```
Router# show cable modem rogue
                                        Spoof TFTP
MAC Address    Vendor     Interface     Count Dnld Dynamic Secret
AAAA.7b43.aa7f Vendor1    C4/0/U5         2  Yes  45494DC933F8F47A398F69EE6361B017
AAAA.7b43.aa7f Vendor1    C4/0/U5         2  Yes  D47BCBB5494E9936D51CB0EB66EF0B0A
BBBB.7b43.aa7f Vendor2    C4/0/U5         2  No   8EB196423170B26684BF6730C099D271
AAAA.7b43.aa7f Vendor1    C4/0/U5         2  No   DF8FE30203010001A326302430120603
BBBB.7b43.aa7f Vendor2    C4/0/U5         2  No   300E0603551D0F0101FF040403020106
AAAA.7b43.aa7f Vendor1    C4/0/U5         2  Yes  820101002D1A264CE212A1BB6C1728B3
DDDD.7b43.aa7f Vendor4    C4/0/U5         2  Yes  7935B694DCA90BC624AC92A519C214B9
AAAA.7b43.aa7f Vendor1    C4/0/U5         2  No   3AB096D00D56ECD07D9B7AB662451CFF
Router#
```

Table below describes the fields shown by the **show cable modem rogue** command.

Table 45: show cable modem Field Descriptions

Field	Description
MAC Address	The MAC address for the CM.
Vendor	Vendor name for this cable modem, as configured using the **cable modem vendor** command.

Field	Description
Interface	The cable interface line card providing the upstream for this CM.
Spoof Count	Number of times that this cable modem has attempted to register with an invalid dynamic shared-secret value. **Note** To account for possible network problems, such as loss of packets and congestion, the Cisco CMTS will allow a cable modem to attempt to register twice before marking it as having failed the dynamic shared-secret authentication checks.
TFTP Dnld	Whether TFT downloads are enforced, as configured by the **cable tftp-enforce** command.
Dynamic Secret	The dynamic shared-secret for this cable modem.

Related Commands

Command	Description
cable dynamic-secret	Enables the Dynamic Shared Secret feature, so that DOCSIS configuration files are verified with a Message Integrity Check (MIC) that has been created with a dynamically generated shared secret.
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
cable shared-secondary-secret	Configures one or more secondary shared secret keys that CMs can use to successfully process the DOCSIS configuration file and register with the CMTS.
cable shared-secret	Configures an authentication shared secret key that CMs must use to successfully process the DOCSIS configuration file and register with the CMTS.
cable tftp-enforce	Requires that all CMs on a cable interface attempt to download a DOCSIS configuration file using the Trivial File Transfer Protocol (TFTP) through the cable interface before being allowed to register and come online.
clear cable modem lock	Resets the lock on one or more CMs, and reinitializes them, so that they can reregister with a valid DOCSIS configuration file.
show cable modem	Displays information for the registered and unregistered CMs.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays the SID information for a CM.

show cable modem rbg-activity

To view CM RBG usage statistics, use the **show cable modem rbg-activity** command in privileged EXEC mode.

show cable modem ip-address mac-address cable { *slot* / *subslot* / *cable-interface-index* } **rbg-activity** { **max** | **sort-by-move-count** | **sort-by-create-count** }

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific cable modem. If you specify the IP address for a CPE behind a cable modem, the output displays information for that cable modem.
mac-address	(Optional) MAC address of a specific cable modem. If you specify the MAC address for a CPE behind a cable modem, the output displays information for that cable modem.
cable	(Optional) Displays the modems on a specific cable interface.
slot	Slot where the line card resides. The valid range is 0–3 and 6–9.
subslot	Secondary slot number of the cable interface line card. The valid value is 0.
port	Downstream port number. The valid range is 0–4 (depending on the cable interface).
cable-interface-index	The 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. The valid range is 0–15.
rbg-activity	Displays CM RBG usage statistics. The following information is shown: • Total number of times CM are moved to any RBG. • Number of RBGs that are created for this CM. • Recent RBG move history with timestamps. • Indication if CM has currently reached **cm-max-rbg-moves** limit.
max	Sort the command output information by number of **cm-max-rbg-moves**.
sort-by-move-count	Sort the command output information by number of times CM are moved to any RBG.
sort-by-create-count	Sort the command output information by number of RBGs that are created for this CM.

Command Modes

Privileged EXEC (#)

Release	Modification
Cisco IOS XE Dublin 17.12.1w	This command is introduced for the Cisco cBR Series Converged Broadband routers.

Example

The following example shows sample output of the **show cable modem Cable1/0/0 rbg-activity** command:

```
Router#show cable modem Cable1/0/0 rbg-activity
                                          Number of        CM At
         Number of Times    RBG Created   cm-max-rbg-moves
I/F      MAC Address    Moved to RBG      For This CM       Limit
------------------------------------------------------------------------------
C1/0/0 206a.9454.30a4     2                  1               no
C1/0/0 0025.2e2d.7648     2                  1               no
C1/0/0 a84e.3f37.0e9a     3                  2               no
C1/0/0 0025.2e2d.76f4     3                  1               no
```

Related Commands

Command	Description
cable resiliency cm-max-rbg-moves	Configure the maximum number of times a CM can be moved to any RBG within the configured interval.

show cable modem rpd

To display the cable modem information associated with a specific Cisco Remote PHY Devices (RPD), use the **show cable modem rpd** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable modem rpd { *mac-address ip-address* | **id** *identifier* | **name** *name* } { **docsis** { **device-class** { **withip** } | **version** { **d31-capable** { **not-operational** | **operational** } } } | **flap** | **offline** | **partial-service** | **phy** { **normalized** | **ofdm-profile** { **upstream** | **downstream** } } | **primary-channel** { **non-bondng-capable** { **legacy-ranging** } | **sup** | **wideband** { **registered-traditional-docsis** } } | **registered** | **unregistered** | **verbose** { **normalized** | **sup** } | **wideband** { **channel** | **forwarding-summary** | **phy** | **registered-traditional-docsis** } } [{ **all** | { **summary** | [{ **total** }] } }]

Syntax Description

mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *identifier*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
all	(Optional) Displays all information on cable modems associated with a specific RPD.
summary	(Optional) Displays the summary information of cable modems associated with a specific RPD.
summary total	(Optional) Displays the summary and total information of cable modems associated with a specific RPD.
docsis version	(Optional) Displays the DOCSIS version information for cable modems.
docsis version d31-capable	(Optional) Displays the DOCSIS 3.1 version information for cable modems.
docsis device-class	(Optional) Displays the DOCSIS device-class information for cable modems.

docsis device-class withip	(Optional) Displays docsis device-class with IP addresses of the cable modems. The following two columns are displayed in the output:
	• DIP—Displays IP version configuration
	  • Y—CM is configured to dual IP.
	  • N—CM is configured with either IPv4 or IPv6.
	• IP Address—Displays the IPv6 address if the CM is configured with only IPv6. Otherwise, it displays IPv4 address.

flap	(Optional) Displays the flap list statistics for cable modems.
offline	(Optional) Displays a list of cable modems (CMs) marked as offline.

partial-service	(Optional) Displays a list of cable modems (CMs) in partial service.
phy	(Optional) Displays the DOCSIS PHY layer information for cable modems.
phy normalized	(Optional) Displays the normalized DOCSIS PHY layer information for cable modems.
phy ofdm-profile upstream	(Optional) Displays the upstream channel OFDM profiles associated with the cable modems (CMs).
phy ofdm-profile downstream	(Optional) Displays the downstream channel OFDM profiles associated with the cable modems (CMs).
primary-channel	(Optional) Display the primary-channel and host interface for cable modems (CMs).
non-bonding-capable	(Optional) Displays the cable modems and primary downstreams of the cable modems that aren't capable of bonding.
legacy-ranging	(Optional) Displays modems that access with legacy INIT-RNG-REQ.
registered-traditional-docsis	(Optional) Displays wideband cable modems registered in traditional pre DOCSIS3.0 mode.
registered	(Optional) Displays a list of cable modems (CMs) marked as registered.
unregistered	(Optional) Displays a list of the cable modems marked as unregistered.
wideband	(Optional) Displays the information for registered and unregistered wideband cable modems (CMs).
channel	(Optional) Displays the number of downstream (DS) and upstream (US) channels used by a cable modem.
forwarding-summary	(Optional) Displays the following details: • FrwdIF—The wideband interface that each modem is using. • BG DS Config—Number of downstreams in the wideband interface • Bonded State—Number of downstreams the modem is currently bonded on. • CM DS Capab—Number of downstreams the modem is capable of bonding on.
verbose	(Optional) Displays detailed information of the cable modems (CMs).

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Release	Modification
Cisco IOS XE Gibraltar 16.12.1z	The **docsis, flap, offline, partial-service, phy, primary-channel, registered, unregistered, verbose,** and **wideband** keywords were added to the command.

Usage Guidelines

Use this command to verify the cable modem information associated with a specific RPD.

The following example shows the sample output for the **show cable modem rpd** *mac-address* command:

```
Router# show cable modem rpd 0000.5e00.0091
                                                                                D
MAC Address    IP Address      I/F           MAC               Prim  RxPwr  Timing Num I
                                             State             Sid   (dBmv) Offset CPE P
0000.5e00.1522 192.0.2.102     C9/0/0/UB     w-online          21    -0.50  1327   0   N
0000.5e00.14ba 192.0.2.108     C9/0/0/UB     w-online          22    0.00   1264   0   N
0000.5e00.14e2 192.0.2.99      C9/0/0/UB     w-online          23    0.00   1264   0   N
0000.5e00.1422 192.0.2.100     C9/0/0/UB     w-online          24    0.50   1302   0   N
0000.5e00.1526 192.0.2.109     C9/0/0/UB     w-online          25    0.00   1274   0   N
0000.5e00.8d1e 192.0.2.51      C9/0/0/UB     w-online          26    0.50   869    0   N
0000.5e00.148a 192.0.2.98      C9/0/0/UB     w-online          27    0.00   1187   0   N
0000.5e00.2b5e 192.0.2.78      C9/0/0/UB     w-online          35    0.50   871    0   N
0000.5e00.1512 192.0.2.101     C9/0/0/UB     w-online          37    0.00   1302   0   N
0000.5e00.80aa 192.0.2.50      C9/0/0/UB     w-online          39    0.00   1462   0   N
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* command:

```
Router# show cable modem rpd 192.0.2.80
                                                                                D
MAC Address    IP Address      I/F           MAC               Prim  RxPwr  Timing Num I
                                             State             Sid   (dBmv) Offset CPE P
0000.5e00.1522 192.0.2.102     C9/0/0/UB     w-online          21    -0.50  1327   0   N
0000.5e00.14ba 192.0.2.108     C9/0/0/UB     w-online          22    0.00   1264   0   N
0000.5e00.14e2 192.0.2.99      C9/0/0/UB     w-online          23    0.00   1264   0   N
0000.5e00.1422 192.0.2.100     C9/0/0/UB     w-online          24    0.50   1302   0   N
0000.5e00.1526 192.0.2.109     C9/0/0/UB     w-online          25    0.00   1274   0   N
0000.5e00.8d1e 192.0.2.51      C9/0/0/UB     w-online          26    0.50   869    0   N
0000.5e00.148a 192.0.2.98      C9/0/0/UB     w-online          27    0.00   1187   0   N
0000.5e00.2b5e 192.0.2.78      C9/0/0/UB     w-online          35    0.50   871    0   N
0000.5e00.1512 192.0.2.101     C9/0/0/UB     w-online          37    0.00   1302   0   N
0000.5e00.80aa 192.0.2.50      C9/0/0/UB     w-online          39    0.00   1462   0   N
```

The following example shows the sample output for the **show cable modem rpd name***name* command:

```
Router# show cable modem rpd name P2_MATE
                                                                                D
MAC Address    IP Address      I/F           MAC               Prim  RxPwr  Timing Num I
                                             State             Sid   (dBmv) Offset CPE P
0000.5e00.1522 192.0.2.102     C9/0/0/UB     w-online          21    -0.50  1327   0   N
0000.5e00.14ba 192.0.2.108     C9/0/0/UB     w-online          22    0.00   1264   0   N
0000.5e00.14e2 192.0.2.99      C9/0/0/UB     w-online          23    0.00   1264   0   N
0000.5e00.1422 192.0.2.100     C9/0/0/UB     w-online          24    0.50   1302   0   N
0000.5e00.1526 192.0.2.109     C9/0/0/UB     w-online          25    0.00   1274   0   N
```

```
0000.5e00.8d1e 192.0.2.51      C9/0/0/UB     w-online          26    0.50   869    0   N
0000.5e00.148a 192.0.2.98      C9/0/0/UB     w-online          27    0.00   1187   0   N
0000.5e00.2b5e 192.0.2.78      C9/0/0/UB     w-online          35    0.50   871    0   N
0000.5e00.1512 192.0.2.101     C9/0/0/UB     w-online          37    0.00   1302   0   N
0000.5e00.80aa 192.0.2.50      C9/0/0/UB     w-online          39    0.00   1462   0   N
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* command:

```
Router# show cable modem rpd id 0000.5e00.0091
                                                                                  D
MAC Address    IP Address      I/F           MAC               Prim  RxPwr  Timing Num I
                                             State             Sid   (dBmv) Offset CPE P
0000.5e00.1522 192.0.2.102     C9/0/0/UB     w-online          21    0.00   1327   0   N
0000.5e00.14ba 192.0.2.108     C9/0/0/UB     w-online          22    0.00   1264   0   N
0000.5e00.14e2 192.0.2.99      C9/0/0/UB     w-online          23    0.00   1264   0   N
0000.5e00.1422 192.0.2.100     C9/0/0/UB     w-online          24    0.50   1302   0   N
0000.5e00.1526 192.0.2.109     C9/0/0/UB     w-online          25    0.00   1276   0   N
0000.5e00.8d1e 192.0.2.51      C9/0/0/UB     w-online          26    0.50   869    0   N
0000.5e00.148a 192.0.2.98      C9/0/0/UB     w-online          27    0.00   1187   0   N
0000.5e00.2b5e 192.0.2.78      C9/0/0/UB     w-online          35    0.50   871    0   N
0000.5e00.1512 192.0.2.101     C9/0/0/UB     w-online          37    0.00   1302   0   N
0000.5e00.80aa 192.0.2.50      C9/0/0/UB     w-online          39    0.00   1462   0   N
```

The following example shows the sample output for the **show cable modem rpd** *mac-address***docsis version** command:

```
Router#show cable modem rpd 0000.5e00.5100 docsis version
MAC Address    I/F            MAC               Prim Reg QoS  US Phy DS Chl
                              State             Sid  Ver Prov Mode   Mode
0000.5e00.c49c C3/0/1/UB      w-online          35   3.0 1.1  atdma* WB
0000.5e00.bfc4 C3/0/1/UB      w-online          36   3.0 1.1  atdma* WB
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **docsis version d31-capable** command:

```
Router#show cable modem rpd 0000.5e00.5100 docsis version d31-capable
MAC Address    I/F            MAC               Reg Oper DSxUS DS   RCC   US
                              State             Ver Ver        OFDM ID    OFDMA
0000.5e00.17ae C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
0000.5e00.1556 C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
0000.5e00.18da C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **docsis device-class** command:

```
Router#show cable modem rpd 0000.5e00.5100 docsis device-class
MAC Address    I/F            MAC               Prim Reg      Device Class      Reg
                              State             Sid  Ver  --------------------  Priv
0000.5e00.952c C2/0/4/p       w-online(pt)      1    3.0  CM            RTR     BPI+
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **docsis device-class withip** command:

```
Router#show cable modem rpd 0000.5e00.5100 docsis device-class withip
                                                                                D

MAC Address    I/F            MAC               Prim Reg      Device Class      Reg  I IP
Address
                              State             Sid  Ver  --------------------  Priv P

0000.5e00.952c C2/0/4/p       w-online(pt)      1    3.0  CM            RTR     BPI+ N
192.0.2.165
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+ N
192.0.2.169
0000.5e00.91c3 C2/0/4/p       w-online(pt)      3    3.0  CM            RTR     BPI+ N
192.0.2.170
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **flap** command:

```
Router#show cable modem rpd 0000.5e00.5100 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0000.5e00.c08e C3/0/1/UB     0     83    0     0      0      0
0000.5e00.c57a C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c66a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:49
0000.5e00.c49c C3/0/1/UB     0     81    0     0      0      0
0000.5e00.c112 C3/0/1/UB     0     82    0     0      0      0
0000.5e00.c4b0 C3/0/1/UB     0     84    0     0     !0      0
0000.5e00.c668 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c660 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf64 C3/0/1/UB     0     81    0     0      0      0
0000.0275.dee6 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c49a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:54
0000.5e00.c4da C3/0/1/UB     0     82    0     0     !0      0
0000.5e00.bb3b C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b565 C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b61c C3/0/1/UB     0     79    0     0      0      0
0000.5e00.c612 C3/0/1/UB     0     83    0     0     !0      0
0000.5e00.c5c8 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf68 C3/0/1/UB     0     78    0     0      0      0
0000.5e00.c53c C3/0/1/UB     0     78    0     0     !1      1     Mar 23 21:50:54
0000.5e00.bf16 C3/0/1/UB     0     85    0     0     !1      1     Mar 23 21:47:34
0000.5e00.bfcc C3/0/1/UB     0     77    0     0     !1      1     Mar 23 21:51:14
0000.5e00.c43a C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c078 C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c588 C3/0/1/UB     0     80    0     0     !0      0
0000.5e00.c4b4 C3/0/1/UB     0     82    0     0     !1      1     Mar 23 21:48:44
0000.5e00.c412 C3/0/1/UB     0     83    0     0     !1      1     Mar 23 21:48:04
0000.5e00.c67c C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:29
0000.5e00.c17a C3/0/1/UB     0     79    0     0     !0      0
0000.5e00.bfc4 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c022 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c4cc C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c5c6 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c178 C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:39
0000.5e00.c56e C3/0/1/UB     0     80    0     0     !0      0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **offline** command:

```
Router#show cable modem rpd 0000.5e00.5100 offline
Interface     MAC address    Prim Previous    Offline          Rx      Rx    SM
                             Sid  State       Time             Power   SNR   Exhaust
                                                                             Count
C3/0/1/UB     0000.5e00.c08e 1    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
```

```
C3/0/1/UB     0000.5e00.c57a 2    w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c66a 3    w-online(pt)Mar 23 22:12:32  -0.50  25.4  0
C3/0/1/UB     0000.5e00.c49c 4    w-online(pt)Mar 23 22:12:32  -0.50  25.3  0
C3/0/1/UB     0000.5e00.c112 5    w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c4b0 6    w-online(pt)Mar 23 22:12:32  -0.50  27.4  0
C3/0/1/UB     0000.5e00.c668 7    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c660 8    w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.bf64 9    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.0275.dee6 10   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c49a 11   w-online(pt)Mar 23 22:12:32  -0.50  24.7  0
C3/0/1/UB     0000.5e00.c4da 12   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.bb3b 13   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
C3/0/1/UB     0000.5e00.b565 14   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.b61c 15   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c612 16   w-online(pt)Mar 23 22:12:32  0.00   26.1  0
C3/0/1/UB     0000.5e00.c5c8 17   w-online(pt)Mar 23 22:12:32  0.50   27.9  0
C3/0/1/UB     0000.5e00.bf68 18   w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.c53c 19   w-online(pt)Mar 23 22:12:32  0.00   24.9  0
C3/0/1/UB     0000.5e00.bf16 20   w-online(pt)Mar 23 22:12:32  -0.50  26.6  0
C3/0/1/UB     0000.5e00.bfcc 21   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c43a 22   w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c078 23   w-online(pt)Mar 23 22:12:32  0.00   24.4  0
C3/0/1/UB     0000.5e00.c588 24   w-online(pt)Mar 23 22:12:32  -0.50  26.7  0
C3/0/1/UB     0000.5e00.c4b4 25   w-online(pt)Mar 23 22:12:32  0.00   24.2  0
C3/0/1/UB     0000.5e00.c412 26   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c67c 27   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c17a 28   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.bfc4 29   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.c022 30   w-online(pt)Mar 23 22:12:32  0.00   27.4  0
C3/0/1/UB     0000.5e00.c4cc 31   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.c5c6 32   w-online(pt)Mar 23 22:12:32  -0.50  25.4  0
C3/0/1/UB     0000.5e00.c178 33   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c56e 34   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **partial-service** command:

```
Router#show cable modem rpd 0000.5e00.5100 partial-service
MAC Address    IP Address      I/F           MAC              DSxUS  Impaired    Impaired
                                             State            State  DS          US

0000.5e00.c660 192.0.2.4       C3/0/1/UB     p-online         7x1    3/0/0:7

0000.5e00.c43a 192.0.2.26      C3/0/1/UB     p-online         7x1    3/0/0:6
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **phy** command:

```
Router#show cable modem rpd 0000.5e00.5100 phy
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  29.13 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.22 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.39 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  29.24 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.09 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  25.14 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  24.28 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.56 861     0.00  -----  atdma* 1.1
```

```
0000.5e00.c66a C3/0/1/U2     3     23.50  25.14 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  27.90 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  27.74 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  26.11 867     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U0     5     24.00  28.81 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U1     5     24.00  28.16 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U2     5     24.00  27.99 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U3     5     23.75  25.61 876     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U0     6     23.50  28.16 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U1     6     23.75  27.67 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U2     6     23.50  26.58 866     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U3     6     23.25  24.89 867     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U0     7     24.00  28.16 864     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U1     7     24.00  27.29 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U2     7     24.50  26.63 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U3     7     23.75  25.75 862     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U0     8     23.50  29.13 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U1     8     23.75  28.24 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U2     8     23.50  25.75 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U3     8     23.75  24.60 870     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **phy ofdm-profile** command:

```
Router#show cable modem rpd 0000.5e00.5100 phy ofdm-profile
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **phy ofdm-profile downstream** command:

```
Router#show cable modem rpd 0000.5e00.5100 phy ofdm-profile downstream
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **phy normalized** command:

```
Router#show cable modem rpd 0000.5e00.5100 phy normalized
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  28.92 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.09 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.23 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  27.99 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.74 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  27.09 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  23.74 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.65 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  26.45 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  28.81 866     0.00  -----  atdma* 1.1
```

```
0000.5e00.c49c C3/0/1/U1     4     23.75  29.24 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  25.41 867     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel wideband registered-traditional-docsis** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel wideband
registered-traditional-docsis
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.952c 192.0.2.165     C2/0/4/U6     online(pt)        1     0   Do2/0/28:28
23580
0000.5e00.2dce 192.0.2.169     C2/0/4/U2     online(pt)        2     0   Do2/0/28:28
23580
0000.5e00.91c3 192.0.2.170     C2/0/4/U6     online(pt)        3     0   Do2/0/28:28
23580
0000.5e00.9ec9 192.0.2.162     C2/0/4/U1     online(pt)        4     0   Do2/0/28:4
23556
0000.5e00.21e0 192.0.2.168     C2/0/4/U2     online(pt)        5     0   Do2/0/28:20
23572
0000.5e00.a940 192.0.2.164     C2/0/4/U4     online(pt)        6     0   Do2/0/28:20
23572
0000.5e00.91bd 192.0.2.166     C2/0/4/U0     online(pt)        7     0   Do2/0/28:24
23576
0000.5e00.9190 192.0.2.163     C2/0/4/U2     online(pt)        8     0   Do2/0/28:16
23568
0000.5e00.9f5f 192.0.2.161     C2/0/4/U0     online(pt)        9     0   Do2/0/28:0
23552
0000.5e00.91ba 192.0.2.171     C2/0/4/U3     online(pt)        10    0   Do2/0/28:16
23568
0000.5e00.a8cb 192.0.2.167     C2/0/4/U1     online(pt)        11    0   Do2/0/28:16
23568
0000.5e00.17ae 192.0.2.156     C2/0/4/U2     init6(t)          29    0   Do2/0/28:20
23572
0000.5e00.1556 ---             C2/0/4/U5     init(r1)          30    0   Do2/0/28:16
23568
0000.5e00.18da ---             C2/0/4/U4     init(rc)          31    0   Do2/0/28:16
23568
0000.5e00.196e 192.0.2.157     C2/0/4/U3     init6(t)          32    0   Do2/0/28:16
23568
0000.5e00.18ce ---             C2/0/4/U0     init(rc)          53    0   Do2/0/28:16
23568
0000.5e00.18f6 ---             C2/0/4/U5     init6(s)          59    0   Do2/0/28:20
2357
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel wideband** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel wideband
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel non-bonding-capable** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel non-bonding-capable
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c588 192.0.2.27      C3/0/1/U0     init(o)           187   0   Do3/0/0:6
24582
0000.5e00.c57a 192.0.2.55      C3/0/1/U3     init(o)           188   0   Do3/0/0:0
24576
0000.5e00.c112 192.0.2.11      C3/0/1/U3     init(o)           189   0   Do3/0/0:3
24579
0000.5e00.c078 192.0.2.88      C3/0/1/U1     init(t)           190   0   Do3/0/0:0
24576
0000.5e00.c178 ---             C3/0/1/U1     init(io)          191   0   Do3/0/0:7
24583
0000.5e00.c4da ---             C3/0/1/U3     init(io)          192   0   Do3/0/0:5
24581
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel sup** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel sup
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.bfcc 192.0.2.19      C3/0/1        online            1     0   Do3/0/0:4
24580
0000.0275.dee6 192.0.2.12      C3/0/1        online            2     0   Do3/0/0:0
24576
0000.5e00.c612 192.0.2.10      C3/0/1        online            3     0   Do3/0/0:0
24576
0000.5e00.c49c 192.0.2.3       C3/0/1        online            4     0   Do3/0/0:6
24582
0000.5e00.c53c 192.0.2.8       C3/0/1        online            5     0   Do3/0/0:0
24576
0000.5e00.c08e 192.0.2.21      C3/0/1        online            6     0   Do3/0/0:1
24577
0000.5e00.c588 192.0.2.27      C3/0/1        online            7     0   Do3/0/0:1
24577
0000.5e00.c4cc 192.0.2.24      C3/0/1        online            8     0   Do3/0/0:6
24582
0000.5e00.c660 192.0.2.4       C3/0/1        online            9     0   Do3/0/0:0
24576
0000.5e00.c022 192.0.2.22      C3/0/1        online            10    0   Do3/0/0:3
24579
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **primary-channel summary total** command:

```
Router#show cable modem rpd 0000.5e00.5100 primary-channel summary total
                                Cable Modem
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO

Local Primary Narrowband:
Do3/0/0:0     7     7     7     0     0       0        0      0     0      0
Do3/0/0:1     4     4     4     0     0       0        0      0     0      0
Do3/0/0:2     1     1     1     0     0       0        0      0     0      0
Do3/0/0:3     2     2     2     0     0       0        0      0     0      0
Do3/0/0:4     14    14    14    0     0       0        0      0     0      0
Do3/0/0:5     2     2     2     0     0       0        0      0     0      0
Do3/0/0:6     3     3     3     0     0       0        0      0     0      0
Do3/0/0:7     1     1     1     0     0       0        0      0     0      0
Subtotal:     34    34    34    0     0       0        0      0     0      0

Local Primary Wideband:
Subtotal:     0     0     0     0     0       0        0      0     0      0

Total:        34    34    34    0     0       0        0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **registered** command:

```
Router#show cable modem rpd 0000.5e00.5100 registered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/UB    1    w-online(pt)      876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/UB    2    w-online(pt)      872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/UB    3    w-online(pt)      860    -0.50 2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/UB    4    w-online(pt)      866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/UB    5    w-online(pt)      876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/UB    6    w-online(pt)      866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/UB    7    w-online(pt)      864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/UB    8    w-online(pt)      870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/UB    9    w-online(pt)      873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/UB    10   w-online(pt)      1293   0.00  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **unregistered** command:

```
Router#show cable modem rpd 0000.5e00.5100 unregistered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/U1    1    offline          876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/U1    2    offline          872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/U2    3    offline          860    0.00  2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/U0    4    offline          866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/U3    5    offline          876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/U2    6    offline          866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/U0    7    offline          864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/U2    8    offline          870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/U0    9    offline          873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/U1    10   offline          1293   0.50  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **wideband** command:

```
Router#show cable modem rpd 0000.5e00.5100 wideband
MAC Address    IP Address      I/F           MAC              Prim  RCC  MD-DS-SG/
                                             State            Sid   ID   MD-US-SG
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)     1     5    4 / 4
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)     2     5    4 / 4
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **wideband channel** command:

```
Router#show cable modem rpd 0000.5e00.5100 wideband channel
MAC Address    IP Address      I/F           MAC              DSxUS Primary
                                             State                  WB
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)     8x4   Wi3/0/0:0
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)     8x4   Wi3/0/0:0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **wideband forwarding-summary** command:

```
Router#show cable modem rpd 0000.5e00.5100 wideband forwarding-summary
MAC Address    IP Address      Primary        FrwdIF         BG DS  Bonded CM DS
                               Downstream                    Config State  Capab
0000.5e00.c08e 192.0.2.21      Do3/0/0:7      Wi3/0/0:0      8      8      8
0000.5e00.c57a 192.0.2.55      Do3/0/0:2      Wi3/0/0:0      8      8      8
0000.5e00.c66a 192.0.2.25      Do3/0/0:4      Wi3/0/0:0      8      8      8
0000.5e00.c49c 192.0.2.3       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.c112 192.0.2.11      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.c4b0 192.0.2.54      Do3/0/0:5      Wi3/0/0:0      8      8      8
0000.5e00.c668 192.0.2.20      Do3/0/0:4      Wi3/0/0:0      8      8      8
0000.5e00.c660 192.0.2.4       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.bf64 192.0.2.59      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.dee6 192.0.2.12      Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.c49a 192.0.2.9       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.c4da 192.0.2.16      Do3/0/0:0      Wi3/0/0:0      8      8      8
0000.5e00.bb3b 192.0.2.15      Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.b565 192.0.2.6       Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.b61c 192.0.2.13      Do3/0/0:1      Wi3/0/0:1      24     24     24
0000.5e00.c612 192.0.2.10      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.c5c8 192.0.2.2       Do3/0/0:5      Wi3/0/0:0      8      8      8
0000.5e00.bf68 192.0.2.18      Do3/0/0:7      Wi3/0/0:0      8      8      8
0000.5e00.c53c 192.0.2.8       Do3/0/0:2      Wi3/0/0:0      8      8      8
0000.5e00.bf16 192.0.2.56      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.bfcc 192.0.2.19      Do3/0/0:2      Wi3/0/0:0      8      8      8
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **wideband phy** command:

```
Router#show cable modem name node1 wideband phy
MAC Address    IP Address      I/F           MAC              Chan   Frq    SNR    Pwr
                                             State            Desc   (MHZ)  (db)   (dBmV)
0000.5e00.c08e 192.0.2.21     C3/0/1/UB     w-online(pt)     dsPri   495   -----  0.00
                                                            dsSec   453    N/A    N/A
                                                            dsSec   459    N/A    N/A
                                                            dsSec   465    N/A    N/A
                                                            dsSec   471    N/A    N/A
                                                            dsSec   477    N/A    N/A
                                                            dsSec   483    N/A    N/A
                                                            dsSec   489    N/A    N/A
                                                             us0     13   29.13  31.75
                                                             us1     14   27.22  32.00
                                                             us2     16   27.90  32.50
                                                             us3     18   24.72  32.50
```

```
0000.5e00.c57a 192.0.2.55     C3/0/1/UB     w-online(pt)      dsPri   465  -----   0.00
                                                             dsSec   453    N/A    N/A
                                                             dsSec   459    N/A    N/A
                                                             dsSec   471    N/A    N/A
                                                             dsSec   477    N/A    N/A
                                                             dsSec   483    N/A    N/A
                                                             dsSec   489    N/A    N/A
                                                             dsSec   495    N/A    N/A
                                                              us0     13  27.09  24.25
                                                              us1     14  28.16  24.25
                                                              us2     16  26.00  24.00
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **wideband registered-traditional-docsis** command:

```
Router#show cable modem name node1 wideband registered-traditional-docsis
MAC Address    IP Address      I/F           MAC               Prim  RCC  MD-DS-SG/
                                             State             Sid   ID   MD-US-SG
0000.5e00.bfcc 192.0.2.19      C3/0/1/U1     online            1     0    2 / N/A
0000.5e00.dee6 192.0.2.12      C3/0/1/U0     online            2     0    2 / N/A
0000.5e00.c612 192.0.2.10      C3/0/1/U3     online            3     0    2 / N/A
0000.5e00.c49c 192.0.2.3       C3/0/1/U3     online            4     0    2 / N/A
0000.5e00.c53c 192.0.2.8       C3/0/1/U0     online            5     0    2 / N/A
0000.5e00.c08e 192.0.2.21      C3/0/1/U2     online            6     0    2 / N/A
0000.5e00.c588 192.0.2.27      C3/0/1/U0     online            7     0    2 / N/A
0000.5e00.c4cc 192.0.2.24      C3/0/1/U2     online            8     0    2 / N/A
0000.5e00.c660 192.0.2.4       C3/0/1/U1     online            9     0    2 / N/A
0000.5e00.c022 192.0.2.22      C3/0/1/U0     online            10    0    2 / N/A
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **verbose** command:

```
Router#show cable modem rpd 0000.5e00.5100 verbose

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
QoS Profile Index                 : 2
Host Interface                    : C3/0/1/U1
RPD ID                            : 1004.9fb1.4000
MD-DS-SG / MD-US-SG               : 4 / N/A
MD-CM-SG                          : 0x910404
Primary Downstream                : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                  : Y
DS Tuner Capability               : 8
RCP Index                         : 3
RCP ID                            : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
UDC Enabled                       : N
US Frequency Range Capability     : Standard (5-42 MHz)
Extended Upstream Transmit Power  : 0dB
Multi-Transmit Channel Mode       : N
Upstream Channel                  :
Device ID                         :
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **verbose normalized** command:

```
Router#show cable modem rpd 0000.5e00.5100 verbose normalized

MAC Address                          : 0000.5e00.c08e
IP Address                           : 192.0.2.21
IPv6 Address                         : ---
Dual IP                              : N
Prim Sid                             : 1
Host Interface                       : C3/0/1/UB
RPD ID                               : 1004.9fb1.4000
MD-DS-SG / MD-US-SG                  : 4 / 4
MD-CM-SG                             : 0x910404
Primary Wideband Channel ID          : 24577 (Wi3/0/0:0)
Primary Downstream                   : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                     : Y
DS Tuner Capability                  : 8
RCP Index                            : 3
RCP ID                               : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
Downstream Channel DCID RF Channel : 1     3/0/0:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     3/0/0:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     3/0/0:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     3/0/0:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     3/0/0:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **verbose sup** command:

```
Router#show cable modem rpd 0000.5e00.5100 verbose sup
MAC Address                          : 0000.5e00.91ba
IP Address                           : 192.0.2.171
IPv6 Address                         : ---
Dual IP                              : N
Prim Sid                             : 10
Host Interface                       : C2/0/4
MD-DS-SG / MD-US-SG                  : 7 / 8
Primary Wideband Channel ID          : 23569 (Wi2/0/28:16)
Primary Downstream                   : Do2/0/28:16 (RfId : 23568)
Wideband Capable                     : Y
DS Tuner Capability                  : 24
RCP Index                            : 3
RCP ID                               : 00 10 00 00 18
MAC Version                          : DOC3.0
Operational Version                  : DOC1.1
QoS Provisioned Mode                 : DOC1.1
Enable DOCSIS2.0 Mode                : Y
Modem Status                         : {Modem= w-online(pt), Security=assign(tek)}
Tag                                  :
Service Type ID                      :
Service Type ID in config file       :
Ranging Class ID                     : 0x0


UPSTREAM SERVICE FLOW DETAIL:
Sfid                      : 45
Sid                       : 10
State                     : Admitted
Type                      : Primary
Schedule Type             : 2
Hfid                      : 131071
Service Class Name        :
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **summary** command:

```
Router# show cable modem rpd 0000.5e00.5100 summary
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd** *mac-address* **summary total** command:

```
Router# show cable modem rpd 0000.5e00.5100 summary total
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0

Total:        10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **docsis version** command:

```
Router#show cable modem rpd 192.0.2.11 docsis version
MAC Address    I/F            MAC               Prim Reg QoS  US Phy DS Chl
                              State             Sid  Ver Prov Mode   Mode
0000.5e00.c49c C3/0/1/UB      w-online          35   3.0 1.1  atdma* WB
0000.5e00.bfc4 C3/0/1/UB      w-online          36   3.0 1.1  atdma* WB
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **docsis version d31-capable** command:

```
Router#show cable modem rpd 192.0.2.11 docsis version d31-capable
MAC Address    I/F            MAC               Reg Oper DSxUS DS   RCC   US
                              State             Ver Ver        OFDM ID    OFDMA
0000.5e00.17ae C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
0000.5e00.1556 C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
0000.5e00.18da C2/0/4/UB      w-online(pt)      3.1 3.1  33x8  1    19    0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **docsis device-class** command:

```
Router#show cable modem rpd 192.0.2.11 docsis device-class
MAC Address    I/F            MAC               Prim Reg      Device Class      Reg
                              State             Sid  Ver  --------------------  Priv
0000.5e00.952c C2/0/4/p       w-online(pt)      1    3.0  CM            RTR     BPI+
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **docsis device-class withip** command:

```
Router#show cable modem rpd 192.0.2.11 docsis device-class withip
                                                                            D
```

```
MAC Address    I/F            MAC               Prim Reg      Device Class      Reg  I IP
Address
                              State             Sid  Ver  --------------------  Priv P

0000.5e00.952c C2/0/4/p       w-online(pt)      1    3.0  CM            RTR     BPI+ N
192.0.2.165
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+ N
192.0.2.169
0000.5e00.91c3 C2/0/4/p       w-online(pt)      3    3.0  CM            RTR     BPI+ N
192.0.2.170
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **flap** command:

```
Router#show cable modem rpd 192.0.2.11 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0000.5e00.c08e C3/0/1/UB     0     83    0     0      0      0
0000.5e00.c57a C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c66a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:49
0000.5e00.c49c C3/0/1/UB     0     81    0     0      0      0
0000.5e00.c112 C3/0/1/UB     0     82    0     0      0      0
0000.5e00.c4b0 C3/0/1/UB     0     84    0     0     !0      0
0000.5e00.c668 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c660 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf64 C3/0/1/UB     0     81    0     0      0      0
0000.0275.dee6 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c49a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:54
0000.5e00.c4da C3/0/1/UB     0     82    0     0     !0      0
0000.5e00.bb3b C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b565 C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b61c C3/0/1/UB     0     79    0     0      0      0
0000.5e00.c612 C3/0/1/UB     0     83    0     0     !0      0
0000.5e00.c5c8 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf68 C3/0/1/UB     0     78    0     0      0      0
0000.5e00.c53c C3/0/1/UB     0     78    0     0     !1      1     Mar 23 21:50:54
0000.5e00.bf16 C3/0/1/UB     0     85    0     0     !1      1     Mar 23 21:47:34
0000.5e00.bfcc C3/0/1/UB     0     77    0     0     !1      1     Mar 23 21:51:14
0000.5e00.c43a C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c078 C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c588 C3/0/1/UB     0     80    0     0     !0      0
0000.5e00.c4b4 C3/0/1/UB     0     82    0     0     !1      1     Mar 23 21:48:44
0000.5e00.c412 C3/0/1/UB     0     83    0     0     !1      1     Mar 23 21:48:04
0000.5e00.c67c C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:29
0000.5e00.c17a C3/0/1/UB     0     79    0     0     !0      0
0000.5e00.bfc4 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c022 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c4cc C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c5c6 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c178 C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:39
0000.5e00.c56e C3/0/1/UB     0     80    0     0     !0      0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **offline** command:

```
Router#show cable modem rpd 192.0.2.11 offline
Interface     MAC address    Prim Previous    Offline          Rx      Rx    SM
                             Sid  State       Time             Power   SNR   Exhaust
                                                                            Count
C3/0/1/UB     0000.5e00.c08e 1    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
C3/0/1/UB     0000.5e00.c57a 2    w-online(pt)Mar 23 22:12:32  0.00    25.1  0
C3/0/1/UB     0000.5e00.c66a 3    w-online(pt)Mar 23 22:12:32  -0.50   25.4  0
```

```
C3/0/1/UB     0000.5e00.c49c 4    w-online(pt)Mar 23 22:12:32  -0.50  25.3  0
C3/0/1/UB     0000.5e00.c112 5    w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c4b0 6    w-online(pt)Mar 23 22:12:32  -0.50  27.4  0
C3/0/1/UB     0000.5e00.c668 7    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c660 8    w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.bf64 9    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.0275.dee6 10   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c49a 11   w-online(pt)Mar 23 22:12:32  -0.50  24.7  0
C3/0/1/UB     0000.5e00.c4da 12   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.bb3b 13   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
C3/0/1/UB     0000.5e00.b565 14   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.b61c 15   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c612 16   w-online(pt)Mar 23 22:12:32  0.00   26.1  0
C3/0/1/UB     0000.5e00.c5c8 17   w-online(pt)Mar 23 22:12:32  0.50   27.9  0
C3/0/1/UB     0000.5e00.bf68 18   w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.c53c 19   w-online(pt)Mar 23 22:12:32  0.00   24.9  0
C3/0/1/UB     0000.5e00.bf16 20   w-online(pt)Mar 23 22:12:32  -0.50  26.6  0
C3/0/1/UB     0000.5e00.bfcc 21   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c43a 22   w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c078 23   w-online(pt)Mar 23 22:12:32  0.00   24.4  0
C3/0/1/UB     0000.5e00.c588 24   w-online(pt)Mar 23 22:12:32  -0.50  26.7  0
C3/0/1/UB     0000.5e00.c4b4 25   w-online(pt)Mar 23 22:12:32  0.00   24.2  0
C3/0/1/UB     0000.5e00.c412 26   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c67c 27   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c17a 28   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.bfc4 29   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.c022 30   w-online(pt)Mar 23 22:12:32  0.00   27.4  0
C3/0/1/UB     0000.5e00.c4cc 31   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.c5c6 32   w-online(pt)Mar 23 22:12:32  -0.50  25.4  0
C3/0/1/UB     0000.5e00.c178 33   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c56e 34   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **partial-service** command:

```
Router#show cable modem rpd 192.0.2.11 partial-service
MAC Address    IP Address      I/F           MAC              DSxUS  Impaired    Impaired
                                             State            State  DS          US

0000.5e00.c660 192.0.2.4       C3/0/1/UB     p-online         7x1    3/0/0:7

0000.5e00.c43a 192.0.2.26      C3/0/1/UB     p-online         7x1    3/0/0:6
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **phy** command:

```
Router#show cable modem rpd 192.0.2.11 phy
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  29.13 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.22 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.39 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  29.24 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.09 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  25.14 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  24.28 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.56 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  25.14 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
```

```
0000.5e00.c49c C3/0/1/U0     4     23.50  27.90 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  27.74 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  26.11 867     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U0     5     24.00  28.81 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U1     5     24.00  28.16 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U2     5     24.00  27.99 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U3     5     23.75  25.61 876     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U0     6     23.50  28.16 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U1     6     23.75  27.67 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U2     6     23.50  26.58 866     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U3     6     23.25  24.89 867     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U0     7     24.00  28.16 864     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U1     7     24.00  27.29 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U2     7     24.50  26.63 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U3     7     23.75  25.75 862     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U0     8     23.50  29.13 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U1     8     23.75  28.24 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U2     8     23.50  25.75 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U3     8     23.75  24.60 870     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **phy ofdm-profile** command:

```
Router#show cable modem rpd 192.0.2.11 phy ofdm-profile
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **phy ofdm-profile downstream** command:

```
Router#show cable modem rpd 192.0.2.11 phy ofdm-profile downstream
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **phy normalized** command:

```
Router#show cable modem rpd 192.0.2.11 phy normalized
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  28.92 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.09 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.23 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  27.99 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.74 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  27.09 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  23.74 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.65 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  26.45 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  28.81 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  29.24 867     0.00  -----  atdma* 1.1
```

```
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  25.41 867     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel wideband registered-traditional-docsis** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel wideband registered-traditional-docsis
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.952c 192.0.2.165     C2/0/4/U6     online(pt)        1     0   Do2/0/28:28
23580
0000.5e00.2dce 192.0.2.169     C2/0/4/U2     online(pt)        2     0   Do2/0/28:28
23580
0000.5e00.91c3 192.0.2.170     C2/0/4/U6     online(pt)        3     0   Do2/0/28:28
23580
0000.5e00.9ec9 192.0.2.162     C2/0/4/U1     online(pt)        4     0   Do2/0/28:4
23556
0000.5e00.21e0 192.0.2.168     C2/0/4/U2     online(pt)        5     0   Do2/0/28:20
23572
0000.5e00.a940 192.0.2.164     C2/0/4/U4     online(pt)        6     0   Do2/0/28:20
23572
0000.5e00.91bd 192.0.2.166     C2/0/4/U0     online(pt)        7     0   Do2/0/28:24
23576
0000.5e00.9190 192.0.2.163     C2/0/4/U2     online(pt)        8     0   Do2/0/28:16
23568
0000.5e00.9f5f 192.0.2.161     C2/0/4/U0     online(pt)        9     0   Do2/0/28:0
23552
0000.5e00.91ba 192.0.2.171     C2/0/4/U3     online(pt)        10    0   Do2/0/28:16
23568
0000.5e00.a8cb 192.0.2.167     C2/0/4/U1     online(pt)        11    0   Do2/0/28:16
23568
0000.5e00.17ae 192.0.2.156     C2/0/4/U2     init6(t)          29    0   Do2/0/28:20
23572
0000.5e00.1556 ---             C2/0/4/U5     init(r1)          30    0   Do2/0/28:16
23568
0000.5e00.18da ---             C2/0/4/U4     init(rc)          31    0   Do2/0/28:16
23568
0000.5e00.196e 192.0.2.157     C2/0/4/U3     init6(t)          32    0   Do2/0/28:16
23568
0000.5e00.18ce ---             C2/0/4/U0     init(rc)          53    0   Do2/0/28:16
23568
0000.5e00.18f6 ---             C2/0/4/U5     init6(s)          59    0   Do2/0/28:20
2357
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel wideband** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel wideband
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel non-bonding-capable** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel non-bonding-capable
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c588 192.0.2.27      C3/0/1/U0     init(o)           187   0   Do3/0/0:6
24582
0000.5e00.c57a 192.0.2.55      C3/0/1/U3     init(o)           188   0   Do3/0/0:0
24576
0000.5e00.c112 192.0.2.11      C3/0/1/U3     init(o)           189   0   Do3/0/0:3
24579
0000.5e00.c078 192.0.2.88      C3/0/1/U1     init(t)           190   0   Do3/0/0:0
24576
0000.5e00.c178 ---             C3/0/1/U1     init(io)          191   0   Do3/0/0:7
24583
0000.5e00.c4da ---             C3/0/1/U3     init(io)          192   0   Do3/0/0:5
24581
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel sup** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel sup
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.bfcc 192.0.2.19      C3/0/1        online            1     0   Do3/0/0:4
24580
0000.0275.dee6 192.0.2.12      C3/0/1        online            2     0   Do3/0/0:0
24576
0000.5e00.c612 192.0.2.10      C3/0/1        online            3     0   Do3/0/0:0
24576
0000.5e00.c49c 192.0.2.3       C3/0/1        online            4     0   Do3/0/0:6
24582
0000.5e00.c53c 192.0.2.8       C3/0/1        online            5     0   Do3/0/0:0
24576
0000.5e00.c08e 192.0.2.21      C3/0/1        online            6     0   Do3/0/0:1
24577
0000.5e00.c588 192.0.2.27      C3/0/1        online            7     0   Do3/0/0:1
24577
0000.5e00.c4cc 192.0.2.24      C3/0/1        online            8     0   Do3/0/0:6
24582
0000.5e00.c660 192.0.2.4       C3/0/1        online            9     0   Do3/0/0:0
24576
0000.5e00.c022 192.0.2.22      C3/0/1        online            10    0   Do3/0/0:3
24579
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **primary-channel summary total** command:

```
Router#show cable modem rpd 192.0.2.11 primary-channel summary total
                                Cable Modem
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO

Local Primary Narrowband:
Do3/0/0:0     7     7     7     0     0       0        0      0     0      0
Do3/0/0:1     4     4     4     0     0       0        0      0     0      0
Do3/0/0:2     1     1     1     0     0       0        0      0     0      0
Do3/0/0:3     2     2     2     0     0       0        0      0     0      0
Do3/0/0:4     14    14    14    0     0       0        0      0     0      0
Do3/0/0:5     2     2     2     0     0       0        0      0     0      0
Do3/0/0:6     3     3     3     0     0       0        0      0     0      0
Do3/0/0:7     1     1     1     0     0       0        0      0     0      0
Subtotal:     34    34    34    0     0       0        0      0     0      0

Local Primary Wideband:
Subtotal:     0     0     0     0     0       0        0      0     0      0

Total:        34    34    34    0     0       0        0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **registered** command:

```
Router#show cable modem rpd 192.0.2.11 registered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/UB    1    w-online(pt)      876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/UB    2    w-online(pt)      872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/UB    3    w-online(pt)      860    -0.50 2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/UB    4    w-online(pt)      866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/UB    5    w-online(pt)      876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/UB    6    w-online(pt)      866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/UB    7    w-online(pt)      864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/UB    8    w-online(pt)      870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/UB    9    w-online(pt)      873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/UB    10   w-online(pt)      1293   0.00  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **unregistered** command:

```
Router#show cable modem rpd 192.0.2.11 unregistered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/U1    1    offline          876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/U1    2    offline          872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/U2    3    offline          860    0.00  2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/U0    4    offline          866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/U3    5    offline          876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/U2    6    offline          866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/U0    7    offline          864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/U2    8    offline          870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/U0    9    offline          873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/U1    10   offline          1293   0.50  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **wideband** command:

```
Router#show cable modem rpd 192.0.2.11 wideband
MAC Address    IP Address      I/F           MAC              Prim  RCC  MD-DS-SG/
                                             State            Sid   ID   MD-US-SG
```

```
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     5    4 / 4
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     5    4 / 4
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **wideband channel** command:

```
Router#show cable modem rpd 192.0.2.11 wideband channel
MAC Address    IP Address      I/F           MAC               DSxUS Primary
                                             State                   WB
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **wideband forwarding-summary** command:

```
Router#show cable modem rpd 192.0.2.11 wideband forwarding-summary
MAC Address    IP Address      Primary       FrwdIF         BG DS  Bonded CM DS
                               Downstream                   Config State  Capab
0000.5e00.c08e 192.0.2.21      Do3/0/0:7     Wi3/0/0:0      8      8      8
0000.5e00.c57a 192.0.2.55      Do3/0/0:2     Wi3/0/0:0      8      8      8
0000.5e00.c66a 192.0.2.25      Do3/0/0:4     Wi3/0/0:0      8      8      8
0000.5e00.c49c 192.0.2.3       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.c112 192.0.2.11      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.c4b0 192.0.2.54      Do3/0/0:5     Wi3/0/0:0      8      8      8
0000.5e00.c668 192.0.2.20      Do3/0/0:4     Wi3/0/0:0      8      8      8
0000.5e00.c660 192.0.2.4       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.bf64 192.0.2.59      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.dee6 192.0.2.12      Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.c49a 192.0.2.9       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.c4da 192.0.2.16      Do3/0/0:0     Wi3/0/0:0      8      8      8
0000.5e00.bb3b 192.0.2.15      Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.b565 192.0.2.6       Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.b61c 192.0.2.13      Do3/0/0:1     Wi3/0/0:1      24     24     24
0000.5e00.c612 192.0.2.10      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.c5c8 192.0.2.2       Do3/0/0:5     Wi3/0/0:0      8      8      8
0000.5e00.bf68 192.0.2.18      Do3/0/0:7     Wi3/0/0:0      8      8      8
0000.5e00.c53c 192.0.2.8       Do3/0/0:2     Wi3/0/0:0      8      8      8
0000.5e00.bf16 192.0.2.56      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.bfcc 192.0.2.19      Do3/0/0:2     Wi3/0/0:0      8      8      8
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **wideband phy** command:

```
Router#show cable modem name node1 wideband phy
MAC Address    IP Address      I/F           MAC               Chan   Frq    SNR    Pwr
                                             State             Desc   (MHZ)  (db)   (dBmV)
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      dsPri   495  -----  0.00
                                                               dsSec   453    N/A    N/A
                                                               dsSec   459    N/A    N/A
                                                               dsSec   465    N/A    N/A
                                                               dsSec   471    N/A    N/A
                                                               dsSec   477    N/A    N/A
                                                               dsSec   483    N/A    N/A
                                                               dsSec   489    N/A    N/A
                                                               us0      13  29.13  31.75
                                                               us1      14  27.22  32.00
                                                               us2      16  27.90  32.50
                                                               us3      18  24.72  32.50
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      dsPri   465  -----  0.00
                                                               dsSec   453    N/A    N/A
                                                               dsSec   459    N/A    N/A
```

```
dsSec   471    N/A    N/A
dsSec   477    N/A    N/A
dsSec   483    N/A    N/A
dsSec   489    N/A    N/A
dsSec   495    N/A    N/A
 us0     13  27.09  24.25
 us1     14  28.16  24.25
 us2     16  26.00  24.00
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **wideband registered-traditional-docsis** command:

```
Router#show cable modem name node1 wideband registered-traditional-docsis
MAC Address    IP Address      I/F           MAC              Prim  RCC  MD-DS-SG/
                                             State            Sid   ID   MD-US-SG
0000.5e00.bfcc 192.0.2.19      C3/0/1/U1     online           1     0    2 / N/A
0000.5e00.dee6 192.0.2.12      C3/0/1/U0     online           2     0    2 / N/A
0000.5e00.c612 192.0.2.10      C3/0/1/U3     online           3     0    2 / N/A
0000.5e00.c49c 192.0.2.3       C3/0/1/U3     online           4     0    2 / N/A
0000.5e00.c53c 192.0.2.8       C3/0/1/U0     online           5     0    2 / N/A
0000.5e00.c08e 192.0.2.21      C3/0/1/U2     online           6     0    2 / N/A
0000.5e00.c588 192.0.2.27      C3/0/1/U0     online           7     0    2 / N/A
0000.5e00.c4cc 192.0.2.24      C3/0/1/U2     online           8     0    2 / N/A
0000.5e00.c660 192.0.2.4       C3/0/1/U1     online           9     0    2 / N/A
0000.5e00.c022 192.0.2.22      C3/0/1/U0     online           10    0    2 / N/A
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **verbose** command:

```
Router#show cable modem rpd 192.0.2.11 verbose

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
QoS Profile Index                 : 2
Host Interface                    : C3/0/1/U1
RPD ID                            : 1004.9fb1.4000
MD-DS-SG / MD-US-SG               : 4 / N/A
MD-CM-SG                          : 0x910404
Primary Downstream                : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                  : Y
DS Tuner Capability               : 8
RCP Index                         : 3
RCP ID                            : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
UDC Enabled                       : N
US Frequency Range Capability     : Standard (5-42 MHz)
Extended Upstream Transmit Power  : 0dB
Multi-Transmit Channel Mode       : N
Upstream Channel                  :
Device ID                         :
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **verbose normalized** command:

```
Router#show cable modem rpd 192.0.2.11 verbose normalized

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
```

```
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 1
Host Interface                      : C3/0/1/UB
RPD ID                              : 1004.9fb1.4000
MD-DS-SG / MD-US-SG                 : 4 / 4
MD-CM-SG                            : 0x910404
Primary Wideband Channel ID         : 24577 (Wi3/0/0:0)
Primary Downstream                  : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                    : Y
DS Tuner Capability                 : 8
RCP Index                           : 3
RCP ID                              : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
Downstream Channel DCID RF Channel : 1     3/0/0:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     3/0/0:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     3/0/0:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     3/0/0:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     3/0/0:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **verbose sup** command:

```
Router#show cable modem rpd 192.0.2.11 verbose sup
MAC Address                         : 0000.5e00.91ba
IP Address                          : 192.0.2.171
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 10
Host Interface                      : C2/0/4
MD-DS-SG / MD-US-SG                 : 7 / 8
Primary Wideband Channel ID         : 23569 (Wi2/0/28:16)
Primary Downstream                  : Do2/0/28:16 (RfId : 23568)
Wideband Capable                    : Y
DS Tuner Capability                 : 24
RCP Index                           : 3
RCP ID                              : 00 10 00 00 18
MAC Version                         : DOC3.0
Operational Version                 : DOC1.1
QoS Provisioned Mode                : DOC1.1
Enable DOCSIS2.0 Mode               : Y
Modem Status                        : {Modem= w-online(pt), Security=assign(tek)}
Tag                                 :
Service Type ID                     :
Service Type ID in config file      :
Ranging Class ID                    : 0x0


UPSTREAM SERVICE FLOW DETAIL:
Sfid                      : 45
Sid                       : 10
State                     : Admitted
Type                      : Primary
Schedule Type             : 2
Hfid                      : 131071
Service Class Name        :
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **summary** command:

```
Router# show cable modem rpd 192.0.2.11 summary
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd** *ip-address* **summary total** command:

```
Router# show cable modem rpd 192.0.2.11 summary total
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0

Total:        10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **docsis version** command:

```
Router#show cable modem rpd id 0000.5e00.5100 docsis version
MAC Address    I/F            MAC              Prim Reg QoS  US Phy DS Chl
                              State            Sid  Ver Prov Mode   Mode
0000.5e00.c49c C3/0/1/UB      w-online         35   3.0 1.1  atdma* WB
0000.5e00.bfc4 C3/0/1/UB      w-online         36   3.0 1.1  atdma* WB
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **docsis version d31-capable** command:

```
Router#show cable modem rpd id 0000.5e00.5100 docsis version d31-capable
MAC Address    I/F            MAC              Reg Oper DSxUS DS   RCC   US
                              State            Ver Ver        OFDM ID    OFDMA
0000.5e00.17ae C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
0000.5e00.1556 C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
0000.5e00.18da C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **docsis device-class** command:

```
Router#show cable modem rpd id 0000.5e00.5100 docsis device-class
MAC Address    I/F            MAC              Prim Reg      Device Class      Reg
                              State            Sid  Ver  --------------------  Priv
0000.5e00.952c C2/0/4/p       w-online(pt)     1    3.0  CM            RTR     BPI+
0000.5e00.2dce C2/0/4/p       w-online(pt)     2    3.0  CM            RTR     BPI+
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **docsis device-class withip** command:

```
Router#show cable modem rpd id 0000.5e00.5100 docsis device-class withip
                                                                                D

MAC Address    I/F            MAC              Prim Reg      Device Class      Reg  I IP
Address
```

```
                              State             Sid  Ver  --------------------  Priv P

0000.5e00.952c C2/0/4/p       w-online(pt)      1    3.0  CM            RTR     BPI+ N
192.0.2.165
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+ N
192.0.2.169
0000.5e00.91c3 C2/0/4/p       w-online(pt)      3    3.0  CM            RTR     BPI+ N
192.0.2.170
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **flap** command:

```
Router#show cable modem rpd id 0000.5e00.5100 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0000.5e00.c08e C3/0/1/UB     0     83    0     0      0      0
0000.5e00.c57a C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c66a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:49
0000.5e00.c49c C3/0/1/UB     0     81    0     0      0      0
0000.5e00.c112 C3/0/1/UB     0     82    0     0      0      0
0000.5e00.c4b0 C3/0/1/UB     0     84    0     0     !0      0
0000.5e00.c668 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c660 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf64 C3/0/1/UB     0     81    0     0      0      0
0000.0275.dee6 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c49a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:54
0000.5e00.c4da C3/0/1/UB     0     82    0     0     !0      0
0000.5e00.bb3b C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b565 C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b61c C3/0/1/UB     0     79    0     0      0      0
0000.5e00.c612 C3/0/1/UB     0     83    0     0     !0      0
0000.5e00.c5c8 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf68 C3/0/1/UB     0     78    0     0      0      0
0000.5e00.c53c C3/0/1/UB     0     78    0     0     !1      1     Mar 23 21:50:54
0000.5e00.bf16 C3/0/1/UB     0     85    0     0     !1      1     Mar 23 21:47:34
0000.5e00.bfcc C3/0/1/UB     0     77    0     0     !1      1     Mar 23 21:51:14
0000.5e00.c43a C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c078 C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c588 C3/0/1/UB     0     80    0     0     !0      0
0000.5e00.c4b4 C3/0/1/UB     0     82    0     0     !1      1     Mar 23 21:48:44
0000.5e00.c412 C3/0/1/UB     0     83    0     0     !1      1     Mar 23 21:48:04
0000.5e00.c67c C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:29
0000.5e00.c17a C3/0/1/UB     0     79    0     0     !0      0
0000.5e00.bfc4 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c022 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c4cc C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c5c6 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c178 C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:39
0000.5e00.c56e C3/0/1/UB     0     80    0     0     !0      0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **offline** command:

```
Router#show cable modem rpd id 0000.5e00.5100 offline
Interface     MAC address    Prim Previous    Offline          Rx      Rx    SM
                             Sid  State       Time             Power   SNR   Exhaust
                                                                             Count
C3/0/1/UB     0000.5e00.c08e 1    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
C3/0/1/UB     0000.5e00.c57a 2    w-online(pt)Mar 23 22:12:32  0.00    25.1  0
C3/0/1/UB     0000.5e00.c66a 3    w-online(pt)Mar 23 22:12:32  -0.50   25.4  0
C3/0/1/UB     0000.5e00.c49c 4    w-online(pt)Mar 23 22:12:32  -0.50   25.3  0
C3/0/1/UB     0000.5e00.c112 5    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
C3/0/1/UB     0000.5e00.c4b0 6    w-online(pt)Mar 23 22:12:32  -0.50   27.4  0
```

```
C3/0/1/UB     0000.5e00.c668 7    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c660 8    w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.bf64 9    w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.0275.dee6 10   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c49a 11   w-online(pt)Mar 23 22:12:32  -0.50  24.7  0
C3/0/1/UB     0000.5e00.c4da 12   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.bb3b 13   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
C3/0/1/UB     0000.5e00.b565 14   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.b61c 15   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c612 16   w-online(pt)Mar 23 22:12:32  0.00   26.1  0
C3/0/1/UB     0000.5e00.c5c8 17   w-online(pt)Mar 23 22:12:32  0.50   27.9  0
C3/0/1/UB     0000.5e00.bf68 18   w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.c53c 19   w-online(pt)Mar 23 22:12:32  0.00   24.9  0
C3/0/1/UB     0000.5e00.bf16 20   w-online(pt)Mar 23 22:12:32  -0.50  26.6  0
C3/0/1/UB     0000.5e00.bfcc 21   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c43a 22   w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c078 23   w-online(pt)Mar 23 22:12:32  0.00   24.4  0
C3/0/1/UB     0000.5e00.c588 24   w-online(pt)Mar 23 22:12:32  -0.50  26.7  0
C3/0/1/UB     0000.5e00.c4b4 25   w-online(pt)Mar 23 22:12:32  0.00   24.2  0
C3/0/1/UB     0000.5e00.c412 26   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c67c 27   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c17a 28   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.bfc4 29   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.c022 30   w-online(pt)Mar 23 22:12:32  0.00   27.4  0
C3/0/1/UB     0000.5e00.c4cc 31   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.c5c6 32   w-online(pt)Mar 23 22:12:32  -0.50  25.4  0
C3/0/1/UB     0000.5e00.c178 33   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c56e 34   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **partial-service** command:

```
Router#show cable modem rpd id 0000.5e00.5100 partial-service
MAC Address    IP Address      I/F           MAC              DSxUS  Impaired    Impaired
                                             State            State  DS          US

0000.5e00.c660 192.0.2.4       C3/0/1/UB     p-online         7x1    3/0/0:7

0000.5e00.c43a 192.0.2.26      C3/0/1/UB     p-online         7x1    3/0/0:6
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **phy** command:

```
Router#show cable modem rpd id 0000.5e00.5100 phy
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)              (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  29.13 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.22 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.39 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  29.24 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.09 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  25.14 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  24.28 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.56 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  25.14 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  27.90 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  27.74 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
```

```
0000.5e00.c49c C3/0/1/U3     4     23.75  26.11 867     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U0     5     24.00  28.81 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U1     5     24.00  28.16 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U2     5     24.00  27.99 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U3     5     23.75  25.61 876     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U0     6     23.50  28.16 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U1     6     23.75  27.67 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U2     6     23.50  26.58 866     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U3     6     23.25  24.89 867     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U0     7     24.00  28.16 864     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U1     7     24.00  27.29 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U2     7     24.50  26.63 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U3     7     23.75  25.75 862     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U0     8     23.50  29.13 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U1     8     23.75  28.24 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U2     8     23.50  25.75 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U3     8     23.75  24.60 870     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **phy ofdm-profile** command:

```
Router#show cable modem rpd id 0000.5e00.5100 phy ofdm-profile
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **phy ofdm-profile downstream** command:

```
Router#show cable modem rpd id 0000.5e00.5100 phy ofdm-profile downstream
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **phy normalized** command:

```
Router#show cable modem rpd id 0000.5e00.5100 phy normalized
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                 (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  28.92 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.09 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.23 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  27.99 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.74 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  27.09 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  23.74 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.65 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  26.45 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  28.81 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  29.24 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  25.41 867     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel wideband registered-traditional-docsis** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel wideband
registered-traditional-docsis
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.952c 192.0.2.165     C2/0/4/U6     online(pt)        1     0   Do2/0/28:28
23580
0000.5e00.2dce 192.0.2.169     C2/0/4/U2     online(pt)        2     0   Do2/0/28:28
23580
0000.5e00.91c3 192.0.2.170     C2/0/4/U6     online(pt)        3     0   Do2/0/28:28
23580
0000.5e00.9ec9 192.0.2.162     C2/0/4/U1     online(pt)        4     0   Do2/0/28:4
23556
0000.5e00.21e0 192.0.2.168     C2/0/4/U2     online(pt)        5     0   Do2/0/28:20
23572
0000.5e00.a940 192.0.2.164     C2/0/4/U4     online(pt)        6     0   Do2/0/28:20
23572
0000.5e00.91bd 192.0.2.166     C2/0/4/U0     online(pt)        7     0   Do2/0/28:24
23576
0000.5e00.9190 192.0.2.163     C2/0/4/U2     online(pt)        8     0   Do2/0/28:16
23568
0000.5e00.9f5f 192.0.2.161     C2/0/4/U0     online(pt)        9     0   Do2/0/28:0
23552
0000.5e00.91ba 192.0.2.171     C2/0/4/U3     online(pt)        10    0   Do2/0/28:16
23568
0000.5e00.a8cb 192.0.2.167     C2/0/4/U1     online(pt)        11    0   Do2/0/28:16
23568
0000.5e00.17ae 192.0.2.156     C2/0/4/U2     init6(t)          29    0   Do2/0/28:20
23572
0000.5e00.1556 ---             C2/0/4/U5     init(r1)          30    0   Do2/0/28:16
23568
0000.5e00.18da ---             C2/0/4/U4     init(rc)          31    0   Do2/0/28:16
23568
0000.5e00.196e 192.0.2.157     C2/0/4/U3     init6(t)          32    0   Do2/0/28:16
23568
0000.5e00.18ce ---             C2/0/4/U0     init(rc)          53    0   Do2/0/28:16
23568
0000.5e00.18f6 ---             C2/0/4/U5     init6(s)          59    0   Do2/0/28:20
2357
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel wideband** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel wideband
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
```

```
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel non-bonding-capable** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel non-bonding-capable
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c588 192.0.2.27      C3/0/1/U0     init(o)           187   0   Do3/0/0:6
24582
0000.5e00.c57a 192.0.2.55      C3/0/1/U3     init(o)           188   0   Do3/0/0:0
24576
0000.5e00.c112 192.0.2.11      C3/0/1/U3     init(o)           189   0   Do3/0/0:3
24579
0000.5e00.c078 192.0.2.88      C3/0/1/U1     init(t)           190   0   Do3/0/0:0
24576
0000.5e00.c178 ---             C3/0/1/U1     init(io)          191   0   Do3/0/0:7
24583
0000.5e00.c4da ---             C3/0/1/U3     init(io)          192   0   Do3/0/0:5
24581
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel sup** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel sup
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.bfcc 192.0.2.19      C3/0/1        online            1     0   Do3/0/0:4
24580
0000.0275.dee6 192.0.2.12      C3/0/1        online            2     0   Do3/0/0:0
24576
0000.5e00.c612 192.0.2.10      C3/0/1        online            3     0   Do3/0/0:0
24576
0000.5e00.c49c 192.0.2.3       C3/0/1        online            4     0   Do3/0/0:6
24582
0000.5e00.c53c 192.0.2.8       C3/0/1        online            5     0   Do3/0/0:0
24576
0000.5e00.c08e 192.0.2.21      C3/0/1        online            6     0   Do3/0/0:1
24577
0000.5e00.c588 192.0.2.27      C3/0/1        online            7     0   Do3/0/0:1
24577
0000.5e00.c4cc 192.0.2.24      C3/0/1        online            8     0   Do3/0/0:6
24582
0000.5e00.c660 192.0.2.4       C3/0/1        online            9     0   Do3/0/0:0
24576
0000.5e00.c022 192.0.2.22      C3/0/1        online            10    0   Do3/0/0:3
24579
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **primary-channel summary total** command:

```
Router#show cable modem rpd id 0000.5e00.5100 primary-channel summary total
                              Cable Modem
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
```

```
Local Primary Narrowband:
Do3/0/0:0     7     7     7     0     0       0        0      0      0      0
Do3/0/0:1     4     4     4     0     0       0        0      0      0      0
Do3/0/0:2     1     1     1     0     0       0        0      0      0      0
Do3/0/0:3     2     2     2     0     0       0        0      0      0      0
Do3/0/0:4     14    14    14    0     0       0        0      0      0      0
Do3/0/0:5     2     2     2     0     0       0        0      0      0      0
Do3/0/0:6     3     3     3     0     0       0        0      0      0      0
Do3/0/0:7     1     1     1     0     0       0        0      0      0      0
Subtotal:     34    34    34    0     0       0        0      0      0      0

Local Primary Wideband:
Subtotal:     0     0     0     0     0       0        0      0      0      0

Total:        34    34    34    0     0       0        0      0      0      0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **registered** command:

```
Router#show cable modem rpd id 0000.5e00.5100 registered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/UB    1    w-online(pt)     876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/UB    2    w-online(pt)     872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/UB    3    w-online(pt)     860    -0.50 2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/UB    4    w-online(pt)     866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/UB    5    w-online(pt)     876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/UB    6    w-online(pt)     866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/UB    7    w-online(pt)     864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/UB    8    w-online(pt)     870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/UB    9    w-online(pt)     873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/UB    10   w-online(pt)     1293   0.00  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **unregistered** command:

```
Router#show cable modem rpd id 0000.5e00.5100 unregistered
Interface    Prim Online           Timing Rec   QoS CPE IP address      MAC address
             Sid  State            Offset Power
C3/0/1/U1    1    offline          876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/U1    2    offline          872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/U2    3    offline          860    0.00  2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/U0    4    offline          866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/U3    5    offline          876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/U2    6    offline          866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/U0    7    offline          864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/U2    8    offline          870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/U0    9    offline          873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/U1    10   offline          1293   0.50  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **wideband** command:

```
Router#show cable modem rpd id 0000.5e00.5100 wideband
MAC Address    IP Address      I/F           MAC              Prim  RCC  MD-DS-SG/
                                             State            Sid   ID   MD-US-SG
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)     1     5    4 / 4
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)     2     5    4 / 4
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **wideband channel** command:

```
Router#show cable modem rpd id 0000.5e00.5100 wideband channel
MAC Address    IP Address      I/F           MAC               DSxUS Primary
                                             State                   WB
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **wideband forwarding-summary** command:

```
Router#show cable modem rpd id 0000.5e00.5100 wideband forwarding-summary
MAC Address    IP Address      Primary       FrwdIF         BG DS  Bonded CM DS
                               Downstream                   Config State  Capab
0000.5e00.c08e 192.0.2.21      Do3/0/0:7     Wi3/0/0:0      8      8      8
0000.5e00.c57a 192.0.2.55      Do3/0/0:2     Wi3/0/0:0      8      8      8
0000.5e00.c66a 192.0.2.25      Do3/0/0:4     Wi3/0/0:0      8      8      8
0000.5e00.c49c 192.0.2.3       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.c112 192.0.2.11      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.c4b0 192.0.2.54      Do3/0/0:5     Wi3/0/0:0      8      8      8
0000.5e00.c668 192.0.2.20      Do3/0/0:4     Wi3/0/0:0      8      8      8
0000.5e00.c660 192.0.2.4       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.bf64 192.0.2.59      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.dee6 192.0.2.12      Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.c49a 192.0.2.9       Do3/0/0:1     Wi3/0/0:0      8      8      8
0000.5e00.c4da 192.0.2.16      Do3/0/0:0     Wi3/0/0:0      8      8      8
0000.5e00.bb3b 192.0.2.15      Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.b565 192.0.2.6       Do3/0/0:0     Wi3/0/0:1      24     24     24
0000.5e00.b61c 192.0.2.13      Do3/0/0:1     Wi3/0/0:1      24     24     24
0000.5e00.c612 192.0.2.10      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.c5c8 192.0.2.2       Do3/0/0:5     Wi3/0/0:0      8      8      8
0000.5e00.bf68 192.0.2.18      Do3/0/0:7     Wi3/0/0:0      8      8      8
0000.5e00.c53c 192.0.2.8       Do3/0/0:2     Wi3/0/0:0      8      8      8
0000.5e00.bf16 192.0.2.56      Do3/0/0:6     Wi3/0/0:0      8      8      8
0000.5e00.bfcc 192.0.2.19      Do3/0/0:2     Wi3/0/0:0      8      8      8
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **wideband phy** command:

```
Router#show cable modem name node1 wideband phy
MAC Address    IP Address      I/F           MAC               Chan   Frq    SNR    Pwr
                                             State             Desc   (MHZ)  (db)   (dBmV)
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      dsPri   495  -----   0.00
                                                               dsSec   453    N/A    N/A
                                                               dsSec   459    N/A    N/A
                                                               dsSec   465    N/A    N/A
                                                               dsSec   471    N/A    N/A
                                                               dsSec   477    N/A    N/A
                                                               dsSec   483    N/A    N/A
                                                               dsSec   489    N/A    N/A
                                                                us0     13  29.13  31.75
                                                                us1     14  27.22  32.00
                                                                us2     16  27.90  32.50
                                                                us3     18  24.72  32.50
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      dsPri   465  -----   0.00
                                                               dsSec   453    N/A    N/A
                                                               dsSec   459    N/A    N/A
                                                               dsSec   471    N/A    N/A
                                                               dsSec   477    N/A    N/A
                                                               dsSec   483    N/A    N/A
```

```
dsSec   489    N/A    N/A
dsSec   495    N/A    N/A
 us0     13  27.09  24.25
 us1     14  28.16  24.25
 us2     16  26.00  24.00
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **wideband registered-traditional-docsis** command:

```
Router#show cable modem name node1 wideband registered-traditional-docsis
MAC Address    IP Address      I/F           MAC               Prim  RCC  MD-DS-SG/
                                             State             Sid   ID   MD-US-SG
0000.5e00.bfcc 192.0.2.19      C3/0/1/U1     online            1     0    2 / N/A
0000.5e00.dee6 192.0.2.12      C3/0/1/U0     online            2     0    2 / N/A
0000.5e00.c612 192.0.2.10      C3/0/1/U3     online            3     0    2 / N/A
0000.5e00.c49c 192.0.2.3       C3/0/1/U3     online            4     0    2 / N/A
0000.5e00.c53c 192.0.2.8       C3/0/1/U0     online            5     0    2 / N/A
0000.5e00.c08e 192.0.2.21      C3/0/1/U2     online            6     0    2 / N/A
0000.5e00.c588 192.0.2.27      C3/0/1/U0     online            7     0    2 / N/A
0000.5e00.c4cc 192.0.2.24      C3/0/1/U2     online            8     0    2 / N/A
0000.5e00.c660 192.0.2.4       C3/0/1/U1     online            9     0    2 / N/A
0000.5e00.c022 192.0.2.22      C3/0/1/U0     online            10    0    2 / N/A
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **verbose** command:

```
Router#show cable modem rpd id 0000.5e00.5100 verbose

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
QoS Profile Index                 : 2
Host Interface                    : C3/0/1/U1
RPD ID                            : 1004.9fb1.4000
MD-DS-SG / MD-US-SG               : 4 / N/A
MD-CM-SG                          : 0x910404
Primary Downstream                : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                  : Y
DS Tuner Capability               : 8
RCP Index                         : 3
RCP ID                            : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
UDC Enabled                       : N
US Frequency Range Capability     : Standard (5-42 MHz)
Extended Upstream Transmit Power  : 0dB
Multi-Transmit Channel Mode       : N
Upstream Channel                  :
Device ID                         :
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **verbose normalized** command:

```
Router#show cable modem rpd id 0000.5e00.5100 verbose normalized

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
```

```
Host Interface                     : C3/0/1/UB
RPD ID                             : 1004.9fb1.4000
MD-DS-SG / MD-US-SG                : 4 / 4
MD-CM-SG                           : 0x910404
Primary Wideband Channel ID        : 24577 (Wi3/0/0:0)
Primary Downstream                 : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                   : Y
DS Tuner Capability                : 8
RCP Index                          : 3
RCP ID                             : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
Downstream Channel DCID RF Channel : 1     3/0/0:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     3/0/0:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     3/0/0:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     3/0/0:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     3/0/0:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **verbose sup** command:

```
Router#show cable modem rpd id 0000.5e00.5100 verbose sup
MAC Address                        : 0000.5e00.91ba
IP Address                         : 192.0.2.171
IPv6 Address                       : ---
Dual IP                            : N
Prim Sid                           : 10
Host Interface                     : C2/0/4
MD-DS-SG / MD-US-SG                : 7 / 8
Primary Wideband Channel ID        : 23569 (Wi2/0/28:16)
Primary Downstream                 : Do2/0/28:16 (RfId : 23568)
Wideband Capable                   : Y
DS Tuner Capability                : 24
RCP Index                          : 3
RCP ID                             : 00 10 00 00 18
MAC Version                        : DOC3.0
Operational Version                : DOC1.1
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Modem Status                       : {Modem= w-online(pt), Security=assign(tek)}
Tag                                :
Service Type ID                    :
Service Type ID in config file     :
Ranging Class ID                   : 0x0


UPSTREAM SERVICE FLOW DETAIL:
Sfid                      : 45
Sid                       : 10
State                     : Admitted
Type                      : Primary
Schedule Type             : 2
Hfid                      : 131071
Service Class Name        :
```

The following example shows the sample output for the **show cable modem rpd id** *identifier* **summary** command:

```
Router# show cable modem rpd id 0000.5e00.5100 summary
Interface                    Cable Modem                                    Description
```

```
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd id** *identidier* **summary total** command:

```
Router# show cable modem rpd id 0000.5e00.5100 summary total
Interface                     Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0

Total:        10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **docsis version** command:

```
Router#show cable modem rpd name node1 docsis version
MAC Address    I/F            MAC              Prim Reg QoS  US Phy DS Chl
                              State            Sid  Ver Prov Mode   Mode
0000.5e00.c49c C3/0/1/UB      w-online         35   3.0 1.1  atdma* WB
0000.5e00.bfc4 C3/0/1/UB      w-online         36   3.0 1.1  atdma* WB
```

The following example shows the sample output for the **show cable modem rpd name** *name* **docsis version d31-capable** command:

```
Router#show cable modem rpd name node1 docsis version d31-capable
MAC Address    I/F            MAC              Reg Oper DSxUS DS   RCC   US
                              State            Ver Ver        OFDM ID    OFDMA
0000.5e00.17ae C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
0000.5e00.1556 C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
0000.5e00.18da C2/0/4/UB      w-online(pt)     3.1 3.1  33x8  1    19    0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **docsis device-class** command:

```
Router#show cable modem rpd name node1 docsis device-class
MAC Address    I/F            MAC              Prim Reg      Device Class      Reg
                              State            Sid  Ver  --------------------  Priv
0000.5e00.952c C2/0/4/p       w-online(pt)     1    3.0  CM            RTR     BPI+
0000.5e00.2dce C2/0/4/p       w-online(pt)     2    3.0  CM            RTR     BPI+
```

The following example shows the sample output for the **show cable modem rpd name** *name* **docsis device-class withip** command:

```
Router#show cable modem rpd name node1 docsis device-class withip
                                                                                D

MAC Address    I/F            MAC              Prim Reg      Device Class      Reg  I IP
Address
                              State            Sid  Ver  --------------------  Priv P

0000.5e00.952c C2/0/4/p       w-online(pt)     1    3.0  CM            RTR     BPI+ N
192.0.2.165
```

```
0000.5e00.2dce C2/0/4/p       w-online(pt)      2    3.0  CM            RTR     BPI+ N
192.0.2.169
0000.5e00.91c3 C2/0/4/p       w-online(pt)      3    3.0  CM            RTR     BPI+ N
192.0.2.170
```

The following example shows the sample output for the **show cable modem rpd name** *name* **flap** command:

```
Router#show cable modem rpd name node1 flap
MAC Address    I/F           Ins   Hit   Miss  CRC   P-Adj   Flap  Time
0000.5e00.c08e C3/0/1/UB     0     83    0     0      0      0
0000.5e00.c57a C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c66a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:49
0000.5e00.c49c C3/0/1/UB     0     81    0     0      0      0
0000.5e00.c112 C3/0/1/UB     0     82    0     0      0      0
0000.5e00.c4b0 C3/0/1/UB     0     84    0     0     !0      0
0000.5e00.c668 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c660 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf64 C3/0/1/UB     0     81    0     0      0      0
0000.0275.dee6 C3/0/1/UB     0     80    0     0      0      0
0000.5e00.c49a C3/0/1/UB     0     87    0     0     !1      1     Mar 23 21:46:54
0000.5e00.c4da C3/0/1/UB     0     82    0     0     !0      0
0000.5e00.bb3b C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b565 C3/0/1/UB     0     79    0     0      0      0
0000.5e00.b61c C3/0/1/UB     0     79    0     0      0      0
0000.5e00.c612 C3/0/1/UB     0     83    0     0     !0      0
0000.5e00.c5c8 C3/0/1/UB     0     81    0     0      0      0
0000.5e00.bf68 C3/0/1/UB     0     78    0     0      0      0
0000.5e00.c53c C3/0/1/UB     0     78    0     0     !1      1     Mar 23 21:50:54
0000.5e00.bf16 C3/0/1/UB     0     85    0     0     !1      1     Mar 23 21:47:34
0000.5e00.bfcc C3/0/1/UB     0     77    0     0     !1      1     Mar 23 21:51:14
0000.5e00.c43a C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c078 C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c588 C3/0/1/UB     0     80    0     0     !0      0
0000.5e00.c4b4 C3/0/1/UB     0     82    0     0     !1      1     Mar 23 21:48:44
0000.5e00.c412 C3/0/1/UB     0     83    0     0     !1      1     Mar 23 21:48:04
0000.5e00.c67c C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:29
0000.5e00.c17a C3/0/1/UB     0     79    0     0     !0      0
0000.5e00.bfc4 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c022 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c4cc C3/0/1/UB     0     77    0     0      0      0
0000.5e00.c5c6 C3/0/1/UB     0     76    0     0      0      0
0000.5e00.c178 C3/0/1/UB     0     76    0     0     !1      1     Mar 23 21:51:39
0000.5e00.c56e C3/0/1/UB     0     80    0     0     !0      0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **offline** command:

```
Router#show cable modem rpd name node1 offline
Interface     MAC address    Prim Previous    Offline          Rx      Rx    SM
                             Sid  State       Time             Power   SNR   Exhaust
                                                                            Count
C3/0/1/UB     0000.5e00.c08e 1    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
C3/0/1/UB     0000.5e00.c57a 2    w-online(pt)Mar 23 22:12:32  0.00    25.1  0
C3/0/1/UB     0000.5e00.c66a 3    w-online(pt)Mar 23 22:12:32  -0.50   25.4  0
C3/0/1/UB     0000.5e00.c49c 4    w-online(pt)Mar 23 22:12:32  -0.50   25.3  0
C3/0/1/UB     0000.5e00.c112 5    w-online(pt)Mar 23 22:12:32  0.00    27.2  0
C3/0/1/UB     0000.5e00.c4b0 6    w-online(pt)Mar 23 22:12:32  -0.50   27.4  0
C3/0/1/UB     0000.5e00.c668 7    w-online(pt)Mar 23 22:12:32  0.00    28.1  0
C3/0/1/UB     0000.5e00.c660 8    w-online(pt)Mar 23 22:12:32  0.00    27.9  0
C3/0/1/UB     0000.5e00.bf64 9    w-online(pt)Mar 23 22:12:32  0.00    28.1  0
C3/0/1/UB     0000.0275.dee6 10   w-online(pt)Mar 23 22:12:32  0.00    27.2  0
```

```
C3/0/1/UB     0000.5e00.c49a 11   w-online(pt)Mar 23 22:12:32  -0.50  24.7  0
C3/0/1/UB     0000.5e00.c4da 12   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.bb3b 13   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
C3/0/1/UB     0000.5e00.b565 14   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.b61c 15   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c612 16   w-online(pt)Mar 23 22:12:32  0.00   26.1  0
C3/0/1/UB     0000.5e00.c5c8 17   w-online(pt)Mar 23 22:12:32  0.50   27.9  0
C3/0/1/UB     0000.5e00.bf68 18   w-online(pt)Mar 23 22:12:32  0.00   27.9  0
C3/0/1/UB     0000.5e00.c53c 19   w-online(pt)Mar 23 22:12:32  0.00   24.9  0
C3/0/1/UB     0000.5e00.bf16 20   w-online(pt)Mar 23 22:12:32  -0.50  26.6  0
C3/0/1/UB     0000.5e00.bfcc 21   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c43a 22   w-online(pt)Mar 23 22:12:32  0.00   28.1  0
C3/0/1/UB     0000.5e00.c078 23   w-online(pt)Mar 23 22:12:32  0.00   24.4  0
C3/0/1/UB     0000.5e00.c588 24   w-online(pt)Mar 23 22:12:32  -0.50  26.7  0
C3/0/1/UB     0000.5e00.c4b4 25   w-online(pt)Mar 23 22:12:32  0.00   24.2  0
C3/0/1/UB     0000.5e00.c412 26   w-online(pt)Mar 23 22:12:32  -0.50  27.2  0
C3/0/1/UB     0000.5e00.c67c 27   w-online(pt)Mar 23 22:12:32  0.00   27.2  0
C3/0/1/UB     0000.5e00.c17a 28   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.bfc4 29   w-online(pt)Mar 23 22:12:32  0.00   25.8  0
C3/0/1/UB     0000.5e00.c022 30   w-online(pt)Mar 23 22:12:32  0.00   27.4  0
C3/0/1/UB     0000.5e00.c4cc 31   w-online(pt)Mar 23 22:12:32  0.00   27.0  0
C3/0/1/UB     0000.5e00.c5c6 32   w-online(pt)Mar 23 22:12:32  -0.50  25.4  0
C3/0/1/UB     0000.5e00.c178 33   w-online(pt)Mar 23 22:12:32  0.00   25.1  0
C3/0/1/UB     0000.5e00.c56e 34   w-online(pt)Mar 23 22:12:32  0.00   27.7  0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **partial-service** command:

```
Router#show cable modem rpd name node1 partial-service
MAC Address    IP Address      I/F           MAC              DSxUS  Impaired    Impaired
                                             State            State  DS          US

0000.5e00.c660 192.0.2.4       C3/0/1/UB     p-online         7x1    3/0/0:7

0000.5e00.c43a 192.0.2.26      C3/0/1/UB     p-online         7x1    3/0/0:6
```

The following example shows the sample output for the **show cable modem rpd name** *name* **phy** command:

```
Router#show cable modem rpd name node1 phy
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)         (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  29.13 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.22 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.39 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  29.24 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.09 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  25.14 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  24.28 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.56 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  25.14 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  27.90 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  27.74 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  26.11 867     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U0     5     24.00  28.81 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U1     5     24.00  28.16 874     0.00  -----  atdma* 1.1
0000.5e00.c112 C3/0/1/U2     5     24.00  27.99 874     0.00  -----  atdma* 1.1
```

```
0000.5e00.c112 C3/0/1/U3     5     23.75  25.61 876     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U0     6     23.50  28.16 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U1     6     23.75  27.67 867     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U2     6     23.50  26.58 866     0.00  -----  atdma* 1.1
0000.5e00.c4b0 C3/0/1/U3     6     23.25  24.89 867     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U0     7     24.00  28.16 864     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U1     7     24.00  27.29 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U2     7     24.50  26.63 862     0.00  -----  atdma* 1.1
0000.5e00.c668 C3/0/1/U3     7     23.75  25.75 862     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U0     8     23.50  29.13 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U1     8     23.75  28.24 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U2     8     23.50  25.75 870     0.00  -----  atdma* 1.1
0000.5e00.c660 C3/0/1/U3     8     23.75  24.60 870     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd name** *name* **phy ofdm-profile** command:

```
Router#show cable modem rpd name node1 phy ofdm-profile
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd name** *name* **phy ofdm-profile downstream** command:

```
Router#show cable modem rpd name node1 phy ofdm-profile downstream
MAC Address    I/F           Chan          DCID  Curr  Recm  Dwngd  Unfit
                                                 Prof  Prof  Prof   Prof
0000.5e00.17ae C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
0000.5e00.1556 C2/0/4/UB     Do2/0/28:158  159   4     4     2      N/A
```

The following example shows the sample output for the **show cable modem rpd name** *name* **phy normalized** command:

```
Router#show cable modem rpd name node1 phy normalized
MAC Address    I/F           Sid   USPwr  USMER Timing DSPwr  DSMER  Mode   DOCSIS
                                   (dBmV) (SNR) Offset (dBmV) (SNR)         Prov
                                          (dB)                (dB)
0000.5e00.c08e C3/0/1/U0     1     31.75  28.92 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U1     1     31.50  27.09 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U2     1     32.50  26.23 876     0.00  -----  atdma* 1.1
0000.5e00.c08e C3/0/1/U3     1     32.25  25.23 876     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U0     2     24.25  27.99 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U1     2     24.00  27.74 872     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U2     2     24.25  27.09 873     0.00  -----  atdma* 1.1
0000.5e00.c57a C3/0/1/U3     2     24.75  24.98 874     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U0     3     19.25  23.74 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U1     3     19.25  23.65 861     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U2     3     23.50  26.45 860     0.00  -----  atdma* 1.1
0000.5e00.c66a C3/0/1/U3     3     27.00  28.24 861     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U0     4     23.50  28.81 866     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U1     4     23.75  29.24 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U2     4     23.75  26.39 867     0.00  -----  atdma* 1.1
0000.5e00.c49c C3/0/1/U3     4     23.75  25.41 867     0.00  -----  atdma* 1.1
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel** command:

```
Router#show cable modem rpd name node1 primary-channel
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel wideband registered-traditional-docsis** command:

```
Router#show cable modem rpd name node1 primary-channel wideband registered-traditional-docsis
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.952c 192.0.2.165     C2/0/4/U6     online(pt)        1     0   Do2/0/28:28
23580
0000.5e00.2dce 192.0.2.169     C2/0/4/U2     online(pt)        2     0   Do2/0/28:28
23580
0000.5e00.91c3 192.0.2.170     C2/0/4/U6     online(pt)        3     0   Do2/0/28:28
23580
0000.5e00.9ec9 192.0.2.162     C2/0/4/U1     online(pt)        4     0   Do2/0/28:4
23556
0000.5e00.21e0 192.0.2.168     C2/0/4/U2     online(pt)        5     0   Do2/0/28:20
23572
0000.5e00.a940 192.0.2.164     C2/0/4/U4     online(pt)        6     0   Do2/0/28:20
23572
0000.5e00.91bd 192.0.2.166     C2/0/4/U0     online(pt)        7     0   Do2/0/28:24
23576
0000.5e00.9190 192.0.2.163     C2/0/4/U2     online(pt)        8     0   Do2/0/28:16
23568
0000.5e00.9f5f 192.0.2.161     C2/0/4/U0     online(pt)        9     0   Do2/0/28:0
23552
0000.5e00.91ba 192.0.2.171     C2/0/4/U3     online(pt)        10    0   Do2/0/28:16
23568
0000.5e00.a8cb 192.0.2.167     C2/0/4/U1     online(pt)        11    0   Do2/0/28:16
23568
0000.5e00.17ae 192.0.2.156     C2/0/4/U2     init6(t)          29    0   Do2/0/28:20
23572
0000.5e00.1556 ---             C2/0/4/U5     init(r1)          30    0   Do2/0/28:16
23568
0000.5e00.18da ---             C2/0/4/U4     init(rc)          31    0   Do2/0/28:16
23568
0000.5e00.196e 192.0.2.157     C2/0/4/U3     init6(t)          32    0   Do2/0/28:16
23568
0000.5e00.18ce ---             C2/0/4/U0     init(rc)          53    0   Do2/0/28:16
23568
0000.5e00.18f6 ---             C2/0/4/U5     init6(s)          59    0   Do2/0/28:20
2357
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel wideband** command:

```
Router#show cable modem rpd name node1 primary-channel wideband
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      1     0   Do3/0/0:7
24583
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      2     0   Do3/0/0:2
24578
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel non-bonding-capable** command:

```
Router#show cable modem rpd name node1 primary-channel non-bonding-capable
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.c588 192.0.2.27      C3/0/1/U0     init(o)           187   0   Do3/0/0:6
24582
0000.5e00.c57a 192.0.2.55      C3/0/1/U3     init(o)           188   0   Do3/0/0:0
24576
0000.5e00.c112 192.0.2.11      C3/0/1/U3     init(o)           189   0   Do3/0/0:3
24579
0000.5e00.c078 192.0.2.88      C3/0/1/U1     init(t)           190   0   Do3/0/0:0
24576
0000.5e00.c178 ---             C3/0/1/U1     init(io)          191   0   Do3/0/0:7
24583
0000.5e00.c4da ---             C3/0/1/U3     init(io)          192   0   Do3/0/0:5
24581
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel sup** command:

```
Router#show cable modem rpd name node1 primary-channel sup
MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
0000.5e00.bfcc 192.0.2.19      C3/0/1        online            1     0   Do3/0/0:4
24580
0000.0275.dee6 192.0.2.12      C3/0/1        online            2     0   Do3/0/0:0
24576
0000.5e00.c612 192.0.2.10      C3/0/1        online            3     0   Do3/0/0:0
24576
0000.5e00.c49c 192.0.2.3       C3/0/1        online            4     0   Do3/0/0:6
24582
0000.5e00.c53c 192.0.2.8       C3/0/1        online            5     0   Do3/0/0:0
24576
0000.5e00.c08e 192.0.2.21      C3/0/1        online            6     0   Do3/0/0:1
24577
0000.5e00.c588 192.0.2.27      C3/0/1        online            7     0   Do3/0/0:1
24577
0000.5e00.c4cc 192.0.2.24      C3/0/1        online            8     0   Do3/0/0:6
24582
0000.5e00.c660 192.0.2.4       C3/0/1        online            9     0   Do3/0/0:0
24576
0000.5e00.c022 192.0.2.22      C3/0/1        online            10    0   Do3/0/0:3
24579
```

The following example shows the sample output for the **show cable modem rpd name** *name* **primary-channel summary total** command:

```
Router#show cable modem rpd name node1 primary-channel summary total
                                Cable Modem
              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO

Local Primary Narrowband:
Do3/0/0:0     7     7     7     0     0       0        0      0     0      0
Do3/0/0:1     4     4     4     0     0       0        0      0     0      0
Do3/0/0:2     1     1     1     0     0       0        0      0     0      0
Do3/0/0:3     2     2     2     0     0       0        0      0     0      0
Do3/0/0:4     14    14    14    0     0       0        0      0     0      0
```

```
Do3/0/0:5     2     2     2     0     0       0       0      0      0      0
Do3/0/0:6     3     3     3     0     0       0       0      0      0      0
Do3/0/0:7     1     1     1     0     0       0       0      0      0      0
Subtotal:     34    34    34    0     0       0       0      0      0      0

Local Primary Wideband:
Subtotal:     0     0     0     0     0       0       0      0      0      0

Total:        34    34    34    0     0       0       0      0      0      0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **registered** command:

```
Router#show cable modem rpd name node1 registered
Interface    Prim Online            Timing Rec   QoS CPE IP address      MAC address
             Sid  State             Offset Power
C3/0/1/UB    1    w-online(pt)      876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/UB    2    w-online(pt)      872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/UB    3    w-online(pt)      860    -0.50 2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/UB    4    w-online(pt)      866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/UB    5    w-online(pt)      876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/UB    6    w-online(pt)      866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/UB    7    w-online(pt)      864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/UB    8    w-online(pt)      870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/UB    9    w-online(pt)      873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/UB    10   w-online(pt)      1293   0.00  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd name** *name* **unregistered** command:

```
Router#show cable modem rpd name node1 unregistered
Interface    Prim Online            Timing Rec   QoS CPE IP address      MAC address
             Sid  State             Offset Power
C3/0/1/U1    1    offline           876    -0.50 2   0   192.0.2.21      0000.5e00.c08e
C3/0/1/U1    2    offline           872    -0.50 2   0   192.0.2.55      0000.5e00.c57a
C3/0/1/U2    3    offline           860    0.00  2   0   192.0.2.25      0000.5e00.c66a
C3/0/1/U0    4    offline           866    0.00  2   0   192.0.2.3       0000.5e00.c49c
C3/0/1/U3    5    offline           876    0.00  2   0   192.0.2.11      0000.5e00.c112
C3/0/1/U2    6    offline           866    -0.50 2   0   192.0.2.54      0000.5e00.c4b0
C3/0/1/U0    7    offline           864    0.00  2   0   192.0.2.20      0000.5e00.c668
C3/0/1/U2    8    offline           870    -0.50 2   0   192.0.2.4       0000.5e00.c660
C3/0/1/U0    9    offline           873    0.00  2   0   192.0.2.59      0000.5e00.bf64
C3/0/1/U1    10   offline           1293   0.50  2   0   192.0.2.12      0000.5e00.dee6
```

The following example shows the sample output for the **show cable modem rpd name** *name* **wideband** command:

```
Router#show cable modem rpd name node1 wideband
MAC Address    IP Address      I/F           MAC              Prim  RCC  MD-DS-SG/
                                             State            Sid   ID   MD-US-SG
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)     1     5    4 / 4
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)     2     5    4 / 4
```

The following example shows the sample output for the **show cable modem rpd name** *name* **wideband channel** command:

```
Router#show cable modem rpd name node1 wideband channel
MAC Address    IP Address      I/F           MAC              DSxUS Primary
                                             State                  WB
```

```
0000.5e00.c08e 192.0.2.21      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
0000.5e00.c57a 192.0.2.55      C3/0/1/UB     w-online(pt)      8x4   Wi3/0/0:0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **wideband forwarding-summary** command:

```
Router#show cable modem rpd name node1 wideband forwarding-summary
MAC Address    IP Address      Primary        FrwdIF         BG DS  Bonded CM DS
                               Downstream                    Config State  Capab
0000.5e00.c08e 192.0.2.21      Do3/0/0:7      Wi3/0/0:0      8      8      8
0000.5e00.c57a 192.0.2.55      Do3/0/0:2      Wi3/0/0:0      8      8      8
0000.5e00.c66a 192.0.2.25      Do3/0/0:4      Wi3/0/0:0      8      8      8
0000.5e00.c49c 192.0.2.3       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.c112 192.0.2.11      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.c4b0 192.0.2.54      Do3/0/0:5      Wi3/0/0:0      8      8      8
0000.5e00.c668 192.0.2.20      Do3/0/0:4      Wi3/0/0:0      8      8      8
0000.5e00.c660 192.0.2.4       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.bf64 192.0.2.59      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.dee6 192.0.2.12      Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.c49a 192.0.2.9       Do3/0/0:1      Wi3/0/0:0      8      8      8
0000.5e00.c4da 192.0.2.16      Do3/0/0:0      Wi3/0/0:0      8      8      8
0000.5e00.bb3b 192.0.2.15      Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.b565 192.0.2.6       Do3/0/0:0      Wi3/0/0:1      24     24     24
0000.5e00.b61c 192.0.2.13      Do3/0/0:1      Wi3/0/0:1      24     24     24
0000.5e00.c612 192.0.2.10      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.c5c8 192.0.2.2       Do3/0/0:5      Wi3/0/0:0      8      8      8
0000.5e00.bf68 192.0.2.18      Do3/0/0:7      Wi3/0/0:0      8      8      8
0000.5e00.c53c 192.0.2.8       Do3/0/0:2      Wi3/0/0:0      8      8      8
0000.5e00.bf16 192.0.2.56      Do3/0/0:6      Wi3/0/0:0      8      8      8
0000.5e00.bfcc 192.0.2.19      Do3/0/0:2      Wi3/0/0:0      8      8      8
```

The following example shows the sample output for the **show cable modem rpd name** *name* **wideband phy** command:

```
Router#show cable modem name node1 wideband phy
MAC Address    IP Address      I/F          MAC              Chan   Frq    SNR    Pwr
                                            State            Desc   (MHZ)  (db)   (dBmV)
0000.5e00.c08e 192.0.2.21      C3/0/1/UB    w-online(pt)     dsPri   495  -----   0.00
                                                             dsSec   453    N/A    N/A
                                                             dsSec   459    N/A    N/A
                                                             dsSec   465    N/A    N/A
                                                             dsSec   471    N/A    N/A
                                                             dsSec   477    N/A    N/A
                                                             dsSec   483    N/A    N/A
                                                             dsSec   489    N/A    N/A
                                                              us0     13  29.13  31.75
                                                              us1     14  27.22  32.00
                                                              us2     16  27.90  32.50
                                                              us3     18  24.72  32.50
0000.5e00.c57a 192.0.2.55      C3/0/1/UB    w-online(pt)     dsPri   465  -----   0.00
                                                             dsSec   453    N/A    N/A
                                                             dsSec   459    N/A    N/A
                                                             dsSec   471    N/A    N/A
                                                             dsSec   477    N/A    N/A
                                                             dsSec   483    N/A    N/A
                                                             dsSec   489    N/A    N/A
                                                             dsSec   495    N/A    N/A
                                                              us0     13  27.09  24.25
                                                              us1     14  28.16  24.25
                                                              us2     16  26.00  24.00
```

The following example shows the sample output for the **show cable modem rpd name** *name* **wideband registered-traditional-docsis** command:

```
Router#show cable modem name node1 wideband registered-traditional-docsis
MAC Address    IP Address      I/F           MAC               Prim  RCC  MD-DS-SG/
                                             State             Sid   ID   MD-US-SG
0000.5e00.bfcc 192.0.2.19      C3/0/1/U1     online            1     0    2 / N/A
0000.5e00.dee6 192.0.2.12      C3/0/1/U0     online            2     0    2 / N/A
0000.5e00.c612 192.0.2.10      C3/0/1/U3     online            3     0    2 / N/A
0000.5e00.c49c 192.0.2.3       C3/0/1/U3     online            4     0    2 / N/A
0000.5e00.c53c 192.0.2.8       C3/0/1/U0     online            5     0    2 / N/A
0000.5e00.c08e 192.0.2.21      C3/0/1/U2     online            6     0    2 / N/A
0000.5e00.c588 192.0.2.27      C3/0/1/U0     online            7     0    2 / N/A
0000.5e00.c4cc 192.0.2.24      C3/0/1/U2     online            8     0    2 / N/A
0000.5e00.c660 192.0.2.4       C3/0/1/U1     online            9     0    2 / N/A
0000.5e00.c022 192.0.2.22      C3/0/1/U0     online            10    0    2 / N/A
```

The following example shows the sample output for the **show cable modem rpd name** *name* **verbose** command:

```
Router#show cable modem rpd name node1 verbose

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
QoS Profile Index                 : 2
Host Interface                    : C3/0/1/U1
RPD ID                            : 1004.9fb1.4000
MD-DS-SG / MD-US-SG               : 4 / N/A
MD-CM-SG                          : 0x910404
Primary Downstream                : Do3/0/0:7 (RfId : 24583, SC-QAM)
Wideband Capable                  : Y
DS Tuner Capability               : 8
RCP Index                         : 3
RCP ID                            : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
UDC Enabled                       : N
US Frequency Range Capability     : Standard (5-42 MHz)
Extended Upstream Transmit Power  : 0dB
Multi-Transmit Channel Mode       : N
Upstream Channel                  :
Device ID                         :
```

The following example shows the sample output for the **show cable modem rpd name** *name* **verbose normalized** command:

```
Router#show cable modem rpd name node1 verbose normalized

MAC Address                       : 0000.5e00.c08e
IP Address                        : 192.0.2.21
IPv6 Address                      : ---
Dual IP                           : N
Prim Sid                          : 1
Host Interface                    : C3/0/1/UB
RPD ID                            : 1004.9fb1.4000
MD-DS-SG / MD-US-SG               : 4 / 4
MD-CM-SG                          : 0x910404
Primary Wideband Channel ID       : 24577 (Wi3/0/0:0)
Primary Downstream                : Do3/0/0:7 (RfId : 24583, SC-QAM)
```

```
Wideband Capable                    : Y
DS Tuner Capability                 : 8
RCP Index                           : 3
RCP ID                              : 00 10 00 00 08
Downstream Channel DCID RF Channel : 8     3/0/0:7 (SC-QAM)
Downstream Channel DCID RF Channel : 1     3/0/0:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     3/0/0:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     3/0/0:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     3/0/0:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     3/0/0:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     3/0/0:5 (SC-QAM)
```

The following example shows the sample output for the **show cable modem rpd name** *name* **verbose sup** command:

```
Router#show cable modem rpd name node1 verbose sup
MAC Address                         : 0000.5e00.91ba
IP Address                          : 192.0.2.171
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 10
Host Interface                      : C2/0/4
MD-DS-SG / MD-US-SG                 : 7 / 8
Primary Wideband Channel ID         : 23569 (Wi2/0/28:16)
Primary Downstream                  : Do2/0/28:16 (RfId : 23568)
Wideband Capable                    : Y
DS Tuner Capability                 : 24
RCP Index                           : 3
RCP ID                              : 00 10 00 00 18
MAC Version                         : DOC3.0
Operational Version                 : DOC1.1
QoS Provisioned Mode                : DOC1.1
Enable DOCSIS2.0 Mode               : Y
Modem Status                        : {Modem= w-online(pt), Security=assign(tek)}
Tag                                 :
Service Type ID                     :
Service Type ID in config file      :
Ranging Class ID                    : 0x0


UPSTREAM SERVICE FLOW DETAIL:
Sfid                       : 45
Sid                        : 10
State                      : Admitted
Type                       : Primary
Schedule Type              : 2
Hfid                       : 131071
Service Class Name         :
```

The following example shows the sample output for the **show cable modem rpd name** *name* **summary** command:

```
Router# show cable modem rpd name node1 summary
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **summary total** command:

```
Router# show cable modem rpd name node1 summary total
Interface                    Cable Modem                                    Description

              Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C9/0/0/UB     10    10    10    0     0       10       0      0     0      0

Total:        10    10    10    0     0       10       0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd name** *name* **summary** command when there's no description configured under RPD us-port:

```
Router# show cable modem rpd name node1 summary

Interface                          Cable Modem
Description
                Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C1/0/2/U0         1     1     1     0     0       0        0      0     0      0
      UC1/0/1:U0
C1/0/2/U1         1     1     1     0     0       0        0      0     0      0
      UC1/0/1:U0

Total             2     2     2     0     0       0        0      0     0      0
```

The following example shows the sample output for the **show cable modem rpd all summary total** command when there's a description configured under RPD us-port:

```
Router# show cable modem rpd all summary total
RPD ID: 1111.1111.1111
Interface                          Cable Modem
Description
               Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C1/0/0/U0       1     1     1     0     0       0        0      0     0      0
      RPD_X_PORT_0
C1/0/0/U1       1     1     1     0     0       0        0      0     0      0
      RPD_X_PORT_1
RPD ID: 2222.2222.2222
Interface                          Cable Modem
Description
               Total Reg   Oper  Unreg Offline Wideband initRC initD initIO initO
C1/0/0/U0       2     2     2     0     0       0        0      0     0      0
      RPD_Y_PORT_0
C1/0/0/U1       2     2     2     0     0       0        0      0     0      0
      RPD_Y_PORT_1
```

show cable modem rpd all summary

To display a summary of cable modems with the per RPD us port description on one or more cable interfaces, use the **show cable modem rpd all summary** command in privileged EXEC mode.

show cable modem rpd all summary [**total**]

Command History

Release	Modification
Cisco IOS-XE 4.1.0	This command was introduced.

Usage Guidelines

This command displays a summary of cable modems with the per RPD us port description on one or more cable interfaces:

- **show cable modem rpd summary total**—Displays a summary and a total for all CMs with the per RPD us port description on the chassis.

Note The length of the configurable limitation is 20 characters while there are 80 characters reserved.

show cable modem select

This command is a SQL query string for a faster search, filtering, ordering, grouping, and some calculation of the available records.

show cable modem select [**mac** | **ip**]

Syntax Description

ip	Specifies the IPv4 address of a specific CM to be displayed.
mac	Identifies the MAC address of a specific CM to be displayed.
ipv6	IPv6 address of the cable modem to be displayed.
intf	Name of the host interface.
dip	Dual IP Support of dual IP for both IPv4 and IPv6 addressing.
sid	Primary SID assigned to this CM.
st	Displays cable modem status events.
dssg	MD-DS-SG for cable modem.
ussg	MD-US-SG for cable modem.
cmsg	MD-CM-SG for cable modem.
mtc	Multi-Transmit Channel Mode. Cable modem is in MTC mode or not.
macver	Displays the maximum supported version of DOCSIS that the cable modem supports (DOCSIS 1.0, DOCSIS 1.1, DOCSIS 2.0, DOCSIS 3.01).
opver	Operational mode.
qos	Displays the version of DOCSIS that the CM currently is provisioned and registered for (DOCSIS 1.0 and DOCSIS 1.1).

timing	Timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the cable modem has exceeded the maximum delay and timing offset specified by the cable map-advance command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the show cable modem remote-query command. This is because the latter value is the offset as recognized on the cable modem (which will include any internal delay between when the cable modem software begins the transmission and when the bits actually appear on the local cable interface).
cpe	CPE number.
rxpwr	Receive power (dBmV).
voicena	Voice enabled.
primds	Primary downstream.
tag	Shows various states of the CM. By default, the value is null. • *—Modem has failed the BPI-plus-policy. • #—Modem did not use TFTP downloaded CM config file. • !—Modem failed DMIC calculation multiple times. • &—Modem uses self-signed certificate to authenticate itself.
impds	Impaired downstream.
impus	Impaired upstream.
dsxus	Downstream and upstream.
rcc	RCC ID.
usphy	Phy operating mode.
rpdid	RPD ID if this modem is on the RPD.
sysdes	System description
txpwr	The reported Tx power.
cpev4	CPE IPv4 address

cpev6	CPE IPv6 address

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1z	The **show cable modem select usphy** command is enhanced such that if a modem is assigned with multiple upstream bonded channel, the best operating mode is used in usphy. The priority order for usphy operating mode of bonded upstreams is ofdma, atdma, and tdma.
Cisco IOS XE Everest 16.12.1	Four new fields—sysdes, txpwr, cpev4, and cpev6 are introduced on the Cisco cBR Series Converged Broadband Routers.
Cisco IOS XE Everest 16.6.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The **show cable modem select** is updated. Four new fields—sysdes, txpwr, cpev4, and cpev6 are added. This is a sample output of the **show cable modem select mac, cpev4, txpwr, cpev6** command:

```
Router#show cable modem select mac,cpev4,cpev6,ip,txpwr where mac='7cb2.1b0b.e742'
Load for five secs: 10%/0%; one minute: 15%; five minutes: 15%
Time source is NTP, *12:24:52.397 CST Tue Jul 2 2019
 mac            | cpev4           | cpev6                                    | ip
    | txpwr
================================================================================================

 7cb2.1b0b.e742 | 198.51.100.1    | 2001:100:113:0:41C8:1B36:9979:D490      | 209.165.200.225
 |  52.00   51.50   51.75   50.25


                |                 | 2001:100:113:0:DC6F:B35:AD34:39B4       |
    |
```

This is a sample output of the **show cable modem select mac, ip, sysdes** command:

```
Router#scm select mac, ip, sysdes where mac='34bd.fa0f.4946'
Load for five secs: 5%/0%; one minute: 8%; five minutes: 7%
No time source, 12:29:48.632 PDT Thu Sep 27 2018
 mac            | ip              | sysdes
=====================================
 34bd.fa0f.4946 | 209.165.200.225 | Cisco DPC3008 DOCSIS 3.0 Cable Modem <<HW_REV: 1.0;
VENDOR: Cisco; BOOTR: 2.3.1_R3; SW_R
```

Usage Guidelines

The **show cable modem select** command shows the details filtered by a SQL query statement. The output displays the following columns:

- MacAddress

- IPV6Address
- IPV4Address
- HostIF
- DualIP
- CMTransPower
- ChanTransPower

These parameters show the value from modems that satisfy the following two conditions at the same time. The ChanTransPower values are displayed in an ascending order:

- MacAddress ending with 46a or having dual IP
- CMTransPower larger than 40

Examples

The following is a sample output of the **show cable modem select ip,mac** command:

```
Router#show cable modem select ip,mac
ip           | mac
================================
30.101.12.2  | 4800.33ef.1562
30.101.12.3  | 4800.33ef.17de
30.101.12.4  | 4800.33ef.1dd2
30.101.12.5  | 4800.33ef.1756
30.101.12.6  | 4800.33ef.1dce
30.101.12.9  | 1859.3356.88c0
30.101.12.7  | 4800.33ef.1546
30.101.12.8  | 4800.33ef.1d3e
30.101.12.10 | f45f.d4a2.f608
30.101.12.13 | 4458.2945.20d6
30.101.12.11 | 4458.2945.2bf6
30.101.12.15 | bcc8.1087.d71e
30.101.12.14 | 7cb2.1b9c.8340
30.101.12.12 | 4800.33ef.1cea
30.101.12.16 | 4458.2945.2c2e
30.101.12.17 | f45f.d4a2.f2ae
30.101.12.18 | 7cb2.1b9c.8660
30.101.12.19 | 4458.2945.38a2


Router# show cable modem SELECT MacAddress, IPV6Address, IPV4Address,
  HostIF, DualIP, CMTransPower, ChanTransPower WHERE
 (MacAddress LIKE '%46a' OR DualIP = 'Y') AND
 CMTransPower > 40 ORDER BY ChanTransPower ASC


Router# show cable modem select ip,mac,intf,macver,opver,st,dsxus,impus,impds where macver
 like '%3.1' and intf like 'C1/0/6%'
Load for five secs: 10%/2%; one minute: 10%; five minutes: 11% Time source is NTP,
11:36:57.402 CST Mon May 8 2017
 ip           | mac            | intf      | macver | opver  | st           | dsxus | impus
 | impds
================================================================================================

 93.11.1.191 | 4800.33ef.1ca2 | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
 |
 93.11.1.193 | 4800.33ef.1dde | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
```

```
|
93.11.1.192 | 4800.33ef.17b2 | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.188 | 4800.33ef.1cfe | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.195 | 4800.33ef.15a6 | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.189 | 4800.33ef.1372 | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.190 | 4800.33ef.157e | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.35  | f45f.d4ff.fb64 | C1/0/6/UB | DOC3.1 | DOC3.1 | p-online(pt) | 33x4  |
| 1/0/6:162
93.11.1.194 | 4800.33ef.1302 | C1/0/6/UB | DOC3.1 | DOC3.1 | w-online(pt) | 33x4  |
|
93.11.1.205 | a84e.3f37.15de | C1/0/6/UB | DOC3.1 | DOC3.1 | p-online(pt) | 33x4  |
| 1/0/6:162
93.11.1.204 | a84e.3f37.18f0 | C1/0/6/UB | DOC3.1 | DOC3.1 | p-online(pt) | 33x4  |
| 1/0/6:162
```

The following is a sample output of the **show cable modem select intf as hostinterface, count(mac) as number group by intf** command:

```
Router# show cable modem select intf as hostinterface, count(mac) as number group by intf
hostinterface | number
========================
C6/0/2/UB     | 18
```

The following is a sample output of the **show cable modem select ip,mac,st,sid order by sid desc** command:

```
Router# show cable modem select ip,mac,st,sid order by sid desc
ip           | mac            | st           | sid
=================================================
30.101.12.19 | 4458.2945.38a2 | w-online(pt) | 35
30.101.12.18 | 7cb2.1b9c.8660 | w-online(pt) | 31
30.101.12.17 | f45f.d4a2.f2ae | w-online(pt) | 30
30.101.12.16 | 4458.2945.2c2e | w-online(pt) | 28
30.101.12.12 | 4800.33ef.1cea | w-online(pt) | 22
30.101.12.14 | 7cb2.1b9c.8340 | w-online(pt) | 21
30.101.12.15 | bcc8.1087.d71e | w-online(pt) | 19
30.101.12.11 | 4458.2945.2bf6 | w-online(pt) | 18
30.101.12.13 | 4458.2945.20d6 | w-online(pt) | 17
30.101.12.10 | f45f.d4a2.f608 | w-online(pt) | 9
30.101.12.8  | 4800.33ef.1d3e | w-online(pt) | 8
30.101.12.7  | 4800.33ef.1546 | w-online(pt) | 7
30.101.12.9  | 1859.3356.88c0 | w-online(pt) | 6
30.101.12.6  | 4800.33ef.1dce | w-online(pt) | 5
30.101.12.5  | 4800.33ef.1756 | w-online(pt) | 4
30.101.12.4  | 4800.33ef.1dd2 | w-online(pt) | 3
30.101.12.3  | 4800.33ef.17de | w-online(pt) | 2
30.101.12.2  | 4800.33ef.1562 | w-online(pt) | 1
```

The following is a sample output of the **show cable modem select ip where sid=1** command:

```
Router# show cable modem select ip where sid=1
ip
=============
30.101.12.2
```

The following is a sample output of the **show cable modem select ip,st where st like '%online%'** command:

```
Router#show cable modem select ip,st where st like '%online%'
ip           | st
==============================
30.101.12.2  | w-online(pt)
30.101.12.3  | w-online(pt)
30.101.12.4  | w-online(pt)
30.101.12.5  | w-online(pt)
30.101.12.6  | w-online(pt)
30.101.12.9  | w-online(pt)
30.101.12.7  | w-online(pt)
30.101.12.8  | w-online(pt)
30.101.12.10 | w-online(pt)
30.101.12.13 | w-online(pt)
30.101.12.11 | w-online(pt)
30.101.12.15 | w-online(pt)
30.101.12.14 | w-online(pt)
30.101.12.12 | w-online(pt)
30.101.12.16 | w-online(pt)
30.101.12.17 | w-online(pt)
30.101.12.18 | w-online(pt)
30.101.12.19 | w-online(pt)
```

The following is a sample output of the **show cable modem select ip,st,intf,mac where sid<10 and st like '%online%'** order by mac command:

```
Router# show cable modem select ip,st,intf,mac where sid<10 and st like '%online%' order
by mac
ip           | st           | intf      | mac
============================================================
30.101.12.9  | w-online(pt) | C6/0/2/UB | 1859.3356.88c0
30.101.12.7  | w-online(pt) | C6/0/2/UB | 4800.33ef.1546
30.101.12.2  | w-online(pt) | C6/0/2/UB | 4800.33ef.1562
30.101.12.5  | w-online(pt) | C6/0/2/UB | 4800.33ef.1756
30.101.12.3  | w-online(pt) | C6/0/2/UB | 4800.33ef.17de
30.101.12.8  | w-online(pt) | C6/0/2/UB | 4800.33ef.1d3e
30.101.12.6  | w-online(pt) | C6/0/2/UB | 4800.33ef.1dce
30.101.12.4  | w-online(pt) | C6/0/2/UB | 4800.33ef.1dd2
30.101.12.10 | w-online(pt) | C6/0/2/UB | f45f.d4a2.f608
```

The following is a sample output of a modem configured with 5 bonded us channel, including ofdma and atdma.

```
Router# show cable modem 4800.33ee.e502 verbose | include Phy
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
Phy Operating Mode                 : ofdma
```

The following is a sample output of the preceding configuration **show cable modem select mac,usphy where mac like "%4800.33ee.e502%"**

```
Router# show cable modem select mac,usphy where mac like "%4800.33ee.e502%"
Load for five secs: 4%/0%; one minute: 6%; five minutes: 8%
Time source is NTP, *12:59:05.892 CTS Wed Mar 23 2022
mac            | usphy
==============================
4800.33ee.e502 | ofdma
```

Related Commands

None.

show cable modem service-type-id

To display the modems having the service type id, use the **show cable modem service-type-id** command in privileged EXEC mode.

show cable modem service-type-id [*service-type-id*]

Syntax Description

service-type-id	Specifies the name of the service type identifier.

Command Default

If no service type identifier is specified, this command will show all the CMs with their respective service-type-id.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.OS	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command shows CMs having specified service-type-id.

Examples

The following example shows sample output for the **show cable modem service-type-id** command:

```
Router# show cable modem service-type-id
                                                                        B D
MAC Address    IP Address      I/F       MAC         Prim Service-type-id    P I
                                         State       Sid                     I P
0018.6812.29ae 41.42.2.212    C6/1/4/U2 offline      3838 commercial         N N
0018.6811.f9f8 41.42.0.140    C6/1/4/U2 offline      3225 commercial         N N
0018.6811.fba6 41.42.5.169    C6/1/4/U2 offline      3439 commercial         N N
0018.6812.225a 41.42.3.210    C6/1/4/U2 offline      3355 commercial         N N
0018.6811.fa8c 41.42.1.133    C6/1/4/U2 offline      3091 commercial         N N
0018.6812.37e8 41.42.0.136    C6/1/4/U2 offline      7439 commercial         N N
0018.6811.fbca 41.42.2.255    C6/1/4/U2 offline      6263 commercial         N N
0018.6811.fb44 41.42.2.17     C6/1/4/U2 offline      2996 commercial         N N
0018.6812.2f20 41.42.0.100    C6/1/4/U2 offline      3544 commercial         N N
```

Table below describes the significant fields shown in the display.

Table 46: show cable modem service-type-id Field Descriptions

Field	Description
MAC Address	Hardware (MAC-layer) address of the cable modem or CPE device.
IP Address	IP address of the cable modem or CPE device.
I/F	The cable interface line card providing the upstream for this CM.

Field	Description
MAC State	The current state of the MAC layer.
Prim Sid	Primary Service ID (SID) of the device.
Service Type Id	Service Type identifier.
BPI	Indicates whether or not Baseline Privacy Interface (BPI) or BPI Plus (BPI+) encryption is enabled for the CM.
DIP	Dual IP flag. Identifies whether or not (“Y” or “N”) the CM or CPE supports both IPv4 and IPv6 addressing.

Related Commands

Command	Description
clear cable modem service-type-id	This command clears the cable modem service type id.

show cable modem service-flow

To display information about all service flows associated with a particular modem, use the **show cable modem service-flow** command in privileged EXEC mode.

show cable modem {*ip-addressmac-address*} **service-flow** [{**verbose** | **ds-hardware**}]

Cisco cBR-8 Converged Broadband Router
show cable modem {*ip-addressmac-address*} **service-flow** [{**verbose** | **ds-hardware** | **upstream**}]

Syntax Description

ip-address	Specifies the IPv4 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	Identifies the MAC address of a specific CM to be displayed. You can also specify the MAC address for a CPE device behind a CM, and information for that CM will be displayed.
service-flow	Displays summary of relevant parameters and statistics for all service flows associated with a particular modem.
verbose	(Optional) Displays comprehensive details for all service flows associated with a particular modem. In addition, it displays the active cable-filter group for the cable modem.
ds-hardware	(Optional) Displays details of Baseline Privacy Interface (BPI), Payload Header Suppression (PHS), Downstream Service Identifier (DSID) and other statistical data.
upstream	Displays summary of relevant parameters and statistics for upstream service flows with a particular modem for a Cisco cBR-8 router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB1	This command is introduced for Cisco uBR7200 series and Cisco uBR10012 routers in Cisco IOS Release 12.2(33)SCB1.
12.3(23)BC7	This command is integrated into Cisco IOS Release 12.3(23)BC7.
12.2(33)SCE	This command is modified. The **ds-hardware** keyword is added.
12.2(33)SCF2	This command is modified. The command output is enhanced to display upstream buffer control parameters.
IOS-XE 3.15.0S	This command is implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** keyword is added.
IOS-XE 3.18.1SP	This command is modified. The command output for the verbose option is enhanced to display the active cable filter groups for the cable modem.
Cisco IOS XE Cupertino 17.9.1x	This command is modified to support Low Latency DOCSIS Capable information.

Usage Guidelines

The **show cable modem service-flow** command has a verbose and a non-verbose option. The non-verbose command supports live debugging and provides a summary of relevant parameters and statistics for all service flows of a particular modem. The verbose option of the command provides comprehensive details for all service flows associated with a particular modem.

The optional ds-hardware keyword is used to display per service flow BPI, PHS, DSID and stats data obtained directly from the hardware on the line card or SPA.

Note The output data for unconfigured or non applicable features are not always displayed.

The following is a sample output of the **show cable modem service-flow** command without the verbose option:

```
Router# show cable modem 40.30.0.5 service-flow

SUMMARY:
MAC Address    IP Address      Host      MAC          Prim  Num  Primary    DS
                               Interface State        Sid   CPE  Downstream RfId
001a.c30c.7eec 40.30.0.5       C7/0/0/U0 online       15    0    C7/0/0     Local
Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst   MinRsvRate  Throughput
          State       Type
31    US  act   15    BE     0    0           3044      0           0
32    DS  act   N/A   BE     0    0           3044      0           0
UPSTREAM SERVICE FLOW DETAIL:
SFID  SID   Requests   Polls      Grants     Delayed    Dropped    Packets
                                             Grants     Grants
31    15    0          0          0          0          0          0
DOWNSTREAM SERVICE FLOW DETAIL:
SFID  RP_SFID QID    Flg Policer               Scheduler             FrwdIF
                         Xmits      Drops      Xmits      Drops
32    32817   131124     0          0          0          0          Ca7/0/0
Flags Legend:
$: Low Latency Queue (aggregated)
~: CIR Queue
```

The following is a sample output of the **show cable modem service-flow** command with the verbose option:

```
Router# show cable modem c8fb.26a5.55f2 service-flow verbose
SUMMARY:

MAC Address    IP Address      Host          MAC               Prim  Num Primary        DS
                               Interface     State             Sid   CPE Downstream
RfId
c8fb.26a5.55f2 30.133.41.3     C1/0/1/UB     w-online(pt)      62    3   In1/0/1:4
8452


Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
177   US  act   62    BE     7    0           3044        0           863
178   DS  act   N/A   N/A    7    0           3044        0           122
212   DS  act   N/A   N/A    0    0           3044        0           0


CfrId  SFID     CM Mac Address  Direction  State    Priority  Matches
```

```
UPSTREAM SERVICE FLOW DETAIL:
Sfid     : 177
Hfid     : 54
Mac Address    : c8fb.26a5.55f2
Type     : Primary
Direction    : Upstream
Current State    : Active
Current QoS Indexes [Prov, Adm, Act] : [3, 3, 3]
Active Time    : 01:03
Required Attributes   : 0x00000000
Forbidden Attributes   : 0x00000000
Aggregate Attributes   : 0x00000000
Sid     : 62
Service Class Name   :
Traffic Priority   : 7
Maximum Sustained rate   : 0 bits/sec
Maximum Burst    : 3044 bytes
Minimum Reserved Rate   : 0 bits/sec
Minimum Packet Size   : 0 bytes
Minimum Buffer Size   : 0 bytes
Target Buffer Size   : 0 bytes
Maximum Buffer Size   : 0 bytes
Peak Rate    : 0 bits/sec
Admitted QoS Timeout   : 200 seconds
Active QoS Timeout   : 0 seconds
Packets     : 27
Bytes     : 8582
Rate Limit Delayed Grants  : 0
Rate Limit Dropped Grants  : 0
Current Throughput   : 863 bits/sec, 0 packets/sec
Application Priority   : 0
US Bonded    : YES
Upstream Bonding Group   : UBG-1
Transmit Channel Set   : 0xF
Sid Cluster    : SC-0, Sid [ 62 62 62 62 ]
Upstream PCH    : 0 1 2 3
Segments Valid    : 27
Segments Discarded   : 0
Segments Lost    : 0
BPI US Index    : 53
SID Cluster Switching Information
Total Bytes Requested   : 0
Total Time    : 0
Outstanding Bytes   : 0
Max Requests    : 255
Classifiers: NONE
Sid                            : 62
Request polls issued           : 0
BWReqs {Cont,Pigg,RPoll,Other} : 28, 0, 0, 0
Grants issued                  : 28
Packets received               : 27
Bytes received                 : 9273
Queue-indicator bit statistics : 0 set, 0 granted
Good Codewords rx              : 18
Corrected Codewords rx         : 48
Uncorrectable Codewords rx     : 0
Concatenated headers received  : 0
Fragmentation headers received : 0
Fragmentation headers discarded: 0
ARP Requests Received          : 5

DOWNSTREAM SERVICE FLOW DETAIL:
Sfid     : 178
Mac Address    : c8fb.26a5.55f2
```

```
Type     : Primary
Direction    : Downstream
Current State    : Active
Current QoS Indexes [Prov, Adm, Act] : [4, 4, 4]
Active Time    : 01:03
Required Attributes   : 0x00000000
Forbidden Attributes   : 0x00000000
Aggregate Attributes   : 0x00000000
Sid     : N/A
Service Class Name   :
Traffic Priority   : 7
Maximum Sustained rate   : 0 bits/sec
Maximum Burst    : 3044 bytes
Minimum Reserved Rate   : 0 bits/sec
Minimum Packet Size   : 0 bytes
Maximum Latency    : 0 usecs
Minimum Buffer Size   : 0 bytes
Target Buffer Size   : 0 bytes
Maximum Buffer Size   : 0 bytes
Peak Rate    : 0 bits/sec
Admitted QoS Timeout   : 200 seconds
Active QoS Timeout   : 0 seconds
Packets     : 5
Bytes     : 494
Rate Limit Dropped Packets  : 0
Current Throughput   : 122 bits/sec, 0 packets/sec
Application Priority   : 0
Low Latency App    : No
DS HW Flow Index   : 2942
DS WCM mode    : 3
DS Bonded          : YES
DSID     : 131125
Forwarding BG ID   : 8457
Forwarding Interface   : Wi1/0/1:8
Classifiers: NONE
DS HW Header Len = 16
DS HW Header = 00 00 00 01 00 2D F8 00 00 01 B8 00 00 00 00 00

app_type=7, source=0
app_priority=0, sched_type=0

QOS Forwarding Client Data:

Docsis SFID: 178  CM SF Reference: 1  NumCFRs: 0:
Primary: TRUE  LowLatency: FALSE  Dynamic: FALSE
Priority: 7  MinRate: 0 bps  MaxRate: 0 bps
WfqWeight: 32
QueueSize: 511 packets
Burst: 3044 bytes  PeakRate: 0 bps
BurstThresh: 1000000 bytes, Ds-max-burst: FALSE
ForwardingInterface: Wideband-Cable1/0/1:8
FlowHeader: 0x 00-00-00-01-00-2D-F8-00-00-01-B8-00-00-00-00-00

Police Xmits         : 0
Police Xmits drops   : 0
Scheduler Xmitsi     : 5
Scheduler Xmits drops: 0

Sfid     : 212
Mac Address    : c8fb.26a5.55f2
Type     : Secondary(Static)
Direction    : Downstream
Current State    : Active
Current QoS Indexes [Prov, Adm, Act] : [5, 5, 5]
```

```
Active Time    : 01:03
Required Attributes   : 0x00000000
Forbidden Attributes   : 0x00000000
Aggregate Attributes   : 0x00000000
Sid                : N/A
Service Class Name   : test_tos
Traffic Priority   : 0
Maximum Sustained rate   : 0 bits/sec
Maximum Burst    : 3044 bytes
Minimum Reserved Rate   : 0 bits/sec
Minimum Packet Size   : 0 bytes
Maximum Latency    : 0 usecs
Minimum Buffer Size   : 0 bytes
Target Buffer Size   : 0 bytes
Maximum Buffer Size   : 0 bytes
Peak Rate    : 0 bits/sec
Admitted QoS Timeout   : 200 seconds
Active QoS Timeout   : 0 seconds
Packets     : 0
Bytes     : 0
Rate Limit Dropped Packets  : 0
Current Throughput   : 0 bits/sec, 0 packets/sec
Application Priority   : 0
Low Latency App    : No
DS HW Flow Index   : 2943
DS WCM mode    : 3
DS Bonded    : YES
DSID     : 131125
Forwarding BG ID   : 8457
Forwarding Interface   : Wi1/0/1:8
Classifiers: NONE
DS HW Header Len = 16
DS HW Header = 00 00 00 01 00 2D FC 00 00 01 B8 00 00 00 00 00

app_type=7, source=0
app_priority=0, sched_type=0

QOS Forwarding Client Data:

Docsis SFID: 212  CM SF Reference: 2  NumCFRs: 0:
Primary: FALSE  LowLatency: FALSE  Dynamic: FALSE
Priority: 0  MinRate: 0 bps  MaxRate: 0 bps
WfqWeight: 4
QueueSize: 511 packets
Burst: 3044 bytes  PeakRate: 0 bps
BurstThresh: 1000000 bytes, Ds-max-burst: FALSE
ForwardingInterface: Wideband-Cable1/0/1:8
FlowHeader: 0x 00-00-00-01-00-2D-FC-00-00-01-B8-00-00-00-00-00

Police Xmits         : 0
Police Xmits drops   : 0
Scheduler Xmitsi     : 0
Scheduler Xmits drops: 0


Reg Info Requests Rx        : 15
Reg Info TLV len            : 199

Active Cable Filter:
  CM Upstream Filter Group           : 2
  CM Downstream Filter Group         : 1
  STB Upstream Filter Group          : 13
  STB Downstream Filter Group        : 12
  MTA Upstream Filter Group          : 7
```

```
  MTA Downstream Filter Group        : 5
  PS Upstream Filter Group           : 11
  PS Downstream Filter Group         : 9
  CPE Upstream Filter Group          : 4
  CPE Downstream Filter Group        : 3
```

The following is a sample output of the **show cable modem service-flow** command with the verbose option, for Cisco IOS Release 12.2(33)SCF2:

```
Router# show cable modem 0022.cea5.02ba service-flow verbose
SUMMARY:
MAC Address    IP Address      Host          MAC           Prim  Num Primary
DS
                               Interface     State         Sid   CPE Downstrea
RfId
0022.cea5.02ba 5.60.122.132    C7/1/0/UB     w-online      10    0   In7/1/0:0
840
Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughp
          State       Type
29    US  act   10    BE     0    100000      3044        0           0
30    DS  act   N/A   BE     0    200000      3044        0           0
CfrId  SFID     CM Mac Address  Direction  State    Priority  Matches
Reg Info Requests Tx        : 2
Reg Info TLV len            : 152
UPSTREAM SERVICE FLOW DETAIL:
Sfid                                  : 29
Mac Address                           : 0022.cea5.02ba
Type                                  : Primary
Direction                             : Upstream
Current State                         : Active
Current QoS Indexes [Prov, Adm, Act]  : [3, 4, 4]
Active Time                           : 03:45
Required Attributes                   : 0x00000000
Forbidden Attributes                  : 0x00000000
Aggregate Attributes                  : 0x00000000
Sid                                   : 10
Service Class Name                    : REG-US
Traffic Priority                      : 0
Maximum Sustained rate                : 100000 bits/sec
Maximum Burst                         : 3044 bytes
Minimum Reserved Rate                 : 0 bits/sec
Minimum Packet Size                   : 0 bytes
!Upstream Buffer Control Parameters
Minimum Buffer Size                   : 1000 bytes
Target Buffer Size                    : 1500 bytes
Maximum Buffer Size                   : 2000 bytes
Peak Rate                             : 0 bits/sec
Admitted QoS Timeout                  : 200 seconds
Active QoS Timeout                    : 0 seconds
Packets                               : 3
Bytes                                 : 1020
Rate Limit Dropped Grants             : 0
Current Throughput                    : 0 bits/sec, 0 packets/sec
Application Priority                  : 0
US Bonded                             : YES
Upstream Bonding Group                : UBG-1
Transmit Channel Set                  : 0x6
Sid Cluster                           : SC-0, Sid [ 10 10 ]
Segments Valid                        : 3
Segments Discarded                    : 0
Segments Lost                         : 0
SID Cluster Switching Information
Total Bytes Requested                 : 0
```

```
Total Time                              : 0
Outstanding Bytes                       : 0
Max Requests                            : 1
Classifiers: NONE
Sid                             : 10
Request polls issued            : 0
BWReqs {Cont,Pigg,RPoll,Other} : 4, 0, 0, 0
No grant buf BW request drops  : 0, where:0
Rate exceeded BW request drops : 0
Grants issued                   : 4
Packets received                : 4
Bytes received                  : 1488
rate-adapt                      : Disabled
rate-adapt {rcvd, Consec-PB}   : 0, 0
Fragment reassembly completed  : 0
Fragment reassembly incomplete : 0
Concatenated packets received  : 0
Queue-indicator bit statistics : 0 set, 0 granted
Good Codewords rx               : 8
Corrected Codewords rx          : 0
Uncorrectable Codewords rx     : 0
Concatenated headers received  : 0
Fragmentation headers received : 0
Fragmentation headers discarded: 0
ARP Requests Received          : 2
```

Examples

The following is a sample output of the **show cable modem service-flow ds-hardware** command on the narrow band modem on a legacy interface:

```
Router# show cable modem 50.3.112.12 service-flow ds-hardware

LC SFID:15 RP SFID: 32999
KeyIndex: 6 PHSIndex: 0
TX Pkts: 9 TX Bytes: 636
BPI -
Said: 0x1 KeySeq:0x1
Even Key: 15DC474264C81500 Even Iv: 2619043723FB046B
Odd Key: 07A89421B4458B00 Odd Iv: 1FB0253D0D1C1643
PHS -
PHSM: 0000-0000-0000-0000
Ctrl: 0x0 PHSI: 0x0 PHSS: 0x0 Count: 0x0
```

The following is a sample output of the **show cable modem service-flow ds-hardware** command on the narrow band modem with a modena remote primary channel:

```
Router# show cable modem
 50.3.112.6 service-flow ds-hardware
LC SFID:7 RP SFID: 33007 StatIndex: 13
KeyIndex: 7 PHSIndex: 0
TX Pkts: 8 TX Bytes: 592
BPI -
KeyNum: 0x7 Control: 0xC001 KeySeq: 0x1
Even Key: 10F4-6BE1-D944-B0 Even Iv: 04B3-1CCD-25DA-163E
Odd Key: 0818-8A00-9D01-1E Odd Iv: 1C58-1967-16BC-0BD0
PHS -
PHSM: 0000-0000-0000-0000
Ctrl: 0x0 PHSI: 0x0 PHSS: 0x0 Count: 0x0
```

The following is a sample output of the **show cable modem service-flow ds-hardware** command on the wideband modem on a remote modena:

```
Router# show cable modem
 50.3.112.28 service-flow ds-hardware
LC SFID:9 RP SFID: 33001 StatIndex: 7
KeyIndex: 4 PHSIndex: 0
TX Pkts: 13 TX Bytes: 962
DSID: 0x11E Priority: 0x0 SCC: 0 Seqnum: 0xD
BPI -
KeyNum: 0x4 Control: 0xC002 KeySeq: 0x1
Even Key: 01B8-5830-9246-66 Even Iv: 0BAB-1CA8-0145-1AB9
Odd Key: 0720-8C81-FD04-6F Odd Iv: 0D80-13F1-0E32-083B
PHS -
PHSM: 0000-0000-0000-0000
Ctrl: 0x0 PHSI: 0x0 PHSS: 0x0 Count: 0x0
```

The following is a sample output of the **show cable modem service-flow ds-hardware** command on the narrowband modem on an integrated interface:

```
Router# show cable modem 80.36.0.3 service-flow ds-hardware

LC SFID:50 RP SFID: 33150 StatIndex: 21
KeyIndex: 8 PHSIndex: 0
TX Pkts: 4 TX Bytes: 648
BPI (DES) -
KeyNum: 0x3 Said: 0x16 KeySeq:0x1
Even Key: 0A3C-5BC0-C9C0-9F Even Iv: 0204-25F7-07A1-026E
Odd Key: 0448-0392-26C4-55 Odd Iv: 087F-0B13-237A-1F89
PHS -
PHSM: 0000-0000-0000-0000
Ctrl: 0x0 PHSI: 0x0 PHSS: 0x0 Count: 0x0
```

The following is a sample output of the **show cable modem service-flow ds-hardware** command on the wideband modem on a bonded local interface:

```
Router# show cable modem 80.36.0.122 service-flow ds-hardware

LC SFID:46 RP SFID: 33148 StatIndex: 19
KeyIndex: 7 PHSIndex: 0
TX Pkts: 200 TX Bytes: 23600
DSID: 0x152 Priority: 0x0 Seqnum: 0xC8
Enabled: 0x1 DPV Enabled: 0x0 SeqNum Change Cnt: 0x0
BPI (DES) -
KeyNum: 0x3 Said: 0x14 KeySeq:0x1
Even Key: 08E0-8C51-8AC2-A5 Even Iv: 0EA2-1FA8-1C32-2685
Odd Key: 12F4-3980-C984-53 Odd Iv: 0DA1-0BA2-0E4F-0864
PHS -
PHSM: 0000-0000-0000-0000
Ctrl: 0x0 PHSI: 0x0 PHSS: 0x0 Count: 0x0
```

Table below describes the significant fields shown in the output.

Table 47: show cable mode service-flow Field Descriptions

Field	Description
MAC Address	Hardware (MAC-layer) address of the cable modem or CPE device.
IP Address	IP address of the cable modem or CPE device.
Host Interface	Host interface name.

Field	Description
MAC State	Current state of the MAC layer.
Prim Sid	Primary SID assigned to this CM.
Num CPE	Number of CPE devices for which the CM is providing services.
Primary Downstream	Primary downstream channel assigned to the CM.
DS RfId	Downstream RF identifier.
SFID	Service flow identifier.
SID	Service ID (SID) of the device.
Requests	Number of requests.
Polls	Number of polls.
Grants	Number of grants.
Delayed Grants	Number of delayed grants.
Dropped Grants	Number of dropped grants.
Packets	Number of packets.
RP_SFID	Route processor SFID.
QID	Link queue identification number.
Flg	Indicates whether the queue is low latency or CIR.
Policer Xmits	Packets transmitted out of the policer.
Drops	Packets dropped by the policer.
Scheduler Xmits	Packets transmitted out of the scheduler.
Drops	Packets dropped by the scheduler.
FrwdIF	Forwarding interface.
LC SFID	Line card SFID.
KeyIndex	Per flow index to BPI data.
PHSIndex	Per flow index to PHS data.
TX Pkts	Number of packets the router has transmitted on this service flow.
TX Bytes	Number of bytes the router has transmitted on this service flow.
BPI	Indicates whether or not Baseline Privacy Interface (BPI) encryption is enabled for the CM.

Field	Description
Said	Security association identifier.
KeySeq	Downstream traffic key sequence number.
Even Key	Even traffic encryption key (TEK) value.
Even Iv	Value of the even Initialization Vector (IV).
Odd Key	Odd TEK key value.
Odd Iv	Odd IV value.
PHS	Payload header suppression.
PHSM	PHS Mask. 5-bit PHS mask that defines the header bytes that should be suppressed.
Ctrl	Control block.
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.
Count	PHS rule usage count.

Examples for Cisco cBR-8 Converged Broadband Router

This example shows the output of the **show cable modem service-flow** command.

```
Router#show cable modem 0010.18de.8134 service-flow

SUMMARY:
MAC Address    IP Address      Host          MAC           Prim  Num Primary        DS
                               Interface     State         Sid   CPE Downstream     RfId
0010.18de.8134 80.17.150.66    C9/0/4/UB     w-online      2     1   In1/0/0:0      29696


Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
9     US  act   2     BE     7    0           3044        0           0
10    DS  act   N/A   N/A    7    0           3044        0           0


UPSTREAM SERVICE FLOW DETAIL:
SFID  SID   Requests   Polls      Grants     Packets
9     2     361        0          377        209


DOWNSTREAM SERVICE FLOW DETAIL:

SFID  Flg Policer               Scheduler             FrwdIF
          Xmits      Drops      Xmits      Drops
10        0          0          164        0          Wi9/0/4:1

Flags Legend:
```

```
$: Low Latency Queue (aggregated)
~: CIR Queue


Router#
```

This example shows the output of the **upstream** keyword.

```
Router#show cable modem 0010.18de.8134 service-flow upstream


UPSTREAM SERVICE FLOW DETAIL:
SFID  SID   Requests   Polls      Grants     Packets
9     2     359        0          375        207
```

This example shows the output of the **ds-hardware** keyword.

```
Router#show cable modem 0010.18de.8134 service-flow upstream ds-hardware
No DS BPI Index allocated.

SFID: 10  DS HW Flow Index: 2625 DSID: 917520
Valid        : TRUE
DSID         :       131088 [   0x20010]
Priority     :            0
Bonding Group:           29 [      0x1d]
Channel      :        65535 [    0xffff]
DS-EH        :            3 [       0x3]
Profile 1    :            0 [         0]
Profile 2    :            0 [         0]
No Sniff Enabled.


Jib4DS DSID entry for DSID 131088 [Bufsz 8000]:
SCC Bit         = 0x0
Sequence Number = 162
```

This example shows the output of the **verbose** keyword.

```
Router#show cable modem 0010.18de.8134 service-flow upstream verbose

SUMMARY:

MAC Address    IP Address      Host          MAC           Prim  Num Primary        DS
                               Interface     State         Sid   CPE Downstream     RfId
0010.18de.8134 80.17.150.66    C9/0/4/UB     w-online      2     1   In1/0/0:0      29696


Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst     MinRsvRate  Throughput
          State       Type
9     US  act   2     BE     7    0           3044        0           0
10    DS  act   N/A   N/A    7    0           3044        0           0


CfrId  SFID     CM Mac Address  Direction  State    Priority  Matches
```

```
UPSTREAM SERVICE FLOW DETAIL:
Sfid                                    : 9
Hfid                                    : 17
Mac Address                             : 0010.18de.8134
Type                                    : Primary
Direction                               : Upstream
Current State                           : Active
Current QoS Indexes [Prov, Adm, Act]    : [4, 4, 4]
Active Time                             : 11h42m
Required Attributes                     : 0x00000000
Forbidden Attributes                    : 0x00000000
Aggregate Attributes                    : 0x00000000
Sid                                     : 2
Service Class Name                      :
Traffic Priority                        : 7
Maximum Sustained rate                  : 0 bits/sec
Maximum Burst                           : 3044 bytes
Minimum Reserved Rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Minimum Buffer Size                     : 0 bytes
Target Buffer Size                      : 0 bytes
Maximum Buffer Size                     : 0 bytes
Peak Rate                               : 0 bits/sec
Admitted QoS Timeout                    : 200 seconds
Active QoS Timeout                      : 0 seconds
Packets                                 : 211
Bytes                                   : 13670
Rate Limit Dropped Grants               : 0
Current Throughput                      : 0 bits/sec, 0 packets/sec
Application Priority                    : 0
US Bonded                               : YES
Upstream Bonding Group                  : UBG-1
Transmit Channel Set                    : 0x7
Sid Cluster                             : SC-0, Sid [ 2 2 2 ]
Upstream PCH                            : 36    37      38
Segments Valid                          : 211
Segments Discarded                      : 0
Segments Lost                           : 0
BPI US Index                            : N/A
SID Cluster Switching Information
Total Bytes Requested                   : 0
Total Time                              : 0
Outstanding Bytes                       : 0
Max Requests                            : 1
Classifiers: NONE
Sid                             : 2
Request polls issued            : 0
BWReqs {Cont,Pigg,RPoll,Other} : 363, 0, 0, 0
Grants issued                   : 379
Packets received                : 211
Bytes received                  : 30751
Queue-indicator bit statistics : 0 set, 0 granted
Good Codewords rx               : 2579
Corrected Codewords rx          : 0
Uncorrectable Codewords rx      : 0
Concatenated headers received   : 0
Fragmentation headers received : 0
Fragmentation headers discarded: 0
ARP Requests Received           : 60

DOWNSTREAM SERVICE FLOW DETAIL:
Sfid                                    : 10
Mac Address                             : 0010.18de.8134
Type                                    : Primary
```

```
Direction                               : Downstream
Current State                           : Active
Current QoS Indexes [Prov, Adm, Act]    : [5, 5, 5]
Active Time                             : 11h42m
Required Attributes                     : 0x00000000
Forbidden Attributes                    : 0x00000000
Aggregate Attributes                    : 0x00000000
Sid                                     : N/A
Service Class Name                      :
Traffic Priority                        : 7
Maximum Sustained rate                  : 0 bits/sec
Maximum Burst                           : 3044 bytes
Minimum Reserved Rate                   : 0 bits/sec
Minimum Packet Size                     : 0 bytes
Maximum Latency                         : 0 usecs
Minimum Buffer Size                     : 0 bytes
Target Buffer Size                      : 0 bytes
Maximum Buffer Size                     : 0 bytes
Peak Rate                               : 0 bits/sec
Admitted QoS Timeout                    : 200 seconds
Active QoS Timeout                      : 0 seconds
Packets                                 : 166
Bytes                                   : 12284
Rate Limit Dropped Packets              : 0
Current Throughput                      : 0 bits/sec, 0 packets/sec
Application Priority                    : 0
Low Latency App                         : No
DS HW Flow Index                        : 2625
DS Bonded                               : YES
DSID                                    : 917520
Forwarding BG ID                        : 29698
Forwarding Interface                    : Wi9/0/4:1
Classifiers: NONE
DS HW Header Len = 16
DS HW Header = 00 00 00 09 10 29 04 00 00 00 00 00 00 00 00 00

app_type=7, source=0
app_priority=0, sched_type=0

QOS Forwarding Client Data:

Docsis SFID: 10  CM SF Reference: 1  NumCFRs: 0:
Primary: TRUE  LowLatency: FALSE  Dynamic: FALSE
Priority: 7  MinRate: 0 bps  MaxRate: 0 bps
WfqWeight: 32
QueueSize: 575 packets
Burst: 3044 bytes  PeakRate: 0 bps
BurstThresh: 1000000 bytes, Ds-max-burst: FALSE
ForwardingInterface: Wideband-Cable9/0/4:1
FlowHeader: 0x 00-00-00-09-10-29-04-00-00-00-00-00-00-00-00-00

Police Xmits         : 0
Police Xmits drops   : 0
Scheduler Xmitsi     : 166
Scheduler Xmits drops: 0


Reg Info Requests Rx        : 9
Reg Info TLV len            : 163
Router#
```

This example shows the output of the **show cable modem service-flow** on **Cisco IOS XE Cupertino 17.9.1x** or later for a Low Latency DOCSIS capable CM using both a DS and US ASF..

```
Router# show cable modem 206a.9454.30a4 service-flow

SUMMARY:
MAC Address    IP Address      Host      MAC          Prim  Num  Primary    DS
                               Interface State        Sid   CPE  Downstream RfId
206a.9454.30a4 10.5.8.9        C1/0/0/UB w-online(pt)  17    0   Inl/0/0:0  8192

Sfid  Dir Curr  Sid   Sched  Prio MaxSusRate  MaxBrst   MinRsvRate  Throughput
          State       Type
28    US  act   17    BE     1    100000000   1800000   0           0
45    US  act   30    BE     6    0           6800000   800000      0
46    US  pro   0     RSVD   0    0           0         0           0
29    DS  act   N/A   N/A    4    0           3211      0           0
47    DS  act   N/A   N/A    0    400000000   3044      0           0
48    DS  act   N/A   N/A    0    350000000   3044      0           0
49    DS  pro   N/A   ASF    0    0           3044      0           0
```

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem calls	Displays displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem counters	Displays downstream and upstream traffic counters for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem domain-name	Updates the cable-specific DNS cache and display the domain name for specified CMs and CPE behind a CM on a Cisco CMTS router.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more CMs.
show cable modem ipv6	Displays IPv6 information for specified CMs and CPE behind a CM on a Cisco CMTS router.
show cable modem mac	Displays MAC layer information for one or more CMs.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more CMs.

Command	Description
show cable modem offline	Displays a list of the CMs that are marked as offline with the Cisco CMTS.
show cable modem phy	Displays the DOCSIS PHY layer information for one or more CMs.
show cable modem qos	Displays quality of service (QoS) and service flow information for a particular CM.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem remote-query	Displays information collected by the remote-query feature.

show cable modem sysDescr

To display the system description of a particular cable modem (CM) on the Cisco CMTS router, use the **show cable modem sysDescr** command in privileged EXEC mode.

show cable modem {*ip-addressipv6-addressmac-address*} **sysDescr** [**community** *community-name*]

Syntax Description

ip-address	IPv4 address of the cable modem to be displayed.
ipv6-address	IPv6 address of the cable modem to be displayed.
mac-address	MAC address of the cable modem to be displayed.
sysDescr	Displays cable modem system description.
community *community-name*	(Optional) Specifies the cable modem community name provided in the cable modem configuration file. The *community-name* should match the cable modem's community name in cable modem configuration file.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCG2	This command was introduced.
12.2(33)SCH 12.2(33)SCG5	This command is supported for IPv6 cable modems.
12.2(33)SCH	This command was modified. The variable *ipv6-address* was added for IPv6 support.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.

