Commands: show cable h to v

show cable heartbeat

To display the number of heartbeats received from the line cards, use the **show cable heartbeat** command in privileged EXEC mode.

show cable heartbeat

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the heartbeat of the line cards:

```
Router# show cable heartbeat
                  Heartbeat
      Heartbeat   Received    Card
Slot  Enabled     Count       State
-------------------------------------
3     enabled     6183        ready
4     enabled     733519      ready
5     enabled     562516      ready
6     enabled     1423983     ready
7     enabled     1423001     ready
8     enabled     1423984     ready
9     enabled     1424010     ready
10    enabled     1423989     ready
11    enabled     197795      ready
12    enabled     562139      ready
13    enabled     1423949     ready
14    enabled     1423900     ready
```

The table below describes the significant fields shown in the display.

Table 1: show cable hearbeat Field Descriptions

Field	Specifies the
Slot	Slot on the chassis.
Heartbeat Enabled	Heartbeat enabled status. If no heartbeat is received, it indicates that the line card is reset. Note that heartbeat state must be enabled to receive heartbeats.

Field	Specifies the
Heartbeat Received Count	Number of heartbeats.
Card State	State of the line card.

Related Commands

Command	Description
cable linecard reset	Resets the line card on the chassis.

show cable image-upgrade bundle

To display the upgraded images of all the devices on the Supervisor card, use the **show cable image-upgrade bundle** command in user EXEC or privileged EXEC mode.

show cable image-upgrade bundle

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the sample output using the **show cable image-upgrade bundle** command on the Cisco RF Gateway 10:

```
Router# show cable image-upgrade bundle

Image Name                            Id  Date      Time
==================================    ==  ================
TCC_APP_00000000_20080811-00144654    00  20080811  00144654
TCC_ROM_00000001_20080317-00170141    01  20080317  00170141
TCC_GEN_00000002_20080612-00140709    02  20080612  00140709
TCC_DTI_00000003_20080428-00094708    03  20080428  00094708
TCC_RST_00000004_20080612-00140712    04  20080612  00140712
RFS_CPL_00000005_20080428-00105357    05  20080428  00105357
MV_APP_00000011_20080811-00144650     11  20080811  00144650
MV_ROM_00000012_20080605-00074654     12  20080605  00074654
MV_DIS_00000013_20080603-00151016     13  20080603  00151016
MV_COB_00000014_20080609-00205712     14  20080609  00205712
MV_YEL_00000015_20080609-00205659     15  20080609  00205659
MV_GWT_00000016_20080717-00162446     16  20080717  00162446
RFGW_GUI_00000017_20080603-00114822   17  20080603  00114822
```

The table below describes the significant fields shown in the display.

Table 2: show cable image-upgrade bundle Field Descriptions

Field	Indicates the
Image Name	Name of images of all devices on Supervisor card.
Id	ID allotted to the image.

Field	Indicates the
Date	Date when the image was created.
Time	Time when the image was created.

Related Commands

Command	Description
cable-image upgrade download	Upgrades the image on the specified line card.
show cable-image upgrade status	Displays the image upgraded status of the line card.
show cable-image upgrade version	Displays all the upgraded image versions on the line card.

show cable image-upgrade status

To display the upgrade status for a line card, use the **show cable image-upgrade status** command in user EXEC or privileged EXEC mode.

show cable image-upgrade status *slot*

Syntax Description

slot	Specifies the slot number of the line card. Valid ranges are from 3 to 12.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example displays the upgrade status for the line card:

```
Router# show cable image-upgrade status 12
No current image upgrade is occurring on slot 12
```

Related Commands

Command	Description
cable-image upgrade download	Upgrades the image on the specified line card.
show cable-image upgrade bundle	Displays the upgraded images of all the devices on the Supervisor card.
show cable-image upgrade version	Displays all the upgraded image versions on the line card.

show cable image-upgrade version

To display the upgraded images on the line card, use the **show cable image-upgrade version** command in privileged EXEC and user EXEC mode.

show cable image-upgrade version *slot*

Syntax Description

slot	Specifies the slot number of the line card. Valid slot range is from 3 to 12.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the output from the **show cable image-upgrade version** command:

```
Router# show cable image-upgrade version  3
Image Name                            Id  Date      Time
==================================    ==  ==================
MV_APP_00000011_20080811-00144650     11  20080811  00144650
MV_ROM_00000012_20080605-00074654     12  20080605  00074654
MV_DIS_00000013_20080603-00151016     13  20080603  00151016
MV_COB_00000014_20080609-00205712     14  20080609  00205712
MV_YEL_00000015_20080609-00205659     15  20080609  00205659
MV_GWT_00000016_20080717-00162446     16  20080717  00162446
```

The table below describes the significant fields shown in the display.

Table 3: show cable image-upgrade version Field Descriptions

Field	Indicates the
Image Name	Name of the image upgraded.
Id	ID allotted to the image.
Date	Date when image was upgraded.
Time	Time when image upgrade occurred.

Related Commands

Command	Description
cable-image upgrade download	Upgrades the image on the specified line card.
show cable-image upgrade bundle	Displays the upgraded images of all the devices e on the Supervisor card.
show cable-image upgrade status	Displays the image upgraded status of the line card.

show cable licenses

To view license information applied to QAM channels on the Cisco RFGW-10, use the **show cable licenses** command in the privileged EXEC mode.

show cable licenses [**all** | *lc-slot*]

Syntax Description

all	Displays detailed information of all licenses Cisco RFGW-10.
lc-slot	Displays detailed information of a specific slot on the line card. Valid line cards are from 3 to 12.

Command Default

Information on licenses are displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.2.0SQ	This command was introduced.

Usage Guidelines

Use the **show cable license** command to view the licenses on the line cards on the Cisco RFGW-10 DS-384 line card.

The license on the Cisco RFGW-10 DS-384 line card is a count based license for available QAM channels. The Supervisor enforces the license after ensuring the number of unshut QAM channels in the running configuration does not exceed the license. If there are more QAM channels unshut, then the system shuts down the extra QAM channels. Depending on the running configuration, the first N licensed channels remain unshut, and the rest are shutdown.

Note This command does not display the license information for the Cisco RFGW-10 DS-48 line card.

Examples

The following example displays the license information of all line cards on the Cisco RFGW-10:

```
Router# show cable licenses all
Slot 3 : License Configuration : DS384_384_CLEAR
-------------------------------------------------
Feature: Downstream Licenses
Installed: 384 Consumed: 0   Available: 384 Forced-Shut: 0
Router#
```

The table below describes the significant fields shown in the display.

Table 4: show cable licenses Field Descriptions

Field	Description
Slot	Indicates the slot on the Cisco RFGW-10.
License Configuration	Indicates the type of license.
Feature	Indicates whether the license is for downstream or upstream port.
Installed	Displays the currently active license count.
Consumed	Displays the number of un-shut channels used by the license.
Available	Displays the number of available un-shut channels allowed by the license.
Forced-Shut	Displays the number of un-shut channels not allowed by the license during a license downgrade. The channels are un-shut during a license upgrade.

show cable linecard carrier-id-mapping

To display the carrier-id mapped to the line card, use the **show cable linecard carrier-id-mapping** command in privileged EXEC mode.

show cable linecard carrier-id-mapping *slot*

Syntax Description

slot	Specifies the line card on the Cisco RF Gateway 10. Valid range is from 3 to 14.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.2.0SQ	This command was introduced.

Usage Guidelines

QAM block information, QAM carrier mapped to line card, and maximum carriers assigned to the slot are displayed.

Examples

The following example shows the carrier ID, and the QAM carriers on slot 9 on the Cisco RFGW-10 DS-48 line card:

```
Router# show cable linecard carrier-id-mapping 9

QAM Block 1      Slot: 9        Maximum Carriers per Block: 24
        ID       QAM Carrier
-------------------------------------------------------
        1        9/1.1
        2        9/1.2
        3        9/1.3
        4        9/1.4
        5        9/2.1
        6        9/2.2
        7        9/2.3
        8        9/2.4
        9        9/3.1
        10       9/3.2
        11       9/3.3
        12       9/3.4
        13       9/4.1
        14       9/4.2
        15       9/4.3
        16       9/4.4
        17       9/5.1
        18       9/5.2
        19       9/5.3
```

```
        20       9/5.4
        21       9/6.1
        22       9/6.2
        23       9/6.3
        24       9/6.4

QAM Block 2      Slot: 9        Maximum Carriers per Block: 24
        ID       QAM Carrier
-----------------------------------------------------------
        25       9/7.1
        26       9/7.2
        27       9/7.3
        28       9/7.4
        29       9/8.1
        30       9/8.2
        31       9/8.3
        32       9/8.4
        33       9/9.1
        34       9/9.2
        35       9/9.3
        36       9/9.4
        37       9/10.1
        38       9/10.2
        39       9/10.3
        40       9/10.4
        41       9/11.1
        42       9/11.2
        43       9/11.3
        44       9/11.4
        45       9/12.1
        46       9/12.2
        47       9/12.3
        48       9/12.4
```

The following example shows the carrier ID , and the QAM carriers on slot 3 on the Cisco RFGW-10 DS-384 line card:

```
Router# show cable linecard carrier-id-mapping 3

QAM Block 1      Slot: 3        Maximum Carriers per Block: 16
        ID       QAM Carrier
-----------------------------------------------------------
        1        3/1.1
        2        3/1.2
        3        3/1.3
        4        3/1.4
        5        3/1.5
        6        3/1.6
        7        3/1.7
        8        3/1.8
        9        3/1.9
        10       3/1.10
        11       3/1.11
        12       3/1.12
        13       3/1.13
        14       3/1.14
        15       3/1.15
        16       3/1.16
        17       --
        18       --
        19       --
        20       --
        21       --
        22       --
        23       --
        24       --
        25       --
        26       --
        27       --
        28       --
        29       --
        30       --
```

```
31        --
32        --
33        --
34        --
35        --
36        --
37        --
38        --
39        --
40        --
41        --
42        --
43        --
44        --
45        --
46        --
47        --
48        --
49        --
50        --
51        --
52        --
53        --
54        --
55        --
56        --
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58        --
59        --
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62        --
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66        --
67        --
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72        --
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77        --
78        --
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82        --
83        --
84        --
85        --
86        --
87        --
88        --
89        --
90        --
91        --
92        --
93        --
94        --
95        --
96        --
97        --
98        --
99        --
100       --
101       --
102       --
103       --
```

```
104      --
105      --
106      --
107      --
108      --
109      --
110      --
111      --
112      --
113      --
114      --
115      --
116      --
117      --
118      --
119      --
120      --
121      --
122      --
123      --
124      --
125      --
126      --
127      --
128      --
129      --
130      --
131      --
132      --
133      --
134      --
135      --
136      --
137      --
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140      --
141      --
142      --
143      --
144      --
145      --
146      --
147      --
148      --
149      --
150      --
151      --
152      --
153      --
154      --
155      --
156      --
157      --
158      --
159      --
160      --
161      --
162      --
163      --
164      --
165      --
166      --
167      --
168      --
169      --
170      --
171      --
172      --
173      --
174      --
175      --
176      --
```

```
        177     --
        178     --
        179     --
        180     --
        181     --
        182     --
        183     --
        184     --
        185     --
        186     --
        187     --
        188     --
        189     --
        190     --
        191     --
        192     --

QAM Block 2     Slot: 3        Maximum Carriers per Block: 0
        ID      QAM Carrier
-------------------------------------------------------
        193     --
        194     --
        195     --
        196     --
        197     --
        198     --
        199     --
        200     --
        201     --
        202     --
        203     --
        204     --
        205     --
        206     --
        207     --
        208     --
        209     --
        210     --
        211     --
        212     --
        213     --
        214     --
        215     --
        216     --
        217     --
        218     --
        219     --
        220     --
        221     --
        222     --
        223     --
        224     --
        225     --
        226     --
        227     --
        228     --
        229     --
        230     --
        231     --
        232     --
        233     --
        234     --
        235     --
        236     --
        237     --
        238     --
        239     --
        240     --
        241     --
        242     --
        243     --
        244     --
        245     --
```

```
246      --
247      --
248      --
249      --
250      --
251      --
252      --
253      --
254      --
255      --
256      --
257      --
258      --
259      --
260      --
261      --
262      --
```

The table below describes the significant fields shown in the display.

Table 5: show cable linecard carrier-id mapping Field Descriptions

Field	Description
QAM Block ID	Indicates the QAM block on the line card. First 24 carriers are QAM 1 for Cisco RFGW-10 DS-48 line card. First 192 carriers are QAM 1 for the Cisco RFGW-10 DS-384 line card.
Slot	Indicates the line card slot.
QAM carrier	Indicates all the carrier IDs associated to the QAM block.
Maximum carriers per block	Indicates the maximum carriers associated to the QAM block.

Related Commands

Command	Description
cable linecard license max-carriers	Creates the QAM carriers on the QAM port.
cable carrier-id	Auto-generated when the line card is inserted into to the Cisco RFGW-10 chassis. Applicable to both the Cisco RFGW-10 DS-48 and Cisco RFGW10-DS-384 line cards.

show cable linecard coreinfo

To copy the core file information from line card flash directory to the bootflash, use the **show cable linecard coreinfo** command in privileged EXEC mode.

show cable linecard coreinfo *slot*

Syntax Description

slot	Specifies the line card and TCC card slots. Valid line card range is from 3 to 12 and valid TCC card slots are 13 and 14.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

This command copies the core files from line card flash directories to the bootflash with the line card identifier appended as a prefix and file creation time appended as a suffix to the core file information.

Examples

The following example shows the core files from slot 3 being copied onto the bootflash:

```
Router# dir bootflash:
Directory of bootflash:/

    1  -rwx    12535060  Apr 12 2007 19:10:18 +00:00  cat4000-i9s-mz.122-25.EWA8.bin
    3  -rw-        5737  Sep 13 2007 12:54:26 +00:00  np_rfgw_run_913.cfg
    6  -rwx    26904132  Oct 23 2007 05:27:07 +00:00  cat4500-entservices-mz
    7  -rw-        6576  Mar 11 2008 02:48:36 +00:00  temp-1.cfg
    8  -rw-        8070   Oct 5 2008 04:28:25 +00:00  np-startup1.cfg
    9  -rw-      236964  Oct 21 2008 23:54:48 +00:00  slogs1

61341696 bytes total (9444684 bytes free)

Router# dir linecard-3-flash:
Directory of linecard-3-flash:/

720958  -rw-     4047732  Sep 29 2008 12:40:49 +00:00  mv_app.lc
720986  -rwx          74  Sep 29 2008 12:48:37 +00:00  update
1704275  -rw-       65536   Jan 1 1970 00:03:00 +00:00  mv_iu.core
2031738  -rw-      232833  Oct 24 2008 19:31:32 +00:00  slog_latest
1245266  -rw-      327881   Nov 3 2008 18:30:16 +00:00  AA
1573181  -rw-       77824   Nov 6 2008 01:29:35 +00:00  mv_video.core
1442197  -rw-      147603   Nov 7 2008 20:57:23 +00:00  AAA
131273  -rw-      385309  Nov 10 2008 20:54:58 +00:00  slogs1.text
1048865  -rw-       63617  Nov 10 2008 20:57:18 +00:00  slogs2.text
```

```
327848  -rw-      385309  Nov 10 2008 20:54:58 +00:00  slogs1_boot.text
458769  -rw-       63617  Nov 10 2008 20:57:18 +00:00  slogs2_boot.text
196793  -rw-       20036   Jan 1 1970 00:00:14 +00:00  slogs1_boot.txt
524465  -rw-      114208   Dec 9 2008 20:33:25 +00:00  slogs1

8126464 bytes total (1719532 bytes free)

Router# show cable linecard coreinfo 3
 Copying core file linecard-3-flash:mv_video.core to
bootflash:LC_3_mv_video.core_012935_6_Nov_2008

 Copying core file linecard-3-flash:mv_iu.core to bootflash:LC_3_mv_iu.core_000300_1_Jan_1970
Router#dir bootflash:
Directory of bootflash:/

    1  -rwx    12535060  Apr 12 2007 19:10:18 +00:00  cat4000-i9s-mz.122-25.EWA8.bin
    3  -rw-        5737  Sep 13 2007 12:54:26 +00:00  np_rfgw_run_913.cfg
    6  -rwx    26904132  Oct 23 2007 05:27:07 +00:00  cat4500-entservices-mz
    7  -rw-        6576  Mar 11 2008 02:48:36 +00:00  temp-1.cfg
    8  -rw-        8070   Oct 5 2008 04:28:25 +00:00  np-startup1.cfg
    9  -rw-      236964  Oct 21 2008 23:54:48 +00:00  slogs1
   21  -rw-       77824   Dec 9 2008 20:33:51 +00:00  LC_3_mv_video.core_012935_6_Nov_2008
   22  -rw-       65536   Dec 9 2008 20:33:51 +00:00  LC_3_mv_iu.core_000300_1_Jan_1970

61341696 bytes total (9301068 bytes free)
```

The table below describes the significant fields shown in the display.

Table 6: show cable linecard coreinfo Field Descriptions

Field	Description
Copying core file line card	Shows the copying of the files to the bootflash directory.

Related Commands

Command	Description
show cable linecard version	Displays the version information for a line card.

show cable linecard cpuload

To display the CPU utilization information of the line card, use the **show cable linecard cpuload** command in privileged EXEC mode.

show cable linecard cpuload *slot*

Syntax Description

slot	Specifies the slot number of the line card. Valid range is from 3 to 12.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the CPU information on line card 3:

```
Router# show cable linecard cpuload 3

    4444444444444444444444444444444444444444444444444444444444444444
100
 90
 80
 70
 60
 50
 40
 30
 20
 10
   0....5....1....1....2....2....3....3....4....4....5....5....
             0    5    0    5    0    5    0    5    0    5
               CPU% per second (last 60 seconds)

                                       1
                                       0
    4444444444444444444444444444444440
100                                    *
 90                                    *
 80                                    *
 70                                    *
 60                                    *
 50                                    #
 40                                    #
 30                                    #
 20                                    #
 10                                    #
   0....5....1....1....2....2....3....3....4....4....5....5....
```

```
            0    5    0    5    0    5    0    5    0    5
              CPU% per minute (last 60 minutes)
             * = maximum CPU%   # = average CPU%


100
 90
 80
 70
 60
 50
 40
 30
 20
 10
   0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.
             0    5    0    5    0    5    0    5    0    5    0    5    0
                   CPU% per hour (last 72 hours)
                  * = maximum CPU%   # = average CPU%

CPU utilization for five seconds: 4%; one minute: 4%; five minutes: 4%
```

The table below describes the significant fields shown in the display.

