GoQAM Software Version 1.1.4

Release Notes and Installation Instructions

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

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About This Guide

Introduction

This document provides the following information and procedures for upgrading a Gigabit Overlay Quadrature Amplitude Modulation modulator (GoQAM) to GoQAM software version 1.1.4.

Important: This software version supports PowerKEY® encryption and the following devices:

- Radio frequency (RF) GoQAM
- Intermediate frequency (IF) GoQAM

Note: The RF GoQAM is a software-modified Model D9477-1 Gigabit QAM (GQAM) Modulator. The IF GoQAM (Model D9477-3) is similar to the RF GoQAM, but does not require or contain RF cards, and it has a different back panel. Both are integral components of our Overlay solution.

Purpose

This document enables system operators to perform the following tasks:

- Upgrade the GoQAM with software version 1.1.4.
- Roll back to earlier versions of software in the unlikely event that a site encounters problems after upgrading the software.

Scope

This document provides instructions for upgrading GoQAMs with GoQAM software version 1.1.4. It does not provide instructions for installing a GoQAM modulator in your headend.

Note: For instructions to install a GoQAM modulator in your headend or for a complete description of GoQAM features, refer to the *GoQAM Modulator RF Output and IF Output Hardware Installation and Operation Guide* (part number 4004834).

Who Should Read This Publication?

System operators or field service engineers who are responsible for installing the GoQAM software onto a GoQAM modulator should read this publication.

Document Version

This is the second release of this document.

1

Introducing GoQAM Software Version 1.1.4

Introduction

This chapter lists the requirements for upgrading the RF and IF GoQAMs with software version 1.1.4, while also describing a feature enhancement and performance improvements over previous releases of GoQAM software. This chapter also includes the CR implemented in this release. For additional details, go to ***What's Fixed?*** (on page 2).

Note: For a complete description of the hardware, refer to the *GoQAM Modulator RF Output and IF Output Hardware Installation and Operation Guide* (part number 4004834).

In This Chapter

What's Fixed?

Introduction

This section provides a description of the CR implemented in this software product.

Implemented CR

CR 71947: GoQAM Software Now Filters Payload-Less Transport Stream Packets

In prior releases of GoQAM software, a high density of empty program clock reference (PCR) packets in the input stream caused intermittent tiling and degraded picture quality on overlay content delivered to M-Card hosts. This change prevents the selection of empty PCR packets for overlay splicing, thus correcting the issue. **CR 71947** addressed this issue.

What Are the Site Requirements?

System Release Compatibility and Prerequisites

This software can be installed on a DBDS that is running SR 2.7/3.7/4.2 and related Service Packs.

For a complete configuration listing, or to upgrade your system, contact Cisco Services.

Application Platform Release Dependencies

The following table shows the set-top and Multi-Stream CableCARD (M-Card) module software application platform release dependencies for this software release.

Important: Failure to have the correct application platform software *or later* installed on your system *prior* to installing the software can result in video freezing and black screens when using video-on-demand (VOD) or xOD applications.

Set-Top or M-Card Platform	Operating System (OS)	SARA*	PowerKEY Conditional Access Version
Explorer 8300 DVR v. 1.4.3a10 or later v. 1.5.2	 OS 6.14.74.1 OS 6.14.79.1	 1.88.22.1 1.89.16.2	 3.9 3.9
Explorer 8000/8010 DVR v. 1.4.3a10 or later v. 1.5.2	 OS 6.12.74.1 OS 6.12.79.1	 1.88.21.1 1.89.16.2	 3.7.5 3.7.5
Explorer 3250HD MR4 P1 or later	OS 3.24.5.2	1.59.18.1	3.9
Explorer 2xxx, 31xx, 3200, 3100HD	OS 3.13.6.1	1.60.6.2	1.0.6.20 (Explorer 2000s) 1.0.7 (all others)
Explorer 4250HDC Exp. 2.0.0 (0701) or later	OS 6.20.28.1	1.61.5.a100	4.0.1.1
Explorer 8300HDC DVR 1.5.3 (0801) or later	OS 6.20.28.1	1.90.5a101	3.9.7.13
M-Card OS 1.1.10p5 or later	OS 1.1.10p5	Not applicable	Not applicable

* *Cisco Resident Application*

Important: If you are not using the Cisco Resident Application, contact your resident application provider to verify that you have the most recent version.

Software

This software product includes the following software code:

- GoQAM Host Application code 1.1.7
- GoQAM Host Boot code 1.0.1
- GoQAM Input Application code 1.0.0
- GoQAM Input Boot code 1.0.0
- GoQAM Output Application code 1.0.1
- GoQAM Output Boot code 1.0.0
- GoQAM RF Application code 2.5

Hardware Supported

This software product supports both the IF GoQAM and the RF GoQAM.

When to Perform the Upgrade

To reduce the impact of service interruptions, perform the upgrade during a scheduled maintenance window.

Known Issues

This software product currently has no known issues.

2

Upgrading the Software

Introduction

This chapter describes how to upgrade the hardware with the latest software version.

In This Chapter

Upgrade Process Overview

Before You Begin

Before you upgrade, be sure that your system meets the criteria specified in ***What Are the Site Requirements?*** (on page 3).

If you will not be downloading the software from our File Transfer Protocol (FTP) site, make sure that you have obtained the CD, **GoQAM Software V1.1.4**, part number 4021958.