Usage Guidelines

You must enable the Simple Network Management Protocol (SNMP) manager process using the **snmp-server manager** command in global configuration mode before using the **show cable modem sysDescr** command. The **show cable modem sysDescr** command displays result for IPv4 cable modems only.

Note Effective with Cisco IOS Release 12.2(33)SCH and 12.2(33)SCG5, the **show cable modem sysDescr** command displays results for IPv6 cable modems.

In Cisco IOS Release 12.2(33)SCG1 and earlier, you cannot view the system description of a single cable modem. Instead, you can view system descriptions of all the cable modems connected to the Ciso CMTS router. To view the system descriptions of all cable modems, enable the **remote-query** functionality on the Cisco CMTS router using the **cable modem remote-query** command in global configuration mode. Then, run the **show cable modem verbose | include sysDescr** command.

Note The **remote-query** functionality might impact system performance because it queries all the cable modems connected to the Cisco CMTS router.

A community name string is configured in the CMTS for the cable modems using the **snmp-server community***community-string* command or by enabling the cable modem remote-query feature using the **cable modem remote-query** *community-string* command.

The CMTS uses the default community name *public* if you do not specify the **community** option when you use the **show cable modem sysDescr** command.

Note Ensure that the *community-name* specified in the **show cable modem sysDescr** command matches the community name configured in the cable modem's configuration file. Also ensure that *public* is configured as a community name in the cable modem configuration file in case you do not specify the **community** string in this **show** command.

If the community name specified in this **show** command does not match the community names configured in the cable modem's configuration file , then the **show cable modem sysDescr** command output does not provide any system description and the output is as follows:

```
Router#show cable modem 602a.d001.faa0 sysdescr
Querying remote CM...
Timeout
```

Examples

The following is a sample output of the **show cable modem sysDescr** command that displays system description of the specified cable modem:

```
Router# show cable modem 001c.ea37.9b52 sysDescr
Querying remote CM...
Response received
00:26:53 edt Fri Jan 4 2013
Last Poll
        Started:00:26:53 edt Fri Jan 4 2013
        Ended:  00:26:53 edt Fri Jan 4 2013
    I/F     IP Address       MAC Address     sysDescr
----------  ---------------  --------------  ---------
Cable7/1/2  40.101.0.7      001c.ea37.9b52  S-A DOCSIS CABLE MODEM <<HW_REV: 1.0;VENDOR:S-A;
 BOOTR: 2.1.7c; SW_REV: v202r1061-061016;              MODEL: DPC2505>>
```

Table 48: show cable modem sysDescr Field Descriptions

Field	Description
I/F	Cable interface.
IP Address	IPv4 or IPv6 address of the CM.
MAC Address	MAC address of the CM.
sysDescr	Cable modem system description.

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

```
Router# show cable modem 1859.334d.fa14 sysdescr
Querying remote CM...
Response received
21:17:10 PDT Sat Dec 31 2011

Last Poll
        Started:21:17:09 PDT Sat Dec 31 2011
        Ended:  21:17:10 PDT Sat Dec 31 2011
    I/F         IP Address       MAC Address     sysDescr
--------------  ---------------  --------------  ---------
Cable3/0/1      10.10.1.221      1859.334d.fa14  Cisco DPC3010 DOCSIS 3.0 Cable Modem
<<HW_REV: 1.0;
 VENDOR: Cisco; BOOTR: 2.3.0_R1; SW_REV: d3000-v302r125573-130625a; MODEL: DPC3010>>
      MODEL: DPC2505>>
```

Related Commands

Command	Description
cable modem remote-query	Enables the remote query functionality on the Cisco CMTS router to gather cable modem performance statistics.
snmp-server manager	Enables the SNMP manager process.

show cable modem subscriber

On the Cisco cBR Series Converged Broadband Router, to view the subscriber information, use the **show cable modem subscriber** command.

show cable modem subscriber

Syntax Description

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

The **show cable modem subscriber** command is introduced to provide the subscriber information for the Cisco cBR router

Example for Cisco cBR Router

This example shows the output of the **show cable modem subscriber** command on the Cisco cBR router:

```
Router#show cable modem subscriber

MAC Address                       : 0025.2e2d.75be
IP Address                        : 100.1.2.4
IPv6 Address                      : 2001:420:3800:909:4C0E:7623:3EDE:DDB1
Routing Table                     :
Dual IP                           : Y
Prim Sid                          : 1
Host Interface                    : C3/0/0
Modem Vendor                      : 00.25.2E
sysDescr                          :
MAC Version                       : DOC3.0
Modem Status                      :  online
Modem ACL                         : N/A
Modem Device Class                : CM
Spoof Attempts                    : 0
Clone Attempts                    : 0
Number of CPEs                    : 0(Max = 16)
Number of CPE IPv4 Addresses      : 0(Max = 16)
Number of CPE IPv6 Addresses      : 0(0 LLA, 0 GUA, 0 PREFIX, Max = 16)
Source Address Verification       :
 Group Name                       :
 Packet Drops                     : 0
Submgmt Learnable                 : TRUE
Total Time Online                 : 1h44m   (1h44m    since last counter reset)

MAC Address                       : 0025.2eaf.7f38
IP Address                        : 100.1.2.7
IPv6 Address                      : 2001:420:3800:909:2541:C9AD:9CB3:6B6D
```

```
Routing Table                     :
Dual IP                           : Y
Prim Sid                          : 2
Host Interface                    : C3/0/0
Modem Vendor                      : 00.25.2E
sysDescr                          :
MAC Version                       : DOC3.0
Modem Status                      :  online
Modem ACL                         : N/A
Modem Device Class                : CM
Spoof Attempts                    : 0
Clone Attempts                    : 0
Number of CPEs                    : 1(Max = 16)
Number of CPE IPv4 Addresses      : 1(Max = 16)
Number of CPE IPv6 Addresses      : 1(0 LLA, 0 GUA, 1 PREFIX, Max = 16)
Source Address Verification       :
 Group Name                       :
 Packet Drops                     : 0
Submgmt Learnable                 : TRUE
Total Time Online                 : 1d1h18m (1d1h18m  since last counter reset)

MAC Address                       : 0025.2eaf.82f4
IP Address                        : 100.1.2.9
IPv6 Address                      : 2001:420:3800:909:D0C9:4EC6:1765:99C2
Routing Table                     :
Dual IP                           : Y
Prim Sid                          : 3
Host Interface                    : C3/0/0
Modem Vendor                      : 00.25.2E
sysDescr                          :
MAC Version                       : DOC3.0
Modem Status                      :  online
Modem ACL                         : N/A
Modem Device Class                : CM
Spoof Attempts                    : 0
Clone Attempts                    : 0
Number of CPEs                    : 0(Max = 16)
Number of CPE IPv4 Addresses      : 0(Max = 16)
Number of CPE IPv6 Addresses      : 0(0 LLA, 0 GUA, 0 PREFIX, Max = 16)
Source Address Verification       :
 Group Name                       :
 Packet Drops                     : 0
Submgmt Learnable                 : TRUE
Total Time Online                 : 1d1h17m (1d1h17m  since last counter reset)
```

show cable modem summary

To display a summary of CMs on one or more cable interfaces, use the **show cable modem summary** command in privileged EXEC mode.

show cable modem summary [**total**]
show cable modem summary *interface1* [*interface2*] **total**
show cable modem summary *interface1* [*interface2*] **upstream** *port1 port2* **total**
show cable modem cable {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] **summary**
show cable modem cable {*slot*/*subslot*/*port* | *slot*/*subslot*/*cable-interface-index*} [**upstream** *port* [*logical-channel-index*]] **summary**

Cisco cBR-8 Converged Broadband Router
show cable modem summary *interface1* [*interface2*] **total**

Syntax Description

total	(Optional) Displays a footer line showing the totals for each column.

interface1	(Optional) Cable interface to be summarized. The *interface1* parameter can take the following forms: • **cable** {*slot /port* | *slot /cable-interface-index* } • **cable** {*slot/ subslot /port* | *slot/subslot /cable-interface-index* } where, • *slot* —Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9. • *subslot* — • (Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. • Cisco cBR-8 router—The valid subslot is 0. • *port* —Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—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-MC20X20, Cisco uBR-MC3GX60V and Cisco cBR-8 line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
interface2	(Optional) Second cable interface, specifying a range of cable interfaces to be summarized. The *interface2* parameter has the same form as *interface1* . **Note** When specifying a range of cable interfaces, *interface1* must be the lower-numbered interface and *interface2* must be the higher-numbered interface.
upstream*port1 port2*	(Optional) Specifies a range of upstream ports on the cable interfaces to be summarized. The *port1* and *port2* parameters can start at 0, and *port2* must be a higher-numbered port than *port1* .

upstream*upstream-channel-ID 1 upstream-channel-ID 2*	(Optional) For Cisco cBR-8 router—Specifies a range of upstream channel IDs on the cable interfaces to be summarized. The *upstream-channel-ID 1* and *upstream-channel-ID 2* parameters can start at 0, and *upstream-channel-ID 2* must be a higher-numbered port than *upstream-channel-ID 1* . The valid range is from 0 to 15.
upstream *port*	(Optional) Specifies a specific upstream port to be summarized. This option can be specified only when summarizing a single cable interface. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
summary	Displays a summary of CMs on one or more cable interfaces.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3XA	This command was introduced.
12.1(4)CX and 12.2(4)BC1	Support was added for the Cisco uBR10012 router.
12.1(6)EC	The **total** option was supported for the Cisco uBR7100 series and Cisco uBR7200 series routers.
12.1(11b)EC	The upstream Description field was added to the **show cable modem summary** display in Cisco IOS Release 12.1 EC.
12.2(8)BC1	The **total** option was supported for the Cisco uBR10012 universal broadband router.
12.2(15)BC2	The upstream Description field was added to the **show cable modem summary** display in Cisco IOS Release 12.2 BC.
12.3(21)BC	Support was added for wideband cable modem output.
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)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The *upstream-channel-id* variable was added. The *logical-channel-index* is removed.

Usage Guidelines

This command displays a summary of CMs for a single cable interface or upstream, or for a range of cable interfaces or upstreams. The following possible combinations are possible for this command:

- **show cable modem summary total**—Displays a summary and a total for all CMs on the chassis.
- **show cable modem summary** *cable x/0* **total**—Displays a summary of CMs on a specified card.
- **show cable modem summary** *cable x/0* **upstream** *port1 port2* **total**—Displays a summary of CMs on the specified card and specified range of ports. The *port1* value must be less than the *port2* value.
- **show cable modem summary** *cable x/0 cable y/0* **total**—Displays a summary of CMs on the specified range of cards.
- **show cable modem summary** *cable x/0 cable y/0* **upstream** *port1 port2* **total**—Displays a summary of CMs on the specified range of ports on the specified range of cards.

Note Also see the information about this command's behavior in a Hot Standby Connection-to-Connection Protocol (HCCP) configuration, see the "Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration" in the Cisco IOS CMTS Cable Command Reference.

Examples

The following example shows typical output for the default form of the **show cable modem summary** command on a Cisco uBR7200 series router:

```
Router# show cable modem summary

Interface     Total      Active      Registered   Description
              Modems     Modems      Modems
Cable3/0/U0   165         141         141         Line 32/1
Cable3/0/U1   209         172         170         Line 32/2
Cable3/0/U2   262         207         203         Line 32/3
Cable3/0/U3   256         194         188         Line 32/4
Cable5/0/U0   746         714         711         Line 41/1
Cable6/0/U0   806         764         759         Line 42/2
Router#
```

Note The Description field appears in Cisco IOS Release 12.1(11b)EC, 12.2(15)BC2, and later releases, and shows the string configured for the upstream using the **cable upstream description** command.

The following example shows typical output for the **show cable modem summary** command with the **total** option on a Cisco uBR7200 series router:

```
Router# show cable modem summary total

Interface     Total      Active      Registered   Description
              Modems     Modems      Modems
Cable5/0/U0     746         714         711         Node1
Cable6/0/U1     806         764         759         Node3
Total:         1552        1478        1470
Router#
```

The following example shows sample output for the **show cable modem summary** command with the **total** option for a Cisco uBR10012 router:

```
Router# show cable modem summary total
```

```
Interface                       Cable Modem                    Description
            Total Reg   Unreg Offline Wideband initRC initD initIO initO
C5/0/0/U0   84    84    0     0       84       0      0     0      0
C5/0/0/U1   84    84    0     0       84       0      0     0      0
C5/0/0/U2   83    83    0     0       83       0      0     0      0
C5/0/0/U3   83    83    0     0       83       0      0     0      0
<<output omitted>>
Total:      8020  8020  0     0       8016     0      0     0      0
Router#
```

The following example shows sample output for the **show cable modem summary total** command for a range of interfaces on the Cisco uBR10012 router:

```
Router# show cable modem summary c5/1/1 c5/1/2 total
Interface                       Cable Modem                    Description
            Total Reg   Unreg Offline Wideband initRC initD initIO initO
C5/1/1/U0   84    84    0     0       84       0      0     0      0
C5/1/1/U1   84    84    0     0       83       0      0     0      0
C5/1/1/U2   83    83    0     0       83       0      0     0      0
C5/1/1/U3   83    83    0     0       83       0      0     0      0
C5/1/2/U0   84    84    0     0       84       0      0     0      0
C5/1/2/U1   84    84    0     0       84       0      0     0      0
C5/1/2/U2   83    83    0     0       83       0      0     0      0
C5/1/2/U3   83    83    0     0       83       0      0     0      0
Total:      668   668   0     0       667      0      0     0      0
Router#
```

The following example shows sample output for the **show cable modem summary total** command for a range of interfaces and upstreams on the Cisco uBR10012 router:

```
Router# show cable modem summary c5/1/1 c5/1/2 upstream 0 1 total
Interface                       Cable Modem                    Description
            Total Reg   Unreg Offline Wideband initRC initD initIO initO
C5/1/1/U0   84    84    0     0       84       0      0     0      0
C5/1/1/U1   84    84    0     0       83       0      0     0      0
C5/1/2/U0   84    84    0     0       84       0      0     0      0
C5/1/2/U1   84    84    0     0       84       0      0     0      0
Total:      336   336   0     0       335      0      0     0      0
Router#
```

Note When displaying a summary for a range of ports or cable interfaces, the first port or cable interface (for example, u0 or c4/0) must be lower-numbered than the second port or interface (for example, u6 or c6/0). If you specify the higher-numbered port or interface first, the display shows no CMs connected.

Table below describes the fields shown in the **show cable modem summary** displays:

Table 49: Descriptions for the show cable modem summary Fields

Field	Description
Interface	The cable interface line card providing the upstream for the CMs.
Total Modems or Total	Total number of CMs, registered, unregistered, and offline for this interface.

Field	Description
Registered Modems or Reg	Total number of CMs that have registered and are online on this interface. This number might be different from the Total Modems number if some modems are offline or not fully registered.
Unregistered Modems	Total number of CMs that are either offline and not currently communicating with the CMTS, or attempting to come online but are not yet registered.
Offline	Total number of CMs that were online or attempted to register but are no longer communicating with the CMTS.
Wideband	CM is registered as a wideband CM.
init(rc)	MAC state of CM is init(rc).
init(d)	MAC state of CM is init(d).
init(io)	MAC state of CM is init(io).
init(o)	MAC state of CM is init(o).
Description	Description entered for this upstream using the cable upstream description command.

Note For information on MAC states, see the show cable modem command.

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 modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem calls	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem counters	Displays downstream and upstream traffic counters for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.

Command	Description
show cable modem offline	Displays a list of the CMs that are marked as offline with the Cisco CMTS.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modem unregistered	Displays a list of the CMs that are marked as unregistered with the Cisco CMTS.
show cable modem vendor	Displays the vendor name or Organizational Unique Identifier (OUI) for the CMs on each cable interface.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.
show cable modem wideband	Displays information for a wideband CMs.

show cable modem summary scn

To display the summary of cable modem interfaces by a service class name, use the **show cable modem summary scn** command in privileged EXEC mode. Maximum of four service class names are listed.

show cable modem summary scn {*service class name list*}

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCJ1	This command was introduced in Cisco uBR Series router.
3.18.1SP	This command was introduced in Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable modem summary scn** command:

```
Router# show cable modem summary scn ds1 ds2 us1 us2
Interface ds1 ds2 us1 us2
C7/0/0/UB 8   8   8   8
C7/0/0/U2 1   1   1   1
```

Related Commands

Command	Description
show cable modem summary	Displays a summary of CMs on one or more cable interfaces.

show cable modem summary wb-rf

To display the number of RF channels that are down on a cable interface, use the **show cable modem summary wb-rf** command in privileged EXEC mode.

show cable modem [**cable** *slot /subslot /port*] **summary wb-rf** [**modular-cable** *slot /bay/port* **:***nb-channel-number*]

Cisco cBR-8 Converged Broadband Router
show cable modem [**cable** *slot /subslot /port*]**summary wb-rfs** *slot /subslot/portWB-RF-channel-number*

Syntax Description

cable *slot /subslot /port*	(Optional) Specifies the cable interface. The following are the valid values: • *slot* —Specifies the chassis slot number of the cable interface line card. Valid values are 5to 8. • *subslot* —Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • *port* —Specifies the port number. Valid values are 0 to 4 (depending on the cable interface). This option is not supported on the Cisco cBR-8 router.
slot /subslot /port	(Optional) Specifies the cable interface on the Cisco cBR-8 router. The following are the valid values: • *slot* —Specifies the chassis slot number of the cable interface line card. Valid values are 0 to 3 and 6 to 9. • *subslot* —Specifies the secondary slot number of the cable interface line card. Valid subslot is 0. • *port* —Specifies the port number. Valid values are 0 to 7.
WB-RF-channel-number	(Optional) Specifies the cable interface on the Cisco cBR-8 router. The valid values 0 to 163.
modular-cable *slot/bay/port:nb-channel-number*	(Optional) Specifies the modular cable interface. The following are the valid values: • *slot* —The slot where a SIP resides. On the Cisco uBR10012 router, 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 interface number on the SPA. • *nb-channel-number* —Specifies the narrowband channel number. This option is not supported on the Cisco cBR-8 router.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **modular-cable** keyword and the *port* variable were removed.

Examples

The following is a sample output of the **show cable modem summary wb-rf** command on the cable interface at slot/subslot/port 8/0/0:

```
Router# show cable modem cable 8/0/0 summary wb-rfs
Total     Total    Percent
RF        w-online  RF down  RF down
--------  --------  -------  -------
1/0/0 0   4         0        0
      1   6         0        0
      2   7         0        0
```

The following is a sample output of the **show cable modem summary wb-rf** command on the modular cable interface at slot/bay/port and narrowband channel 1/0/0 18:

```
Router# show cable modem c8/0/0 summary wb-rfs modular-cable 1/0/0 18
Total     Total    Percent
RF        w-online  RF down  RF down
--------  --------  -------  -------
1/0/0 18  0         0        0
```

Example for Cisco cBR-8 Converged Broadband Router

This example shows the output of the **show cable modem summary wb-rf** command:

```
Router#show cable modem summary wb-rfs

          Total     Total    Percent
RF         w-online  RF down  RF down
--------  --------  -------  -------
1/0/1 0   7         0        0
      1   6         0        0
      2   7         0        0
      3   1         0        0
      32  1         0        0
      33  1         0        0
      35  1         0        0
1/0/4 1   2         0        0
      2   2         0        0
      3   2         0        0
      4   1         0        0
      5   1         0        0
      6   1         0        0
      7   1         0        0
      158 1         0        0

Router#
```

```
Router#show cable modem c1/0/1 summary wb-rfs

          Total     Total    Percent
RF        w-online  RF down  RF down
--------  --------  -------  -------
1/0/1 0   6         0        0
      1   6         0        0
      2   7         0        0
      3   2         1        50
      32  1         0        0
      33  1         0        0
      35  1         0        0
```

```
Router#show cable modem c1/0/1 summary wb-rfs 1/0/1 0

          Total     Total    Percent
RF        w-online  RF down  RF down
--------  --------  -------  -------
1/0/1 0   6         0        0
```

Related Commands

Command	Description
show cable modem summary	Displays a summary of CMs on one or more cable interfaces.

show cable modem tcs summary

To display transmit channel set (TCS) information on the Cisco CMTS router, use the **show cable modem tcs summary** command in privileged EXEC mode.

show cable modem tcs summary

Syntax Description

There are no keywords or arguments.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCG	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router.

Examples

This example is the output of the **show cable modem tcs summary** command:

```
Router# show cable modem tcs summary

Interface                              Cable Modem
                                Total Reg   Oper  Unreg Offline Wideband TCS   USCB
C7/0/0/U0-3                     8     8     8     0     0       8         3840  1,2
C7/0/0/U0                       3     3     3     0     0       2
C7/0/0/U1                       2     2     2     0     0       2
C7/0/0/U3                       5     5     5     0     0       0
C7/1/0/U3                       1     1     1     0     0       0
C7/1/1/U0                       1     0     0     1     1       0
C8/0/0/U0-1,2.0,3              3     3     3     0     0       3         3840  1,2,3,4,5,6,7,8
Total:                          23    22    22    1     1       15
```

Note In the above example, the interface value indicates the upstream channels of the TCS. The interface is displayed as *U0-1 3 5-7* when the TCS is U0, U1, U3, U5, U6, U7 and if it is a logical channel, the interface is displayed as *U0.0,1.0,3.0* .

Table below describes the significant fields shown in the display:

Table 50: show cable modem tcs summary Field Descriptions

Field	Description
Interface	Cable interface line card providing the upstream for the CMs.
Total Modems or Total	Total number of CMs, registered, unregistered, and offline for this interface.

Field	Description
Registered Modems or Reg	Total number of CMs that have registered and are online on this interface. This number might be different from the Total Modems number if some modems are offline or not fully registered.
Oper	Total number of CMs that are operational.
Unregistered Modems or Unreg	Total number of CMs that are either offline and not currently communicating with the Cisco CMTS, or attempting to come online but are not yet registered.
Offline	Total number of CMs that were online or attempted to register but are no longer communicating with the Cisco CMTS.
Wideband	CM is registered as a wideband CM.
TCS	TCS ID.
USCB	Upstream bonding group ID.

This example is the output of the **show cable modem tcs summary** command for the Cisco cBR Series Converged Broadband Router router:

```
Router#show cable modem tcs summary
Interface                                  Cable Modem
                                  Total Reg   Oper  Unreg Offline Wideband TCS
USCB
Ca3/0/1/U0                        8     1     1     7     1       0        1
Ca3/0/1/U1                        8     0     0     8     1       0        2
Ca3/0/1/U2                        48    0     0     48    2       0        3
Ca3/0/1/U4                        57    26    26    31    12      0        5
Ca3/0/1/U5                        14    0     0     14    1       0        6
Ca3/0/1/U6                        9     0     0     9     0       0        7
Ca3/0/2/U0                        28    4     4     24    10      0        1
Ca3/0/2/U1                        50    50    50    0     0       0        2
Ca3/0/2/U5                        72    72    72    0     0       0        6
Ca3/0/3/U1                        94    94    94    0     0       0        2
Ca3/0/3/U2                        59    59    59    0     0       0        3
Ca3/0/4/U0                        29    0     0     29    6       0        1
Ca3/0/4/U1                        20    2     2     18    7       0        2
Ca3/0/4/U2                        14    0     0     14    4       0        3
Ca3/0/4/U4                        57    10    10    47    39      0        5
Ca3/0/4/U5                        17    1     1     16    13      0        6
Ca3/0/4/U6                        6     6     6     0     0       0        7
Ca3/0/5/U0                        3     3     3     0     0       0        1
Ca3/0/5/U1                        74    74    74    0     0       0        2
Ca3/0/5/U2                        3     3     3     0     0       0        3
Ca3/0/5/U5                        77    77    77    0     0       0        6
Ca3/0/6/U4                        4     4     4     0     0       0        5
Ca3/0/6/U5                        1     0     0     1     1       0        6
Ca3/0/6/U6                        2     1     1     1     0       0        7
Ca3/0/6/U4                        4     4     4     0     0       4        4096
65540
Ca3/0/6/U5                        1     1     0     0     0       1        8192
65541
Ca3/0/6/U6                        3     3     3     0     0       3        16384
65542
Ca3/0/7/U0                        2     0     0     2     2       0        1
```

```
Ca3/0/7/U1                          1     0     0     1     0     0     2
Ca3/0/7/U2                          29    0     0     29    23    0     3
Ca3/0/7/U4                          43    0     0     43    40    0     5
Ca3/0/7/U5                          27    0     0     27    25    0     6
Ca3/0/7/U6                          24    0     0     24    20    0     7

Total:                              888   495   494   393   207   8

Router#
```

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs on the Cisco CMTS router.
show interface cable modem	Displays information about the CMs connected to a particular cable interface on the Cisco CMTS router.
show cable modem wideband	Displays information for a wideband CM on the Cisco CMTS router.

show cable modem tftp

To display a single CM's configuration file related information by MAC/IPv4 address /IPv6 address, use the **show cable modem tftp** command in privileged EXEC configuration mode.

show cable modem *[cm-mac|cm-ip|cm-ipv6]* **tftp**

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS XE Gibraltar 16.12.1	This command was introduced in Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable modem tftp** command, it displays a CM's configuration file related information by IPv6 address.

```
Router# show cable modem 34bd.fa0f.4418 tftp
Host Interface : C1/0/0
MAC Address : 34bd.fa0f.4418
IP Address : 50.13.0.4
IPv6 Address : 2001:50:13:0:74E3:4197:E2F2:8162
Modem Status : w-online(pt)
TFTP Server Address : 2001:1:38::25:3
Modem Configuration File Name : cbr8/cm.bin
Timestamp : 02:16:02 CST Tue May 21 2019
```

If no MAC/IPv4 address /IPv6 address is specified, it will display configuration file related information for all CMs on the CMTS.

```
Router#show cable modem tftp
Host Interface : C1/0/0
MAC Address : 34bd.fa0f.4418
IP Address : 50.13.0.4
IPv6 Address : 2001:50:13:0:74E3:4197:E2F2:8162
Modem Status : w-online(pt)
TFTP Server Address : 2001:1:38::25:3
Modem Configuration File Name : cbr8/cm.bin
Timestamp : 02:16:02 CST Tue May 21 2019
Host Interface : C1/0/0
MAC Address : 34bd.fa0f.3850
IP Address : 50.13.0.38
IPv6 Address : 2001:50:13:0:7DF4:56AD:6F3A:231B
Modem Status : w-online(pt)
TFTP Server Address : 2001:1:38::25:3
Modem Configuration File Name : cbr8/cm.bin
Timestamp : 02:16:10 CST Tue May 21 2019
Host Interface : C1/0/1
MAC Address : 34bd.fa0f.4448
IP Address : 50.13.0.26
IPv6 Address : ---
Modem Status : w-online(pt)
TFTP Server Address : 1.38.25.3
```

```
Modem Configuration File Name : cbr8/cm.bin
Timestamp : 02:20:14 CST Tue May 21 2019
```

show cable modem timeline

To display the history for cable modem state transition, use the **show cable modem timeline** command in privileged EXEC mode.

show cable modem { *ip-address mac-address* } **timeline** [{ **dynamic** | **verbose** }]

Syntax Description

dynamic	Displays CM timeline of dynamic events.
verbose	Display CM dynamic and registration events in chronological order.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1x	This command was updated on the Cisco cBR Series Converged Broadband Router. The **dynamic** and **verbose** keywords are added.

Examples

This example shows sample output for the **show cable modem timeline** command:

```
Router#show cable modem 385f.6673.6a40 timeline
Load for five secs: 6%/0%; one minute: 6%; five minutes: 6%
Time source is NTP, .21:16:13.017 EST Tue Jan 18 2022
cable modem timeline in sup :
TIMESTAMP               OLD STATE    EVENT                    NEW STATE    IPv6

Jan 18 20:40:55.600     w-online     cm state update          w-online(pt) ---
                          sup received cm evt
Jan 18 20:40:55.396     init(o)      cm state update          w-online(d)  ---
                          sup received cm evt
Jan 18 20:40:51.905     init(o)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:51.895     init(o)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:51.887     init(t)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:49.151     init(dr)     dhcpv4 ack               init(i)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:49.149     init(io)     dhcpv4 request           init(dr)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:20.871     init(d)      dhcpv4 offer             init(io)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:20.870     init(rc)     dhcpv4 discover          init(d)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:17.083     offline      init CM instance         init(rc)     ---
                          C2/0/1/U2  rfid:16644

cable modem timeline in clc :
TIMESTAMP               OLD STATE    EVENT                    NEW STATE    IPv6

Jan 18 20:40:54.325     init(o)      register ack             w-online     ---
                          C2/0/1/UB  rfid:16644
Jan 18 20:40:51.456     init(o)      register request         init(o)      ---
```

```
                          handle reg-req-mp
Jan 18 20:40:50.821     init(t)      cm state update          init(o)      ---
                          clc received cm evt
Jan 18 20:40:50.481     init(i)      cm state update          init(t)      ---
                          clc received cm evt
Jan 18 20:40:48.085     init(dr)     cm state update          init(i)      ---
                          clc received cm evt
Jan 18 20:40:48.083     init(io)     cm state update          init(dr)     ---
                          clc received cm evt
Jan 18 20:40:19.805     init(d)      cm state update          init(io)     ---
                          clc received cm evt
Jan 18 20:40:19.805     init(rc)     cm state update          init(d)      ---
                          clc received cm evt
Jan 18 20:40:17.034     init(r1)     ranging request          init(rc)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:16.014     offline      bond initial ranging     init(r1)     ---
                          C2/0/1/U2  rfid:16644


Router#show cable modem 385f.6673.6a40 timeline dynamic
Load for five secs: 6%/0%; one minute: 6%; five minutes: 6%
Time source is NTP, .21:16:25.102 EST Tue Jan 18 2022

cable modem dynamic event timeline in clc :
TIMESTAMP               OLD STATE    EVENT                    NEW STATE
Jan 18 20:41:04.073     w-online(pt) ds resiliency            p-online(pt)  dcid: 2


Router#show cable modem 385f.6673.6a40 timeline verbose
Load for five secs: 7%/0%; one minute: 6%; five minutes: 6%
Time source is NTP, .21:16:31.992 EST Tue Jan 18 2022
cable modem verbose timeline in sup :
TIMESTAMP               OLD STATE    EVENT                    NEW STATE    IPv6

Jan 18 20:40:55.601     w-online     cm state update          w-online(pt) ---
                          sup received cm evt
Jan 18 20:40:55.397     init(o)      cm state update          w-online(d)  ---
                          sup received cm evt
Jan 18 20:40:51.906     init(o)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:51.896     init(o)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:51.888     init(t)      tftpv4 request           init(o)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:49.152     init(dr)     dhcpv4 ack               init(i)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:49.150     init(io)     dhcpv4 request           init(dr)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:20.872     init(d)      dhcpv4 offer             init(io)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:20.871     init(rc)     dhcpv4 discover          init(d)      ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:17.084     offline      init CM instance         init(rc)     ---
                          C2/0/1/U2  rfid:16644

cable modem verbose timeline in clc :
TIMESTAMP               OLD STATE    EVENT                    NEW STATE    IPv6

Jan 18 20:41:04.074     w-online(pt) ds resiliency            p-online(pt) ---
                          dcid: 2
Jan 18 20:40:54.324     init(o)      register ack             w-online     ---
                          C2/0/1/UB  rfid:16644
Jan 18 20:40:51.456     init(o)      register request         init(o)      ---
                          handle reg-req-mp
```

```
Jan 18 20:40:50.821     init(t)      cm state update          init(o)      ---
                          clc received cm evt
Jan 18 20:40:50.481     init(i)      cm state update          init(t)      ---
                          clc received cm evt
Jan 18 20:40:48.085     init(dr)     cm state update          init(i)      ---
                          clc received cm evt
Jan 18 20:40:48.083     init(io)     cm state update          init(dr)     ---
                          clc received cm evt
Jan 18 20:40:19.805     init(d)      cm state update          init(io)     ---
                          clc received cm evt
Jan 18 20:40:19.805     init(rc)     cm state update          init(d)      ---
                          clc received cm evt
Jan 18 20:40:17.034     init(r1)     ranging request          init(rc)     ---
                          C2/0/1/U2  rfid:16644
Jan 18 20:40:16.014     offline      bond initial ranging     init(r1)     ---
                          C2/0/1/U2  rfid:16644
```

show cable modem type

To display cable modem (CM) provisioning information for all CMs, such as boot mode configuration and MAC and IP address information, use the **show cable modem type** command in privileged EXEC configuration mode.

Cisco uBR7246VXR Router and Cisco uBR7225VXR Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *port* | *slot* / *cable-interface-index* } [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **type**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index* } [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **type**

Cisco cBR Series Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot* / *subslot* / *cable-interface-index* [**upstream** *port*] }] **type**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) MAC address of a specific CM to be displayed. If you specify the MAC address for a CPE device behind a CM, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface).

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for port begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.

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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **name** keyword and the *logical-channel-index* variable were removed.

Usage Guidelines

In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Examples

The following example shows sample output for the **show cable modem type** command :

```
Router# show cable modem type
Boot Mode configuration:
P - Primary Boot mode (IPv6 or IPv4)
D - Dual Stack (Yes/No)
A - Alternative Provisioning Mode (Yes/No)
MAC Address    Interface P/D/A  IPv4 address    IPv6 Address
0004.27a5.b761 C6/0/2/U1 v6/N/N 10.7.0.161      ---
```

```
0007.0e01.d9a1 C6/0/2/U0 v6/N/N 10.7.0.162      ---
0006.2854.7275 C6/0/2/U1 v6/Y/N 10.7.0.3        2001:ODB8:3800:80B:7565:5B87:1D7D:5AD5
0018.6835.27dd C6/0/U0   v6/N/N ---             2001:0DB8:3800:803:41D7:DECC:F15D:133
```

Table below describes the significant fields shown in the display.

Table 51: show cable modem type Field Descriptions

Field	Description
MAC Address	MAC address of this CM.
Interface	Cable line card interface and upstream associated with this CM.
P/D/A	String of 3 values representing the boot mode configuration of the CM as follows: • P—Primary Boot Mode, where “v4” or “v6” indicates IPv4 or IPv6 as the primary addressing mode. • D—Dual Stack, where “Y” or “N” indicates whether or not both IPv4 and IPv6 addressing modes are supported. • A—Alternative Provisioning Mode (APM), where “Y” or “N” indicates whether or not APM is supported. **Note** APM is not supported by the Cisco CMTS routers in Cisco IOS Release 12.2(33)SCA.
IPv4 address	IPv4 address acquired by the CM. Prior to acquisition of the IP address, or if the CM fails IPv4 registration, the following output is shown: • IPv4 address not yet acquired—“0.0.0.0” • CM fails IPv4 registration, but online with IPv6 address: “---” • IPv4 address of an IPv6-only CM: “---”
IPv6 Address	IPv6 address acquired by the CM. Prior to acquisition of the IP address, or if the CM fails IPv6 registration, the following output is shown: • IPv6 address not yet acquired—“::” • CM fails IPv6 registration, but online with IPv4 address “---” • IPv6 address of IPv4-only CM: “---”

This example shows the output of the **show cable modem type** command on the Cisco cBR Series Converged Broadband Router router:

```
Router#show cable modem type
Boot Mode configuration:
P - Primary Boot mode (IPv6 or IPv4)
D - Dual Stack (Yes/No)
A - Alternative Provisioning Mode (Yes/No)

MAC Address    Interface    P/D/A  IPv4 address    IPv6 Address
1859.334d.6622 C3/0/1       v4/N/N 10.10.0.4       ---
1859.334d.7cd2 C3/0/1       v4/N/N 10.10.0.9       ---
1859.334d.7db2 C3/0/1       v4/N/N 10.10.0.10      ---
1859.334d.7e64 C3/0/1       v4/N/N 10.10.0.17      ---
1859.334d.f658 C3/0/1       v4/N/N 10.10.0.20      ---
1859.334d.f9d0 C3/0/1       v4/N/N 10.10.0.23      ---
1859.334d.774c C3/0/1       v4/N/N 10.10.0.25      ---
1859.334d.f628 C3/0/1       v4/N/N 10.10.0.28      ---
```

```
1859.334d.f60e C3/0/1       v4/N/N 10.10.0.33      ---
1859.334d.fa36 C3/0/1       v4/N/N 10.10.0.35      ---
1859.334d.667e C3/0/1       v4/N/N 10.10.0.36      ---
1859.334d.fb1e C3/0/1       v4/N/N 10.10.0.37      ---
1859.334d.7d8e C3/0/1       v4/N/N 10.10.0.42      ---
1859.334d.f604 C3/0/1       v4/N/N 10.10.0.52      ---
1859.334d.fc64 C3/0/1       v4/N/N 10.10.0.57      ---
1859.334d.f696 C3/0/1       v4/N/N 10.10.0.61      ---
1859.334d.fce6 C3/0/1       v4/N/N 10.10.0.78      ---
1859.334d.f9b0 C3/0/1       v4/N/N 10.10.0.97      ---
1859.334d.fa8c C3/0/1       v4/N/N 10.10.0.116     ---
1859.334d.71e0 C3/0/1       v4/N/N 10.10.0.123     ---
1859.334d.7e34 C3/0/1       v4/N/N 10.10.0.134     ---
1859.334d.7e9e C3/0/1       v4/N/N 10.10.0.150     ---
1859.334d.7cf0 C3/0/1       v4/N/N 10.10.0.164     ---
1859.334d.f96e C3/0/1       v4/N/N 10.10.0.167     ---
1859.334d.7b68 C3/0/1       v4/N/N ---             ---
1859.334d.7aec C3/0/1       v4/N/N 10.10.0.176     ---
1859.334d.fce8 C3/0/1       v4/N/N 10.10.0.180     ---
1859.334d.f62a C3/0/1       v4/N/N 10.10.0.191     ---
1859.334d.fabc C3/0/1       v4/N/N 10.10.0.217     ---
1859.334d.7d00 C3/0/1       v4/N/N 10.10.0.224     ---
1859.334d.6778 C3/0/1       v4/N/N 10.10.0.247     ---
1859.334d.7306 C3/0/1       v4/N/N 10.10.1.18      ---
1859.334d.65d4 C3/0/1       v4/N/N 10.10.1.5       ---
1859.334d.6604 C3/0/1       v4/N/N 10.10.1.49      ---
1859.334d.7a10 C3/0/1       v4/N/N 10.10.1.51      ---
1859.334d.7d38 C3/0/1       v4/N/N 10.10.1.75      ---
1859.334d.6434 C3/0/1       v4/N/N 10.10.1.55      ---
1859.334d.7ace C3/0/1       v4/N/N 10.10.1.78      ---
1859.334d.7b5a C3/0/1       v4/N/N 10.10.1.61      ---
1859.334d.7d16 C3/0/1       v4/N/N 10.10.1.60      ---
1859.334d.7c78 C3/0/1       v4/N/N 10.10.1.93      ---
1859.334d.65b0 C3/0/1       v4/N/N 10.10.1.81      ---
1859.334d.7c40 C3/0/1       v4/N/N 10.10.1.82      ---
1859.334d.804a C3/0/1       v4/N/N 10.10.1.87      ---
1859.334d.7b2a C3/0/1       v4/N/N 10.10.1.98      ---
1859.334d.7d04 C3/0/1       v4/N/N 10.10.1.100     ---
1859.334d.7e42 C3/0/1       v4/N/N 10.10.1.107     ---
1859.334d.6e1a C3/0/1       v4/N/N 10.10.1.109     ---
1859.334d.7be8 C3/0/1       v4/N/N 10.10.1.113     ---
1859.334d.7a5a C3/0/1       v4/N/N 10.10.1.129     ---
1859.334d.6584 C3/0/1       v4/N/N 10.10.1.128     ---
1859.334d.7ad2 C3/0/1       v4/N/N 10.10.1.130     ---
1859.334d.660e C3/0/1       v4/N/N 10.10.1.132     ---
1859.334d.7b4c C3/0/1       v4/N/N 10.10.1.134     ---
1859.334d.6688 C3/0/1       v4/N/N 10.10.1.136     ---
1859.334d.7cc0 C3/0/1       v4/N/N 10.10.1.141     ---
1859.334d.6742 C3/0/1       v4/N/N 10.10.1.153     ---
1859.334d.7c32 C3/0/1       v4/N/N ---             ---
1859.334d.7aac C3/0/1       v4/N/N 10.10.1.172     ---
1859.334d.f968 C3/0/1       v4/N/N 10.10.1.177     ---
```

Related Commands

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

show cable modem unregistered

To display a list of the cable modems (CMs) that are marked as unregistered with the Cisco CMTS, use the **show cable modem unregistered** command in privileged EXEC mode.

Cisco uBR7100 Series and Cisco uBR7200 Series Routers
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *port* | *slot* / *cable-interface-index* } [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **unregistered**

Cisco uBR10012 Router
show cable modem [{*ip-addressmac-address* | **cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index* } [**upstream** *port* [*logical-channel-index*]] | **name** *fqdn* }] **unregistered**

Cisco cBR-8 Converged Broadband Router
show cable modem [{*ip-addressmac-address* | **cable** *slot* / *subslot* / *cable-interface-index* }] **unregistered**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific cable modem to be displayed. If you specify the IP address for a CPE device behind a cable modem, information for that cable modem is displayed.
mac-address	(Optional) MAC address of a specific cable modem to be displayed. If you specify the MAC address for a CPE device behind a cable modem, information for that CM is displayed.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is from 3 to 6. • Cisco uBR10012 router—The valid range is from 5 to 8. • Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	Secondary slot number of the cable interface line card. For the Cisco uBR10012 router—The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is from 0 to 4 (depending on the cable interface). This option is not supported on the Cisco cBR-8 router.

cable-interface-index	Downstream port of the Cisco uBR10-MC5X20 and Cisco uBR-MC28 line cards, or MAC domain index of the Cisco UBR-MC20X20V and Cisco uBR-MC3GX60V line cards. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid port value is 0 or 1. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using the specified upstream port. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card. This option is not supported on the Cisco cBR-8 router.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
name *fqdn*	(Optional) Specifies the fully qualified domain name (FQDN) of the cable device to be displayed. This option is only available if the **show cable modem domain-name** command has been run for the first time to update the cable DNS cache on the CMTS router. This option is not supported on the Cisco cBR-8 router.

Command Default

Displays a list of all unregistered CMs on the Cisco CMTS router.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 NA	This command was introduced.
12.2(4)BC1	This command was introduced on the Cisco uBR10012 router.

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.
	• Support for specifying the IPv6 address of a cable modem or CPE device was added.
	• The **name** keyword option was added for specifying the fully-qualified domain name of a CM.
	• 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*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The **upstream** and **name** keywords and the *logical-channel-index* variable were removed.

Usage Guidelines

Operation with Hot Standby Connection-to-Connection Protocol (HCCP) Configuration

If you are using Hot Standby Connection-to-Connection Protocol (HCCP) 1+1 or 1:n (N+1) redundancy, the new primary processor after a switchover automatically creates a new database of the online cable modems. This means that the **show cable modem** *ip-address* command might not show a particular cable modem until the CMTS receives IP traffic from that cable modem. You can force IP traffic by using the **ping** *ip-address* command, and then the **show cable modem** *ip-address* command will show the cable modem. You can also display any particular cable modem by using the **show cable modem | include** *ip-address* command.

In addition, when HCCP redundancy has been configured, the Cisco IOS software automatically synchronizes the secondary, backup cards whenever the configuration is changed. The cards can also be synchronized manually, using the **hccp resync** command. When a SYNC event command is occurring, CLI commands might be very slow to respond. In particular, if you enter the **show cable modem** command at the same time a SYNC event is occurring, the command might respond produce a blank display, or it might display an error message similar to the following:

```
%No response from slot 6/1. Command aborted
```

If this occurs, wait a minute or so and retry the command.

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.

Note In Cisco IOS Release 12.2(33)SCA, the **show cable modem domain-name** command must be run first on the route processor (RP) of the CMTS router before any domain name can be used as part of a cable command.

Examples

The following example shows sample output for the default form of the **show cable modem unregistered** command.

```
Router# show cable modem unregistered

Interface   Prim Online    Timing Rec    QoS CPE IP address      MAC address
            Sid  State     Offset Power
Cable3/0/U0 1    online     2812   -0.25  5   1   3.18.1.5        0030.80bc.2303
Cable3/0/U0 2    online     2804    0.50  5   0   3.18.1.9        0006.2854.73f5
C6/0/U0     6    init6(i)   1532   -0.50  2   0   0.0.0.0         0018.6835.27dd
```

The following example shows sample output for the **show cable modem unregistered** command for a particular cable interface:

```
Router# show cable modem c8/1/0 unregistered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U1 1    online       1548   0.00   5   0   22.1.1.11       0050.7366.1243
C8/1/0/U4 2    online       1925   0.00   5   0   23.1.1.10       0002.b970.0027
C8/1/0/U4 3    online       1918   -0.50  2   0   22.1.1.10       0006.5314.858d
```

The following example shows sample output for the **show cable modem unregistered** command for a single cable modem, as identified by its IP address:

```
Router# show cable modem 22.1.1.10 unregistered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U4 3    online       1918   -0.75  2   0   22.1.1.10       0006.5314.858d
```

The following example shows sample output for the **show cable modem unregistered** command for a single cable modem, as identified by its MAC address:

```
Router# show cable modem 0006.5314.858d unregistered

Interface Prim Online      Timing Rec     QoS CPE IP address      MAC address
          Sid  State       Offset Power
C8/1/0/U4 3    online       1918   -0.25  2   0   22.1.1.10       0006.5314.858d
```

Note An asterisk (*) in the Receive Power column indicates that a power adjustment has been made for that CM. An exclamation point (!) in the Receive Power column indicates that the cable modem has reached its maximum power transmit level and cannot increase its power level further. An exclamation point (!) in the Timing Offset column indicates that the cable modem has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. A pound sign (#) in the MAC State column indicates that the **cable tftp-enforce mark-only** command has been used to require that a cable modem attempt a TFTP download of the DOCSIS configuration file before registering, but the cable modem did not do so (Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases).

Tip The **show cable modem** command displays the cable modem timing offset in DOCSIS ticks, while other commands, such as **cable map-advance**, display the offset in microseconds. Use the following method to convert microseconds to DOCSIS ticks: ticks = microseconds*64/6.25 .

Table below describes the major fields shown in the **show cable modem unregistered** displays:

Table 52: Descriptions for the show cable modem unregistered Fields

Field	Description
Interface	The cable interface line card providing the upstream for this CM.
Prim SID	The primary SID assigned to this CM.
Online State	The current state of the MAC layer.
Timing Offset	The timing offset for the cable modem, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the cable modem has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the cable modem (which will include any internal delay between when the cable modem software begins the transmission and when the bits actually appear on the local cable interface).
Rec Power	The received power level (in dB) for the CM. **Note** An asterisk (*) in the RxPwr column indicates that a power adjustment has been made for that CM. An exclamation point (!) indicates that the cable modem has reached its maximum power transmit level and cannot increase its power level further.
QoS	Displays the QoS profile assigned to the cable modem (DOCSIS 1.1 and DOCSIS 2.0 CMs only).

Field	Description
CPE	Indicates the number of CPE devices for which the cable modem is providing services.
IP Address	The IP address that the DHCP server has assigned to the CM.
MAC Address	The MAC address for the CM.

Table below shows the possible values for the Online State field:

Table 53: Descriptions for the Online State Field

MAC State Value[5]	Description
Registration and Provisioning Status Conditions for Devices Using IPv4 Addressing	
init(r1)	The cable modem sent initial ranging.
init(r2)	The cable modem is ranging. The CMTS received initial ranging from the cable modem and has sent RF power, timing offset, and frequency adjustments to the CM.
init(rc)	Ranging has completed. **Note** If a cable modem appears to be stuck in this state, it could be that the cable modem 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 cable modem to finish registration and come online. Either manually move one or more CMs to other upstreams, or enable load balancing on the upstream using the **cable load-balance group** commands.
init(d)	The DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
init(dr)	The DHCP request has been sent to the cable modem.
init(i)	The cable modem has received the DHCPOFFER reply (DHCPACK) from the DHCP server that has assigned an IP address to the modem, but the modem has not yet replied with a DHCPREQUEST message requesting that particular IP address, nor has it sent an IP packet with that IP address. **Note** If a cable modem appears to be stuck in this state, the cable modem 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.

MAC State Value[5]	Description
init(o)	The cable modem 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 cable modem remains in this state, it indicates that the download has failed.
init(t)	Time-of-day (TOD) exchange has started.
resetting	The cable modem 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 cable modem 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 cable modem to the TFTP server.
init6(t)	The Cisco CMTS router has seen the REQUEST message from the cable modem to the TOD server.
Non-error Status Conditions	
cc(r1)	The cable modem had registered and was online, but has received a Downstream Channel Change (DCC) or Upstream Channel Change (UCC) request message from the CMTS. The cable modem 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 cable modem 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 cable modem has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the cable modem 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 cable modem is considered offline (disconnected or powered down).
online	The cable modem has registered and is enabled to pass data on the network.

MAC State Value[5]	Description
online(d)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. The cable modem does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the cable modem using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the cable modem, assume that the cable modem is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The cable modem registered, but network access for CPE devices using this cable modem 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 cable modem registered, but network access for CPE devices using this cable modem 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 cable modem registered, BPI is enabled and KEK is assigned.
online(pt)	The cable modem 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 cable modem, 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.

MAC State Value[5]	Description
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 cable modem registered, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value.
expire(pkd)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, KEK was assigned, but the current KEK expired before the cable modem could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pk) states.
expire(pt)	The cable modem registered, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value.
expire(ptd)	The cable modem registered, but network access for CPE devices using this cable modem has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the cable modem could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	

MAC State Value[5]	Description
reject(m)	The cable modem 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 cable modem attempt a TFTP download of the DOCSIS configuration file before registering, but the cable modem did not do so.
reject(c)	The cable modem attempted to register, but registration was refused due to a a number of possible errors: • The cable modem attempted to register with a minimum guaranteed upstream bandwidth that would exceed the limits imposed by the **cable upstream admission-control** command. • The cable modem has been disabled because of a security violation. • A bad class of service (COS) value in the DOCSIS configuration file. • The cable modem attempted to create a new COS configuration but the CMTS is configured to not permit such changes. • The cable modem 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 cable modem and CMTS.)
reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.
reject(pkd)	The cable modem registered, but network access for CPE devices using this cable modem 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 cable modem registered, but network access for CPE devices using this cable modem 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.

MAC State Value[5]	Description
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 cable modem, 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 cable modem attempted to register, but registration failed because the TFTP server timestamp in the cable modem registration request did not match the timestamp maintained by the CMTS. This might indicate that the cable modem attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The cable modem attempted to register, but registration failed because the IP address in the cable modem 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.

MAC State Value[5]	Description
reject(na)	The cable modem attempted to register, but registration failed because the cable modem 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.

[5] The cable modem MAC state field can also be retrieved using SNMP by getting the value of the cdxCmtsCmStatusValue object in the CISCO-DOCS-EXT-MIB.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Cisco cBR-8 Converged Broadband Router

This example shows the output for the **show cable modem unregistered** command:

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem access-group	Displays the access groups for the CMs on a particular cable interface.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem offline	Displays a list of the CMs that are marked as offline with the Cisco CMTS.
show cable modem registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem vendor	Displays the vendor name or Organizational Unique Identifier (OUI) for the CMs on each cable interface.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem vendor

To display the vendor name or Organizational Unique Identifier (OUI) for the CMs on each cable interface, use the **show cable modem vendor** command in privileged EXEC mode.

show cable modem [**cable** {*slot* / *subslot* / *port* | *slot* / *subslot* / *cable-interface-index* } [**upstream** *port* [*logical-channel-index*]]] **vendor** [**summary**]

Cisco cBR Series Converged Broadband Router
show cable modem vendor [**summary**]
show cable modem [**cable** *slot* / *subslot* / *cable-interface-index* [**upstream** *port*]] **vendor**

Syntax Description

slot	Slot where the line card resides. The valid range is from 5 to 8. Cisco cBR-8 router—The valid range is from 0 to 3 and 6 to 9.
subslot	Secondary slot number of the cable interface line card. The valid subslots are 0 or 1. Cisco cBR-8 router—The valid subslot is 0.
port	Downstream port number. 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 uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1. This option is not supported on the Cisco cBR-8 router.
summary	(Optional) Displays the total numbers for each vendor and OUI, along with the total numbers of those vendor's CMs that are currently registered with the CMTS, unregistered, or offline.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(8)BC2	This command was introduced for the Cisco uBR7100 series, Cisco uBR7200 series, and Cisco uBR10012 routers.

Release	Modification
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The *logical-channel-index* argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The *logical-channel-index* variable was removed.

Usage Guidelines

This command displays the vendor name for each CM. If the vendor name has not been defined by the **cable modem vendor** command, the command displays the OUI value for the modem's vendor.

Note The Institute of Electrical and Electronics Engineers (IEEE) is the official issuer of OUI values. The IEEE OUI web site is at http://standards.ieee.org/regauth/oui/index.shtml .

Note Also see the information about this command's behavior in a Hot Standby Connection-to-Connection Protocol (HCCP) configuration.

Examples

The following example shows typical output for the **show cable modem vendor** command:

```
Router# show cable modem vendor

Vendor     MAC Address    I/F       MAC         Prim  RxPwr  Timing  Num BPI
                                    State       Sid   (db)   Offset  CPE Enb
Cisco      0001.9659.519f C1/0/U0   init(rc)    16    0.75    2738  0    N
Cisco      0002.b96f.fdbb C1/0/U0   online      20    1.00    2738  1    N
Cisco      0002.b96f.fdf9 C1/0/U0   online      21    0.50    2737  1    N
Cisco      0002.b96f.fff7 C1/0/U0   online      12    0.50    2737  1    N
Cisco      0002.fdfa.1163 C1/0/U0   online      1     0.00    2734  1    N
Cisco      0002.fdfa.12d5 C1/0/U0   online      14    0.00    2737  1    N
Cisco      0002.fdfa.12db C1/0/U0   online      18    0.25    2736  1    N
Cisco      0002.fdfa.12e9 C1/0/U0   online      13    0.25    2737  1    N
Cisco      0006.28dc.37fd C1/0/U0   offline     7     0.25    2734  0    N
Cisco      0006.28e9.81c9 C1/0/U0   online      2     0.75    2735  1    N
Motorola   0020.28f9.9d19 C1/0/U0   online      28    -0.25   2733  1    N
Motorola   0020.4006.b010 C1/0/U0   online      19    0.00    2728  1    N
00.C0.FF   00c0.FF78.8bea C1/0/U0   offline     10    1.25    2732  0    N
Cisco      00b0.6478.ae8d C1/0/U0   offline     10    1.50    2735  0    N
Cisco      00d0.bad3.c0cd C1/0/U0   online      26    0.25    2214  1    N
Cisco      00d0.bad3.c0d5 C1/0/U0   online      27    0.00    2215  1    N
Router#
```

The following example shows typical output for the **show cable modem vendor** command on the Cisco uBR10012 router:

```
Router# show cable modem vendor

Vendor     MAC Address    I/F       MAC         Prim  RxPwr  Timing  Num BPI
                                    State       Sid   (db)   Offset  CPE Enb
Thomson    0010.9507.01db C5/1/0/U5 online      1     0.00     938   1    N
```

```
Ericsson   0080.37b8.e99b C5/1/0/U5 online      2     -0.25   1268  0    N
Cisco      0002.fdfa.12ef C6/1/0/U0 online      13    0.00    1920  1    N
Cisco      0002.fdfa.137d C6/1/0/U0 online      16    -0.50   1920  1    N
Cisco      0003.e38f.e9ab C6/1/0/U0 online      3     -0.25   1926  1    N
Cisco      0003.e3a6.7f69 C6/1/0/U0 online      15    0.50    1927  1    N
Cisco      0003.e3a6.816d C6/1/0/U0 online      4     0.00    1929  1    N
Cisco      0006.28f9.8be5 C6/1/0/U0 online      12    0.75    1922  1    N
Cisco      0001.9659.519f C6/1/1/U2 online      26    0.25    1930  1    N
Cisco      0002.b96f.fdbb C6/1/1/U2 online      29    -0.75   1929  1    N
Cisco      0002.b96f.fdf9 C6/1/1/U2 online      39    -0.50   1931  1    N
Cisco      0002.b96f.fff7 C6/1/1/U2 online      38    0.00    1928  1    N
Cisco      0002.fdfa.1163 C6/1/1/U2 online      15    0.00    1923  1    N
Cisco      0002.fdfa.12d5 C6/1/1/U2 online      35    0.25    1923  1    N
Cisco      0002.fdfa.12e9 C6/1/1/U2 online      5     -0.25   1925  1    N
Cisco      0050.7302.3d73 C6/1/1/U2 online      58    0.25    1553  1    N
Cisco      0002.fdfa.12db C7/0/0/U0 online      15    -0.75   1914  1    N
Cisco      0002.fdfa.138d C7/0/0/U5 online      4     0.25    1917  1    N
Cisco      0003.e38f.e85b C7/0/0/U5 online      17    0.25    1919  1    N
Cisco      0003.e38f.f4cb C7/0/0/U5 online      16    0.00    1922  1    N
Cisco      0003.e3a6.7fd9 C7/0/0/U5 online      1     0.25    1922  0    N
Motorola   0020.4005.3f06 C7/0/0/U0 online      2     0.00    1901  1    N
Motorola   0020.4006.b010 C7/0/0/U5 online      3     0.25    1901  1    N
Cisco      0050.7302.3d83 C7/0/0/U0 online      18    -0.25   1543  1    N
Cisco      00b0.6478.ae8d C7/0/0/U5 online      44    0.50    1920  21   N
Cisco      00d0.bad3.c0cd C7/0/0/U5 online      19    0.00    1543  1    N
Cisco      00d0.bad3.c0cf C7/0/0/U0 online      13    0.00    1546  1    N
Cisco      00d0.bad3.c0d5 C7/0/0/U0 online      12    -0.50   1546  1    N
Router#
```

Tip The **show cable modem vendor** command displays the CM timing offset in DOCSIS ticks, while other commands, such as **cable map-advance**, display the offset in microseconds. Use the following method to convert microseconds to DOCSIS ticks: ticks = microseconds*64/6.25 .

Table below describes the major fields shown in the **show cable modem vendor** displays:

Table 54: Descriptions for the show cable modem vendor Fields

Field	Description
Vendor	The vendor name for the indicated CM, as specified by the **cable modem vendor** command. If no name for this vendor has been specified, displays the modem's OUI value.
MAC Address	The MAC address for the CM.
I/F	The cable interface line card providing the upstream for this CM.
MAC State	The current state of the MAC layer.
Prim SID	The primary SID assigned to this CM.

Field	Description
RxPwr	The received power level (in dB) for the CM. **Note** An asterisk (*) in the RxPwr column indicates that a power adjustment has been made for that CM. An exclamation point (!) indicates that the CM has reached its maximum power transmit level and cannot increase its power level further. **Note** RxPwr field is not supported on Cisco cBR-8 router.
Timing Offset	The timing offset for the CM, in ticks, as recognized on the CMTS. (A tick, as used here, is 6.25/64 microseconds.) This is the delay between when a particular cable modem is scheduled to make a transmission and when the CMTS actually receives it. **Note** An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. **Note** The timing offset shown here is typically smaller than the TX Time Offset value shown by the **show cable modem remote-query** command, because the latter value is the offset as recognized on the CM (which will include any internal delay between when the CM software begins the transmission and when the bits actually appear on the local cable interface). **Note** Timing Offset field is not supported on Cisco cBR-8 router.
Num CPE	Indicates the number of CPE devices for which the CM is providing services.
BPI Enbld	Indicates whether Baseline Privacy Interface (BPI) or BPI Plus (BPI+) encryption is enabled for the CM.

Note An asterisk (*) in the RxPwr column indicates that a power adjustment has been made for that CM. An exclamation point (!) in the Receive Power column indicates that the CM has reached its maximum power transmit level and cannot increase its power level further. An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset specified by the **cable map-advance** command. A pound sign (#) in the MAC State column indicates that the cable tftp-enforce mark-only 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 (Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases).

The following example shows typical output for the **show cable modem vendor summary** command, displaying the total numbers for each vendor and OUI, along with the total numbers of those vendor's CMs that are currently registered with the CMTS, unregistered, or offline.

```
Router# show cable modem vendor summary

  Vendor     OUI                  Cable Modem
                          Total Registered Unregistered Offline
  00.02.B2   00.02.B2  4288  3997       291          259
  00.0A.73   00.0A.73  4105  3938       167          108
  00.0B.06   00.0B.06  1060  1001       59           48
```

```
  00.40.7B    00.40.7B  216   211        5            2
  00.50.04    00.50.04  701   684        17           15
  00.50.DA    00.50.DA  737   706        31           26
  00.D0.DD    00.D0.DD  2     0          2            2
  3Com        00.01.03  669   645        24           21
  3Com        00.04.75  10    10         0            0
  Ambit       00.D0.59  1     1          0            0
  BestData    00.E0.CA  1     1          0            0
  Cisco       00.04.C1  1     1          0            0
  LinkSys     00.06.25  15    13         2            2
  Motorola    00.04.BD  705   676        29           21
  Motorola    00.08.0E  762   734        28           16
  Motorola    00.20.40  1504  1444       60           45
  Powercom    00.30.3B  3     2          1            1
  SMC         00.04.E2  1     1          0            0
  Terayon     00.E0.6F  652   612        40           25
  Thomson     00.10.95  127   121        6            5
  Toshiba     00.00.39  1     1          0            0
  Turbo       00.90.83  4     4          0            0
  Zoom        00.40.36  1     1          0            0
Router#
```

Tip You can add a timestamp to this command using the **exec prompt timestamp** command in line configuration mode.

Examples for the Cisco cBR-8 Router

This example shows the output for the **show cable modem vendor** command on the Cisco cBR-8 router:

```
Router#show cable modem c1/0/1 vendor
                                                            B D
Vendor      MAC Address    I/F           MAC           Prim Num P I
                                         State         Sid  CPE I P
18.59.33    1859.334d.6622 c1/0/1        init(i)       1    0   N N
18.59.33    1859.334d.7cd2 c1/0/1        offline       2    0   N N
18.59.33    1859.334d.7db2 c1/0/1        online(pt)    3    0   Y N
18.59.33    1859.334d.7e64 c1/0/1        offline       4    0   N N
18.59.33    1859.334d.f658 c1/0/1        online(pt)    5    0   Y N
18.59.33    1859.334d.f9d0 c1/0/1        online(pt)    6    0   Y N
18.59.33    1859.334d.774c c1/0/1        init(i)       7    0   N N
18.59.33    1859.334d.f628 c1/0/1        offline       8    0   N N
18.59.33    1859.334d.f60e c1/0/1        online(pt)    9    0   Y N
18.59.33    1859.334d.fa36 c1/0/1        init(i)       10   0   N N
18.59.33    1859.334d.667e c1/0/1        online(pt)    11   0   Y N
18.59.33    1859.334d.fb1e c1/0/1        online(pt)    12   0   Y N
18.59.33    1859.334d.7d8e c1/0/1        online(pt)    13   0   Y N
18.59.33    1859.334d.f604 c1/0/1        online(pt)    14   0   Y N
18.59.33    1859.334d.fc64 c1/0/1        online(pt)    15   0   Y N
18.59.33    1859.334d.f696 c1/0/1        online(pt)    16   0   Y N
18.59.33    1859.334d.fce6 c1/0/1        online(pt)    17   0   Y N
18.59.33    1859.334d.f9b0 c1/0/1        init(i)       18   0   N N
18.59.33    1859.334d.fa8c c1/0/1        offline       19   0   N N
18.59.33    1859.334d.71e0 c1/0/1        init(i)       20   0   N N
18.59.33    1859.334d.7e34 c1/0/1        online(pt)    21   0   Y N
18.59.33    1859.334d.7e9e c1/0/1        online(pt)    22   0   Y N
18.59.33    1859.334d.7cf0 c1/0/1        init(i)       23   0   N N
```

```
18.59.33   1859.334d.f96e c1/0/1        offline       24   0   N N
18.59.33   1859.334d.7b68 c1/0/1        init(rc)      25   0   N N
18.59.33   1859.334d.7aec c1/0/1        init(i)       26   0   N N
18.59.33   1859.334d.fce8 c1/0/1        init(i)       27   0   N N
18.59.33   1859.334d.f62a c1/0/1        online(pt)    28   0   Y N
18.59.33   1859.334d.fabc c1/0/1        offline       29   0   N N
18.59.33   1859.334d.7d00 c1/0/1        online(pt)    30   0   Y N
18.59.33   1859.334d.6778 c1/0/1        init(i)       31   0   N N
18.59.33   1859.334d.7306 c1/0/1        offline       32   0   N N
18.59.33   1859.334d.65d4 c1/0/1        init(i)       33   0   N N
18.59.33   1859.334d.6604 c1/0/1        offline       34   0   N N
18.59.33   1859.334d.7a10 c1/0/1        online(pt)    35   0   Y N
18.59.33   1859.334d.7d38 c1/0/1        init(i)       36   0   N N
18.59.33   1859.334d.6434 c1/0/1        init(i)       37   0   N N
18.59.33   1859.334d.7ace c1/0/1        init(i)       38   0   N N
18.59.33   1859.334d.7b5a c1/0/1        offline       39   0   N N
18.59.33   1859.334d.7d16 c1/0/1        offline       40   0   N N
18.59.33   1859.334d.7c78 c1/0/1        init(rc)      41   0   N N
18.59.33   1859.334d.65b0 c1/0/1        online(pt)    42   0   Y N
18.59.33   1859.334d.7c40 c1/0/1        init(i)       43   0   N N
18.59.33   1859.334d.804a c1/0/1        online(pt)    44   0   Y N
18.59.33   1859.334d.7b2a c1/0/1        init(i)       45   0   N N
18.59.33   1859.334d.7d04 c1/0/1        online(pt)    46   0   Y N
18.59.33   1859.334d.7e42 c1/0/1        offline       47   0   N N
18.59.33   1859.334d.6e1a c1/0/1        offline       48   0   N N
18.59.33   1859.334d.7be8 c1/0/1        offline       49   0   N N
18.59.33   1859.334d.7a5a c1/0/1        init(i)       50   0   N N
18.59.33   1859.334d.6584 c1/0/1        online(pt)    51   0   Y N
18.59.33   1859.334d.7ad2 c1/0/1        init(i)       52   0   N N
18.59.33   1859.334d.660e c1/0/1        init(i)       53   0   N N
18.59.33   1859.334d.7b4c c1/0/1        init(i)       54   0   N N
18.59.33   1859.334d.6688 c1/0/1        init(i)       55   0   N N
18.59.33   1859.334d.7cc0 c1/0/1        init(i)       56   0   N N
18.59.33   1859.334d.6742 c1/0/1        init(i)       57   0   N N
18.59.33   1859.334d.7c32 c1/0/1        offline       58   0   N N
18.59.33   1859.334d.7aac c1/0/1        init(i)       59   0   N N
18.59.33   1859.334d.f968 c1/0/1        online(pt)    60   0   Y N
18.59.33   1859.334d.7908 c1/0/1        init(i)       61   0   N N
18.59.33   1859.334d.7aa8 c1/0/1        offline       62   0   N N
18.59.33   1859.334d.7d14 c1/0/1        init(i)       63   0   N N
18.59.33   1859.334d.6602 c1/0/1        online(pt)    64   0   Y N

Router#
```

Related Commands

Command	Description
cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem cpe	Displays the CPE devices accessing the cable interface through a particular CM.
show cable modem remote-query	Displays information collected by the remote-query feature.

Command	Description
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem verbose

To display detailed information of cable modems, use the **show cable modem verbose** command in privileged EXEC mode.

show cable modem [{ **ip-address** | **mac-address** | **cable** { *slot* / *subslot* / *cable-interface-index* } }] **verbose**

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of a specific cable modem. If you specify the IP address for a CPE behind a cable modem, the output displays information for that cable modem.
mac-address	(Optional) MAC address of a specific cable modem. If you specify the MAC address for a CPE behind a cable modem, the output displays information for that cable modem.
cable	(Optional) Displays the modems on a specific cable interface.
slot	Slot where the line card resides. • Cisco uBR7225VXR router—The valid value is 1 or 2. • Cisco uBR7246VXR router—The valid range is 3–6. • Cisco uBR10012 router—The valid range is 5–8. • Cisco cBR router—The valid range is 0–3 and 6–9.
subslot	Secondary slot number of the cable interface line card. Cisco uBR10012 only—The valid subslots are 0 or 1. Cisco cBR router—The valid value is 0.
port	Downstream port number. • Cisco uBR7225VXR and Cisco uBR7246VXR routers—The valid value is 0 or 1. • Cisco uBR10012 router—The valid range is 0–4 (depending on the cable interface).
cable-interface-index	The 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 0–4. The valid range for the Cisco uBR-MC3GX60V line card is 0–14. • Cisco cBR router—The valid range is 0–15.
verbose	Displays detailed information of the cable modems.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Dublin 17.12.1x	The output of the command is updated to display D40 cable modem Capabilities.
Cisco IOS XE Cupertino 17.9.1x	This command is modified to support Low Latency DOCSIS Capable information.
Cisco IOS XE Bengaluru 17.6.1z	The output of the command is updated to display **UGS Service Flow Limit**.
Cisco IOS XE Amsterdam 17.3.1w	The output of the command is updated with partial-mode information.