Table 7: show cable linecard cpuload Field Descriptions

Field	Description
CPU utilization	Displays the utilization of CPU in per second, per minute and per hour.

Related Commands

Command	Description
cable linecard reset	Resets the line card on the Cisco RF Gateway 10.

show cable linecard load-balancing-group

To display the load balancing groups created on the Cisco RFGW-10, use the **show cable line card load-balancing-group** command in privileged EXEC mode.

show cable linecard *slot* **load-balancing-group**

Syntax Description

slot	Line card slot on the Cisco RFGW-10. Valid range is from 3 to14.

Command Default

This command is disabled by default.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.2.0SQ	This command was introduced.

Usage Guidelines

Use the **show cable linecard load-balancing-group** command to view the load balanced groups on the Cisco RFGW-10.

Examples

The following example displays the load balancing groups on line card slot 3 on the Cisco RFGW-10:

```
Router# show cable linecard 3 load-balancing-group all

Slot : 3        Load-balancing Group : 1
Total Bandwidth      : 10000000 KBps
Available Bandwidth  : 10000000 KBps
Reserved Bandwidth for QAM Based Sessions  : 0 KBps
Reserved Bandwidth for IP Based Sessions   : 0 KBps
Slot : 3        Load-balancing Group : 2
Total Bandwidth      : 10000000 KBps
Available Bandwidth  : 10000000 KBps
Reserved Bandwidth for QAM Based Sessions  : 0 KBps
Reserved Bandwidth for IP Based Sessions   : 0 KBps
```

The table below describes the significant fields shown in the display.

Table 8: show cable linecard load-balancing-group Field Descriptions

Field	Description
Slot	Indicates the line card slot.

Field	Description
Load-balancing Group	Indicates the load balancing group.
Total Bandwidth	Indicates the total bandwidth.
Available Bandwidth	Indicates the available bandwidth.
Reserved Bandwidth for QAM Based Sessions	Indicates reserved bandwidth for QAM session.
Reserved Bandwidth for IP Based Sessions	Indicates reserved bandwidth for IP sessions.

Related Commands

Command	Description
cable downstream freq-profile	Configures the frequency profiles on the Cisco RFGW-10.

show cable linecard logical-qamid-mapping

To display the logical QAM group IDs and QAM carriers mapped to the RF profiles on the Cisco RFGW-10, use the **show cable linecard logical-qamid-mapping** command in privileged EXEC mode.

show cable linecard logical-qamid-mapping *lc-slot*

Syntax Description

lc-slot	Line card slot on the Cisco RFGW-10. Valid range is from 3 to 14.

Command Default

Information on mapped QAM group IDs and QAM carriers are displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.2.0SQ	This command was introduced.

Usage Guidelines

Use the **show cable linecard logical-qamid-mapping** command to view the associated logical QAM groups and QAM carrier information.

Logical QAM groups are internally associated to RF profiles when the RF profile configuration is assigned to the QAM interface.

Examples

The following example displays the logical QAM IDs and carriers assigned to QAM interface 3 on the Cisco RFGW-10:

```
Router# show cable linecard logical-qamid-mapping 4
Slot: 4, Logical QAM Group ID 1:
        RF Profile ID : Remote-RF-Profile-14
        First Port    : Qam-red4/1
        Associated Qam Carrier ids:
                offset 0 - carrier-id 1 - Qam-red4/1.1
                offset 1 - carrier-id 2 - Qam-red4/1.2
        Second Port   : Qam-red4/2
                offset 4 - carrier-id 49 - Qam-red4/2.1
                offset 5 - carrier-id 50 - Qam-red4/2.2
Slot: 4, Logical QAM Group ID 2:
        RF Profile ID : Remote-RF-Profile-14
        First Port    : Qam-red4/3
        Associated Qam Carrier ids:
                offset 0 - carrier-id 97 - Qam-red4/3.1
                offset 1 - carrier-id 98 - Qam-red4/3.2
        Second Port   : Qam-red4/4
                offset 4 - carrier-id 145 - Qam-red4/4.1
                offset 5 - carrier-id 146 - Qam-red4/4.2
Slot: 4, Logical QAM Group ID 33:
```

```
RF Profile ID : Remote-RF-Profile-14
First Port    : Qam-red4/5
Associated Qam Carrier ids:
        offset 0 - carrier-id 193 - Qam-red4/5.1
```

The table below describes the significant fields shown in the display.

Table 9: show cable linecard logical-qamid-mapping Field Descriptions

Field	Description
Slot	Indicates the line card slot.
Logical QAM ID	Indicates the QAM ID.
RF Profile ID	Indicates RF profile ID associated to the logical QAM.
Annex	Indicates annex mode set to the RF profile.
First Port	Indicates the port of the QAM interface.
Associated Qam Carrier IDs	Indicates the QAM carriers associated with the RF profile.
Offset	Indicates the QAM offset within that group for the carrier.
Carrier ID	Indicates the QAM carrier ID.

Related Commands

Command	Description
cable downstream rf-profile	Configures the RF profiles on the Cisco RFGW-10.
cable downstream lqam-group	Creates a logical qam group on the Cisco RFGW-10.

show cable linecard logs

To display the system log information of the line card at bootup, use the **show cable linecard logs** command in privileged EXEC mode.

show cable linecard logs *slot* {**all**| **slogs1**| **slogs1-boot**| **slogs2**| **slogs2-boot**}

Syntax Description

slot	Specifies the line card slot. Valid range is from 3 to 12.
all	Displays log information of all line cards on the chassis.
slogs1	Displays log information of latest system log 1 file.
slogs1-boot	Displays log information of latest system log 1 file at boot up.
slogs2	Displays log information of latest system log 2 file.
slogs2-boot	Displays log information of latest system log 2 file at boot up.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

The command may result in a lengthy output, if **all** option is used.

Examples

The following example shows the log information for all line cards on the chassis:

```
Router# show cable linecard logs 3 all
More linecard-3-flash:slogs1.txt ...
Time              Sev Major Minor Args
Jan 01 00:00:11    6 10000     0 root >> process is up (restart max 3 times)
Jan 01 00:00:11    6 10000     0 root >> guardian 94217 waiting on source 94216
Jan 01 00:00:11    6 10000     0 root >> thread [tid: 2] child_monitor awaiting
signal
Jan 01 00:00:11    6 10000     0 root >> thread [tid: 3] daemon_monitor awaiting
```

```
 event
Jan 01 00:00:11    6 10000     0 Active SUP: slot 1, mac 020000000100
Jan 01 00:00:11    5    14     0 tcpip starting
Jan 01 00:00:11    3    14     0 Using pseudo random generator.  See "random" op
tion
Jan 01 00:00:13    6 10000     0 NPM: init
Jan 01 00:00:13    6 10000     0 NPM: options seat_id=0x02030000
Jan 01 00:00:13    6 10000     0 NPM: Seat ID 2030000
Jan 01 00:00:13    6 10000     0 NPM: Cell 2, EndPt 0
Jan 01 00:00:13    6 10000     0 NPM: Start resmgr: No error
Jan 01 00:00:13    6 10000     0 NCM: init
Jan 01 00:00:13    6 10000     0 NCM: Cell 1, EndPt 0
Jan 01 00:00:13    6 10000     0 NPM: Advert: en0, mac 02:00:00:00:03:00, mtu 15
14, cell 1, endPt 0, iface 0
Jan 01 00:00:13    6 10000     0 NCM: Module started
Jan 01 00:00:13    6 10000     0 NCM: Start resmgr: No error
Jan 01 00:00:13    6 10000     0 NCM: ncm_cipc_en: IPC master mac 02:00:00:00:01
:00
More linecard-3-flash:slogs2.txt ...
%Error opening linecard-3-flash:slogs2.txt (No such file or directory)
More linecard-3-flash:slogs1_boot.txt ...
Time             Sev Major Minor Args
Jan 01 00:00:11    6 10000     0 root >> process is up (restart max 3 times)
Jan 01 00:00:11    6 10000     0 root >> guardian 94217 waiting on source 94216
Jan 01 00:00:11    6 10000     0 root >> thread [tid: 2] child_monitor awaiting
signal
Jan 01 00:00:11    6 10000     0 root >> thread [tid: 3] daemon_monitor awaiting
 event
Jan 01 00:00:11    6 10000     0 Active SUP: slot 1, mac 020000000100
Jan 01 00:00:11    5    14     0 tcpip starting
Jan 01 00:00:11    3    14     0 Using pseudo random generator.  See "random" op
tion
Jan 01 00:00:11    6 10000     0 NPM: init
Jan 01 00:00:11    6 10000     0 NPM: options seat_id=0x02030000
Jan 01 00:00:11    6 10000     0 NPM: Seat ID 2030000
Jan 01 00:00:11    6 10000     0 NPM: Cell 2, EndPt 0
Jan 01 00:00:11    6 10000     0 NPM: Start resmgr: No error
Jan 01 00:00:13    6 10000     0 NCM: init
Jan 01 00:00:13    6 10000     0 NCM: Cell 1, EndPt 0
Jan 01 00:00:13    6 10000     0 NPM: Advert: en0, mac 02:00:00:00:03:00, mtu 15
14, cell 1, endPt 0, iface 0
Jan 01 00:00:13    6 10000     0 NCM: Module started
Jan 01 00:00:13    6 10000     0 NCM: Start resmgr: No error
Jan 01 00:00:13    6 10000     0 NCM: ncm_cipc_en: IPC master mac 02:00:00:00:01
:00
More linecard-3-flash:slogs2_boot.txt ...
```

The table below describes the significant fields shown in the display.

Table 10: show cable linecard logs Field Descriptions

Field	Description
Time	Displays the time during which the log was recorded.
Sev	Indicates the severity of the issue logged.
Major Minor Args	Displays a short description of the issue.

Related Commands

Command	Description
show cable linecard version	Displays the version information for a line card.

show cable linecard process

To display all the processes running on the line card, use the **show cable linecard process** command in privileged EXEC mode.

show cable linecard process *slot*

Syntax Description

slot	Specifies the slot on the Cisco RF Gateway 10. Valid range is from 3 to 14.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the processes running on line card 3:

```
Router# show cable linecard process 3
                            start
pid    name                 counter  state
=====  ==================== =======  =====
45066  io-net               1        Registered,Launched
81934  mv_iu                1        Registered,Launched
81935  ipc_ping_server      1        Registered,Launched
81936  rfs                  1        Registered,Launched
81937  mv_cpuload           1        Registered,Launched
81938  mv_lcinfo            1        Registered,Launched
81939  mv_lcred             1        Registered,Launched
81940  mv_hw_ctrl           1        Registered,Launched
81941  mv_tsec_ctrl         1        Registered,Launched
81942  mv_depi              1        Registered,Launched
81943  mv_video             1        Registered,Launched
Total number of processes: 11
```

The table below describes the significant fields shown in the display.

Table 11: show cable linecard process Field Descriptions

Field	Description
pid	Displays the program identifier.
name	Displays the name of the process.

Field	Description
start counter	Displays how many times a process has been launched.
state	Displays the state of the process.

Related Commands

Command	Description
show cable linecard cpuload	Displays the CPU utilization information on the line card.

show cable linecard version

To display image version information of the line card, use the **show cable linecard version** command in privileged EXEC mode.

show cable linecard version *slot*

Syntax Description

slot	Specifies the line card on the Cisco RF Gateway 10. Valid range is from 3 to 14.

Command Default

None

Command Modes

Privileged EXEC (#)

Usage Guidelines

Software, hardware version information, and programmed flash image information are displayed for the line card.

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the sample output of the **show cable line card version** command on a Cisco RF Gateway 10:

```
Router# show cable linecard version 4
Application Upgrade Version: 12.2(20100116.00032134): MV_APP_00000011_20100116-0
0032645
Application Permanent Version: MV_APP_00000011_20081112-00144210
Rommon Version: 12.2(12.2.394): MV_ROM_00000012_20081111-00141240
Board rev ID: 0x0000000A

Discus Image version: MV_DIS_00000013_20080603-00151016
Discus FPGA 1st rev ID: 0x00420042
Discus FPGA 2nd rev ID: 0x00420042

Cobia Image version: MV_COB_00000014_20080807-00112745
Cobia FPGA 1st rev ID: 0x02560029
Cobia FPGA 2nd rev ID: 0x00230276

Yellowfin Image version: MV_YEL_00000015_20090319-00124021
Yellowfin FPGA 1st rev ID: 0x02260025
Yellowfin FPGA 2nd rev ID: 0x00240277

UPX Image version: MV_ZMR_00000018_20091217-00145848
Zimmer module: 0
        Cisco S/N:
        Cisco Part Number:
        Cisco PN Number:
```

```
        Cisco Mfg Dev:
        OEM Name: Vecima Networks Inc
        OEM Serial Number: 2469876
        OEM Part Number: 00020000
        OEM HW Rev: 2
        Mfg Test Software Version: S1.0.94.0
        Production Status:
        UI Version 3885
Zimmer module: 1
        Cisco S/N:
        Cisco Part Number:
        Cisco PN Number:
        Cisco Mfg Dev:
        OEM Name: Vecima Networks Inc
        OEM Serial Number: 2469846
        OEM Part Number: 00020000
        OEM HW Rev: 2
        Mfg Test Software Version: S1.0.81.0
        Production Status:
        UI Version 3885
Zimmer module: 2
        Cisco S/N:
        Cisco Part Number:
        Cisco PN Number:
        Cisco Mfg Dev:
        OEM Name: Vecima Networks Inc
        OEM Serial Number: 2469854
        OEM Part Number: 00020000
        OEM HW Rev: 2
        Mfg Test Software Version: S1.0.84.0
        Production Status:
        UI Version 3885
```

The table below describes the significant fields shown in the display.

Table 12: show cable linecard version Field Descriptions

Field	Description
Rommon version	Displays the ROMMON version.

Related Commands

Command	Description
show cable linecard cpuload	Displays the CPU utilization information.
show cable linecard process	Displays the processes running on the line card.

show cable midplane ping statistics

To display the midplane ping statistics on the Cisco RFGW-10, use the **show cable midplane ping statistics** command in privileged EXEC mode.

show cable midplane ping statistics {**all**| **slot** *lc_slot*}

Syntax Description

all	Displays the midplane ping statistics of all line cards.
slot	Displays the midplane ping statistics of a line card slot.
lc_slot	Line card slot. The valid range is from 3 to 12.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ4	This command was introduced.

Usage Guidelines

Midplane pings sent and pings received counters are cumulative. The downstream traffic functions normally as the ping received counter increments,

It might also be possible that the ping failed counter may display a non-zero value, though the downstream traffic functions normally.

Examples

The following example is a sample output of the **show cable midplane ping statistics all** command that displays the midplane ping information on all line cards:

```
Router# show cable midplane ping statistics all

Slot: 3
  Port   : 0
      Pings sent     : 36841
      Pings received : 661
      Pings failed   : 36179
  Port   : 1
      Pings sent     : 36841
      Pings received : 36841
      Pings failed   : 0
Slot: 11
  Port   : 0
      Pings sent     : 0
      Pings received : 0
      Pings failed   : 0
  Port   : 1
      Pings sent     : 0
      Pings received : 0
```

```
Pings failed   : 0
```

The table below describes the significant fields shown in the display.

Table 13: show cable midplane ping statistics all Field Descriptions

Field	Description
Slot	Line card slot.
Port	Internal Gigabit Ethernet interface on the line card.
Pings sent	Number of midplane pings sent by the line card.
Pings received	Number of midplane pings received by the Supervisor.
Pings failed	Number of midplane pings lost between the line card and the Supervisor.

Related Commands

Command	Description
cable midplane ping	Configures the midplane pings between the line card and the Supervisor on the Cisco RFGW-10.
clear cable midplane ping statistics	Clears the midplane ping statistics on the Cisco RFGW-10.

show cable qam-partition

To display the QAM partition information on the line card, use the **show cable qam-partition** command in privileged EXEC mode.

show cable qam-partition {**all**| {*partition-id*| **default**} {**qam**| **route**| **sessions**}| **protocol** {**ermi**| **gqi**}}

Syntax Description

partition-id	QAM partition ID. The valid range is from 1 to 50.
all	Displays all QAM partitions configured on the line card.
default	Displays the default QAM partitions.
qam	Displays the QAM channels on QAM partition.
route	Displays the input route used for the QAM partition.
session	Displays the video sessions on the QAM partition.
protocol	Displays QAM partitions using the same protocol
ermi	Displays QAM paritions used by the ERMI procol.
qam	Displays QAM paritions used by the GQI procol.

Command Default

This command is enabled by default.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.3.0SQ	This command was introduced.

Examples

This example displays the QAM partition information for partition ID 3 on the line card:

```
Router# show cable qam-partition 3

QAM Partition : 3
Management IP address: 10.78.179.187
State :       active
Protocol :    gqi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
```

```
SDV Bindings Service : Not Available
MAC Address : 30e4.db04.8dc0
Reset Timeout Period :  5 seconds
Server           State
--------------------------------
10.78.179.150    disconnected
Total QAM carriers :  34
QAM        Carrier    Logical    External
Interface  ID         QAM ID     Channel ID
-----------------------------------------------------------------
3/1.1      1          0          1
3/1.2      2          1          2
3/1.3      3          2          3
3/1.4      4          3          4
3/1.5      5          4          5
3/1.6      6          5          6
3/1.7      7          6          7
3/1.8      8          7          8
3/1.9      9          8          9
3/1.10     10         9          10
3/1.11     11         10         11
3/1.12     12         11         12
3/1.13     13         12         13
3/1.14     14         13         14
3/1.15     15         14         15
3/1.16     16         15         16
3/1.17     17         16         17
3/1.18     18         17         18
3/1.19     19         18         19
3/1.20     20         19         20
3/1.21     21         20         21
3/1.22     22         21         22
3/1.23     23         22         23
3/1.24     24         23         24
3/1.25     25         24         25
!
```

The table below describes the significant fields shown in the display.

Table 14: show cable qam-partition Field Descriptions

Field	Description
QAM partition	QAM partition ID
Management IP address	Management IP address configured on the QAM partition.
State	State of the QAM partition.
Protocol	Protocol used on the QAM partition.
Keepalive Timout Period	Keeplive time period in seconds
Number of retry	Number of connection retries.
MAC address	Cisco RFGW-10 MAC address in a GQI specific QAM partition.
Reset Timeout Period	Reset time period in seconds.
Server	Server IP address.

Field	Description
State	State of the video server.
Total QAM carriers	No of carriers on the QAM partition.
QAM interface	QAM interface associated with the QAM partition.
Carrier ID	QAM channel.
Logical QAM ID	Logical QAM ID.
External channel ID	External channel number for GQI protocol QAM partition.

