



MQAM Modulator Software Version 2.5.0

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:

- Instructions for upgrading the Model D9477 Multiple Quadrature Amplitude Modulation (MQAM) Modulator with MQAM software version 2.5.0
- A brief description of benefits the software provides
- Instructions for rolling back to earlier versions of MQAM software in the unlikely event that a site encounters problems after upgrading to MQAM software version 2.5.0

Purpose

This document enables system operators to perform the following tasks:

- Upgrade the Model D9477 MQAM Modulator with MQAM software version 2.5.0.
- Roll back to earlier versions of MQAM software in the unlikely event that a site encounters problems after upgrading the software.

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 the Model D9477 MQAM Modulator with MQAM software version 2.5.0. It does not provide instructions for installing a MQAM modulator in your headend.

Note: For instructions on installing a MQAM modulator in your headend or for a complete description of MQAM features, refer to *MQAM Modulator Models D9477-1, D9477-2, D9477-3 Installation and Operation Guide*.

Document Version

This is the second release of this document.

Chapter 1

Introducing MQAM Software Version 2.5.0

Overview

Introduction

This chapter lists the requirements for upgrading the Model D9477 MQAM Modulator with MQAM software version 2.5.0. In addition, this chapter lists a change request (CR) implemented in this release.

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About MQAM Software Version 2.5.0

Introduction

MQAM software version 2.5.0 is designed to be installed on an MQAM 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.

Note: For a complete description of the MQAM modulator, refer to the *MQAM Modulator Models D9477-1, D9477-2, and D9477-3 Installation and Operation Guide*.

This section includes the system release configuration, application platform release dependencies, software requirements, and hardware requirements for installing MQAM software version 2.5.0. This section also includes the CRs implemented in this release of MQAM software.

System Release Compatibility and Prerequisites

MQAM software version 2.5.0 can be installed on a DBDS that is running one of the following system releases and DNCS application versions *prior* to installing MQAM software version 2.5.0:

- SR 2.5/SR 3.5 or later
- SR 4.0
- SR 3.4

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

About MQAM Software Version 2.5.0, Continued

Application Platform Release Dependencies

The following table shows the application platform release dependencies for MQAM software version 2.5.0. You must have the correct application platform software installed on your system *prior* to installing MQAM software version 2.5.0.

Important: Failure to have the correct application platform software *or later* installed on your system *prior* to installing MQAM software version 2.5.0 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. 1.2.6a25g	OS 6.8.9.4	1.85.17.3	3.7.5
Explorer 8300 DVR v. 1.3.1a10	OS 6.14.5	1.87.3.1	3.7.5
Explorer 8000/8010 DVR v. 1.3.1a10	OS 6.12.5	1.87.3.1	3.7.5
Explorer 3250HD MR4 P1	OS 3.12.8.1	1.57.8.1	3.7.5
Epoch 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

Software

MQAM software version 2.5.0 includes the following codes:

- MQAM Host Application code 2.5.0
- MQAM Host Boot code 1.2.2

Hardware

MQAM software version 2.5.0 supports only the Model D9477 MQAM Modulator.

When to Perform the Upgrade

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

Implemented Change Request for MQAM Software Version 2.5.0

Introduction

The following quick reference matrix lists an implemented change request (CR) addressed by MQAM software version 2.5.0. Additionally, this matrix lists the following attributes associated with the implemented CR:

- 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 this CR in more detail, go to **Want to Know More?**, next in this chapter.

Quick Reference Matrix

CR Number	Subscriber	Cable Service Provider	Process Affected
47550-04	Black screens on digital channels when using the 1394 port	Program identifiers (PIDs) that are less than 30 are no longer used.	MultiQAM Application

Want To Know More?

Introduction

This section provides additional detail on an implemented CR for MQAM software version 2.5.0.

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 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 47550-04** implements this specification.

CA Descriptor and VOD Sessions

Overview

Previous versions of MQAM software inserted the PowerKEY CA descriptor into the PMT for unencrypted on-demand content. If the DHCT OS found the CA descriptor in the PMT, the OS started the PowerKEY decryptor.

The PowerKEY scheduler within the DHCT then prioritized 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 an 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

MQAM software version 2.5.0 has been modified 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, enabling sessions, including VOD and MR-DVR sessions, to be established correctly on a multi-room server.

