Commands: i to show cable f

interface qam

To configure a QAM interface, use the **interface qam** command in global configuration mode.

interface {**qam**| **qam-red**} *slot*/*port*.[*channel*]

Syntax Description

slot	Specifies the QAM or QAM-red slot on the line card. If line card redundancy is configured on the QAM, the interface is QAM-red. Valid range is from 3 to 12.
port	Specifies the port on the slot. Valid range is from 1 to 12.
channel	(Optional) Specifies the channel on the port. Valid range is from 1 to 4. Enters the QAM sub interface configuration mode when executed.

Command Default

This command has no default behavior or values.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

Redundancy-configured interfaces (QAM-red) imply that line card redundancy (LCRED) is configured on the chassis.

All downstream commands are configured in the interface and subinterface configuration modes.

Examples

The following example shows how to configure a QAM interface:

```
Router# configure terminal
Router(config)# interface qam 3/1
```

Related Commands

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

ip

To configure a destination IP address for video sessions on a QAM domain, use the **ip** command in QAM domain configuration mode. To remove the assigned IP address, use the **no** form of this command.

ip *IP address* [**local**| **remote**]

no ip *IP address* [**local**| **remote**]

Syntax Description

IP address	Specifies the destination IP address for the video sessions.
local	(Optional) Specifies the video services that are configured locally.
remote	(Optional) Specifies remotely configured video sessions.

Command Default

If local or remote destinations are not specified, then the IP address is used for both local and remote sessions.

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

A QAM domain has a local IP address and a remote IP address. The IP address is assigned to destination local or remote video sessions on the QAM domain. You can configure two sets of IP addresses for each session. You can also use the same IP address for both local and remote sessions.

Note If you remove an IP address, all its associated video services are also removed.

Examples

The following example shows the IP address assigned to a video session on the QAM domain in slot 3:

```
Router#configure terminal
Router(config)#cable qam-domain 3
Router(qam-domain)#ip 10.10.10.1 local
Router(qam-domain)#ip 10.10.10.1 remote
Router(qam-domain)#exit
Router(config)#exit
```

Related Commands

Command	Description
cable qam-domain	Configures the QAM domain.
video route	Specifies the route for a video session.

ip multicast-routing

To enable video multicast routing, use the **ip multicast-routing** command in global configuration mode. To disable video multicast routing, use the **no** form of this command.

ip multicast-routing

no ip multicast-routing

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default behavior or values.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

This command enables multicast forwarding on the chassis. To enable video multicast routing, set the interfaces in multicast mode and assign the specific bandwidth.

Examples

The following example enables video multicast routing on the Cisco RFGW-10:

```
Router#configure terminal
Router(config)#ip multicast-routing
```

Related Commands

Command	Description
cable video multicast	Enables an uplink port for multicast traffic.

ip rpc portmapper

To establish a remote procedure call (RPC) connection between an external server and an EQAM, use the **ip rpc portmapper** command in global configuration mode.

ip rpc portmapper

Syntax Description

This command has no arguments or keywords.

Command Default

None

Command Modes

Global configuration (config)

Command History

Release	Modification
12.2(50)SQ	This command was introduced on Cisco RF Gateway 10.

Usage Guidelines

The **ip rpc portmapper** command establishes an RPC connection to enable the DNCS (client) to invoke a program to be executed on the Cisco RFGW-10 EQAM (server).

Examples

The following example shows how to establish an RPC connection:

```
Router# configure terminal
Router(config)# ip rpc portmapper
```

Related Commands

Command	Description
active	Activates the server.
cable video servers	Configures the video server group for external servers.
keepalive retry	Configures the keepalive retry value on the server.
mgmt-ip-address mac-address	Configures the management IP and MAC address of the server.
protocol	Configures the protocols supported by the server.
reset interval	Configures the reset interval on the server.
server	Configures the IP address of the server.

keepalive retry

To send keepalive message to a remote client with a specified retry interval, use the keepalive retry command in QAM partition configuration mode. To remove the setting, use the **no** form of this command.

keepalive retry *seconds*

no keepalive retry *seconds*

Syntax Description

seconds	Retry interval value. A maximum of three retry attempts are allowed. The valid retry range is from 0 to 10. The default keepalive is 5 seconds.

Command Default

This command is not enabled by default.

Command Modes

QAM partition configuration (config-qp)

Command History

Release	Modification
12.2(50)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.0SQ	This command is integrated into Cisco IOS-XE Release 3.3.0SQ.

Usage Guidelines

Use the **keepalive retry** command in QAM partition configuration to set the keepalive retry time interval.

Examples

The following example shows how to configure a keepalive retry interval value of 4 seconds in a QAM partition configuration:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# keepalive retry 4
```

Related Commands

Command	Description
active	Activates the server.
cable qam-partition	Configures the QAM partition for a video server.
ip rpc portmapper	Establishes an RPC connection between the external server and EQAM.

Command	Description
mgmt-ip-address mac-address	Configures the management IP and MAC address of the server.
protocol	Configures the protocols supported by the server.
reset interval	Configures the reset interval on the server.
server	Configures the IP address of the server.

l2tp-class

To create a template of Layer 2 Tunnel Protocol (L2TP) control plane configuration settings, which different pseudowire classes can inherit and to enter L2TP class configuration mode, use the **l2tp-class** command in global configuration mode. To remove a specific L2TP class configuration, use the **no** form of this command.

l2tp-class *l2tp-class-name*

no l2tp-class *l2tp-class-name*

Syntax Description

l2tp-class-name	Name of the L2TP class. The *l2tp-class-name* argument must be specified if you want to configure multiple sets of L2TP control parameters.

Command Default

No L2TP classes are defined.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

The **l2tp-class** *l2tp-class-name* command allows you to configure an L2TP class template that consists of configuration settings used by different pseudowire classes. An L2TP class includes the following configuration settings:

- Hostname of local router used during Layer 2 authentication
- Authentication enabled
- Time interval used for exchange of hello packets
- Password used for control channel authentication
- Packet size of receive window
- Retransmission settings for control packets
- Time allowed to set up a control channel

The **l2tp-class** command enters L2TP class configuration mode, where L2TP control plane parameters are configured.

You must use the same L2TP class in the pseudowire configuration at both ends of a Layer 2 control channel.

Examples

The following example shows how to enter L2TP class configuration mode to create an L2TP class configuration template for the class named ether-pw:

```
Router(config)# l2tp-class ether-pw
Router(config-l2tp-class)#
```

Related Commands

Command	Description
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	Specifies the name of the depi-tunnel and enters the DEPI tunnel configuration mode.

lane

To configure the lane frequency in the frequency profile, use the **lane** command in frequency profile configuration mode.

lane *lane_id* **start-freq** *frequency*

Syntax Description

lane_id	Lane ID in the frequency profile. Valid range is from 1 to 4.
start-freq	Specifies the starting frequency of the lane.
frequency	Downstream start frequency of a lane. Valid range is from 48000000 to 999000000 Hz.

Command Default

The command is disabled by default.

Command Modes

Frequency profile configuration mode (config-freq-prof)

Command History

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

Usage Guidelines

The Supervisor card uses two frequency schemes—static frequency scheme and the user-defined frequency scheme—to configure the frequency profile at port level. Cisco IOS-XE Release 3.2.0SQ supports global templates or profiles on the Cisco RFGW-10 DS-384 line card. A wider range of frequency spectrum is supported on the UPX on the line card.

Note The downstream frequency layout schemes are applicable only on the Cisco RFGW-10 DS-384 line card.

In the user-defined frequency layout scheme allows you to define the frequency on a global chassis level, and apply the cable downstream frequency scheme spectrum for any port on any Cisco RFGW-10 DS-384 line card.

A frequency profile has four frequency lanes in the 1GHz spectrum. Each lane has a frequency of 216 MHz. Each lane has 4 blocks of 54 MHz, and each block has 8 carriers. The start frequency assigned to a carrier must be in the frequency range of 216 MHz.

Note The channel frequencies cannot overlap with each other. Each lane cannot exceed 32 carriers.

Note This command is applicable on the Cisco RFGW10-DS-384 line card.

Examples

The following example creates the lane in frequency profile, and enters the frequency profile lane configuration mode:

```
Router(config)# cable downstream freq-profile freq-profile-1
Router(config-freq-prof)# lane 1 start-freq 48000000
Router(config-freq-prof-lane)# exit
Router(config-freq-prof)#
```

Related Commands

Command	Description
cable downstream freq-profile	Creates the frequency profile for a Cisco RFGW-10 DS-384 line card.
block	Creates the block frequency in the lane for the frequency profile.

linecard-group internal switch

To add a group ID for a line card group and configure line card redundancy, use the **linecard-group internal switch** command in redundancy configuration mode. To remove the line card group, use the no form of this command.

linecard-group *group-id* **internal switch**

no linecard-group *group-id* **internal switch**

Syntax Description

group-id	Specifies the group ID number. Valid range is from 0 to 5.

Command Default

This command has no default behavior or values.

Command Modes

Redundancy configuration (config-red)

Command History

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

Usage Guidelines

Before you remove the group, ensure that the configured slot members on the line card are removed.

Examples

The following example creates a redundancy line card group 2 on the Cisco RFGW-10:

```
Router(config-red)#linecard-group 2 internal-switch
```

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 redundant line card or a line card group.

mac-address

To configure the MAC address for the QAM partition, use the **mac-address** command in QAM partition configuration mode. To disable the MAC address, use the **no** form of this command.

mac-address *mac_address*

no mac-address *mac_address*

Syntax Description

mac-address	MAC address of the external server.

Command Default

None.

Command Modes

QAM partition configuration (config-qp)

Command History

Release	Modification
Cisco IOS-XE Release 3.3.0SQ	This command was integrated into the Cisco IOS-XE Release 3.3.0SQ.

Usage Guidelines

The GQI protocol uses the Cisco RFGW-10 MAC address in a GQI specific QAM partition configurtion.

Examples

This example configures the MAC address on the QAM parttion:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# mac-address 192.168.20.20
Router(config-qp)#
```

Related Commands

Command	Description
cable qam-partition	Configures the QAM partition for a video server.
protocol	Configures the protocols supported by the server.

main-cpu

To configure the synchronization of the active and standby Supervisor cards, use the **main-cpu** command in redundancy configuration mode,.

main-cpu

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default behavior or values.

