



GQAM Software Version 1.2

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.

Notices

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About This Guide

Introduction

This document provides the following information and procedures for upgrading a Model D9479 Gigabit Quadrature Amplitude Modulation (GQAM) modulator to GQAM software version 1.2:

- Chapter 1 provides a description of new features and improvements that this software version offers including change requests implemented in this release. It also lists the requirements for upgrading a GQAM modulator with GQAM software version 1.2.
- Chapter 2 provides step-by-step instructions for installing GQAM software version 1.2 onto a GQAM modulator.
- Chapter 3 provides general information for contacting Cisco.
- Appendix A provides a procedure for backing out of this upgrade should it not succeed for some unforeseen reason.

Who Should Read This Publication?

Cisco engineers or system operators who are responsible for installing the GQAM software onto a GQAM modulator should read this publication.

Scope

This document provides instructions for upgrading a Model D9479 GQAM modulator with GQAM software version 1.2. It does not provide instructions for installing a GQAM modulator in your headend.

Note: For instructions on installing a GQAM modulator in your headend or for a complete description of GQAM features, refer to *Gigabit QAM Modulator Model D9479 Hardware Installation and Operation Guide*. For the part number for this document, see **Related Publications**.

Related Publications

You may find the following publications useful as you implement the procedures in this document. The publish dates for these documents are valid as of this printing. However, some of these documents may have since been revised.

- *System Release 2.5 Release Notes* (part number 749253, published October 2005)
- *System Release 3.5 Release Notes* (part number 4001159, published October 2005)
- *SR 2.2/SR 3.2 Service Pack 3 Release Notes and Installation Instructions* (part number 4001702, published September 2005)
- *Digital Network Control System Online Help (PC) Version 3.5.0.3* (part number 4002881, published February 2005, released November 2005*)
- *DNCS Patches for SR 2.2/SR 3.2 Service Pack 3 Release Notes and Installation Instructions* (part number 4003788, expected publish date: fall 2005)
- *DBDS Utilities Version 5.1 Installation Instructions and DNCS Utilities User's Guide* (part number 740020, expected publish date: fall 2005)
- *Gigabit QAM Modulator Model D9479 Hardware Installation and Operation Guide* (part number 745431, published January 2005)

*The *Digital Network Control System Online Help (UNIX) for System Release 2.5/3.5* should already be installed on your DNCS. The PC version is a separate CD that allows you to view the same online Help on a PC separate from the DNCS workstation.

Document Version

This is the second release of this document.

1

Introducing GQAM Software Version 1.2

Introduction

This chapter lists the requirements for upgrading the Model D9479 GQAM Modulator with GQAM software version 1.2. GQAM software version 1.2 includes several feature enhancements and performance improvements over previous releases of GQAM software. These enhancements and improvements are described in the change requests (CRs) implemented in this release. For additional details, go to *Implemented CRs* (on page 5) and *Want To Know More?* (on page 7).

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About GQAM Software Version 1.2

Introduction

GQAM software version 1.2 is designed to be installed on a GQAM modulator. After the software is installed and the modulator is active, it provides additional support for sites that deploy video-on-demand (VOD), *anything*-On-Demand (xOD), and other interactive broadcast services. This additional support is described in the CRs implemented in this release. For additional details, go to ***Implemented CRs*** (on page 5) and ***Want To Know More?*** (on page 7).

Note: For a complete description of the GQAM modulator, refer to the *GQAM Modulator Model D9479 Hardware Installation and Operation Guide*.

This chapter includes the system release and application compatibility requirements, application platform release dependencies, software requirements, and hardware requirements for installing GQAM software version 1.2. This chapter also provides guidance on when to perform the upgrade. In addition, this chapter includes the CRs implemented in this release of GQAM software.

System Release and Application Compatibility Requirements

GQAM software version 1.2 can be installed on a Digital Broadband Delivery System (DBDS) that is running System Release (SR) 2.2/SR 3.2 with Service Pack 3 or SR 4.0 *prior* to installing GQAM software version 1.2.

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

Application Platform Release Dependencies

The following table shows the application platform release dependencies for GQAM software version 1.2. You must have the correct application platform software installed on your system *prior* to installing GQAM software version 1.2.

Important: Failure to have the correct application platform software *or later* installed on your system *prior* to installing GQAM software version 1.2 can result in video freezing and black screens when using VOD or xOD applications.

Set-Top Platform	Operating System (OS)	SARA*	PowerKEY® Version
Explorer® 8300 DVR v. 1.3.1a17 (or later)	OS 6.14.10.1	1.87.14.1	3.7.5
Explorer® 8000/8010 DVR v. 1.3.1a17 (or later)	OS 6.12.7.1	1.87.13.1	3.7.5
Explorer® 3250HD MR4 P1 (or later)	OS 3.12.8.1	1.57.8.1	3.7.5
Explorer® 2xxx, 31xx, 3200, 3100HD	OS 3.10.9	1.54.23.1	1.0.6.20 (Explorer® 2000s) 1.0.7 (all others)
Pace	Pace to provide OS build	N/A	2.0.4.11
Pioneer	Pioneer to provide OS build	N/A	2.0.4.11

* Cisco Resident Application

Software Requirements

GQAM software version 1.2 includes the following host, input, and output application and boot codes:

- GQAM Host Application code 1.1.9
- GQAM Host Boot code 1.0.1
- GQAM Input Application code 1.0.3
- GQAM Input Boot Application code 1.0.0
- GQAM Output Application code 1.0.2
- GQAM Output Boot code 1.0.0
- RF Application code 2.1

Hardware Requirements

GQAM software version 1.2 supports only the Model D9479 GQAM Modulator.

When to Perform the Upgrade

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

Implemented CRs

Introduction

The following quick reference matrix lists the implemented CRs addressed by GQAM software version 1.2. Additionally, this matrix lists the following attributes associated with the implemented CRs:

- The CR number
- A brief description of the CR appears in the Subscriber column if the subscriber is affected by the CR
- A brief description of the CR appears in the Cable Service Provider column if the cable service provider is affected by the CR.
- The process most affected by the CR

Note: If you would like to review these CRs in more detail, go to *Want to Know More?* (on page 7).

Quick Reference Matrix for CRs

CR Number	Subscriber	Cable Service Provider	Process Affected
35943-01	Temporary loss of services	Corrected an issue that occurred when GigE sessions having the same session ID and User Datagram Protocol (UDP) port caused the GQAM to lock up after the sessions were deleted	GQAM Application
47328-04	Temporary loss of services	Corrected an issue that caused GQAMs to reboot when subscribers performed a large number of pause, fast-forward, and rewind functions using their remote controls	GQAM Application
47550-07	Black screens on digital channels when using the 1394 port	Program identifiers (PIDs) that are less than 30 are no longer used	GQAM Application
48635-01	No impact	Updated the GQAM radio frequency (RF) firmware code to support <i>both</i> the current and the previous versions of the GQAM RF board	GQAM Application
53735-01	Temporary loss of services	A high number of program map table (PMT) updates in an incoming video stream no longer causes GQAMs to reboot	GQAM Application

Want To Know More?