Example

This example shows the output of the **show cable modem ccf3.c8ff.ed7e verbose** . (**Cisco IOS XE Dublin 17.12.1x** or later).

```
Router# show cable modem ccf3.c8ff.ed7e verbose
MAC Address                          : ccf3.c8ff.ed7e
IP Address                           : 9.15.1.29
IPv6 Address                         : ---
Dual IP                              : N
Prim Sid                             : 5
Host Interface                       : C7/0/1/UB
RPD ID                               : acbc.d98d.e37e
MD-DS-SG / MD-US-SG                  : 1 / 3
MD-CM-SG                             : 0xF10103
Primary Wideband Channel ID          : 41219 (Wi7/0/1:2)
Primary Downstream                   : Do7/0/1:17 (RfId : 41233, SC-QAM)
Wideband Capable                     : Y
DS Tuner Capability                  : 32
Downstream Channel DCID RF Channel : 18    7/0/1:17 (SC-QAM)
Downstream Channel DCID RF Channel : 1     7/0/1:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     7/0/1:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     7/0/1:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     7/0/1:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     7/0/1:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     7/0/1:5 (SC-QAM)
Downstream Channel DCID RF Channel : 7     7/0/1:6 (SC-QAM)
Downstream Channel DCID RF Channel : 8     7/0/1:7 (SC-QAM)
Downstream Channel DCID RF Channel : 9     7/0/1:8 (SC-QAM)
Downstream Channel DCID RF Channel : 10    7/0/1:9 (SC-QAM)
Downstream Channel DCID RF Channel : 11    7/0/1:10 (SC-QAM)
Downstream Channel DCID RF Channel : 12    7/0/1:11 (SC-QAM)
Downstream Channel DCID RF Channel : 13    7/0/1:12 (SC-QAM)
Downstream Channel DCID RF Channel : 14    7/0/1:13 (SC-QAM)
Downstream Channel DCID RF Channel : 15    7/0/1:14 (SC-QAM)
Downstream Channel DCID RF Channel : 16    7/0/1:15 (SC-QAM)
Downstream Channel DCID RF Channel : 17    7/0/1:16 (SC-QAM)
Downstream Channel DCID RF Channel : 19    7/0/1:18 (SC-QAM)
Downstream Channel DCID RF Channel : 20    7/0/1:19 (SC-QAM)
Downstream Channel DCID RF Channel : 21    7/0/1:20 (SC-QAM)
Downstream Channel DCID RF Channel : 22    7/0/1:21 (SC-QAM)
Downstream Channel DCID RF Channel : 23    7/0/1:22 (SC-QAM)
Downstream Channel DCID RF Channel : 24    7/0/1:23 (SC-QAM)
Downstream Channel DCID RF Channel : 25    7/0/1:24 (SC-QAM)
```

```
Downstream Channel DCID RF Channel : 26    7/0/1:25 (SC-QAM)
Downstream Channel DCID RF Channel : 27    7/0/1:26 (SC-QAM)
Downstream Channel DCID RF Channel : 28    7/0/1:27 (SC-QAM)
Downstream Channel DCID RF Channel : 29    7/0/1:28 (SC-QAM)
Downstream Channel DCID RF Channel : 30    7/0/1:29 (SC-QAM)
Downstream Channel DCID RF Channel : 31    7/0/1:30 (SC-QAM)
Downstream Channel DCID RF Channel : 32    7/0/1:31 (SC-QAM)
Downstream Channel DCID RF Channel : 159   7/0/1:158 (OFDM)
Downstream Channel DCID RF Channel : 160   7/0/1:159 (OFDM)
Downstream OFDM DCID                : 159
  Downstream OFDM Profile (config)     : 0 1 2 3
  Downstream OFDM Profile (REG-RSP-MP) : 0 1 2 3
  Downstream OFDM Profile (DBC-REQ)    : N/A
  Downstream OFDM Profile (in-use)     : 3  [4096-QAM]
  Downstream OFDM Profile (dwngrd)     : 2
  Downstream OFDM Profile (recomm)     : 3
  Downstream OFDM Profile (unfit)      : N/A
Downstream OFDM DCID                : 160
  Downstream OFDM Profile (config)     : 0 1 2 3
  Downstream OFDM Profile (REG-RSP-MP) : 0 1 2 3
  Downstream OFDM Profile (DBC-REQ)    : N/A
  Downstream OFDM Profile (in-use)     : 3  [4096-QAM]
  Downstream OFDM Profile (dwngrd)     : 2
  Downstream OFDM Profile (recomm)     : 3
  Downstream OFDM Profile (unfit)      : N/A
UDC Enabled                         : N
US Frequency Range Capability       : Extended (5-85 MHz)
Extended Upstream Transmit Power    : 0dB
Max CM Transmit Power (dBmV)        : 65.00
Neq 1.6MHz Transmit Channels        : 13
US Power Display Bandwidth Units    : 1.6 MHz
Max Transmit Channel Power (dBmV)   : 53.20
Multi-Transmit Channel Mode         : Y
Max US SC-QAMs Supported            : 8
Number of US in UBG                 : 6
Minimum power load in DRW (dB)      : 6.75
Max Dynamic ranging window (dBmV)   : 46.25
Min Dynamic ranging window (dBmV)   : 34.25
Upstream Channel                    : US0        US1        US2        US3
Device ID                           : 0          0          0          0
Ranging Status                      : sta        sta        sta        sta
Upstream SNR (dB)                   : 45.15      45.15      45.15      45.15
Upstream Data SNR (dB)              : 43.32      43.32      43.32      46.33
Received Power (dBmV)               : 4.50       5.00       5.00       5.00
Configured Received Power (dBmV)    : 5.00       5.00       5.00       5.00
Actual Received Power (dBmV)        : -0.50      0.00       0.00       0.00
Data Burst resiliency suspended     : N          N          N          N
Reported Transmit Power (dBmV)      : 45.75      46.25      46.00      43.75
Commanded Transmit Power (dBmV)     : 46.25      46.25      46.00      43.75
Minimum Transmit Power (dBmV)       : 17.00      17.00      17.00      17.00
Power Load (dB)                     : 7.45       6.95       7.20       9.45
Timing Offset             (97.6 ns): 1123       1123       1123       1122
Initial Timing Offset               : 1123       1123       1123       1122
Rng Timing Adj Moving Avg(0.381 ns): 0          256        0          256
Rng Timing Adj Lt Moving Avg        : 0          249        0          84
Rng Timing Adj Minimum              : 0          0          0          0
Rng Timing Adj Maximum              : 0          256        0          256
Pre-EQ Good                         : 0          0          0          0
Pre-EQ Scaled                       : 0          0          0          0
Pre-EQ Impulse                      : 0          0          0          0
Pre-EQ Direct Loads                 : 0          0          0          0
Total Codewords rx                  : 1494       1311       1222       1715
Good Codewords rx                   : 1494       1311       1222       1715
Corrected Codewords rx              : 0          0          0          0
```

```
Uncorrectable Codewords rx         : 0          0          0          0
Phy Operating Mode                 : atdma*     atdma*     atdma*     atdma*
Upstream Channel                   : US4        US5
Device ID                          : 0          0
Ranging Status                     : sta        sta
Upstream SNR (dB)                  :  N/A        N/A
Upstream Data SNR (dB)             :  N/A        N/A
Received Power (dBmV)              : 0.00       0.00
Configured Received Power (dBmV)   : 0.00       0.00
Actual Received Power (dBmV)       : 0.00       0.00
Data Burst resiliency suspended    : N          N
Reported Transmit Power (dBmV)     : 37.00      36.75
Commanded Transmit Power (dBmV)    : 37.00      36.75
Minimum Transmit Power (dBmV)      : 17.00      17.00
Power Load (dB)                    : 16.20      16.45
Timing Offset              (97.6 ns): 808        808
OFDMA Timing Offset        (4.88 ns): 16176      16176
Initial Timing Offset              : 1218       1218
Rng Timing Adj Moving Avg(0.381 ns): -1         -1
Rng Timing Adj Lt Moving Avg       : -7         -7
Rng Timing Adj Minimum             : -104857    -104857
Rng Timing Adj Maximum             : 0          0
Pre-EQ Good                        : 0          0
Pre-EQ Scaled                      : 0          0
Pre-EQ Impulse                     : 0          0
Pre-EQ Direct Loads                : 0          0
Total Codewords rx                 : 43812      2567
Good Codewords rx                  : 43812      2567
Corrected Codewords rx             : 0          0
Uncorrectable Codewords rx         : 0          0
Phy Operating Mode                 : ofdma      ofdma
OFDMA Profile in Use               : 13         13
OFDMA IUC assignment               : 13         13
sysDescr                          : BFC cablemodem reference design <<HW_REV: V1.0; VENDOR:
 Broadcom; BOOTR: 2.8.44alpha0; SW_REV: Prod_23.1-mainline_gen2-PC_NB_2023-02-10_09-35-26;
 MODEL: BCM933940DCWVG>>
Downstream Power                   : 18.30 dBmV (SNR = 49.70 dB)
MAC Version                        : DOC4.0
Operational Version                : DOC3.1
QoS Provisioned Mode               : DOC1.1
Enable DOCSIS2.0 Mode              : Y
Service Flow Priority              : N
Modem Status                       : {Modem= w-online(pt), Security=assign(tek)}
Capabilities                       : {Frag=N, Concat=N, PHS=N}
Security Capabilities              : {Priv=BPI+, EAE=Y, Key_len=56,128}
L2VPN Capabilities                 : {L2VPN=N, eSAFE=N}
L2VPN type                         : {CLI=N, DOCSIS=N}
Sid/Said Limit                     : {Max US Sids=16, Max DS Saids=63}
UGS Service Flow Limit             : {Max UGS Service Flows=16}
Optional Filtering Support         : {802.1P=N, 802.1Q=N, DUT=N}
Transmit Equalizer Support         : {Taps/Symbol= 1, Num of Taps= 24}
Extended Pkt Len Capability        : Max len of PDU = 2000 bytes, CMTS sent 2000
OFDM MRC Support                   : Max num of DS OFDM channels = 5
OFDMA MTC Support                  : Max num of US OFDMA channels = 8
DS OFDM Profile Support            : Max num of DS OFDM profile per channel = 5
DS OFDM QAM Modulation Support     : 0x1FD4{|QPSK|16|64|128|256|512|1024|2048|4096 QAM}
US OFDMA QAM Modulation Support    : 0x1FFC{|QPSK|8|16|32|64|128|256|512|1024|2048|4096
QAM}
DS Lower Band Edge                 : 0x2{258 MHz}
DS Upper Band Edge                 : 0x2{1788 MHz}
Diplex Upper Band Edge             : 4(204 MHz)
DTP mode                           : 0(DTP Op not supported)
DTP performance                    : 0(DTP mode not supported)
Diplexer DS Lower Band Edge Cap    : 0x0{ MHz}
```

```
Diplexer DS Upper Band Edge Cap    : 0x0{ MHz}
Diplexer US Upper Band Edge Cap    : 0x0{ MHz}
D40: Advanced Band Plan Cap        : 0x4{FDD}
D40: Advanced DS Lower Band Edge   : 0
D40: Advanced DS Upper Band Edge   : 0
D40: Advanced US Upper Band Edge   : 0
D40: Adv DS Lower Band Edge Options: [108|300|492]
D40: Adv DS Upper Band Edge Options: [1002|1218|1794]
D40: Adv US Upper Band Edge Options: [42|65|85|117|204]
D40: Extendec Power Options        : 0
D40: FDX Switching SW Uncertainty  : 0(microseconds)
D40: FDX DS to US Switching Time   : 0(microseconds)
D40: FDX US to DS Switching Time   : 0(microseconds)
D40: CWT RxMER Convergence Time    : 0(milliseconds)
D40: CWT Simultaneous Data Tx Cap  : 0
D40: EC RBA sub-band Dir Sets      : 0
OUDP Leak Test                     : N/A
CM Capability Reject               : {1,3,15,22,23,35,38,44,57,58}
CM STATUS ACK Support              : Y
Flaps                              : 643(Jan 19 00:17:20)
Errors                             : 0 CRCs, 0 HCSes
Stn Mtn Failures                   : 0 aborts, 0 exhausted
Total US Flows                     : 1(1 active)
Total DS Flows                     : 1(1 active)
Total US Data                      : 21231 packets, 10176511 bytes
Total US Throughput                : 1869 bits/sec, 0 packets/sec
Total DS Data                      : 10776 packets, 993142 bytes
Total DS Throughput                : 0 bits/sec, 0 packets/sec
LB group ID assigned               : 2147607343
LB group ID in config file         : N/A
LB policy ID                       : 0
LB policy ID in config file        : 0
LB priority                        : 0
Tag                                :
Required DS Attribute Mask         : 0x0
Forbidden DS Attribute Mask        : 0x0
Required US Attribute Mask         : 0x0
Forbidden US Attribute Mask        : 0x0
Low Latency Capable                : 1
Low Latency ASF Supported          : 2
Absolute Queue-Depth Req Support   : 0
Service Type ID                    :
Service Type ID in config file     :
Ranging Class ID                   : 0x6
Active Classifiers                 : 0 (Max = NO LIMIT)
CM Upstream Filter Group           : 0
CM Downstream Filter Group         : 0
CPE Upstream Filter Group          : 0
CPE Downstream Filter Group        : 0
DSA/DSX messages                   : permit all
Voice Enabled                      : NO
DS Change Times                    : 0
Boolean Services                   : 22
CM Energy Management Capable       : Y
CM Enable Energy Management        : N
CM Enter Energy Management         : NO
Battery Mode                       : N
Battery Mode Status                : AC_POWER_MODE
Number of Multicast DSIDs Support  : 32
MDF Capability Mode                : 2
IGMP/MLD Version                   : IGMPv3
FCType10 Forwarding Support        : Y
IPv6 Support                       : Y
Features Bitmask                   : 0x0
```

```
Ext SF SID Cluster Assignment      : 1
Total Time Online                  : 21h19m  (21h19m   since last counter reset)
CM Initialization Reason           : POWER_ON
CM_CTRL   req/rsp                  : 0/0
CM_STATUS                          : 0
DBC       req/rsp/ack              : 0/0/0
DCC       req/rsp/ack              : 0/0/0
DSA_US    req/rsp/ack              : 0/0/0
DSA_DS    req/rsp/ack              : 0/0/0
DSC_US    req/rsp/ack              : 0/0/0
DSC_DS    req/rsp/ack              : 0/0/0
DSD_US    req/rsp                  : 0/0
DSD_DS    req/rsp                  : 0/0
REG       req/rsp/ack              : 1/1/1
EM        req/rsp                  : 0/0
ODS       req/rsp                  : 0/0
OPT       req/rsp/ack              : 0/7154/1022
UCC       req/rsp                  : 0/0
```

Note The above CLI output displays modems that register in D4.0. The following lines in the CLI output show the D4.0 modem capabilities

```
...
...
...
MAC Version                        : DOC4.0
...
...
...
D40: Advanced Band Plan Cap        : 0x4{FDD}
D40: Advanced DS Lower Band Edge   : 0
D40: Advanced DS Upper Band Edge   : 0
D40: Advanced US Upper Band Edge   : 0
D40: Adv DS Lower Band Edge Options: [108|300|492]
D40: Adv DS Upper Band Edge Options: [1002|1218|1794]
D40: Adv US Upper Band Edge Options: [42|65|85|117|204]
D40: Extendec Power Options        : 0
D40: FDX Switching SW Uncertainty  : 0(microseconds)
D40: FDX DS to US Switching Time   : 0(microseconds)
D40: FDX US to DS Switching Time   : 0(microseconds)
D40: CWT RxMER Convergence Time    : 0(milliseconds)
D40: CWT Simultaneous Data Tx Cap  : 0
D40: EC RBA sub-band Dir Sets      : 0
...
...
...
```

Example

This example shows the output of the **show cable modem verbose | s Low Latency** *206a.9454.30a4* **verbose**. (**Cisco IOS XE Cupertino 17.9.1x** or later).

```
Router# show cable modem 206a.9454.30a4 verbose | s Low Latency
Low Latency Enabled                        :1
Low Latency ASF Supported                  :4
```

Example

The following example shows a sample output of the **show cable modem verbose** command when the modem is in partial-mode.

```
Router#show cable modem 5c76.953e.8ba0 verbose
MAC Address                         : 5c76.953e.8ba0
IP Address                          : 10.38.8.30
IPv6 Address                        : ---
Dual IP                             : N
Prim Sid                            : 8
Host Interface                      : C1/0/2/UB
MD-DS-SG / MD-US-SG                 : 6 / 2
MD-CM-SG                            : 0x320602
Primary Wideband Channel ID         : 8705 (Wi1/0/2:0)
Primary Downstream                  : In1/0/2:8 (RfId : 8712, SC-QAM)
Wideband Capable                    : Y
DS Tuner Capability                 : 32
Downstream Channel DCID RF Channel : 9     1/0/2:8 (SC-QAM)
Downstream Channel DCID RF Channel : 1     1/0/2:0 (SC-QAM)
Downstream Channel DCID RF Channel : 2     1/0/2:1 (SC-QAM)
Downstream Channel DCID RF Channel : 3     1/0/2:2 (SC-QAM)
Downstream Channel DCID RF Channel : 4     1/0/2:3 (SC-QAM)
Downstream Channel DCID RF Channel : 5     1/0/2:4 (SC-QAM)
Downstream Channel DCID RF Channel : 6     1/0/2:5 (SC-QAM)
Downstream Channel DCID RF Channel : 7     1/0/2:6 (SC-QAM)
Downstream Channel DCID RF Channel : 8     1/0/2:7 (SC-QAM)
Downstream Channel DCID RF Channel : 10    1/0/2:9 (SC-QAM)
Downstream Channel DCID RF Channel : 11    1/0/2:10 (SC-QAM)
Downstream Channel DCID RF Channel : 12    1/0/2:11 (SC-QAM)
Downstream Channel DCID RF Channel : 13    1/0/2:12 (SC-QAM)
Downstream Channel DCID RF Channel : 14    1/0/2:13 (SC-QAM)
Downstream Channel DCID RF Channel : 15    1/0/2:14 (SC-QAM)
Downstream Channel DCID RF Channel : 16    1/0/2:15 (SC-QAM)
Downstream Channel DCID RF Channel : 17    1/0/2:16 (SC-QAM)
Downstream Channel DCID RF Channel : 18    1/0/2:17 (SC-QAM)
Downstream Channel DCID RF Channel : 19    1/0/2:18 (SC-QAM)
Downstream Channel DCID RF Channel : 20    1/0/2:19 (SC-QAM)
Downstream Channel DCID RF Channel : 21    1/0/2:20 (SC-QAM)
Downstream Channel DCID RF Channel : 22    1/0/2:21 (SC-QAM)
Downstream Channel DCID RF Channel : 23    1/0/2:22 (SC-QAM)
Downstream Channel DCID RF Channel : 24    1/0/2:23 (SC-QAM)
Downstream Channel DCID RF Channel : 25    1/0/2:24 (SC-QAM)
Downstream Channel DCID RF Channel : 26    1/0/2:25 (SC-QAM)
Downstream Channel DCID RF Channel : 27    1/0/2:26 (SC-QAM)
Downstream Channel DCID RF Channel : 28    1/0/2:27 (SC-QAM)
Downstream Channel DCID RF Channel : 29    1/0/2:28 (SC-QAM)
Downstream Channel DCID RF Channel : 30    1/0/2:29 (SC-QAM)
Downstream Channel DCID RF Channel : 31    1/0/2:30 (SC-QAM)
Downstream Channel DCID RF Channel : 32    1/0/2:31 (SC-QAM)
Downstream Channel DCID RF Channel : 159   1/0/2:158 (OFDM)
Downstream Channel DCID RF Channel : 160   1/0/2:159 (OFDM)
Downstream OFDM DCID                : 159
  Downstream OFDM Profile (config)     : 0 1 2 3 4 5
  Downstream OFDM Profile (REG-RSP-MP) : 0 1 2 3
  Downstream OFDM Profile (DBC-REQ)    : 0 3 4 5
  Downstream OFDM Profile (in-use)     : 5  [4096-QAM]
  Downstream OFDM Profile (dwngrd)     : 4
  Downstream OFDM Profile (recomm)     : 5
  Downstream OFDM Profile (unfit)      : N/A
Downstream OFDM DCID                : 160
  Downstream OFDM Profile (config)     : 0 1 2 3 4 5
  Downstream OFDM Profile (REG-RSP-MP) : 0 1 2 3
```

```
  Downstream OFDM Profile (DBC-REQ)    : 0 3 4 5
  Downstream OFDM Profile (in-use)     : 5  [4096-QAM]
  Downstream OFDM Profile (dwngrd)     : 4
  Downstream OFDM Profile (recomm)     : 5
  Downstream OFDM Profile (unfit)      : N/A
UDC Enabled                          : N
US Frequency Range Capability          : Extended (5-85 MHz)
Extended Upstream Transmit Power       : 0dB
Max CM Transmit Power (dBmV)           : 65.00
Neq 1.6MHz Transmit Channels           : 8
US Power Display Bandwidth Units       : 1.6 MHz
Max Transmit Channel Power (dBmV)      : 53.20
Multi-Transmit Channel Mode            : Y
Max US SC-QAMs Supported               : 8
Number of US in UBG                    : 1
Minimum power load in DRW (dB)         : 13.00
Max Dynamic ranging window (dBmV)      : 40.00
Min Dynamic ranging window (dBmV)      : 28.00
Upstream Channel                       : US6
Ranging Status                         : sta
Upstream SNR (dB)                      :  N/A
Upstream Data SNR (dB)                 :  N/A
Upstream Channel Width (MHz)           : 1.6 3.2 3.2 6.4
Received Power delta (dBmV)            : 0.00 0.00 0.00 0.00
Configured Received Power (dBmV@chw)   : -4.00 -1.00 -1.00 2.00
Received Power (dBmV@chw)              : -4.00 -1.00 -1.00 2.00
Configured Received Power (dBmV@1.6MHz): -4.00 -4.00 -4.00 -4.00
Received Power (dBmV@1.6MHz)           : -4.00 -4.00 -4.00 -4.00
Actual Received Power (dBmV)           : 0.00
Data Burst resiliency suspended        : N
Reported Transmit Power (dBmV)         : 40.00
Commanded Transmit Power (dBmV)        : 40.00
Minimum Transmit Power (dBmV)          : 17.00
Power Load (dB)                        : 13.20
Timing Offset             (97.6 ns)    : 2343
OFDMA Timing Offset       (4.88 ns)    : 46872
Initial Timing Offset                  : 2548
Rng Timing Adj Moving Avg(0.381 ns)    : -1
Rng Timing Adj Lt Moving Avg           : -7
Rng Timing Adj Minimum                 : -52428
Rng Timing Adj Maximum                 : 0
Pre-EQ Good                            : 0
Pre-EQ Scaled                          : 0
Pre-EQ Impulse                         : 0
Pre-EQ Direct Loads                    : 0
Total Codewords rx                     : 114195
Good Codewords rx                      : 73649
Corrected Codewords rx                 : 40546
Uncorrectable Codewords rx             : 0
Phy Operating Mode                     : ofdma
OFDMA Profile in Use                   : 5
OFDMA IUC assignment                   : 5, 13
sysDescr                               : Technicolor E31T2V1 DOCSIS 3.1 2-PORT Voice Modem
 <<HW_REV: 1.0; VENDOR: Technicolor; BOOTR: 2.7.0alpha4; SW_REV:
E31T2D-P20-20-c2000r1910-201016-TWC; MODEL: E31T2V1>> AVS:0
Downstream Power                       : -0.40 dBmV (SNR = 45.50 dB)
MAC Version                            : DOC3.1
Operational Version                    : DOC3.1
QoS Provisioned Mode                   : DOC1.1
Enable DOCSIS2.0 Mode                  : Y
Service Flow Priority                  : N
Modem Status                           : {Modem= w-online(pt), Security=assign(tek)}
Capabilities                           : {Frag=N, Concat=N, PHS=N}
Security Capabilities                  : {Priv=BPI+, EAE=Y, Key_len=56,128}
```

```
L2VPN Capabilities                      : {L2VPN=Y, eSAFE=N}
L2VPN type                              : {CLI=N, DOCSIS=N}
Sid/Said Limit                          : {Max US Sids=16, Max DS Saids=63}
UGS Service Flow Limit                  : {Max UGS Service Flows=16}
Optional Filtering Support              : {802.1P=N, 802.1Q=N, DUT=Y}
Transmit Equalizer Support              : {Taps/Symbol= 1, Num of Taps= 24}
Extended Pkt Len Capability             : Max len of PDU = 2000 bytes, CMTS sent 2000
OFDM MRC Support                        : Max num of DS OFDM channels = 2
OFDMA MTC Support                       : Max num of US OFDMA channels = 2
DS OFDM Profile Support                 : Max num of DS OFDM profile per channel = 5
DS OFDM QAM Modulation Support         : 0x1FD4{|QPSK|16|64|128|256|512|1024|2048|4096 QAM}
US OFDMA QAM Modulation Support        : 0x1FFC{|QPSK|8|16|32|64|128|256|512|1024|2048|4096
 QAM}
DS Lower Band Edge                      : 0x2{258 MHz}
DS Upper Band Edge                      : 0x1{1218 MHz}
Diplex Upper Band Edge                  : 0(42 MHz)
DTP mode                                : 0(DTP Op not supported)
DTP performance                         : 0(DTP mode not supported)
Diplexer DS Lower Band Edge Cap         : 0x0{ MHz}
Diplexer DS Upper Band Edge Cap         : 0x0{ MHz}
Diplexer US Upper Band Edge Cap         : 0x0{ MHz}
OUDP Leak Test                          : N/A
CM Capability Reject                    : {1,3,15,22,23,35,38,44,47}
CM STATUS ACK Support                   : Y
Flaps                                   : 0()
Errors                                  : 0 CRCs, 0 HCSes
Stn Mtn Failures                        : 0 aborts, 0 exhausted
Total US Flows                          : 2(2 active)
Total DS Flows                          : 1(1 active)
Total US Data                           : 59679 packets, 7597095 bytes
Total US Throughput                     : 589 bits/sec, 0 packets/sec
Total DS Data                           : 58847 packets, 5422376 bytes
Total DS Throughput                     : 443 bits/sec, 0 packets/sec
LB group ID assigned                    : 2147509287
LB group ID in config file              : N/A
LB policy ID                            : 0
LB policy ID in config file             : 0
LB priority                             : 0
Tag                                     :
Required DS Attribute Mask              : 0x0
Forbidden DS Attribute Mask             : 0x0
Required US Attribute Mask              : 0x0
Forbidden US Attribute Mask             : 0x0
Service Type ID                         :
Service Type ID in config file          :
Ranging Class ID                        : 0x6
Active Classifiers                      : 0 (Max = NO LIMIT)
CM Upstream Filter Group                : 0
CM Downstream Filter Group              : 0
CPE Upstream Filter Group               : 0
CPE Downstream Filter Group             : 0
DSA/DSX messages                        : permit all
Voice Enabled                           : NO
DS Change Times                         : 0
Boolean Services                        : 62
CM Energy Management Capable            : Y
CM Enable Energy Management             : N
CM Enter Energy Management              : NO
Battery Mode                            : N
Battery Mode Status                     : AC_POWER_MODE
Number of Multicast DSIDs Support       : 32
MDF Capability Mode                     : 2
IGMP/MLD Version                        : IGMPv3
FCType10 Forwarding Support             : Y
```

```
IPv6 Support                            : Y
Features Bitmask                        : 0x0
Total Time Online                       : 3d17h   (3d17h    since last counter reset)
CM Initialization Reason                : NO_PRIM_SF_USCHAN
CM_CTRL   req/rsp                       : 0/0
CM_STATUS                               : 0
DBC       req/rsp/ack                   : 7/7/7
DCC       req/rsp/ack                   : 0/0/0
DSA_US    req/rsp/ack                   : 0/0/0
DSA_DS    req/rsp/ack                   : 0/0/0
DSC_US    req/rsp/ack                   : 0/0/0
DSC_DS    req/rsp/ack                   : 0/0/0
DSD_US    req/rsp                       : 0/0
DSD_DS    req/rsp                       : 0/0
REG       req/rsp/ack                   : 1/1/1
EM        req/rsp                       : 0/0
ODS       req/rsp                       : 0/0
OPT       req/rsp/ack                   : 0/540/180
UCC       req/rsp                       : 0/0
```

Note

In the release Cisco IOS XE Dublin 17.12.1y, on CBR8, the command **show cable modem verbose** has been updated for all SCQAM and OFDMA upstream channels to include upstream RF port base power if configured(applicable to RPHY only) in addition to channel power adjust. Additionally we display the "Configured Received Power" and "Received Power" with reference to both:

1. channel width(dBmV@chw) and
2. 1.6MHz PSD (dBmV@1.6MHz)

The newly added/modified fields in the verbose output are listed below:

1. Upstream Channel Width (MHz)
2. Received Power delta (dBmV)
3. Configured Received Power (dBmV@chw)
4. Received Power (dBmV@chw)
5. Configured Received Power (dBmV@1.6MHz)
6. Received Power (dBmV@1.6MHz)

show cable modem voice

To show the detected voice-enabled modems, use the **show cable modem voice** command.

show cable modem voice [{**pending** | **failed**}]

Syntax Description

pending	(Optional) Displays cable modems that are being moved to the target channel via Downstream Frequency Override (DFO).
failed	(Optional) Displays cable modems that have already reached the maximum Downstream Frequency Override retry limit without success.

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use this command to display the detected voice-enabled modems.

Note The **show cable modem voice** command is not supported on the Cisco uBR-MC28U line card on the Cisco uBR7200 series routers.

Examples

```
Router# show cable modem voice
MAC Address    IP Address      Host      MAC          Prim  Num  Primary    DS
                               Interface State        Sid   CPE  Downstream RfId
0013.10bb.22f9 80.17.1.2       C6/0/0/U0 online(pt)   2     0    Mo3/0/0:1  1
0013.10bb.23d1 80.17.1.5       C6/0/1/U1 online(pt)   5     0    C6/0/1     255
```

Related Commands

Command	Description
show cable service-voice downstream-type	Displays the downstream-types that are capable of providing voice services.

show cable modem wideband

To display information for registered and unregistered wideband CMs, use the **show cable modem wideband** command in privileged EXEC mode.

Cisco uBR Series Router
show cable modem wideband [registered-traditional-docsis| channel]
show cable modem { *ip-address mac-address*}**wideband [channel]**
show cable modem [{**cable** *slot*/*subslot*/*cable-interface-index* [**upstream** *port* [*logical-channel-index*]]}] **wideband** [**channel**]

Cisco cBR Series Router
show cable modem wideband [registered-traditional-docsis| channel]
show cable modem wideband {*forwarding-summary*}
show cable modem { *ip-address mac-address*}**wideband [channel]**
show cable modem [{**cable** *slot*/*subslot*/*cable-interface-index* [**upstream** *port*]}] **wideband** [**channel**]

ip-address	(Optional) Identifies the IP address of a specific wideband CM to be displayed. If you specify the IP address for a CPE device behind a CM, information for that CM is displayed.
mac-address	(Optional) Identifies the MAC address of a specific wideband CM to be displayed. If you specify the MAC address for a CPE device behind a wideband CM, information for that wideband CM is displayed.
slot	Slot where the line card resides. The valid range is from 5 to 8 for uBR series router, 0 to 3 and 6 to 9 for cBR series router.
subslot	Secondary slot number of the cable interface line card. The valid subslots are 0 or 1 for uBR series router, 0 for cBR series router.
cable-interface-index	DOCSIS line card MAC domain index. • Cisco uBR10012 router—The valid range for the Cisco UBR-MC20X20V and Cisco uBR-MC5X20 line cards is from 0 to 4. The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14. • Cisco cBR-8 router—The valid range is from 0 to 15.
upstream *port*	(Optional) Displays information for all CMs using this specific upstream. You can specify this option only when displaying information for a cable interface. The valid range for *port* begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
logical-channel-index	(Optional) Logical channel index. The valid values are 0 or 1.

forwarding-summary	(Optional) Displays the following details: • FrwdIF—The wideband interface that each modem is using • BG DS Config—Number of downstreams in the wideband interface • Bonded State—Number of downstreams the modem is currently bonded on • CM DS Capab—Number of downstreams the modem is capable of bonding on
registered-traditional-docsis	(Optional) Displays information for wideband CMs that are currently registered as traditional DOCSIS modems.
channel	(Optional) Displays the number of downstream (DS) and upstream (US) channels used by a cable modem.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(21)BC	This command was introduced for the Cisco uBR10012 universal broadband router.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(33)SCB	This command output no longer shows the downstream (DS) channel ID or the bonding group (BG) ID. A new column was added to display the Receive Channel Configuration (RCC) ID of the RCC assigned to the cable modem.
12.2(33)SCE	This command was modified. The *port* parameter was changed to *cable-interface-index*.
12.2(33)SCF	This command was modified. The channel keyword and *logical-channel-index* argument was added.
12.2(33)SCG	This command output was modified to display direct downstream and upstream channel information on downstream channel bonding (DSCB) and upstream channel bonding (USCB) partial services.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The *logical-channel-index* variable was removed.
IOS-XE 3.18.1SP	This command was modified. The *forwarding-summary* argument was added.

Usage Guidelines

This command displays information for a one or more wideband CMs. Optionally, the CMs for which to display information can be identified IP address, MAC address, or cable interface.

If a wideband-capable CM is not able to register as a wideband CM (for example, if no wideband channel is available), the CM attempts to register as a traditional DOCSIS modem. The **registered-traditional-docsis** keyword limits the set of wideband CMs for which to display information to wideband-capable CMs that are currently registered as DOCSIS 1.X or DOCSIS 2.0 modems.

The following is a sample output of the **show cable modem wideband** *forwarding-summary* command for all cable modems running Cisco IOS-XE Release 3.18.1SP:

```
Router# show cable modem wideband forwarding-summary
MAC Address    IP Address      Primary        FrwdIF         BG DS  Bonded CM DS
                               Downstream                    Config State  Capab
c8fb.26a3.c694 88.22.0.8       In8/0/0:13     Wi8/0/0:1      8      8      8
c8fb.26a3.bc1e 88.22.0.11      In8/0/0:9      Wi8/0/0:1      8      8      8
c8fb.26a3.c160 88.22.0.37      In8/0/0:15     Wi8/0/0:1      8      8      8
c8fb.26a3.c18c 88.22.0.134     In8/0/0:10     Wi8/0/0:1      8      8      8
c8fb.26a3.c6ee 88.22.0.38      In8/0/0:11     Wi8/0/0:1      8      8      8
c8fb.26a3.c25c 88.22.0.41      In8/0/0:14     Wi8/0/0:1      8      8      8
c8fb.26a3.7fd6 88.22.0.15      In8/0/0:12     Wi8/0/0:1      8      8      8
c8fb.26a3.b8e8 88.22.0.29      In8/0/0:8      Wi8/0/0:1      8      8      8
c8fb.26a3.c510 88.22.0.10      In8/0/0:10     Wi8/0/0:1      8      8      8
c8fb.26a3.c524 88.22.0.40      In8/0/0:13     Wi8/0/0:1      8      8      8
c8fb.26a3.c1ac 88.22.0.43      In8/0/0:9      Wi8/0/0:1      8      8      8
c8fb.26a3.e158 88.22.0.27      In8/0/0:8      Wi8/0/0:1      8      8      8
c8fb.26a3.c452 88.22.0.7       In8/0/0:11     Wi8/0/0:1      8      8      8
c8fb.26a3.c722 88.22.0.12      In8/0/0:15     Wi8/0/0:1      8      8      8
c8fb.26a3.c68a 88.22.0.30      In8/0/0:14     Wi8/0/0:1      8      8      8
c8fb.26a3.c528 88.22.0.45      In8/0/0:14     Wi8/0/0:1      8      8      8
c8fb.26a3.c6ec 88.22.0.95      In8/0/1:10     Wi8/0/1:1      8      8      8
c8fb.26a3.c566 88.22.0.107     In8/0/1:11     Wi8/0/1:1      8      8      8
c8fb.26a3.c718 88.22.0.86      In8/0/1:10     Wi8/0/1:1      8      8      8
c8fb.26a3.c68e 88.22.0.99      In8/0/1:15     Wi8/0/1:1      8      8      8
c8fb.26a3.6da6 88.22.0.108     In8/0/1:12     Wi8/0/1:1      8      8      8
c8fb.26a3.c5d2 88.22.0.110     In8/0/1:8      Wi8/0/1:1      8      8      8
c8fb.26a3.c6f0 88.22.0.182     In8/0/1:11     Wi8/0/1:1      8      8      8
c8fb.26a3.e182 88.22.0.111     In8/0/1:15     Wi8/0/1:1      8      8      8
c8fb.26a3.c5e6 88.22.0.93      In8/0/1:14     Wi8/0/1:1      8      8      8
c8fb.26a3.c418 88.22.0.181     In8/0/1:9      Wi8/0/1:1      8      8      8
c8fb.26a3.c568 88.22.0.113     In8/0/1:13     Wi8/0/1:1      8      8      8
c8fb.26a3.c674 88.22.0.117     In8/0/1:14     Wi8/0/1:1      8      8      8
c8fb.26a3.c680 88.22.0.91      In8/0/1:13     Wi8/0/1:1      8      8      8
c8fb.26a3.c65e 88.22.0.88      In8/0/1:9      Wi8/0/1:1      8      8      8
```

Examples

The following is a sample output for the default form of the **show cable modem wideband** command on a Cisco uBR10012 router running a Cisco IOS Release prior to Cisco IOS Release 12.2(33)SCB:

```
Router# show cable modem wideband
MAC Address    IP Address      I/F       MAC          Prim BG DSID MD-DS-SG
                               State        Sid   ID
0014.bfbe.3cc0 1.11.0.1        C5/0/1/U0 w-online(pt)  3    24     24   N/A
0016.92f0.90d6 1.11.0.4        C5/0/1/U0 w-online(pt)  5    24     272  1
0014.bfbe.3cb8 1.11.0.2        C6/0/1/U0 w-online(pt)  3    36     36   N/A
0016.92f0.90d8 1.11.0.3        C6/0/1/U0 w-online(pt)  5    36     274  1
```

Example of the show cable modem wideband Command in Cisco IOS Release 12.2(33)SCB

The following is a sample output for the default form of the **show cable modem wideband** command on a Cisco uBR10012 router running Cisco IOS Release 12.2(33)SCB:

```
Router# show cable modem wideband
MAC Address    IP Address I/F        MAC           Prim   RCC  MD-DS-SG
                                     State          Sid    ID
0014.bfbe.4694 30.2.0.3  C8/0/0/U0  w-online(pt)    3      1     1
0018.6852.84aa 30.2.0.5  C8/0/0/U0  w-online(pt)    4      2     1
```

Note The RCC ID refers to the output of the **show cable mac-domain rcc command.**

Examples of the show cable modem wideband channel Command in Cisco IOS Release 12.2(33)SCF

The following is a sample output of the **show cable modem widebandchannel** command for all cable modems running Cisco IOS Release 12.2(33)SCF:

```
Router# show cable modem wideband channel
MAC Address    IP Address      I/F           MAC           DSxUS Primary
                                             State               WB
0018.6852.7b76 80.62.0.5       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
0019.474a.c182 80.62.0.2       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
```

The following is a sample output of the **show cable modem widebandchannel** command for a specific cable modem identified by its IP address:

```
Router# show cable modem 80.62.0.5 wideband channel
MAC Address    IP Address      I/F           MAC           DSxUS Primary
                                             State               WB
0018.6852.7b76 80.62.0.5       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
```

The following is a sample output of the **show cable modem widebandchannel** command for a specific cable modem identified by its MAC address:

```
Router# show cable modem 0018.6852.7b76 wideband channel
MAC Address    IP Address      I/F           MAC           DSxUS Primary
                                             State               WB
0018.6852.7b76 80.62.0.5       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
```

The following is a sample output of the **show cable modem widebandchannel** command for a specific cable interface:

```
Router# show cable modem Cable 6/1/0  wideband channel
MAC Address    IP Address      I/F           MAC           DSxUS Primary
                                             State               WB
0018.6852.7b76 80.62.0.5       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
0019.474a.c182 80.62.0.2       C6/1/0/U0     w-online      2x1   Wi6/1/0:1
```

Table below describes the significant fields shown in the display:

Table 55: show cable modem wideband Field Descriptions

Field	Description
MAC Address	MAC address for the CM.
IP Address	IP address that the DHCP server has assigned to the CM.
I/F	Cable interface providing the upstream for this CM.
MAC State	Current state of the MAC layer.
Prim SID	Primary SID assigned to this CM.

Field	Description
Bonding group ID	Identifier of the primary wideband channel.
DSID	Downstream Service Identifier.
DSxUS	Number of DS and US channels used by the CM.
Primary WB	Primary wideband channel for the CM.
MD-DS-SG	MAC Domain Downstream Service Group, the downstream channels of a single MAC domain that reach the cable modem.

Following is a sample output of the **show cable modem wideband** command in Cisco IOS Release 12.2(33)SCG:

```
Router# show cable modem cable 7/0/0 wideband channel
MAC Address    IP Address      I/F           MAC           DSxUS Primary
                                             State               WB
001a.c30c.7f04 40.4.58.4       C7/0/0/U3     w-online(pt)  3x1   Wi7/0/0:0
54d4.6ffb.2f6b 40.4.58.16      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
54d4.6ffb.30fd 40.4.58.14      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
4458.2945.2ade 40.4.58.18      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
001e.6bfc.d1ea 40.4.58.26      C7/0/0/p      w-online      3x3   Wi7/0/0:0
001a.c30c.7dbc 40.4.58.7       C7/0/0/U2     w-online(pt)  3x1   Wi7/0/0:0
001a.c30c.7efc 40.4.58.6       C7/0/0/U2     w-online(pt)  3x1   Wi7/0/0:0
001a.c30c.7e1e 40.4.58.8       C7/0/0/U2     w-online(pt)  3x1   Wi7/0/0:0
54d4.6ffb.2e1b 40.4.58.23      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
4458.2945.2a78 40.4.58.21      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
4458.2945.4604 40.4.58.19      C7/0/0/p      w-online(pt)  3x3   Wi7/0/0:0
```

Note Some modems on CMTS have an exclamation point showing next to their MD-DS-SG, and denotes an FN configuration change on the CMTS. The configuration change might have triggered the MD-DS-SG changes. Every time there is a change in frequency, the SG-ID will be increased by 1. For modems which would use the old SG-ID, they will stay online, but will be marked by an exclamation mark (!).

```
0090.ea1c.8442 172.19.254.80   C7/0/2/UB     w-online(pt)      3     5    !2 / 2
fc91.14b3.03b0 172.20.211.137  C7/0/2/UB     w-online(pt)      20    7    !2 / 2
0090.ea1c.80aa 172.18.254.71   C7/0/2/UB     w-online(pt)      32    4    !2 / 5
48f7.c072.164e 172.20.211.90   C7/0/2/UB     w-online(pt)      35    7    !2 / 2
48f7.c07e.880c 172.22.11.165   C7/0/2/UB     w-online(pt)      52    7    !2 / 5
001d.d4bd.8c01 172.20.211.24   C7/0/2/UB     w-online(pt)      65    5    !2 / 2
48f7.c07e.700c 172.20.211.100  C7/0/2/UB     w-online(pt)      67    7    !2 / 2
acb3.131a.faa7 172.20.171.40   C7/0/2/UB     w-online(pt)      72    6    !2 / 5
48f7.c070.028e 172.20.211.85   C7/0/2/UB     w-online(pt)      73    7    !2 / 2
2073.55c7.b4db 172.20.211.50   C7/0/2/UB     w-online(pt)      108   5    !2 / 2
```

Table below shows the possible values for the MAC State field for a wideband CM modem that registers as a traditional DOCSIS modem:

Table 56: Descriptions for the MAC State Field (for Traditional DOCSIS Modems)

MAC State Value [6]	Description
Registration and Provisioning Status Conditions	
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** commands.
init(d)	The DHCP request was received, as DHCPDISCOVER. This also indicates that the first IP broadcast packet has been received from the CM.
init(dr)	The DHCP request has been sent to the cable modem.
init(i)	The cable modem has received the DHCPOFFER reply (DHCPACK) from the DHCP server that has assigned an IP address to the modem, but the modem has not yet replied with a DHCPREQUEST message requesting that particular IP address, nor has it sent an IP packet with that IP address. **Note** If a CM appears to be stuck in this state, the CM has likely received the DHCPOFFER reply from the DHCP server, but this reply might have contained one or more invalid options for that particular CM.
init(io)	The Cisco CMTS has seen the DHCP offer as sent to the cable modem from the DHCP server that has assigned an IP address to the modem.
init(o)	The CM has begun to download the option file (DOCSIS configuration file) using the Trivial File Transfer Protocol (TFTP), as specified in the DHCP response. If the CM remains in this state, it indicates that the download has failed.
init(t)	Time-of-day (TOD) exchange has started.
resetting	The CM is being reset and will shortly restart the registration process.
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.

MAC State Value [6]	Description
cc(r2)	This state should normally follow cc(r1) and indicates that the CM has finished its initial ranging on the new channel, and is currently performing continuous ranging on the new channel. At the MAC layer, the CM is considered offline because it is not yet passing traffic on the new channel, but this state does not trigger the flap-list counters.
offline	The CM is considered offline (disconnected or powered down).
online	The CM has registered and is enabled to pass data on the network.
online(d)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the CMTS can continue to communicate with the CM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the CM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
online(pkd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the online(d) and online(pk) states.
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.

MAC State Value [6]	Description
expire(pt)	The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.
expire(ptd)	The CM registered, but network access for CPE devices using this CM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value. **Note** This state is equivalent to the online(d) and expire(pt) states.
Error Status Conditions	
reject(m)	The CM attempted to register but registration was refused due to a bad Message Integrity Check (MIC) value. This also could indicate that the shared secret in the DOCSIS configuration file does not match the value configured on the CMTS with the **cable shared-secret** command. In Cisco IOS Release 12.1(11b)EC1 and Cisco IOS Release 12.2(8)BC2 or later releases, this could also indicate that the **cable tftp-enforce** command has been used to require that a CM attempt a TFTP download of the DOCSIS configuration file before registering, but the CM did not do so.
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.

MAC State Value [6]	Description
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.
reject(ts)	The CM attempted to register, but registration failed because the TFTP server timestamp in the CM registration request did not match the timestamp maintained by the CMTS. This might indicate that the CM attempted to register by replaying an old DOCSIS configuration file used during a prior registration attempt.
reject(ip)	The CM attempted to register, but registration failed because the IP address in the CM request did not match the IP address that the TFTP server recorded when it sent the DOCSIS configuration file to the CM. IP spoofing could be occurring.
reject(na)	The CM attempted to register, but registration failed because the CM did not send a Registration-Acknowledgement (REG-ACK) message in reply to the Registration-Response (REG-RSP) message sent by the CMTS. A Registration-NonAcknowledgement (REG-NACK) is assumed.

[6] 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.

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 below shows the possible values for the MAC state field for a wideband-capable CM that registers as a wideband modem:

Table 57: Additional MAC States for a Wideband Cable Modem

MAC State Value	Description
Non-error Status Conditions	
w-online	The WCM has registered and is enabled to pass data on the network.
w-online(d)	The WCM registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. The CM does not forward traffic to or from the CPE devices, but the WCMTS can continue to communicate with the WCM using DOCSIS messages and IP traffic (such as SNMP commands). **Note** If BPI was enabled in the DOCSIS configuration file sent to the WCM, assume that the CM is using BPI encryption, unless other messages show that the BPI negotiation and key assignments have failed.
w-online(pkd)	The WCM registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled and KEK is assigned. **Note** This state is equivalent to the w-online(d) and w-online(pk) states.

MAC State Value	Description
w-online(pt)	The WCM 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 WCM, the network disabled status takes precedence, and the MAC status field shows w-online(d) instead of w-online(pt) even when BPI encryption is enabled and operational.
w-online(ptd)	The WCM registered, but network access for CPE devices using this WCM 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 w-online(d) and w-online(pt) states.
w-online(pk)	The WCM registered, BPI is enabled and KEK is assigned.
w-expire(pk)	The WCM registered, BPI is enabled, KEK was assigned, but the current KEK expired before the WCM could successfully renew a new KEK value.
w-expire(pkd)	The WCM registered, but network access for CPE devices using this WCM 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 w-online(d) and w-expire(pk) states.
w-expire(pt)	The WCM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value.
w-expire(ptd)	The WCM registered, but network access for CPE devices using this WCM has been disabled through the DOCSIS configuration file. In addition, BPI is enabled, TEK was assigned, but the current TEK expired before the WCM could successfully renew a new KEK value. **Note** This state is equivalent to the w-online(d) and w-expire(pt) states.
Error Status Conditions	
w-reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.
w-reject(pkd)	The WCM registered, but network access for CPE devices using this WCM 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 w-online(d) and w-reject(pk) states.
w-reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
w-reject(ptd)	The WCM registered, but network access for CPE devices using this WCM 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 w-online(d) and w-reject(pt) states.

Note For the complete list of the cable modem status, see Table 8: Descriptions for the MAC State Field , on page 82.

Related Commands

Command	Description
show cable modem vendor	Associates the name of a vendor with its Organizational Unique Identifier (OUI).
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem summary	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem classifiers	Displays information about the classifiers for a particular CM.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) for a particular cable modem.
show cable modem connectivity	Displays connectivity statistics for one or more CMs.
show cable modem errors	Displays error statistics for one or more CMs.
show cable modem flap	Displays flap list statistics for one or more cable modems.
show cable modem maintenance	Displays station maintenance (SM) error statistics for one or more cable modems.
show cable modem remote-query	Displays information collected by the remote-query feature.
show cable modulation-profile	Displays modulation profile group information.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.
show interface cable sid	Displays cable interface information.

show cable modem wideband phy

To display the physical information of registered and unregistered wideband CMs on the Cisco CMTS router, use the **show cable modem wideband phy** command in privileged EXEC mode.

show cable modem wideband phy

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following is a sample output for the default form of the **show cable modem wideband phy** command:

```
Router# show cable modem wideband phy
MAC Address    IP Address      I/F           MAC          Chan   Frq    SNR    Pwr
                                             State        Desc   (MHZ)  (db)   (dBmV)
001a.c30c.7f04 40.4.58.4       C7/0/0/U3     w-online(pt) dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us3    13  36.12   0.00
54d4.6ffb.2f6b 40.4.58.16      C7/0/0/p      w-online(pt) dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   45.00
                                                            us1    37  -----   44.00
                                                            us2    20  36.12   44.50
                                                            us3    13  36.12   44.00
54d4.6ffb.30fd 40.4.58.14      C7/0/0/p      w-online(pt) dsPri   561  -----   0.00
                                                          dsSec   555    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   44.75
                                                            us1    37  -----   44.00
                                                            us2    20  36.12   44.00
                                                            us3    13  36.12   44.75
4458.2945.2ade 40.4.58.18      C7/0/0/p      w-online(pt) dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   23.50
                                                            us1    37  -----   23.50
                                                            us2    20  36.12   23.50
                                                            us3    13  36.12   23.50
001e.6bfc.d1ea 40.4.58.26      C7/0/0/p      w-online     dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   46.25
                                                            us1    37  -----   46.25
                                                            us2    20  36.12   46.25
```

```
                                                          us3    13  36.12   46.25
54d4.6ffb.2e21 40.4.58.5      C7/0/0/p      w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   45.50
                                                            us1    37  -----   45.00
                                                            us2    20  36.12   45.00
                                                            us3    13  36.12   45.00
001a.c30c.7dbc 40.4.58.7      C7/0/0/U2     w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us2    20  36.12   0.00
001a.c30c.7efc 40.4.58.6      C7/0/0/U2     w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us2    20  36.12   0.00
001a.c30c.7e1e 40.4.58.8      C7/0/0/U2     w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us2    20  36.12   0.00
54d4.6ffb.2e1b 40.4.58.23     C7/0/0/p      w-online(pt)  dsPri   561  -----   0.00
                                                          dsSec   555    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   45.00
                                                            us1    37  -----   44.25
                                                            us2    20  36.12   44.25
                                                            us3    13  36.12   44.50
4458.2945.2a78 40.4.58.21     C7/0/0/p      w-online(pt)  dsPri   561  -----   0.00
                                                          dsSec   555    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   34.75
                                                            us1    37  -----   33.00
                                                            us2    20  36.12   33.00
                                                            us3    13  36.12   33.75
4458.2945.4604 40.4.58.19     C7/0/0/p      w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    31  36.12   23.75
                                                            us1    37  -----   23.75
                                                            us2    20  36.12   24.00
                                                            us3    13  36.12   24.00
001e.6bfb.0662 40.4.58.11     C8/0/0/UB     w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    15  36.12   27.50
                                                            us1    25  36.12   27.00
                                                            us2    35  27.70   29.00
                                                            us3    45  27.70   38.25
001e.6bfb.01aa ---            C8/0/0/UB     w-online(pt)  dsPri   573  -----   0.00
                                                          dsSec   555    N/A   N/A
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    15  36.12   26.75
                                                            us1    25  36.12   26.75
                                                            us2    35  27.48   28.25
                                                            us3    45  27.32   38.00
54d4.6ffb.2e66 ---            C8/0/0/p      w-online(pt)  dsPri   555  -----   0.00
                                                          dsSec   561    N/A   N/A
                                                          dsSec   567    N/A   N/A
                                                            us0    15  36.12   26.25
                                                            us1    25  36.12   28.75
                                                            us2    35  28.26   27.00
                                                            us3    45  28.26   38.00
```

Table below describes the significant fields shown in the display:

Table 58: show cable modem wideband phy Field Descriptions

Field	Description
MAC Address	MAC address of the CM.
IP Address	IP address that the DHCP server has assigned to the CM.
I/F	Cable interface providing the upstream to the CM.
MAC State	Current state of the MAC layer.
Chan Desc	Descriptive name of the channel.
Frq State (MHZ)	Frequency value.
SNR (db)	Upstream signal-to-noise ratio (SNR) for a particular CM.
Pwr (dBmV)	Power value.

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered CMs.
show cable modem summary	Displays voice call information for a particular CM, identified either by its IP address or MAC address.
show cable modem wideband	Displays information of registered and unregistered wideband CMs.
show interface cable modem	Displays information about the CMs connected to a particular cable interface.

show cable modem wideband primary-channel

To display primary-channel information for a wideband channel, use the **show cable modem wideband primary-channel** command in privileged EXEC mode.

show cable modem {**ip-address** | **mac-address**} **wideband primary-channel**

Syntax Description

ip-address	Identifies the IP address of a specific cable modem to be displayed. If you specify the IP address for a CPE device behind a cable modem, information for that cable modem is displayed.
mac-address	Identifies the MAC address of a specific cable modem to be displayed. You can also specify the MAC address for a CPE device behind a cable modem, and information for that cable modem will be displayed.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.3(23)BC	This command was introduced for the Cisco uBR10012 router.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command displays primary-channel information for a wideband channel that is associated with a specific MAC address or IP address of a cable modem or CPE device being the cable modem.

Related Commands

Command	Description
show cable modem	Displays information for the registered and unregistered cable modems.
show cable modem primary-channel summary total	Displays information for the wideband and narrowband cable modems and location of the primary downstream channel.

show cable modem wideband rcs-status

To display details of events for each RF channel in the cable modem's receive channel configuration (RCC), use the **show cable modem wideband rcs-status** command in privileged EXEC mode.

Cisco uBR Series Router

show cable modem {**mac-address** | **ip-address** | **cable** *slot*/*subslot*/*port*} **wideband rcs-status**

Cisco cBR Series Router
show cable modem {**mac-address** | **ip-address** | **cable** *slot*/*subslot*/*mac-domain*} **wideband rcs-status [verbose]**

Syntax Description

mac-address	(Optional) Specifies the MAC address of a wideband CM to be displayed.
ip-address	(Optional) Specifies the IP address of a wideband CM to be displayed.
cable *slot/subslot/port*	(Optional) Identifies a cable interface on the Cisco uBR10012 router. The following are the valid values: • *slot* —Specifies the chassis slot number of the cable interface line card. Valid values 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 port number. Valid values are 0 to 4 (depending on the cable interface).
cable *slot/subslot/mac-domain*	(Optional) Identifies a cable interface on the Cisco cBR-8 router. The following are the valid values: • *slot* —Specifies the chassis slot number of the cable interface line card. Valid values are 0 to 9. • *subslot* —Specifies the secondary slot number of the cable interface line card. Valid subslots is 0. • *mac-domain* —Specifies the mac-domain. The valid values are 0 to 15.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **verbose** keyword was added.
IOS-XE 3.18.0SP	The command was modified on the Cisco cBR Series Converged Broadband Routers to display the DS OFDM profile ID events when **verbose** keyword was used.

Release	Modification
IOS-XE 16.6.1	The command was modified on the Cisco cBR Series Converged Broadband Routers to display the statistics of the OFDM specific CM-STATUS events when verbose keyword was used.

The following is a sample output of the **show cable modem wideband rcs-status** command:

```
Router# show cable modem 0010.18de.813f wideband rcs-status
CM              DS-CTRL  RF   CH ID  STATUS        TYPE      PRIM-CHAN
--------------  -------  ---  -----  ------------  --------  ---------

0010.18de.813f  6/0/4    0    1      UP            SC-QAM    YES
                         1    2      UP            SC-QAM    NO
                         2    3      UP            SC-QAM    NO
                         3    4      UP            SC-QAM    NO
                         4    5      UP            SC-QAM    NO
                         5    6      UP            SC-QAM    NO
                         6    7      UP            SC-QAM    NO
                         7    8      UP            SC-QAM    NO
                         8    9      UP            SC-QAM    NO
                         9    10     UP            SC-QAM    NO
                         10   11     UP            SC-QAM    NO
                         11   12     UP            SC-QAM    NO
                         12   13     UP            SC-QAM    NO
                         13   14     UP            SC-QAM    NO
                         14   15     UP            SC-QAM    NO
                         15   16     UP            SC-QAM    NO
                         16   17     UP            SC-QAM    NO
                         17   18     UP            SC-QAM    NO
                         18   19     UP            SC-QAM    NO
                         19   20     UP            SC-QAM    NO
                         20   21     UP            SC-QAM    NO
                         21   22     UP            SC-QAM    NO
                         22   23     UP            SC-QAM    NO
                         23   24     UP            SC-QAM    NO
                         158  159    UP            OFDM      NO
```

The following is a sample output of the **show cable modem wideband rcs-status verbose** command on Cisco cBR Series Converged Broadband Routers:

```
cbr8-14#show cable modem 0010.18de.813f wideband rcs-status verbose
RF  : 6/0/4 158
  Status                   : UP
  FEC/QAM Failure          : 0
  Dup FEC/QAM Failure      : 0
  FEC/QAM Recovery         : 0
  Dup FEC/QAM Recovery     : 0
  MDD Failure              : 0
  Dup MDD Failure          : 0
  MDD Recovery             : 0
  Dup MDD Recovery         : 0
  Flaps                    : 0
  Flap Duration            : 00:00
OFDM Profile Id : 2
  Status                   : UP
  FEC Lock Failure         : 1         Mar 31 16:03:37
  DUP FEC Lock Failure     : 0
  FEC Lock Recovery        : 1         Mar 31 16:04:01
  DUP FEC Lock Recovery    : 0
 OFDM Profile Id : 8
```

```
  Status                  : DOWN
  FEC Lock Failure        : 1         Mar 31 16:04:50
  DUP FEC Lock Failure    : 0
  FEC Lock Recovery       : 0
  DUP FEC Lock Recovery   : 0
```

Example of show cable modem wideband rcs-status verbose command in Cisco IOS-XE Release 16.6.1

The following is a sample output of the **show cable modem wideband rcs-status verbose** command on Cisco cBR Series Converged Broadband Routers:

```
cbr8-14#show cable modem 4800.33ea.7072 wideband rcs-status verbose
CM  : 4800.33ea.7072
RF  : 3/0/0 0
  Status                  : UP
  FEC/QAM Failure         : 0
  Dup FEC/QAM Failure     : 0
  FEC/QAM Recovery        : 0
  Dup FEC/QAM Recovery    : 0
  MDD Failure             : 0
  Dup MDD Failure         : 0
  MDD Recovery            : 0
  Dup MDD Recovery        : 0
  Flaps                   : 0
  Flap Duration           : 00:00
RF  : 3/0/0 1
  Status                  : UP
  FEC/QAM Failure         : 0
  Dup FEC/QAM Failure     : 0
  FEC/QAM Recovery        : 0
  Dup FEC/QAM Recovery    : 0
  MDD Failure             : 0
  Dup MDD Failure         : 0
  MDD Recovery            : 0
  Dup MDD Recovery        : 0
  Flaps                   : 0
  Flap Duration           : 00:00
RF  : 3/0/0 159
  Status                  : UP
  FEC/QAM Failure         : 0
  Dup FEC/QAM Failure     : 0
  FEC/QAM Recovery        : 0
  Dup FEC/QAM Recovery    : 0
  MDD Failure             : 0
  Dup MDD Failure         : 0
  MDD Recovery            : 0
  Dup MDD Recovery        : 0
  NCP PROF Failure        : 2         May 8  15:14:24
  Dup NCP PROF Failure    : 0
  NCP PROF Recovery       : 1         May 8  15:15:18
  Dup NCP PROF Recovery   : 0
  PLC Lock Failure        : 1         May 8  15:14:47
  Dup PLC Lock Failure    : 0
  PLC Lock Recovery       : 1         May 8  15:15:46
  Dup PLC Lock Recovery   : 0
  Flaps                   : 0
  Flap Duration           : 00:00
  OFDM Profile Id : 2
  Status                  : UP
  Profile Failure         : 1         May 8  15:16:18
  DUP Profile Failure     : 0
```

```
Profile Recovery         : 1         May 8  15:16:44
DUP Profile Recovery     : 0
```

*Table 59: Field Description for **show cable modem wideband rcs-status** command:*

Field	Description
CM	Cable Modem
DS-CTRL	Downstream Integrated Controller
STATUS	RF channel DS resiliency status
RF CH ID	RF channel Docsis Channel ID
TYPE	RF channel OAM type
PRIM-CHAN	If it is a primary channel

*Table 60: Field Description for **show cable modem wideband rcs-status verbose** command on the Cisco cBR Series Converged Broadband Routers:*

Field	Description
CM	Cable Modem
RF	RF Channel
Status	RF channel DS resiliency status
FEC/QAM Failure	Loss of FEC lock or QAM count
Dup FEC/QAM Failure	Duplicate Loss of FEC lock or QAM count
FEC/QAM Recovery	FEC lock or QAM recovery count
Dup FEC/QAM Recovery	Duplicate FEC lock or QAM recovery count
MDD Failure	Secondary channel MDD timeout count
Dup MDD Failure	Duplicate Secondary channel MDD timeout count
MDD Recovery	Secondary channel MDD recovery count
Dup MDD Recovery	Duplicate Secondary channel MDD recovery count
Flaps	RF channel flap count
Flap Duration	RF channel flap duration
NCP PROF Failure	Loss of FEC lock on NCP count
Dup NCP PROF Failure	Duplicate loss of FEC lock on NCP count
NCP PROF Recovery	FEC recovery on NCP profile count

Field	Description
Dup NCP PROF Recovery	Duplicate FEC recovery on NCP profile count
PLC Lock Failure	Loss of FEC lock on PLC channel count
Dup PLC Lock Failure	Duplicate loss of FEC lock on PLC count
PLC Lock Recovery	FEC recovery on PLC channel count
Dup PLC Lock Recovery	Duplicate FEC recovery on PLC channel count
OFDM Profile Id	OFDM profile ID
Status	OFDM profile status
Profile Failure	Loss of FEC lock on OFDM profile count
DUP Profile Failure	Duplicate Loss of FEC lock on OFDM profile count
Profile Recovery	FEC recovery on OFDM profile count
DUP Profile Recovery	Duplicate FEC recovery on OFDM profile count

Related Commands

Command	Description
show cable modem summary wb-rf	Displays the number of RFs that are down on a cable interface.

show cable modulation-profile

To display modulation profile group information for a Cisco CMTS, use the **show cable modulation-profile** command in privileged EXEC mode.

Cisco uBR Series Router

show cable modulation-profile [*profile* [**verbose**]] [*iuc-code*]
show cable modulation-profile cable {*slot* /*port* | *slot* /*subslot*/*port* } [**upstream** *port*]

Cisco cBR Series Router

show cable modulation-profile [*profile* [**verbose**]] [*iuc-code*]
show cable modulation-profile Upstream-Cable *slot* /*card*/*port* **us-channel** *us-channel-id*
show cable modulation-profile ofdma

Syntax Description

profile	(Optional) Profile number. Valid values start with 1.
verbose	(Optional) Displays detailed information for an individual profile.
iuc-code	(Optional) Internal usage code (IUC). Valid options are: **a-long**—Advanced Phy Long Grant Burst (IUC 10)**a-short**—Advanced Phy Short Grant Burst (IUC 9)**a-ugs**—Advanced Phy Unsolicited Grant Burst (IUC 11)**initial**—Initial Ranging Burst (IUC 3) **long**—Long Grant Burst (IUC 6) **reqdata**—Request/Data Burst (IUC 2) [7]**request**—Request Burst (IUC 1) **short**—Short Grant Burst (IUC 5) **station—**Station Ranging Burst (IUC 4)
cable *slot* /*port*	For uBR series router, identifies a cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers. On the Cisco uBR7100 series router, the only valid value is **1/0**. On the Cisco uBR7200 series router, *slot* can range from 3 to 6, and *port* can be 0 or 1, depending on the cable interface.
cable *slot* /*subslot* /*port*	For uBR series router, identifies a cable interface on the Cisco uBR10012 router. The following are the valid values: • *slot* = 5 to 8 • *subslot* = 0 or 1 • *port* = 0 to 4 (depending on the cable interface)
upstream *port*	(Optional) For uBR series router, displays information for a particular upstream on the selected cable interface. The *port* value starts with 0 and continues up, depending on the type of cable interface card.

cable *slot* /*card*/*port*	For cBR series router, identifies a cable interface on the Cisco cBR-8 router. The following are the valid values: • *slot* = 0 to 9 • *card* = 0 • *port* = 0 to 15 (depending on the cable interface)
us-channel *us-channel-id*	(Optional) For cBR series router, displays information for a particular upstream on the selected cable interface. The *us-channel-id* value is from 0 to 12, depending on the type of cable interface card.
ofdma	Displays the OFDMA modulation profile details.

[7] The Cisco CMTS recognizes the reqdata burst type but does not use it.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3 XA	This command was first introduced.
12.(0)5T1, 12.0(6)SC, 12.1(2)EC	This command was supported, replacing the **show cable burst-profile** command.
12.1(3a)EC	This **reqdata** type was added as a placeholder for scripts that might reference it, but the DOCSIS MAC scheduler on the Cisco CMTS does not use this type of burst.
12.2(15)CX	Support was added for the Cisco uBR-MC28U/X cable interface line card, including support for DOCSIS 2.0 A-TDMA and mixed modulation profiles. This includes adding additional information to the command's display, as well as adding the **a-long**, **a-short**, **a-ugs**, and **verbose** options.
12.2(15)CX1	Added the ability to display the modulation profiles being used by a particular cable interface and upstream.
12.2(15)BC2	This command displays all default modulation profiles 1, 21, 41, 101, 121, 201, 221, and 241), even when the cable interface card that is associated with those profiles is not installed. Previous releases displayed only the default modulation profiles that were in use.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The value range for the *slot* /*card* /*port* variables are changed.
Cisco IOS XE Everest 16.6.1	This command was modified. The **ofdma** keyword was added to display the OFDMA modulation profile details.

Usage Guidelines

The **show cable modulation-profile** command displays modulation profile group information. A modulation profile is a collection of burst profiles that are sent out in a Upstream Channel Descriptor (UCD) message to configure a modem's transmit parameters for an upstream message burst type.

Table below shows the IUC codes for each burst type:

Table 61: Internal Usage Code Types

IUC	Type	IUC	Type
IUC 1	Request Burst (**req**)	IUC 7	Not used
IUC 2	Request/Data Burst (**reqdata**)[8]	IUC 8	Not used
IUC 3	Initial Ranging Burst (**initial**)	IUC 9	Advanced Phy Short Grant Burst (**a-short**)
IUC 4	Station Ranging Burst (**station**)	IUC 10	Advanaced Phy Long Grant Burst (**a-long**)
IUC 5	Short Grant Burst (**short**)	IUC 11	Advanaced Phy Unsolicited Grant Burst (**a-ugs**)
IUC 6	Long Grant Burst (**long**)	IUC 12	Not used

[8] The Cisco CMTS recognizes the reqdata burst type but does not use it.

Modulation Profile Ranges

The ranges for modulation profiles depends on the cable interface being used and the type of modulation profile being created. Table below lists the valid ranges according to cable interface and modulation type:

Table 62: Allowable Ranges for Modulation Profiles

Cable Interface	DOCSIS 1.X (TDMA)	Mixed DOCSIS 1.X/2.0	DOCSIS 2.0 (A-TDMA)
Cisco uBR7100 series	1 to 10[9], default=1	N/A	N/A
Cisco uBR-MC16C	1 to 10, default=1	N/A	N/A
Cisco uBR-MC16S	1 to 10, default=1	N/A	N/A
Cisco uBR-MC28C	1 to 10, default=1	N/A	N/A
Cisco uBR10-MC5X20S, Cisco uBR10-MC5X20U, Cisco uBR10-MC5X20H	21 to 30, default=21	121 to 130, default=121	221 to 230, default=221
Cisco uBR-MC16U/X, Cisco uBR-MC28U/X	41 to 50, default=41	141 to 150, default=141	241 to 250, default=241

[9] Only 8 modulation profiles are supported in Cisco IOS software releases before 12.2(15)BC1, so in these releases the valid range is 1 to 8.

Note Default modulation profiles are created for each type of card and operation mode. You cannot delete the default modulation profiles (1, 21, 41, 101, 121, 201, 221, and 241). In Cisco IOS Release 12.2(15)BC2 and later, all default modulation profiles are displayed, even when that particular cable interface is not installed. In previous versions, only the default modulation profiles that were in use were displayed.

Examples

The following example shows a sample output of the show cable modulation-profile ofdma command in Cisco IOS XE Everest 16.6.1 release:

```
Router# show cable modulation-profile ofdma

Mod  Subc    IUC type    Act   Preamble   Bit       Pilot
     Spacing             subc  Symbols    Loading   Pattern
421  25KHz    3 (IR)     64       4
              4 (FR)     192      1
              13 (data)                   16-QAM    8

423  25KHz    3 (IR)     64       4
              4 (FR)     128      1
              6 (data)                    1024-QAM  8
              10 (data)                   512-QAM   8
              11 (data)                   256-QAM   8
              12 (data)                   128-QAM   9
              13 (data)                   64-QAM    9

461  50KHz    3 (IR)     32       4
              4 (FR)     192      1
              13 (data)                   16-QAM    1

466 50KHz     3 (IR)     64       4
              4 (FR)     128      1
              13 (data)                   1024-QAM  2
```

The following example shows a sample output of the show cable modulation-profile ofdma command in Cisco IOS XE Everest 16.6.1 release to show a list of upstream state us channels for a specific OFDMA profile:

```
Router# show cable modulation-profile ofdma 421
Mod   Subc    IUC type  Act    Preamble  Bit      Pilot
      Spacing           subc   Symbols   Loading  Pattern
421   25KHz    3  (IR)   64     4
               4  (FR)   192    1
               13 (data)                  1024-QAM 8

**** OFDMA Profile Assigned Channels ****
Prof Channel
421 1/0/1:/12
```

The following is sample output from the **show cable modulation-profile** command in Cisco IOS Release 12.2(11)BC3 and earlier releases:

```
CMTS01# show cable modulation-profile

Mo IUC     Type  Preamb Diff FEC     FEC   Scrambl Max  Guard Last Scrambl Preamb
                 length enco T       CW    seed    B    time  CW           offset
                              bytes  size          size size  short
1  request qpsk   64     no   0x0    0x10  0x152   1    8     no     yes     56
1  initial qpsk   128    no   0x5    0x22  0x152   0    48    no     yes     0
1  station qpsk   128    no   0x5    0x22  0x152   0    48    no     yes     0
1  short   qpsk   72     no   0x5    0x4B  0x152   0    8     no     yes     48
```

The following is sample output from the **show cable modulation-profile** command in Cisco IOS Release 12.2(15)CX and later releases:

```
Router# show cable modulation-profile

Mod IUC     Type  Pre Diff FEC  FEC  Scrmb Max Guard Last Scrmb Pre   Pre   RS
                  len enco T    k    seed  B   time  CW         offst Type
                           BYTE BYTE       siz size  short
1   request qpsk  64  no   0x0  0x10 0x152 0   8     no   yes   184   qpsk  na
```

```
1   initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   128   qpsk  na
1   station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   128   qpsk  na
1   short   qpsk  72  no   0x4  0x4C 0x152 12  8     yes  yes   176   qpsk  na
1   long    qpsk  80  no   0x9  0xEC 0x152 0   8     yes  yes   168   qpsk  na
41  request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk  na
41  initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
41  station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
41  short   qpsk  80  no   0x4  0x4C 0x152 12  8     yes  yes   0     qpsk  na
41  long    qpsk  80  no   0x8  0xEC 0x152 0   8     yes  yes   0     qpsk  na
45  request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk  na
45  initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
45  station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
45  short   16qam 160 no   0x6  0x4C 0x152 7   8     yes  yes   0     16qam na
45  long    16qam 160 no   0x8  0xE7 0x152 0   8     yes  yes   0     16qam na
141 request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk  na
141 initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
141 station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk  na
141 short   16qam 160 no   0x6  0x4C 0x152 7   8     yes  yes   0     16qam na
141 long    16qam 160 no   0x8  0xE7 0x152 0   8     yes  yes   0     16qam na
141 a-short 32qam 160 no   0x9  0x4C 0x152 6   8     yes  yes   0     qpsk1 no
141 a-long  64qam 196 no   0xC  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
241 request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk0 no
241 initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 no
241 station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 no
241 a-short 32qam 160 no   0x9  0x4C 0x152 6   8     yes  yes   0     qpsk1 no
241 a-long  64qam 196 no   0xC  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
241 a-ugs   16qam 80  no   0x3  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
242 request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk0 no
242 initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 no
242 station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 no
242 a-short qpsk  80  no   0x4  0x4C 0x152 12  8     yes  yes   0     qpsk0 no
242 a-long  qpsk  68  no   0x8  0xEC 0x152 0   8     yes  yes   0     qpsk0 no
242 a-ugs   qpsk  80  no   0x0  0xEC 0x152 0   8     yes  yes   0     qpsk0 no
243 request 64qam 132 no   0x4  0x10 0x152 0   8     no   yes   0     qpsk1 no
243 initial 64qam 128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk1 no
243 station 64qam 128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk1 no
243 a-short 64qam 160 no   0x9  0x4C 0x152 5   8     yes  yes   0     qpsk1 no
243 a-long  64qam 196 no   0xC  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
243 a-ugs   64qam 100 no   0x7  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
244 request 64qam 132 no   0x4  0x10 0x152 0   8     no   yes   0     qpsk1 no
244 initial 64qam 128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk1 no
244 station 64qam 128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk1 no
244 a-short 64qam 160 no   0x9  0x4C 0x152 5   8     yes  yes   0     qpsk1 no
244 a-long  64qam 196 no   0xC  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
244 a-ugs   64qam 32  no   0xA  0xC8 0x152 255 32    yes  yes   0     qpsk1 yes
245 initial qpsk  32  no   0xA  0xC8 0x152 32  32    no   yes   0     qpsk1 yes
245 station qpsk  32  no   0xA  0xC8 0x152 32  32    yes  yes   0     qpsk1 yes
245 a-short 64qam 64  no   0xA  0xC8 0x152 32  32    yes  yes   0     qpsk1 yes
245 a-long  64qam 32  no   0xA  0xC8 0x152 252 32    yes  yes   0     qpsk1 yes
245 a-ugs   64qam 32  no   0xA  0xC8 0x152 32  32    yes  yes   0     qpsk1 yes
Router#
```

The following shows sample output from the **show cable modulation-profile** command for a mixed mode modulation profile (TDMA/A-TDMA) on the Cisco uBR10-MC5X20S cable interface line card:

```
Router# show cable modulation-profile 121

Mod IUC     Type  Pre Diff FEC  FEC  Scrmb Max Guard Last Scrmb Pre   Pre   RS
                  len enco T    k    seed  B   time  CW         offst Type
                            BYTE BYTE       siz size  short
121 request qpsk  32  no   0x0  0x10 0x152 0   20    no   yes   0     qpsk  na
121 initial qpsk  64  no   0x5  0x22 0x152 0   48    no   yes   64    qpsk  na
```

```
121 station qpsk  64  no   0x5  0x22 0x152 0   48    no   yes   64    qpsk  na
121 short   qpsk  64  no   0x5  0x4B 0x152 6   20    yes  yes   64    qpsk  na
121 long    qpsk  64  no   0x8  0xDC 0x152 0   20    yes  yes   64    qpsk  na
121 a-short 64qam 128 no   0x5  0x63 0x152 10  20    yes  yes   192   qpsk0 no
121 a-long  64qam 128 no   0xF  0xC8 0x152 0   20    yes  yes   192   qpsk0 no
Router#
```

The following shows sample output from the **show cable modulation-profile** command for two DOCSIS 2.0 modulation profiles (A-TDMA) on the Cisco uBR10-MC5X20S cable interface line card:

```
Router# show cable modulation-profile 221

Mod IUC     Type  Pre Diff FEC  FEC  Scrmb Max Guard Last Scrmb Pre   Pre   RS
                  len enco T    k    seed  B   time  CW         offst Type
                      BYTE BYTE       siz size  short
221 request qpsk  64  no   0x0  0x10 0x152 0   8     no   yes   184   qpsk0 na
221 initial qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 na
221 station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 na
221 short   qpsk  72  no   0x5  0x4B 0x152 6   8     yes  yes   176   qpsk0 na
221 long    qpsk  80  no   0x8  0xDC 0x152 0   8     yes  yes   168   qpsk0 na
221 a-short 64qam 128 no   0x5  0x63 0x152 10  20    yes  yes   192   qpsk0 no
221 a-long  64qam 128 no   0xF  0xC8 0x152 0   20    yes  yes   192   qpsk0 no
Router# show cable modulation-profile 241

Mod IUC     Type  Pre Diff FEC  FEC  Scrmb Max Guard Last Scrmb Pre   Pre   RS
                  len enco T    k    seed  B   time  CW         offst Type
                      BYTE BYTE       siz size  short
241 request qpsk  68  no   0x0  0x10 0x152 0   8     no   yes   0     qpsk0 no
241 initial qpsk  2   no   0x0  0x10 0x0   0   0     no   no    0     qpsk1 no
241 station qpsk  128 no   0x5  0x22 0x152 0   48    no   yes   0     qpsk0 no
241 a-short 32qam 160 no   0x9  0x4C 0x152 6   8     yes  yes   0     qpsk1 no
241 a-long  64qam 132 no   0xC  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
241 a-ugs   16qam 80  no   0x3  0xE7 0x152 0   8     yes  yes   0     qpsk1 no
Router#
```

The following shows sample output for the **upstream** option, which displays the modulation profile currently being used by a particular upstream:

```
Router# show cable modulation-profile cable 4/1 upstream 1

Mod  IUC     Type  Pre Diff FEC  FEC  Scrmb  Max Guard Last Scrmb Pre   Pre   RS
                  len enco T    k    seed   B   time  CW         offst Type
                      BYTE BYTE       siz size  short
41   request qpsk  64  no   0x0  0x10 0x152  0   8     no   yes   396  qpsk  na
41   initial qpsk  128 no   0x5  0x22 0x152  0   48    no   yes   6    qpsk  na
41   station qpsk  128 no   0x5  0x22 0x152  0   48    no   yes   6    qpsk  na
41   short   qpsk  88  no   0x5  0x4C 0x152  35  42    yes  yes   396  qpsk  na
41   long    qpsk  76  no   0x6  0xE8 0x152  135 143   yes  yes   396  qpsk  na
Router#
```

The following example shows typical detailed output for an individual modulation profile that is displayed when using the **verbose** option. Each IUC is described in detail.

```
Router# show cable modulation-profile 1 verbose

Modulation Profile Number:      1
Burst:                          tdma
IUC:                            request (IUC 1)
Modulation:                     qpsk
Preamble length:                64
Differential Encoding:          off
```

```
FEC parity T bytes:             0x0
FEC codeword length K bytes:    0x10
Scrambler seed:                 0x152
Max short burst size B bytes:   0
Guard time size in symbols:     8
Shortened last codeword:        no
Scrambler:                      enabled
Preamble offset:                184
Preamble type:                  qpsk0
RS interleaver on:              na
RS interleaver depth:           0
RS interleaver block size:      0
Modulation Profile Number:      1
Burst:                          tdma
IUC:                            initial maintenance (IUC 3)
Modulation:                     qpsk
Preamble length:                128
Differential Encoding:          off
FEC parity T bytes:             0x5
FEC codeword length K bytes:    0x22
Scrambler seed:                 0x152
Max short burst size B bytes:   0
Guard time size in symbols:     48
Shortened last codeword:        no
Scrambler:                      enabled
Preamble offset:                0
Preamble type:                  qpsk0
RS interleaver on:              na
RS interleaver depth:           0
RS interleaver block size:      0
Modulation Profile Number:      1
Burst:                          tdma
IUC:                            station maintenance (IUC 4)
Modulation:                     qpsk
Preamble length:                128
Differential Encoding:          off
FEC parity T bytes:             0x5
FEC codeword length K bytes:    0x22
Scrambler seed:                 0x152
Max short burst size B bytes:   0
Guard time size in symbols:     48
Shortened last codeword:        no
Scrambler:                      enabled
Preamble offset:                0
Preamble type:                  qpsk0
RS interleaver on:              na
RS interleaver depth:           0
RS interleaver block size:      0
Modulation Profile Number:      1
Burst:                          tdma
IUC:                            short grant (IUC 5)
Modulation:                     qpsk
Preamble length:                72
Differential Encoding:          off
FEC parity T bytes:             0x5
FEC codeword length K bytes:    0x4B
Scrambler seed:                 0x152
Max short burst size B bytes:   6
Guard time size in symbols:     8
Shortened last codeword:        yes
Scrambler:                      enabled
Preamble offset:                176
Preamble type:                  qpsk0
RS interleaver on:              na
```

```
RS interleaver depth:           0
RS interleaver block size:      0
Modulation Profile Number:      1
Burst:                          tdma
IUC:                            long grant (IUC 6)
Modulation:                     qpsk
Preamble length:                80
Differential Encoding:          off
FEC parity T bytes:             0x8
FEC codeword length K bytes:    0xDC
Scrambler seed:                 0x152
Max short burst size B bytes:   0
Guard time size in symbols:     8
Shortened last codeword:        yes
Scrambler:                      enabled
Preamble offset:                168
Preamble type:                  qpsk0
RS interleaver on:              na
RS interleaver depth:           0
RS interleaver block size:      0
Router#
```

Table below describes the significant fields displayed by the show cable modulation-profile command.