Note: This modification was made in MQAM software version 2.4.10 under CR 41859.

Chapter 2

Upgrading MQAM Modulators With MQAM Software Version 2.5.0

Overview

Introduction

This chapter describes how to upgrade the Model D9477 MQAM Modulator with MQAM software version 2.5.0.

In This Chapter

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Upgrade Process Overview

Introduction

This section provides a brief overview of the tasks you must complete to upgrade the Model D9477 MQAM Modulator with MQAM software version 2.5.0.

Before You Begin

Before you upgrade to MQAM 2.5.0, be sure that your system meets the configuration requirements specified in **About MQAM Software Version 2.5.0** in Chapter 1.

If you will not download MQAM 2.5.0 from a File Transfer Protocol (FTP) site, make sure that you have obtained the CD **MQAM Software V2.5.0**, part number 4009792.

Important: Do *not* proceed with installing MQAM software version 2.5.0 until you have read and followed the directives in the **About MQAM Software Version 2.5.0** section of Chapter 1.

Time To Complete

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

- Completing pre-upgrade tasks takes from 30 to 45 minutes.
- If you are upgrading from an FTP site, allow an additional 10 to 15 minutes to download MQAM software from the FTP site. The speed of the connection and the size of the files determine the download time.
- Downloading MQAM software version 2.5.0 to an MQAM modulator takes approximately 5 minutes for each MQAM modulator.
- Verifying the functionality of an MQAM 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 non-VOD sessions on the MQAM modulators that you upgrade. The non-VOD sessions are rebuilt automatically after MQAM version 2.5.0 is downloaded to an MQAM modulator.

Subscriber Impact

When MQAM 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 MQAM modulator.

Upgrade Process Overview, Continued

Impact of TVs With QAM Tuners

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

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 MQAMs. 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 MQAM Modulators That Carry Broadcast Sessions in the Download MQAM Software Version 2.5.0 to MQAM Modulators** section
- **Verifying the Functionality of MQAM Modulators That Carry xOD or VOD Sessions in the Download MQAM Software Version 2.5.0 to MQAM Modulators** section

Upgrade Process Overview, Continued

Process Overview

This section provides an overview of the process required to upgrade to MQAM software version 2.5.0.



CAUTION:

If upgrading more than one MQAM modulator, download MQAM software version 2.5.0 to one modulator group and verify its functionality before attempting to download MQAM software to another modulator group. Verifying the functionality of one MQAM 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 MQAMs.
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 MQAMs.
4. Verify the current MQAM software version running on your DNCS.
5. Make a copy of the *current* MQAM configuration file. In the unlikely event of a failure, you can use this backup copy to restore your system to the previous version of MQAM software.
6. Install MQAM software version 2.5.0 onto the DNCS.
7. If you are upgrading more than one MQAM modulator, establish an order for upgrading the modulators.
8. If the MQAM 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 MQAM 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 Process Overview, Continued

Upgrade Tasks

1.



CAUTION:

All active sessions on the MQAM 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 MQAM modulators with MQAM software version 2.5.0 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 MQAM Software Version 2.5.0 to the MQAM Modulators**, later in this chapter.

Note: If resetting the modulator does not cause it to reboot and load MQAM software version 2.5.0, turn power to the modulator off and on again. For assistance cycling power to the modulator, refer to *MQAM Modulator Models D9477-1, D9477-2, D9477-3 Installation and Operation Guide*.

2. Verify that the MQAM 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 MQAM 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 MQAM Software Version on the DNCS

Introduction

Before attempting to upgrade to MQAM software version 2.5.0, verify the MQAM software version currently installed on your DNCS. This section describes how to verify the MQAM software version currently installed on your DNCS.

Verifying the Current MQAM Software Version on the DNCS

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

1. Open an xterm window on the DNCS.
2. Type **cd /tftpboot** and press **Enter**.

Result: The tftpboot directory becomes the working directory.

3. Type **grep mqam_app mqam.config** and press **Enter**.

Result: The system displays a result similar to the following:

```
ApplCodePath = mqam_app_2_4_10.bin
```

Note: The preceding result indicates that MQAM software version 2.4.10 is installed on the DNCS.