This example displays the default QAM partition information for QAM channels on the line card:

```
Router# show cable qam-partition default qam

QAM Partition : 0
Total QAM carriers :  34
QAM         Carrier    Logical
Interface   ID         QAM ID
-------------------------------------------------------------------
3/3.1       65         64
3/3.2       66         65
3/3.3       67         66
3/3.4       68         67
3/3.5       69         68
3/3.6       70         69
3/3.7       71         70
3/3.8       72         71
3/3.9       73         72
3/3.10      74         73
3/3.11      75         74
3/3.12      76         75
3/3.13      77         76
3/3.14      78         77
3/3.15      79         78
3/3.16      80         79
3/3.17      81         80
3/3.18      82         81
```

This example displays the default QAM partition information for input routes used by the QAM partition:

```
Router# show cable qam-partition default route

QAM Partition : 0
Total Routes :  4
Slot  LBG  Destination      Low    High   Reserved   Bandwidth  Ingress  Numbe
Id    Id   IP               UDP    UDP    Bandwdith  In-Use     Port     Sessi
s
-------------------------------------------------------------------------------
--
3     1    30.0.3.10        1      49260  1000000    3300       0        2
3     2    1.21.1.2         1      49260  1000000    0          0        0
3     2    40.0.1.10        1      65535  1000000    3300       0        2
7     1    192.168.11.2     1      65535  112500     0          0        0
```

The table below describes the significant fields shown in the display.

Table 15: show cable qam-partition default route Field Descriptions

Field	Description
QAM Partition	Default QAM partition ID.
Total Routes	Routes used by the QAM partition.
Slot ID	Slot on the line card.
LBG ID	Load balancing group ID.
Low UDP	Low UDP value.
High UDP	Hig UDP value.
Reserved Bandwidth	Total bandwidth value.
Bandwidth In-Use	Used bandwidth value.
Ingress Port	Ingress port used by the QAM partition.
Number of Sessions	Total number of video sessions on the QAM partition.

This example displays the default QAM partition information for video sessions used by the QAM partition:

```
Router# show cable qam-partition default sessions

QAM Partition : default
Total QAM carriers :  34
Slot  Carrier    QAM        Session         Session
Id    Id         Port       Id              Type
-----------------------------------------------------------------
3     65         3/3.1      205586432       VIDEO
3     65         3/3.1      205586433       VIDEO
3     66         3/3.2      205651971       VIDEO
3     66         3/3.2      205651972       VIDEO
```

This example displays the default QAM partition information for ERMI protocol used by the QAM partition:

```
Router# show cable qam-partition protocol ermi

QAM Partition : 1
Management IP address: 10.78.179.167
State :       active
Protocol :    ermi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
ERRP Addr Domain     :  0
ERRP Hold Time       :  90 Seconds
ERRP Connect Time    :  10 Seconds
ERRP Connect Retry   :  0
ERRP Keepalive Time  :  0 Seconds
ERRP Keepalive Retry :  0
RTSP Connect Time    :  200 Seconds
RTSP Connect Retry   :  0
RTSP Keepalive Time  :  10 Seconds
RTSP Keepalive Retry :  0
RTSP Session Timeout :  10800 Seconds
Server           State
--------------------------------
```

```
10.78.179.170    disconnected
Total QAM carriers :  0
```

The table below describes the significant fields shown in the display.

Table 16: show cable qam-partition protocol ermi Field Descriptions

Field	Descriptions
ERRP Hold Time	Hold time in seconds.
ERRP Connect Time	Connection time in seconds.
ERRP Connect Retry	Connection retry interval.
ERRP Keepalive Time	Keepalive time interval in seconds.
ERRP Keepalive Retry	Keepalive retry interval.
RTSP Connect Time	Connection time in seconds.
RTSP Connect Retry	Connection retry interval.
RTSP Keepalive Time	Keepalive time interval in seconds.
RTSP Keepalive Retry	Keepalive retry interval.
RTSP Session Timeout	Session timeout interval.

This example displays the default QAM partition information for GQI protocol used by the QAM partition:

```
Router# show cable qam-partition protocol gqi

QAM Partition : 2
Management IP address: 10.78.179.185
State :       active
Protocol :    gqi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
SDV Bindings Service : Not Available
MAC Address : 30e4.db04.8dc1
Reset Timeout Period :  5 seconds
Server           State
--------------------------------
10.78.179.170    connected
Total QAM carriers :  32
QAM        Carrier    Logical    External
Interface  ID         QAM ID     Channel ID
-----------------------------------------------------------------
3/2.1      33         32         1
3/2.2      34         33         2
3/2.3      35         34         3
3/2.4      36         35         4
3/2.5      37         36         5
```

This example displays the default QAM partition information for all QAM partitions:

```
Router# show cable qam-partition all

QAM Partition : 1
```

```
Management IP address: 10.78.179.167
State :       active
Protocol :    ermi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
ERRP Addr Domain     :  0
ERRP Hold Time       :  90 Seconds
ERRP Connect Time    :  10 Seconds
ERRP Connect Retry   :  0
ERRP Keepalive Time  :  0 Seconds
ERRP Keepalive Retry :  0
RTSP Connect Time    :  200 Seconds
RTSP Connect Retry   :  0
RTSP Keepalive Time  :  10 Seconds
RTSP Keepalive Retry :  0
RTSP Session Timeout :  10800 Seconds
Server           State
---------------------------------
10.78.179.170    disconnected
Total QAM carriers :  0
Total Routes: 1
Slot  LBG  Destination      Low    High   Reserved   Bandwidth  Ingress  Numb
Id    Id   IP               UDP    UDP    Bandwdith  In-Use     Port     Sess
s
-------------------------------------------------------------------------------
--
3     1    1.1.1.1          1      65535  21         0          0        0
QAM Partition : 2
Management IP address: 10.78.179.185
State :       active
Protocol :    gqi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
SDV Bindings Service : Not Available
MAC Address : 30e4.db04.8dc1
Reset Timeout Period :  5 seconds
Server           State
---------------------------------
10.78.179.170    connected
Total QAM carriers :  32
QAM        Carrier    Logical    External
Interface  ID         QAM ID     Channel ID
-----------------------------------------------------------------
3/2.1      33         32         1
3/2.2      34         33         2
3/2.3      35         34         3
3/2.4      36         35         4
3/2.5      37         36         5
3/2.6      38         37         6
3/2.7      39         38         7
3/2.8      40         39         8
3/2.9      41         40         9
3/2.10     42         41         10
3/2.11     43         42         11
3/2.12     44         43         12
3/2.13     45         44         13
3/2.14     46         45         14
3/2.15     47         46         15
3/2.16     48         47         16
3/2.17     49         48         17
3/2.18     50         49         18
3/2.19     51         50         19
3/2.20     52         51         20
3/2.21     53         52         21
3/2.22     54         53         22
3/2.23     55         54         23
3/2.24     56         55         24
3/2.25     57         56         25
3/2.26     58         57         26
3/2.27     59         58         27
3/2.28     60         59         28
3/2.29     61         60         29
3/2.30     62         61         30
```

```
3/2.31      63          62          31
3/2.32      64          63          32
Total Routes: 0
QAM Partition : 3
Management IP address: 10.78.179.187
State :       active
Protocol :    gqi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
SDV Bindings Service : Not Available
MAC Address : 30e4.db04.8dc0
Reset Timeout Period :  5 seconds
Server           State
---------------------------------
10.78.179.150    disconnected
Total QAM carriers :  34
QAM         Carrier    Logical    External
Interface   ID         QAM ID     Channel ID
-------------------------------------------------------------------
3/1.1       1          0          1
3/1.2       2          1          2
3/1.3       3          2          3
3/1.4       4          3          4
3/1.5       5          4          5
3/1.6       6          5          6
3/1.7       7          6          7
3/1.8       8          7          8
3/1.9       9          8          9
3/1.10      10         9          10
3/1.11      11         10         11
3/1.12      12         11         12
3/1.13      13         12         13
3/1.14      14         13         14
3/1.15      15         14         15
3/1.16      16         15         16
3/1.17      17         16         17
3/1.18      18         17         18
3/1.19      19         18         19
3/1.20      20         19         20
3/1.21      21         20         21
3/1.22      22         21         22
3/1.23      23         22         23
3/1.24      24         23         24
3/1.25      25         24         25
3/1.26      26         25         26
3/1.27      27         26         27
3/1.28      28         27         28
3/1.29      29         28         29
3/1.30      30         29         30
3/1.31      31         30         31
3/1.32      32         31         32
3/5.1       129        128        33
3/5.2       130        129        34
Total Routes: 3
Slot  LBG  Destination      Low    High   Reserved   Bandwidth  Ingress  Numb
Id    Id   IP               UDP    UDP    Bandwdith  In-Use     Port     Sess
s
-------------------------------------------------------------------------------
--
3     1    0.0.0.0          0      0      34         0          20       0
3     1    10.1.1.1         1      65535  21         0          10       0
3     1    30.0.3.10        49261  65535  1000000    0          1        0
QAM Partition : 4
Management IP address: 10.78.179.184
State :       active
Protocol :    gqi
Keepalive Timeout Period :  5 seconds
Number of Retry : 3
SDV Bindings Service : Not Available
MAC Address : 30e4.db04.8dc2
Reset Timeout Period :  5 seconds
Server           State
---------------------------------
```

```
10.78.179.150    disconnected
```

Related Commands

Command	Description
cable partition	Associates the QAM partition to the QAM interface.
cable qam-partition	Creates a QAM partition for the video server on the Cisco RFGW-10 DS-384 line card.

show cable qam-replication-group

To display the QAM Replication Group (QRG) information on the line card, use the **show cable qam-replication-group** command in privileged EXEC mode.

show cable qam-replication-group {*qam-replication-group-id*| **all**| **slot** *slot-id*}

Syntax Description

qam-replication-group-id	Specifies the QRG group ID. The valid range is from 1 to 3840.
all	Displays all QRGs configured on the line card.
slot *slot-id*	Specifies a slot on the line card.

Command Default

This command is enabled by default.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.3.0SQ	This command was introduced.

Examples

The following example displays QRG information for group ID 3 on the line card:

```
Router# show cable qam-replication-group 10

QRG    Pilot Qam      Replicate Qams
-----------------------------------------------------
10     3/1.2          3/6.2, 3/8.2, 3/7.2
```

The following example displays QRG information for slot 8:

```
Router# show cable qam-replication-group slot 8

QRG   Pilot Qam    Replicate Qams
-------------------------------------------------
3     8/1.1        8/2.1, 8/3.1
4     8/1.2        8/2.2, 8/3.2
```

The following example displays QRG information for all line cards:

```
Router# show cable qam-replication-group all

QRG          Pilot Qam         Replicate Qams
-----------------------------------------------------------
1            3/1.1             3/6.1, 3/7.1, 3/8.1
3            8/1.1             8/2.1, 8/3.1
4            8/1.2             8/2.2, 8/3.2
10           3/1.2             3/6.2, 3/8.2, 3/7.2
```

```
11          3/1.3             3/6.3, 3/7.3, 3/8.3
```

The table below describes the significant fields shown in the display.

Table 17: show cable qam-replication-group Field Descriptions

Field	Description
QRG	QAM replication group number.
Pilot Qam	Pilot Qam information.
Replicate Qams	Replicate Qam information.

Related Commands

Command	Description
cable qam-replication-group	Configures QAM Replication Group.

show cable rf-profile

To display RF profiles created on the Cisco RFGW-10, use the **show cable rf-profile** command in privileged EXEC mode.

show cable rf-profile [**all**| *profile-id*]

Syntax Description

all	Displays information of all the RF profiles on the Cisco RFGW-10.
profile-id	RF profile ID applied to the QAM channel on the line card.

Command Default

Information on configured RF profiles are displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.2.0SQ	This command was introduced.

Usage Guidelines

Use the **show cable rf-profile** command to view the mapping of the RF profiles with the QAM channels.

Examples

The following example displays the RF profiles configured on the Cisco RFGW-10:

```
Router# show cable rf-profile

RF Profile ID default-rf-profile is configured
        annex: B
        modulation: 64
        interleaver-depth options: I32-J4, I32-J4
        srate: 5056941
        remote: 0
RF Profile ID line 1 is configured
        annex: A
        modulation: 64
        interleaver-depth options: I12-J17, I12-J17
        srate: 3500000
        remote: 0
RF Profile ID line 10 is configured
        annex: A
        modulation: 256
        interleaver-depth options: I12-J17, I12-J17
        srate: 3500000
        remote: 0
```

The table below describes the significant fields shown in the display.

Table 18: show cable rf-profile Field Descriptions

Field	Description
RF Profile ID	Indicates the RF profile ID.
annex	Indicates the annex for the RF downstream channel.
modulation	Indicates the modulation level of the QAM.
Interleaver-depth options	Indicates the frequency interleaver depth on the QAM.
srate	Indicates the symbol rate configured on the QAM.
remote	Indicates the RF profile is remote.

Related Commands

Command	Description
cable downstream rf-profile	Configures the RF profiles on the Cisco RFGW-10.

show cable service group

To display the service group information, use the **show cable service-group** command in privileged EXEC mode.

show cable service-group {**brief**| **detail**} {**all**| **name**}

Syntax Description

brief	Displays summarized information about the service group.
detail	Displays detailed information about the service group.
all	Displays information about the all service group configured on the Cisco RFGW-10.
name	Displays information about the a particular service group.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.3.0SQ	This command was introduced.

Examples

The following example shows a summary of all the cable service groups configured on the Cisco RFGW-10:

```
Router# show cable service-group brief all

Service Group : servicegroup1
 QAM Group                          QAM Carriers
 -------------------------------------------
 qamgroup1                          4
 qamgroup2                          3
Service Group : servicegroup2
 QAM Group                          QAM Carriers
 -------------------------------------------
 qamgroup3                          0
 qamgroup4                          0
Total Qam Service Groups: 2
```

The following example shows output of the **show cable service-group brief name** command:

```
Router# show cable service-group brief name servicegroup1

QAM Service Group : servicegroup1
```

```
QAM Group                          QAM Carriers
-----------------------------------------------
qamgroup1                          4
qamgroup2                          3
```

The following example shows output of the **show cable service-group detail name** command:

```
Router# show cable service-group detail name servicegroup1

Service Group : servicegroup1
  Qam Group   : qamgroup1
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  3     1           qamgroup1
  3     2           qamgroup1
  3     3           qamgroup1
  3     4           qamgroup1
  Total QAM carriers :  4
  Qam Group   : qamgroup2
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  3     5           qamgroup2
  3     6           qamgroup2
  3     7           qamgroup2
  Total QAM carriers :  3
```

The following example shows output of the **show cable service-group detail all** command:

```
Router# show cable service-group detail all

Service Group : servicegroup1
  Qam Group   : qamgroup1
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  3     1           qamgroup1
  3     2           qamgroup1
  3     3           qamgroup1
  3     4           qamgroup1
  Total QAM carriers :  4
  Qam Group   : qamgroup2
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  3     5           qamgroup2
  3     6           qamgroup2
  3     7           qamgroup2
  Total QAM carriers :  3
Service Group : servicegroup2
  Qam Group   : qamgroup3
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  Total QAM carriers :  0
  Qam Group   : qamgroup4
  Slot  Carrier ID  Qam Group
  ----  ----------  ---------
  Total QAM carriers :  0
Router#
```

The table below describes the significant fields shown in the display.

Table 19: show cable service-group Field Descriptions

Field	Description
Carrier ID	Carrier identifier.
Service Group	Service group name.
QAM group	QAM group name.

Field	Description
QAM carriers	QAM carriers associated to QAM group.

Related Commands

Command	Description
cable service-group	Configures a cable service group on the Cisco RFGW-10.
qam-group	Configures the QAM group in a cable service group.

show cable video gqi

To display all the GQI video sessions information, use the **show cable video gqi** command in privileged EXEC mode.

show cable video gqi {**connection**| **sessions**| **statistics**} {**all**| **qam-partition** *partition-id*}

Syntax Description

qam-partition *partition-id*	QAM partition ID. The valid range is from 1 to 50.
all	Information for all QAM partitions configured on the line card.
connection	Connection information for the QAM partition.
sessions	Session information for the QAM partition.
statistics	Statistics information for the QAM partition.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.3.0SQ	This command was introduced.

Examples

The following example shows all the GQI connection information on the line card:

```
Router# show cable video gqi connections all

Management      Server         Protocol  QP Connection RPC     Resp    Event   Reset
Encryption
IP              IP             Type      ID State      Version Pending Pending Indication
Discovery
-------------------------------------------------------------------------------------------
10.78.179.185   10.78.179.170  GQI       2  Connected  2       0       0        Acked
 -
10.78.179.187   10.78.179.150  GQI       3  Disconnect 0       0       0        -
 -
10.78.179.184   10.78.179.150  GQI       4  Disconnect 0       0       0        -
 -
```

The table below describes the significant fields shown in the display.

Table 20: show cable video gqi connections Field Descriptions

Field	Description
Management IP	Management IP address.
Server IP	GQI server IP address.
Protocol Type	Protocol on QAM partition.
Connection State	State of connection.
RPC Version	GQI Remote Procedure Call interface version.
Resp Pending	Number of responses that could not be sent to the requestor (USRM or DNCS).
Event Pending	Number of announcement events pending in the system waiting to be sent to the ERM (DNCS or USRM).
Reset indication	Indicates whether an acknowledgement has been received from the peer after the reset indication message is sent to the peer.
Encryption Discovery	Asynchronous message sent to USRM to inform type of encryption currently supported in Cisco RFGW-10.