Command Modes

Redundancy configuration (config-red)

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

When you enter the main-CPU redundancy configuration mode, the command prompt changes to:

```
Router(config-r-mc)#
```

After you enter the main-CPU redundancy configuration mode, use the **auto-sync** command to specify which files are synchronized between the active and standby Supervisor cards.

To exit main-CPU redundancy configuration mode and return to the redundancy configuration mode, use the **exit** command.

Examples

The following example shows how to enter main-CPU redundancy mode, and its associated commands:

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# main-cpu
Router(config-r-mc)# ?
Main CPU redundancy configuration commands:
  auto-sync  Sync elements
  default    Set a command to its defaults
  exit       Exit from main-cpu configuration mode
  no         Negate a command or set its defaults
```

Related Commands

Command	Description
auto-sync	Configures which files are synchronized between the active and standby Supervisor cards.

Command	Description
redundancy	Enters redundancy configuration mode.

member slot

To configure the redundancy role of a line card, use the member slot command in line card redundancy configuration mode. To remove the role, use the no form of this command.

member slot *slot* {**primary**| **secondary**}

no member slot *slot* {**primary**| **secondary**}

Syntax Description

slot	Specifies the slot number of the line card. Valid range is from 3 to 12.
primary	Specifies the redundancy role of the active line card.
secondary	Specifies the redundancy role of the standby line card.

Command Default

This command has no default behavior or values.

Command Modes

Line card redundancy configuration (config-red-lc)

Command History

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

Usage Guidelines

Ensure that the following criteria are met prior to configuring the member slots:

- The slot is not configured as a member of another line card group.
- The number of primary members must be less than or equal to the maximum number allowed in a line card group for a line card.
- A primary or secondary member is not configured in a line card group.

Examples

The following example assigns member slots 7 and 12 as the primary and secondary line cards in the redundancy line card group 2 in the Cisco RFGW-10:

```
Router(config-red)#linecard-group 2 internal-switch
Router(config-red-lc)#class 1:1
Router(config-red-lc)#member slot 7 primary
Router(config-red-lc)#member slot 12 secondary
```

Related Commands

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

mgmt-ip

To configure the IP address of the QAM partition, use the **mgmt-ip** command in QAM partition configuration mode. To disable the IP adddress on the QAM partition, use the **no** form of this command.

mgmt-ip *IP_address*

no mgmt-ip *IP_address*

Syntax Description

IP_address	Specifies the IP address of the QAM partition.

Command Default

This command is disabled by default.

Command Modes

QAM partition configuration (config-qp)

Command History

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

Usage Guidelines

The **mgmt-ip** command sets the IP address of QAM partition. The management IP address of the QAM partition must be unique.

Examples

This example configures the management IP address of the QAM partition:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol gqi
Router(config-qp)# mgmt-ip 1.1.1.1
Router(config-qp)# end
```

Related Commands

Command	Description
cable qam-partition	Configures the QAM partition for a video server.
protocol	Assigns the protocol used by the external server.

mgmt-ip-address mac-address

To configure the management port IP address and MAC address, use the **mgmt-ip-address mac address** command in cable video server configuration mode. To remove the configuration, use the **no** form of this command.

mgmt-ip-address *IP address* **mac-address** *MAC address*

no mgmt-ip-address *IP address* **mac-address** *MAC address*

Syntax Description

IP address	Specifies the IP address of the management port on the external server.
MAC address	Specifies the MAC address of the external server.

Command Default

This command has no default behavior or values.

Command Modes

Cable video server configuration (config-video-servers)

Command History

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

Usage Guidelines

Ensure that you configure the protocol used by the external server prior to configuring the IP address and MAC address.

Examples

The following example shows the configuration of the management port:

```
Router#configure terminal
Router(config)#cable video servers group2
Router(config-video-servers)#protocol gqi
Router(config-video-servers)#mgmt-ip-address 172.16.22.1 mac-address 1234.abcd.4e4e
Router(config-video-servers)#exit
```

Related Commands

Command	Description
cable video servers	Configures the video server group for external servers.
protocol	Configures the protocol used by the external server.

Command	Description
server	Configures the IP address of the external server.

mode

To configure the redundancy mode of operation, use the **mode** command in redundancy configuration mode.

mode {**rpr**| **sso**}

Syntax Description

rpr	Sets Route Processor Redundancy (RPR) mode on the Supervisor card.
sso	Sets Stateful Switchover (SSO) redundancy mode on the Supervisor card.

Command Default

The default mode is SSO.

Command Modes

Redundancy configuration (config-red)

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.
12.2(50)SQ	Support for SSO was added.

Usage Guidelines

The IOS software image on both the active and standby Supervisor cards must be the same.

Examples

The following example shows how to enter RPR mode on the Cisco RFGW-10:

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# mode rpr
Router(config-red)# main-cpu
Router(config-red-mc)# auto-sync standard
Router(config-red-mc)# exit
Router# write memory
```

The following example shows how to enter SSO redundancy mode:

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# mode sso
Router(config-red)# exit
Router# write memory
```

Related Commands

Command	Description
redundancy	Enters redundancy configuration mode.
redundancy force-failover main-cpu	Forces a manual switchover between the active and standby Supervisor cards.
redundancy force-switchover	Forces the standby Supervisor card to assume the role of the active Supervisor card.

overrule

To overrule the default settings of the Entitlement Control Message Generator (ECMG), use the **overrule** command in ECMG configuration mode. To disable the overrule, use the **no** form of this command.

overrule {**max-comp-time** *max-comp-time*| **min-cp-duration** *min-cp-duration*| **trans-start-delay** *trans-start-delay*| **trans-stop-delay** *trans-stop-delay*| **start-delay** *start-delay*| **stop-delay** *stop-delay*| **ac-start-delay** *ac-start-delay*| **ac-stop-delay** *ac-stop-delay*| **rep-period** *rep-period*| **max-streams** *max-streams*}

no overrule {**max-comp-time** *max-comp-time*| **min-cp-duration** *min-cp-duration*| **trans-start-delay** *trans-start-delay*| **trans-stop-delay** *trans-stop-delay*| **start-delay** *start-delay*| **stop-delay** *stop-delay*| **ac-start-delay** *ac-start-delay*| **ac-stop-delay** *ac-stop-delay*| **rep-period** *rep-period*| **max-streams** *max-streams*}

Syntax Description

max-comp-time *max-comp-time*	Specifies the maximum time needed by ECMG to compute an ECM in milliseconds. The valid range is from 1 to 60000. The default is 5000.
min-cp-duration*min-cp-duration*	Specifies the minimum crypto period (CP) in milliseconds. The valid range is from 1000 to 3600000. The default is 10000.
trans-start-delay*trans-start-delay*	Specifies the transition start delay in milliseconds. The valid range is from -30000 to 0. The default is -2000.
trans-stop-delay*trans-stop-delay*	Specifies the transition stop delay in milliseconds. The valid range is from 0 to 30000. The default is 2000.
start-delay start-delay	Specifies the delay between the start of CP and ECM broadcast in milliseconds. The valid range is from -30000 to 30000. The default is -2000.
stop-delay*stop-delay*	Specifies the delay between the end of CP and ECM broadcast in milliseconds. The valid range is from -30000 to 30000. The default is -2000.
ac-start-delay*ac-start-delay*	Specifies the delay between the start of first CP after a change in access criteria and ECM broadcast. The valid range is from -30000 to 30000. The default is -2000.
ac-stop-delay*ac-stop-delay*	Specifies the delay between the end of last CP preceding a change in access criteria and ECM broadcast. The valid range is from -30000 to 30000. The default is -2000.

rep-period *rep-period*	Specifies the repitition period of ECM packets in milliseconds. The valid range is from 100 to 30000. The default is 100.
max-streams*max-streams*	Specifies the maximum number of simultaneous open streams supported by the ECMG on a channel. The valid range is from 0 to 30000. The default is 512.

Command Default

Overrule is disabled.

Command Modes

ECMG configuration (config-ecmg)

Command History

Release	Modification
Cisco IOS-XE Release 3.4.0SQ	This command was introduced.

Usage Guidelines

When the *max-streams* is set to 0, the scrambler does not limit the number of streams on a channel and ECMs are not requested from the ECMG backup when the ECMG reaches its maximum capacity. To ensure that an ECMG is not overloaded, specify a non-zero value for the maximum number of simultaneous open streams.

Examples

The following example shows how to overrule the default settings of the ECMG:

```
Router# configure terminal
Router(config)# cable video scrambler linecard 3 ecmg 2 update
Router(config-ecmg)# overrule max-comp-time 2
Router(config-ecmg)# overrule min-cp-duration 1200
Router(config-ecmg)# overrule trans-start-delay -3000
Router(config-ecmg)# overrule trans-stop-delay 4000
Router(config-ecmg)# overrule start-delay -2200
Router(config-ecmg)# overrule stop-delay -2400
Router(config-ecmg)# overrule ac-start-delay -2500
Router(config-ecmg)# overrule ac-stop-delay -2010
Router(config-ecmg)# overrule rep-period 200
Router(config-ecmg)# overrule max-streams 540
```

Related Commands

Command	Description
cable video scrambler	Configures scrambling for the video sessions.
show cable video scrambler	Displays the scrambling information for the video sessions.

overwrite-scg

To enable Scrambling Control Group (SCG) overwrite, use the **overwrite-scg** command in Event Information Scheduler (EIS) configuration mode. To disable the SCG overwrite, use the **no** form of this command.

overwrite-scg

no overwrite-scg

Syntax Description

This command has no arguments or keywords.

