



Release Notes for Cisco RF Gateway 10, Cisco IOS-XE Release 3.5SQ

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# Introduction



Note

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This document describes the features and caveats for all releases in the Cisco IOS-XE Release 3.5SQ train for the Cisco RF Gateway 10 (RFGW-10) that supports the Cisco RFGW-10 DS-384 line card and the Cisco Supervisor Engine 7-E.

To download and upgrade to the new ROMMON image for the Cisco RFGW-X45-SUP7-E, see the ROMMON Release Notes for ROMMON Release Notes for Supervisor Engine 7-E on the Cisco RF Gateway 10 at: http://www.cisco.com/en/us/docs/cable/rf\_gateway/release/notes/rommom\_rn\_rfgw10\_sup7e.html

Cisco recommends that you view the field notices for this release to see if your software or hardware platforms are affected. If you have an account on Cisco.com, you can find field notices at:http://www.cisco.com/en/US/support/tsd\_products\_field\_notice\_summary.html.

For information on new features and the Cisco IOS documentation set supported on Cisco IOS-XE Release 3.5SQ train, New and Changed Information, on page 6 see the and the Related Documentation, on page 15. For a list of the caveats that apply to this release, see the Caveats, on page 17.



Note

Use the service internal command on the Cisco RFGW-10 only for system debugging and troubleshooting purposes. This command should not be used in normal operation mode.



Note

Cisco IOS-XE Release 3.5.2SQ is not available on Cisco.com now.

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# Overview of Cisco RF Gateway 10 UEQAM Platform

The Cisco RFGW-10 is a carrier-class Universal Edge QAM (UEQAM) platform that offers concurrent support for standard and high-definition digital broadcast television, Switched Digital Video (SDV), Video on Demand (VoD), and DOCSIS/Modular CMTS services. It is a chassis-based product based on open standards with superior performance, capacity, power consumption, ease of management, and scalability. All components of the Cisco RFGW-10 are designed for high availability, including dual Supervisor and Ethernet switching line cards, 1:N Universal Edge QAM line cards, dual timing, communication and control (TCC) line cards, dual load balancing and load sharing DC PEMs and integrated RF switching modules.

The Cisco RFGW-10 is a centralized switching architecture leveraged from the Cisco Catalyst 4500 Series switches. The Cisco RFGW-10 is a 13-rack unit, modular chassis designed for providing front-to-back airflow and system-level redundancy. All chassis components are hot-swappable and redundant. The chassis supports "wire-once" cabling for RF line cards and an integrated dual-zone RF switch matrix. The Supervisor Engine 7-E provides robust Layer 2 to Layer 4 switching with up to 848 Gbps, and up to 250 Mbps packet throughput

## **System Requirements**

This section describes the system requirements for Cisco IOS-XE Release 3.5SQ series and includes the following sections:

## **Hardware Supported**

Table 1: Hardware Supported on the Cisco RFGW-10, on page 2 provides information on the hardware supported on the Cisco RFGW-10 for Cisco IOS-XE Release 3.5SQ.

Table 1: Hardware Supported on the Cisco RFGW-10

PID	Description
Cisco RFGW Chassis	
RFGW-10	Chassis with the following slots: 2 Supervisor, 10 RF line card, two TCC, and 12 RFGW-10-RFSW (RF switch card) slots. Also includes the RFGW-10 fan assembly and front panel display (FPD)
Cisco RFGW Series Supervisors	
RFGW-X45-SUP7-E	Cisco RFGW Supervisor 7-E, 4xSFP+ (10/1GE) (primary)
RFGW-X45-SUP7-E=	Cisco RFGW Supervisor 7-E, 4xSFP+ (10/1GE) (spare)
Cisco RFGW Series TCC Cards	

PID	Description
RFGW-TCC1	RFGW timing, communication, and control card v.04 or higher
RFGW-TCC1=	RFGW timing, communication, and control card v.04 or higher (spare)
Cisco RFGW Series Line Cards	
RFGW-DS384	RFGW universal downstream EQAM card, 8 RF ports, 384 QAMs
RFGW-DS384=	RFGW universal downstream EQAM card, 8 RF ports, 384 QAMs (spare)
RFGW-DS48	RFGW Universal Downstream EQAM Card, 48 QAMs
RFGW-DS48=	RFGW Universal Downstream EQAM Card, 48 QAMs (spare)
RFGW-DS48-1G	RFGW Universal Downstream EQAM card, 48 QAMs, 1 GHz
RFGW-DS48-1G=	RFGW Universal Downstream EQAM card, 48 QAMs, 1 GHz (spare)
RFGW-DS48-1G-BUN	RFGW Universal Downstream EQAM Card 48 QAMs 1G
Cisco RFGW Series RF Switch Cards	
RFGW-10RFSW1=	RFGW RF switch v1 (spare)
Cisco RFGW Series PEM Options	
RFGW-10-PWR-DC	RFGW DC PEM with monitoring v1
RFGW-10-PWR-DC1=	RFGW DC PEM with monitoring v1 (spare)
Cisco RFGW Series Supervisor Memory O	ptions
SD-X45-2GB-E	Catalyst 4500 2GB SD Memory Card for Sup7-E
SD-X45-2GB-E=	Catalyst 4500 2GB SD Memory Card for Sup7-E (spare)
USB-X45-4GB-E	Catalyst 4500 4GB USB device for Sup7-E
USB-X45-4GB-E=	Catalyst 4500 4GB USB device for Sup7-E (spare)
Cisco RFGW Series Transceiver Modules	
SFP-GE-T	1000BASE-T SFP (NEBS 3 ESD) (100 m on Cat5 UTP)
SFP-GE-S	1000BASE-SX short wavelength; with DOM (550 m on MMF)
SFP-GE-L	1000BASE-LX/LH long wavelength; with DOM (10 km on SMF)
SFP-10G-SR	10GBASE-SR SFP Module