Introduction

This section provides additional detail on each change for GQAM software version 1.2. The changes described in this section appear in numerical order by CR number, like the quick reference table earlier in this chapter.

GigE Sessions Having the Same Session ID and UDP Port Cannot Be Created

Previously, GigE Sessions having the same session ID and UDP port caused the craft port and the front panel on the GQAM to lock up after the sessions were deleted. A powercycle was required to recover from this condition. Now, you cannot create GigE sessions that have the same Session ID and UDP port. **CR 35943-01** corrects this issue.

GQAMs No Longer Reboot When Subscribers Perform a Large Number of VOD Trick Modes

Previously, some GQAMs at a customer site experienced reboots after detecting changes in the VOD stream. These changes in the VOD stream were caused by a large number of “trick mode” requests to the VOD Server from subscribers using their remote controls. Trick modes are pause, fast forward, and rewind functions on the remote control. Now, GQAMs do not reboot under this scenario. **CR 47328-04** corrects this issue.

PIDs Less Than 30 Are No Longer Used

Previously, when PIDs less than 30 were used, subscribers would experience black screens on digital channels when connecting certain TV models to the set-top box using the 1394 port. According to a new Moving Picture Experts Group (MPEG) specification, PIDs that are less than 30 can no longer be used. **CR 47550-07** implements this new requirement.

GQAMs Need New RF Code to Support New RF Boards

The new RF boards needed RF code that supported *both* the current and the previous versions of the board. GQAM RF application code 2.1 now supports *both* versions of GQAM RF board. **CR 48635-01** addresses this requirement.

High PMT Update Rate No Longer Causes GQAMs to Reboot

Previously, when an incoming stream was encoded with a fluctuating PMT, the GQAM would run out of 256-byte buffers. **CR 53735-01** corrects this issue.

CA Descriptor and VOD Sessions

Overview

Versions of GQAM software prior to version 1.0.6 inserted the PowerKEY® Conditional Access (CA) descriptor into the PMT for unencrypted on-demand content. If the Digital Home Communications Terminal (DHCT) OS found the CA descriptor in the PMT, the OS started the PowerKEY® decryptor.

The PowerKEY® scheduler within the DHCT then prioritized Entitlement Control Messages (ECMs) by waiting until an ECM was processed before allowing any other CA messages or requests to be processed.

Background

During this waiting period, when no ECMs were delivered, non-ECM requests (for example, a request for a Multi-Room™ DVR [MR-DVR] session), remained in the queue, and were not processed until the PowerKEY® decryptor was stopped. Therefore, no MR-DVR sessions could be established while the MR-DVR server was streaming unencrypted VOD.

Solution

GQAM software version 1.2 includes a modification to insert the CA descriptor only for encrypted sessions, including those which will be encrypted after interactive session key (ISK) setup. Consequently, the OS now correctly detects the encryption status of the stream. Detecting the encryption status enables sessions (including VOD and MR-DVR sessions) to be established correctly on a Multi-Room™ server.

2

Upgrading GQAM Modulator Software

Introduction

This chapter describes how to upgrade the Model D9479 GQAM Modulator with GQAM software version 1.2.

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Upgrade Process Overview

Introduction

This section provides a brief overview of the tasks you must complete to upgrade the Model D9479 GQAM Modulator with GQAM software version 1.2.

Before You Begin

Before you upgrade to GQAM software version 1.2, be sure that your system meets the configuration requirements specified in *About GQAM Software Version 1.2* (on page 2).

If you will not download GQAM software version 1.2 from a File Transfer Protocol (FTP) site, make sure that you have obtained the CD **GQAM Software 1.2**, part number 4012800.

Important! Do *not* proceed with installing GQAM software version 1.2 until you have read and followed the directives in *About GQAM Software Version 1.2* (on page 2).

Time to Complete

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

- Completing pre-upgrade tasks takes from 30 to 45 minutes.
Note: If you are upgrading from an FTP site, allow an additional 10 to 15 minutes to download GQAM software from the FTP site. The speed of the connection and the size of the files determine the download time.
- Downloading GQAM software version 1.2 to a GQAM modulator takes approximately 5 minutes for each GQAM modulator.
- Verifying the functionality of a GQAM modulator depends on the number of sessions that the modulator carries and takes approximately 5 to 10 minutes.

Note: It is not necessary to rebuild non-VOD sessions on the GQAM modulators that you upgrade. The non-VOD sessions are rebuilt automatically after GQAM software version 1.2 is downloaded to a GQAM modulator.

Subscriber Impact

When GQAM 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 GQAM modulator.

Impact of TVs with QAM Tuners

When upgrading GQAMs to new releases of software, you must reset the GQAMs 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 GQAMs. The DNCS also activates encryption for any secure services that were running on the GQAMs.

An increasing number of TVs are being manufactured and sold with QAM tuners that can access services which 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 GQAMs. This extra step ensures that no potentially objectionable content can be viewed inadvertently when using a TV that is equipped with a QAM tuner. For further assistance, refer to the following procedures found later in this chapter:

- *Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions* (on page 34)
- *Verifying the Functionality of GQAM Modulators That Carry xOD or VOD Sessions* (on page 35)

Process Overview

This section provides an overview of the process required to upgrade to GQAM software version 1.2.



CAUTION:

If upgrading more than one GQAM modulator, download GQAM software version 1.2 to one modulator group and verify its functionality before attempting to download GQAM software to another modulator group. Verifying the functionality of one GQAM 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

- 1 If you are installing from a CD, verify the integrity of the installation CD. For further instructions, refer to the installation and upgrade documentation for your system release.

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

Important! If new or unexpected errors appear in the Doctor Report, contact Cisco Services before upgrading your GQAMs.

Note: For further instructions on running the Doctor Report, refer to Chapter 5, **Analyze System Configuration With the Doctor Report**, in the *DBDS Utilities Installation Instructions and DNCS Utilities User's Guide*.

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

Important! If new or unexpected errors occur, contact Cisco Services before upgrading your GQAMs.