The following example shows the GQI session information for all QAM partitions on the line card:

```
Router# show cable video gqi sessions all

QP    GQI                                SCM        Session   Encryption   Current
Id    Id                                 Id         Type      Type         State
-------------------------------------------------------------------------------------
3     00 00 00 00 00 00 00 00 00 03      201785344  VOD       None         Clear Mode
3     00 00 00 00 00 00 00 00 00 08      201457668  VOD       PowerKey     Encrypted
2     D0 67 E5 F3 6E E7 00 5D 32 95      203489281  SDV       None         Clear Mode
Total Sessions for All QAM Partitions: 3
```

The following example shows how to create an encrypted session with no CA blob and verify that the session is created, but the gqi state is set to 'Waiting CA':

```
Router# show cable video gqi sessions all

QP    GQI                                SCM        Session   Encryption   Current

Id    Id                                 Id         Type      Type         State

-------------------------------------------------------------------------------------
1     00 00 00 00 00 00 00 00 00 01      201457664  SDV       PowerKey     Waiting CA

Total Sessions: 1
```

The following example shows how to create a session with override and verify that the session is updated and session is active:

```
Router# show cable video session a

Slot:11 Lic-Enforcement module sent Simultaneous PKEY_N_DVB encryption to GQIll
Session    QAM     Stream Sess IP               UDP   Out   Input    Input  Output PSI Ctrl
ID         Port    Type   Type Address          Port  Pgm   Bitrate  State  State  Rdy State
---------- ------- ------ ---- ---------------- ----- ----- -------- ------ ------ --- --
201457664  3/1.2   Remap  SSM  -                -     1     2500320  ACTIVE OFF    NO  -

Total Sessions = 1
Router# show cable video gqi sessions all
QP    GQI                                  SCM        Session   Encryption   Current

Id    Id                                   Id         Type      Type         State

-------------------------------------------------------------------------------------------
1     00 00 00 00 00 00 00 00 00 01        201457664  SDV       PowerKey     Encrypted

Total Sessions: 1
```

The following example shows the GQI session information on QAM partition ID 3 of the line card:

```
Router# show cable video gqi sessions qam-partition 3

QP    GQI                                  SCM        Session   Encryption   Current
Id    Id                                   Id         Type      Type         State
-------------------------------------------------------------------------------------------
3     00 00 00 00 00 00 00 00 00 00 03     201785344  VOD       None         Clear Mode
3     00 00 00 00 00 00 00 00 00 00 08     201457668  VOD       PowerKey     Encrypted
Total Sessions for QAM Partition 3: 2
```

The table below describes the significant fields shown in the display.

Table 21: show cable video gqi sessions Field Descriptions

Field	Description
QP ID	QAM partition ID.
GQI ID	GQI session ID.
SCM ID	Session control manager ID.
Session Type	Type of session.
Encryption Type	Encryption type used.
Current State	Current state of session.
Total Sessions	Total number of sessions.

The following example shows the GQI statistics on QAM partition 3 on the line card:

```
Router# show cable video gqi statistic qam 3

Qam Partition 3 Statistics:
         Create     Delete     Create     Delete     Insert     Cancel     Switch     Bind
       Unbind     Reset      Encryption Event
         Shell      Shell      Session    Session    Packet     Packet     Source     Session
    Session    Indication Discovery  Notification
```

```
-------------------------------------------------------------------------------------------
Success: 0          0          0          0          0          0          0          0
   0          0          0          0
Error:   0          0          0          0          0          0          0          0
   0          0          0          0
Total:   0          0          0          0          0          0          0          0
   0          0          0          0
```

Related Commands

Command	Description
cable qam-partition	Creates a QAM partition for video server on the Cisco RFGW-10 DS-384 line card.
protocol	Sets the control plane protocol of the QAM partition.

show cable video label

To display the active video labels, use the **show cable video label** command in privileged EXEC mode.

show cable video label [*label*]

Syntax Description

label	(Optional) Specifies the label name given to the video label.

Command Default

None

Command Modes

Privileged EXEC (#)

Usage Guidelines

The command displays all the labels configured on the chassis.

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
12.2(50)SQ1	The output of the command is modified to display the filtered PIDs for pass-through video sessions.

Examples

The following example shows the video labels configured on the Cisco RFGW-10:

```
Router# show cable video label

Multicast Label: s1
  Label Type: SSM
  Label Sources: [1]
SRC ADDR        DST ADDR        BITRATE   JITTER
    --------------- --------------- --------- ------
    162.0.0.10      232.3.1.1        3750000 200
  Current Active Src: 0
  Label Output Streams: [2]
    QAM         Program ID
    ---------   ----------
    10/1.1       1
    10/7.1       1
Multicast Label: s2
  Label Type: SSM
  Label Sources: [1]
SRC ADDR        DST ADDR        BITRATE   JITTER
    --------------- --------------- --------- ------
    162.0.0.10      232.3.1.2        15000000    200
  Current Active Src: 0
  Label Output Streams: [2]
    QAM         Program ID
    ---------   ----------
```

```
    10/1.1       2
    10/7.1       2
```

The following example shows the PIDs filtered when filtering is configured for pass-through video sessions:

```
Router# show cable video label
Multicast Label ID: 2
  Label Name: ssm0
  Label Type: SSM
  Label Sources: [3]
SRC ADDR        DST ADDR        BITRATE   JITTER
    --------------- --------------- --------- ------
    111.17.1.101    232.2.1.0       25000000   200
    SRC ADDR        DST ADDR        BITRATE   JITTER
    --------------- --------------- --------- ------
    111.17.1.102    232.2.1.0       25000000    200
    SRC ADDR        DST ADDR        BITRATE   JITTER
    --------------- --------------- --------- ------
    111.17.1.103    232.2.1.0       25000000    200
Filtered PIDs: [25]
     00000101 00000102 00000103 00000104 00000105 00000106 00000107 00000108
     00000109 00000110 00000111 00000112 00000113 00000114 00000115 00000116
     00000117 00000118 00000119 00000120 00000200 00000201 00000202 00000203
     00000800
MAP: 1
Current Active Src: 0
  Label Output Streams: [1]
    QAM         Program ID
    ---------   ----------
    3/7.1        -1
```

The table below describes the significant fields shown in the display.

Table 22: show cable video label Field Descriptions

Field	Description
Multicast Label	Name of the label.
Label Type	Whether it is an ASM label or an SSM label.
Label Sources	Source of the label.
SRC ADD	Source IP address.
DST ADDR	Destination IP address.
BITRATE	Amount of bandwidth allotted.
JITTER	Amount of Jitter allotted.
Filtered PIDs	Lists the PIDs that are dropped when PID filtering is configured for pass-through video sessions.
Current Active Src	Name of the active source.
Label Output Stream	Name of the output stream label.
QAM	QAM interface.

Field	Description
Program ID	Program Identifier (PID).

Related Commands

Command	Description
asm	Configures ASM video session definition.
cable video labels	Enters the cable video label configuration.
cable video multicast	Configures video multicast sessions on the QAM interface.
ssm	Configures SSM video session definition.

show cable video multicast uplink

To display the multicast uplink interfaces, use the **show cable video multicast uplink** command in privileged EXEC mode.

show cable video multicast uplink [**GigabitEthernet**| **TenGigabitEthernet** *interface/port*]

Syntax Description

GigabitEthernet	Indicates the Gigabit Ethernet interface. Valid port range is 3 through 6, 13 and 14.
TenGigabitEthernet	Indicates the 10 Gigabit Ethernet interface. Valid slots are 1 and 2.
interface/port	Specifies the interface slot and port.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows all uplink interfaces configured on the Cisco RFGW-10:

```
Router# show cable video multicast uplink

Uplink Interface       Status  Allocated  Maximum    Allocated  Backup Interface
       Backup
                               Streams    Bandwidth  Bandwidth
       Activated
------------------------------------------------------------------------------
--------------------
TenGigabitEthernet1/1  UP      240        10000000   30240
```

The table below describes the significant fields shown in the display.

Table 23: show cable video multicast uplink Field Descriptions

Field	Description
Uplink Interface Backup Activated	Displays the status of the Uplink interface such as activated or deactivated.

Field	Description
Status	Displays the status of the interface such as up or down..
Allotted Streams	Specifies the number of allotted streams.
Maximum Bandwidth	Specifies the maximum amount of bandwidth for the specified interface
Allocated Bandwidth	Specifies the bandwidth allocated for that interface.
Backup Interface	Dispays the name of the backup interface.

Related Commands

Command	Description
cable video multicast uplink	Configures an uplink port for multicast traffic.
ip multicast-routing	Enables multicast routing on the Cisco RFGW-10.

show cable video packet

To display the video insertion packet information, use the **show cable video packet** command in privileged EXEC mode.

show cable video packet {**qam**| **qam-red** *slot/port.channel* [**stream** *stream-id*]| **all**| **slot** *slot*}

Syntax Description

qam	Specifies the QAM interface on the Cisco RFGW-10.
qam-red	Specifies the QAM interface when line card redundancy is configured on the Cisco RFGW-10.
slot	Specifies the slot on the QAM interface. Valid range is from 3 to 12.
port	Specifies the port on the interface. Valid range is from 1 to12.
channel	(Optional) Specifies the channel on the port. Valid range is from 1 to 4.
stream	(Optional) Specifies packet stream insertion information.
stream-id	(Optional) Specifies the packet stream identifier. Valid range is from 1 to 4294967295.
all	Displays a summary of the packet insertion on the chassis.
slot	Displays packet insertion for a slot.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the video packets on a QAM interface 3:

```
Router# show cable video packet qam-red 3/1.1

Packet                          Times        Actual     Insert       Num Pkts
Stream ID  Interface  Version  Repeat       Repeated   Rate (bps)   Inserted  State
-------------------------------------------------------------------------------------
1          Qam3/1.1   1        Continuos    14460      1000        1   ON
```

The table below describes the significant fields shown in the display.

Table 24: show cable video packet Field Descriptions

Field	Description
Packet Stream ID	Packet stream identifiers of the video packets.
Interface	QAM channel or QAM subinterface.
Version	Version of video packets.
Times Repeat	Packets repetition state such as continuos.
Actual Repeated	The number of times the packets are repeated.
Insert rate	Rate at which packets are inserted.
Num pkts inserted	Number of packets inserted.
State	Displays the status of the packets whether on or off.

show cable video route

To display video route information, use the **show cable video route** command in privileged EXEC mode.

show cable video route {**multicast**| **unicast**} {**all**| **slot** *slot*}

Syntax Description

multicast	Displays information for multicast routes.
unicast	Displays information for unicast routes.
all	Displays information on all routes on the chassis.
slot	Displays information of a slot on the line card.
slot	Specifies the slot on the line card. Valid range is from 3 to 12.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.0SQ	This command was integrated into Cisco IOS-XE Release 3.3.0SQ. The **qam-domain** is *not* supported. The **unicast** keyword is removed. Use **show cable linecard load-balancing group** command to view unicast video sessions

Examples

The following example displays all the multicast routes configured on the chassis:

```
Router# show cable video route multicast all

Source           Group            rx-interface           tx-qamblock      Sessions
-------------------------------------------------------------------------------
162.0.0.10       232.3.1.1        TenGigabitEthernet1/1  qam 10/1-6       1
162.0.0.10       232.3.1.2        TenGigabitEthernet1/1  qam 10/1-6       1
162.0.0.10       232.3.1.3        TenGigabitEthernet1/1  qam 10/1-6       1
162.0.0.10       232.3.1.4        TenGigabitEthernet1/1  qam 10/1-6       1
162.0.0.10       232.3.1.5        TenGigabitEthernet1/1  qam 10/1-6       1
```

The table below describes the significant fields shown in the display.

Table 25: show cable video route Field Descriptions

Field	Description
Source	Source IP address.
Group	Group IP address.
rx-interface	Multicast interfaces.
tx-qamblock	QAM block on a slot.
Sessions	Number of sessions.
Route Type	Type of route configured.

Related Commands

Command	Description
video route	Configures the video route on the line card.

show cable video scrambler

To display scrambling information for the video sessions, use the **show cable video scrambler** command in privileged EXEC mode.

show cable video scrambler {**brief**| **eis** {*eis-id*| **all**}| **linecard** *slot* {**brief**| **tier-based**| **arp-entries**| **routes**| **ecmg** {**all**| *ecmg-id* {**brief**| **connection**| **desc-rule**| **overrule**}}}| **scg** {**all**| **tsid** *tsid*| **slot** *slot*| **eis-id** *eis-id* {*scg-id* {**brief**| **detail**}| **all**}}| **pme status**}

Syntax Description

brief	Displays the scrambler general setting information.
eis *eis-id*	Displays the Event Information Scheduler (EIS) details. The valid range for EIS connection ID is from 1 to 10.
all	Displays EIS information for all the EIS connections.
linecard	Displays the scrambler details for a line card.
slot	Line card slot number. The valid range is from 3 to 12.
brief	Displays the summary of scrambling settings for a line card.
tier-based	Displays the tier-based scrambling details for a line card.
arp-entries	Displays the ARP entries in line card.
routes	Displays the IP routes for the line card.
ecmg	Displays the ECMG details.
all	Displays Entitlement Control Message Generator (ECMG) information for all the ECMGs.
ecmg-id	ECMG ID. The valid range is from 2 to 4.
brief	Displays the summary of the ECMG.
connection	Displays the details of all connections of the ECMG.
desc-rule	Displays the details of all descriptor rules for the ECMG.
overrule	Displays the details of all overrules for the ECMG.

scg	Displays the details of the Scrambling Control Group (SCG).
all	Displays the summary of all SCGs.
tsid *tsid*	Displays the details for an SCG. The valid range for Transport Stream ID (TS ID)is from 1 to 65535.
slot*slot*	Displays a summary of all the SCGs of the line card in the slot. The valid value of slot ranges from 3 to 12.
eis-id *eis-id*	Displays a summary of SCGs from the EIS. The valid range for EIS proxy ID is from 1 to 10.
scg-id	SCG ID. The valid range is from 1 to 65535.
brief	Displays the summary of the SCG in the EIS proxy.
detail	Displays the details of the SCG in the EIS proxy.
all	Displays information for all SCGs in the EIS proxy.
pme status	Displays the PME configurations.

Command Default None

Command Modes Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.4.0SQ	This command was introduced.
Cisco IOS-XE Release 3.5.0SQ	This command was modified. The **pme status** keyword was introduced.

Examples The following example shows the summary of scrambler general settings :

```
Router# show cable video scrambler brief
General Settings related to Scrambling
--------------------------------------
Scramble Audio & Video Only    : DISABLED
Check SCG At Provision Time    : ENABLED
NDS Strong Pairing Enforcement : DISABLED
```

The following example shows the EIS settings for all EIS connections:

```
Router# show cable video scrambler eis all
-------------------------------------------------------------------------------------------
EIS EIS             Peer        TCP      CP           CP         Overwrite   Connection
ID  Name            IP          Port     Overrule     Duration   SCG         Status
-------------------------------------------------------------------------------------------
1   server1         0.0.0.0     1024     DISABLED     0          DISABLED    Waiting
10  test_EIS        0.0.0.0     6000     DISABLED     0          DISABLED    Waiting
-------------------------------------------------------------------------------------------

NA - Not Available
```

The following example shows the EIS settings for EIS ID 1:

```
Router# show cable video scrambler eis 1
-------------------------------------------------------------------------------------------
EIS EIS             Peer        TCP      CP           CP         Overwrite   Connection
ID  Name            IP          Port     Overrule     Duration   SCG         Status
-------------------------------------------------------------------------------------------
1   server1         0.0.0.0     1024     DISABLED     0          DISABLED    Waiting
-------------------------------------------------------------------------------------------

NA - Not Available
```

The following example shows the scrambler settings on line card 3:

```
Router# show cable video scrambler linecard 3 brief
CA Interface Details of Line Card : 3
--------------------------------------
IP Address : 192.168.2.250
Net Mask   : 255.255.255.0
Gateway    : 0.0.0.0
--------------------------------------

Encryption Configuration Details of Line Card : 3
-------------------------------------------------
Encryption: DVB
Algorithm : DVB-CSA
-------------------------------------------------
```

The following example shows the tier-based scrambling details on line card 3:

```
Router# show cable video scrambler linecard 3 tier-based
-------------------------------------------------------------------
SLOT TIER       ECMG ID   ACCESS CRITERIA
-------------------------------------------------------------------
3    Enabled    2         A076B300005E
-------------------------------------------------------------------
```

The following example shows the ARP entries for line card 5:

```
Router# show cable video scrambler linecard 3 arp-entries
-----------------------------------------
SLOT IP ADDRESS        MAC ADDRESS
-----------------------------------------
192.168.0.8      30e4.db04.8dc0
-----------------------------------------
```

The following example shows the IP routes for line card 3:

```
Router# show cable video scrambler linecard 3 routes
-------------------------------------------------------------
SLOT IP ADDRESS        GATEWAY           SUBNET MASK
-------------------------------------------------------------
3    192.168.0.15     192.168.0.19     255.255.255.128
-------------------------------------------------------------
```

The following example shows the ECMG information for all ECMGs on line card 3:

```
Router# show cable video scrambler linecard 3 ecmg all
-------------------------------------------------------------------------------------------------------------
ECMG ECMG    ECMG     CA Sys   CA Subsys  PID     Lower  Upper  Streams/   Open Streams/
```

```
Auto Chan  LC    ECMG
ID   Name    Type     ID       ID         Source  limit  limit  ECMG       ECMG
ID         Slot  Connections
-------------------------------------------------------------------------------------------------------
2    ecmg1   standard 0x952    0x0        sid     0      0      0          0
Enabled    3       1
3    ecmg2   standard 0x952    0x0        sid     34     36     0          0
Enabled    3       1
-------------------------------------------------------------------------------------------------------
```

The following example shows the summary of ECMG configuration for an ECMG on line card 3:

```
Router# show cable video scrambler linecard 3 ecmg 2 brief
-------------------------------------------------------------------------------------------------------
ECMG ECMG    ECMG     CA Sys   CA Subsys  PID     Lower  Upper  Streams/   Open Streams/
Auto Chan  LC    ECMG
ID   Name    Type     ID       ID         Source  limit  limit  ECMG       ECMG
ID         Slot  Connections
-------------------------------------------------------------------------------------------------------
2    ecmg1   standard 0x952    0x0        sid     0      0      0          0
Enabled    3     1
-------------------------------------------------------------------------------------------------------
```

The following example shows the details of all the ECMG connections for an ECMG on line card 3:

```
Router# show cable video scrambler linecard 3 ecmg 2 connection
-------------------------------------------------------------------------------------------------------
ECMG ECMG   ECMG     CA Sys     CA Subsys  PID     Lower  Upper  Streams/   Open Streams/
  Auto Chan  LC    ECMG
ID   Name   Type     ID       ID         Source  limit  limit  ECMG       ECMG
  ID         Slot  Connections
-------------------------------------------------------------------------------------------------------
2    ecmg1  standard 0x952      0x0        sid     0      0      18         18
  Enabled    3     1
-------------------------------------------------------------------------------------------------------

ECMG Connections for ECMG ID = 2

-------------------------------------------------------------------
Conn Conn     IP               Port    Channel Conn       Open
ID   Priority Address          Number  ID      Status     Streams
-------------------------------------------------------------------
1    1        192.168.0.2      4001    0       Open       0
-------------------------------------------------------------------
```

