GoQAM Modulator Software Version 1.1.0

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:

- Release notes that highlight changes to the Gigabit Overlay Quadrature Amplitude Modulation (GoQAM) for GoQAM software version 1.1.0
- Instructions for upgrading GoQAM modulators with GoQAM software version 1.1.0
- A brief description of benefits the software provides
- Instructions for rolling back to earlier versions of GoQAM software in the unlikely event that a site encounters problems after upgrading to GoQAM software version 1.1.0

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

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

Note: The RF GoQAM is a software-modified Model D9479-1 Gigabit QAM (GQAM) Modulator. The IF GoQAM (Model D9479-3) is similar to the RF GoQAM, but does not require or contain RF cards and has a different back panel. *Both* are integral components of Cisco's Overlay solution.

Audience

This document is written for the following audiences:

- System administrators of the Digital Broadband Delivery System (DBDS)
- Operators of the Digital Network Control System (DNCS)
- Cisco's on-site and field service engineers who support sites that use Cisco or other resident applications

Scope

This document provides instructions for upgrading GoQAM modulators with GoQAM software version 1.1.0. It does not provide instructions for installing a GoQAM modulator in your headend.

Note: For instructions on installing a GoQAM modulator in your headend or for a complete description of GoQAM features, refer to the *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide.*

Document Version

This is the second release of this document.

Chapter 1
Introducing GoQAM Software Version 1.1.0

Overview

Introduction

This chapter lists the requirements for upgrading both the RF and IF GoQAM modulators with GoQAM software version 1.1.0. It also provides a brief overview of the benefits GoQAM software version 1.1.0 provides along with any known issues.

In This Chapter

This chapter contains the following topics.

About GoQAM Software Version 1.1.0

Introduction

GoQAM software version 1.1.0 is designed to be installed on both the RF and IF GoQAM modulators.

Note: For a description of the GoQAM modulator, refer to *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide*.

System Release Configuration

GoQAM software version 1.1.0 can be installed on a DBDS that is running System Release (SR) 2.4/SR 3.4 and later.

For a complete configuration listing, please contact Cisco Services.

Software

GoQAM software version 1.1.0 includes the following application and boot codes:

For RF GoQAMs

- Host Application code version 1.1.0
- Host Boot code version 1.1.0
- Input Application code version 1.1.0
- Input Boot code version 1.1.0
- Output Application code version 1.1.0
- Output Boot code version 1.1.0
- RF Application code version 1.1.0

For IF GoQAMs

- Host Application code version 1.1.0
- Host Boot code version 1.1.0
- Input Application code version 1.1.0
- Input Boot code version 1.1.0
- Output Application code version 1.1.0
- Output Boot code version 1.1.0

Hardware

Install GoQAM software version 1.1.0 only onto an RF GoQAM or an IF GoQAM.

Note: For instructions to install the GoQAM in your DBDS, refer to the *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide*.

When to Perform the Upgrade

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

Features and Benefits

Overview

The GoQAM represents one of the most up-to-date innovations in video transmission technology. The GoQAM allows set-tops from different vendors, running a non-Cisco conditional access (CA) protocol to operate on the same system.

The GoQAM requires a clear copy and an encrypted copy of the same transport stream at each input of one of its two ASI blocks. Each unit contains four asynchronous serial interface (ASI) input ports that are grouped in two input pairs or blocks. Each block drives one QAM output. Each block is configured to accept both a clear and an encrypted version of the same MPEG transport stream. These MPEG transport streams are then processed and combined to generate a QAM output capable of being used by DHCTs from Cisco as well as set-tops from vendors using the alternate CA protocol.

As a space saving feature, the GoQAM provides two 6 MHz outputs while only occupying one rack unit (RU) in the equipment rack. This feature makes the GoQAM an ideal product for deployment of contemporary broadcast services in an Overlay environment.

After the software is installed and the GoQAM is active, GoQAM software version 1.1.0 provides required support for sites that deploy Cisco's Overlay solution for pay-per-view (PPV) and other broadcast services.

Want to Learn More About GoQAM Features?

For a description of the features that a GoQAM modulator provides, refer to *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide*. In addition to a list of features, this guide provides instructions on installing, provisioning, operating, and troubleshooting a GoQAM modulator.

Implemented Change Requests for GoQAM 1.1.0

Introduction

This section describes the change request (CR) that was implemented for GoQAM software version 1.1.0.

CR 48635-03: GoQAMS Need New RF Code to Support New RF Boards

The new RF boards needed RF software coding that supported *both* the current and the previous versions of the board. GQAM RF firmware version 2.2 now supports *both* versions of the GoQAM RF board. **CR 48635-03** addresses this requirement.

Chapter 2
Upgrading GoQAM Modulators With GoQAM Software Version 1.1.0

Overview

Introduction

This chapter describes how to upgrade both the RF and IF GoQAM modulators with GoQAM software version 1.1.0.

In This Chapter

This chapter contains the following topics.

