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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

<i>slot</i>	Specifies the chassis slot number of the cable interface line card. The range is from 5 to 8.
<i>subslot</i>	Specifies the secondary slot number of the cable interface line card. The range is from 0 or 1.
<i>port</i>	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 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 <i>slot</i> /<i>subslot</i> /<i>port</i>	<p>Identifies the cable interface on the Cisco uBR10012 router.</p> <ul style="list-style-type: none"> • <i>slot</i> —Slot where the line card resides. The range is from 5 to 8. • <i>subslot</i> —Subslot where the line card resides. The range is from 0 or 1. • <i>port</i> —Downstream controller number on the line card. The range is from 0 to 4.
cable <i>slot</i> /<i>port</i>	<p>Identifies the cable interface on the Cisco uBR7246VXR or Cisco uBR7225VXR router.</p> <ul style="list-style-type: none"> • <i>slot</i> —Slot where the line card resides. <ul style="list-style-type: none"> ◦ Cisco uBR7246VXR router: The range is from 3 to 6. ◦ Cisco uBR7225VXR router: The range is from 1 to 2. • <i>port</i> —Downstream port number on the line card. The range is from 0 or 1.

cable <i>slot /subslot /cable-interface-index</i>	<p>Identifies the cable interface on the Cisco cBR-8 router.</p> <ul style="list-style-type: none"> • <i>slot</i> —Slot where the line card resides. The range is from 0 to 3 and 6 to 9. • <i>subslot</i> —Subslot where the line card resides. The value is 0. • <i>cable-interface-index</i> —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*.

Examples

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                1                Y
          1/0/0 0-1            0
```

Examples

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
```

Examples

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.

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
```

show cable mac-domain cgd-associations

```

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 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

<i>slot</i>	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
<i>subslot</i>	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.
<i>port</i>	The downstream port used as a primary downstream channel. Valid values are from 0 to 4 (depending on the cable interface).
<i>cable-interface-index</i>	<i>cable-interface-index</i> —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.
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:

Examples

```
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
```

Examples

```
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.

Examples

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
```

Examples

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
```

Examples

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.

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
```

 show cable mac-domain downstream-service-group

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 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

<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	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.
<i>port</i>	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.
<i>cable-interface-index</i>	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.

Examples

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

```
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:

```
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: show cable mac-domain rcc Field Descriptions

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.

**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.

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 mac-domain 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

<i>slot</i>	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
<i>subslot</i>	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.
<i>port</i>	Port number. The range is from 0 to 4 (depending on the cable interface).
<i>cable-interface-index</i>	<i>cable-interface-index</i> —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 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 <i>bundle interface number</i>	Specifies bundle interface number. The value ranges from 1 to 255.
<i>source ipv4 address</i>	The source ipv4 address.
<i>group ipv4 address</i>	The group ipv4 address.
<i>source ipv6 address</i>	The source ipv6 address.
<i>group ipv6 address</i>	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
                000000060EE4E000000000000000000000 (00 00 00 0)
                000000060EE4E000000000000000000000 (00 00 00 2204106752)
```

```

000000060EE4E400000000000000000000 (00 00 00 2204350777)
          In6/0/0:1      0              0x200000012
000000060EE4E8000000000000000000000 (00 00 00 0)
000000060EE4E8000000000000000000000 (00 00 00 2204106753)
000000060EE4EC000000000000000000000 (00 00 00 2204350779)

```

Related Commands

Command	Description
show cable multicast db	Displays the contents of the multicast explicit tracking database.
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.
complete_time, Complete Time	Date and time when the last billing record was written to a local file or streamed to an external server.

Field	Description
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	<p>Indicates whether CPE IP addresses are included or suppressed in the billing records:</p> <ul style="list-style-type: none">• Yes — CPE addresses are suppressed and are not included in the billing records.• No— CPE addresses are included in the billing records.

Field	Description
status, Status of last export	<p>Indicates the status of the last billing operation:</p> <ul style="list-style-type: none"> • 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 (<i>data-type</i>)—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). <ul style="list-style-type: none"> ◦ The value of data-type could be <i>file-header</i> , <i>file-end</i> , <i>bulk-data</i> , <i>sflog</i> , <i>bulk-data</i> , <i>ipdr-data</i> , <i>ipdr-sflog</i> , or <i>ipdr-file</i> .

Examples

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-address*|*mac-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

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>Cisco cBR router—The valid range of <i>port</i> is 0 to 7.</p>
name fqdn	<p>(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.</p> <p>This keyword is not supported on the Cisco cBR router.</p>
verbose	Displays detailed information of the cable modems.
cm-status	Displays cable modem status events.

queue	Displays the downstream hierarchical queueing framework (HQF) queue information for a cable modem. This keyword is not supported on the Cisco cBR router.
<i>logical-channel-index</i>	(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.
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.

BC Release	Modification
12.3(13a)BC	<p>New initialization states were added for the MAC State Field:</p> <ul style="list-style-type: none"> • 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	<p>The verbose option displays additional information about the cable modem. The following fields have been added to the output of this option:</p> <ul style="list-style-type: none"> • Host Interface • Primary Downstream • Wideband Capable • Voice Enabled • DS Change Times
C 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.

BC Release	Modification
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	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ “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: <ul style="list-style-type: none"> ◦ 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	<p>This command was modified with the following changes:</p> <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .

BC Release	Modification
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.
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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	<p>The output of the command with the verbose keyword was modified to display the following:</p> <ul style="list-style-type: none"> • 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.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The name , queue keyword and the <i>logical-channel-index</i> variable were removed.

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

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.

Examples**Examples**

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 State	Prim Sid	RxPwr (db)	Timing Offset	Num CPEs	BPI 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

Examples

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

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

Examples

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 State	Prim Sid	RxPwr (db)	Timing Offset	Num CPEs	BPI 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

show cable modem

```

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

```

Examples

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 State	Prim Sid	RxPwr (db)	Timing Offset	Num BPI CPE	Enb
-------------	------------	-----	-----------	----------	------------	---------------	-------------	-----

Examples

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
```

Examples

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 Sids=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 .

Examples

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 Sids=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.

Examples

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

```

MAC Address	IP Address	I/F	MAC State	Prim Sid	RxPwr (dBmv)	Timing Offset	Num CPE	B D P I
0019.474a.ccd0	---	C5/0/1/U0	w-online	38	0.00	1580	0	N

Examples

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 Sids=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)

```

Examples

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 Said=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.

Examples

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}

```

show cable modem

```

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 Sids=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)

```

Examples

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}
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 Sids=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

```

show cable modem

```

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 Sids=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

```

show cable modem

```

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 Sids=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 Sids=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

```

show cable modem

```

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 Sids=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)

```

Examples

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:

```

Examples

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**

MAC Address	IP Address	I/F	MAC State	Prim Sid	RxPwr (dBmv)	Timing Offset	Num CPE	D I 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

show cable modem

```

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

```

Examples

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 Sids=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)

```

Examples

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)      : --

```

show cable modem

```

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 Sids=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.

Examples

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 Sids=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)

```

Examples

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

```

show cable modem

```

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 Said=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)

```

Examples

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 Sids=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)

```

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.
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.

Field	Description
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.
RxPwr, Received Power	<p>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.</p> <p>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.</p> <p>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.</p>

Field	Description
Timing Offset and Initial Timing Offset	<p>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.</p> <p>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.</p> <p>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).</p>
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.
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.

Field	Description
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).

Field	Description
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.
Dynamic Secret	<p>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".</p> <p>Note This field displays a value only when the cable dynamic-secret command has been used on the CMTS interface.</p>
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.

Field	Description
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.

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 `cdxCmtsCableModemStatusValue` 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 (&) 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.

MAC State Value	Description
init(rc)	<p>Ranging has completed.</p> <p>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.</p>
Early Authentication and Encryption	
assign(epk)	BPI is enabled and KEK is assigned.
assign(ept)	BPI is enabled and TEK is assigned. The registration messages will be encrypted.
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.
init(i)	<p>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.</p> <p>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.</p>
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	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.
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 REQUEST 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)	<p>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).</p> <p>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.</p>
online(pk d)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(pt d)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	The cable modem registered, BPI is enabled and KEK is assigned.

MAC State Value	Description
online(pt)	<p>The cable modem registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
expire(epk)	<p>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.</p>
expire(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
expire(ept)	<p>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.</p>
expire(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	

MAC State Value	Description
reject(m)	<p>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.</p> <p>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.</p>
reject(c)	<p>The cable modem attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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(epk)	Early authentication and encryption is enabled, KEK key assignment is rejected, and the modem has not been authenticated.
reject(pk)	KEK key assignment is rejected, and the modem has not been authenticated.

MAC State Value	Description
reject(pk)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(ept)	<p>Early authentication and encryption is enabled, TEK key assignment is rejected, and BPI encryption has not been established.</p>
reject(pt)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
reject(ts)	<p>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.</p>
reject(ip)	<p>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.</p>
reject(na)	<p>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.</p>

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

```
Router#show cable modem
```

MAC Address	IP Address	I/F	MAC State	Prim Sid	RxPwr (dBmv)	Timing Offset	Num CPE	D I 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

The following shows a typical display 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 Sids=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

```

show cable modem

```

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

```

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.
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.

Command	Description
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 rf-adapt	Displays RF adaptation information for cable modems.
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

<i>ip-address</i>	(Optional) Access-group information displayed for the CM with the specified IP address. (Cisco uBR7100 series and Cisco uBR7200 series routers only.)
<i>mac-address</i>	(Optional) Access-group information displayed for the CM with the specified MAC address. (Cisco uBR7100 series and Cisco uBR7200 series routers only.)
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
<i>port</i>	Downstream port number. <ul style="list-style-type: none"> • 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).

<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
<i>logical-channel-index</i>	(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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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.
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.

Command	Description
show cable modem rf-adapt	Displays RF adaptation information for cable modems.
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 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-address*|*mac-address*] [**auth-profile**]

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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

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-address*|*mac-address*] **cable** {*slot* /*port* | *slot* /*cable-interface-index*} [**upstream port** [*logical-channel-index*]] **name fqdn** **calls**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot* /*cable-interface-index*] **calls**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	Secondary slot number of the cable interface line card. <p>Cisco uBR10012 only —The valid subslots are 0 or 1.</p> <p>Cisco cBR router—The valid value is 0.</p>

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>This keyword is not supported on the Cisco cBR router.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This keyword is not supported on the Cisco cBR router.</p>
name fqdn	<p>(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.</p> <p>This keyword is not supported on the Cisco cBR router.</p>
calls	<p>Display voice call information for a CM.</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 modem rf-adapt	Displays RF adaptation information for cable modems.
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-address*|*mac-address*} [*name fqdn*] **classifiers** [*cache*|*verbose*]

Cisco cBR Series Router

show cable modem {*ip-address*|*mac-address*} **classifiers** [*cache*|*verbose*]

Syntax Description

<i>ip-address</i>	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.
<i>mac-address</i>	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 <i>fqdn</i>	(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.

