



SR 2.5/3.5 UniPack Upgrade Installation Instructions

Please Read This Entire Guide

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 guide provides step-by-step instructions for upgrading a Cisco Digital Broadband Delivery System (DBDS) to System Release (SR) 2.5 or SR 3.5. Sites that use this guide to upgrade must currently support one of the following system releases:

- SR 2.2 or SR 3.2
- SR 2.4 or SR 3.4

What's New in SR 2.5 and SR 3.5

SR 2.5 and SR 3.5 provide support for the Remote Network Control Server (RNCS) component of a Cisco Digital Broadband Delivery System (DBDS). The RNCS is a needed component in a Regional Control System (RCS) that uses the DNCS to manage remote headends.

SR 2.5 and SR 3.5 UniPack Features Live Upgrade

Cisco introduces the Live Upgrade with the SR 2.5 and SR 3.5 UniPack. Through use of the Live Upgrade, engineers can upgrade an Enterprise 450 and Sun Fire V880 server without having to shut down the system processes until activation of the new system software.

How Long to Complete the Upgrade?

The upgrade to SR 2.5 or SR 3.5 is to be completed from within a maintenance window that usually begins at midnight. Cisco engineers have determined that a typical site can be upgraded within one maintenance window. The maintenance window should begin when you stop system components in Chapter 2

System Performance Impact

Staging, third-party applications, video-on-demand (VOD), *anything*-on-demand (xOD), and interactive services, such as impulse pay-per-view (IPPV), will not be available during the maintenance window.

Audience

This guide provides Cisco field service engineers with instructions for upgrading an existing DBDS to SR 2.5 and SR 3.5.

About This Guide, Continued

Related Publications

You may find the following publications useful as you read through this guide:

- *RNCS Upgrade Installation Instructions*, part number 4003191 (expected publish date summer 2005)
- *System Release 2.5 Release Notes* (part number 749253, expected publish date summer 2005)
- *System Release 3.5 Release Notes* (part number 4001159, expected publish date summer 2005)
- *DBDS Alarm Manager 1.0 Installation Instruction* (part number 745262, published June 2005)
- *CoolTools Utilities User's Guide* (part number 749640, published October 2004)
- *DBDS Utilities Installation Instructions and DNCS Utilities User's Guide* (part number 740020, published August 2005)
- *DHCT Status Reporting and signonCount Utilities User's Guide* (part number 738186, published November 2004)
- *DBDS Backup and Restore Procedures for SR 2.2 and SR 3.2, SR 2.4 and SR 3.4, SR 2.5 and SR 3.5, and SR 3.3* (part number 4001155, published November 2004)
- *Configuring and Troubleshooting the Digital Emergency Alert System, For Use With All System Releases* (part number 4004455, published January 2004)
- *Configuring Variable Length Subnet Masks in System Release 2.1 or 3.0 Upgrades Technical Bulletin* (part number 4000375, published November 2002)

Read Me

Please review this entire guide before beginning the upgrade. If you are uncomfortable with any of the procedures, contact Cisco Services for assistance.

Important: Complete all of the procedures in this guide in the order in which they are presented. Failure to follow all of the instructions may lead to undesirable results.

About This Guide, Continued

Required Skills and Expertise

System operators or engineers who upgrade the DBDS system to SR 2.5 or SR 3.5 need the following skills:

- Advanced knowledge of UNIX
 - Experience with the UNIX vi editor. Several times throughout the system upgrade process system files are edited using the UNIX vi editor. The UNIX vi editor is not intuitive. The instructions provided in this guide are no substitute for an advanced working knowledge of vi.
 - The ability to review and edit cron files
- Extensive DBDS system expertise
 - The ability to identify keyfiles that are unique to the site being upgraded
 - The ability to add and remove user accounts

Requirements

Before beginning the UniPack upgrade to SR 2.5 or SR 3.5, be sure that the site you are upgrading meets these requirements:

- SR 2.2 or SR 3.2, or SR 2.4 or SR 3.4 is currently installed on your system.
- You have the CD labeled **DBDS Maintenance CD 2.1.x** in order to complete the required backups of the database and the filesystem.

Note: The DBDS Maintenance CD replaces Backup/Restore Floppy 5.0.x, as well as earlier versions of the DBDS Maintenance CD. You cannot use the floppy disk to back up your system components.

- The system must support one of the following combinations of Cisco Resident Application (SARA) and PowerTV operating system code:
 - SARA 1.54 and OS 3.10
 - SARA 1.43.5a3 and OS 3.3.4.1008
- The latest version of DBDS Utilities is installed on your system.
- You have the CD labeled similarly to **updatebfselement.sh**.

Note: This CD contains a script that updates the bfselement table in the database. You will run the script in Chapter 4.
- Sites that are upgrading a Sun Fire V880 DNCS need a special cable with which to connect to the UniPack. Specific information for the cable follows:
Part Number: 530-2453
Description: External SCSI Cable, HD68 to VHDCI, 2M
Option Number: X3832A

About This Guide, Continued

Supported Server Platforms

The following DNCS and Application Server hardware platforms are supported by the SR 2.5 and SR 3.5 release:

DNCS

Platform	Hard Drives	Memory
Sun Fire V880	• 6 X 73 GB • 12 X 73 GB	4 GB minimum 8 GB minimum
Sun Enterprise 450	• 7 X 9 GB • 7 X 18 GB • 10 X 9 GB • 10 X 18 GB	1 GB minimum
Sun Enterprise 250	• 2 X 9 GB • 2 X 18 GB	1 GB minimum

Application Server

Platform	Hard Drives	Memory
Sun Blade 150	• 1 X 40 GB • 1 X 80 GB	512 MB minimum
Sun Ultra 5	• 1 X 9 GB • 1 X 20 GB	256 MB minimum
Sun Ultra 2	1 X 9 GB	256 MB minimum

About This Guide, Continued

Application Platform Release Dependencies

The following table shows the application platform release dependencies for SR 2.5/3.5.

Important: You must have these versions of application platform software *or later* installed on your system prior to upgrading to SR 2.5/3.5. If you do not install the correct application platform software *before* you upgrade to SR 2.5/3.5, subscribers may see video freezing and black screens when using video-on-demand (VOD) or *anything*-on-demand (xOD) applications.

Set-top Platform	Operating System	SARA	PowerKEY
8300 DVR 1.2.6a25g	6.8.9.4	1.85.17.3	3.7.5
8300 DVR 1.3.1a10	6.14.5	1.87.3.1	3.7.5
8000/8010 DVR 1.3.1a10	6.12.5	1.87.3.1	3.7.5
3250HD MR4 P1	3.12.8.1	1.57.8.1	3.7.5
2xxx, 31xx, 3200, 3100HD	3.10.9	1.54.23.1	1.0.6.20 (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

Document Version

This is the first release of these upgrade installation instructions.

Chapter 1

SR 2.5 and SR 3.5 UniPack Pre-Upgrade Procedures

Overview

Introduction

This chapter contains procedures that you will follow to prepare the system you are upgrading for the SR 2.5 or SR 3.5 upgrade.

Prerequisites

Note these important upgrade requirements:

- Systems that upgrade to SR 2.5 or SR 3.5 using the UniPack must currently be operating with system software from SR 2.2/SR 3.2, SR 2.4/SR 3.4, or SR 2.5/SR 3.5.
- Cisco field service engineers or the system operator must have already installed the DNCS Utilities software onto the DNCS. Refer to *DBDS Utilities Installation Instructions and DNCS Utilities User's Guide* for instructions on installing and executing the DNCS Utilities.

Notice to Installers

To ensure a successful system upgrade, it is important that you follow the instructions described in this chapter in the order given.

Estimated Time to Complete The SR 2.5 and SR 3.5 Upgrade

Cisco engineers have designed the SR 2.5 and SR 3.5 upgrade so that it can be completed while you are within one maintenance window.

Post upgrade procedures may involve resetting the QAM and MQAM modulators. Reset time is approximately 4 or 5 minutes per modulator. Cisco recommends that you never reset more than four modulators at once.

Performance Impact

Interactive services will not be available while you are within the SR 2.5 and SR 3.5 maintenance window and after DNCS processes are stopped.

Important Note About Third-Party Applications

Note these important points about third-party applications:

- Identify all third-party applications currently loaded onto either the DNCS or the Application Server.
- Contact all third-party vendors before the upgrade to SR 2.5 or SR 3.5. Inform the vendor that you are upgrading to SR 2.5 or SR 3.5 and determine whether you need to complete any steps related to the third-party application before or after the upgrade.

Overview, Continued

In This Chapter

This chapter contains the following topics.

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Back Up the File Systems

Introduction

The upgrade scripts on the SR 2.5 and SR 3.5 UniPack do not back up the DNCS or Application Server file systems. Prior to beginning the upgrade, back up the file systems manually. The following procedures provide instructions on backing up the file systems of the Application Server and the DNCS.

Important: Repeat these procedures two times: once for the DNCS and then again for the Application Server.

Note: These are the same file system backup procedures that are contained in *DBDS Backup and Restore Procedures for SR 2.2/3.2, SR 2.5/3.5, SR 2.6/3.6, SR 3.3, CV SR 3.4, and SR 4.0*, part number 4011040.

Preparing for the File System Backup

Follow this procedure to prepare for the DNCS or Application Server file system backup.

1. Are you backing up an Enterprise 450 or Sun Fire 880 DNCS?
 - If **yes**, check the dncs and root user e-mail accounts on the DNCS for the presence of metadvice errors.

Note: Correct any metadvice errors before proceeding with the backup. Contact Cisco Services if you need help in correcting metadvice errors.
 - If **no**, go to step 2.
2. If necessary, open an xterm window on the DNCS or Application Server, whichever server you are backing up.
3. Type **su -** and then press **Enter** to log in as root user.

Note: Be sure to type the single dash after typing su.

Result: The **password** prompt appears.
4. Type the root password and then press **Enter**.
5. Insert the CD labeled **DBDS Maintenance CD 2.1.x** into the CD drive of the DNCS or the Application Server, whichever server you are backing up.
6. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

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

Back Up the File Systems, Continued

7. Label a blank tape with the following information:
[DNCS or Application Server] File System Backup [Date]
[Site Name]
[Software Version]
DBDS Maintenance CD 2.1.x
Note: Customize the date, site name, and software version for the site you are backing up.
8. Go to **Backing Up the File System of the DNCS or Application Server**, next in this section.

Backing Up the File System of the DNCS or Application Server

Follow these instructions under the following circumstances:

- You are backing up the file system of the DNCS to a tape in the DNCS, itself
- You are backing up the file system of the Application Server to a tape in the Application Server, itself

Notes:

- If you have correctly followed the directions in this chapter, you should be logged in to an xterm window as root user.
- Expect to spend about an hour backing up the DNCS and about 45 minutes to back up the Application Server.

1. Insert the blank tape into the tape drive of the DNCS or Application Server, whichever server you are backing up, and wait for the green light to stop flashing.
2. Choose one of the following options to back up the file system:
 - To back up the file system on a local tape drive, type **/cdrom/cdrom0/s3/backup_restore/backupFileSystems** and then press **Enter**.
 - To back up the file system on a DNCS or Application Server that does not have a local tape drive, type:
/cdrom/cdrom0/s3/backup_restore/backupFileSystems -r [hostname or IP address]:[tape device] and then press **Enter**.

Result: The system backs up the DNCS or Application Server file system, ejects the tape, and displays a message when the backup is complete.

3. When the backup is complete, remove the tape and store it in a safe place.
4. Type **exit** and then press **Enter** to log out of the xterm window as root user.

Back Up the Database

Introduction

In this procedure, you will back up the Informix database. The CD labeled **DBDS Maintenance CD 2.1.x** should still be in the CD drive of the DNCS.

Note: These are the same database backup procedures that are contained in *DBDS Backup and Restore Procedures for SR 2.2/3.2, SR 2.5/3.5, SR 2.6/3.6, SR 3.3, CV SR 3.4, and SR 4.0*, part number 4011040.

Backing Up the Informix Database

Use this procedure to back up the DNCS and Application Server databases.

Notes:

- The DNCS, the Application Server, and Spectrum can be running while you back up the Informix database.
- It may take up to 30 minutes to back up a typical database with approximately 100,000 DHCTs.

1. If necessary, open an xterm window on the DNCS.
2. Type **su -** and then press **Enter** to log in as root user.

Note: Be sure to type the single dash after typing su.

Result: The **password** prompt appears.

3. Type the root password and then press **Enter**.
4. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

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

Back Up the Database, Continued

5. Label your backup tape with the following information:

DNCS Database Backup [Day of the Week]

[Site Name]

[Software Version]

DBDS Maintenance CD 2.1.x

[Tape #]

Notes:

- Customize the label with the day of the week, site name, and software version for the site you are backing up.
- If your database backup requires more than one tape, be sure to note the tape number on the label.

6. Insert the tape into the tape drive of the DNCS and wait until the green light stops flashing.

Important: Be sure that you are using different tapes for each day of the week, as recommended in the **Introduction** to this chapter.

7. Type **. /dvs/dnCS/bin/dnCSSetup** and then press **Enter**.

Important: Be sure to type the dot, followed by a space, prior to typing /dvs.

Result: The system establishes the root user environment.

8. Choose one of the following options.

- If you are using the standard tape drive configuration, follow these instructions.

- a) Type **/cdrom/cdrom0/s3/backup_restore/backupDatabase** and then press **Enter**.

Result: The system displays the following message:

Please mount tape 1 on /dev/rmt/0h and then press Return to continue.

- b) Go to step 10.

- If you are using a custom tape drive configuration, go to step 9.

Back Up the Database, Continued

9. If you are using a custom tape drive configuration, type
**/cdrom/cdrom0/s3/backup_restore/backupDatabase -b [blocksize]
-s [tapesize]** and then press **Enter**.

Note: Substitute the blocksize and tapesize that pertain to your system for [blocksize] and [tapesize].

Example:

/cdrom/cdrom0/s3/backup_restore/backupDatabase -b 128 -s 13212058

Result: The system displays the following message:

Please mount tape 1 on /dev/rmt/0h and then press Return to continue.

10. Press **Enter**.

Result: The system backs up your Informix database.

Notes:

- The system will prompt you to insert additional tapes if your backup requires more than one tape.
- The message **Successfully completed the database backup** appears when the backup has completed successfully.
- If the database backup was not successful, the system displays an error **message**. Contact Cisco Services for assistance in resolving the error message.

11. Type **eject cdrom** and then press **Enter**.
12. Remove the CD and tape(s) and store them in a safe place.

Examine Mirrored Devices

Introduction

Examine the status of the mirrored disk drives on the Sun Enterprise 450 or the Sun Fire 880 DNCS prior to the SR 2.5 and SR 3.5 upgrade. All the disk mirroring functions must be working normally before proceeding with the upgrade.



CAUTION:

If the disk mirroring functions of the DNCS are not working properly before the upgrade, you may not be able to easily recover from a failed upgrade.

Examining the Mirrored Devices

Follow these instructions to examine the status of the mirrored drives on your DNCS.

Notes:

- If you have properly followed the instructions in this chapter, you should be logged on to an xterm window on the DNCS as **dncs** user.
- This procedure should take only a few minutes to complete.

1. If necessary, open an xterm window on the DNCS.
2. Type **metastat | more** and then press **Enter**.

Result: The system displays the status of all of the metadevices on the DNCS.

Note: Press the **Spacebar**, if necessary, to page through all of the output.

3. Are the following two conditions true?
 - The designation **ok** appears in the **State** column next to each metadevice.
 - No **Hot Spare** indicates **In Use**.
 - If **yes** (to both conditions), go to **Run the clearDbSessions Utility**, next in this chapter.
 - If **no** (to either or both conditions), contact Cisco Services for help in resolving these issues with the metadevices.

Run the clearDbSessions Utility

Introduction

It takes only several minutes to run the clearDbSessions utility. Once the utility starts running, you can continue with the rest of the pre-upgrade procedures covered in this chapter.

Running the clearDbSessions Utility

Run the clearDbSessions utility to remove orphaned and completed sessions from the database. Follow these instructions to run the clearDbSessions utility.

Note: The system components can be running while you run the clearDbSessions utility.

1. If necessary, open an xterm window on the DNCS.
2. Type **clearDbSessions** and then press **Enter**.

Result: The system removes all completed session, resource, and network graph records more than 1 hour old from the database.

3. Type **clearDbSessions -c** and then press **Enter**.

Result: The system removes all completed session, resource, and network graph records from the database.

4. Type **clearDbSessions -o** and then press **Enter**.

Result: The system removes orphaned records from the database.

5. While the clearDbSessions utility is running, go to **Examine Key Files**, next in this chapter to continue with the pre-upgrade procedures.

Examine Key Files

Introduction

The scripts contained on the UniPack are designed to back up the key files most likely to be found on the DNCS. Some sites, however, include special key files that are unique to that site, only. As part of the backup, the upgrade scripts ask if you have any special files that you want to add to the list of files to be backed up. If you answer **yes**, the system offers you an opportunity to type in the directory path and name of any special files you want to back up.

You can save a lot of time if you spend a few minutes identifying those special files now.

Identify Special Files to be Backed Up

On a sheet of paper, create a list of special key files that you will back up. Use the following guidelines when you create the list:

- Write down the home directories of all user accounts.
- Make a list of all custom scripts that your system uses.
- Review all system cron files and write down any special cron files that you want to retain after the upgrade.

Notes:

- Some of your special cron files may reference custom scripts. Be certain to include those custom scripts on any list of special cron files you want backed up.
- Be aware that there is a system limitation of 2 GB of special files that can be backed up on an Enterprise 250 server.
- Contact Cisco Services if you are unsure of what cron files you need to back up separately.

Include These Files

Be sure to include these files when you identify special files to back up:

- All the files in the `/dvs/dncs/tmp/dhctStatus2` directory
Note: This directory contains the most recent 8 days of DHCT polling data.
- The `/dvs/dncs/tmp/signonCount.out` file
Note: This file is the most recent logfile associated with the signonCount utility.
- The output from the most recent Doctor report.

Examine Key Files, Continued

Do Not Include These Files

When you create your list of special files to be backed up, avoid including the following types of files:

- Do not include any binary files from the `/usr/local/bin` directory or binary files from any other directory. These binary files may not function after the upgrade and may actually harm the upgrade.
- Do not include any library files from the `/usr/lib` or the `/usr/local/lib` directories. These library files may not function after the upgrade and may actually harm the upgrade.
- Do not include any files in the `/dvs/dncs/bin` directories. When these files are restored (after the upgrade), they will overwrite the new binary files associated with the upgrade.

Note: You should not have a need to back up any files in the `/dvs/dncs/bin` directories. However, if you have placed a utility in this directory and decide to back it up, Cisco recommends that you move the utility to `/export/home/dncs/scripts` after the upgrade.

- Do not include any Solaris Operating System binary or library files.
- Do not include any Informix software binary or library files.

Verify System Communications

Verifying System Communication

Use this procedure to verify that an active communication link exists between the DNCS and the various system components. The DNCS must be able to communicate with other system components to ensure a successful system upgrade.

Important: If any of the following tests fail, troubleshoot the system to the best of your ability. If you are unable to resolve the failure, contact Cisco Services for assistance.

1. From an xterm window on the DNCS, type **cd /export/home/dncs/doctor** and then press **Enter**.

Result: The /export/home/dncs/doctor directory becomes the working directory.

2. Generate a complete Doctor Report by typing **doctor -av** and then press **Enter**.

Results:

- The system generates the Doctor Report listing all system configuration information and directs the output of the report to the screen.
- The system also saves the output of the Doctor Report to a log file in the current directory on the DNCS.

Notes:

- Depending upon the size of your system, it may take a few minutes for the report to generate.
 - The final line of the report generated to the screen lists the file to which the output was saved.
3. Examine the log file and verify that the system was able to ping the following hardware components:
 - The Broadband Integrated Gateway (BIG)
 - All Quadrature Amplitude Modulators (QAMs) in the system
 - All Quadrature Phase-Shift Keying (QPSK) Modulators in the system (both the Ethernet and RF [radio frequency] ports)
 - The Transaction Encryption Device (TED)

Verify System Communications, Continued

4. Verify that you can manually ping the following hardware components:
 - The Asynchronous Transfer Mode (ATM) switch (if one exists)
 - All router interfaces in the system
5. Type **df -k** and then press **Enter** to verify that you are using no more than 85 percent of the partition capacity of each disk.

Note: If any disk partition lists a capacity of greater than 85 percent, contact Cisco Services before proceeding.
6. Complete these steps to perform a slow and fast boot on a test DHCT with a working return path (2-way mode):
 - a) Boot a DHCT.

Note: Do not press the power button.
 - b) Access the Power On Self Test and Boot Status Diagnostic Screen on the DHCT and verify that all parameters, except UNcfg, display **Ready**.

Note: UNcfg displays **Broadcast**.
 - c) Wait 5 minutes.
 - d) Press the power button on the DHCT.

Result: The power to the DHCT is turned on.
 - e) Access the Power On Self Test and Boot Status Diagnostic Screen on the DHCT and verify that all parameters, including UNcfg, display **Ready**.
7. Verify that you can ping the DHCT.
8. Verify that the Interactive Program Guide (IPG) displays 7 days of accurate and valid data.
9. Tune to each available channel on a DHCT to confirm that a full channel lineup is present.

Note: Record any anomalies you notice while verifying the channel lineup.
10. Choose one of the following options:
 - For sites with the Pioneer application, verify that you can purchase an existing impulse pay-per-view (IPPV) event.
 - For sites with the Cisco application, verify that you can define, purchase, and view an IPPV event.
11. Go to **Check the EAS Configuration**, next in this chapter.

Check the EAS Configuration

Checking the EAS Configuration

Before upgrading to SR 2.5 or SR 3.5, verify that your EAS equipment is properly configured in the DNCS. Complete all of the procedures in Chapter 5, **Testing the EAS**, of *Configuring and Troubleshooting the Digital Emergency Alert System, For Use With All System Releases*.

Check the Number of BFS Sessions

Introduction

The number of BFS sessions post-upgrade needs to equal the number of pre-upgrade sessions. Use this procedure to determine and record the number of pre-upgrade BFS sessions. Then, after the upgrade, you will determine the number of post-upgrade BFS sessions.

Checking the Number of BFS Sessions

Follow this procedure to check and record the number of pre-upgrade BFS sessions.

1. Press the **Options** button on the front panel of the BFS QAM until the **Session Count** total appears.
2. Record the **Session Count** total in the space provided. _____

Obtain System Configuration

Obtaining System Configuration

Complete these steps to obtain basic system configuration data.

1. If necessary, open an xterm window on the DNCS.
2. Type **more /etc/hosts** and then press **Enter**.

Result: A list of IP (Internet Protocol) addresses and hostnames appears.

3. On a sheet of paper, write down the IP addresses of the hosts that appear in the /etc/hosts file.

Important: At a minimum, write down the IP addresses for the following hosts:

- **appservatm** _____
- **dncsatm** _____
- **dncseth** _____
- **dncsted** _____

4. Type **uname -n** and then press **Enter**.

Result: The hostname for the DNCS appears.

Important: Contact Cisco Services if the hostname contains a period (.). Cisco engineers will help you change it to a valid hostname.

5. Write down the hostname for the DNCS, as displayed in step 4:

6. From an xterm window on the Application Server, type **more /etc/hosts** and then press **Enter**.

Result: A list of IP addresses and hostnames appears.

7. Write down the IP addresses and hostnames for the following hosts:

- **dncsatm** _____
- **appservatm** (if appservatm is *not* 10.253.0.10) _____

8. At the Application Server, type **uname -n** and then press **Enter**.

Result: The hostname for the Application Server appears.

9. Write down the hostname for the Application Server, as displayed in step 8:

Edit Debug and Logging Settings in the .profile File

Introduction

After the upgrade to SR 2.5 and SR 3.5, some of the logging and debug settings that were managed through the .profile file will be managed through the DNCS user interface. Before upgrading to SR 2.5 and SR 3.5, edit the .profile to remove these logging and debug settings. The instructions in this section describe how to edit the .profile file.

Editing Debug and Logging Settings in the .profile File

Follow these instructions to edit the .profile file to remove specific logging and debug settings.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd /export/home/dncs** and then press **Enter**.
Result: The /export/home/dncs directory becomes the working directory.
3. Open the .profile file using the text editor of your choice.
4. Look for an entry in the .profile file similar to the following example:

```
export EMCDEBUG=BbKkQ9SD
```

5. Delete the following debug flags from the entry described in step 4:
 - Bb
 - Kk
 - Q9
 - S
 - D
Result: The debug flags for the bossServer (Bb), camPsm (Kk), qamManager (Q9), dsm (S), and siManager processes are now deleted from the .profile file.
6. Do any other debug or logging flags remain with the EMCDEBUG variable after having completed step 5?
 - If **yes**, contact Cisco Services to see if these flags are still needed.
 - If **no**, delete the entire **export EMCDEBUG=** line (or make it into a comment).
7. Save the changes to the .profile file and then close the text editor.

Note: You will reset these flags from the user interface later during the upgrade.

Check the Time to Live Parameter

Introduction

The number of “hops” refers to the number of routers a single packet of data traverses on its way to its destination. In the case of router failure or network misconfiguration, a packet of data can theoretically exist in an endless loop, never reaching its destination and never being discarded by the system.

To prevent data from existing in an endless loop, IP packets of data contain a Time to Live (TTL) parameter that decrements by 1 each time that packet of data navigates a router. This protocol is designed to discard the packet whenever the TTL parameter reaches 0.

Cisco uses a default TTL parameter of 10 for IP multicast packets that are generated by the DNCS; there are no known DBDS systems that are configured to require more than 10 hops for a packet of data to reach its destination.

In this procedure, you will “probe” each Cable Modem Termination System (CMTS) on the network and analyze the number of hops required for a packet of data to reach the CMTS. To do this, you will query the database to obtain the IP address of each CMTS. Then, you will run the **tracert** command against every CMTS and count the number of hops. If the **tracert** command reveals that data requires 8 or more hops to reach any CMTS, you will then modify the TTL parameter in the `/export/home/dncs/.profile` file on the DNCS.

Obtaining the CMTS IP Addresses

Follow these instructions to query the database regarding the IP address of each CMTS.

Note: To be certain that the IP address of each CMTS has been properly entered into the database, you may want to cross-reference any IP addresses returned from the database against the documentation that accompanied the CMTS.

- ❑ 1. If necessary, open an xterm window on the DNCS.
- ❑ 2. Type **dbaccess dnscdb -** and then press **Enter**.

Result: The system opens the DNCS database.

Check the Time to Live Parameter, Continued

- ❑ 3. Type **select * from cmts;** and then press **Enter**.

Result: The system displays the rows in the cmts table.

id name	ipaddr	ipaddr2
2 vod4CriscoCMTS	192.168.201.201	

1 row(s) retrieved.

Note: This system shows only one CMTS; your system may show more.

- ❑ 4. Write the IP address of each CMTS on a sheet of paper so that you can refer to it later.

Note: If no CMTSs are found, skip the remainder of this procedure and go to **Delete the copyControlParams File**, later in this chapter.

- ❑ 5. Type the **Ctrl** and **c** keys simultaneously to close the database.
- ❑ 6. Go to **Determining the Number of Hops**, next in this section.

Determining the Number of Hops

In this procedure, you will run the Unix **traceroute** command against each CMTS IP address that you found in the previous procedure, **Obtaining the CMTS IP Addresses**. The results of the traceroute command will indicate the number of hops required for data to reach each CMTS.

- ❑ 1. Type **traceroute <IP Address>** and then press **Enter**.

Note: Substitute the IP address of a CMTS for <IP Address>.

Example: **traceroute 192.168.201.201**

Result: The system shows the number of hops; this example shows that two hops are required.

```
$ traceroute 192.168.201.201
traceroute: Warning: Multiple interfaces found; using 10.252.0.1 @ ce0
traceroute to 192.168.201.201 (192.168.201.201), 30 hops max, 40 byte
packets
 1 router (10.252.0.254) 0.541 ms 0.343 ms 0.290 ms
 2 cmts (192.168.201.201) 0.773 ms * 0.738 ms
```

- ❑ 2. On the sheet of paper that you used in step 4 of the previous procedure, write the number of hops required for data to reach each CMTS.

Check the Time to Live Parameter, Continued

- ❑ 3. Repeat steps 1 and 2 for each CMTS that you recorded in the previous procedure, **Obtaining the CMTS IP Addresses**.
- ❑ 4. Do any of the CMTSs require 8 or more hops?
 - If **yes**, go to **Editing the .profile File**, next in this section.
 - If **no**, go to **Delete the copyControlParams File**, next in this chapter; you do not have to modify the .profile file.

Editing the .profile File

You need to edit the .profile file *only* if the traceroute command (previous procedure, **Determining the Number of Hops**) reveals that a packet of data requires 8 or more hops to reach a CMTS.

Follow these instructions to edit the .profile file.

- ❑ 1. In the space provided, write down the greatest number of hops revealed by the traceroute command in the previous procedure. _____
- ❑ 2. Add 3 to your number from step 1 and write the result in the space provided. _____

Example: If your number in step 1 is 8, adding 3 to 8 yields 11.

- ❑ 3. Use a text editor to open the /export/home/dnscs/.profile file.
- ❑ 4. Append the following lines to the .profile file:

```
#Time To Live seconds/hops (default=10)
export COMM_MULTICAST_TTL=<Number from step 2>
```

```
#BFS Time To Live seconds/hops (default=10)
export BFS_MULTICAST_TTL=<Number from step 2>
```

```
#HCTM Time To Live seconds/hops (default=10)
export HCTM_MULTICAST_TTL=<Number from step 2>
```

Note: Substitute the number you recorded in step 2 for <Number from step 2>.

- ❑ 5. Save the .profile file and close the text editor.

Note: Your changes will take effect after you stop and restart the DNCS, later during this upgrade procedure.

Delete the copyControlParams File

Introduction

Early versions of the copyControlParams.inf file were loaded onto the DNCS with erroneous default values. In this procedure, you will delete the copyControlParams.inf file that is currently on your DNCS. Then, during the upgrade, when the system determines that the file is missing, it will load the correct version of the file.

Note: You can skip this procedure if you know for a fact that your system does not use the copyControlParams.inf file. If you are uncertain, begin the procedure. One of the steps in the procedure is designed to determine whether the system you are upgrading uses the copyControlParams.inf file.

Deleting the copyControlParams File

Follow these instructions to delete the copyControlParams.inf file from the DNCS.

- ❑ 1. Check with the system operator and determine whether the site you are upgrading has any customized entries in the copyControlParams.inf file.

Note: If the copyControlParams.inf file has customized entries, you will make a back up copy of the file before deleting it.

Important: If your copyControlParams file has been customized, be sure to note it as a *special file* so that you can reference it later, after the upgrade, and add those customized entries back into the new version of the copyControlParams file. Refer to **Examine Key Files**, earlier in this chapter, for information about notating files that need to be backed up specially.

- ❑ 2. If necessary, open an xterm window on the DNCS.

- ❑ 3. Type **cd /export/home/dnscs** and then press **Enter**.

Result: The /export/home/dnscs directory becomes the working directory.

- ❑ 4. Type **ls copyControlParams.inf** and then press **Enter**.

Result: If the copyControlParams.inf exists, the system lists its properties; if the file does not exist, the command prompt is displayed.

- ❑ 5. Does the copyControlParams.inf exist?
 - If **yes**, continue with step 6.
 - If **no**, skip the rest of this procedure and go to Prepare to Activate the Spectrum Software, next in this chapter.

Delete the copyControlParams File, Continued

- ❑ 6. Type **mv copyControlParams.inf copyControlParams.inf.bak** and then press **Enter**.

Result: The system renames the **copyControlParams.inf** file to **copyControlParams.inf.bak**.

Note: Ignore any warning message generated by the camPsm process. You should normally delete the copyControlParams.inf file while the system is not running. However, because the SR 2.5 and SR 3.5 UniPack upgrade is a live upgrade, you will not stop the system components prior to the upgrade

Important: After the upgrade, use the backup copy of the copyControlParams.inf file, if necessary, to add any customized entries to the file.

Prepare to Activate the Spectrum Software

Obtaining the Activation Key and Expiration Date

Completing this procedure now will save you time later. Use this procedure to obtain the Spectrum activation key and expiration date.

1. Do you have your Spectrum CD certificate?
 - If **yes**, go to step 2.
 - If **no**, go to step 6.
2. From a PC, log on to the following Website:
www.aprisma.com/swmfg/act-keygen/keygen
3. Use the form on the Website to supply Aprisma™ with the requested information, and then click **Continue**.

Note: You need to supply Aprisma with the following information:

- Spectrum license number
- Spectrum PO number
- First 12 characters of the Spectrum extraction key
- Spectrum Authorization key
- Spectrum Authorization code
- Spectrum version number

Result: Aprisma updates the Website to provide you with an activation key and expiration date.

4. Write the activation key and expiration date in the space provided.

Note: You will need this information in the next chapter when you activate your Spectrum software.

5. Go to **Connect the UniPack to the DNCS**, next in this chapter.

Prepare to Activate the Spectrum Software, Continued

6. Follow these instructions if you do not have the Spectrum CD certificate.
 - a) From an xterm window on the DNCS, type
more /export/home/spectrum/installrc and then press **Enter**.
Result: The /export/home/spectrum/.installrc file opens using the Unix *more* utility.
 - b) Call Aprisma's support center **1-877-468-1448**.
Note: This telephone number is available 24 hours a day.
 - c) Supply the Aprisma phone representative with the information listed in the /export/home/spectrum/.installrc file.
Result: The Aprisma representative will provide you with an activation key and expiration date.
 - d) Write the activation key and expiration date in the space provided.

Note: You will need this information in the next chapter when you activate your Spectrum software.

- e) Go to **Connect the UniPack to the DNCS**, next in this chapter.

Connect the UniPack to the DNCS

Connecting the UniPack

Follow this procedure to connect the UniPack to the DNCS.

Note: Unlike previous system upgrades that used a UniPack, you do not have to stop the system components before connecting the UniPack to the DNCS.

1. Follow these instructions to connect the UniPack to the DNCS.

Note: Refer to the illustration that accompanies these instructions as you connect the UniPack.

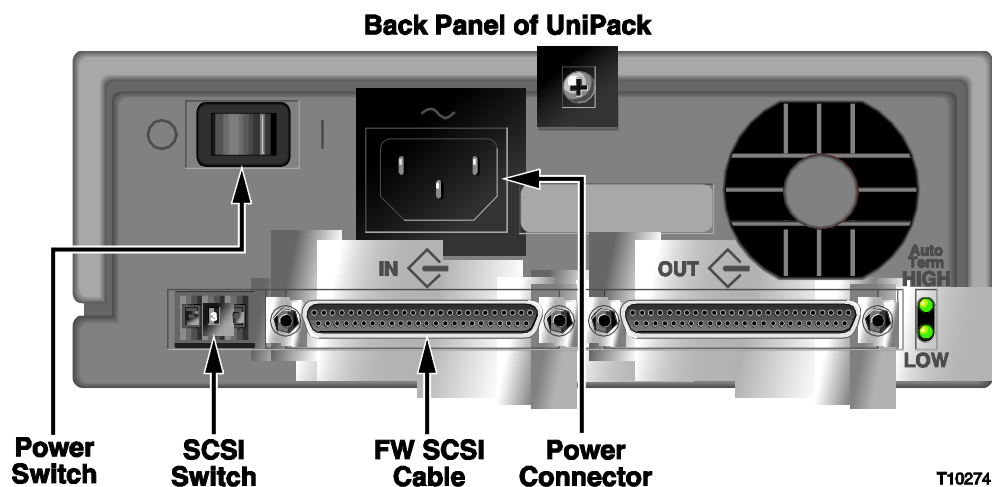
- a) Be sure the power switch of the UniPack is in the off position (noted as **O** on the side of the switch).
- b) Verify that the SCSI switch, labeled **SCSI Switch** in the illustration, is set to **3**.

Note: The UniPack ships with this switch set to **3**, but it may have changed in transit or set up.

- c) Connect one end of an FW SCSI cable to the SCSI port labeled **IN**, and the other end to the DNCS.

Important: On the V880 DNCS, use the upper port of slot 6; select any port on the motherboard for the Enterprise 450 or Enterprise 250.

- d) Plug one end of the power cable into the back of the UniPack, and the other end into an AC power outlet.



Connect the UniPack to the DNCS, Continued

2. Turn on the power to the UniPack (noted as **I** on the side of the switch).
3. Wait a few seconds.
Result: A green light on the front of the UniPack appears.
4. Go to **Run the cleanup_UniPack Script on the DNCS**, next in this chapter.

Run the cleanup_UniPack Script on the DNCS

Introduction

The UniPack may contain backup and log files from the previous upgrade. Cisco recommends that before you use the UniPack to back up the current system, you first remove any files associated with the previous upgrade. Follow the instructions in this section to remove old files from the UniPack.

Running the cleanup_UniPack Script on the DNCS

The cleanup_UniPack script removes old system files from the UniPack so that you can later use the UniPack to upgrade a new system to SR 2.5 and SR 3.5. Follow these instructions to run the cleanup_UniPack script on the DNCS.

1. If necessary, open an xterm window on the DNCS.
2. Follow these instructions to log into the xterm window as root user.
 - a) Type **su -** and then press **Enter**.

Important: Be sure to type the dash (-) after typing su.

Result: The **password** prompt appears.
 - b) Type the root password and then press **Enter**.
3. Insert the CD labeled **DBDS Maintenance CD** into the CD drive of the DNCS.

Note: If the File Manager window opens, you can close it.
4. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

Note: The presence of **/cdrom** in the output confirms that the system correctly mounted the CD.
5. Type **/cdrom/cdrom0/s3/sai/scripts/Media/cleanup_UniPack** and then press **Enter**.

Results:

 - The system displays a message that indicates that the cleanup_UniPack script will delete all backup files and log files on the UniPack.
 - The system displays a confirmation message.
6. Type **y** and then press **Enter**.

Result: The system removes the old files from the UniPack.
7. Go to **Run the setup_UniPack Script on the DNCS**, next in this chapter.

Run the setup_UniPack Script on the DNCS

Running the setup_UniPack Script on the DNCS

The setup_UniPack script creates several system files so that you can later use the UniPack to upgrade to SR 2.5 and SR 3.5. Follow these instructions to run the setup_UniPack script on the DNCS.