Command Default

SCG overwrite is disabled.

Command Modes

EIS Configuration (config-eis)

Command History

Release	Modification
Cisco IOS-XE Release 3.4.0SQ	This command was introduced.

Usage Guidelines

When SCG overwrite is enabled and there is another SCG with the same SCG ID and different Transport Stream ID (TSID) or Original Network ID (ONID), it overwrites the existing SCG. When SCG overwrite is disabled and there is a new SCG with the same SCG ID and different TSID or ONID, the new SCG is rejected.

Examples

The following example shows how to enable SCG overwrite:

```
Router# configure terminal
Router(config)# cable video scrambler eis 1 server1 1024
Router(config-eis)# overwrite-scg
```

Related Commands

Command	Description
cable video scrambler	Configures scrambling for the video sessions.
show cable video scrambler	Displays the scrambling information for the video sessions.

pilot-qam

To configure the pilot (source) QAM, use the **pilot-qam** command in QAM replication group configuration mode. To remove the pilot QAM, use the **no** form of this command.

pilot-qam {**Qam**| **Qam-red**} *qam-interface-number*

no pilot-qam {**Qam**| **Qam-red**} *qam-interface-number*

Syntax Description

Qam	QAM interface
Qam-red	QAM red interface
qam-interface-number	Pilot QAM location

Command Default

This command is enabled by default.

Command Modes

QAM replication group configuration (config-qrg)

Command History

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

Usage Guidelines

Cisco IOS-XE Release 3.3.0SQ introduces the QAM replication group feature to replicate any single QAM output from one port to another port on the same Cisco RFGW-10 DS-384 line card.

A QAM replication group contains information about a single source QAM and its corresponding replicated copy or copies. Each group is numbered with a *group-id* and contains the *slot*, *port* and *channel-number* for both the source QAM (pilot-qam) and the destination QAM (replicate-qam).

Note QAM replication is supported only within a given line card and not from one line card to another.

Examples

This example shows how to create a pilot QAM:

```
Router# configure terminal
Router(config)# cable qam-replication-group 1
Router(config-qrg)# pilot-qam qam-red 3/1.1
```

Related Commands

Command	Description
cable qam-replication-group	Configures the QAM replication group.
replicate-qam	Configures the replicate QAM in the QAM replication group.

protect-tunnel

To configure a Downstream External PHY Interface (DEPI) tunnel on the Cisco RF Gateway 10 (RFGW-10), use the **protect-tunnel** command in global configuration mode. To disable this configuration, use the **no** form of this command.

protect-tunnel *protect-depi-tunnel-name*

no protect-tunnel *protect-depi-tunnel-name*

Syntax Description

protect-depi-tunnel-name	Protect DEPI tunnel with which the depi-tunnel is associated.

Command Default

The N+1 DEPI redundancy feature is disabled.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

The protect tunnel must be explicitly configured. The protect tunnel inherits L2TP class and DEPI class parameters from the working tunnel. When you configure the protect tunnel and specify the destination IP address for the protect tunnel, the protect tunnel inherits the QAM channel parameters specified for the working tunnel.

Examples

The following example shows how to configure a DEPI tunnel for the protect cable interface line card on the Cisco RFGW-10.

Destination IP address of the M-CMTS router must be specified as the endpoint for the protect tunnel:

```
Router> enable
Router# configure terminal
Router(config)# depi-tunnel protect1
Router(config-depi-tunnel)# dest-ip 192.0.2.103
Router(config-depi-tunnel)# exit
```

The protect tunnel is then configured on an existing working DEPI tunnel:

```
Router(config)# depi-tunnel working1
Router(config-depi-tunnel)# protect-tunnel protect1
Router(config-depi-tunnel)# end
```

Related Commands

Command	Description
depi-tunnel	Specifies a template for DEPI tunnel configuration settings.

protocol

To set the protocol used by the server, use the **protocol** command in **cable qam-partition** configuration mode QAM partition configuration mode. To remove the protocol configuration, use the **no** form of this command.

protocol {**ermi**| **gqi**| **ngod-d6**}

no protocol {**ermi**| **gqi**| **ngod-d6**}

Syntax Description

ermi	Supports Edge Resource Management Interface (ERMI) protocol for video sessions.
gqi	Supports Generic QAM Interface (GQI) protocol sent to the Data Network Control Station (DNCS) server.
ngod-d6	Supports Video Registration Protocol (VREP) which is used to send QAM information to the ERM (Edge Resource Manager). Ngod-d6 qam-partition only supports local video qam.

Command Default

This command has no default behavior or values.

Command Modes

QAM partition configuration (config-qp)

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.
Cisco IOS-XE Release 3.5.0SQ	This command was modified. The **ngod-d6** protocol is supported.

Usage Guidelines

Use the **protocol** command in QAM partition configuration to set the interface used between DNCS/USRM and RFGW-10.

QAM partitioning is used by protocol applications such as GQI and ERMI to extend the QAM partition configuration for a given protocol.

The GQI protocol supports the latest GQI protocol. The QAM partition must be configured before any protocol configuration.

Examples

The following example shows the GQI protocol configuration on the cable qam partition:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol gqi
Router(config-qp)# mgmt-ip 10.10.10.10
Router(config-qp)# mac-address 30e4.db04.8dc0
```

The following example sets the QAM partition with the ERMI protocol:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol ermi
Router(config-qp)# mgmt-ip 10.10.10.10
```

The following example sets the QAM partition with the NGOD-D6 protocol:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol ngod-d6
Router(config-qp)# mgmt-ip 10.10.10.10
```

Related Commands

Command	Description
mgmt-ip-address mac-address	Configures the management port IP address and MAC address.
server	Configures the IP address of the external server.
cable qam-partition	Configures the QAM partition for a video server.

qam-group

To configure a QAM group, use the **qam-group** command in the cable service group configuration mode. To remove the QAM group, use the **no** form of this command.

qam-group *qam-group-name*

no qam-group *qam-group-name*

Syntax Description

qam-group-name	QAM group name.

Command Default

This command is enabled by default.

Command Modes

Cable service group configuration (config-qsg)

Command History

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

Usage Guidelines

A QAM group can contain one or more QAM channels.

Examples

This example shows how to create a QAM group:

```
Router# configure terminal
Router(config)# cable service-group 1
Router(config-qsg)# qam-group group1
```

Related Commands

Command	Description
cable service-group	Configures the QAM service group.
show cable service-group	Displays the service groups configured on the Cisco RFGW-10.

qam-partition

To assign a QAM partition to the load balancing group, use the **qam-partition** command in load balancing group configuration mode. To disable the QAM partition, use the **no** form of this command.

qam-partition {*partition-id* | **default** *dest-IP-address*} **bitrate** *bit-value* **udp** *low-udp high-udp* {**bitrate** | *bit-value*}

no qam-partition {*partition-id* | **default** *dest-IP-address*} **bitrate** *bit-value* **udp** *low-udp high-udp* {**bitrate** | *bit-value*}

Generic QAM Interface (GQI)

qam-partition {*partition-id*} [**ip** *IP-address* **udp** *low-udp high-udp*] [**gqi-ingress-port** *input-port* **bitrate** *bit-value*]

no qam-partition {*partition-id*} [**ip** *IP-address* **udp** *low-udp high-udp*] [**gqi-ingress-port** *input-port* **bitrate** *bit-value*]

Syntax Description

partition-id	QAM partition ID. The valid range is from 1 to 50.
default	Configures the default QAM partition to the load balancing group.
dest-IP-address	IP address of the default QAM partition.
bitrate	Sets the reserved bandwidth to the partition.
bit-value	Specifies the bit value in Kbps. The valid range is from 1 to 9100000.
udp	Sets the UDP port range.
low-udp	Low UDP port value. The valid range is from 1 to 65535.
high-udp	High UDP port value. The valid range is from 1 to 65535.
ip	Specifies the destination IP address.
gqi-ingress-port	Specifies the input port for the GQI interface.
input-port	Input port of GQI. The valid range is from 1 to 100.

Command Default

This command is enabled by default.

Command Modes

Load balancing group configuration (config-lbg)

Command History

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

Usage Guidelines

Use the **qam-partition** command to assign a QAM partition to the load balancing group.

Note The IP address and UDP range in the cable route must be unique, and must be a valid IP address configured on the QAM interface.

Note The **gqi-ingress-port** command is only used in GQI QAM partitions. This identifies the physical input port for sessions in GQI model.

Examples

This example shows how to configure the QAM partition on the load balancing group:

```
Router# configure terminal
Router(config)# cable route linecard 3 load-balance-group 1
Router(config-lbg)# qam-partition default 30.0.3.10 udp 1 49260 bitrate 3300
Router(config-lbg)#
```

This example shows how to configure the GQI QAM partition on the load balancing group:

```
Router# configure terminal
Router(config)# cable route linecard 3 load-balance-group 1
Router(config-lbg)# qam-partition 3 ip  10.1.1.1 gqi 10 bitrate 21
Router(config-lbg)#
```

Related Commands

Command	Description
cable qam-partition	Creates a QAM partition for video server on the Cisco RFGW-10 DS-384 line card.
cable route linecard load-balancing-group	Configures a video route on the cable load balancing group's line card.
show cable linecard load-balancing-group	Displays the load balancing groups configured on the QAM partitions.
snmp-server enable traps qp-lbg route-change	Enables trap notifications when a route has been added to or deleted from a QAM partition.

redundancy

To configure redundancy configuration mode, use the **redundancy** command in global configuration mode.

redundancy

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default behavior or values.

Command Modes

Global configuration (config)

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

At the redundancy configuration mode, you can do the following:

- Set a command to its default mode using the **default** command.
- Exit from a redundancy configuration using the **exit** command.
- Enter the line card group redundancy configuration using the **linecard-group** command.
- Enter main-CPU redundancy configuration mode using the **main-cpu** command, which allows you to specify which files are synchronized between the active and standby Supervisor cards.
- Configure the redundancy mode for the chassis using the **mode** command.
- Enforce a redundancy policy using the **policy** command.

Examples

The following example shows how to enter redundancy configuration mode and its associated commands on the Cisco RFGW-10 chassis:

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)#?
Redundancy configuration commands:
  default         Set a command to its defaults
  exit            Exit from redundancy configuration mode
  linecard-group  Enter linecard redundancy submode
  main-cpu        Enter main-cpu mode
  mode            redundancy mode for this chassis
  no              Negate a command or set its defaults
  policy          redundancy policy enforcement
```

Related Commands

Command	Description
auto-sync	Enables automatic synchronization of the configuration files in NVRAM.
main-cpu	Enters main-CPU redundancy configuration mode to synchronize the active and standby Supervisor cards.
mode (redundancy)	Configures the redundancy mode of operation.
redundancy force-switchover	Switches control of a router from the active RP to the standby RP.
show redundancy	Displays information about the current redundant configuration, recent changes in states, current or historical status, and planned or logged handovers.

redundancy force-failover main-cpu

To force a switchover so that a standby Supervisor card becomes an active Supervisor card, use the **redundancy force-failover main-cpu** command in privileged EXEC mode.

redundancy force-failover main-cpu

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default behavior or values.