Table 63: show cable modulation-profile field descriptions

Field	Description
Mo	Modulation profile group number. A modulation profile group is the set of burst profiles that defines upstream transmit characteristics for the various types of upstream transmission classes.
IUC	Interval usage code. Each upstream transmit burst belongs to a class that is given a number called the interval usage code (IUC). Bandwidth maps messages (MAP) by IUC codes used to allocate upstream time slots. The following types are currently defined: • Request—Bandwidth request slot • Request Data—Bandwidth request and short data burst slot • Initial Maintenance—Initial link registration contention slot • Station Maintenance—Link keepalive slot • Short Data Grant—Short data burst slot • Long Data Grant—Long data burst slot
Type	Modulation type.
Preamb length	Preamble length.
Diff enco	Differential encoding enabled (yes) or not enabled (no).
FEC T bytes	Number of bytes that can be corrected for each forward error correction (FEC) code word.
FEC CW size	Size, in bytes, of the FEC code word.
Scrambl seed	Scrambler seed value in hex format.
Max B size	Maximum burst size.
Guard time size	Time between successive bursts measured in symbols.

Field	Description
Last CW short	Handling of FEC for shortened last code word.
Scrambl	Scrambler enabled (yes) or not enabled (no).
Preamb offset	(DOCSIS 1.0 and DOCSIS 1.1 modulation profiles) The bits to be used for the preamble value.
Pre offst	(DOCSIS 2.0 modulation profiles) The bits to be used for the preamble value.
Pre Type	(DOCSIS 2.0 modulation profiles) The A-TDMA preamble type (qpsk0 or qpsk1).
RS	(DOCSIS 2.0 modulation profiles) The A-TDMA RS encoding type.

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 upstream modulation-profile	Configures a spectrum group to use a specified frequency.
show cable hop	Displays CM configuration settings.
show interface cable sid	Displays cable interface information.

show cable multicast authorization

To display the list of defined multicast authorization profiles and all CMs associated with corresponding profiles, use the **show cable multicast authorization** command in privileged EXEC mode.

show cable multicast authorization profile-group {*profile-group-number* | **all**} **profile-list** {*profile-number* | **all**}

Syntax Description

profile-group	Displays the profile group.
profile-group-number	Displays the profile number.
all	Displays all profile groups.
profile-list	Displays the profile list.
profile-number	Displays the profile number.
all	Displays all profiles.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCC	The command output was modified to display profile description for the specified profile.
IOS-XE 3.15.OS	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use this command to display all the profile groups, profile descriptions, and CMs associated with the profiles.

Examples

The following command shows all the profile groups and rules associated with it:

```
Router# show cable multicast authorization profile-group all
Profile-Group Index: 1
   CMs using this group: 2
   ProfileId   CMs        Profile
   -------------------------------
     0         2         prof1
     1         2         prof2
     2         2         prof3
 Session-Rule List:
   Group / Source                                      Prio  Action
   ------------------------------------------------------------------
   grp: FF15::1/64                                     1     permit
   src: 0::0/0
   grp: FF15::1/64                                     1     permit
```

```
   src: 1234::1/64
   grp: 224.1.1.1/16                                  1     permit
   src: 0.0.0.0/0
   grp: FF16::1/64                                    1     permit
   src: 0::0/0
   grp: 224.1.1.1/16                                  1     permit
   src: 10.1.1.1/16
   ---------------------------------------------------------------
```

The following command shows a particular profile group and rules associated with it:

```
Router# show cable multicast authorization profile-group 1
Profile-Group Index: 1
   CMs using this group: 2
   ProfileId   CMs        Profile
   -----------------------------
     0         2         prof1
     1         2         prof2
     2         2         prof3
 Session-Rule List:
   Group / Source                                     Prio  Action
   ---------------------------------------------------------------
   grp: FF15::1/64                                    1     permit
   src: 0::0/0
   grp: FF15::1/64                                    1     permit
   src: 1234::1/64
   grp: 224.1.1.1/16                                  1     permit
   src: 0.0.0.0/0
   grp: FF16::1/64                                    1     permit
   src: 0::0/0
   grp: 224.1.1.1/16                                  1     permit
   src: 10.1.1.1/16
   ---------------------------------------------------------------
```

The following command shows all the profiles and their profile descriptions, and the session rules for each profile.

```
Router# show cable multicast authorization profile-list all
CMTS Authorization Profile List
-------------------------------
Profile-Index: 0    Name: prof1
   Number of CMs: 2
   Id         Group / Source                                  Prio  Action
   ------------------------------------------------------------------------
   1          grp: FF15::1/64                                 1     permit
              src: 0::0/0
   2          grp: FF15::1/64                                 1     permit
              src: 1234::1/64
   3          grp: 224.1.1.1/16                               1     permit
              src: 0.0.0.0/0
   4          grp: FF16::1/64                                 1     permit
              src: 0::0/0
   5          grp: 224.1.1.1/16                               1     permit
              src: 10.1.1.1/16
   ------------------------------------------------------------------------
Profile-Index: 1    Name: prof2
   Number of CMs: 2
   Id         Group / Source                                  Prio  Action
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------
Profile-Index: 2    Name: prof3
   Number of CMs: 2
   Id         Group / Source                                  Prio  Action
```

```
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------
```

The following command shows a particular profile and its description.

```
Router# show cable multicast authorization profile-list 3
CMTS Authorization Profile List
-------------------------------
Profile-Index: 3    Name: gold
   Number of CMs: 0
   Profile Description: gold profile for higher bandwidth
   Id         Group / Source                                  Prio  Action
   ------------------------------------------------------------------------
   ------------------------------------------------------------------------
```

Table below describes the significant fields shown in the display.

Table 64: show cable multicast authorization Field Descriptions

Field	Description
Profile-Group Index	Displays the profile group index.
Name	Displays the name of the profile group.
Profile Description	Displays the description given to the profile.
ProfileId	Displays the QoS profile being used.
CMs	Displays the CMs belonging to the profile.
Profile	Displays the profile being used for multicast.
Session-Rule List	Displays the list of session rules being used for the multicast.
Source (src)	Displays the source IP address.
Group (grp)	Displays the group IP address.
Priority	Displays the rule priority value.
Action	Displays the action taken for multicast.

Related Commands

Command	Description
cable multicast auth enable default-action	Configures cable multicast authorization profile and sets the maximum sessions limit.
cable multicast auth profile-name	Configures cable multicast authorization profile.
profile description	Configures profile descriptions for each profile in the selected cable multicast authorization profile.
show cable multicast db	Displays the contents of multicast explicit tracking database.
show cable multicast dsid	Displays the entire DSID database content.

Command	Description
show cable multicast qos	Displays the configuration information for MQoS, (Group-Config, Group-QoS-Config, Group-Encryption-Config).

show cable multicast db

To display the contents of the multicast explicit tracking database, use the **show cable multicast db** command in privileged EXEC mode.

{**show cable multicast db** [{**bundle** *bundle-interface* [{*ipv4-addressipv6-address* | **summary**}] | *cm-mac* [{*host-mac-add* | **hosts** | **proxy**}] | **summary** | **client pcmm**}] | [**detail**]}

Syntax Description

bundle bundle-interface	(Optional) Displays the bundle interface. For example, Bundle 10.
ipv4-address	(Optional) IPv4 address.
ipv6-address	(Optional) IPv6 address of the group that should be matched using the format X:X:X:X:X.
cm-mac	(Optional) MAC address of the cable modem.
host-mac-add	(Optional) Host MAC address.
hosts	(Optional) Displays host details.
proxy	(Optional) Displays proxy details.
summary	(Optional) Displays the bundle interface summary or the multicast explicit tracking database summary.
client	(Optional) Displays entries by the client type.
pcmm	(Optional) Displays all PacketCable multimedia (PCMM) client entries.
detail	(Optional) Displays additional information related to the multicast explicit tracking database.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCE	This command was modified. The following two keywords were added to this command: • **client** • **pcmm**
12.2(33)SCF	This command was modified. A new keyword, **detail, was added to provide** additional information related to the multicast explicit tracking database.

Release	Modification
IOS-XE 3.15.0S	This command was integrated into Cisco IOS-XE Release 3.15.0S. Support for the Cisco cBR Series Converged Broadband Routers was added.

Usage Guidelines

Starting with Cisco IOS Release 12.2(33)SCF:

- There is an Explicit Tracking Database (ETDB) entry for each static multicast configuration.
- The total number of replications supported on each chassis is restricted to a maximum of 5000 replications.
- The total number of replications corresponding to static multicast is restricted to a maximum of 1500 replications.
- The **show cable multicast db detail** command is not applicable for ETDB entries created by the static TLV.

Examples

The following is a sample output from the **show cable multicast db** command:

```
Router# show cable multicast db
Interface : Bundle1
Session (S,G) : (*,230.1.1.1)
Fwd Intfc  Sub Intfc  Host Intfc  CM Mac          Hosts
w1/0/0:0                          aaaa.bbbb.cccc      2
w1/0/0:0                          aaaa.bbbb.cccc      2
Session (S,G) : (255.255.255.255,255.255.255.255)
Fwd Intfc  Sub Intfc  Host Intfc  CM Mac          Hosts
w1/0/0:0                          aabb.bbcc.ccdd      3
Interface : Bundle2
Session (S,G) : (*,230.1.1.1)
Fwd Intfc  Sub Intfc  Host Intfc  CM Mac          Hosts
w1/0/0:0                          aaaa.bbbb.cccc      2
w1/0/0:0                          aaaa.bbbb.cccc      2
Session (S,G) : (255.255.255.255,255.255.255.255)
Fwd Intfc  Sub Intfc  Host Intfc  CM Mac          Hosts
w1/0/0:0                          aabb.bbcc.ccdd      3
```

The following is a sample output from the **show cable multicast db summary** command:

```
Router# show cable multicast db summary
Interface  Session Count  CM Count
Bundle1           10         5
Bundle2               23        11
```

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

```
Router# show cable multicast db bundle 1
Interface : Bundle1
Session (S,G) : (*,230.1.2.3)
Fwd Intfc  Sub Intfc            Host Intfc   CM Mac           Hosts
Wi1/1/0:0  Bundle1              Ca5/0/0      ff01.0001.0000       1
Interface : Bundle1
Session (S,G) : (20.1.1.1,232.1.1.1)
Fwd Intfc  Sub Intfc            Host Intfc   CM Mac           Hosts
Wi1/1/0:0  Bundle1              Ca5/0/0      ff01.0001.0000       1
```

The following is a sample output from the **show cable multicast db bundle** *bundle-interface summary* command:

```
Router# show cable multicast db bundle 1 summary
Interface  Session Count  CM Count
Bundle1           10      5
```

The following is a sample output from the **show cable multicast db bundle** *bundle-interface ipv4-address* command:

```
Router# show cable multicast db bundle 1
225.0.0.1
Session (S,G) : (*,225.0.0.1)
Fwd Intfc  Sub Intfc            Host Intfc   CM Mac           Hosts
Wi5/1:0    Bundle1              Ca5/1        001e.6bfb.29a6       1
```

The following is a sample output from the **show cable multicast db bundle** *bundle-interface ipv6-address* command:

```
Router# show cable multicast db bundle1
ff15::1
Session (S,G) : (*,FF15::1)
Fwd Intfc  Sub Intfc            Host Intfc   CM Mac           Hosts
In5/1:0    Bundle1              Ca5/1        001e.6bfb.29a6       1
```

The following is a sample output from the **show cable multicast db** *cm-mac* command:

```
Router# show cable multicast db 000f.66f9.aa73
Session (S,G) : (*,230.1.1.1)
Fwd Intfc  Sub Intfc  Host Intfc  Hosts  Proxy  Static
w1/0/0:0                            2      Y       N
Session (S,G) : (*,230.1.1.1)
Fwd Intfc  Sub Intfc  Host Intfc  Hosts  Proxy  Static
w1/0/0:0
```

The following is a sample output from the **show cable multicast db** *cm-mac host-mac-add* command:

```
Router# show cable multicast db aaaa.bbbb.cccc 000f.66f9.aa73
Bundle Interface : Bundle1
CM mac           :
Host mac         : aaaa.bbbb.cccc
Session (S,G)    : (*,230.1.1.1)
Fwd Interface    :
Sub Interface    :
Host Interface   :
IGMP/MLD Ver     :
TimeStamp Delta  :
Bundle Interface : Bundle1
CM mac           :
Host mac         : aaaa.bbbb.cccc
Session  (S,G)   : (*,230.1.1.1)
Fwd Interface    :
Sub Interface    :
Host Interface   :
IGMP/MLD Ver     :
TimeStamp Delta  :
```

The following is a sample output from the **show cable multicast db** *cm-mac hosts* command:

```
Router# show cable multicast db aaaa.bbbb.cccc hosts
Session (S,G) : (*,230.1.1.1)
Fwd Intfc  Sub Intfc  Host Intfc  Host Mac        Proxy
w1/0/0:0                          aaaa.bbbb.cccc      Y
Session (S,G) : (255.255.255.255,255.255.255.255)
Fwd Intfc  Sub Intfc  Host Intfc  Host Mac         Proxy
w1/0/0:0                          aabb.bbcc.ccdd       N
```

The following is a sample output from the **show cable multicast db** *cm-mac proxy* command:

```
Router# show cable multicast db aaaa.bbbb.cccc proxy
Bundle Interface : Bundle1
CM mac           :
Host mac         : aaaa.bbbb.cccc
Session  (S,G)   : (*,230.1.1.1)
Fwd Interface    :
Sub Interface    :
Host Interface   :
IGMP/MLD Ver     :
TimeStamp Delta  :
Bundle Interface : Bundle1
CM mac           :
Host mac         : aaaa.bbbb.cccc
Session (S,G)    : (*,230.1.1.1)
Fwd Interface    :
Sub Interface    :
Host Interface   :
IGMP/MLD Ver     :
TimeStamp Delta  :
```

The following is a sample output from the **show cable multicast db command** that displays all the available PCMM client entries on a Cisco CMTS router:

```
Router# show cable multicast db client pcmm
Interface : Bundle1
Session (S,G) : (*,229.2.2.12)
Fwd Intf     Bundle Intf  Host Intf    CM MAC         CPE IP           Gate-ID SFID
Wi1/1/0:0    Bundle1      Ca5/0/0      0018.6852.8056 60.1.1.202       134 4
```

The following is a sample output from the **show cable multicast db** command with the **detail** keyword **in Cisco IOS Release 12.2(33)SCF**:

```
Router# show cable multicast db detail
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.4        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:36.643   Nov 25 08:42:36.643
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61330        0xCF25C    Nov 25 08:42:36.643
8201     1        61331        0xCF25C    Nov 25 08:42:36.643
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.3        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:22.339   Nov 25 08:42:22.339
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61328        0xCF25B    Nov 25 08:42:22.339
8201     1        61329        0xCF25B    Nov 25 08:42:22.339
```

The following is a sample output from the **show cable multicast db** command with the **detail** keyword that provides multicast explicit tracking database information for a particular bundle interface in Cisco IOS Release 12.2(33)SCF :

```
Router# show cable multicast db bundle 1 detail
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.4        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:36.643   Nov 25 08:42:36.643
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61330        0xCF25C    Nov 25 08:42:36.643
8201     1        61331        0xCF25C    Nov 25 08:42:36.643
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.3        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:22.339   Nov 25 08:42:22.339
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61328        0xCF25B    Nov 25 08:42:22.339
8201     1        61329        0xCF25B    Nov 25 08:42:22.339
```

The following is a sample output from the **show cable multicast db** command with the **detail** keyword that provides multicast explicit tracking database information for a particular bundle interface based on its host MAC address in Cisco IOS Release 12.2(33)SCF :

```
Router# show cable multicast db bundle 1 230.1.2.4 detail
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.4        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:36.643   Nov 25 08:42:36.643
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61330        0xCF25C    Nov 25 08:42:36.643
8201     1        61331        0xCF25C    Nov 25 08:42:36.643
```

The following is a sample output from the **show cable multicast db** command with the **detail** keyword that provides multicast explicit tracking database information based on its cable modem MAC address n Cisco IOS Release 12.2(33)SCF:

```
Router# show cable multicast db 0019.474a.d516 detail
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.3        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:22.339   Nov 25 08:42:22.339
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61328        0xCF25B    Nov 25 08:42:22.339
8201     1        61329        0xCF25B    Nov 25 08:42:22.339
Interface  Fwd Intfc   group            source
Bundle1    Wi7/0/0:0   230.1.2.4        N/A
ETDB received IGMP   ETDB processed IGMP
Nov 25 08:42:36.643   Nov 25 08:42:36.643
Sid      gc_id    Stat Index   DSID       Stat Index Allocated
DEFAULT  N/A      61330        0xCF25C    Nov 25 08:42:36.643
8201     1        61331        0xCF25C    Nov 25 08:42:36.643
```

Table below describes the significant fields shown in the show cable multicast db command display.

Table 65: show cable multicast db Field Descriptions

Field	Description
Bundle Interface	Bundle interface number.

Field	Description
CM Mac	MAC address of the CM.
Host Mac	Host MAC address.
Fwd Intfc	Forwarding interface name.
Sub Intfc	Sub-interface name.
Host Intfc	Host interface name.
IGMP/MLD Ver	IPv4 or IPv6 multicast group signaling protocols. IPv4: IGMPv1/v2/v3 IPv6: MLDv1/v2
TimeStamp Delta	Timestamp of the session.
Hosts	Hosts behind the CM.
CPE IP	IP address of the CPE.
Gate-ID	Unique number identifying the local PCMM multicast gate.
SFID	Service flow ID (SFID) for the downstream associated with this PCMM multicast gate.

Note For cBR Series Broadband Converged Routers, multicast ipv6 support will be supported in later releases.

Related Commands

Command	Description
show cable multicast authorization	Displays the list of defined multicast authorization profiles and all cable modems associated with the corresponding profiles.
show cable multicast dsid	Displays the entire multicast downstream service identifier (DSID) database content.
show cable multicast qos	Displays the configuration information of the MQoS (Group-Config, Group-QoS-Config, Group-Encryption-Config).
show packetcable gate multimedia	Displays the information about the total number of PCMM multicast gates.

show cable multicast debug

To display information about debug counters, use the **show cable multicast** debug command in privileged EXEC mode.

show cable multicast debug [**etdb** [{*multicast-group-addressmac-address*}]]

Syntax Description

etdb	(Optional) Displays information about multicast explicit tracking database debug counters.
multicast-group-address	(Optional) IP address of the multicast group.
mac-address	(Optional) MAC address of the cable modem.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

The show cable multicast debug command provides information only about the explicit tracking database **counter in Cisco IOS Release 12.2(33)SCE and later. This means that the command output does not include other debug counters such as multicast a**uthorization and multicast quality of service (QoS).

If you want to verify multicast group specific or MAC specific debug counters, you must turn on debugging of multicast counters using the debug cable multicast counter start command before using the **show cable multicast debug** command.

Note The command output will be the same if you run the **show cable multicast debug** command with or without the keyword etdb **in Cisco IOS Release 12.2(33)SCE, because this command does not support any other debug counters in Cisco IOS Release 12.2(33)SCE.**

Examples

The following is a sample output of the **show cable multicast debug** command that displays information about multicast explicit tracking database debug counters on the Cisco uBR10012 router:

```
Router# show cable multicast debug
ETDB
counter                    value
et_ses_update              3
et_ses_delete              0
et_cm_delete               0
et_post_host_add           1
et_post_cm_add             1
et_post_ses_intfc_update   3
et_post_ses_intfc_delete   0
```

```
et_post_cm_delete          0
et_post_host_delete        0
```

The following is a sample output of the **show cable multicast debug** command that displays information about multicast explicit tracking database debug counters based on a particular multicast group:

```
Router# show cable multicast debug etdb 230.1.1.1
ETDB  GROUP:230.1.1.1
counter                    value
et_ses_update              3
et_ses_delete              0
et_post_host_add           1
et_post_cm_add             1
et_post_ses_intfc_update   3
et_post_ses_intfc_delete   0
et_post_cm_delete          0
et_post_host_delete        0
```

The following is a sample output of the **show cable multicast debug** command that displays information about multicast explicit tracking database debug counters based on a particular cable modem:

```
Router# show cable multicast debug etdb 001a.c3ff.d41a
ETDB  CM:001a.c3ff.d41a
counter                    value
et_ses_update              2
et_ses_delete              0
et_cm_delete               0
et_post_host_add           0
et_post_cm_add             0
et_post_ses_intfc_update   2
et_post_cm_delete          0
et_post_host_delete        0
```

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

Table 66: show cable multicast debug Field Descriptions

Field	Description
ETDB	Multicast explicit tracking database
counter	Debug counters for the multicast operation.
value	Debug counter values.
ETDB GROUP	Identifies a particular multicast group for explicit tracking database debug counters.
ETDB CM	Identifies a particular cable modem for explicit tracking database debug counters.

Related Commands

Command	Description
debug cable multicast counter clear	Resets debugging of multicast counters.
debug cable multicast counter start	The Cisco CMTS router starts collecting multicast debug counters based on a particular multicast group or a cable modem.

Command	Description
debug cable multicast counter stop	The Cisco CMTS router stops collecting multicast debug counters.

show cable multicast dsid

To display the entire Downstream Service Identifier (DSID) database content, use the **show cable multicast dsid** command in privileged EXEC mode.

Cisco uBR7246VXR and Cisco uBR7225VXR Routers
show cable multicast dsid [{*dsidip-address* | [**source-ip**] | **integrated-cable** *slot* / *port* **:** *integrated-channel* {**dynamic** | **static**} | **wideband-cable***slot* / *port* **:** *wideband-channel* {**dynamic** } *ipv6-address*}]

Cisco uBR10012 Router
show cable multicast dsid [{*dsidip-address* | [**source-ip**] | **integrated-cable** *slot* / *sub-slot* / *port* **:** *integrated-channel* {**dynamic** | **static**} | **wideband-cable***slot* / *bay* / *port* **:** *wideband-channel* {**dynamic** | **static**} *ipv6-address*}]

Cisco cBR Series Router
show cable multicast dsid [{*dsidip-address* | [**source-ip**] | **integrated-cable** *slot* / *sub-slot* / *port* **:** *integrated-channel* {**dynamic** | **static**} | **wideband-cable***slot* / *bay* / *port* **:** *wideband-channel* **dynamic** *ipv6-address*}]

Syntax Description

dsid	Specifies the Downstream Service Identifier.
ip-address	Specifies the IP address of the group.
integrated-cable *slot* / *sub-slot* / *port* **:** *integrated-channel*	Identifies the cable interface on the router for which information should be displayed, where: • *slot*—0 to 8 for uBR series router, 0 to 9 for cBR series router • *sub-slot*—0 or 1 for uBR series router, 0 for cBR series router • *port*—0 to 4 for uBR series router, 0 to 7 for cBR series router • *integrated-channel* —0 to 3 for uBR series router, 0 to 157 for cBR series router
wideband-cable *slot* / *sub-slot* / *port* **:** *wideband-channel*	Identifies the wideband interface on the router for which information should be displayed, where: • *slot*—0 to 8 for uBR series router, 0 to 9 for cBR series router • *sub-slot*—0 or 1 for uBR series router, 0 for cBR series router • *port*—0 to 4 for uBR series router, 0 to 7 for cBR series router • *wideband-channel*—0 to 5 for uBR series router, 0 to 63 for cBR series router
ipv6-address	Specifies the IPv6 address of the group that should be matched using the format X:X:X:X::X.

Command Default

No default behavior or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCC	This command was modified to display all the SIP/SPA indexes assigned for a multicast session.
12.2(33)SCD	This command was modified. Support for Cisco uBR7246VXR and Cisco uBR7225VXR routers were added. Two new keywords, dynamic and static, were added to this command.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **dynamic** keyword in the **wideband-cable** was removed.

Usage Guidelines

Use this command to display the DSID database content and SIP/SPA indexes assigned for a multicast session.

Examples

The following example shows sample output for the **show cable multicast dsid** command:

```
Router# show cable multicast dsid

Multicast Group    : 230.1.2.3

         Source    : *

         IDB       : Bu2         Interface: Mo1/1/0:0   Dsid: 0x1F078

         StatIndex : 2           SAID: DEFAULT

Multicast Group    : 230.1.2.3

         Source    : *

         IDB       : Bu2         Interface: Mo1/1/0:0   Dsid: 0x1F078

         StatIndex : 3           SAID: 8196

Multicast Group    : 230.1.2.3

         Source    : *

         IDB       : Bu2         Interface: Mo1/1/0:0   Dsid: 0x1F078

         StatIndex : 4           SAID: 8197
```

The following example shows a sample output for the **show cable multicast dsid** *ip-address* [*source-ip*] command:

```
Router#  show cable multicast dsid 225.0.0.1


Multicast Group    : 225.0.0.1

         Source    : *

         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F078

         StatIndex : 7                 SAID     : DEFAULT
```

```
Multicast Group    : 225.0.0.1
         Source    : *
         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F078
         StatIndex : 8                 SAID     : 8195        GC  : 1
```

The following example shows a sample output for the **show cable multicast dsid wideband-Cable** [**dynamic** | **static**] command for uBR series router:

```
Router# show cable multicast dsid wideband-Cable 5/0:0 dynamic
Multicast Group    : 225.0.0.1
         Source    : *
         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F078
         StatIndex : 7                 SAID     : DEFAULT
Multicast Group    : 225.0.0.1
         Source    : *
         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F078
         StatIndex : 8                 SAID     : 8195        GC  : 1
Multicast Group    : 225.0.0.2
         Source    : *
         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F079
         StatIndex : 9                 SAID     : DEFAULT
Multicast Group    : 225.0.0.2
         Source    : *
         IDB       : Bu1               Interface: Wi5/0:0     Dsid: 0x5F079
         StatIndex : 10                SAID     : 8196        GC  : 1
```

The following example shows a sample output for the **show cable multicast dsid wideband-Cable dynamic** command for cBR series router:

```
Router# show cable multicast dsid wideband-Cable 6/0/0:0 dynamic
show cable multicast dsid wideband-Cable 6/0/0:0 dynamic
Load for five secs: 3%/0%; one minute: 3%; five minutes: 5%
Time source is NTP, 15:19:37.706 CST Fri Apr 24 2015
Multicast Group    : 225.1.1.33
         Source    : *
         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCE6
```

```
         StatIndex : 245693            SAID     : DEFAULT

Multicast Group    : 225.1.1.33

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCE6

         StatIndex : 245694            SAID     : 9061          GC  : 1

Multicast Group    : 225.1.1.32

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCDE

         StatIndex : 245678            SAID     : DEFAULT

Multicast Group    : 225.1.1.32

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCDE

         StatIndex : 245679            SAID     : 9054          GC  : 1

Multicast Group    : 225.1.1.17

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCE5

         StatIndex : 245691            SAID     : DEFAULT

Multicast Group    : 225.1.1.17

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCE5

         StatIndex : 245692            SAID     : 9060          GC  : 1

Multicast Group    : 225.0.0.1

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCD6

         StatIndex : 245665            SAID     : DEFAULT

Multicast Group    : 225.0.0.1

         Source    : *

         IDB       : Bu10              Interface: Wi6/0/0:0     Dsid: 0x9BCD6
```

The following example shows a sample output for the **show cable multicast dsid integrated-Cable static** command:

```
Router# show cable multicast dsid integrated-Cable 5/0:0 static
```

```
Dsid   Stat Index   Type

0x5F000  65384      IGMPv1/v2

0x5F001  65385      IGMPv3

0x5F002  65386      MLDv1

0x5F003  65387      MLDv2

0x5F004  65388      PreReg
```

Table below describes the significant fields shown in the display.

Table 67: show cable multicast dsid Field Descriptions

Field	Description
Multicast Group	Displays the multicast group.
Source	Displays the source IP address.
IDB	Interface description block number.
Interface	Displays the interface name.
Dsid	The Downstream Service Identifier.
StatIndex	The Blaze indexes assigned for a multicast session.
SAID	Security Association Identifier (SAID).

Related Commands

Command	Description
show cable multicast authorization	Displays the list of defined multicast authorization profiles and all CMs associated with corresponding profiles.
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, Group-Encryption-Config).

show cable multicast qos

To display the configuration information for multicast quality of service (MQoS), use the **show cable multicast qos** command in privileged EXEC mode.

show cable multicast qos {**group-config** [*group-config-index*] | **group-encryption** [*group-encryption-index*] | **group-qos** [*group-qos-index*]}

Syntax Description

group-config	Displays multicast group configuration information.
group-config-index	(Optional) Index for the multicast group. The valid range is from 1 to 2048.
group-encryption	Displays multicast group encryption information.
group-encryption-index	(Optional) Index for the multicast group encryption.
group-qos	Displays multicast group QoS information.
group-qos-index	(Optional) Index for the multicast group QoS.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
12.2(33)SCC	The command output was modified to display the application ID for default multicast group QoS configuration.
12.2(33)SCE	The command output was modified to list the PCMM application for multimedia multicast configuration.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

Example of the **show cable multicast qos** Command Output for Multicast Group Configuration

The following example shows a sample output of the command that displays multicast group configuration information: :

```
Router# show cable multicast qos group-config
Default Multicast Group-Qos Application ID 65535
Multiast Group Config 1 : Priority 1
Group QOS - 1
Group Encryption - 1
Application ID 65534
Session Range - Group Prefix 230.0.0.0 Mask 255.0.0.0 Source Prefix 0.0.0.0 Mask 0.0.0.0
```

Example of the **show cable multicast qos** Command Output for Multicast Group Encryption

The following example shows a sample output of the **show cable multicast qos** command that displays multicast group encryption information:

```
Router# show cable multicast qos group-encryption
Multicast Group Encryption 1 : Algorithm 56bit-des
Multicast Group Encryption 2 : Algorithm 128bit-aes
```

Example of the show cable multicast qos Command Output for Multicast Group QoS

The following example shows a sample output of the **show cable multicast qos command that displays multicast group QoS information in Cisco IOS Release 12.2(33)SCC**:

```
Router# show cable multicast qos group-qos
Group QOS Index  Service Class  Control         Igmp Limit         Override
DEFAULT      MQOS_DEFAULT     Aggregate NO-LIMIT 1 MQOS Aggregate NO-LIMIT
```

The following example shows a sample output of the **show cable multicast qos command that displays multicast group QoS information including the** application (the App field) for multimedia multicast configuration **in Cisco IOS Release 12.2(33)SCE**:

```
Router# show cable multicast qos group-qos
Group QOS Index    Service Class    Control    Igmp Limit    Override  App
 DEFAULT           mcast_default     Aggregate  NO-LIMIT
 1                 SDV_SD            Single      ---          No        CLI
 512               SDV_HD            Single      ---          No        PCMM
```

Table below describes the significant fields shown in the display.

Table 68: show cable multicast qos Field Descriptions

Field	Description
Group	Identifies the multicast group.
QOS	Identifies the QoS profile that is being enforced.
Index	Index number of the QoS group.
Service Class	Identifies the service class being used for the multicast.
Control	Identifies the type of control.
Igmp Limit	Displays the Internet Group Management Protocol (IGMP) session limit for aggregate service flows.
Override	Displays the additional IGMP session admitted and forwarded as best effort traffic.
App	Displays the application used for multimedia multicast.

Related Commands

Command	Description
show cable multicast authorization (for uBR series router)	Displays the list of defined multicast authorization profiles and all CMs associated with corresponding profiles.
show cable multicast db	Displays the contents of multicast explicit tracking database.
show cable multicast dsid	Displays the entire Downstream Service Identifier (DSID) database content.

show cable multicast ses-cache

To display the current multicast replication sessions cache information, use the **show cable multicast ses-cache** command in interface configuration and global configuration mode.

show cable multicast ses-cache interface integrated-cable *slot*/*subslot*/*port*:*rf-channel* [{**summary** | **verbose**}]
show cable multicast ses-cache interface modular-cable *slot*/{*subslotbay*}/*port*:*interface-number* [{**summary** | **verbose**}]
show cable multicast ses-cache interface wideband-cable *slot*/{*subslotbay*}/*port*:*wideband-channel* [{**summary** | **verbose**}]
show cable multicast ses-cable global [**summary**]

Syntax Description

interface integrated-cable*slot/subslot/port:rf-channel*	Displays the multicast replication sessions cache information for a integrated-cable interface. • *slot* —Slot where a line card resides. • *subslot* —(Cisco uBR10012 only) Secondary slot number of a line card. • *port*—Downstream port number. • *rf:channel* —RF channel number.
interface integrated-cable*slot/{subslot* | *bay}/port:interface-number*	Displays the multicast replication sessions cache information for a wideband-cable interface. • *slot*—Slot where a SPA interface processor (SIP) or a line card resides. • *subslot*—Secondary slot for a shared port adapter (SPA) or a line card. • *bay*—Bay in a SIP where a SPA is located. • *port*—Downstream port number. • *interface-number*—Modular cable interface number
interface wideband-cable *slot/{subslot* | *bay}/port:wideband-channel*	Displays the multicast replication sessions cache information for a wideband-cable interface. • *slot*—Slot where a SPA interface processor (SIP) or a line card resides. • *subslot*—Secondary slot for a shared port adapter (SPA) or a line card. • *bay*—Bay in a SIP where a SPA is located. • *port*—Downstream port number. • *wideband-channel*—Wideband channel number.
global	Displays the multicast replication sessions cache information at a global level.
summary	Provides summarized information of the multicast replication sessions cache.

verbose	Provides detailed information of the multicast replication session cache.

Command Modes

Global configuration (config)

Interface configuration (config-if)

Command History

Release	Modification
12.2(33)SCH	This command was introduced.
IOS-XE 3.15.OS	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The **show cable multicast ses-cache interface** and the **show cable multicast ses-cache global** command displays the session cache information when multicast replication session cache is configured on the Cisco uBR10012 router. The **show cable multicast ses-cable global** command displays the cache information for all interfaces at the chassis level. The **show cable multicast ses-cache interface** displays the session cache information for a particular interface.

Table below displays the valid values for an integrated-cable interface.

Table 69: Integrated Cable Interface Density Information

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

Table below displays the valid values for a modular cable interface.

Table 70: Modular Cable Interface Density Information

Line Card	Slot	Subslot	Bay	Port	Interface Number
Cisco uBR-MC3GX60V	5 to 8	0 or 1	—	0 to 2	0 to 23
Cisco UBR-MC20X20V			—	0 to 5	
Cisco Wideband SPA	—	0 or 1[10]	0 to 3	0	
Cisco Wideband SIP / Cisco SIP-600	1 or 3	—	—	—	

[10] Applicable to SPAs when the SIP is in Slot1 or Slot 3. The subslot is not specified from Cisco IOS Release 12.2(33)SCB onwards.

Table below displays the valid values for a wideband-cable interface.

Table 71: Wideband Interface Density Information

CMTS Router	Line Card	Slot	Subslot	Bay	Port	Wideband Channel
Cisco uBR10012	Cisco uBR-MC3GX60V	5 to 8	0 or 1	—	0 to 4	0 to 31
	Cisco UBR-MC20X20V			—		0 to 5
	Cisco uBR10-MC5X20			—		—
	Cisco Wideband SPA	—	0 or 1[11]	0 to 3	0	—
	Cisco Wideband SIP / Cisco SIP-600	1 or 3	—	—	—	—
Cisco uBR7225VXR	All	1 to 2	—	—	0 or 1	0 to 5
Cisco uBR7246VXR	All	3 to 6	—	—		

[11] Applicable to SPAs when the SIP is in Slot1 or Slot 3. The subslot is not specified from Cisco IOS Release 12.2(33)SCB onwards.

Examples

The following example displays the multicast replication session cache information at the global level:

```
Router#
show cable multicast ses-cache global

Fwd Intfc          Sub Intfc              Session (S,G)
Wi7/1/0:0          Bundle1                (30.30.30.30,227.0.0.20)
                   Bundle1                (30.30.30.30,227.0.0.22)
Wi7/1/0:1          Bundle1                (30.30.30.30,226.0.0.20)
                   Bundle1                (30.30.30.30,226.0.0.22)
                   Bundle1                (30.30.30.30,226.0.0.23)
                   Bundle1                (30.30.30.30,226.0.0.21)
Mo6/0/1:0          Bundle1                (*, 230.0.8.138)
In8/1/0:1          Bundle1                (*, 226.0.0.18)
```

The following example displays the multicast replication session cache at the wideband-cable interface:

```
Router# show cable multicast ses-cache interface wi7/1/0:1
Fwd Intfc           Sub Intfc              Session (S,G)
Wi7/1/0:1          Bundle1                (30.30.30.30,226.0.0.20)
                   Bundle1                (30.30.30.30,226.0.0.22)
                   Bundle1                (30.30.30.30,226.0.0.23)
                   Bundle1                (30.30.30.30,226.0.0.21)
```

Table below describes the significant fields shown in the display.

Table 72: show cable multicast ses-cache Field Descriptions

Field	Description
Fwd Intc	Layer 2 forwarding interface such as interface cable, integrated-cable and wideband-cable interface.
Sub Intfc	Sub interface.
Session (S,G)	Secondary multicast group.

The following example shows a summarized view of the multicast replication session cache information at the chassis level:

```
Router# show cable multicast ses-cache global summary
Global Cache Config: 20
-----------------------------------------------------------------
Fwd             Cache      Cache     Cache      Cache
Intfc           Config     Used      Missed     Hitted
Wi7/1/0:1        10          4          4          12
Mo6/0/1:0        12          3          3          15
In8/1/0:1        100         1          1           0
-----------------------------------------------------------------
Total
```

The following example is a summary of the multicast replication session cache at the wideband interface:

```
Router# show cable multicast ses-cache interface wi7/1/0:1 summary
Global Cache Config: 20
-------------------------------------------------
Fwd             Cache       Cache    Cache      Cache
Intfc             Config      Used     Missed    Hitted
Wi7/1/0:1    10              4          4              12
```

Table below describes the significant fields shown in the display.

Table 73: show cable multicast ses-cache summary Field Descriptions

Field	Description
Fwd Intfc	Layer 2 forwarding interface.
Cache Config	Multicast session cache value.
Cache Used	No. of sessions used from cache.
Cache Missed	No. of IGMP join sessions that were missed.
Cache Hitted	No. of times the IGMP join session was matched with the reused cache sessions.

The following example displays verbose information of the multicast replication session cache at the wideband interface:

```
Router# show cable multicast ses-cache wi8/0/0:0 verbose
Multicast Group    : 232.10.0.8
         Source    : 100.0.0.2
```

```
        Act GCRs  : 1
        Interface : Bu255                State: A      GI: Bu255       RC: 0
        GCR       : GC   SAID    SFID    Key   GQC    GEn
                          10   8858    24      0     1      0
Multicast Group   : 232.10.0.16
        Source    : 100.0.0.2
        Act GCRs  : 1
        Interface : Bu255                State: A      GI: Bu255       RC: 0
        GCR       : GC   SAID    SFID    Key   GQC    GEn
                          10   8859    25      0     1      0
Total session cache num: 2
```

Table below describes the significant fields shown in the display.

Table 74: show cable multicast ses-cache verbose Field Descriptions

Field	Description
Multicast Group	IP address of the multicast group
Source	IP address of the source.
Act GCRs	Active group classifier rules on the multicast QoS.
Interface	Forwarding interface.
GCR	Group classifier rules.

Related Commands

Command	Description
cable multicast ses-cache	Enables multicast replication session on the forwarding interface on the Cisco uBR10012 router.
clear cable multicast ses-cache	Clears the multicast replication session cache on the interfaces on the Cisco uBR10012 router.

show cable multicast statistics

To display the multicast statistics details, use the **show cable multicast statistics** command in privileged EXEC mode.

show cable multicast statistics {*index* | **failure** | **pool** [*pool-id*] [**verbose**]}

Syntax Description

index	Statistics index value of the configured multicast. The valid range is from 61320 to 64815.
failure	Displays the multicast statistics failure information.
pool	Displays the multicast statistics pool information.
pool-id	Multicast statistics pool ID. The valid range is from 0 to 15.
verbose	Displays the detailed multicast statistics pool information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCF	This command was introduced.
12.2(33)SCI	This command was modified. The output of the command with the **pool** keyword was modified to display the downstream service identifier (DSID) allocation information.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **Pool_Start** and **Pool_End** columns in the output were removed.

Usage Guidelines

The **show cable multicast statistics failure** command displays information about admission control failure, PXF (uBR series router) or DP (cBR series router) queue failure, IGMP report drop, and DBC failure counters.

Examples

The following is a sample output from the **show cable multicast statistics failure** command in uBR series router:

```
Router# show cable multicast statistics failure

counter                   value
Admission Control Failure  0
PXF Queue Failure          0
IGMP Report Drop           0
DBC Failure                0

Driver IGMP Dropped:
 Fragmented                0
 Record Size Incorrect     0
 IP Sanity Error           0
 IGMP Sanity Error         0
 IGMP CRC Error            0
```

The following is a sample output from the **show cable multicast statistics failure** command in cBR series router:

```
Router# show cable multicast statistics failure

counter                    value
Admission Control Failure  0
DP Queue Failure          0
IGMP Report Drop           0
DBC Failure                0

Driver IGMP Dropped:
 Fragmented                0
 Record Size Incorrect     0
 IP Sanity Error           0
 IGMP Sanity Error         0
 IGMP CRC Error            0
```

The following is a sample output from the **show cable multicast statistics pool** command in uBR series router:

```
Router# show cable multicast statistics pool

Pool   Total   Allocated   Pool_Start   Pool_End
9      3496    24          24           0
```

The following is a sample output from the **show cable multicast statistics pool** command in cBR series router:

```
Router# show cable multicast statistics pool

Pool   Total   Allocated
9      3496    24
```

The following is a sample output from the **show cable multicast statistics pool** command for the pool ID 9 in uBR series router:

```
Router# show cable multicast statistics pool 9

Pool   Total   Allocated   Pool_Start   Pool_End
9      3496    24          24           0

Stat Index List:
        61320 61321 61322 61323 61324 61325 61326 61327 61328 61329 61330 61331
        61332 61333 61334 61335 61336 61337 61338 61339 61340 61341 61342 61343
```

The following is a sample output from the **show cable multicast statistics pool** command for the pool ID 9 in cBR series router:

```
Router# show cable multicast statistics pool 9

Pool   Total   Allocated
6      18256   1136

Stat Index List:
243888 243890 243892 243894 243895 243896 243898 243899 243900 243902 243904 243906
243907 243908 243910 243911 243912 243914 243916 243918 243919 243920 243922 243923
```

The table below describes the significant fields shown in the display:

Table 75: show cable multicast statistics pool Field Descriptions

Field	Description
Pool	Multicast statistics pool ID.
Total	Total number of statistics index.
Allocated	Number of allocated statistics index.
Pool_Start	For uBR series router, pointer to the position of the first available statistics index.
Pool_End	For uBR series router, pointer to the position of the last available statistics index.
Stat Index List	List of the allocated statistics index in the pool.

The following is a sample output from the **show cable mulitcast statistics** command with and index value of 61328:

```
Router# show cable multicast statistics 61328

Stat Index Pool id: 9

Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:8   StatIndex : 61328
         SAID     : 8203             SFID : 59      NB/WB index :  15/0
```

The following is a sample output from the **show cable multicast statistics pool verbose** command:

```
Router# show cable multicast statistics pool verbose

Stat Index Pool id: 9

Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:0   StatIndex : 61320
         SAID     : 8195             SFID : 51      NB/WB index :  15/0
Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:1   StatIndex : 61321
         SAID     : 8196             SFID : 52      NB/WB index :  15/0
Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:2   StatIndex : 61322
         SAID     : 8197             SFID : 53      NB/WB index :  15/0
Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:3   StatIndex : 61323
         SAID     : 8198             SFID : 54      NB/WB index :  15/0
Multicast Group   : 232.1.1.1
         Source   : N/A
         Interface: Mo5/1/0:4   StatIndex : 61324
         SAID     : 8199             SFID : 55      NB/WB index :  15/0
!
```

The table below describes the significant fields shown in the display:

Table 76: show cable multicast statistics and show cable multicast statistics pool verbose Field Descriptions

Field	Description
Stat Index Pool id	Statistics index pool ID.
Multicast Group	Multicast group address.
Source	Multicast source address.
Interface	Interface number.
StatIndex	Statistics index value.
SAID	Security association identifier (SAID).
SFID	Service flow identifier (SFID).
NB/WB index	Narrowband and wideband index numbers.

The following is a sample output from the **show cable multicast statistics pool** command in Cisco IOS Release 12.2(33)SCI:

```
Router# show cable multicast statistics pool

Min Static Index: 59424, Max: 62079
Pool   Total   Allocated
15     2656    1


DSID Table:
Min DSID: 62160, Max DSID: 65535.
Pool   Total   Allocated
0      3376    0
1      3376    0
2      3376    0
3      3376    0
4      3376    0
5      3376    0
6      3376    0
7      3376    0
8      3376    0
9      3376    0
10     3376    0
11     3376    0
12     3376    0
13     3376    0
14     3376    0
15     3376    1
```

The table below describes the significant fields shown in the display:

Table 77: show cable multicast statistics pool Field Descriptions

Field	Description
Pool	Multicast statistics pool ID.
Total	Total number of statistics index.

Field	Description
Allocated	Number of the allocated statistics index.
Min DSID	Minimum value of the DSID.
Max DSID	Maximum value of the DSID.

Related Commands

Command	Description
show cable multicast db	Displays the contents of the multicast explicit tracking database.
clear cable multicast statistics counter	Clears all multicast statistics counters.

show cable noise

To display cable noise statistics on a Cisco CMTS, use the **show cable noise** command in EXEC mode.

show cable {*slot* /*port* | *slot* /*subslot* /*port* } **noise**

Syntax Description

slot /*port*	Identifies the cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers. On the Cisco uBR7100 series router, the only valid value is **1/0**. On the Cisco uBR7200 series router, *slot* can range from 3 to 6, and *port* can be 0 or 1, depending on the cable interface.
slot /*subslot* /*port*	Identifies the cable interface on the Cisco uBR10012 router. The following are the valid values: • *slot* = 5 to 8 • *subslot* = 0 or 1 • *port* = 0 to 4 (depending on the cable interface)

Command Modes

EXEC

Command History

Release	Modification
12.0(4)XI	This command was introduced.
12.1(3a)EC1	This command was removed from the 12.1 EC release.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command is not supported on Cisco IOS Release 12.1(3a)EC1 or later releases.

Examples

The following example shows how to display CM noise statistics:

```
Router# show cable 6/0 noise
```

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 modem	Displays CM configuration settings.

show cable ofdm-chan-profiles

To verify the OFDM channel profile configuration, use the **show cable ofdm-chan-profile** command in privileged EXEC mode.

show cable ofdm-chan-profile{*id* | **channels** | **configuration**}

Syntax Description

id	Display an individual OFDM channel profile's configuration and assigned channels.
channels	Display the assigned channels for all configured OFDM channel profiles.
configuration	Display the configuration for all OFDM channel profiles.

Command Modes

Privileged EXEC

Command History

Release	Modification
IOS-XE 3.18.0SP	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 3.18.1SP	This command was modified on the Cisco cBR Series Converged Broadband Routers. **guardband override** was added in the command output.

Examples

The following example displays an individual OFDM channel profile's configuration and assigned channels:

```
Router# show cable ofdm-chan-profile 21
 **** OFDM Channel Profile Configuration ****

Prof  Cycl  Roll  Guardband  FFT  Intr   Pilot  Modulation (D-Default, P-Profile)

ID    Prfx  Off   Override   KHz  Depth  Scale  Cntrl   NCP     Data Profiles (count = 0)
                                                             1       2       3       4
      5
21    1024  128   2400000    50   16     48     D:1024  D:16    NA      NA      NA      NA
      NA

**** OFDM Channel Profile Assigned Channels ****

Prof  Admin  Controller:channels
ID
21    Up     6/0/4:158
```

The following example displays the configuration for all OFDM channel profiles:

```
Router# show cable ofdm-chan-profile configuration

**** OFDM Channel Profile Configuration ****

Prof  Cycl  Roll  Guardband  FFT  Intr   Pilot  Modulation (D-Default, P-Profile)

ID    Prfx  Off   Override   KHz  Depth  Scale  Cntrl   NCP     Data Profiles
```

```
              (Limited to 20)
                                                                                1       2       3       4
      5
0     1024  128   NA          50   16     48     D:256   D:16    D:1024  NA      NA      NA
      NA
1     1024  128   NA          50   16     48     D:256   D:16    D:2048  D:1024  NA      NA
      NA
2     1024  128   NA          50   16     48     D:256   D:16    D:4096  D:2048  D:1024  NA
      NA
3     1024  128   NA          50   16     48     D:256   D:16    P:0     D:4096  D:2048
D:1024  NA
4     1024  128   NA          50   16     48     D:256   D:16    D:512   P:0     D:4096
D:2048  D:1024
5     1024  128   NA          25   16     48     D:256   D:16    D:1024  NA      NA      NA
      NA
6     1024  128   NA          25   16     48     D:256   D:16    D:2048  D:1024  NA      NA
      NA
7     1024  128   NA          25   16     48     D:256   D:16    D:4096  D:2048  D:1024  NA
      NA
8     1024  128   NA          25   16     48     D:256   D:16    P:1     D:4096  D:2048
D:1024  NA
9     1024  128   NA          25   16     48     D:256   D:16    D:512   P:1     D:4096
D:2048  D:1024
20    1024  128   NA          50   16     48     D:1024  D:16    NA      NA      NA      NA
      NA
21    1024  128   1000000     50   16     48     D:1024  D:16    NA      NA      NA      NA
      NA
```

The following example displays the assigned channels for all configured OFDM channel profiles:

```
Router# show cable ofdm-modulation-profile channels

**** OFDM Channel Profile Assigned Channels ****

Prof  Admin  Controller:channels
ID
20    Up     3/0/4:158-159,161-162  7/0/0:158,161-162      7/0/1:159              7/0/2:160

             7/0/4:162              7/0/5:158              7/0/6:159              7/0/7:160

      Down   7/0/3:161
35    Down   7/0/0:160
255   Up     3/0/4:160              3/0/5:158-160,162      3/0/6:159-161          3/0/7:158

             7/0/0:159               7/0/7:159
      Down   3/0/5:161              3/0/6:158              3/0/7:161-162          7/0/5:162

             7/0/6:160               7/0/7:158
```

Related Commands

Command	Description
cable downstream ofdm-chan-profile	Define the OFDM channel profile on the OFDM channel.

show cable ofdm-modulation-profiles

To verify the OFDM modulation profile configuration, use the **show cable ofdm-modulation-profile** command in privileged EXEC mode.

show cable ofdm-modulation-profile {*id* | **channel-profiles** | **configuration**}

Syntax Description

id	Display an individual OFDM modulation profile's configuration and channel profiles that include this modulation profile.
channel-profiles	Display the OFDM channel profiles that include this modulation profile.
configuration	Display the configuration for all OFDM modulation profiles.

Command Modes

Privileged EXEC

Command History

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

Examples

The following example displays an individual OFDM modulation profile's configuration and channel profiles that include this specific modulation profile:

```
Router# show cable ofdm-modulation-profile 8

**** OFDM Modulation Profile Configuration ****

Description: Mixed-mod ex14

Prof  FFT  Width     Start-freq Modulations
ID    KHz  Hz        Hz
9     50   96000000  627000000  1024 default
                                512  freq-abs  659050000
                                     width      12000000
                                2048 freq-abs  627000000
                                     width       6000000

Profile Subcarrier Modulations
  Modulation: Start-freq-abs[start-sc] - End-freq-abs[end-sc] Width-freq[num-sc]
  1024: 572600000[   0] -  626950000[1087]    54400000[1088]
  2048: 627000000[1088] -  632950000[1207]     6000000[ 120]
  1024: 633000000[1208] -  659000000[1728]    26050000[ 521]
  512 : 659050000[1729] -  671000000[1968]    12000000[ 240]
  1024: 671050000[1969] -  722950000[3007]    51950000[1039]
  1024: 723000000[3008] -  777350000[4095]    54400000[1088]

**** OFDM Modulation Profile Assigned Channel Profiles ****

Prof  Channel
ID    Profiles
9     25, 100-102, 255
```

The following example displays the configuration for all OFDM modulation profiles:

```
Router# show cable ofdm-modulation-profile configuration

**** OFDM Modulation Profile Configuration ****

Prof  FFT  Width     Start-freq Modulations              Description
ID    KHz  Hz        Hz                                  (Limited to 20)
8     50   192000000 NA         2048 default
                                 512  freq-off   48000000
                                      width      24000000
9     50   96000000  627000000  1024 default             Mixed-mod ex14
                                 512  freq-abs  659050000
                                      width      12000000
                                 2048 freq-abs  627000000
                                      width       6000000
```

The following example displays the OFDM channel profiles that include this specific modulation profile:

```
Router# show cable ofdm-modulation-profile channel-profiles

**** OFDM Modulation Profile Assigned Channel Profiles ****

Prof  Channel
ID    Profiles
8     20, 22
9     25, 100-102, 255
```

Related Commands

Command	Description
cable downstream ofdm-modulation-profile	Define the OFDM modulation profile on the OFDM channel.

show cable privacy

To display Baseline Privacy Interface Plus (BPI+) certificate information and the security or privacy information for the Cisco CMTS router, use the **show cable privacy** command in privileged EXEC mode.

Cisco uBR Series Router

show cable privacy {**eae-exclude** | **hotlist cm** | **manufacturer-cert-list** | **root-cert-list**}

Cisco cBR Series Router

show cable privacy {**eae-exclude** | **hotlist** {**cm** | **host**} | **manufacturer-cert-list** | **root-cert-list**}

Syntax Description

eae-exclude	Displays the early authentication and encryption (EAE) details.
hotlist cm	Displays a list of cable modems detected as clones.
host	Block a CPE.
manufacturer-cert-list	Displays the BPI manufacturer certificate verification list.
root-cert-list	Displays the BPI root certificate verification list.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.3 NA	This command was introduced in a different form and its functions moved to the show interface cable privacy command.
12.2(4)BC1	This command was introduced in its current form.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA.
12.2(33)SCC	This command was modified. The eae-exclude keyword was added.
12.2(33)SCE	This command was modified. The hotlist keyword was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The **host** keyword was added.

Usage Guidelines

The **show cable privacy** command is available only in IOS images that support BPI and BPI+ encryption.

Examples

The following is a sample output of the show cable privacy command with the **eae-exclude** keyword that lists the cable modems excluded from the early authentication and encryption process:

```
Router#
 show cable privacy eae-exclude

EAE Exclusion List:
```

```
  MAC: 1111.1111.1111 Mask: ffff.ffff.ffff
  MAC: 2222.2222.2222 Mask: ffff.ffff.ffff
```

The following is a sample output of the show cable privacy command with the **hotlist** keyword that lists the permanent and temporary hotlist entries:

```
Router#
 show cable privacy hotlist
 cm
MAC Address            Last Ranged           Type             Interface
0025.2eaf.6f16         Dec 13 21:03:56       Permanent        C8/1/0
0025.2eaf.6f26         Dec 13 21:03:56       Temporary        C5/1/0
```

Table below describes the significant fields shown in the **show cable privacy command** display:

Table 78: show cable privacy Command Field Description

Field	Description
MAC Address	MAC address of the cable modem that is on the hotlist.
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 add-certificate (for uBR series router)	Configures certificates for BPI+ encryption.
cable privacy	Enables and configures BPI+ encryption on a cable interface.
show cable modem	Displays cable modem configuration settings.
show interface cable privacy	Displays baseline privacy information.

show cable profile

To display configuration of profile in service group based configuration, use the **show cableprofile** command in the Privileged EXEC mode.

show cable profile [**downstream** | **mac-domain** | **service-group** | **wideband**] *profile-name*

Syntax Description

downstream	Shows OPS downstream profile.
mac-domain	Shows OPS mac-domain profile.
service-group	Shows OPS service-group profile.
wideband	Shows OPS wideband profile.
profile name	Name of the desired profile.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 3.17.0S	This command was introduced.

Usage Guidelines

This command is used to display the configuration of profile in service group.

```
Router#show cable profile downstream
Load for five secs: 2%/1%; one minute: 2%; five minutes: 2%
Time source is NTP, 14:15:33.701 CST Tue Oct 27 2015
cable profile downstream DS
cable rf-bandwidth-percent 10

Router#show cable profil mac-domain
Load for five secs: 1%/0%; one minute: 2%; five minutes: 2%
Time source is NTP, 14:34:14.121 CST Tue Oct 27 2015
cable profile mac-domain MD
 cable privacy mandatory

Router#show cable profile service-group
Load for five secs: 1%/0%; one minute: 2%; five minutes: 2%
Time source is NTP, 14:37:28.081 CST Tue Oct 27 2015
cable profile service-group test
 cable bundle 1
 mac-domain 0 profile MD
  downstream sg-channel 0-3 profile DS
  upstream 0 sg-channel 0
  upstream 1 sg-channel 1
  upstream 2 sg-channel 2
  upstream 3 sg-channel 3
  us-bonding-group 1
   upstream 0
   upstream 1
   upstream 2
   upstream 3
```

```
 wideband-interface 0 profile WB
  downstream sg-channel 0-3 rf-bandwidth-percent 10

Router#show cable profile wideband
Load for five secs: 3%/0%; one minute: 2%; five minutes: 2%
Time source is NTP, 14:37:49.195 CST Tue Oct 27 2015
cable profile wideband-interface WB
```

show cable qam-profile

To display information about the QAM profile, use the **show cable qam-profile** command in privileged EXEC mode.

show cable qam-profile *qam-profile-id*

Syntax Description

qam-profile-id	Specifies a qam-profile ID. Valid values range from 0 to 31.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use the **show cable qam-profile** command to display information about a qam-profile. If you specify the *qam-profile-id*, the command displays the QAM profile with the specified ID.

Examples

The following is a sample output of the **show cable qam-profile** command:

```
Router# show cable qam-profile
QAM Profile ID 0: default-annex-b-64-qam
        annex: B
        modulation: 64
        interleaver-depth: I32-J4
        symbol rate: 5057 kilo-symbol/second
        spectrum-inversion: off

QAM Profile ID 1: default-annex-b-256-qam
        annex: B
        modulation: 256
        interleaver-depth: I32-J4
        symbol rate: 5361 kilo-symbol/second
        spectrum-inversion: off

QAM Profile ID 2: default-annex-a-64-qam
        annex: A
        modulation: 64
        interleaver-depth: I12-J17
        symbol rate: 6952 kilo-symbol/second
        spectrum-inversion: off

QAM Profile ID 3: default-annex-a-256-qam
        annex: A
```

The following is a sample output of the **show cable qam-profile** *qam-profile-id* command:

```
Router# show cable qam-profile 1
QAM Profile ID 1: default-annex-b-256-qam
        annex: B
        modulation: 256
```

```
interleaver-depth: I32-J4
symbol rate: 5361 kilo-symbol/second
spectrum-inversion: off
```

This table describes the fields shown in the **show cable qam-profile** command display.

Table 79: show cable qam-profile Field Descriptions

Field	Description
annex	Displays the annex (MPEG framing format) configured in the QAM profile.
modulation	Displays the QAM modulation format configured in the QAM profile.
interleaver-depth	Displays the interleaver-depth configured in the QAM profile.
symbol rate	Displays the symbol rate configured in the QAM profile.
spectrum-inversion	Displays the spectrum-inversion status configured in the QAM profile.

Related Commands

Command	Description
cable downstream qam-profile	Set the QAM profile for the cable interface line card.

show cable qos enforce-rule

To display the quality of service (QoS) enforce-rules that are currently defined, use the **show cable qos enforce-rule** command in privileged EXEC mode.

show cable qos enforce-rule [*name*] [**verbose**]

Syntax Description

name	(Optional) Specifies the name of a particular enforce-rule to be displayed.
verbose	(Optional) Displays detailed information about the QoS enforce-rule options that are currently defined.

Command Default

All enforce-rules are displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(15)BC1	This command was introduced.
12.3(9a)BC	This command was integrated into Cisco IOS Release 12.3(9a)BC.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added.
12.3(23)BC2	The following new output fields were added for the **verbose** form of the command: Penalty End-time, Weekend First Peak Time, Weekend First Duration, Weekend First Average-rate, Weekend Second Peak Time, Weekend Second Duration, Weekend Second Average rate, Weekend Offpeak Duration, Weekend Offpeak Average-rate, and Weekend Auto-enforce.
12.2(33)SCB	The new output fields for the **verbose** form of the command were integrated into Cisco IOS Release 12.2(33)SCB.
12.3(23)SCD2	The following new output fields were added for the **verbose** form of the command: Monitoring after RelTime, Penalty-Period for week-days, Penalty-Period for week-ends. The following output fields were modified for the verbose form of the command: Penalty End-time, First Peak Time, Second Peak Time, Weekend First Peak Time, Weekend Second Peak Time. The output field Penalty End-time was renamed as Default Penalty Duration.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows typical output for the default version of the **show cable qos enforce-rule** command:

```
Router# show cable qos enforce-rule
```

```
           Name               Dur   Dir byte-cnt Auto rate  penalty Reg Enf Ena Persist
                             (min)      (kbytes) enf  (min) (min)   QoS QoS
 residential                  10    us  5        act  1     10080   5   10  Yes Yes
 ef-q11d                      30    ds  150      act  1     20      11  99  Yes Yes
 ef-q11u                      30    us  60       act  1     20      11  99  Yes Yes
 ef-q21                       720   us  60       act  1     10      21  81  Yes Yes
 ef-q21d                      300   ds  150      act  1     10      21  81  Yes Yes
 ef-q22                       720   us  60       act  1     10      22  82  Yes Yes
 ef-q22d                      300   ds  150      act  1     10      22  82  Yes No
 ef-q23                       720   us  60       act  1     10      23  83  Yes Yes
 ef-q23d                      300   ds  150      act  1     10      23  83  Yes Yes
 ef-q24                       720   us  60       act  1     10      24  84  Yes Yes
 ef-q24d                      300   ds  150      act  1     10      24  84  Yes Yes
 ef-q25                       720   us  60       act  1     10      25  85  Yes Yes
 ef-q25d                      300   ds  150      act  1     10      25  85  Yes Yes
 ef-q26                       720   us  60       act  1     10      26  86  Yes Yes
 ef-q26d                      300   ds  150      act  1     10      26  86  Yes Yes
 ef-q27                       720   us  60       act  1     10      27  87  Yes Yes
 ef-q27d                      300   ds  150      act  1     10      27  87  Yes Yes
 ef-q28                       720   us  60       act  1     10      28  88  Yes Yes
 ef-q28d                      300   ds  150      act  1     10      28  88  Yes No
 ef-q5d                       300   ds  150      act  1     10      5   99  Yes Yes
 ef-q5u                       720   us  600      act  1     10      5   99  Yes Yes
```

The following example shows sample output from the **show cable qos enforce-rule** command for a particular enforce-rule named “residential”:

```
Router# show cable qos enforce-rule residential
           Name               Dur   Dir byte-cnt Auto rate  penalty Reg Enf Ena Persist
                             (min)      (kbytes) enf  (min) (min)   QoS QoS
 residential                  10    us  5        act  1     10080   5   10  Yes Yes
```

Table below describes the significant fields displayed by the **show cable qos enforce-rule** command.

Table 80: show cable qos enforce-rule Field Descriptions

Field	Description
Name	Name of the enforce-rule.
Dur (min)	The monitoring duration period, in minutes.
Dir	Direction in which the byte-count is applied: • DS—Downstream direction • US—Upstream direction
byte-cnt (kbytes)	Maximum number of bytes, in kilobytes, that subscribers using this enforce-rule can transmit during the monitoring-duration window before being considered to be overconsuming.
Auto enf	Displays whether the enforce-rule QoS profile is automatically activated when a subscriber exceeds their allowed bandwidth.
rate (min)	Size of the sample-rate interval, in minutes.
penalty (min)	Size of the penalty period, in minutes.
Reg QoS	Profile ID for the registered QoS profile or the name of the service class.

Field	Description
Enf QoS	Profile ID for the enforced QoS profile or the name of the service class.
Ena	Displays whether this enforce-rule is currently enabled and active.
Persist	Displays whether this enforce-rule keeps the enforced QoS profile in force across cable modem reboots: • Yes—Enforced QoS profiles remain in effect across cable modem reboots. • No—Enforced QoS profiles do not remain in effect when a cable modem reboots. See the **no-persistence** option for the **qos-profile enforced** command.

The following example shows the sample output from the **show cable qos enforce-rule verbose** form of the command with the new output fields beginning in Cisco IOS Release 12.3(23)BC2:

```
Name                          : test
Version                       : docsis10
Monitoring Type               : peak-offpeak
Registered                    : 255
Enforced                      : 4
Monitoring Duration           : 120 (in minutes)
Sample-rate                   : 10 (in minutes)
Average-rate                  : 1 kbits/sec
Direction                     : upstream
Penalty Time                  : 10080 (in minutes)
Penalty End-time              : 23 (time of day in hrs)
Rule Enabled                  : Yes
Persistence                   : Yes
Week-end                      : Yes
First Peak Time               : 6
Duration                      : 180 (in minutes)
First Average-rate            : 2 kbits/sec
Second Peak Time              : 18
Duration                      : 240 (in minutes)
Second Averate-rate           : 3 kbits/sec
Offpeak Duration              : 120 (in minutes)
Offpeak Average-rate          : 1 kbits/sec
Auto-enforce                  : active
Weekend First Peak Time       : 8
Weekend First Duration        : 120 (in minutes)
Weekend First Average-rate    : 2 kbits/sec
Weekend Second Peak Time      : 18
Weekend Second Duration       : 180 (in minutes)
Weekend Second Average-rate   : 5 kbits/sec
Weekend Offpeak Duration      : 240 (in minutes)
Weekend Offpeak Average-rate  : 4 kbits/sec
Weekend Auto-enforce          : active
```

The following example shows the sample output from the **show cable qos enforce-rule verbose** form of the command with the new output fields in Cisco IOS Release 12.3(33)SCD2:

```
Router# show cable qos enforce-rule test verbose
Name                          : test
Version                       : docsis11
Monitoring Type               : peak-offpeak
Registered                    : REG-DS
Enforced                      : ENF-DS
Monitoring Duration           : 70 (in minutes)
Sample-rate                   : 10 (in minutes)
```

```
Average-rate                 : 3 kbits/sec
Direction                    : downstream
Auto Enforce                 : Yes
Current Penalty Duration     : 10 (in minutes)
Default Penalty Duration     : 10 (in minutes)
Penalty End-time             : 23:0 (time of day)
Rule Enabled                 : Yes
Persistence                  : Yes
Weekend                      : No
Penalty Off                  : No
Monitor Weekend              : Yes
Monitoring after RelTime     : Off
First Peak Time              : 10:0
Duration                     : 60 (in minutes)
First Average-rate           : 1 kbits/sec
Second Peak Time             : 19:0
Duration                     : 65 (in minutes)
Second Average-rate          : 2 kbits/sec
Offpeak Duration             : 70 (in minutes)
Offpeak Average-rate         : 3 kbits/sec
Auto Enforce                 : Yes
Sample Rate                  : 10
Penalty-Period for week-days : 0
Weekend First Peak Time      : 11:0
Weekend Duration             : 75 (in minutes)
Weekend First Average-rate   : 4 kbits/sec
Weekend Second Peak Time     : 20:0
Weekend Duration             : 80 (in minutes)
Weekend Second Average-rate  : 5 kbits/sec
Weekend Offpeak Duration     : 85 (in minutes)
Weekend Offpeak Average-rate : 6 kbits/sec
Weekend Auto Enforce         : Yes
Weekend Sample Rate          : 12
Penalty-Period for week-ends : 0
```

Related Commands

Command	Description
cable qos enforce-rule	Creates an enforce-rule to enforce a particular QoS profile for subscriber traffic management and enters enforce-rule configuration mode.
duration	Specifies the time period and sample rate to be used for monitoring subscribers.
enabled (enforce-rule)	Activates an enforce-rule and begins subscriber traffic management on a Cisco CMTS router.
penalty-period	Specifies the time period that an enforced QoS profile should be in effect for subscribers that violate their registered QoS profiles.
qos-profile enforced	Specifies a QoS profile that should be enforced when users violate their registered QoS profiles. This command is applicable for only DOCSIS 1.0 cable modems.
qos-profile registered	Specifies the registered QoS profile that should be used for this enforce-rule. This command is applicable for only DOCSIS 1.0 cable modems.
service-class (enforce-rule)	Specifies a service class (enforced or registered) that should be used for the cable modem monitoring in an enforce-rule. This command is applicable for DOCSIS 1.1 or later cable modems.

Command	Description
show cable subscriber-usage	Displays subscribers who are violating their registered QoS profiles.

show cable qos permission

To display the status of permissions for changing quality-of-service (QoS) tables on a Cisco CMTS, use the **show cable qos permission** command in privileged EXEC mode.

show cable qos permission

Syntax Description

This command has no keywords or arguments.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1 T	This command was introduced.
12.1(4)CX	This command was deprecated for DOCSIS 1.1 use, because DOCSIS 1.1 replaces the QoS profile model with a service flow model. The **show interface cable qos paramset** command is used for DOCSIS 1.1 operation.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example displays the output of the **show cable qos permission** command:

```
CMTS01# show cable qos permission

Create by mgmt  Update by mgmt  Create by modems
no              no              yes
```

Table below describes the fields displayed by the **show cable qos permission** command.

Table 81: show cable qos permission Command Field Descriptions

Field	Description
Create by mgmt	Indicates permission setting for creation of QoS table entries by the Simple Network Management Protocol (SNMP).
Update by mgmt	Indicates permission setting for creation of QoS table entries by modem registration requests.
Create by modems	Indicates permission setting for dynamic updating of QoS table entries by the SNMP.

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 qos permission	Specifies permission for updating the cable router QoS table.
cable qos profile	Configures a QoS profiles.
cable service-flow inactivity-timeout	Sets the amount of time a dynamic service-flow can be present in the system without any activity.
show controllers cable	Displays cable router QoS profiles.
show interface cable qos paramset	Displays the DOCSIS 1.1 QoS parameter sets.

show cable qos profile

To display quality-of-service (QoS) profiles for a Cisco CMTS, use the **show cable qos profile** command in privileged EXEC mode.

show cable qos profile *profile-index* [**verbose**]

Syntax Description

profile-index	Displays cable QoS table. Valid range is 1 to 255.
verbose	Displays detailed information about the QoS profiles.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3NA	This command was introduced.
12.0(3)T	The command was included in the mainline release.
12.0(7)XR	The verbose option was added.
12.1(1)T	The IP precedence rate enabling bits were added to the display.
12.1(4)CX	This command was deprecated for DOCSIS 1.1 use, because DOCSIS 1.1 replaces the QoS profile model with a service flow model. The **show interface cable qos paramset** command is used for DOCSIS 1.1 operation.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows how to display the existing QoS profiles on the CMTS:

```
Router# show cable qos profile

ID  Prio Max       Guarantee Max        Max   TOS  TOS   Create  B     IP prec.
         upstream  upstream  downstream tx    mask value by      priv  rate
         bandwidth bandwidth bandwidth  burst                     enab  enab
1   0    0         0         0          0     0x0  0x0   cmts(r) no    no
2   0    64000     0         1000000    0     0x0  0x0   cmts(r) no    no
3   7    31200     31200     0          0     0x0  0x0   cmts    yes   no
4   7    87200     87200     0          0     0x0  0x0   cmts    yes   no
5   2    256000    0         128000     1503  0x0  0x0   cm      no    no
```

Profiles 1 and 2 are always created by the CMTS at initial startup. The CMTS dynamically creates profiles 3 and 4, as shown above, to support Voice over IP (VoIP) codecs G.711 and G.729 when a CM configures phone lines and uses dynamic service requests to request VoIP service. The remaining profiles, such as profile 5 above, are typically created by a CM when it comes online.

Profile 3 creates a grant-size of 31.22 KiloBytes per second for G.729 service, and profile 4 creates a grant-size of 87.2 KiloBytes per second for G.711 service. Both profiles use a default grant-interval of 20 milliseconds. For more information on these profiles, see the TAC technical note at the following URL: http://www.cisco.com/warp/public/109/uBR7200_QoSMAC.html

The following example displays detailed output for profile 1:

```
Router# show cable qos profile 1 verbose

Profile Index                          1
Name                                   Default
Upstream Traffic Priority              0
Upstream Maximum Rate (bps)            0
Upstream Guaranteed Rate (bps)         0
Unsolicited Grant Size (bytes)         0
Unsolicited Grant Interval (usecs)     0
Upstream Maximum Transmit Burst (bytes) 0
IP Type of Service Overwrite Mask      0x0
IP Type of Service Overwrite Value     0x0
Downstream Maximum Rate (bps)          0
Created By                             cmts(r)
Baseline Privacy Enabled               no
```

Table below describes the fields displayed by the **show cable qos profile** command.

Table 82: show cable qos profile Command Field Descriptions

Field	Description
ID	Profile number.
Prio	Priority level.
Max upstream bandwidth	Maximum upstream bandwidth.
Guarantee upstream bandwidth	Guaranteed minimum upstream bandwidth.
Max downstream bandwidth	Maximum downstream bandwidth.
Max tx burst	Maximum transmit burst size in bytes.
Tos mask	Hex value of the mask bits.
Tos value	Hex value of the mask byte.
Create by	Identity of who created the profile: • cmts = Created by the CMTS with read-write properties. The profile can be modified but not deleted. • cmts(r) = Created by the CMTS with read-only properties. The profile cannot be modified or deleted. • cm = Created by the CM DOCSIS configuration file. • mgmt = Created by an operator using CLI commands.
B priv enab	Describes whether Baseline Privacy Interface (BPI) encryption is enabled (yes) or disabled (no) for this QoS profile.
IP prec. rate enab	Describes whether IP precedence rate limiting enabling is enabled (yes) or disabled (no) for this QoS profile. When a profile is created by a CM, this value is set by the Type Length Value (TLV) 11 fields in the DOCSIS configuration file, unless overwritten using the **cable qos profile** command.

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 qos permission	Specifies permission for updating the cable router QoS table.
cable qos profile	Configures a QoS profiles.
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 modem qos	Displays quality of service (QoS) and service flow information for a particular CM.
show cable noise	Displays the status of permissions for changing QoS tables.
show interface cable qos paramset	Displays the DOCSIS 1.1 QoS parameter sets.

show cable rate-adapt

To display the global and local upstream utilization optimization configuration parameters, use the **show cable rate-adapt** command in privileged EXEC mode.

show cable rate-adapt

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(23)BC2	This command was introduced.
12.2(33)SCB	This command was integrated into Cisco IOS Release 12.2(33)SCB. Support for the Cisco uBR7225VXR router was added.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

This command displays the current global rate-adapt settings that govern all cable modem and the local rate-adapt settings that relate to a specific cable modem upstream.

Examples

The following example shows a typical display of the **show cable rate-adapt** command:

```
Router# show cable rate-adapt
Global:Enabled Local-Only:Enabled global:maps 500 priority 6, rate 12 bcs 10 fcms On
```

Note The output “maps 500” relates to duration. It indicates that the service flow is optimized for 500 MAPs.

Table below describes the fields shown in the **show cable rate-adapt** display.

Table 83: show cable rate-adapt Field Descriptions

Field	Description
Global	Indicates if upstream utilization optimization is enabled globally on all cable modems.
Local	Indicates if upstream utilization optimization is enabled locally on a specific upstream flow.
priority	Indicates the specified priority setting.
rate	Indicates the specified minimum max-rate.
bcs	Indicates the number of broadcast contention minislots (BCS).
fcms	Indicates if forced broadcast contention minislot (fcms) is turned on or off.

Field	Description
duration	Indicates the duration of a rate-adapt flow.

Related Commands

Command	Description
cable upstream rate-adapt (global)	Enables upstream utilization optimization globally on all cable modem upstream flows.
cable upstream rate-adapt (interface)	Enables upstream utilization optimization locally.

show cable rate-limit-ccf

To display information about rate limiting criteria for upstream bonded service flows on the Cisco uBR10-MC5X20H cable interface line card, use the **showcable rate-limit-ccf** command in privileged EXEC mode.

show cable rate-limit-ccf [{*start-index count* | **clear**}]

Syntax Description

start-index	(Optional) Starting index for the log entries. The valid range is from 0 to 2000. The default value is 0.
count	(Optional) Total number of log entries to be displayed. The valid range is from 0 to 2000.
clear	(Optional) Clears information about rate limiting.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following is a sample output of the **show cable rate-limit-ccf** command that displays information about rate limiting criteria for upstream bonded service flows on a Cisco uBR10-MC5X20H cable interface line card:

```
Router# show cable rate-limit-ccf
rate_limiting config: aggr_throughput: 215000000 aggr_burst: 240000
cpu_threshold: 50 cpu_burst: 10
5X20H rate limit: cpu-throttle 0 ccf-bw-drop 0 others 0
5X20H rate limit ccf info count: 0
```

Table below describes the fields shown in the **show cable rate-limit-ccf command display.**

Table 84: show cable rate-limit-ccf Field Descriptions

Field	Description
aggr_throughput	Aggregate throughput value.
aggr_burst	Aggregate burst rate value.
cpu_threshold	CPU threshold for Continuous Concatenation and Fragmentation (CCF) in percentage.
cpu_burst	CPU burst for CCF in percentage

Field	Description
cpu-throttle	Total number of bandwidth requests that stopped due to CPU throttle.
ccf-bw-drop	Total number of bandwidth requests that stopped due to CCF resource constraint.
5X20H rate limit ccf info count	Total number of log entries.