Notes:

- The CD labeled **DBDS Maintenance CD** should still be in the CD drive of the DNCS.
- You should still be logged in as root user to an xterm window on the DNCS.

1. Type **/cdrom/cdrom0/s3/sai/scripts/Media/setup_UniPack** and then press **Enter**.

Result: The system displays the following message:

This program will do the following:

- create a sysidcfg file so that you can boot off the UniPack.
- create a file system info file that can be used for file system backups
- setup the eeprom so that you can boot off the devalias "unipack".

Do you want to continue? [y, n, ?, q]

2. Type **y** and then press **Enter**.

Results:

- The system creates the system files and sets up the eeprom.
 - The system displays a **Finished setting up the machine for UniPack install** message when it is complete.
3. Type **exit** and then press **Enter** to log out the root user.
 4. Choose one of the following options:
 - If you are upgrading an Enterprise 450 or a Sun Fire V880 DNCS to SR 2.5 or SR 3.5, go to Chapter 2, **SR 2.5 and SR 3.5 Upgrade Procedures for the Enterprise 450 and Sun Fire V880 DNCS**.
 - If you are upgrading an Enterprise 250 DNCS to SR 2.5 or SR 3.5, go to Chapter 3, **SR 2.5 and SR 3.5 Upgrade Procedures for the Enterprise 250 DNCS**.

Chapter 2

SR 2.5 and SR 3.5 Upgrade Procedures for the Enterprise 450 and Sun Fire V880 DNCS

Overview

Introduction

The Sun Enterprise 450 and Sun Fire V880 DNCS servers are to be upgraded using Solaris' Live Upgrade. Live Upgrade is a Solaris facility which allows operating system or application upgrades in an inactive boot environment while the active boot environment continues to run without interruption. Therefore, do *not* shut down the DNCS or Application Server processes until you are instructed to do so.

The procedures in this chapter describe how to upgrade an Enterprise 450 and a Sun Fire V880 DNCS to SR 2.5 and SR 3.5.

Note: If you are upgrading an Enterprise 250 DNCS to SR 2.5 or SR 3.5, skip this chapter entirely. Go instead to Chapter 3, **SR 2.5 and SR 3.5 Upgrade Procedures for the Enterprise 250 DNCS**.

Important: You can complete the first five procedures of this chapter in about 2 hours. Be certain that you are within a maintenance window when you stop the cron jobs in this chapter, and when you complete the procedures in Chapter 4, **SR 2.5 and SR 3.5 Common Upgrade Procedures**.

Overview, Continued

In This Chapter

This chapter contains the following topics.

Topic	See Page
Remove Spectrum Archive Files	2-3
Remove Hot Spares on the Enterprise 450 DNCS	2-5
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Remove Spectrum Archive Files

Removing Spectrum Archive Files

Follow these instructions to remove Spectrum archive files.

1. In an xterm window, type **su -** and then press **Enter** to log in as root user.
Result: The **password** prompt appears.
2. Type the root password and then press **Enter**.
3. Type **. /dvs/dncls/bin/dnclsSetup** and then press **Enter**.
Important: Be sure to type the dot followed by a space prior to typing **/dvs**.
Result: The system establishes the root user environment.
4. Type **cd /export/home/spectrum/SS/DDM** and then press **Enter**.
Result: The **/export/home/spectrum/SS/DDM** directory becomes the working directory.
5. Type **ls -l .DDMDB.LOCK** and then press **Enter**.
Important: Be sure to type the dot before typing **DDMDB.LOCK**.
Result: One of the following results occurs:
 - If the **.DDMDB.LOCK** file exists, the system lists the file's characteristics.
 - If the **.DDMDB.LOCK** file does not exist, the system displays a **No such file or directory** message.
6. Does the **.DDMDB.LOCK** file exist?
 - If **yes**, type **rm .DDMDB.LOCK** and then press **Enter**.
Result: The system removes the lock held on the database by the ArchMgr process.
 - If **no**, go to step 7.
7. Type **ddm_load -i 16** and then press **Enter**.
Result: The message **Do you want to initialize the DDM Database?** appears.
8. Type **y** and then press **Enter**.
Results:
 - The Spectrum database is initialized.
 - A message similar to **Landscape handle is 0X400000** appears.

Remove Spectrum Archive Files, Continued

9. Choose one of the following options:
 - If you are upgrading an Enterprise 450 DNCS, go to **Remove Hot Spares on the Enterprise 450 DNCS**, next in this chapter.
 - If you are upgrading a Sun Fire V880 DNCS, go to **Detach File System Mirrors on the Sun Fire V880 DNCS**, later in this chapter.

Remove Hot Spares on the Enterprise 450 DNCS

Removing Hot Spares

Follow this procedure to temporarily disable the hot spare function of the Enterprise 450 DNCS. The hot spare function refers to the capability of the Enterprise 450 DNCS to automatically replace a failed mirrored disk.

Important: Complete this procedure *only* if you are upgrading an Enterprise 450 DNCS. If you are upgrading a Sun Fire V880 DNCS, go to **Detach File System Mirrors on the Sun Fire V880 DNCS**, next in this chapter.

Notes:

- The CD labeled **DBDS Maintenance CD** should still be in the CD drive of the DNCS.
 - You should still be logged in as root user to an xterm window on the DNCS.
1. From an xterm window on the Enterprise 450 DNCS, type `/cdrom/cdrom0/s3/sai/scripts/Media/remove_hotspares` and then press **Enter**.
Result: A confirmation message appears.
 2. Type **y** and then press **Enter**.
Result: The system checks for metadevice errors and disables the hot spare function on the Enterprise 450 DNCS.
 3. Go to **Attach Database Mirrors on the Enterprise 450 DNCS**, next in this chapter.

Attach Database Mirrors on the Enterprise 450 DNCS

Attaching Database Mirrors

The following procedure prepares the database mirrors of the Enterprise 450 DNCS for the upgrade. In this procedure, you will attach the c4 disk slices to the database mirrors in order to create three-way mirrors. These disk slices will be detached later so that they can be used for the Live Upgrade.

Important: Note these important points:

- Complete this procedure *only* if you are upgrading an Enterprise 450 DNCS. If you are upgrading a Sun Fire V880 DNCS, go to **Detach File System Mirrors on the Sun Fire V880 DNCS**, next in this chapter.
- This procedure can take up to an hour to complete. Do not move on to the next procedure until you have completed this procedure.

Notes:

- The CD labeled **DBDS Maintenance CD** should still be in the CD drive of the DNCS.
 - You should still be logged in as root user to an xterm window on the DNCS.
1. From an xterm window on the Enterprise 450 DNCS, type `/cdrom/cdrom0/s3/sai/scripts/Media/attach_DBmirrors` and then press **Enter**.
Result: A confirmation message appears.
 2. Type **y** and then press **Enter**.
Result: The system attached the database mirroring function on the Enterprise 450 DNCS.
 3. Go to **Install the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS**, later in this chapter.

Detach File System Mirrors on the Sun Fire V880 DNCS

Detaching File System Mirrors

Follow this procedure to temporarily detach the file system mirrors on the Sun Fire V880 DNCS. File system mirrors refer to the mirrors of the Sun Fire V880 DNCS that contain file system data.

Important: Complete this procedure *only* if you are upgrading a Sun Fire V880 DNCS.

Notes:

- The CD labeled **DBDS Maintenance CD** should still be in the CD drive of the DNCS.
- You should still be logged in as root user to an xterm window on the DNCS.

1. From an xterm window on the Sun Fire V880 DNCS, type `/cdrom/cdrom0/s3/sai/scripts/Media/detach_UFSmirrors` and then press **Enter**.

Result: A confirmation message appears.

2. Type **y** and then press **Enter**.

Result: The system checks for metadvice errors and disables the file system mirroring function on the Sun Fire V880 DNCS.

Note: An orange disk-status screen may appear that confirms that one-way mirroring is in place. You can close that screen.

3. Go to **Install the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS**, next in this chapter.

Install the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS

Introduction

In this section, you will install the SR 2.5 or SR 3.5 software on to an Enterprise 450 or Sun Fire V880 DNCS.

Note: If you have followed the instructions in this upgrade guide in order, the DBDS Maintenance CD should still be in the CD drive of the DNCS, and you should still be logged on to an xterm window on the DNCS as root user.



CAUTION:

If you have entries in the `/etc/vfstab` file to automatically mount NFS file systems, you need to comment out those specific entries prior to running this procedure. The `pkgadd` command is likely to fail in a Live Upgrade environment if there are NFS mounts present in the `/etc/vfstab` file; commenting these entries out resolves the issue. You need to put these entries back manually after the upgrade is complete, or after you have rolled back the system.

Installing the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS

Follow these instructions to install the DNCS software on the Enterprise 450 or Sun Fire V880 DNCS.

1. In the xterm window, type `/cdrom/cdrom0/s3/sai/scripts/Media/SAmenu` and then press **Enter**.

Results:

- The UniPack environment is established.
- The system configuration is checked.

Note: The system check should complete in 3 minutes.

Important: If the script that checks system configuration takes longer than 3 minutes to execute, something may have gone wrong. Contact Cisco Services for assistance in troubleshooting the system check.

- The SA UniPack Menu should appear.

2. From the SA UniPack menu, type **1** (for Install Solaris OS & all DNCS Packages) and then press **Enter**.

Results:

- A message appears that warns that this option will delete data from the disks.
- The message **Are you sure you want to do this?** appears.

Install the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS, Continued

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

Result: A message appears that prompts you to confirm that you want to use Live Upgrade.

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

Result: The message **Are you going to use Cisco's App Server?** appears.

5. Choose one of the following options:

- Type **y** and then press **Enter** if you are going to use Cisco's Application Server.
- Type **n** and press **Enter** if you are *not* going to use Cisco's Application Server.

Results:

- The system displays a message about generating a response file.
- The system displays a list of configuration parameters similar to the following example:

```
***** Installation Configuration *****
**                                     **
**      0)  INFORMIXSERVER           =      dncsDbServer      **
**      1)  DNCS_HOST                 =      dncs              **
**      2)  BFS_HOST                   =      dncs              **
**      3)  DNCSATM_IP                 =      10.253.6.1        **
**      4)  APPSERVATM_IP              =      10.253.6.10       **
**      5)  DNCSTED_IP                 =      192.168.1.2        **
**                                     **
*****
```

Number to change ("0", "1", ...), "c" to continue, or "q" to quit:

6. Follow these instructions regarding the configuration parameters that appeared after executing step 5.
 - a) Examine the configuration parameters and follow the onscreen instructions to change any parameter that needs to be changed.
 - b) Type **c** and then press **Enter** when you are finished.

Results:

- The system generates a response file.
- The system displays a confirmation message about continuing with the upgrade.

Install the DNCS Software on an Enterprise 450 or Sun Fire V880 DNCS, Continued

7. Type **y** and then press **Enter**.

Results:

- The live upgrade of the DNCS occurs.
- The DNCS image is extracted on to the unused disks of the DNCS.
- The system displays a message seeking intent to back up the key files.

Note: This step may take 30 minutes or longer to complete.

Important: Ignore any on-screen directives to reboot the system.

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

Results:

- The system lists the key files and directories that will be backed up and then later restored.
- The system displays a **Do you want to add to the above list?** message.

9. Examine the list of key files and directories that will be backed up and then choose one of the following options.

- If you want to add to the list of key files and directories to be backed up, follow these instructions.
 - a) Type **y** and then press **Enter**.
 - b) Follow the on-screen instructions to add to the list of files or directories.
- If you do *not* want to add to the list of key files and directories to be backed up, type **n** and then press **Enter**.

Result: The **Do you want to back up the Spectrum database?** message appears.

10. Are you using Spectrum?

- If **yes**, type **y** and then press **Enter**.

Results:

- The system backs up the Spectrum database.
- The system prompt appears.

- If **no**, type **n**, and then press **Enter**.

Result: The system prompt appears.

11. Go to **Stop the cron Jobs**, next in this chapter.

Stop the cron Jobs

Introduction

Before continuing with the upgrade, stop any cron jobs that are currently running on the DNCS and the Application Server. Follow these instructions to stop all cron jobs.

Note: A cron job refers to programs that run automatically, without specific user intervention.

Important: You need to be in a maintenance window to complete the remaining procedures in this chapter, as well as Chapter 4, **SR 2.5 and SR 3.5 Common Upgrade Procedures**.

Stopping the cron Jobs on the DNCS

Follow these instructions to stop cron jobs on the DNCS.

- ❑ 1. Type **ps -ef |grep cron** and then press **Enter**.

Result: The system lists running processes that include the word cron.

- ❑ 2. Did the results from step 1 include **/usr/sbin/cron**?

- If **yes**, follow these instructions.

- a) Type **/etc/rc2.d/S75cron stop** and then press **Enter**.

Result: The system stops all cron jobs.

- b) Go to step 3.

- If **no**, go to **Stopping the cron Jobs on the Application Server**, next in this section; the cron jobs are already stopped on the DNCS.

- ❑ 3. Confirm that the cron jobs have stopped by typing **ps -ef |grep cron** again and then press **Enter**.

Result: The system should list only the grep process.

Stop the cron Jobs, Continued

Stopping the cron Jobs on the Application Server

Follow these instructions to stop cron jobs on the Application Server.

Note: If you are not upgrading a Cisco Application Server, skip this procedure and go to **Suspend Billing Transactions and Third-Party Applications**, next in this section.

- ❑ 1. Type **ps -ef |grep cron** and then press **Enter**.

Result: The system lists running processes that include the word cron.

- ❑ 2. Did the results from step 1 include **/usr/sbin/cron**?

- If **yes**, follow these instructions.

- a) Type **su -** and then press **Enter**.
- b) Type the root password and then press **Enter**.
- c) Type **/etc/rc2.d/S75cron stop** and then press **Enter**.

Result: The system stops all cron jobs.

- d) Type **exit** and then press **Enter** to log out the root user.
- e) Go to step 3.

- If **no**, go to **Suspend Billing Transactions and Third-Party Applications**, next in this section; the cron jobs are already stopped.

- ❑ 3. Confirm that the cron jobs have stopped by typing **ps -ef |grep cron** again and then press **Enter**.

Result: The system should list only the grep process.

Suspend Billing Transactions and Third-Party Applications

Contact the billing vendor and ask that all transactions be suspended until after the upgrade is complete. In addition, be sure to stop all third-party applications.

Stop the System Components

Stopping System Components

Refer to Appendix A, **Stopping the System Components**, to stop Spectrum, the Application Server, and the DNCS.

Detach Database Mirrors

Introduction

In this procedure, you will detach the database mirrors of the Enterprise 450 or Sun Fire V880 DNCS.

Notes:

- You should be logged in to the DNCS CDE as root user.
- The system components and the cron jobs should be stopped.
- You should be within a maintenance window.
- The DBDS Maintenance CD should still be in the CD drive of the DNCS.

Important: Interactive services are unavailable at this point and will not be available until you restart system components at the end of Chapter 4.

Detaching Database Mirrors

1. Open a terminal window on the DNCS.
2. Type `. /dvs/dncs/bin/dncsSetup` and then press **Enter**.
Important: Be sure to type the dot followed by a space prior to typing `/dvs`.
Result: The system establishes the root user environment.
3. Wait a few moments and then type **showActiveSessions** and press **Enter**.
Result: One of the following messages appears:
 - A message indicating that the **INFORMIXSERVER** is **idle**
 - A message listing active sessions
4. Did the message in step 3 indicate that there are active sessions?
 - If **yes**, follow these instructions:
 - a) Type **killActiveSessions** and then press **Enter**.
Result: The system removes all active sessions from the database.
 - b) Type **showActiveSessions** again and then press **Enter**.
 - c) Did a message appear indicating that there are active sessions?
 - If **yes**, wait a few minutes and then repeat step b).
 - Note:** Contact Cisco Services if there are still active sessions.
 - If **no**, go to step 5.
 - If **no**, go to step 5.

Detach Database Mirrors, Continued

5. Type these commands to clear orphaned and completed session and resource records from the database.
 - a) Type **clearDbSessions -c** and then press **Enter**.
 - b) Type **clearDbSessions -o** and then press **Enter**.
 - c) Type **clearDbSessions** and then press **Enter**.

6. Type **onmode -c** and then press **Enter**.

Result: The system forces a database checkpoint.

7. Type **/cdrom/cdrom0/s3/sai/scripts/Media/detach_DBmirrors** and then press **Enter**.

Result: The following message appears:

This script will detach Database submirrors so that they can be used during the Live Upgrade (LU) process.

If you are not SURE what this means, please quit now.

Are you SURE you want to do this?

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

Result: The following message appears:

After the Database submirrors are detached, the machine needs to be booted using the upgrade disks. So answer "yes" when prompted about activating the Alternate Boot Environment (ABE). You should answer "no" only if you are trying to rollback the actions of attach_DBmirrors on an E450.

9. Type **y** and then press **Enter**.

Result: The system detaches the database mirrors.

Note: The script takes about 10 minutes to run and the screen displays a lot of output.

Detach Database Mirrors, Continued

10. Type **lustatus** and then press **Enter**.

Result: The system displays the status of the LiveUpgrade boot environment.

Example: You should see results similar to this example:

BE_name	Complete	Active	ActiveOnReboot	CopyStatus
SR_2.2	yes	yes	no	-
SR_2.5	yes	no	yes	-

Note: This example shows that the SR 2.5 environment will be active upon the next reboot.

11. Do the results from step 10 show that the SR 2.5 environment is active on reboot?
- If **yes**, continue with step 12.
 - If **no**, contact Cisco Services.
12. Follow these instructions to eject the DBDS Maintenance CD.
- a) Type **cd /** and then press **Enter**.
 - b) Type **eject cdrom** and then press **Enter**.
13. Type **/usr/sbin/shutdown -y -g0 -i6** and then press **Enter**.

Result: The DNCS reboots several times.

Note: After the final reboot, the new boot environment contains SR 2.5 or SR 3.5.

14. Log on to the DNCS as **dncs** user.
15. Go to **Install the DNCS Patch**, next in this chapter.

Install the DNCS Patch

Introduction

In this procedure, you will install a patch onto the DNCS.

Installing the DNCS Patch

Follow these instructions to install the DNCS patch.

Note: It should only take a few minutes to install the patch.

1. Follow these instructions to log on to an xterm window on the DNCS as root user.
 - a) Type **su -** and then press **Enter**.

Result: The **password** prompt appears.
 - b) Type the root password and then press **Enter**.
2. Insert the CD labeled similarly to **DNCS 3.5.0.27p4** into the CD drive of the DNCS.

Result: The system automatically mounts the CD to **/cdrom** within 30 seconds.
3. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

Note: The presence of **/cdrom** in the output confirms that the system correctly mounted the CD.
4. Type **cd /cdrom/cdrom0** and then press **Enter**.

Result: The **/cdrom/cdrom0** directory becomes the working directory.
5. Type **./install_patch** and then press **Enter**.

Important: There should be no spaces between the dot **'.'** and the slash **'/'**.

Result: A confirmation message appears.
6. Type **y** and then press **Enter**.

Result: The patch installs on the DNCS.

Note: The log file associated with the patch is called **/var/sadm/system/logs/<pkgname>_<version>.log**

Install the DNCS Patch, Continued

7. Follow these instructions to eject the CD.
 - c) Type **cd /** and then press **Enter**.
 - d) Type **eject cdrom** and then press **Enter**.
8. Go to **Convert the DNCS Database**, next in this chapter.

Note: Keep your root permissions. You need to be root user to complete the next procedure.

Convert the DNCS Database

Introduction

In this procedure, you will convert the DNCS database to SR 2.5 and SR 3.5 standards.

Note: The system components should be stopped.

Converting the DNCS Database

Follow these instructions to convert the DNCS database.

Note: You should still be root user in an xterm window on the DNCS.

1. Type **/etc/rc2.d/S75cron stop** and then press **Enter**.

Result: The system stops the cron jobs on the DNCS.

2. From a terminal window, type **. /dvs/dncc/bin/dnccSetup** and then press **Enter**.

Note: Be sure to type the dot, followed by a space, before typing **/dvs**.

Result: The system establishes the root user environment.

Important: At some sites, a message similar to the following may appear:

Failed to get SITE_ID __ database up?

No LOCAL_SITE_ID available for site hostname=<hostname>.

You can ignore this message.

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

Result: The system converts the DNCS database.

Note: Depending upon the size of the database, this script may take over 30 minutes to complete.

4. Go to Chapter 4, **SR 2.5 and SR 3.5 Common Upgrade Procedures**.

Chapter 3

SR 2.5 and SR 3.5 Upgrade Procedures for the Enterprise 250 DNCS

Overview

Introduction

The procedures in this chapter describe how to upgrade an Enterprise 250 DNCS to SR 2.5 or SR 3.5. These procedures do not use Solaris' Live Upgrade; you need to stop the system components to upgrade.

Important: Before starting this procedure, be sure that you are within a maintenance window.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Stop System Components	3-2
Remove Spectrum Archive Files	3-3
Shut Down the Application Server	3-4
Log Out of the DNCS	3-5
Install the DNCS Software on an Enterprise 250	3-6
Install the DNCS Patch	3-11
Restore the DNCS Database	3-13

Stop System Components

Stopping System Components

Follow the procedures in Appendix A to stop the Spectrum Network Management Service (Spectrum), the Application Server, and the DNCS processes.

Remove Spectrum Archive Files

Removing Spectrum Archive Files

Follow these instructions to remove Spectrum archive files.

1. In an xterm window, type **su -** and then press **Enter** to log in as root user.

Result: The **password** prompt appears.

2. Type the root password and then press **Enter**.

3. Type **. /dvs/dncs/bin/dncsSetup** and then press **Enter**.

Important: Be sure to type the dot followed by a space prior to typing **/dvs**.

The system establishes the root user environment.

4. Type **cd /export/home/spectrum/SS/DDM** and then press **Enter**.

Result: The **/export/home/spectrum/SS/DDM** directory becomes the working directory.

5. Type **ls -l .DDMDB.LOCK** and then press **Enter**.

Important: Be sure to type the dot before typing **DDMDB.LOCK**.

Result: One of the following results occurs:

- If the **.DDMDB.LOCK** file exists, the system lists the file's characteristics.
- If the **.DDMDB.LOCK** file does not exist, the system displays a **No such file or directory** message.

6. Does the **.DDMDB.LOCK** file exist?

- If **yes**, type **rm .DDMDB.LOCK** and then press **Enter**.

Result: The system removes the lock held on the database by the ArchMgr process.

- If **no**, go to step 7.

7. Type **ddm_load -i 16** and then press **Enter**.

Result: The message **Do you want to initialize the DDM Database?** appears.

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

Results:

- The Spectrum database is initialized.
- A message similar to **Landscape handle is 0X400000** appears.

9. Go to **Shut Down the Application Server**, next in this chapter.

Shut Down the Application Server

Logging Out of the Application Server

Log out of the Application Server so that you can later log back in as root user. Follow these instructions to log out of the Application Server.

1. Click **EXIT** on the toolbar at the bottom of the Application Server screen.
Result: A message appears seeking confirmation of your intent to log off the Application Server.
2. Click **OK**.
Results:
 - You log off the Application Server.
 - The CDE Login window opens.
3. Go to **Shutting Down the Application Server**, next in this section.

Shutting Down the Application Server

You need to shut down the Application Server while the DNCS is being prepared for the SR 2.5 and SR 3.5 upgrade. Follow these instructions to shut down the Application Server.

1. Log in to the Application Server as root user.
2. Open an xterm window on the Application Server.
3. Type `/usr/sbin/shutdown -y -g0 -i0` and then press Enter.
Result: The **ok** prompt appears.
4. Go to **Log Out of the DNCS**, next in this chapter.

Log Out of the DNCS

Logging Out of the DNCS

Log out of the DNCS so that you can log back in as root user. When you log in to the DNCS as root user, you have the proper permissions to execute some of the remaining procedures in this chapter. Follow these instructions to log out of the DNCS.

1. Click **EXIT** on the toolbar at the bottom of the DNCS screen.

Result: A message appears seeking confirmation of your intent to log off the DNCS.

2. Click **OK**.

Results:

- You log off the DNCS.
- The Common Desktop Environment (CDE) Login window opens.

3. Go to **Install the DNCS Software on an Enterprise 250**, next in this chapter.

Install the DNCS Software on an Enterprise 250

Introduction

In this section, you will install the Solaris OS and DNCS software packages onto the Enterprise 250 DNCS or the Sun Fire V880 DNCS.

Preparing to Install the DNCS OS and Software Packages

Follow these instructions to prepare for the installation of the Enterprise 250 DNCS software.

Notes: If you have followed the procedures of these upgrade instructions in order, the following conditions are true:

- All system components have been shut down.
- The DNCS is displaying the CDE window.
- The DBDS Maintenance CD should still be in the CD drive of the DNCS.

1. Log into the CDE of the DNCS as **root** user.
2. Follow these instructions to open a terminal window on the DNCS.
 - a) Right click on the DNCS desktop.
Result: The Workspace menu appears.
 - b) Select **Programs**.
Result: The Programs menu appears.
 - c) Select **Terminal**.

Notes:

- Cisco recommends that you maximize the terminal window so that you can easily view all of the messages that will appear later in the terminal window.
 - Since you have logged in to the CDE as root user, you will have root permissions in the terminal window.
3. Go to **Installing the DNCS Software on an Enterprise 250**, next in this section.

Install the DNCS Software on an Enterprise 250, Continued

Installing the DNCS Software on an Enterprise 250

Follow these instructions to install the DNCS software on the Enterprise 250 or Sun Fire V880 DNCS.

1. In the terminal window, type `/cdrom/cdrom0/s3/sai/scripts/Media/SAmenu` and then press **Enter**.

Results:

- The UniPack environment is established.
- The system configuration is checked.

Note: The system check should complete in 5 minutes.

Important: If the script that checks system configuration takes longer than 5 minutes to execute, something may have gone wrong. Contact Cisco Services for assistance in troubleshooting the system check.

- The SA UniPack Menu should appear.
2. From the SA UniPack menu, type **1** (for Install Solaris OS & all DNCS Packages) and then press **Enter**.

Results:

- A message appears that warns that this option will delete data from the disks.
- The message **Are you sure you want to do this?** appears.

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

Result: The message **Are you going to use Cisco's App Server?** appears.

Install the DNCS Software on an Enterprise 250, Continued

4. Choose one of the following options:

- Type **y** and then press **Enter** if you are going to use Cisco's Application Server.
- Type **n** and press **Enter** if you are *not* going to use Cisco's Application Server.

Results:

- The system displays a message about generating a response file.
- The system displays a list of configuration parameters similar to the following example:

```
***** Installation Configuration *****
**                                     **
**  0)  INFORMIXSERVER                =  dncsDbServer  **
**  1)  DNCS_HOST                     =  dncs          **
**  2)  BFS_HOST                      =  dncs          **
**  3)  DNCSATM_IP                    =  10.253.6.1     **
**  4)  APPSERVATM_IP                 =  10.253.6.10    **
**  5)  DNCSTED_IP                    =  192.168.1.2     **
**                                     **
*****
```

Number to change ("0", "1", ...), "c" to continue, or "q" to quit:

5. Follow these instructions regarding the configuration parameters that appeared after executing step 4.
- a) Examine the configuration parameters and follow the onscreen instructions to change any parameter that needs to be changed.
 - b) Type **c** and then press **Enter** when you are finished.

Results:

- The system generates a response file.
- The system displays the following message:

The Database and Key Files MUST be backed up so that they can be restored after the installation.

Do you want to back them up? [Default=yes]

6. Type **y** and then press **Enter**.

Results:

- The system lists the key files and directories that will be backed up and then later restored.
- The system displays a **Do you want to add to the above list?** message.

Install the DNCS Software on an Enterprise 250, Continued

7. Examine the list of key files and directories that will be backed up and then choose one of the following options.
 - If you want to add to the list of key files and directories to be backed up, follow these instructions.
 - a) Type **y** and then press **Enter**.
 - b) Follow the on-screen instructions to add to the list of files or directories.
 - If you do *not* want to add to the list of key files and directories to be backed up, type **n** and then press **Enter**.

Result: The **Do you want to back up the Spectrum database?** Message appears.

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

Results:

- The system backs up the Spectrum database.
- The message **Do you want to back up the DNCS database?** appears.

9. Type **y** and then press **Enter**.

Result: The system backs up the DNCS database and the Application Server database if it exists.

10. Did the script you executed in step 9 complete without error?
 - If **yes**, type **/usr/sbin/shutdown -y -g0 -i0** and then press **Enter**.

Result: The DNCS shuts down and an **ok** prompt appears.
 - If **no**, contact Cisco Services for assistance.

11. At the **ok** prompt, type **boot unipack - install** and then press **Enter**.

Results:

- The DNCS boots from the UniPack and starts the Solaris and DNCS installation process.
- The CDE window opens.

Note: The installation process may take more than 1 hour. Do not interrupt the installation process. The system will reboot several times during the installation.

12. Log on to the DNCS as **dncs** user.

Install the DNCS Software on an Enterprise 250, Continued

13. From an xterm window on the DNCS, type these commands to eject the CD.
 - a) Type **cd /** and then press **Enter**.
 - b) Type **eject cdrom** and then press **Enter**.
14. Go to **Install the DNCS Patch**, next in this chapter.

Install the DNCS Patch

Introduction

In this procedure, you will install a patch onto the DNCS.

Installing the DNCS Patch

Follow these instructions to install the DNCS patch.

Note: It should only take a few minutes to install the patch.

1. Follow these instructions to log on to an xterm window on the DNCS as root user.

- a) Type **su -** and then press **Enter**.

Result: The **password** prompt appears.

- b) Type the root password and then press **Enter**.

2. Insert the CD labeled similarly to **DNCS 3.5.0.27p4** into the CD drive of the DNCS.

Result: The system automatically mounts the CD to **/cdrom** within 30 seconds.

3. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

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

4. Type **cd /cdrom/cdrom0** and then press **Enter**.

Result: The **/cdrom/cdrom0** directory becomes the working directory.

5. Type **./install_patch** and then press **Enter**.

Important: There should be no spaces between the dot **'.'** and the slash **'/'**.

Result: A confirmation message appears.

6. Type **y** and then press **Enter**.

Result: The patch installs on the DNCS.

Note: The log file associated with the patch is called **/var/sadm/system/logs/<pkgname>_<version>.log**

Install the DNCS Patch, Continued

7. Follow these instructions to eject the CD.
 - a) Type **cd /** and then press **Enter**.
 - b) Type **eject cdrom** and then press **Enter**.
8. Go to **Restore the DNCS Database**, next in this chapter.

Note: Keep your root permissions. You need to be root user to complete the next procedure.

Restore the DNCS Database

Restoring the DNCS Database

After rebooting the DNCS, follow these instructions to restore the DNCS database.

1. Insert the DBDS Maintenance CD into the CD drive of the DNCS.
2. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

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

3. Type **/cdrom/cdrom0/s3/sai/scripts/Media/SAmenu** and then press **Enter**.

Results:

- The UniPack environment is established.
- The system configuration is checked.

Note: It should take no longer than 5 minutes to complete the system check.

Important: If the script that checks system configuration takes longer than 5 minutes to execute, something may have gone wrong. Contact Cisco Services for assistance in troubleshooting the system check.

- The SA UniPack Menu should appear.

4. After completing step 3, did the SA UniPack Menu appear?
 - If **yes**, type **2** and then press **Enter** to restore the DNCS database.

Results:

- The system displays a list of backups that are available.
- The following message appears:

Select the backup directory you want to restore from

- If **no**, contact Cisco Services for assistance.

5. Type the number that corresponds to this UniPack and then press **Enter**.

Note: The UniPack's backup directory is usually listed as the first one.

Result: The system restores and converts the Database.

Restore the DNCS Database, Continued

6. Did the database restore and convert without error?
 - If **yes**, type **/dvs/dncs/etc/copyDB2disk** and then press **Enter**.

Note: The purpose of this command is to preserve a copy of the old DNCS database to the DNCS.

Result: A confirmation message appears.
 - If **no**, contact Cisco Services for assistance in resolving the error messages.
7. Type **y** and then press **Enter**.

Results:

 - The system confirms the presence of the old DNCS database directory.
 - The system copies the old DNCS database to the DNCS.
8. Type **eject cdrom** and then press **Enter**.
9. Remove the CD labeled **DBDS Maintenance CD** from the CD drive of the DNCS.
10. Go to Chapter 4, **SR 2.5 and SR 3.5 Common Upgrade Procedures**.

Chapter 4

SR 2.5 and SR 3.5 Common Upgrade Procedures

Overview

Introduction

If you are upgrading an Enterprise 450 or a Sun Fire V880 DNCS, you followed the upgrade procedures in Chapter 2. If you are upgrading an Enterprise 250 DNCS, you followed the procedures in Chapter 3. Now that you have finished upgrading the DNCS, you have been directed to this chapter, where you will upgrade the Application Server and complete additional upgrade procedures that are common to whatever DNCS platform you support.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Disconnect the UniPack From the DNCS	4-1
Connect the UniPack to the Application Server	4-4
Activate the Spectrum Software (Optional)	4-6
Stop the cron Jobs on the DNCS	4-11
Install the Application Server Software	4-13
Disconnect the UniPack From the Application Server	4-18
Check the SR 2.5 and SR 3.5 Installed Components Version	4-19
Add an EAS Variable to the .profile File	4-22
Inspect the DNCS for BFS RPC Version 3 Support	4-23
Restart the System Components	4-24
Restart the cron Jobs	4-25

Disconnect the UniPack From the DNCS

Disconnecting the UniPack From the DNCS

Follow these instructions to disconnect the UniPack from the DNCS.

Note: You should still be logged on as root user in an xterm window on the DNCS.

1. On the DNCS, type **/usr/sbin/shutdown -y -g0 -i0** and then press **Enter**.
Result: The DNCS shuts down and an **ok** prompt appears..
2. At the **ok** prompt, turn the power switch of the DNCS to the Off position.
3. Turn off power to the UniPack.
4. Disconnect the UniPack from the DNCS.
5. Turn on the power to the DNCS.
Result: The DNCS boots.
6. When the message **Boot device: <full path of boot device>disk file and args** appears on the screen of the DNCS, press the **Stop** and **a** keys simultaneously.
Result: An **ok** prompt appears.
7. Type **boot -r** and then press **Enter**.
Results:
 - A series of messages scroll across the screen as the DNCS boots.
 - The CDE window opens.
8. Log into the CDE of the DNCS as **dncs** user.
9. Ensure that the DNCS application is still stopped.
Notes:
 - In rare cases, the DNCS application may have restarted.
 - If the DNCS application restarted, follow the **Stopping the DNCS** procedure in Appendix A.
10. Will you be upgrading the Cisco Application Server?
 - If **yes**, go to **Connect the UniPack to the Application Server**, next in this chapter.
 - If **no**, go to step 11.

Disconnect the UniPack From the DNCS, Continued

11. Will you be using Spectrum after the upgrade?
 - If **yes**, go to **Activate the Spectrum Software (Optional)**, later in this chapter.
 - If **no**, skip to **Check the SR 2.5 and SR 3.5 Installed Components Version**, later in this chapter.

Connect the UniPack to the Application Server

Connecting the UniPack to the Application Server

Follow this procedure to connect the UniPack to the Application Server.

1. Follow these instructions to connect the UniPack to the Application Server.

Note: Refer to the illustration that accompanies these instructions as you connect the UniPack.

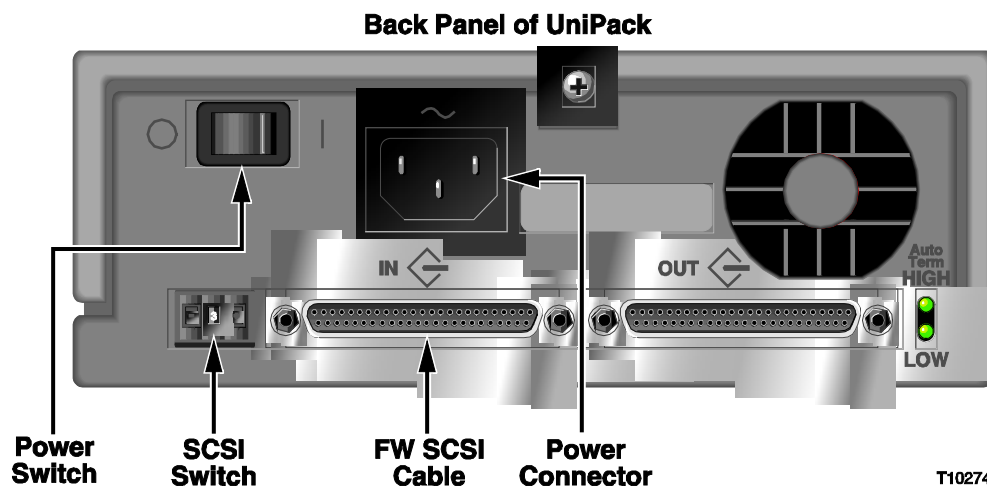
- a) Be sure the power switch of the UniPack is in the off position.
- b) Verify that the SCSI switch, labeled **SCSI Switch** in the illustration, is set to **3**.

Note: The UniPack ships with this switch set to **3**, but it may become dislodged during transit or set up.

- c) Connect one end of an FW SCSI cable to the SCSI port labeled **IN**, and the other end to the Application Server.

Important: The Sun Blade 150 Application Server has two ports that can accept the SCSI cable. Be sure that you use the upper port when connecting the UniPack to the Sun Blade 150 Application Server. If the Sun Blade 150 Application Server has only one port, this configuration is not supported. Contact Cisco Services.

- d) Plug one end of the power cable into the back of the UniPack, and the other end into an AC power outlet.



2. Turn on the power to the UniPack.

Result: A green light on the front of the UniPack appears.

Connect the UniPack to the Application Server, Continued

3. Type **boot -r** and then press **Enter**.

Results:

- The system boots into the Application Server.
 - The CDE window opens.
4. Will you be using Spectrum after the upgrade?
 - If **yes**, go to **Activate the Spectrum Software (Optional)**, next in this chapter.
 - If **no**, go to **Stop the cron Jobs on the DNCS**, later in this chapter.

Activate the Spectrum Software (Optional)

Activating the Spectrum Software

When you installed the DNCS image, you also installed Spectrum software onto the DNCS. Follow these instructions to activate the Spectrum software.

Notes:

- You should still be logged in to an xterm window on the DNCS as `dncs` user.
- You need the Spectrum CD certificate that accompanied the Spectrum software when the DNCS was shipped to the site you are upgrading.