Time to Complete

When upgrading the software, consider the following tasks and the amount of time required for each:

- Completing pre-upgrade tasks takes from 30 to 45 minutes.
- If you are upgrading from an FTP site, allow an additional 10 to 15 minutes to download the software from the FTP site. The speed of the connection and the size of the files will determine the actual download time.
- Downloading new software takes approximately 5 minutes for each modulator.
- For modulators that carry broadcast sessions, the DNCS will restart the sessions after loading the new software.
- For modulators that carry VOD sessions, only those sessions that are determined to be active will be restarted. Because subscribers may tune away during the time when the modulator reboots, the total number of recovered sessions may not match the original number of sessions on the modulators.

Note: It is not necessary to rebuild non-VOD sessions on the modulators that you upgrade. The non-VOD sessions are rebuilt automatically after the new software is downloaded.

Subscriber Impact

When modulators are reset (rebooted) during the upgrade, the services they carry are interrupted. DHCTs will show a frozen picture or black screen until the upgrade is complete and the DNCS has restarted all of the active sessions on the modulator.

Impact of TVs with QAM Tuners

When upgrading modulators to new releases of software, you must reset the modulators in order for the devices to download the new software from the DNCS. When the software download is complete, the DNCS then recreates any broadcast sessions that were active on the modulators. The DNCS also activates encryption for any secure services that were running on the modulators.

An increasing number of TVs are being manufactured and sold with QAM tuners that can access services that are not properly encrypted. Therefore, as a part of the upgrade process, we encourage you to verify that the DNCS re-establishes encryption for *all* secure services on the upgraded modulators. This extra step ensures that no modulator that may be carrying content inappropriate for children can be viewed inadvertently when using a TV that is equipped with a QAM tuner. For additional information, refer to the following procedures:

- ***Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions*** (on page 26)
- ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27)

Process Overview

This section provides an overview of the software upgrade process.

Important: You should only upgrade to new releases of software if your network is running in a healthy state (for example, a system can boot and stage set-tops). If your network is not in a healthy state, you should not upgrade to the new release of software unless the new release contains a remedy to your system issue.

CAUTION:

If you are upgrading more than one modulator, download the new software to one modulator group (for example, all modulators in a single rack or hub) and verify its functionality before attempting to download the software to another modulator group. Verifying the functionality of one modulator group at a time enables you to better isolate any failures that may occur and enables you to minimize service interruptions.

Pre-Upgrade Tasks

Important: Performing the pre-upgrade tasks will not impact system performance.

1. Verify that the install tool (install_pkg) exists on the DNCS.

   Note: For procedures on how to check for the install_pkg tool, see ***Verify the Install Package Exists on the DNCS*** (on page 31).
2. Determine the configuration (config) files currently in use on your system.
3. Verify the software version associated with the configuration files.
4. Make a backup copy of the *current* GoQAM configuration file.

5 If you are upgrading more than one GoQAM, establish an order for upgrading the modulators.

6 Install the GoQAM software onto the DNCS from either our FTP site or from a CD.

Upgrade Tasks

Important: Performing the upgrade tasks will result in a temporary loss of service as modulators are reset.

1 Download the new software to the modulators.

2 If the modulators you are upgrading currently carry broadcast sessions, determine the sessions that are running on those modulators you plan to upgrade. This will allow you to verify that these sessions are rebuilt after the new software is downloaded to the modulators.

3 Verify that the upgraded modulator is functioning properly.

Important: Read and follow the directives contained in ***Impact of TVs with QAM Tuners*** (on page 9).

4 After the upgrade is complete, generate a Doctor Report using the **–av** option to verify system stability and functionality.

5 Perform System Validation Tests for your system release version.

Verify the Current Software Version on the DNCS

Introduction

Before attempting the software upgrade, verify the number of configuration files in use and what software version is associated with each configuration file.

On occasion, for testing purposes, the configuration file for a test device or a set of test devices is changed to a non-standard value (for example goqam111.config instead of goqam.config). If your site has been involved in this type of testing (and you are now ready to use the released code again), you should update the configuration file setting for your test units to reflect the default values.

Note: The default configuration file for the GoQAM is **/tftpboot/goqam.config**.

Important: Failure to correct a unit from using a unique configuration will result in the unit remaining in the uniquely-specified configuration. Specifically, it will not load the new code and it will continue to load the code specified in the unique configuration file.

In extremely rare cases, the configuration file may have been specified in or may need to be specified in the /etc/bootptab file. In the event that a headend device fails to load the code you intended it to receive, you should check to see if a unique file was specified either through the DNCS GUI or in the /etc/bootptab file before you contact Cisco Services for assistance.

Checking for Multiple Config Files

1. From the DNCS Administrative Console, click **Utilities** and click **xterm**. The xterm window opens.
2. Type **dbaccess dncsdb <<%** and press **Enter**.
3. Type **unload to goqamdata select qam_name, configfile from pdcaqam where modeltype=4;** and press **Enter**.