The following example shows the details of the descriptor rules for an ECMG on line card 3:

```
Router# show cable video scrambler linecard 3 ecmg 2 desc-rule
-------------------------------------------------------------------------------------------------------
ECMG ECMG    ECMG     CA Sys     CA Subsys  PID     Lower  Upper  Streams/   Open Streams/
   Auto Chan  LC    ECMG
ID   Name    Type     ID       ID         Source  limit  limit  ECMG       ECMG
   ID         Slot  Connections
-------------------------------------------------------------------------------------------------------
2    ecmg1   standard 0x952      0x0        sid     0      0      0          0
   Enabled    3     1
-------------------------------------------------------------------------------------------------------


ECMG Descriptor Rules for ECMG ID = 2
---------------------------------------

Rule ID       : 1
Rule Name     : rule1
Rule Type     : add-priv-data
Insert Option : as-per-eis
ECM ID(s)     :
Private Data  : a042
-------------------------------------------------------------------------
```

The following example shows the details of the overrules for an ECMG on line card 3:

```
Router# show cable video scrambler linecard 3 ecmg 2 overrule
------------------------------------------------------------------------------------------------------------
ECMG ECMG    ECMG     CA Sys     CA Subsys  PID     Lower  Upper  Streams/   Open Streams/
   Auto Chan  LC    ECMG
ID   Name    Type     ID         ID         Source  limit  limit  ECMG       ECMG
   ID         Slot  Connections
------------------------------------------------------------------------------------------------------------
2    ecmg1   standard 0x952      0x0        sid  0      0      0          0
Enabled    3     1
------------------------------------------------------------------------------------------------------------


ECMG Advanced Overrule Settings for ECMG ID = 2
-----------------------------------------------
Maximum Compute Time   : Disabled, Value = 0
Minimum CP Duration    : Disabled, Value = 0
Transition Start Delay : Disabled, Value = 0
Transition Stop Delay  : Disabled, Value = 0
Start Delay            : Disabled, Value = 0
Stop Delay             : Disabled, Value = 0
AC Start Delay         : Disabled, Value = 0
AC Stop Delay          : Disabled, Value = 0
Repetition Period      : Disabled, Value = 0
Maximum Streams        : Disabled, Value = 0
Hint Bit Start Delay   : Disabled, Value = 0
```

The following examples shows the summary of all SCGs:

```
Router# show cable video scrambler scg all
-------------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation           CP Duration LC    EIS
ID   ID  ID   ID          Time                 (msec)      Slot  ID
-------------------------------------------------------------------------
1    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
2    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 289,290
3    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 321,322
4    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 353,354
5    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 385,386
6    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 417,418,419
7    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 449,450
8    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 481,482
100  0   2    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 258,259
101  0   2    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 289,290,291
102  0   2    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 322,321
103  0   2    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 353,354,355
104  0   2    0           Immediate            100000      3     10
     Service IDs : NA
```

```
     ES PIDs : 385,386,387
105  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 417,418
106  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 449,450,451
107  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 481,482,483
108  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 513,514
200  0   321  0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
-------------------------------------------------------------------------
Total SCGs available = 18
```

The following example shows the details of the SCG with TSID 1:

```
Router# show cable video scrambler scg tsid 1
-------------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation          CP Duration LC    EIS
ID   ID  ID   ID          Time                (msec)      Slot  ID
-------------------------------------------------------------------------
1    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
2    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 289,290
3    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 321,322
4    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 353,354
5    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 385,386
6    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 417,418,419
7    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 449,450
8    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 481,482
-------------------------------------------------------------------------
Number of SCGs = 8
```

The following example shows the summary of all SCGs on the line card in slot 3:

```
Router# show cable video scrambler scg slot 3
-------------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation          CP Duration LC    EIS
ID   ID  ID   ID          Time                (msec)      Slot  ID
-------------------------------------------------------------------------
1    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
2    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 289,290
3    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 321,322
4    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 353,354
5    0   1    0           Immediate           100000      3     10
```

```
     Service IDs : NA
     ES PIDs : 385,386
6    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 417,418,419
7    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 449,450
8    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 481,482
100  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 258,259
101  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 289,290,291
102  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 322,321
103  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 353,354,355
104  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 385,386,387
105  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 417,418
106  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 449,450,451
107  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 481,482,483
108  0   2    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 513,514
200  0   321  0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
-------------------------------------------------------------------
Number of SCGs = 18
```

The following example shows the summary of all the SCGs from the EIS:

```
Router# show cable video scrambler scg eis-id 10 all
-------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation          CP Duration LC    EIS
ID   ID  ID   ID          Time                (msec)      Slot  ID
-------------------------------------------------------------------
1    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 257,258,259
2    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 289,290
3    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 321,322
```

The following example shows the summary of the SCG in the EIS proxy:

```
Router# show cable video scrambler scg eis-id 10 3 brief
-------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation          CP Duration LC    EIS
ID   ID  ID   ID          Time                (msec)      Slot  ID
-------------------------------------------------------------------
3    0   1    0           Immediate           100000      3     10
     Service IDs : NA
     ES PIDs : 321, 322
```

The following example shows the details of the SCG in the EIS proxy:

```
Router# show cable video scrambler scg eis-id 10 3 detail
-----------------------------------------------------------------------
SCG  ON  TS   SCG Ref     Activation           CP Duration LC    EIS
ID   ID  ID   ID          Time                 (msec)      Slot  ID
-----------------------------------------------------------------------
3    0   1    0           Immediate            100000      3     10
     Service IDs : NA
     ES PIDs : 321, 322

SCG Group Details
-----------------------------------------------------
SCG  ECM   Super      AC      Access
ID   ID    CAS ID     Change  Criteria
-----------------------------------------------------
3    1     9520000    FALSE   12345678
```

The following example shows the PME status:

```
Router# show cable video scrambler pme status

Vodsid     : 111
CEM IP     : 10.78.206.100
CEM Port   : 5000
Local Port : 63363
Count of ECMs recd   : 1
CEM Connection State : Connected
```

The table below describes the significant fields shown in the display.

Table 26: show cable video scrambler Field Descriptions

Field	Description
EIS ID	Displays the EIS connection ID.
EIS Name	Displays EIS server name in the Conditional Access (CA) system.
Peer IP	Displays the IP address of the EIS.
TCP Port	Displays the port number used to establish TCP connection with the EIS.
CP Overrule	Displays whether the CP overrule is enabled or disabled.
CP Duration	Displays the CP overrule duration in seconds.
Overwrite SCG	Displays whether the SCG overwrite is enabled or disabled.
Connection Status	Displays the status of the connection to the EIS.
ECMG ID	Displays the ECMG ID.
ECMG Name	Displays the name of the ECMG.
ECMG Type	Displays the type of the ECMG.

Field	Description
CA Sys ID	Displays the CA system ID.
CA Subsys ID	Displays the CA subsytem ID.
PID Source	Displays the ECM PID source information.
Lower Limit	Displays the Lower limit of the ECM PID range.
Upper Limit	Displays the Upper limit of the ECM PID range.
Streams/ECMG	Displays the number of ECMG streams.
Open Streams/ECMG	Displays the number of open ECMG streams.
Auto Chan ID	Displays whether auto channel ID is enabled or disabled.
LC Slot	Displays the line card slot number.
ECMG Connections	Displays the number of ECMG connections.
SCG ID	Displays the SCG ID.
ON ID	Displays the Original Network ID.
TS ID	Displays the Transport Stream ID.
SCG Ref ID	Displays the SCG reference ID.

Related Commands

Command	Description
cable video scrambler	Configures the scrambling parameters for the video sessions.
access-criteria	Configures the access criteria for the Entitlement Control Message Generator (ECMG).
cp-overrule	Configures the Crypto Period (CP) overrule duration.
overwrite-scg	Sets the Scrambling Control Group (SCG) overwrite.
auto-channel-id	Configures automatic channel ID selection.
connection	Configures ECMG connection.
desc-rule	Configures descriptor rule.

Command	Description
overrule	Overrules the default setting for the ECMG.

show cable video server-group

To display information on a video server group, use the **show cable video server-group** command in privileged EXEC mode.

show cable video server-group {**all**| **mapping**| **name** *group_name*}

Syntax Description

all	Displays all the server groups configured on a line card.
mapping	Displays external and internal session mapping.
name	Displays the information of a server group.
group_name	Specifies a server group.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

This command is used to view all the server groups configured on a line card.

Examples

The following example displays information on all server groups configured on the line card:

```
Router# show cable video server-group all

Server-Group :    gqi1
State :           ACTIVE
Protocol :        GQI
Timeout Period :  5 seconds
Number of Retry : 3
Server[0] :       172.22.23.161
       Management IP :  172.22.22.181   Port : 844    Mac Id : 0017.94fe.a9c0
                                           Reset             Pending
       Server           State              Indication        Requests
       ------------------------------------------------------------------------
       172.22.23.161    Connected          In-progress       0
Server-Group :    GQI
State :           NON-ACTIVE
Protocol :        GQI Emulation
Emulation Type :  24-qam
Timeout Period :  5 seconds
```

```
Number of Retry : 3
Server[0] :       56.1.1.11
Management IP :  56.1.1.101   Port : 0    Mac Id : 001a.a2ff.0d03
        QAM Interfaces : 5/1.1-5/6.4
```

The table below describes the significant fields shown in the display.

Table 27: show cable video server-group Field Descriptions

Field	Description
Server-Group	Specifies the name of the server group.
State	Indicates whether the group is active or non-active.
Protocol	Indicates the protocol configured on the server group.
Timeout Period	Indicates the time period for a time out.
Number of Retry	Indicates the number of retries.
Server	Indicates the IP address of the external server. IP address must be configured for the GQI protocol.
Management IP	IP address of the manaagement port of the server configured on the server group.
Port	Specifies the port number.
Mac Id	Specifies the MAC address of the server.
QAM Interfaces	Specifies the QAM interfaces.

Related Commands

Command	Description
cable video servers	Configures external control server groups on the line card.

show cable video session

To display the video session information, use the **show cable video session** command in privileged EXEC mode.

{**show cable video session** [{**Qam** *qam-interface-number*| **Qam-red** *qam-interface-number*| **all**} [**brief** [*filter*]| **summary**]]| **id** *session-id-number* [**in**| **out**] [**psi**| **si**| **stats**]| **local** {**Qam** *qam-interface-number*| **Qam-red** *qam-interface-number*| **all**| **slot** *slot*}| **remote** {**Qam** *qam-interface-number*| **Qam-red** *qam-interface-number*| **all**| **ermi**| **gqi**| **slot** *slot*}| **slot** [**brief** [*filter*]| **count**| **summary**]}

Syntax Description

Qam	Displays information on video session configured on a QAM interface.
Qam-red	Displays the video session configured on a QAM interface with line card redundancy.
qam_interface_number	Indicates the interface number of the QAM. • *slot*: Specifies the slot of the QAM interface. Valid range is from 3 to 12. • *port*: Specifies the number of port on the slot. The following are the valid range For DS384, the valid range is 8 and for ds48, the valid range is12. • *channel*: Specifies the channel on the QAM. The following are the valid range: For DS384, the valid range is 48 and for ds48, the valid range is 4.
all	Displays information of all video sessions configured on the chassis.
summary	(Optional) Displays a summary of all the video sessions configured on the chassis.
brief	(Optional) Displays brief video information.

filter	(Optional) Filters the information using the following criteria: • **active—**Shows the active sessions present. • **asm—**Shows the ASM video sessions. • **blocked—**Shows blocked video sessions. • **data—**Shows sessions with the data-piping processing type. • **idle—**Shows idle sessions. • **off—**Shows off sessions. • **passthru—**Shows sessions with the pass-through processing type. • **psi—**Shows packet stream identifiers of video sessions. • **remap—**Shows remapped video streams. • **shell—**shows video sessions in shell. • **ssm—**Shows SSM video sessions. • **udp—**Shows the UDP port.
id	Displays video session information for a session ID.
session-id-number	Specifies the ID of a particular session. Valid session IDs are 1 and 2.
in	(Optional) Displays input session information.
out	(Optional) Displays output session information.
si	(Optional) Displays only the SI information of an input or output session.
psi	(Optional) Displays detailed Program Specific Information (PSI) video session information with program table.
stats	(Optional) Displays detailed video session .
slot	Displays video sessions information for a slot.
slot	Specifies the slot on the QAM interface. Valid slot number range is from 3 to 12.

ermi	Displays video session information for ERMI sessions.
gqi	Displays video session information for GQI sessions.
count	(Optional) Displays the session count for all QAM channels on the line card interface.
local	Displays local video sessions.
remote	Displays remote video sessions.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
12.2(50)SQ2	This command was modified. The **count** keyword was added.
Cisco IOS-XE Release 3.3.0SQ	This command was integrated into Cisco IOS-XE Release 3.3.0SQ. **qam-domain** is *not* supported. The **local** and **remote** keywords are added.
Cisco IOS-XE Release 3.4.0SQ	This command was modified. The **si** keyword was added. The command displays the de-jittering mode and master PCR information.
Cisco IOS-XE Release 3.5.0SQ	This command was modified. A new column **Current State** was added in the command output.

Examples

The following example shows the video sessions configured on 3/1.1 QAM interface:

```
Router# show cable video session qam 3/1.1

Session   QAM        Stream    Sess IP        UDP   Out Input   Input  Output PSI
ID        Port       Type      Type Address   Port  Pgm Bitrate State  State  Rdy

Ctrl      Encryption Current
State     Type       State
--------- ---------- -------   ---- --------- ----- --- ------- ------ ------ ---
201392133 3/1.1      Remap     UDP  30.0.3.10 49155 4   2999750 ACTIVE ON     YES
-         DVB        Encrypted
201392134 3/1.1      Remap     UDP  30.0.3.10 49156 5   2999856 ACTIVE ON     YES
-         DVB        Encrypted
201392135 3/1.1      Remap     UDP  30.0.3.10 49157 6   2993065 ACTIVE ON     YES
-         DVB        Encrypted
Total Sessions = 3
```

The following example shows the video sessions configured on the chassis:

```
Router# show cable video session all

Session   QAM        Stream    Sess IP        UDP   Out  Input   Input  Output PSI
ID        Port       Type      Type Address   Port  Pgm  Bitrate State  State  Rdy

Ctrl      Encryption Current
State     Type       State
--------- ---------- -------   ---- --------- ----- ---- ------- ------ ------ ---
201392133 3/1.1      Remap     UDP  30.0.3.10 49155 4    2999750 ACTIVE ON     YES
-         DVB        Encrypted
201392134 3/1.1      Remap     UDP  30.0.3.10 49156 5    2999856 ACTIVE ON     YES
-         DVB        Encrypted
201392135 3/1.1      Remap     UDP  30.0.3.10 49157 6    2993065 ACTIVE ON     YES
-         DVB        Encrypted
201457672 3/1.2      Remap     SSM  -         -     4    1692577 ACTIVE ON     YES
-         -          -
201457673 3/1.2      Remap     SSM  -         -     5    2042924 ACTIVE ON     YES
-         -          -
268500996 4/1.1      Remap     UDP  30.0.3.10 49262 1111 2999846 ACTIVE ON     YES
-         PowerKey   Encrypted
268566533 4/1.2      Remap     UDP  30.0.3.10 49263 1112 2999257 ACTIVE ON     YES
-         PowerKey   Encrypted
268632070 4/1.3      Remap     UDP  30.0.3.10 49264 1113 2999980 ACTIVE ON     YES
-         PowerKey   Encrypted
Total Sessions = 8
```

The following example shows the SI information along with the other information of the sessions configured on the chassis:

```
Router# show cable video session id 201523208
INPUT Source      : 201523208
  Created On      : 07:38:55 AM
  Uptime [SUP]    : 07:38:55 AM
  Data State      : ACTIVE, PSI,
  Config Bitrate  : 3000000 bps
  Jitter          : 200 ms
  Stream Type     : SPTS
  Stream Rate     : VBR
  PID Remap       : ENABLED
  Source IP       : 20.0.1.1
  Source UDP      : -
  Destination IP  : 232.2.2.2
  Destination UDP : -
  Idle Timeout    : 250 msecs
  Init Timeout    : 1000 msecs
  Off Timeout     : 70 seconds


Input SI Info:
NIT :   pid 0x10
SDT :   pid 0x11
TDT :   pid 0x14

Output Session: 201523208:
  SPTS PGM Number: 265
  Data State     : PSI,
  Control State  : ACTIVE
  QAM            : 3/1.3
  QAM-partition  : None


Output SI Info:
NIT :   pid 0x10
SDT :   pid 0x11
TDT :   pid 0x14
```

The following example shows the SI information for the input sessions:

```
Router# show cable video session id 201523208 in
INPUT Source      : 201523208
  Created On      : 07:38:55 AM
```

```
  Uptime [SUP]    : 07:38:55 AM
  Data State      : ACTIVE, PSI,
  Config Bitrate  : 3000000 bps
  Jitter          : 200 ms
  Stream Type     : SPTS
  Stream Rate     : VBR
  PID Remap       : ENABLED
  Source IP       : 20.0.1.1
  Source UDP      : -
  Destination IP  : 232.2.2.2
  Destination UDP : -
  Idle Timeout    : 250 msecs
  Init Timeout    : 1000 msecs
  Off Timeout     : 70 seconds


Input PSI Info:
  PAT Info:
  Ver 2, TSID 1, len 16, section 0/0
    Prog 1: pmt 16
  PMT Info:
  Ver 2, program 1, pcr pid 17, len 32
    Type 2, PID 17, len 0
    Type 129, PID 20, len 6 (desc 10, len 4)


Input SI Info:
NIT :   pid 0x10
SDT :   pid 0x11
TDT :   pid 0x14
```

The following example shows the SI information for the output sessions:

```
Router# show cable video session id 201523208 out
Output Session: 201523208:
  SPTS PGM Number: 265
  Data State     : PSI,
  Control State  : ACTIVE
  QAM            : 3/1.3
  QAM-partition  : None

  Output PSI Info (Carrier ID 3):
  PAT Info for Pgm Num 265:
  Ver 5, TSID 5003, len 68, section 0/0
    Prog 265: pmt 496
  PMT Info for Pgm Num 265:
  Ver 0, program 265, pcr pid 497, len 32
    Type 2, PID 497, len 0
    Type 129, PID 498, len 6 (desc 10, len 4)
```

The following example shows only the input SI info:

```
Router#show cable video session id 201523208 in si
Input SI Info:
NIT :   pid 0x10
SDT :   pid 0x11
TDT :   pid 0x14
```

The following example shows only the output SI info:

```
Router#show cable video session id 201523208 out si
Output SI Info:
NIT :   pid 0x10
SDT :   pid 0x11
TDT :   pid 0x14
```