1. Type **`ps -ef | grep proc`** and then press **Enter**.

Result: The system indicates that *processd* is running.

Note: If *processd* is not running, contact Cisco Services.

2. Type **`spectrum`** and then press **Enter**.

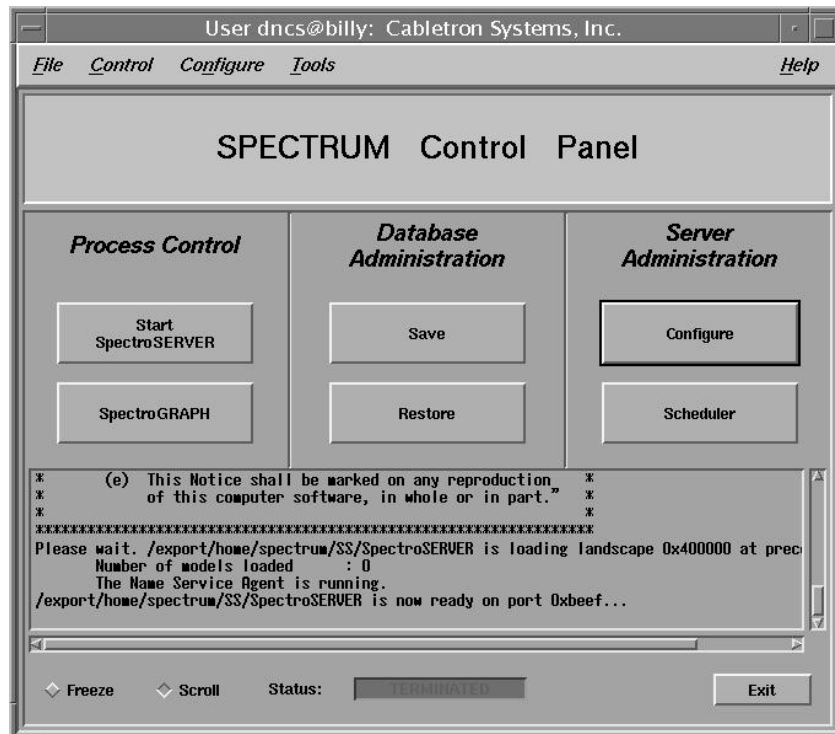
Result: The **Select Host to run on** window opens.



Activate the Spectrum Software (Optional), Continued

3. Click **OK** to select the default host.

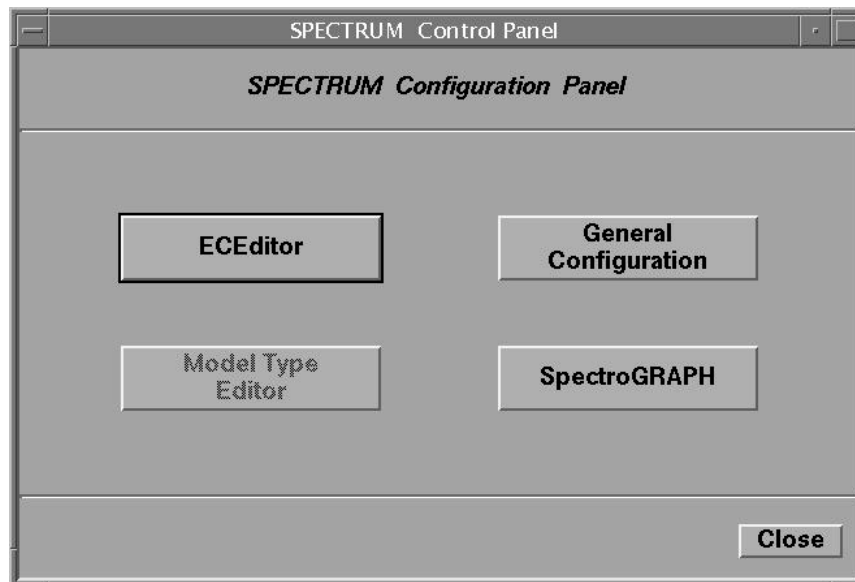
Result: The Spectrum Control Panel opens.



Activate the Spectrum Software (Optional), Continued

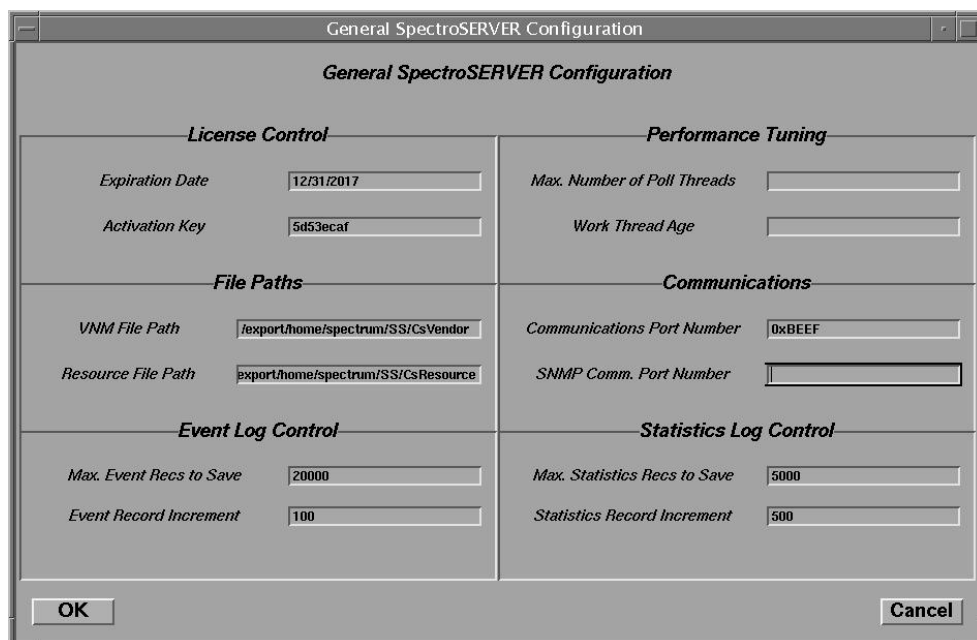
- Click **Configure** on the Spectrum Control Panel.

Result: The Spectrum Configuration Panel opens.



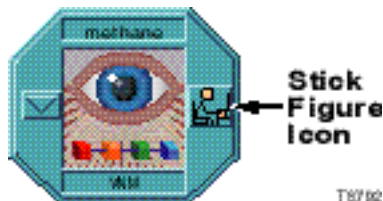
- Click **General Configuration** on the Spectrum Configuration Panel.

Result: The General SpectroSERVER Configuration window opens.



Activate the Spectrum Software (Optional), Continued

6. Click the **Activation Key** field and type your activation key code.
Note: You obtained the activation key last night while completing the procedure, **Preparing to Activate the Spectrum Software**.
7. Click the **Expiration Date** field and type your expiration date.
Note: You found the expiration date last night while completing the procedure, **Preparing to Activate the Spectrum Software**.
8. Click **OK**.
Result: The Status field on the Spectrum Control Panel briefly displays **Restoring**, and then displays **Inactive**.
9. Click **Start SpectroSERVER**.
Result: The Status field on the Spectrum Control Panel briefly displays **Starting**, and then displays **Running**.
10. Click **SpectroGRAPH**.
Result: A message requesting that you select the SpectroSERVER appears.
11. Click **OK** (for default).
Result: The SpectroGRAPH Licensing Information screen appears.
12. Click **Acknowledge**.
Result: The SpectroGRAPH Landscape screen opens.
13. On the SpectroGRAPH Landscape screen, double-click the stick figure icon.



- Result:** The SPECTRUM UserEditor screen appears.
14. Does the Spectrum UserEditor screen already contain an entry for **dncs** user?
 - If **yes**, go to step 17.
 - If **no**, go to step 15.
 15. From the SPECTRUM UserEditor screen, click **User** and then select **New**.
Result: The Create User screen opens.

Activate the Spectrum Software (Optional), Continued

16. Type the DNCS user name and then click **OK**.
17. Click **File** and then select **Close**.
Result: The SPECTRUM UserEditor screen closes.
18. On the SpectroGRAPH Landscape screen, click **File** and then select **Exit**.
Result: A confirmation message appears.
19. Click **OK**.
Result: The SpectroGRAPH Landscape screen closes.
20. On the Spectrum Control Panel, click **Stop SpectroSERVER**.
Result: A confirmation message appears.
21. Click **OK**.
Result: The Status field on the Spectrum Control Panel shows **Inactive**.
22. On the Spectrum Control Panel, click **Exit**.
Result: A confirmation message appears.
23. Click **OK**.
Result: The Spectrum Control Panel closes.
24. Choose one of the following options:
 - If you support the Cisco Application Server, go to **Stop the cron Jobs on the DNCS**, next in this chapter.
 - If you support the Pioneer Application Server, go to **Check the SR 2.5 and SR 3.5 Installed Components Version**, later in this chapter.

Stop the cron Jobs on the DNCS

Stopping the cron Jobs on the DNCS.

Follow these instructions to stop the cron jobs on the DNCS.

1. In the xterm window, type **cd** and then press **Enter**.
Result: The home directory on the DNCS becomes the working directory.
2. Follow these instructions, if necessary, to log in to the xterm window as root user.
 - a) Type **su -** and then press **Enter**.
Result: The **password** prompt appears.
 - b) Type the root password and then press **Enter**.
3. Type **/etc/rc2.d/S75cron stop** and then press **Enter**.
Result: The system stops all cron jobs on the DNCS.
4. Type **./dvs/dncs/bin/dncsSetup** and then press **Enter**.
Important: Be sure to type the dot followed by a space prior to typing **/dvs**.
Result: The system establishes the root user environment.
5. Wait a few moments and then type **showActiveSessions** and press **Enter**.
Result: One of the following messages appears:
 - A message indicating that the **INFORMIXSERVER** is **idle**
 - A message listing active sessions
6. Did the message in step 5 indicate that there are active sessions?
 - If **yes**, follow these instructions:
 - a) Type **killActiveSessions** and then press **Enter**.
Result: The system removes all active sessions from the database.
 - b) Type **showActiveSessions** again and then press **Enter**.
 - c) Did a message appear indicating that there are active sessions?
 - If **yes**, wait a few minutes and then repeat step b).
 - Note:** Contact Cisco Services if there are still active sessions.
 - If **no**, go to step 7.
 - If **no**, go to step 7.

Stop the cron Jobs on the DNCS, Continued

7. Click **EXIT** on the toolbar at the bottom of the DNCS screen.

Result: A message appears seeking confirmation of your intent to log out of the DNCS.

8. Click **OK**.

Results:

- You log out of the DNCS.
- The CDE Login window opens.

9. Log on to the DNCS as **dncs** user.
10. Go to **Install the Application Server Software**, next in this chapter.

Install the Application Server Software

Introduction

In the previous procedure, you connected the UniPack to the Application Server. The UniPack contains the Solaris OS software, as well as all Application Server software packages for SR 2.5 and SR 3.5. Use the instructions in this section to install Solaris OS and Application Server software onto the Application Server.

Installing the Application Server Software

Follow these instructions to install the Solaris OS and Application Server software packages onto the Application Server.

Note: If you have followed the procedures of these upgrade instructions in order, all system components have been shut down and the Application Server is displaying the CDE window.

1. Log into the CDE of the Application Server as **root** user.
2. Follow these instructions to open a terminal window on the Application Server.
 - a) Right click on the Application Server desktop.
Result: The Workspace menu appears.
 - b) Select **Programs**.
Result: The Programs menu appears.
 - c) Select **Terminal**.

Notes:

- Cisco recommends that you maximize the terminal window so that you can easily view all of the messages that will appear later in the terminal window.
- Since you have logged in to the CDE as root user, you will have root permissions in the terminal window.

3. Insert the CD labeled **DBDS Maintenance CD** into the CD drive of the Application Server.

Note: If the File Manager window opens, you can close it.

4. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

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

Install the Application Server Software, Continued

5. Type `/cdrom/cdrom0/s3/sai/scripts/Media/SAmenu` and then press **Enter**.

Results:

- The UniPack environment is established.
- The system configuration is checked.

Note: It should take only 5 minutes to complete the system check.

Important: If the script that checks system configuration takes longer than 5 minutes to execute, something may have gone wrong. Contact Cisco Services for assistance in troubleshooting the system check.

- The SA UniPack Menu appears.
6. After completing step 5, did the SA UniPack Menu appear?
 - If **yes**, go to step 7.
 - If **no**, contact Cisco Services for assistance.

7. Type **1** and then press **Enter** to install the Solaris OS and all Application Server packages.

Results:

- The system displays a warning message that states that all data will be deleted from the computer.
- The system displays the following question
Are you SURE you want to do this? [y,n,?,q]

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

Results:

- The system displays a message stating that it will generate a response file.
- The system prompts you to press **c** to continue.

Install the Application Server Software, Continued

9. Type **c** and then press **Enter**.

Result: The system displays the following message:

The FileSystems (if not already backed up) and the Key Files must be backed up during this upgrade. Do you want to back them up?

10. Type **y** and then press **Enter**.

Result: The system displays the following message:

Did you back up the AppServer file system to the DNCS tape drive?

11. Type **y** and then press **Enter**.

Note: You backed up the Application Server file system in the **Back up the Application Server File Systems** procedure in Chapter 1.

Result: The following message appears:

Do you want to back up the key files? (y/n)

12. Type **y** and then press **Enter**.

Results:

- The system lists the key files and directories that will be backed up and then later restored.
- The system displays a **Do you want to add to the above list?** message

13. Examine the list of key files and directories that will be backed up and then choose one of the following options.

- If you want to add to the list of key files and directories to be backed up, follow these instructions.
 - a) Type **y** and then press **Enter**.
 - b) Follow the on-screen instructions to add to the list of files or directories.
- If you do *not* want to add to the list of key files and directories to be backed up, type **n** and then press **Enter**.

Results:

- The system backs up the Application Server key files.
- The system generates the system identification (sysidcfg) file for the Solaris OS installation.

Install the Application Server Software, Continued

14. Did the script you ran in step 13 execute without error?
 - If **yes**, type **/usr/sbin/shutdown -y -g0 -i0** and then press **Enter**.
Result: The Application Server shuts down and an **ok** prompt appears.
 - If **no**, contact Cisco Services for assistance.
15. At the **ok** prompt, type **devalias** and then press **Enter**.
Result: The system displays a list of aliases for the various devices.
16. Was the UniPack included in the list of aliases displayed in step 15?
 - If **yes**, go to step 21.
 - If **no**, type **printenv nvramrc** and then press **Enter**.
Result: The system displays the environmental variables of nvram.
17. Was the UniPack included in the environmental variables displayed in step 16?
 - If **yes**, type **reset** and then press **Enter**.
Result: The Application Server begins to reboot.
 - If **no**, follow the procedures in Appendix F, **Setting Up the UniPack Alias**, to set up the UniPack alias. Then, go to step 22 after completing the procedures in Appendix F.
18. When the message **Boot device disk file and args** appears, press the **Stop** and **a** keys simultaneously.
Result: An **ok** prompt appears.
19. At the **ok** prompt, type **devalias** and then press **Enter**.
Result: The system displays a list of aliases for the various devices.
20. Was the UniPack included in the list of aliases displayed in step 19?
 - If **yes**, go to step 21, next in these instructions.
 - If **no**, follow the procedures in Appendix F, **Setting Up the UniPack Alias**, to set up the UniPack alias. Then, go to step 21 after completing the procedures in Appendix F.

Install the Application Server Software, Continued

21. At the **ok** prompt, type **boot unpack - install** and then press **Enter**.

Results:

- The Application Server boots from the UniPack.
- The Solaris OS installs.
- All Application Server software packages install.
- The Application Server key files restore.
- The CDE window opens.

Note: The installation process may take more than 2 hours. Do not interrupt the installation process.

22. Did the installation conclude without error?
- If **yes**, go to step 23, next in these instructions.
 - If **no**, contact Cisco Services for assistance.
23. Log in to the CDE of the Application Server as **root** user.
24. Follow these instructions to open a terminal window on the Application Server.
- a) Right click on the Application Server desktop.
Result: The Workspace menu appears.
 - b) Select **Programs**.
Result: The Programs menu appears.
 - c) Select **Terminal**.
25. Type **eject cdrom** and then press **Enter**.
26. Remove the CD from the CD drive of the Application Server.
27. Go to **Disconnect the UniPack From the Application Server**, next in this chapter.

Disconnect the UniPack From the Application Server

Disconnecting the UniPack from the Application Server

Follow these instructions to shut down the Application Server and to then disconnect the UniPack

1. Type **/usr/sbin/shutdown -y -g0 -i0** and then press **Enter**.
Result: The Application Server shuts down and an **ok** prompt appears.
2. Turn off power to the Application Server.
3. Turn off power to the UniPack.
4. Disconnect the UniPack from the Application Server.
5. Turn on power to the Application Server.
Result: A series of messages scroll across the screen as the Application Server boots.
6. When the message **Boot device: disk file and args** appear, press the **Stop** and **a** keys simultaneously.
Result: An **ok** prompt appears.
7. Type **boot -r** and then press **Enter**.
Result: The system reboots and the CDE window opens.
8. Log into the Application Server CDE as **dncs** user.
9. Go to **Check the SR 2.5 and SR 3.5 Installed Components Version**, next in this chapter.

Check the SR 2.5 and SR 3.5 Installed Components Version

Introduction

Use *pkginfo*, a Solaris software management tool, to verify installed software versions on the DNCS and the Application Server.

Notes:

- Use the Version field and the Status field of the output produced by *pkginfo* to obtain the information you need.
- If the Status field indicates that the software is not completely installed, contact Cisco Services for help.

Verifying DNCS Versions

Follow these instructions to verify the installed software versions on the DNCS.

1. From an xterm window on the DNCS, type **pkginfo -l [Package Name]** and then press **Enter**.

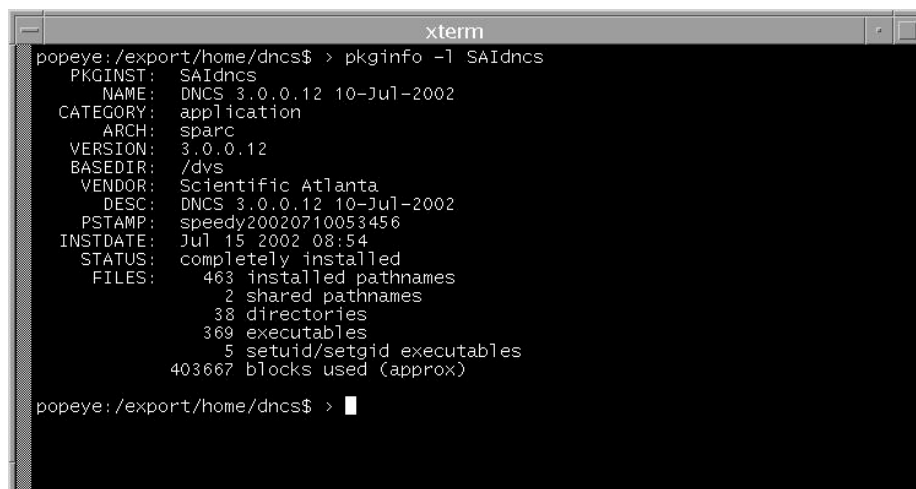
Notes:

- The -l is a lowercase L.
- Substitute the software component you are verifying for [Package Name].
- Use **SAIdnccs** for Package Name the first time you run this procedure.

Result: The system displays the installed software version.

Example: Notice that the Version field indicates that DNCS version 3.0.0.12 is installed on the DNCS and the Status field indicates that the software is completely installed.

Important: This is *only* an example. System versions applicable to your upgrade are likely to be different.



```
xterm
popeye:/export/home/dnccs$ > pkginfo -l SAIdnccs
PKGINST: SAIdnccs
NAME: DNCS 3.0.0.12 10-Jul-2002
CATEGORY: application
ARCH: sparc
VERSION: 3.0.0.12
BASEDIR: /dvs
VENDOR: Scientific Atlanta
DESC: DNCS 3.0.0.12 10-Jul-2002
PSTAMP: speedy20020710053456
INSTDATE: Jul 15 2002 08:54
STATUS: completely installed
FILES: 463 installed pathnames
       2 shared pathnames
       38 directories
       369 executables
       5 setuid/setgid executables
       403667 blocks used (approx)
popeye:/export/home/dnccs$ > █
```

Check the SR 2.5 and SR 3.5 Installed Components Version, Continued

- Record the version number in the Actual Results column of the accompanying table for each Package Name you check.

Component	Pkg Name	Expected Results	Actual Results
DNCS Application	SAIdncs	3.5.0.25p3	
DNCS/ App Tools	SAItools	3.5.0.7	
DNCS GUI	SAIgui	3.5.0.25	
DNCS WUI	SAIwebui	3.5.0.25	
Spectrum Kit	SAIspkit	2.0.0.8	
DNCS Online Help	SAIhelp	3.5.0.3	
DNCS Report Writer	SAIrptwrt	3.5.0.2	
QAM	SAIqam	2.3.5	
MQAM	SAImqam	2.5.0	
GQAM	SAIgqam	1.1.2	
GoQAM	SAIgoqam	1.1.0	
QPSK	SAIqpsk	C70 / A62	

- Repeat steps 1 and 2 for each Package Name in the table in step 2.
- Do the first three digits of the Actual Results match the first three digits of the Expected Results for each component in the table in step 2?

Important: The build number (the fourth digit of the version number) may differ.

- If **yes**, go to **Verifying Application Server Versions**, next in this chapter.
- If **no**, contact Cisco Services and inform them of the discrepancy.

Check the SR 2.5 and SR 3.5 Installed Components Version, Continued

Verifying Application Server Versions

Follow these instructions to verify the installed software versions on the Application Server.

Note: Omit this procedure at sites on which Pioneer applications are running on the Application Server.

1. From an xterm window on the Application Server, type **pkginfo -l [Package Name]** and then press **Enter**.

Notes:

- The -l is a lowercase L.
- Substitute the software component you are verifying for [Package Name].
- Use **SAIapshr** for Package Name the first time you run this procedure.

Result: The system displays the installed software version.

2. Record the version number in the Actual Results column of the accompanying table for each Package Name you check.

Component	Pkg Name	Expected Results	Actual Results
Application Server	SAIapshr	3.1.5.3	
Application Server Toolkit	SAItools	3.5.0.7	

3. Repeat steps 1 and 2 for each Package Name in the table in step 2.
4. Do the first three digits of the Actual Results match the first three digits of the Expected Results for each component in the table in step 2?

Important: The build number (the fourth digit of the version number) may differ.

- If **yes**, go to step 5.
- If **no**, contact Cisco Services and inform them of the discrepancy.

5. Go to **Inspect the .profile File**, next in this chapter.

Add an EAS Variable to the .profile File

Introduction

In order to make the EAS work properly, you may need to add the `LOCAL_EAS_IP` variable to the `.profile` file. This procedure describes how to add the variable.

Adding an EAS Variable to the .profile File

Follow these instructions to add the `LOCAL_EAS_IP` variable, if necessary, to the `.profile` file.

1. If necessary, open an xterm window on the DNCS.
2. Type **`cd /export/home/dncs`** and then press **Enter**.
Result: The `/export/home/dncs` directory becomes the working directory.
3. Type **`vi .profile`** and then press **Enter**.
Result: The `.profile` file opens for editing using the Unix vi text editor.
4. Does the `.profile` file contain an entry for the `LOCAL_EAS_IP` variable?
 - If **yes**, close the `.profile` file and go to **Restart the System Components**, next in this chapter.
 - If **no**, continue with step 5.
5. Append the following line to the `.profile` file:
`export LOCAL_EAS_IP=[Ethernet address of the DNCS]`
Note: Substitute the Ethernet address of the DNCS for `[Ethernet address of the DNCS]`.
6. Save the file and close the vi text editor.
7. Follow these instructions to activate the EAS variable.
 - a) Type **`cd /export/home/dncs`** and then press **Enter**.
 - b) Type **`./profile`** and then press **Enter**.
8. Type **`env | grep -i local`** and then press **Enter**.
Result: The system displays the value of environmental variables that contain the word "local."
9. Do the results from step 8 show that the `LOCAL_EAS_IP` variable has been set properly?
 - If **yes**, go to **Inspect the DNCS for BFS RPC Version 3 Support**, next in this chapter.
 - If **no**, repeat this procedure, or contact Cisco Services for assistance.

Inspect the DNCS for BFS RPC Version 3 Support

Introduction

In this procedure, you will ensure that the BFS server can process RPC version 3 commands.

Inspecting the DNCS for BFS RPC Version 3 Support

Follow these instructions to ensure that the BFS server can process RPC version 3 commands.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd /export/home/dncs** and then press **Enter**.
Result: The /export/home/dncs directory becomes the working directory.
3. Type **vi .profile** and then press **Enter**.
Result: The .profile file opens for editing using the Unix vi text editor.
4. Is there an entry for **BFS_SERVER_CATCHES_OLD=TRUE**?
 - If **yes**, close the .profile file and go to **Restart the System Components**, next in this chapter. The BFS server is already configured for RPC version 3 commands.
 - If **no**, add the entry (if it does not exist) or set the variable to TRUE (if it is set to FALSE).
Example: **export BFS_SERVER_CATCHES_OLD=TRUE**
5. Save the file and close the vi text editor.
6. Go to **Restart the System Components**, next in this chapter.

Restart the System Components

Restarting the System Components

Refer to Appendix B, **Restarting System Components**, to restart Spectrum, the DNCS, and the Application Server.

Restart the cron Jobs

Introduction

After starting the system components, restart the cron jobs on the DNCS and the Application Server. Follow these instructions to restart all cron jobs.

Restarting the cron Jobs on the DNCS

Follow these instructions to restart the cron jobs on the DNCS.

1. If necessary, open an xterm window on the DNCS.
2. Follow these instructions to log in to the xterm window as root user.
 - a) Type **su -** and then press **Enter**.
Result: The **password** prompt appears.
 - b) Type the root password and then press **Enter**.
3. Type **/etc/rc2.d/S75cron start** and then press **Enter**.
Result: The system restarts all cron jobs.
4. Confirm that the cron jobs have restarted by typing **ps -ef | grep cron** and then press **Enter**.
Result: The system should list **/usr/sbin/cron**.
5. Go to **Restarting the cron Jobs on the Application Server**, next in this section.

Restart the cron Jobs, Continued

Restarting the cron Jobs on the Application Server

Follow these instructions to restart the cron jobs, if necessary, on the Application Server.

Note: The cron jobs on the Application Server may have restarted on their own when you booted the application Server, earlier in this chapter.

Important: This procedure pertains to the Cisco Application Server, only. If the site you are upgrading supports the Pioneer application server, check with Pioneer for the appropriate procedure.

1. If necessary, open an xterm window on the Application Server.
2. Follow these instructions to log in to the xterm window as root user.
 - a) Type **su -** and then press **Enter**.

Result: The **password** prompt appears.
 - b) Type the root password and then press **Enter**.
3. Type **/etc/rc2.d/S75cron start** and then press **Enter**.

Result: The system restarts all cron jobs.
4. Confirm that the cron jobs have restarted by typing **ps -ef | grep cron** and then press **Enter**.

Result: The system should list **/usr/sbin/cron**.
5. Type **exit** and then press **Enter** to log out the root user.

Chapter 5

SR 2.5 and SR 3.5 Post Upgrade Procedures

Overview

Introduction

After upgrading your system by following the procedures set forth earlier in these upgrade installation instructions, perform the procedures in this chapter to verify that the system is fully functional and to complete the upgrade.

Important: If any of the tests in this chapter fail, troubleshoot the system to the best of your ability. If you are unable to resolve the failure, contact Cisco Services.

Overview, Continued

In This Chapter

This chapter contains the following topics.

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Set Debug Flags	5-3
Examine and Re-Order the pddataqampat Table	5-5
Check BFS QAM Sessions	5-18
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Reset Modulators	5-23
Reset QPSK Modulators	5-29
Change the DNCS Data Pump Rates	5-30
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Set Debug Flags

Introduction

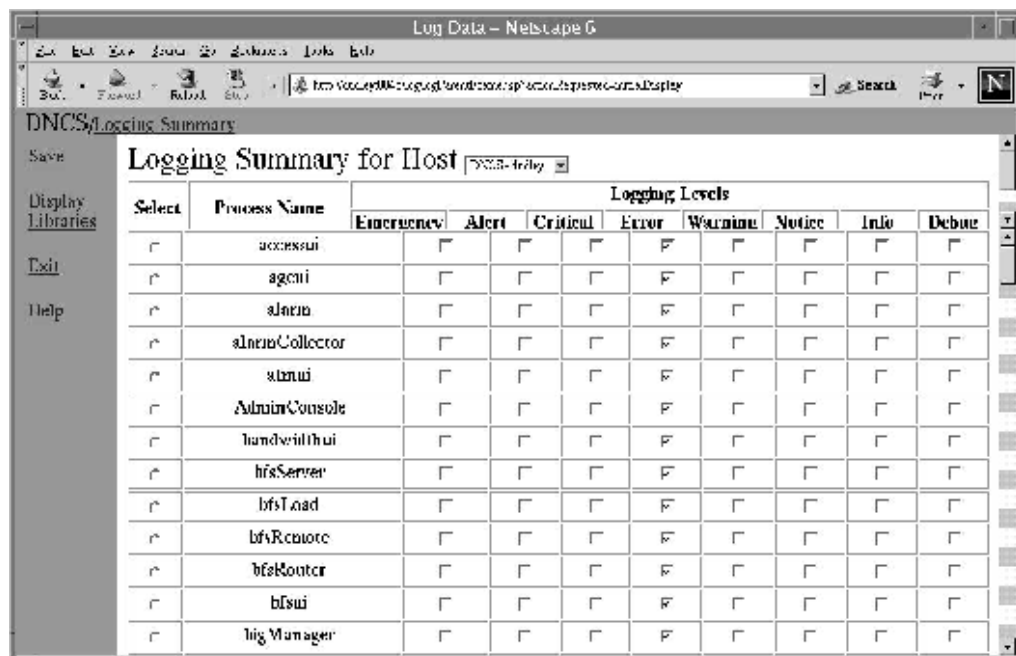
In Chapter 1, during pre-upgrade procedures, you completed a procedure called **Editing Debug and Logging Settings in the .profile File**, during which you removed some of the debug and logging flags in the .profile file. In this procedure, you will reset those flags through the user interface of the DNCS.

Setting Debug Flags

Follow this procedure to reset the debug flags through the user interface of the DNCS.

1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Click the **Utilities** tab.
3. Click **Logging**.

Result: The Logging Summary window opens.



Set Debug Flags, Continued

4. Click the checkbox in the **Debug** column for each of the following processes:
 - bossServer
 - camPsm
 - dsm
 - qamManager
 - siManager
5. Click **Save**.
6. Close the Logging Summary window.

Examine and Re-Order the pddataqampat Table

Introduction

After the system upgrade to SR 2.5 / SR 3.5, the contents of the pddataqampat table may be out of order. When the contents of the pddataqampat table are out of order, the system may send erroneous session data to DHCTs, impeding the ability of the DHCT to download IPG or third-party applications.

After upgrading to SR 2.5 or SR 3.5, inspect the contents of the pddataqampat table and re-order the data, if necessary.

Note: Prior to SR 2.5 and SR 3.5, session ID 199 had to be the last entry in the Session Number column of the pddataqampat table. With SR 2.5 and SR 3.5 and later, this is no longer a requirement. In fact, with SR 2.5 and SR 3.5 and later, session ID 199 must appear after session ID 22.

Tear Down Session ID 199

Begin the process of re-ordering the pddataqampat table by tearing down session ID 199. Follow these instructions to tear down session ID 199.

- ❑ 1. From the **DNCS** tab on the DNCS Administrative Console, select **Utilities** and then click **Session List**.

Result: The Sessions Filters window opens.

- ❑ 2. Highlight **BFSqam** and then click **Display Sessions for Selected QAMs**.

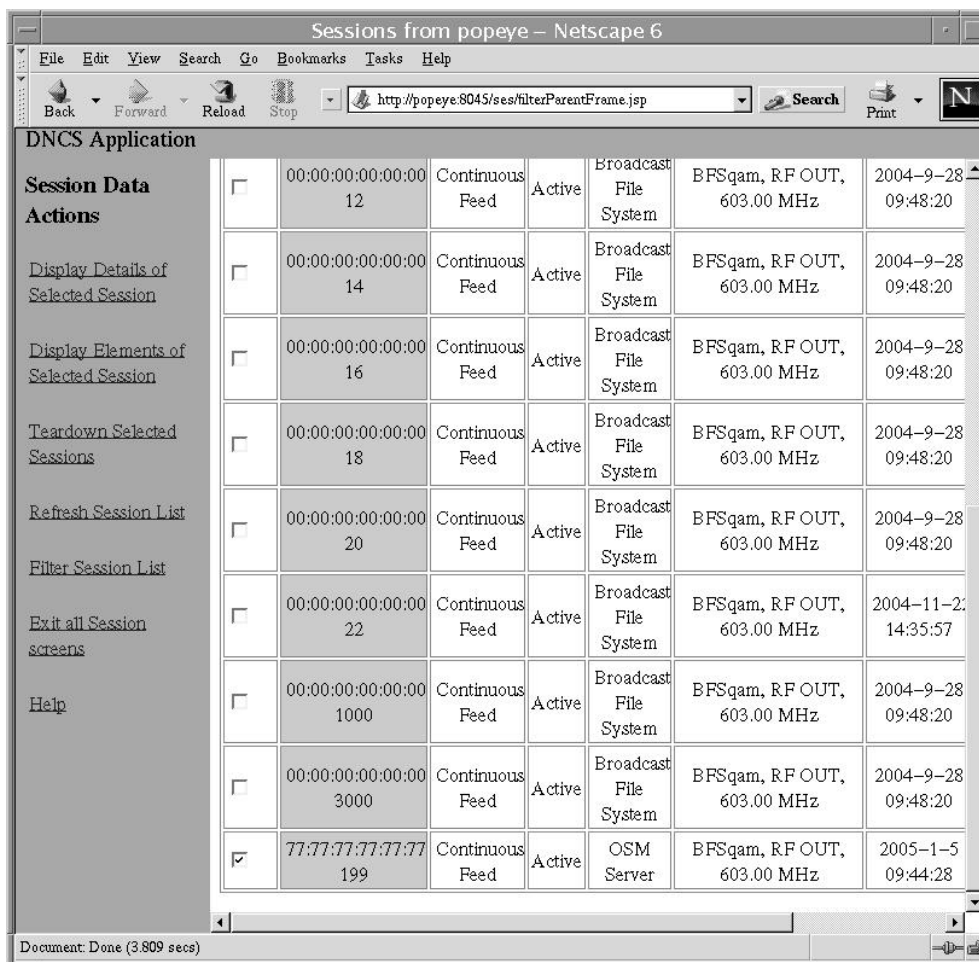
Result: The window updates to display session data for the BFS QAM.

- ❑ 3. Does the data show that session ID 199 *directly* follows session ID 22, and that session ID 199 has a session MAC address of 00:00:00:00:00:00?
 - If **yes** (to both conditions), skip this entire section and go to **Check BFS QAM Sessions**, later in this chapter.
 - If **no** (to at least one condition), continue with step 4.

Examine and Re-Order the pddataqampat Table, Continued

- ❑ 4. Click the checkbox in the **Select** column associated with session ID 199.

Note: Session ID 199 is likely to be at the bottom of the window.



- ❑ 5. Click **Teardown Selected Sessions**.

Result: The system tears down the selected session.

- ❑ 6. Choose one of the following options:

- If the site you are upgrading uses the Direct ASI feature, go to **Checking the pddataqampat Table – ASI**, next in this section.
- If the site you are upgrading uses ATM, go to **Checking the pddataqampat Table – ATM**, later in this section.

Examine and Re-Order the pddataqampat Table, Continued

Checking the pddataqampat Table—ASI

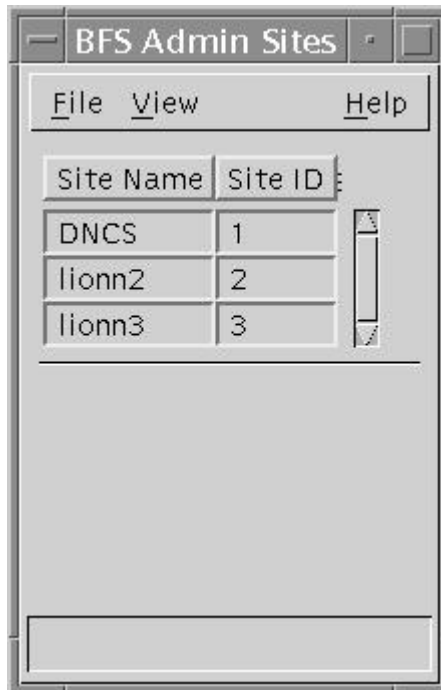
After upgrading to SR 2.5 or SR 3.5, follow these instructions to inspect the contents of the pddataqampat table and then to re-order the table, if necessary.

Note: Follow this procedure if the site you are upgrading uses the Direct ASI feature. If the site you are upgrading uses ATM, use the **Checking the pddataqampat Table – ATM** procedure, instead.

- ❑ 1. From the DNCS Administrative Console, select the Application Interface Modules tab and then click **BFS Admin**.

Result: The BFS Admin Sites window opens.

Note: If the RCS feature is not enabled on the system, the Site DNCS BFS Administration window appears instead.