Upgrade Process Overview

Introduction

This section provides a brief overview of the tasks you must complete to upgrade the RF and IF GoQAM modulators with GoQAM software version 1.1.0.

Before You Begin

Before you upgrade to GoQAM software version 1.1.0, be sure that your system meets the configuration requirements specified in **About GoQAM Software Version 1.1.0** in Chapter 1.

If you will not download GoQAM software version 1.1.0 from the Cisco File Transfer Protocol (FTP) site, make sure that you have obtained the CD **GoQAM V1.1.0**, part number 4009930.

Important: Do *not* proceed with installing GoQAM software version 1.1.0 until you have read and followed the directives in the **About GoQAM Software Version 1.1.0** section of Chapter 1.

Time To Complete

When upgrading GoQAM modulators with GoQAM software version 1.1.0, 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 GoQAM software from the FTP site. The speed of the connection and the size of the files determine the download time.

- Downloading GoQAM software version 1.1.0 to a GoQAM modulator takes approximately 5 minutes for each GoQAM modulator**.**
- Verifying the functionality of a GoQAM modulator depends on the number of sessions that the modulator carries and typically takes approximately 5 to 10 minutes.

Note: It is not necessary to rebuild sessions on the GoQAM modulators that you upgrade. The sessions are rebuilt automatically after GoQAM version 1.1.0 is downloaded to a GoQAM modulator.

Subscriber Impact

When GoQAM 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 GoQAM modulator.

Impact of TVs With QAM Tuners

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

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 GoQAMs. 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, see **Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions** on page 2-26.

Process Overview

This section provides an overview of the process required to upgrade to GoQAM software version 1.1.0.

> **CAUTION:**
>
> **If upgrading more than one GoQAM modulator, download GoQAM software version 1.1.0 to one modulator and verify its functionality before attempting to download GoQAM software to another modulator. Verifying the functionality of one GoQAM modulator 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.

   Note: For further instructions on verifying the integrity of an installation CD, 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 GoQAMs.

   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 GoQAMs.
4. Verify the current GoQAM software version running on your DNCS and GoQAM modulators.
5. Make a copy of the *current* GoQAM configuration file. In the unlikely event of a failure, you can use this backup copy to restore your system to the previous version of GoQAM software.
6. Install GoQAM software version 1.1.0 onto the DNCS.
7. If you are upgrading more than one GoQAM modulator, establish an order for upgrading the modulators.
8. If the GoQAM 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.

Upgrade Tasks

1. **CAUTION:**

   All active sessions on the GoQAM 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.

   Upgrade GoQAM modulators with GoQAM software version 1.1.0 by resetting the modulator from the DNCS or by cycling power to the modulator. Resetting the modulator causes it to reboot, update the software, and re-establish existing sessions. Follow the instructions found in **Download GoQAM Software Version 1.1.0 to GoQAM Modulators**, later in this chapter.

   Note: If resetting the modulator does not cause it to reboot and load GoQAM software version 1.1.0, turn power to the modulator off and on again. For assistance cycling power to the modulator, refer to *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide*.

2. Verify that the GoQAM modulator is functioning properly following the upgrade.

   Important: Read and follow the directives contained in **Impact of TVs With QAM Tuners**, earlier in this section.

3. To upgrade another GoQAM 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 GoQAM Software Version on the DNCS

Introduction

Before attempting to upgrade to GoQAM software version 1.1.0, verify the current GoQAM software version installed on your DNCS. This section describes how to verify the GoQAM software version currently installed on your DNCS.

Verifying the GoQAM Software Version Currently on the DNCS

Complete these steps to verify the GoQAM software version currently installed on your DNCS.

1. Open an xterm window on the DNCS.
2. Type **pkginfo -l SAIgoqam** and then press **Enter**.

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

   Result: Information about the software package appears in the xterm window. The **version** line indicates the current version of GoQAM software installed on the DNCS.
3. Does the information indicate that GoQAM software version 1.1.0 has been installed?
   - If **yes**, you do not need to install GoQAM software version 1.1.0 onto the DNCS. You can ignore the remainder of these instructions.
   - If **no**, before installing GoQAM 1.1.0 on the DNCS, backup the GoQAM software currently installed on your DNCS. Go to **Back Up the Current GoQAM Software Version**, next in this chapter.

Back Up the Current GoQAM Software Version

Introduction

Before installing GoQAM software version 1.1.0 to a GoQAM modulator, copy the configuration file of the version of GoQAM software currently installed. In the unlikely event of a failure, you can use the copy to restore the current version of GoQAM software to your system. This section provides instructions for copying the configuration file of your current GoQAM software version.

CAUTION:

Do not proceed with installing GoQAM software version 1.1.0 until you have created a backup of the current configuration file of the GoQAM software installed on your system. Otherwise, you will be unable to restore the previous version of GoQAM software to your system in the unlikely event of a failure.

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

Backing Up the Current GoQAM Configuration File

Follow these steps to back up the current version of GoQAM configuration file on your system.

1. Open an xterm window on the DNCS.

   Result: The system displays a dncs user prompt.