The following example displays the de-jittering mode for a pass through session:

```
Router# show cable video session id 201392130

INPUT Source      : 201523204
  Created On      : 11:05:12 AM
  Uptime [SUP]    : 11:05:12 AM
  Data State      : ACTIVE, PSI
```

```
 Config Bitrate  : 0 bps
 Jitter          : 200 ms
 Stream Type     : MPTS
 Stream Rate     : VBR
 PID Remap       : DISABLED
 De-jitter mode  : SINGLE-STREAM
 Source IP       : 20.0.1.1
 Source UDP      : -
 Destination IP  : 232.2.2.253
 Destination UDP : -
 Idle Timeout    : 5000 msecs
 Init Timeout    : 1000 msecs
 Off Timeout     : 60 seconds


 Elapsed time [LC]: 0 days 00 hours 06 min 33 secs
 IP Packets: In: 743567, Drop: 0
TP Packets: In: 5204969, PCR: 180513, Non-PCR: 3981494, PSI: 4939, NULL: 679782, Filtered:
0, Unreferenced: 0
             Sync-Loss: 0, Dis-continous: 0, CC Errors: 0, PCR Jump: 34, Idle: 0
 Measured Bitrate 20000155 (19994056 min 20003570 max) bps, stay 163 ms, jitter 30 ms
 PCR Bitrate 20132 (19994084 min 0 max) bps, stay 163 ms, jitter 30 ms
 Idle Count: 0, Total Idle Time: 0 sec
 Master PCR pid: 80 M-PCR switch cnt: 35
```

The following example shows the detailed summary of video sessions configured on the chassis:

```
Router# show cable video session all summary

Video Session Summary for Chassis:
Active    : 3        Init      : 0        Idle      : 0
Off       : 0        Blocked   : 0        PSI-Ready : 3
UDP       : 3        ASM       : 0        SSM       : 0
Remap     : 3        Data      : 0        Passthru  : 0
Shell     : 0        Bound     : 0
Total Sessions: 3
Total Measured Bitrate : 7070361 bps
```

The following example shows information about video sessions configured on the chassis:

```
Router# show cable video session all brief

Session   QAM        Stream    Sess IP        UDP   Out  Input   Input  Output PSI
ID        Port       Type      Type Address   Port  Pgm  Bitrate State  State  Rdy

Ctrl      Encryption Current
State     Type       State
--------- ---------- -------   ---- --------- ----- ---- ------- ------ ------ ---
201392133 3/1.1      Remap     UDP  30.0.3.10 49155 4    3000215 ACTIVE ON     YES
-         DVB        Encrypted
201392134 3/1.1      Remap     UDP  30.0.3.10 49156 5    3000093 ACTIVE ON     YES
-         DVB        Encrypted
201392135 3/1.1      Remap     UDP  30.0.3.10 49157 6    2992358 ACTIVE ON     YES
-         DVB        Encrypted
201457672 3/1.2      Remap     SSM  -         -     4    1692777 ACTIVE ON     YES
-         -          -
201457673 3/1.2      Remap     SSM  -         -     5    2051344 ACTIVE ON     YES
-         -          -
268500996 4/1.1      Remap     UDP  30.0.3.10 49262 1111 3000480 ACTIVE ON     YES
-         PowerKey   Encrypted
268566533 4/1.2      Remap     UDP  30.0.3.10 49263 1112 3000094 ACTIVE ON     YES
-         PowerKey   Encrypted
268632070 4/1.3      Remap     UDP  30.0.3.10 49264 1113 3000342 ACTIVE ON     YES
-         PowerKey   Encrypted
Total Sessions = 8
```

The table below describes the significant fields shown in the display.

Table 28: show cable video session all Field Descriptions

Field	Description
Session ID	Represents the internal ID allocated by the chassis to the output stream of the input session.
QAM Port	Indicates the QAM interface or QAM subinterface.
Stream Type	Indicates the transport stream.
IP address	Session IP address
Session Type	Indicates the video session type.
UDP Port	Indicates the UDP port.
Output Program	Indicates the Single ProgramTransport Stream (SPTS) or Multiple ProgramTransport Stream (MPTS) program number.
Input Bitrate	Indicates the actual bitrate measured on the input.
Input State	Indicates the state on the input.
Output State	Indicates the stare on the output.
PSI Rdy	Indicates the PSI ready state.
Ctrl State	Indicates the controller state.
Encryption Type	Indicates the encryption type.
Current State	Indicates the encryption state.

The following example shows the detailed video session configuration on the line card:

```
Router# show cable video session id 201392130

INPUT Source      : 201392130
  Created On      : 04:41:10 AM
  Uptime [SUP]    : 04:41:10 AM
  Data State      : ACTIVE, PSI,
  Config Bitrate  : 3000000 bps
  Jitter          : 200 ms
  Stream Type     : SPTS
  Stream Rate     : VBR
  PID Remap       : ENABLED
  Source IP       : 0.0.0.0
  Source UDP      : 0
  Destination IP  : 30.0.3.10
  Destination UDP : 49261
  Idle Timeout    : 250 msecs
  Init Timeout    : 1000 msecs
  Off Timeout     : 60 seconds
  PID Filter [0] :
```

```
Input PSI Info:
  PAT Info:
  Ver 2, TSID 1, len 16, section 0/0
    Prog 1: pmt 16
  PMT Info:
  Ver 2, program 1, pcr pid 17, len 32
    Type 2, PID 17, len 0
    Type 129, PID 20, len 6 (desc 10, len 4)
  Elapsed time [LC]: 0 days 17 hours 48 min 52 secs
  IP Packets: In: 17879939, Drop: 0
  TP Packets: In: 125159573, PCR: 1782371, Non-PCR: 117297535, PSI: 264196, NU
: 5682013, Filtered: 0, Unreferenced: 133458
              Sync-Loss: 0, Dis-continous: 0, CC Errors: 18, PCR Jump: 826, Id
: 0
  Measured Bitrate 2998635 (0 min 3159570 max) bps, stay 169 ms, jitter 34 ms
  PCR Bitrate 3000092 (600014 min 0 max) bps, stay 169 ms, jitter 34 ms
  Idle Count: 0, Total Idle Time: 0 sec
Output Session: 201392130:
  SPTS PGM Number: 3111
  Data State     : PSI,
  Control State  : ACTIVE
  QAM            : 3/1.1
  QAM-partition  : 3
  Output PSI Info (Carrier ID 1):
  PAT Info for Pgm Num 3111:
  Ver 1, TSID 311, len 16, section 0/0
    Prog 3111: pmt 352
  PMT Info for Pgm Num 3111:
  Ver 0, program 3111, pcr pid 353, len 32
    Type 2, PID 353, len 0
    Type 129, PID 354, len 6 (desc 10, len 4)
Elapsed time [LC]: 0 days 17 hours 48 min 53 secs
  TP Packets: PCR: 4, Non-PCR: 215, PSI: 2, New PAT: 1, New PMT: 1
              Drop: 0, Info-Err: 0, Inv-Rate: 0, Output Adjust: 0
              Overruns: 0, Overdue Drop 0, Under-Flow: 0, Over-Flow: 0
```

The following example shows the cable video session information for session ID 2:

```
Router# show cable video session id  2 in psi

Session PAT:   Ver 0, TSID 1, len 16, section 0/0
    Prog 1: pmt 500
  Session PMT:   Ver 0, program 1, pcr pid 481, len 43
    Type 3, PID 482, len 6 (desc 10, len 4)
    Type 129, PID 483, len 6 (desc 10, len 4)
    Type 2, PID 481, len 0
```

The following example shows detailed video session statistics:

```
Router# show cable video session id 2 in stats

  Elapsed time [LC]: 14142 days 22 hours 52 min 41 secs
  IP Packets: In: 0, Drop: 0
  TP Packets: In: 0, PCR: 0, Non-PCR: 0, PSI: 0, NULL: 0, Unreferenced: 0
              Sync-Loss: 0, Dis-continous: 0, CC Errors: 0, PCR Jump: 0, Idle: 0
  Measured Bitrate 0 (0 min 0 max) bps, stay 0 ms, jitter 0 ms
  PCR Bitrate 0 (0 min 0 max) bps, stay 0 ms, jitter 0 ms
  Idle Count: 0, Total Idle Time: 0 sec
```

The following example shows the session count on all QAMs on the line card in slot 9:

```
Router# show cable video session slot 9 count

     QAM Port           Sessions
   x------------------x-----------
    Channel 9/1.1       2
    Channel 9/1.2       10
```

The table below describes the significant fields shown in the display.

Table 29: show cable video session id Field Descriptions

Field	Description
Elapsed time	Indicates the session time elapsed in days, hours, minutes. and seconds.
IP packets	Indicates the number of IP packets used and dropped.
TP packets	Indicates the number of transport packets that are program clock referenced, known and unknown bitrates, unreferenced, discontinuous, and idle.
Measured Bitrate	Indicates the size of the video stream. Standard definition (SD) video programs have bitrates from 62.5 kbps to 15 Mbps, high definition (HD) video programs have bitrates from 6 to 20 Mbps, and music programs have bitrates of 128 to 384 kbps. 32 SD programs, or 4 HD programs per QAM channel.
PCR Bitrate	Indicates the known bitrate size of the video stream.
Idle count	Indicates the number of times the line card is idle. When the input session enters into the IDLE state, an update is sent to the Supervisor card.
QAM Port	Indicates the QAM channel on a linecard.
Sessions	Indicates the session count on a QAM channel.

The following example displays the local sessions on the line card:

```
Router# show cable video session local all

Session   QAM        Stream   Sess IP               UDP   Out   Input    Input  Output PSI
ID        Port       Type     Type Address          Port  Pgm   Bitrate  State  State  Rdy

Ctrl      Encryption Current
State     Type       State
--------- ---------- ------   ---- ---------------- ----- ----- -------- ------ ------ ---
201392133 3/1.1      Remap    UDP  30.0.3.10        49155 4     2999994  ACTIVE ON     YES
-         DVB        Encrypted
201392134 3/1.1      Remap    UDP  30.0.3.10        49156 5     2999777  ACTIVE ON     YES
-         DVB        Encrypted
201392135 3/1.1      Remap    UDP  30.0.3.10        49157 6     2992876  ACTIVE ON     YES
-         DVB        Encrypted
201457672 3/1.2      Remap    SSM  -                -     4     1692888  ACTIVE ON     YES
-         -          -
201457673 3/1.2      Remap    SSM  -                -     5     2038039  ACTIVE ON     YES
-         -          -
Total Sessions = 5
```

Related Commands

Command	Description
cable qam-partition	Creates a QAM partition on the line card.

show cable video statistics packet

To display unicast and multicast video packets, use the **show cable video statistics packet** command in privileged EXEC mode.

show cable video statistics packet {**all**| **slot** *slot-num*} {**brief**| **detail**}

Syntax Description

all	Displays video unicast and multicast packets configured on the chassis.
slot	Displays video unicast and multicast packets for a specified slot.
slot-num	Specifies the slot on the chassis. Valid range is from 3 to 12.
brief	Displays the brief information of packets for a given slot.
detail	Displays detailed summary information of packets for a given slot.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.0SQ	This command was integrated into Cisco IOS-XE Release 3.3.0SQ. The command output is modified to display the load balancing groups.
Cisco IOS-XE Release 3.5.0SQ	This command was modified. Two new fields **Total Multicast Sessions** and **Total Unicast Sessions** are added to summarize the sessions count per slot or chassis level.

Examples

The following example shows the information of all packets on a chassis:

```
Router# show cable video statistics packet all brief

Slot    LBG    Multicast  Multicast     Unicast    Mcast DS    Unicast DS
Id      Id     Groups     Sessions      Sessions   Packets     Packets
```

```
-------------------------------------------------------------------------------
3       1       0          0             40          17          858851741
3       2       6          48            0           1735875     0
6       1       0          0             0           29          0
6       2       0          0             0           29          0

Total Multicast Sessions : 48
Total Unicast Sessions   : 40
```

The following example shows the detailed summary information of all packets on a chassis:

```
Router# show cable video statistics packet slot 3 detail

Slot: 3
LBG ID: 1
QAM Range:              qam3/1-6
Multicast Groups:       0
Multicast Sessions:     0
Unicast Sessions:       3
DS BYTES:               135146944
MCAST DS PACKETS:       48                  UCAST DS PACKETS:     563833

CRC ALIGN ERROR:        0                   DROPPED BAD PKTS:     0
COLLISIONS:             0                   SYMBOL ERROR:         255
UNDERSIZE PKTS:         0                   OVERSIZE PKTS:        0
FRAGMENTS PKTS:         0                   JABBERS:              0

SINGLE COL:             0                   MULTI COL:            0
LATE COL:               0                   ACCESSIVE COL:        0

DEFERRED COL:           0                   FALSE CARRIER:        0
CARRIER SENSE:          0                   SEQUENCE ERROR:       255

QAM Range:              qam3/7-12
Multicast Groups:       0
Multicast Sessions:     0
Unicast Sessions:       0
DS BYTES:               20160
MCAST DS PACKETS:       48                  UCAST DS PACKETS:     0

CRC ALIGN ERROR:        0                   DROPPED BAD PKTS:     0
COLLISIONS:             0                   SYMBOL ERROR:         255
UNDERSIZE PKTS:         0                   OVERSIZE PKTS:        0
FRAGMENTS PKTS:         0                   JABBERS:              0

SINGLE COL:             0                   MULTI COL:            0
LATE COL:               0                   ACCESSIVE COL:        0

DEFERRED COL:           0                   FALSE CARRIER:        0
CARRIER SENSE:          0                   SEQUENCE ERROR:       255
```

The table below describes the significant fields shown in the display.

Table 30: show cable video statistics packet Field Descriptions

Field	Description
Qam Range	QAM domains configured on the chassis.
LBG ID	Load balancing group ID.
Multicast Groups	Multicast groups configured.
Multicast Sessions	Number of video multicast sessions.
Unicast Sessions	Number of video unicast sessions.

Field	Description
Mcast DS Packets	Multicast downstream packets.
Unicast DS Packets	Unicast downstream packets.
CRC ALIGN ERROR	Number of packets with a CRC align errors.
DROPPED BAD PKTS	Number of bad packets that were dropped.
COLLISIONS	Number of packet collisions.
SYMBOL ERROR	Number of symbol errors.
UNDERSIZE PKTS	Number of undersized packets.
OVERIZE PKTS	Number of oversized packets
FRAGMENTS PKTS	Number of fragmented packets.
JABBERS	Number of jabber errors.
DEFFERED COL	Number of times the interface has tried to send a frame, but found the carrier busy at the first attempt.
FALSE CARRIER	False carrier counter. It is incremented when a false error is detected in the register.
CARRIER SENSE	Indicates the signal.
SEQUENCE ERROR	Frame check sequence error.
Total Multicast Sessions	Total number of video multicast sessions.
Total Unicast Sessions	Total number of video unicast sessions.

Related Commands

Command	Description
cable video group	Creates a group of video sessions.
cable video multicast	Configures multicast sessions on a QAM interface.

show controllers linecard

To display information about used bandwidth and total bandwidth on all QAMs on a line card interface, use the show controllers **linecard** command in user EXEC or privileged EXEC mode.

show controllers linecard *number* **bandwidth**

Syntax Description

linecard	Specifies the slot location of the line card. The valid range is from 3 to 12.
bandwidth	Displays the used bandwidth and total bandwidth on all QAMs on a line card interface.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ2	This command was introduced.

Examples

The following is sample output for the **show controllers linecard** command for a line card in slot 3:

```
Router# show controllers linecard 3 bandwidth

       QAM Port         Bandwidth Used(bps)  Bandwidth Total(bps)
       x----------------x--------------------x-------------------------
       Channel 3/1.1    0                    38810000
       Channel 3/1.2    0                    38810000
       Channel 3/1.3    0                    38810000
       Channel 3/1.4    0                    38810000
```

The table below describes the fields shown in the **show controllers linecard** command display.

Table 31: show controllers linecard Field Descriptions

Field	Description
QAM Port	QAM channel on the line card.
Bandwidth Used (bps)	Amount of bandwidth used by the QAM interface.
Bandwidth Total (bps)	Amount of bandwidth alloted to the QAM interface.

Related Commands

Command	Description
show running-config interface qam	Displays the running configuration of the QAM interface.

show controllers qam

To display information about downstream configuration on a line card, use the **show controllers qam** command in privileged EXEC mode.

show controllers {**qam**| **qam-red**} *slot/port.channel* **downstream**

Syntax Description

slot	Specifies the line card in the QAM interface. Line card redundancy configured interfaces appear as QAM -red. Valid range is from 3 to 12.
port	Specifies the QAM RF port number in the line card.Valid range is from 1 to 12.
channel	Specifies the QAM channel in the port of the line card. Valid range is from 1 to 4.
downstream	Specifies the configuration of the QAM interface.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

This command displays the downstream information for a QAM interface. If line card redundancy (LCRED) is configured on the QAM interface, the interface is denoted by **qam-red**.

Examples

The following example shows the downstream configuration on a redundancy line card:

```
Router# show controllers qam 3/1.1 downstream

Qam3/1.1 Downstream is up
        Annex B, Stacking set to 4
        Frequency: 279000000 Hz, Power: 50.0 dBmV
        Modulation: 256QAM, TSID: 0, QAM IDB_State: UP
        Bandwidth Reserved for Video:   0        bps
        Bandwidth Used:                 8223776  bps
        Bandwidth Total:                38810000 bps
        Transport Mode: QAM_MODE_MPT Qam Owner: LOCAL
        Interleave Level: 2, FEC I: 32 FEC J: 4
```

The table below describes the significant fields shown in the display.

Table 32: show controllers qam Field Descriptions

Field	Description
Downstream	Indicates whether the interface hardware is currently active or disabled by the administrator.
Annex	Indicates the annex for the RF downstream channel.
Stacking	Indicates the stacking level set on the QAM interface.
Modulation	Indicates the modulation level of the QAM.
TSID	Indicates the TSID value set on the QAM.
QAM_IDB_State	Indicates the state of the QAM interface.
Bandwidth Reserved for video	Amount of bandwidth alloted for video.
Bandwidth Used	Amount of bandwidth used by the QAM interface.
Bandwidth Total	Amount of bandwidth alloted to the QAM interface.
Transport Mode	Indicates the mode on the QAM.
Interleave Level	Indicates the frequency interleave level on the QAM.
FEC	Length of the forward error correction in bytes. The range is 0 to 10 bytes; a value of 0 implies no forward error correction.

Related Commands

Command	Description
show running-config interface qam	Displays the running configuration of the QAM interface.

show depi

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

show depi

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ	This command was introduced.