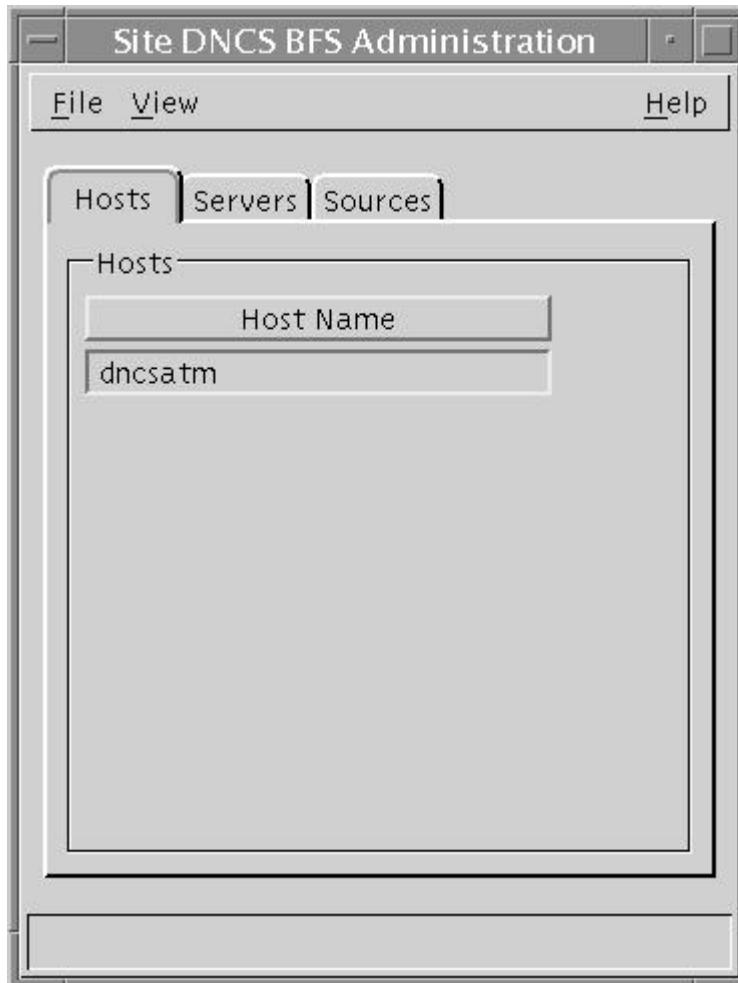


Examine and Re-Order the pddataqampat Table, Continued

- ❑ 2. Double-click the appropriate Site Name.

Note: You will probably want to examine the pddataqampat table on the DNCS first, before you examine any remote sites.

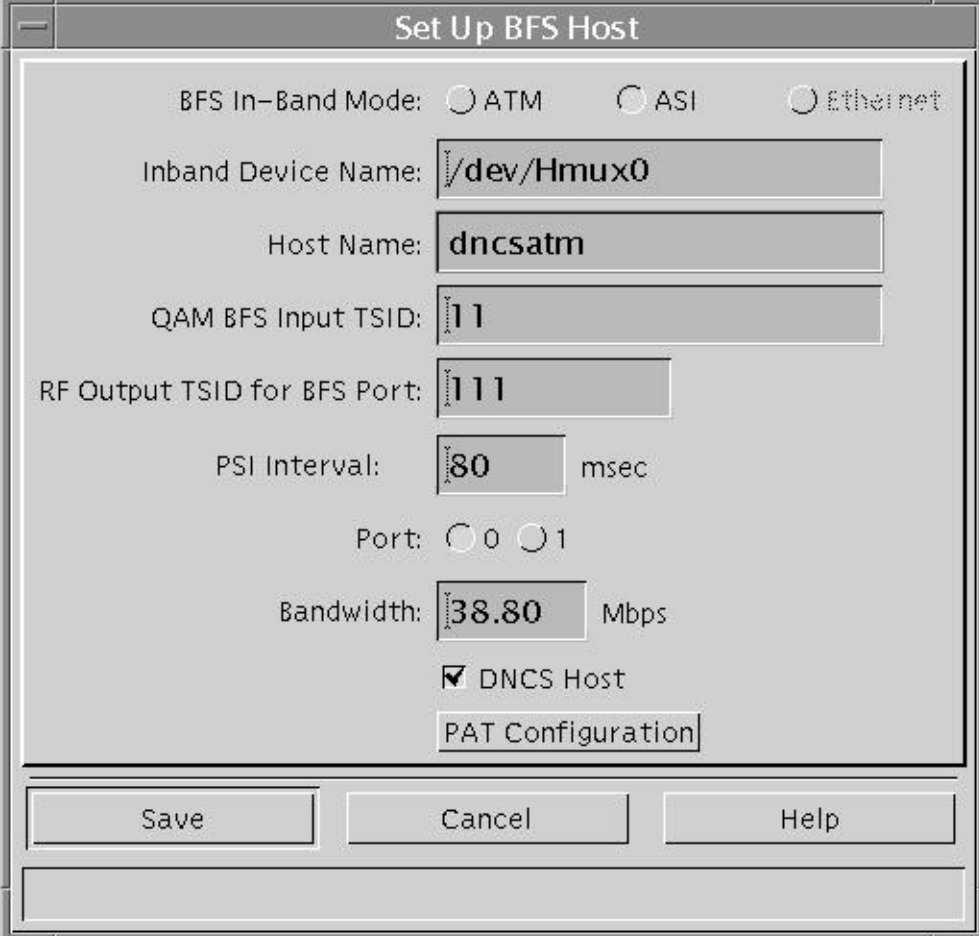
Result: The Site [site name] BFS Administration window opens.



Examine and Re-Order the pddataqampat Table, Continued

- ❑ 3. Double-click the appropriate Host Name.

Result: The Set Up BFS Host window opens.



The image shows a 'Set Up BFS Host' dialog box with the following fields and options:

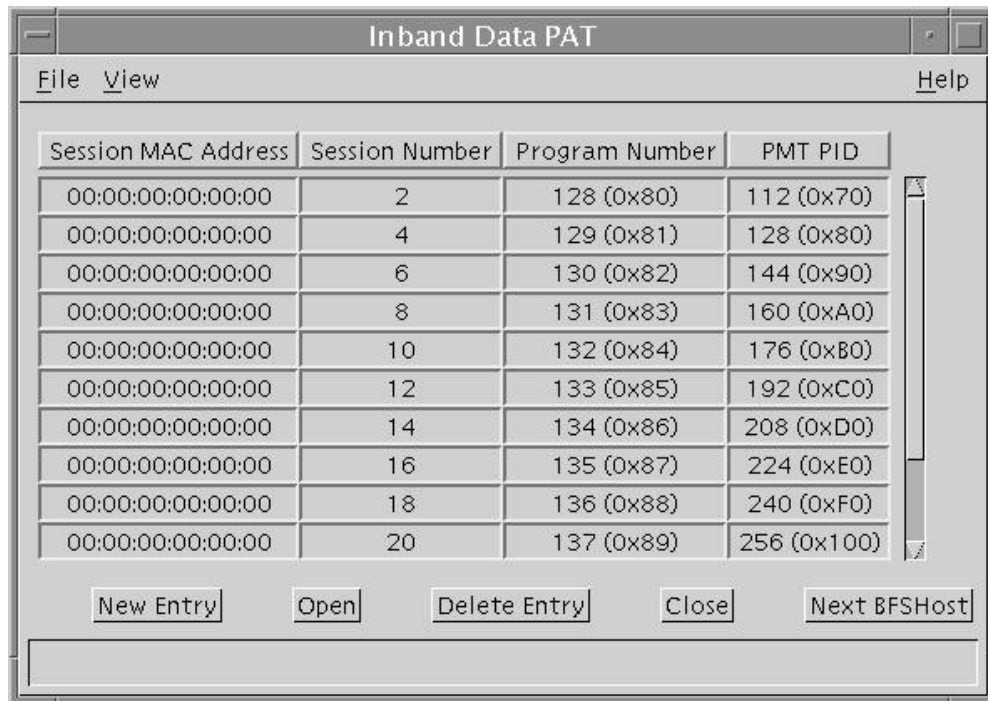
- BFS In-Band Mode:** Three radio buttons are present: ☐ ATM, ☐ ASI, and ☐ Ethernet.
- Inband Device Name:** A text field containing the value `/dev/Hmux0`.
- Host Name:** A text field containing the value `dnccsatm`.
- QAM BFS Input TSID:** A text field containing the value `11`.
- RF Output TSID for BFS Port:** A text field containing the value `111`.
- PSI Interval:** A text field containing the value `80`, followed by the unit `msec`.
- Port:** Two radio buttons labeled `0` and `1`.
- Bandwidth:** A text field containing the value `38.80`, followed by the unit `Mbps`.
- DNCS Host:** A checked checkbox.
- PAT Configuration:** A text field.

At the bottom of the dialog box are three buttons: **Save**, **Cancel**, and **Help**.

Examine and Re-Order the pddataqampat Table, Continued

- ❑ 4. Click **PAT Configuration**.

Result: The Inband Data PAT window opens.



- ❑ 5. Go to **Recording and Re-Creating Out-of-Order Entries**, later in this section.

Examine and Re-Order the pddataqampat Table, Continued

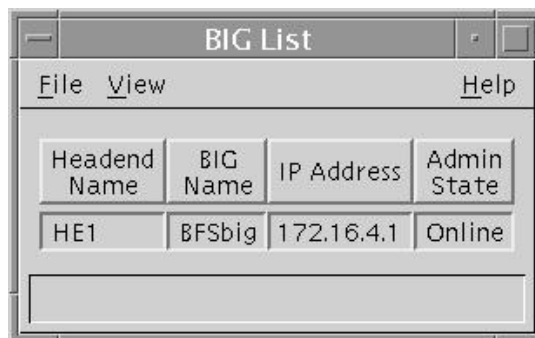
Checking the pddataqampat Table—ATM

After upgrading to SR 2.5 or SR 3.5, follow these instructions to inspect the contents of the pddataqampat table and then to re-order the table, if necessary.

Note: Follow this procedure if the site you are upgrading uses ATM. If the site you are upgrading uses Direct ASI, use the **Checking the pddataqampat Table – ASI** procedure, instead.

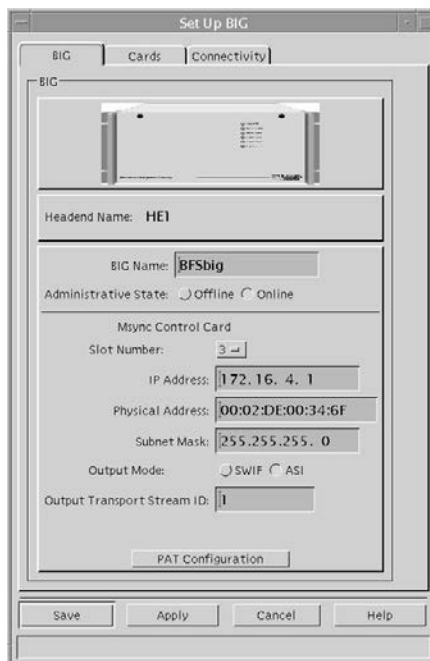
1. From the DNCS Administrative Console, select the Element Provisioning tab.
2. Click **BIG**.

Result: The BIG List window opens



3. Double-click the entry in the BIG List for the BFS BIG.

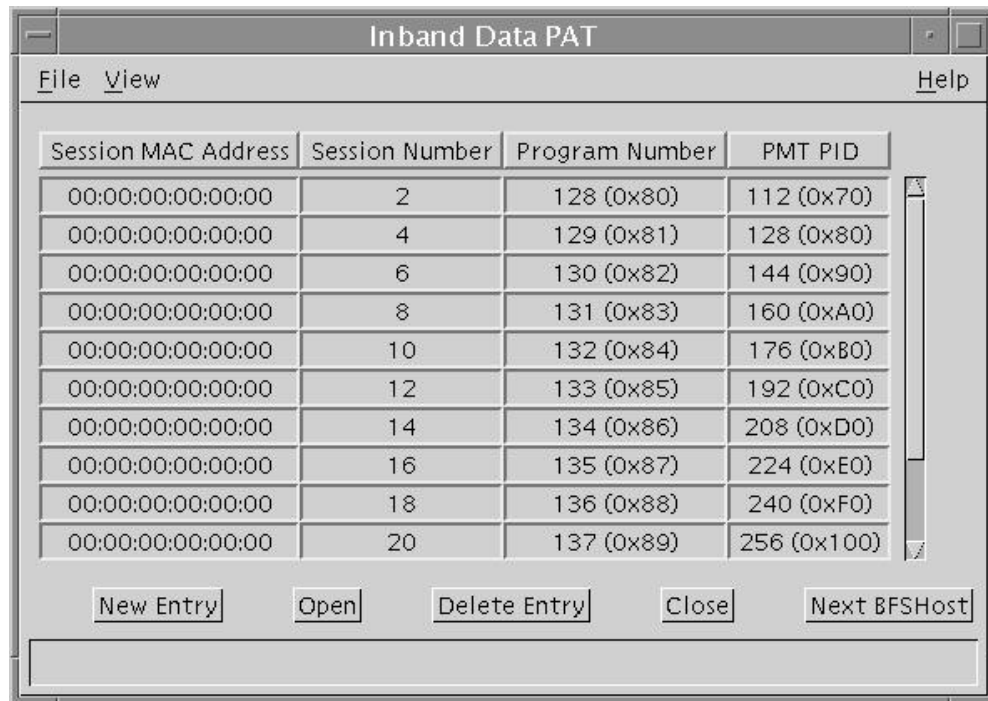
Result: The Set Up BFS BIG window opens.



Examine and Re-Order the pddataqampat Table, Continued

- Click **PAT Configuration**.

Result: The Inband Data PAT window opens.



- Go to **Recording and Re-Creating Out-of-Order Entries**, next in this section.

Examine and Re-Order the pddataqampat Table, Continued

Recording and Re-Creating Out-of-Order Entries

In this procedure, you will delete session IDs greater than 22, and then recreate them such that session ID 199 comes right after session ID 22.

Important: Pay special attention to step 6 of this procedure. Step 6 provides special instructions regarding session ID 199.

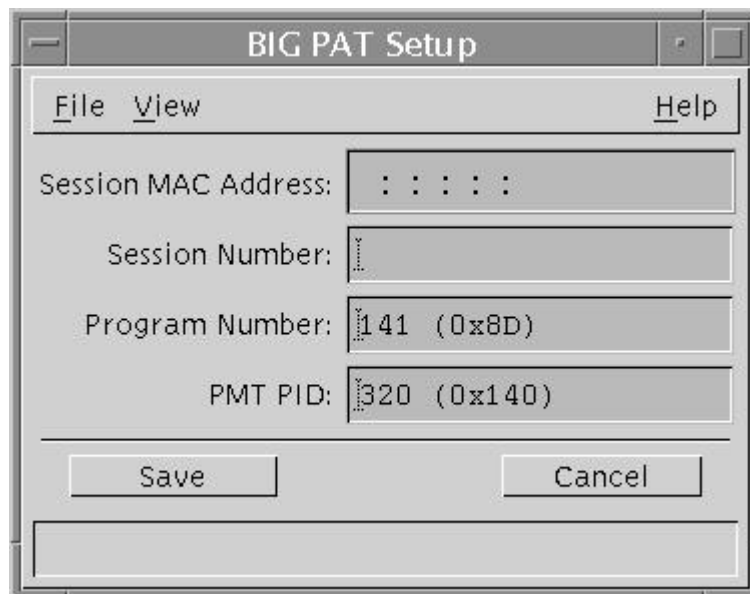
- ❑ 1. On a sheet of paper, write down every entry in the Inband Data PAT window that is out of ascending order.

Important: Be sure to record each field: **Session MAC Address**, **Session Number**, **Program Number**, and **PMT PID**.

- ❑ 2. Follow these instructions to delete each out-of-order entry.
 - a) Highlight an out-of-order entry and click **Delete Entry**.
Result: A confirmation message appears.
 - b) Click **OK** (to confirm the intention to delete).
Result: The system deletes the out-of-order entry.

- ❑ 3. Click **New Entry** on the Inband Data PAT window.

Result: The BIG PAT Setup window opens.



The image shows a 'BIG PAT Setup' dialog box. It has a title bar with the text 'BIG PAT Setup'. Below the title bar is a menu bar with three items: 'File', 'View', and 'Help'. The main area of the dialog contains four input fields, each with a label to its left: 'Session MAC Address:' followed by a text box containing ': : : : :'; 'Session Number:' followed by a text box containing '1'; 'Program Number:' followed by a text box containing '141 (0x8D)'; and 'PMT PID:' followed by a text box containing '320 (0x140)'. At the bottom of the dialog are two buttons: 'Save' on the left and 'Cancel' on the right.

Examine and Re-Order the pddataqampat Table, Continued

- ❑ 4. On the BIG PAT Setup window, type in the data for an out-of-order entry.

Important: Be sure to type in each field: **Session MAC Address**, **Session Number**, **Program Number**, and **PMT PID**.

Note: The **Program Number** and **PMT PID** fields may be already filled in. Erase any data in these fields and use the data that you collected when you recorded the out-of-order entries.

- ❑ 5. Click **Save**.

Result: The system saves the just-added entry in proper ascending order.

- ❑ 6. Repeat steps 3 through 5 for each out-of-order entry in the BIG PAT Setup window that you recorded on the sheet of paper.

Important: For session ID 199, do *not* enter 77:77:77:77:77:77 as the Session MAC Address. Instead, enter the session MAC address for the site, similar to what you would do for any other session.

- ❑ 7. Go to **Stopping the BFS Server Processes**, next in this section.

Examine and Re-Order the pddataqampat Table, Continued

Stopping the BFS Server Processes

For the system to recognize the changes you just made on the Inband Data PAT window, you need to stop and restart the BFS Server processes of the DNCS, using the dncsControl utility. Follow these instructions to stop the BFS Server processes.

Note: Stopping and restarting a process is sometimes referred to as “bouncing” the process.

- ❑ 1. From an xterm window on the DNCS, type **dncsControl** and then press **Enter**.

Result: The DnCS Control window opens.

- ❑ 2. Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**.

Result: The DnCS Control window updates to list all of the DNCS processes and servers.

- ❑ 3. Type the number associated with the **BFS Server** element group and then press **Enter**.

Result: A message appears that prompts the user to enter the target status for the entire element group or to type *e* to display each individual element.

- ❑ 4. Type **1** (for stopped) and then press **Enter**.

Result: A confirmation message appears.

- ❑ 5. Type **y** (for yes) and then press **Enter**.

Result: The DnCS Control window updates to reflect the current status of the BFS Server element group.

- ❑ 6. Wait until the current state (**Curr Stt**) of the BFS Server element group is **stopped**.

Note: The DnCS Control window updates automatically in about 30 seconds or you can press **Enter** to force an update.

- ❑ 7. When the current state is stopped, follow the on-screen instructions to return to the Main Menu of the DnCS Control window and then to exit from the dncsControl utility.

- ❑ 8. Go to **Tearing Down the BFS Sessions**, next in this section.

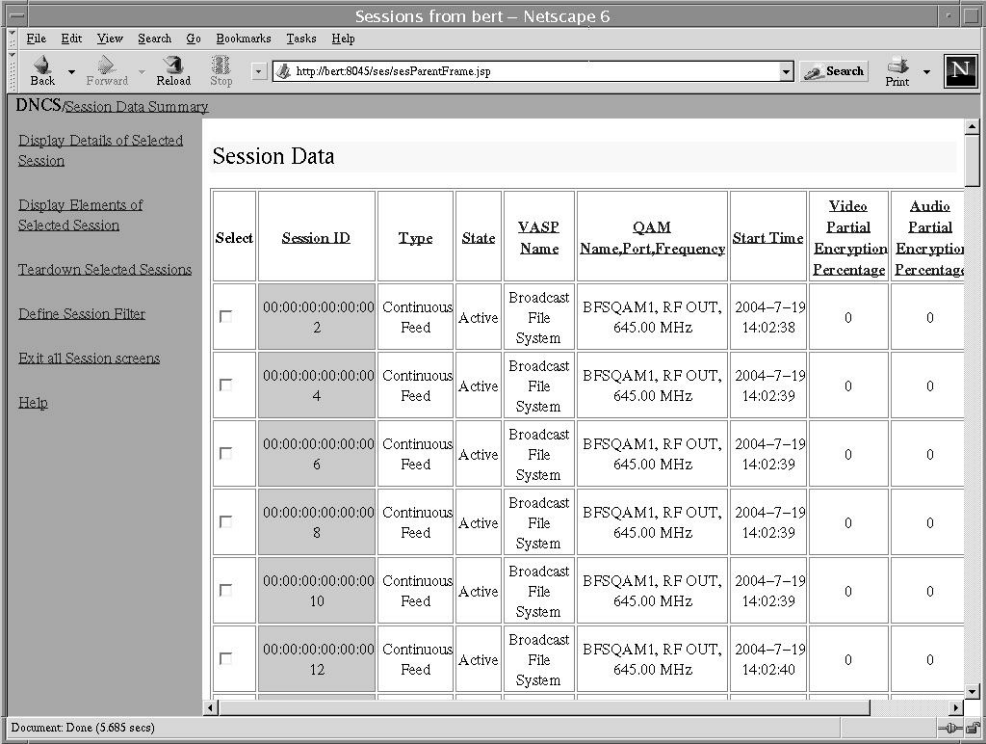
Examine and Re-Order the pddataqampat Table, Continued

Tearing Down the BFS Sessions

After stopping the BFS Server processes, tear down the BFS sessions. Follow these instructions to tear down the BFS sessions.

- ❑ 1. From the **DNCS** tab on the DNCS Administrative Console, select **Utilities** and then click **Session List**.

Result: The Sessions from [host name] window opens.



DNCS Session Data Summary

Session Data

Select	Session ID	Type	State	VASP Name	QAM Name, Port, Frequency	Start Time	Video Partial Encryption Percentage	Audio Partial Encryption Percentage
☐	00:00:00:00:00:00 2	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:38	0	0
☐	00:00:00:00:00:00 4	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:39	0	0
☐	00:00:00:00:00:00 6	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:39	0	0
☐	00:00:00:00:00:00 8	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:39	0	0
☐	00:00:00:00:00:00 10	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:39	0	0
☐	00:00:00:00:00:00 12	Continuous Feed	Active	Broadcast File System	BFSQAM1, RF OUT, 645.00 MHz	2004-7-19 14:02:40	0	0

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- ❑ 2. Click the checkbox in the **Select** column for all BFS sessions.

Result: A checkmark appears in the checkbox.

- ❑ 3. Click **Teardown Selected Sessions**.

Result: The system tears down the selected sessions.

- ❑ 4. Go to **Rebooting the BIG and the BIG QAM**, next in this section.

Examine and Re-Order the pddataqampat Table, Continued

Rebooting the BIG and the BIG QAM

After tearing down the BFS and OSM sessions, reboot the Broadband Integrated Gateway (BIG) and the BIG QAM. Reboot these devices by turning the power switch off and then turning the power switch on. Then, go to **Restarting the BFS Server Processes**, next in this section.

Restarting the BFS Server Processes

After rebooting the BIG and the BIG QAM, you can use the dncsControl utility to restart the BFS Server processes on the DNCS. Follow these instructions to restart the BFS Server processes.

- ❑ 1. If necessary, open an xterm window on the DNCS.
- ❑ 2. Type **dncsControl** and then press **Enter**.
Result: The DnCS Control window opens.
- ❑ 3. Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**.
Result: The DnCS Control window updates to list all of the DNCS processes and servers.
- ❑ 4. Type the number associated with the **BFS Server** element group and then press **Enter**.
Result: A message appears that prompts the user to enter the target status for the entire element group or to type *e* to display each individual element.
- ❑ 5. Type **2** (for running) and then press **Enter**.
Result: A confirmation message appears.
- ❑ 6. Type **y** (for yes) and then press **Enter**.
Result: The DnCS Control window updates to reflect the current status of the BFS Server.
- ❑ 7. Wait until the current state (**Curr Stt**) of the BFS Server is **running**.
Note: The DnCS Control window updates automatically in about 30 seconds or you can press **Enter** to force an update.
- ❑ 8. When the current state is **running**, follow the on-screen instructions to return to the Main Menu of the DnCS Control window and then to exit from the dncsControl utility.

Check BFS QAM Sessions

Introduction

The number of BFS sessions after the upgrade needs to be the same as the number of BFS sessions before the upgrade. The procedures in this section guide you through the steps that are required in validating the number of BFS sessions.

Verifying the Number of Recovered BFS Sessions.

Follow these steps to check the number of post-upgrade BFS sessions.

- ❑ 1. Press the **Options** button on the front panel of the BFS QAM until the **Session Count** total appears.
- ❑ 2. Does the **Session Count** total equal the number of sessions you recorded in the **Check the Number of BFS Sessions** procedure in Chapter 1?
 - If **yes**, skip the remainder of this section, and go to **Verify the crontab Entries**, next in this chapter. The system recovered all of the BFS sessions.
 - If **no**, access the craft port of the BFS QAM using whatever terminal emulator software you prefer.
- ❑ 3. Type **print_session_status** and then press **Enter**.

Result: The system displays the sessions that are set up on the BFS QAM.

- ❑ 4. Locate Session ID **00:00:00:00:00:00:2**. Is this session in the **CREATE_TABMAN_WAITING** state?
 - If **yes**, go to step 5.
 - If **no**, troubleshoot this matter using your established escalation procedures.
Note: Contact Cisco Services if you are unable to resolve the issue.
- ❑ 5. Does the **Program State** field of Session ID **00:00:00:00:00:00:2** show **PAT_ASSEMBLY**?
 - If **yes**, go to **Tear Down BFS and OSM Sessions**, next in this section.
 - If **no**, troubleshoot this matter using your established escalation procedures.
Note: Contact Cisco Services if you are unable to resolve the issue.

Check BFS QAM Sessions, Continued

Tear Down BFS and OSM Sessions

Complete these steps to tear down the BFS and OSM sessions in order to return the BFS session count to the expected number of sessions.

- ❑ 1. On the DNCS Control window, highlight the **siManager** process.
- ❑ 2. Click **Process** and then select **Stop Process**.

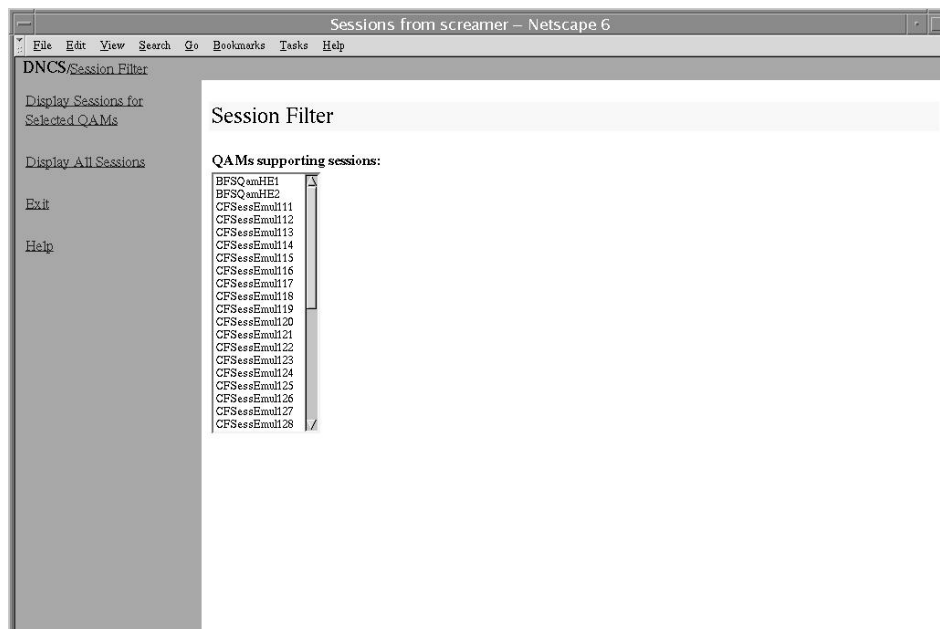
Result: In a few minutes, the indicator for the siManager process changes from green to red.

- ❑ 3. Highlight the **osm** process.
- ❑ 4. Click **Process** and then select **Stop Process**.

Result: In a few minutes, the indicator for the osm process changes from green to red.

- ❑ 5. On the DNCS Administrative Console, select the **Utilities** tab.
- ❑ 6. Click **Session List**.

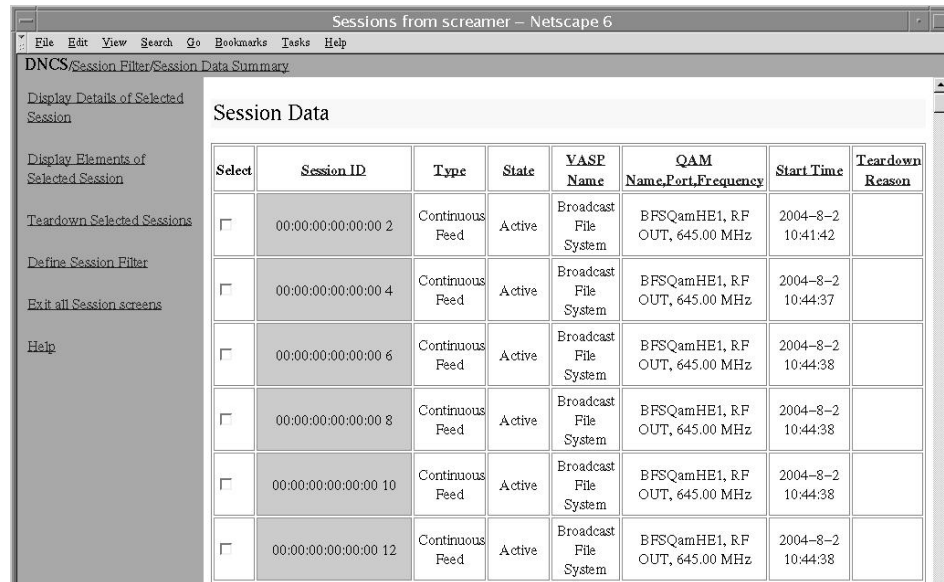
Result: The Session Filter window opens.



Check BFS QAM Sessions, Continued

- ❑ 7. Click **Display All Sessions**.

Result: The window updates to display all configured sessions.



Select	Session ID	Type	State	VASP Name	QAM Name, Port, Frequency	Start Time	Teardown Reason
☐	00:00:00:00:00:00:2	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:41:42	
☐	00:00:00:00:00:00:4	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:44:37	
☐	00:00:00:00:00:00:6	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:44:38	
☐	00:00:00:00:00:00:8	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:44:38	
☐	00:00:00:00:00:00:10	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:44:38	
☐	00:00:00:00:00:00:12	Continuous Feed	Active	Broadcast File System	BFSQamHE1, RF OUT, 645.00 MHz	2004-8-2 10:44:38	

- ❑ 8. In the **Select** column, check the box associated with Session ID **00:00:00:00:00:00:2**.
- ❑ 9. Click **Teardown Selected Sessions**.

Result: The system tears down the BFS and OSM sessions.

- ❑ 10. Wait about 10 minutes for the system to rebuild the sessions.
- ❑ 11. On the DNCS Control window, highlight the **osm** process.
- ❑ 12. Click **Process** and then select **Start Process**.

Result: In a few minutes, the indicator for the osm process changes from red to green.

- ❑ 13. After the indicator for the osm process has turned green, highlight the **siManager** process.
- ❑ 14. Click **Process** and then select **Start Process**.

Result: In a few minutes, the indicator for the siManager process changes from red to green.

Check BFS QAM Sessions, Continued

- ❑ 15. Press the **Options** button on the front panel of the BFS QAM until the **Session Count** total appears.
- ❑ 16. Does the **Session Count** total *now* equal the number of sessions you recorded in the **Check the Number of BFS Sessions** procedure in Chapter 1?
 - If **yes**, go to **Verify the crontab Entries**, next in this chapter. The system recovered all of the BFS sessions.
 - If **no**, contact Cisco Services for assistance.

Verify the crontab Entries

Verifying the crontab Entries

After upgrading the DNCS, inspect the crontab file to verify that it contains an entry for dbOptimizer, and that it contains no entry for camEmmDeleter. Follow these instructions to inspect the crontab file.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd** and then press **Enter**.

Result: The home directory of /export/home/dncs becomes the working directory.

3. Type **crontab -l** and then press **Enter**.

Note: The 'l' is a lowercase L.

Result: The system lists the entries in the crontab file.

4. Does the crontab file include an entry for **dbOptimizer**?
 - If **yes**, type **exit** and then press **Enter** to close the xterm window. Then, go to **Adding Custom crontab Entries**, next in this section.
 - If **no**, contact Cisco Services for assistance.

Adding Custom crontab Entries

Cisco preserves old crontab entries in the /var/spool/cron/crontabs.previous directory on the DNCS and the Application Server. Examine these old crontab entries for each user on the DBDS system (dncs, root, informix). Then consult with the system operator to determine whether any of these old entries should be retained. If necessary, add the required crontab entries to the current crontab file.

Note: Go to **Reset Modulators**, next in this chapter, when you are finished.

Reset Modulators

Introduction

The UniPack upgrade to SR 2.5 and SR 3.5 updates your QAM, MQAM, GQAM, and GoQAM modulator code. After the upgrade, you need to reset the modulators in order for the modulators to operate with the new code.

Note: Depending upon your upgrade scenario, you may not have to complete this procedure. If your upgrade did not modify QAM, MQAM, GQAM, or GoQAM modulator code, you can skip this procedure.

You have the following methods available when you reset modulators:

- You can use the traditional method of resetting modulators through the DNCS GUI.
- You can reset the modulators (except the QAM modulator) through the front panel of the modulators. The QAM modulator resets through the power switch on the back panel.
- You can use the new auditQam utility to reset the modulators through the command line of the DNCS.

Which Reset Method to Use

Resetting modulators from the DNCS GUI or 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, engineers are free to complete other upgrade-related tasks.

Notes:

- Instructions for resetting modulators through the DNCS GUI are found in **Resetting Modulators Through the DNCS GUI**, next in this section.
- Instructions for resetting modulators through the front panel are found in **Resetting Modulators Through the Modulator Panel**, later in this section
- Instructions for resetting modulators through the auditQam utility are found in **Resetting Modulators Through the auditQam Utility**, also later in this section.
- Appendix H, **The auditQam Utility**, provides detailed information about the various options supported by the auditQam utility.

Reset Modulators, Continued

Resetting Modulators Through the DNCS GUI

When you reset the modulators, the modulators download their new SR 2.5 and SR 3.5 code. Follow these instructions to reset the modulators through the DNCS GUI.

Important: Never reset more than four modulators at once or the DNCS may become overloaded. The following instructions alert you to this important point at the appropriate step.

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

Note: Skip this step for any 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.
 - 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.
 - e) Press the **Options** button on the front panel until the **IP address** appears.
 - f) Record the IP address on a piece of paper.
 - g) Repeat steps a) through f) for all of your QAM and MQAM modulators.
2. Open an xterm window on the DNCS.
3. From the DNCS Administrative Console, select the **Element Provisioning** tab.
4. Click **QAM**.

Result: The QAM List window opens.

5. From the QAM List window, highlight a modulator.

Notes:

- Refer to the QAM Type column to differentiate between types of modulators.
- Each MQAM, GQAM, and/or GoQAM modulator appears multiple times on the QAM List window; highlight only the first occurrence.

Reset Modulators, Continued

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

Result: A confirmation message appears.

7. Click **Yes** on the confirmation message.

Result: The modulator resets.

8. Repeat steps 5 through 7 for up to three additional modulators, and then go to step 9.

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.

9. Wait a few minutes and then 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.

Note: It may take up to 5 minutes for each modulator to reset.

10. Do you have additional modulators to reset?
 - If **yes**, repeat steps 5 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. Did you record the Program Count and the Session Count for each modulator not used for VOD, as specified in step 1?

- If **yes**, repeat step 1 to verify that the Program Count and Session Count totals match what you recorded before resetting the modulators, and then go to **Reset QPSK Modulators**, next in this chapter.

Important: If the Program Count and Session Count totals do not match what you recorded prior to resetting the modulators, contact Cisco Services.

- If **no**, go to **Reset QPSK Modulators**, next in this chapter.

Reset Modulators, Continued

Resetting Modulators Through the Modulator Panel

When you reset the modulators, the modulators download their new SR 2.5 and SR 3.5 code. Follow these instructions to reset the modulators through the modulator panel.

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

Note: Skip this step for any 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.
 - 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.
 - e) Press the **Options** button on the front panel until the **IP address** appears.
 - f) Record the IP address on a piece of paper.
 - g) Repeat steps a) through f) for all of your QAM and MQAM modulators.
2. Choose one of the following options:
 - To reset an MQAM, GQAM, or GoQAM modulator, go to step 3.
 - To reset a QAM modulator, go to step 4.
3. To reset an MQAM, GQAM, or 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.
 - c) Go to step 5.
4. To reset a QAM modulator, turn off the power switch on the back of the QAM modulator, wait a few seconds, and then turn it back on.
5. Repeat steps 3 and 4 for up to three additional modulators, and then go to step 6.

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

Note: In step 7, you will have the opportunity to reset additional modulators.

Reset Modulators, Continued

6. Wait a few minutes and then from an xterm window on the DNCS, 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.

Note: It may take up to 5 minutes for each modulator to reset.

7. Do you have additional modulators to reset?
 - If **yes**, repeat steps 3 through 6 as many times as necessary until all of your modulators have been reset, and then go to step 8.
 - If **no**, go to step 8.
8. Did you record the Program Count and the Session Count for each modulator not used for VOD, as specified in step 1?
 - If **yes**, repeat step 1 to verify that the Program Count and Session Count totals match what you recorded before resetting the modulators, and then go to **Reset QPSK Modulators**, next in this chapter.
 - **Important:** If the Program Count and Session Count totals do not match what you recorded prior to resetting the modulators, contact Cisco Services.
 - If **no**, go to **Reset QPSK Modulators**, next in this chapter.

Reset Modulators, Continued

Resetting Modulators Through the auditQam Utility

The *reset* option of the auditQam utility allows upgrade engineers to reset a 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.

Resetting a Few 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 [qam ip address or 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.