Command Modes

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 **redundancy force-failover main-cpu** command initiates a manual switchover so that the standby Supervisor card becomes the active Supervisor card and assumes full responsibilities for router operations. When using this command, ensure that both Supervisor cards have the Cisco IOS software image that supports the Route Processor Redundancy (RPR) feature.

Note Though the terms “failover” and “switchover” are interchangeable, “switchover” is the term used across all Cisco platforms.

A manual switchover is performed for the following reasons:

- To upgrade or replace the active Supervisor card.
- To upgrade the Cisco IOS software on the standby Supervisor card and let the standby Supervisor card use the new software image. This also allows you to upgrade the software on the former active Supervisor card without interrupting system operations.
- To test the switchover operation on the system.

A switchover can also be manually initiated by removing the active Supervisor card from the chassis, by using the **redundancy force-failover main-cpu** command to provide a more graceful switchover, without generating hardware alarms.

Tip Do not perform a switchover immediately after you change the configuration and save it to the NVRAM. Instead, wait a few minutes to allow the two Supervisor cards to synchronize with the new configuration, and then perform the switchover.

Examples

The following example shows a manually initiated switchover on a Supervisor card on a Cisco RFGW-10 chassis:

```
Router# redundancy force-failover main-cpu

Proceed with switchover to standby Supervisor? [confirm] y
```

Note Press **Enter** or enter **y** to begin the switchover. Pressing any other key aborts the switchover and returns control to the current active Supervisor card.

The following example shows a switchover attempt that has failed, because the standby Supervisor card is either not ready, not available, or not installed on a Cisco RFGW-10 chassis:

```
Switch# redundancy force-failover main-cpu

Proceed with switchover to standby Supervisor? [confirm]
Standby Supervisor not ready, switchover aborted.
```

Related Commands

Command	Description
redundancy	Enters the redundancy configuration mode so that the synchronization parameters can be configured.
redundancy reload	Resets the standby Supervisor card to reset both the active and standby Supervisor cards.

redundancy force-switchover

To force the standby Route Processor (RP) or standby Supervisor card to assume the role of an active RP or Supervisor card, use the **redundancy force-switchover** command in privileged EXEC mode.

redundancy force-switchover

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default behavior or values.

Command Modes

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

Use the **redundancy force-switchover** command to switch control of a router from the active Supervisor card to the standby Supervisor card. Install the Cisco IOS image on both the active and standby Supervisor cards to ensure high availability. Configure the Route Processor Redundancy (RPR) mode on both the Supervisor cards before the **redundancy force-switchover** command is used. This command verifies if the standby Supervisor card is ready for system switchover.

When you use the **redundancy force-switchover** command and the current running configuration is different from the startup configuration, the system prompts you to save the running configuration before the switchover is performed.

Note All line cards will reset in RPR mode on a switchover.

Examples

The following example shows how to perform a manual switchover from the active to the standby RP when the running configuration is different from the startup configuration:

```
Router# redundancy force-switchover
System configuration has been modified. Save? [yes/no]:y
Building configuration...
...
...
[OK]
Proceed with switchover to standby NSE? [confirm]y
00:07:35:%SYS-5-SWITCHOVER:Switchover requested
```

The following example shows how to perform a manual switchover from the active to the standby RP when the running configuration is the same as the startup configuration:

```
Router# redundancy force-switchover
Proceed with switchover to standby NSE? [confirm]
00:07:35:%SYS-5-SWITCHOVER:Switchover requested
```

Related Commands

Command	Description
redundancy	Enters the redundancy configuration mode.
show redundancy	Displays the current active and standby Supervisor card redundancy status.

redundancy linecard-group switchover from slot

To initiate a line card switchover, use the **redundancy linecard-group switchover from slot** command in privileged EXEC mode.

redundancy linecard-group switchover from slot *slot*

Syntax Description

slot	Specifies the line card slot on the chassis. Valid range is from 3 to 12.

Command Default

The switchover of the line card takes place.

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 for the line card switchover. Switchover occurs from the current active line card to the standby line card.

Examples

The following example shows the switchover of a line card in slot 3:

```
Router#redundancy linecard-group switchover from slot 3
```

Related Commands

Command	Description
show redundancy linecard	Displays information on a line card or line card group redundancy status.

redundancy reload

To reset the standby Supervisor card to reset both the active and standby Supervisor cards, use the **redundancy reload** command in privileged EXEC mode.

redundancy reload {**peer**| **shelf**}

Syntax Description

peer	Reloads only the standby Supervisor card.
shelf	Reloads both the active and standby r Supervisor card.

Command Default

This command has no default behavior or values.

Command Modes

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 **redundancy reload peer** command reloads the Cisco IOS software on the standby Supervisor card which does not have an impact on router operations, assuming a switchover is not required while the standby module is resetting. The **redundancy reload shelf** command reloads the Cisco IOS software on both the active and standby Supervisor cards, which will interrupt services on the router until all the Supervisor cards and line cards initialize and come back online.

Examples

The following example shows the system response when a standby Supervisor card is not installed in the Cisco RFGW-10:

```
Switch# redundancy reload peer
System is running in SIMPLEX mode, reload anyway? [confirm] n
```

Peer reload not performed.

The following example shows how to reload both Supervisor cards on the Cisco RFGW-10:

```
Switch# redundancy reload shelf
Reload the entire shelf [confirm] y

Preparing to reload entire shelf
```

Note Pressing **Enter** or **y** confirms the action and begins the reload of both cards. Pressing any other key aborts the reload and returns control to the current active Supervisor card.

Related Commands

Command	Description
redundancy	Enters redundancy configuration mode so that the synchronization parameters can be configured.
redundancy force-failover main-cpu	Forces a switchover, so that the standby Supervisor card becomes the active Supervisor card.

redundancy tcc-group switchover from slot

To initiate a Timing, Communication and Control (TCC) card switchover, use the **redundancy tcc-group switchover from slot** command in privileged EXEC mode.

redundancy tcc-group switchover from slot *slot*

Syntax Description

slot	Specifies the TCC card slot on the chassis. Valid slots are 13 and 14.

Command Default

This command has no default behavior or values.

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 for TCC card switchover. Switchover occurs from the current active card to the standby TCC card.

Examples

The following example shows the switchover of a TCC card in slot 13:

```
Router#redundancy tcc-group switchover from slot 13
```

Related Commands

Command	Description
show redundancy tcc	Displays information of the TCC card redundancy status.

replicate-qam

To configure the replicate (destination) QAM, use the **replicate-qam** command in the QAM replication group configuration mode. To remove the replicate QAM, use the **no** form of this command.

replicate-qam {**qam**| **qam-red**} *qam-interface-number*

no replicate-qam {**qam**| **qam-red**} *qam-interface-number*

Syntax Description

qam-interface-number	Replicate QAM location.

Command Default

This command is enabled by default.

Command Modes

QAM replication group configuration (config-qrg)

Command History

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

Usage Guidelines

Note Effective from Cisco IOS-XE Release 3.4.0SQ, the keywords **qam**, **Qam**, **qam-red**, or **Qam-red** must be explicitly typed. Typing q or Q and pressing the **Tab** will not autocomplete the command.

Cisco IOS-XE Release 3.3.0SQ introduces the QAM replication group feature to replicate any single QAM output from one port to another port on the same Cisco RFGW-10 DS-384 line card.

A QAM replication group contains information about a single source QAM and its corresponding replicated copy or copies. Each group is numbered with a *group-id* and contains the *slot*, *port* and *channel-number* for both the source QAM (pilot-qam) and the destination QAM (replicate-qam).

Note QAM replication is supported only within a given line card and not from one line card to another.

Examples

This example shows how to create a replicate QAM:

```
Router# configure terminal
Router(config)# cable qam-replication-group 1
Router(config-qrg)# replicate-qam qam-red3/2.1
```

Related Commands

Command	Description
cable qam replication-group	Configures the QAM replication group.
pilot-qam	Configures the pilot QAM in the QAM replication group.

reserve cardtype

To configure the reserve line card type in line card redundancy, use the **reserve cardtype** command in line card redundancy configuration mode. To disable the line card type, use the **no** form of this command.

reserve cardtype *type*

no reserve cardtype *type*

Syntax Description

type	Line card type in Hex or Decimal. Valid range is from 0-4294967295.

Command Default

This command is auto-generated when the first primary line card is configured.