Examples

The following example shows a sample output of the **show depi** command on a Cisco RF Gateway 10:

```
Router# show depi

DEPI Tunnel and Session Information Total tunnels 3 sessions 12

LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                Count
555844637  4037701912 RFGW-10-1     est    11.30.14.100    4     test10

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252048235 1074332337 555844637  717,       est    1w0d     16         P
1252049362 1074332330 555844637  711,       est    1w0d     15         P
1252005266 1074332288 555844637  699,       est    1w0d     13         P
1252000641 1074332316 555844637  705,       est    1w0d     14         P

LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                Count
1486289361 1394811300 RFGW-10-1     est    12.30.14.100    4     test10
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252014460 1074332279 1486289361 549,       est    1w0d     20         P
1252059306 1074332234 1486289361 531,       est    1w0d     17         P
1252057709 1074332245 1486289361 537,       est    1w0d     18         P
1252006708 1074332262 1486289361 543,       est    1w0d     19         P

LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                Count
1688275168 1361251901 RFGW-10-1     est    24.30.14.100    4     test10
LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252018493 1074332252 1688275168 537,       est    1w0d     22         S
1252054974 1074332286 1688275168 549,       est    1w0d     24         S
1252022230 1074332263 1688275168 543,       est    1w0d     23         S
1252059782 1074332236 1688275168 531,       est    1w0d     21         S
```

The table below describes the major fields shown in the **show depi** command display:

Table 33: show depi Field Descriptions

Field	Description
LocTunID	Identifier of the local tunnel.
RemTunID	Identifier of the remote tunnel.
Remote Name	Name of the remote tunnel.
State	State of the tunnel.
Remote Address	IP address of the remote tunnel.
Session Count	Number of sessions.
LocID	Identifier of the session.
RemID	Identifier of the remote session.
TunID	Identifier of the tunnel.
State	State of the session.
Last Chg	Last state change timestamp.
Uniq ID	Unique identifier of the QAM channel.
Type	Primary or secondary session.

Related Commands

Command	Description
depi-tunnel	Creates a template of DEPI tunnel configuration settings that can be inherited by different pseudowire classes.
show depi session	Displays information about DEPI sessions.
show depi tunnel	Displays information about DEPI tunnels.

show depi session

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

show depi session [*session-id* **verbose| configured**| **name** *session-name* **[verbose]| primary**| **secondary**| **tsid** *ts-id*]

Syntax Description

session-id	(Optional) Local session ID value. The allowed range is from 1 to 4294967295.
verbose	(Optional) Displays detailed DEPI tunnel or session information.
configured	(Optional) Displays all the DEPI sessions configured and their state. The states are IDLE and ACTIVE.
name *session-name*	(Optional) Specifies the name of the DEPI session.
primary	(Optional) Specifies the primary DEPI session.
secondary	(Optional) Specifies the backup DEPI session.
tsid *ts-id*	(Optional) Specifies the Transport Stream Identifier (TSID).

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ	This command was introduced.
12.2(50)SQ2	This command was modified. The following keywords were added to this command: • **configured** • **name** • **primary** • **secondary** • **tsid**

Examples

The following example shows sample output of the **show depi session** command for all the established DEPI data sessions in Cisco IOS Release 12.2(50)SQ:

```
Router# show depi session

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1074004031 1252011014 641420592  514        est    04:19:46 4           P
1074003980 1252043972 641420592  511        est    04:19:46 1           P
1074266112 1252009847 641420592  7711       est    04:19:46 5           P
1074266158 1252028749 641420592  7713       est    04:19:45 7           P
1074004011 1252053945 641420592  513        est    04:19:46 3           P
1074266138 1252065065 641420592  7712       est    04:19:46 6           P
1074003990 1252034268 641420592  512        est    04:19:46 2           P
1074266170 1252049135 641420592  7714       est    04:19:45 8           P
1074332283 1252057764 1102797124 549        est    04:19:46 16          S
1074332237 1252023871 1102797124 531        est    04:19:46 10          S
1074332269 1252060064 1102797124 543        est    04:19:46 14          S
1074332247 1252030448 1102797124 537        est    04:19:46 12          S
1074332254 1252061912 2073848961 537        est    04:19:47 11          P
1074332258 1252020223 2073848961 543        est    04:19:47 13          P
1074332275 1252030759 2073848961 549        est    04:19:47 15          P
```

The following is sample output of the **show depi session** command for a specific established DEPI data session identified by the session-id in Cisco IOS Release 12.2(50)SQ:

```
Router# show depi session 1074528558 verbose

Session id 1074528558 is up, tunnel id 3574340018
  Remote session id is 1252003902, remote tunnel id 3815831337
  Remotely initiated session
  Session Type: Secondary
Qam Channel Parameters
  Tsid is 953
  Group Tsid is 76
  Frequency is 435000000
  Modulation is 256qam
  Annex is B
  Interleaver Depth I=32 J=4
  Power is 480
  Qam channel status is 0
  Unique ID is 58
Call serial number is 2504300043
Remote tunnel name is romeo
  Internet address is 1.30.54.1
Local tunnel name is RFGW-10-1
  Internet address is 1.30.54.100
IP protocol 115
  Session is L2TP signaled
  Session state is established, time since change 00:22:48
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
  Last clearing of counters never
  Counters, ignoring last clear:
    0 Packets sent, 0 received
    0 Bytes sent, 0 received
    Receive packets dropped:
      out-of-order:             0
      out-of-order:             0
      total:                    0
    Send packets dropped:
      exceeded session MTU:     0
      exceeded session MTU:     0
      total:                    0
  DF bit on, ToS reflect enabled, ToS value 0, TTL value 255
  UDP checksums are disabled
  Session PMTU enabled, path MTU is 1518 bytes
  No session cookie information available
  FS cached header information:
```

```
    encap size = 28 bytes
    45000014 00004000 FF730CD6 011E3664
    011E3601 4AA0103E 00000000
  Sequencing is on
    Ns 0, Nr 0, 0 out of order packets received
    Packets switched/dropped by secondary path: Tx 0, Rx 0
  Peer Session Details
  Peer Session ID : 1073808091
  Peer Qam ID : Qam3/12.2
  Peer Qam State : ACTIVE
  Peer Qam Type : Secondary
  Peer Qam Statistics
  Total Pkts : 35177
  Total Octets : 6613276
  Total Discards : 0
  Total Errors : 0
  Total In Pkt Rate : 0
  Bad Sequence Num : 0
  Total In DLM Pkts : 0
  Conditional debugging is disabled
```

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

```
Router# show depi session configured

Session Name                 State  Reason                       Time
Qam5/1.1:0                   ACTIVE -
Qam5/1.2:0                   ACTIVE -
Qam5/1.3:0                   ACTIVE -
Qam5/1.4:0                   ACTIVE -
Qam7/1.1:0                   ACTIVE -
Qam7/1.2:0                   ACTIVE -
Qam7/1.3:0                   ACTIVE -
Qam7/1.4:0                   ACTIVE -
Qam7/10.1:0                  ACTIVE -
Qam7/10.1:1                  ACTIVE -
Qam7/10.2:0                  ACTIVE -
Qam7/10.2:1                  ACTIVE -
Qam7/10.3:0                  ACTIVE -
Qam7/10.3:1                  ACTIVE -
Qam7/10.4:0                  ACTIVE -
Qam7/10.4:1                  ACTIVE -
Qam7/11.1:0                  IDLE                                  0  00:00:00
Qam7/11.2:0                  IDLE                                  0  00:00:00
Qam7/11.3:0                  IDLE                                  0  00:00:00
Qam7/11.4:0                  IDLE                                  0  00:00:00
Qam9/1.1:0                   ACTIVE -
Qam12/4.1:0                  IDLE                                  0  00:00:00
```

The following is a sample output of the **show depi session** command that displays all primary data sessions on the Cisco RFGW-10:

```
Router# show depi session primary

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252048235 1074332337 555844637  717,       est    3d09h    16         P
1252049362 1074332330 555844637  711,       est    3d09h    15         P
1252005266 1074332288 555844637  699,       est    3d09h    13         P
1252000641 1074332316 555844637  705,       est    3d09h    14         P
1252014460 1074332279 1486289361 549,       est    3d09h    20         P
1252059306 1074332234 1486289361 531,       est    3d09h    17         P
1252057709 1074332245 1486289361 537,       est    3d09h    18         P
1252006708 1074332262 1486289361 543,       est    3d09h    19         P
```

The following is a sample output of the **show depi session** command that displays all secondary data sessions on the Cisco RFGW-10:

```
Router# show depi session secondary

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1252018493 1074332252 1688275168 537,       est    3d09h    22         S
1252054974 1074332286 1688275168 549,       est    3d09h    24         S
```

```
1252022230 1074332263 1688275168 543,       est    3d09h    23          S
1252059782 1074332236 1688275168 531,       est    3d09h    21          S
```

The following is a sample output of the **show depi session** command that shows all secondary data sessions on the Cisco RFGW-10:

```
Router# show depi session tsid 549

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1074332275 1252030759 2073848961 549        est    04:30:38 15          P

LocID      RemID      TunID      Tsid       State  Last Chg Uniq ID    Type
1074332283 1252057764 1102797124 549        est    04:30:37 16          S
```

The table below describes the major fields shown in the **show depi session** command display:

Table 34: show depi Field Descriptions

Field	Description
State	State of the tunnel or the session.
LocID	Identifier of the session.
RemID	Identifier of the remote session.
TunID	Identifier of the tunnel.
Last Chg	Last state change timestamp.
Uniq ID	Unique identifier of the QAM channel.
Session Name	Name of the session.
Reason	Reason for the current state of the session.
Time	Timestamp of the session.
Type	Primary or secondary session.

Related Commands

Command	Description
cable mode	Sets the mode of the QAM channel.
depi-class	Creates a template of Downstream External PHY Interface (DEPI) control plane configuration settings, which different pseudowire classes can inherit, and enters the DEPI class configuration mode.
depi-tunnel	Creates a template of DEPI tunnel configuration settings that can be inherited by different pseudowire classes.

Command	Description
show depi	Displays information about DEPI sessions and tunnels.
show depi tunnel	Displays information about DEPI tunnels.
snmp-server enable traps l2tun	Enables trap notifications when there is change in DEPI tunnel or session state.

show depi tunnel

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

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

Syntax Description

tunnel-id	(Optional) Name of the DEPI tunnel.
verbose	(Optional) Displays detailed DEPI tunnel or session information.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ	This command was introduced.

Examples

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

```
Router# show depi tunnel

LocTunID   RemTunID   Remote Name   State  Remote Address  Sessn L2TP Class
                                                          Count
555844637  4037701912 RFGW-10-1     est    11.30.14.100    4     classM
1486289361 1394811300 RFGW-10-1     est    12.30.14.100    4     class1
1688275168 1361251901 RFGW-10-1     est    24.30.14.100    4     class1
```

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

```
Router# show depi tunnel 1834727012 verbose

Tunnel id 1834727012 is up, remote id is 3849925733, 1 active sessions
  Locally initiated tunnel
  Tunnel state is established, time since change 04:10:38
  Remote tunnel name is RFGW-10
    Internet Address 1.3.4.155, port 0
  Local tunnel name is myankows_ubr10k
    Internet Address 1.3.4.103, port 0
  L2TP class for tunnel is rf6
  Counters, taking last clear into account:
    0 packets sent, 0 received
    0 bytes sent, 0 received
    Last clearing of counters never
  Counters, ignoring last clear:
```

```
  0 packets sent, 0 received
  0 bytes sent, 0 received
Control Ns 255, Nr 254
Local RWS 1024 (default), Remote RWS 8192
Control channel Congestion Control is enabled
  Congestion Window size, Cwnd 256
  Slow Start threshold, Ssthresh 8192
  Mode of operation is Slow Start
Retransmission time 1, max 1 seconds
Unsent queuesize 0, max 0
Resend queuesize 0, max 2
Total resends 0, ZLB ACKs sent 252
Total peer authentication failures 0
Current no session pak queue check 0 of 5
Retransmit time distribution: 0 0 0 0 0 0 0 0 0 0
Control message authentication is disabled
```

The table below describes the major fields shown in the **show depi tunnel** command display:

Table 35: show depi Field Descriptions

Field	Description
LocTunID	Identifier of the local tunnel.
RemTunID	Identifier of the remote tunnel.
Remote Name	Name of the remote tunnel.
State	State of the tunnel.
Remote Address	IP address of the remote tunnel.
Session Count	Number of sessions.
L2TP Class	L2TP class name for the tunnel.

Related Commands

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

Command	Description
snmp-server enable traps l2tun	Enables trap notifications when there is change in DEPI tunnel or session state.

show interfaces qam

To display the QAM details, use the **show interfaces qam** command in privileged EXEC mode.

show interfaces {**qam**| **qam-red**} *slot/port.*[*channel*] **[cable]** [**psi**| **pat**| **pmt**| **carousel**]

Syntax Description

slot	Specifies the slot on the QAM interface. Line card redundancy configured interfaces appear as QAM-red. Valid range is from 3 to 12.
port	Specifies the port on the interface. Valid range is from 1 to 12.
channel	(Optional) Specifies the channel on the port. Valid range is from 1 to 4.
cable	(Optional) Displays cable specific information of the QAM interface.
psi	(Optional) Displays the Packet Stream Identifier (PSI) information of the QAM interface such as Program Allocation Table (PAT) information, PMT information of sessions such as elementary streams and PIDs associated.
pat	(Optional) Displays PAT table information of the QAM interface.
pmt	(Optional) Displays PMT information of the QAM interface.
carousel	(Optional) Displays the IDs and the packets of the different packet stream.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

This command displays packet and byte counts and protocol information of the QAM interface. PSI, PMT, and PAT information details are not displayed.

The Program Allocation Table (PAT) is the master table that contains the list of PIDs for all programs on the output stream of the QAM.

Note The **show interfaces qam** *slot/port.channel* **psi** and **show interfaces qam** *slot/port.channel* **pmt** commands could potentially create a large amount of output and are recommended to be used sparingly.

Examples

The following example displays the protocol and byte information on QAM slot 3:

```
Router# show interfaces qam 3/1

Qam3/1 is up, line protocol is up
  Hardware is RFGW-48DS Line Card - QAM Port
  MTU 1464 bytes, BW 107880 Kbit, DLY 0 usec,
     reliability 0/255, txload 1/255, rxload 1/255
  Encapsulation QAM, loopback not set
  Keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicasts)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  8439807 packets output, 67518456 bytes 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

The table below describes the significant fields shown in the display.

Table 36: show interfaces qam Field Descriptions

Field	Description
QAM slot/port	Indicates whether the interface hardware is currently active or taken down by the administrator.
line protocol	Indicates whether the software processes that handle the line protocol believe the interface is usable or if it has been taken down by the administrator.
Hardware	Hardware type and address.
MTU	Maximum transmission unit (MTU) of the interface.
BW	Bandwidth of the interface in kilobits per second.
DLY	Delay of the interface in microseconds.

Field	Description
reliability	Reliability of the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is 100-percent reliability)
txload	Load on the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is complete saturation)
rxload	Load on the interface as a fraction of 255, calculated as an exponential average over 5 minutes. (For example, 255/255 is complete saturation)
Encapsulation	Encapsulation method assigned to this interface.
Keepalive set	Indicates the time for the keep alive set.
Last input	Number of hours, minutes, and seconds since the last packet was successfully received by an interface.
output	Number of hours, minutes, and seconds since the last packet was successfully sent by an interface.
Last clearing of "show interfaces" counters	Time at which the counters that measure cumulative statistics (such as number of bytes sent and received) were last reset to zero.
Input queue	Number of packets in the input queue. The format of this number is A/B, where A indicates the number of packets in the queue, and B indicates the maximum number of packets allowed in the queue.
Total output drops	Indicates the number of packets dropped because of a full queue.

Field	Description
5 minute input rate 5 minute output rate	Average number of bits and packets sent and received per second in the last five minutes. The five-minute interval is the default time period for statistics collection and can be changed for each individual cable interface using the **load-interval** command in the interface configuration mode. **Note** These statistics are calculated using a decayed averaging method, where only the average is stored over the interval period, not the individual samples. Every time a sample average is taken, a percentage of the sample and a percentage of the average are added together to create the new average. If traffic stops for a time period, these statistics do not immediately go to zero but drop with a decay rate of about 70 percent per time period. For example, if the interface is passing 1,000 packets per second (pps) before traffic stops, the **show interface cable** command shows the rate being 300 pps at the end of the first time interval. The rate then drops to 90 pps at the end of the second time interval, and so forth.
packets input	Total number of error-free packets received by the system.
bytes input	Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.
no buffer	Number of received packets discarded because there was no buffer space in the main system.
Received broadcast	Total number of broadcast or multicast packets received by the interface.
runts	Number of packets that are discarded because they are smaller than the medium's minimum packet size.

Field	Description
giants	Number of packets that are discarded because they are bigger than the standard Ethernet Maximum Transmission Unit (MTU) size. For Ethernet packets, RFC 1757 defines giants as "the total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed." **Note** In addition, to account for the different Ethernet and other packet encapsulations on the network, packets are considered giants when they exceed the configured MTU size plus 114 bytes.
input errors	Total number of errors received on the interface. This count includes runts and giants, as well as other errors, such as no buffers, and CRC, frame, overrun, and ignored counts. This count can also include DOCSIS protocol errors such as an invalid SID in the DOCSIS frame, a bad extended header length, corrupted concatenated packets, and invalid bandwidth requests.
CRC	Indicates the number of times the cyclic redundancy check (CRC) generated by the originating LAN station or far-end device does not match the checksum calculated from the data received.
frame	Number of packets received incorrectly having a CRC error and a non-integer number of octets.
overrun	Number of times the receiver hardware was unable to forward received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets ignored by the interface because the interface hardware ran low on internal buffers.
packets output	Total number of messages sent by the system.
bytes	Total number of bytes, including data and MAC encapsulation, sent by the system.
underruns	Number of times the sender has been relaying faster than the receiving device can handle.
output errors	Sum of all errors that prevented the final transmission of packets out of the interface.

Field	Description
collisions	Not applicable.
interface resets	Number of times an interface has been completely reset.
output buffer failures	Number of times the output buffer has failed.
output buffers swapped out	Number of times the output buffer has been swapped out.

Related Commands

Command	Description
interface qam	Enters QAM interface configuration mode.

show redundancy

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

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

Syntax Description

clients	(Optional) Displays the Redundancy Facility client list.
counters	(Optional) Displays RF operational counters.
history	(Optional) Summarizes RF history.
states	(Optional) Displays RF states for active and standby cards.

Command Default

None

Command Modes

User EXEC (>)

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was integrated into Cisco IOS Release 12.2(44)SQ. Support for the Cisco RF Gateway 10 was added.

Usage Guidelines

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

The redundancy mode set on the Supervisor can also be seen.

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

Examples

The following example shows sample output of the **show redundancy** command when Supervisor redundancy RPR mode is configured on the Cisco RF Gateway 10:

```
Router# show redundancy

Load for five secs: 8%/0%; one minute: 9%; five minutes: 10%
Time source is hardware calendar, *15:26:51.687 PDT Wed Sep 16 2009

Redundant System Information :
------------------------------
       Available system uptime = 2 days, 4 hours, 5 minutes
Switchovers system experienced = 0
              Standby failures = 1
        Last switchover reason = none
                  Hardware Mode = Simplex
    Configured Redundancy Mode = RPR
     Operating Redundancy Mode = RPR
              Maintenance Mode = Disabled
                Communications = Down      Reason: Simplex mode

Current Processor Information :
-------------------------------
               Active Location = slot 1
        Current Software state = ACTIVE
       Uptime in current state = 2 days, 4 hours, 5 minutes
                 Image Version = Cisco IOS Software, Catalyst 4500 L3 Switch Sof
tware (rfgw-ENTSERVICESK9-M), Version 12.2(122SQ_20090905)SQ EARLY DEPLOYMENT DA
TECODE BUILD, synced to 122_50_SG_THROTTLE_BASE_LABEL
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Sat 05-Sep-09 04:24 by jdkerr
                        BOOT = bootflash:rfgw-entservicesk9-mz.122SQ_20090905,
12;
        Configuration register = 0x2

Peer (slot: 2) information is not available because it is in 'DISABLED' state
```

The following example shows Supervisor redundancy SSO mode on the Cisco RFGW-10:

```
Router# show redundancy

Load for five secs: 8%/0%; one minute: 10%; five minutes: 10%
Time source is hardware calendar, *15:18:51.999 PDT Wed Sep 16 2009

Redundant System Information :
------------------------------
       Available system uptime = 2 days, 3 hours, 57 minutes
Switchovers system experienced = 0
              Standby failures = 0
        Last switchover reason = none
                  Hardware Mode = Duplex
    Configured Redundancy Mode = Stateful Switchover
     Operating Redundancy Mode = Stateful Switchover
              Maintenance Mode = Disabled
                Communications = Up

Current Processor Information :
-------------------------------
               Active Location = slot 1
        Current Software state = ACTIVE
       Uptime in current state = 2 days, 3 hours, 57 minutes
                 Image Version = Cisco IOS Software, Catalyst 4500 L3 Switch Sof
tware (rfgw-ENTSERVICESK9-M), Version 12.2(122SQ_20090905)SQ EARLY DEPLOYMENT DA
TECODE BUILD, synced to 122_50_SG_THROTTLE_BASE_LABEL
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Sat 05-Sep-09 04:24 by jdkerr
                        BOOT = bootflash:rfgw-entservicesk9-mz.122SQ_20090905,
12;
        Configuration register = 0x2

Peer Processor Information :
```

```
----------------------------
              Standby Location = slot 2
         Current Software state = STANDBY HOT
       Uptime in current state = 2 days, 3 hours, 56 minutes
                 Image Version = Cisco IOS Software, Catalyst 4500 L3 Switch Sof
tware (rfgw-ENTSERVICESK9-M), Version 12.2(122SQ_20090905)SQ EARLY DEPLOYMENT DA
TECODE BUILD, synced to 122_50_SG_THROTTLE_BASE_LABEL
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Sat 05-Sep-09 04:2
                        BOOT = bootflash:rfgw-entservicesk9-mz.122SQ_20090905,
12;
        Configuration register = 0x2Router
```

Clients Display

The following example shows a sample output of the **show redundancy clients** command:

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

The table below describes the significant fields shown in the display.

Table 37: show redundancy clients Field Descriptions

Field	Description
clientID	Client ID number.
clientSeq	Client notification sequence number.

Counters Display

The following example shows a sample output of the **show redundancy counters** command:

```
Router# show redundancy counters

Redundancy Facility OMs
               comm link up = 1
        comm link down down = 0

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

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

                buffers tx = 1009
     tx buffers unavailable = 0
                buffers rx = 1006
      buffer release errors = 0

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

History Display

The following example shows a sample output of the **show redundancy history** command:

```
Router# show redundancy history

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

States Display

The following example shows a sample output of the **show redundancy states** command:

```
Router# show redundancy states

       my state = 13 -ACTIVE
     peer state = 8  -STANDBY HOT
           Mode = Duplex
           Unit = Primary
        Unit ID = 0

  Redundancy Mode = Hot Standby Redundancy
Maintenance Mode = Disabled
    Manual Swact = Enabled
  Communications = Up

            client count = 5
client_notification_TMR = 30000 milliseconds
          RF debug mask = 0x0
```

Related Commands

Command	Description
mode	Configures the redundancy mode of operation.
redundancy	Enters redundancy configuration mode.
redundancy force-failover main-cpu	Forces a manual switchover when Supervisor is in RPR mode between the active and standby Supervisor cards.

Command	Description
redundancy force-switchover	Forces the standby Supervisor cards to assume the role of the active Supervisor card.

show redundancy linecard

To display the information pertaining to a redundancy line card or line card group, use the **show redundancy linecard** command privileged EXEC mode.

show redundancy linecard {**all**| **slot** *slot*| **group all**| *groupID*}

Syntax Description

all	Displays information of all the redundancy line cards.
slot	Displays information about line cards in the specified slot.
slot	Specifies the slot number of the line card. Valid range is from 3 to 12.
group	Displays information about the redundancy line card group: • **all—**Displays information on all groups on the line card • *groupID***—**Displays information on a specified group.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following example shows the output for the redundancy line card in slot 3:

```
Router# show redundancy linecard slot 3

 LC Redundancy Is Configured:
 LC Group Number: 0
 LC Slot: 3 (idx=3)
 LC Card Type: 0xFFFFFFFF , -1
 LC Name: 3
 LC Mode: Primary
 LC Role: None
 LC My State: Init
```

```
 LC Peer State: Init
```

The following example shows the output for all redundancy line cards:

```
Router# show redundancy linecard all

              LC     My         Peer       Peer     Peer
Slot Subslot  Group  State      State      Slot     Subslot  Role     Mode
-------------------------------------------------------------------------------
 3   -        0      Init       Init       11       -        None     Primary
 11  -        0      -          -          Multiple None     None     Secondary
 7   -        1      Init       Active     12       -        None     Primary
 12  -        1      Active     Init       7        -        Active   Secondary
```

The table below describes the significant fields shown in the display.

Table 38: show redundancy linecard all Field Descriptions

Field	Description
Slot	The slot of the line card.
LC Group	If a line card group exists in the line card.
My State	The state of the line card.
Peer State	If the peer state is active.
Peer Slot	The peer line card slot.
Role	Whether the line card is active.
Mode	Whether the line card is in primary or secondary mode.

The following example shows the output for redundancy line card group 2:

```
Router# show redundancy linecard group 2

Group Identifier: 2
Group Description: "line card group 2 created."
NON-revertive
Reserved Cardtype: 0x6011  24593
Group Redundancy Type: INTERNAL SWITCH
Group Redundancy Class: 1:1
Group Redundancy Configuration Type: LINECARD GROUP
Primary: 7
Secondary: 12
```

The table below describes the significant fields shown in the display.

Table 39: show redundancy linecard group Field Descriptions

Field	Description
Group Identifier	Indicates the name of the group.
Group Description	Displays the description given to the line card group.

Field	Description
Reserved Cardrtype	Displays the reserved card.
Group Redundancy Type	Indicates the type of redundancy group.
Group Redundancy class	Indicates the redundancy class set for the group.
Group Redundancy Configuration Type	Indicates the linecard group.
Primary	Indicates the primary line card.
Secondary	Indicates the secondary line card.

Related Commands

Command	Description
class	Configures redundancy class on the line card.
description	Adds a description to the line card group.
member slot	Adds a slot to the line card redundancy group.
redundancy	Enters redundancy configuration mode.
show redundancy linecard	Displays information about a line card or a line card group.

show redundancy tcc

To display the information pertaining to a redundancy Timing, Communication and Control (TCC) card, use the **show redundancy tcc** command in privileged EXEC mode.

show redundancy tcc {**all**| **slot** *slot*}

Syntax Description

all	Displays information about all TCC cards.
slot	Displays information about TCC cards in the specified slot.
slot	Specifies the slot number of the TCC card. Valid slots are 13 and 14.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Examples

The following is the sample output for all redundancy TCC cards:

```
Router# show redundancy tcc all

     My          Peer
Slot State       Slot   Role
---------------------------------
13   -           14     -
14   Ready       None   Active
```

The table below describes the significant fields shown in the display.

Table 40: show redundancy tcc Field Descriptions

Field	Descriptions
Slot	Indicates the slot of the TCC card.
My State	Indicates the state of the TCC card.
Peer Slot	Indicates the peer TCC card slot.

Field	Descriptions
Role	Indicates whether the TCC card is active.

Related Commands

Command	Description
redundancy	Enters redundancy configuration mode.

show running-config interface qam

To display the running configuration of the QAM interfaces, use the **show running-config interface qam** command in privileged EXEC mode.

show running-config interface {**qam| qam-red**} *slot/port.channel*

Syntax Description

slot	Specifies the line card in the QAM interface. Line card redundancy configured interfaces appear as QAM-red. Valid range is from 3 to 12.
port	Specifies the QAM RF port number in the line card. Valid range is from 1 to 12.
channel	Specifies the QAM channel in the port of the line card. Valid range is from 1 to 4.

Command Default

None

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

If line card redundancy (LCRED) is configured on the QAM interface, then the interface appears as **qam-red**.

Examples

The following example shows a running configuration of QAM interface 3:

```
Router# show running-config interface qam-red 3/1.1

Load for five secs: 12%/0%; one minute: 14%; five minutes: 15%
Time source is hardware calendar, *00:39:45.193 UTC Fri Nov 28 2008

Building configuration...

Current configuration : 263 bytes
!
interface Qam-red3/1.1
 cable mode depi local
 no cable downstream rf-shutdown
 cable downstream rf-power 50.0
 cable downstream frequency 279000000
 cable downstream modulation 256
 cable depi dest-ip 192.168.201.100 session-id 311
 snmp trap link-status
```

```
end
```

The table below describes the significant fields shown in the display.

Table 41: show running-config interface qam Field Descriptions

Field	Description
Current configuration	Displays all the downstream parameters configured on the QAM interface.

Related Commands

Command	Description
show controllers qam	Displays downstream information of a QAM interface.

ssm

To configure a Source Specific Multicast (SSM) definition, use the **ssm** command in cable video label configuration mode. To remove the SSM label, use the **no** form of this command.

ssm *label* {**source** *source-ip*} {**group** *group-ip*} [**cbr**| **bitrate** *bps*| **jitter** *ms*| **GigabitEthernet**| **TenGigabitEthernet** *interface*]

no ssm *label* {**source** *source-ip*} {**group** *group-ip*} [**cbr**| **bitrate** *bps*| **jitter** *ms*| **GigabitEthernet**| **TenGigabitEthernet** *interface*]

Syntax Description

label	Specifies the name of the session.
source	Indicates the source.
source-ip	Specifies the IP address of the source.
group	Indicates the multicast group.
group-ip	Specifies the destination IP address.
cbr	Specifies that the session is supposed to be constant bitrate.
bitrate	(Optional) Sets the bitrate allocated for the session.
bps	Specifies the bitrate value. Valid range is 1 to 52000000 bps.
GigabitEthernet	(Optional) Indicates the Gigabit Ethernet interface. Valid slot range is 1 to 12.
TenGigabitEthernet	(Optional) Indicates the 10-Gigabit Ethernet interface. Valid slot range is 1 to 12.
interface	Specifies the interface slot and port.
jitter	(Optional) Sets the jitter for group sessions.
ms	Specifies the jitter value. Valid range is from 10 to 200 ms.

Command Default

None

Command Modes

Cable video label configuration (cfg-video-lbl)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.1SQ	This command is modified. The **bitrate** keyword is made optional.

Usage Guidelines

Cisco RF Gateway 10 supports Source Specific Multicast (SSM) video sessions. An SSM video label is identified by the source and group IP address pair. You can specify upto three source addresses for each SSM video label. This can be achieved by reusing the same video label for all the source addresses. The address pairs under the same label must have different source IP addresses. The Cisco RFGW-10 cycles the address pairs to look for an active source.

These address pairs are redundant sources for the label. Address pairs under the same label must have identical settings for cbr, bitrate, and jitter. If additional address pairs are entered without these parameters, the corresponding values for the first address pair are used. These parameters can be modified by re-entering the first address pair with new parameter settings. The change is propagated to all the address pairs under the same label.

An SSM video session can be mapped to multiple QAM channels. All cloned sessions of the same video label share the same attributes.

Note The label definition cannot be modified once the label is used in a QAM channel. Address pairs cannot be added or deleted, or any optional parameters cannot be modified. Effective with Cisco IOS-XE Release 3.3.0SQ and later releases, the label definitions can be modified. The optional parameters like bitrate and jitter cannot be modified. You can also add or delete backup sources. However, an active source cannot be deleted.

Note To avoid oversubscription, ensure that the actual bitrate of the video session does not exceed the allocated bitrate.

Examples

The following example shows the SSM configuration on the Cisco RF Gateway 10:

```
Router# configure terminal
Router(config)# cable video labels
Router(cfg-video-lbl)# ssm ssm1 source 10.1.1.1 group 233.1.1.1 bitrate 3750000
Router(cfg-video-lbl)# exit
```

The following example shows how to configure a backup source:

```
Router# configure terminal
Router(config)# cable video labels
Router(cfg-video-lbl)# ssm ssm1 source 10.2.2.2 group 233.1.1.1 bitrate 3750000
Router(cfg-video-lbl)# ssm ssm1 source 10.3.3.3 group 233.1.1.1 bitrate 3750000
Router(cfg-video-lbl)# exit
```

Effective with Cisco IOS-XE Release 3.3.1SQ, the **bitrate** keyword is optional. This example shows the SSM configuration without the **bitrate** keyword.

```
Router(cfg-video-lbl)# ssm ssm1 source 10.1.1.1 group 233.1.1.1
```

Related Commands

Command	Description
asm	Configures the ASM video session definition.
cable video labels	Enters the cable video label configuration.
cable video ip multicast	Configures video multicast session on a QAM subinterface.
show cable video label	Displays the labels configured on a chassis.

video route

To create policy routes to redirect traffic to the line cards, use the **video route** command in QAM domain configuration mode. To remove the policy route, use the **no** form of this command.

video route {**local | remote**} {**udp** *startport endport*| **table 24-qam-map**} **qam** *slot/* {**1-6 | 7-12**}

no video route {**local | remote**} {**udp** *startport endport*| **table 24-qam-map**} **qam** *slot/* {**1-6 | 7-12**}

Syntax Description

local	Creates a local video session.
remote	Creates a remote video session.
udp	Specifies UDP mode.
startport	Specifies the start port of the UDP range.
endport	Specifies the end port of the UDP range.
table	Specifies table-based mode. This is only applicable to local sessions.
24-qam-map	Specifies the pre-defined port map. This is only applicable to local sessions.
qam	Specifies the QAM interface.
slot	Specifies the slot on the line card. Valid ranges are from 3 to 12.
1-6	Specifies the first QAM block of channels.
7-12	Specifies the second QAM block of channels.

Command Default

None

Command Modes

QAM domain configuration (qam-domain)

Command History

Release	Modification
12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.

Usage Guidelines

Video routes are used to direct traffic to the underlying QAM blocks in a QAM domain. A video route specifies a continous range of UDP ports mapped to a QAM block. For a local route, the UDP ports are taken from the local IP address. For a remote route, the UDP ports are taken from the remote IP address. A pre-defined UDP map also is present for local video routes, where the UDP ports are defined by a map.

Policy routes are used to redirect traffic to line cards. QAM blocks are added to QAM domains using video policy routes. Each video policy route specifies a range of QAM channels. QAM channels are bound to a QAM block in the video route.

In a local configuration, you can configure the QAM channels using the CLI, GUI or SNMP.

In a remote configuration, the video control plane configures the QAM channels using GQI.

The local session offers two methods of mapping UDP ports to QAM ports:

- User- specified UDP ranges: Start and end UDP ports are specified in the CLI. The video route maps a range of UDP destination ports from the local IP address to the QAM block.
- Table-based: referred to as **24-qam-map**. This is a pre-defined range with a default UDP port range of 49152 to 55295. The video route uses the UDP port map defined in the table for the QAM block.

Note Only one QAM map is used per QAM domain.

In the remote session, only user-specified UDP range setup is allowed. Data network Control Station (DNCS) and Universal Session and Resource Manager (USRM) controls the session setup.

Note No two video routes within a QAM domain can overlap in IP address and UDP range.

Note Removing a video route results in removal of all the sessions configured with that video route.

Examples

The following example shows a video route for a local session on QAM domain 5:

```
Router# configure terminal
Router(config)# cable qam-domain 5
Router(qam-domain)# ip 1.1.1.1 local
Router(qam-domain)# video route local udp 50000 51000 qam 7/1-6
Router(qam-domain)# video route local udp 51001 52000 qam 7/7-12
Router(qam-domain)# exit
Router(config)# exit
```

The following example shows a video route for a remote session on QAM domain 5:

```
Router# configure terminal
Router(config)# cable qam-domain 5
Router(qam-domain)# ip 1.1.1.1 remote
Router(qam-domain)# video route remote udp 20000 21000 qam 7/1-6
Router(qam-domain)# video route remote udp 21001 22000 qam 7/7-12
Router(qam-domain)# exit
Router(config)# exit
```

The following example shows a table-based policy route on QAM domain 5:

```
Router# configure terminal
Router(config)# cable qam-domain 5
Router(qam-domain)# ip 1.1.1.1 local
Router(qam-domain)# video route local table 24-qam-map qam 3/1-6
Router(qam-domain)# exit
```

The following example shows non-overlapping UDP ranges and QAM channel lists:

```
Router(qam-domain)# video route local udp 50001 51000 qam 3/1-6
Router(qam-domain)# video route local udp 51001 52000 qam 3/7-12
Router(qam-domain)# video route local udp 52001 53000 qam 5/1-6
```

Related Commands

Command	Description
cable qam-domain	Enters QAM domain configuration mode.
ip	Configures the IP address for video and remote sessions.