PID	Description
SFP-10G-LR	10GBASE-LR SFP Module
• GLC-SX-MMD	1 Gbps Optical SFP Modules
• GLC-LH-SMD	



Note

The Cisco IOS-XE Release 3.5SQ train does not support the Cisco RFGW-X4516-10GE, and the Cisco RFGW Supervisor V-10GE.

## **Software Supported**

**Table 2: Supported Software** 

Supported Software	Minimum Release	Latest Release
Cisco IOS-XE Release	3.2.0SQ	3.5.9SQ
ROMMON Release	15.0(1r)SQ(315)	15.0(1r)SQ1(316)

For more information on ROMMON, see the ROMMON Release Notes for Supervisor Engine 7-E on the Cisco RF Gateway 10 at:

http://www.cisco.com/en/US/docs/cable/rf gateway/release/notes/ROMMOM RN RFGW10 SUP7E.html

## **Compatible Software and Versions**

**Table 3: Compatible Software and Versions** 

Compatible Software	Latest Release
Video Sessions Resource Manager (VSRM)	3.7.1-53
Cisco License Manager (CLM)	3.2.6
Cisco RF Gateway 10 Remote Provisioning Utility (RPU-10)	1.0
Cisco Converged EdgeQAM Manager (CEM)	1.0.1

## **Determining the Software Version**

To determine the version of Cisco IOS-XE software running on the Cisco RFGW-10 platform, log in to the platform and enter the **show version** EXEC command.

Below is an example of the output from the show version command:

```
RFGW10#show version
Cisco IOS Software, IOS-XE Software, RFGW-10 Software (rfgwk10-ENTSERVICESK9-M), Version
03.05.09.SQ RELEASE SOFTWARE (fc1) Technical Support: http://www.cisco.com/techsupport
```

```
Copyright (c) 1986-2019 by Cisco Systems, Inc. Compiled Tue 01-Oct-19 18:31 by prod rel team
```

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Image text-base: 0x100A6C34, data-base: 0x143067A0

ROM: 15.0(1r)SO(315)

Joe Revision 50, Snowtrooper Revision 0x0.0x116

Goofy uptime is 18 minutes
Uptime for this control processor is 19 minutes
System returned to ROM by reload at 21:04:11 EST Tue Oct 1 2019
System restarted at 21:08:01 EST Tue Oct 1 2019
System image file is "slot0:rfgwk10-entservicesk9.03.05.09.SQ.150-2.SQD9.bin"
Last reload reason: Admin reload CLI

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:  $\label{eq:http://www.cisco.com/wwl/export/crypto/tool/stqrg.html} \end{array}$ 

If you require further assistance please contact us by sending email to export@cisco.com.

cisco Cable-RFGW (MPC8572) processor (revision 8) with 2097152K/16384K bytes of memory. Processor board ID FXS1728001R MPC8572 CPU at 1.5GHz, Supervisor 7 Last reset from Reload 58 Virtual Ethernet interfaces 30 Gigabit Ethernet interfaces 28 Ten Gigabit Ethernet interfaces

Configuration register is 0x2

511K bytes of non-volatile configuration memory.

RFGW10#

# **New and Changed Information**

These sections list the new and existing hardware and software features supported by the Cisco RFGW-10:

## **New Hardware Features in Cisco IOS-XE Release 3.5.9SQ**

There are no new hardware features for Cisco IOS-XE Release 3.5.9SQ.

#### New Hardware Features in Cisco IOS-XE Release 3.5.8SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.8SQ.

#### New Hardware Features in Cisco IOS-XE Release 3.5.7SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.7SQ.

## New Hardware Features in Cisco IOS-XE Release 3.5.6SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.6SQ.

## New Hardware Features in Cisco IOS-XE Release 3.5.5SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.5SQ.

## **New Hardware Features in Cisco IOS-XE Release 3.5.4SQ**

There are no new hardware features for Cisco IOS-XE Release 3.5.4SQ.

## New Hardware Features in Cisco IOS-XE Release 3.5.3SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.3SQ.

## **New Hardware Features in Cisco IOS-XE Release 3.5.2SQ**

There are no new hardware features for Cisco IOS-XE Release 3.5.2SQ.

## **New Hardware Features in Cisco IOS-XE Release 3.5.1SQ**

There are no new hardware features for Cisco IOS-XE Release 3.5.1SQ.

## New Hardware Features in Cisco IOS-XE Release 3.5.0SQ

There are no new hardware features for Cisco IOS-XE Release 3.5.0SQ.

## **New Software Features in Cisco IOS-XE Release 3.5.9SQ**

There are no new software features for Cisco IOS-XE Release 3.5.9SQ.

## **New Software Features in Cisco IOS-XE Release 3.5.8SQ**

There are no new software features for Cisco IOS-XE Release 3.5.8SQ.