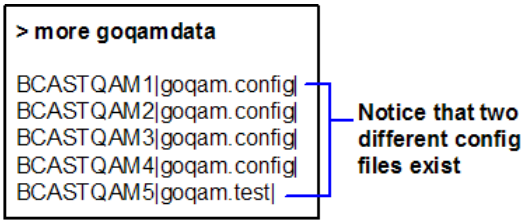
   Note: For an IF GoQAM, use the number "5" for "modeltype=" in this command.
4. Type % and press **Enter**. A result, similar to the following output, appears.

```
Database selected.

5 row(s) unloaded.

Database closed.
```

5 Type **more goqamdata** and press **Enter**. A result, similar to the following output, appears.



6 Did more than one config file appear?

- If **yes**, keep the xterm window open and go to step 7.
- If **no**, go to ***Checking the Software Version Associated with the config File*** (on page 13).

7 Do you need to continue to run different versions of software on some modulators in your network?

- If **yes**, refer to ***Load Multiple Versions of GoQAM Code*** (on page 33).
- If **no**, go to step 8.

8 Update the modulators to use the same config file by completing the following steps:

a From the DNCS Administrative Console, click **Element Provisioning** and click **QAM**. The QAM List window opens.

b Select the modulator, click **File** and select **Open**. The Set Up GoQAM window opens.

c Click **Advanced Parameters** and modify the configuration file, as needed.

9 Go to ***Checking the Software Version Associated with the config File*** (on page 13).

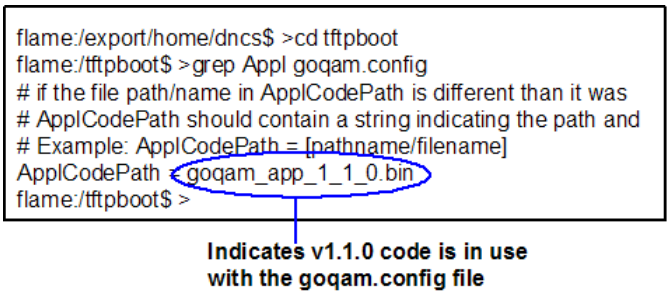
Checking the Software Version Associated with the config File

1 From the xterm window, type **cd /tftpboot** and press **Enter**. The tftpboot directory becomes the working directory.

2 For each unique config file identified in ***Checking for Multiple config Files*** (on page 11), type **grep Appl <config file name>** and press **Enter**.

Example: grep Appl goqam.config

Result: A result, similar to the following output, appears.



3 Is the correct software version installed?

Note: See the GoQAM Host Application code version listed in ***Software*** (on page 4) to verify the correct software version.

- If **yes**, type **exit** and press **Enter**.
- If **no**, go to ***Back Up the Current GoQAM Configuration File*** (on page 14).

Back Up the Current GoQAM Configuration File

Introduction

Before installing the new software, make a backup file of the config file currently installed on the DNCS by completing the procedure in this section.

CAUTION:

Do not install new software until you have created a backup of the configuration file currently installed on your system. Having a backup file will enable you to restore the previous version of software in the unlikely event of a failure.

Restore the previous version of software to your system only when recommended by Cisco Services.

Backing Up the Current GoQAM Configuration File

1. Complete the following steps to log on to the xterm window as **root** user.
   a. Type **su -** and press **Enter**. The password prompt appears.
   b. Type the root password and press **Enter**.
2. Type **cd /tftpboot** and press **Enter** to access the tftpboot directory.
3. Type **pwd** and press **Enter**. The /tftpboot directory name appears and indicates that you are in the correct directory.
4. Copy the current configuration file to a backup file.

   Example: Type **cp –p goqam.config goqam.config.old** and press **Enter.**

   Note: If you are using a non-standard config file (for example, goqam.test), substitute that config file name for goqam.config.

   Result: A copy of the goqam.config file (or the file name you specified), which contains configuration settings, is saved to a configuration file named goqam.config.old.
5. Remain logged in as root user and go to *Install GoQAM Software onto the DNCS* (on page 15).

Install GoQAM Software onto the DNCS

Introduction

This section describes how to install the new software onto the DNCS. Software is installed from either of the following locations:

- GoQAM Software V1.1.4 CD, part number 4021958. Go to ***Installing the GoQAM Software from a CD*** (on page 15).
- Our FTP server. Go to ***Installing the GoQAM Software from the FTP Server*** (on page 16).

Installing the GoQAM Software from a CD

1. Insert the **GoQAM V1.1.4** CD into the CD-ROM drive of the DNCS.
2. Did the File Manager window display?
   - If **yes**, the CD mounted successfully. Go to step 4.
   - If **no**, type **df -k** to determine where the CD is mounted and then go to step 3.
3. Is /cdrom listed in the output?
   - If **yes**, go to step 4.
   - If **no**, contact Cisco Services.
4. From an xterm window where you are logged in as root, type **cd /cdrom/cdrom0** and press **Enter** to access the cdrom0 directory.
5. Type **/usr/sbin/install_pkg** and press **Enter.**

   Results:
   - The system lists the packages that will be installed.
   - A confirmation message appears asking you to confirm that you want to proceed with the installation.
6. Type **y** and press **Enter** to start the installation. When the installation is complete, the system displays a message stating that the installation was successful and a prompt for the root user appears.

   Note: The installation should take less than 30 seconds.
7. Was the installation successful?
   - If **yes**, go to step 8.
   - If **no**, contact Cisco Services.
8. From the xterm window where you are logged in as root, type **exit** and press **Enter**. You are logged out as root user.

9 Complete one of the following options:

- **If the File Manager is present**: From the File Manager window, click **File** and select **Eject**. The CD is ejected from the CD drive and the File Manager window closes.
- **If the File Manager is not present**: From an xterm window, type the following command: **cd /.; eject; exit**. The CD is ejected from the CD drive.