- 4 Verify the current GQAM software version running on your DNCS.
 - 5 Make a copy of the *current* GQAM configuration file. In the unlikely event of a failure, you can use this backup copy to restore your system to the previous version of GQAM software.
 - 6 Verify that the package install tool (install_pkg) is installed on your DNCS. Follow these steps:
 - a Open an xterm window on the DNCS and type **cd /usr/sbin** and press **Enter**. The /usr/sbin directory becomes the working directory.
 - b Type **ls** and press **Enter**.
 - c Is the install_pkg file listed in the directory?
 - If **yes**, continue with the pre-upgrade tasks.
 - If **no**, contact Cisco Services for further assistance.
 - 7 Install GQAM software version 1.2 onto the DNCS.
 - 8 If you are upgrading more than one GQAM modulator, establish an order for upgrading the modulators.
 - 9 If the GQAM modulators you are upgrading currently carry broadcast sessions, determine the sessions that are running on the modulators you plan to upgrade so that you can verify that these sessions are rebuilt after the new software is downloaded to the modulators.
- Note:** If your GQAM modulator will carry VOD sessions, documenting current sessions is not necessary. VOD sessions are set up as needed when a DHCT requests a session.

Upgrade Tasks



CAUTION:

All active sessions on the GQAM 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.

- 1 Upgrade GQAM modulators with GQAM software version 1.2 by resetting the modulator. Resetting the modulator causes it to reboot, update the software, and re-establish existing sessions. Follow the instructions found in *Download GQAM Software to the GQAM Modulators* (on page 28).

Note: If resetting the modulator does not cause it to reboot and load GQAM software version 1.2, turn power to the modulator off and on again. For assistance cycling power to the modulator, refer to *GQAM Modulator Model D9479 Hardware Installation and Operation Guide*. For the part number of this guide, see **Related Publications** in the Preface of this document.

- 2 Verify that the GQAM modulator is functioning properly following the upgrade.

Important! Read and follow the directives contained in *Impact of TVs With QAM Tuners* (on page 13).

- 3 To upgrade another GQAM modulator, repeat steps 1 and 2. Then go to step 4.
- 4 After the upgrade is complete, generate a Doctor Report using the **-av** option to verify system stability and functionality.

Important! If new or unexpected errors appear in the Doctor Report, contact Cisco Services.

Note: For further instructions on running the Doctor Report, refer to Chapter 5, **Analyze System Configuration With the Doctor Report**, in the *DBDS Utilities Installation Instructions and DNCS Utilities User's Guide*.

- 5 After the upgrade is complete, perform the System Validation Tests found in the installation and upgrade documentation for your system release version to verify the functionality and performance of the set-tops in your system.

Important! If new or unexpected errors occur, contact Cisco Services.

- 6 Check the individual modulators to verify that they received the new code.

Verify the Current GQAM Software Version on the DNCS

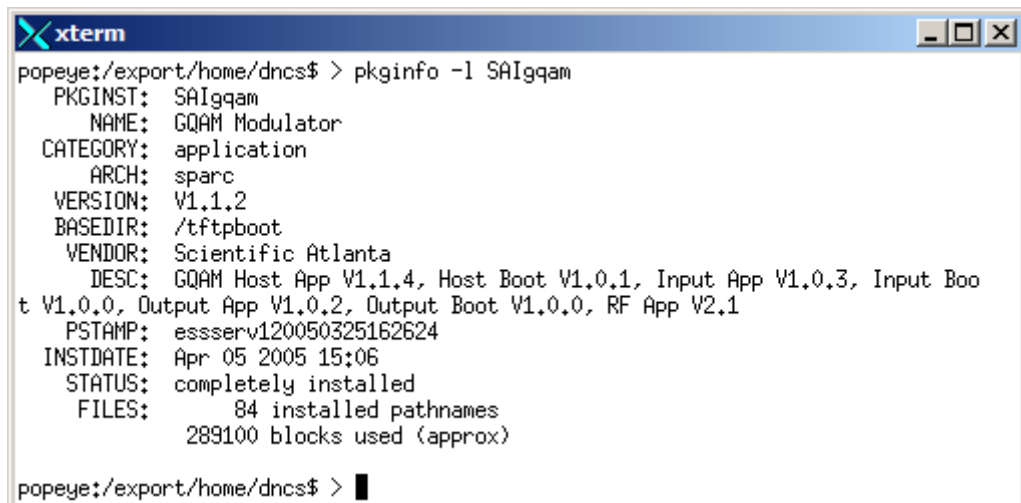
Introduction

Before attempting to upgrade to GQAM software version 1.2, verify the GQAM software version currently installed on your DNCS. This section describes how to verify the GQAM software version currently installed on your DNCS.

Verifying the Current GQAM Software Version on the DNCS

- 1 Open an xterm window on the DNCS.
- 2 Type **pkginfo -l SAIgqam** and then press **Enter**. Information about the software package appears in the xterm window similar to the following example. The **version** line indicates the current version of GQAM software installed on the DNCS. In the following example, the GQAM software version shown is 1.1.2.

Note: The **l** used in “-l” is the lowercase of the letter L.



```

xterm
popeye:/export/home/dncc$ > pkginfo -l SAIgqam
  PKGINST: SAIgqam
    NAME:  GQAM Modulator
  CATEGORY: application
    ARCH:  sparc
  VERSION: V1.1.2
  BASEDIR: /tftpboot
  VENDOR:  Scientific Atlanta
    DESC:  GQAM Host App V1.1.4, Host Boot V1.0.1, Input App V1.0.3, Input Boo
t V1.0.0, Output App V1.0.2, Output Boot V1.0.0, RF App V2.1
  PSTAMP:  essserv120050325162624
  INSTDATE: Apr 05 2005 15:06
  STATUS:  completely installed
    FILES:      84 installed pathnames
              289100 blocks used (approx)

popeye:/export/home/dncc$ > █

```

- 3 Does the information indicate that GQAM software version 1.2 has been installed?
 - If **yes**, you do not need to install GQAM software version 1.2 onto the DNCS. You can ignore the remainder of these instructions
 - If **no**, before installing GQAM software version 1.2 onto the DNCS, backup the GQAM configuration file currently installed on your DNCS. Go to **Back Up the Current GQAM Configuration File** (on page 17).

Back Up the Current GQAM Configuration File

Introduction

Before installing GQAM software version 1.2 to a GQAM modulator, copy the configuration file of the version of GQAM software currently installed. In the unlikely event of a failure, you can use the copy to restore the current version of GQAM software to your system. This section provides instructions for copying the configuration file of your current GQAM software version.



CAUTION:

Do not proceed with installing GQAM software version 1.2 until you have created a backup of the current configuration file of the GQAM software installed on your system. Otherwise, you will be unable to restore the previous version of GQAM software to your system in the unlikely event of a failure.