## **New Software Features in Cisco IOS-XE Release 3.5.7SQ**

There are no new software features for Cisco IOS-XE Release 3.5.7SQ.

## New Software Features in Cisco IOS-XE Release 3.5.6SQ

There are no new software features for Cisco IOS-XE Release 3.5.6SQ.

## New Software Features in Cisco IOS-XE Release 3.5.5SQ

There are no new software features for Cisco IOS-XE Release 3.5.5SO.

#### New Software Features in Cisco IOS-XE Release 3.5.4SQ

There are no new software features for Cisco IOS-XE Release 3.5.4SQ.

## New Software Features in Cisco IOS-XE Release 3.5.3SQ

There are no new software features for Cisco IOS-XE Release 3.5.3SO.

## New Software Features in Cisco IOS-XE Release 3.5.2SQ

There are no new software features for Cisco IOS-XE Release 3.5.2SQ.

## New Software Features in Cisco IOS-XE Release 3.5.1SQ

The following sections describe the new software features supported in the Cisco IOS-XE Release 3.5.1SQ.

## **Video QAM Monitoring for Bandwidth Oversubscription**

QAM bandwidth oversubscription is determined by measuring the bandwidth usage of a QAM and validating it against the capacity of the QAM. If the bandwidth usage exceeds the capacity for an interval of 30 seconds, the QAM is declared as oversubscribed. When you enable QAM monitoring for QAM bandwidth oversubscription, all the line cards in the chassis monitor the QAMs associated with them and report any QAM oversubscription activity in the form of console messages. You can also enable QAM bandwidth oversubscription trap to receive notifications on a NMS (network management system). QAM monitoring is disabled by default.

For more information about this feature, see the RFGW-10 Video chapter in Cisco RF Gateway 10 Software Configuration Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf\_gateway/feature/guide/rfgw\_scg/rfgw10\_video.html

#### Cisco RFGW-10 DS-384 Line Card Reset

Bass SEU interrupts are single event upset (SEU) interrupts received from Bass field-programmable gate array (FPGA). You can enable Cisco RFGW-10 DS-384 line card reset when Bass SEU interrupt is received.

For more information about this feature, see the Cisco RF Gateway 10 DS-384 Line Card Hardware Installation Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/linecard/ds384/installation/guide/b ds384 hig.html

#### Cisco RF Gateway 10 (RFGW-10) GUI Enhancements

#### **NGOD-D6 Support**

Effective with Cisco IOS-XE Release 3.5.1SQ, NGOD-D6 interface is enhanced to support RFGW-10 GUI.

#### **Read-Only GUI Access**

Users logged in with the login name "guest" will only have read-only access to the RFGW-10 GUI.

For more information, see the Cisco RFGW-10 GUI User Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/feature/guide/rfgw10 gui.html

## **Enabling kernel dumper for RFGW-10 DS-384 Line Card**

The kernel dumper program is invoked when the execution of kernel is disrupted. It collects vital information and dumps them in dump logs. These logs are compressed and written to the line card flash before a normal reboot is invoked.

For more information, see the Cisco RF Gateway 10 DS-384 Line Card Hardware Installation Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/linecard/ds384/configuration/guide/b ds384 scg.html

## New Software Features in Cisco IOS-XE Release 3.5.0SQ

The following sections describe the new software features supported in the Cisco IOS-XE Release 3.5.0SQ.

## **Privacy Mode Encryption (PME)**

Effective with Cisco IOS\_XE 3.5.0SQ, PME is the video encryption technology used for Video-on-demand (VOD). It enables easy encryption of VOD programs to ensure the programs are viewed only by the authorized subscribers.

PME encryption supports encryption in both local and remote modes. To enforce PME, use the **cable linecard encryption** command.

For more information on PME, see the Cisco RFGW-10 Software Configuration Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/feature/guide/rfgw scg.html

For more information on the **cable linecard encryption** command, see the *Cisco RFGW-10 Command Reference* at:

http://www.cisco.com/c/en/us/td/docs/cable/rf\_gateway/command/reference/b\_rfgw10\_cmd\_ref.html

#### NGOD-D6 QAM Partition

Effective with Cisco IOS\_XE 3.5.0SQ, Cisco RFGW-10 supports a new interface called NGOD-D6 for local video QAMs. It interfaces between EQAM and NMS. It is a service discovery and registration interface and the protocol used in this interface is VREP (Video Registration Protocol).

For more information on NGOD-D6 QAM Partition, see the Cisco RFGW-10 Software Configuration Guide at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/feature/guide/rfgw scg.html

## **Powerkey Alarm Delay**

Effective with Cisco IOS-XE 3.5.0SQ, a new command **cable video scrambler alarm-start-delay** is introduced. This command is used to configure the delay timer for scrambling alarms. If the alarm is cleared within the configured delay time, then it will not be displayed on the console.

For more information on the **cable video scrambler alarm-start-delay** command, see the *Cisco RFGW-10 Command Reference* at:

http://www.cisco.com/c/en/us/td/docs/cable/rf\_gateway/command/reference/b\_rfgw10\_cmd\_ref.html

#### **Enable Scrambling for Tier-based Mode**

Effective with Cisco IOS-XE 3.5.0SQ, a new command **scrambling [Enable | Disable]** is introduced. It is used to enable or disable the tier-based scrambling of the line card.