Release	Modification
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	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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.

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.

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.

Field	Description
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.

Command	Description
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-address*|*mac-address*|**name fqdn**} **cnr**

Cisco cBR Series Converged Broadband Router

show cable modem {*ip-address*|*mac-address*} **cnr**

Syntax Description

<i>ip-address</i>	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.
<i>mac-address</i>	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 "----".

BC Release	Modification
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.
SC Release	Modification
12.2(33)SCA	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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          Sid          (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.

Field	Description
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.
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.

MAC State Value ¹	Description
init(rc)	<p>Ranging has completed.</p> <p>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.</p>
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)	<p>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.</p> <p>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.</p>
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.

MAC State Value ¹	Description
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.
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.

MAC State Value ¹	Description
online(d)	<p>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).</p> <p>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.</p>
online(pk)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	CM is registered, BPI is enabled and KEK is assigned.
online(pt)	<p>CM is registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
<p>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.</p>	
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.

MAC State Value ¹	Description
expire(pk)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
expire(pt)	<p>CM is registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.</p>
expire(pte)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	
reject(m)	<p>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.</p> <p>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.</p>

MAC State Value ¹	Description
reject(c)	<p>CM attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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.
reject(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
Note	<p>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.</p>

MAC State Value ¹	Description
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.

Examples

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.

Command	Description
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-address*|*mac-address*] **cable** {*slot* /*port* | *slot* /*cable-interface-index*} [**upstream port** [*logical-channel-index*]] **name fqdn** **connectivity**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot* /*cable-interface-index*] **connectivity**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
<i>logical-channel-index</i>	(Optional) Logical channel index. The valid values are 0 or 1.
name <i>fqdn</i>	(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).

Release	Modification
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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.

Field	Description
Online time	<p>The minimum, average, and maximum number of days, hours, and minutes the modem with this SID has been connected.</p> <p>Note A CM is considered online when it has completed the registration process and has communicated with the DHCP, TFTP, and TOD servers.</p>
Offline time	<p>The minimum, average, and maximum number of days, hours, and minutes the modem with this SID has been disconnected.</p> <p>Note A CM is considered offline after it has missed 16 consecutive station maintenance messages.</p>

**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 modem rf-adapt	Displays RF adaptation information for cable modems.

Command	Description
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 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-address*|*mac-address*] **cable** {*slot*/*port* | *slot*/*cable-interface-index*} [**upstream port** [*logical-channel-index*]]| **name fqdn** **counters**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot*/*cable-interface-index*] **counters**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p>
name <i>fqdn</i>	<p>(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.</p>
counters	<p>Displays downstream and upstream traffic counters for one or more cable modems.</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 rf-adapt	Displays RF adaptation information for cable modems.

Command	Description
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.
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-address*|*mac-address*|**name fqdn**} **cpe**

Cisco cBR Series Converged Broadband Router

show cable modem {*ip-address*|*mac-address*} **cpe**

Syntax Description

<i>ip-address</i>	Displays the CPE devices for the CM with the specified IPv4 or IPv6 address.
<i>mac-address</i>	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: <ul style="list-style-type: none"> • 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.

Release	Modification
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.

Examples

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.

Command	Description
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.
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 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]	<p>(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:</p> <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. • <i>subslot</i> —Specifies the downstream port number. <p>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.</p>

cable slot /subslot /port [cable slot /subslot /port]	<p>(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:</p> <ul style="list-style-type: none"> • <i>slot</i>—Specifies the chassis slot number of the cable interface line card. Valid slots are 5 to 8. • <i>subslot</i>—Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • <i>port</i>—Specifies the downstream port number. Valid ports are 0 to 4, depending on the cable interface line card.
cable slot /subslot /cable-interface-index	<p>(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:</p> <ul style="list-style-type: none"> • <i>slot</i>—Specifies the chassis slot number of the cable interface line card. Valid slots are 0 to 3 and 6 to 9. • <i>subslot</i>—Specifies the secondary slot number of the cable interface line card. Valid subslots is 0. • <i>cable-interface-index</i>—Specifies the MAC domain index . Valid index numbers are 0 to 15.
upstream port1 port2	<p>(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:</p> <ul style="list-style-type: none"> • <i>port1</i>—Specify only <i>port1</i> if you want to display information about a single upstream. When used with the <i>port2</i> argument, specifies the beginning of a range of upstream ports, and <i>port1</i> must be a lower-numbered port than <i>port2</i>. • <i>port2</i>—Specifies the end of a range of upstream ports, and <i>port2</i> must be a higher-numbered port than <i>port1</i>.

upstream <i>chan1 chan2</i>	<p>(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:</p> <ul style="list-style-type: none"> • <i>chan1</i>—Specify only <i>chan1</i> if you want to display information about a single upstream. When used with the <i>chan2</i> argument, specifies the beginning of a range of upstream ports, and <i>chan1</i> must be a lower-numbered port than <i>chan2</i>. • <i>chan2</i>—Specifies the end of a range of upstream channels, and <i>chan2</i> must be a higher-numbered channel than <i>chan1</i>.
total	(Optional) Displays a total of DOCSIS device-class information for the cable modems connected to all interfaces, or to the specified cable interfaces.

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.

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              BPI
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 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              BPI
```

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	<p>Displays the device-class information for the PacketCable device. The modem can report its device-class type during registration. The possible values are:</p> <ul style="list-style-type: none"> • 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

Total:           Online  unrep CM    eCM    eMTA  eSTB  ePS
                  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.

Examples

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

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
```

show cable modem docsis device-class

```

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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port1 port2</i>	<p>(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:</p> <ul style="list-style-type: none"> • <i>port1</i>—Specify only <i>port1</i> if you want to display information about a single upstream. When used with the <i>port2</i> argument, specifies the beginning of a range of upstream ports, and <i>port1</i> must be a lower-numbered port than <i>port2</i>. • <i>port2</i>—Specifies the end of a range of upstream ports, and <i>port2</i> must be a higher-numbered port than <i>port1</i>.

upstream <i>chan1 chan2</i>	<p>(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:</p> <ul style="list-style-type: none"> • <i>chan1</i>—Specify only <i>chan1</i> if you want to display information about a single upstream. When used with the <i>chan2</i> argument, specifies the beginning of a range of upstream channels, and <i>chan1</i> must be a lower-numbered channel than <i>chan2</i>. • <i>chan2</i>—Specifies the end of a range of upstream channels, and <i>chan2</i> must be a higher-numbered channel than <i>chan1</i>.
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>Not available for Cisco cBR-8</p>
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.
	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.

Release	Modification
12.2(33)SCE	This command was modified. The <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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

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          State      Prim  Reg  QoS  US  Phy  DS  Chl
                I/F      MAC          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          State      Prim  Reg  QoS  US  Phy  DS  Chl
                I/F      MAC          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	<p>Displays the DOCSIS operating mode for the CM, with the following possible values:</p> <ul style="list-style-type: none"> • 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 <p>Note This field is the same as that returned by the docsIfCmtsCmStatusModulationType object in the DOCS-IF-MIB.</p>
DS Chl Mode	<p>Displays the downstream channel mode for the CM, with the following possible values:</p> <ul style="list-style-type: none"> • NB—Narrowband • WB—Wideband

Examples

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	<p>Total number of cable modems (in a/b/c format) for the specified DOCSIS version (x.y) that have the following status:</p> <ul style="list-style-type: none"> • 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.

Field	Description
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.
Total <i>mode</i> US Phy operating CMs	<p>Total number of cable modems with upstreams currently operating in a particular wideband channel mode, where <i>mode</i> is:</p> <ul style="list-style-type: none"> • 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 <p>Note The US Phy Mode counters (scdma, atdma, and tdma) remain 0 on the UB interfaces.</p>
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

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
-----
Interface Online DOCSIS Registered US QoS US Phy Mode DS Mode
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
                  v1.0: 0          atdm: 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
                                   v2.0: 12                v1.0: 0      UP   : 9                 WP: 12
                                   v1.1: 1                  scdm: 0                NB: 13
                                   v1.0: 0                  atdm: 0
                                                                 tdma: 14
-----

```

Examples

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
```

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).

Field	Description
US Phy Mode	<p>Total number of cable modems on this cable interface with upstreams currently operating in a particular wideband channel mode, where:</p> <ul style="list-style-type: none"> • WB—Total number of upstreams on this cable interface operating in any wideband channel mode. • scdma—Total number of upstreams on this cable interface operating in DOCSIS 2.0 Synchronous Code Division Multiple Access (SCDMA) 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. <p>Note The US Phy Mode counters (scdma, atdma, and tdma) remain 0 on the UB interfaces.</p>
DS Mode	<p>Total number of cable modems on this cable interface whose downstreams are operating in the following modes:</p> <ul style="list-style-type: none"> • 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.
DOCSIS Mode	<ul style="list-style-type: none"> • 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 rf-adapt	Displays RF adaptation information for cable modems.

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-address*|*mac-address*] **cable** {*slot/port*|*slot/cable-interface-index*} [**upstream port** [*logical-channel-index*]] **name fqdn** **domain-name**

Cisco uBR10012 Router

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

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
<i>port</i>	Downstream port number. <ul style="list-style-type: none"> • 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).

<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.
<i>logical-channel-index</i>	(Optional) Logical channel index. The valid values are 0 or 1.
name <i>fqdn</i>	(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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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.
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 modem rf-adapt	Displays RF adaptation information for cable modems.
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 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-address*|*mac-address*] **cable** {*slot* /*port* | *slot* /*cable-interface-index*} [**upstream port** [*logical-channel-index*]]| **name** *fqdn*] **errors**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot* /*cable-interface-index* [**upstream port**]] **errors**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>Not available on the Cisco cBR-8 router.</p>
name <i>fqdn</i>	<p>(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.</p> <p>Not available on the Cisco cBR-8 router.</p>
errors	<p>Displays packet header error statistics for one or more cable modems .</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 22: 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.
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 rf-adapt	Displays RF adaptation information for cable modems.

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
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 23: 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.

 show cable modem extended-power

Field	Description
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 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-address*| *mac-address*] **cable** {*slot* /*cable-interface-index*} [**upstream port** *logical-channel-index*]| **name** *fqdn*] **flap**

Cisco uBR10012 Router

show cable modem [*ip-address*| *mac-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-address*| *mac-address*] **cable** {*slot* /*subslot* /*cable-interface-index*} [**upstream port**] **flap**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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
<i>subslot</i>	Secondary slot number of the cable interface line card. <ul style="list-style-type: none"> • Cisco uBR10012 —The valid subslots are 0 or 1. • Cisco cBR-8 router— The valid subslot is 0.

<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>Cisco cBR-8 router— The valid range is from 0 to 7</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This variable is not supported on the Cisco cBR-8 router.</p>
name fqdn	<p>(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.</p> <p>This keyword is not supported on the Cisco cBR-8 router.</p>
flap mtc	<p>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.</p> <p>The mtc keyword is not supported on the Cisco cBR-8 router.</p>

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: <ul style="list-style-type: none"> • 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, <i>mtc</i> , was added to provide multiple transmit channel (MTC) information for cable modems in the MTC mode. <ul style="list-style-type: none"> • The <i>mtc</i> 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The name keyword and <i>logical-channel-index</i> 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
```