Resetting Many QAM and MQAM Modulators

Upgrade engineers frequently do not have time to manually reset hundreds of modulators from the DNCS GUI. To save time, engineers can create a script that runs automatically. 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 1
```

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

Reset QPSK Modulators

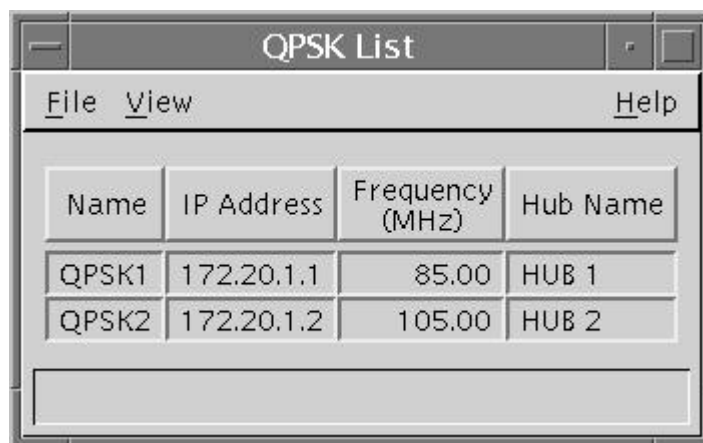
Resetting QPSK Modulators

Use these instructions to reset your QPSK modulators.

Note: You do not have to reset the QPSK modulators if the system you are upgrading is already operating with version C70 of QPSK modulator code.

1. From the DNCS Administrative Console, select the **Element Provisioning** tab.
2. Click **QPSK**.

Result: The QPSK List window opens.



Name	IP Address	Frequency (MHz)	Hub Name
QPSK1	172.20.1.1	85.00	HUB 1
QPSK2	172.20.1.2	105.00	HUB 2

3. Highlight a QPSK modulator.
4. Click **File** and then select **Reset**.
Result: A confirmation message appears.
5. Click **Yes** on the confirmation message.
Result: The QPSK modulator resets.
6. Wait about 15 minutes and then repeat steps 3 through 5 until all of your QPSK modulators have been reset.
Important: Cisco recommends that you wait about 15 minutes before resetting the next modulator.
7. Click **File** and then select **Close** to close the QPSK List window.

Change the DNCS Data Pump Rates

Introduction

Operators of Cisco's DBDS have flexibility in managing both the content and the performance characteristics of their data carousels. This section provides background information and recommendations for managing inband and out-of-band data carousel rates on the DNCS.

This section provides charts with new default values for both inband and out-of-band data rates.

Change the DNCS Data Pump Rates, Continued

Cisco Resident Application Data Carousel Rate Settings

The following table lists the default data carousel rate settings for systems that use the Cisco Resident Application (SARA).

Source ID	Data Carousel	Data Rate (Mbps)	Block Size (Bytes)	Indication Interval (ms)	Enabled ¹
0	System Carousel	0.01	1024	200	√
1	Out-of-Band	0.05	1024	200	√
2	Inband	1.00	4000	100	√
3	CAM OOB	0.01	1024	200	√
4	CAM IB ²	See note 2	4000	100	See note 2
5	IPG OOB	0.05	1024	200	√
6	IPG1 IB	1.00	4000	100	√
7	PPV OOB	0.01	1024	200	√
8	PPV IB	1.00	4000	100	√
9	SAM OOB	0.05	1024	200	√
10	IPG2 IB	1.00	4000	100	√
11	POD OOB	0.03	1024	200	√
12	IPG3 IB	1.00	4000	100	√
14	IPG4 IB	1.00	4000	100	√
16	IPG5 IB	1.00	4000	100	√
18	IPG6 IB	1.00	4000	100	√
20	IPG7 IB	1.00	4000	100	√
21	MMM OOB	0.05	1024	200	√
22	PPV IB2	1.00	4000	100	√
199 ³	bootloader	3.00	4000	100	√
4444 ⁴	SAIXOD	2.00	4000	100	√
4446 ⁵	SAIXOD_IB_SM	2.00	4000	100	√
4448 ⁶	SAIXOD_IB_LG	2.00	4000	100	√

Change the DNCS Data Pump Rates, Continued

Specific Notes About the SARA Data Carousel Rate Settings

Each of the items in the following list pertains to a corresponding number in superscript in the preceding table.

- 1 The **Enabled** column pertains to the **Sources** field on the Set Up BFS Source window on systems supporting SR 2.4/3.4 and later software. Once an inband source is disabled, the session for that source is torn down, if active, and will not be restored until the BFS source is re-enabled. Also, note that the data pumps for inband and out-of-band sources will not restart until the BFS source is re-enabled.
Note: When you disable a source, you free up the associated bandwidth.
- 2 Follow these guidelines to configure the Data Rate for the **CAM IB** data carousel:
 - If your site uses the camFastRefresh feature, set the Data Rate for the CAM IB data carousel to 1.0 Mbps and enable the source.
 - If your site does *not* use the camFastRefresh feature, follow these guidelines:
 - For SR 2.4/3.4 and later software, disable the source
 - For system software earlier than SR 2.4/3.4, set the Data Rate for the CAM IB data carousel to 0.50 Mbps
- 3 On a pre-SR 2.4/3.4 system, the bootloader carousel is managed by the OSM process and is not visible on the BFS user interface. The 3.00 Mbps data rate of the bootloader carousel, however, must be considered as part of the total inband data carousel rate.
Note: On an SR 2.4/3.4 system and later, the bootloader carousel is managed by the bfsServer process and is visible on the BFS UI.
- 4 The SAIXOD carousel is present only at those sites that have installed xOD.
- 5 The SAIXOD_IB_SM data carousel is used by the Cisco xOD application and is intended for files that have a size of 70 kilobytes or less.
Note: This carousel is present only at sites that have installed xOD.
- 6 The SAIXOD_IB_LG data carousel is used by the Cisco xOD application and is intended for files that are larger than 70 kilobytes.
Note: This carousel is present only at sites that have installed xOD.

Change the DNCS Data Pump Rates, Continued

General Notes About the SARA Data Carousel Rate Settings

Note these general points about the data in the SARA Data Carousel Rate Settings table:

- The rows highlighted in gray represent inband data carousels. The rows without the gray highlighting represent out-of-band (OOB) data carousels.
- The xOD source IDs that you see in the preceding table are used only as an example. The xOD source IDs that you actually use with your xOD applications may differ.

Note: Cisco recommends that you use even-numbered source IDs for inband carousels and odd-numbered source IDs for OOB carousels.

Change the DNCS Data Pump Rates, Continued

Pioneer Resident Application Data Carousel Rate Settings

The following table contains the recommended data carousel rates for a system that uses the Pioneer resident application.

Source ID	Data Carousel	Data Rate (Mbps)	Block Size (Bytes)	Indication Interval (ms)	Enabled ¹
0	System Carousel	0.01	1024	200	√
1	Out-of-Band	0.01	1024	200	√
2	Inband	1.00	4000	100	√
3	CAM OOB	0.01	1024	200	√
4	CAM IB ²	See note 2	4000	100	See note 2
5	IPG OOB	0.05	1024	200	√
6	IPG IB	0.50	4000	100	√
7	PPV OOB	0.01	1024	200	√
8	PPV IB	0.50	4000	100	√
9	SAM OOB ³	See note 3	1024	200	See note 3
10	IPG2 IB	0.50	4000	100	√
11	POD OOB	0.03	1024	200	√
12	IPG3 IB	0.50	4000	100	√
14	IPG4 IB	0.50	4000	100	√
16	IPG5 IB	0.50	4000	100	√
18	IPG6 IB	0.50	4000	100	√
20	IPG7 IB	0.50	4000	100	√
21	MMM OOB	0.05	1024	200	√
22	PPV2 IB	0.50	4000	100	√
199 ⁴	bootloader	3.00	4000	100	√
2500	PDT OOB	0.06	1024	200	√
2501	PDT Medium	0.06	1024	200	√
2502	PDT Small	0.01	1024	200	√
2503	PDT IB	1.00	4000	100	√
2510 ⁵	PDT MOD OOB	0.02	1024	200	√
2511 ⁵	PDT MOD IB	0.50	4000	100	√

Change the DNCS Data Pump Rates, Continued

Specific Notes About the Pioneer Data Carousel Rate Settings

Each of the items in the following list pertains to a corresponding number in superscript in the preceding table.

- 1 The **Enabled** column pertains to the **Sources** field on the Set Up BFS Source window on systems supporting SR 2.4/3.4 and later software. Once an inband source is disabled, the session for that source is torn down, if active, and will not be restored until the BFS source is re-enabled. Also, note that the data pumps for inband and out-of-band sources will not restart until the BFS source is re-enabled.
Note: When you disable a source, you free up the associated bandwidth.
- 2 Follow these guidelines to configure the Data Rate for the **CAM IB** data carousel:
 - If your site uses the camFastRefresh feature, set the Data Rate for the CAM IB data carousel to 1.0 Mbps and enable the source.
 - If your site does *not* use the camFastRefresh feature, follow these guidelines:
 - For SR 2.4/3.4 and later software, disable the source
 - For system software earlier than SR 2.4/3.4, set the Data Rate for the CAM IB data carousel to 0.50 Mbps
- 3 Follow these guidelines to configure the Data Rate for the **SAM OOB** data carousel:
 - Set the SAM OOB Data Rate to 0.01 Mbps if your system supports software earlier than SR 2.4/3.4.
 - Disable the source, and leave the field blank, if your system supports SR 2.4/3.4 or later software.
- 4 On a pre-SR 2.4/3.4 system, the bootloader carousel is managed by the OSM process and is not visible on the BFS user interface. The 3.00 Mbps data rate of the bootloader carousel, however, must be considered as part of the total inband data carousel rate.
Note: On an SR 2.4/3.4 system and later, the bootloader carousel is managed by the bfsServer process and is visible on the BFS UI.
- 5 The PDT MOD OOB and PDT MOD IB carousels are only necessary for sites that use the Passport ShowRunner application.

Change the DNCS Data Pump Rates, Continued

General Notes About the Pioneer Data Carousel Rate Settings

Note these general points about the data in the Pioneer Data Carousel Rate Settings table:

- The rows highlighted in gray represent inband data carousels. The rows without the gray highlighting represent out-of-band (OOB) data carousels.
- Source IDs for non- Cisco data carousels may be different than those listed in the preceding table.

BFS Performance Recommendations

When setting your inband and out-of-band data carousel rates, consider the following points as they pertain to the configuration of your Broadcast File Server:

- The presence of third-party applications does not require that you configure one data carousel per application. You may assign multiple files to the same carousel, as long as you consider the specific performance requirements of the DBDS network. The more files you assign to a given data carousel, the longer it will take for the files to transfer to the DHCT.
- You can redistribute existing application files among the data carousels as you add new application files to your system. Consider the specific transfer speed requirements of the files when deciding whether to redistribute the application files.
- Do not use any system default data carousels for third-party application files. Cisco reserves default carousels for system files only.

Inband Data Carousel Recommendations

Consider these recommendations for managing inband data carousels on the DBDS:

- For third-party applications, use these guidelines when adding inband carousels:
 - The data rate should be either 1 or 2 Mbps (megabits per second).
 - The block size should be 4000 bytes.
 - The indication interval should be 100 ms (milliseconds).
- Depending upon your QAM modulation mode, the sum of your inband data carousel rates (including source 199), plus any additional audio-visual content that is combined on the modulator, should not exceed the following totals:

	Direct ASI	BFS BIG
64-QAM modulation	26 Mbps	25 Mbps
256-QAM modulation	37 Mbps	36 Mbps

Note: Once you define an inband data carousel, the BFS automatically sets up the session. However, you still need to define the source and source definition.

Change the DNCS Data Pump Rates, Continued

Out-of-Band Data Carousel Recommendations

Keep the following points in mind when configuring OOB data carousels:

- When configuring out-of-band data carousel rates on the DBDS, Cisco recommends that the total of all out-of-band data carousel rates be kept as low as possible, in order to maximize the amount of data bandwidth available for applications.

Note: Output from the Doctor Report will alert you when the sum of your out-of-band data carousel rates is greater than or equal to 0.35 Mbps.

- The indication interval should be 200 ms.

Inband vs. Out-of-Band Considerations

When deciding whether to assign files to an inband carousel or to an out-of-band carousel, keep the following points in mind:

- Out-of-band data transfer rates are considerably slower than inband data transfer rates. Consider how fast of a transfer time you require. If a fast data transfer rate is essential, then assigning the file to an inband data carousel may be more beneficial than assigning that file to an out-of-band data carousel.
- If an application requires access to files while simultaneously allowing the user to watch video, then you should assign files for that application to an out-of-band carousel. If these application files are assigned to an inband carousel, video will be interrupted during file retrieval.

Note: In a dual-tuner Digital Video Recorder (DVR) configuration, if the second tuner is available, that set-top can access application files from an inband carousel without interrupted video. If both tuners are in use, however, video will be interrupted during inband file retrieval.

- You can assign files for applications that do not allow the user to watch video while using the application to either the inband or out-of-band carousel, depending upon the size and the performance requirements of the application.

Change the DNCS Data Pump Rates, Continued

VPI/VCI Pairing

Cisco recommends that you map at least 20 VPI/VCI pairs in your Asynchronous Transfer Mode (ATM) switch for inband data when initially configuring the system. The DNCS port on the ATM switch uses VPI/VCI permanent virtual circuits (PVCs) 0/256 through 0/275. These PVCs must be mapped to VPI/VCI pairs x/256 through x/275 respectively, (where x represents any available VPI) on the Broadband Integrated Gateway (BIG) port of the ATM switch. There is one VPI/VCI PVC for each inband data carousel for up to 20 inband carousels.

If you plan to support more than 20 inband data carousels, you need additional PVCs on the ATM switch. Begin configuring your additional PVCs at 0/276.

The BIG ATM module has no awareness of the VPI. Hence, the ATM switch can map the incoming DNCS PVCs to any VPI on the outgoing BIG PVCs. For simplicity, Cisco recommends that you use VPI of 0.

Note: This discussion of VPI/VCI pairing pertains only to sites that use a BFS BIG and does not pertain to sites that use an ASI/HMUX card. The Direct ASI implementation does not use ATM.

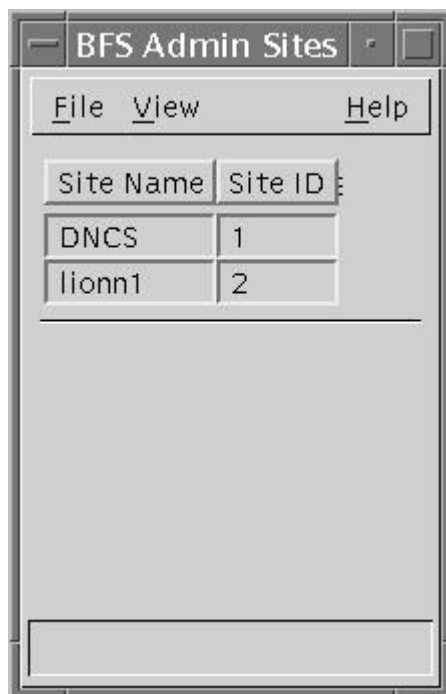
Change the DNCS Data Pump Rates, Continued

Changing the Data Carousel Rates

Follow these instructions to change the data carousel rates.

1. From the DNCS Administrative Console, select the **Application Interface Modules** tab.
2. Click **BFS Administration**.

Result: The BFS Admin Sites window opens.

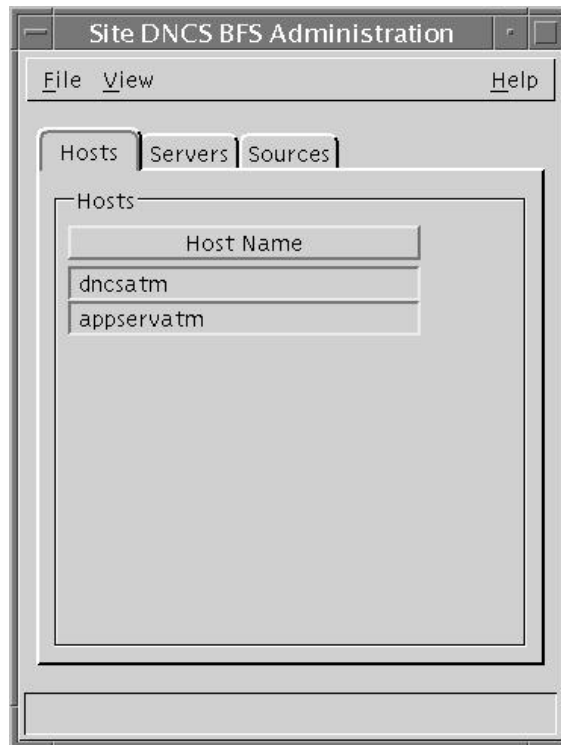


Note: The system used in this example supports the Regional Control System (RCS) feature that uses the DNCS to manage several remote headends. The lionn1 site (shown in this example) is a remote headend. Your system may support more remote headends or might not support the RCS feature at all.

Change the DNCS Data Pump Rates, Continued

3. Double-click the **DNCS** site.

Result: The Site <DNCS> BFS Administration window opens.

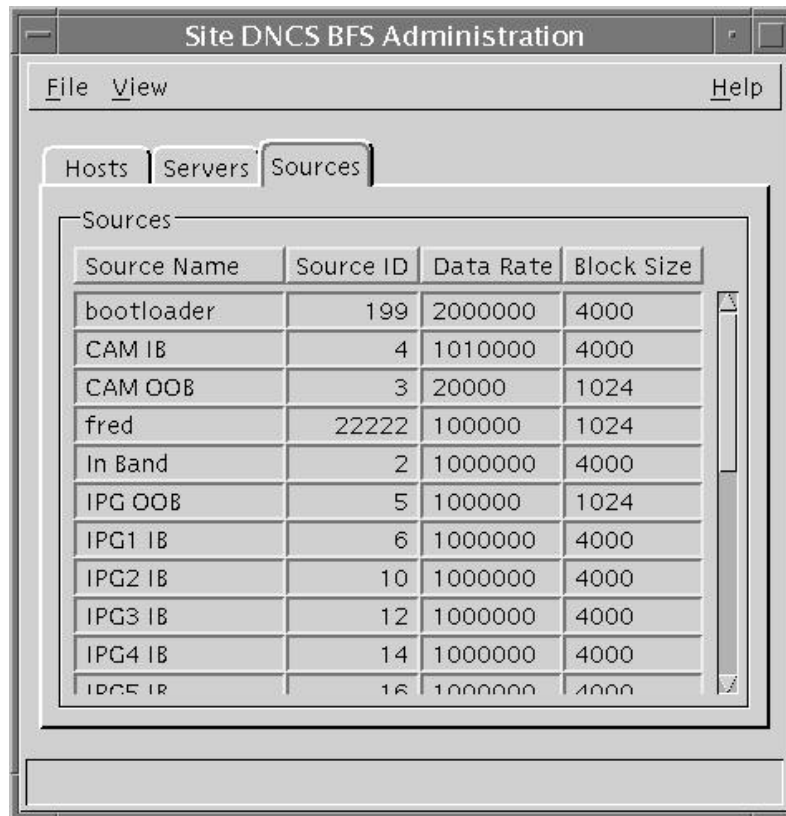


Note: The name of this window will vary, based upon the site you select.

Change the DNCS Data Pump Rates, Continued

4. Click the **Sources** tab.

Result: The window updates to display a list of BFS source names and associated configuration data.



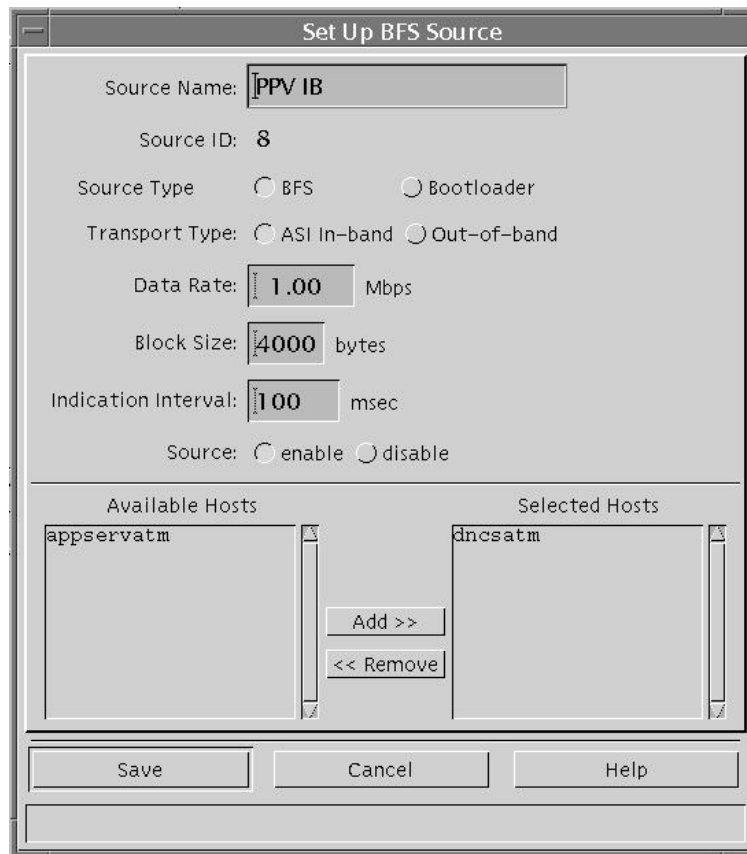
The screenshot shows a window titled "Site DNCS BFS Administration". It has a menu bar with "File", "View", and "Help". Below the menu bar are three tabs: "Hosts", "Servers", and "Sources". The "Sources" tab is selected. Inside the "Sources" tab, there is a table with the following data:

Source Name	Source ID	Data Rate	Block Size
bootloader	199	2000000	4000
CAM IB	4	1010000	4000
CAM OOB	3	20000	1024
fred	22222	100000	1024
In Band	2	1000000	4000
IPG OOB	5	100000	1024
IPG1 IB	6	1000000	4000
IPG2 IB	10	1000000	4000
IPG3 IB	12	1000000	4000
IPG4 IB	14	1000000	4000
IPG5 IB	16	1000000	4000

Change the DNCS Data Pump Rates, Continued

5. Double-click a source.

Result: The Set Up BFS Source window opens.



The image shows a Windows-style dialog box titled "Set Up BFS Source". It contains several input fields and radio buttons. The "Source Name" field is set to "PPV IB", "Source ID" is "8", "Data Rate" is "1.00" Mbps, "Block Size" is "4000" bytes, and "Indication Interval" is "100" msec. The "Source" field has two radio buttons: "enable" (selected) and "disable". Below these fields are two list boxes: "Available Hosts" containing "appservatm" and "Selected Hosts" containing "dnccsatm". Between the list boxes are "Add >>" and "<< Remove" buttons. At the bottom are "Save", "Cancel", and "Help" buttons.

Field	Value
Source Name	PPV IB
Source ID	8
Source Type	☒ BFS ☐ Bootloader
Transport Type	☐ ASI In-band ☐ Out-of-band
Data Rate	1.00 Mbps
Block Size	4000 bytes
Indication Interval	100 msec
Source	☒ enable ☐ disable

Available Hosts	Selected Hosts
appservatm	dnccsatm

Buttons: Add >>, << Remove, Save, Cancel, Help

Note: This example shows the **PPV IB** source.

6. On a sheet of paper, write the current values for the **Source Name**, **Source ID**, **Data Rate**, **Block Size**, **Indication Interval**, and **Source** fields.

Important: Save this sheet of paper; you may need these settings should you ever want to restore your original values.

7. Use the data from the appropriate data rate table, earlier in this chapter, to configure the **Data Rate**, **Block Size**, **Indication Interval**, and **Source** fields with the new recommended data.

Change the DNCS Data Pump Rates, Continued

8. Click **Save**.

Results:

- The Set Up BFS Source window closes.
- The DNCS saves the new settings.
- The BFS automatically repopulates the data carousel. During this period, the carousel may be down for a period of up to two minutes.

Note: The staging process could be affected when you change data rates. The download interruption is brief, as the session restarts in a few minutes.

9. Repeat steps 5 through 8 for the remaining sources on the Site <DNCS> BFS Administration window.
10. After examining and changing (if necessary) the carousel data for each source on the DNCS site, go back to step 3 and repeat this procedure for each of the remote sites supported by the system.
11. After you have changed all the data carousel rates, click **File** and then select **Close** on the Site <Site Name> BFS Administration window.

Configure the System for Open Cable Compliance

Introduction

Will the site you are upgrading support the CableCARD module?

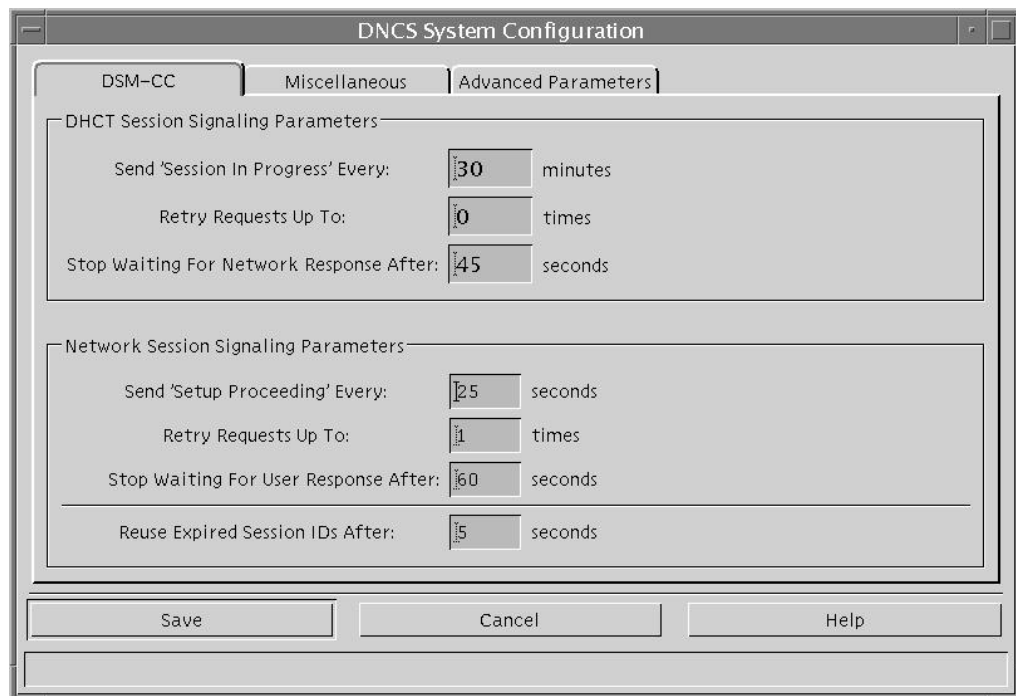
- If **yes**, go to **Configuring for Open Cable Compliance**, next in this section.
- If **no**, skip this section and go to **Delete the POD_Data and sam File Servers**, later in this chapter.

Configuring for Open Cable Compliance

Complete these steps to configure the site you are upgrading for Open Cable Compliance.

1. From the DNCS Administrative Console, select the **DNCS** tab.
2. Select the **System Provisioning** tab.
3. Click **DNCS System**.

Result: The DNCS System Configuration window opens.



The screenshot shows the 'DNCS System Configuration' window with the 'Advanced Parameters' tab selected. The window contains two main sections: 'DHCT Session Signaling Parameters' and 'Network Session Signaling Parameters'. Each section has three input fields for timing and retry settings. At the bottom are 'Save', 'Cancel', and 'Help' buttons.

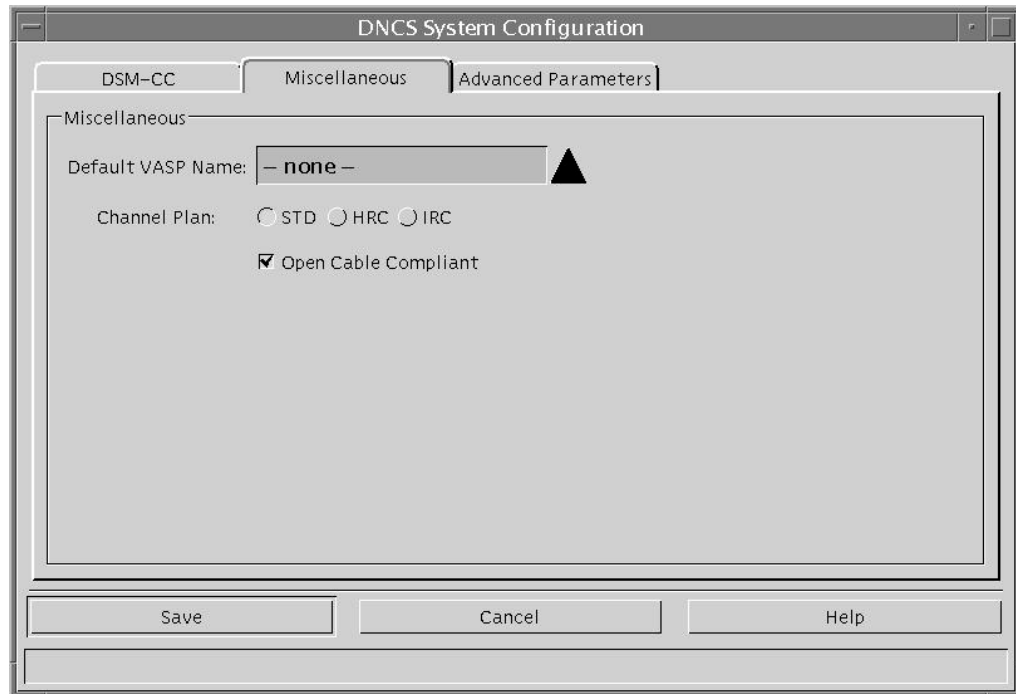
Section	Parameter	Value	Unit
DHCT Session Signaling Parameters	Send 'Session In Progress' Every:	30	minutes
	Retry Requests Up To:	0	times
	Stop Waiting For Network Response After:	45	seconds
Network Session Signaling Parameters	Send 'Setup Proceeding' Every:	25	seconds
	Retry Requests Up To:	1	times
	Stop Waiting For User Response After:	60	seconds
	Reuse Expired Session IDs After:	5	seconds

4. Select the **Miscellaneous** tab.

Configure the System for Open Cable Compliance, Continued

5. Select the **Open Cable Compliant** option.

Result: A check mark appears in the Open Cable Compliant field.



6. Click **Save**.

Result: The Open Cable Compliance Warning message appears.



7. Click **OK** to close the Open Cable Compliance Warning message.
8. Click **Close** on the DNCS System Configuration window.

Result: The DNCS System Configuration window closes.

9. Go to **Stopping and Restarting the SI Manager Process**, next in this section.

Configure the System for Open Cable Compliance, Continued

Stopping and Restarting the SI Manager Process

Note: Stopping and restarting a process is frequently referred to as “bouncing” the process.

Follow these instructions to stop and restart the SI Manager process on the DNCS.

1. If necessary, open an xterm window on the DNCS.

2. Type **dncsControl** and then press **Enter**.

Result: The DnCS Control window opens.

3. Type **2** (Startup/Shutdown Single Element Group) and then press **Enter**.

Result: The system displays a list of all servers and processes running on the DNCS.

4. Type the number associated with the **SiManager** process and then press **Enter**.

Note: The SiManager process may be listed on the same line as the DSM/BSM process.

Result: The system prompts you to enter a target status for the selected process.

5. Type **1** (for stopped) and then press **Enter**.

Result: The DnCS Control window displays a confirmation message.

6. Type **y** (for yes) and then press **Enter**.

Result: The DnCS Control window refreshes.

Note: The DnCS Control window will refresh in real time, or you can press **Enter** to force a refresh.

7. Wait until **Curr Stt** (for current state) indicates **stopped**.

8. Press **x** and then press **Enter**.

Result: The main menu of the DnCS Control window reappears.

9. Type **2** (Startup/Shutdown Single Element Group) and then press **Enter**.

Result: The system displays a list of all servers and processes running on the DNCS.

Configure the System for Open Cable Compliance, Continued

10. Type the number associated with the **SiManager** process and then press **Enter**.

Note: The SiManager process may be listed on the same line as the DSM/BSM process.

Result: The system prompts you to enter a target status for the selected process.

11. Type **2** (for running) and then press **Enter**.

Result: The DnCS Control window displays a confirmation message.

12. Type **y** (for yes) and then press **Enter**.

Result: The DnCS Control window refreshes.

Note: The DnCS Control window will refresh in real time, or you can press **Enter** to force a refresh.

13. Wait until **Curr Stt** (for current state) indicates **running**.
14. Follow the on-screen instructions to return to the Main Menu and to exit the DNCS Control window.

Delete the POD_Data and sam File Servers

Introduction

In this procedure, you will delete the existing POD_Data and sam file servers. Then, when the system rebuilds the servers automatically, the servers will be rebuilt with the proper data.

Stopping the saManager Process

Your first step is to stop the saManager process on the DNCS. Follow these steps to stop the saManager process.

- ❑ 1. On the DNCS Control window, highlight the **saManager** process.
- ❑ 2. Click **Process** and then select **Stop Process**.

Result: In a few minutes, the indicator for the saManager process changes from green to red.

Deleting the POD_Data and sam File Servers

Follow these instructions to delete the POD_Data and sam file servers.

Note: The saManager process on the DNCS should be stopped.

- ❑ 1. From the DNCS Administrative Console, select the Application Interface Modules tab.
- ❑ 2. Click **BFS Client**.

Result: The BFS Client Sites window opens.

- ❑ 3. Double-click the DNCS site.

Result: The Site [DNCS] Broadcast File Server List window opens.

- ❑ 4. Highlight the **POD_Data** file server.

- ❑ 5. Click **File** and then select **Delete**.

Result: A confirmation message appears.

- ❑ 6. Click **Yes** and then press **Enter**.

Result: The system deletes the POD_Data file server.

- ❑ 7. Highlight the **sam** file server.

- ❑ 8. Click **File** and then select **Delete**.

Result: A confirmation message appears.

Delete the POD_Data and sam File Servers, Continued

- ❑ 9. Click **Yes** and then press **Enter**.

Result: The system deletes the sam file server.

- ❑ 10. Close the Site [DNCS] Broadcast File Server List window.

Restarting the saManager Process

After processing each remote site (if applicable), you can now restart the saManager process. Follow these instructions to restart the saManager process on the DNCS.

- ❑ 1. On the DNCS Control window, highlight the **saManager** process.
- ❑ 2. Click **Process** and then select **Start Process**.

Result: In a few minutes, the indicator for the saManager process changes from red to green.

Remove Scripts That Bounce the Pass Through Process

Introduction

In order to correct some issues associated with the Pass Through process on the DNCS, some sites have been regularly bouncing this process through scripts that reside in the crontab file. SR 2.5 and SR 3.5 contain software that corrects issues associated with the Pass Through process. Therefore, after the upgrade, installation engineers should remove any entries in the crontab file that reference scripts that bounce the Pass Through process. The instructions in this section guide you through the process of removing these references.

Note: The scripts that Cisco wrote to bounce the Pass Through process are called **elop.sh** and **bouncePassThru**.

Removing Scripts That Bounce the Pass Through Process

Follow these instructions to remove entries from the crontab file that reference scripts that bounce the Pass Through process.

1. If necessary, open an xterm window on the DNCS.
2. Follow these instructions to check on the presence of scripts in the crontab file that bounce the Pass Through process.
 - a) Type **crontab -l | grep -i elop.ksh** and then press **Enter**.
Result: The system lists the line(s) within the crontab file that contain elop.ksh.
 - b) Type **crontab -l | grep -i bouncePassThru** and then press **Enter**.
Result: The system lists the line(s) within the crontab file that contain bouncePassThru.
3. Did the output of step 2 contain any references to the elop.ksh or the bouncePassThru scripts?
 - If **yes**, go to step 4 to remove those references.
 - If **no**, then go to **Verify SR 2.5 and SR 3.5**, next in this chapter.
Note: You do not have to remove any references to the scripts from the crontab file.
4. Type **crontab -l > /tmp/dncls.crontab** and then press **Enter**.
Result: The system redirects the contents of the crontab into dncls.crontab.
Note: While you can edit the crontab directly, Cisco recommends that you first redirect the contents of the crontab to dncls.crontab so you can recover the original crontab if necessary.

Remove Scripts That Bounce the Pass Through Process, Continued

5. Type **vi /tmp/dnscs.crontab** and then press **Enter**.

Result: The dnscs.crontab file opens for editing using the vi text editor.

6. Remove all lines from the dnscs.crontab file that reference the elop.ksh or bouncePassThru scripts.

7. Save the dnscs.crontab file and close the vi text editor.

8. Type **crontab /tmp/dnscs.crontab** and then press **Enter**.

Result: The just-edited dnscs.crontab file becomes the crontab file.

9. Go to **Verify SR 2.5 and SR 3.5**, next in this chapter.

Verify SR 2.5 and SR 3.5

Verifying the System Upgrade

Complete these steps to verify a successful upgrade to SR 2.5 or SR 3.5.

Pioneer Notes:

- At sites in which Pioneer applications are running on the Application Server, the DNCS Monitor might indicate that the saManager process is not running (red indicator) prior to the upgrade. This is normal for some sites.
- On systems that run Pioneer applications, the method for accessing the diagnostic screens in step 6 will be different than what is described. Consult with the system operator if you need assistance in accessing the diagnostic screens.

1. Examine the dncsLog file in the /var/log directory to see if there are VASP entry errors.
 - If **yes**, complete these steps to rebuild the VASP entries.
 - a) Open the DNCS Administrative Console, select the **System Provisioning** tab, and then click **ATM PVC**.
Result: The ATM PVC Map List window opens.
 - b) Record all of the information from the ATM PVC Map List window on a piece of paper.
 - c) Delete all of the entries from the ATM PVC Map List window.
 - d) Re-enter each entry from the recorded information.
 - If **no**, go to step 2.
2. Type **cd /export/home/dncs/doctor** and press **Enter**.
3. Type **doctor -vn** and press **Enter**.

Result: This command runs the Doctor Report. Review the Doctor Report to ensure that communications exists between all DBDS elements.

Important: It is normal for Pioneer sites to report errors on Application Server checks.

4. Type **df -k** and then press **Enter** to verify that you are using no more than 85 percent of the partition capacity of each disk.

Important: If any disk partition lists a capacity greater than 85 percent, contact Cisco Services before proceeding.

Verify SR 2.5 and SR 3.5, Continued

5. Complete these steps to perform a slow and fast boot on a test DHCT with a working return path (2-way mode):
 - a) Boot a DHCT.
Note: Do not press the power button.
 - b) Access the Power On Self Test and Boot Status Diagnostic Screen on the DHCT and verify that all parameters, except UNcfg, display **Ready**.
Note: UNcfg displays **Broadcast**.
 - c) Wait 5 minutes.
 - d) Press the power button on the DHCT.
Result: The power to the DHCT is turned on.
 - e) Access the Power On Self Test and Boot Status Diagnostic Screen on the DHCT and verify that all parameters, including UNcfg, display **Ready**.
6. Verify that you can ping the DHCT.
7. Verify that the IPG displays accurate and valid data.
8. Tune each available channel on a DHCT to confirm that a full channel lineup is present.
Note: Write down any anomalies you notice while verifying the channel lineup.
9. Verify that you can purchase and view an IPPV event.
10. If you had a point-to-point protocol (PPP) link prior to the upgrade, verify that the PPP link is operational by performing the following steps.
 - a) As root user, type **/etc/ppp/pppup-sa.sh** and then press **Enter**.
Result: The system establishes a PPP session and assigns a dynamic IP address.
 - b) Type **ping 192.168.41.209** and then press **Enter**.
 - c) Verify that the returned data shows that the PPP link is functional.
Note: See Appendix C, **Dialup Remote Access Configuration Procedures**, for further instructions on how to establish a PPP link.
11. Stage at least one new DHCT to the system operator's specifications. After staging the DHCT, verify the following:
 - The DHCT receives 33 or 34 EMMs (Entitlement Management Messages).
 - The DHCT successfully receives its Entitlement Agent.

Set Staging Options

Setting Staging Options

After upgrading to SR 2.5 or SR 3.5, remember to set the DHCT staging options. Complete these steps to set the default staging options for the DHCTs.

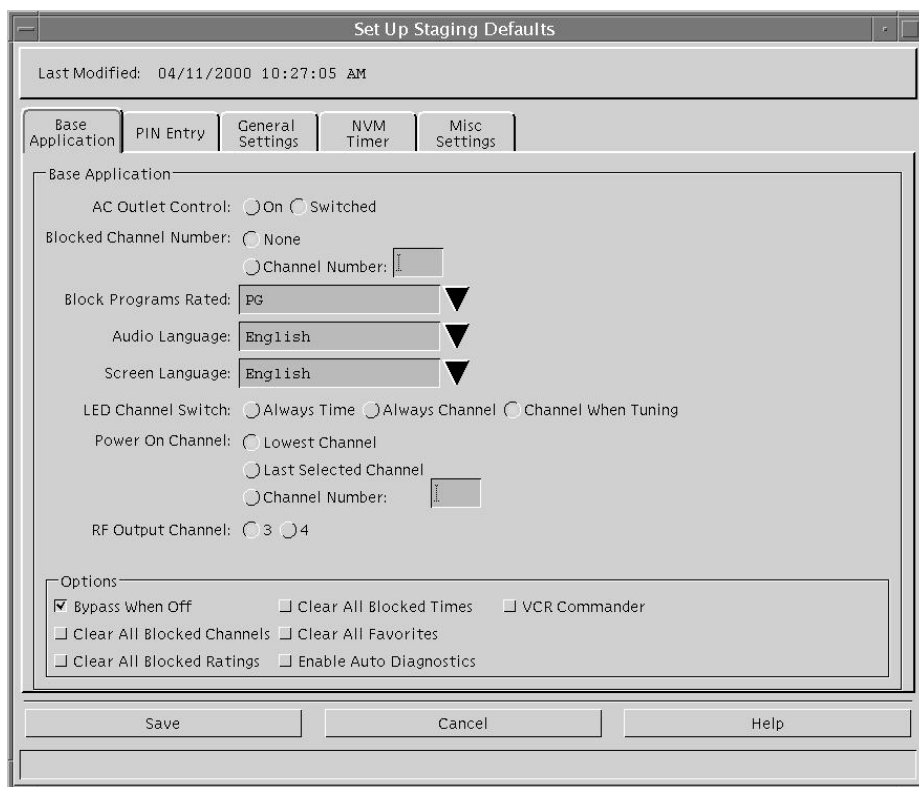
Note: The staging options may have been set in a previous upgrade.

1. From the DNCS Administrative Console, click the **Server Applications** tab.
2. Click **DHCT Config**.

Result: The DHCT Configure Prompt window opens.

3. Click **Staging Defaults** on the DHCT Configure Prompt window.

Result: The Set Up Staging Defaults window opens.



4. Set your DHCT staging options and click **Save** when complete.

Note: Refer to the *Explorer 2100 and 3100 Digital Home Communications Terminal Staging Guide* for details about staging options.

Verify the EAS Network Configuration on the DNCS

Introduction

Occasionally after an upgrade, the `/etc/hosts.equiv` and the `/etc/hosts` files on the DNCS do not contain an entry for the Emergency Alert Controller (EAC) in use on the system. Follow the procedures in this section to inspect each file and to add the entries, if required.

Inspecting the `/etc/hosts` File on the DNCS

Follow these instructions to inspect the `/etc/hosts.equiv` file on the DNCS and to add the missing entry, if required.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd /etc** and then press **Enter**.

Result: The `/etc` directory becomes the working directory.

3. Type **more hosts** and then press **Enter**.

Result: The hosts file opens for viewing using the UNIX *more* utility.

4. Inspect the hosts file and look for an entry that contains an IP address, followed by **eac**.

Example: `172.18.28.173 eac`

Verify the EAS Network Configuration on the DNCS, Continued

5. Does the hosts file contain an entry as described in step 4?
 - If **yes**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Go to **Inspecting the /etc/hosts.equiv File on the DNCS**, next in this section.
 - If **no**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Obtain the IP address for the EAC.

Note: You can obtain the IP address for the EAC from the `/etc/hosts` file on the Application Server or from the Network Administrator of the site you are upgrading.
 - c) Type **vi hosts** and then press **Enter**.

Result: The hosts file opens for editing using the UNIX vi text editor.
 - d) Append the IP address and **eac** to the hosts file.

Important: Use the following format:
[IP address] eac
Example: 172.18.28.173 eac
 - e) Save and close the `/etc/hosts` file.
 - f) Go to **Inspecting the /etc/hosts.equiv File on the DNCS**, next in this section.

Inspecting the /etc/hosts.equiv File on the DNCS

Follow these instructions to inspect the `/etc/hosts.equiv` file on the DNCS and to add the missing entry, if required.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd /etc** and then press **Enter**.

Result: The `/etc` directory becomes the working directory.
3. Type **more hosts.equiv** and then press **Enter**.

Result: The `hosts.equiv` file opens for viewing using the UNIX *more* utility.

Verify the EAS Network Configuration on the DNCS, Continued

4. Inspect the `hosts.equiv` file and look for an entry that contains **eac easftp**.
5. Does the `hosts.equiv` file contain an entry as described in step 4?
 - If **yes**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Go to **Inspect the DNCS for the atm_addr Environment Variable**, next in this chapter.
 - If **no**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Type **vi hosts.equiv** and then press **Enter**.

Result: The `hosts.equiv` file opens for editing using the UNIX vi text editor.
 - c) Append **eac easftp** to the `hosts.equiv` file.
 - d) Save and close the `/etc/hosts.equiv` file.
 - e) Go to **Inspect the DNCS for the atm_addr Environment Variable**, next in this chapter.

Inspect the DNCS for the atm_addr Environment Variable

Introduction

After an upgrade, you need to inspect the `.profile` and `dncsSetup` files on the DNCS to determine how they reference the `atm_addr` environment variable. The following treatment of the `atm_addr` environment variable is required following an upgrade:

- The `.profile` file must no longer contain a reference to the `atm_addr` environment variable. If the reference is there, you must either transform that line into a comment or delete the line.
- The `dncsSetup` file must contain the following entry: **`atm_addr=dncsatm`**. If the **`atm_addr=dncseth`** entry exists in the `dncsSetup` file after an upgrade, you must edit it so that it becomes **`atm_addr=dncsatm`**.

Inspecting the .profile File

Follow these instructions to inspect the `.profile` on the DNCS for the presence of the `atm_addr` variable.

1. If necessary, open an xterm window on the DNCS.
2. Type **`cd`** and then press **Enter**.

Result: The home directory, `/export/home/dncs`, becomes the working directory.

3. Type **`more .profile`** and then press **Enter**.

Result: The `.profile` opens for viewing using the UNIX *more* utility.

4. Examine the `.profile` file and look for an entry that contains **`atm_addr`**.

Example: `export atm_addr=dncseth`

Inspect the DNCS for the atm_addr Environment Variable, Continued

5. Does the .profile file contain an entry as described in step 4?
Important: If the entry is “commented out,” you should answer **no**.
 - If **yes**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Type **vi .profile** and then press **Enter**.
Result: The .profile file opens using the UNIX vi text editor.
 - c) Insert the “#” character at the beginning of the line that contains atm_addr.
Result: The line becomes a comment.
 - d) Save and close the .profile file.
 - e) Go to **Inspecting the dncsSetup File**, next in this section.
 - If **no**, follow these instructions.
 - a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
 - b) Go to **Inspecting the dncsSetup File**, next in this section.

Inspect the DNCS for the atm_addr Environment Variable, Continued

Inspecting the dncsSetup File

Follow these instructions to inspect the dncsSetup on the DNCS for the presence of the atm_addr variable.

1. If necessary, open an xterm window on the DNCS.

2. Type **cd /dvs/dncs/bin** and then press **Enter**.

Result: The /dvs/dncs/bin directory becomes the working directory.

3. Type **more dncsSetup** and then press **Enter**.

Result: The dncsSetup file opens for viewing using the UNIX *more* utility.

4. Examine the dncsSetup file and look for the following entry:

atm_addr=dncsatm

5. Does the dncsSetup file contain the entry as described in step 4?

- If **yes**, follow these instructions.

- a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
- b) Go to **Check for Stranded Audio Links**, next in this chapter.

- If **no**, follow these instructions.

- a) Type the **Ctrl** and **c** keys simultaneously to exit the *more* utility.
- b) Type **vi dncsSetup** and then press **Enter**.

Result: The dncsSetup file opens using the UNIX vi text editor.

- c) Edit the dncsSetup file so that it contains an **atm_addr=dncsatm** entry.

Note: The file may contain an **atm_addr=dnscseth** entry. If so, change it so that it reads **atm_addr=dncsatm**. You must not have an **atm_addr=dnscseth** entry in the dncsSetup file after the upgrade to SR 2.1 or later.

- d) Save and close the dncsSetup file.
- e) Go to **Check for Stranded Audio Links**, next in this chapter.

Check for Stranded Audio Links

Introduction

Audio files used in conjunction with the EAS system are defined with an expiration time and date. Sometimes, when the MMM Server process of the DNCS is bounced before an audio file expires, a link to that audio file remains on the DNCS. This audio link is said to be “stranded.” After an upgrade, engineers need to examine the dncsLog file for the presence of a stranded audio link, and then delete that link, if necessary.

Checking for Stranded Audio Links

Follow these instructions to check the DNCS for a stranded audio link and then to delete that stranded link if one is found.

1. If necessary, open an xterm window on the DNCS.
2. Type **cd /var/log** and then press **Enter**.

Result: The /var/log directory becomes the working directory.

3. Type **grep -i aiff dncsLog** and then press **Enter**.

Result: The system checks the dncsLog file for the presence of **aiff**.

Note: The file extension of audio files used by the MMM Server is **aiff**.

4. Did the grep operation from step 3 return a line similar to **[Date Time] dncs bfsServer BFSDir::_checkLinkedFiles() Error, can't find file /MMMAud/a1847750.aiff, marking as inaccessible?**
 - If **yes**, go to **Deleting the Stranded Audio Links**, next in this section.
 - If **no**, go to **Check the EAS Configuration**, later in this chapter; you have no stranded audio links.

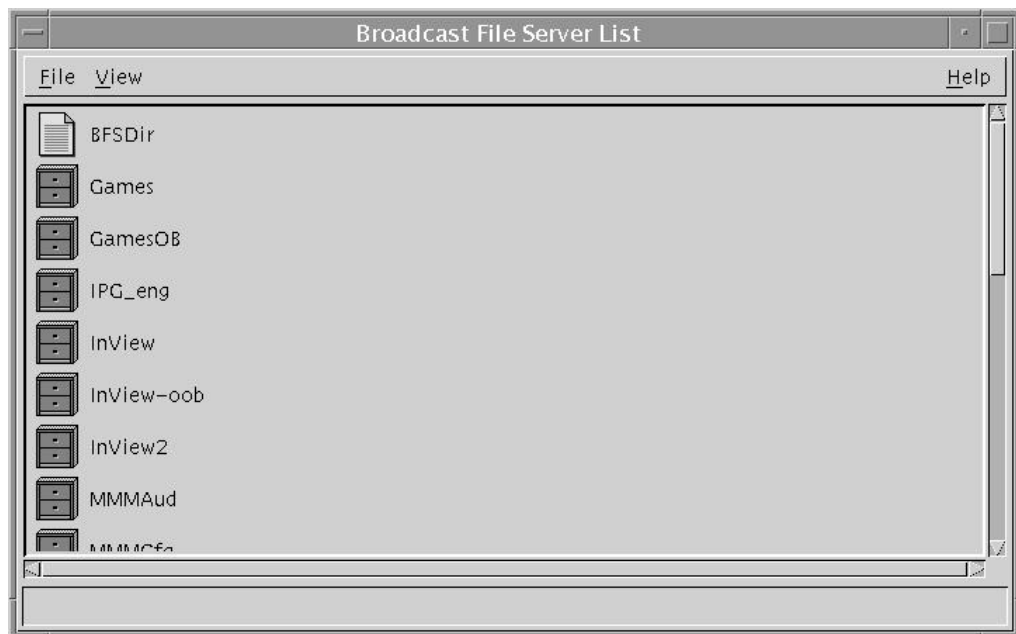
Check for Stranded Audio Links, Continued

Deleting the Stranded Audio Links

Follow these instructions to delete the stranded audio links from the DNCS.

1. From the DNCS Administrative Console, select the **Application Interface Modules** tab.
2. Click **BFS Client**.

Result: The Broadcast File Server List window opens.



Check for Stranded Audio Links, Continued

3. Scroll down the window and double-click the **MMMAud** icon.

Note: The icon is in the form of a filing cabinet.

Result: The filing cabinet icon “opens” to display the individual files within.



4. Highlight the individual file that corresponds with the stranded audio link you identified in the **Checking for Stranded Audio Links** procedure, earlier in this section.
5. Click **File** and then select **Delete**.
6. Click **Yes**.

Result: A confirmation message appears.

Result: The system deletes the selected file.

Notes:

- In some cases, you may have to repeat steps 4 through 6 several times before the system finally deletes the file.
 - If, after several attempts, the system does not delete the file, repeat steps 4 through 6, but delete the entire MMMAud filing cabinet, instead.
7. Close the Broadcast File Server List window.
 8. Go to **Check the EAS Configuration**, next in this chapter.

Check the EAS Configuration

Checking the EAS Configuration

After installing the SR 2.5 and SR 3.5 software, verify that your EAS equipment is still properly configured in the DNCS. Complete all of the procedures in Chapter 5, **Testing the EAS**, of the *Configuring and Troubleshooting the Digital Emergency Alert System, For Use With All System Releases* guide.

After completing the procedures in Chapter 5, **Testing the EAS**, of the *Configuring and Troubleshooting the Digital Emergency Alert System, For Use With All System Releases* guide, verify that you can generate an EAS message for the Emergency Alert Controller (EAC), itself.

Enable Optional Features

Introduction

SR 2.5 and SR 3.5 includes several optional features that system operators can elect to enable on their systems. These optional features are briefly described in the following list:

- EAS Filtering – Enables system operators to filter Emergency Alert System (EAS) messages by hub.
- Enhanced Interactive Session Performance – Improves the efficiency with which the DNCS processes video-on-demand (VOD) sessions.
- Session-Based Encryption – Activates encryption for session-based VOD.
- Direct ASI – permits the use of the ASI card for transmitting inband data.

Run the licenseGen Software

You can enable these optional features by running a special license generating program called licenseGen. If the site you have upgraded to SR 2.5 or SR 3.5 is authorized for any of the optional features, refer to *Proprietary Procedures for Enabling Optional Features for the DBDS*, part number 4000631. This technical bulletin describes how to load and run the licenseGen software. Cisco requires that you remove the licenseGen software from the system after enabling the appropriate optional features. Instructions for removing the licenseGen software are also contained in the technical bulletin.

Important: If you have previously enabled these optional features as part of an upgrade, authorization for the optional features is retained during an upgrade to SR 2.5 or SR 3.5. You do not need to re-enable the features.

Install and Configure Direct ASI

If the site you are upgrading will support Direct ASI, refer to the installation and configuration instructions in Appendix I.

Set the Clock on the TED (Optional)

Introduction

There is no requirement that the clocks on the DNCS and the TED match exactly. The intent of this procedure is to synchronize the clocks so that log activity can be easily compared.

Setting the Clock on the TED

Complete these steps to set the clock on the TED.

1. From an xterm window on the DNCS, type **su** and then press **Enter**.
2. Type the root password and then press **Enter**.
3. Type **date** and then press **Enter**.

Result: The system date and time appear.

4. Write down the system date and time in the space provided.

System Date: _____

System Time: _____

5. Type **rsh -l root dncsted** and press **Enter**.

Note: The "l" is a lowercase L.

6. Type in the root password and press **Enter**.

Result: You are logged into the TED as a root user.

7. Type **date** and press **Enter**.

Result: The TED date and time appear.

8. Compare the time results from step 4 with step 7. Do the time results match the time zone where the equipment is physically located?

- If **yes**, go to step 11.
- If **no**, go to step 9.

Set the Clock on the TED (Optional), Continued

9. At the prompt, type **date [mmddhhmm]** and press **Enter**.

Example: `date 07132316`

Notes:

- The format for the date command is:
 - mm – month
 - dd – day
 - hh – hours in 24 hour format
 - mm – minutes
- The command can be modified to include the year, the seconds, or both the year and seconds.

Examples:

- The `date 073123162005` includes the year.
- The `date 07132316.30` includes the seconds.
- The `date 071323162005.30` includes the year and seconds.

10. Type **date** again and press **Enter**.

Result: Verify that the correct time now appears.

11. Type `/sbin/clock -r` and press **Enter**.

Result: The time on the hardware clock appears.

12. Type `/sbin/clock -w` and press **Enter**.

Result: This command writes the system time to the TED hardware clock.

13. Type `/sbin/clock -r` and press **Enter**.

Result: Verify the time is synchronized between the system and the TED hardware clock.

14. Type **exit** and press **Enter**.

Install the NMI Software

Installing the NMI Software

If you supported the Alarm Manager product prior to the upgrade, or plan to support Alarm Manager after the upgrade, you need to install or re-install the Network Management Interface (NMI) software now.

Note: The UniPack upgrade to SR 2.5 and SR 3.5 overwrote the NMI software at sites that supported the Alarm Manager product prior to the upgrade.

Refer to Chapter 2 of the *DBDS Alarm Manager 1.0 Installation Instructions* for instructions on installing the NMI software.

Disable the Orbix Daemon on the Application Server

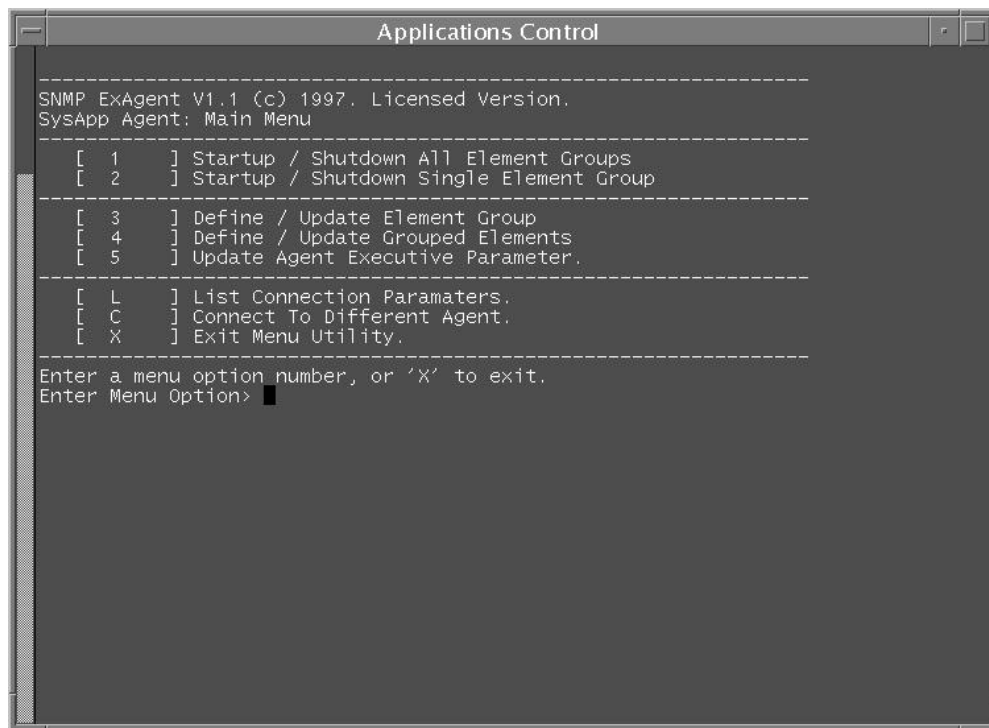
Disabling the Orbix Daemon

Because the functionality of the EAS has been moved from the Application Server to the DNCS, you no longer need the Orbix daemon on the Application Server. Follow these instructions to disable the Orbix daemon on the Cisco Application Server.

Note: You should be logged on to the Application Server as dncs user to complete this procedure.

- ❑ 1. If necessary, open an xterm window on the Application Server.
- ❑ 2. Type **appControl** and then press **Enter**.

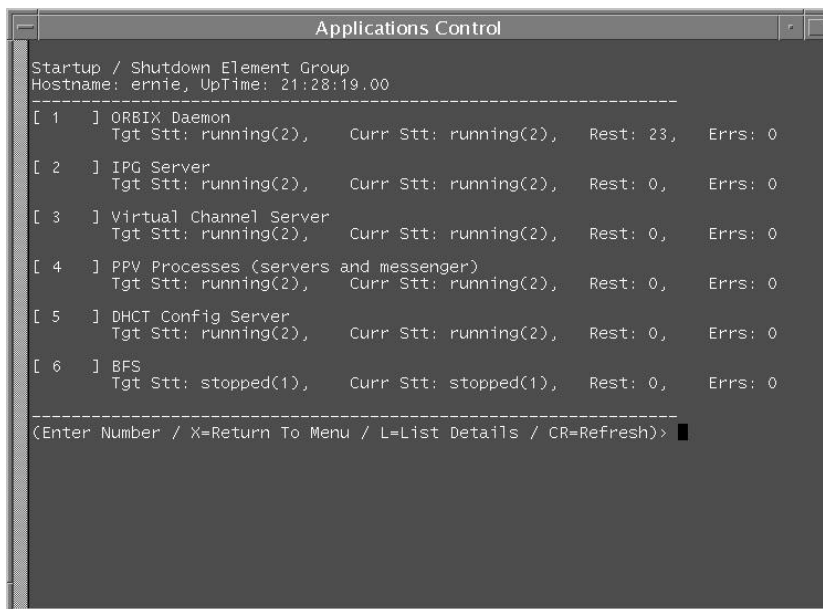
Result: The Applications Control window opens.



Disable the Orbix Daemon on the Application Server, Continued

- ❑ 3. Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**.

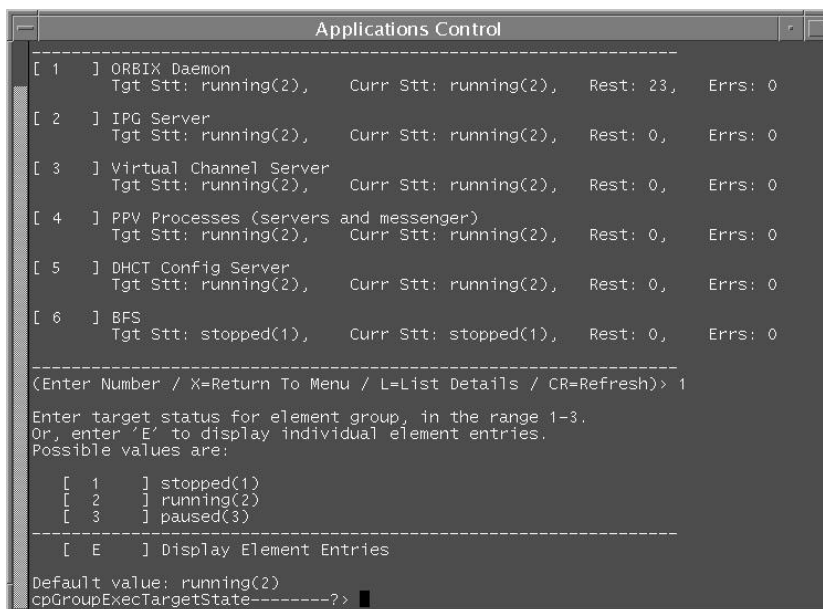
Result: The window updates to show all the server and process groups on the Application Server.