Command Modes

Line card redundancy configuration (config-red-lc)

Command History

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

Usage Guidelines

Associated Feature

The **reserve cardtype** command is used to configure the reserve cardtype in a redundancy line card configuration on the Cisco RFGW-10 router.For information on configuring line card redundancy, see

- 1:1 and 1:N Line Card Redundancy

The Cisco RFGW-10 DS-48 line card and the Cisco RFGW-10 DS-384 line card have 12 and 8 ports respectively. Thus, these cards cannot exist in the same redundancy group.

Each protection group has a reserve cardtype configuration which can be manually configured before configuring the first primary line card in the group. However, if the reserve cardtype is not configured, it is automatically generated when the first primary line card is configured.

Additional redundancy line cards in a redundancy group are configured only if the card types are compatible with the reserve cardtype. The line card will not be allowed to fully initialize, if the line card is removed from a redundancy group and replaced with a non-compatible line cardtype.

For information on the redundancy group cardtype compatibility, see 1:1 and 1:N Line Card Redundancy.

Note To determine the cardtype of an existing line card, use the **show redundancy linecard slot** [*slot*] command. Use this command even if the line card is a *not* redundant line card.

Examples

The following example shows the configuration and the output of the automatic generation of the reserve cardtype for a Cisco RFGW-10 line card:

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# linecard-group 0 internal-switch
Router(config-red-lc)# class 1:n
Class set to 1:N for Redundancy group (0)
Router(config-red-lc)# member slot 3 primary
 Auto generate reserve card type command
Router(config-red-lc)# end
Router# show run | beg redundancy
...
redundancy
  linecard-group 0 internal-switch
  class 1:N
  reserve cardtype 0x6011
  member slot 3 primary
  revertive 300
  mode sso
```

The following example manually configures the reserve cardtype for a Cisco RFGW-10 DS-384 line card, and attempts to configure the Cisco RFGW-10 DS-48 line card as a primary line card.

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# linecard-group 0 internal-switch
Router(config-red-lc)# class 1:n
Class set to 1:N for Redundancy group (0)
Router(config-red-lc)# reserve cardtype ?
  <0-4294967295>  Enter reserve cardtype in Hex or Decimal
Router(config-red-lc)# reserve cardtype 0x6015
Router(config-red-lc)# member slot 3 primary
Reject: Configuration of slot 3 as Primary failed for the above reason
Router(config-red-lc)#
*Apr 20 11:36:13.690: %RFGW-3-CARDTYPE_MISMATCH: Primary card type (ElbCardTypeMossbeach)
in slot (3) is not compatible with Reserve card type (ElbCardTypeBlackbriar)
```

The following example manually configures the reserve cardtype for a Cisco RFGW-10 DS-48 line card, and configure the Cisco RFGW-10 DS-48 line card as a primary line card.

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# linecard-group 0 internal-switch
Router(config-red-lc)# class 1:n
Class set to 1:N for Redundancy group (0)
Router(config-red-lc)# reserve cardtype 0x6011
Router(config-red-lc)# member slot 3 primary
Router(config-red-lc)# end
Router#
*Apr 20 11:38:27.161: %SYS-5-CONFIG_I: Configured from console by console
Router# show run | beg redundancy
...
redundancy
  linecard-group 0 internal-switch
  class 1:N
  reserve cardtype 0x6011
  member slot 3 primary
  revertive 300
  mode sso
!
```

The following example shows an attempt to configure an invalid reserve cardtype for the Cisco RFGW-10 line card:

```
Router# configure terminal
```

```
Router(config)# redundancy
Router(config-red)# linecard-group 0 internal-switch
Router(config-red-lc)# class 1:n
Class set to 1:N for Redundancy group (0)
Router(config-red-lc)# reserve cardtype 0x6000
Router#
Cardtype is not valid, enter valid card type and try this command again
```

The following example shows an attempt to configure a different reserve cardtype that does not match the existing redundancy members.

```
Router# configure terminal
Router(config)# redundancy
Router(config-red)# linecard-group 0 internal-switch
Router(config-red-lc)# class 1:n
Class set to 1:N for Redundancy group (0)
Router(config-red-lc)# reserve cardtype 0x6011
Router(config-red-lc)# member slot 3 primary
Router(config-red-lc)# reserve cardtype 0x6015
 Reserve cardtype cannot be changed while this group
 has members. Reserved card type (0x6011  24593)
Router(config-red-lc)#
```

Related Commands

Command	Description
class	Configures redundancy class on the line card.
linecard-group internal-switch	Adds a group ID for a line card group, and enters line card redundancy configuration mode.
member slot	Adds a slot to the line card redundancy group.
redundancy	Enters the redundancy configuration mode.

reset interval

Note The **reset-interval** command is not available in the Cisco IOS-XE Release 3.3.0SQ and later releases.

To set the reset interval, use the reset interval command in video server configuration mode and QAM partition configuration mode. To remove the setting, use the **no** form of this command.

reset interval *seconds*

no reset interval *seconds*

Syntax Description

seconds	Reset interval value. The valid interval range is from 1 to 300.

Command Default

This command is not enabled by default.

Command Modes

Video server configuration (config-video-servers)QAM partition configuration (config-qp)

Command History

Release	Modification
12.2(50)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.0SQ	This command is removed. It is not available in the Cisco IOS-XE Release 3.3.0SQ and later releases.

Usage Guidelines

Use the reset interval command in QAM partition configuration to reset the reset interval value.

Examples

The following example shows how to configure the reset interval value of 10 seconds in QAM partition configuration:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# reset interval 10
```

The following example shows how to configure the reset interval value of 1 second on a Cisco RFGW-10:

```
Router(config)# cable video servers servergroup1
Router(config-video-servers)# reset interval 1
```

Related Commands

Command	Description
active	Activates the server.
cable qam-partition	Configures the QAM partition for a video server.
cable video servers	Configures server groups for video sessions using external servers.
ip rpc portmapper	Establishes an RPC connection between the external server and EQAM.
keepalive retry	Configures the keepalive retry value on the server.
mgmt-ip-address mac-address	Configures the management IP and MAC address of the server.
protocol	Configures the protocols supported by the server.
server	Configures the IP address of the server.
show cable video server-group	Displays the video server-group information.

retry interval

To configure the retry time and interval time on the external server, use the **retry interval** command in cable video server configuration mode. To remove the configuration, use the **no** form of this command.

retry *seconds* **interval** *seconds*

no retry *seconds* **interval** *seconds*

Syntax Description

seconds	Specifies the time interval. The default retry time is 3 seconfds and the default interval time is 5 seconds.

Command Default

This command has no default behavior or values.

Command Modes

Cable video server configuration (config-video-servers)

Command History

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

Usage Guidelines

Retry and interval time are optionally configured in the server group for communication between the Cisco RFGW-10 and the external servers.

Examples

The following example shows 10 seconds configured as the retry and interval value on the video server:

```
Router#configure terminal
Router(config)#cable video server servergroup1
Router(config-video-servers)#protocol gqi
Router(config-video-servers)#server 10.10.10.1
Router(config-video-servers)#retry 10 interval 10
Router(config-video-servers)#exit
```

Related Commands

Command	Description
cable video servers	Configures the video server group for external servers.
mgmt-ip-address mac-address	Configures the management port IP address and MAC address.
protocol	Configures the protocol used by the external server.

Command	Description
server	Configures the IP address of the external server.

rtsp

To configure the ERMI Real-time Streaming Protocol (RTSP) on the QAM partition, use the **rtsp** command in global configuration mode. To disable the protocol, use the **no** form of this command.

rtsp {**connect-retry** *retry-interval* | **connect-time** *connect-seconds* | **keepalive** *connection-timeout-interval* | **session-timeout** *session-timeout-interval*}

no rtsp {**connect-retry** *retry-interval* | **connect-time** *connect-seconds* | **keepalive** *connection-timeout-interval* | **session-timeout** *session-timeout-interval*}

Syntax Description

connect-retry	Specifies RTSP connection retry time.
retry-interval	RTSP connection retry interval, The valid range is from 1 to 10.
connect-time	Specifies the RTSP connection time
connect-seconds	RTSP connection time in seconds. The valid range is from 10 to 200.
keepalive	Specifies the keepalive time for the RTSP connection.
connection-timeout-interval	RTSP connection timeout interval. The valid range is from 1 to 300. The default value is 300.
session-timeout	Specifies the RTSP session timeout for the connection.
session-timeout-interval	RTSP session timeout interval. The valid range is from 10800 to 36000.

Command Default

This command is disabled by default.

Command Modes

QAM partition configuration mode (config-qp)

Command History

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

Usage Guidelines

ERMI is a protocol for managing EQAM resources both for DOCSIS and video services. It provides video edge device discovery, resource provisioning and signaling protocols for setup and control of video on demand (VOD) and switched digital video (SDV) type video sessions.

Note ERMI protocol has to be configured in the QAM partition.

RTSP protocol is designed to support the setup of multimedia sessions over IP networks. RTSP operates on TCP port and provides primitives for session setup and session management protocol. RTSP is a client server protocol that enables a client application to request streaming media services from a media server.