show cable modem flap

```
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 24: 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.
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 cable modem rf-adapt	Displays RF adaptation information for cable modems.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

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-address*|*mac-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-address*|*mac-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-address*|*mac-address*] **cable** *slot/subslot/cable-interface-index*] **ipv6** [**prefix**|**registered**|**summary**|**unregistered**]

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p>
name <i>fqdn</i>	<p>(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.</p>
cpe	<p>(Optional) Displays IPv6 information for the CPE devices behind the CM with the specified IPv4 or IPv6 address.</p>
prefix	<p>(Optional) Displays the IPv6 prefix of the network.</p>
registered	<p>(Optional) Displays IPv6 information for registered CMs.</p>

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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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    2001:0DB8:3800:80C::/64
```

Starting with Cisco IOS Release 12.2(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 Release 12.2(33)SCG1, the following example shows sample output for the **show cable modem mac-address ipv6 prefix** 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 Release 12.2(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 25: show cable modem ipv6 Field Descriptions

Field	Description
MAC Address	MAC address of this CM.
Type	Type of device that this CM is functioning as, with the following possible values: <ul style="list-style-type: none"> • 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. <p>Note In Cisco IOS Release 12.2(33)SCA, the Cisco CMTS router does not support SLAAC.</p>
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.

Field	Description
IP Address	<p>IP address acquired by the CM. Prior to acquisition of the IP address, or if the CM fails registration, the following output is shown:</p> <ul style="list-style-type: none"> • 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 26: 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)	<p>Ranging has completed.</p> <p>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.</p>
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 2	Description
init(i)	<p>The cable modem has received the DHCP OFFER 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.</p> <p>Note If a CM appears to be stuck in this state, the CM has likely received the DHCP OFFER reply from the DHCP server, but this reply might have contained one or more invalid options for that particular CM.</p>
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 REQUEST 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	

MAC State Value 2	Description
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)	<p>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).</p> <p>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.</p>
online(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>

MAC State Value 2	Description
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	<p>The CM registered, BPI is enabled and KEK is assigned.</p>
online(pt)	<p>The CM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
<p>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.</p>	
expire(pk)	<p>The CM registered, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value.</p>
expire(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
expire(pt)	<p>The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.</p>
expire(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>

MAC State Value 2	Description
Error Status Conditions	
reject(m)	<p>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.</p> <p>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.</p>
reject(c)	<p>The CM attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>

MAC State Value ²	Description
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
<p>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.</p>	
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.

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 rf-adapt	Displays RF adaptation information for cable modems.
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 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-address| mac-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-address| mac-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-address| mac-address| cable slot/subslot/cable-interface-index ] mac [summary
[total]]
```

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p>
name <i>fqdn</i>	<p>(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.</p>
summary [total]	<p>(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.</p>

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."
12.2(33)SCA	This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> argument was added.

Release	Modification
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The upstream and name keywords were and <i>logical-channel-index</i> 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
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
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 State	Prim Sid	Ver	QoS Prov	Frag	Concat	PHS	Priv	DS	US
									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 State	Prim Sid	Ver	QoS Prov	Frag	Concat	PHS	Priv	DS	US
									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 State	Prim Sid	Ver	QoS Prov	Frag	Concat	PHS	Priv	DS	US
									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
```

MAC Address	IP Address	I/F	MAC State	Prim Sid	RxPwr (dBmv)	Timing Offset	Num CPE	D I
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 State	Prim Sid	Ver	QoS Prov	Frag	Concat	PHS	Priv	DS Sids	US 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 27: 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 Sids	Number of downstream security association IDs (Sids) used by this CM.

Field	Description
US Sids	Number of upstream service IDs (SIDs) used by this CM.

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

Table 28: 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.
init(rc)	<p>Ranging has completed.</p> <p>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.</p>
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)	<p>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.</p> <p>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.</p>

MAC State Value ³	Description
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 REQUEST 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 ³	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)	<p>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).</p> <p>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.</p>
online(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	The CM registered, BPI is enabled and KEK is assigned.

MAC State Value ³	Description
online(pt)	<p>The CM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
<p>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.</p>	
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	

MAC State Value ³	Description
reject(m)	<p>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.</p> <p>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.</p>
reject(c)	<p>The CM attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.

MAC State Value ³	Description
reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
<p>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 modemmac-address command to confirm whether BPI is enabled or disabled for a particular cable modem.</p>	
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.

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
Interface      Total  DOC2.0  DOC1.1  DOC1.0  Reg/Online  QoS Provision Mode
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
Interface      Total  DOC2.0  DOC1.1  DOC1.0  Reg/Online  QoS Provision Mode
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 29: 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).
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-address| mac-address| cable {slot/cable-interface-index} [upstream port
[ logical-channel-index ]]] name fqdn ] maintenance
```

Cisco uBR10012 Router

```
show cable modem [ip-address| mac-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-address| mac-address| cable {slot/subslot/cable-interface-index} [upstream port ]]
maintenance
```

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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
<i>subslot</i>	Secondary slot number of the cable interface line card. <ul style="list-style-type: none"> • Cisco uBR10012 —The valid subslots are 0 or 1. • Cisco cBR-8 router— The valid subslot is 0.

<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>Cisco cBR-8 router—The valid range is 0 to 7.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This variable is not supported on the Cisco cBR-8 router.</p>
name fqdn	<p>(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.</p> <p>This keyword is not supported on the Cisco cBR-8 router.</p>
maintenance	<p>Displays station maintenance (SM) error statistics for one or more cable modems.</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Router. The name keyword and <i>logical-channel-index</i> 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 aborted 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 Sid	SM Exhausted Count Time	SM Aborted 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 Sid	SM Exhausted Count Time	SM Aborted 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 Sid	SM Exhausted Count Time	SM Aborted Count Time
0010.7bb3.fcd1	C5/0/U5	1	3 Jun 1 10:24:52	0 Jan 1 00:00:00

```
Router#
```

show cable modem maintenance

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
                I/F      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
                I/F      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
                I/F      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 30: 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.
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 aborted ranging for a CM during a Station Maintenance period, typically because the CM has been reset.
SM Aborted Time	The last time the CMTS aborted 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.

Command	Description
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 modem rf-adapt	Displays RF adaptation information for cable modems.
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-address*|*mac-address*] **cable** {*slot/port*|*slot/cable-interface-index*} [**upstream port** [*logical-channel-index*]] **name fqdn** **offline**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p>
name fqdn	<p>(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.</p>
offline	<p>Displays a list of the cable modems that are marked as offline.</p>

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	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 Sid	Previous State	Offline Time	Rx Power	Rx SNR	SM 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 Sid	Previous State	Offline Time	Rx Power	Rx SNR	SM 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 Sid	Previous State	Offline Time	Rx Power	Rx SNR	SM 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 31: 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	<p>The last known state of the MAC layer for this CM before it went offline.</p> <p>Note A pound sign (#) in the Previous 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).</p>
Offline Time	The time and date that this CM last went offline.
Rx Power	<p>The last known received power level (in dB) for the CM before it went offline.</p> <p>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.</p>
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.

Field	Description
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 32: 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)	<p>Ranging has completed.</p> <p>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.</p>
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)	<p>The cable modem has received the DHCP OFFER 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.</p> <p>Note If a CM appears to be stuck in this state, the CM has likely received the DHCP OFFER reply from the DHCP server, but this reply might have contained one or more invalid options for that particular CM.</p>

MAC State Value ⁴	Description
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 REQUEST 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)	<p>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).</p> <p>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.</p>
online(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	The CM registered, BPI is enabled and KEK is assigned.

MAC State Value ⁴	Description
online(pt)	<p>The CM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
<p>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.</p>	
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	

MAC State Value ⁴	Description
reject(m)	<p>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.</p> <p>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.</p>
reject(c)	<p>The CM attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.

MAC State Value ⁴	Description
reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
<p>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.</p>	
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.

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.

Command	Description
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 registered	Displays a list of the CMs that are marked as registered with the Cisco CMTS.
show cable modem rf-adapt	Displays RF adaptation information for cable modems.
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

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.

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 33: 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	<ul style="list-style-type: none"> 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  3     2     0x1 / 0x4
0022.cef4.3d9a  2.99.81.23      C7/0/0/p p-online  4     2     0x1 / 0x4
001e.6bfb.194e  2.99.81.32      C7/0/0/p p-online  6     2     0x1 / 0x4
001e.6bfb.1538  2.99.81.38      C7/0/0/p p-online  8     2     0x1 / 0x4
001e.6bfb.0d22  2.99.81.29      C7/0/0/p p-online  9     1     0x1 / 0x4
001e.6bfb.1a7e  2.99.81.30      C7/0/0/p p-online  10    1     0x1 / 0x4
001e.6bfa.f58a  2.99.81.9        C7/0/0/p p-online  12    1     0x1 / 0x4
0022.cef4.3fa2  2.99.81.24      C7/0/0/p p-online  13    2     0x1 / 0x4
001e.6bfb.1b72  2.99.81.10      C7/0/0/p p-online  14    2     0x1 / 0x4
0023.be50.e578  2.99.81.17      C7/0/0/UB p-online  16    2     N/A
0025.2e2d.784a  2.99.81.28      C7/0/0/UB p-online  17    2     N/A
0025.2e2d.748c  2.99.81.26      C7/0/0/UB p-online  18    2     N/A
```

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 partial-service

Cisco cBR-8 Converged Broadband Router

show cable modem partial-service

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-8 Converged Broadband Router.