2. Type **su –** and press **Enter.**

   Result: The system prompts you to enter the password for the root user.

3. Type the password for the root user and press **Enter**.

   Result: The system logs you in as the root user and displays a root user prompt.

4. Type **cd /tftpboot** and then press **Enter**.

   Result: The root prompt appears.

5. Type **pwd** and then press **Enter**.

   Result: The /tftpboot directory name appears. This name indicates you are in the correct directory.

6. Type **cp –p goqam.config goqam.config.bakxxx** and then press **Enter.**

   Result: A copy of the configuration file goqam.config, which contains GoQAM configuration settings, is saved to a configuration file named goqam.config.bakxxx.

   Note: In this example, xxx represents your current GoQAM software version. For example, if your current GoQAM software version is 0.4.0, name the file **goqam.config.bak040.**

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 version of GoQAM software installed on your DNCS, you are ready to install GoQAM software version 1.1.0 on your DNCS. Go to **Install GoQAM Software Version 1.1.0 Onto the DNCS**, next in this chapter.

Install GoQAM Software Version 1.1.0 Onto the DNCS

Introduction

This section describes how to install GoQAM software version 1.1.0 onto the DNCS using either of the following methods:

- From the CD **GoQAM V1.1.0**, part number 4009930
- From Cisco's FTP server

Installing the GoQAM Software From a CD

Follow these steps to install GoQAM software version 1.1.0 from a CD.

1. Open an xterm window on the DNCS.

   Result: The system displays a dncs user prompt.

2. Type **su –** and press **Enter.**

   Result: The system prompts you to enter the password for the root user.

3. Type the password for the root user and press **Enter**.

   Result: The system logs you in as the root user and displays a root user prompt.

4. Insert the CD **GoQAM V1.1.0** 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.

   Result: 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/dvsg** and press **Enter.**

   Result: The /cdrom/dvsg directory becomes the working directory.

8. Type **./install_pkg** and then press **Enter.**

   Important: Be sure to type a period in front of /install_pkg.

   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.

   Result: 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.

    Result: The xterm window closes and the File Manager window is now visible.

12. From the File Manager window, click **File** and select **Eject**.

    Result: 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**, later in this chapter.

Installing the GoQAM Software From Cisco's FTP Server

In this section, you will create a directory on the DNCS into which you will load the GoQAM software version 1.1.0 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 GoQAM software version 1.1.0 from the file you created at the beginning of this procedure.

Creating the Directory

Follow these steps to create a directory on the DNCS into which you will load the file containing GoQAM software version 1.1.0.

1. Open an xterm window on the DNCS.

   Result: The system displays a dncs user prompt.

2. Type **su –** and press **Enter**.

   Result: The system prompts you to enter the password for the root user.

3. Type the password for the root user and press **Enter.**

   Result: 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**.

   Result: 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. Go to **Obtaining the GoQAM Software File**, next in this section.

Obtaining the GoQAM Software File

Follow these guidelines to obtain the file containing GoQAM software version 1.1.0 from Cisco's FTP server.

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 of Cisco's firewall, type **cd /pub/scicare/RELEASED/GoQAM** to navigate to the correct directory**.**
   - If you are inside of Cisco's firewall, type **cd /external_pub/scicare/RELEASED/GoQAM** to navigate to the correct directory**.**

3. Type **bin** and then press **Enter**.

   Result: The system sets the ftp transfer mode to binary.

4. Type **hash** and then press **Enter**.

   Result: The system configures itself to display hash marks that show file-transfer progress.

5. Type **get SAIgoqam110.tar.gz** and press **Enter**.

   Result: The system begins copying files into the /export/home/dncs/download/ directory on your DNCS.

6. Type **bye** and press **Enter**.

   Result: The system logs you out of Cisco's FTP server.

7. Go to **Decompressing and Extracting the File**, next in this procedure.

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 SAIgoqam110.tar.gz** and then press **Enter**.

   Result: The system decompresses the GoQAM software file.

2. Type **tar xvf SAIgoqam110.tar** and then press **Enter**.

   Result: The system extracts the individual files.

3. Go to **Installing GoQAM 1.1.0 on the DNCS**, next in this procedure.

Installing GoQAM 1.1.0 on the DNCS

Follow these instructions to install GoQAM software version 1.1.0 from the directory you created at the beginning of this procedure.

1. Type **./install_pkg** and then press **Enter.**

   Important: Be sure to type a period in front of /install_pkg.

   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.

   Result: 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 files and directories:

   - install_pkg (file)
   - GOQAM110.tar (file)
   - SAMgoqam (directory)

   Example: Type **rm –rfi install_pkg** and press **Enter**.

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

5. Type **Yes** and press **Enter** when prompted to remove the install_pkg and GOQAM110.tar files and the contents of the and SAIgoqam directory.

6. Type **exit** and press **Enter** to close the xterm window. You are ready to determine a sequence for downloading GoQAM software version 1.1.0 to the GoQAM modulators in your system. Go to **Establish a Download Sequence**, next in this chapter.