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

Backing Up the Current GQAM Configuration File

- 1 Open an xterm window on the DNCS. The system displays a **dncs** user prompt.
- 2 Type **su -** and press **Enter**. The system prompts you to enter the password for the root user.
- 3 Type the password for the root user and press **Enter**. The system logs you in as the root user and displays a root user prompt.
- 4 Type **cd /tftpboot** and then press **Enter**. The root prompt appears.
- 5 Type **pwd** and then press **Enter**. The /tftpboot directory name appears. This name indicates you are in the correct directory.
- 6 Type **cp -p gqam.config gqam.config.bakxxx** and then press **Enter**. A copy of the configuration file gqam.config, which contains GQAM configuration settings, is saved to a configuration file named gqam.config.bakxxx.
Note: In this example, xxx represents your current GQAM software version. For example, if your current GQAM software version is 1.1.2, name the file **gqam.config.bak112**.
- 7 Type **exit** and then press **Enter** to exit from the root user.
- 8 Type **exit** and press **Enter** again to close the xterm window.
- 9 Now that you have made a copy of the current GQAM configuration file on your DNCS, you are ready to install GQAM software version 1.2 on your DNCS. Go to *Install GQAM Software onto the DNCS* (on page 18).

Install GQAM Software onto the DNCS

Introduction

This section describes how to install GQAM software version 1.2 onto the DNCS using either of the following methods:

- From the CD, **GQAM Software 1.2**, part number 4012800
- From Cisco's FTP server

Installing the GQAM Software from a CD

- 1 Open an xterm window on the DNCS. The system displays a **dncs** user prompt.
- 2 Type **su -** and press **Enter**. The system prompts you to enter the password for the root user.
- 3 Type the password for the root user and press **Enter**. The system logs you in as the root user and displays a root user prompt.
- 4 Insert the CD **GQAM Software 1.2** into the CD-ROM drive of the DNCS.
- 5 Wait approximately 30 seconds for the system to mount the **CD** before continuing to step 6.

Note: Shortly after inserting the CD, a File Manager window opens. When it does, it may block the xterm window. If this occurs, click the xterm window to bring the xterm window to the forefront.

- 6 From the xterm window, type **df -n** and then press **Enter** to confirm that the system mounted the CD successfully. A list of the mounted and unmounted file systems appears.

Note: The presence of **/cdrom/dvsg** in the list confirms that the system correctly mounted the CD.

- 7 Type **cd /cdrom/cdrom0** and press **Enter**.
- 8 Type **/usr/sbin/install_pkg** and then 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.
- 9 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 a minute or less.

- 10 Was the installation successful?
 - If **yes**, type **exit** and press **Enter** to log out as root user. Then go to step 11.
 - If **no**, contact Cisco Services.
- 11 Type **exit** and press **Enter** to close the xterm window. The xterm window closes and the File Manager window is now visible.
- 12 From the File Manager window, click **File** and select **Eject**. The CD ejects and the File Manager window closes.
- 13 Remove the CD from the CD drive and store it in a safe location. Go to *Establish a Download Sequence* (on page 22).

Installing the GQAM Software From Cisco's FTP Server

In this section, you will create a directory on the DNCS into which you will load the GQAM software version 1.2 file. Then, you will use the FTP file transfer utility to obtain the file from Cisco's FTP server and load it into the newly created directory. Next, you will decompress and extract the compressed file. Finally, you will install GQAM software version 1.2 from the file you created at the beginning of this procedure.

Creating the Directory

- 1 Open an xterm window on the DNCS. The system displays a **dncs** user prompt.
- 2 Type **su -** and press **Enter**. The system prompts you to enter the password for the root user.
- 3 Type the password for the root user and press **Enter**. The system logs you in as the root user and displays a root user prompt.
- 4 Type **cd /export/home/dncs/download** and then press **Enter**. The /export/home/dncs/download directory becomes the working directory.
Important! If the directory does *not* exist, use the **mkdir** command to create the /export/home/dncs/download directory. Then, repeat this step.
- 5 Type **mkdir GQAM12** and then press **Enter**. The system creates a subdirectory called GQAM12 in the export/home/dncs/download directory.
- 6 Type **cd GQAM12** and then press **Enter**. The /export/home/dncs/download/GQAM12 directory becomes the working directory.
- 7 Go to *Obtaining the GQAM Software File* (on page 20).

Obtaining the GQAM Software File

- 1 Log on to Cisco's FTP server.

Notes:

- The address of the server is **ftp.sciatl.com** or **192.168.43.143**.
 - The username is **anonymous**.
 - The password is the email 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 the firewall, type **cd /pub/scicare/RELEASED/GQAM** to navigate to the correct directory.
 - If you are inside the firewall, type **cd /external_pub/scicare/RELEASED/GQAM** to navigate to the correct directory.
 - 3 Type **bin** and then press **Enter**. The system sets the ftp transfer mode to binary.
 - 4 Type **hash** and then press **Enter**. The system configures itself to display hash marks that show file-transfer progress.
 - 5 Type **get GQAM12.tar.gz** and press **Enter**. The system begins copying files into the /export/home/dnscs/download/directory on your DNCS.
 - 6 Type **bye** and press **Enter**. The system logs you out of Cisco's FTP server.
 - 7 Go to *Decompressing and Extracting the File* (on page 20).

Decompressing and Extracting the File

In this procedure, you will use the gzip and tar file-processing utilities to decompress and extract the file you just loaded onto your system.

- 1 Type **gzip -d GQAM12.tar.gz** and then press **Enter**. The system decompresses the GQAM software file.
- 2 Type **tar xvf GQAM12.tar** and then press **Enter**. The system extracts the individual files.
- 3 Go to *Installing GQAM Software onto the DNCS* (on page 20).

Installing GQAM Software onto the DNCS

Follow these instructions to install GQAM software version 1.2 from the directory you created at the beginning of this procedure.

- 1 Type **/usr/sbin/install_pkg** and then 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. 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 a minute or less.

- 3 Was the installation successful?
 - If **yes**, type **exit** and press **Enter** to log out as root user. Then, go to step 4.
 - If **no**, contact Cisco Services.
- 4 Use the UNIX **rm -rfi** command to remove the following file and directory:
 - GQAM12.tar (file)
 - SAIgqam (directory)

Example: Type **rm -rfi GQAM12.tar** and press **Enter**.

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

- 5 Type **Yes** and press **Enter** when prompted to remove the GQAM12.tar file and the contents of the SAIgqam directory.
- 6 Type **exit** and press **Enter** to close the xterm window. You are ready to determine a sequence for downloading GQAM software version 1.2 to the GQAM modulators in your system.
- 7 Go to *Establish a Download Sequence* (on page 22).

Establish a Download Sequence

Introduction

This section provides guidelines for establishing a sequence to follow when downloading GQAM software version 1.2 onto more than one GQAM modulator.