Examples The following is a sample output of the **show cable modem partial-service** command:

```
Router#show cable modem partial-service
MAC Address      IP Address      I/F             MAC      DSxUS  Impaired  Impaired
State            State           DS              US
54d4.6ffb.2f6b  40.4.58.16      C7/0/0/p        w-online  3x3    1
54d4.6ffb.2f6b  40.4.58.16      C7/0/0/p        w-online  3x3    1
4458.2945.2ade  40.4.58.18      C7/0/0/p        w-online  3x3    1
001e.6bfc.d1ea  40.4.58.26      C7/0/0/p        w-online  3x3    1
54d4.6ffb.2e21  40.4.58.5       C7/0/0/p        w-online  3x3    1
54d4.6ffb.2e1b  40.4.58.23      C7/0/0/p        w-online  3x3    1
4458.2945.2a78  40.4.58.21      C7/0/0/p        w-online  3x3    1
4458.2945.4604  40.4.58.19      C7/0/0/p        w-online  3x3    1
54d4.6ffb.2e66  ---            C8/0/0/p        w-online  3x3    1

Router#
```

Table below describes the significant fields shown in the display:

Table 34: 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.

Field	Description
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.

This example shows the output of the **show cable modem partial-service** command:

```
Router#show cable modem partial-service
MAC Address      IP Address      I/F              MAC          DSxUS  Impaired  Impaired
State            State           State            State         DS      US
```

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 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-address*|*mac-address*] **cable** {*slot/port*|*slot/cable-interface-index*} [**upstream port** [*logical-channel-index*]]| **name fqdn**] **phy**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot/subslot/cable-interface-index*]**phy**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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). <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
name fqdn	<p>(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.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>

phy	Displays DOCSIS PHY layer information for one or more cable modems.
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Command Default Displays PHY information for all CMs.

Command Modes Privileged EXEC (#)

This table includes the following release-specific history entries:

- [CX and BC Releases](#)
- [SC Release](#)

Command History

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
12.2(33)SCA	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .

CX and BC Releases	Modification
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> is removed.

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

Example from Cisco IOS Release 12.3(17a)BC and Later Releases

Cisco IOS Release 12.3(17a)BC introduces revised output for 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.

```
Router# show cable modem phy
MAC Address      I/F      Sid  USPwr  USSNR  Timing  DSPwr  DSSNR  Mode  DOCSIS
                (dBmV) (dB)   Offset (dBmV) (dB)
0003.e350.9a3f   C5/1/0/U0  1    0.00  30.23  2811    0.00  ----- tdma  1.0
0050.734e.c1a1   C5/1/0/U0  2    0.00  30.47  2811    0.00  ----- tdma  1.0
0007.0e01.1749   C5/1/0/U0  3    0.00  30.65  2808    0.00  ----- tdma  1.0
0007.0e00.90dd   C5/1/0/U0  4    0.00  30.66  2806    0.00  ----- tdma  1.0
0003.e350.9ad3   C5/1/0/U0  5    0.00  30.47  2810    0.00  ----- tdma  1.0
0003.e38f.f4e5   C5/1/0/U0  6    0.00  30.36  2813    0.00  ----- tdma  1.0
0003.e350.9b97   C5/1/0/U0  7    0.00  30.44  2812    0.00  ----- tdma  1.0
0003.e350.9bed   C5/1/0/U0  8    0.00  30.16  2814    0.00  ----- tdma  1.0
0003.e308.455d   C5/1/0/U0  9    0.00  30.79  2811    0.00  ----- tdma  1.0
0003.6bd6.bfaf   C5/1/0/U0  10   0.00  30.40  2813    0.00  ----- tdma  1.0
```

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
                I/F              Sid    (dBmV) (SNR)  Offset (dBmV) (SNR)  (dB)   Prov
                I/F              Sid
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 35: 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.

 show cable modem phy

Field	Description
USSNR (dBmV)	

Field	Description
	<p>Upstream signal ratio (SNR) or carrier ratio (CNR), in dB, as measured by the CMTS. This field shows the the CNR value for cable interfaces that support onboard hardware spectrum management management, such as the Cisco BRACS BRACS card, and shows the the SNR value for other cable interfaces.</p> <p>Note Although the field name shows the value</p>


show cable modem phy

Field	Description
	as being given in dBmV, the actual value should be interpreted in dB.

Field	Description
Timing Offset	

Field	Description
	<p>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.</p> <p>Note An exclamation point (!) in the Timing Offset column indicates that the CM has exceeded the maximum delay and timing offset</p>

Field	Description
	<p>specified by the cable map-advance command. 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).</p>


 show cable modem phy

Field	Description
Microefc (dBc)	

Field	Description
	<p>The approximate value of noise floor on the downstream, measured in dBc below the signal level, as seen by the CM. Noise floor are a type of impairment that is caused by impedance mismatches between amplifiers, couplers, cables, and other equipment in the cable plant. Noise floor create copies of a signal that arrive at the receiver with different amounts of delay and attenuation, generating</p>

Field	Description
	<p>inter-symbol interference (ISI) that can cause the receiver to improperly detect the amplitude and phase of the incoming signal.</p> <p>Note This value is not exact but provides an approximate indication of the microreflections that have been received.</p>
DSPwr (dBmV)	Downstream receive power level, in dBmV, as reported by the CM.
DSSNR (dBmV)	Downstream signal-to-noise ratio (SNR), in dB, as reported by the CM.

Field	Description
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.

 show cable modem phy

Field	Description
Mode	

Field	Description
	DOCSIS operating mode for the CM: • 10 IX TX not • 10 20 TX not 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

Field	Description
	<p>1238CC, the asterix (*) that appears beside the DOCSIS operating mode under the Mode column identifies that the CM is operating in the MTC mode.</p> <p>Note This field is the same as that returned by the docsIfCmtsCmStatusModulationType object in the DOCS-IF-MIB.</p>

Examples

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
                I/F              Sid    (dBmV) (SNR)  Offset (dBmV) (SNR)  (dB)   Prov
                I/F              Sid    (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

show cable modem phy

```

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 (dBmV)	USMER (SNR) (dB)	Timing Offset	DSPwr (dBmV)	DSMER (SNR) (dB)	Mode	DOCSIS Prov
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 (dBmV)	USMER (SNR) (dB)	Timing Offset	DSPwr (dBmV)	DSMER (SNR) (dB)	Mode	DOCSIS Prov
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
                I/F          Sid    (dBmV) (SNR)  Offset (dBmV) (SNR)  (dB)  Prov
                I/F          Sid    (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.

Command	Description
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 cable modem rf-adapt	Displays RF adaptation information for cable modems.
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 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

<i>slot</i>	Slot where the line card resides. The valid range is from 5 to 8. Cisco cBR-8 router—The valid range is 0.
<i>subslot</i>	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.
<i>port</i>	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.
<i>cable-interface-index</i>	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. <ul style="list-style-type: none"> • 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 <i>port</i>	(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 <i>port</i> 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.
<i>logical-channel-index</i>	(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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
	12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 rf-adapt	Displays RF adaptation information for cable modems.

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

<i>slot</i>	The slot used for the cable interface line card. Valid values are 5 to 8.
<i>subslot</i>	The subslot used for the cable interface line card. Valid values are 0 to 1.
<i>port</i>	The downstream port used as a MAC domain host interface port. Valid values are 0 to 4.
<i>cable-interface-index</i>	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.cab7.7flc  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
C6/0/1      0      0      0      0      0      0      0      0      0      0
Subtotal:   5      5      5      0      0      0      0      0      0      0
Local Primary Wideband:
C6/0/0      5      5      5      0      0      0      0      0      0      0
C6/0/1      0      0      0      0      0      0      0      0      0      0
Subtotal:   5      5      5      0      0      0      0      0      0      0
Remote Primary Narrowband:
Mo3/0/0:0   1      1      1      0      0      0      0      0      0      0
Subtotal:   1      1      1      0      0      0      0      0      0      0
Remote Primary Wideband:
Subtotal:   0      0      0      0      0      0      0      0      0      0
Total:     11     11     11     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
Local Primary Wideband:
C6/0/0      5      5      5      0      0      0      0      0      0      0
Remote Primary Narrowband:
Mo3/0/0:0   1      1      1      0      0      0      0      0      0      0
Subtotal:   1      1      1      0      0      0      0      0      0      0
Remote Primary Wideband:
Subtotal:   0      0      0      0      0      0      0      0      0      0
Total:     11     11     11     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
```

show cable modem primary-channel summary total

	Total	Reg	Oper	Cable Modem		Wideband	initRC	initD	initIO	initO
				Unreg	Offline					
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-address*|*mac-address*} **privacy** [**verbose**]

Cisco uBR10012 Router

show cable modem {*ip-address*|*mac-address*} **privacy** [**verbose**]

Cisco cBR-8 Converged Broadband Router

show cable modem {*ip-address*|*mac-address*} **privacy** [**verbose**]

Syntax Description

<i>ip-address</i>	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.
<i>mac-address</i>	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 36: show cable modem privacy Field Descriptions

Field	Description
MAC Address	MAC address for the CM.
Prim SID	Primary SID assigned to the CM.

Field	Description
BPI Mode	Baseline Privacy Interface (BPI) mode used.
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 information.
Traffic Key Requests	Number of traffic key requests.
Traffic Key Replies	Number of traffic key replies.

Field	Description
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.
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.

Field	Description
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.
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 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-address*|*mac-address*} **name fqdn** **qos** [**service-class**|**verbose**]

Cisco cBR-8 Converged Broadband Router

show cable modem {*ip-address*|*mac-address*} **qos** [**service-class**|**verbose**]

Syntax Description

<i>ip-address</i>	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.
<i>mac-address</i>	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.