   Result: The xterm window closes and the File Manager window is now visible.

Establish a Download Sequence

Introduction

This section provides guidelines for establishing a sequence to follow when downloading GoQAM software version 1.1.0 onto more than one GoQAM 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 GoQAM Software Version 1.1.0 Onto Each GoQAM Modulator

> ⚠ **CAUTION:**
>
> **If downloading GoQAM software version 1.1.0 to more than one GoQAM 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 GoQAM software onto GoQAM modulators allows you to verify that the download is successful before proceeding. Follow these guidelines to establish an order in which to download GoQAM software version 1.1.0 to GoQAM modulators.

- When upgrading GoQAM modulators that carry broadcast sessions, upgrade the modulators in one hub, four modulators at a time, and verify their functionality before proceeding to other GoQAM modulators in the hub. Use the following guidelines to determine the order in which to upgrade modulators:
  - If any GoQAM modulators act as spares, start by downloading GoQAM software version 1.1.0 on these modulators.
  - If your system does not have a spare GoQAM modulator, download GoQAM software version 1.1.0 on the modulator carrying sessions that are least viewed.
  - Continue downloading the software to modulators in this hub by working your way up to the modulator carrying sessions that are most frequently viewed.
- If you have GoQAM 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 GoQAM 1.1.0 is downloaded to the modulator. Go to **Determine Existing Broadcast Sessions**, next in this chapter.

Determine Existing Broadcast Sessions

Introduction

By using Cisco's Report Writer, you can generate a 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, save, and print the Channels, Sources & Sessions Report, which lists this information.

Description

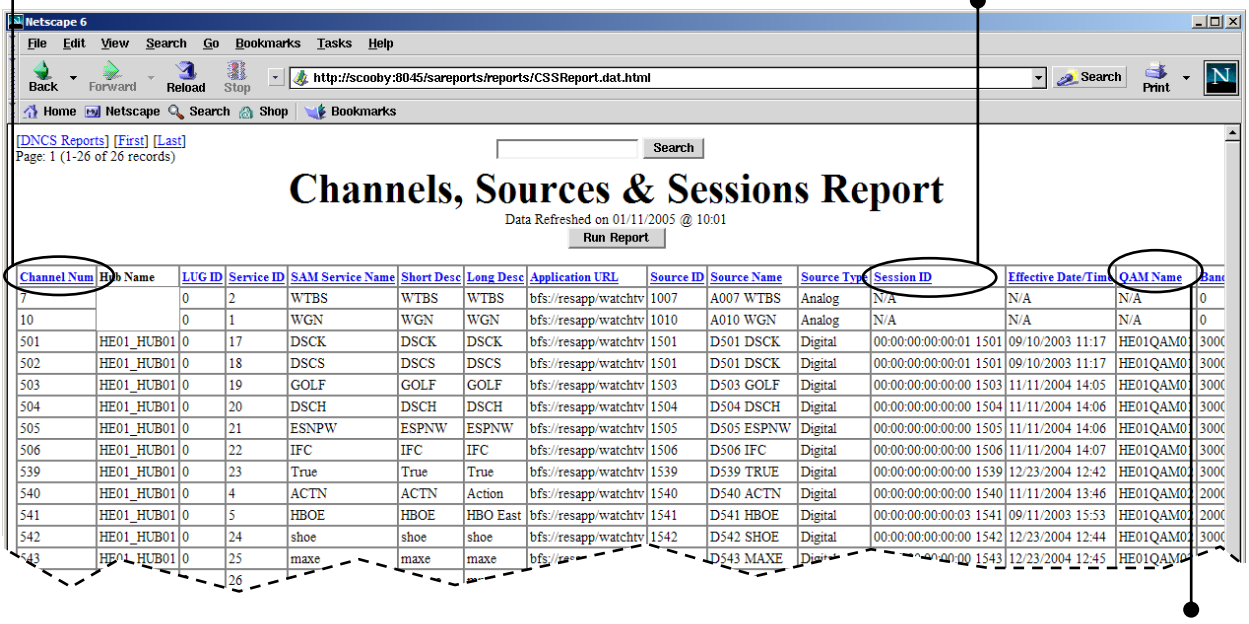
The Channels, Sources & Sessions Report lists each *display channel* (channel number) in the system. It also displays information about the *carriage* of each channel (how the channel is transmitted on the DBDS), starting from each source in your system and ending with each GoQAM modulator in your system.

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 a GoQAM modulator carries.