4. Does the information indicate that MQAM software version 2.5.0 has been installed?
 - If **yes**, you do not need to install MQAM software version 2.5.0 onto the DNCS. You may ignore the remainder of these instructions
 - If **no**, before installing MQAM 2.5.0 on the DNCS, backup the MQAM configuration file currently installed on your DNCS. Go to **Back Up the Current MQAM Configuration File**, next in this chapter.

Back Up the Current MQAM Configuration File

Introduction

Before installing MQAM software version 2.5.0 to an MQAM modulator, copy the configuration file of the version of MQAM software currently installed. In the unlikely event of a failure, you can use the copy to restore the current version of MQAM software to your system. This section provides instructions for copying the configuration file of your current MQAM software version.



CAUTION:

Do not proceed with installing MQAM software version 2.5.0 until you have created a backup of the current configuration file of the MQAM software installed on your system. Otherwise, you will be unable to restore the previous version of MQAM software to your system in the unlikely event of a failure.

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

Backing Up the Current MQAM Configuration File

Follow these steps to back up the current MQAM 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 mqam.config mqam.config.bakxxx** and then press **Enter**.
Result: A copy of the configuration file mqam.config, which contains MQAM configuration settings, is saved to a configuration file named mqam.config.bakxxx.
Note: In this example, xxx represents your current MQAM software version. For example, if your current MQAM software version is 2.4.5, name the file **mqam.config.bak245**.

Back Up the Current MQAM Configuration File, Continued

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 MQAM configuration file on your DNCS, you are ready to install MQAM software version 2.5.0 on your DNCS. Go to **Install MQAM Software Version 2.5.0 Onto the DNCS**, next in this chapter.

Install MQAM Software Version 2.5.0 Onto the DNCS

Introduction

This section describes how to install MQAM software version 2.5.0 onto the DNCS using either of the following methods:

- From the CD, **MQAM Software V2.5.0**, part number 4009792
- From Cisco's FTP server

Installing the MQAM Software From a CD

Follow these steps to install MQAM software version 2.5.0 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 **MQAM Software V2.5.0** 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/cdrom0** and press **Enter**.
Result: The **/cdrom/cdrom0** directory becomes the working directory.

Install MQAM Software Version 2.5.0 Onto the DNCS, Continued

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.

Install MQAM Software Version 2.5.0 Onto the DNCS, Continued

Installing the MQAM Software From Cisco's FTP Server

In this section, you will create a directory on the DNCS into which you will load the MQAM software version 2.5.0 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 MQAM software version 2.5.0 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 MQAM software version 2.5.0.

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 MQAM Software File**, next in this procedure.

Install MQAM Software Version 2.5.0 Onto the DNCS, Continued

Obtaining the MQAM Software File

Follow these guidelines to obtain the file containing MQAM software version 2.5.0 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/MQAM** to navigate to the correct directory.
- If you are inside of Cisco's firewall, type **cd /external_pub/scicare/RELEASED/MQAM** 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 MQAM25.tar.gz** and press **Enter**.

Result: The system begins copying files into the /export/home/dncls/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 MQAM25.tar.gz** and then press **Enter**.

Result: The system decompresses the MQAM software file.

2. Type **tar xvf MQAM25.tar** and then press **Enter**.

Result: The system extracts the individual files.

3. Go to **Installing MQAM 2.5.0 on the DNCS**, next in this procedure.

Install MQAM Software Version 2.5.0 Onto the DNCS, Continued

Installing MQAM 2.5.0 on the DNCS

Follow these instructions to install MQAM software version 2.5.0 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 directory:

- `install_pkg` (file)
- `MQAM25.tar` (file)
- `SAImqam` (directory)

Example: Type **`rm -rfi install_pkg`** 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 `install_pkg` and `MQAM25.tar` files and the contents of the `SAImqam` directory.
6. Type **exit** and press **Enter** to close the xterm window. You are ready to determine a sequence for downloading MQAM software version 2.5.0 to the MQAM modulators in your system. Go to **Establish a Download Sequence**, next in this chapter.

Result: The xterm window closes.