Release	Modification
12.2(33)SCA	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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.
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 State	Sid	Sched Type	Prio	MaxSusRate	MaxBrst	MinRsvRate	Throughput
3	US	act	1	BE	7	2000000	1522	100000	0
4	DS	act	N/A	BE	0	4000000	1522	0	0

Examples

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 State	Sid	Sched Type	Prio	MaxSusRate	MaxBrst	MinRsvRate	Throughput
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

Examples

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
Minimum 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
Minimum 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
Minimum 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
Minimum 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

```

Examples

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 37: 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: <ul style="list-style-type: none"> • 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.

Field	Description
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

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
```

show cable modem qos

```

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.

Command	Description
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 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-address*|*mac-address*] **cable** {*slot/port*|*slot/cable-interface-index*} [**upstream port** [*logical-channel-index*]]| **name fqdn**] **registered**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot/subslot/cable-interface-index*] **registered**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>logical-channel-index</i>	<p>(Optional) Displays the logical channel index. Valid values are 0 and 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
name <i>fqdn</i>	<p>(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.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
	12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 38: 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	<p>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.</p> <p>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.</p> <p>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).</p>
Rec Power	<p>The received power level (in dB) for the CM.</p> <p>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.</p>
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
```

show cable modem registered

```
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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 rf-adapt	Displays RF adaptation information for cable modems.
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 39: 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.

Field	Description
TX Time Offset	<p>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.</p> <p>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).</p>
Micro (dB) Reflection	<p>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.</p> <p>Note This value is not exact but provides an approximate indication of the microreflections that have been received.</p>
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

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 Ratio	US Power	DS Power	Tx Time Offset	SNMP Request	IP address/IPv6 address
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

show cable modem remote-query

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
I/F      MAC Address  ID   I/F      RFs  ID   Curr BG      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 40: 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.

show cable modem resiliency

Field	Description
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
I/F      MAC Address  ID   I/F      RFs ID   Curr BG      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 rf-adapt

To display RF adaptation relocation history for cable modems, use the **show cable modem rf-adapt** command in privileged EXEC mode.

show cable modem [*mac-address*] **cable** {*slot /cable-interface-index* | *slot /subslot /cable-interface-index* } [**upstream port** [*logical-channel-index*]]] **rf-adapt** [**verbose**]

Syntax Description

<i>mac-address</i>	(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.
<i>ip-address</i>	(Optional) 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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
<i>cable-interface-index</i>	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. <ul style="list-style-type: none"> • 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 <i>port</i> 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.
rf-adapt	Displays RF adaptation information.
verbose	Displays detailed information for the cable modems.

Command Modes

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-8 Converged Broadband Router.

ExamplesThe following is a sample output of the **show cable modem rf-adapt** command:Router#**show cable modem rf-adapt**

MAC Address	Downgrade Count	Upgrade Count	Primary Upstream	Last Action	Last Time
0019.474a.d4cc	1	0	C8/0/1/U3.0	D	Jun 25 22:10:22
0019.474a.d554	1	1	C8/0/14/U0.0	U	Jun 25 22:10:22
0019.474a.d542	2	1	C8/0/0/U0.0	D	Jun 25 22:10:22
0019.474a.d508	1	1	C8/0/8/U0.0	U	Jun 25 22:10:23
0025.2e2d.7400	1	0	C8/0/0/U1.0	D	Jun 25 22:10:23
0022.cea4.f404	1	1	C8/0/2/U2.0	U	Jun 25 22:10:23

Router# **show cable modem**001e.6bfb.2d3c **rf-adapt**

MAC Address	Downgrade Count	Upgrade Count	Primary Upstream	Last Action	Last Time
001e.6bfb.2d3c	1	0	Ca6/1/0/U0.0	D	Mar 7 05:12:37

Router# **show cable modem**0025.2e2d.7990 **rf-adapt verbose**

Action Time	Action Type	Source Upstream	Destination Upstream	Action Reason
Mar 9 23:03:08	D	Ca7/0/0/U0.0	Ca7/0/0/U0.1	SNR 26<28
Mar 9 21:50:05	U	Ca7/0/0/U0.1	Ca7/0/0/U0.0	SNR 31>=31
Mar 9 21:37:02	D	Ca7/0/0/U0.0	Ca7/0/0/U0.1	SNR 26<28
Mar 9 20:45:59	U	Ca7/0/0/U0.1	Ca7/0/0/U0.0	SNR 32>=31

Mar 9 20:36:56 D Ca7/0/0/U0.0 Ca7/0/0/U0.1 SNR 27<28

Table below describes the significant fields shown in the display:

Table 41: show cable modem Field Descriptions

Field	Description
MAC Address	MAC address of the cable modem.
Downgrade Count	Number of times the cable modem was relocated from the primary to the secondary logical upstream channel.
Upgrade Count	Number of times the cable modem was relocated from the secondary to the primary logical upstream channel.
Primary Upstream	The primary logical upstream at the time of the relocation event.
Last Action	Last action performed on the cable modem; indicates whether the cable modem was downgraded or upgraded.
Last Action Time	Date and time when the last action was performed on the cable modem.
Action Time	Date and time when the action was performed on the cable modem.
Action Type	Upgrade or downgrade.
Source Upstream	Upstream logical channel from where the cable modem is moved.
Destination Upstream	Upstream logical channel to where the cable modem is moved.
Action Reason	Reason for the relocation of the cable modem.

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)	Configures the primary upstream logical channel and secondary upstream logical channel.
cable upstream threshold	Configures the upstream for the signal-to-noise ratio (SNR) and forward error correction (FEC) threshold values to be used in determining the allowable noise levels.
cable upstream threshold hysteresis	Configures the hysteresis value to be used in conjunction with the dynamic modulation upgrade thresholds.
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 for the registered and unregistered cable modems.
show cable modem phy	Displays the DOCSIS PHY layer information for one or more cable modems.
show cable modulation-profile	Displays modulation profile group information.
show cable rf-adapt	Displays the downgrade and upgrade candidate lists.
show interface cable modem	Displays information about the cable modems connected to a particular cable interface.

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-address|mac-address] cable {slot/port|slot/cable-interface-index} [upstream port
[ logical-channel-index ]]| name fqdn ] rogue
```

Cisco uBR10012 Router

```
show cable modem [ip-address|mac-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-address|mac-address] cable slot/subslot/cable-interface-index ] rogue
```

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
name fqdn	<p>(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.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>

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: <ul style="list-style-type: none"> • 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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
MAC Address      Vendor      Interface    Spoof  TFTP
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 42: 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.
Interface	The cable interface line card providing the upstream for this CM.

Field	Description
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 TFTP downloads are enforced, as configured by the cable tftp-enforce command.
Dynamic Secret	The dynamic shared-secret for this cable modem.

This example shows the output of the Cisco cBR Series Converged Broadband Router

```
Router#show cable modem rf-adapt
MAC Address      Downgrade  Upgrade   Primary   Last      Last Action
                  Count      Count     Upstream  Action    Time

Router#
```

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.

Command	Description
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 cable modem rf-adapt	Displays RF adaptation information for cable modems.
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 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

<i>service-type-id</i>	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**

MAC Address	IP Address	I/F	MAC State	Prim Sid	Service-type-id	B	D
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 43: 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.
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-address*|*mac-address*} **service-flow** [**verbose**|**ds-hardware**]

Cisco cBR-8 Converged Broadband Router

show cable modem {*ip-address*|*mac-address*} **service-flow** [**verbose**|**ds-hardware**|**upstream**]

Syntax Description

<i>ip-address</i>	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.
<i>mac-address</i>	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.
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 was introduced for Cisco uBR7200 series and Cisco uBR10012 routers in Cisco IOS Release 12.2(33)SCB1.
12.3(23)BC7	This command was integrated into Cisco IOS Release 12.3(23)BC7.

Release	Modification
12.2(33)SCE	This command was modified. The ds-hardware keyword was added.
12.2(33)SCF2	This command was modified. The command output was enhanced to display upstream buffer control parameters.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The upstream keyword was added.

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.

Examples

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
31   15    0           0           0           0           0           0
DOWNSTREAM SERVICE FLOW DETAIL:
SFID RP_SFID QID  Flg Policer      Scheduler      Drops      FrwdIF
      Xmits      Xmits      Drops
32   32817  131124  0    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, 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  Downstream
RfId
0022.cea5.02ba  5.60.122.132  C7/1/0/UB  w-online  10    0    In7/1/0:0
840
```

Sfid	Dir	Curr State	Sid	Sched Type	Prio	MaxSusRate	MaxBrst	MinRsvRate	Throughp
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 Delayed Grants : 0
 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 44: 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.
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.

Field	Description
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.
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.

Field	Description
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

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 Interface	MAC State	Prim Sid	Num CPE	Primary Downstream	DS RfId
0010.18de.8134	80.17.150.66	C9/0/4/UB	w-online	2	1	In1/0/0:0	29696

Sfid	Dir	Curr State	Sid	Sched Type	Prio	MaxSusRate	MaxBrst	MinRsvRate	Throughput
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 Xmits	Drops	Scheduler Xmits	Drops	FrwdIF
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
```

show cable modem service-flow

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 Interface	MAC State	Prim Sid	Num CPE	Primary Downstream	DS RfId
0010.18de.8134	80.17.150.66	C9/0/4/UB	w-online	2	1	In1/0/0:0	29696

Sfid	Dir	Curr State	Sid	Sched Type	Prio	MaxSusRate	MaxBrst	MinRsvRate	Throughput
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 Delayed Grants : 0
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:

```

show cable modem service-flow

```

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 Xmitsl   : 166
Scheduler Xmits drops: 0

```

```

Reg Info Requests Rx      : 9
Reg Info TLV len          : 163
Router#

```

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.

Command	Description
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.
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-address*|*ipv6-address*|*mac-address*} **sysDescr** [**community** *community-name*]

Syntax Description

<i>ip-address</i>	IPv4 address of the cable modem to be displayed.
<i>ipv6-address</i>	IPv6 address of the cable modem to be displayed.
<i>mac-address</i>	MAC address of the cable modem to be displayed.
sysDescr	Displays cable modem system description.
community <i>community-name</i>	(Optional) Displays the cable modem community name provided in the 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 <i>ipv6-address</i> 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 Cisco CMTS router**. To view system descriptions of all cable modems, enable remote query on the Cisco CMTS router using the **cable modem remote-query** command in global configuration mode. Then, run the **show cable modem | 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.

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 45: 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

Examples

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
```