Channel Num	Hub 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	Band
7		0	2	WTBS	WTBS	WTBS	bfs://resapp/watchtv	1007	A007 WTBS	Analog	N/A	N/A	N/A	0
10		0	1	WGN	WGN	WGN	bfs://resapp/watchtv	1010	A010 WGN	Analog	N/A	N/A	N/A	0
501	HE01_HUB01	0	17	DSCK	DSCK	DSCK	bfs://resapp/watchtv	1501	D501 DSCK	Digital	00:00:00:00:00:01 1501	09/10/2003 11:17	HE01QAM01	3000
502	HE01_HUB01	0	18	DSCS	DSCS	DSCS	bfs://resapp/watchtv	1501	D501 DSCK	Digital	00:00:00:00:00:01 1501	09/10/2003 11:17	HE01QAM01	3000
503	HE01_HUB01	0	19	GOLF	GOLF	GOLF	bfs://resapp/watchtv	1503	D503 GOLF	Digital	00:00:00:00:00:00 1503	11/11/2004 14:05	HE01QAM01	3000
504	HE01_HUB01	0	20	DSCH	DSCH	DSCH	bfs://resapp/watchtv	1504	D504 DSCH	Digital	00:00:00:00:00:00 1504	11/11/2004 14:06	HE01QAM01	3000
505	HE01_HUB01	0	21	ESNPW	ESPNW	ESPNW	bfs://resapp/watchtv	1505	D505 ESPNW	Digital	00:00:00:00:00:00 1505	11/11/2004 14:06	HE01QAM01	3000
506	HE01_HUB01	0	22	IFC	IFC	IFC	bfs://resapp/watchtv	1506	D506 IFC	Digital	00:00:00:00:00:00 1506	11/11/2004 14:07	HE01QAM01	3000
539	HE01_HUB01	0	23	True	True	True	bfs://resapp/watchtv	1539	D539 TRUE	Digital	00:00:00:00:00:00 1539	12/23/2004 12:42	HE01QAM02	3000
540	HE01_HUB01	0	4	ACTN	ACTN	Action	bfs://resapp/watchtv	1540	D540 ACTN	Digital	00:00:00:00:00:00 1540	11/11/2004 13:46	HE01QAM02	2000
541	HE01_HUB01	0	5	HBOE	HBOE	HBO East	bfs://resapp/watchtv	1541	D541 HBOE	Digital	00:00:00:00:00:03 1541	09/11/2003 15:53	HE01QAM02	2000
542	HE01_HUB01	0	24	shoe	shoe	shoe	bfs://resapp/watchtv	1542	D542 SHOE	Digital	00:00:00:00:00:00 1542	12/23/2004 12:44	HE01QAM02	3000
543	HE01_HUB01	0	25	maxe	maxe	maxe	bfs://re		D543 MAXE	Digit	00:00:00:00:00:00 1543	12/23/2004 12:45	HE01QAM0	
			26											

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

   Result: The Utilities tab moves to the forefront.

2. Click **Reports.**

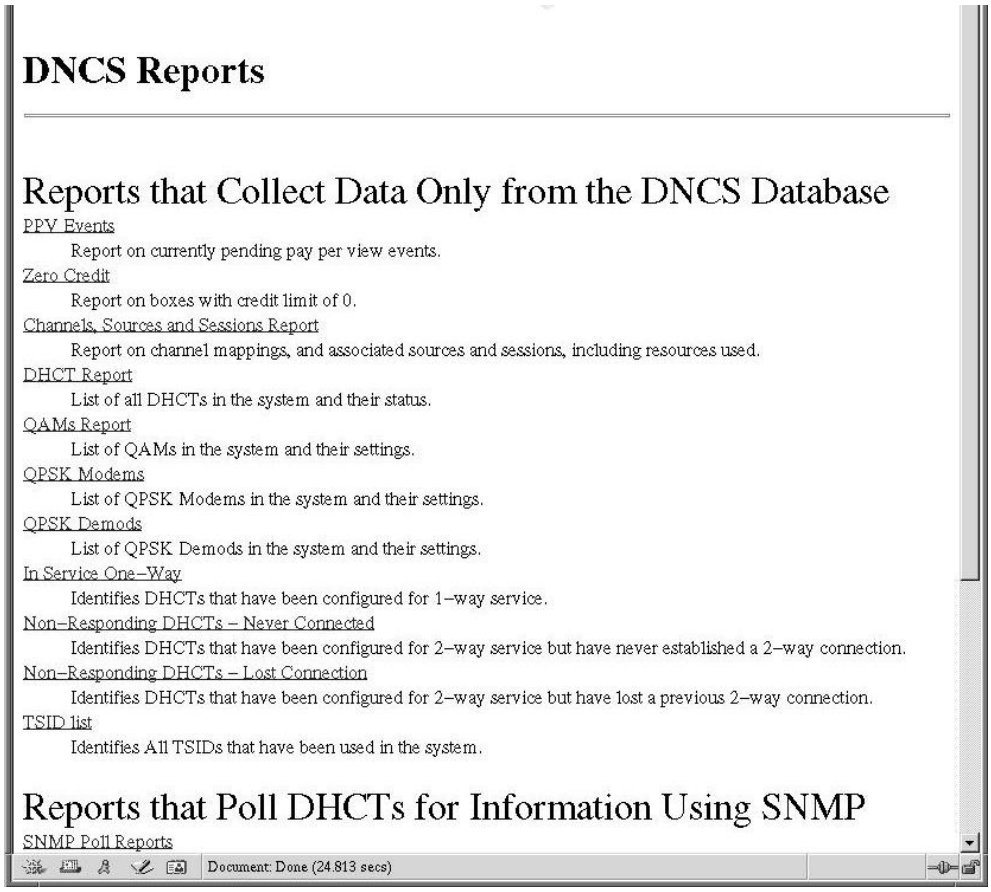
   Result: A Web browser opens and displays the DNCS Web Server welcome message.