Examples

This example shows how to configure ERMI **rtsp** protocol on the QAM partition 1:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol ermi
Router(config-qp)# rtsp connect-retry 5
Router(config-qp)# rtsp connect-time 10
Router(config-qp)# rtsp keepalive 5
Router(config-qp)# rtsp session-timeout 10800
```

Related Commands

Command	Description
cable qam-partition	Creates a QAM partition for video server on the Cisco RFGW-10 DS-384 line card.
clear cable ermi statistics	Clears the ERMI protocol connection stastistics information.
errp	Configures Edge Resource and Registration protocol (ERRP) on the QAM partition.
protocol	Assigns the protocol used by the external server.

server

To configure the external server IP address, use the **server** command in cable video server configuration mode and QAM partition configuration mode. To remove the configuration, use the **no** form of this command.

server *IP address*

no server *IP address*

Syntax Description

IP address	Specifies the IP address of the external server.

Command Default

This command has no default behavior or values.

Command Modes

QAM partition configuration (config-qp)

Command History

Release	Modification
Cisco IOS Release 12.2(44)SQ	This command was introduced on the Cisco RF Gateway 10.
Cisco IOS-XE Release 3.3.0SQ	This command is integrated Cisco IOS-XE Release 3.3.0SQ.

Usage Guidelines

Data Network Control Station (DNCS) servers use Generic QAM interface (GQI) protocol. The IP address of the DNCS server must be provided. SDV servers use Switched Digital Video (SDV) protocol and do not require an IP address.

Starting with Cisco IOS-XE Release 3.3.0SQ, the **server** command configures the IP address of the external server that uses the QAM partition.

Examples

The following example sets the external server IP address in a QAM partition:

```
Router# configure terminal
Router(config)# cable qam-partition 1
Router(config-qp)# protocol gqi
Router(config-qp)# mgmt-ip 1.1.1.1
Router (config-qp)# server 192.168.0.10
```

Related Commands

Command	Description
cable qam-partition	Configures the QAM partition for a video server.

Command	Description
protocol	Assigns the protocol used by the external server.

service bass-seu-interrupt

Bass SEU interrupts are single event upset (SEU) interrupts received from Bass field-programmable gate array (FPGA).

To enable Cisco RFGW-10 DS-384 line card reset when a Bass SEU interrupt is received, use the **service bass-seu-interrupt** command in the global configuration mode. To disable Cisco RFGW-10 DS-384 line card reset, use the **no** form of the command.

service bass-seu-interrupt

no service bass-seu-interrupt

Syntax Description

This command has no arguments or keywords.

Command Default

Line card reset is disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.1SQ	This command was introduced.

Usage Guidelines

Use this command to enable Cisco RFGW-10 DS-384 line card reset when Bass SEU interrupt is reported.

Examples

The following example shows how to enable line card reset when a Bass SEU interrupt is received:

```
Router#configure terminal
Router(config)#service bass-seu-interrupt
```

Related Commands

Command	Description
show running-config	Displays the running configuration on the router.

service heartbeat

To enable the service heartbeat messages to the Supervisor card, use the **service heartbeat** command. To disable the service heartbeat messages, use the **no** form of the **service heartbeat** command.

service heartbeat [**warning-timeout**| **fatal-timeout**| **cslipc-timeout**| **alive-timeout**]*seconds*

no service heartbeat

Syntax Description

warning-timeout	(Optional) Specifies the timeout period that the Supervisor card waits for, before logging the event as expiry of warning timeout for heartbeat, in the Supervisor card's logs. The default time is 3 seconds.
fatal-timeout	(Optional) Specifies the timeout period that the Supervisor card waits for, before resetting the line card to recover. The default time is 5 seconds.
cslipc-timeout	(Optional) Specifies the timeout period that the Supervisor card waits for, before the expiry of which the line card needs to send its license information to the Supervisor card. The default time is 600 seconds.
alive-timeout	(Optional) Specifies the timeout period that the Supervisor card waits for, before the expiry of which the line card needs to send the first heartbeat (alive) message to the Supervisor card. The default time is 600 seconds.
seconds	Specifies the timeout in seconds.

Command Default

Enabled.

Command Modes

Command History

Release	Modification
12.2(50)SQ	This command was introduced.
Cisco IOS-XE Release 3.2.0SQ	This command was integrated.

Usage Guidelines

To enable the Service Heartbeat feature, enable the following options of the **service heartbeat** command with default values:

To avoid any errors in service heartbeat messaging to the Supervisor card, it is recommended that you configure all the options with default values only.

Examples

This example shows the configuration that enables the service heartbeat feature:

```
Router(config)# service heartbeat  warning-timeout 3
Router(config)# service heartbeat  fatal-timeout 5
Router(config)# service heartbeat  alive-timeout 600
```

This example shows the configuration of the **cslipc-timeout** option:

```
Router(config)# service heartbeat  cslipc-timeout 600
```

Related Commands

Command	Description
show running-config	Displays the running configuration on the router.

scrambling

To configure tier-based scrambling of the linecard, use the **scrambling** command in tier-based configuration mode.

scrambling{**enable**| **disable**}

Syntax Description

enable	Enable the tier-based scrambling of the linecard.
disable	Disable the tier-based scrambling of the linecard.

Command Default

Tier-based scrambling are enabled.

Command Modes

Tier-based configuration (config-tier)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Examples

The following example shows how to configure tier-based scrambling of the linecard:

```
Router# configure terminal
Router(config-tier)# scrambling disable
```

Related Commands

Command	Description
cable video scrambler	Configures scrambling for the video sessions.
show cable video scrambler	Displays the scrambling information for the video sessions.

snmp-server enable traps dti client

To enable notifications when there is change in DTI client state, use the **snmp-server enable traps dti client** command in the global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps dti client

no snmp-server enable traps dti client

Syntax Description

This command has no arguments or keywords.

Command Default

Notification traps for DTI client state change are disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Use this command to enable notifications when there is change in DTI client state.

Examples

The following example shows how to enable notifications when there is change in DTI client state:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps dti client
```

Related Commands

Command	Description
show cable clock	Displays information about displaying Timing, Communication and Control (TCC) card DOCSIS Timing Interface (DTI) client and server statistic counts.

snmp-server enable traps dti server

To enable notifications when there is change in DTI server state, use the **snmp-server enable traps dti server** command in the global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps dti server

no snmp-server enable traps dti server

Syntax Description

This command has no arguments or keywords.

Command Default

Notification traps for DTI server state change are disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Use this command to enable notifications when there is change in DTI server state.

Examples

The following example shows how to enable notifications when there is change in DTI server state:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps dti server
```

Related Commands

Command	Description
show cable clock	Displays information about displaying Timing, Communication and Control (TCC) card DOCSIS Timing Interface (DTI) client and server statistic counts.

snmp-server enable traps l2tun

To enable notification when there is change in DEPI tunnel or session state, use the **snmp-server enable traps l2tun** command in global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps l2tun {**pseudowire**| **session**}

no snmp-server enable traps l2tun {**pseudowire**| **session**}

Syntax Description

pseudowire	Enable SNMP l2tun pseudowire traps.
session	Enable SNMP l2tun session traps.

Command Default

Notification traps are disabled by default.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Use this command to enable notifications when there is change in DEPI tunnel or session state.

Examples

The following example shows how to enable kernel dumper for the RFGW-10 DS-384 line card:

```
Router> enable
Router# configure terminal
Router(config)#  snmp-server enable traps l2tun pseudowire
Router(config)#  snmp-server enable traps l2tun session
```

Related Commands

Command	Description
show depi tunnel	Displays information about Downstream External PHY Interface (DEPI) tunnels.
show depisession	Displays information about Downstream External PHY Interface (DEPI) sessions.

snmp-server enable traps qp-lbg qam-change

To enable notifications when a QAM has been added to or deleted from a QAM partition, use the **snmp-server enable traps qp-lbg qam-change** command in the global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps qp-lbg qam-change

no snmp-server enable traps qp-lbg qam-change

Syntax Description

This command has no arguments or keywords.

Command Default

Notification traps are disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Ensure that you have QAM Partitions setup.

Examples

The following example shows how to enable notifications when a QAM has been added to or deleted from a QAM partition:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps qp-lbg qam-change
```

Related Commands

Command	Description
cable qam-partition	Creates QAM partitions.
active	Activates a QAM partition.

snmp-server enable traps qp-lbg qam-oversubscription

To enable video QAM monitoring traps for receiving video QAM bandwidth oversubscription notifications on an NMS (network management system), use the **snmp-server enable traps qp-lbg qam-oversubscription** command in the global configuration mode. To disable video QAM monitoring traps, use the **no** form of the command.

snmp-server enable traps qp-lbg qam-oversubscription

no snmp-server enable traps qp-lbg qam-oversubscription

Syntax Description

This command has no arguments or keywords.

Command Default

Video QAM monitoring trap is disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.1SQ	This command was introduced.

Usage Guidelines

Use this command to enable traps to receive video QAM bandwidth oversubscription notifications on an NMS (network management system).

Examples

The following example shows how to enable video QAM monitoring traps:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps qp-lbg qam-oversubscription
```

Related Commands

Command	Description
cable video qam-oversubs-notify enable	Enables QAM bandwidth oversubscription monitoring.

snmp-server enable traps qp-lbg qp-state-change

To enable notifications when a QAM partition's state has been changed, use the **snmp-server enable traps qp-lbg qp-state-change** command in the global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps qp-lbg qp-state-change

no snmp-server enable traps qp-lbg qp-state-change

Syntax Description

This command has no arguments or keywords.

Command Default

Notifications for QAM partition's state change are disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Use this command to receive notifications in case of QAM partition's state change.

Examples

The following example shows how to enable notifications when a QAM partition's state has been changed:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps qp-lbg qp-state-change
```

Related Commands

Command	Description
active	Activates a QAM partition.

snmp-server enable traps qp-lbg route-change

To enable notifications when a route has been added to or deleted from a QAM partition or an LBG, use the **snmp-server enable traps qp-lbg route-change** command in the global configuration mode. To disable such notifications, use the **no** form of the command.

snmp-server enable traps qp-lbg route-change

no snmp-server enable traps qp-lbg route-change

Syntax Description

This command has no arguments or keywords.

Command Default

Route change notifications are disabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS-XE Release 3.5.0SQ	This command was introduced.

Usage Guidelines

Use this command to receive notifications in case a route has been added to or deleted from a QAM partition or an LBG.