For more information, see the Cisco RFGW-10 Command Reference at:

http://www.cisco.com/c/en/us/td/docs/cable/rf gateway/command/reference/b rfgw10 cmd ref.html

## Modified Software Features in Cisco IOS-XE Release 3.5.9SQ

There are no modified software features for Cisco IOS-XE Release 3.5.9SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.8SQ

There are no modified software features for Cisco IOS-XE Release 3.5.8SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.7SQ

There are no modified software features for Cisco IOS-XE Release 3.5.7SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.6SQ

There are no modified software features for Cisco IOS-XE Release 3.5.6SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.5SQ

Effective with Cisco IOS-XE 3.5.5SQ, the command **cable qdepth disable** is introduced to enable a customer specific scenario. For more information, see the Cisco RF Gateway 10 Command Reference guide.

## Modified Software Features in Cisco IOS-XE Release 3.5.4SQ

There are no modified software features for Cisco IOS-XE Release 3.5.4SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.3SQ

There are no modified software features for Cisco IOS-XE Release 3.5.3SQ.

#### Modified Software Features in Cisco IOS-XE Release 3.5.2SQ

There are no modified software features for Cisco IOS-XE Release 3.5.2SQ.

## Modified Software Features in Cisco IOS-XE Release 3.5.1SQ

#### **Enhancements to CLI**

#### **Modifications in the Existing Command**

- Effective with Cisco IOS-XE Release 3.5.1SQ, the command cable video scrambler for EIS is modified
  as follows:
  - tcp port has been changed to accommodate the range value 1 to 65535.
  - The CLI option "cp-overrule" has been changed to accommodate the range value 1 to 3600 (duration in seconds).
- The CLI option "max-comp-time" under the ECMG overrule configuration has been changed to accommodate the range 0 to 60000 (duration in msec).

#### **Modifications in the Existing Show Command Output**

- The "Bandwidth Used" field in the **show controllers qam** *slot/port.channel* **downstream** command, which used to display the input rate will now reflect the output bitrate.
- The "Total Measured Bitrate" field in the **show cable video session all summary** command which used to display the input rate will now reflect the output bitrate.

## Modified Software Features in Cisco IOS-XE Release 3.5.0SQ

## Cisco RF Gateway 10 (RFGW-10) GUI Enhancements

Effective with Cisco IOS-XE Release 3.5.0SQ, the GUI application has been enhanced to support PME and Dual Encrypt license configuration.

For more information, see the Cisco RFGW-10 GUI User Guide at the following URL:

http://www.cisco.com/c/en/us/td/docs/cable/rf\_gateway/feature/guide/rfgw10\_gui.html

#### **Enhancements to CLI**

#### **Additional Fields added to Existing Show Command Output**

- Effective with Cisco IOS-XE 3.5.0SQ, the output of the **show cable video statistics packet** command is modified. The Total Multicast Sessions and Total Unicast Sessions fields are added to display the total multicast sessions and total unicast sessions.
- Effective with Cisco IOS-XE 3.5.0SQ, the output of the **show cable video session all** command, the Current State field is added to display the current state of the session.

For more information, see the Cisco RFGW-10 Command Reference at:

http://www.cisco.com/c/en/us/td/docs/cable/rf\_gateway/command/reference/b\_rfgw10\_cmd\_ref.html.

## **MIBs**

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locater found at the following URL:

http://tools.cisco.com/ITDIT/MIBS/servlet/index

To access Cisco MIB Locater, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check verifies that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password is e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

http://tools.cisco.com/RPF/register/register.do

For information about the MIBs supported by the Cisco RFGW-10 in common with Cisco IOS-XE, see the Cisco RF Gateway 10 MIB Specifications Guide.

## New and Changed MIB Information in Cisco IOS-XE Release 3.5.9SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.9SQ.

## New and Changed MIB Information in Cisco IOS-XE Release 3.5.8SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.8SQ.

## New and Changed MIB Information in Cisco IOS-XE Release 3.5.7SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.7SQ.

## New and Changed MIB Information in Cisco IOS-XE Release 3.5.6SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.6SQ.

## New and Changed MIB Information in Cisco IOS-XE Release 3.5.5SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.5SQ.

#### New and Changed MIB Information in Cisco IOS-XE Release 3.5.4SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.4SQ.

#### New and Changed MIB Information in Cisco IOS-XE Release 3.5.3SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.3SQ.

#### New and Changed MIB Information in Cisco IOS-XE Release 3.5.2SQ

There are no new or changed MIB information for Cisco IOS-XE Release 3.5.2SQ.

#### New and Changed MIB Information in Cisco IOS-XE Release 3.5.1SQ

The following MIB is modified in Cisco IOS-XE Release 3.5.1SQ:

CISCO-QP-LBG-MIB

Effective with Cisco IOS-XE Release 3.5.1SQ, the Cisco RF Gateway-10 supports *cqlQamOverSubscribedAlert* MIB trap and *cqlqpQamOversubscribedStatus* and *cqlqpServerIpList* MIB objects.