10 Type **exit** and press **Enter** to close the xterm window.

11 Go to *Establish a Download Sequence* (on page 18).

Installing the GoQAM Software from the FTP Server

Creating the Directory

1 From the xterm window where you are logged in as root, type **cd /export/home/dncs/download** and press **Enter**. The /export/home/dncs/download directory becomes the working directory.

Important: If this directory does *not* exist, use the **mkdir** command to create it. Then, repeat step 1.

2 Type **mkdir GoQAM114** and press **Enter**. The system creates a subdirectory called GoQAM114 in the /export/home/dncs/download directory.

3 Type **cd GoQAM114** and press **Enter** to access the GoQAM114 directory.

4 Go to *Obtaining the GoQAM Software File* (on page 16).

Obtaining the GoQAM Software File

1 Log on to the FTP server.

Notes:

- The address of the server is **ftp.sciatl.com** or **192.133.243.133**.

  Note: The address for the FTP server is subject to change. If you are unable to reach the FTP server, please contact Cisco Services for the latest address.
- The username is **anonymous**.
- The password is the e-mail address of the person logging in.

2 Choose one of the following options to navigate to the directory in which the file is located:

- If you are *outside* our firewall, type **cd /pub/scicare/RELEASED/GoQAM**
- If you are *inside* our firewall, type **cd /external_pub/scicare/RELEASED/GoQAM**

3 Type **bin** and press **Enter**. The system sets the ftp transfer mode to binary.

4 Type **hash** and press **Enter**. The system configures itself to display hash marks that show file-transfer progress.

5 Type **prompt** and press **Enter**. The system indicates that interactive mode is off.

6 Type **get GoQAM_1.1.4.tar.gz** and press **Enter**. The system begins copying the file (or files) from the FTP site to the current directory on your DNCS.

7 Type **bye** and press **Enter** to log out of the FTP server.

8 Go to *Decompressing and Extracting the File* (on page 17).

Decompressing and Extracting the File

1 From the xterm window, type **gzip -d GoQAM_1.1.4.tar.gz** and press **Enter**. The system decompresses the GoQAM software file.

2 Type **tar xvf GoQAM_1.1.4.tar** and press **Enter**. The system extracts the individual files.

3 Go to *Installing GoQAM Software* (on page 17).

Installing GoQAM Software

1 From the xterm window where you are logged in as root, type **/usr/sbin/install_pkg** and press **Enter**.

Results:

- The system lists the packages that will be installed.
- A confirmation message appears asking you to confirm that you want to proceed with the installation.

2 Type **y** and press **Enter** to start the installation.

Note: The installation should take less than 30 seconds.

3 Did a message appear indicating that the installation was successful?

- If **yes**, go to step 4.
- If **no**, contact Cisco Services.

4 Use the UNIX **rm -rfi** command to remove the following file and directory:

- GoQAM114.tar (file)
- SAIGoQAM (directory)

Example: Type **rm –rf SAIgoqam GoQAM114.tar** and press **Enter**.

Result: A confirmation question message appears asking you to confirm the removal.

5 Type **exit** and press **Enter** to log out as root user.

6 Type **exit** and press **Enter** to close the xterm window.

7 Go to *Establish a Download Sequence* (on page 18).

Establish a Download Sequence

Introduction

The order in which you download new software allows you to verify that the download is successful before proceeding. Follow these guidelines to establish an order in which to download the new software. The method that you follow depends on the type of sessions that the modulator carries (xOD/VOD sessions or broadcast sessions).

CAUTION:

If you are downloading new software to more than one GoQAM modulator group, download the software to one modulator group (for example, all modulators in a single rack or hub) and verify its functionality before attempting to download software to another modulator group. Verifying the functionality of one modulator group at a time enables you to better isolate any failures that may occur and enables you to minimize service interruptions.

xOD/VOD Sessions

When upgrading modulators that carry xOD or VOD sessions, we suggest that you upgrade all modulators in one hub and verify the functionality of those modulators before upgrading modulators in another hub.

Use the following guidelines to determine the order in which to upgrade modulators within a hub.

1. If any modulators act as spares, download the software to these modulators first.
2. If your system does not have a spare modulator, download the software to the modulator carrying the fewest number of sessions.
3. Continue downloading the software to modulators by working your way up to the modulator carrying the most sessions.

Broadcast Sessions

When upgrading modulators that carry broadcast sessions, upgrade the modulators in one hub, four modulators at a time, and verify their functionality before proceeding to other modulators in the hub.

Use the following guidelines to determine the order in which to upgrade modulators:

1. If any modulators act as spares, download the software to these modulators first.
2. If your system does not have a spare modulator, download the software to the modulator carrying sessions that are least viewed.

3 If you have modulators that carry BFS sessions, download the software to the BFS modulator first.

4 Continue downloading the software to modulators in this hub by working your way up to the modulator carrying sessions that are most frequently viewed.

What's Next?

xOD/VOD Sessions

If all of your modulators carry xOD or VOD sessions, you are ready to begin downloading the new software to the modulators. Go to ***Download Software to the GoQAM Modulators*** (on page 20).

Note: Because xOD and VOD sessions are not pre-configured, but they are set up as needed when a subscriber requests them, generating a list of existing sessions is not necessary.