Examples

The following example shows how to enable notifications when a route has been added to or deleted from a QAM partition or an LBG:

```
RFGW-10> enable
RFGW-10# configure terminal
RFGW-10(config)# snmp-server enable traps qp-lbg route-change
```

Related Commands

Command	Description
qam partition	Assigns a QAM partition to the load balancing group.

show cable clock

To display information about displaying Timing, Communicaton and Control (TCC) card DOCSIS Timimg Interface (DTI) client and server statistic counts, use the **show cable clock** command in privileged EXEC mode.

show cable clock [*slot*] {**client** *port id* | **server** *port id* | **counters**}

Syntax Description

slot	(Optional) Identifies a TCC interface on the Cisco RF Gateway 10. Valid TCC slots are 13 and 14.
client *port id*	Specifies the DTI client port ID. Valid port values are 1 and 2.
server *port id*	Specifies the DTI server port ID. Valid port values are 1 and 2.
counters	Specifies the DTI client counters.

Command Default

Information on the TCC DTI client and server is displayed. Counters are not displayed.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(44)SQ	This command was modified in Cisco IOS Release 12.2(44)SQ to support the Cisco RF Gateway 10. The *slot*, **client**, **server**, and **counters** options were added.

Examples

The following example shows the TCC DTI client and server statistic counts information:

```
Router# show cable clock
DTI Client status: TCC 13
-----------------
Client status                  : normal
Client clock type              : ITU type 1
Client firmware version        : 7
Client dti version             : 0
Client timestamp               : 657519453
Client phase correction        : 65535
Client normal time             : 65535
Client holdover time           : 0
Client transition t3 count     : 0
Client transition t4 count     : 1
Client transition t6 count     : 0
```

```
Client transition t7 count     : 0
Client port switch count       : 1
Client Integral Frequency Term : 64518
Client EFC Value               : 63282
DTI Client Port 1 Status:
-------------------------
   Port Status             : Active
   Signal detected         : yes
   CRC error count         : 2
   Frame error rate        : < 2%
   Cable advance           : 2560
    -- Connected server information ---
    Server status                  : Active free-run
    Root Server clock type         : ITU type 3
    Root Server source             : none
    Server Type                    : Root
    Client Performance Stable      : yes
    Client Cable advance Valid     : yes
DTI Client Port 2 Status:
-------------------------
   Port Status             : Inactive
   Signal detected         : no
   CRC error count         : 66
   Frame error rate        : > 5%
   Cable advance           : 0
DTI Client status: TCC 14
-----------------
Client status                  : normal
Client clock type              : ITU type 1
Client firmware version        : 7
Client dti version             : 0
Client timestamp               : 672169320
Client phase correction        : 65535
Client normal time             : 65535
Client holdover time           : 0
Client transition t3 count     : 0
Client transition t4 count     : 1
Client transition t6 count     : 0
Client transition t7 count     : 0
Client port switch count       : 1
Client Integral Frequency Term : 64760
Client EFC Value               : 63832
DTI Client Port 1 Status:
-------------------------
   Port Status             : Inactive
   Signal detected         : no
   CRC error count         : 26
   Frame error rate        : > 5%
   Cable advance           : 0

DTI Client Port 2 Status:
-------------------------
   Port Status             : Active
   Signal detected         : yes
   CRC error count         : 2
   Frame error rate        : < 2%
   Cable advance           : 1792
    -- Connected server information ---
    Server status                  : Active free-run
    Root Server clock type         : ITU type 3
    Root Server source             : none
    Server Type                    : Root
    Client Performance Stable      : yes
    Client Cable advance Valid     : yes
```

The following is sample output of a TCC card in slot 13 on a Cisco RF Gateway 10:

```
Router#show cable clock 13 client 1
DTI Client Port 1 Status:
-------------------------
   Port Status             : Inactive
   Signal detected         : no
```

```
CRC error count         : 63006
Frame error rate        : > 5%
Cable advance           : 0x0000
```

Table 1: show cable clock client Field Descriptions

Field	Description
Port status	Indicates the current status of the DTI port on the TCC card.
Signal detected	Indicates whether the DTI signal was detected.
CRC error count	The number of cyclic redundancy check (CRC) errors. It can indicate intermittent upstream, laser clipping, or common-path distortion.

The following example shows the server status of the TCC card in slot 13 on a Cisco RFGW-10:

```
Router#show cable clock 13 server 2
TCC Card 13 port 2 DTI Server status:
-------------------------------------
    Server signal detected         : yes
    Server status                  : free-run
    Root Server clock type         : ITU type 3
    Root Server source             : none
    Server Type                    : Root
    Client Performance Stable      : yes
    Client Cable advance Valid     : yes
    TOD Setting Mode               : Short
    TOD gpssec                     : 902825745
    TOD leap seconds               : 14
```

Table 2: show cable clock server Field Descriptions

Field	Description
Server signal detected	Indicates whether the server was detected.
Server status	Indicates the state in which the serer is functioning. The states are warm-up, free-run state, fast mode, normal, holdover, or bridge mode.
Root server source	The server source such as internal, external, GPSor none.
Root server clock type	The clock type. The types are 1, 2, 3 or ITU Stratum 3 or DTI Min. clock.
TOD setting mode	Displays the time (user time, NTP, GPS) mode such as short or long.

The following is a sample output showing the counters on TCC card 13 on Cisco RFGW-10:

```
Router#show cable clock 13 counters
TCC Card 13 DTI counters:
-------------------------
    Client Normal time            : 0x1EB6
    Client Holdover time          : 0x0000
    Client Phase Correction       : 0
    Client Freq Correction        : 63213
    Client EFC Correction         : 61039
    Client transition count t3    : 0
    Client transition count t4    : 1
    Client transition count t6    : 0
    Client transition count t7    : 0
    Client port switch count      : 1
```

Related Commands

Command	Description
cable clock free-run	Allows the clock to be in free-run mode.
clear cable clock counters	Clears DTI client transition counters of a TCC DTI client and server.
snmp-server enable traps dti client	Enables trap notifications when there is change in DTI client state.
snmp-server enable traps dti server	Enables trap notifications when there is change in DTI server state.

show cable depi-sessions

To display Downstream External PHY Interface (DEPI) sessions configured on the line card, use the **show cable depi-sessions** command in privileged EXEC mode.

show cable depi-sessions *mode* {**session-id**| **summary**}

Syntax Description

mode	Specifies the mode of the QAM channel: • **L2TP—**Displays signalled DEPI sessions. • **Manual—**Displays manually configured DEPI sessions.
session-id	Displays detailed information on a specific DEPI session.
summary	Displays a summary of all DEPI sessions configured

Command Default

Information on configured DEPI sessions is displayed.

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 sample output for manual DEPI session 1 on the Cisco RF Gateway 10:

```
Router#show cable depi-sessions manual 1
Detailed Info about Session with id# 1:

                Type                : MANUAL_DEPI_OVER_IP
                Name                :
                State               : IDLE
                Remote id           : 0
                DestIP addr         : 1.1.1.1
                Qam slotid          : 3
                Qam portid          : 1
                Qam ch id           : 1
                Payload type        : DEPI_PW_TYPE_D_MPT
                Sync Mode           : ENABLE
                Sync Intl           : 100
                Up time             : 01:58:34

                << Session Statistic >>
```

```
Session is off     : 0
Broken seq num     : 0
Bad depi header    : 0
Bad MPEG sync byte : 0
In packet rate     : 0 pps
In bit rate        : 0 bps
Out bit rate       : 0 bps

<< Flow Statistic >>
Total packet       : 0
Total byte         : 0
Total segment      : 0
Discards           : 0
Errors             : 0
Bad pyld size      : 0
Cmnd buf ovfw      : 0
```

Table 3: show cable depi-sessions manual Field Descriptions

Field	Indicates the
Type	Mode of the DEPI session.
Name	Name given to the session.
State	State of the session.
Remote id	Remote ID of the session.
DestIP addr	Destination IP address of the DEPI.
Qam slotid	Slot on the QAM interface.
Qam portid	Port on the QAM slot.
Qam ch id	Channel on the QAM port.

The following example shows a summary of the manual DEPI sessions configured on a Cisco RF Gateway 10:

```
Router#show cable depi-sessions manual summary
List of the Configured Depi Sessions
  ID          Type                State      Qam-info   PWtype
  x-----------x-------------------x----------x----------x--------
  1           MANUAL_DEPI_OVER_IP IDLE       Qam3/01.1  DMPT
  11012       MANUAL_DEPI_OVER_IP ACTIVE     Qam3/01.2  DMPT
  11013       MANUAL_DEPI_OVER_IP ACTIVE     Qam3/01.3  DMPT
  30011       MANUAL_DEPI_OVER_IP ACTIVE     Qam5/01.1  DMPT
  30012       MANUAL_DEPI_OVER_IP ACTIVE     Qam5/01.2  DMPT
  30013       MANUAL_DEPI_OVER_IP ACTIVE     Qam5/01.3  DMPT
```

Table 4: show cable depi-sessions manual summaryField Descriptions

Field	Indicates the
ID	ID of the sessions created.

Field	Indicates the
Type	Type of the DEPI session.
State	State of the DEPI session.
Qam-info	Slot, port and channel of a QAM interface.
PW type	Cable mode of the QAM channel.

Related Commands

Command	Description
cable mode	Specifies the mode and usage of QAM channels.

show cable depi-sessions slot count

To display the Downstream External PHY Interface (DEPI) session count on all QAMs on a line card, use the **show cable depi-sessions slot count** command in privileged EXEC mode.

show cable depi-sessions *slot slot* **count**

Syntax Description

slot	Displays DEPI sessions information for a slot.
slot	Specifies the slot on the QAM interface. Valid slot number range is from 3 to 12.
count	Displays the count of both Manual and L2tp sessions for all QAM channels on the linecard interface.

Command Default

This command has no default behavior or values.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SQ2	This command was introduced on the Cisco RF Gateway 10.