Establish a Download Sequence

Introduction

This section provides guidelines for establishing a sequence to follow when downloading MQAM software version 2.5.0 onto more than one MQAM 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 MQAM Software Version 2.5.0 Onto Each MQAM Modulator



CAUTION:

If downloading MQAM software version 2.5.0 to more than one MQAM 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 MQAM software onto MQAM modulators allows you to verify that the download is successful before proceeding. Follow these guidelines to establish an order in which to download MQAM software version 2.5.0 to MQAM modulators. The method that you follow depends on the type of sessions that the MQAM modulator carries (xOD/VOD sessions or broadcast sessions).

xOD/VOD Sessions

When upgrading MQAM 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 MQAM modulators act as spares, start by downloading MQAM software version 2.5.0 on these modulators.
- If your system does not have a spare MQAM modulator, download MQAM software version 2.5.0 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.

Establish a Download Sequence, Continued

Broadcast Sessions

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

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

- If any MQAM modulators act as spares, start by downloading MQAM software version 2.5.0 on these modulators.
- If your system does not have a spare MQAM modulator, download MQAM software version 2.5.0 on the modulator carrying sessions that are least viewed.
- If you have an MQAM that is carrying BFS sessions, download MQAM software version 2.5.0 to the BFS MQAM.
- 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 MQAM software version 2.5.0 onto the MQAM modulators in your system, the next step depends on the type of sessions your MQAM modulators carry (xOD/VOD sessions or broadcast sessions).

xOD/VOD Sessions

If all of your MQAM modulators carry xOD or VOD sessions, you are ready to begin downloading MQAM software version 2.5.0 to MQAM modulators. Go to **Download MQAM Software Version 2.5.0 to the MQAM Modulators**, later in this chapter.

Note: 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 MQAM 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 MQAM 2.5.0 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.

Note: If your MQAM 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.

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 MQAM 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 MQAM 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	Bandwidth	MPEG Program Number	Cont
513	Hub1	1	165	HBOPW 513	HBOPW	HBO Plus West 513	bfs/resapp/watchtv	1513	D513 HBOPW	Digital	00:00:00:00:00:01 1513	01/28/2004 13:10	HUB1gqam1	3000000	14	MPE
513	Hub2	2	165	HBOPW 513	HBOPW	HBO Plus West 513	bfs/resapp/watchtv	1513	D513 HBOPW	Digital	00:00:00:00:00:01 1513	01/28/2004 13:10	HUB1gqam1	3000000	14	MPE
513		0	165	HBOPW 513	HBOPW	HBO Plus West 513	bfs/resapp/watchtv	1513	D513 HBOPW	Digital	00:00:00:00:00:01 1513	01/28/2004 13:10	HUB1gqam1	3000000	14	MPE
514	Hub1	1	166	HBOSW 514	HBOSW	HBO Signature West 514	bfs/resapp/watchtv	1514	D514 HBOSW	Digital	00:00:00:00:00:01 1514	01/28/2004 13:12	HUB1gqam1	3000000	15	MPE
514	Hub2	2	166	HBOSW 514	HBOSW	HBO Signature West 514	bfs/resapp/watchtv	1514	D514 HBOSW	Digital	00:00:00:00:00:01 1514	01/28/2004 13:12	HUB1gqam1	3000000	15	MPE
514		0	166	HBOSW 514	HBOSW	HBO Signature West 514	bfs/resapp/watchtv	1514	D514 HBOSW	Digital	00:00:00:00:00:01 1514	01/28/2004 13:12	HUB1gqam1	3000000	15	MPE
515	Hub1	1	167	SHO2W 515	SHO2W	Showtime 2 West 515	bfs/resapp/watchtv	1515	D515 SHO2W	Digital	00:00:00:00:00:01 1515	01/28/2004 13:13	HUB1gqam1	3000000	16	MPE
515	Hub2	2	167	SHO2W 515	SHO2W	Showtime 2 West 515	bfs/resapp/watchtv	1515	D515 SHO2W	Digital	00:00:00:00:00:01 1515	01/28/2004 13:13	HUB1gqam1	3000000	16	MPE
515		0	167	SHO2W 515	SHO2W	Showtime 2 West 515	bfs/resapp/watchtv	1515	D515 SHO2W	Digital	00:00:00:00:00:01 1515	01/28/2004 13:13	HUB1gqam1	3000000	16	MPE
516	Hub1	1	168	TMCW 516	TMCW	The Movie Channel West 516	bfs/resapp/watchtv	1516	D516 TMCW	Digital	00:00:00:00:00:01 1516	01/28/2004 13:14	HUB1gqam1	3000000	17	MPE
516	Hub2	2	168	TMCW 516	TMCW	The Movie Channel West 516	bfs/resapp/watchtv	1516	D516 TMCW	Digital	00:00:00:00:00:01 1516	01/28/2004 13:14	HUB1gqam1	3000000	17	MPE
516		0	168	TMCW 516	TMCW	The Movie Channel West 516	bfs/resapp/watchtv	1516	D516 TMCW	Digital	00:00:00:00:00:01 1516	01/28/2004 13:14	HUB1gqam1	3000000	17	MPE
517	Hub1	1	169	ST22W 517	ST22W	Starz 2 West 517	bfs/resapp/watchtv	1517	D517 ST22W	Digital	00:00:00:00:00:01 1517	01/28/2004 13:17	HUB1gqam1	3000000	18	MPE
517	Hub2	2	169	ST22W 517	ST22W	Starz 2 West 517	bfs/resapp/watchtv	1517	D517 ST22W	Digital	00:00:00:00:00:01 1517	01/28/2004 13:17	HUB1gqam1	3000000	18	MPE
517		0	169	ST22W 517	ST22W	Starz 2 West 517	bfs/resapp/watchtv	1517	D517 ST22W	Digital	00:00:00:00:00:01 1517	01/28/2004 13:17	HUB1gqam1	3000000	18	MPE