Related Commands

Command	Description
cable upstream rate-limit-ccf	Configures rate limiting criteria for upstream bonded service flows on a Cisco uBR10-MC5X20H cable interface line card.

show cable rcp-id

To view available Receive Channel Profile (RCP) on the cmts which includes well-known RCP defined in CableLab DOCSIS MULPI specification, use **show cable rcp-id** command in privileged EXEC mode.

show cable rcp-id

Syntax Description

rcp id	Specifies a unique RCP ID in hexadecimal.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR8 Series Converged Broadband Routers.

Usage Guidelines

The **show cable rcp-id** is used along with RCP-ID to view the RCP definition.

The following example shows a typical display for the **show cable rcp-id** command:

```
Router#show cable rcp-id  00 10 18 80 61
RCP ID  : 00 10 18 80 61
  Name  :
  Center Frequency Spacing      : 0
  Max number of Channels        : 0
  Primary Capable Channel       : 1
  Number of Modules             : 1
   Module[1]:
     Number of Adjacent Channels: 1
     Minimum Center Frequency-Hz: 111000001
     Maximum Center Frequency-Hz: 111000000
```

Related Commands

Command	Description
cable rcp-id	Specifies the receive channel profile ID.
show cable rcps	Displays all the available Receive Channel Profiles (RCP) on the CMTS.

show cable rcps

To view all the available Receive Channel Profiles (RCP) on the CMTS, use the **show cable rcps** command in privilged EXEC mode.

show cable rcps

Syntax Description

This command has no arguments.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

The **show cable rcps** allows users to view all the available RCP's in CMTS.

Examples

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

```
Router# show cable rcps
RCP-ID  : 00 10 00 10 04
  Name  : CLAB-8M-004
  Center Frequency Spacing     : 8
  Number of Channels           : 4
  Primary Capable Channels     : 1
  Number of Modules            : 1
    Module [1]:
        Number-of-adjacent-channels : 8
        Minimum-center-frequency    : 112000000
        Maximum-center-frequency    : 858000000
        Connected Module            :  64
```

Related Commands

Command	Description
cable rcp-id	Specifies the receive channel profile ID.
show cable rcp-id	Displays all available Receive Channel Profile (RCP) on the cmts which includes well-known RCP defined in CableLab DOCSIS MULPI specification.

show cable redundancy

To display the DDC redundancy partners and their relative states, and additional information about DDC states on the Cisco CMTS, use the **show cable redundancy** command in privileged EXEC mode.

show cable redundancy {**hashfilter** | **class** | **calls**}

Syntax Description

hashfilter	Displays the hash filter(s) being used in the scheme.
class	Displays the displays the number of cable modems in each DDC class of the same scheme.
calls	Displays the number of active and E911 calls currently being supported on the relative DDC nodes.

Command Default

This command has no default behaviors or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Release 12.3(9a)BC	This command was introduced on the Cisco uBR7246 universal broadband router.
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example of the **show cable redundancy hashfilter** command illustrates the same DDC Redundancy scheme (two Cisco uBR7246VXR routers). This command displays the configured hash filter parameters. You can either list all hash filters (as shown) or list one hash filter, if specified with the optional *hash_id* value at the end of the command.

```
Router# show cable redundancy hashfilter
HashFilter 1
HashType        MacMask
default         ffff.ffff.ffff
MacAddr         OUI             Node
0000.39cc.b270                  1
0000.39cc.ba70                  2
0000.39cc.c070                  2
HashFilter 2
HashType        MacMask
default         0000.00ff.ffff
MacAddr  OUI  Node
 00.00.39 1
 00.08.0D 1
 00.0C.E5 1
```

The following example of the**show cable redundancy class** command displays the number of cable modems in each DDC class of the same scheme (two Cisco uBR7246VXR routers).

```
Router# show cable redundancy class
Number of modems in each DDC class:
Interface Class0 Class1 Class2 Class3 Class4
```

```
Cable3/0  32  0 0 0 0
Cable3/1  32 0 0 0 0
Cable4/0 32 0 0 0 0
Cable4/1 0 0 0 0 0
Cable5/0 31 0 0 0 0
Cable5/1 32 0 0 0 0
Cable6/0 0 0 0 0 0
Cable6/1 0 0 0 0 0
```

The following example of the **show cable redundancy calls** command displays the number of active 911 (E911) calls, voice calls, and the number of cable modems with service flows for each subinterface. If the subinterface is configured on a bundle, the number of calls is the total for all the members in the bundle.

```
Router# show cable redundancy calls
SubInterface  911Calls   VoiceCalls  ModemCount  ServiceFlow
Cable3/0.1    0          0           159         159
Cable3/0.2    0          0           0           0
```

Related Commands

Command	Description
cable redundancy hashfilter	Sets the MAC address and DDC node mappings of the DDC redundancy scheme.
cable redundancy myid	Sets the total number of Cisco DDC nodes (routers) in the DDC Redundancy scheme and sets the ID of the current DDC node.
cable redundancy node	Configures the DDC node with active or standby state.
cable redundancy node frequency	Sets the downstream frequencies for each node participating in the scheme other than the current DDC node (router).
cable redundancy target	Sets the target DDC node (router) to use in a DDC switchover event.
cable redundancy threshold	Sets the active voice call threshold on the current DDC node (router).

show cable resil-rf-status

To display the logical up and down state of a channel number, or the logical state of all RF channels, use the **show cable resil-rf-status** command in privileged EXEC mode.

show cable resil-rf-status [{**integrated-cable** *slot /card/port wb-rf-channel-number* | **down** | **uncfg** | **up**}]

Syntax Description

integrated-cable	(Optional) Specifies the integrated cable interface.
slot	(Optional) The slot where a SIP resides. Valid values are from 0 to 3 and 6 to 9.
card	(Optional) The bay in a SIP where a SPA is located. Valid values is 0.
port	(Optional) Specifies the interface number on the SPA. Valid values are from 0 to 15.
wb-rf-channel-number	(Optional) Specifies the channel number for the RF channel. Valid values are from 0 to 162.
down	(Optional) Display the RF in "DOWN" status.
uncfg	(Optional) Display the RF in "UNCFG" status.
up	(Optional) Display the RF in "UP" status.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.15.0S	This command was introduced on the Cisco cBR Series Converged Broadband Routers. This command replaces the **show cable rf-status** command.

Examples

The following is a sample output of the **show cable resil-rf-status** command used to display the logical state of all RF channels on a integrated cable interface:

```
Router# show cable rf-status
          Logical  Suspend  Suspend  Flap    Flap
RF        Status   Status   Fails    Counts  Time
--------  -------  -------  -------  ------  ----
3/0/0 0   UP       N/A      0        0
      1   UP       N/A      0        0
      2   UP       N/A      0        0
      3   UP       N/A      0        0
      4   UP       N/A      0        0
      5   UP       N/A      0        0
      6   UP       N/A      0        0
      7   UP       N/A      0        0
      8   UP       N/A      0        0
      9   UP       N/A      0        0
```

```
10  UP       N/A      0        0
11  UP       N/A      0        0
12  UP       N/A      0        0
13  UP       N/A      0        0
14  UP       N/A      0        0
15  UP       N/A      0        0
16  UP       N/A      0        0
17  UP       N/A      0        0
18  UP       N/A      0        0
19  UP       N/A      0        0
20  UP       N/A      0        0
```

Table below describes the significant fields shown in the display.

Table 85: show cable resil-rf-status Field Descriptions

Field	Description
RF	Indicates the RF channel ID.
Suspend Status	Indicates if the channel is currently suspended
Suspend Fails	Indicates the number of times that the CMTS attempted to suspend a channel without success.
Logical Status	Indicates the logical up and down state of all RF channels.
Flap Counts	Indicates the number of times the RF channel has dropped and recovered.
Flap Time	Indicates the duration in seconds for each flap count.

The following is a sample output of the **show cable resil-rf-status** command used to display the logical up and down state of a particular channel number on a integrated cable interface:

```
Router# show cable resil-rf-status integrated-cable 3/0/3:111
          Logical  Suspend  Suspend  Flap    Flap
RF        Status   Status   Fails    Counts  Time
--------  -------  -------  -------  ------  ----
3/0/3 111 UP       N/A      0        0
```

Related Commands

Command	Description
show interface resil-rf-status	Displays the logical up and down state for each of the configured RF channels for a wideband interface.

show cable resiliency

To display all information about the resiliency bonding groups and their assigned status on the Cisco CMTS router, use the **show cable resiliency** command in privileged EXEC mode.

show cable resiliency

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following example shows a sample output of the **show cable resiliency** command:

```
Router# show cable resiliency
              BG   Resil BG                                  RF
Resil BG I/F  ID   State          Count Time              Ctrl  Num
------------- ---- -------------- ----- --------------- ----------
Wi1/2/0:10    10   Free
Wi1/2/0:20    20   Free
Wi7/0/0:1     1    Assigned       3     Nov 3  09:55:49 0     0
                                                               1
                                                               2
Wi7/0/0:2     2    Assigned       3     Nov 3  09:57:09 0     0
                                                               1
                                                               3
```

Table below describes the significant fields shown in the display.

Table 86: show cable resiliency Field Descriptions

Field	Description
Resil BG I/F	Bonding group interface assigned to resiliency mode.
BG ID	Bonding group ID.
Resil BG State	Status of the resiliency bonding group—free or assigned.
Count	Number of times this bonding group has been assigned.
Time	Day and time the bonding group was last assigned.
RF Ctrl	Primary RF channel.
RF Num	RF index number of the assigned RF channel.

Related Commands

Command	Description
cable resiliency ds-bonding	Enables the Downstream Resiliency Bonding Group feature on the Cisco CMTS router.
cable ds-resiliency	Reserves a resiliency bonding group for a line card on the Cisco CMTS router.
show cable modem resiliency	Displays resiliency status of the cable modem in resiliency mode on the Cisco CMTS router.

show cable resiliency counts

You can use the **show cable resiliency counts** command in privileged EXEC mode to display the number of RBGs created per downstream port.

show cable resiliency counts

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Use the **show cable resiliency counts** command to monitor RBG creation counts per DS port and quickly identify where most RBGs are created. You can use this information to further identify which DS channels and cable modems have the most impairments.

Examples

The following example shows a sample output of the **show cable resiliency counts** command:

```
Router# show cable resiliency counts
Load for five secs: 3%/0%; one minute: 4%; five minutes: 4%
Time source is NTP, 10:30:03.791 EDT Mon Nov 30 2023

RBG Creation Count Per Port:
DS-CTRL          Total
                 RBG Count
-------          ---------
1/0/0            1
1/0/1            2
```

Related Commands

Command	Description
cable resiliency exclude	Use this command to exclude cable modems from Downstream Resiliency operations.

show cable resiliency exclude

You can use the **show cable resiliency exclude** command in privileged EXEC mode to display a list of cable modems excluded from Downstream Resiliency operations.

show cable resiliency exclude

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following example shows a sample output of the **show cable resiliency exclude** command:

```
router# show cable resiliency exclude
Load for five secs: 14%/0%; one minute: 4%; five minutes: 4%
Time source is NTP, 21:59:51.293 EDT Sun Nov 30 2023

MAC Address        I/F       State         Primary WB
34bd.fa0f.4784     C8/0/1    w-online(pt)  Wi8/0/1:4
34bd.fa0f.3726     C8/0/1    w-online(pt)  Wi8/0/1:4
34bd.fa0f.5690     C8/0/0    w-online(pt)  Wi8/0/0:3
34bd.fa0f.8899     C8/0/0    w-online(pt)  Wi8/0/0:5
```

Related Commands

Command	Description
cable resiliency exclude	Use this command to exclude cable modems from Downstream Resiliency operations.

show cable resiliency throttled-cm

You can use the **show cable resiliency throttled-cm** command in privileged EXEC mode to display RGB throttle information.

show cable resiliency throttled-cm { **list** | **stats** }

Syntax Description

list	Displays all the CMs that are moved to NB due to RBG throttle.
stats	Displays the RBG Throttle statistics information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1z	This command is introduced for the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows a sample output of the **show cable resiliency throttled-cm stats** command:

```
Router# show cable resiliency throttled-cm stats
RBG Throttle:            Enabled
RBG Throttle Auto Mode:  Enabled

RBG Throttle Auto Mode State:  STEADY
RBG Throttle Auto Mode Settling State Duration:  2 (minutes)
RBG Throttle Auto Mode NB to RBG Rate:  2 (per 30 seconds)

Metric:             Configured Threshold:    Current Value:
RBG Creation Rate        010                        0
CPU Usage                095%                       3
CM Online Rate           025                        0
```

Examples

The following example shows a sample output of the **show cable resiliency throttled-cm list** command:

```
Router# show cable resiliency throttled-cm list
Number of Throttled CMs: 3

MAC Address Timestamp
-------------- ---------
c8fb.26a3.cd54 Jul 28 23:25:58
c8fb.26a3.961a Jul 28 23:26:06
c8fb.26a3.aa82 Jul 28 23:26:11
```

Related Commands

Command	Description
cable resiliency rbg-throttle	Use this command to reduce SUP CPU usage during CM Mass Registration Events.

show cable rf-adapt

To display the downgrade and upgrade candidate modems, use the **show cable rf-adapt** command in user EXEC or privileged EXEC mode.

show cable rf-adapt [{**cable** {*slot /cable-interface-index* | *slot /subslot /cable-interface-index* } [{**upgrade-candidates** | **downgrade-candidates** | **upstream** *upstream-channel-id* [{**upgrade-candidates** | **downgrade-candidates**}]}] | **upgrade-candidates** | **downgrade-candidates**}]

Syntax Description

cable	Displays information about the cable modems in a specific cable interface.
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.
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.
upgrade-candidates	Displays information about the upgrade candidate cable modems.
downgrade-candidates	Displays information about the downgrade candidate cable modems.
upstream *upstream-channel-id*	(Optional) Displays candidates on a particular upstream channel. The valid range for *upstream-channel-id* is from 0 to 3.

Command Modes

User EXEC (>) or

Privileged EXEC (#)

Command History

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

Examples

The following is a sample output of the **show cable rf-adapt downgrade-candidates** command:

```
Router# show cable rf-adapt downgrade-candidates
MAC Address      IP Address      Source       Destination
                                 Upstream     Upstream
0019.474a.d4cc   10.10.1.9       C8/0/1/U3.0  C8/0/1/U3.1
0019.474a.d554   10.10.1.73      C8/0/14/U0.0 C8/0/14/U0.1
0019.474a.d542   10.10.1.79      C8/0/0/U0.0  C8/0/0/U0.1
0019.474a.d508   10.10.1.11      C8/0/8/U0.0  C8/0/8/U0.1
0025.2e2d.7400   10.10.1.66      C8/0/0/U1.0  C8/0/0/U1.1
0022.cea4.f404   10.10.1.53      C8/0/2/U2.0  C8/0/2/U2.1
```

The following is a sample output of the **show cable rf-adapt upgrade-candidates** command:

```
Router# show cable rf-adapt upgrade-candidates
MAC Address      IP Address      Source       Destination
                                 Upstream     Upstream
0019.474a.d554   10.10.1.73      C8/0/14/U0.1 C8/0/14/U0.0
0019.474a.d542   10.10.1.79      C8/0/0/U0.1  C8/0/0/U0.0
0025.2e2d.7400   10.10.1.66      C8/0/0/U1.1  C8/0/0/U1.0
```

The following is a sample output of the **show cable rf-adapt cable upstream downgrade-candidates** command:

```
Router# show cable rf-adapt cable 7/0/0 upstream 0 downgrade-candidates
MAC Address      IP Address      Source       Destination
                                 Upstream     Upstream
0019.474a.d4cc   10.10.1.9       C7/0/0/U3.0  C7/0/0/U3.1
```

The following is a sample output of the **show cable rf-adapt cable upstream upgrade-candidates** command:

```
Router# show cable rf-adapt cable 7/0/0 upstream 0 upgrade-candidates
MAC Address      IP Address      Source       Destination
                                 Upstream     Upstream
0019.474a.d554   10.10.1.73      C7/0/0/U0.1  C7/0/0/U0.0
```

The following is a sample output of the **show cable rf-adapt cable downgrade-candidates** command:

```
Router# show cable rf-adapt cable 7/0/0 downgrade-candidates
 MAC Address IP Address Source Destination
 Upstream Upstream
  0019.474a.d4cc 10.10.1.9 C7/0/0/U3.0 C7/0/0/U3.1
```

The following is a sample output of the **show cable rf-adapt cable upgrade-candidates** command:

```
Router# show cable rf-adapt cable 7/0/0 upgrade-candidates
MAC Address      IP Address      Source       Destination
                                 Upstream     Upstream
0019.474a.d554   10.10.1.73      C7/0/0/U0.1  C7/0/0/U0.0
```

Table below describes the significant fields shown in the display.

Related Commands

Command	Description
cable rf-adapt timer	Configures timers for RF adaptation.
cable upstream rf-adapt	Enables RF adaptation on the physical upstream channel.

Command	Description
cable upstream rf-adapt (logical channel)	Specifies the primary upstream logical channel and the secondary upstream logical channel.
cable upstream threshold rf-adapt	Configures the upstream RF adaptation threshold value, which prevents excessive relocation of modems from the primary upstream channel to the secondary upstream channel.
show cable modem	Displays information about the registered and unregistered cable modems.

show cable rf-status

To display the logical up and down state of a channel number, or the logical state of all RF channels, use the **show cable rf-status** command in privileged EXEC mode.

show cable rf-status [**modular-cable** *slot* /**bay**/*port*:*nb-channel-number*]

Syntax Description

modular-cable	(Optional) Specifies the modular cable interface.
slot	(Optional) The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs.
bay	(Optional) The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay).
port	(Optional) Specifies the interface number on the SPA.
nb-channel-number	(Optional) Specifies the channel number for the RF channel.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SCB	This command was introduced.
IOS-XE 3.15.0S	This command was replaced by the **show cable resil-rf-status** command on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable rf-status** command used to display the logical state of all RF channels on a modular cable interface:

```
Router# show cable rf-status
          Logical  Flap    Flap
RF        Status   Counts  Time
--------  -------  ------  ----
1/0/0 0   UP       0
      1   UP       0
      2   UP       0
      3   UP       0
      5   UP       0
      6   UP       0
      7   UP       0
      8   UP       0
      9   UP       0
      10  UP       0
      11  UP       0
      12  UP       0
      13  UP       0
      14  UP       0
```

```
15  UP       0
16  UP       0
17  UP       0
18  UP       0
19  UP       0
20  UP       0
21  UP       0
22  UP       0
23  UP       0
```

Table below describes the significant fields shown in the display.

Table 87: show cable rf-status Field Descriptions

Field	Description
RF	Indicates the RF channel ID.
Logical Status	Indicates the logical up and down state of all RF channels.
Flap Counts	Indicates the number of times the RF channel has dropped and recovered.
Flap Time	Indicates the duration in seconds for each flap count.

The following is a sample output of the **show cable rf-status** command used to display the logical up and down state of a particular channel number on a modular cable interface:

```
Router# show cable rf-status modular-cable 1/0/0:1
Load for five secs: 6%/0%; one minute: 3%; five minutes: 2%
Time source is NTP, .14:47:27.751 EDT Thu Aug 7 2008

          Logical  Flap    Flap
RF        Status   Counts  Time
--------  -------  ------  ----
1/0/0 1   UP       0
```

Related Commands

Command	Description
show interface rf-status	Displays the logical up and down state for each of the configured RF channels for a wideband interface.

show cable rpd

To display the active Cisco Remote PHY Devices (RPD), use the **show cable rpd** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd { **slot** *slot* | [{ *ip-address mac-address* | **id** *id* | **name** *name* }] | **tengigabitethernet** | { *slot* / *subslot* / *port* } } [**verbose**]

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.
verbose *port*	Displays detailed information of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
Cisco IOS XE Fuji 16.7.1	This command was updated to support IPv6 on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use this command to verify the active RPDs with the principal and auxiliary roles.

The following example shows the sample output for the **show cable rpd** command:

```
Router#show cable rpd
MAC Address     IP Address       I/F       State        Role HA  Auth Name

0000.5e00.5301  192.0.2.21       Te1/1/0   online       Pri  Act N/A  shelf-node8

0000.5e00.5302  192.0.2.106      Te1/1/1   online       Pri  Act N/A  shelf-node9

0000.5e00.5303  192.0.2.104      Te1/1/2   online       Pri  Act N/A  shelf-node10

0000.5e00.5304  192.0.2.100      Te7/1/0   online       Pri  Act N/A  node0
```

```
0000.5e00.5304  192.0.2.100      Te7/1/1   online       Aux  Act N/A  node0

0000.5e00.5305  192.0.2.103      Te7/1/1   online       Pri  Act N/A  node2

0000.5e00.5306  192.0.2.104      Te7/1/1   online       Pri  Act N/A  node1

0000.5e00.5307  192.0.2.105      Te7/1/2   online       Pri  Act N/A  node3

0000.5e00.5308  192.0.2.102      Te7/1/2   online       Pri  Act N/A  node4

0000.5e00.5309  192.0.2.128      Te7/1/4   online       Pri  Act N/A  shelf-node5

0000.5e00.530a  192.0.2.101      Te7/1/5   online       Pri  Act N/A  shelf-node6

0000.5e00.530b  192.0.2.100      Te7/1/6   online       Pri  Act N/A  shelf-node7

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following table contains information on the RPD states.

State	Description
`online`	RPD is online.
`!online`	RPD has lost PTP phase lock. Restore phase lock to avoid RPD losing service.
`^online`	RPD uses the default password. If you continue to use the default password, RPD services are disabled from RPD 7.7 and later.

The following example shows the RPD IPV6 Status:

```
Router#show cable rpd ipv6
MAC Address    I/F     State        Role HA  Auth IP Address
0000.5e00.5301 Te3/1/0 offline      Pri  Act N/A  ---
0000.5e00.5302 Te3/1/0 offline      Pri  Act N/A  ---
0000.5e00.5303 Te3/1/1 init(gcp)    Pri  Act N/A  2001:DB8:3:58::9993
0000.5e00.5304 Te3/1/1 !init(clock) Pri  Act N/A  2001:DB8:3:58::87FA
0000.5e00.5305 Te7/1/0 offline      Pri  Act N/A  ---
0000.5e00.5306 Te7/1/3 offline      Pri  Act N/A  ---

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd** *MAC adderss* **tengigabitethernet** command:

```
Router#show cable rpd 0000.5e00.5301 te7/1/0

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
```

The following example shows the sample output for the **show cable rpd** *IP adderss* **tengigabitethernet** command:

```
Router#show cable rpd 192.0.2.10 te7/1/0

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
```

The following example shows the sample output for the **show cable rpd id** *id* **tengigabitethernet** command:

```
Router#show cable rpd id 0000.5e00.5301 te7/1/0

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
```

The following example shows the sample output for the **show cable rpd name** *name* **tengigabitethernet** command:

```
Router#show cable rpd name node te7/1/0

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
```

The following example shows the sample output for the **show cable rpd slot** *slot* command:

```
Router#show cable rpd slot 7
MAC Address     IP Address       I/F       State        Role HA  Auth Name

0000.5e00.5301  192.0.2.100       Te7/1/0   online       Pri  Act N/A  node0

0000.5e00.5301  192.0.2.100       Te7/1/1   online       Aux  Act N/A  node0

0000.5e00.5302  192.0.2.105       Te7/1/1   online       Pri  Act N/A  node2

0000.5e00.5303  192.0.2.102       Te7/1/1   online       Pri  Act N/A  node1

0000.5e00.5304  192.0.2.100       Te7/1/2   online       Pri  Act N/A  node3

0000.5e00.5305  192.0.2.122       Te7/1/2   online       Pri  Act N/A  node4

0000.5e00.5306  192.0.2.128       Te7/1/4   online       Pri  Act N/A  shelf-node5

0000.5e00.5307  192.0.2.101       Te7/1/5   online       Pri  Act N/A  shelf-node6

0000.5e00.5308  192.0.2.200       Te7/1/6   online       Pri  Act N/A  shelf-node7

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd tengigabitethernet verbose** command for a specific RPD:

```
Router#show cable rpd name node te1/1/0 verbose
```

```
RPD ID                                  : 0000.5e00.5301
Vendor Name                             : Cisco
Vendor Id                               : NA
Model Number                            : NB
Device Mac Address                      : 0000.5e00.5301
Current Sw Version                      : Linux version 4.1.8-rt8
(gitlab-runner@cabu-openrpd-minhang) (gcc version 4.8.3 (OpenWrt/Linaro GCC 4.8-2014.04
r48749) ) #1 SMP Fri Feb 10 02:55:15 CST 2017
Boot Rom Version                        : ND
Device Description                      : RPD
Device Alias                            : RPD
Serial Number                           : NE
Us Burst Receiver Vendor Id             : NF
Us Burst Receiver Model Number          : R_Dummy
Us Burst Receiver Driver Version        : R_Dummy
Us Burst Receiver Serial Number         : R_Dummy
Rpd Rcp Protocol Version                : R_Dummy
Rpd Rcp Schema Version                  : R_Dummy
Hw Revision                             : NL
offline_timestamp                       :
auth_timestamp                          : Mar 8  10:56:52
online_timestamp                        : Mar 8  10:57:08
```

show cable rpd 55d1-us cpp-cache

To display information stored in the software cache (IOS) for 55-1 OOB, use the **show cable rpd 55d1-us cpp-cache** command in privileged EXEC mode.

show cable rpd 55d1-us cpp-cache

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Amsterdam 17.3.1x	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

The following example shows a sample output of the command **show cable rpd 55d1-us cpp-cache**:

```
Router#show cable rpd 55d1-us cpp-cache
Session ID rpd_index  rfport     chn_id     demodId    chan_index msg_chn_id msg_Flag
HA_Mode
0x40300003 3          0          0          32         18         18         TRUE
Active
0x40300003 3          1          0          32         21         18         FALSE
Active
0x60300003 3          0          0          32         536870930  536870930  TRUE
Standby
0x60300003 3          0          2          130        536870932  536870932  TRUE
Standby
0x60300003 3          1          0          32         536870933  536870930  FALSE
Standby
0x60300003 3          1          2          130        536870935  536870932  FALSE
Standby
```

show cable rpd alloc-chan-resources

To display the allocation status for both upstream and downstream channel resources of the Cisco Remote PHY Device (RPD), use the **show cable rpd alloc-chan-resources** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **alloc-chan-resources**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the allocation status for channel resources of the RPD.

The following example shows the sample output for the **showcable rpdalloc-chan-resources** command for a specific RPD:

```
Router#show cable rpd name node alloc-chan-resources
RPD ID                                  : 0004.9f00.0907
Downstream RF Port Index                : 0
Allocated DS OFDM Channels              : 0
Allocated DS SCQAM Channels             : 0
Allocated DS OOB55D1 Channels           : 0
Allocated DS NDF Channels               : 0
Downstream RF Port Index                : 1
Allocated DS OFDM Channels              : 0
Allocated DS SCQAM Channels             : 0
Allocated DS OOB55D1 Channels           : 0
Allocated DS NDF Channels               : 0
Upstream RF Port Index                  : 0
Allocated US OFDMA Channels             : 0
Allocated US SCQAM Channels             : 0
Allocated US OOB55D1 Channels           : 0
Allocated US NDR Channels               : 0
Upstream RF Port Index                  : 1
Allocated US OFDMA Channels             : 0
Allocated US SCQAM Channels             : 0
Allocated US OOB55D1 Channels           : 0
Allocated US NDR Channels               : 0
```

show cable rpd auxiliary

To display the Cisco Remote PHY Device (RPD) with the auxiliary role, use the **show cable rpd auxiliary** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd auxiliary

show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **auxiliary**

Syntax Description

ip-address	(Optional) IP address of the RPD with the auxiliary role.
mac-adderss	(Optional) MAC address of the RPD with the auxiliary role.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD with the auxiliary role.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPDs that are in the auxiliary role.

The following example shows the sample output for the **show cable rpd auxiliary** command:

```
Router#show cable rpd auxiliary

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.11       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/7   online       Aux  Act node
```

The following example shows the sample output for the **show cable rpd** *ip-address* **auxiliary** command:

```
Router#show cable rpd 192.0.2.11 auxiliary

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.11       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd** *MAC address* **auxiliary** command:

```
Router#show cable rpd 0000.5e00.5301 auxiliary

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.11       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd id** *id* **auxiliary** command:

```
Router#show cable rpd id 0000.5e00.5301 auxiliary

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.11       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd name** *name* **auxiliary** command:

```
Router#show cable rpd name node auxiliary

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.11       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.11       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd capability

To display the capability information of Cisco Remote-PHY device (RPD), use the **show cable rpd capability** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **capability**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to monitor buffer depth of RPD towards various types of upstream and downstream channels.

The following example shows the sample output for the **showcable rpdcapability** command for a specific RPD:

```
Router#show cable rpd name node capability

RPD ID                                    : 0004.9f00.0907
Bi-direction RF Ports                     : 2
Downstream RF Ports                       : 1
Upstream RF Ports                         : 1
10 Gigabit Ethernet Ports                 : 2
1 Gigabit Ethernet Ports                  : 1
Downstream SC-QAM Channels Per Port       : 158
Downstream OFDM Channels Per Port         : 1
Upstream SC-QAM Channels Per Port         : 12
Upstream OFDMA Channels  Per Port         : 2
Downstream SCTE-55-1 Channels Per Port    : 1
Upstream SCTE-55-1 Channels Per Port      : 3
Downstream SCTE-55-2 Channels Per Port    : 1
Upstream SCTE-55-2 Channels Per Port      : 1
DS NDF Channels Per Port                  : 1
US NDF Channels Per Port                  : 1
UDP Encapsulation On L2TPv3               : Not Support
DS Distinct PSP Flows                     : 8
US Distinct PSP Flows                     : 4
Asynchronous MPEG Video Channels Per Port : 160
```

```
Flow Tags support capability              : Support
Frequency Tilt support capability         : Support
Range of tilt setting                     : 0
Number of CW Tone Generators              : 4
Lowest CW Tone Frequency                  : 48000000
Highest CW Tone Frequency                 : 999000000
Maximum Power of CW Tone Generators       : 340
QAM as Pilot setting                      : 1
Buffer depth monitor alert support        : 0
Buffer depth configuration support        : 0
Rpd ucd processing time                   : 0
Rpd ucd change null grant time            : 0
Multi section timing mer reporting support: 0
```

show cable rpd config

To display the Cisco Remote PHY Device (RPD) downstream configuration information for CCAP-Core side (local) and RPD side (remote), use the **show cable rpd config** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {[{*ip-address mac-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* / *subslot* / *port* }}**config downstream**{ **local** **remote** }

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPD downstream configuration information for CCAP-Core side (local) and RPD side (remote).

The following example shows the sample output for the **show cable rpd config** command:

```
Router#show cable rpd 0004.9f33.0731 Te9/1/6 config downstream local

Load for five secs: 8%/3%; one minute: 9%; five minutes: 9%
Time source is NTP, 17:06:02.859 CST Mon Mar 27 2017
Controller Downstream 9/0/31
max-carrier 158
base-channel-power 21
rf-chan 72
  type DOCSIS
  docsis-channel-id 73
  frequency 531000000
  rf-output NORMAL
  power-adjust 0
  annex B
```

```
modulation 256
interleaver-depth I_32_J_4
spectrum-inversion off
symbol-rate 5361
```

show cable rpd core-ident

You can use the **show cable rpd core-ident** command in privileged EXEC mode to display RPD CCAP Core Identification information.

Cisco cBR Series Converged Broadband Router

show cable rpd { **slot** *slot* | [{ *mac-address ip-address* }] | **id** *id* | **name** *name* | **tengigabitethernet** { *slot* | *subslot* | *port* } } **core-ident**

Syntax Description

slot *slot*	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitEthernet *slot*	(Optional) The slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
tengigabitEthernet *subslot*	(Optional) The secondary slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD. The secondary slot number is always 1.
tengigabitEthernet *port*	(Optional) The port number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1z	This command is introduced on theCisco cBR Series Converged Broadband Routers.

Usage Guidelines

Use the **show cable rpd core-ident** command to display to display RPD CCAP Core identification information.

The following example shows the sample output for the **show cable badb.ad13.2be0 core-ident** command:

```
Router#show cable rpd badb.ad13.2be0 core-ident
RPD ID                                  : badb.ad13.2be0
Core Index                              : 0
Core ID                                 : 005f.8692.dd31
Core IP Address Type                    : Ipv4
```

```
Core IP Address                          : 10.1.0.1
Is Principal Core                        : Yes
CoreName                                 : CCAPCORE
VendorId                                 : 9
CoreMode                                 : Active
InitialConfigurationComplete             : True
MoveToOperational                        : True
CoreFunction                             : 3
ResourceSetIndex                         : 2
AuxCoreGcpConnectionStatus               : Connected
AuxCoreRpdState                          : Unknown
BackupGcpConfig                          : Connection
rpdGcpConnectionStatus                   : Connected
rpdGcpBackupCoreStatus                   : InService

RPD ID                                   : badb.ad13.2be0
Core Index                               : 1
Core ID                                  : 005f.8692.dcc0
Core IP Address Type                     : Ipv4
Core IP Address                          : 10.10.0.1
Is Principal Core                        : No
CoreName                                 : CCAPCORE
VendorId                                 : 9
CoreMode                                 : Backup
InitialConfigurationComplete             : True
MoveToOperational                        : True
CoreFunction                             : 3
ResourceSetIndex                         : 2
AuxCoreGcpConnectionStatus               : Connected
AuxCoreRpdState                          : OutOfService
BackupGcpConfig                          : Connection
rpdGcpConnectionStatus                   : Connected
rpdGcpBackupCoreStatus                   : StandingBy
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of RPD when the RPD is in the initialization state (L2TP).

show cable rpd depi

To display Downstream External PHY Interface (DEPI) session and tunnel information of the Cisco Remote-PHY device (RPD), use the **show cable rpd depi** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | [{ *mac-addressip-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* */subslot/port* }}**depi**

Syntax Description

slot *slot*	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitEthernet *slot*	(Optional) The slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
tengigabitEthernet *subslot*	(Optional) The secondary slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD. The secondary slot number is always 1.
tengigabitEthernet *port*	(Optional) The port number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use the **show cable rpd depi** command to display the complete DEPI session and L2TP status information associated to the RPD.

Use the **show cable rpd slot** *slot* **depi** command to display the DEPI session and L2TP status information associated to a specific slot of the RPD.

Use the **show cable rpd** *ip-address* **depi** command to display the DEPI session and L2TP status information associated to the RPD with a specific IP address.

Use the **show cable rpd** *mac-address* **depi** command to display the DEPI session and L2TP status information associated to the RPD with a specific MAC address.

Use the **show cable rpd id** *identifier* **depi** command to display the DEPI session and L2TP status information associated to the RPD with a specific identifier.

Use the **show cable rpd name** *name* **depi** command to display the DEPI session and L2TP status information associated to the RPD with a specific name.

Use the **show cable rpd tengigabitEthernet** *slot/subslot/port* **depi** command to display the DEPI session and L2TP status information associated to the RPD on a specific Ten Gigabit Ethernet interface of the RPD.

The following example shows the sample output for the **show cable rpd depi** command for a specific RPD:

```
Router#show cable rpd depi

DEPI Tunnel and Session Information Total tunnels 1 sessions 26
LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                           Count
338514820  671581873  0004.9f00.0901 est    120.100.1.20    26    rphy-l2tp-gl...

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x41040008 0x00000B02 US1/0/0:2(R)    est    00:34:57 21          P    PSP  UP
0x41010000 0x00000600 US1/0/0:0(D)    est    00:34:57 11          P    PSP  UP
0x00002006 0x00000405 DS1/0/0:5       est    00:34:57 6           P    PSP  UP
0x00002004 0x00000403 DS1/0/0:3       est    00:34:57 4           P    PSP  UP
0x4100000C 0x00000D03 US1/0/0:3(M)    est    00:34:57 23          P    PSP  UP
0x00002002 0x00000401 DS1/0/0:1       est    00:34:57 2           P    PSP  UP
0x00002007 0x00000406 DS1/0/0:6       est    00:34:57 7           P    PSP  UP
0x00002008 0x00000407 DS1/0/0:7       est    00:34:57 8           P    PSP  UP
0x4101000C 0x00000603 US1/0/0:3(D)    est    00:34:57 24          P    PSP  UP
0x41000004 0x00000D01 US1/0/0:1(M)    est    00:34:57 15          P    PSP  UP
0x00002001 0x00000400 DS1/0/0:0       est    00:34:57 1           P    PSP  UP
0x41080008 0x00000F02 US1/0/0:2(S)    est    00:34:57 22          P    PSP  UP
0x41010004 0x00000601 US1/0/0:1(D)    est    00:34:57 16          P    PSP  UP
0x41020000 0x00000800 US1/0/0:0(B)    est    00:34:57 12          P    PSP  UP
0x00002009 0x00000408 DS1/0/0:8       est    00:34:57 9           P    PSP  UP
0x41010008 0x00000602 US1/0/0:2(D)    est    00:34:57 20          P    PSP  UP
0x41000008 0x00000D02 US1/0/0:2(M)    est    00:34:57 19          P    PSP  UP
0x4108000C 0x00000F03 US1/0/0:3(S)    est    00:34:57 26          P    PSP  UP
0x00002003 0x00000402 DS1/0/0:2       est    00:34:57 3           P    PSP  UP
0x41080000 0x00000F00 US1/0/0:0(S)    est    00:34:57 14          P    PSP  UP
0x41040004 0x00000B01 US1/0/0:1(R)    est    00:34:57 17          P    PSP  UP
0x41080004 0x00000F01 US1/0/0:1(S)    est    00:34:57 18          P    PSP  UP
0x41000000 0x00000D00 US1/0/0:0(M)    est    00:34:56 10          P    PSP  UP
0x00002005 0x00000404 DS1/0/0:4       est    00:34:56 5           P    PSP  UP
0x4104000C 0x00000B03 US1/0/0:3(R)    est    00:34:56 25          P    PSP  UP
0x41040000 0x00000B00 US1/0/0:0(R)    est    00:34:56 13          P    PSP  UP
```

The following example shows the sample output for the **show cable rpdslot depi** command for a specific RPD:

```
Router#show cable rpd slot 7 depi
 Load for five secs: 5%/1%; one minute: 6%; five minutes: 6%
No time source, *12:40:16.725 CST Mon Mar 20 2017

DEPI Tunnel and Session Information Total tunnels 2 sessions 58
LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                           Count
813114830  35521958   000c.2923.9991 est    120.105.4.6     29    rphy-l2tp-gl...
```

```
LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x0000A012 0x8000A013 DS7/0/0:17      est    02:22:09 134         P    PSP  UP
0x0000A00D 0x8000A00E DS7/0/0:12      est    02:22:09 129         P    PSP  UP
0x0000A002 0x8000A003 DS7/0/0:1       est    02:22:09 118         P    PSP  UP
0x0000A00C 0x8000A00D DS7/0/0:11      est    02:22:09 128         P    PSP  UP
0x0000A013 0x8000A014 DS7/0/0:18      est    02:22:09 135         P    PSP  UP
0x45010004 0x00000601 US7/0/1:1(D)    est    02:22:09 143         P    PSP  UP
0x0000A010 0x8000A011 DS7/0/0:15      est    02:22:09 132         P    PSP  UP
0x45020004 0x00000800 US7/0/1:0(B)    est    02:22:09 139         P    PSP  UP
0x0000A00F 0x8000A010 DS7/0/0:14      est    02:22:09 131         P    PSP  UP
0x0000A00B 0x8000A00C DS7/0/0:10      est    02:22:08 127         P    PSP  UP
0x45080004 0x00000F01 US7/0/1:1(S)    est    02:22:08 145         P    PSP  UP
0x45010000 0x00000600 US7/0/1:0(D)    est    02:22:08 138         P    PSP  UP
0x45000000 0x00000D00 US7/0/1:0(M)    est    02:22:08 137         P    PSP  UP
0x0000A00E 0x8000A00F DS7/0/0:13      est    02:22:08 130         P    PSP  UP
0x0000A00A 0x8000A00B DS7/0/0:9       est    02:22:08 126         P    PSP  UP
0x45040000 0x00000B00 US7/0/1:0(R)    est    02:22:08 140         P    PSP  UP
0x0000A007 0x8000A008 DS7/0/0:6       est    02:22:08 123         P    PSP  UP
0x0000A011 0x8000A012 DS7/0/0:16      est    02:22:08 133         P    PSP  UP
0x0000A014 0x8000A015 DS7/0/0:19      est    02:22:08 136         P    PSP  UP
0x0000A004 0x8000A005 DS7/0/0:3       est    02:22:08 120         P    PSP  UP
0x0000A008 0x8000A009 DS7/0/0:7       est    02:22:08 124         P    PSP  UP
0x45080000 0x00000F00 US7/0/1:0(S)    est    02:22:08 141         P    PSP  UP
0x0000A006 0x8000A007 DS7/0/0:5       est    02:22:08 122         P    PSP  UP
0x0000A005 0x8000A006 DS7/0/0:4       est    02:22:08 121         P    PSP  UP
0x0000A009 0x8000A00A DS7/0/0:8       est    02:22:08 125         P    PSP  UP
0x45040004 0x00000B01 US7/0/1:1(R)    est    02:22:08 144         P    PSP  UP
0x45000004 0x00000D01 US7/0/1:1(M)    est    02:22:08 142         P    PSP  UP
0x0000A003 0x8000A004 DS7/0/0:2       est    02:22:08 119         P    PSP  UP
0x0000A001 0x8000A002 DS7/0/0:0       est    02:22:08 117         P    PSP  UP
LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                            Count
3388764998 1054297851 0004.9f03.0214 est    120.105.4.7     29    rphy-l2tp-gl...

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x45010008 0x00000600 US7/0/0:0(D)    est    02:22:09 167         P    PSP  UP
0x45000008 0x00000D00 US7/0/0:0(M)    est    02:22:09 166         P    PSP  UP
0x4501000C 0x00000601 US7/0/0:1(D)    est    02:22:09 172         P    PSP  UP
0x4500000C 0x00000D01 US7/0/0:1(M)    est    02:22:09 171         P    PSP  UP
0x45020000 0x00000800 US7/0/0:0(B)    est    02:22:09 168         P    PSP  UP
0x0001A00F 0x8000A010 DS7/0/0:14      est    02:22:09 160         P    PSP  UP
0x45040008 0x00000B00 US7/0/0:0(R)    est    02:22:09 169         P    PSP  UP
0x0001A009 0x8000A00A DS7/0/0:8       est    02:22:09 154         P    PSP  UP
0x0001A012 0x8000A013 DS7/0/0:17      est    02:22:08 163         P    PSP  UP
0x0001A013 0x8000A014 DS7/0/0:18      est    02:22:08 164         P    PSP  UP
0x0001A00C 0x8000A00D DS7/0/0:11      est    02:22:08 157         P    PSP  UP
0x0001A014 0x8000A015 DS7/0/0:19      est    02:22:08 165         P    PSP  UP
0x0001A010 0x8000A011 DS7/0/0:15      est    02:22:08 161         P    PSP  UP
0x0001A004 0x8000A005 DS7/0/0:3       est    02:22:08 149         P    PSP  UP
0x0001A002 0x8000A003 DS7/0/0:1       est    02:22:08 147         P    PSP  UP
0x0001A00D 0x8000A00E DS7/0/0:12      est    02:22:08 158         P    PSP  UP
0x0001A005 0x8000A006 DS7/0/0:4       est    02:22:08 150         P    PSP  UP
0x4504000C 0x00000B01 US7/0/0:1(R)    est    02:22:08 173         P    PSP  UP
0x0001A00E 0x8000A00F DS7/0/0:13      est    02:22:08 159         P    PSP  UP
0x0001A008 0x8000A009 DS7/0/0:7       est    02:22:08 153         P    PSP  UP
0x4508000C 0x00000F01 US7/0/0:1(S)    est    02:22:08 174         P    PSP  UP
0x0001A006 0x8000A007 DS7/0/0:5       est    02:22:08 151         P    PSP  UP
0x0001A00B 0x8000A00C DS7/0/0:10      est    02:22:08 156         P    PSP  UP
0x0001A00A 0x8000A00B DS7/0/0:9       est    02:22:08 155         P    PSP  UP
0x0001A007 0x8000A008 DS7/0/0:6       est    02:22:08 152         P    PSP  UP
0x0001A011 0x8000A012 DS7/0/0:16      est    02:22:08 162         P    PSP  UP
0x0001A001 0x8000A002 DS7/0/0:0       est    02:22:08 146         P    PSP  UP
0x45080008 0x00000F00 US7/0/0:0(S)    est    02:22:08 170         P    PSP  UP
```

```
0x0001A003 0x8000A004 DS7/0/0:2       est    02:22:08 148        P    PSP  UP
```

The following example shows the sample output for the **show cable rpd te depi** command for a specific RPD:

```
Router#show cable rpd te7/1/0 depi
 Load for five secs: 8%/1%; one minute: 6%; five minutes: 6%
No time source, *12:40:30.447 CST Mon Mar 20 2017

DEPI Tunnel and Session Information Total tunnels 2 sessions 58
LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                          Count
813114830  35521958   000c.2923.9991 est    120.105.4.6     29    rphy-l2tp-gl...

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x0000A012 0x8000A013 DS7/0/0:17      est    02:22:22 134        P    PSP  UP
0x0000A00D 0x8000A00E DS7/0/0:12      est    02:22:22 129        P    PSP  UP
0x0000A002 0x8000A003 DS7/0/0:1       est    02:22:22 118        P    PSP  UP
0x0000A00C 0x8000A00D DS7/0/0:11      est    02:22:22 128        P    PSP  UP
0x0000A013 0x8000A014 DS7/0/0:18      est    02:22:22 135        P    PSP  UP
0x45010004 0x00000601 US7/0/1:1(D)    est    02:22:22 143        P    PSP  UP
0x0000A010 0x8000A011 DS7/0/0:15      est    02:22:22 132        P    PSP  UP
0x45020004 0x00000800 US7/0/1:0(B)    est    02:22:22 139        P    PSP  UP
0x0000A00F 0x8000A010 DS7/0/0:14      est    02:22:22 131        P    PSP  UP
0x0000A00B 0x8000A00C DS7/0/0:10      est    02:22:22 127        P    PSP  UP
0x45080004 0x00000F01 US7/0/1:1(S)    est    02:22:22 145        P    PSP  UP
0x45010000 0x00000600 US7/0/1:0(D)    est    02:22:22 138        P    PSP  UP
0x45000000 0x00000D00 US7/0/1:0(M)    est    02:22:22 137        P    PSP  UP
0x0000A00E 0x8000A00F DS7/0/0:13      est    02:22:22 130        P    PSP  UP
0x0000A00A 0x8000A00B DS7/0/0:9       est    02:22:22 126        P    PSP  UP
0x45040000 0x00000B00 US7/0/1:0(R)    est    02:22:22 140        P    PSP  UP
0x0000A007 0x8000A008 DS7/0/0:6       est    02:22:22 123        P    PSP  UP
0x0000A011 0x8000A012 DS7/0/0:16      est    02:22:22 133        P    PSP  UP
0x0000A014 0x8000A015 DS7/0/0:19      est    02:22:22 136        P    PSP  UP
0x0000A004 0x8000A005 DS7/0/0:3       est    02:22:22 120        P    PSP  UP
0x0000A008 0x8000A009 DS7/0/0:7       est    02:22:22 124        P    PSP  UP
0x45080000 0x00000F00 US7/0/1:0(S)    est    02:22:22 141        P    PSP  UP
0x0000A006 0x8000A007 DS7/0/0:5       est    02:22:22 122        P    PSP  UP
0x0000A005 0x8000A006 DS7/0/0:4       est    02:22:22 121        P    PSP  UP
0x0000A009 0x8000A00A DS7/0/0:8       est    02:22:22 125        P    PSP  UP
0x45040004 0x00000B01 US7/0/1:1(R)    est    02:22:22 144        P    PSP  UP
0x45000004 0x00000D01 US7/0/1:1(M)    est    02:22:22 142        P    PSP  UP
0x0000A003 0x8000A004 DS7/0/0:2       est    02:22:22 119        P    PSP  UP
0x0000A001 0x8000A002 DS7/0/0:0       est    02:22:22 117        P    PSP  UP
LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                          Count
3388764998 1054297851 0004.9f03.0214 est    120.105.4.7     29    rphy-l2tp-gl...

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x45010008 0x00000600 US7/0/0:0(D)    est    02:22:22 167        P    PSP  UP
0x45000008 0x00000D00 US7/0/0:0(M)    est    02:22:22 166        P    PSP  UP
0x4501000C 0x00000601 US7/0/0:1(D)    est    02:22:22 172        P    PSP  UP
0x4500000C 0x00000D01 US7/0/0:1(M)    est    02:22:22 171        P    PSP  UP
0x45020000 0x00000800 US7/0/0:0(B)    est    02:22:22 168        P    PSP  UP
0x0001A00F 0x8000A010 DS7/0/0:14      est    02:22:22 160        P    PSP  UP
0x45040008 0x00000B00 US7/0/0:0(R)    est    02:22:22 169        P    PSP  UP
0x0001A009 0x8000A00A DS7/0/0:8       est    02:22:22 154        P    PSP  UP
0x0001A012 0x8000A013 DS7/0/0:17      est    02:22:22 163        P    PSP  UP
0x0001A013 0x8000A014 DS7/0/0:18      est    02:22:22 164        P    PSP  UP
0x0001A00C 0x8000A00D DS7/0/0:11      est    02:22:22 157        P    PSP  UP
0x0001A014 0x8000A015 DS7/0/0:19      est    02:22:22 165        P    PSP  UP
```

```
0x0001A010 0x8000A011 DS7/0/0:15      est    02:22:22 161        P    PSP  UP
0x0001A004 0x8000A005 DS7/0/0:3       est    02:22:22 149        P    PSP  UP
0x0001A002 0x8000A003 DS7/0/0:1       est    02:22:22 147        P    PSP  UP
0x0001A00D 0x8000A00E DS7/0/0:12      est    02:22:22 158        P    PSP  UP
0x0001A005 0x8000A006 DS7/0/0:4       est    02:22:22 150        P    PSP  UP
0x4504000C 0x00000B01 US7/0/0:1(R)    est    02:22:22 173        P    PSP  UP
0x0001A00E 0x8000A00F DS7/0/0:13      est    02:22:22 159        P    PSP  UP
0x0001A008 0x8000A009 DS7/0/0:7       est    02:22:22 153        P    PSP  UP
0x4508000C 0x00000F01 US7/0/0:1(S)    est    02:22:22 174        P    PSP  UP
0x0001A006 0x8000A007 DS7/0/0:5       est    02:22:22 151        P    PSP  UP
0x0001A00B 0x8000A00C DS7/0/0:10      est    02:22:22 156        P    PSP  UP
0x0001A00A 0x8000A00B DS7/0/0:9       est    02:22:22 155        P    PSP  UP
0x0001A007 0x8000A008 DS7/0/0:6       est    02:22:22 152        P    PSP  UP
0x0001A011 0x8000A012 DS7/0/0:16      est    02:22:22 162        P    PSP  UP
0x0001A001 0x8000A002 DS7/0/0:0       est    02:22:22 146        P    PSP  UP
0x45080008 0x00000F00 US7/0/0:0(S)    est    02:22:22 170        P    PSP  UP
0x0001A003 0x8000A004 DS7/0/0:2       est    02:22:22 148        P    PSP  UP
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of RPD when the RPD is in the initialization state (L2TP).
show cable rpd depi session	Displays DEPI session information of RPD.

show cable rpd depi session

To display Downstream External PHY Interface (DEPI) session information of the Cisco Remote-PHY device (RPD), use the **show cable rpd depi session** command in privileged EXEC mode.

show cable rpd {**slot** *slot* | [{ *mac-addressip-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* */subslot/port* }}**depi**[{**session** | [{*session-id* | **configured** | **endpoints** | **name** *session-name* | **tsid** *tsid*}]}]

Syntax Description

slot *slot*	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *identifier*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitEthernet *slot*	(Optional) The slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
tengigabitEthernet *subslot*	(Optional) The secondary slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD. The secondary slot number is always 1.
tengigabitEthernet *port*	(Optional) The port number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
session*session-id*	(Optional) The DEPI session ID of the RPD. The value ranges from 1 to 4,294,967,295.
session configured	(Optional) Displays all the DEPI sessions configured and their state. The states are IDLE and ACTIVE..
session endpoints	(Optional) The DEPI session endpoints including tunnel ID.
session name *session-name*	(Optional) The DEPI session name of the RPD.
session tsid *tsid*	(Optional) The information for DEPI sessions identified by Transport Stream Identifier (TSID).

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use the **show cable rpd depi session** command to display the complete DEPI session information associated to the RPD.

Use the **show cable rpd depi session** *session-id* command to display a DEPI session information with a specific session identifier.

Use the **show cable rpd depi session configured** command to display all the DEPI sessions configured and their states.

Use the **show cable rpd depi session endpoints** command to display the DEPI session endpoints including tunnel ID.

Use the **show cable rpd depi session name** *session-name* command to display a DEPI session information with a specific session name.

Use the **show cable rpd depi session tsid** *tsid* command to display the information for DEPI sessions identified by a specifc TSID.

Use the **show cable rpd slot** *slot* **depi session** command to display the DEPI session information associated to a specific slot of the RPD.

Use the **show cable rpd tengigabitEthernet** *slot/subslot/port* **depi session** command to display the DEPI session information associated to the RPD on a specific Ten Gigabit Ethernet interface of the RPD.

Use the **show cable rpd** *mac-address* **depi session** *session-id* command to display a specific DEPI session information associated to the RPD with a specific MAC address.

Use the **show cable rpd** *ip-address* **depi session configured** command to display a specific DEPI session configured associated to the RPD with a specific IP address.

Use the **show cable rpd id** *identifier* **depi session endpoints** command to display the DEPI session endpoint information associated to the RPD with a specific identifier.

Use the **show cable rpd name** *name* **depi session name** *name* command to display the DEPI session information associated to the RPD with a specific name.

Use the **show cable rpd** *mac-address* **depi session tsid** *tsid* command to display the information for DEPI sessions identified by a specifc TSID.

Use the **show cable rpd** *mac-address* **tengigabitEthernet** *slot/subslot/port* **depi session** command to display the DEPI session information associated to the RPD with a specific MAC address on a specific Ten Gigabit Ethernet interface of the RPD.

The following example shows the sample output for the **show cable rpd depi session** command for particular RPD:

```
Router#show cable rpd te7/1/0 depi session

Load for five secs: 6%/1%; one minute: 6%; five minutes: 6%
No time source, *12:41:02.578 CST Mon Mar 20 2017

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x0000A012 0x8000A013 DS7/0/0:17      est    02:22:55 134         P    PSP  UP
0x0000A00D 0x8000A00E DS7/0/0:12      est    02:22:55 129         P    PSP  UP
0x0000A002 0x8000A003 DS7/0/0:1       est    02:22:55 118         P    PSP  UP
0x0000A00C 0x8000A00D DS7/0/0:11      est    02:22:55 128         P    PSP  UP
0x0000A013 0x8000A014 DS7/0/0:18      est    02:22:54 135         P    PSP  UP
0x45010004 0x00000601 US7/0/1:1(D)    est    02:22:54 143         P    PSP  UP
0x0000A010 0x8000A011 DS7/0/0:15      est    02:22:54 132         P    PSP  UP
0x45020004 0x00000800 US7/0/1:0(B)    est    02:22:54 139         P    PSP  UP
```

```
0x0000A00F 0x8000A010 DS7/0/0:14      est    02:22:54 131        P    PSP  UP
0x0000A00B 0x8000A00C DS7/0/0:10      est    02:22:54 127        P    PSP  UP
0x45080004 0x00000F01 US7/0/1:1(S)    est    02:22:54 145        P    PSP  UP
0x45010000 0x00000600 US7/0/1:0(D)    est    02:22:54 138        P    PSP  UP
0x45000000 0x00000D00 US7/0/1:0(M)    est    02:22:54 137        P    PSP  UP
0x0000A00E 0x8000A00F DS7/0/0:13      est    02:22:54 130        P    PSP  UP
0x0000A00A 0x8000A00B DS7/0/0:9       est    02:22:54 126        P    PSP  UP
0x45040000 0x00000B00 US7/0/1:0(R)    est    02:22:54 140        P    PSP  UP
0x0000A007 0x8000A008 DS7/0/0:6       est    02:22:54 123        P    PSP  UP
0x0000A011 0x8000A012 DS7/0/0:16      est    02:22:54 133        P    PSP  UP
0x0000A014 0x8000A015 DS7/0/0:19      est    02:22:54 136        P    PSP  UP
0x0000A004 0x8000A005 DS7/0/0:3       est    02:22:54 120        P    PSP  UP
0x0000A008 0x8000A009 DS7/0/0:7       est    02:22:54 124        P    PSP  UP
0x45080000 0x00000F00 US7/0/1:0(S)    est    02:22:54 141        P    PSP  UP
0x0000A006 0x8000A007 DS7/0/0:5       est    02:22:54 122        P    PSP  UP
0x0000A005 0x8000A006 DS7/0/0:4       est    02:22:54 121        P    PSP  UP
0x0000A009 0x8000A00A DS7/0/0:8       est    02:22:54 125        P    PSP  UP
0x45040004 0x00000B01 US7/0/1:1(R)    est    02:22:54 144        P    PSP  UP
0x45000004 0x00000D01 US7/0/1:1(M)    est    02:22:54 142        P    PSP  UP
0x0000A003 0x8000A004 DS7/0/0:2       est    02:22:54 119        P    PSP  UP
0x0000A001 0x8000A002 DS7/0/0:0       est    02:22:54 117        P    PSP  UP
0x45010008 0x00000600 US7/0/0:0(D)    est    02:22:55 167        P    PSP  UP
0x45000008 0x00000D00 US7/0/0:0(M)    est    02:22:55 166        P    PSP  UP
0x4501000C 0x00000601 US7/0/0:1(D)    est    02:22:54 172        P    PSP  UP
0x4500000C 0x00000D01 US7/0/0:1(M)    est    02:22:54 171        P    PSP  UP
0x45020000 0x00000800 US7/0/0:0(B)    est    02:22:54 168        P    PSP  UP
0x0001A00F 0x8000A010 DS7/0/0:14      est    02:22:54 160        P    PSP  UP
0x45040008 0x00000B00 US7/0/0:0(R)    est    02:22:54 169        P    PSP  UP
0x0001A009 0x8000A00A DS7/0/0:8       est    02:22:54 154        P    PSP  UP
0x0001A012 0x8000A013 DS7/0/0:17      est    02:22:54 163        P    PSP  UP
0x0001A013 0x8000A014 DS7/0/0:18      est    02:22:54 164        P    PSP  UP
0x0001A00C 0x8000A00D DS7/0/0:11      est    02:22:54 157        P    PSP  UP
0x0001A014 0x8000A015 DS7/0/0:19      est    02:22:54 165        P    PSP  UP
0x0001A010 0x8000A011 DS7/0/0:15      est    02:22:54 161        P    PSP  UP
0x0001A004 0x8000A005 DS7/0/0:3       est    02:22:54 149        P    PSP  UP
0x0001A002 0x8000A003 DS7/0/0:1       est    02:22:54 147        P    PSP  UP
0x0001A00D 0x8000A00E DS7/0/0:12      est    02:22:54 158        P    PSP  UP
0x0001A005 0x8000A006 DS7/0/0:4       est    02:22:54 150        P    PSP  UP
0x4504000C 0x00000B01 US7/0/0:1(R)    est    02:22:54 173        P    PSP  UP
0x0001A00E 0x8000A00F DS7/0/0:13      est    02:22:54 159        P    PSP  UP
0x0001A008 0x8000A009 DS7/0/0:7       est    02:22:54 153        P    PSP  UP
0x4508000C 0x00000F01 US7/0/0:1(S)    est    02:22:54 174        P    PSP  UP
0x0001A006 0x8000A007 DS7/0/0:5       est    02:22:54 151        P    PSP  UP
0x0001A00B 0x8000A00C DS7/0/0:10      est    02:22:54 156        P    PSP  UP
0x0001A00A 0x8000A00B DS7/0/0:9       est    02:22:54 155        P    PSP  UP
0x0001A007 0x8000A008 DS7/0/0:6       est    02:22:54 152        P    PSP  UP
0x0001A011 0x8000A012 DS7/0/0:16      est    02:22:54 162        P    PSP  UP
0x0001A001 0x8000A002 DS7/0/0:0       est    02:22:54 146        P    PSP  UP
0x45080008 0x00000F00 US7/0/0:0(S)    est    02:22:54 170        P    PSP  UP
0x0001A003 0x8000A004 DS7/0/0:2       est    02:22:54 148        P    PSP  UP
```

The following example shows the sample output for the **show cable rpd depi session endpoints** command for a specific RPD:

```
Router#show cable rpd depi session endpoints
Load for five secs: 4%/1%; one minute: 4%; five minutes: 4%
Time source is NTP, 14:50:21.553 CST Wed Mar 22 2017

DEPI Tunnel              RF Channel          EQAM RF-Port    Tsid       State  Type
0004.9f00.0413:57        Mod3:40961:57          -            40961      est    P
0004.9f00.0413:57        Mod3:40962:57          -            40962      est    P
```

```
0004.9f00.0413:57       Mod3:40963:57         -           40963      est    P
0004.9f00.0413:57       Mod3:40964:57         -           40964      est    P
0004.9f00.0413:57       Mod3:40965:57         -           40965      est    P
0004.9f00.0413:57       Mod3:40966:57         -           40966      est    P
0004.9f00.0413:57       Mod3:40967:57         -           40967      est    P
0004.9f00.0413:57       Mod3:40968:57         -           40968      est    P
0004.9f00.0413:57       Mod3:1073777665:57    -           1073777665 est    P
0004.9f00.0413:57       Mod3:1073777666:57    -           1073777666 est    P
0004.9f00.0413:57       Mod3:1073777667:57    -           1073777667 est    P
0004.9f00.0413:57       Mod3:1073777668:57    -           1073777668 est    P
0004.9f00.0413:57       Mod3:1073777669:57    -           1073777669 est    P
0004.9f00.0413:57       Mod3:1073777670:57    -           1073777670 est    P
0004.9f00.0413:57       Mod3:1073777671:57    -           1073777671 est    P
0004.9f00.0413:57       Mod3:1073777673:57    -           1073777673 est    P
0004.9f00.0413:57       Mod3:1073777674:57    -           1073777674 est    P
0004.9f00.0413:57       Mod3:1073777675:57    -           1073777675 est    P
0004.9f00.0413:57       Mod3:1073777676:57    -           1073777676 est    P
0004.9f00.0413:57       Mod3:1073777678:57    -           1073777678 est    P
0004.9f00.0413:57       Mod3:1073777679:57    -           1073777679 est    P
0004.9f00.0413:57       Mod3:1073777680:57    -           1073777680 est    P
0004.9f00.0413:57       Mod3:1073777681:57    -           1073777681 est    P
0004.9f00.0413:57       Mod3:1073777683:57    -           1073777683 est    P
0004.9f00.0413:57       Mod3:1073777684:57    -           1073777684 est    P
0004.9f00.0413:64       Mod3:48921:64         -           48921      est    P
0004.9f00.0413:64       Mod3:48922:64         -           48922      est    P
0004.9f00.0413:64       Mod3:48923:64         -           48923      est    P
0004.9f00.0413:64       Mod3:48924:64         -           48924      est    P
0004.9f00.0413:64       Mod3:48925:64         -           48925      est    P
0004.9f00.0413:64       Mod3:48926:64         -           48926      est    P
0004.9f00.0413:64       Mod3:48927:64         -           48927      est    P
0004.9f00.0413:64       Mod3:48928:64         -           48928      est    P
0004.9f00.0413:58       Mod3:43785:58         -           43785      est    P
0004.9f00.0413:58       Mod3:43786:58         -           43786      est    P
0004.9f00.0413:58       Mod3:43787:58         -           43787      est    P
0004.9f00.0413:58       Mod3:43788:58         -           43788      est    P
0004.9f00.0413:58       Mod3:43789:58         -           43789      est    P
0004.9f00.0413:58       Mod3:43790:58         -           43790      est    P
0004.9f00.0413:58       Mod3:43791:58         -           43791      est    P
0004.9f00.0413:58       Mod3:43792:58         -           43792      est    P
0004.9f00.0413:59       Mod3:44049:59         -           44049      est    P
0004.9f00.0413:59       Mod3:44050:59         -           44050      est    P
0004.9f00.0413:59       Mod3:44051:59         -           44051      est    P
0004.9f00.0413:59       Mod3:44052:59         -           44052      est    P
0004.9f00.0413:59       Mod3:44053:59         -           44053      est    P
0004.9f00.0413:59       Mod3:44054:59         -           44054      est    P
0004.9f00.0413:59       Mod3:44055:59         -           44055      est    P
0004.9f00.0413:59       Mod3:44056:59         -           44056      est    P
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of RPD when the RPD is in the initialization state (L2TP).
show cable rpd depi tunnel	Displays DEPI tunnel information of RPD.

show cable rpd depi tunnel

To display Downstream External PHY Interface (DEPI) tunnel information of the Cisco Remote-PHY device (RPD), use the **show cable rpd depi tunnel** command in privileged EXEC mode.

show cable rpd {**slot** *slot* | [{ *mac-addressip-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* */subslot/port* }}**depitunnel***tunnel-id***ver**

Syntax Description

slot *slot*	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *identifier*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitEthernet *slot*	(Optional) The slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
tengigabitEthernet *subslot*	(Optional) The secondary slot number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD. The secondary slot number is always 1.
tengigabitEthernet *port*	(Optional) The port number of the DPIC in the Ten Gigabit Ethernet interface that connects to the RPD.
tunnel *tunnel-id***ver**	(Optional) Local tunnel identifier. The value ranges from 1 to 4,294,967,295.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to view the detailed information of DEPI tunnel with Layer 2 Tunnel Protocol (L2TP) status of the RPD.

Use the **show cable rpd depi tunnel** command to display the DEPI tunnel with Layer 2 Tunnel Protocol (L2TP) status of the RPD.

Use the **show cable rpd slot** *slot* **depi tunnel** command to display the DEPI tunnel information associated to a specific slot of the RPD.

Use the **show cable rpd tengigabitEthernet** *slot/subslot/port* **depi tunnel** command to display the DEPI tunnel information associated to the RPD on a specific Ten Gigabit Ethernet interface of the RPD.

Use the **show cable rpd** *mac-address* **depi tunnel** command to display a specific DEPI tunnel information associated to the RPD with a specific MAC address.

Use the **show cable rpd** *ip-address* **depi tunnel** command to display a specific DEPI tunnel associated to the RPD with a specific IP address.

Use the **show cable rpd id***identifier* **depi tunnel** command to display the DEPI tunnel information associated to the RPD with a specific identifier.

Use the **show cable rpd name** *name* **depi tunnel name** *name* command to display the DEPI tunnel information associated to the RPD with a specific name.

Use the **show cable rpd** *mac-address* **tengigabitEthernet** *slot/subslot/port* **depi tunnel** command to display the DEPI tunnel information associated to the RPD with a specific MAC address on a specific Ten Gigabit Ethernet interface of the RPD.

The following example shows the sample output for the **show cable rpd depi tunnel** command for particular RPD:

```
Router#show cable rpd 0004.9f03.0214 te7/1/0 depi tunnel

Load for five secs: 7%/2%; one minute: 6%; five minutes: 6%
No time source, *12:41:44.228 CST Mon Mar 20 2017

LocTunID   RemTunID   Remote Device  State  Remote Address  Sessn L2TP Class
                                                           Count
3388764998 1054297851 0004.9f03.0214 est    120.105.4.7     29    rphy-l2tp-gl...

TST78-NH04#show cable rpd 0004.9f03.0214 te7/1/0 depi ses
TST78-NH04#show cable rpd 0004.9f03.0214 te7/1/0 depi session
Load for five secs: 6%/2%; one minute: 6%; five minutes: 6%
No time source, *12:41:47.668 CST Mon Mar 20 2017

LocID      RemID      Pseudowire      State  Last Chg Uniq ID    Type Mode RemSt
0x45010008 0x00000600 US7/0/0:0(D)    est    02:23:40 167        P    PSP  UP
0x45000008 0x00000D00 US7/0/0:0(M)    est    02:23:40 166        P    PSP  UP
0x4501000C 0x00000601 US7/0/0:1(D)    est    02:23:40 172        P    PSP  UP
0x4500000C 0x00000D01 US7/0/0:1(M)    est    02:23:40 171        P    PSP  UP
0x45020000 0x00000800 US7/0/0:0(B)    est    02:23:40 168        P    PSP  UP
0x0001A00F 0x8000A010 DS7/0/0:14      est    02:23:40 160        P    PSP  UP
0x45040008 0x00000B00 US7/0/0:0(R)    est    02:23:39 169        P    PSP  UP
0x0001A009 0x8000A00A DS7/0/0:8       est    02:23:39 154        P    PSP  UP
0x0001A012 0x8000A013 DS7/0/0:17      est    02:23:39 163        P    PSP  UP
0x0001A013 0x8000A014 DS7/0/0:18      est    02:23:39 164        P    PSP  UP
0x0001A00C 0x8000A00D DS7/0/0:11      est    02:23:39 157        P    PSP  UP
0x0001A014 0x8000A015 DS7/0/0:19      est    02:23:39 165        P    PSP  UP
0x0001A010 0x8000A011 DS7/0/0:15      est    02:23:39 161        P    PSP  UP
0x0001A004 0x8000A005 DS7/0/0:3       est    02:23:39 149        P    PSP  UP
0x0001A002 0x8000A003 DS7/0/0:1       est    02:23:39 147        P    PSP  UP
0x0001A00D 0x8000A00E DS7/0/0:12      est    02:23:39 158        P    PSP  UP
0x0001A005 0x8000A006 DS7/0/0:4       est    02:23:39 150        P    PSP  UP
0x4504000C 0x00000B01 US7/0/0:1(R)    est    02:23:39 173        P    PSP  UP
0x0001A00E 0x8000A00F DS7/0/0:13      est    02:23:39 159        P    PSP  UP
0x0001A008 0x8000A009 DS7/0/0:7       est    02:23:39 153        P    PSP  UP
0x4508000C 0x00000F01 US7/0/0:1(S)    est    02:23:39 174        P    PSP  UP
0x0001A006 0x8000A007 DS7/0/0:5       est    02:23:39 151        P    PSP  UP
0x0001A00B 0x8000A00C DS7/0/0:10      est    02:23:39 156        P    PSP  UP
0x0001A00A 0x8000A00B DS7/0/0:9       est    02:23:39 155        P    PSP  UP
0x0001A007 0x8000A008 DS7/0/0:6       est    02:23:39 152        P    PSP  UP
0x0001A011 0x8000A012 DS7/0/0:16      est    02:23:39 162        P    PSP  UP
0x0001A001 0x8000A002 DS7/0/0:0       est    02:23:39 146        P    PSP  UP
```

```
0x45080008 0x00000F00 US7/0/0:0(S)    est    02:23:39 170        P    PSP  UP
0x0001A003 0x8000A004 DS7/0/0:2       est    02:23:39 148        P    PSP  UP
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of RPD when the RPD is in the initialization state (L2TP).
show cable rpd depi session	Displays DEPI session information of RPD.

show cable rpd event

To display event logging information and messages of the Cisco Remote PHY Devices (RPD), use the **show cable rpd event** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}]**event**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify error event information of the RPD.

The following example shows the sample output for the **showcable rpdevent** command for RPDs:

```
Router#show cable rpd event

RPD            EventId  Level Count      LastTime       Message
0004.9f00.0401 66070205 Error 37         Nov21 22:43:41 Loss of Clock Sync
0004.9f00.0401 66070206 Notic 1          Nov21 22:43:42 Clock Sync Reestablished
0004.9f30.0255 66070201 Criti 36         Nov21 14:13:59 Connection lost - Principal CCAP
Core CCAP-IP=30.85.33.1
0004.9f30.0255 66070202 Error 7          Nov21 14:44:44 Principal Core Not Found
0004.9f30.0255 66070204 Error 712        Nov21 14:44:36 GCP Connection Failure
CCAP-IP=30.85.33.1
0004.9f30.0255 66070205 Error 2210       Nov21 14:46:55 Loss of Clock Sync
0004.9f30.0255 66070214 Notic 22         Nov21 14:30:09 Ethernet Link Up vbh0
```

show cable rpd gcp-session

To display the GCP session information for the Cisco Remote-PHY device (RPD), use the **show cable rpd tengigabitethernetgcp-session** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {**slot** *slot* | [{*ip-address mac-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot /subslot/port* }}**gcp-session**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the GCP session details with the packet and message statistical information of the RPD.

The following example shows the sample output for the **show cable rpd tengigabitethernetgcp-session** command for a specific RPD:

```
Router#show cable rpd name node te1/1/0 gcp-session

GCP Session ID : 10
Core Address   : 120.100.1.1:8190
RPD Address    : 120.100.1.20:60656
Next Hop MAC   : 0004.9F00.0901
Session State  : Active

Packet Statistics:
========================
Rx         : 5038
Tx         : 5034
Rx Dropped : 0
```

```
Tx Dropped : 0

Message Statistics:
=======================
Rx         : 5948
Tx         : 5954
Rx Dropped : 7
Tx Dropped : 0
Rx Illegal : 0
Tx Illegal : 0
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of the RPD, when the RPD is in the initialization state (GCP).
show cable rpd gcp-state	Displays GCP state information of the RPD.

show cable rpd gcp-state

To display the Generic Control Plane (GCP) state information of Cisco Remote-PHY device (RPD), use the **show cable rpd tengigabitethernetgcp-state** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {**slot** *slot* | [{ *mac-addressip-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* */subslot/port* }}**gcp-state**

Syntax Description

mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

To display the Generic Control Plane (GCP) state information of the RPD.

The following example shows the sample output for the **show cable rpd tengigabitethernetgcp-state** command for a specific RPD:

```
Router#show cable rpd 0004.9f03.0280 Te3/1/0 gcp-state

MAC Address     IP Address       I/F       State        Role HA  Name
0004.9f03.0280  120.101.19.9     Te3/1/0   ready        Pri  Act 2

A06#show cable rpd 0004.9f03.0280 Te3/1/0 gcp-state
MAC Address     IP Address       I/F       State        Role HA  Name
0004.9f03.0280  120.101.19.9     Te3/1/0   ready        Pri  Act 2
```

Related Commands

Command	Description
show cable rpd	Displays general information and status of the RPD, when the RPD is in the initialization state (GCP).
show cable rpd gcp-session	Displays GCP session information of the RPD.

show cable rpd gcp-transaction

To display the complete history and the current Generic Control Plane (GCP) transaction information for the Cisco Remote-PHY device (RPD), use the **show cable rpd tengigabitethernetgcp-transaction** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {**slot** *slot* | [{*ip-address mac-address* | **id** *id* | **name** *name*}] | **tengigabitethernet** | {*slot* */subslot/port* }}**gcp-transaction**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the GCP transaction information of the RPD.

Use the **show cable rpd tengigabitethernetgcp-transaction verbose** command to view the detailed GCP message information for the RPD) in privileged EXEC mode.