Examples

The following is sample output for DEPI session count on the Cisco RF Gateway 10:

```
Router#show cable depi-sessions slot 3 count
       QAM Port          Sessions
      x-----------------x---------
       Channel 3/1.1     1
       Channel 3/1.2     1
       Channel 3/1.3     1
       Channel 3/1.4     1
```

Table 5: show cable depi-sessions slot count Field Descriptions

Field	Description
QAM Port	Port on the QAM slot.
Sessions	Count of the DEPI sessions on the QAM port.

Related Commands

Command	Description
cable mode	Specifies the mode and usage of QAM channels.

show cable depi-sessions offset

To display the DOCSIS Timing Interface (DTI) timing value on the QAM channels, use the **show cable depi-sessions offset** command in privileged EXEC mode.

show cable depi-sessions offset [**port** *slot*/*port*| **slot** *slot*]

Syntax Description

port	Displays the offset value at the port.
slot/port	Specifies the slot and the port of the line card. Valid slot range is 3 to 12. Valid port range is 1 to 12.
slot	Displays the offset value for the specified slot.
slot	Specifies the slot on the line card. Valid slot range is from 3 to 12.

Command Default

This command has no default behavior or values.

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 sample output for DTI offset values configured on the chassis:

```
Router# show cable depi-sessions offset
Qam-info Offset
x-----------x------------------
Qam3/01.1 639
Qam3/01.2 640
Qam3/01.3 641
Qam3/01.4 642
Qam3/02.1 639
Qam3/02.2 640
Qam3/02.3 641
Qam3/02.4 642
```

Table 6: show cable depi-sessions offset Field Descriptions

Field	Description
Qam-info	Displays information about the QAM interface.
Offset	Displays the offset value configured.

Related Commands

Command	Description
cable depi offset	Sets the offset value on the QAM channel for a line card in DEPI mode.

show cable depi-ctrl-session teardown detail

To display the reason for and time of flapping of DEPI, use the **show cable depi-ctrl-session teardown details** command.

show cable depi-ctrl-session teardown details

Syntax Description

Command Default

None.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS-XE Release 3.4.1SQ	This command was introduced.

Usage Guidelines

This command provides session details like the reason for DEPI flapping and the time at which the flaps occurred.

Examples

This example shows the output format of the **show cable depi-ctrl-sessions teardown detail** command:

```
Router# show cable depi-ctrl-sessions teardown detail
Session Name Teardown-Reason Time
```

show cable ermi errp

To display information on the ERMI Edge Resource and Registration protocol (ERRP) protocol, use the **show cable ermi errp** command in privileged EXEC mode.

{**show cable ermi errp server** {*server-IP-address*| **all**}| **resources** {*res-IP-address*| **all**}| **statistics**}

Syntax Description

server	Displays information of a specific ERRP server.
server-IP-address	ERRP server IP address.
all	Displays all information about the ERRP server.
resources	Displays all resources used by the ERRP server.
res-IP-address	Displays information of a particular resource used by the ERRP server.
all	Displays informatin of all resources used by the ERRP server.
statistics	Displays the ERRP statistics information.

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 ERRP server information:

```
Router# show cable ermi errp server all
ERRP Details:
Socket    : 1
 Local     : 10.78.179.167:22350
 Remote    : 10.78.179.170:6069
 Timers    : Hold 90, Keepalive 0, ConnectRetry 10
 FSM state : CONNECT
 QAM Parition : 1
 Number of QAMs reachable : 0
```

Table 7: show cable ermi errp Field Descriptions

Field	Description
Socket	Port connected to the ERRP server.
Local	Local IP address.
Remote	Remote IP address
FSM State	State of server.
QAM Partition	QAM Partition used by the protocol.
No of QAMs Reachable	No of QAM interfaces that use the server.

The following example displays the ERRP server statistics:

```
Router# show cable ermi errp statistics
ERRP Protocol Statistics:
Packet         Received  Received  Received  Sent      Sent      Sent
Type           Packets   Failed    Success   Packets   Failed    Success
-------------  --------  --------  --------  --------  --------  --------
OPEN            0         0         0         0         0         0
UPDATE          0         0         0         0         0         0
NOTIFICATION    0         0         0         0         0         0
KEEPALIVE       0         0         0         0         0         0
SOCKET          0         0         0         0         0         0
UNKNOWN         0         0         0         0         0         0
```

The following example displays the resources used by ERRP server:

```
Router# show cable ermi errp server resources all
ERRP Connection ID 1
QAM        Carrier
Interface  ID
-----------------------------------------------------------------Total Resource
 : 0
```

Related Commands

Command	Description
clear cable ermi statistics	Clears ERMI protocol connection stastistics information.
errp	Configures Edge Resource and Registration protocol (ERRP) on the QAM partition.

show cable ermi rtsp

To display information on the ERMI Real-time Streaming Protocol (RTSP) protocol, use the **show cable ermi rtsp** command in privileged EXEC mode.

{**show cable ermi errp server** {*server-IP-address*| **all**}| **session** {*session-id*| **all**}| **statistics**}

Syntax Description

server	Displays RTSP server information.
server-IP-address	Server IP address.
all	Displays all information about the server.
session	Displays information about an RTSP session ID.
session-id	RTSP session ID. The valid range is from 0 to 4294967295.
all	Displays information about all RTSP sessions.
statistics	Displays the RTSP statistics information.

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 all the server information:

```
Router# show cable ermi rtsp server all
Socket         Mgmt                Server          QP   RTSP   RTSP  Conn   Co
ID             Info                Info            ID  Session Req  Timeout Re
y
------ -------------------- -------------------- --- ------- ---- ------- --
-
```

Table 8: show cable ermi errp Field Descriptions

Field	Description
Socket ID	ID of the socket.
Mgmt Infol	Information about Management port.
Server Info	Information about the Server port.
QP ID	QAM partition ID.
RTSP session	Number of RTSP sessions.
RTSP Req	RTSP request.
Conn timeout	Connection timeout interval.
Conn Retry	Connection retry interval.

This example displays the RTSP server statistics:

```
Router# show cable ermi errp statistics
RTSP Protocol Statistics:
Packet          Received  Received  Received  Sent      Sent      Sent
Type            Packets   Failed    Success   Packets   Failed    Success
-------------   --------  --------  --------  --------  --------  --------
SETUP            0         0         0         0         0         0
TEARDOWN         0         0         0         0         0         0
SET PARAMETER    0         0         0         0         0         0
GET PARAMETER    0         0         0         0         0         0
ANNOUNCE         0         0         0         0         0         0
SOCKET           0         0         0         0         0         0
UNKNOWN          0         0         0         0         0         0
```

The following example displays the RTSP session information:

```
Router# show cable ermi rtsp session all
Session    Session QP  QAM     QAM   RTSP   Server          Socket Session Ses
on Client
ID         Type    ID  Port    TSID  State  Addr(Socket)    Id     Index   Gro
   Session ID
---------- ------- --- ------- ----- ------ --------------- ------ ------- ---
-- -----------
Total Sessions: 0
```

Table 9: show cable ermi rtsp Field Descriptions

Field	Descriptions
Session on Client ID	RTSP Client ID (MAC address).
Session Type	Type of session.
QAM ID	QAM partition ID assigned to server.

Field	Descriptions
QAM Port	QAM port assigned to server.
RTSP State	State of RTSP server.
Server Address (Socket)	IP address of server.
Socket ID	TCP Socket ID.
Session Index	Session Index.
Session Group	Group of sessions.
Session ID	RTSP Session ID.
Total Sessions	Total number of sessions.

Related Commands

Command	Description
clear cable ermi statistics	Clears the ERMI protocol connection statistics information.
rtsp	Configures RTSP on the QAM partition.

show cable freq-profile

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

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

Syntax Description

all	Displays detailed information of all the frequency profiles on the Cisco RFGW-10.
freq-profile-id	Displays detailed information of a specific frequency profile.

Command Default

Information on configured frequency 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 freq-profile** command find out which frequency segment is occupied by the carriers, which part are not being used, and which portions cannot be used.

Examples

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

```
Router# show cable freq-profile
Frequency Profile ID default-freq-profile:
        Lane 1 start-freq 88000000hz
                Block 1 start-freq 88000000hz
                Block 2 start-freq 136000000hz
                Block 3 start-freq 184000000hz
                Block 4 start-freq 232000000hz
        Lane 2 start-freq 280000000hz
                Block 1 start-freq 280000000hz
                Block 2 start-freq 328000000hz
                Block 3 start-freq 376000000hz
                Block 4 start-freq 424000000hz
        Lane 3 start-freq 472000000hz
                Block 1 start-freq 472000000hz
                Block 2 start-freq 520000000hz
                Block 3 start-freq 568000000hz
                Block 4 start-freq 616000000hz
        Lane 4 start-freq 664000000hz
                Block 1 start-freq 664000000hz
                Block 2 start-freq 712000000hz
```

```
                Block 3 start-freq 760000000hz
                Block 4 start-freq 808000000hz
Frequency Profile ID 20:
        Lane 1 start-freq 680000000hz
                Block 1 start-freq 680000000hz
                Block 2 start-freq 680000000hz
                Block 3 start-freq 680000000hz
                Block 4 start-freq 680000000hz
        Lane 2 start-freq 780000000hz
                Block 1 start-freq 780000000hz
                Block 2 start-freq 780500000hz
                Block 3 start-freq 780500000hz
                Block 4 start-freq 780099000hz
        Lane 3 start-freq 99000000hz
                Block 1 start-freq 99400000hz
                Block 2 start-freq 99300000hz
                Block 3 start-freq 99340000hz
                Block 4 start-freq 99540000hz
        Lane 4 start-freq 580000000hz
                Block 1 start-freq 679000000hz
                Block 2 start-freq 678000000hz
                Block 3 start-freq 678500000hz
                Block 4 start-freq 679500000hz
```

Table 10: show cable freq-profile Field Descriptions

Field	Description
Frequency Profile ID	Indicates the frequency profile ID.
Lane	Indicates the lane ID, and starting frequency of the lane.
Block	Indicates the block ID, and starting frequency of the block.

Related Commands

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