Note: For more information about the DNCS and operating the DNCS software, refer to the *DNCS Online Help* for your system.

Establishing a Sequence for Downloading GQAM Software onto Each GQAM Modulator



CAUTION:

If downloading GQAM software version 1.2 to more than one GQAM modulator group, download the software to one modulator group 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.

The order in which you download GQAM software onto GQAM modulators allows you to verify that the download is successful before proceeding. Follow these guidelines to establish an order in which to download GQAM software version 1.2 to GQAM modulators. The method that you follow depends on the type of sessions that the GQAM modulator carries (xOD/VOD sessions or broadcast sessions).

xOD/VOD Sessions

When upgrading GQAM 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:

- If any GQAM modulators act as spares, start by downloading GQAM software version 1.2 on these modulators.
- If your system does not have a spare GQAM modulator, download GQAM software version 1.2 on the modulator carrying the fewest number of sessions.
- Continue downloading the software to modulators by working your way up to the modulator carrying the most sessions.

Broadcast Sessions

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

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

- If any GQAM modulators act as spares, start by downloading GQAM software version 1.2 on these modulators.
- If your system does not have a spare GQAM modulator, download GQAM software version 1.2 on the modulator carrying sessions that are least viewed.
- If you have a GQAM that is carrying BFS sessions, download GQAM software version 1.2 to the BFS GQAM.
- 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?

After you have established an order for downloading GQAM software version 1.2 onto the GQAM modulators in your system, the next step depends on the type of sessions your GQAM modulators carry (xOD/VOD sessions or broadcast sessions).

xOD/VOD Sessions

If all of your GQAM modulators carry xOD or VOD sessions, you are ready to begin downloading GQAM software version 1.2 to GQAM modulators. Go to ***Download GQAM Software to the GQAM Modulators*** (on page 28).

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

Broadcast Sessions

If you have GQAM modulators that carry broadcast sessions, first generate a list of the existing sessions that each modulator currently carries. Generating this list helps you to verify that these sessions are successfully rebuilt after GQAM software version 1.2 is downloaded to the modulator. Go to ***Determine Existing Broadcast Sessions*** (on page 24).

Determine Existing Broadcast Sessions

Introduction

By using Cisco's Report Writer, you can generate the Channels, Sources & Sessions report that lists the existing broadcast sessions in your system along with the channels and sources in your system. This section describes how to generate the Channels, Sources & Sessions Report, which lists this information.

Note: If your GQAM modulator will carry VOD sessions, you do not need to generate the Channels, Sources & Sessions Report. VOD sessions are set up as needed when a subscriber requests a session.

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), starting from each source in your system and ending with each GQAM modulator in your system.

Channels, Sources & Sessions Report Information

The following screen shows an example of the Channels, Sources & Sessions Report and highlights information helpful in verifying a successful upgrade.

The **Channel Num** column lists the display channels in your system. Display channels are those to which you can tune the DHCT to receive each service.

The **Session ID** column lists the sessions that an GQAM modulator carries.

Channel Num	Chk Name	LUG ID	Service ID	SAM Service Name	Short Desc	Long Desc	Application URL	Source ID	Source Name	Source Type	Session ID	Effective Date Time	QAM Name	Modulator	MPEG Program Number	Cost
513	Hdb1	1	165	HBOPW 513	HBOPW	HBO Plus West 513	Info: resapp-watcher	1513	D113 HBOPW	Digital	00:00:00:00:00:01:1513	01-28-2004 13:10	Hdb1	qam3	3000000	14
513	Hdb2	2	165	HBOPW 513	HBOPW	HBO Plus West 513	Info: resapp-watcher	1513	D113 HBOPW	Digital	00:00:00:00:00:01:1513	01-28-2004 13:10	Hdb2	qam3	3000000	14
514	Hdb1	1	166	HBO5W 514	HBO5W	HBO Signature West 514	Info: resapp-watcher	1514	D114 HBO5W	Digital	00:00:00:00:00:01:1514	01-28-2004 13:12	Hdb1	qam3	3000000	15
514	Hdb2	2	166	HBO5W 514	HBO5W	HBO Signature West 514	Info: resapp-watcher	1514	D114 HBO5W	Digital	00:00:00:00:00:01:1514	01-28-2004 13:12	Hdb2	qam3	3000000	15
515	Hdb1	1	167	SNO2W 515	SNO2W	Showtime 2 West 515	Info: resapp-watcher	1515	D115 SNO2W	Digital	00:00:00:00:00:01:1515	01-28-2004 13:13	Hdb1	qam3	3000000	16
515	Hdb2	2	167	SNO2W 515	SNO2W	Showtime 2 West 515	Info: resapp-watcher	1515	D115 SNO2W	Digital	00:00:00:00:00:01:1515	01-28-2004 13:13	Hdb2	qam3	3000000	16
516	Hdb1	1	168	TMCW 516	TMCW	The Movie Channel West 516	Info: resapp-watcher	1516	D116 TMCW	Digital	00:00:00:00:00:01:1516	01-28-2004 13:14	Hdb1	qam3	3000000	17
516	Hdb2	2	168	TMCW 516	TMCW	The Movie Channel West 516	Info: resapp-watcher	1516	D116 TMCW	Digital	00:00:00:00:00:01:1516	01-28-2004 13:14	Hdb2	qam3	3000000	17
517	Hdb1	1	169	STZ2W 517	STZ2W	Starz 2 West 517	Info: resapp-watcher	1517	D117 STZ2W	Digital	00:00:00:00:00:01:1517	01-28-2004 13:17	Hdb1	qam3	3000000	18
517	Hdb2	2	169	STZ2W 517	STZ2W	Starz 2 West 517	Info: resapp-watcher	1517	D117 STZ2W	Digital	00:00:00:00:00:01:1517	01-28-2004 13:17	Hdb2	qam3	3000000	18

The **QAM Name** column lists the name of each GQAM modulator, uniquely identifying each GQAM modulator in the system.