show cable modem subscriber

```

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.
-------	-----------------------------------------------------------------------

show cable modem summary

<i>interface1</i>	
-------------------	--

(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.

	<p>The valid range for the Cisco uBR-MC3GX60V line card is from 0 to 14.</p> <p>◦ Cisco cBR-8 router—The valid range is from 0 to 15.</p>
<i>interface2</i>	<p>(Optional) Second cable interface, specifying a range of cable interfaces to be summarized. The <i>interface2</i> parameter has the same form as <i>interface1</i>.</p> <p>Note When specifying a range of cable interfaces, <i>interface1</i> must be the lower-numbered interface and <i>interface2</i> must be the higher-numbered interface.</p>
upstream <i>port1 port2</i>	<p>(Optional) Specifies a range of upstream ports on the cable interfaces to be summarized. The <i>port1</i> and <i>port2</i> parameters can start at 0, and <i>port2</i> must be a higher-numbered port than <i>port1</i>.</p>
upstream <i>upstream-channel-ID 1 upstream-channel-ID 2</i>	<p>(Optional) For Cisco cBR-8 router—Specifies a range of upstream channel IDs on the cable interfaces to be summarized. The <i>upstream-channel-ID 1</i> and <i>upstream-channel-ID 2</i> parameters can start at 0, and <i>upstream-channel-ID 2</i> must be a higher-numbered port than <i>upstream-channel-ID 1</i>.</p> <p>The valid range is from 0 to 15.</p>
upstream <i>port</i>	<p>(Optional) Specifies a specific upstream port to be summarized. This option can be specified only when summarizing a single cable interface.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
summary	<p>Displays a summary of CMs on one or more cable interfaces.</p>

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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The <i>upstream-channel-id</i> variable was added. The <i>logical-channel-index</i> 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 Modems	Active Modems	Registered Modems	Description
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 Modems	Active Modems	Registered Modems	Description
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	Total	Reg	Unreg	Offline	Cable Modem Wideband	initRC	initD	initIO	initO	Description
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	Total	Reg	Unreg	Offline	Cable Modem Wideband	initRC	initD	initIO	initO	Description
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 46: 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.
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).

Field	Description
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.
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 rf-adapt	Displays RF adaptation information for cable modems.

Command	Description
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 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

<i>cable slot /subslot /port</i>	<p>(Optional) Specifies the cable interface. The following are the valid values:</p> <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. Valid values are 5 to 8. • <i>subslot</i> —Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • <i>port</i> —Specifies the port number. Valid values are 0 to 4 (depending on the cable interface). <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>slot /subslot /port</i>	<p>(Optional) Specifies the cable interface on the Cisco cBR-8 router. The following are the valid values:</p> <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. Valid values are 0 to 3 and 6 to 9. • <i>subslot</i> —Specifies the secondary slot number of the cable interface line card. Valid subslot is 0. • <i>port</i> —Specifies the port number. Valid values are 0 to 7.
<i>WB-RF-channel-number</i>	<p>(Optional) Specifies the cable interface on the Cisco cBR-8 router. The valid values 0 to 163.</p>

modular-cable <i>slot/bay/port:nb-channel-number</i>	<p>(Optional) Specifies the modular cable interface. The following are the valid values:</p> <ul style="list-style-type: none"> • <i>slot</i> —The slot where a SIP resides. On the Cisco uBR10012 router, slots 1 and 3 can be used for SIPs. • <i>bay</i>—The bay in a SIP where a SPA is located. Valid values are 0 (upper bay) and 1 (lower bay). • <i>port</i> —Specifies the interface number on the SPA. • <i>nb-channel-number</i> —Specifies the narrowband channel number. <p>This option is not supported on the Cisco cBR-8 router.</p>
-------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Command Default None

Command Modes Privileged EXEC (#)

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 <i>port</i> 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
```

```
show cable modem summary wb-rf
```

```
-----
1/0/0 18  0      0      0
```

Examples

This example shows the output of the **show cable modem summary wb-rf** command:

```
Router#show cable modem summary wb-rfs
```

RF		Total w-online	Total RF down	Percent 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
```

RF		Total w-online	Total RF down	Percent 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
```

RF		Total w-online	Total RF down	Percent 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 47: show cable modem tcs summary Field Descriptions

Field	Description
Interface	Cable interface line card providing the upstream for the CMs.

Field	Description
Total Modems or Total	Total number of CMs, registered, unregistered, and offline for this interface.
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 eBR 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 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-address*|*mac-address*] **cable** {*slot* /*port* | *slot* /*cable-interface-index* } [**upstream port** [*logical-channel-index*]]
name *fqdn*] **type**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot* /*cable-interface-index* [**upstream port**]] **type**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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).
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	<p>(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.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
name <i>fqdn</i>	<p>(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.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>

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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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        2001:0DB8:3800:80B: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 48: 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.

Field	Description
P/D/A	<p>String of 3 values representing the boot mode configuration of the CM as follows:</p> <ul style="list-style-type: none"> • 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. <p>Note APM is not supported by the Cisco CMTS routers in Cisco IOS Release 12.2(33)SCA.</p>
IPv4 address	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • 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    ---

```

show cable modem type

```

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 rf-adapt	Displays RF adaptation information for cable modems.

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-address*|*mac-address*] **cable** {*slot* /*port* | *slot* /*cable-interface-index* } [**upstream port** [*logical-channel-index*]]| **name** *fqdn*] **unregistered**

Cisco uBR10012 Router

show cable modem [*ip-address*|*mac-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-address*|*mac-address*] **cable** *slot* /*subslot* /*cable-interface-index*] **unregistered**

Syntax Description

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	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.

<i>port</i>	<p>Downstream port number.</p> <ul style="list-style-type: none"> • 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). <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>cable-interface-index</i>	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports supported by the cable interface line card.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
<i>logical-channel-index</i>	<p>(Optional) Logical channel index. The valid values are 0 or 1.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>
name fqdn	<p>(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.</p> <p>This option is not supported on the Cisco cBR-8 router.</p>

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.
	12.2(33)SCA	<p>This command was integrated into Cisco IOS Release 12.2(33)SCA, with the following changes:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
	12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> 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 <i>logical-channel-index</i> 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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 Sid	Online State	Timing Offset	Rec Power	QoS	CPE	IP address	MAC address
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 49: 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.

Field	Description
Timing Offset	<p>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.</p> <p>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.</p> <p>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).</p>
Rec Power	<p>The received power level (in dB) for the CM.</p> <p>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.</p>
QoS	Displays the QoS profile assigned to the cable modem (DOCSIS 1.1 and DOCSIS 2.0 CMs only).
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 50: Descriptions for the Online State Field

MAC State Value ⁵	Description
Registration and Provisioning Status Conditions for Devices Using IPv4 Addressing	

MAC State Value ⁵	Description
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)	<p>Ranging has completed.</p> <p>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.</p>
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)	<p>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.</p> <p>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.</p>
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.

MAC State Value ⁵	Description
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 REQUEST 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).

MAC State Value ⁵	Description
online	The cable modem has registered and is enabled to pass data on the network.
online(d)	<p>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).</p> <p>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.</p>
online(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	The cable modem registered, BPI is enabled and KEK is assigned.
online(pt)	<p>The cable modem registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
Note	<p>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.</p>

MAC State Value ⁵	Description
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	
reject(m)	<p>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.</p> <p>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.</p>

MAC State Value ⁵	Description
reject(c)	<p>The cable modem attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>

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.
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.

Examples

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.

Command	Description
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 rf-adapt	Displays RF adaptation information for cable modems.
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

<i>slot</i>	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.
<i>subslot</i>	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.
<i>port</i>	Downstream port number. The valid range is from 0 to 4 (depending on the cable interface).
<i>cable-interface-index</i>	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. <ul style="list-style-type: none"> • 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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.

<i>logical-channel-index</i>	(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.
12.2(33)SCE	This command was modified. The <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The <i>logical-channel-index</i> argument was added.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR-8 Converged Broadband Router. The <i>logical-channel-index</i> 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 State	Prim Sid	RxPwr (db)	Timing Offset	Num BPI CPE	Enb
--------	-------------	-----	-----------	----------	------------	---------------	-------------	-----

show cable modem vendor

```

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 State	Prim Sid	RxPwr (db)	Timing Offset	Num CPE	BPI 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 51: 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.
RxPwr	<p>The received power level (in dB) for the CM.</p> <p>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.</p>
Timing Offset	<p>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.</p> <p>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.</p> <p>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).</p>
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

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
```

Vendor	MAC Address	I/F	MAC State	Prim Sid	RxPwr (dBmv)	Timing Offset	B D		
							Num CPE	P I	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).

Command	Description
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.
show cable modem rf-adapt	Displays RF adaptation information for cable modems.
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 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 { *ip-address* | *mac-address* } **wideband** [**channel**]

show cable modem [**cable** *slot/subslot/cable-interface-index* [**upstream port**]] **wideband** [**channel**]

<i>ip-address</i>	(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.
<i>mac-address</i>	(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.
<i>slot</i>	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.
<i>subslot</i>	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.
<i>cable-interface-index</i>	<p>DOCSIS line card MAC domain index.</p> <ul style="list-style-type: none"> • 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 <i>port</i>	(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 <i>port</i> begins with 0 and ends with a value that depends on the number of upstream ports on the cable interface line card.
<i>logical-channel-index</i>	(Optional) Logical channel index. The valid values are 0 or 1.
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 <i>port</i> parameter was changed to <i>cable-interface-index</i> .
12.2(33)SCF	This command was modified. The channel keyword and <i>logical-channel-index</i> 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 <i>logical-channel-index</i> variable was removed.

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.

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
```

Examples

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

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      Sid  ID      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      Sid  ID      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      Sid  ID      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
```

show cable modem wideband

```

0018.6852.7b76 80.62.0.5      C6/1/0/U0      State      WB
                                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 52: 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.
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.7ele 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

```

Table below shows the possible values for the MAC State field for a wideband CM modem that registers as a traditional DOCSIS modem:

Table 53: 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)	<p>Ranging has completed.</p> <p>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.</p>
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)	<p>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.</p> <p>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.</p>
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.

MAC State Value ⁶	Description
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.
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)	<p>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).</p> <p>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.</p>

MAC State Value ⁶	Description
online(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pk) states.</p>
online(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and online(pt) states.</p>
online(pk)	<p>The CM registered, BPI is enabled and KEK is assigned.</p>
online(pt)	<p>The CM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
<p>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</p>	
expire(pk)	<p>The CM registered, BPI is enabled, KEK was assigned, but the current KEK expired before the CM could successfully renew a new KEK value.</p>
expire(pkd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pk) states.</p>
expire(pt)	<p>The CM registered, BPI is enabled, TEK was assigned, but the current TEK expired before the CM could successfully renew a new KEK value.</p>

MAC State Value ⁶	Description
expire(ptd)	<p>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.</p> <p>Note This state is equivalent to the online(d) and expire(pt) states.</p>
Error Status Conditions	
reject(m)	<p>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.</p> <p>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.</p>
reject(c)	<p>The CM attempted to register, but registration was refused due to a number of possible errors:</p> <ul style="list-style-type: none"> • 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)	<p>KEK key assignment is rejected, BPI encryption has not been established.</p>

MAC State Value ⁶	Description
reject(pk)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pk) states.</p>
reject(pt)	<p>TEK key assignment is rejected, BPI encryption has not been established.</p>
reject(pte)	<p>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.</p> <p>Note This state is equivalent to the online(d) and reject(pt) states.</p>
reject(ts)	<p>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.</p>
reject(ip)	<p>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.</p>
reject(na)	<p>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.</p>

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 54: 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)	<p>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).</p> <p>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.</p>
w-online(pk)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-online(pk) states.</p>
w-online(pt)	<p>The WCM registered, BPI is enabled and TEK is assigned. BPI encryption is now being performed.</p> <p>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.</p>
w-online(ptd)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-online(pt) states.</p>
w-online(pk)	The WCM registered, BPI is enabled and KEK is assigned.