The following example shows the sample output for the **show cable rpd tengigabitethernetgcp-transaction** command for a specific RPD:

```
Router#show cable rpd 120.102.6.7 te9/1/1 gcp-transaction
 Load for five secs: 3%/1%; one minute: 4%; five minutes: 4%
No time source, *10:22:57.158 CST Thu Mar 16 2017

RPD ID           I/F        TRANS ID   GCP MSG TYPE             RCP MSG TYPE   TIMESTAMP
---------------- ---------- ---------- ------------------------ --------------
-------------------------
0004.9f31.1007   Te9/1/1    7452       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:54.440
0004.9f31.1007   Te9/1/1    7452       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
```

```
10:22:54.415
0004.9f31.1007   Te9/1/1    7451       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:54.240
0004.9f31.1007   Te9/1/1    7451       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:54.215
0004.9f31.1007   Te9/1/1    7450       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:54.040
0004.9f31.1007   Te9/1/1    7450       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:54.015
0004.9f31.1007   Te9/1/1    7449       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:53.836
0004.9f31.1007   Te9/1/1    7449       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:53.815
0004.9f31.1007   Te9/1/1    7448       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:50.236
0004.9f31.1007   Te9/1/1    7448       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:50.215
0004.9f31.1007   Te9/1/1    7447       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:50.038
0004.9f31.1007   Te9/1/1    7447       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:50.015
0004.9f31.1007   Te9/1/1    7446       GCP_MSG_ID_EDS_RSP       TYPE_REX       2017-03-16
10:22:49.839
0004.9f31.1007   Te9/1/1    7446       GCP_MSG_ID_EDS           TYPE_REX       2017-03-16
10:22:49.815
```

The following example shows the sample output for the **show cable rpd tengigabitethernetgcp-transaction verbose** command for a specific RPD:

```
Router#show cable rpd 120.102.6.7 te9/1/1 gcp-transaction verbose

Load for five secs: 3%/1%; one minute: 3%; five minutes: 3%
No time source, *10:24:52.791 CST Thu Mar 16 2017

DETAILED TRANSACTION FOR RPD(0004.9f31.1007)
------------------------------------------------
RPD ID                        : 0004.9f31.1007
I/F                           : Te9/1/1
TRANS ID                      : 7616
GCP MSG TYPE                  : GCP_MSG_ID_EDS_RSP
RCP MSG TYPE                  : TYPE_REX
TIMESTAMP                     : 2017-03-16 10:24:51.238
MODE                          : 0
PORT                          : 0
CHANNEL                       : 0
VENDOR ID                     : 4491
VENDOR INDEX                  : 1
TLV                           :
{ T = TYPE_REX, L = 65, V =
    { T = TYPE_SEQUENCE, L = 62, V =
        { T = TYPE_SEQUENCENUMBER, L = 2, V = 7616 }
        { T = TYPE_OPERATION, L = 1, V = 5 }
        { T = TYPE_RESPONSECODE, L = 1, V = 0 }
        { T = TYPE_RFCHANNEL, L = 46, V =
            { T = TYPE_RFCHANNELSELECTOR, L = 12, V =
                { T = TYPE_RFPORTINDEX, L = 1, V = 0 }
                { T = TYPE_RFCHANNELTYPE, L = 1, V = 5 }
                { T = TYPE_RFCHANNELINDEX, L = 1, V = 3 }
            }
            { T = TYPE_FFT_TRIGGER, L = 28, V =
                { T = TYPE_SID, L = 2, V = 8191 }
```

```
                    { T = TYPE_FREQ, L = 4, V = 31400 }
                    { T = TYPE_IUC, L = 1, V = 4 }
                    { T = TYPE_SIZE, L = 4, V = 4 }
                    { T = TYPE_MODE, L = 2, V = 6 }
                }
            }
        }
    }
```

show cable rpd group

To display Cisco Remote-PHY devices (RPD) of all groups, use the **show cable rpd group** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd group *group id*
clear cable rpd group *group id* {**reset** | **delete**}
show cable rpd group { **eeprom-fanio** | **eeprom-psio** | **eeprom-psu** }

Syntax Description

group id	Specify the ID of the group to display RPDs of that group.
reset	Reset RPDs of a specific group.
delete	Delete RPDs of a specific group.
eeprom-fanio	Shows shelf group fanio eeprom info.
eeprom-psio	Shows shelf group psio eeprom info.
eeprom-psu	Shows shelf group psu eeprom info.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
Cisco IOS XE Fuji 16.8.1	Options to show eeprom info for shelf group fanio, psio, and psu were added.

The following example shows the sample output for the **show cable rpd group** command to display specific RPDs:

```
Router# show cable rpd group 0004.9f30.a078

MAC Address     IP Address       I/F     State        Group Id          Slot   M Name

0100.5e0a.0a02  192.0.2.1      Te6/1/1   online       0004.9f30.a078    0      Y
h01-shelf-rpd1
0100.5e0a.0a04  192.0.2.24     Te6/1/1   online       0004.9f30.a078    1      N
h01-shelf-rpd2
```

The following example shows the sample output for the **show cable rpd group eeprom-fanio** command:

```
Router# show cable rpd group eeprom-fanio
```

```
---------- Group Id 0053.bff4.4b6e -----------
Eeprom format version: 04
Compatiblity Byte: FF
Controller Type - Type: 40
Controller Type - High Byte: 0D
Controller Type - Low Byte: 7F
Hardware Version - Type: 41
Hardware Version - High Byte: 02
Hardware Version - Low Byte: 00
PCA Part Number - Type: 82
PCA Part Number - Values: 73-18623-2
PCA Revision - Type: 42
PCA Revision - Values: 42 30
TAN Part Number - Type: C0
TAN Part Number - Length: 46
TAN Part Number: 800-104482-2
TAN Revision Number - Type: 8D
TAN Revision Number: 42 30 00 00
Product Number (PID) - Type: CB
Product Number (PID) - Length: 92
Product Number (PID): RPHY_SHELF_3X6
Version ID (VID) - Type: 89
Version ID (VID): V02
CLEI Code - Type: C6
CLEI Code - Length: 8A
CLEI Code: CAMME00BRB
Deviation Number - Type: 88
Deviation Number: 00 00 00 00
PCB Fab Version - Type: 02
PCB Fab Version: 02
PCA Serial Number - Type: C1
PCA Serial Number - Length: 8B
PCA Serial Number: CAT2222E1JJ
RMA Test History - Type: 03
RMA Test History: 00
RMA Number - Type: 81
RMA Number: 00 00 00 00
RMA History - Type: 04
RMA History: 00
Manufacturing Test Data - Type: C4
Manufacturing Test Data - Length: 08
Manufacturing Test Data: 00 00 00 00 00 00 00 00
Field Diagnostic Data - Type: C5
Field Diagnostic Data - Length: 08
Field Diagnostic Data: 00 00 00 00 00 00 00 00
Asset ID - Type: CC
Asset ID - Length: A0
Asset ID: 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
 20 20 20 20 20
Licensing Transaction ID - Type: 8B
Licensing Transaction ID: 00 00 00 00
```

The following example shows the sample output for the **show cable rpd group eeprom-psio** command:

```
Router# show cable rpd group eeprom-psio
---------- Group Id 0053.bff4.4b6e -----------
Eeprom format version: 04
Compatiblity Byte: FF
Controller Type - Type: 40
Controller Type - High Byte: 0D
Controller Type - Low Byte: 7F
```

```
Hardware Version - Type: 41
Hardware Version - High Byte: 01
Hardware Version - Low Byte: 00
PCA Part Number - Type: 82
PCA Part Number - Values: 73-18592-1
PCA Revision - Type: 42
PCA Revision - Values: 46 30
TAN Part Number - Type: C0
TAN Part Number - Length: 46
TAN Part Number: 800-104482-2
TAN Revision Number - Type: 8D
TAN Revision Number: 42 30 00 00
Product Number (PID) - Type: CB
Product Number (PID) - Length: 92
Product Number (PID): RPHY_SHELF_3X6
Version ID (VID) - Type: 89
Version ID (VID): V02
CLEI Code - Type: C6
CLEI Code - Length: 8A
CLEI Code: CAMME00BRB
Deviation Number - Type: 88
Deviation Number: 00 00 00 00
PCB Fab Version - Type: 02
PCB Fab Version: 01
PCA Serial Number - Type: C1
PCA Serial Number - Length: 8B
PCA Serial Number: CAT2222E0UX
RMA Test History - Type: 03
RMA Test History: 00
RMA Number - Type: 81
RMA Number: 00 00 00 00
RMA History - Type: 04
RMA History: 00
Manufacturing Test Data - Type: C4
Manufacturing Test Data - Length: 08
Manufacturing Test Data: 00 00 00 00 00 00 00 00
Field Diagnostic Data - Type: C5
Field Diagnostic Data - Length: 08
Field Diagnostic Data: 00 00 00 00 00 00 00 00
Asset ID - Type: CC
Asset ID - Length: A0
Asset ID: 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
 20 20 20 20 20
Licensing Transaction ID - Type: 8B
Licensing Transaction ID: 00 00 00 00
System MAC Address - Type: C3
System MAC Address - Length: 06
System MAC Address: 00:53:bf:f4:4b:6e
System MAC Address Block Size - Type: 43
System MAC Address Block Size: 00 01 C2 8B
Chassis Serial Number - Type Field: C2
Chassis Serial Number - Length Field: 8B
Chassis Serial Number: CAT2223E15D
```

The following example shows the sample output for the **show cable rpd group eeprom-psu** command:

```
Router# show cable rpd group eeprom-psu
---------- Group Id 0053.bff4.4b6e -----------
PSU0:   PRESENT
Block Signature: 0xABAB
Block Version: 2
```

```
Block Length: 124
Block Checksum: 3734
Seeprom Size: 4096
Block Count: 2
Fru Major Type: 0x4501
Fru Minor Type: 0x0014
OEM String: Cisco
Product Number (PID): RPHYSHLF_AC=
Serial Number: POG2201BT6K
Part Number: 341-100760-01
Part Version: A0
MFG Deviation: 0
HW Rev Major: 0x0001
HW Rev Minor: 0x0000
Power Consumption: 750
RMA_Failure Code: 0,0,0,0
Block Signature: 0x4601
Block Version: 1
Block Length: 22
Block Checksum: 932
CLEI Code: CAP1AAEAAA
Version ID (VID): V01

PSU1:   PRESENT
Block Signature: 0xABAB
Block Version: 2
Block Length: 124
Block Checksum: 3750
Seeprom Size: 4096
Block Count: 2
Fru Major Type: 0x4501
Fru Minor Type: 0x0014
OEM String: Cisco
Product Number (PID): RPHYSHLF_AC=
Serial Number: POG2201BTAP
Part Number: 341-100760-01
Part Version: A0
MFG Deviation: 0
HW Rev Major: 0x0001
HW Rev Minor: 0x0000
Power Consumption: 750
RMA_Failure Code: 0,0,0,0
Block Signature: 0x4601
Block Version: 1
Block Length: 22
Block Checksum: 932
CLEI Code: CAP1AAEAAA
Version ID (VID): V01
```

show cable rpd host-resources

To display the brief CPU process and memory information of the Cisco Remote PHY Devices (RPD), use the **show cable rpd host-resources** command in privileged EXEC mode.

show cable rpd [{*ip-address mac-address* | **id** *identifier* | **name** *name*}]**host-resources**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *identifier*	(Optional) Unique string to identify the RPD. Specifies the MAC address of the RPD.
name	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the CPU process and memory information of the RPD.

The following sample output shows the **show cable rpd host-resources** command for a specific RPD:

```
Router#show cable rpd name node host-resources
RPD ID                  : 0004.9f00.0901
MemorySize              : 898112KB
CPU Load                : 73%

Storages:
  Index    Type             Size(KB)   Used(KB)  AllocUnits  AllocFailures
  1        Ram              898112     682116       1024         0
  2        FixedDisk        128804     87288        1024         0
  3        VirtualMemory    131072     20728        1024         0

Processes:
  Pid      CPU    Memory(KB)  Status       Type
  3550      0%    41416       runnable     Application
  3553      0%    40692       runnable     Application
  2924      0%    39776       runnable     Application
```

The following sample output shows the **showcable rpd***RPD ID***host-resources** command:

```
router#show cable rpd 0004.9f00.0901 host-resources
Load for five secs: 3%/0%; one minute: 5%; five minutes: 5%
No time source, *02:29:47.704 UTC Thu Jun 13 2019
```

```
RPD ID                  : 0004.9f00.0901

Storages:
 Index    Type      AllocUnits   AllocFailures  Size        Used        Descr
 1        4         1024         0              128804      90272       /
 2        3         1024         0              131072      5192        /tmp
 3        3         1024         0              512         0           /dev
 4        9         1024         0              5160576     1604416     /bootfla
 5        5         1024         0              2064208     148044      /rpd
 6        5         1024         0              266727      53519       /obfl
 7        3         1024         0              65536       0           /tmp/ssd
 8        3         1024         0              65536       1920        /tmp/tra

Processes:
 Index     Type                Status         CPU         Memory      Name
 1         Application         runnable       0           1868        procd
 2         Operating System    runnable       0           0           kthreadd
 ...
 ...
 4233      Application         runnable       0           1600        dropbear
 6021      Application         runnable       0           2496        udhcpc
 6076      Application         runnable       0           2536        rsyslogd
 9054      Operating System    runnable       0           0           kworker/
 13252     Operating System    runnable       0           0           kworker/

router#show redundancy linecard all
Load for five secs: 4%/0%; one minute: 5%; five minutes: 5%
No time source, *02:29:09.997 UTC Thu Jun 13 2019

              LC     My         Peer       Peer     Peer
Slot Subslot  Group  State      State      Slot     Subslot  Role     Mode
-------------------------------------------------------------------------------
 1   -        0      Stdby Hot  Active     0        -        Standby  Primary
 0   -        0      Active     Stdby Hot  1        -        Active   Secondary
```

show cable rpd lcce-chan-reach

To display the connectivity constrains and channel supported information of the Cisco Remote PHY Device (RPD), use the **show cable rpd lcce-chan-reach** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **lcce-chan-reach**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the Ethernet port and RF port details with the channel type of RPD.

The following example shows the sample output for the **showcable rpdlcce-chan-reach** command for a specific RPD:

```
Router#show cable rpd 0004.9f00.0907 lcce-chan-reach

RPD ID          EthPort     ChnlType    RFPort  FirstChnl   LastChnl
0004.9f00.0907  1           DsScQam     1       1           1
```

show cable rpd identification

To display the identification parameters of the Cisco Remote-PHY device (RPD), use the **show cable rpd identification** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}]**identification**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the vendor details with model number and software version of a specific RPD.

The following example shows the sample output for the **showcable rpdidentification** command for a specific RPD:

```
Router#show cable rpd name node identification

RPD ID                                  : 0004.9f00.0907
Vendor Name                             : Cisco
Vendor Id                               : AB
Model Number                            : 123456
Device Mac Address                      : 0004.9F00.0907
Current Sw Version                      : Prototype
Boot Rom Version                        :
Device Description                      : TestingPrototypeWithHardcodedValues
Device Alias                            : TP
Serial Number                           : 123456
Us Burst Receiver Vendor Id             :
Us Burst Receiver Model Number          :
Us Burst Receiver Driver Version        :
Us Burst Receiver Serial Number         :
Rpd Rcp Protocol Version                : 1.0
Rpd Rcp Schema Version                  : 1.0.0
Hw Revision                             :
```

show cable rpd info

To display specific information of the Cisco Remote PHY Device (RPD), use the **show cable rpd info** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}]**info**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify specific information of the RPD.

The following example shows the sample output for the **showcable rpdinfo** command for a specific RPD:

```
Router#show cable rpd name node info
RPD ID               : 0004.9f00.0907
SysUpTime              : 1791025
```

show cable rpd lcha-cores

To display the Cisco Remote PHY Device (RPD) Line Card High Availability (LCHA) active and standby cores, use the **show cable rpd lcha-cores** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}]**lcha-cores** [{*active standbysummary*}]

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
active	(Optional) Displays RPD LCHA active cores.
standby	(Optional) Displays RPD LCHA standby cores.
summary	(Optional) Displays RPD LCHA cores summary.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPD LCHA cores.

The following example shows the sample output for the **showcable rpd lcha-cores** command:

```
Router#show cable rpd lcha-cores

MAC Address     IP Address    I/F       State        Role HA  Auth Name
0000.5e00.5396  192.0.2.21    Te1/1/0   online       Pri  Act N/A  shelf-node8
0000.5e00.53c0  192.0.2.106   Te1/1/1   online       Pri  Act N/A  shelf-node9
0000.5e00.5320  192.0.2.104   Te1/1/2   online       Pri  Act N/A  shelf-node10
0000.5e00.5361  192.0.2.100   Te7/1/0   online       Pri  Act N/A  node0
0000.5e00.5361  192.0.2.100   Te0/1/0   offline      NA   Sby N/A  node0
0000.5e00.5361  192.0.2.100   Te0/1/1   offline      NA   Sby N/A  node0
0000.5e00.5361  192.0.2.100   Te7/1/1   online       Aux  Act N/A  node0
0000.5e00.538e  192.0.2.130   Te7/1/1   online       Pri  Act N/A  node2
0000.5e00.538e  192.0.2.130   Te0/1/1   offline      NA   Sby N/A  node2
0000.5e00.5302  192.0.2.102   Te7/1/1   online       Pri  Act N/A  node1
0000.5e00.5302  192.0.2.102   Te0/1/1   offline      NA   Sby N/A  node1
0000.5e00.53c4  192.0.2.110   Te7/1/2   online       Pri  Act N/A  node3
0000.5e00.53c4  192.0.2.110   Te0/1/2   offline      NA   Sby N/A  node3
```

```
0000.5e00.53cc  192.0.2.102   Te7/1/2   online       Pri  Act N/A  node4
0000.5e00.53cc  192.0.2.102   Te0/1/2   offline      NA   Sby N/A  node4
0000.5e00.53ee  192.0.2.128   Te7/1/4   online       Pri  Act N/A  shelf-node5
0000.5e00.53ee  192.0.2.128   Te0/1/4   offline      NA   Sby N/A  shelf-node5
0000.5e00.530d  192.0.2.101   Te7/1/5   online       Pri  Act N/A  shelf-node6
0000.5e00.530d  192.0.2.101   Te0/1/5   offline      NA   Sby N/A  shelf-node6
0000.5e00.5330  192.0.2.120   Te7/1/6   online       Pri  Act N/A  shelf-node7
0000.5e00.5330  192.0.2.120   Te0/1/6   offline      NA   Sby N/A  shelf-node7

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd location

To display the location information of the Cisco Remote PHY Device (RPD), use the **show cable rpd location** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **location**

Syntax Description

ip-address	(Optional) Location information displayed for the RPD with the specified IP address.
MAC adderss	(Optional) Location information displayed for the RPD with the specified MAC address.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the location information of the remote physical device.

The following example shows the sample output for the **showcable rpdlocation** command for a specific RPD:

```
Router#show cable rpd 0004.9f00.0907 location

RPD ID                          : 0004.9f00.0907
Location Description            : NM
Latitude                        : NN
Longitude                       : NO
```

show cable rpd md-association

To display MAC Domain (MD) association details of the Cisco Remote PHY Devices (RPD), use the **show cable rpd md-association** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | **tengigabitethernet** | {*slot /subslot/port* }}**md-association**

Syntax Description

slot	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify MD association of the RPD.

The following example shows the sample output for the **showcable rpd md-association** command:

```
Router#show cable rpd name node md-association

RPD ID: 0004.9f00.0907

RPD Principal Core Te1/1/6:
  DS 0 controller: 1/0/20 (profile 200, DOCSIS)
                   1/0/21 (profile 201, VIDEO)
  US 0 controller: 1/0/63 (profile 88, DOCSIS)
  US 1 controller: NA
  Mac Domain: Ca1/0/0
RPD Auxiliary Core Te1/1/2:
  DS 0 controller: 1/0/2  (profile 204, VIDEO)
  US 0 controller: NA
  US 1 controller: NA
  Mac Domain: NA
```

show cable rpd name

To display the Cisco Remote PHY Device (RPD) name, use the **show cable rpd name** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | **tengigabitethernet** | {*slot /subslot/port* }}**name**

Syntax Description

slot	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the complete detailed information of RPDs.

The following example shows the sample output for the **showcable rpd name** command:

```
Router#show cable rpd name

MAC Address     Name
0000.5e00.5379  node_2_0
0000.5e00.5337  node_3_0
0000.5e00.5343  node_0_6
0000.5e00.5373  node_0_5
0000.5e00.5301  node_0_8
0000.5e00.5307  node_0_7
0000.5e00.5327  node_0_1
0000.5e00.5387  node_0_2
0000.5e00.5393  node_0_0
0000.5e00.5337  node_0_3
```

The following example shows the sample output for the **showcable rpd tengigabitethernet name** command:

```
Router#show cable rpd te1/1/0 name
```

```
MAC Address    Name
0000.5e00.5361 node0
```

The following example shows the sample output for the **showcable rpd slot name** command:

```
Router#show cable rpd slot 1 name

MAC Address    Name
0000.5e00.5396 shelf-node8
0000.5e00.53c0 shelf-node9
0000.5e00.5320 shelf-node10
```

The following example shows the sample output for the **showcable rpd tengigabitethernet name** command:

```
Router#show cable rpd tengigabitethernet 7/1/0 name

MAC Address    Name
0004.9f31.0161 node0
```

show cable rpd online

To display the Cisco Remote PHY Device (RPD) in the online state, use the **show cable rpd online** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | **tengigabitethernet** | {*slot /subslot/port* }}**online**

Syntax Description

slot *slot*	Slot number of the RPD line card to which the RPDs are connected.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPDs that are in the online state.

The following example shows the sample output for the **show cable rpd online** command:

```
Router#show cable rpd online

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
0000.5e00.5301  192.0.2.10       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.10       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.10       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd slot** *slot* **online** command:

```
Router#show cable rpd slot 7 online

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/0   online       Pri  Act node
0000.5e00.5301  192.0.2.10       Te7/1/1   online       Aux  Act node
0000.5e00.5301  192.0.2.10       Te7/1/2   online       Aux  Act node
0000.5e00.5301  192.0.2.10       Te7/1/7   online       Aux  Act node
```

```
! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd tengigabitethernet online** command:

```
Router#show cable rpd tenGigabitEthernet 7/1/0 online

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5301  192.0.2.10       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd offline

To display the Cisco Remote PHY Device (RPD) in the offline state, use the **show cable rpd offline** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | **tengigabitethernet** | {*slot* /*subslot*/*port* }}**offline**

Syntax Description

slot *slot*	Slot number of the RPD line card to which the RPDs are connected.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPDs that are in the offline state.

The following example shows the sample output for the **show cable rpd offline** command:

```
Router#show cable rpd offline

MAC Address     I/F      State        Previous State  Offline Time     Role HA
0000.5e00.5320  Te1/1/0  offline      !online         Mar 01 09:58:42  Pri  Act
0000.5e00.5301  Te1/1/0  offline      !online         Mar 01 09:58:42  Pri  Act

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd slot** *slot* **offline** command:

```
Router#show cable rpd slot 1 offline

MAC Address     I/F      State        Previous State  Offline Time     Role HA
0000.5e00.5355  Te1/1/0  offline      !online         Mar 01 09:58:42  Pri  Act
0000.5e00.5301  Te1/1/0  offline      !online         Mar 01 09:58:42  Pri  Act

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd tengigabitethernet offline** command:

```
Router#show cable rpd te 1/1/0 offline

MAC Address     I/F      State        Previous State  Offline Time     Role HA
0000.5e00.5355  Te1/1/0  offline      !online         Mar 01 09:58:42  Pri  Act

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd pilot-tone

To display the pilot tone configuration of a specific Cisco Remote PHY Device (RPD), use the **show cable rpd pilot-tone** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {[{ *mac-addressip-address* | **id** *identifier* | **name** *name*}]}**pilot-tone**

Syntax Description

mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *identifier*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the pilot tones and alignment carriers information, and the leakage detection signal of a specific RPD.

Use the **show cable rpd capability** command to show the pilot tone capability of the RPD.

The following example shows the sample output for the **show cable rpdpilot-tone** command:

```
Router#show cable rpd 0004.9f00.0719 pilot-tone
Load for five secs: 8%/1%; one minute: 9%; five minutes: 9%
No time source, *06:03:44.969 CST Wed Mar 29 2017

Downstream 0 pilot tone profile 1:
  SC-QAM as tone list:
   rf-chan-id     freq         pwr_adj mute
   35             267000000    0.0     N
   37             270000000    10.0    N
  Dedicated tone list:
   dedicated-tone freq         freq_frac pwr_adj mute
   0              400000000    0         12.0    N
   1              401000000    0         10.0    N
   2              287000000    0         10.0    N
   3              289000000    0         -10.0   N
```

The following example shows the sample output for the **show cable rpdcapability** command:

```
Router#show cable rpd  7.5.5.13 capability
```

```
Number of CW Tone Generators              : 4
Lowest CW Tone Frequency                  : 48000000
Highest CW Tone Frequency                 : 999000000
Maximum Power of CW Tone Generators       : 340
QAM as Pilot setting                      : 1
```

Related Commands

Command	Description
show cable rpd capability	Displays the pilot tone capability of a specific RPD.

show cable rpd principal

To display the Cisco Remote PHY Device (RPD) with the principal role, use the **show cable rpd principal** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd principal

show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] **principal**

Syntax Description

ip-address	(Optional) IP address of the RPD with the principal role.
mac-adderss	(Optional) MAC address of the RPD with the principal role.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD with the principal role.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the RPDs that are in the principal role.

The following example shows the sample output for the **show cable rpd principal** command:

```
Router#show cable rpd principal

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd** *ip-address* **principal** command:

```
Router#show cable rpd 93.7.10.11 principal

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd** *MAC address* **principal** command:

```
Router#show cable rpd 0004.9f00.0413 principal

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd id** *id* **principal** command:

```
Router#show cable rpd id 0004.9f00.0413 principal

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

The following example shows the sample output for the **show cable rpd name** *name* **principal** command:

```
Router#show cable rpd name node principal

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd sbfd-session

To display the seamless BFD (SBFD) session information of the Cisco Remote PHY Device (RPD), use the **show cable rpd sbfd-session** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd sbfd-session[{*session-id* | **summary**}]

Syntax Description

session-id	(Optional) SBFD session identifier of the RPD.
summary	(Optional) Complete SBFD session information of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the SBFD session information of the RPD.

The following example shows the sample output for the **show cable rpdsbfd-session** command:

```
Router#show cable rpd sbfd-session
```

show cable rpd spectrum-capture-capabilities

You can use the **show cable rpd spectrum-capture-capabilities** command in privileged EXEC mode, to display the spectrum capture capability of the Remote PHY Device (RPD).

Cisco cBR Series Converged Broadband Router

show cable rpd spectrum-capture-capabilities

show cable rpd [{ *ip-address mac-address* | **id** *id* | **name** *name* }] **spectrum-capture-capabilities**

Syntax Description

ip-address	(Optional) IP address of the RPD with the principal role.
mac-adderss	(Optional) MAC address of the RPD with the principal role.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD with the principal role.
spectrum-capture-capabilities *slot*	Display the spectrum capture capability of the Remote PHY Device (RPD).

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Bengaluru 17.6.1z	This command is introduced for the Cisco cBR Series Converged Broadband Routers

Usage Guidelines

Use this command to display the spectrum capture capability of the Remote PHY Device (RPD).

The following example shows the sample output for the **show cable rpd 0018.4802.71a8 spectrum-capture-capabilities** command:

```
Router# show cable rpd 0018.4802.71a8 spectrum-capture-capabilities
Load for five secs: 6%1%: one minute: 7%; five minutes: 7%
Time source is NTP, 10:24:56.527 CST Mon Jul 22 2022
-------------------------------------------------
RPD ID                          : 0018.48fe.e643
NumSacs                         : 4
SacIndex                        : 0

SacDescription                  : Wideband spectrum analysis circuit, upstream RF ports 0 &
 0
MaxCaptureSpan                  : 409600000 Hz
MinimumCaptureFrequency         : 0 Hz
MaximumCaptureFrequency         : 409600000 Hz
SupportedTriggerModes           : |freeRunning|miniSlotCount|sid|burstIuc|timestamp|
SupportedOutputFormats          : |timeIQ|fftPower|fftIQ|fftAmplitude|
```

```
SupportedWindowFormats         :
|rectangular|hann|blackmanHarris|hamming|flatTop|gaussian|chebyshev|
SupportsAveraging              : Support
SupportedAggregationMethods    : None
SupportsSpectrumQualification  : Not Support
MaxNumBins                     : 4096
MinNumBins                     : 256
MinRepeatPeriod                : 100000 ms
SupportedTrigChanTypes         : |OFDMA|
PwType                         : |PNM PW|
LowestCapturePort              : 0
HighestCapturePort             : 0
SupportsScanningCapture        : Not Support
MinScanningRepeatPeriod        : 0 ms

--------------------------------------------------
```

show cable rpd slot

To display the active Cisco Remote PHY Devices (RPD) configured under a specific slot, use the **show cable rpd slot** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd slot *slot*

Syntax Description

slot	Slot number of the RPD line card to which the RPDs are connected

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the active RPDs configured for a specific slot.

The following example shows the sample output for the **show cable rpd slot** *slot* command:

```
Router#show cable rpd slot 7

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.53c0  192.0.2.16       Te7/1/0   online       Pri  Act node
0000.5e00.53c0  192.0.2.16       Te7/1/1   online       Aux  Act node
0000.5e00.53c0  192.0.2.16       Te7/1/2   online       Aux  Act node
0000.5e00.53c0  192.0.2.16       Te7/1/7   online       Aux  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd summary

To display the Cisco Remote PHY Device (RPD) information on all or specified Ten Gigabit Ethernet intfaces, use the **show cable rpd summary** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router

show cable rpd {**slot** *slot* | **tengigabitethernet** | {*slot /subslot/port* }}**summary**

Syntax Description

slot	(Optional) The slot number of the Digitial Position Independent Card (DPIC) that connects to the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the complete detailed information of RPDs.

The following example shows the sample output for the **showcable rpd summary** command:

```
Router#show cable rpd summary

I/F      Total    offline init(auth) init(gcp) init(clock) init(l2tp) online
Te0/1/6  1        0       0          0         0          0          1
Te1/1/5  8        0       0          0         0          0          8
Te1/1/7  8        0       0          0         0          0          8
Te3/1/0  8        0       0          0         0          0          8
Te6/1/0  7        0       0          0         0          0          7
Te7/1/2  16       0       0          0         0          0          16
Te7/1/5  16       0       0          0         0          0          16
Te7/1/7  15       0       0          0         0          0          15

Total    79       0       0          0         0          0          79
```

show cable rpd tengigabitethernet

To display the active Cisco Remote PHY Device (RPD) on a specified Ten Gigabit Ethernet interface, use the **show cable rpd tengigabitethernet** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd tengigabitethernet*slot*/*subslot*/*port*

Syntax Description

slot	Ten Gigabit Ethernet line card slot number of the RPD.
subslot	Ten Gigabit Ethernet line card secondary slot number of the RPD.
port	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the active RPDs configured on a specific Ten Gigabit Ethernet interface.

The following example shows the sample output for the **showcable rpd tengigabitethernet** command:

```
Router#show cable rpd te7/1/0

MAC Address     IP Address       I/F       State        Role HA  Name
0000.5e00.5396  192.0.2.21       Te7/1/0   online       Pri  Act node

! = PTP clock out of phaselock occurred, ^ = Default password in use
```

show cable rpd topology

To display topology information of the Cisco Remote PHY Devices (RPD), use the **show cable rpd topology** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}]**topology**

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify topology information of the RPD.

The following example shows the sample output for the **showcable rpdtopology** command for a specific RPD:

```
Router#show cable rpd name node topology
RPD-ID              Local Addr      Peer Addr       VRF        Link Role  Link Type  Status

0004.9f00.0907      120.100.2.16    120.100.2.20               Primary    Link-ha    Active
```

show cable rpd us-phy channel

To display the physical channels of the Cisco Remote PHY Device (RPD), use the **show cable rpd us-phy channel** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd {[{ *mac-addressip-address* | **id** *identifier* | **name** *name*}] | **tengigabitethernet** | {*slot* /*subslot*/*port* }}**us-phy channel***physical-channel-number*

Syntax Description

mac-adderss	(Optional) MAC address of the RPD.
ip-address	(Optional) IP address of the RPD.
id *identifier*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.
us-phy channel*physical-channel-number*	US PHY physical channel number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Before using the **show cable rpd us-phy channel** command, you need to know the following information:

- The upstream controller configured for the RPD.
- The card level receiver number (CARD-RCVR) of the physical channel associated with the upstream controller of the RPD. Use the **show cable urm** *slot*/*subslot* command to check CARD-RCVR.

Use the CARD-RCVR to display the physical channels of the RPD using the **show cable rpd us-phy channel** command.

The following example shows the sample output for the **show cable rpdus-phy channel** command:

```
Router#show cable rpd 0004.9f00.0731 Te9/1/0 us-phy channel 0

Channel Counters for physical channel 0/0, status valid(1)
+-------+----------+-------+----------+-------+-------+----------+----------+----------+-----+
```

```
|IUC    |  Grants  |Collide|  No      |Phy    |No     |   Good   | Corrected|Uncorrectd|
SNR |
|       |          |       |  Energy  |Errors |Preambl|   FEC    | FEC      |FEC       |
   |
+-------+----------+-------+----------+-------+-------+----------+----------+----------+-----+
|1-Req  |9714572   |0      |9714314   |0      |0      |0         |0         |0         |0
. 0|
|2-ReqD |0         |0      |0         |0      |0      |0         |0         |0         |0
. 0|
|3-Init |5796      |0      |5759      |0      |0      |35        |0         |2
|39.59|
|4-Maint|1376      |0      |929       |0      |0      |447       |0         |0
|38.51|
|5-Short|0         |0      |0         |0      |0      |0         |0         |0         |0
. 0|
|6-Long |0         |0      |0         |0      |0      |0         |0         |0         |0
. 0|
|9-AShrt|102       |0      |0         |0      |0      |102       |0         |0
|32.78|
|10-ALng|735       |0      |85        |0      |0      |1037      |3         |0
|33.97|
|11-AUGS|0         |0      |0         |0      |0      |0         |0         |0         |0
. 0|
+-------+----------+-------+----------+-------+-------+----------+----------+----------+-----+

Physical Channel 0/0 Counters:
DOCSIS 2.0 REQ Count:      166       DOCSIS 3.0 REQ Count:     1451
REQ Overflow Count  :        0       Delete Packet Count :        0
High Byte Count :        0       Low Byte Count  :   685824
```

Related Commands

Command	Description
show cable urm *slot*/*subslot*	Displays the mapping of MAC domain upstream channel/upstream-cable controller us channel/the US PHY receiver in the Cisco cBR series router. .

show cable rpd verbose

To display a detailed information about the Cisco Remote-PHY device (RPD), use the **show cable rpd verbose** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable rpd [{*ip-address mac-address* | **id** *id* | **name** *name*}] [{**tengigabitethernet** *slot*/*subslot*/*port*}] [**verbose**]

Syntax Description

ip-address	(Optional) IP address of the RPD.
mac-adderss	(Optional) MAC address of the RPD.
id *id*	(Optional) An unique string to identify the RPD. Specifies the MAC address of the RPD.
name *name*	(Optional) Name of the RPD.
tengigabitethernet *slot*	Ten Gigabit Ethernet line card slot number of the RPD.
tengigabitethernet *subslot*	Ten Gigabit Ethernet line card secondary slot number of the RPD.
tengigabitethernet *port*	Ten Gigabit Ethernet line card port number of the RPD.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the detailed information f the RPD.

The following example shows the sample output for the **showcable rpdtengigabitethernetverbose** command for a specific RPD:

```
Router#show cable rpd name node te1/1/0 verbose

RPD ID                                  : 0004.9f00.0901
Vendor Name                             : Cisco
Vendor Id                               : NA
Model Number                            : NB
Device Mac Address                      : 0004.9F00.0901
Current Sw Version                      : Linux version 4.1.8-rt8
(gitlab-runner@cabu-openrpd-minhang) (gcc version 4.8.3 (OpenWrt/Linaro GCC 4.8-2014.04
r48749) ) #1 SMP Fri Feb 10 02:55:15 CST 2017
Boot Rom Version                        : ND
Device Description                      : RPD
Device Alias                            : RPD
Serial Number                           : NE
```

```
Us Burst Receiver Vendor Id                : NF
Us Burst Receiver Model Number             : R_Dummy
Us Burst Receiver Driver Version           : R_Dummy
Us Burst Receiver Serial Number            : R_Dummy
Rpd Rcp Protocol Version                   : R_Dummy
Rpd Rcp Schema Version                     : R_Dummy
Hw Revision                                : NL
offline_timestamp                          :
auth_timestamp                             : Mar 8  10:56:52
online_timestamp                           : Mar 8  10:57:08
```

show cable rsvp flow-db

To display contents of the Resource ReSerVation Protocol (RSVP) to DOCSIS service-flow mapping database, use the show cable rsvp flow-db command in user EXEC mode.

show cable rsvp flow-db [*mac-addr*]

Syntax Description

mac-addr	(Optional) The MAC address of the specific cable modem in hexadecimal format.

Command Default

None

Command Modes

User EXEC mode

Command History

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

Usage Guidelines

The **show cable rsvp flow-db** command displays contents of the RSVP to DOCSIS service-flow mapping database.

Examples

The following example shows the sample output for the **show cable rsvp flow-db** command.

```
Router# show cable rsvp flow-db
CM Count   : 1
Flow Count : 1
Mac Address    Src IP          Src   Dest IP         Dest  Pr Sfid  Dir Handle
                               Port                  Port  ot           (Hex)
0019.474a.c5f6 200.0.0.1       1000  40.1.1.62       1000  6  11    DS  7000406
```

Table below describes the significant fields shown in the display.

Table 88: cable rsvp flow-db Field Descriptions

Field	Description
Mac Address	The MAC address of the specific cable modem.
Src IP	RSVP path source IP address.
Src Port	RSVP path source port number.
Dest IP	Destination IP address.
Dest port	Destination port number.
Proto	IP protocol type. Here 17 is the UDP's IP protocol number.
SFid	Service flow ID.

Field	Description
Dir	Direction of the DOCSIS service flow. Here DS indicates downstream flow.

Related Commands

Command	Description
cable rsvp default-scn	Specifies the default service class for the RSVP.

show cable service-class

To display the parameters for cable service class, use the **show cable service class** command in privileged EXEC mode.

show cable service-class [*sclass-index*] [**verbose**]

Syntax Description

sclass-index	Identifies the index for a service class that has already been defined (1 to 255).
verbose	Displays all of the defined attributes for the service class.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)CX	This command was introduced.
12.2(4)BC1	Support was added to the Release 12.2 BC train.
12.2(33)SCC	This command was integrated into Cisco IOS Release 12.2(33)SCC. The command output was modified to display the traffic peak rate value for a specific service flow.
12.2(33)SCG	The command output was modified to display the scheduling type as “N/A” for all downstream service flows.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

You can display a summary of either one service class or all service classes. You can also display a complete listing of each service class and of all the defined service classes.

Note Starting with Cisco IOS Release 12.2(33)SCG, the output of the **show cable service class** 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

The following sample output shows the standard and verbose formats of the **show cable service class** command:

```
Router# show cable service-class

Index Name             Dir   Sched  Prio MaxSusRate  MaxBurst    MinRsvRate
1     UP_UGS           US/DS UGS    0    0           1522        0
2     UP_UGSAD         US/DS UGS_AD 0    0           1522        0
3     UP_RTPS          US/DS RTPS   0    128000      2000        64000
4     UP_BE            US/DS BE     5    128000      2000        0
5     DOWN_BE          US/DS BE     5    1000000     3000        0
Router# show cable service-class 1
```

```
Index Name             Dir   Sched  Prio MaxSusRate  MaxBurst    MinRsvRate
1     UP_UGS           US/DS UGS    0    0           1522        0
Router# show cable service-class 1 verbose

Index:                                  1
Name:                                   UP_UGS
Direction:                              Upstream/Downstream
Traffic Priority:                       0
Maximum Sustained Rate:                 0 bits/sec
Max Burst:                              1522 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     100 bytes
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Scheduling Type:                        Unsolicited Grant Service
Request/Transmission Policy:            0x1FF
Unsolicited Grant Size:                 100 bytes
Nominal Grant Interval:                 20000 usecs
Tolerated Grant Jitter:                 4000 usecs
Grants per Interval:                    1
IP ToS Overwrite [AND-mask,OR-mask]:    0xE0,0xA0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xE08, 0xBCC000}
Router# show cable service-class verbose

Index:                                  1
Name:                                   UP_UGS
Direction:                              Upstream/Downstream
Traffic Priority:                       0
Maximum Sustained Rate:                 0 bits/sec
Max Burst:                              1522 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     100 bytes
Peak Rate                               0 bits/sec
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Scheduling Type:                        Unsolicited Grant Service
Request/Transmission Policy:            0x1FF
Unsolicited Grant Size:                 100 bytes
Nominal Grant Interval:                 20000 usecs
Tolerated Grant Jitter:                 4000 usecs
Grants per Interval:                    1
IP ToS Overwrite [AND-mask,OR-mask]:    0xE0,0xA0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xE08, 0xBCC000}
Index:                                  2
Name:                                   UP_UGSAD
Direction:                              Upstream/Downstream
Traffic Priority:                       0
Maximum Sustained Rate:                 0 bits/sec
Max Burst:                              1522 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     100 bytes
Peak Rate                               0 bits/sec
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Scheduling Type:                        Unsolicited Grant Service(AD)
Request/Transmission Policy:            0x1FF
Nominal Polling Interval:               10000 usecs
Tolerated Poll Jitter:                  4000 usecs
Unsolicited Grant Size:                 100 bytes
Nominal Grant Interval:                 20000 usecs
Tolerated Grant Jitter:                 4000 usecs
Grants per Interval:                    1
```

```
IP ToS Overwrite [AND-mask,OR-mask]:    0xE0,0xA0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xE08, 0xBFC000}
Index:                                  3
Name:                                   UP_RTPS
Direction:                              Upstream/Downstream
Traffic Priority:                       0
Maximum Sustained Rate:                 128000 bits/sec
Max Burst:                              2000 bytes
Minimum Reserved Rate:                  64000 bits/sec
Minimum Packet Size                     64 bytes
Peak Rate                               0 bits/sec
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Maximum Concatenated Burst:             1522 bytes
Scheduling Type:                        Realtime Polling Service
Request/Transmission Policy:            0x1FF
Nominal Polling Interval:               10000 usecs
Tolerated Poll Jitter:                  4000 usecs
IP ToS Overwrite [AND-mask,OR-mask]:    0xE0,0xA0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xDC8, 0x83E000}
Index:                                  4
Name:                                   UP_BE
Direction:                              Upstream/Downstream
Traffic Priority:                       5
Maximum Sustained Rate:                 128000 bits/sec
Max Burst:                              2000 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     64 bytes
Peak Rate                               0 bits/sec
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Maximum Concatenated Burst:             1522 bytes
Scheduling Type:                        Best Effort
Request/Transmission Policy:            0x0
IP ToS Overwrite [AND-mask,OR-mask]:    0xE0,0x0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xDE8, 0x80E000}
Index:                                  5
Name:                                   DOWN_BE
Direction:                              Upstream/Downstream
Traffic Priority:                       5
Maximum Sustained Rate:                 1000000 bits/sec
Max Burst:                              3000 bytes
Minimum Reserved Rate:                  0 bits/sec
Minimum Packet Size                     64 bytes
Peak Rate                               0 bits/sec
Admitted QoS Timeout                    30 seconds
Active QoS Timeout                      30 seconds
Maximum Concatenated Burst:             0 bytes
Scheduling Type:                        Best Effort
Request/Transmission Policy:            0x0
IP ToS Overwrite [AND-mask,OR-mask]:    0xFF,0x0
Max Latency:                            0 usecs
Parameter Presence Bitfield:            {0xDE8, 0x0}
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
cable service class	Defines and modifies a service class.
show interface cable qos paramset	Displays the parameters in one or more service templates.

show cable service-voice downstream-type

To display the downstream-types that are capable of providing voice services, use the **show cable service-voice downstream-type** command.

show cable service-voice downstream-type

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Privileged EXEC

Command History

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

Usage Guidelines

Use this command to display the downstream-types that are capable for providing voice services on each uBR10-MC 5x20 line card.

Examples

The example below shows that both HA-capable-DS and MDC-DS are enabled for downstream types on the uBR10-MC5X20 line card in slot 5, subslot 1 and the line card in slot 6, subslot 0.

```
Router# show cable service-voice downstream-type
Slot 5/1 :    HA-capable-DS               MDC-DS
Slot 6/0 :    HA-capable-DS               MDC-DS
```

show cable service-flow summary

To display system level service flow and downstream classifier summary information per line card basis, use the **show cable service-flow summary** command in privileged EXEC mode..

show cable service-flow summary

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCJ	This command was introduced.
IOS-XE 3.18.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The **show cable service-flow summary** command displays system level service flow and downstream classifier summary information per line card basis. For uBR10K series routers, system level downstream classifier resource used percentage and downstream service flow system limit are displayed. However, for cBR Series Converged Broadband Routers, the downstream classifier used percentage and system limit are not displayed. This command displays only the unicast service flow summary information and limit and excludes multicast service flows.

For uBR10k series routers:

- Downstream service flow:
  - For a given MC2020, MC3G60, 3GSPA or 6GSPA Line Card, per Line Card limit is about 64k. However, the upper limit per line card is highly dependent on configuration. For example, the downstream service flow limit would differ if two MC3G60 Line Cards share the same 3GSPA. So it is not possible to set a fixed value for Line Card downstream service flow upper limit.
  - For each chassis limit the fixed value is 294865. This is similar to a “RP flow” table resource.

Note Each downstream service flow and downstream classifier consumes one “RP flow” table resource. So actual limit depends on the downstream service flow and classifier configuration.

- Upstream service flow
  - Limited by 8K SID space per mac-domain.

Note If SID Cluster is configured, one upstream service flow might have multiple SIDs and the total upstream service flow limit per mac-domain will be lesser than 8K.

    - 64K per line card.
    - There is no chassis limit on the CMTS. In order to specify this, the command output displays "Not Applicable".

- Dowstream classifier
    - Each chassis is limited by "RP flow" table resource.
    - The fixed limit is displayed in percentage.
- Upstream classifier
    - The upstream classifier has no limit on CMTS and it is not displayed on the output.

For cBR Series Converged Broadband Routers, the following limitations are applicable:

- Downstream service flow
    - The downstream service flow count is limited by Yoda capability even though hardware limitation per CLC is 128K. Each Yoda has a limitation about 100K+ service flows and the Yoda to CLC mapping decides the CLC limitation. For example, if Yoda 1 is mapped to CLC1 and CLC2, the two CLCs has a shared limitation of 100K service flows. However, if Yoda 1 is mapped only to CLC1, CLC1 alone could reach 100K service flows.
    - 426K per chassis for Quad Yoda. 72K per chassis for one Yoda.
    - The downstream service flow upper limit is not displayed since it is not possible to derive a fixed value.
- Upstream service flow
    - Similar to uBR10K Series Routers, the upstream service flow is limited by 8K SID space per mac-domain.

Note If SID Cluster is configured, one upstream service flow might have multiple SIDs and the total upstream service flow limit per mac-domain will be lesser than 8K.

    - No chassis limit on CMTS.

- Downstream classifier
    - No limit on CMTS.
    - There is no "RP flow" table resource for cBR Series Converged Broadband Routers and no used percentage is displayed on the output.
- Upstream classifier

- The upstream classifier has no limit on CMTS and it is not displayed on the output.

Examples

The following example shows the sample output for the **show cable service-flow summary** command on the uBR10K series routers.

```
Router#   show cable service-flow summary
                Upstream Service Flow              Downstream Service Flow
Downstream Classifier
              Active CM   Inactive CM Total       Active CM   Inactive CM Total       Count
CLC5/0         8000         100          8100        12000        100          12100        800

CLC6/0         1000         10           1010        1000         10           1010         500

CLC7/0         10           0            10          10           0            10           5


Total:         9010        110           9120        13010        110          13120        1305
  1%
System Limit: Not Applicable                       294865
```

The following example shows the sample output for the **show cable service-flow summary** command on the cBR series routers.

```
Router# show cable service-flow summary
                  Upstream Service Flow              Downstream Service Flow
Downstream Classifier
              Active CM   Inactive CM Total       Active CM   Inactive CM Total       Count
CLC1           8000         100          8100        12000        100          12100        800
CLC2           1000         10           1010        1000         10           1010         500
CLC3           10           0            10          10           0            10           5

Total:         9010        110           9120       13010         110          13120        1305
```

Table below describes the significant fields shown in the display.

Table 89: show cable service-flow summary Field Descriptions

Field	Description
Upstream Service Flow	Upstream service flow summary information.
Downstream Service Flow	Downstream service flow summary information.
Downstream Classifier	Downstream classifier summary information.
Active CM	The upstream or downstream service flow count for active modems, including online and initiating modems.
Inactive CM	The upstream or downstream service flow count for offline modems.
Total	Total upstream or downstream service flow count.

Field	Description
Count	Downstream classifier count. For uBR10K Series Routers, the downstream classifier resource used percentage is displayed as well. **Note** For cBR Series Converged Broadband Routers, downstream classifier resource used percentage is not displayed since there is no limit for downstream classifier.

Related Commands

Command	Description
show cable service-flow summary detail	Displays service flow and classifier summary information per MAC domain basis.

show cable service-flow summary detail

To display system level service flow and classifier summary information per MAC domain basis, use the **show cable service-flow summary detail** command in privileged EXEC mode.

show cable service-flow summary detail

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Privileged EXEC mode

Command History

Release	Modification
12.2(33)SCJ	This command was introduced.
IOS-XE 3.18.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows the sample output for the **show cable service-flow summary detail** command on the uBR10K series routers.

```
Router# show cable service-flow summary detail
Interface     Upstream Service Flow              Downstream Service Flow
Downstream Classifier
              Active CM   Inactive CM Total       Active CM   Inactive CM Total       Count
Cable5/0/0    1000        0           1000        1000        0           1000        0
Cable5/0/1    1000        0           1000        1000        0           1000        0
Cable5/0/2    6000        100         6100        10000       100         11000       800
Cable6/0/0    900         10          910         900         10          910         500
Cable6/0/1    100         0           100         100         0           100         0
Cable7/0/0    10          0           10          10          0           10          5
```

The following example shows the sample output for the **show cable service-flow summary detail** command on the cBR series routers.

```
Router# show cable service-flow summary detail
Interface     Upstream Service Flow              Downstream Service Flow
Downstream Classifier
              Active CM   Inactive CM Total       Active CM   Inactive CM Total       Count
Cable1/0/0    1000        0           1000        1000        0           1000        0
Cable1/0/1    1000        0           1000        1000        0           1000        0
Cable1/0/2    6000        100         6100        10000       100         11000       800
Cable2/0/0    900         10          910         900         10          910         500
Cable2/0/1    100         0           100         100         0           100         0
Cable3/0/0    10          0           10          10          0           10          5
```

Table below describes the significant fields shown in the display.

Table 90: show cable service-flow summary detail Field Descriptions

Field	Description
Interface	The cable mac-domain interface.
Upstream Service Flow	Upstream service flow summary information.
Downstream Service Flow	Downstream service flow summary information.
Active CM	The upstream or downstream service flow count for active modems, including online and initiating modems.
Inactive CM	The upstream or downstream service flow count for offline modems.
Total	Total upstream or downstream service flow count.
Count	Total downstream classifiers count.

Related Commands

Command	Description
show cable service-flow summary	Displays system level service flow and downstream classifier summary information per line card basis.

show cable signal-quality

To display information about the signal quality of an upstream port on a cable interface, use the **show cable signal-quality** command in privileged EXEC mode.

Cisco uBR Series Router

show cable signal-quality {**cable** {*slot* /*port* | *slot* /*subslot* /*port* } **upstream** *number* | **cmts** | **mer**}
Cisco cBR Series Router

show cable signal-quality {**cable** *slot* /*card* /*port* **upstream** *number* | **cmts** | **mer**}

Syntax Description

cable	Specifies the cable interface.
slot /*subslot* /*port*	For uBR series router, displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: • *slot* —Chassis slot number of the cable interface line card. Valid slots are from 5 to 8. • *subslot* —Secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • *port* —Port number. Valid ports are from 0 to 4, depending on the cable interface line card.
slot /*subslot* /*port*	For cBR series router, displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: • *slot* —Chassis slot number of the cable interface line card. Valid slots are 0 to 3 and 6 to 9. • *card* —Secondary slot number of the cable interface line card. Valid subslots is 0. • *port* — Cable interface index. Valid ports are from 0 to 15, depending on the cable interface line card.
upstream *number*	Specifies the upstream channel ID. Valid values are from 0 to 15.
cmts	Displays the carrier-to-noise ratio (CNR) data and expected signal power received per cable interface.
mer	Displays the modulation error rate (MER) data per cable interface.

Command Modes

Privileged EXEC (#)

Command History

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

Release	Modification
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The value range for the *slot* /*card* /*port* variables are changed.
Cisco 1x2 RPD Software 4.1	The output of this command was updated when virtual combining of upstream channels was introduced in this release on Cisco Remote PHY Devices.

Usage Guidelines

The **show cable signal-quality** command with the **mer** keyword displays the modulation error rate data per cable interface. Note that at least one cable modem (CM) must be online on the cable interface for this command to provide the modulation error rate data. This is identical to the modulation error rate data displayed by the **show controllers** command.

The CNR data is displayed only for the upstream channels that are assigned to a spectrum group. Upstream channels with fixed frequencies do not return any CNR data.

Examples

The following example shows the CNR data received on the upstream ports on the cable interface line card at slot/subslot/port 7/0/3 on a Cisco uBR10012 router:

```
Router# show cable signal-quality cable 7/0/3 cmts
I/F           CNiR            Expected Received
              (dB)            Signal Power (dBmV)
Cable7/0/3/U0 55.0            1.0
Cable7/0/3/U1 44.0            0.0
Cable7/0/3/U2 43.0            -1.0
Cable7/0/3/U3 43.0            2.0
```

The following example shows the MER data received on the cable upstream port 3 on the cable interface line card at slot/subslot/port 5/0/0 on a Cisco uBR10012 router:

```
Router# show cable signal-quality cable 5/0/0 upstream 3 mer
I/F           Received MER    Received MER
              (dB)            Samples
Cable5/0/0/U3 36.0            10
```

The following example shows the signal quality information for all cable interfaces on a Cisco uBR10012 router:

```
Router#show cable signal-quality mer
I/F           Received MER    Received MER
              (dB)            Samples
Cable6/1/0/U0 -----           -----
Cable6/1/0/U1 -----           -----
Cable6/1/0/U2 -----           -----
Cable6/1/0/U3 -----           -----
Cable6/1/1/U0 -----           -----
Cable6/1/1/U1 -----           -----
Cable6/1/1/U2 -----           -----
Cable6/1/1/U3 -----           -----
Cable6/1/2/U0 -----           -----
Cable6/1/2/U1 -----           -----
Cable6/1/2/U2 -----           -----
Cable6/1/2/U3 -----           -----
Cable6/1/3/U0 -----           -----
Cable6/1/3/U1 -----           -----
Cable6/1/3/U2 -----           -----
Cable6/1/3/U3 -----           -----
```

```
Cable6/1/4/U0 -----           -----
Cable6/1/4/U1 -----           -----
Cable6/1/4/U2 -----           -----
Cable6/1/4/U3 -----           -----
Cable7/1/0/U0 23.6            10
Cable7/1/0/U1 -----           -----
Cable7/1/0/U2 -----           -----
Cable7/1/0/U3 -----           -----
Cable7/1/1/U0 -----           -----
Cable7/1/1/U1 -----           -----
Cable7/1/1/U2 -----           -----
Cable7/1/1/U3 -----           -----
Cable7/1/2/U0 -----           -----
Cable7/1/2/U1 -----           -----
Cable7/1/2/U2 -----           -----
Cable7/1/2/U3 -----           -----
Cable7/1/3/U0 -----           -----
Cable7/1/3/U1 -----           -----
Cable7/1/3/U2 -----           -----
Cable7/1/3/U3 -----           -----
Cable7/1/4/U0 -----           -----
Cable7/1/4/U1 -----           -----
Cable7/1/4/U2 -----           -----
Cable7/1/4/U3 -----           -----
Cable8/0/0/U0 36.1            10
Cable8/0/0/U1 -----           -----
```

The following table describes the major fields displayed by the **show cable signal-quality** command.

Table 91: show cable signal-quality Command Field Descriptions

Field	Description
I/F	Cable interface.
CNiR (db)	CNR value.
Expected Received Signal Power (dBmV)	Expected signal power received per upstream port.
Received MER (db)	Received MER signal-to-noise ratio (SNR) value.
Received MER (samples)	Samples used for calculating the SNR per upstream port.

The following example shows the signal quality information of the specified channels supporting virtual combining:

```
show cable signal-quality cmts
I/F           DevID    CNiR           Expected Received
                       (dB)           Signal Power (dBmV)
Cable1/0/0/U0   0      31.0           0.0
Cable1/0/0/U0   1      31.0           0.0
Cable1/0/0/U0   2      31.0           0.0
Cable1/0/0/U1   0      31.0           0.0
Cable1/0/0/U1   1      31.0           0.0
Cable1/0/0/U2          -----          -----
Cable1/0/0/U3          -----          -----
Cable1/0/0/U4   0      31.0           0.0
Cable1/0/0/U5   0      31.0           0.0
```

Related Commands

Command	Description
show cable spectrum-analysis	Displays information about the spectrum measurements of an upstream port on a cable interface on a Cisco uBR10012 router.
show controllers	Displays information about the interface controllers for a cable interface on the Cisco CMTS router.
show cable modem cnr	Displays information about CNR or SNR data for a particular cable modem.
show cable modem	Displays information about the registered and unregistered CMs on a Cisco CMTS router.

show cable snmp cache-status

To display the SNMP cache status, use the **show cable snmp cache-status** command in privileged EXEC mode.

show cable snmp cache-status

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

Important You must configure the **service internal** command in global configuration mode to display the SNMP cache status.

Example

The following is a sample output of the **show cable snmp cache-status** command:

```
Router# show cable snmp cache-status
Cache engine is ON, age: 5 seconds
```

Table 92: show cable snmp cache-status Field Descriptions

Field	Description
age	The time interval for which the SNMP cache information is stored on the Supervisor.

Related Commands

Command	Description
cable snmp cache active	Configures the SNMP cache status.

show cable spectrum-analysis

To display information about the spectrum measurements of an upstream port on a cable interface line card, use the **show cable spectrum-analysis** command in privileged EXEC mode.

Cisco uBR Series Router

show cable spectrum-analysis *slot /subslot /port* **upstream** *port*

Cisco cBR Series Router

show cable spectrum-analysis Cable *slot /subslot /port* **upstream** *port*

Syntax Description

slot /subslot /port	Displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: • *slot* —Chassis slot number of the cable interface line card. Valid slots are from 5 to 8 for uBR series router, from 0 to 9 for cBR series router. • *subslot* —Secondary slot number of the cable interface line card. Valid subslots are 0 or 1 for uBR series router, 0 for cBR series router. • *port* —Downstream port number. Valid ports are from 0 to 4 for uBR series router, from 0 to 7 for cBR series router, depending on the cable interface line card.
upstream *port*	Specifies the upstream port number.

Command Modes

Privileged EXEC(#)

Command History

Release	Modification
12.2(33)SCC	This command was introduced in Cisco IOS Release 12.2(33)SCC.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The value range for the *slot /subslot /port* variables are changed. This command replaces the **show controllers cable upstream spectrum** command.
Cisco 1x2 RPD Software 4.1	The output of this command was updated when virtual combining of upstream channels was introduced in this release on Cisco Remote PHY devices.

Examples

The following example shows the spectrum measurements on upstream port 1 on a Cisco uBR10012 router:

```
Router# show cable spectrum-analysis  c5/0/0 upstream 1
Spectrum Analysis Measurements for Cable5/0/0: Upstream 1
Channel Center Frequency: 17000000 Hz
Frequency Span: 6400000 Hz
Number of Bins: 321
Bin Spacing: 20000 Hz
```

```
Resolution Bandwidth: 34200 Hz
Amplitude Data:
    Bin   1: -60.00 dBmV
    Bin   2: -58.00 dBmV
    Bin   3: -58.00 dBmV
    Bin   4: -58.00 dBmV
    Bin   5: -55.00 dBmV
    Bin   6: -55.00 dBmV
    Bin   7: -58.00 dBmV
    Bin   8: -55.00 dBmV
    Bin   9: -49.00 dBmV
    Bin  10: -49.00 dBmV
    Bin  11: -49.00 dBmV
    Bin  12: -49.00 dBmV
    Bin  13: -49.00 dBmV
    Bin  14: -55.00 dBmV
    Bin  15: -58.00 dBmV
    Bin  16: -45.00 dBmV
    Bin  17: -38.00 dBmV
    Bin  18: -35.00 dBmV
    Bin  19: -33.00 dBmV
    Bin  20: -33.00 dBmV
    Bin  21: -34.00 dBmV
    Bin  22: -37.00 dBmV
    Bin  23: -37.00 dBmV
    Bin  24: -32.00 dBmV
    Bin  25: -28.00 dBmV
    Bin  26: -27.00 dBmV
    Bin  27: -26.00 dBmV
    Bin  28: -27.00 dBmV
    Bin  29: -31.00 dBmV
    Bin  30: -32.00 dBmV
    Bin  31: -29.00 dBmV
    Bin  32: -29.00 dBmV
```

Table below describes the significant fields shown in the display.

Table 93: show cable spectrum-analysis Field Descriptions

Field	Description
Spectrum analysis measurements	Spectrum measurements.
Channel center frequency	Channel center frequency value.
Frequency span	Frequency span.
No of Bins	Total number of bins in the spectrum analysis data.
Bin spacing	Spacing between the center frequency of each bin.
Resolution Bandwidth	Spacing between bins after the spectral window is applied.
Amplitude Data	Spectral amplitudes for the received signal power of a bin.

The following example shows the signal quality information of the specified channels supporting virtual combining in Cisco 1x2 RPD Software 4.1.

```
show cable spectrum-analysis Cable 9/0/7 upstream 0 sid 1 devID 1
```

```
Load for five secs: 5%/1%; one minute: 5%; five minutes: 5%
No time source, *11:16:00.436 CST Sat Feb 24 2018

Spectrum Analysis Measurements for Cable9/0/7: Upstream 0 Sid 1
Device ID: 1
Channel Center Frequency: 10000 kHz
Frequency Span:           3200 kHz
Number of Bins:           129
Bin Spacing:              25.0 kHz
Resolution Bandwidth:     42.750 kHz
Amplitude Data:
    Bin   1: -60.00 dBmV
    Bin   2: -60.00 dBmV
    Bin   3: -60.00 dBmV
    Bin   4: -32.00 dBmV
    Bin   5: -23.00 dBmV
    Bin   6: -22.00 dBmV
```

Related Commands

Command	Description
show cable signal-quality	Displays information about the signal quality of an upstream port on a cable interface line card.
show controllers cable	Displays information about the interface controllers for a cable interface line card on a Cisco CMTS router.
show cable modem cnr	Displays information about the upstream carrier-to-noise ratio (CNR) or signal-to-noise ratio (SNR) for a particular cable modem.

show cable spectrum-group

To display information about spectrum groups on a Cisco CMTS, use the **show cable spectrum-group** command in user EXEC or privileged EXEC mode.

show cable spectrum-group [*groupnum*] [**detail**]

Syntax Description

groupnum	(Optional) Displays information about the specified group number (1–32). If no group number is specified, information for all spectrum groups is displayed.
detail	(Optional) Displays whether the groups are allocated, free, or in-use.

Command Modes

User EXEC, Privileged EXEC

Command History

Release	Modification
11.3 NA	This command was introduced.
12.0(5)SC, 12.0(5)T	The **detail** keyword was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is sample output from the **show cable spectrum-group** command for all upstream spectrum groups:

```
CMTS01# show cable spectrum-group
 Group  Frequency      Upstream     Weekly Scheduled           Power   Shared
 No.    Band           Port         Availability               Level   Spectrum
        (Mhz)                       From Time:    To Time:     (dBmV)

 1       5.000-42.000                                          0       No
 1      17.328 [1.60]  Cable3/0 U0                            0
 1       5.808 [1.60]  Cable3/0 U1                            0
 1       5.808 [1.60]  Cable3/0 U2                            0
 1      15.792 [1.60]  Cable3/0 U3                            0
 1       6.096 [1.60]  Cable3/0 U4                            0
 1       5.808 [1.60]  Cable3/0 U5                            0
 2       5.000-42.000                                          0       No
 2       6.608 [3.20]  Cable6/0 U1                            0
 2       5.808 [1.60]  Cable6/0 U2                            0
 2       5.808 [1.60]  Cable6/0 U3                            0
 2       5.808 [1.60]  Cable6/0 U4                            0
 2       5.808 [1.60]  Cable6/0 U5                            0
 3       5.000-42.000                                          0       No
 3      17.488 [1.60]  Cable5/0 U1                            0
 3       6.160 [1.60]  Cable5/0 U2                            0
 3      36.912 [1.60]  Cable5/0 U3                            0
 3      36.560 [1.60]  Cable5/0 U4                            0
 3      16.240 [1.60]  Cable5/0 U5                            0
 4       6.000- 8.600                                         0       No
 4      16.000-18.000                                         0       No
```

```
 4      17.168 [1.60]  Cable5/0 U0                              0
 5       5.000-42.000                                           0       No
 6       5.000-42.000                                           0       No
 7       5.000-42.000                                           0       No
 8       5.000-42.000                                           0       No
 9       5.000-42.000                                           0       No
 10      5.000-42.000                                           0       No
 11      5.000-42.000                                           0       No
 12     10.000-13.000                                           0       No
CMTS#
```

The following is sample output from the **show cable spectrum-group detail** command:

```
CMTS# show cable spectrum-group detail

Group  Frequency      Upstream     Weekly Scheduled            Power   Shared
No.    Band           Port         Availability                Level   Spectrum
       (Mhz)                       From Time:    To Time:      (dBmV)

1      10.000                                                   1       Yes
1      10.000                                                   2       Yes
1      11.000                                                   3       Yes
1      11.000                                                   4       Yes
1      15.000-20.000                                            0       Yes
  A     8.400-12.600
  A    15.000-20.000
1      11.008 [0.80]  Cable3/0 U2                              4
1      15.808 [1.60]  Cable3/0 U3                              0
1      Unassigned     Cable3/0 U4
1      17.408 [1.60]  Cable3/0 U5                              0
  I    10.600-11.400                                          4
  I    15.000-16.600                                          0
  I    16.600-18.200                                          0
  F     8.400-10.600
  F    11.400-12.600
  F    18.200-20.000
  C    Width  [3.20]
  C    Width  [1.60]
  C    Width  [0.80]
  O    19.000 [1.60]                                          0
  O    10.000 [0.80]                                          2
  O    18.600 [0.80]                                          0
  O    19.400 [0.80]                                          0
  O    10.000 [0.80]                                          1
CMTS#
```

Table below describes the fields shown in the **show cable spectrum-group** displays.

Table 94: show cable spectrum-group Command Field Descriptions

Field	Description
Group No.	Identifies the spectrum group. When using the detail keyword, the following also appear: • A = Signifies that the band is allocated. • F = Signifies that the band is free. • I = Signifies that the band is in-use. • C = Identifies the channel width. • O = Identifies the offered list bands (based on the current channel widths).

Field	Description
Frequency Band (MHz)	Identifies the upper and lower ranges of the frequency for this spectrum group.
Upstream Port	Identifies the upstream port number.
Weekly Scheduled Availability	Identifies the day and time of day when this group is available. If no values appear in the **From** and **To Time** fields, this group is available at all times.
Power Level (dBmV)	Identifies the assigned decibels per millivolt (dBmV) input level.
Shared Spectrum	Indicates if upstreams are physically combined (share the same combiner group). Y or yes values indicate that upstreams that are members of the spectrum group are combined and cannot be assigned overlapping frequency bands. N or no values indicate that upstreams that are members of the spectrum group are not combined and can be assigned overlapping frequency bands.

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 hop	Displays CM configuration settings.
show cable modulation-profile	Displays modulation profile group information.

show cable subscriber-usage

To display subscribers who are violating their registered quality of service (QoS) profiles, use the show cable subscriber-usage command in privileged EXEC mode.

show cable subscriber-usage [**over-consume**][{**cable** *slot /port* | **cable** *slot /subslot/port* }][**upstream** *port*][**sort-byte-count**][**sort-avg-rate**]

Syntax Description

over-consume	(Optional) Displays only those subscribers who have exceeded their maximum allowed bandwidth.
cable *slot /port*	(Optional) Displays information for all CMs on the specified cable interface and downstream port on a Cisco 7100 series or Cisco 7200 series router, 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.
cable *slot/subslot/port*	(Optional) 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.
upstream *port*	(Optional) Displays information for a particular upstream on the selected cable interface. The *port* value starts with 0 and continues up, depending on the type of cable interface card.
sort-byte-count	(Optional) Sorts the list by the subscriber byte count, with the highest byte counts listed first. The default is to sort the list by Service Flow ID (SFID). (This option is replaced by the **sort-avg-rate** keyword in later releases.)
sort-avg-rate	(Optional) Sorts the list by the subscriber's average rate. The default is to sort the list by Service Flow ID (SFID).

Command Default

All subscribers are shown, with the display sorted by SFID.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(15)BC1	This command was introduced.

Release	Modification
12.3(9a)BC	This command was integrated into Cisco IOS Release 12.3(9a)BC. The **sort-byte-count** keyword option is replaced by the **sort-avg-rate** keyword option.
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA. Support for the Cisco uBR7225VXR router was added. The output field Total-Kbyte Count was modified to Mon-Dur Cons (kbits/sec).
IOS-XE 3.15.0S	This command is not supported on the Cisco cBR Series Converged Broadband Routers.

Usage Guidelines

The show cable subscriber-usage command displays the current usage statistics for all subscribers on the Cisco CMTS router, all subscribers on a particular cable interface, or for only those subscribers that are marked as over-consuming bandwidth.

Effective with Cisco IOS Release 12.3(9a)BC, the **sort-byte-count** keyword option is replaced by the **sort-avg-rate** keyword option.

Examples

The following example shows typical output for the default version of the show cable subscriber-usage command:

```
Router# show cable subscriber-usage
Sfid Mac Address   Enforce-rule Mon-dur Cons  Last-detect    Last-penalty   Pen
                       Name      (kbits/sec)      time           time        Flag
3    0007.0e03.110d efrule-q5   121944817  Jan1  03:44:08  Jan1  03:54:08  Act
4    0007.0e03.110d efrule-q5d  1879076068 Jan1  03:35:05  Jan1  03:45:06  Act
5    0007.0e03.1431 efrule-q5   120052387  Jan1  03:44:18  Jan1  03:54:18  Act
6    0007.0e03.1431 efrule-q5d  1838493626 Jan1  03:34:55  Jan1  03:44:55  Act
7    0007.0e03.1445 efrule-q5   120919427  Jan1  03:44:08  Jan1  03:54:08  Act
8    0007.0e03.1445 efrule-q5d  1865955172 Jan1  03:35:06  Jan1  03:45:06  Act
9    0007.0e03.1225 efrule-q5   120200155  Jan1  03:44:18  Jan1  03:54:18  Act
10   0007.0e03.1225 efrule-q5d  1839681070 Jan1  03:34:55  Jan1  03:44:55   -
11   0007.0e03.0cb1 efrule-q5   122941643  Jan1  03:43:58  Jan1  03:53:58  Act
12   0007.0e03.0cb1 efrule-q5d  1889107176 Jan1  03:35:06  Jan1  03:45:06  Act
13   0007.0e03.1435 efrule-q5   119504795  Jan1  03:44:18  Jan1  03:54:18  Act
14   0007.0e03.1435 efrule-q5d  1835164034 Jan1  03:34:55  Jan1  03:44:55   -
15   0007.0e02.f80d efrule-q5   119250047  Jan1  03:44:18  Jan1  03:54:18  Act
16   0007.0e02.f80d efrule-q5d  1832034114 Jan1  03:34:55  Jan1  03:44:55   -
17   0007.0e03.1469 efrule-q5   117562137  Jan1  03:44:18  Jan1  03:54:18  Act
18   0007.0e03.1469 efrule-q5d  1816957486 Jan1  03:34:55  Jan1  03:44:55   -
19   0007.0e03.11f9 efrule-q5   124265775  Jan1  03:44:18  Jan1  03:54:18  Act
20   0007.0e03.11f9 efrule-q5d  1959957066 Jan1  03:35:46  Jan1  03:45:46  Act
21   0007.0e03.1461 efrule-q5   113314731  Jan1  03:34:55  Jan1  03:44:55   -
22   0007.0e03.1461 efrule-q5d  1827583110 Jan1  03:35:46  Jan1  03:45:46  Act
23   0007.0e03.11d9 efrule-q5   104607787  Jan1  03:34:55  Jan1  03:44:55   -
24   0007.0e03.11d9 efrule-q5d  1675444338 Jan1  03:34:55  Jan1  03:44:55   -
25   0007.0e03.1475 efrule-q5   113751019  Jan1  03:34:55  Jan1  03:44:55   -
26   0007.0e03.1475 efrule-q5d  1841060070 Jan1  03:35:56  Jan1  03:45:56  Act
27   0007.0e03.10d9 efrule-q5   113713981  Jan1  03:34:55  Jan1  03:44:55   -
28   0007.0e03.10d9 efrule-q5d  1840272262 Jan1  03:35:56  Jan1  03:45:56  Act
29   0007.0e03.1065 efrule-q5   113443243  Jan1  03:34:55  Jan1  03:44:55   -
30   0007.0e03.1065 efrule-q5d  1834855264 Jan1  03:35:56  Jan1  03:45:56  Act
31   0007.0e03.1081 efrule-q5   119843737  Jan1  03:44:18  Jan1  03:54:18  Act
32   0007.0e03.1081 efrule-q5d  1852632338 Jan1  03:35:56  Jan1  03:45:56  Act
33   0007.0e03.1179 efrule-q5   118522795  Jan1  03:44:18  Jan1  03:54:18  Act
34   0007.0e03.1179 efrule-q5d  1834693996 Jan1  03:35:56  Jan1  03:45:56  Act
35   0007.0e03.1471 efrule-q5   122182565  Jan1  03:43:58  Jan1  03:53:58  Act
36   0007.0e03.1471 efrule-q5d  1881390866 Jan1  03:34:55  Jan1  03:44:55   -
```

```
37   0007.0e03.1341 efrule-q5   129557931  Jan1  03:43:48  Jan1  03:53:48  Act
38   0007.0e03.1341 efrule-q5d  2016792338 Jan1  03:35:56  Jan1  03:45:56  Act
```

The following example shows typical output for subscribers on a particular cable interface:

```
Router# show cable subscriber-usage c6/0/0

Sfid Mac Address   Enforce-rule Mon-dur Cons  Last-detect    Last-penalty   Pen
                      Name      (kbits/sec)       time            time     Flag
7    0007.0e03.2cad test1       0          Jan1  00:00:00  Jan1  00:00:00   -
9    0007.0e03.2c45 test1       0          Jan1  00:00:00  Jan1  00:00:00   -
```

The following example shows typical output for the **show cable subscriber-usage** command for one upstream on a particular cable interface:

```
Router# show cable subscriber-usage c6/0/1
 upstream 0

Sfid Mac Address   Enforce-rule Mon-dur Cons  Last-detect    Last-penalty   Pen
                      Name      (kbits/sec)       time            time     Flag
5    0007.0e03.2c25 test1       0          Jan1  00:00:00  Jan1  00:00:00   -
```

The following example shows typical output for the **sort-byte-count** option for the **show cable subscriber-usage** command:

```
Router# show cable subscriber-usage
 sort-byte-count

Sfid Mac Address   Enforce-rule Mon-dur Cons  Last-detect    Last-penalty   Pen
                      Name      (kbits/sec)       time          time        Flag
7    0007.0e03.2cad test1       65157114   Feb24 11:36:34  Mar3  11:36:34  Act
9    0007.0e03.2c45 test1       16381014                                   -
5    0007.0e03.2c25 test1       13440960                                   -
```

Table below describes the fields shown by the show cable subscriber-usage command.

Table 95: show cable subscriber-usage Field Descriptions

Field	Description
SFID	Number of the Service Flow ID.
Mac Address	Hardware address (MAC address) of the subscriber's cable modem.
Enforce-rule Name	Name of the enforce-rule being applied to this subscriber.
Total-Kbyte	Total number of kilobytes consumed by the subscriber's cable modem during the last monitoring-duration window. **Note** The total byte count is reset to 0 whenever an enforce-rule's configuration is changed. **Note** Effective with Cisco IOS Release 12.2(33)SCA, the field Total-Kbyte has been modified to Mon-Dur Cons (kbits/sec).
Last-detect time	Last time period, if any, at which it was determined that the cable modem was using more bandwidth than allowed by their QoS profile. This value also shows the time at which the enforced QoS profile was automatically applied, if this option has been enabled.

Field	Description
Last-penalty time	If an enforced QoS profile is currently in effect, this field shows the time period at which the subscriber's current penalty time expires, at which point their original registered QoS profile is restored.
Pen Flag	Identifies whether a penalty enforce-rule has been applied to this cable modem.