Broadcast Sessions

If you have modulators that carry broadcast sessions, use our Report Writer to view the Channels, Sources & Sessions Report. This report lists the existing broadcast sessions in your system along with the channels and sources in your system that each modulator currently carries.

The Channels, Sources & Sessions Report lists each *display channel* (channel number) in the system. The report also displays information about the *carriage* of each channel (how the channel is transmitted on the DBDS). The report maps each source to the transport device used to deliver the source (analog frequency on modulators).

Generating this report helps you to determine which sessions/services are carried by each modulator. This report also helps you to verify that these sessions are successfully rebuilt after the new software is downloaded to the modulator.

You can also use the DNCS Session List to determine the existing broadcast sessions in your system.

Important: Refer to the *DNCS Report Writer Version 3.5 User's Guide* (part number 734347) or the *DNCS Online Help* for your system for further assistance.

Download Software to the GoQAM Modulators

Introduction

To download the new software to modulators, you must first reset (reboot) the modulators using one of the following methods:

- DNCS GUI
- auditQam utility
- Front panel of the modulator

CAUTION:

All active sessions on the modulator will be interrupted when the modulator is reset. DHCTs downstream of the modulator will lose their ability to display services until sessions are reestablished.

Important: Use the procedure for ***Preparing to Monitor Remote GoQAM Resets*** (on page 20) when resetting modulators from the DNCS GUI or when using an auditQam script to reset multiple modulators.

After the modulators reset, the software is downloaded from the DNCS to the modulators and existing sessions are reestablished.

Choose a Reset Method

Choose one of the following methods to reset your modulators:

- To reset modulators through the DNCS GUI, go to ***Preparing to Monitor Remote GoQAM Resets*** (on page 20).
- To reset modulators using the auditQam utility, go to ***Preparing to Monitor Remote GoQAM Resets*** (on page 20).
- To reset modulators through the front panel, go to ***Physically Resetting the GoQAM Modulator*** (on page 25).

Note: Resetting modulators from the DNCS GUI or from the front panel can be time-consuming. If you have a number of modulators to reset, consider using the auditQam utility.

Preparing to Monitor Remote GoQAM Resets

1. From the xterm window, type **cd /dvs/dncs/tmp** and press **Enter** to access the TMP directory.
2. Type **ls -ltr boot*** and press **Enter**. A list of files starting with "boot" appears in the xterm window.

3 Locate the current bootpd.xxx file name.

Note: This file will be the bootpd.xxx file with the latest version and/or the most recent date.

4 Type **tail -f bootpd.xxx | awk '/goqam/'** to show the last modulator to reboot.

5 As you reset modulators (in the QAM List window or using the auditqam utility), monitor the bootpd file to verify that each modulator was reset.

Note: The bootpd file will roll over to the next log as it grows. If logging stops, repeat steps 2 through 4 to see if a new log file is being used.

6 Go to one of the following sections, as desired:

- ***Resetting the GoQAM Modulator Through the DNCS GUI*** (on page 21)
- ***Resetting GoQAM Modulators Through the auditQam Utility*** (on page 23)

Resetting the GoQAM Modulator Through the DNCS GUI

This section describes how to reset modulators in order to load new software. Use the procedure ***Preparing to Monitor Remote GoQAM Resets*** (on page 20) before resetting modulators through the DNCS GUI.

CAUTION:

All active sessions on the modulator will be interrupted when the modulator is reset. DHCTs downstream of the modulator will lose their ability to display services until sessions are re-established.

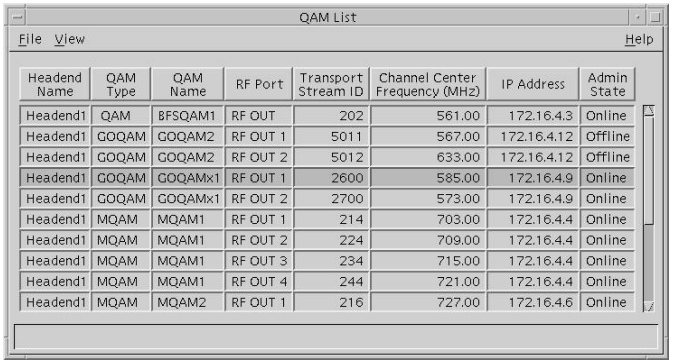
1 If you have not already done so, provision the modulator on the DNCS.

Note: For instructions to provision the modulator, refer to the *GoQAM Modulator RF Output and IF Output Hardware Installation and Operation Guide* (part number 4004834).

2 From the DNCS Administrative Console, click the **DNCS** tab, click the **Network Element Provisioning** tab, and then click **QAM**. The QAM List window opens.

3 Based on the order you determined earlier, select the modulator that you want to reset.

Note: In the following QAM List window, GoQAMx1 would be reset once even though it is listed two times.