#### New and Changed MIB Information in Cisco IOS-XE Release 3.5.0SQ

The following MIBs are added in Cisco IOS-XE Release 3.5.0SQ:

- CISCO-QP-LBG-MIB
- CISCO-DTI-EXT-MIB

The following MIB is modified in Cisco IOS-XE Release 3.5.0SQ:

• CISCO-VPDN-MGMT-MIB

# **Important Notes**

The Cisco RF Gateway 10 Supervisor Engine 7-E uplink ports are not recommended for data or management traffic. The Supervisor 7-E card has four uplink ports on its front panel. Only the top two ports are active in redundancy mode. However, in redundancy mode, packet loss occurs in the traffic paths between the uplink ports on the standby Supervisor card and the switch fabric on the active Supervisor card. There is no packet loss for uplink ports on active supervisors. The uplink ports on the Cisco RFGW-10 DS-384 and the Cisco RFGW-10 DS-48 line cards are recommended for data and management traffic.

## Cisco IOS-XE Release 3.5.9SQ

There is no important notes for Cisco IOS-XE Release 3.5.9SQ.

## Cisco IOS-XE Release 3.5.8SQ

There is no important notes for Cisco IOS-XE Release 3.5.8SQ.

## Cisco IOS-XE Release 3.5.7SQ

There is no important notes for Cisco IOS-XE Release 3.5.7SQ.

#### Cisco IOS-XE Release 3.5.6SQ

There is no important notes for Cisco IOS-XE Release 3.5.6SQ.

#### Cisco IOS-XE Release 3.5.5SQ

There is no important notes for Cisco IOS-XE Release 3.5.5SQ.

#### Cisco IOS-XE Release 3.5.4SQ

There is no important notes for Cisco IOS-XE Release 3.5.4SQ.

## Cisco IOS-XE Release 3.5.3SQ

- Effective with Cisco IOS-XE Release 3.5.3SQ, fail-to-clear-duration timeout command is introduced to configure DVB encrypted session to flow clear for a specified duration.
- Effective with Cisco IOS-XE Release 3.5.3SQ, pme mgmt-ip is introduced to configure RFGW10 management IP as part of PME configuration for CEM communication.
- Effective with Cisco IOS-XE Release 3.5.3SQ, the ONID range is 0 65535.

## Cisco IOS-XE Release 3.5.1SQ

Effective with Cisco IOS-XE Release 3.5.1SQ, QP ERMI span is supported.

## Cisco IOS-XE Release 3.5.0SQ

- Effective with Cisco IOS-XE Release 3.5.0SQ, the following are supported:
  - 384 Video QAMs for Annex B/C
  - 288 Video QAMs for Annex A or mix of Annex A and B/C.
  - All video QAMs are PowerKey/DVB/Dual-crypt/PME encryption capable.
- Effective with Cisco IOS-XE Release 3.4.1SQ, the reserved PID range is 256 8159.
- Effective with Cisco IOS-XE Release 3.4.1SQ, the **show cable depi-ctrl-sessions teardown details** command is introduced to view the session failure reason and the time of failure for particular DEPI session.
- Effective with Cisco IOS-XE Release 3.4.1SQ, the **cable downstream 8MHz-overlap-start-freq** *frequency* command is introduced to configure the starting frequency for the 8MHz overlap block for Annex A.
- Effective with Cisco IOS-XE Release 3.4.0SQ, the **onid** keyword is removed from the **cable downstream tsid** command and replaced with the **cable downstream onid** command.
- Effective from Cisco IOS-XE Release 3.4.0SQ, if Annex A is configured, then the Logical QAM groups must be configured contiguously, for example, lqam-group1, lqam-group2, lqam-group3, and so on.

- Effective with Cisco IOS-XE Release 3.4.0SQ, while using the **replicate-qam** command, the keywords **qam**, **Qam**, **qam-red**, **Qam-red** should be explicitly typed. Typing q or Q and pressing **Tab** will not auto-complete it.
- Effective with Cisco IOS-XE Release 3.4.0SQ, a replicate with DEPI remote learn should be removed from the QRG before defaulting it, if not it may lead to QRG corruption.
- Effective with Cisco IOS-XE Release 3.4.0SQ, a PID should be filtered before scrambling a session, filtering of PID on the scrambled session can lead to unwarranted results.
- Effective with Cisco IOS-XE Release 3.4.0SQ, bulk QRG removal is supported only through GUI. It takes about 3 seconds to complete the action with this option. While using this option the user should not simultaneously access the console to enter any commands. If the console is accessed simultaneously, the QRG removal in the standby supervisor card may be affected.
- Effective with Cisco IOS-XE Release 3.4.0SQ, scrambling of MPTS remap sessions are not supported.

## **Limitations and Restrictions**

This section lists the limitations and restrictions for the Cisco IOS-XE Release 3.5SQ train on the Cisco RFGW-10:

- LQAM-group configuration restrictions
  - An Iqam-group can have a maximum number of eight QAM channels
  - It can be spanned across two QAM ports with a maximum of four QAM channels per port
  - It should be associated in an ascending order of QAM interfaces or ports
- Online insertion and removal (OIR) of active Supervisor card is not supported. You must force switchover to the standby Supervisor card before removing the active card.
- The limitation for ERMI is that only 48 TSIDs are supported on one Service Group (SG).
- Use the ASI port in maintenance window only.
- Policing cannot be applied to bitrate for streams and the session reserved bitrate.
- The start-frequency of pilot QAM port and replicate QAM port should not be different.
- Before a QAM Replication Group (QRG) is configured, the LCRED must be configured.
- Some of the below system commands for querying CPU and Memory should not be executed continuously for better operation and performance
  - · show memory
  - show cpu
  - show redundancy
- After a QRG is configured, no other configuration changes are supported on replicate QAM except below:
  - shutdown (admin)
  - no shutdown (admin)
  - default (except remote learn QAMs)
- After a QRG is configured, no other configuration changes are supported on pilot QAM except below:
  - shutdown (admin)
  - no shutdown (admin)
  - default (except remote learn QAMs)
  - · rf-shutdown