Generating the Channels, Sources & Sessions Report

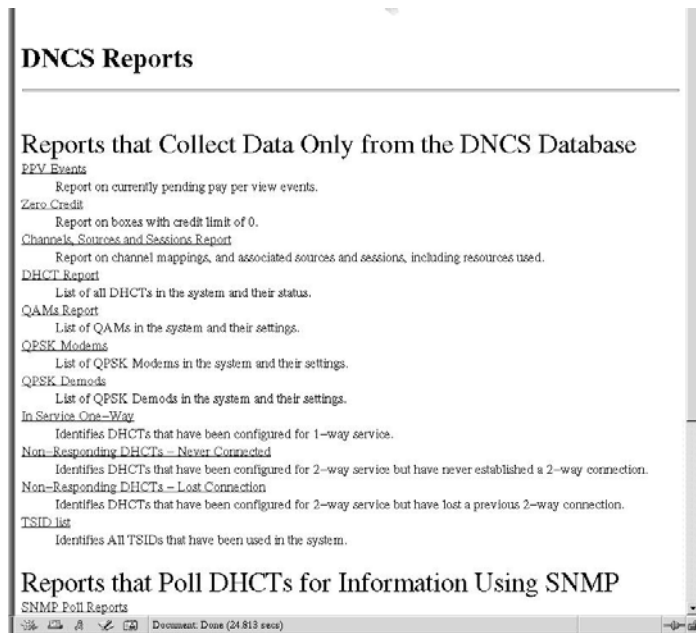
Follow these steps to generate a Channels, Sources & Sessions Report.



CAUTION:

Before running Report Writer, you must exit all instances of Netscape associated with your UNIX user ID. When you try to run Report Writer with more than one instance of Netscape associated with your UNIX user ID, a message appears on the screen stating that Netscape has “detected a lock file.” Do not continue. If you attempt to continue, Report Writer may exhibit unpredictable behavior.

- 1 On the DNCS Administrative Console, click the **Utilities** tab. The Utilities tab moves to the forefront.
- 2 Click **Reports**. A Web browser opens and displays the DNCS Web Server welcome message.
- 3 Click **DNCS Report Manager**. A prompt for the user ID and password appears for the DNCS server where Cisco’s Report Writer software is located.
- 4 Type your user ID and password and then click **OK**. The default user name is **sareports** and the default password is **report**. The Web browser displays the following page.



- 5 Under Reports that Collect Data Only from the DNCS Database, click the Channels, Sources and Sessions Report link. A page similar to the following page opens.

[DNCS Reports] [First] [Next] [Last]
Page: 1 (1-500 of 2396 records)

Choose a page:
Select

Search

Channels, Sources & Sessions Report

Data Refreshed on 06/10/2004 @ 16:32

Run Report

Channel Num	Hub Name	LUG ID	Service ID	SAM Service Name	Short Desc	Long Desc	Application URL
8		0	710	WGTW	WGTW	WGTW	bfs://resapp/watchtv
12		0	754	WPBA_ANALOG	WPBA	WPBA	bfs://resapp/watchtv
9	Hub_1_HE1	0	713	WUPA	WUPA	WUPA	bfs://resapp/watchtv
10	Hub_1_HE1	0	712	WGN	WGN	WGN CHICAGO	bfs://resapp/watchtv
11	Hub_1_HE1	0	769	WPXA_ANALOG	WPXA	WPXA	bfs://resapp/watchtv
9	Hub_2_HE2	0	713	WUPA	WUPA	WUPA	bfs://resapp/watchtv
10	Hub_2_HE2	0	712	WGN	WGN	WGN CHICAGO	bfs://resapp/watchtv
11	Hub_2_HE2	0	769	WPXA_ANALOG	WPXA	WPXA	bfs://resapp/watchtv
501	Hub_11_HE1	0	897	SHEXE	SHEXE	SHOW Extreme	bfs://resapp/watchtv
502	Hub_11_HE1	0	898	STZE	STZE	Starz East	bfs://resapp/watchtv
503	Hub_11_HE1	0	901	ENCE	ENCE	ENCE	bfs://resapp/watchtv
513	Hub_11_HE1	0	564	HBOPW	HBOPW	HBO PLUS WEST	bfs://resapp/watchtv
515	Hub_11_HE1	0	601	SHO2W	SHO2W	Showtime 2 West	bfs://resapp/watchtv
516	Hub_11_HE1	0	602	TMCW	TMCW	The Movie Channel West	bfs://resapp/watchtv
517	Hub_11_HE1	0	603	STZ2W	STZ2W	Starz 2 West	bfs://resapp/watchtv
527	Hub_11_HE1	0	558	ZDTV	ZDTV	ZDTV	bfs://resapp/watchtv
537	Hub_11_HE1	0	900	ACTE	ACTE	ACTION East	bfs://resapp/watchtv
538	Hub_11_HE1	0	565	HBOE	HBOE	HBO EAST	bfs://resapp/watchtv

- 6 To generate the report click **Run Report**.

Results:

- The **Running** message displays to let you know that the system is generating the report.
 - When the report has been generated, the **Click on button below to display report data** message displays.
- 7 Click **Display Data**. The Channels, Sources & Sessions Report page opens.

- 8 Scroll to the right until the **QAM Name** column appears. Then, click the **QAM Name**. The system begins re-generating the report so that the session list is sorted according to each QAM, MQAM, or GQAM modulator in your system.

Source ID	Source Name	Source Type	Session ID	Effective Date/Time	QAM Name	Bandwidth	MPEG Program Number	Content Origination
1008	A008 WGTW	Analog	N/A	N/A	N/A	0	N/A	N/A
1012	A012 WPBA	Analog	N/A	N/A	N/A	0	N/A	N/A
1009	A009 WUPA	Analog	N/A	N/A	N/A	0	N/A	N/A
1010	A010 WGN	Analog	N/A	N/A	N/A	0	N/A	N/A
1011	A011 WPXA	Analog	N/A	N/A	N/A	0	N/A	N/A
1009	A009 WUPA	Analog	N/A	N/A	N/A	0	N/A	N/A
1010	A010 WGN	Analog	N/A	N/A	N/A	0	N/A	N/A
1011	A011 WPXA	Analog	N/A	N/A	N/A	0	N/A	N/A
1501	D501 DSCK	Digital	00:00:00:00:02 1501	01/18/2001 13:05	QAM2x1	2000000	50	MPEG
1502	D502 DSCS	Digital	00:00:00:00:02 1502	01/19/2001 12:22	QAM2x1	2000000	48	MPEG
1503	D503 GOLF	Digital	00:00:00:00:02 1503	01/19/2001 16:29	QAM2x1	2000000	47	MPEG
1513	D513 HBOPW	Digital	00:00:00:00:02 1513	01/20/2001 10:19	QAM2x1	2000000	14	MPEG
1515	D515 SHO2W	Digital	00:00:00:00:02 1515	02/06/2001 15:09	QAM2x1	2000000	16	MPEG
1516	D516 TMCW	Digital	00:00:00:00:02 1516	02/06/2001 16:13	QAM2x1	2000000	17	MPEG
1517	D517 STZ2W	Digital	00:00:00:00:02 1517	02/06/2001 16:20	QAM2x1	2000000	18	MPEG
1527	D527 ZDTV	Digital	00:00:00:00:02 1527	01/19/2001 12:55	QAM2x1	2000000	29	MPEG
1537	D537 ACTN	Digital	00:00:00:00:02 1537	02/06/2001 10:09	QAM2x1	2000000	40	MPEG
1538	D538 HBOE	Digital	00:00:00:00:02 1538	01/20/2001 10:31	QAM2x1	2000000	41	MPEG

- 9 When the **Data Refreshed** message appears, click **Display Data**. The Channels, Sources & Sessions Report page displays again with the session list sorted according to each QAM, MQAM, or GQAM modulator in your system
- 10 Now that you have a list of the channels and sessions that are running on the GQAM modulators that you are upgrading, you are ready to begin the upgrade process. Keep the Channels, Sources & Sessions Report open on the screen and go to *Download GQAM Software to the GQAM Modulators* (on page 28).