```
Applications Control
-----
Startup / Shutdown Element Group
Hostname: ernie, UpTime: 21:28:19.00
-----
[ 1 ] ORBIX Daemon
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 23,   Errs: 0
[ 2 ] IPG Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 3 ] Virtual Channel Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 4 ] PPV Processes (servers and messenger)
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 5 ] DHCT Config Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 6 ] BFS
      Tgt Stt: stopped(1),   Curr Stt: stopped(1),   Rest: 0,    Errs: 0
-----
(Enter Number / X=Return To Menu / L=List Details / CR=Refresh)>
```

- ❑ 4. Type **1** (for ORBIX Daemon) and then press **Enter**.

Result: A message appears that prompts you to enter the target status for the selected group.



```
Applications Control
-----
[ 1 ] ORBIX Daemon
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 23,   Errs: 0
[ 2 ] IPG Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 3 ] Virtual Channel Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 4 ] PPV Processes (servers and messenger)
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 5 ] DHCT Config Server
      Tgt Stt: running(2),   Curr Stt: running(2),   Rest: 0,    Errs: 0
[ 6 ] BFS
      Tgt Stt: stopped(1),   Curr Stt: stopped(1),   Rest: 0,    Errs: 0
-----
(Enter Number / X=Return To Menu / L=List Details / CR=Refresh)> 1
Enter target status for element group, in the range 1-3.
Or, enter 'E' to display individual element entries.
Possible values are:
      [ 1 ] stopped(1)
      [ 2 ] running(2)
      [ 3 ] paused(3)
-----
      [ E ] Display Element Entries
-----
Default value: running(2)
cpGroupExecTargetState-----?>
```

Disable the Orbix Daemon on the Application Server, Continued

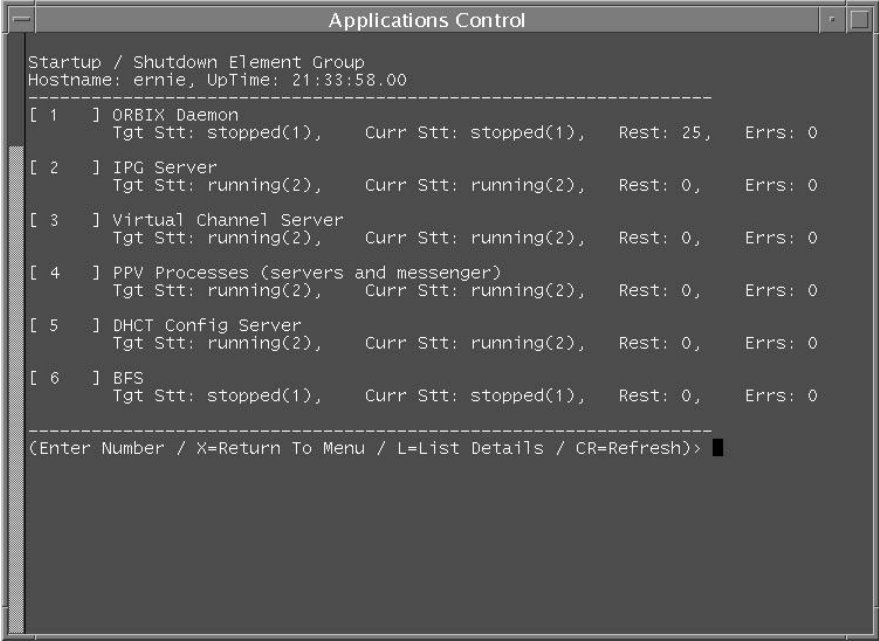
- ❑ 5. Type **1** (for stopped) and then press **Enter**.

Result: A confirmation message appears.

- ❑ 6. Type **y** (for yes) and then press **Enter**.

Result: The window updates to display the status of the Application Server server and process groups.

- ❑ 7. Wait until the current status (Curr Stt) of ORBIX Daemon is **stopped**.



```
Applications Control
-----
Startup / Shutdown Element Group
Hostname: ernie, UpTime: 21:33:58.00
-----
[ 1 ] ORBIX Daemon
      Tgt Stt: stopped(1),    Curr Stt: stopped(1),    Rest: 25,    Errs: 0
[ 2 ] IPG Server
      Tgt Stt: running(2),    Curr Stt: running(2),    Rest: 0,    Errs: 0
[ 3 ] Virtual Channel Server
      Tgt Stt: running(2),    Curr Stt: running(2),    Rest: 0,    Errs: 0
[ 4 ] PPV Processes (servers and messenger)
      Tgt Stt: running(2),    Curr Stt: running(2),    Rest: 0,    Errs: 0
[ 5 ] DHCT Config Server
      Tgt Stt: running(2),    Curr Stt: running(2),    Rest: 0,    Errs: 0
[ 6 ] BFS
      Tgt Stt: stopped(1),    Curr Stt: stopped(1),    Rest: 0,    Errs: 0
-----
(Enter Number / X=Return To Menu / L=List Details / CR=Refresh)>
```

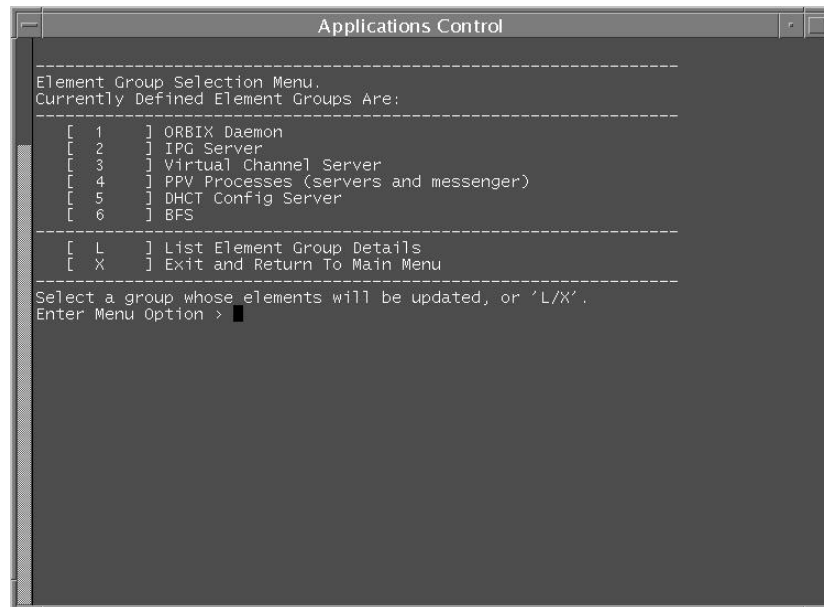
- ❑ 8. Type **x** and then press **Enter** to return to the main menu of the Applications Control window.

Note: You may have to press x more than once to return to the main menu.

Disable the Orbix Daemon on the Application Server, Continued

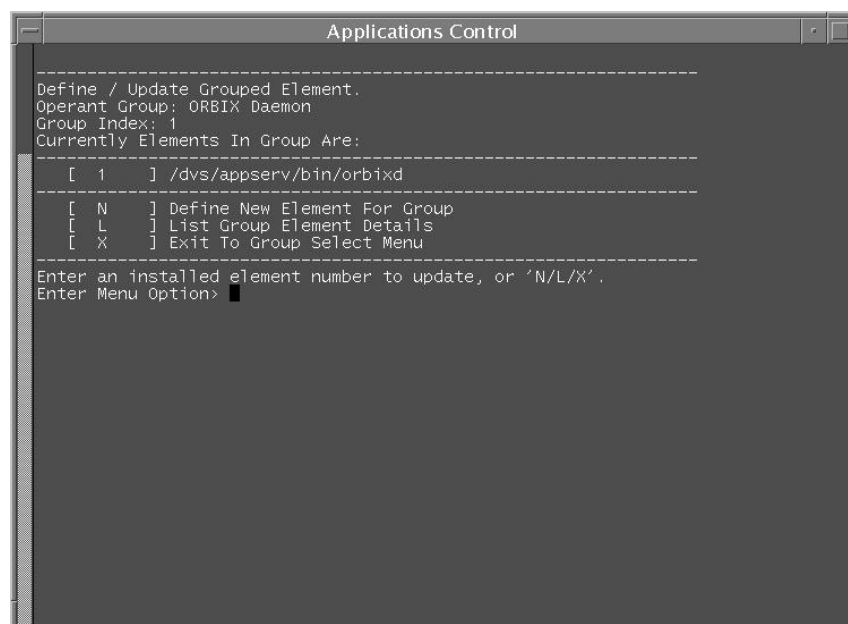
- ❑ 9. From the main menu of the Applications Control window, type **4** (for Define / Update Grouped Elements) and then press **Enter**.

Result: The window updates to display all element groups.



- ❑ 10. Type **1** (for ORBIX Daemon) and then press **Enter**.

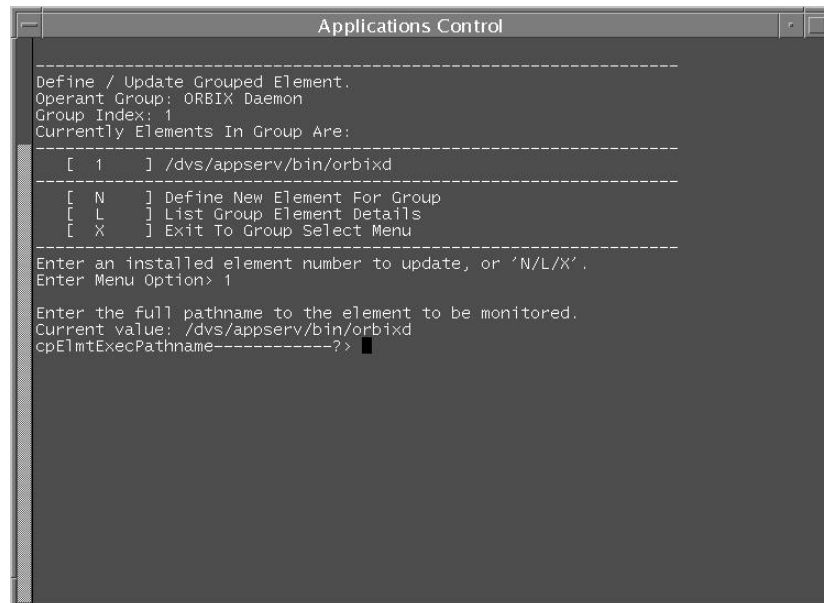
Result: The window displays a message that prompts you to select the number associated with an installed element.



Disable the Orbix Daemon on the Application Server, Continued

- ❑ 11. Type **1** (for /dvs/appserv/bin/orbixd) and then press **Enter**.

Result: A message appears that prompts you to enter the full pathname to the Orbix element.



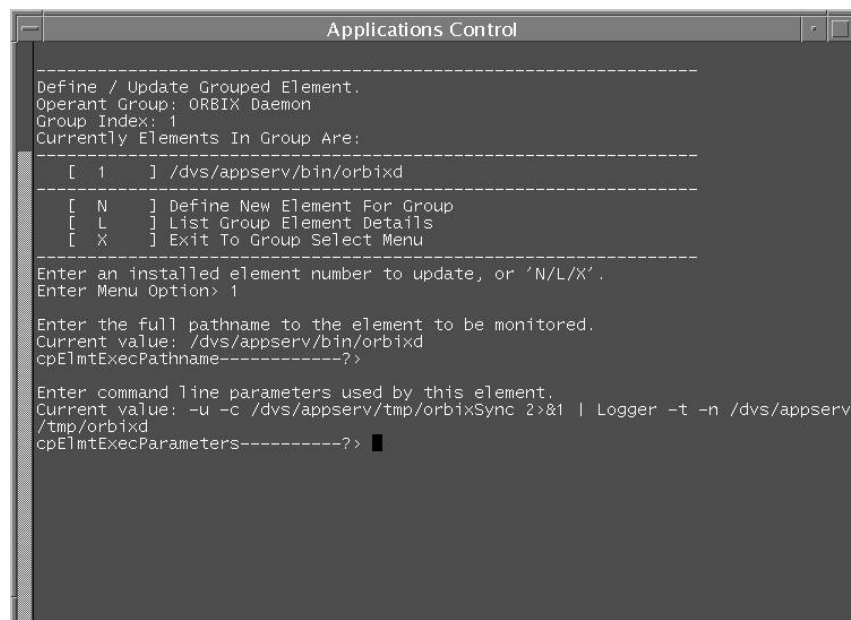
```
Applications Control

-----
Define / Update Grouped Element.
Operant Group: ORBIX Daemon
Group Index: 1
Currently Elements In Group Are:
-----
[ 1 ] /dvs/appserv/bin/orbixd
-----
[ N ] Define New Element For Group
[ L ] List Group Element Details
[ X ] Exit To Group Select Menu
-----
Enter an installed element number to update, or 'N/L/X'.
Enter Menu Option> 1

Enter the full pathname to the element to be monitored.
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>
```

- ❑ 12. Press **Enter** to accept the default value.

Result: A message appears that prompts you to enter the command line parameters used by the Orbix element.