#### no rf-shutdown

- The RF parameters of an RF profile being used in a QRG cannot be modified.
- The number of passthru sessions is restricted to one per QAM channel.
- These are the QAM limitations in the Cisco IOS-XE Release 3.5.0SQ:
  - Annex B/C
- 1024 total DS channels—384 pilot QAMs and 640 replicate QAMs
- 256 DEPI QAMs
- 384 video QAMs—All video QAMs are PowerKey/DVB/Dual crypt/PME encryption capable
  - Annex A or mix of Annex A and B/C
- 768 total—288 pilot QAMs and 480 replicate QAMs
- 288 video QAMs—All video QAMs are PowerKey/DVB/Dual crypt/PME encryption capable
- 192 DEPI OAMs
- 144 Annex—A QAMs per load balancing group (LBG)
- Annex A specifications allows user defined symbol rates only for video.
- Static remote DEPI is not supported.
- Cisco IOS-XE Release 3.5.0SQ provides limited support to Etherchannel.
- Effective with Cisco IOS-XE Release3.4.0SQ, PowerKey/DVB encryption licenses are changed to feature-based from count-based.
- Effective with Cisco IOS-XE Release3.4.0SQ, the max-carrier number configured on a port includes only pilot QAMs and non-QRG channels on that port. The max-carrier number does not include replicate OAMs.
- Jumbo Frames are not supported on line cards.
- RFGW-10 booting up with older configuration that does not have management IP can not be able to establish CEM connectivity anymore. Customer should choose a particular interface for connecting to CEM and provide the IP address of that interface as PME management IP.

## **Related Documentation**

These documents are available for the Cisco RFGW-10 platform on Cisco.com:

- Cisco RF Gateway 10 Hardware Installation Guide
- Configuring the Cisco RFGW-10 DS-384 Line Card
- Cisco RF Gateway 10 Command Reference
- Cisco RF Gateway 10 GUI
- Cisco RF Gateway 10 Software Feature and Configuration Guide
- Software License Activation for Cisco RF Gateway 10 Line Cards
- Cisco RF Gateway 10 MIB Specification Guide
- Cisco RF Gateway 10 Quick Start Guide
- Release Notes for Cisco RF Gateway 10
- Cisco RF Gateway 10 Remote Provisioning Utility User Guide

# **Obtaining Documentation and Submitting a Service Request**

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see What's New in Cisco Product Documentation.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed. The RSS feeds are a free service.



## **Caveats**

This section describes open and resolved severity 1 and 2 caveats and select severity 3 caveats:

- The "Open Caveats" sections list open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.
- The "Resolved Caveats" sections list caveats resolved in a specific release, but open in previous releases.
- Cisco Bug Search, on page 17
- Open Caveats for Cisco IOS-XE Release 3.5.9SQ, on page 18
- Resolved Caveats for Cisco IOS-XE Release 3.5.9SQ, on page 18
- Open Caveats for Cisco IOS-XE Release 3.5.8SQ, on page 18
- Resolved Caveats for Cisco IOS-XE Release 3.5.8SQ, on page 18
- Open Caveats for Cisco IOS-XE Release 3.5.7SQ, on page 19
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- Resolved Caveats for Cisco IOS-XE Release 3.5.0SQ, on page 24

# Cisco Bug Search

Cisco Bug Search Tool (BST), the online successor to Bug Toolkit, is designed to improve effectiveness in network risk management and device troubleshooting. You can search for bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. For more details on the tool, see the help page located at <a href="http://www.cisco.com/web/applicat/cbsshelp/help.html">http://www.cisco.com/web/applicat/cbsshelp/help.html</a>.

# Open Caveats for Cisco IOS-XE Release 3.5.9SQ

There are no open caveats for Cisco IOS-XE Release 3.5.9SQ.

# **Resolved Caveats for Cisco IOS-XE Release 3.5.9SQ**

Caveat ID Number	Description
CSCvi95652	RFGW-10 Sup 7-E Active SUP crashes due to corruption of the lbg routes.
CSCvj70613	4K Macroblocking issue when process fast input SPTS
CSCvp08673	ifOutOctets for Qam channel displaying Bandwidth instead of output packets
CSCvq33294	Active supervisor crash when standby supervisor is hung

# Open Caveats for Cisco IOS-XE Release 3.5.8SQ

There are no open caveats for Cisco IOS-XE Release 3.5.8SQ.

# **Resolved Caveats for Cisco IOS-XE Release 3.5.8SQ**

Caveat ID Number	Description
CSCej44331	No socket for the specified port# message when registering endpoints
CSCtr78358	YAP: sh platform software monitor all asserts
CSCuq11612	Mismatch System returned to ROM Time
CSCuq51351	SQC : TFTP copy doesn't follow ip source-interface via Fa1
CSCvc03110	GUI: Opening tabs in new window gives Admin privilege to Guest User
CSCvc29631	Slogs from video module needs to be throttled
CSCvc69282	Machine check exception handling failed
CSCve89377	RFGW-10 Sup Moka CRC Causes Slot 3-10 Linecard Restarts
CSCvf47351	When the 14 # TCC card is active, the Alarm LED will turn off
CSCvg47973	"Bundle Session" field header is missing in show gqi statistics CLI command
CSCvg79718	show CLI modification to display multicast group IP

# Open Caveats for Cisco IOS-XE Release 3.5.7SQ

Caveat ID Number	Description
CSCve89377	RFGW-10 Sup Moka CRC Causes Slot 3-10 Linecard Restarts.