Download GQAM Software to the GQAM Modulators

Introduction

To download GQAM software version 1.2 to GQAM modulators, you must reset (reboot) the modulators. After the modulators reboot, GQAM software version 1.2 is downloaded from the DNCS to the modulators.

Important! Read and follow the directives contained in *Impact of TVs With QAM Tuners* (on page 13).

You have the following methods available when you reset GQAM modulators:

- You can reset the modulators through the DNCS GUI.
- You can reset the modulators through the front panel of the GQAM.
- You can use the new auditQam utility to reset the modulators through the command line of the DNCS.

Which Reset Method to Use

Resetting GQAM modulators from the DNCS GUI or from the front panel can be time-consuming. If you have many modulators to reset, consider using the new auditQam utility. The auditQam utility takes, as an argument, the IP address of the modulator that you want to reset. While the auditQam utility script runs, you are free to complete other upgrade-related tasks.

Notes:

- Instructions for resetting modulators through the DNCS GUI are found in *Resetting the GQAM Modulator Through the DNCS GUI* (on page 29).
- Instructions for resetting modulators through the front panel are found in *Resetting the GQAM Modulator Through the Front Panel* (on page 31).
- Instructions for resetting modulators through the auditQam utility are found in *Resetting GQAM Modulators Through the auditQam Utility* (on page 32).

Resetting the GQAM Modulator Through the DNCS GUI



CAUTION:

All active sessions on the GQAM 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.

- 1 If you have not already done so, provision the modulator on the DNCS.
Note: For instructions on provisioning the GQAM modulator, refer to *GQAM Modulator Model D9479 Hardware Installation and Operation Guide*.
- 2 From the DNCS Administrative Console, click the **DNCS** tab, click the **Element Provisioning** tab, and then click **QAM**. The QAM List window opens.
- 3 Open an xterm window on the DNCS for use later in this procedure.
- 4 Based on the order you determined earlier, select the GQAM modulator that you want to reset by highlighting it in the QAM List window.

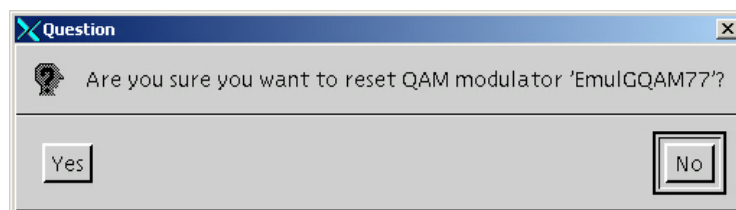
Important! Although each GQAM modulator that has been provisioned is listed 16 times, select only 1 of the 16 modulators listed.

Example: The following diagram shows an example of a GQAM modulator selected in the QAM List window.

Headend Name	QAM Type	QAM Name	RF Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (4)	23231	621.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (3)	22231	615.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (16)	23234	621.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (15)	22234	615.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (13)	20234	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (2)	21231	609.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (1)	20231	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (14)	21234	609.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 2 (5)	20232	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 2 (6)	21232	609.00	172.16.4.77	Online

- 5 Click **File** and then select **Reset**. The Question window appears with the name of the selected GQAM modulator inside the quotation marks ('...').

Example: The following diagram shows an example of the Question window.



- 6 Click **Yes**. The QAM List window displays the following message:
The reset request has been received by QAM modulator <Name of GQAM>
Note: The <Name of GQAM> represents the name of the modulator you just reset.
- 7 Repeat steps 4 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 overload the DNCS.
Note: In step 10, you will have the opportunity to reset additional modulators.
- 8 Wait a few minutes and then, in the xterm window you opened earlier, type **ping [IP address]** and press **Enter** to ping each modulator you just reset.
Example: **ping 172.16.4.77**
Result: The ping command displays a message similar to **Device is alive** when the modulator has been reset.
Important! If the ping fails, wait a few minutes and retry the ping. If the ping fails an additional time, contact Cisco Services.
Note: It may take up to 5 minutes for each modulator to reset.
- 9 Go to *Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions* (on page 34), and verify the functionality of the GQAMs you just reset. Then, return to step 10 of this procedure.
- 10 Do you have additional modulators to reset?
 - If **yes**, repeat steps 4 through 9 as many times as necessary until all of your modulators have been reset, and then go to step 11.
 - If **no**, go to step 11.
- 11 Click **File** and then select **Close** to close the QAM List window.
- 12 In the xterm window, type **exit** and press **Enter** to close the xterm window.

Resetting the GQAM Modulator Through the Front Panel

- 1 Follow these instructions to record the Session Count, the Program Count, and the IP address of your GQAM modulators.
Note: Skip this step for any GQAM modulator that is used for video-on-demand (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 GQAM.
 - 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 GQAM.
 - e Repeat steps a) through d) for all of your GQAM modulators.
- 2 To reset a GQAM modulator, follow these instructions.
 - a Press the **Options** button on the front panel until the **Reset** option appears.
 - b Follow the instructions that appear alongside the Reset option.
- 3 Repeat step 2 for up to three additional modulators, and then go to step 4.
Important! Never reset more than four modulators at once, or you may overload the DNCS.
Note: In step 6, you will have the opportunity to reset additional modulators.
- 4 Verify the Program and Session Count totals for each modulator not used for VOD that you just reset, using the totals you recorded in step 1 of this procedure.
- 5 Do the Program and Session Count totals match?
 - If **yes**, go to *Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions* (on page 34). Then, return 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 as many times as necessary until all of your modulators have been reset, and then go to step 7.
 - If **no**, go to step 7.
- 7 Go to *Verifying the Functionality of GQAM Modulators That Carry xOD or VOD Sessions* (on page 35).

Resetting GQAM Modulators Through the auditQam Utility

The *reset* option of the auditQam utility allows you to reset a GQAM 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. If you have only a few modulators to reset, you can just type the IP address of the modulator as an argument to the **auditQam -reset** command. If you have many modulators to reset, consider creating a script. Instructions and guidelines for both situations follow next in this section.