Headend Name	QAM Type	QAM Name	RF Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
Headend1	QAM	BFSQAM1	RF OUT	202	561.00	172.16.4.3	Online
Headend1	GOQAM	GOQAM2	RF OUT 1	5011	567.00	172.16.4.12	Offline
Headend1	GOQAM	GOQAM2	RF OUT 2	5012	633.00	172.16.4.12	Offline
Headend1	GOQAM	GOQAMx1	RF OUT 1	2600	585.00	172.16.4.9	Online
Headend1	GOQAM	GOQAMx1	RF OUT 2	2700	573.00	172.16.4.9	Online
Headend1	MQAM	MQAM1	RF OUT 1	214	703.00	172.16.4.4	Online
Headend1	MQAM	MQAM1	RF OUT 2	224	709.00	172.16.4.4	Online
Headend1	MQAM	MQAM1	RF OUT 3	234	715.00	172.16.4.4	Online
Headend1	MQAM	MQAM1	RF OUT 4	244	721.00	172.16.4.4	Online
Headend1	MQAM	MQAM2	RF OUT 1	216	727.00	172.16.4.6	Online

4 Click **File** and select **Reset**. The Question window opens and asks you to confirm the reset of the modulator.

5 Click **Yes**. The QAM List window displays the following message:
The reset request has been received by QAM modulator <Name of modulator>

Notes:

- The <Name of modulator> represents the name of the modulator you just reset.
- It may take up to 5 minutes for each modulator to reset.

6 Do you see the IP address for the modulator you reset in the bootpd log file?

- If **yes**, continue with this procedure.
- If **no**, call Cisco Services.

Note: For details about IP addresses in the bootpd log file, go to ***Preparing to Monitor Remote GoQAM Resets*** (on page 20).

7 Repeat steps 3 through 6 for up to three additional modulators and then go to step 8.

Important: Never reset more than four modulators at once or you may cause other GoQAMs to have to retry downloads due to traffic congestion on the network.

8 Choose one of the following options and then go to step 9 of this procedure.

- For modulators that carry broadcast sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions*** (on page 26).
- For modulators that carry xOD or VOD sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27).

Resetting GoQAM Modulators Through the auditQam Utility

The *reset* option of the auditQam utility allows you to reset the modulator from the command line of the DNCS—a process that is usually quicker than resetting the modulator through the DNCS GUI or modulator panel.

You can use one of the following methods to reset the modulator using auditQam:

Note: Instructions and guidelines for both situations are provided in this section.

- Reset a single modulator by typing the IP address of the modulator as an argument to the **auditQam -reset** command.
- Reset more than one modulator by creating a script that includes a reset command for each modulator. The script includes a delay value that resets each modulator over a period of time.

Resetting One GoQAM

1. If necessary, open an xterm window on the DNCS.
2. Type the following command and press **Enter**:

   auditQam -reset [GoQAM ip address]

   Result: The system shuts down and reinitializes the modulator.

   Note: The system also performs an audit to ensure that the session list for the modulator matches the session list from the DNCS.
3. Do you see the IP address for the modulator you reset in the bootpd log file?
   - If **yes**, continue with this procedure.
   - If **no**, call Cisco Services.
4. Select one of the following options:
   - For modulators that carry broadcast sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions*** (on page 26).
   - For modulators that carry xOD or VOD sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27)

Resetting More Than One GoQAM

When performing an upgrade, you may not want to manually reset hundreds of modulators from the DNCS GUI. To save time, you can create a script that resets the modulators. Refer to the following example for a sample script.

Important: Resetting the modulator interrupts all active sessions on the modulator for up to 10 minutes. Complete this task during a maintenance window whenever possible.

This sample script will execute the following functions:

- Reset four modulators.
- After 5 minutes (300 seconds), reset another set of four modulators.

Important: Use the procedure for ***Preparing to Monitor Remote GoQAM Resets*** (on page 20) when using an auditQam script to reset multiple modulators.

Note: You can save and re-use this script each time you need to reboot your modulators.

```
auditQam  -reset  123.123.123.123
sleep 1
auditQam  -reset  123.123.123.124
sleep 1
auditQam  -reset  123.123.123.125
sleep 1
auditQam  -reset  123.123.123.126
sleep 300
# end of first set
auditQam  -reset  123.123.123.127
sleep 1
auditQam  -reset  123.123.123.128
sleep 1
auditQam  -reset  123.123.123.129
sleep 1
auditQam  -reset  123.123.123.130
sleep 300
# end of second set
```

After resetting the modulators, select one of the following options:

- For modulators that carry broadcast sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions*** (on page 26).
- For modulators that carry xOD or VOD sessions, go to ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27).

Physically Resetting the GoQAM Modulator

1. Record the Session Count and the Program Count for your modulators by completing the following steps:

   Note: Skip this step for any modulator that is used for VOD.

   a. Press the **Options** button on the front panel until the **Session Count** total appears.

   b. Record the Session Count on a piece of paper.

      Note: Press the **RF Select** button to access each component of the modulator.

   c. Press the **Options** button on the front panel until the **Program Count** total appears.

   d. Record the Program Count on a piece of paper.

      Note: Press the **RF Select** button to access each component of the modulator.

   e. Repeat steps a) through d) for each modulator in your system.

2. Reset the modulator by turning off, and then back on, the power switch located on the rear panel.

   Note: If it is difficult to reach the power switch, you can reset the modulators by pressing the **Options** button on the front panel until the Reset option appears.

3. Repeat steps 1 and 2 for up to three additional modulators.

   Important: Never reset more than four modulators at once, or you may overload the DNCS.

4. Repeat step 1 to record the current Session and Program Count totals for each modulator that you reset. Then, go to step 5.

5. Does the Session Count and Program Count recorded in step 1 and step 4 match?

   Note: Skip this step for any modulator that is used for VOD.

   - If **yes**, go to ***Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions*** (on page 26). Then, go to step 6 of this procedure.
   - If **no**, contact Cisco Services.