# **Resolved Caveats for Cisco IOS-XE Release 3.5.7SQ**

Caveat ID Number	Description
CSCve94296	Adding set and clear alarm message when power supply detects low voltages
CSCve40421	Disable TCC switchover when there is no DTI connection
CSCve51401	DS-384:bb_video crash observed while copying PMT
CSCve77926	PCR PID missing on output when PCR is incoming on separate PID
CSCvd13549	Pixelization on video observed on some Set Top box
CSCvd04799	RFGW10: Rate Limit error messages LC_ERRMSG_VIDEO_UNKNOWN_PROG_NUM Snoop: IN 555, prog 2
CSCve35042	SUP CLI to disable ignorable PSI err msg notifications
CSCve26394	Tier-based encryption error

# Open Caveats for Cisco IOS-XE Release 3.5.6SQ

Caveat	Description
CSCvd13549	Pixelization on video observed on some Set Top box

# **Resolved Caveats for Cisco IOS-XE Release 3.5.6SQ**

Caveat ID Number	Description
CSCue46475	4500 switch running IOS-XE crashes after show version running
CSCvd48893	Cisco IOS and IOS XE Software Cluster Management Protocol Remote Code Execution Vulnerability

# **Open Caveats for Cisco IOS-XE Release 3.5.5SQ**

Caveat	Description
CSCvb81818	Standby SUP crashes when defaulting Video & QAM configurations
CSCvb86285	IOSXE-2-PLATFORM: Active SUP reloads due to cli_agent crash
CSCuv84976	Show CLI not displaying depi session end points

# **Resolved Caveats for Cisco IOS-XE Release 3.5.5SQ**

Caveat ID Number	Description
CSCuv83472	Annex C-256 QAMS bandwidth NOT working more than 33 Mbps
CSCvc55227	CLI to enable/disable RLD qdepth and QAM oversubscription events for DEPI
CSCuw19675	used_bw shows -ve value during oversubscription with PMT change
CSCvc10738	RF Switch Card removal causes TCC crash
CSCvb95425	Optimising SteelHead 'Rx Buffer Underflow' event handling to avoid service outage
CSCvc83750	RFGW-10 PCR drift causing loss of audio on some subscriber channels
CSCva86389	RFGW-3-BULK_DNLD failure observed with Kernel Dumper configuration

# **Open Caveats for Cisco IOS-XE Release 3.5.4SQ**

Caveat	Description
CSCvb81818	Standby SUP gets reset when defaulting QAM, video labels, and load balancing group routes.
CSCvb86285	Active Supervisor card fails, but the standby Supervisor card takes over the process.

# **Resolved Caveats for Cisco IOS-XE Release 3.5.4SQ**

Caveat	Description
CSCsm05024	After running data traffic for several hours, when trying to synchronize configuration, a router processor (RP) switch-over may reload the new standby RP.

Caveat	Description
CSCul24407	LC Crash with SH Watchdog Expired Error
CSCun32800	On line cards where powerkey encryption is enforced, when running longevity with VOD and SDV churn, error messages similar to the following appear: Requested PID could not be allocated.
CSCuy82194	Active Supervisor Engine crashes when creating ACL for Downstream External PHY Interface (DEPI) route.
CSCuz59967	Active Supervisor Engine fails because of memory corruption.
CSCva77674	The Switch or the Syslog server does not show any alert or warning messages, when the output voltage of the power supply is zero.
CSCva77710	Set-top box shows black screen and the following error messages appear in logs because of some configuration changes in the LQAM ID numbers.
	%RFGW-3-LINECARD_ERRMSG_ERR: SLOT 7:LC_ERRMSG_VIDEO_PROG_NUM_IN_USE: OUT 4, QAM 73, prog 62351
	%RFGW-3-LINECARD_ERRMSG_ERR: SLOT 7:LC_ERRMSG_VIDEO_PSI_BLOCKED Out PAT: id 4, error File exists
CSCvb23962	SNMP traps are not delivered when the output voltage of the power supply is zero.
CSCvb42652	Active Supervisor card fails over to the standby Supervisor.
CSCuz04980	When a line card boots up, the IPC buffer allocated for video process is depleted.
CSCvb48099	Line card fails and automatically recovers because of QNX Kernel exception handling.
CSCva97280	The quality of 4K videos is affected due to macro blocking when streamer server delivers 4K program with fast clock.
CSCuv15286	The DS384 Line card resets with the following error message because of a UPX RF power level that was out of spec:  LC_ERRMSG_FAILOVER_TRIGGER_UPX
CSCvb49802	SUP CLI implementation for disabling MPEG compliance.

Caveat	Description
CSCuj94485	TCC card fails to boot up with this error message  TCC_ERRMSG_GEN_UCPC_SAME_AS_OCPC and it causes other LC to be not operational. This issue will be seen only during an image upgrade.
CSCux03328	Video line card fails when you shut unshut video src in simulcrypt sessions.