MAC State Value	Description
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)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-expire(pk) states.</p>
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)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-expire(pt) states.</p>
Error Status Conditions	
w-reject(pk)	KEK key assignment is rejected, BPI encryption has not been established.
w-reject(pkd)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-reject(pk) states.</p>
w-reject(pt)	TEK key assignment is rejected, BPI encryption has not been established.
w-reject(ptd)	<p>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.</p> <p>Note This state is equivalent to the w-online(d) and w-reject(pt) states.</p>

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 modem rf-adapt	Displays RF adaptation information for cable modems.
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

```

54d4.6ffb.2e21 40.4.58.5      C7/0/0/p      w-online (pt)  us3    13    36.12    46.25
                                     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 55: show cable modem wideband phy Field Descriptions

Field	Description
MAC Address	MAC address of the CM.

Field	Description
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

<i>ip-address</i>	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.
<i>mac-address</i>	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: <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. Valid values are 5 to 8. • <i>subslot</i> —Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • <i>port</i> —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: <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. Valid values are 0 to 9. • <i>subslot</i> —Specifies the secondary slot number of the cable interface line card. Valid subslots is 0. • <i>mac-domain</i> —Specifies the mac-domain. The valid values are 0 to 15.

show cable modem wideband rcs-status**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.

Examples

The following is a sample output of the **show cable modem wideband rcs-status** command on a wideband cable interface:

```
Router# show cable modem wideband rcs-status
CM : 0019.474a.c0ba
RF : 1/0/0 10
  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 : 1/0/0 11
  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
```

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*

Syntax Description

<i>profile</i>	(Optional) Profile number. Valid values start with 1.
verbose	(Optional) Displays detailed information for an individual profile.
<i>iuc-code</i>	<p>(Optional) Internal usage code (IUC). Valid options are:</p> <p>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) request—Request Burst (IUC 1) short—Short Grant Burst (IUC 5) station—Station Ranging Burst (IUC 4)</p>
cable <i>slot /port</i>	<p>For uBR series router, identifies a cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers.</p> <p>On the Cisco uBR7100 series router, the only valid value is 1/0. On the Cisco uBR7200 series router, <i>slot</i> can range from 3 to 6, and <i>port</i> can be 0 or 1, depending on the cable interface.</p>

cable <i>slot /subslot /port</i>	For uBR series router, identifies a cable interface on the Cisco uBR10012 router. The following are the valid values: <ul style="list-style-type: none"> • <i>slot</i> = 5 to 8 • <i>subslot</i> = 0 or 1 • <i>port</i> = 0 to 4 (depending on the cable interface)
upstream <i>port</i>	(Optional) For uBR series router, displays information for a particular upstream on the selected cable interface. The <i>port</i> value starts with 0 and continues up, depending on the type of cable interface card.
cable <i>slot /card/port</i>	For cBR series router, identifies a cable interface on the Cisco cBR-8 router. The following are the valid values: <ul style="list-style-type: none"> • <i>slot</i> = 0 to 9 • <i>card</i> = 0 • <i>port</i> = 0 to 15 (depending on the cable interface)
us-channel <i>us-channel-id</i>	(Optional) For cBR series router, displays information for a particular upstream on the selected cable interface. The <i>us-channel-id</i> value is from 0 to 12, depending on the type of cable interface card.

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(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.

Release	Modification
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 <i>slot /card /port</i> variables are changed.

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 56: 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	Advanced Phy Long Grant Burst (a-long)
IUC 5	Short Grant Burst (short)	IUC 11	Advanced 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 57: 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 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 length	Diff enco	FEC T bytes	FEC CW size	Scrambl seed	Max B size	Guard time size	Last CW short	Scrambl	Preamb offset
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 len	Diff enco	FEC T	FEC k	Scrambl seed	Max B size	Guard time size	Last CW short	Scrambl	Pre offst	Pre Type	RS
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 len	Diff enco	FEC T	FEC k	Scramb seed	Max B	Guard time	Last CW	Scramb	Pre offst	Pre Type	RS
					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 len	Diff enco	FEC T	FEC k	Scramb seed	Max B	Guard time	Last CW	Scramb	Pre offst	Pre Type	RS
					BYTE	BYTE		siz	size	short				
221	request	qpsk	64	no	0x0	0x10	0x152	0	8	no	yes	184	qpsk0	na

show cable modulation-profile

```

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 len	Diff enco	FEC T	FEC k	Scramb seed	Max B	Guard time	Last CW	Scramb	Pre offst	Pre Type	RS
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 len	Diff enco	FEC T	FEC k	Scramb seed	Max B	Guard time	Last CW	Scramb	Pre offst	Pre Type	RS
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 58: 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.

Field	Description
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: <ul style="list-style-type: none"> • 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.
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).

Field	Description
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.
<i>profile-group-number</i>	Displays the profile number.
all	Displays all profile groups.
profile-list	Displays the profile list.
<i>profile-number</i>	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: 1.1.1.1/16

```

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: 1.1.1.1/16

```

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: 1.1.1.1/16
-----
Profile-Index: 1      Name: prof2
Number of CMs: 2
Id      Group / Source                                Prio  Action
-----
Profile-Index: 2      Name: prof3

```

show cable multicast authorization

```

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 59: 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.

Command	Description
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.
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-address| ipv6-address| summary]] cm-mac
[host-mac-add| hosts| proxy]] summary| client pcmm]] [detail]}
```

Syntax Description

<i>bundle bundle-interface</i>	(Optional) Displays the bundle interface. For example, Bundle 10.
<i>ipv4-address</i>	(Optional) IPv4 address.
<i>ipv6-address</i>	(Optional) IPv6 address of the group that should be matched using the format X:X:X:X.
<i>cm-mac</i>	(Optional) MAC address of the cable modem.
<i>host-mac-add</i>	(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.

Release	Modification
12.2(33)SCE	This command was modified. The following two keywords were added to this command: <ul style="list-style-type: none"> • 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.
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
wl/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
wl/0/0:0 aabb.bbccc.cccd 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 60: show cable multicast db Field Descriptions

Field	Description
Bundle Interface	Bundle interface number.
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.

Field	Description
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-address*| *mac-address*]]

Syntax Description

etdb	(Optional) Displays information about multicast explicit tracking database debug counters.
<i>multicast-group-address</i>	(Optional) IP address of the multicast group.
<i>mac-address</i>	(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 authorization 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_intf_update 3
et_post_ses_intf_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_intf_update 3
et_post_ses_intf_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_intf_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 61: 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.
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 [dsid | ip-address | [ source-ip ]] integrated-cable slot /port :integrated-channel
{dynamic | static}| wideband-cablesslot /port :wideband-channel {dynamic }| ipv6-address]
```

Cisco uBR10012 Router

```
show cable multicast dsid [dsid | ip-address | [ source-ip ]] integrated-cable slot /sub-slot /port
:integrated-channel {dynamic | static}| wideband-cablesslot /bay /port :wideband-channel {dynamic |
static}| ipv6-address]
```

Cisco cBR Series Router

```
show cable multicast dsid [dsid | ip-address | [ source-ip ]] integrated-cable slot /sub-slot /port
:integrated-channel {dynamic | static}| wideband-cablesslot /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 <i>slot</i> / <i>sub-slot</i> / <i>port</i> : <i>integrated-channel</i>	<p>Identifies the cable interface on the router for which information should be displayed, where:</p> <ul style="list-style-type: none"> • <i>slot</i>—0 to 8 for uBR series router, 0 to 9 for cBR series router • <i>sub-slot</i>—0 or 1 for uBR series router, 0 for cBR series router • <i>port</i>—0 to 4 for uBR series router, 0 to 7 for cBR series router • <i>integrated-channel</i> —0 to 3 for uBR series router, 0 to 157 for cBR series router

wideband-cable <i>slot /sub-slot /port</i> <i>:wideband-channel</i>	Identifies the wideband interface on the router for which information should be displayed, where: <ul style="list-style-type: none"> • <i>slot</i>—0 to 8 for uBR series router, 0 to 9 for cBR series router • <i>sub-slot</i>—0 or 1 for uBR series router, 0 for cBR series router • <i>port</i>—0 to 4 for uBR series router, 0 to 7 for cBR series router • <i>wideband-channel</i>—0 to 5 for uBR series router, 0 to 63 for cBR series router
<i>ipv6-address</i>	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 (#)

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          : *

```

show cable multicast dsid

```

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 62: 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.

Command	Description
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 63: 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.

Field	Description
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/{subslot|bay}/port:interface-number* [**summary**|**verbose**]

show cable multicast ses-cache interface wideband-cable *slot/{subslot|bay}/port:wideband-channel* [**summary**|**verbose**]

show cable multicast ses-cache global [**summary**]

Syntax Description

interface integrated-cable <i>slot/subslot/port:rf-channel</i>	<p>Displays the multicast replication sessions cache information for a integrated-cable interface.</p> <ul style="list-style-type: none"> • <i>slot</i> —Slot where a line card resides. • <i>subslot</i> —(Cisco uBR10012 only) Secondary slot number of a line card. • <i>port</i>—Downstream port number. • <i>rf:channel</i> —RF channel number.
interface integrated-cable <i>slot/{subslot bay}/port:interface-number</i>	<p>Displays the multicast replication sessions cache information for a wideband-cable interface.</p> <ul style="list-style-type: none"> • <i>slot</i>—Slot where a SPA interface processor (SIP) or a line card resides. • <i>subslot</i>—Secondary slot for a shared port adapter (SPA) or a line card. • <i>bay</i>—Bay in a SIP where a SPA is located. • <i>port</i>—Downstream port number. • <i>interface-number</i>—Modular cable interface number

interface wideband-cable <i>slot/ {subslot bay}/port:wideband-channel</i>	Displays the multicast replication sessions cache information for a wideband-cable interface. <ul style="list-style-type: none"> • <i>slot</i>—Slot where a SPA interface processor (SIP) or a line card resides. • <i>subslot</i>—Secondary slot for a shared port adapter (SPA) or a line card. • <i>bay</i>—Bay in a SIP where a SPA is located. • <i>port</i>—Downstream port number. • <i>wideband-channel</i>—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-cache 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 64: 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 65: 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 66: 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 67: 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 68: 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
GCR              : GC      SAID      SFID      Key      GQC      GEn      RC: 0
                  10      8858      24      0        1        0
Multicast Group   : 232.10.0.16
Source           : 100.0.0.2
Act GCRs         : 1
Interface        : Bu255
GCR              : GC      SAID      SFID      Key      GQC      GEn      RC: 0
                  10      8859      25      0        1        0
Total session cache num: 2

```

Table below describes the significant fields shown in the display.