6. Do you have additional modulators to reset?

   - If **yes**, repeat steps 2 through 5 until each modulator has been reset, and then go to ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27).
   - If **no**, go to ***Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions*** (on page 27).

Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions

1. Access a DHCT that is connected downstream to one modulator.
2. Refer to the Channels, Sources & Sessions Report that you generated and saved in ***Broadcast Sessions*** (on page 19) to verify restored modulator channels and sessions.
3. Tune the DHCT to each channel listed in the report for each modulator that you reset and upgraded.
4. Are all channels listed for the modulators that you reset accessible from the DHCT?
   - If **yes**, go to step 5.
   - If **no**, do *not* attempt to upgrade the software for any additional modulator. Call Cisco Services.
5. For those modulators that carry content inappropriate for children, we recommend that you verify encryption using one of the following methods:
   - Using a set-top that is authorized for all services, tune one by one to each service and check the PowerKEY Information diagnostic screen (Page 6). If the Prog Stat and Prog Entitle fields are zero (0x00), then the program is in the clear. If these fields are non-zero, then the program is encrypted.
   - Verify that the Program Count is correct on the modulators that carry inappropriate content before and after the reset.
   - Using a QAM tuner television, tune to the respective channels and verify that inappropriate content is not viewable.
6. Is the content viewable?
   - If **yes**, stop and then restart (bounce) the qamManager process on the DNCS, and repeat step 5. If the content continues to be viewable, contact Cisco Services. Then, go to step 7.
   - If **no**, go to step 7.
7. Have you completed resetting your modulators?
   - If **yes**, go to step 8.
   - If **no,** return to the procedure you are using to reset your modulators.
8. Generate a Doctor Report using the **–av** option to verify system stability and functionality.

   Note: For further instructions on running the Doctor Report, refer to the chapter titled **Analyze System Configuration With the Doctor Report** in the *DBDS Utilities Version 5.1 Installation Instructions and DNCS Utilities User's Guide* (part number 740020).

9 Do new or unexpected errors appear in the Doctor Report?

- If **yes**, contact Cisco Services.
- If **no**, go to step 10.

10 Perform the System Validation Tests to verify the functionality and performance of the set-tops in your system. Tests are found in the installation and upgrade documentation for your system release version.

11 Click **File** and select **Close** to close the QAM List window.

12 Over the next few days, check the individual modulators to verify that they received the new code.

Verifying the Functionality of GoQAM Modulators That Carry xOD or VOD Sessions

Sessions that exist on xOD or VOD modulators that were upgraded will be interrupted and, in most cases, will recover. If the sessions do not recover, choose one of the following options:

- Exit the xOD or VOD application (stop the xOD or VOD program), and then restart the application and the xOD or VOD stream by resuming the playback of the "in progress" purchase.
- Change to a different channel, and then back to the previous channel. Restart the application and the xOD or VOD stream by resuming the playback of the "in progress" purchase.

  Note: This procedure will vary depending on the application you are using.

After selecting one of the previous options, complete the following steps to end the verification process.

1 Have you reset your modulators?

- If **yes**, go to step 2.
- If **no**, go to step 4.

2 Generate a Doctor Report using the **–av** option to verify system stability and functionality.

Note: For further instructions on running the Doctor Report, refer to the chapter titled **Analyze System Configuration With the Doctor Report** in the *DBDS Utilities Version 5.1 Installation Instructions and DNCS Utilities User's Guide* (part number 740020).

3 Do new or unexpected errors appear in the Doctor Report?

- If **yes**, contact Cisco Services.
- If **no**, go to step 4.

4 Perform the System Validation Tests to verify the functionality and performance of the set-tops in your system. Tests are found in the installation and upgrade documentation for your system release version.

5 Click **File** and select **Close** to close the QAM List window.

6 Over the next few days, check the individual modulators to verify that they received the new code.
Important: Due to load balancing and traffic, it is difficult to determine if all modulators are functioning properly. For this reason, you should monitor these modulators for a few days following this upgrade to verify that Session and Program Counts are increasing and/or decreasing (whichever is applicable) as new xOD or VOD sessions are created.

3

Customer Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

Access your company's extranet site to view or order additional technical publications. For accessing instructions, contact the representative who handles your account. Check your extranet site often as the information is updated frequently.

A

Verify the Install Package Exists on the DNCS

Introduction

For system releases that do not include the pre-packaged install tool, we recommend that you verify whether or not the tool exists on your DNCS; because, the tool is required to load new software onto the DNCS. This appendix provides procedures for checking for the install tool, as well as procedures for retrieving it from our FTP site.

In This Appendix

Check for the Install Tool on the DNCS

Important: If you are using SR 2.7/3.7/4.2, this procedure is not required because the install tool (install_pkg) is pre-packaged within the software.

Checking for install_pkg on the DNCS

1. From an xterm window, type **cd /usr/sbin** and press **Enter**.
2. Type **ls** and press **Enter**.
3. Is the install_pkg file present on the DNCS?
   - If **yes**, resume your installation procedures.
   - If **no**, go to step 4.
4. Log on to our FTP server.

   Notes:
   - The address of the server is **ftp.sciatl.com** or **192.133.243.133**.