3. Click **DNCS Report Manager**.

   Result: A prompt for the user ID and password appears for the DNCS server where Cisco's Report Writer software is located.

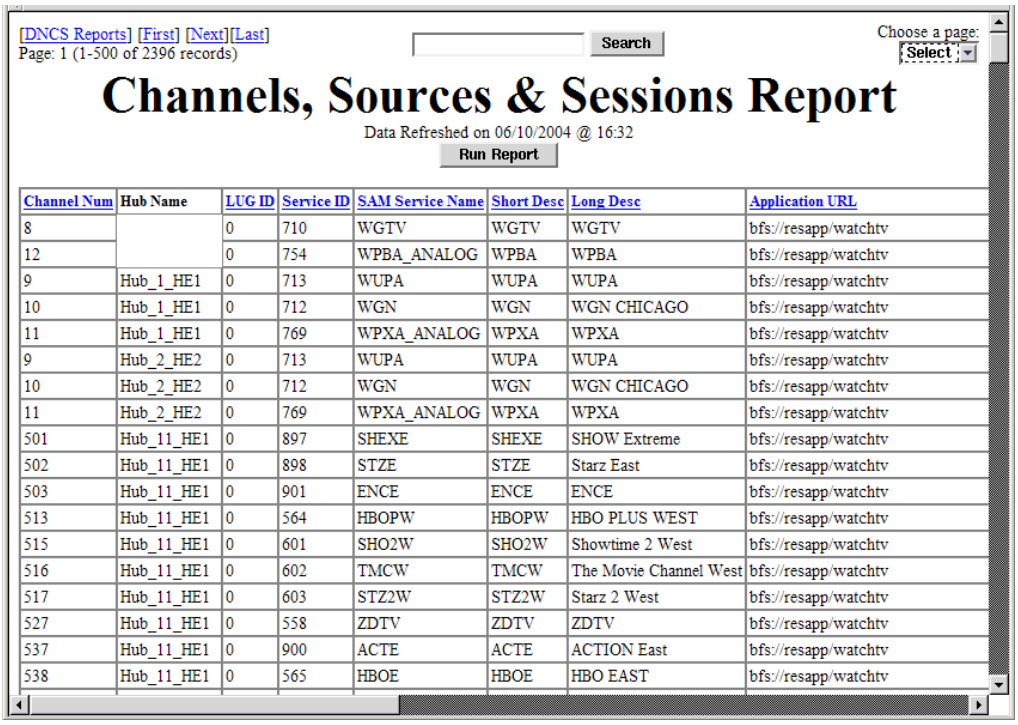
4. Type your user ID and password and then click **OK**. The default user name is **sareports** and the default password is **report.**

   Result: 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.

   Result: A page similar to the following page opens.



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

Search

Choose a page: Select

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	WGTV	WGTV	WGTV	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.**

   Result: The Channels, Sources & Sessions Report page opens.

8. Scroll to the right until the **QAM Name** column appears. Then, click the **QAM Name**.

   Result: The system begins re-generating the report so that the session list is sorted according to each QAM, MQAM, GQAM, or GoQAM modulator in your system.

9. When the **Data Refreshed** message appears, click **Display Data.**

   Result: The Channels, Sources & Sessions Report page displays again with the session list sorted according to each QAM, MQAM, GQAM, or GoQAM 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 WGTV	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	00:00:00:00:00:02 1501	01/18/2001 13:05	QAM2x1	2000000	50	MPEG
1502	D502 DSCS	Digital	00:00:00:00:00:02 1502	01/19/2001 12:22	QAM2x1	2000000	48	MPEG
1503	D503 GOLF	Digital	00:00:00:00:00:02 1503	01/19/2001 16:29	QAM2x1	2000000	47	MPEG
1513	D513 HBOPW	Digital	00:00:00:00:00:02 1513	01/20/2001 10:19	QAM2x1	2000000	14	MPEG
1515	D515 SHO2W	Digital	00:00:00:00:00:02 1515	02/06/2001 15:09	QAM2x1	2000000	16	MPEG
1516	D516 TMCW	Digital	00:00:00:00:00:02 1516	02/06/2001 16:13	QAM2x1	2000000	17	MPEG
1517	D517 STZ2W	Digital	00:00:00:00:00:02 1517	02/06/2001 16:20	QAM2x1	2000000	18	MPEG
1527	D527 ZDTV	Digital	00:00:00:00:00:02 1527	01/19/2001 12:55	QAM2x1	2000000	29	MPEG
1537	D537 ACTN	Digital	00:00:00:00:00:02 1537	02/06/2001 10:09	QAM2x1	2000000	40	MPEG
1538	D538 HBOE	Digital	00:00:00:00:00:02 1538	01/20/2001 10:31	QAM2x1	2000000	41	MPEG

10. Now that you have a list of the channels and sessions that are running on the GoQAM 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 GoQAM Software Version 1.1.0 to GoQAM Modulators**, next in this chapter.