# Open Caveats for Cisco IOS-XE Release 3.5.3SQ

Caveat	Description
CSCuu39578	LCHA reports,RFGW_MCAST:Unable to delete,txint(slot=7, gige=5) not found
CSCuj79992	%IOSXE-2-PLATFORM: process ng_dumper: Process cli_agent

# **Resolved Caveats for Cisco IOS-XE Release 3.5.3SQ**

Caveat	Description
CSCuy17603	Active SUP crashes due to lcc_send_depi_stats_msg()
CSCuv93397	bb_video LC crash is seen after 12 hours SDV and VOD churn
CSCuy87016	CEM communication through loopback as mgmt ip
CSCuw62801	DS384 line card crash due to P4080 Qam channel Mutex lock not released
CSCuz02016	Dualcrypt : VOD freeze on VSRM Failover for first Crypto Period
CSCuz00779	ECMG connectivity issue when Tenx/9 is in L2 mode
CSCux32246	Handling Missing SUP Switchover interrupt in DS384 LC.
CSCux35295	Kernel core not generated during one Crash trigger instance
CSCuz04733	Macro blocking issue seen on Table Based VOD.
CSCux57341	RFGW-10 does not support ifOutOctet for video qam
CSCuy39698	RFGW-10 DS384 Intermittent VoD Black Screen
CSCuv46928	RFGW-10 Management F1 not pingable after SUP switchover.
CSCuw27865	RFGW-10: CLI for feature, Fail to Clear Duration
CSCuw61253	RFGW-10: encrypted Video freeze after LC Switchover

Caveat	Description
CSCun12989	SQA3: Observing Sup crash after resetting LC followed by reloading peer
CSCux45679	TACACS encrypts usermane
CSCuw76263	TCC Card crash causes SUP to hang
CSCux32683	To fix ONID configuration discrepancy between VSRM & RFGW10
CSCuv84881	When doing switchover from slot 12 back, DEPI sessions are stuck
CSCuy87141	LC stuck in INIT state on active SUP failover
CSCva24217	IPC leaks in Linecards causing mbuffer depletion leading LC's to reset
CSCva77002	DS384: Stby LC DVB conform , not sync with Primary LC

# Open Caveats for Cisco IOS-XE Release 3.5.1SQ

Caveat	Description
CSCuv84881	When doing switchover from slot 12 back, DEPI sessions are stuck
CSCuu02591	DS-384 card crash due to bb_depi launch too many times (1)
CSCuv46928	RFGW-10 Management F1 not pingable after SUP switchover

# **Resolved Caveats for Cisco IOS-XE Release 3.5.1SQ**

Caveat	Description				
CSCur43251	POODLE protocol-side fix: HTTPS Client				
CSCuv13913	RFGW10 - 3.3.1 XPP Error causes loss of forwarding plane no SUP failover				
CSCts66733	Crash at TFTP server				
CSCus55348	RFGW10 DS-384 keeps crashing when connected with remote switch or 3gspa				
CSCus78677	DS-384 crash - process bb_video launch too many times				
CSCuu18560	RFGW-10 DS-384 crash command packet channel mismatch and seq number error				
CSCuv78230	RFGW-10 DS-384 cpld_align_fifo_underflow did not cause a failover				
CSCti71472	MF: flowmgr_pre_flow_processing failed 248 message when turn on service				
CSCto69428	Recover for VFE IM portVlanDirectParityError/portVlanHashParityError				
CSCuj03989	RFGW-3-UNEXPECTED: STANDBY:RFGW_MCAST: Unable to delete				

Caveat	Description					
CSCum95021	DS-384 LC reboots with bb_root.core and io_pkt_v4.core during LC bootup					
CSCuo89445	LC 12 was disabled and not loading until standby SUP reloaded					
CSCuq87910	tcc_dti_stats crash occurred while executing 'show cable clock'					
CSCut82422	DS48 LC failed due to yellowfin fatal error					
CSCuu02767	RFGW10 - process_video_session_summary - process bb_video launch					
CSCuu18788	DATACORRUPTION-1-DATAINCONSISTENCY when polling ceExtSysBootImageList					
CSCuu68010	Interfaces in running config out of order after DS384 failover					
CSCuu78415	D6 Protocol crashes on receiving an unsupported messages from NMS server					
CSCuv07545	%Error: Unable to change partition binding					
CSCuv10527	DS384 - Losing heartbeats after executing 'ipc_debug_show_queue_summary'					
CSCuw02912	Private section without syntax was not updated					
CSCuw24111	UPX High priority event (SET): RF Power Level out of spec					
CSCuw48032	SQD01: bb_video launch on config stream having table 0 & 1 in PMT PID					
CSCuw39597	Memory allocation Failure in ERRP DB					

# Open Caveats for Cisco IOS-XE Release 3.5.0SQ

Caveat	Description
CSCus23396	CPUHOG: Task is running for (2024)msecs, more than (2000)msecs (0/0)
CSCus27753	Multiple server ip's and same ip octet display issue.

# **Resolved Caveats for Cisco IOS-XE Release 3.5.0SQ**

Caveat	Description
CSCtz44595	DEPI: duplicate depi sessions being created.
CSCus25477	After GQI churn, DVB scrambling encrypt type is not displayed.

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