     Note: The address for the FTP server is subject to change. If you are unable to reach the FTP server, please contact Cisco Services for the latest address.
   - The username is **anonymous**.
   - The password is the email address of the person logging in.
5. Choose one of the following options to navigate to the directory in which the file is located:
   - If you are *inside* our firewall, type **cd /external_pub/scicare/RELEASED/SR2.2Patches**.
   - If you are *outside* our firewall, type **cd /pub/scicare/RELEASED/SR2.2Patches**.
6. Type **bin** and press **Enter**. The system sets the ftp transfer mode to binary.
7. Type **hash** and press **Enter**. The system configures itself to display hash marks that show file-transfer progress.
8. Type **get install_pkg** and press **Enter**. The system begins copying files into the /export/home/dncs/download/directory on your DNCS.
9. Type **get install_pkg README_3.0.1.3p2EP1.txt**. The system begins copying files into the /export/home/dncs/download/directory on your DNCS.
10. Type **bye** and press **Enter** to log out of our FTP server.
11. Continue with the installation procedures.

B

Load Multiple Versions of GoQAM Code

Introduction

The recommended upgrade process for GoQAMs is based on a goal of getting all the units upgraded within a short period of time (typically one day). In some cases a site may choose to upgrade the GoQAMs over time or may desire to load a unique version of code onto a single GoQAM for extended testing. This appendix describes how to accomplish either of these goals.

In This Appendix

Loading Multiple Versions of GoQAM Code

Note: If you need to determine which config files are being used by each GoQAM, refer to ***Checking for Multiple Config Files*** (on page 11) for details. For this procedure, we will assume that goqam.config is the current configuration file.

1. Go to the /tftpboot directory on the DNCS and rename the current goqam.config file as **goqam.current**.
2. Install the new version of GoQAM software that you intend to use using ***Install GoQAM Software onto the DNCS*** (on page 15).
3. From the /tftpboot directory on the DNCS, rename the new goqam.config file as **goqam.new**.
4. From the /tftpboot directory on the DNCS, rename the original backup file (for example, rename goqam.current to goqam.config).
5. From the QAM List window on the DNCS, open the entry for the GoQAM that should download the new code.
6. Click the **Advanced Parameters** tab, and change the configuration file name from goqam.config to **goqam.new**.
7. Click **Apply**.
8. From the QAM List window on the DNCS, reset the GoQAM to which you want to download the new code.
9. Repeat steps 6 through 8 for each GoQAM to which you want to download the new code.
10. When you are ready to load code to all of your GoQAMs, perform one of the following approaches:

    - **Preferred Approach**

    a. Go to the /tftpboot directory and rename goqam.new as **goqam.config**.

    b. From the QAM List window on the DNCS, reset all the GoQAMs that are using the goqam.config file.

    c. From the QAM List window on the DNCS, change the configuration file value for all GoQAMs that currently use goqam.new to **goqam.config**. These units do not need to be reset.

    - **Alternative Approach**

    a. From the QAM List window, change the configuration file value for all modulators using goqam.config to use **goqam.new**.

    b. Reset the changed GoQAMs.

    Note: Units that were already using goqam.new as their configuration file do not need to be reset.

C

Roll Back to the Previous Version of GoQAM Software

Introduction

This appendix contains instructions for restoring the previous version of GoQAM software should you encounter problems after upgrading to GoQAM 1.1.4. Follow the instructions in this appendix only after Cisco Services directs you to restore the previous version of software.

Important: If after downloading GoQAM 1.1.4 you encounter problems, contact Cisco Services. In the event that Cisco Services directs you to download the previous version of software to GoQAMs, follow the procedures in this appendix while working with Cisco Services.

In This Appendix

Restore the Previous Version of GoQAM Software

Introduction

Contact Cisco Services if you notice that the system is reacting adversely after installing or upgrading the GoQAM software. If Cisco Services recommends restoring the previous GoQAM software version, use the instructions in this section to assist you.

CAUTION:

Contact Cisco Services before attempting to restore the previous GoQAM software version.

Restoring the Previous GoQAM Software Version

Note: To restore the previous GoQAM executable files, restore the configuration backup file that you saved in ***Backing Up the Current GoQAM Configuration File*** (on page 14).

1. Open an xterm window on the DNCS and log on as the **root** user. The root prompt appears.
2. Type **cd /tftpboot** and press **Enter**. The root prompt appears.
3. Type **pwd** and press **Enter**. The text /tftpboot appears at the prompt. This text indicates you are in the correct directory.
4. Type **cp –p goqam.config goqam.config.yyy** and press **Enter**. The configuration file named goqam.config, which contains GoQAM version 1.1.4 configuration settings, is saved to a file named goqam.config.yyy.

   Note: The yyy represents the GoQAM software version number you just installed.
5. Type **cp –p goqam.config.old goqam.config** and press **Enter.** The configuration file named goqam.config.old, which contains the previous list of GoQAM configuration files, is copied to a configuration file named goqam.config.
6. Type **ls -l** and press **Enter**. A list of files displays. The files **goqam.config.old**, **goqam.config**, and **goqam.config.bakyyy** appear in the list.

   Note: The "l" used in **ls** and **-l** is a lowercase letter L.
7. Confirm that the date and size of **goqam.config** matches those of **goqam.config.old**.
8. Type **exit** and press **Enter**.
9. Download the previous version of software to GoQAMs by rebooting the modulators. For detailed procedures, go to ***Download Software to the GoQAM Modulators*** (on page 20).

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April 2012 Printed in USA

Part Number 4021639 Rev B