Download GoQAM Software Version 1.1.0 to GoQAM Modulators

Introduction

To download GoQAM software 1.1.0 to GoQAM modulators, you must reset (reboot) the modulators. After the modulators reboot, GoQAM software version 1.1.0 is downloaded from the DNCS to the modulators.

Important: Read and follow the directives contained in **Impact of TVs With QAM Tuners**, earlier in this chapter.

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

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

Which Reset Method to Use

Resetting GoQAM 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:

- The only auditQam feature that is available with GoQAM software 1.1.0 is **auditqam –reset**. The other two features (**auditqam –query** and **auditqam –audit**) are *not* available with GoQAM software 1.1.0.
- Instructions for resetting modulators through the DNCS GUI are found in **Resetting the GoQAM Modulator Through the DNCS GUI**, next in this section.
- Instructions for resetting modulators through the front panel are found in **Resetting the GoQAM Modulator Through the Front Panel**, later in this section.
- Instructions for resetting modulators through the auditQam utility are found in **Resetting the GoQAM Modulator Through the auditQam Utility**, also later in this section.

Resetting the GoQAM Modulator Through the DNCS GUI

> **CAUTION:**
>
> **All active sessions on the GoQAM 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.**

Follow these steps to reboot the modulator by resetting it from the DNCS.

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

   Note: For instructions on provisioning the GoQAM modulator, refer to *GoQAM Modulator IF Output and RF Output Hardware Installation and Operation Guide*.

2. From the DNCS Administrative Console, click the **DNCS** tab, click the **Element Provisioning** tab, and then click **QAM**.

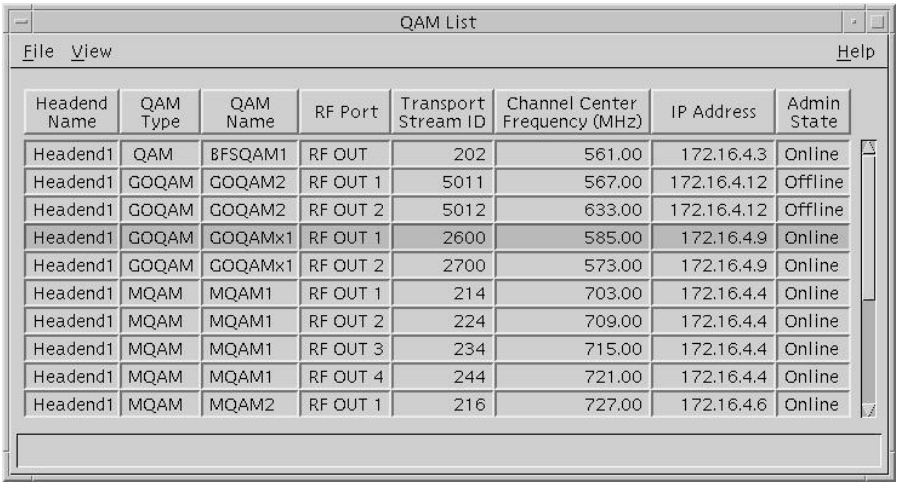
   Result: The QAM List window opens.

3. Open an xterm window on the DNCS for use later in this procedure.

4. Based on the order you determined earlier, select the GoQAM modulator that you want to reset by highlighting it in the QAM List window.

   Important: Although each GoQAM modulator that has been provisioned is listed 16 times, select only one of the sixteen modulators listed.

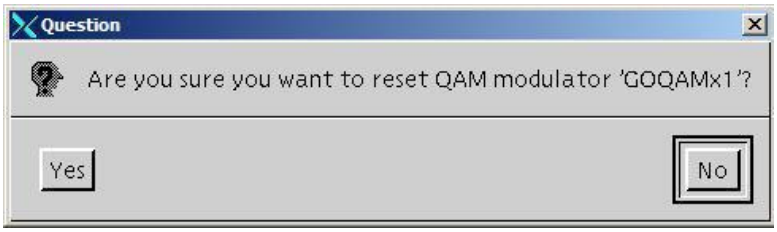
   Example: The following diagram shows an example of a GoQAM modulator selected in the QAM List window.



5. Click **File** and then select **Reset**.

   Result: The Question window appears with the name of the selected GoQAM modulator inside the quotation marks (‘… ‘).

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



6. Click **Yes**.

   Result: The QAM List window displays the following message:
   The reset request has been received by QAM modulator <Name of GoQAM>

   Note: The <Name of GoQAM> 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 GoQAM Modulators That Carry Broadcast Sessions**, later in this section, and verify the functionality of the GoQAMs 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 GoQAM Modulator Through the Front Panel

Follow these instructions to reset the modulators through the front panel.