Table 69: 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

<i>index</i>	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.
<i>pool-id</i>	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 70: 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 multicast statistics** command with an 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 71: 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 72: show cable multicast statistics pool Field Descriptions

Field	Description
Pool	Multicast statistics pool ID.
Total	Total number of statistics index.
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

<i>slot /port</i>	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, <i>slot</i> can range from 3 to 6, and <i>port</i> can be 0 or 1, depending on the cable interface.
<i>slot /subslot /port</i>	Identifies the cable interface on the Cisco uBR10012 router. The following are the valid values: <ul style="list-style-type: none">• <i>slot</i> = 5 to 8• <i>subslot</i> = 0 or 1• <i>port</i> = 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 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 73: 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	<ul style="list-style-type: none"> 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 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

<i>qam-profile-id</i>	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 74: 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

<i>name</i>	(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	<p>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.</p> <p>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.</p> <p>The output field Penalty End-time was renamed as Default Penalty Duration.</p>

Release	Modification
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 (min)	Dir	byte-cnt (kbytes)	Auto enf	rate (min)	penalty (min)	Reg QoS	Enf QoS	Ena	Persist
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 (min)	Dir	byte-cnt (kbytes)	Auto enf	rate (min)	penalty (min)	Reg QoS	Enf QoS	Ena	Persist
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 75: 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: <ul style="list-style-type: none"> • DS—Downstream direction • US—Upstream direction

Field	Description
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.
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: <ul style="list-style-type: none"> • 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 Average-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.

Command	Description
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.
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 76: 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

<i>profile-index</i>	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 upstream bandwidth	Guarantee upstream bandwidth	Max downstream bandwidth	Max tx burst	TOS mask	TOS value	Create by	B priv enab	IP prec. rate 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_QoS MAC.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 77: 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.

Field	Description
Create by	<p>Identity of who created the profile:</p> <ul style="list-style-type: none"> • 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.

Command	Description
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 78: 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.

Field	Description
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.
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 **show cable rate-limit-ccf** command in privileged EXEC mode.

show cable rate-limit-ccf [*start-index count* | **clear**]

Syntax Description

<i>start-index</i>	(Optional) Starting index for the log entries. The valid range is from 0 to 2000. The default value is 0.
<i>count</i>	(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 79: 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
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	<i>rcp id</i> 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.
------------------	------------------------------------------------------------------------------------

Examples

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 privileged 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
```

show cable redundancy

```
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.
<i>slot</i>	(Optional) The slot where a SIP resides. Valid values are from 0 to 3 and 6 to 9.
<i>card</i>	(Optional) The bay in a SIP where a SPA is located. Valid values is 0.
<i>port</i>	(Optional) Specifies the interface number on the SPA. Valid values are from 0 to 15.
<i>wb-rf-channel-number</i>	(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
```

show cable resil-rf-status

RF		Logical Status	Suspend Status	Suspend Fails	Flap Counts	Flap 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 80: 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
```

RF		Logical Status	Suspend Status	Suspend Fails	Flap Counts	Flap 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
Resil BG I/F ID  State      Count Time           RF
-----
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 81: 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.

Field	Description
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 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.
<i>slot</i>	Slot where the line card resides. <ul style="list-style-type: none"> • 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.
<i>subslot</i>	(Cisco uBR10012 only) Secondary slot number of the cable interface line card. The valid subslots are 0 or 1.
<i>cable-interface-index</i>	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. <ul style="list-style-type: none"> • 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.

ExamplesThe 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.

Table 82: show cable modem rf-adapt Field Descriptions

Field	Description
MAC Address	MAC address of the cable modem.
IP Address	IP address of the cable modem.
Source Upstream	Source upstream port and logical channel index of the cable modem.
Destination Upstream	Destination upstream port and logical channel index to which the cable modem will be moved.

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.
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 modem rf-adapt	Displays the RF adaptation history.

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.
<i>slot</i>	(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).
<i>port</i>	(Optional) Specifies the interface number on the SPA.
<i>nb-channel-number</i>	(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 83: 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

RF          Logical  Flap    Flap
-----      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 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  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 84: 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.

Field	Description
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.
Dir	Direction of the DOCSIS service flow. Here DS indicates downstream flow.

Related Commands

Command	Description
cable rsvp default-sc	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

<i>sclass-index</i>	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 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.
<i>slot /subslot /port</i>	For uBR series router, displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: <ul style="list-style-type: none"> • <i>slot</i> —Chassis slot number of the cable interface line card. Valid slots are from 5 to 8. • <i>subslot</i> —Secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • <i>port</i> —Port number. Valid ports are from 0 to 4, depending on the cable interface line card.
<i>slot /card /port</i>	For cBR series router, displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: <ul style="list-style-type: none"> • <i>slot</i> —Chassis slot number of the cable interface line card. Valid slots are 0 to 9. • <i>card</i> —Secondary slot number of the cable interface line card. Valid subslots is 0. • <i>port</i> — 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 3.
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.
IOS-XE 3.15.0S	This command was implemented on the Cisco cBR Series Converged Broadband Routers. The value range for the <i>slot /card /port</i> variables are changed.

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 -----
```

show cable signal-quality

```

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 -----

```

Table below describes the major fields displayed by the **show cable signal-quality** command.

Table 85: 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.

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.

Command	Description
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. This command replaces the show cable bgsync command.

Usage Guidelines



Important You must configure the **service internal** command in global configuration mode to display the SNMP cache status.

Examples

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
hit: 1, mis: 3
```

Table 86: show cable snmp cache-status Field Descriptions

Field	Description
age	The time interval for which the SNMP cache information is stored on the Supervisor.
hit	The number of times the SNMP queries are hit in the cache.
mis	The number of times the SNMP queries are missed in the cache.

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

<i>slot /subslot /port</i>	Displays information about all CMs on the specified cable interface line card on a Cisco CMTS router: <ul style="list-style-type: none">• <i>slot</i> —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.• <i>subslot</i> —Secondary slot number of the cable interface line card. Valid subslots are 0 or 1 for uBR series router, 0 for cBR series router.• <i>port</i> —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 <i>slot /subslot /port</i> variables are changed. This command replaces the show controllers cable upstream spectrum command.

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 87: 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.

Field	Description
Amplitude Data	Spectral amplitudes for the received signal power of a bin.

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

<i>groupnum</i>	(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 No.      Frequency Band      Upstream Port      Weekly Scheduled Availability
                  (Mhz)                                     From Time:      To Time:
Power Level (dBmV)      Shared Spectrum

1          5.000-42.000
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
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
3          17.488 [1.60] Cable5/0 U1      0
```

show cable spectrum-group

```

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 No.	Frequency Band (Mhz)	Upstream Port	Weekly Scheduled Availability From Time: To Time:	Power Level (dBmV)	Shared Spectrum
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 88: show cable spectrum-group Command Field Descriptions


Field	Description
Group No.	Identifies the spectrum group. When using the detail keyword, the following also appear: <ul style="list-style-type: none"> • 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).
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 spectrum-group

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	<p>(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:</p> <ul style="list-style-type: none"> • <i>slot</i>—Specifies the chassis slot number of the cable interface line card. • <i>port</i>—Specifies the downstream port number. <p>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.</p>
cable slot/subslot/port	<p>(Optional) Displays information for all CMs on the specified cable interface on a Cisco uBR10012 router, where:</p> <ul style="list-style-type: none"> • <i>slot</i> —Specifies the chassis slot number of the cable interface line card. Valid slots are 5 to 8. • <i>subslot</i> —Specifies the secondary slot number of the cable interface line card. Valid subslots are 0 or 1. • <i>port</i> —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 <i>port</i> 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 (#)

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. 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.
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 Total-Kbyte Last-detect Last-penalty Pen
      Name      Count      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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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-q5d 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 Name	Total-Kbyte Count	Last-detect time	Last-penalty time	Pen 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 Name	Total-Kbyte Count	Last-detect time	Last-penalty time	Pen 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 Name	Total-Kbyte Count	Last-detect time	Last-penalty time	Pen 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 89: show cable subscriber-usage Field Descriptions

Field	Description
SFID	Number of the Service Flow ID.

Field	Description
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.
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.
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.

Command	Description
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

<i>slot</i> / <i>port</i>	<p>(Optional) Cisco IOS Release 12.3(9a)BC allows you to display information about one specific cable interface.</p> <p>Identifies the cable interface and downstream port on the Cisco uBR7100 series and Cisco uBR7200 series routers.</p> <p>On the Cisco uBR7100 series router, the only valid value is 1/0. On the Cisco uBR7200 series router, <i>slot</i> can range from 3 to 6, and <i>port</i> can be 0 or 1, depending on the cable interface.</p>
<i>slot</i> / <i>subslot</i> / <i>port</i>	<p>(Optional) Cisco IOS Release 12.3(9a)BC allows you to display information about one specific cable interface.</p> <p>Identifies the cable interface on the router. The following are the valid values:</p> <ul style="list-style-type: none"> • <i>slot</i> = 5 to 8 for uBR series router, 0 to 9 for cBR series router. • <i>subslot</i> = 0 or 1 for uBR series router, 0 for cBR series router. • <i>port</i> = 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.

Release	Modification
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 <i>slot /subslot /port</i> 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

**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 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.
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 90: show cable throttle-modem Field Descriptions

Field	Description
CPU for five seconds	CPU usage information.
CM Throttle Status	CM throttle operating status. The valid values are: <ul style="list-style-type: none">• 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 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 91: 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.

Field	Description
UGS	Number of unsolicited grant service schedule types.
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 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	<p>Identifies the cable interface on the router.</p> <ul style="list-style-type: none"> 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.

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  cnnr      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.
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-
CNR    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
```

show cable urm

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

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URM Receiver Resource

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```

SLOT/ SUBSLOT	DEV	DEV- RCVR	MD-US	MD-IDX	CARD- CNNR	CARD- RCVR	DEV- 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.
DEV	The US PHY device number.
DEV-RCVR	The US PHY device receiver.
MD-US	The upstream channel under MAC domain.

Field	Description
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 92: 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.

Field	Description
Primary-DS	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.

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 us-sg