Resetting a Few GQAM Modulators

If you want to reset only a few modulators, complete this procedure for each modulator.

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

auditQam -reset [gqam 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 Select one of the following options:
 - For GQAM modulators that carry broadcast sessions, go to *Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions* (on page 34).
 - For GQAM modulators that carry xOD or VOD sessions, go to *Verifying the Functionality of GQAM Modulators That Carry xOD or VOD Sessions* (on page 35).

Resetting Many GQAM Modulators

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

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

```

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
ping 123.123.123.123
sleep 1
ping 123.123.123.124
sleep 1
ping 123.123.123.125
sleep 1
ping 123.123.123.126
sleep 60
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
ping 123.123.123.127
sleep 1
ping 123.123.123.128
sleep 1
ping 123.123.123.129
sleep 1
ping 123.123.123.130
sleep 60

```

Important! Resetting a GQAM interrupts all active sessions on the GQAM for up to 10 minutes. Complete this task during a maintenance period whenever possible.

Note: After resetting the GQAMs, select one of the following options:

- For GQAM modulators that carry broadcast sessions, go to *Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions* (on page 34).
- For GQAM modulators that carry xOD or VOD sessions, go to *Verifying the Functionality of GQAM Modulators That Carry xOD or VOD Sessions* (on page 35).

Verifying the Functionality of GQAM Modulators That Carry Broadcast Sessions

Follow these steps to verify the functionality of your GQAM modulators by confirming that a DHCT downstream of the GQAM modulators can tune to authorized channels.



CAUTION:

Verify the functionality of one GQAM modulator group at a time. In the unlikely event of a failure, you can better isolate that failure without interrupting service for the remaining GQAM modulators and their associated DHCTs.

- 1 Access a DHCT that is connected downstream of one GQAM modulator.
- 2 Refer to the Channels, Sources & Sessions Report that you generated and saved in *Determine Existing Broadcast Sessions* (on page 24), to verify restored GQAM channels and sessions.
- 3 Tune the DHCT to each channel listed in the report for each GQAM that you reset and upgraded.
- 4 Are all channels listed for the reset GQAMs accessible from the DHCT?
 - If **yes**, go to step 5.
 - If **no**, *do not* attempt to upgrade the software of any additional GQAM modulators, call Cisco Services.
- 5 For those GQAMs that carry objectionable material, Cisco recommends that you verify encryption with one of the following methods:
 - Using a set-top that does not contain subscription service packages, tune to the respective channels and verify content is not viewable.
 - Verify that the program count is correct on the GQAMs that carry objectionable material.
 - Using a QAM tuner television, tune to the respective channels and verify that objectionable 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 GQAMs?
 - If **yes**, go to step 8.
 - If **no**, return to the procedure you are using to reset your GQAMs.

- 8 After the upgrade is complete, generate a Doctor Report using the **-av** option to verify system stability and functionality. If new or unexpected errors appear in the Doctor Report, contact Cisco Services.

Note: For further instructions on running the Doctor Report, refer to Chapter 5, **Analyze System Configuration With the Doctor Report**, in the *DBDS Utilities Installation Instructions and DNCS Utilities User's Guide*.

- 9 After the upgrade is complete, perform the System Validation Tests found in the installation and upgrade documentation for your system release version to verify the functionality and performance of the set-tops in your system. If new or unexpected errors occur, contact Cisco Services.
- 10 Over the next few days, check the individual modulators to verify that they received the new code.

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

Sessions that exist on xOD or VOD GQAMs that were upgraded will be interrupted and, in most cases, will recover. If the sessions do not recover, exit the xOD or VOD application (stop the xOD or VOD program or change to a different channel and then back to the previous channel) and restart the application and the xOD or VOD stream by resuming the playback of the “in progress” purchase. This process will vary depending the application you are using.

Important! Due to load balancing and traffic, it is difficult to determine with absolute certainty that all GQAM 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.

Notes:

- After the upgrade is complete, perform the System Validation Tests found in the installation and upgrade documentation for your system release version to verify the functionality and performance of the set-tops in your system. If new or unexpected errors occur, contact Cisco Services.
- Over the next few days, check the individual modulators to verify that they received the new code.

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

Roll Back to the Previous Version of GQAM Software

Introduction

This appendix contains instructions for restoring the previous version of GQAM software should you encounter problems after upgrading to GQAM software version 1.2. Follow the instructions in this section only after Cisco Services directs you to restore the previous version of software.

Important! If after downloading GQAM software version 1.2 you encounter problems, contact Cisco Services at for assistance. In the event that Cisco Services directs you to download the previous version of software to GQAM modulators, follow the procedures in this appendix while working with Cisco Services.

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- Restore the Previous Version of GQAM Software 38

Restore the Previous Version of GQAM Software

Introduction

Contact Cisco Services if you notice that the system is reacting adversely after installing or upgrading to GQAM software version 1.2. If Cisco Services recommends restoring the previous GQAM software version, use the instructions in this section to assist you as you work with a Cisco Services engineer to restore the previous GQAM software version.



CAUTION:

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

Restoring the Previous GQAM Software Version

Follow these steps to restore the previous version of GQAM software in the unlikely event that you encounter problems after upgrading to GQAM software version 1.2.

Note: To restore the previous GQAM executable files, restore the backup configuration file that you saved in *Back Up the Current GQAM Configuration File* (on page 17).

- 1 Open an xterm window on the DNCS and log on as the **root** user. The root prompt appears.
- 2 Type **cd /tftpboot** and then press **Enter**. The root prompt appears.
- 3 Type **pwd** and then press **Enter**. The text `/tftpboot` appears at the prompt. This text indicates you are in the correct directory.
- 4 Type **cp -p gqam.config gqam.config.12** and then press **Enter**. The configuration file named `gqam.config`, which contains GQAM version 1.2 configuration settings, is saved to a file named `gqam.config.12`.
- 5 Type **cp -p gqam.config.bakxxx gqam.config** and then press **Enter**. The configuration file named `gqam.config.bakxxx`, which contains the previous list of GQAM configuration files, is copied to a configuration file named `gqam.config`.
Note: The xxx represents the original GQAM software version number.
- 6 Type **ls -l** and then press **Enter**. A list of files displays. The files `gqam.config.bakxxx`, `gqam.config`, and `gqam.config.12` appear in the list.
Note: The l used in “ls” and “-l” is the lowercase of the letter L, not the number 1.
- 7 Confirm that the date and size of `gqam.config` matches those of `gqam.config.bakxxx`.

- 8 Type **exit** and then press **Enter**.
- 9 You are now ready to download the previous version of GQAM software to GQAM modulators by rebooting the modulators. For detailed procedures, go to *Download GQAM Software to the GQAM Modulators* (on page 28).



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