1. Follow these instructions to record the Session Count, the Program Count, and the IP address of your GoQAM modulators.
   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 GoQAM.

   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 GoQAM.

   e) Repeat steps a) through d) for all of your GoQAM modulators.
2. To reset a GoQAM 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 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 GoQAM Modulators That Carry Broadcast Sessions**, later in this section. 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 GoQAM Modulators that Carry xOD or VOD Sessions**, later in this section.

Resetting GoQAM Modulators Through the auditQam Utility

The *reset* option of the auditQam utility allows you to reset a GoQAM 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.

Note: The only auditQam feature that is available with GoQAM software 1.1.0 is **auditqam –reset**. The other two features (**auditqam –query** and **auditqam –audit**) are *not* available with GoQAM software 1.1.0.

Resetting a Few GoQAM 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. Go to **Verifying the Functionality of GoQAM Modulators that Carry Broadcast Sessions**, later in this section.

Resetting Many GoQAM 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 GoQAMs. Refer to the following example for a sample script:

```
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 23.123.123.126
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 23.123.123.130
sleep 60
```

Verifying the Functionality of GoQAM Modulators That Carry Broadcast Sessions

Follow these steps to confirm that a DHCT downstream of the GoQAM modulator can tune to authorized channels.

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

1. Access a DHCT that is connected downstream of one GoQAM modulator.
2. Refer to the Channels, Sources & Sessions Report that you generated and saved in the **Determine Existing Broadcast Sessions** section, earlier in this chapter, to verify restored GoQAM channels and sessions.
3. Tune the DHCT to each channel listed in the report for each GoQAM that you reset and upgraded.
4. Are all channels listed for the reset GoQAMs accessible from the DHCT?
   - If **yes**, go to step 5.
   - If **no**, *do not* attempt to upgrade the software of any additional GoQAM modulators, contact Cisco Services.
5. For those GoQAMs 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 GoQAMs 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. 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*.
8. 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.
9. Over the next few days, check the individual modulators to verify that they received the new code.

Chapter 3
Customer Information

Overview

Introduction

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.

Appendix A
Roll Back to the Previous Version of GoQAM Software

Overview

Introduction

This appendix contains instructions for restoring the previous version of GoQAM software should you encounter problems after upgrading to GoQAM software version 1.1.0. Follow the instructions in this section only after Cisco Services directs you to restore the previous version of software.

Important: If after downloading GoQAM software version 1.1.0 you encounter problems, contact Cisco Services for assistance. In the event that they direct you to download the previous version of software to GoQAM modulators, follow the procedures in this appendix while working with Cisco Services.

In This Appendix

This appendix contains the following topics.

Restore the Previous Version of GoQAM Software

Introduction

Contact Cisco Services if you notice that the system is reacting adversely after installing or upgrading to GoQAM software version 1.1.0. If Cisco Services recommends restoring the previous GoQAM software version, use the instructions in this section to assist you as you work with a Cisco Services engineer to restore the previous GoQAM software version.

> **CAUTION:**
>
> **Contact Cisco Services before attempting to restore the previous GoQAM software version.**

Restoring the Previous GoQAM Software Version

Follow these steps to restore the previous version of GoQAM software in the unlikely event that you encounter problems after upgrading to GoQAM software version 1.1.0.

Note: To restore the previous GoQAM executable files, restore the configuration backup file that you saved in **Back Up the Current GoQAM Software Version** in Chapter 2.

1. Open an xterm window on the DNCS and log on as the **root** user.

   Result: The root prompt appears.

2. Type **cd /tftpboot** and then press **Enter**.

   Result: The root prompt appears.

3. Type **pwd** and then press **Enter**.

   Result: The text /tftpboot appears at the prompt. This text indicates you are in the correct directory.

4. Type **cp –p goqam.config goqam.config.110** and then press **Enter**.

   Result: The configuration file named goqam.config, which contains GoQAM version 1.1.0 configuration settings, is saved to a file named goqam.config.110.

5. Type **cp –p goqam.config.bakxxx goqam.config** and then press **Enter.**

   Note: The xxx represents the original GoQAM software version number.

   Result: The configuration file named goqam.config.bakxxx, which contains the previous list of GoQAM configuration files, is copied to a configuration file named goqam.config.

6. Type **ls -l** and then press **Enter**.

   Note: The **l** used in "ls" and "-l" is the lowercase of the letter L, not the number 1.

   Result: A list of files displays. The files goqam.config.bakxxx, goqam.config, and goqam.config.110 appear in the list.

7. Confirm that the date and size of **goqam.config** matches those of **goqam.config.bakxxx**.

8. Type **exit** and then press **Enter.**

9. You are now ready to download the previous version of GoQAM software to GoQAM modulators by rebooting the modulators.

   Note: For assistance in rebooting the GoQAMs, see **Download GoQAM Software Version 1.1.0 to GoQAM Modulators** in Chapter 2.

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