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

Determine Existing Broadcast Sessions, Continued

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.

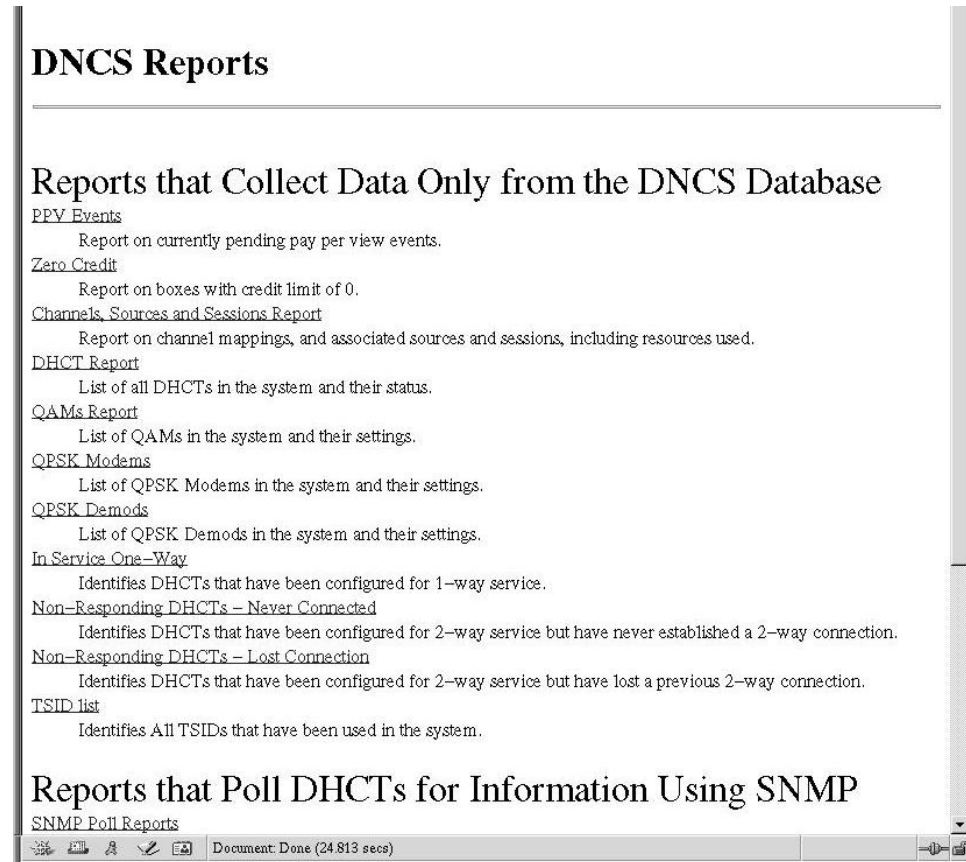
3. Click **DNCS Report Manager**.