Related Commands

Command	Description
activate-rule at-byte-count	Specifies the number of bytes that a subscriber can transmit during the monitoring period on a Cisco CMTS router.
cable qos enforce-rule	Creates an enforce-rule to enforce a particular QoS profile for subscriber traffic management and enters enforce-rule configuration mode.
duration	Specifies the time period and sample rate to be used for monitoring subscribers.
enabled (enforce-rule)	Activates an enforce-rule and begins subscriber traffic management on a Cisco CMTS Router.
penalty-period	Specifies the time period that an enforced QoS profile should be in effect for subscribers who violate their registered QoS profiles.
qos-profile enforced	Specifies a QoS profile that should be enforced when users violate their registered QoS profiles.
qos-profile registered	Specifies the registered QoS profile that should be used for this enforce-rule.
show cable qos enforce-rule	Displays the QoS enforce-rules that are currently defined.

show cable tech-support

To display general information about the router when reporting a problem, use the **show cable tech-support** command in privileged EXEC mode.

show cable tech-support {*slot* /*port* | *slot* /*subslot* /*port* }

Syntax Description

slot /*port*	(Optional) Cisco IOS Release 12.3(9a)BC allows you to display information about one specific cable interface. Identifies the cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers. On the Cisco uBR7100 series router, the only valid value is **1/0**. On the Cisco uBR7200 series router, *slot* can range from 3 to 6, and *port* can be 0 or 1, depending on the cable interface.
slot /*subslot* /*port*	(Optional) Cisco IOS Release 12.3(9a)BC allows you to display information about one specific cable interface. Identifies the cable interface on the router. The following are the valid values: • *slot* = 5 to 8 for uBR series router, 0 to 9 for cBR series router. • *subslot* = 0 or 1 for uBR series router, 0 for cBR series router. • *port* = 0 to 4 for uBR series router, 0 to 7 for cBR series router (depending on the cable interface).

Command Default

None.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.1(1a)T1	This command was modified to include information about the cable clock card.
12.2(15)BC2	This command added several **show pxf** commands to the display on the Cisco uBR10012 router.
12.3(9a)BC	The output of the command was significantly shortened by moving a number of show commands (the ones that display information about individual cable modems) to the show tech-support command. This release also adds support for an option to display information about only one specific cable interface.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The value range for the *slot* /*subslot* /*port* variables were changed.

Usage Guidelines

The **show cable tech-support** command displays a large amount of configuration, run-time status, and other information about the cable interfaces on the Cisco CMTS. The output of this command can be provided to technical support representatives when reporting a problem.

Note The **show tech-support** includes most of the information shown in the **show cable tech-support** command. Unless the problem is clearly cable-specific, TAC personnel will typically request the **show tech-support** output to troubleshoot any problems.

The **show cable tech-support** command displays the output of a number of different show commands. The exact output depends on the platform, configuration, and type of protocols being used. The output includes the output from the following commands:

- **show cable modem**
- **show cable flap-list**
- **show cable qos profile**
- **show cable modulation-profile**
- **show cable spectrum-group**
- **show cable hop**
- **show interface cable sid (for each cable interface)**
- **show interface cable sid connectivity (for each cable interface)**
- **show interface cable downstream**
- **show interface cable upstream**
- **show interface cable mac-scheduler**
- **show interface cable modem**

Other commands could be included in the **show cable tech-support** output, depending on the CMTS platform, the Cisco IOS software being used, and the cards that are installed in the chassis.

On the Cisco uBR10012 router, the following commands also appear in Cisco IOS Release 12.2(15)BC2 and later releases:

- **show pxf cpu statistics**
- **show pxf cpu subblocks**
- **show pxf cpu buffer**
- **show pxf dma**
- **show pxf cpu cef memory**
- **show pxf cpu queue**
- **show pxf cpu statistics drop**
- **show cable modem partial-mode**

Tip Depending on the platform and configuration, the output from the **show cable tech-support** command can easily exceed the buffers found in most communications programs. To capture this output so it can be sent to Cisco TAC, use a Telnet program that allows you to capture the output directly to disk.

Examples

The following abbreviated example illustrates the cable modem and interface information for the Cisco uBR10012 router on which Cisco IOS Release 12.3(9a)BC is installed.

```
Router# show cable tech-support
------------------------------------ Slot 8/1 -----------------------------------
------------------ show cable modem Cable8/1/0 ------------------
MAC Address    IP Address      I/F       MAC         Prim RxPwr  Timing  Num BPI
                                         State       Sid  (dB)   Offset  CPE Enb
------------------ show cable modem Cable8/1/0 connectivity ------------------
Prim  1st time    Times  %online     Online time            Offline time
Sid   online      Online          min     avg     max     min     avg     max
------------------ show interface Cable8/1/0 sid ------------------
Sid  Prim  MAC Address    IP Address      Type Age      Admin   Sched  Sfid
                                                       State   Type
------------------ show interface Cable8/1/0 sid counter ------------------
Sid  Req-polls  BW-reqs    Grants     Packets    Frag       Concatpkts
     issued     received   issued     received   complete   received
------------------ show interface Cable8/1/0 sid association ------------------
Sid  Prim Online     IP Address      MAC Address    Interface     VRF Name
------------------ show interface Cable8/1/0 modem 0 ------------------
SID   Priv bits  Type      State       IP address      method    MAC address
------------------ show cable modem Cable8/1/1 ------------------
MAC Address    IP Address      I/F       MAC         Prim RxPwr  Timing  Num BPI
                                         State       Sid  (dB)   Offset  CPE Enb
------------------ show cable modem Cable8/1/1 connectivity ------------------
Prim  1st time    Times  %online     Online time            Offline time
Sid   online      Online          min     avg     max     min     avg     max
------------------ show cable modem Cable8/1/1 partial-mode ------------------
MAC Address    IP Address      I/F       MAC         Prim  RCC  UP-reason/
                                         State       Sid   ID   Failed-tcs
------------------ show interface Cable8/1/1 sid ------------------
Sid  Prim  MAC Address    IP Address      Type Age      Admin   Sched  Sfid
                                                       State   Type
------------------ show interface Cable8/1/1 sid counter ------------------
Sid  Req-polls  BW-reqs    Grants     Packets    Frag       Concatpkts
     issued     received   issued     received   complete   received
------------------ show interface Cable8/1/1 sid association ------------------
Sid  Prim Online     IP Address      MAC Address    Interface     VRF Name
------------------ show interface Cable8/1/1 modem 0 ------------------
SID   Priv bits  Type      State       IP address      method    MAC address
```

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 controllers cable	Displays information about a specific line card's interface controllers.
show interface cable downstream	Displays information about the cable interface.
show running-config	Displays the current run-time configuration.
show startup-config	Displays the configuration that was used to initially configure the CMTS at system startup.
show tech-support	Displays the output from **show** commands that display the router's configuration and run-time status.

Command	Description
show version	Displays the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images.

show cable throttle-modem

To display cable modem (CM) throttle information, use the **show cable throttle-modem** command in user EXEC or privileged EXEC mode.

show cable throttle-modem

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)SCF3	This command was introduced.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable throttle-modem** command when the Cable Modem Registration Throttling feature is disabled:

```
Router# show cable throttle-modem
CPU for five seconds: 4%/0%; one minute: 1%; five minutes: 1%
CM Throttle Status : Config Disabled; Oper Disabled;
CM Throttle Config : Init Rate 32 CM/Sec; Holdoff 45 Sec;
Flush Rate 300 CM/Sec
CM Register Rate : 0 CM/Sec
```

The following is a sample output of the **show cable throttle-modem** command when the Cable Modem Registration Throttling feature is enabled:

```
Router# show cable throttle-modem
CPU for five seconds: 5%/0%; one minute: 1%; five minutes: 1%
CM Throttle Status : Config Enabled; Oper Enabled;
CM Throttle Config : Init Rate 32 CM/Sec; Holdoff 45 Sec;
Flush Rate 300 CM/Sec
CM Register Rate : 0 CM/Sec
CM Throttling Rate : 4 CM/Sec
Num of CM in Queue : 0
```

Table below describes the significant fields shown in the display.

Table 96: show cable throttle-modem Field Descriptions

Field	Description
CPU for five seconds	CPU usage information.

Field	Description
CM Throttle Status	CM throttle operating status. The valid values are: • Config Enabled—Feature is enabled. • Oper Enabled—Feature is functional.
CM Throttle Config	CM throttle configuration parameters.
CM Register Rate	Information about the current cable modem registration success rate.
CM Throttling Rate	Dynamic cable modem throttle rate from the waiting queue, adjusted according to CPU usage, capped by the init-rate value.
Num of CM in Queue	Number of CMs in the queue.

Related Commands

Command	Description
cable throttle-modem	Enables the Cable Modem Registration Throttling feature.

show cable upstream controller-profile

To display the cable upstream controller profile, use the **show cable upstream controllerprofile** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable upstream controller profile *id*{**us-channel** *chan-id1 chan-id2*}

Syntax Description

profile *id*	Profile identifiler.
us-channel *chan-id1 chan-id2*	Channel identifier.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the cable upstream controller profile.

The following example shows the sample output for the **show cable upstream controllerprofile** command:

```
Router#show cable upstream controller-profile 0

Load for five secs: 2%/0%; one minute: 3%; five minutes: 3%
Time source is NTP, 15:14:27.916 CST Fri Feb 24 2017

Upstream controller-profile 0
Description:
Upstream controller-profile 0 is being used by controller Upstream-Cable:
8/0/1,  8/0/0
  Controller Upstream-Cable
    ...
  Upstream-channel 0
    chan-class-id                  : 0x0
    channel-width                  : 1600000 1600000
    docsis-mode                    : atdma
```

show cable upstream service-flow summary

To display the upstream service flow summary information on the Cisco CMTS router, use the **show cable upstream service-flow summary** command in privileged EXEC mode.

show cable upstream service-flow summary

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following is a sample output of the **show cable upstream service-flow summary** command:

```
Router# show cable upstream service-flow summary
Interface             Static Upstream Service Flow Dynamic Upstream Service Flow Desc
            Total PRI BE   UGS  UGS-AD RTPS N-RTPS BE   UGS  UGS-AD RTPS  N-RTPS
C7/0/0/U0   3     0   0    0    0      3    0      0    0    0      0     0
C7/0/0/U2   21    4   12   0    0      9    0      0    0    0      0     0
C7/0/0/U3   20    5   15   0    0      5    0      0    0    0      0     0
C7/0/0/UB1  24    8   24   0    0      0    0      0    0    0      0     0      UBG1
C7/1/0/U2   4     1   3    0    0      1    0      0    0    0      0     0
C7/1/1/U2   1     1   1    0    0      0    0      0    0    0      0     0
C8/0/0/U0   1     1   1    0    0      0    0      0    0    0      0     0
C8/0/0/U1   1     0   0    0    0      1    0      0    0    0      0     0
C8/0/0/U2   1     0   0    0    0      1    0      0    0    0      0     0
C8/0/0/U3   1     0   0    0    0      1    0      0    0    0      0     0
C8/0/0/UB3  5     2   5    0    0      0    0      0    0    0      0     0
C8/0/0/UB8  4     1   4    0    0      0    0      0    0    0      0     0
Total:      86    23  65   0    0      21   0      0    0    0      0     0
```

Table below describes the significant fields shown in the display.

Table 97: show cable upstream service-flow summary Field Descriptions

Field	Description
Interface	Cable interface.
Total	Total number of upstream service flows.
PRI	Number of primary upstream service flows.
BE	Number of best effort service schedule types.
UGS	Number of unsolicited grant service schedule types.

Field	Description
UGS-AD	Number of unsolicited grant service with activity detection schedule types.
RTPS	Number of real-time polling service schedule types.
N-RTPS	Number of non-real-time polling service schedule types.
Description	Descriptive name for the bonding group.

Related Commands

Command	Description
show interface cable	Displays configuration and status information for the cable interface on the Cisco CMTS router.
show interface cable downstream	Displays information about the downstream cable interface on the Cisco CMTS router.

show cable upstream ofdma mer-fec

To display the per-IUC summary information for every OFDMA channel that is active in the system, you can use the **show cable upstream ofdma mer-fec** command in privileged EXEC mode.

show cable upstream ofdma mer-fec

To clear FEC and MER counts on every OFDMA channel in the system, you can use the **clear cable upstream ofdma mer-fec all**

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Command History

Release	Modification
Cisco IOS XE Gibraltar 16.12.1z	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable upstream ofdma mer-fec** command:

```
Router# show cable upstream ofdma mer-fec
Upstream:IUC           MER(dB)    TotalFecCW    CorrectedFecCW   UncorrFecCW UncorrCW%
MD:upstream
UC1/0/0:U12:IR           0.00     1517          1516             1           0.100
Ca1/0/0:u14
UC1/0/0:U12:FR           0.00     212           212              0           0.0
Ca1/0/0:u14
UC1/0/0:U12:IUC5        39.50     182847169     24808975         4600        0.224
Ca1/0/0:u14
UC1/0/0:U12:IUC6        39.75     12238138      1330784          235         0.204
Ca1/0/0:u14
UC1/0/0:U12:IUC9        39.75     11905027      1870105          101         0.116
Ca1/0/0:u14
UC1/0/0:U12:IUC10        0.00     0             0                0           0.0
Ca1/0/0:u14
UC1/0/0:U12:IUC11        0.00     0             0                0           0.0
Ca1/0/0:u14
UC1/0/0:U12:IUC12        0.00     0             0                0           0.0
Ca1/0/0:u14
UC1/0/0:U12:IUC13       38.25     3308365       471591           16          0.64
Ca1/0/0:u14
UC1/0/0:U13:IR           0.00     431           431              0           0.0
Ca1/0/0:u15
UC1/0/0:U13:FR           0.00     163           163              0           0.0
Ca1/0/0:u15
UC1/0/0:U13:IUC5        40.50     57309324      1071754          827         0.12
Ca1/0/0:u15
```

The following is a sample of the **clear cable upstream ofdma mer-fec all** command:

```
clear cable upstream ofdma mer-fec all
```

```
clear cable upstream ofdma mer-fec upstream-cable <slot>/0/<us-controller> us-channel <12-15>
```

show cable upstream ofdma chan-util

To display the rolling window utilization summary information for every OFDMA channel that is active in the system, you can use the **show cable upstream ofdma chan-util** command in privileged EXEC mode.

show cable upstream ofdma chan-util

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Command History

Release	Modification
Cisco IOS XE Cupertino 17.9.1y	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable upstream ofdma chan-util** command:

```
Router# show cable upstream ofdma chan-util
                SNMP util interval: 360
Upstream Channel %data bytes %dps grants %data grants SNMP   30 sec   MD:upstream
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
UC1/0/0:U13           0           0            0           0         0          Ca1/0/0:u5
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
UC1/0/0:U12           0           0            0           0         0          Ca1/0/0:u4
```

show cable urm

To view the mapping of cable MAC domain upstream channel to connector on a Cisco uBR-MC3GX60V cable interface line card in the Cisco uBR series router, or view the mapping of MAC domain upstream channel/upstream-cable controller us channel/the US PHY receiver in the Cisco cBR series router, use the **show cable urm** command in the privileged EXEC mode.

show cable urm [**slot**/**subslot**]

Syntax Description

slot/**subslot**	Identifies the cable interface on the router. • **slot**—Slot where the line card resides. The valid range is from 5 to 8 for uBR series router, 0 to 9 for cBR series router. • **subslot**—Subslot where the line card resides. Available slots are 0 or 1 for uBR series router, 0 for cBR series router.

Command Default

Display information for all the slot/subslot values that has been configured.

Command Modes

Privileged EXEC (#)

Command History

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

Examples

The following is a sample output indicating the connector group table information of the cable line card in slot 6/1 of the uBR series router:

```
Router# show cable urm 6/1
===
connector group table
===
card  cnnrs  md:us=>cnnr
6/1    0-3    3:2=> 1 *empty*   *empty*   *empty*   *empty*   *empty*
                *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
       4-7     *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
                *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
       8-11    *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
                *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
      12-15    *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
                *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
      16-19    *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
                *empty*   *empty*   *empty*   *empty*   *empty*   *empty*
```

Table below describes the significant fields shown in the display.

Field	Description
card	The slot/subslot information of the card.

Field	Description
cnnrs	The connector index range of connectors in a connector group. The values for the Cisco uBR-MC3GX60V, Cisco UBR-MC20X20V, and the Cisco uBR10-MC5X20U line cards are 0-19.
md:us=>cnnr	The MAC domain upstream channel to connector mapping information of a physical upstream channel. The entry position corresponding to a physical upstream channel index in a connector group. For uBR-MC3GX60V line card, there are 12 physical upstream channels in each connector group. For the UBR-MC20X20V and uBR10-MC5X20U line cards, there are 2 channels in each group. In the example, C6/1/3:U2 is mapped to connector 1 in the running config by the user using connector command. Internally, CMTS software maps C6/1/3:U2 to physical upstream channel 0 (1st entry) in the 0-3 connector group.

Examples

The following is a sample output indicating the URM mapping table information of the cable line card in slot 9/0 of the cBR series router:

```
Router# show cable urm 9/0
===
Card 9/0
===

===
URM Mapping Table
===

UPSTREAM-CHAN MD-US       CARD- CARD- CHIP CHIP- CHIP-
                          CNNR  RCVR       CNNR  RCVR
UC9/0/0:U0    Ca9/0/0/U0  0     12    1    0     0
UC9/0/0:U1    Ca9/0/0/U1  0     13    1    0     1
UC9/0/0:U2    Ca9/0/0/U2  0     14    1    0     2
UC9/0/0:U3    Ca9/0/0/U3  0     15    1    0     3
UC9/0/0:U4    Ca9/0/0/U4  0     16    1    0     4
UC9/0/0:U5    Ca9/0/0/U5  0     17    1    0     5
UC9/0/1:U0    Ca9/0/1/U0  1     18    1    1     6
UC9/0/1:U1    Ca9/0/1/U1  1     19    1    1     7
UC9/0/1:U2    Ca9/0/1/U2  1     20    1    1     8
UC9/0/1:U3    Ca9/0/1/U3  1     21    1    1     9
UC9/0/1:U4    Ca9/0/1/U4  1     22    1    1     10
UC9/0/1:U5    Ca9/0/1/U5  1     23    1    1     11
UC9/0/2:U0    Ca9/0/2/U0  2     0     0    1     0
UC9/0/2:U1    Ca9/0/2/U1  2     1     0    1     1
UC9/0/2:U2    Ca9/0/2/U2  2     2     0    1     2
UC9/0/2:U3    Ca9/0/2/U3  2     3     0    1     3
UC9/0/2:U4    Ca9/0/2/U4  2     4     0    1     4
UC9/0/2:U5    Ca9/0/2/U5  2     5     0    1     5
UC9/0/3:U0    Ca9/0/3/U0  3     6     0    0     6
UC9/0/3:U1    Ca9/0/3/U1  3     7     0    0     7
UC9/0/3:U2    Ca9/0/3/U2  3     8     0    0     8
UC9/0/3:U3    Ca9/0/3/U3  3     9     0    0     9
UC9/0/3:U4    Ca9/0/3/U4  3     10    0    0     10
UC9/0/3:U5    Ca9/0/3/U5  3     11    0    0     11
UC9/0/4:U0    Ca9/0/4/U0  4     36    3    0     0
UC9/0/4:U1    Ca9/0/4/U1  4     37    3    0     1
UC9/0/4:U2    Ca9/0/4/U2  4     38    3    0     2
UC9/0/4:U3    Ca9/0/4/U3  4     39    3    0     3
UC9/0/4:U4    Ca9/0/4/U4  4     40    3    0     4
UC9/0/4:U5    Ca9/0/4/U5  4     41    3    0     5
```

```
UC9/0/5:U0    Ca9/0/5/U0  5     42    3     1     6
UC9/0/5:U1    Ca9/0/5/U1  5     43    3     1     7
UC9/0/5:U2    Ca9/0/5/U2  5     44    3     1     8
UC9/0/5:U3    Ca9/0/5/U3  5     45    3     1     9
UC9/0/5:U4    Ca9/0/5/U4  5     46    3     1     10
UC9/0/5:U5    Ca9/0/5/U5  5     47    3     1     11
UC9/0/6:U0    Ca9/0/6/U0  6     24    2     1     0
UC9/0/6:U1    Ca9/0/6/U1  6     25    2     1     1
UC9/0/6:U2    Ca9/0/6/U2  6     26    2     1     2
UC9/0/6:U3    Ca9/0/6/U3  6     27    2     1     3
UC9/0/6:U4    Ca9/0/6/U4  6     28    2     1     4
UC9/0/6:U5    Ca9/0/6/U5  6     29    2     1     5
UC9/0/7:U0    Ca9/0/7/U0  7     30    2     0     6
UC9/0/7:U1    Ca9/0/7/U1  7     31    2     0     7
UC9/0/7:U2    Ca9/0/7/U2  7     32    2     0     8
UC9/0/7:U3    Ca9/0/7/U3  7     33    2     0     9
UC9/0/7:U4    Ca9/0/7/U4  7     34    2     0     10
UC9/0/7:U5    Ca9/0/7/U5  7     35    2     0     11
UC9/0/8:U0    Ca9/0/8/U0  8     60    5     0     0
UC9/0/8:U1    Ca9/0/8/U1  8     61    5     0     1
UC9/0/8:U2    Ca9/0/8/U2  8     62    5     0     2
UC9/0/8:U3    Ca9/0/8/U3  8     63    5     0     3
UC9/0/8:U4    Ca9/0/8/U4  8     64    5     0     4
UC9/0/8:U5    Ca9/0/8/U5  8     65    5     0     5
UC9/0/9:U0    Ca9/0/9/U0  9     66    5     1     6
UC9/0/9:U1    Ca9/0/9/U1  9     67    5     1     7
UC9/0/9:U2    Ca9/0/9/U2  9     68    5     1     8
UC9/0/9:U3    Ca9/0/9/U3  9     69    5     1     9
UC9/0/9:U4    Ca9/0/9/U4  9     70    5     1     10
UC9/0/9:U5    Ca9/0/9/U5  9     71    5     1     11
UC9/0/10:U0   Ca9/0/10/U0 10    48    4     1     0
UC9/0/10:U1   Ca9/0/10/U1 10    49    4     1     1
UC9/0/10:U2   Ca9/0/10/U2 10    50    4     1     2
UC9/0/10:U3   Ca9/0/10/U3 10    51    4     1     3
UC9/0/10:U4   Ca9/0/10/U4 10    52    4     1     4
UC9/0/10:U5   Ca9/0/10/U5 10    53    4     1     5
UC9/0/11:U0   Ca9/0/11/U0 11    54    4     0     6
UC9/0/11:U1   Ca9/0/11/U1 11    55    4     0     7
UC9/0/11:U2   Ca9/0/11/U2 11    56    4     0     8
UC9/0/11:U3   Ca9/0/11/U3 11    57    4     0     9
UC9/0/11:U4   Ca9/0/11/U4 11    58    4     0     10
UC9/0/11:U5   Ca9/0/11/U5 11    59    4     0     11
UC9/0/12:U0   Ca9/0/12/U0 12    84    7     0     0
UC9/0/12:U1   Ca9/0/12/U1 12    85    7     0     1
UC9/0/12:U2   Ca9/0/12/U2 12    86    7     0     2
UC9/0/12:U3   Ca9/0/12/U3 12    87    7     0     3
UC9/0/12:U4   Ca9/0/12/U4 12    88    7     0     4
UC9/0/12:U5   Ca9/0/12/U5 12    89    7     0     5
UC9/0/13:U0   Ca9/0/13/U0 13    90    7     1     6
UC9/0/13:U1   Ca9/0/13/U1 13    91    7     1     7
UC9/0/13:U2   Ca9/0/13/U2 13    92    7     1     8
UC9/0/13:U3   Ca9/0/13/U3 13    93    7     1     9
UC9/0/13:U4   Ca9/0/13/U4 13    94    7     1     10
UC9/0/13:U5   Ca9/0/13/U5 13    95    7     1     11
UC9/0/14:U0   Ca9/0/14/U0 14    72    6     1     0
UC9/0/14:U1   Ca9/0/14/U1 14    73    6     1     1
UC9/0/14:U2   Ca9/0/14/U2 14    74    6     1     2
UC9/0/14:U3   Ca9/0/14/U3 14    75    6     1     3
UC9/0/14:U4   Ca9/0/14/U4 14    76    6     1     4
UC9/0/14:U5   Ca9/0/14/U5 14    77    6     1     5
UC9/0/15:U0   Ca9/0/15/U0 15    78    6     0     6
UC9/0/15:U1   Ca9/0/15/U1 15    79    6     0     7
UC9/0/15:U2   Ca9/0/15/U2 15    80    6     0     8
UC9/0/15:U3   Ca9/0/15/U3 15    81    6     0     9
```

```
UC9/0/15:U4   Ca9/0/15/U4 15    82    6    0     10
UC9/0/15:U5   Ca9/0/15/U5 15    83    6    0     11


===
URM Receiver Resource
===
SLOT/   DEV DEV- MD-US       MD-IDX CARD- CARD- DEV-
SUBSLOT     RCVR                    CNNR  RCVR  CNNR
9/0     D0  R0   Ca9/0/2/U0  0x152  2     0     1
9/0     D0  R1   Ca9/0/2/U1  0x152  2     1     1
9/0     D0  R2   Ca9/0/2/U2  0x152  2     2     1
9/0     D0  R3   Ca9/0/2/U3  0x152  2     3     1
9/0     D0  R4   Ca9/0/2/U4  0x152  2     4     1
9/0     D0  R5   Ca9/0/2/U5  0x152  2     5     1
9/0     D0  R6   Ca9/0/3/U0  0x153  3     6     0
9/0     D0  R7   Ca9/0/3/U1  0x153  3     7     0
9/0     D0  R8   Ca9/0/3/U2  0x153  3     8     0
9/0     D0  R9   Ca9/0/3/U3  0x153  3     9     0
9/0     D0  R10  Ca9/0/3/U4  0x153  3     10    0
9/0     D0  R11  Ca9/0/3/U5  0x153  3     11    0
9/0     D1  R0   Ca9/0/0/U0  0x150  0     12    0
9/0     D1  R1   Ca9/0/0/U1  0x150  0     13    0
9/0     D1  R2   Ca9/0/0/U2  0x150  0     14    0
9/0     D1  R3   Ca9/0/0/U3  0x150  0     15    0
9/0     D1  R4   Ca9/0/0/U4  0x150  0     16    0
9/0     D1  R5   Ca9/0/0/U5  0x150  0     17    0
9/0     D1  R6   Ca9/0/1/U0  0x151  1     18    1
9/0     D1  R7   Ca9/0/1/U1  0x151  1     19    1
9/0     D1  R8   Ca9/0/1/U2  0x151  1     20    1
9/0     D1  R9   Ca9/0/1/U3  0x151  1     21    1
9/0     D1  R10  Ca9/0/1/U4  0x151  1     22    1
9/0     D1  R11  Ca9/0/1/U5  0x151  1     23    1
9/0     D2  R0   Ca9/0/6/U0  0x156  6     24    1
9/0     D2  R1   Ca9/0/6/U1  0x156  6     25    1
9/0     D2  R2   Ca9/0/6/U2  0x156  6     26    1
9/0     D2  R3   Ca9/0/6/U3  0x156  6     27    1
9/0     D2  R4   Ca9/0/6/U4  0x156  6     28    1
9/0     D2  R5   Ca9/0/6/U5  0x156  6     29    1
9/0     D2  R6   Ca9/0/7/U0  0x157  7     30    0
9/0     D2  R7   Ca9/0/7/U1  0x157  7     31    0
9/0     D2  R8   Ca9/0/7/U2  0x157  7     32    0
9/0     D2  R9   Ca9/0/7/U3  0x157  7     33    0
9/0     D2  R10  Ca9/0/7/U4  0x157  7     34    0
9/0     D2  R11  Ca9/0/7/U5  0x157  7     35    0
9/0     D3  R0   Ca9/0/4/U0  0x154  4     36    0
9/0     D3  R1   Ca9/0/4/U1  0x154  4     37    0
9/0     D3  R2   Ca9/0/4/U2  0x154  4     38    0
9/0     D3  R3   Ca9/0/4/U3  0x154  4     39    0
9/0     D3  R4   Ca9/0/4/U4  0x154  4     40    0
9/0     D3  R5   Ca9/0/4/U5  0x154  4     41    0
9/0     D3  R6   Ca9/0/5/U0  0x155  5     42    1
9/0     D3  R7   Ca9/0/5/U1  0x155  5     43    1
9/0     D3  R8   Ca9/0/5/U2  0x155  5     44    1
9/0     D3  R9   Ca9/0/5/U3  0x155  5     45    1
9/0     D3  R10  Ca9/0/5/U4  0x155  5     46    1
9/0     D3  R11  Ca9/0/5/U5  0x155  5     47    1
9/0     D4  R0   Ca9/0/10/U0 0x15A  10    48    1
9/0     D4  R1   Ca9/0/10/U1 0x15A  10    49    1
9/0     D4  R2   Ca9/0/10/U2 0x15A  10    50    1
9/0     D4  R3   Ca9/0/10/U3 0x15A  10    51    1
9/0     D4  R4   Ca9/0/10/U4 0x15A  10    52    1
9/0     D4  R5   Ca9/0/10/U5 0x15A  10    53    1
9/0     D4  R6   Ca9/0/11/U0 0x15B  11    54    0
```

```
9/0      D4  R7   Ca9/0/11/U1 0x15B  11    55    0
9/0      D4  R8   Ca9/0/11/U2 0x15B  11    56    0
9/0      D4  R9   Ca9/0/11/U3 0x15B  11    57    0
9/0      D4  R10  Ca9/0/11/U4 0x15B  11    58    0
9/0      D4  R11  Ca9/0/11/U5 0x15B  11    59    0
9/0      D5  R0   Ca9/0/8/U0  0x158  8     60    0
9/0      D5  R1   Ca9/0/8/U1  0x158  8     61    0
9/0      D5  R2   Ca9/0/8/U2  0x158  8     62    0
9/0      D5  R3   Ca9/0/8/U3  0x158  8     63    0
9/0      D5  R4   Ca9/0/8/U4  0x158  8     64    0
9/0      D5  R5   Ca9/0/8/U5  0x158  8     65    0
9/0      D5  R6   Ca9/0/9/U0  0x159  9     66    1
9/0      D5  R7   Ca9/0/9/U1  0x159  9     67    1
9/0      D5  R8   Ca9/0/9/U2  0x159  9     68    1
9/0      D5  R9   Ca9/0/9/U3  0x159  9     69    1
9/0      D5  R10  Ca9/0/9/U4  0x159  9     70    1
9/0      D5  R11  Ca9/0/9/U5  0x159  9     71    1
9/0      D6  R0   Ca9/0/14/U0 0x15E  14    72    1
9/0      D6  R1   Ca9/0/14/U1 0x15E  14    73    1
9/0      D6  R2   Ca9/0/14/U2 0x15E  14    74    1
9/0      D6  R3   Ca9/0/14/U3 0x15E  14    75    1
9/0      D6  R4   Ca9/0/14/U4 0x15E  14    76    1
9/0      D6  R5   Ca9/0/14/U5 0x15E  14    77    1
9/0      D6  R6   Ca9/0/15/U0 0x15F  15    78    0
9/0      D6  R7   Ca9/0/15/U1 0x15F  15    79    0
9/0      D6  R8   Ca9/0/15/U2 0x15F  15    80    0
9/0      D6  R9   Ca9/0/15/U3 0x15F  15    81    0
9/0      D6  R10  Ca9/0/15/U4 0x15F  15    82    0
9/0      D6  R11  Ca9/0/15/U5 0x15F  15    83    0
9/0      D7  R0   Ca9/0/12/U0 0x15C  12    84    0
9/0      D7  R1   Ca9/0/12/U1 0x15C  12    85    0
9/0      D7  R2   Ca9/0/12/U2 0x15C  12    86    0
9/0      D7  R3   Ca9/0/12/U3 0x15C  12    87    0
9/0      D7  R4   Ca9/0/12/U4 0x15C  12    88    0
9/0      D7  R5   Ca9/0/12/U5 0x15C  12    89    0
9/0      D7  R6   Ca9/0/13/U0 0x15D  13    90    1
9/0      D7  R7   Ca9/0/13/U1 0x15D  13    91    1
9/0      D7  R8   Ca9/0/13/U2 0x15D  13    92    1
9/0      D7  R9   Ca9/0/13/U3 0x15D  13    93    1
9/0      D7  R10  Ca9/0/13/U4 0x15D  13    94    1
9/0      D7  R11  Ca9/0/13/U5 0x15D  13    95    1
```

Table below describes the significant fields shown in the display.

Field	Description
UPSTREAM-CHAN	The upstream channel under upstream-cable controller.
MD-US	The upstream channel under mac domain interface.
CARD-CNNR	The card level connector number.
CARD-RCVR	The card level receiver number.
CHIP	The US PHY chip number.
CHIP-CNNR	The chip level connector number.
CHIP-RCVR	The chip level receiver number.
SLOT/SUBSLOT	The slot and subslot number for this card.

Field	Description
DEV	The US PHY device number.
DEV-RCVR	The US PHY device receiver.
MD-US	The upstream channel under MAC domain.
MD-IDX	The internal MAC domain index.
CARD-CNNR	The card level connector number.
CARD-RCVR	The card level receiver number.
DEV-CNNR	The device level connector number.

Related Commands

Command	Description
show running-config interface cable	Shows the MD:US connector mapping configured by users.

show cable us-sg

To display the upstream service groups configured on all cable interfaces of a Cisco CMTS router, use the **show cable us-sg** command in privileged EXEC mode.

show cable us-sg

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 in Cisco IOS Release 12.2(33)SCC.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers.

Examples

The following is a sample output of the **show cable us-sg** command.

```
Router# show cable us-sg

Cable MD 5/0/0
  US-SG-ID  : 1         US-Chan : U0,1,2,3,4,5
  Primary-DS: 1/0/0:0   US-SG-ID: 1
    MDD US-List   : U0,1,2,3,4,5
    MDD Ambiguity : U0,1,2,3,4,5
Cable MD 6/0/0
  US-SG-ID  : 1         US-Chan : U0,1,2,3
  Primary-DS: 1/0/0:4   US-SG-ID: 1
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
Cable MD 7/0/0
  US-SG-ID  : 1         US-Chan : U0,1,2,3
  Primary-DS: 7/0/0:0   US-SG-ID: 1
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
  Primary-DS: 7/0/0:1   US-SG-ID: 1
    MDD US-List   : U0,1,2,3
    MDD Ambiguity : U0,1,2,3
```

Table below shows the significant fields shown in the display:

Table 98: show interface cable service-flow Field Descriptions

Field	Description
US-SG-ID	Upstream service group ID.
US-Chan	Upstream channels on the cable interface line card.
Primary-DS	Primary downstream interafce.
MDD US-List	MAC management message: MDD TLV type 7 content, upstream active channel list.

Field	Description
MDD Ambiguity	MAC management message: MDD TLV type 8 content, upstream ambiguity resolution channel list.

Related Commands

Command	Description
show cable mac-domain upstream-service-group	Displays runtime statistics of the upstream service group on a cable interface line card.

show cable video announce-event-profile

To display the configuration of the GQI announce event profile and a list of LEDs that use the profile, use the **show cable video announce-event-profile** command in privileged EXEC mode.

show cable video announce-event-profile [**name** *name* | **id** *id*]

Syntax Description

name *name*	Displays the information for the GQI announce-event-profile of this name if it exists.
id *id*	Displays the information for the GQI announce-event-profile of this ID if it exists.

Command Default

None.

Command Modes

Privileged EXEC (#).

Command History

Release	Modification
Cisco IOS XE Everest 16.6.1	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following sample output shows the GQI announce event profile and the list of LEDs:

```
Router# show cable video announce-event-profile id 3
ID:3                        Name: profile-2
  ACK timeout: 240 seconds
  Number of Event Filters: 10
    2104 4400 4401 5200 5401 5404 5405 5406 5502 5602

  Number of Logical-edge-device: 2
    ID    Name
    ----------------------------------------------------------------
    2     led2
    3     led3
```

Related Commands

Command	Description
announce-event-profile	Configures the GQI announce event profile.
event-profile	Applies the GQI announce event profile to a specific LED.

show cable video encryption

To display the cable video encryption, use the **show cable video encryption** command in privileged EXEC mode.

Cisco cBR Series Converged Broadband Router
show cable video encryption

Syntax Description

—

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE 16.5.1	This command was introduced.

Usage Guidelines

Use this command to verify the active RPDs with the principal and auxilliary roles.

The following example shows the sample output for the **show cable videoencryption** command:

```
Router#show cable video encryption
```

show cable video encryption dvb

To display the digital video broadcasting encryption information, use the **show cable video encryption dvb** command in privileged EXEC mode.

show cable video encryption dvb {**ca-interface brief** | **ecmg** { **all** | **id** *id* | { **brief** | **connection** | **desc-rule** | **overrule** } | **name** *name* | { **brief** | **connection** | **desc-rule** | **overrule** } | **mode** | { **broadcast** | **tier-based** | **vod** } } **eis** { **all** | **id** *id* | **name** *name* } **summary** }
show cable video encryption dvb tier-based { **config** | **ecms** }

Syntax Description

ca-interface brief	Displays the CA interface details.
ecmg all	Displays the information of all the ECMG connections.
id *id*	Specifies the ECMG ID.
name *name*	Specifies the ECMG name.
brief	Displays the brief summary of ECMG.
connection	Displays the details of all the connections of this ECMG.
desc-rule	Displays the details of all the descriptor rules of this ECMG.
overrule	Displays the details of all the overrule settings of this ECMG.
mode {**broadcast** | **tier-based** | **vod**}	Displays the details of ECM application mode.
eis all	Displays the information of all the EIS connections.
id *id*	Specifies the EIS connection ID.
name *name*	Specifies the EIS connection name.
summary	Displays the information of scrambler general settings.
tier-based config	Displays the detail information of tier-based scrambling configuration.
tier-based ecms	Displays Entitlement Control Messages information and debug information for tier-based scrambling.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Everest 16.4.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Release	Modification
Cisco IOS XE Amsterdam 17.3.1x	This command was modified by changing the **show cable video encryption dvb tier-based** form of the command to have two options: **config** and **ecms**

Usage Guidelines

This command displays the digital video broadcasting encryption information.

Examples

The following sample outputs show the ECMG connection information:

```
Router# show cable video encryption dvb ecmg id 1 connection
------------------------------------------------------------------------------------------------------------
ECMG ECMG           ECMG     CA Sys CA Subsys PID    Lower Upper Streams/ Open Streams/
Auto Chan Slot ECMG        ECMG
ID   Name           Type     ID     ID        Source limit limit ECMG     ECMG          ID
             Connections Application
------------------------------------------------------------------------------------------------------------
1    polaris_ecmg01 standard 0x4748 0x0       sid    0     0     1        1
Enabled   RP   1           Tier-Based

ECMG Connections for ECMG ID = 1

-----------------------------------------------------------
Conn Conn     IP          Port    Channel  Conn    Open
-ID  Priority Address     Number  ID       Status  Streams
-----------------------------------------------------------
1    1        1.200.1.81  8888    1        Open    1

Router# show cable video encryption dvb ecmg id 7 connection
------------------------------------------------------------------------------------------------------------
ECMG ECMG           ECMG     CA Sys CA Subsys PID    Lower Upper Streams/ Open Streams/
Auto Chan Slot ECMG        ECMG
ID   Name           Type     ID     ID        Source limit limit ECMG     ECMG          ID
             Connections Application
------------------------------------------------------------------------------------------------------------
7    ecmg-7         standard 0x950  0x1234    sid    0     0     1680     1680
Enabled   7    1           VOD

ECMG Connections for ECMG ID = 1

-----------------------------------------------------------
Conn Conn     IP          Port    Channel  Conn    Open
-ID  Priority Address     Number  ID       Status  Streams
-----------------------------------------------------------
1    1        1.200.1.81  8888    1        Open    1
```

The following sample output shows the CA interface details:

```
Router# show cable video encryption dvb ca-interface brief
CA Interface configuration

------------------------------
Linecard    IP Address    VRF
------------------------------
7           1.24.10.8     N/A

ECMG Route configuration

-----------------------------------------------------
IP Address    NetMast         Interface
```

```
--------------------------------------------------
1.200.1.0     255.255.255.0   TenGigabitEthernet4/1/2
```

The following sample output shows the EIS connection information:

```
Router# show cable video encryption dvb eis id 1
-------------------------------------------------------------------------------------
EIS  EIS   Peer         Management  TCP   CP        CP        Overwrite  Connection
ID   Name  IP           IP          Port  Overrule  Duration  SCG        Status
-------------------------------------------------------------------------------------
1    eis1  1.200.1.172  1.24.2.10   6000  DISABLED  0         DISABLED   Connected
```

The following is sample output from the **show cable video encryption dvb tier-based ecms** command.

```
Router#show cable video encryption dvb tier-based ecms
Aggregator CP:                          12
Number of Ca system:                    1
CAS Logical id:                         1 2
No Of <CWs,ECM> Cached :                3 9(1),10(1),11(1),
Current Pending Request/Response:       NULL
No Of Prefetch CW :                     1
No Of EcmGrps :                         1
Total SCG(s) :                          1
CP Extention :                          Not in CP Extention

Slot      scg_id    cas_id  ReqCP
8         67108872  1       0-- /11(11)[3{(9,9),(10,10),(11,11),} ]
```

Related Commands

Command	Description
dvb	Enters the DVB scrambling configuration mode.

show cable video encryption linecard

To display the encryption configuration information of the line card, use the **show cable video encryption linecard** command in privileged EXEC mode.

show cable video encryption linecard {*slot*/*bay* | **all**}

Syntax Description

slot/*bay*	Displays the encryption configuration information of the line card with this slot and bay number. • *slot*—The line card slot number. The valid range is from 0 to 9. • *bay*—The line card bay number. The valid value is 0.
all	Displays encryption support for all line cards.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.
Cisco IOS XE Everest 16.5.1	Support for powerKEY and PME encryption on the Cisco Remote-PHY device (RPD).

Usage Guidelines

This command displays the encryption configuration information of the line card.

Note The Cisco Remote-PHY device (RPD) supports powerKEY and PME encryption.

Examples

The following sample output shows the encryption configuration information:

```
Router# show cable video encryption linecard 7/0
Line card: 7/0
CA System Scrambler
====================================
PME dvs-042
```

Related Commands

Command	Description
linecard	Defines the encryption type for a line card.
encrypt	Encrypts the virtual carrier group.
rf-channel	Specifies the virtual RF channels in a virtual carrier group.
virtual-edge-input-ip	Specifies and configures a cable multicast QoS group.

Command	Description
show cable video encryption pme	Displays the privacy mode encryption information.
show cable video session logical-edge-device	Displays the session information for the logical edge device.

show cable video encryption pme

To display the Privacy Mode Encryption (PME) information, use the **show cable video encryption pme** command in privileged EXEC mode.

show cable video encryption pme {**linecard** *slot* / *bay* **session** {*stream-id* | **all** | **summary**} | **status** | **version**}

Syntax Description

linecard *slot* / *bay*	Displays the privacy mode encryption line card information with this slot and bay number. • *slot*—The line card slot number. The valid range is from 0 to 9. • *bay*—The line card bay number. The valid value is 0.
session	Displays the session information. • *stream-id* —Displays the privacy mode encryption session information with this stream ID. The valid range is from 1 to 65535. • **all** —Displays the statistics for all the privacy mode encryption sessions. • **summary** —Displays the summary for all the privacy mode encryption sessions.
status	Displays the privacy mode encryption status.
version	Displays the version of the privacy mode encryption module.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.
Cisco IOS XE Everest 16.5.1	The Cisco Remote-PHY device (RPD) supports powerKEY and PME encryption.

Usage Guidelines

This command displays the PME information.

Note

Examples

The following sample output shows the privacy mode encryption line card information:

```
Router# show cable video encryption pme linecard 7/0 session 32
Stream 32, session 7681 is active
Stream number = 32 Session number = 7681
ECM requests = 8 ECM replies = 2
```

```
ECM ID = 32 CryptoPeriod num = 2
CP duration = 0 Nominal duration = 40000
CA transfer mode = 1 Stream status = No
Error Blob details

Router# show cable video encryption pme linecard 7/0 session summary
Currently active streams:
Active = 4
ECM req/resp mismatch = 4
ECM req, all streams = 32
ECM resp, all streams = 8
Since last reset:
Sessions created = 4
Sessions deleted = 0
ECMs received =2
ECMs discarded = 0
```

The following sample output shows the privacy mode encryption status information:

```
Router# show cable video encryption pme status
PME Connection Status:
VODS-ID : 111
CEM IP : 1.200.1.163
CEM Port : 5000
Local Mgmt IP : 1.24.2.6
Local Port : 50394
CEM Connection State : Connected
Count of ECMs recd : 2
```

Related Commands

Command	Description
linecard	Defines the encryption type for a line card.
encrypt	Encrypts the virtual carrier group.
pme cem	Configures the parameters for the Cisco Edge QAM Manager server.
pme mgmt-ip	Configures the privacy mode encryption management IP to establish CEM connection.
pme vodsid	Configures the VODSID of Cisco Edge QAM Manager server.
show cable video encryption linecard	Displays the encryption configuration information of the line card.

show cable video gqi connections

To display the GQI protocol connection information of the logical edge device with the Session Resource Manager, use the **show cable video gqi connections** command in privileged EXEC mode.

show cable video gqi connections

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the GQI connection information of the logical edge device with the Session Resource Manager.

Examples

The following sample output shows the GQI connection information of the logical edge device with the Session Resource Manager:

```
Router# show cable video gqi connections
LED  Management   Server     Connection    Version  Event    Reset      Encryption
ID   IP           IP         Status                 Pending  Indication Discovery
-------------------------------------------------------------------------------
1    1.23.2.10    1.200.3.75 Not Connected 0        0        Not Sent   Not Sent
```

Related Commands

Command	Description
logical-edge-device	Defines a logical edge device.
protocol	Specifies the protocol used in the logical edge device.
mgmt-ip	Defines the local management IP address for a logical edge device.
mac-address	Defines the MAC address for a logical edge device.
vcg	Specifies the virtual carrier group assigned to the logical edge device.
virtual-edge-input-ip	Defines a virtual edge input.
show cable video logical-edge-device	Displays the logical edge device information.
show diag all eeprom detail | include MAC	Displays the chassis MAC address information.

show cable video jitter

To display the session jitter information, use the **show cable video jitter** command in privileged EXEC mode.

show cable video jitter

Command Default

None.

Command Modes

Privileged EXEC (#)

Release	Modification
IOS-XE 16.4.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following sample outputs show the session jitter information:

```
Router# show cable video jitter
Session jitter:
  VOD: 200
  SDV: 200
  broadcast: 200
  gaming: 5
  table-based: 100
```

Related Commands

Command	Description
jitter	Sets session jitter.

show cable video integrated-cable

To display the integrated cable information, use the **show cable video integrated-cable** command in privileged EXEC mode.

show cable video integrated-cable *slot/bay/port* [**rf-channel** *rf-channel*]

Syntax Description

slot/bay/port	• *slot*—Specifies the slot number. The valid range is from 0 to 9. • *bay*—Specifies the bay number. The valid value is 0. • *port*—Specifies the port number. The valid range is from 0 to 7.
rf-channel *channel number*	Displays the RF channel information with this channel number. The valid range is from 0 to 157.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the integrated cable information.

Examples

The following sample output shows the virtual carrier group information:

```
Router# show cable video integrated-cable 8/0/0
Integrated TSID ONID Output Physical    Admin Operational Virtual-Carrier-Group
Service-Distribution-Group Logical-Edge-Device Encryption Total
Cable                Port   QAM ID      State State       Name                    Name
                Name                Capable    Sessions
-------------------------------------------------------------------------------------------------
8/0/0:20    1   0    1      unavailable OFF   DOWN        pme_tbv                 pme_tbv
                 pme_tbv             pme        2
8/0/0:21    2   0    2      unavailable OFF   DOWN        pme_tbv                 pme_tbv
                 pme_tbv             pme        2
8/0/0:22    3   0    3      unavailable OFF   DOWN        pme_tbv                 pme_tbv
                 pme_tbv             pme        2
8/0/0:23    4   0    4      unavailable OFF   DOWN        pme_tbv                 pme_tbv
                 pme_tbv             pme        0
8/0/0:24    5   0    5      unavailable OFF   DOWN        pme_tbv                 pme_tbv
                 pme_tbv             pme        0
```

Related Commands

Command	Description
vcg	Specifies the virtual carrier group assigned to the logical edge device
logical-edge-device	Define a logical edge device.

Command	Description
protocol	Specifies the protocol used in the logical edge device.
virtual-edge-input-ip	Configures a virtual edge input.
show cable video logical-edge-device	Displays the logical edge device information.

show cable video logical-edge-device

To display the logical edge device information, use the **show cable video logical-edge-device** command in privileged EXEC mode.

show cable video logical-edge-device {**all** | **id** *id* [{**reserve-pid-range**}] | **name** *name* [{**reserve-pid-range**}]}

Syntax Description

all	Displays all logical edge devices.
id *id*	Displays the information of the logical edge device with this ID.
name *name*	Displays the information of the logical edge device with this name.
reserve-pid-range	Displays the reserved PID range.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the logical edge device information.

Examples

The following sample output shows the logical edge device information:

```
Router# show cable video logical-edge-device id 1
Logical Edge Device: led
Id: 1
Protocol: GQI
Service State: Active
Discovery State: Disable
Management IP: 1.33.2.10
MAC Address: c414.3c17.6000
Number of Servers: 2
  Server 1: 1.200.1.193
  Server 2: 1.200.1.183
Reset Interval: 5
Keepalive Interval: 5
Retry Count:3
Number of Virtual Carrier Groups: 2
Number of Share Virtual Edge Input: 1
Number of Physical Qams: 94
Number of Sessions: 240
No Reserve PID Range

Virtual Edge Input:
Input Port    VEI          Slot/Bay Bundle Gatewayy
ID            IP                    ID     IP
-------------------------------------------------
1             174.102.1.1  7/0      -      - --
```

```
Virtual Carrier Group:
ID Name  Total Total       Service-Distribution-Group Service-Distribution-Groupup
         VEI   RF-channel  Name                       ID
-------------------------------------------------------------------------------

1  vcg   0     28          sdg                        1
2  vcg-2 0     19          sdg                        1

Integrated Physical Admin Operational TSID ONID Output VCG SDG Encryption
Cable      QAM ID   State State                 Port   ID  ID  Capable
-------------------------------------------------------------------------

7/0/0:1    1        ON    UP          29   1000 30     2   1   powerkey
7/0/0:2    2        ON    UP          30   1000 30     2   1   powerkey
7/0/0:3    3        ON    UP          31   1000 30     2   1   powerkey
7/0/0:4    4        ON    UP          32   1000 30     2   1   powerkey
7/0/0:5    5        ON    UP          33   1000 30     2   1   powerkey
7/0/0:6    6        ON    UP          34   1000 30     2   1   powerkey
7/0/0:7    7        ON    UP          35   1000 30     2   1   powerkey
7/0/0:8    8        ON    UP          36   1000 30     2   1   powerkey
7/0/0:9    9        ON    UP          37   1000 30     2   1   powerkey
```

Related Commands

Command	Description
virtual-edge-input-ip	Specifies and configures a cable multicast QoS group.
encrypt	Encrypts the virtual carrier group.
service-type	Specifies the service type of the virtual carrier group.
rf-channel	Specifies the virtual RF channels in a virtual carrier group.
virtual-carrier-group	Defines a virtual carrier group.

show cable video low-latency linecard

To display the linecard low latency information, use the **show cable video low-latency linecard** command in privileged EXEC mode.

show cable video low-latency linecard {*slot/bay* | **all**}

Syntax Description

slot/bay	Displays the low latency information for a specific linecard.
all	Displays the low latency information for all the linecards.

Command Default

None.

Command Modes

Privileged EXEC (#)

Release	Modification
IOS-XE 16.4.1	This command was introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following sample outputs show the linecard low latency information:

```
Router# show cable video low-latency linecard 1/0
Line Card: 1
   Virtual-Carrier-Group: vcg1
   Service-Distribution-Group: sdg1
   Logical-Edge-Device: led1
   Number of RF-Channels: 8
   RF-Channel Range   TSID Range   Output Port Number Range
   ------------------------------------------------------
   0-7                100-107             100-107
```

Related Commands

Command	Description
low-latency	Sets low latency VCG.

show cable video output-port

To display the output port information, use the **show cable video output-port** command in privileged EXEC mode.

show cable video output-port *port*

Syntax Description

port	Displays the output port information with this port number.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the output port information.

Examples

The following sample output shows the output port information:

```
Router# show cable video output-port 10

Integrated TSID  ONID  Output Physical  Admin  Operational  Virtual-Carrier-Group
Cable                  Port   QAM ID    State  State        Name
-------------------------------------------------------------------------------
7/0/0:1    18    1000   10      1         ON     UP          vcg-rep
7/0/0:2    19    1000   10      2         ON     UP          vcg-rep
7/0/0:3    20    1000   10      3         ON     UP          vcg-rep

Service-Distribution-Group  Logical-Edge-Device  Encryption Total
Name                        Name                 Capable    Sessions
-------------------------------------------------------------------
vod                         led-vei              powerkey    2
vod                         led-vei              powerkey    2
vod                         led-vei              powerkey    2
```

Related Commands

Command	Description
virtual-edge-input-ip	Specifies and configures a cable multicast QoS group.
encrypt	Encrypts the virtual carrier group.
service-type	Specifies the service type of the virtual carrier group.
rf-channel	Specifies the virtual RF channels in a virtual carrier group.
virtual-carrier-group	Defines a virtual carrier group.

show cable video scg

To display the scrambling control group information, use the **show cable video scg** command in privileged EXEC mode.

show cable video scg{**all** | **id** *id* | **logical-edge-device** {**id** *id* | **name** *name*} | **summary** | **tsid** *number* **onid** *number*}

Syntax Description

all	Displays all the scrambling control groups.
id *id*	Displays the information of the scrambling control group with this ID. The valid range is from 0 to 1008730111.
logical-edge-device	Displays the information of the scrambling control groups on the logical edge device. • **id** *id* —Displays the information of the scrambling control groups on the logical edge device with this ID. The valid range is from 0 to 32. • **name** *name* —Displays the information of the scrambling control groups on the logical edge device with this name.
summary	Displays the number of scrambling control groups and encrypted carriers.
tsid *number* **onid** *number*	Displays the list of scrambling control groups on a transport stream identifier. *tsid*—The valid range is from 0 to 65535. *onid*—The valid range is from 0 to 65535.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the scrambling control group information.

Examples

The following sample output shows the scrambling control group information:

```
Router# show cable video scg logical-edge-device id 1
LED 1 has 8137 SCGs on 128 carriers
SCG ID     Session ID   LED   TSID   ONID
-----------------------------------------
68157683   1048819      1     1      100
68157684   1048820      1     1      100

Router# show cable video scg id 68157684
SCGid: 68157684
```

```
Status: SUCCESS
TSID: 1
ONID: 100
Nominal CP: 550

Router# show cable video scg logical-edge-device id 68157684 | inc session 1048820
SCG ID     Session ID   LED   TSID   ONID
-----------------------------------------
68157684   1048820      1     1      100
```

Related Commands

Command	Description
virtual-edge-input-ip	Specifies and configures a cable multicast QoS group.
service-distribution-group	Defines a service distribution group.
onid	Override the default ONID.
rf-port integrated-cable	Specifies the RF ports in a service distribution group.
show cable video logical-edge-device	Displays the logical edge device information.

show cable video service-distribution-group

To verify the service distribution group (SDG) configuration, use the **show cable video service-distribution-group** command in the privileged EXEC (#) mode.

show cable video service-distribution-group [**all** | **id** *id*]

Syntax Description

all	Displays the information for all SDGs.
id *id*	Displays the information for the SDG with this ID.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command is used to verify the SDG configuration.

The following sample output shows the SDG information:

```
router#show cable video service-distribution-group all
Number of Service Distribution Groups: 1
ID Name Virtual-Carrier-Group Logical-Edge-Device RF-Port  ONID   PSI Interval
                 Name                 Name
-------------------------------------------------------------------------------------------------------
1  vod          vod                  LEDnew        7/0/0     0       100
1  vod          vod                  LEDnew        7/0/1     0       100
1  vod          vod                  LEDnew        7/0/2     0       100
1  vod          vod                  LEDnew        7/0/3     0       100
1  vod          vod                  LEDnew        7/0/4     0       100
1  vod          vod                  LEDnew        7/0/5     0       100
1  vod          vod                  LEDnew        7/0/6     0       100
1  vod          vod                  LEDnew        7/0/7     0       100
```

Related Commands

Command	Description
service-distribution-group	Defines a service distribution group.
rf-port integrated-cable	Defines the physical slot/bay/port to be used in a video service.
psi-interval	Override the default PSI value.
onid	Override the default ONID.

show cable video session all

To display the video session information for the entire chassis, use the **show cable video session all** command in privileged EXEC mode.

show cable video session all

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0SP	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 16.8.1	The input program number and the remux information was added to the command output.
Cisco IOS XE Gibraltar 16.10.1c	Added two columns—Encrypt Type and Encrypt Status in the command output. The Encrypt Type column displays the sessions that are encrypted at source as Pre-encrypted and Encrypt Status displays Encrypted.
Cisco IOS XE Amsterdam 17.3.1x	Added the option **dvb-ecm** to the command.
Cisco IOS XE Bengaluru 17.6.x	Added the Virtual Carrier Group ID column in the command output. The VCG ID helps in better debugging.

The following is an example of how to view the session information:

```
Router#show cable video session all
LED Session    Output Streaming   Sess Session Source                 UDP   VCG   Input
 Output  Input      Output  Input    Output   Encrypt  Encrypt    Low PMV   Session
Id  Id         Port   Type        Type Ucast Dest IP/Mcast IP (S,G)    Port  ID    Program
 Program State      State   Bitrate  Bitrate  Type     Status     Lat NUM   Name
-------------------------------------------------------------------------------------------------------------
1   269484032  2      Remap       SSM  175.6.1.12,232.2.1.1           0      1     -
  2      ACTIVE-PSI  ON     1132005  1104565  CLEAR      -         N   -
0x0000000000000080002
1   269484033  3      Remap       SSM  175.6.1.12,232.2.1.1           0      1     -
  3      ACTIVE-PSI  ON     1132005  1058619  CLEAR      -         N   -
0x0000000000000080003
1   269484034  4      Remap       SSM  175.6.1.12,232.2.1.1           0      1     -
  4      ACTIVE-PSI  ON     1132005  1010691  CLEAR      -         N   -
0x0000000000000080004
1   269484035  5      Remap       SSM  175.6.1.12,232.2.1.1           0      1     -
  5      ACTIVE-PSI  ON     1132005  940739   CLEAR      -         N   -
0x0000000000000080005
6   274726912  24     Remap       SSM  175.10.1.2,235.0.1.1           0      6     -
```

```
  2       ACTIVE-PSI  ON     29539426 1217132  CLEAR      -          N   -     mcast.6.182

Total Sessions= 5
Router#
```

show cable video session logical-edge-device

To display the session information for a specific logical edge device, use the **show cable video session logical-edge-device** command in privileged EXEC mode.

show cable video session logical-edge-device { **id** *number* | **name** *led-name* } [{ { **session-id** *id* | **session-name** *name* } | { **dvb-ecm** } }] [{ { **downstream-cable** | **integrated-cable** | **downstream-video** } *slot* | **linecard** *slot/bay* | **summary** | **debug** }]

Syntax Description

number	Specifies the logical edge device identifier.
session-id *id*	Specifies the session identifier for the logical edge device.
session-name *name*	Specifies the session identifier for the logical edge device.
summary	Specifies remux processing type.
debug	Displays debug information.
dvb-ecm	Displays the current Entitlement Control Messages packet identifiers for the specified session.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0SP	This command was introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 16.8.1	The input program number and the remux information was added to the command output.
Cisco IOS XE Gibraltar 16.10.1c	Added two columns—Encrypt Type and Encrypt Status in the command output. The Encrypt Type column displays the sessions that are encrypted at source as Pre-encrypted and Encrypt Status displays Encrypted.
Cisco IOS XE Amsterdam 17.3.1x	Added the option **dvb-ecm** to the command.
Cisco IOS XE Bengaluru 17.6.x	Added the Virtual Carrier Group ID column in the command output. The VCG ID helps in better debugging.

The following is an example of how to verify or view the logical edge device session information:

```
Router#show cable video session logical-edge-device id 2
Total Sessions = 3

Session    Output Frequency  Streaming   Sess Session Source                  UDP   VCG
Input   Output  Input      Output  Input    Output   Encrypt        Encrypt        Low PMV
   Session
Id         Port   Hz         Type        Type Ucast Dest IP/Mcast IP (S,G)    Port  ID
Program Program State      State   Bitrate  Bitrate  Type           Status         Lat NUM
   Name
-------------------------------------------------------------------------------------------------------------
270532608  68     519000000  Data-Piping SSM  2.11.101.1,232.101.10.10        0     1
-       -       ACTIVE     ON      117094   117108   CLEAR          -              N   -
   data.2.68
270532609  68     519000000  Remux       SSM  176.51.1.2,238.11.1.106         0     1
1       4       ACTIVE-PSI ON      2473571  2474970  Pre-encrypted  Encrypted      N   -
   remux.2.68
270532610  68     519000000  Remux       SSM  175.10.6.2,236.0.1.2            0     1
1       2       ACTIVE-PSI ON      35876155 691111   CLEAR          -              N   -
   remuxc.2.68



video-LWR-S-A1#$show cable video session logical-edge-device id 2 session-id 270532608
Session Name        : mpts1.2.199
Session Id          : 270532608
Creation Time       : Fri Oct 12 22:07:03 2018

Output Port         : 41
TSID                : 41
Override TSID       : not specified
ONID                : 2
Number of Sources   : 1
  Source IP         : 176.51.1.2
  Group IP          : 238.11.1.106
  UDP Port          : 0
Config Bitrate      : not specified
Jitter              : 100 ms
Processing Type     : Passthru
Stream Rate         : CBR
Program Number      : -
Idle Timeout        : 2000 msec
Init Timeout        : 2000 msec
Off Timeout         : 60 sec
Encryption Type     : Pre-encrypted
Encryption Status   : Encrypted

Input Session Stats:
====================
  State: ACTIVE-PSI, Uptime: 0 days 02:50:59
  IP Packets: In 2569416, RTP 0, Drop 0
  TP Packets: In 16910560, PCR 262629, PSI 292104, Null 1075352
              Unreference 102351, Discontinuity 0
  Errors: Sync loss 0, CC error 0, PCR Jump 4,
          Underflow 2, Overflow 0, Block 0
  Bitrate: Measured 2463450 bps, PCR 2637379 bps

Output Session Stats:
=====================
  State: ON, Uptime: 0 days 02:50:59
  TP Packets: In 17056642, PCR 262628, PSI 292102,
              Drop 0, Forward 16764540, Insert 0
```

```
  Errors: Info Overrun 0, Info Error 0, Block 0, Overdue 0,
          Invalid Rate 0, Underflow 0, Overflow 0
  Bitrate: Measured 2439152 bps

PAT Info:
=========
  Version 18, TSID 1, len 16, section 0/0
  Program 1: PMT 16

Input PMT Info:
===============
  Program 1, Version 1, PCR 17, Info len 0
  PID 17: Type 2, Info len 9, (CA SYS-ID 3584, PID 1, Private data: 010101)
  PID 18: Type 4, Info len 15, (lang eng), (CA SYS-ID 3584, PID 1, Private data: 010102)
  PID 19: Type 4, Info len 15, (lang spa), (CA SYS-ID 3584, PID 1, Private data: 010103)
  PID 20: Type 4, Info len 15, (lang fre), (CA SYS-ID 3584, PID 1, Private data: 010104)

Output PMT Info:
================
  Program 1, Version 1, PCR 17, Info len 0
  PID 17: Type 2, Info len 9, (CA SYS-ID 3584, PID 1, Private data: 010101)
  PID 18: Type 4, Info len 15, (lang eng), (CA SYS-ID 3584, PID 1, Private data: 010102)
  PID 19: Type 4, Info len 15, (lang spa), (CA SYS-ID 3584, PID 1, Private data: 010103)
  PID 20: Type 4, Info len 15, (lang fre), (CA SYS-ID 3584, PID 1, Private data: 010104)

Router#show cable video session logical-edge-device id 2 session-id 2097152
Session Name : SESS_PME2.1.7.338
Session Id: : 2097152
Creation Time: : Fri Jun 24 16:30:45 2016
Output Port : 142
TSID : 142
ONID : 0
Number of Sources : 1
Source IP : 175.2.5.6
Group IP : 232.5.6.7
UDP Port : 0
Config Bitrate : not specified
Jitter : 100 ms
Processing Type : Remap
Stream Rate : VBR
Program Number : 1
Idle Timeout : 2000 msec
Init Timeout : 2000 msec
Off Timeout : 60 sec
Encryption Type : CLEAR
Encryption Status : -
Input Session Stats:
====================
State: OFF, Uptime: 0 days 00:26:35
IP Packets: In 0, RTP 0, Drop 0
TP Packets: In 0, PCR 0, PSI 0, Null 0
Unreference 0, Discontinuity 0
Errors: Sync loss 0, CC error 0, PCR Jump 0,
Underflow 0, Overflow 0, Block 0
Bitrate: Measured 0 bps, PCR 0 bps
Output Session Stats:
=====================
State: ON, Uptime: 0 days 00:26:35
TP Packets: In 0, PCR 0, PSI 0,
Drop 0, Forward 0, Insert 0
Errors: Info Overrun 0, Info Error 0, Block 0, Overdue 0,
Invalid Rate 0, Underflow 0, Overflow 0
Bitrate: Measured 0 bps
```

The following is an example of how to see the remux sessions along with input and output program numbers:

```
Router# show cable video session log id 1
Total Sessions = 4
Session    Output    Frequency    Streaming   Session Session Source                  UDP
  VCG  Input    Output   Input       Output  Input    Output   Encrypt  Encrypt  LOW  PMV
 SESSION
Id         Port      Hz           Type        Type    Ucast Dest IP/Mcast IP (S,G)    Port
  ID   Program  Program  State       State   Bitrate  Bitrate  Type     Status   LAT  NUM
 NAME
-------------------------------------------------------------------------------------------------------------
2097152    142       567000000    Remux       SSM     175.2.5.6,232.5.6.7             0
  1    1        100      ACTIVE-PSI  ON      78099327 17115419  CLEAR   -        N    -
 SESS_PME2.1.7.338
2097153    163       567000000    Remux       SSM     175.6.1.13,232.2.1.6            0
  1    2        200      ACTIVE-PSI  ON      78099327 17115419  CLEAR   -        N    -
 SESS_PME3.1.7.497
2097154    184       567000000    Remux       SSM     175.2.6.7,232.5.6.15            0
  1    3        300      ACTIVE-PSI  ON      78099327 17115419  CLEAR   -        N    -
 SESS_PME4.1.7.656
2097155    230       567000000    Remux       SSM     175.7.2.2,232.2.6.7             0
  1    4        400      ACTIVE-PSI  ON      78099327 17115419  CLEAR   -        N    -
 SESS_PME6.1.7.978
```

The following is an example of how to see the remux processing type:

```
Router# show cable video session log id 1 summary
Video Session Summary For Video

Active      : 6    Init      : 0      Idle       : 0
Off         : 6    Blocked   : 0      PSI-Ready  : 6
UDP         : 0    ASM       : 0      SSM        : 12
Remap       : 0    Data      : 0      Passthru   : 0
Remux       : 12   Pending   : 0      Encrypted  : 0
Low Latency : 0

Total Sessions: 12
Total Input Bitrate: 467067498 BPS
Total Output Bitrate: 99841084 BPS
```

The following is an example of how the debugging information is displayed:

```
Router# show cable video sess log id 1 debug
Total Sessions = 1472

Session  Output Streaming   Session Output  Input              PCR
      Output                                Invalid
Id       Port   Type        Type    Program Sync-Loss  CC Err  Jump  UnderFlow Overflow
Block  Info Ovrn Info Err  Block   Overdue   Rate     UnderFlow Overflow
-------------------------------------------------------------------------------------------------------------
1048576   1     Passthru    SSM     -       0          0       0     0         0        0
     0         0         0       0         0        0         0
1048577   1     Remap       SSM     1817    0          0       0     0         0        0
     0         0         0       0         0        0         0
1048578   1     Remap       SSM     1145    1          33      0     0         0        0
     0         0         0       0         0        0         0
1048579   1     Remap       SSM     1686    0          0       0     0         0        0
     0         0         0       0         0        0         0
```

The following is sample output from the **show cable video session logical-edge-device id** *id* **session-id** *id* **dvb-ecm** command.

```
Router#sshow cable video session logical-edge-device id 1 session-id 1048591 dvb-ecm
ECM TP address 800000010a568f00
Number of TPs: 1
Insertion period: 4500
TP 0:
47 40 4f 10 00 81 00 4f 00 19 00 02 00 00 00 12
00 02 00 03 00 14 00 0a 00 04 02 fd ec eb 0b e1
1d 09 00 14 00 0a 00 03 a9 14 75 32 66 e8 4c 9a
00 0d 00 04 12 34 12 34 8f fd 00 04 00 00 00 03
8f fe 00 13 31 39 3a 34 35 3a 33 36 20 32 30 32
30 2d 31 31 2d 30 32 ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
ff ff ff ff ff ff ff ff ff ff ff
```

The following table describes the significant fields in the command output:

Table 99: show cable video session logical-edge-device Field Descriptions

Field	Description
Session ID	Session identifier.
Output Port	Output port for the session.
Streaming Type	Streaming type of the session.
Session Type	Session type information.
Session Ucast Dest	Unicast session destination IP address.
Source IP/Mcast IP (S,G)	Source IP address and multicast session IP address.
UDP Port	UDP port information for the session.
Input program	Input program information of the session.
Output Program	Output program information of the session.
Input State	Session input state.
Output State	Session output state.
Input Bitrate	Session input bitrate.
Output Bitrate	Session output bitrate.
Encrypt Type	Session encryption type.
Encrypt Status	Session encryption status.
Session Name	Session name.

Related Commands

Command	Description
encrypt	Encrypts the virtual carrier group.
rf-channel	Specifies the virtual RF channel in a virtual carrier group.

show cable video snmp-alarms

To display the active alarms in the system, use the **show cable video snmp-alarms** command in privileged EXEC mode.

show cable video snmp-alarms

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE Fuji 16.7.1	This command was indroduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE Fuji 16.8.1d	Three alarms—Alarm ID 10, 11, and 12 are added.

Examples

The following sample output shows the active alarms in the system.

```
Router# show cable video snmp-alarms
Displaying the Alarms MIB alarmsLogTable

Total number of alarm entries: 4106

Alarm Log  Time                      Alarm ID  Instance     Instance_Ext Severity Slot
Alarm Message
Index
-------------------------------------------------------------------------------------------------------------------------------


1          2018-06-21 18:30:34 IST   10        3993698591   1            2        1
INPUT_STREAM_FAILURE:SET:0:0: Source 176.53.1.2:238.11.1.31:5194 input stream is not present.
 LED ID = 1, slot = 1
2          2018-06-21 18:29:50 IST   10        3993698591   2            2        2
INPUT_STREAM_FAILURE:SET:0:0: Source 176.53.1.2:238.11.1.31:5194 input stream is not present.
 LED ID = 2, slot = 2
3          2018-06-21 18:29:44 IST   10        3993698591   3            2        3
INPUT_STREAM_FAILURE:SET:0:0: Source 176.52.1.2:238.11.1.31:5194 input stream is not present.
 LED ID = 3, slot = 3
4          2018-06-21 18:29:50 IST   10        3993698591   6            2        6
INPUT_STREAM_FAILURE:SET:0:0: Source 176.53.1.2:238.11.1.31:5194 input stream is not present.
 LED ID = 6, slot = 6
5          2018-06-21 18:29:37 IST   10        3993698591   7            2        7
INPUT_STREAM_FAILURE:SET:0:0: Source 176.52.1.2:238.11.1.31:5194 input stream is not present.
 LED ID = 7, slot = 7
```

Related Commands

Command	Description
show cable video snmp-alarm-config	Display the alarm configuration in the system.
report-stream-error input-stream-failure report-interval syslog	Configure a timeout value and syslog message for input stream failure trap for multicast sources.

Command	Description
snmp-trap input-stream-failure multicast	Disable input stream failure trap for EAS stream.
snmp-server enable traps video-cable	Enable alarm event traps for cable related events.

show cable video snmp-alarm-config

To display the alarm configuration in the system, use the **show cable video snmp-alarm-config** command in privileged EXEC mode.

show cable video snmp-alarm-config

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE Fuji 16.8.1d	This command is introduced on the Cisco cBR Series Converged Broadband Routers.

Examples

The following example shows the alarm configuration in the system.

```
Router# show cable video snmp-alarm-config
Trap Configuration:
-------------------

Alarm ID   Name                        Status
-------------------------------------------
0          CEM Connection Loss         Enabled
1          D6 Connection Loss          Enabled
2          GQI Connection Loss         Enabled
3          PME ECM Missing             Enabled
4          QAM Oversubscription        Enabled
5          PID Conflict                Enabled
6          Program Conflict            Enabled
7          ECMG Connection Loss        Enabled
8          EIS Connection Loss         Enabled
10         In Stream Failure           Enabled
11         Backup Source Active        Enabled
12         PMT Missing                 Enabled
```

Related Commands

Command	Description
showccable video snmp-alarms	Display the active alarms in the system.
report-stream-error input-stream-failure report-interval syslog	Configure a timeout value and syslog message for input stream failure trap for multicast sources.
snmp-trap input-stream-failure multicast	Disable input stream failure trap for EAS stream.
snmp-server enable traps video-cable	Enable alarm event traps for cable related events.

show cable video vei-bundle

To display the virtual edge input bundle information, use the **show cable video vei-bundle** command in privileged EXEC mode.

show cable video vei-bundle {*id* | **all**}

Syntax Description

id	Displays the information of the virtual edge input bundle with this ID.
all	Displays all virtual edge input bundles.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

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

Usage Guidelines

This command displays the virtual edge input bundle information.

Examples

The following sample output shows the virtual edge input bundle information:

```
Router# show cable video vei-bundle all
Total VEI Bundles: 1
Bundle       LED          Input Port   VEI              Slot/Bay     Gateway
ID           ID           ID           IP                            IP
-------------------------------------------------------------------------------
40000        1            33           33.33.33.33      7/0          177.0.10.3
40000        1            44           44.44.44.44      7/0          177.0.10.3
40000        1            66           66.66.66.66      7/0          177.0.10.3
40000        1            77           77.77.77.77      7/0          177.0.10.3
40000        1            222          222.222.222.222  7/0          177.0.10.3
```

Related Commands

Command	Description
virtual-edge-input-ip	Configures a virtual edge input.
logical-edge-device	Define a logical edge device.
protocol	Specifies the protocol used in the logical edge device.
vei-bundle	Bundles the virtual edge inputs for a particular LED.
show cable video logical-edge-device	Displays the logical edge device information.

show cable video virtual-carrier-group

To display the virtual carrier group information, use the **show cable video virtual-carrier-group** command in privileged EXEC mode.

show cable video virtual-carrier-group {**all** | **id** *id* | **name** *name*}

Syntax Description

all	Displays all virtual carrier groups.
id *id*	Displays the information of the virtual carrier group with this ID.
name *name*	Displays the information of the virtual carrier group with this name.

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
IOS-XE 3.18.0S	This command is introduced on the Cisco cBR Series Converged Broadband Routers.
IOS-XE 16.4.1	This command was modified on the Cisco cBR Series Converged Broadband Routers. Low latency status was added in the output.

Usage Guidelines

This command displays the virtual carrier group information.

Examples

The following sample output shows the virtual carrier group information:

```
Router# show cable video virtual-carrier-group all
Number of Virtual Carrier Groups: 1
ID    Name   Input        Service-Distribution-Group   Logical-Edge-Device     Total
             IP Address   Name                         Name                    RF-Channel
-------------------------------------------------------------------------------------
1     vcg-0    -            vcg                          vcgcast                 5
```

Examples

The following sample output shows the information of a specific virtual carrier group with low latency status:

```
Router# show cable video virtual-carrier-group id 1
Name: vcg1
  ID: 1
  Service Distribution Group Name: sdg1
  Service Distribution Group ID: 1
  Logical Edge Device Name: led1
  Logical Edge Device ID: 1
  ServiceType: narrowcast
  Encrypted: N
  Low Latency: Y
  Number of VEIs: 0
```

```
Virtual Edge Input:
Input Port   VEI                 Bundle
ID           IP                  ID
-----------------------------------------------
Number of RF-Channels: 8
RF-Channel Range   TSID Range   Output Port Number Range
-------------------------------------------------------
0-7                 100-107             100-107
```

Related Commands

Command	Description
virtual-edge-input-ip	Specifies and configures a cable multicast QoS group.
encrypt	Encrypts the virtual carrier group.
service-type	Specifies the service type of the virtual carrier group.
rf-channel	Specifies the virtual RF channels in a virtual carrier group.
virtual-carrier-group	Defines a virtual carrier group.
low-latency	Sets low latency VCG.