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

Determine Existing Broadcast Sessions, Continued

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.



Determine Existing Broadcast Sessions, Continued

- 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	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

- 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.

- Click **Display Data**.

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

Determine Existing Broadcast Sessions, Continued

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, 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 DSCN	Digital	00:00:00:00:00:02 1501	01/18/2001 13:05	QAM2x1	2000000	50	MPEG
1502	D502 DSCN	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

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, or GQAM modulator in your system

10. Now that you have a list of the channels and sessions that are running on the MQAM 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 MQAM Software Version 2.5.0 to the MQAM Modulators**, next in this chapter.

Download MQAM Software Version 2.5.0 to the MQAM Modulators

Introduction

To download MQAM software 2.5.0 (Host Application code 2.5.0 and Host Boot code 1.2.2) to MQAM modulators, you must reset (reboot) the modulators. After the modulators reboot, MQAM software version 2.5.0 is downloaded from the DNCS to the modulators.

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

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

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

Which Reset Method to Use

Resetting MQAM 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 MQAM Modulator Through the DNCS GUI**, next in this section.
- Instructions for resetting modulators through the front panel are found in **Resetting the MQAM Modulator Through the Front Panel**, later in this section
- Instructions for resetting modulators through the auditQam utility are found in **Resetting the MQAM Modulator Through the auditQam Utility**, also later in this section.

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

Resetting the MQAM Modulator Through the DNCS GUI



CAUTION:

All active sessions on the MQAM 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 MQAM modulator, refer to *MQAM Modulator Models D9477-1, D9477-2, D9477-3 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 MQAM modulator that you want to reset by highlighting it in the QAM List window.

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

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

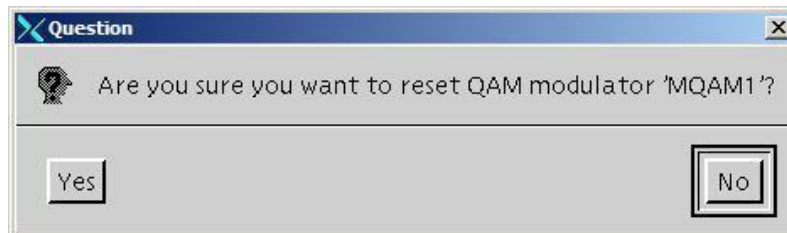
Headend Name	QAM Type	QAM Name	Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
Headend1	GOQAM	GOQAMx2	RF OUT 1	1177	663.00	172.16.4.10	Online
Headend1	GOQAM	GOQAMx2	RF OUT 2	1178	675.00	172.16.4.10	Online
Headend1	IFGOQAM	IFGOQAMx1	IF Out 1	188	44	172.16.4.100	Online
Headend1	IFGOQAM	IFGOQAMx1	IF Out 2	189	44	172.16.4.100	Online
Headend1	QAM	IrtQam	RF OUT	600	639.00	172.16.4.25	Online
Headend1	MQAM	MQAM1	RF OUT 1	777	705.00	172.16.4.4	Offline
Headend1	MQAM	MQAM1	RF OUT 2	224	711.00	172.16.4.4	Offline
Headend1	MQAM	MQAM1	RF OUT 3	234	717.00	172.16.4.4	Offline
Headend1	MQAM	MQAM1	RF OUT 4	244	723.00	172.16.4.4	Offline
Headend1	MQAM	MQAM2	RF OUT 1	216	729.00	172.16.4.6	Online

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

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

Result: The Question window appears with the name of the selected MQAM 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 MQAM>

Note: The <Name of MQAM> 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 172.16.4.4**

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 MQAM Modulators That Carry Broadcast Sessions**, later in this section, and verify the functionality of the MQAMs 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.

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

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 MQAM 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 MQAM modulators.
Note: Skip this step for any MQAM 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 MQAM.
 - 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 MQAM.
 - e) Repeat steps a) through d) for all of your MQAM modulators.
2. To reset an MQAM 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 MQAM Modulators That Carry Broadcast Sessions**, later in this section. Then, return to step 6 of this procedure.
 - If **no**, contact Cisco Services.

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

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 MQAM Modulators That Carry Broadcast Sessions**, later in this section.

Resetting MQAM Modulators Through the auditQam Utility

The *reset* option of the auditQam utility allows you to reset an MQAM 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 MQAM 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 [mqam 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 MQAM modulators that carry broadcast sessions, go to **Verifying the Functionality of MQAM Modulators That Carry Broadcast Sessions**, next in this section.
 - For MQAM modulators that carry xOD or VOD sessions, go to **Verifying the Functionality of MQAM Modulators That Carry xOD or VOD Sessions**, later in this section.

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

Resetting Many MQAM 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 MQAMs. Refer to the following example for a sample script.

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

```
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
```

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

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

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

- For MQAM modulators that carry broadcast sessions, go to **Verifying the Functionality of MQAM Modulators That Carry Broadcast Sessions**, next in this section.
- For MQAM modulators that carry xOD or VOD sessions, go to **Verifying the Functionality of MQAM Modulators That Carry xOD or VOD Sessions**, later in this section.

Verifying the Functionality of MQAM Modulators That Carry Broadcast Sessions

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



CAUTION:

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

1. Access a DHCT that is connected downstream of one MQAM 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 MQAM channels and sessions.
3. Tune the DHCT to each channel listed in the report for each MQAM that you reset and upgraded.
4. Are all channels listed for the reset MQAM accessible from the DHCT?
 - If **yes**, go to step 5.
 - If **no**, *do not* attempt to upgrade the software of any additional MQAM modulators, call Cisco Services.
5. For those MQAMs 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 MQAMs that carry objectionable material.
 - Using a QAM tuner television, tune to the respective channels and verify that objectionable content is not viewable.

Download MQAM Software Version 2.5.0 to the MQAM Modulators, Continued

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.
 - If **no**, go to step 7.
7. Have you completed resetting your MQAMs?
 - If **yes**, go to step 8.
 - If **no**, return to the procedure you are using to reset your MQAMs.
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 MQAM Modulators That Carry xOD or VOD Sessions

Sessions that exist on xOD or VOD MQAMs 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 MQAM 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.

Chapter 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.

Appendix A

Roll Back to the Previous Version of MQAM Software

Overview

Introduction

This appendix contains instructions for restoring the previous version of MQAM software should you encounter problems after upgrading to MQAM software version 2.5.0. Follow the instructions in this section only after Cisco Services directs you to restore the previous version of software.

Important: If after downloading MQAM software version 2.5.0 you encounter problems, contact Services for assistance. In the event that Cisco Services directs you to download the previous version of software to MQAM modulators, follow the procedures in this appendix while working with Cisco Services.

In This Appendix

This appendix contains the following topics.

Topic	See Page
Restore the Previous Version of MQAM Software	A-2

Restore the Previous Version of MQAM Software

Introduction

Contact Cisco Services if you notice that the system is reacting adversely after installing or upgrading to MQAM software version 2.5.0. If Cisco Services recommends restoring the previous MQAM software version, use the instructions in this section to assist you as you work with a Cisco Services engineer to restore the previous MQAM software version.



CAUTION:

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

Restoring the Previous MQAM Software Version

Follow these steps to restore the previous version of MQAM software in the unlikely event that you encounter problems after upgrading to MQAM software 2.5.0.

Note: To restore the previous MQAM executable files, restore the configuration backup file that you saved in **Back Up the Current MQAM 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 mqam.config mqam.config.25** and then press **Enter**.

Result: The configuration file named `mqam.config`, which contains MQAM version 2.5.0 configuration settings, is saved to a file named `mqam.config.25`.

5. Type **cp -p mqam.config.bakxxx mqam.config** and then press **Enter**.

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

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

Restore the Previous Version of MQAM Software, Continued

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 **mqam.config.bakxxx**, **mqam.config**, and **mqam.config.25** appear in the list.

7. Confirm that the date and size of **mqam.config** matches those of **mqam.config.bakxxx**.
8. Type **exit** and then press **Enter**.
9. You are now ready to download the previous version of MQAM software to MQAM modulators by rebooting the modulators. For detailed procedures, go to the **Download MQAM Software Version 2.5.0 to the MQAM Modulators** section of Chapter 2.



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