```
Applications Control

-----
Define / Update Grouped Element.
Operant Group: ORBIX Daemon
Group Index: 1
Currently Elements In Group Are:
-----
[ 1 ] /dvs/appserv/bin/orbixd
-----
[ N ] Define New Element For Group
[ L ] List Group Element Details
[ X ] Exit To Group Select Menu
-----
Enter an installed element number to update, or 'N/L/X'.
Enter Menu Option> 1

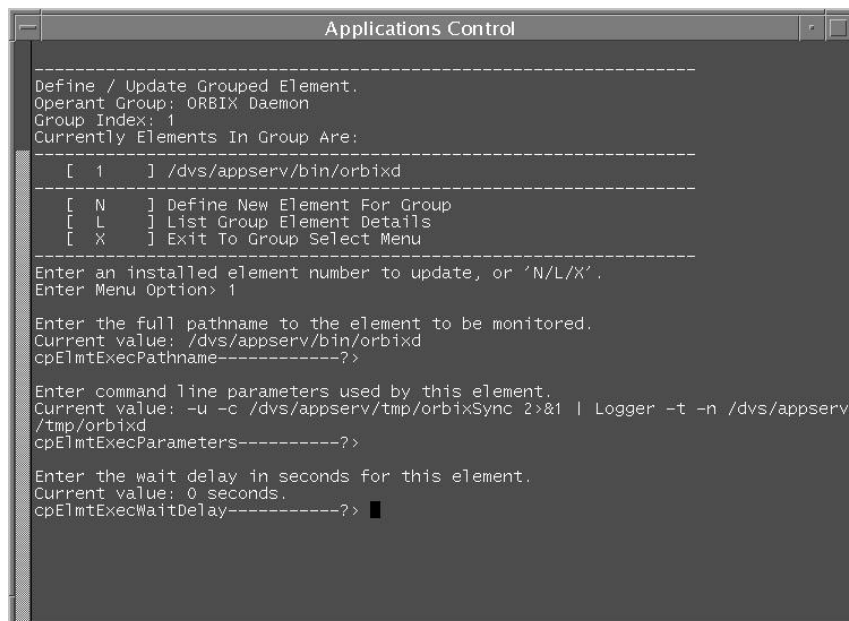
Enter the full pathname to the element to be monitored.
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>

Enter command line parameters used by this element.
Current value: -u -c /dvs/appserv/tmp/orbixSync 2>&1 | Logger -t -n /dvs/appserv
/tmp/orbixd
cpElmtExecParameters-----?>
```

Disable the Orbix Daemon on the Application Server, Continued

- ❑ 13. Press **Enter** to accept the default value.

Result: A message appears that prompts you to set the wait delay for the Orbix element.



```
Applications Control
-----
Define / Update Grouped Element.
Operant Group: ORBIX Daemon
Group Index: 1
Currently Elements In Group Are:
-----
[ 1 ] /dvs/appserv/bin/orbixd
-----
[ N ] Define New Element For Group
[ L ] List Group Element Details
[ X ] Exit To Group Select Menu
-----
Enter an installed element number to update, or 'N/L/X'.
Enter Menu Option> 1

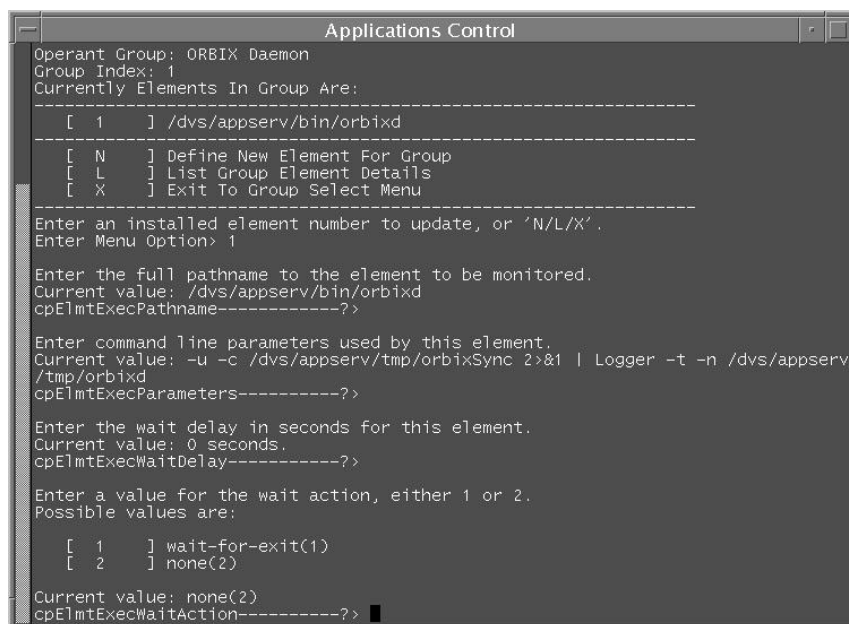
Enter the full pathname to the element to be monitored.
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>

Enter command line parameters used by this element.
Current value: -u -c /dvs/appserv/tmp/orbixSync 2>&1 | Logger -t -n /dvs/appserv
/tmp/orbixd
cpElmtExecParameters-----?>

Enter the wait delay in seconds for this element.
Current value: 0 seconds.
cpElmtExecWaitDelay-----?> █
```

- ❑ 14. Press **Enter** to accept the default value.

Result: A message appears that prompts you to set the wait action for the Orbix element.



```
Applications Control
-----
Operant Group: ORBIX Daemon
Group Index: 1
Currently Elements In Group Are:
-----
[ 1 ] /dvs/appserv/bin/orbixd
-----
[ N ] Define New Element For Group
[ L ] List Group Element Details
[ X ] Exit To Group Select Menu
-----
Enter an installed element number to update, or 'N/L/X'.
Enter Menu Option> 1

Enter the full pathname to the element to be monitored.
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>

Enter command line parameters used by this element.
Current value: -u -c /dvs/appserv/tmp/orbixSync 2>&1 | Logger -t -n /dvs/appserv
/tmp/orbixd
cpElmtExecParameters-----?>

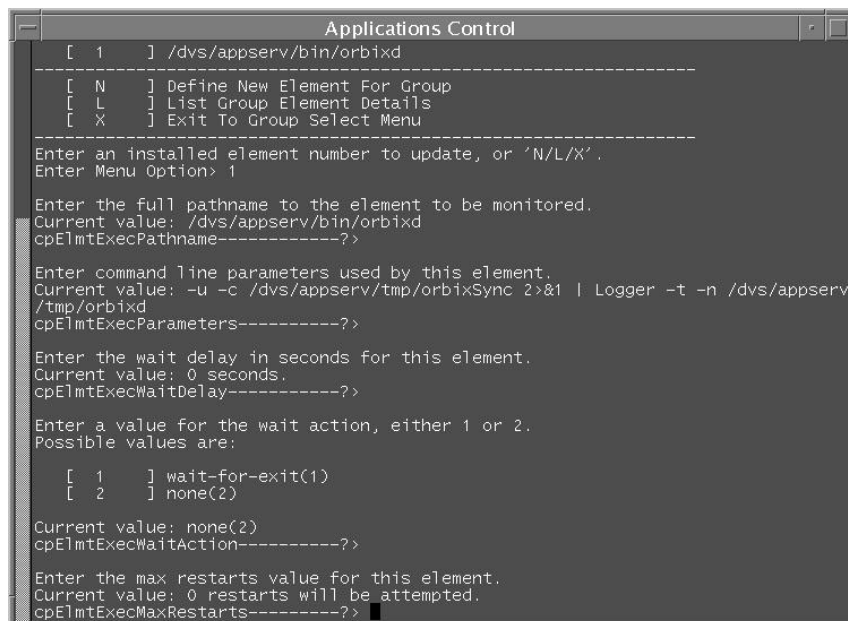
Enter the wait delay in seconds for this element.
Current value: 0 seconds.
cpElmtExecWaitDelay-----?>

Enter a value for the wait action, either 1 or 2.
Possible values are:
[ 1 ] wait-for-exit(1)
[ 2 ] none(2)
Current value: none(2)
cpElmtExecWaitAction-----?> █
```

Disable the Orbix Daemon on the Application Server, Continued

- ❑ 15. Press **Enter** to accept the default value.

Result: A message appears that prompts you to set the maximum restarts value for the Orbix element.



```
Applications Control
[ 1 ] /dvs/appserv/bin/orbixd
-----
[ N ] Define New Element For Group
[ L ] List Group Element Details
[ X ] Exit To Group Select Menu
-----
Enter an installed element number to update, or 'N/L/X'.
Enter Menu Option> 1

Enter the full pathname to the element to be monitored.
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>

Enter command line parameters used by this element.
Current value: -u -c /dvs/appserv/tmp/orbixSync 2>&1 | Logger -t -n /dvs/appserv
/tmp/orbixd
cpElmtExecParameters-----?>

Enter the wait delay in seconds for this element.
Current value: 0 seconds.
cpElmtExecWaitDelay-----?>

Enter a value for the wait action, either 1 or 2.
Possible values are:

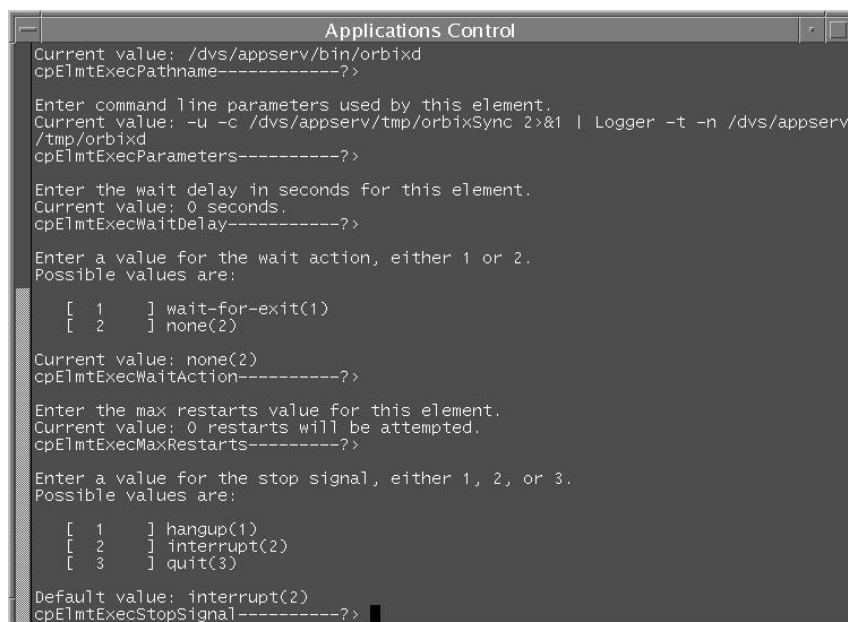
[ 1 ] wait-for-exit(1)
[ 2 ] none(2)

Current value: none(2)
cpElmtExecWaitAction-----?>

Enter the max restarts value for this element.
Current value: 0 restarts will be attempted.
cpElmtExecMaxRestarts-----?>
```

- ❑ 16. Press **Enter** to accept the default value.

Result: A message appears that prompts you to set the value for the stop signal for the Orbix element.



```
Applications Control
Current value: /dvs/appserv/bin/orbixd
cpElmtExecPathname-----?>

Enter command line parameters used by this element.
Current value: -u -c /dvs/appserv/tmp/orbixSync 2>&1 | Logger -t -n /dvs/appserv
/tmp/orbixd
cpElmtExecParameters-----?>

Enter the wait delay in seconds for this element.
Current value: 0 seconds.
cpElmtExecWaitDelay-----?>

Enter a value for the wait action, either 1 or 2.
Possible values are:

[ 1 ] wait-for-exit(1)
[ 2 ] none(2)

Current value: none(2)
cpElmtExecWaitAction-----?>

Enter the max restarts value for this element.
Current value: 0 restarts will be attempted.
cpElmtExecMaxRestarts-----?>

Enter a value for the stop signal, either 1, 2, or 3.
Possible values are:

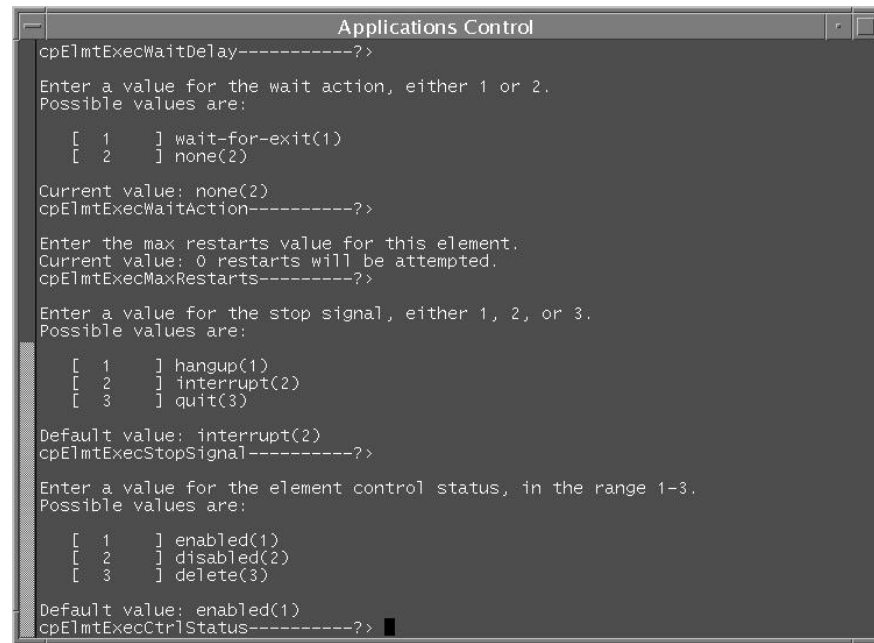
[ 1 ] hangup(1)
[ 2 ] interrupt(2)
[ 3 ] quit(3)

Default value: interrupt(2)
cpElmtExecStopSignal-----?>
```

Disable the Orbix Daemon on the Application Server, Continued

- ❑ 17. Press **Enter** to accept the default value.

Result: A message appears that prompts you to set the control status for the Orbix element.



```
Applications Control
cpElmtExecWaitDelay-----?>
Enter a value for the wait action, either 1 or 2.
Possible values are:
[ 1 ] wait-for-exit(1)
[ 2 ] none(2)
Current value: none(2)
cpElmtExecWaitAction-----?>
Enter the max restarts value for this element.
Current value: 0 restarts will be attempted.
cpElmtExecMaxRestarts-----?>
Enter a value for the stop signal, either 1, 2, or 3.
Possible values are:
[ 1 ] hangup(1)
[ 2 ] interrupt(2)
[ 3 ] quit(3)
Default value: interrupt(2)
cpElmtExecStopSignal-----?>
Enter a value for the element control status, in the range 1-3.
Possible values are:
[ 1 ] enabled(1)
[ 2 ] disabled(2)
[ 3 ] delete(3)
Default value: enabled(1)
cpElmtExecCtrlStatus-----?> █
```

- ❑ 18. Type **2** (for disabled) and then press **Enter**.

Result: A confirmation message appears.

- ❑ 19. Type **y** (for yes) and then press **Enter**.

Result: The message **Element definition was modified** appears.

- ❑ 20. Follow the onscreen instructions to exit from the appControl utility.

Set Up the RNCS

Introduction

If the site you are upgrading is licensed to support the Regional Network Control System (RNCS), then follow the directions in this section.

Enable the RNCS Feature

Run the licenseGen software in order to enable the RNCS feature of the DNCS. Refer to the technical bulletin *Proprietary Procedures for Enabling Optional Features on the DBDS*, part number 4000631, for instructions on how to enable the RNCS feature.

Note: The interface of the licenseGen software refers to the RNCS as the Distributed DNCS.

Register RNCS With the DNCS

After using the licenseGen software to enable the Distributed DNCS feature on the DNCS, your next step is to register each RNCS with the DNCS. Refer to Appendix A, **The siteCmd Program**, in *SR 2.5 and SR 3.5 RNCS Upgrade Installation Instructions*, part number 4003191, for an overview of the siteCmd program and for specific instructions on registering the RNCS.

Provision the RNCS

After using the siteCmd program to register the RNCS with the DNCS, use the on-line help of the DNCS to provision the RNCS.

Note: Provisioning the RNCS refers to adding components, such as QAMs, QPSKs, MQAMs, as well as configuring the parameters on the BFS Administration GUI.

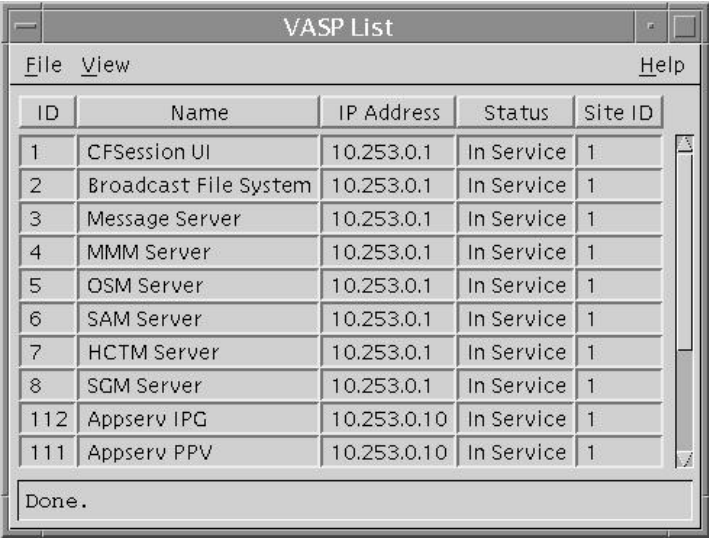
Set Up the RNCS, Continued

Create a VASP Entry on the DNCS

After provisioning each remote site that your system supports, you need to create a VASP entry on the DNCS for each of those sites. Follow these instructions to create the VASP entry.

- ❑ 1. From the DNCS Administrative Console, select the **Element Provisioning** tab and then click **VASP**.

Result: The VASP List window opens.



The screenshot shows a window titled "VASP List" with a menu bar (File, View, Help) and a table of VASP entries. The table has five columns: ID, Name, IP Address, Status, and Site ID. The entries are as follows:

ID	Name	IP Address	Status	Site ID
1	CFSession UI	10.253.0.1	In Service	1
2	Broadcast File System	10.253.0.1	In Service	1
3	Message Server	10.253.0.1	In Service	1
4	MMM Server	10.253.0.1	In Service	1
5	OSM Server	10.253.0.1	In Service	1
6	SAM Server	10.253.0.1	In Service	1
7	HCTM Server	10.253.0.1	In Service	1
8	SGM Server	10.253.0.1	In Service	1
112	Appserv IPG	10.253.0.10	In Service	1
111	Appserv PPV	10.253.0.10	In Service	1

At the bottom of the window, there is a status bar that says "Done."

- ❑ 2. Click **File** and then select **New**.

Result: The Set Up VASP window opens.



The screenshot shows a window titled "Set Up VASP" with the following fields and controls:

- VASP Type: General (dropdown menu)
- ID: (text field)
- Name: (text field)
- IP Address: (text field with dots)
- Status: ☐ Out of Service ☐ In Service
- Site ID: 1 (text field with a dropdown arrow)
- Buttons: Save, Cancel, Help

Set Up the RNCS, Continued

- ❑ 3. Follow these directions to configure the Set Up VASP window.
 - a) For the **VASP Type** field, select **MMM Server**.
 - b) In the **ID** field, type a unique ID number.
 - c) In the **Name** field, type a meaningful name that you can use when referring to the remote site.
 - d) In the **IP Address** field, type the IP address of the remote site.
 - e) In the **Status** field, click **In Service**.
 - f) In the **Site ID** field, type the number that you have used to identify this site.
- ❑ 4. Repeat these instructions for each remote site that the system supports.

Examine and Re-Order the pddataqampat Table for the RNCS

The pddataqampat table on each RNCS may be out of order. Follow the procedures in **Examine and Re-Order the pddataqampat Table**, earlier in this chapter, to examine and re-order, if necessary, the pddataqampat table on each RNCS.

Chapter 6

Basic System Functionality Tests

Overview

Introduction

Run the system functionality tests included in this chapter to verify that the system is fully functional after upgrading to SR 2.5 and SR 3.5. Cisco recommends that the system operator witness the tests to help verify that the system components work together as intended.

Pioneer Note

Some system functionality tests may not apply to sites operating Pioneer applications.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Verify Basic ResApp Functionality	6-2
Verify Channel Banner IPG Functionality	6-7
Verify IPG Matrix Functionality	6-9
Modify DHCT Configuration	6-13
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Verify Basic ResApp Functionality

ResApp Functionality Tests

Run the following tests to verify the basic functionality of the resident applications. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Toggle the DHCT power by pressing **CBL** on the remote control.
Result: The power to the DHCT turns on if it was previously off, or the power to the DHCT turns off if it was previously on.
Notes:
2. Tune directly to a 1-digit channel by entering its digit on the remote control, and then waiting. Repeat with a 2-digit channel, and then a 3-digit channel (ResApp default).
Result: The channel tunes directly each time.
Notes:
3. Tune directly to a 1-digit channel by entering its digit on the remote control, and then pressing **SELECT**.
Result: The channel tunes directly.
Notes:
4. Tune directly to a 2-digit channel by entering its digits on the remote control, and then pressing **SELECT**.
Result: The channel tunes directly.
Notes:
5. Press **Last** on the remote control.
Result: The DHCT tunes to the previously tuned channel.
Notes:

Verify Basic ResApp Functionality, Continued

6. Press **VOL +** and **VOL -** on the remote control.

Results:

- The volume barker appears on the screen.
- The volume adjusts on the DHCT.

Notes:

7. Press and hold either **VOL +** or **VOL -** on the remote control.

Result: The volume adjustment immediately enters into a rapid mode.

Notes:

8. Press **MUTE** on the remote control.

Results:

- A mute barker appears on the screen.
- The volume on the DHCT mutes.

Notes:

9. Press **MUTE** again on the remote control.

Results:

- A volume barker appears on the screen.
- The volume is restored at the DHCT.

Notes:

10. Press **SETTINGS** on the remote control.

Result: The **Quick Settings** menu appears with a button icon for **More Settings**, **Exit – Return to TV** and **Sel** (for Select).

Notes:

Verify Basic ResApp Functionality, Continued

11. Press **SETTINGS** again on the remote control.

Pioneer Note: On Pioneer sites, press the **A** button on the remote control. If you press **SETTINGS** again, the menu goes away.

Result: The **General Settings** menu appears.

Notes:

12. From the General Settings menu, set three blocked channels, and then try to tune them.

Result: A barker appears indicating that the blocked channels cannot be viewed.

Notes:

13. Test favorite channels by performing the following steps:

- From the General Settings menu set three favorite channels.
- Press **FAV** on the remote control to tune the favorite channels.

Results:

- The DHCT tunes the favorite channels.
- The banner for each favorite channel has a blue-ribbon icon.

Notes:

14. Press **SETTINGS** on the remote control.

Result: The **Quick Settings** menu appears with a button icon for **More Settings**, **Exit – Return to TV** and **Sel** (for Select).

Notes:

15. Press **SETTINGS** again on the remote control.

Result: The **General Settings** menu appears.

Notes:

Verify Basic ResApp Functionality, Continued

16. Block all channels for a period of time.

Result: No channels can be viewed during the time you have just set.

Notes:

17. Press **SETTINGS** on the remote control.

Result: The **Quick Settings** menu appears with a button icon for **More Settings**, **Exit – Return to TV** and **Sel** (for Select).

Notes:

18. Press **SETTINGS** again on the remote control.

Result: The **General Settings** menu appears.

Notes:

19. Block a series of channels by rating code.

Result: Channels with the selected rating code cannot be viewed.

Notes:

Verify Basic ResApp Functionality, Continued

20. Test favorite channels by performing the following test:
- From the Quick Settings menu, designate another channel as a favorite channel.
 - Tune the channel by pressing **FAV** on the remote control.

Results:

- The DHCT tunes the newly designated favorite channel.
- The banner for the newly designated favorite channel has a blue-ribbon icon.

Notes:

21. Verify that you can remove a favorite channel from the favorite channel list by performing the following tests:
- Remove a channel from the favorite channel list through the Quick Settings menu.
 - Press **FAV** on the remote control.

Result: The channel does not tune.

Notes:

Verify Channel Banner IPG Functionality

Channel Banner IPG Functionality Tests

Run the following tests to verify the basic functionality of the IPG channel banners. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Apply power to the DHCT, and then press **INFO** on the remote control.

Results:

- The two-line channel banner appears with day, date, time, and title of the program.
- The right side of the channel banner includes browsing arrows.

Notes:

2. Press **INFO** again on the remote control.

Result: The three-line channel banner appears with a brief description of the program, if one is available.

Notes:

3. Press **EXIT** on the remote control.

Result: The channel banner goes away.

Notes:

4. Press the left or right arrow on the remote control.

Results:

- The two-line channel banner appears with a “currently-on” short description, channel number, day, date, time, and title.
- The right side of the channel banner has browse arrows.

Notes:

Verify Channel Banner IPG Functionality, Continued

5. Press the up arrow on the remote control repeatedly, and then press the down arrow repeatedly.

Results:

- The two-line channel banner appears with a “currently-on” short description, channel number, day, date, time, and title.
- The channel banner displays titles for the other available channels for the current time.

Notes:

6. Press the right arrow on the remote control repeatedly, and then press the left arrow repeatedly.

Results:

- The two-line channel banner appears with a “currently-on” short description, channel number, day, date, time, and title.
- The channel banner displays titles for the current channel at the other times.

Notes:

7. Use the arrows on the remote control to scroll to a program at the current time, but on a different channel. Then, press **SELECT**.

Result: The DHCT tunes the selected program.

Notes:

8. Use the arrows on the remote control to scroll to a program at a later time, on a different channel. Then, press **SELECT**.

Result: The DHCT tunes the *current* program on the selected channel.

Notes:

9. Use the arrow keys on the remote control to scroll through an assortment of channels, checking for IPG data as you scroll.

Result: IPG data matches the selected channels.

Notes:

Verify IPG Matrix Functionality

IPG Matrix Functionality Tests

Run the following tests to verify the basic functionality of the IPG matrix. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Apply power to the DHCT, and then press **GUIDE** on the remote control.

Results:

- The IPG matrix (grid) appears with data.
- A video display of the currently tuned channel appears in the upper-right corner.
- The channel logo, short description, program title, and another brief description appear in the upper-left corner.

Notes:

2. Press the up, down, right, and left arrows of the remote control in turn.

Result: The matrix scrolls in the selected direction.

Notes:

3. Press and hold each of the arrow keys in turn.

Result: After a few “slow” scrolls in the selected direction, the matrix scrolls at a much quicker rate.

Notes:

4. Press **PAGE +** and **PAGE -** on the remote control.

Result: The matrix scrolls up and down one page at a time.

Notes:

5. Press and hold **PAGE +** and **PAGE -** in turn.

Result: After a few “slow” scrolls in the selected direction, the matrix scrolls at a much quicker rate.

Notes:

Verify IPG Matrix Functionality, Continued

6. Use the arrow keys on the remote control to scroll back in time.

Result: Depending upon the last time the IPG was updated, up to 2 hours of prior data are available for display.

Notes:

7. Use the arrow keys on the remote control to scroll forward in time.

Result: Depending upon the last time the IPG was updated, up to 7 days of data are available for display.

Notes:

8. In the matrix, highlight a program that has a brief description, and then press **INFO**.

Result: Within a few seconds, the matrix displays a long description of the program.

Notes:

9. Highlight a program that is currently being broadcast and that is on a different channel than the one you have currently tuned. Then, press **SELECT** on the remote control.

Result: The DHCT tunes to the selected program.

Notes:

Verify IPG Matrix Functionality, Continued

10. Test the Reminder Timer by completing these steps:
 - a) Press **GUIDE** on the remote control to display the IPG matrix.
 - b) Highlight a program to be broadcast in the future.
 - c) Press **SELECT** on the remote control.
 - d) Set the reminder time for a few minutes in the future.

Results:

- A green watch icon appears, indicating that a Reminder Timer is set.
- At 1 minute prior to the start of the program, a reminder barker appears on the screen.

Notes:

11. Press **EXIT** on the remote control.

Result: The IPG matrix disappears.

Notes:

12. Test the Theme window on the IPG by completing these tests:
 - a) Press **GUIDE** on the remote control to display the IPG matrix.
 - b) Press **A** on the remote control.
 - c) Select **Theme**.
 - d) Scroll around in the Theme window and randomly check data under other themes.
 - e) Note the program currently highlighted for future use: _____

Result: Programs appear under the correct themes.

Notes:

Verify IPG Matrix Functionality, Continued

13. Test the Title window on the IPG by completing these tests:
 - a) Press **A** on the remote control.
 - b) Select **Title**.
 - c) Scroll around in the Title window and randomly check data under various alphabetic characters.
 - d) Note the program currently highlighted for future use: _____

Result: Programs appear under the correct alphabetic characters.

Notes:

14. Refer to your note of the program highlighted in the Theme window (step 12 e). Press **A** on the remote control and then select the Theme window.

Result: The program that was previously highlighted in the Theme window is still highlighted in the Theme window.

Notes:

15. Refer to your note of the program highlighted in the Title window (step 13 d). Press **A** on the remote control and then select the Title window.

Result: The program that was previously highlighted in the Title window is still highlighted in the Title window.

Notes:

Modify DHCT Configuration

DHCT Configuration Modification Tests

Run the following tests to verify the ability to modify the configuration of the DHCT. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Update the default DHCT global configuration file by changing the quick settings values.

Note: Find the **DHCT Config** on the Server Applications tab. If no default file exists, create one.

2. After 3 minutes, verify that the quick settings on the DHCT match the new ones you just entered in step 1.

Result: The settings match.

Notes:

3. Turn on power to the DHCT and update the default DHCT configuration file by changing the quick settings values.

4. After 1 minute, verify that the quick settings on the DHCT match the new ones you just entered in step 1.

Result: The settings match.

Notes:

5. Turn off power to the DHCT and send an addressable configuration update to the DHCT to change the power-on channel.

6. Wait 1 minute and then turn on power to the DHCT.

Result: The DHCT tunes to the channel just specified as the new power-on channel.

Notes:

Modify DHCT Configuration, Continued

7. Turn on power to the DHCT and send an addressable configuration update to the DHCT to change the power-on channel.
8. Wait 1 minute and then turn off, and then on, the power to the DHCT.

Result: The DHCT tunes to the channel just specified as the new power-on channel.

Notes:

9. At the installation engineer's discretion, repeat the steps in this section up to four times.

Result: The results should be similar to the results previously stated.

Notes:

Authorize DHCT Subscription Service

DHCT-Subscription Authorization Tests

Use the following tests to verify the ability to authorize DHCT subscription. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Define an unlimited segment for each source to be encrypted.

Result: You can still view the sources.

Notes:

2. Ensure that no digital source has an encrypted security mode defined.

Note: Find the Source List and the Package List on the DNCS, on the System Provisioning tab of the Admin Console.

3. Ensure that no packages are defined.

Note: Find the Source List and the Package List on the DNCS, on the System Provisioning tab of the Admin Console.

4. Define an encrypted security mode on one or more digital sources.

Results:

- The sources cannot be viewed in the clear at the DHCT.
- An unauthorized barker appears at the DHCT for each encrypted source.

Notes:

5. With the segments just defined, create one or more packages.

Result: The unauthorized barkers are still present.

Notes:

6. Authorize the DHCT for one or more of the packages.

Result: All of the sources are now viewable at the DHCT.

Notes:

Modify Package Contents

Package Contents Modification Tests

These tests verify the ability to modify the package contents. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

Important: Testers should create a package rather than modify an existing one. Be sure to delete the package when finished with this test.

1. Tune the DHCT to an encrypted segment for which it is authorized.

Result: You can view the segment at the DHCT.

Notes:

2. Delete the segment from the package in which it is contained.

Results:

- You can no longer view the segment at the DHCT.
- An unauthorized barker appears.

Notes:

3. Add the segment that you just deleted back to the package.

Result: You can view the segment at the DHCT.

Notes:

4. Delete the package that you created for this test.

Modify DHCT Authorizations

DHCT Authorizations Modification Tests

These tests verify the ability to modify DHCT authorizations. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Tune the DHCT to an encrypted segment for which the DHCT is authorized.

Result: You can view the segment at the DHCT.

Notes:

2. Remove the DHCT's authorization for the package to which the DHCT is tuned.

Results:

- You can no longer view the segment at the DHCT.
- An unauthorized barker appears.

Notes:

3. Add the DHCT's authorization that you just removed back into the package.

Result: You can view the segment at the DHCT.

Notes:

Preview, Purchase, and Poll an IPPV Event

IPPV Event Preview, Purchase, and Poll Test

Use these tests to verify the ability to preview and purchase an IPPV event, and then to conduct a poll. If the actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

1. Tune to the IPPV service before the advertising window opens.

Result: The **PPV events are shown on this channel** barker appears, or an interstitial is shown.

Notes:

2. Remain tuned to the IPPV service as the advertising window opens.

Result: A purchase barker displays.

Notes:

3. Purchase the event by following the barker instructions.

Result: You can view the event at the event start time.

Notes:

4. During the event, tune from, and then back to the event several times.

Result: You can view the event in the clear every time you tune to it.

Notes:

5. During the event, unplug the DHCT from the wall socket.

6. Plug the DHCT back into the wall socket and allow the DHCT to reboot.

Result: After the DHCT reboots, you can see the event in the clear.

Notes:

Preview, Purchase, and Poll an IPPV Event, Continued

7. Repeat steps 5 and 6.

Result: After the DHCT reboots, you can see the event in the clear.

Notes:

8. After the event ends, send an addressable poll transaction to the DHCT.

Result: The DHCT returns the correct purchase information.

Notes:

9. When the preview of an existing IPPV event begins, purchase the event, using the instructions displayed on the barker.

Results:

- A preview barker appears at the start of the preview window.
- The preview barker disappears when you purchase the event.
- You can view the event in the clear.

Notes:

10. After the Advertising Window closes, send an addressable poll transaction to the DHCT.

Result: The DHCT returns the correct purchase information.

11. When the preview of an existing IPPV event ends, purchase the event, using the instructions displayed on the barker.

Results:

- A preview barker disappears at the end of the preview window.
- The purchase barker appears when the preview barker goes away.
- You can view the event in the clear.

Notes:

Preview, Purchase, and Poll an IPPV Event, Continued

12. Remain tuned to the event until the event ends.

Results:

- You can view the event continuously until the event ends.
- When the event ends, a Pay Per View Events are Shown on this Channel barker appears.

Notes:

13. Wait 2 hours to allow Broadcast Poll to poll purchase information from the DHCT.

14. Verify that accurate purchase information is in the database.

Notes:

- Get secure micro serial number from the DHCT Provisioning Secure Services tab.
- Use the following command to query the database:

```
dbaccess dnscdb -  
>select * from ippv_purchase where  
sm_serial_num = "00:02:DE:05:xx:XX";
```

Result: Correct purchase information is stored in the database.

Notes:

Cancel and Poll an IPPV Event Purchase

IPPV Event Purchase Cancellation and Poll Test

Use these tests to verify your ability to purchase an IPPV event and then cancel the purchase, and then to conduct a poll. If your actual results differ from the stated results, note the differences and attempt to troubleshoot the condition.

Important: If the site you are upgrading does not use Cancel Windows, check with the system operator regarding whether you can modify an existing event. If you are not permitted to modify an existing event, omit this section of the tests.

1. Purchase an existing IPPV event.

Result: You can view the event in the clear at the event start time.

Notes:

2. Cancel the event purchase within 5 minutes after the event begins (General Settings menu, PPV Purchases).

Result: You can no longer view the event.

Notes:

3. Wait 2 hours to allow the Broadcast Poll to poll purchase information from the DHCT.
4. Verify that accurate purchase information is in the database.

Notes:

- Obtain the secure micro serial number from the DHCT Provisioning Secure Services tab.
- Use the following command to query the database:

```
dbaccess dnscsdb -  
>select * from ippv_purchase where  
sm_serial_num = "00:02:DE:05:xx:XX";
```

Result: The correct purchase and cancellation information is stored in the database.

Notes:

Test the Emergency Alert System

EAS Test

Conduct a weekly Emergency Alert System (EAS) test to verify that the EAS equipment is working correctly after the upgrade. Refer to Chapter 4, **Test the EAS**, in the **Digital EAS Configuration and Troubleshooting Guide**, part number 4000312, for instructions on conducting the EAS test.

Notes:

Test VOD, xOD, and Third-Party Applications

Testing VOD, xOD, and Third-Party Applications

Follow these guidelines to confirm the functionality of your VOD, xOD, and third-party applications after the upgrade.

1. Follow these instructions to prepare for the VOD and/or xOD testing.
 - a) Tune to a VOD / xOD channel and allow the application to load.
 - b) Select a title (event) for the test.
 - c) Press **B** on the remote control to purchase the event.
 - d) Press **>>** to test the fast-forward function.
 - e) Press **<<** to test the rewind function.
 - f) Press **>** to test the play function.
 - g) Press **| = |** to test the stop function.

Result: The VOD / xOD application works as intended.

Notes:

2. If the site you have just upgraded supports any third-party applications, verify that the applications work as intended.

Example: A few examples of third-party applications include InView, Buzztime, and Canon.

Notes:

Test the Language Feature

Testing the Language Feature

Follow these instructions to test the language feature of your system after the upgrade.

1. Press **Settings** on the remote control twice.
Result: The General Settings menu appears on the TV.
2. Scroll down to **Language Audio** and select **Espanol** (Spanish).
3. Listen to the audio to verify that the language has changed.

Notes:

4. Repeat steps 1 through 3 to change **Language Audio** back to **English**.
5. Listen to the audio to verify that the language has changed.

Notes:

Chapter 7

Enable Disk Mirroring

Overview

Introduction

Follow the procedure in this chapter only if you have upgraded an Enterprise 450 or a Sun Fire V880 DNCS during the upgrade to SR 2.5 or SR 3.5.

Important: Be sure that you complete this procedure during the current maintenance window on the night of the DNCS upgrade. If you wait until the following night to complete this procedure, the DNCS will operate an entire day without its disk-mirroring functions in place.

Important Note to Consider

You should follow the procedure in this chapter *only* under one of the following circumstances:

- You are satisfied with the upgrade and want to commit the system changes
Note: Rolling back an upgrade after completing the procedure in this chapter is time consuming and takes more effort.
- You have rolled back from an unsuccessful upgrade and want to synchronize the mirrors

In This Chapter

This chapter contains the following topic.

Topic	See Page
Attach Mirrors	7-2

Attach Mirrors

Introduction

Before starting this procedure, inform the system operator that completing this procedure commits the upgrade to SR 2.5 or SR 3.5. Any attempt to roll back from the upgrade after the mirrors are attached will take up to 4 hours to complete. Additionally, the rollback procedure cannot be performed during the current night and will have to be performed during a maintenance window tomorrow.

Attaching Mirrors

Follow this procedure to run a script that attaches submirrors to their respective mirrors and creates all necessary hot spare disks.

Important: Follow this procedure only if you are upgrading an Enterprise 450 or a Sun Fire V880 DNCS.

1. If necessary, open an xterm window on the DNCS.
2. Follow these instructions to log into the xterm window as root user.
 - a) Type **su -** and then press **Enter**.

Result: The password prompt appears.
 - b) Type the root password and then press **Enter**.
3. Insert the CD labeled **UniPack Installation CD** into the CD drive of the DNCS.
4. Type **df -n** and then press **Enter**.

Result: A list of the mounted filesystems appears.

Note: The presence of **/cdrom** in the output confirms that the system correctly mounted the CD.
5. Type **/cdrom/cdrom0/s3/sai/scripts/Media/attach_mirrors** and then press **Enter**.

Result: A confirmation message appears.
6. Type **y** and then press **Enter**.

Result: The system executes a script that attaches submirrors to their respective mirrors and creates all necessary hot spare disks.

Note: It may take as long as 60 minutes to execute the **attach_mirrors** script.
7. Type **eject cdrom** and then press **Enter**.
8. Remove the CD.

Chapter 8

Back Up the System Components

Overview

Introduction

This chapter directs the upgrade engineer to reference the latest version of the backup procedures that pertain to SR 2.5 and SR 3.5, in order to back up the Informix database, the DNCS file system, and the Application Server file system.

Notes:

- The backup procedures that pertain to the Application Server refer to the Cisco Application Server. Consult with Pioneer for procedures for backing up the Pioneer Application Server.
- Cisco recommends that the system operator be present when performing these backups.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Backing Up the System Components	8-2

Backing Up the System Components

Reference Back Up Procedures

The backup procedures for sites that run SR 2.5 or SR 3.5 system software are found in *DBDS Backup and Restore Procedures for SR 2.2 and SR 3.2, SR 2.4 and SR 3.4, SR 2.5 and SR 3.5, and SR 3.3*. To back up the Informix database, the DNCS file system, and the Application Server file system, reference the following chapters:

- The Informix database—Chapter 3, **Backing Up and Restoring the Informix Database**

Note: Refer to the **Back Up the Informix Database** section.

- The DNCS and Application Server File Systems—Chapter 4, **Backing Up and Restoring the DNCS and Application Server**

Note: Refer to the **Back Up the DNCS File System** and **Back Up the Application Server File System** sections.

Chapter 9

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

Stopping the System Components

Overview

Introduction

Use the procedures in this appendix to stop the Spectrum Network Management Service (Spectrum), the Application Server, and the DNCS.

In This Appendix

This appendix contains the following topics.

Topic	See Page
Stop System Components	A-2

Stop System Components

Introduction

Before following several of the DNCS Utilities procedures, you must first stop Spectrum, the Application Server, and the DNCS. Follow these instructions to stop Spectrum, the Application Server, and the DNCS.

Stopping Spectrum

Complete these steps to stop Spectrum.

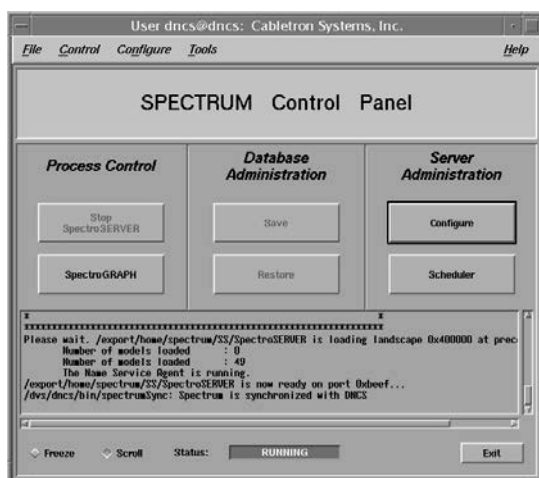
Note: You can skip the procedure to stop Spectrum if the DNCS Administrative Console Status window reveals that Spectrum is not running.

1. From the DNCS Administrative Console Status window, click **Control** in the NMS section of the window.

Result: The Select Host to run on window appears.

2. From the **Select Host to run on** window, click **OK**.

Result: The Spectrum Control Panel appears.



3. Click **Stop SpectroSERVER**.

Result: A confirmation message appears.

4. Click **OK** at the confirmation message.

Result: The **Status** message on the Spectrum Control Panel shows **Inactive**.

Stop System Components, Continued

5. Click **Exit** on the Spectrum Control Panel.
Result: A confirmation message appears.
6. Click **OK** at the confirmation message.
Result: The Spectrum Control Panel closes.
7. Go to **Stopping the Application Server**, next in this section.

Stopping the Application Server

Choose one of the following procedures based upon the resident application that runs on your system:

- For sites that support the Cisco resident application, follow the instructions in **Stopping the Application Server at SARA Sites**.
- For sites that support the Pioneer resident application, follow the instructions in **Stopping the Application Server at Pioneer Sites**

Stopping the Application Server at SARA Sites

Complete these steps to stop the Application Server at sites that support the Cisco resident application.

1. Press the middle mouse button on the Application Server and select **App Serv Stop**.
2. From an xterm window on the Application Server, type **appControl** and then press **Enter**.
Result: The Applications Control window appears.
3. Type **2** (for Startup/Shutdown Single Element Group), and then press **Enter**.
Result: The system displays all Application Server processes.
Note: The system updates the display periodically, or you can press **Enter** to force an update.
4. When the **Curr Stt** (Current State) field of the Applications Control window indicates that all of the Application Server processes have stopped, follow the on-screen instructions to close the Applications Control window.
5. Go to **Shutting Down the Cisco Application Server**, next in this section.

Stop System Components, Continued

Shutting Down the Cisco Application Server

After stopping the Cisco Application Server, follow these steps to stop the Application Server.

1. Log on to an xterm window on the Application Server as **root** user.
2. Type **/usr/sbin/shutdown -i0 -g0 -y** and then press **Enter**.
Result: The Application Server shuts down and the **ok** prompt appears.
3. Go to **Stopping the DNCS**, later in this appendix.

Stopping the Application Server at Pioneer Sites

Complete these steps to stop the Application Server at sites that support the Pioneer resident application.

1. Press the middle mouse button on the Application Server and select **Passport Stop**.
2. From an xterm window on the Application Server, type **CheckServices** and then press **Enter**.
Result: A list of drivers appears.
Note: Each driver is associated with an Application Server process.
3. Wait until the word **No** appears next to each driver.
4. Log in to an xterm window as root user.
5. Type **init 0** and then press **Enter**.
Result: The Application Server shuts down and an **ok** prompt appears.
6. Go to **Stopping the DNCS**, next in this section.

Stop System Components, Continued

Stopping the DNCS

Complete these steps to stop the DNCS.

1. At the DNCS, press the middle mouse button and then select **DNCS Stop**.
Note: If a confirmation message appears, click **OK**.
2. From an xterm window on the DNCS, type **dncsControl** and then press **Enter**.
Result: The DnCS Control window appears.
3. Type **2** (for Startup/Shutdown Single Element Group), and then press **Enter**.
Result: The system displays all DNCS processes.
Note: The system updates the display periodically, or you can press **Enter** to force an update.
4. When the **Curr Stt** (Current State) field of the DnCS Control window indicates that all of the DNCS processes have stopped, follow the on-screen instructions to close the DnCS Control window.
5. Go to **Kill Active Sessions**, next in this appendix.

Kill Active Sessions

After stopping the DNCS, follow these instructions to kill any active sessions that maybe running.

1. Log on to an xterm window on the DNCS as **root** user.
2. Type **. /dvs/dnCS/bin/dnCSSetup** and then press **Enter**.
Important: Be sure to type the dot followed by a space prior to typing **/dvs**.
Result: The system establishes the root user environment.
3. Wait a few moments and then type **showActiveSessions** and press **Enter**.
Result: One of the following messages appears:
 - A message indicating that the **INFORMIXSERVER** is **idle**
 - A message listing active sessions

Stop System Components, Continued

4. Did the message in step 3 indicate that there are active sessions?
 - If **yes**, follow these instructions:
 - a) Type **killActiveSessions** and then press **Enter**.
Result: The system removes all active sessions from the database.
 - b) Type **showActiveSessions** again and then press **Enter**.
 - c) Did a message appear indicating that there are active sessions?
 - If **yes**, wait a few minutes and then repeat step b).
 - Note:** Contact Cisco Services if there are still active sessions.
 - If **no**, go to **What's Next?**, next in this appendix.
 - If **no**, go to **What's Next?**, next in this appendix.

What's Next?

After stopping the system components, return to whatever procedure you were following when you were instructed to go to Appendix A.

Appendix B

Restarting System Components

Overview

Introduction

Use the procedures in this appendix to restart Spectrum, the DNCS, and the Application Server.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Restart System Components	B-2

Restart System Components

Introduction

Follow these procedures to restart the DNCS, the Application Server, and Spectrum.

Restarting Spectrum

Follow these instructions to restart Spectrum.

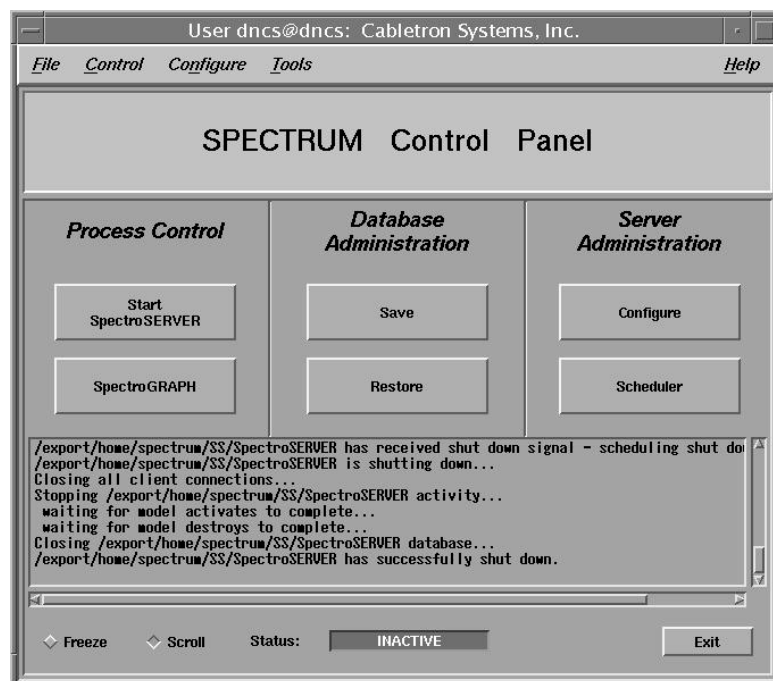
Important: The procedures to restart the system components have been modified to restart Spectrum first. This change ensures that Spectrum is able to access needed resources. Customers may notice unexpected alarms relating to devices having duplicate IP addresses until all of the DNCS and Application Server processes have started. Some alarm cleanup activities may be necessary after all of the processes have started.

1. From the DNCS Administrative Console Status window, click **NMS Control**.

Result: The Select Host to run on window opens.

2. Select the Host Machine (usually DEFAULT), and then click **OK**.

Result: The Spectrum Control Panel window opens.



3. On the Spectrum Control Panel window, click **Start SpectroSERVER**.

Result: The Spectrum Network Management System starts.

Restart System Components, Continued

4. On the Spectrum Control Panel window, click **Exit**.
Result: A confirmation message appears.
5. Click **OK** on the confirmation message.
Result: The Spectrum Control Panel window closes.

Restarting the DNCS

Follow these instructions to restart the DNCS.

1. Click the middle mouse button on the DNCS and select **DNCS Start**.
Result: The DNCS processes start.
2. Click the middle mouse button on the DNCS and select **Administrative Console**.
Result: The DNCS Administrative Console opens.
3. From the DNCS Administrative Console Status window, click **DNCS Monitor**.
Results:
 - The DNCS Monitor window opens.
 - Green indicators replace red indicators on the DNCS Monitor window.
4. When all of the red indicators on the DNCS Monitor window have been replaced by green indicators, go to **Restarting the Application Server**, next in this section.

Restart System Components, Continued

Restarting the Application Server

Choose one of the following options:

- For sites on which the Cisco Resident Application runs on the Application Server, go to **Restarting the SARA Application on the Application Server**.
- For sites on which the Pioneer resident application runs on the Application Server, go to **Restarting the Pioneer Application on the Application Server**.

Restarting the Application Server for SARA Systems

Follow these instructions to check if the Cisco Resident Application has started on the Application Server, and then to start it, if necessary.

1. Open an xterm window on the Application Server.
2. Type **appControl** and then press **Enter**.
Result: The Applications Control window opens.
3. Select option **2** on the Applications Control window.
Result: The system displays a list of Application Server processes and their current status.
4. Does the word **running** appear next to the current state field (**Curr Stt**) of each process?
 - If **yes**, skip the rest of this procedure and return to the procedure you were following when you were instructed to go to Appendix B.
 - If **no**, go to step 5.
5. Press the middle mouse button, and then select **App Serv Start**.
6. When the Application Control window indicates that the current state (**Curr Stt**) of each process is **running**, go to step 7.
Note: On some systems, the VOD Server process may remain at **Stopped**; this is normal.
7. Follow the on-screen instructions to close the Applications Control window.

Restart System Components, Continued

Restarting the Application Server for Pioneer Systems

Follow these instructions to check if the Pioneer application has started on the Application Server, and then to start it, if necessary.

1. Open an xterm window on the Application Server.
2. Type **CheckServices** and then press **Enter**.

Result: A list of drivers appears.

Note: Each driver is associated with an Application Server process.

3. Does the word **Yes** appear next to each driver?

Note: The word **Yes** next to a driver indicates that the process has started.

- If **yes**, skip the rest of this procedure and go to whatever procedure you were following when you were instructed to go to Appendix B.
- If **no**, go to step 4.

4. Press the middle mouse button, and then select **Passport Start**.
5. When the word **Yes** appears next to each driver, go to step 6.
6. Follow the on-screen instructions to close the window containing the list of Pioneer drivers.

What's Next?

After restarting the system components, return to whatever procedure you were following when you were instructed to go to Appendix B.

Appendix C

Dialup Remote Access Configuration Procedures

Overview

Introduction

Use the procedures in this appendix to help you configure dialup remote access.

Note: Starting with SR 2.1.1, PPP drivers are included in the UniPack software. You no longer have to specifically install the Dialup Remote Access software.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Configure Dialup Remote Access	C-2

Configure Dialup Remote Access

Introduction

The following procedure is provided to assist Cisco field service engineers in configuring remote access to systems. Through remote access, field service engineers can dial in and troubleshoot a system from a remote location.

Configuration Procedure Checklist

Before starting the configuration procedure, complete the following checklist.

1. Obtain a working phone line.
2. Identify any prefix needed to get an outside line.
3. Obtain an external US Robotics 56K modem, model number 5686.
4. Obtain a DB-25 male to DB-25 male cable.

Modem Installation Procedure

Follow these instructions to install the modem.

1. Attach the wall-mounted power supply for the modem to the backup power supply for the Sun workstation.
2. Attach the power jack into the back of the modem.
3. Attach one end of the DB-25 male cable to **Port A** of the Sun workstation.
4. Attach the other end of the DB-25 male cable to the DB-25 female connector of the modem.
5. Turn on the power to the modem.

Important: If you receive the following error message after turning on power to the modem, inspect the serial cable connected to Port A; it may not be properly connected:

```
cat: cannot open /var/run/sppp0.pid /etc/ppp/pppdown.sh[5]:kill:bad
argument count
```

Configure Dialup Remote Access, Continued

Editing the Dialup String

Use the following procedure to edit the dialup string.

1. From an xterm window on the DNCS, type **su -** and then press **Enter**.

Result: The **password** prompt appears.

2. Type the root password and then press **Enter**.

Result: You have root permissions in the xterm window.

3. Type **cd /etc/ppp/peers** and then press **Enter**.

4. Type **vi sa.scr** and then press **Enter**.

Result: The sa.scr file opens for editing.

Note: The file looks similar to the following:

```
ABORT      "NO CARRIER"
ABORT      "NO DIALTONE"
ABORT      "ERROR"
ABORT      "NO ANSWER"
ABORT      "BUSY"
" "        "AT"
OK         "at&d2&c1"
OK         "atdt9,7705557890"
CONNECT    " "
```

~

~

~

"sa.scr"[Read Only] 9 lines, 139 Characters

5. Scroll to the line that contains the **OK "atdt9,7705557890"** entry.

Note: The **9** is a prefix and the , (comma) signifies a pause.

6. Edit the file as required.

Note: In many cases, the Dialup Remote Access software requires a long distance telephone call. You may require a prefix other than **9**, or you may need to precede the dialup string with a **1**.

Important: Be sure to save the file and exit the vi editor when you complete this procedure.

7. Type **exit** and then press **Enter** to exit your UNIX session.

Configure Dialup Remote Access, Continued

Establishing a Connection

Follow these procedures to establish a dialup connection.

Notes:

- The system assigns IP addresses automatically.
- IP addresses will be in the range of 192.168.41.211 through 192.168.41.240.

1. As root user, type **su -** and then press **Enter**.
2. Type **cd /etc/ppp** and then press **Enter**.
3. Type **./pppup-sa.sh** and the press **Enter**.

Result: You hear the modem dial and see the **RD** and **SD** LEDs on the modem blink.

4. When you have finished establishing the dialup connection, type **cd /etc/ppp** and then press **Enter**.
5. Type **./pppdown.sh** and then press **Enter**.

Result: Your dialup connection disconnects.

Appendix D

SR 2.5 and SR 3.5 UniPack Rollback Procedures

Overview

Introduction

The SR 2.5 and SR 3.5 rollback procedures are intended for Cisco field service engineers who encounter problems while upgrading an existing digital system to SR 2.5 or SR 3.5. Prior to executing the SR 2.5 and SR 3.5 rollback procedures, contact Cisco Services.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Which DNCS Procedure to Run	D-2
Activate the Old System Release	D-3
Roll Back the Enterprise 250 DNCS	D-8
Roll Back the Application Server	D-11

Which DNCS Procedure to Run

Introduction

Three DNCS rollback procedures exist for rolling back from SR 2.5 or SR 3.5. Identify the DNCS rollback procedure you should use based upon your DNCS hardware platform and whether you have already run the **Enable Disk Mirroring** procedure in Chapter 7.

Enterprise 450 and Sun Fire V880 DNCS

Two rollback procedures exist for the Enterprise 450 and Sun Fire V880 DNCS. Read the following choices to help you decide.

- If you have *not* already run the procedure under **Enable Disk Mirroring** in Chapter 7, then use the procedure under **Activate the Old System Release**, next in this appendix, to roll back from SR 2.5 or SR 3.5.

Note: It should take you about 10 minutes to roll back the Enterprise 450 or Sun Fire V880 DNCS using the **Activate the Old System Release** procedure. It should take you about 1 hour to roll back the Application Server.

- If you have already run the procedure under **Enable Disk Mirroring** in Chapter 7, then use the procedures under **Restore the DNCS and Application Server File System** and **Restore the Informix Database** in *DBDS Backup and Restore Procedures For SR 2.2 and SR 3.2, SR 2.4 and SR 3.4, SR 2.5 and SR 3.5, and SR 3.3*.

Note: It may take as long as 4 hours to roll back the Enterprise 450 or Sun Fire V880 DNCS. It should take you about 1 hour to roll back the Application Server.

Enterprise 250 DNCS

To roll back an Enterprise 250 DNCS, use the procedure under **Roll Back the Enterprise 250 DNCS Using the UniPack**, later in this appendix, to roll back from SR 2.5 or SR 3.5.

Note: It may take as long as 3 hours to roll back a system that uses an Enterprise 250 DNCS.

Activate the Old System Release

Introduction

You can use the following procedure to restore the Enterprise 450 or Sun Fire V880 DNCS, provided you have not already enabled disk mirroring on the DNCS.

Restoring the Old System Release

Follow this procedure to restore the system software that was in place prior to the unsuccessful upgrade to SR 2.5 or SR 3.5.

Important: Some of the sample screen output used in this procedure assumes, as an example, that you have attempted to upgrade to SR 2.5 from SR 2.2. This is just an example; the output you see will be based upon whatever system release your system supported before the unsuccessful upgrade to SR 2.5 or SR 3.5.

1. Write down the version of the system release are you trying to restore.

Example: In the examples used in this procedure, you are trying to restore SR 2.2.

Note: Writing down the old system release may help you remember that SR 2.2 is used in this procedure *only* as an example.

2. If necessary, follow the procedures in Appendix A to stop the system components.
3. If necessary, follow these instructions to log on to an xterm window on the DNCS as root user.
 - a) Type **su -** and then press **Enter**.
 - b) Type the root password and then press **Enter**.
4. Type **lustatus** and then press **Enter**.

Result: The system displays the status of the LiveUpgrade boot environment.

Example: You should see results similar to this example:

BE_name	Complete	Active	ActiveOnReboot	CopyStatus
SR_2.2	yes	no	no	-
SR_2.5	yes	yes	yes	-

Note: This example shows that the SR 2.5 environment will be active upon the next reboot.

Activate the Old System Release, Continued

5. Type **luactivate <previous SR>** and then press **Enter**.

Note: Substitute the system release you are trying to restore for <previous SR>.

Result: The system activates the version of system software that was installed on your system prior to the upgrade and displays the following message:

The target boot environment has been activated. It will be used when you reboot.

NOTE: You must use either **init** or **shutdown** when you reboot. If you do not use one of these commands, the system will not boot using the target BE.

In case of a failure while booting to the target BE, the following process needs to be followed to fallback to the currently working boot environment:

1. Enter the PROM monitor (ok prompt).
2. Change the boot device back to the original boot environment by typing:

setenv boot-device disk:a

3. Boot to the original boot environment by typing: **boot**

Activation of boot environment <previous SR> successful.

6. Type **lustatus** and then press **Enter**.

Result: The system displays the status of the LiveUpgrade boot environment.

Example: You should see results similar to this example:

BE_name	Complete	Active	ActiveOnReboot	CopyStatus
SR_2.2	yes	no	yes	-
SR_2.5	yes	yes	no	-

Note: The example shows that the SR 2.2 environment will become active after the next reboot.

Activate the Old System Release, Continued

7. Type `/usr/sbin/shutdown -y -g0 -i6` and then press **Enter**.
Important: Do not use the *reboot* or *halt* command to reboot the server.
Results: The system reboots and activates the SR 2.2 software.
8. Did the system reboot without error?
 - If **yes**, go to step 14 to continue activating the old system release.
 - If **no** (an error message appeared), continue with step 9 to implement a work-around.
Note: The system may display a message that describes an error condition and then prompts you to provide the root password to implement the workaround in system maintenance mode.
9. Type the root password and then press **Enter**.
Results: The system enters maintenance mode.
10. Type `df -k` and then press **Enter**.
Results: The system displays the mounted filesystems.
Note: Note that there is no entry for `/dev/md/dsk/d503`.
11. Type `mount /var` and then press **Enter**.
Result: The system should mount the `/dev/md/dsk/d503` filesystem to `/var`.
12. Type `df -k` and then press **Enter**.
Results: The system displays the mounted file systems.
Note: The system should now display an entry for `/dev/md/dsk/d503`.
13. Did the system display an entry as described in step 12?
 - If **yes**, press the **Ctrl** and **d** keys simultaneously.
Result: The system reboots and displays the CDE Login window.
 - If **no**, contact Cisco Services.
14. Log on to the CDE of the DNCS as **dncs** user.
15. Log on to an xterm window as **root** user.

Activate the Old System Release, Continued

16. Type **lustatus** and then press **Enter**.

Result: The system displays the status of the LiveUpgrade boot environment.

Example: You should see results similar to this example:

BE_name	Complete	Active	ActiveOnReboot	CopyStatus
SR_2.2	yes	yes	yes	-
SR_2.5	yes	no	no	-

Result: The example shows that SR 2.2 software version is active.

17. Choose one of the following options:

- If you are upgrading a Sun Fire V880 DNCS, follow the **Attach Mirrors** procedure in Chapter 7, **Enable Disk Mirroring**.

Note: Go to **Updating the TED Files**, later in this section, when you have completed the **Attach Mirrors** procedure.

- If you are upgrading an Enterprise 450 DNCS, go to **Adding Hot Spares**, next in this section.

Adding Hot Spares

Follow this procedure *only* if you are upgrading an Enterprise 450 DNCS. If you are upgrading a Sun Fire V880 DNCS, follow the **Attach Mirrors** procedure in Chapter 7, **Enable Disk Mirroring**, instead.

Notes:

- You should still be logged on as root user in an xterm window on the DNCS.
- Be sure that the CD labeled **UniPack Installation CD** is in the CD drive of the DNCS.

1. Type **/cdrom/cdrom0/s3/sai/scripts/Media/add_hotspares** and then press **Enter**.

Result: A confirmation message appears.

2. Type **y** and then press **Enter**.

Result: The system executes a script that adds hot spares to the Enterprise 450 DNCS.

3. Type **eject cdrom** and then press **Enter** to eject the CD from the DNCS.
4. Go to **Updating the TED Files**, next in this section.

Activate the Old System Release, Continued

Updating the TED Files

Complete the rollback of the DNCS by following these instructions to update the TED files.

1. Follow these instructions, if necessary, to log on to an xterm window on the DNCS as root user:

- From an xterm window on the DNCS, type **su -** and then press **Enter**.

Result: The **password** prompt appears.

- Type the root password and then press **Enter**.

2. Type **ping dncsted** and then press **Enter**.

Result: The system responds with a **dncsted is alive** message.

Note: If you cannot ping the TED, contact Cisco Services for help.

3. Type **cd /dvs/dnscs/TED** and then press **Enter**.

Result: The /dvs/dnscs/TED directory becomes the working directory.

4. Type **./loadTedFiles.sh** and then press **Enter**.

Important: Be sure to type the period before typing /loadTedFiles.sh.

Results:

- The system copies the appropriate files to the TED.
- The system initializes the TED.
- After a brief pause, the system displays the contents of the TED logfile (devtedLog.000) to the screen.

Notes:

- If the operating system on the TED is Linux version 4.0, the system copies files with the 2.0.27 file extension.
- If the operating system on the TED is Linux version 6.0, the system copies files with the 2.2.5-15 file extension. (You may sometimes hear this version of TED referred to as TED FX.)

5. Examine the output from the logfile displayed on the screen for any error messages.

Note: Contact Cisco Services if you have any questions or concerns about the TED upgrade.

6. Go to **Roll Back the Application Server**, later in this appendix.

Roll Back the Enterprise 250 DNCS

Preparing to Restore the File System of the Enterprise 250 DNCS

Follow these instructions to prepare to restore the file system of the Enterprise 250 DNCS.

1. If necessary, open an xterm window on the DNCS.
2. Type **su -** and then press **Enter** to log in as root user.
Result: The **password** prompt appears.
3. Type the root password and then press **Enter**.
4. Insert the CD labeled **DBDS Maintenance CD** into the CD drive of the DNCS.
5. Type **shutdown -g0 -y -i0** and then press **Enter**.
Result: The system halts all processes on the DNCS and an **ok** prompt appears.
6. At the ok prompt, type **boot cdrom - SAsHell** and then press **Enter**.
Results:
 - The DNCS boots from the CD.
 - An xterm window opens.
7. Insert your most recent DNCS file system backup tape into the tape drive of the DNCS.
8. Go to **Restoring the DNCS File System**, next in this appendix.

Restoring the DNCS File System

Follow these instructions to restore the file system of the Enterprise 250 DNCS.

1. Type **/tmp/cdrom/backup_restore/restoreFileSystems** and then press **Enter**.
Result: The system restores the DNCS or Application Server file system and displays a message when the restoration is complete.
2. When the restoration is complete, remove the tape and store it in a safe place.

Roll Back the Enterprise 250 DNCS, Continued

3. Type **/usr/sbin/shutdown -y -i0 -i6** and then press **Enter**.

Result: The DNCS or Application Server reboots and the Common Desktop Environment (CDE) login window appears.

Note: The Enterprise 450 and Sun Fire 880 DNCS will reboot a few times as part of the restoration process.

4. Log on to the CDE as **root** user.
5. Go to **Updating the TED Files**, next in this appendix.

Updating the TED Files

Complete the rollback of the DNCS by following these instructions to update the TED files.

1. Follow these instructions, if necessary, to log on to an xterm window on the DNCS as root user:
 - From an xterm window on the DNCS, type **su -** and then press **Enter**.
Result: The **password** prompt appears.
 - Type the root password and then press **Enter**.
2. Type **ping dncsted** and then press **Enter**.
Result: The system responds with a **dncsted is alive** message.
Note: If you cannot ping the TED, contact Cisco Services for help.
3. Type **cd /dvs/dncs/TED** and then press **Enter**.
Result: The **/dvs/dncs/TED** directory becomes the working directory.

Roll Back the Enterprise 250 DNCS, Continued

4. Type **./loadTedFiles.sh** and then press **Enter**.

Important: Be sure to type the period before typing `/loadTedFiles.sh`.

Results:

- The system copies the appropriate files to the TED.
- The system initializes the TED.
- After a brief pause, the system displays the contents of the TED logfile (devtedLog.000) to the screen.

Notes:

- If the operating system on the TED is Linux version 4.0, the system copies files with the 2.0.27 file extension.
- If the operating system on the TED is Linux version 6.0, the system copies files with the 2.2.5-15 file extension. (You may sometimes hear this version of TED referred to as TED FX.)

5. Examine the output from the logfile displayed on the screen for any error messages.

Note: Contact Services if you have any questions or concerns about the TED upgrade.

6. Go to **Roll Back the Application Server**, next in this appendix.

Roll Back the Application Server

Preparing to Restore the Application Server File System

Follow this procedure to prepare to restore the Application Server file system.

1. If necessary, open an xterm window on the Application Server.
2. Type **su -** and then press **Enter** to log in as root user.
Result: The **password** prompt appears.
3. Type the root password and then press **Enter**.
4. Insert the CD labeled **DBDS Maintenance CD** into the CD drive of the Application Server.
5. Type **shutdown -g0 -y -i0** and then press **Enter**.
Result: The system halts all processes on the Application Server and an **ok** prompt appears.
6. At the ok prompt, type **boot cdrom - SAsHell** and then press **Enter**.
Results:
 - The Application Server boots from the CD.
 - An xterm window opens.
7. Insert your most recent Applications Server file system backup tape into the tape drive of the DNCS.

Restoring the Application Server File System

Follow these instructions to restore the Application Server file system from a tape in the tape drive of the DNCS.

1. Type **/tmp/cdrom/backup_restore/restoreFileSystems -r [hostname or IP address]:[tape device]** and then press **Enter**.

Notes:

- Substitute the hostname or IP address of the DNCS for [hostname or IP address].
- Type the command on one line.

Example:

```
/tmp/cdrom/backup_restore/restoreFileSystems -r  
192.168.44.71:/dev/rmt/0h
```

Result: The system restores the Application Server file system and displays a message when the restoration is complete.

Roll Back the Application Server, Continued

2. When the restoration is complete, eject the tape and store it in a safe place.
3. Type **/usr/sbin/shutdown -y -i0 -i6** and then press **Enter**.
Result: The Application Server reboots and the Common Desktop Environment (CDE) login window appears.
4. Log on to the CDE as **root** user.
5. From an xterm window, type **eject cdrom** and then press **Enter**.
Result: The system ejects the CD.
6. Click the right mouse button on the server you restored and select **Log Out**.
Result: The root user logs off and the CDE window returns.
7. Log on to the CDE as **dncs** user.
8. Does the Application Server display an **ok** prompt?
 - If **yes**, follow these instructions.
 - a) Type **boot** at the **ok** prompt on the Application Server and then press **Enter**.
 - b) Log on to the Application Server as **dncs** user.
 - If **no**, go to step 9.
9. Follow the procedures in Appendix B, **Restarting System Components**, to restart Spectrum, the DNCS, and the Application Server.

Appendix E

Setting Up an Automated Database Backup

Overview

Introduction

Cisco engineers have developed a UNIX cron script, called `noinputDbBackup`, which allows system operators to automate the nightly backup of their Informix database.

Note: A cron script is an automated process that operates at predefined time intervals. You may sometimes hear a cron script referred to as a cron job.

The `noinputDbBackup` script uses a modified version of the existing `dncsDbBackup` script to back up the Informix database with no user input. System messages pertaining to the execution of the `noinputDbBackup` script are written to a logfile in the `/dvs/backups` directory. The format of the logfile is `noinputDbBackup.[DATE]_[TIME]`, where `[DATE]` and `[TIME]` refer to the date and the time the system executed the `noinputDbBackup` script.

To configure your system to execute the `noinputDbBackup` script, add an entry to the crontab on the DNCS. Use the instructions in this appendix to configure your system to execute the `noinputDbBackup` script.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Configure the DNCS for an Automatic Database Backup	E-2

Configure the DNCS for an Automatic Database Backup

Verifying the Tape Drive Device Name

Before you configure your system for an automatic backup of the Informix database, confirm that the script that performs the backup uses the correct device name for the tape drive. Follow these instructions to confirm the correct device name.

1. Insert a blank tape into the tape drive of the DNCS.
2. Type **mt -f /dev/rmt/0 offline** and then press **Enter**.

Important: The '0' in /dev/rmt/0 is zero.

Result: If you have installed the tape drive correctly, the tape will eject.

3. Did the tape eject?
 - If **yes**, go to **Editing the crontab**, later in this appendix.

Note: The device name of your tape drive is correct because the tape ejected.
 - If **no**, go to step 4.

4. Type the following UNIX routine.

Important: Type the routine just as shown by pressing **Enter** at the end of each line.

```
for drive in 0 1 2 3 4 5 6 7
do
mt -f /dev/rmt/$drive offline
done
```

Results:

- The system tries to eject the tape using eight possible tape drive device names (/dev/rmt/0 through /dev/rmt/7).
 - The tape ejects when the UNIX routine reaches the correct device name.
 - The screen clearly shows which tape device name was used when the tape ejected.
5. In the space provided, note the device name that was used when the tape ejected. _____
 6. Go to **Edit the noinputDbBackup.sh File**, next in this appendix.

Configure the DNCS for an Automatic Database Backup, Continued

Edit the noinputDbBackup.sh File

Follow these instructions to edit the noinputDbBackup.sh file so that it includes the correct tape drive device name.

Note: The xterm window that you opened in the previous procedure, **Verifying the Tape Drive Device Name**, should still be open.

1. Type **vi /dvs/dnscs/bin/noinputDbBackup.sh** and then press **Enter**.
Result: The noinputDbBackup.sh opens for editing.
2. Scroll down through the file and locate the line that begins with **tapeDevice=/dev/rmt/0h**.
3. Edit the line so that it now references the device name you recorded in step 5 of the **Verifying the Tape Drive Device Name** procedure, earlier in this appendix.
Example: tapeDevice=/dev/rmt/1h
4. Save the file and close the vi editor.
5. Go to **Editing the crontab**, next in this appendix.

Editing the crontab

Follow these instructions to configure your nightly backup of the Informix database on the DNCS.

1. From an xterm window on the DNCS, log in as **root** user.
2. Type **crontab -l > /tmp/root.crontab** and then press **Enter**.
Important: The 'l' in crontab -l is a lower case L.
Result: The system redirects the contents of the crontab into root.crontab.
Note: While you can edit the crontab directly, Cisco recommends that you first redirect the contents of the crontab to root.crontab so you can recover the original crontab if necessary.
3. Type **vi /tmp/root.crontab** and then press **Enter**.
Result: The system opens root.crontab for editing using the UNIX vi editor.

Configure the DNCS for an Automatic Database Backup, Continued

4. Add the following lines to the end of root.crontab:

#cron to automatically back up the database

0 2 * * * (. /dvs/dncs/bin/dncsSetup; /dvs/dncs/bin/noinputDbBackup.sh)

Note: This command will back up the DNCS database at 2 AM everyday. To learn more about the various fields in the command you just entered, type **man crontab** and then press **Enter** at an xterm window on the DNCS.

5. Save the file and exit the vi editor.
6. Type **crontab /tmp/root.crontab** and then press **Enter**.

Result: The system automatically backs up your DNCS database everyday.

Important Notes to the System Operator

The system will eject the tape after each backup. Remember to insert a blank tape into the tape drive of the DNCS each day. Cisco recommends that you store your daily tapes offsite to protect against loss or damage.

Appendix F

Setting Up the UniPack Alias

Overview

Introduction

This appendix contains a procedure for setting the UniPack alias on the DNCS and Application Server. The procedure is the same, regardless of whether you are upgrading the DNCS or the Application Server. Complete this procedure only if you have been instructed to do so in previous chapters of these upgrade installation instructions.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Set Up the UniPack Alias	F-2

Set Up the UniPack Alias

Setting the UniPack Alias

Use these instructions to set up the UniPack alias on either the DNCS or the Application Server.

Note: The **ok** prompt should be displaying on either the DNCS or the Application Server, whichever is appropriate.

1. At the **ok** prompt, type **show-disks** and then press **Enter**.

Result: The system displays a list of SCSI and ebus controllers.

Example: The list is in the following format:

- Enterprise 450 platform **/pci@1f,4000/scsi@2/disk**
- Enterprise 250 platform **/pci@1f,4000/SCSI@3,1/disk**
- Ultra 2 platform **/sbus@1f,0/SUNW,fas@e,8800000/sd**
- Ultra 5 platform **/pci@1f,0/pci@1/pci@2/SUNW,isptwo@4/sd**
- Sun Fire V880 platform **/pci@9,700000/pci@2/scsi@2,1/disk**

2. Type the letter of the hardware platform that corresponds to the computer you are upgrading.

Important: Do not press **Enter**.

3. Type **nvalias unipack <Ctrl>y@3,0:b** and then press **Enter**.

Note: For **<Ctrl>y**, press the Ctrl and y keys simultaneously.

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

Result: The system displays a list of aliases for the various devices.

5. Was the UniPack included in the list of aliases displayed in step 4?
 - If **yes**, return to the procedure you were following when you were directed to this appendix.
 - If **no**, contact Cisco Services for assistance.

Appendix G

Backup Tape Considerations

Overview

Introduction

The SR 2.5 and SR 3.5 upgrade procedures require that you back up the system components (Chapter 8). The scripts used to back up the DNCS and Application Server file systems and key files automatically detect the type of tape used for the backups.

The script used to back up the Informix database is unable to detect the type of tape used for the backup. The Cisco engineer performing the backup may have to specify the tapesize and blocksize of the tape used for the backup of the Informix database.

The chart in the following section, **Tape Considerations**, lists the various 4-mm and 8-mm tapes that can be used to back up the Informix database. You can identify the tapesize and blocksize of the tape you are using to back up the Informix database by referencing this chart.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Tape Considerations	G-2

Tape Considerations

Identify Tapesize and Blocksize

If you use a custom tape drive configuration on your DNCS, the script used to back up the Informix database requires that you specify the tapesize and the blocksize of your tape. Identify this information by referencing the following chart.

Tape Drive	Tape Length (in meters)	Capacity (normal/compressed) (in Gbytes)	Tapesize (in Kbytes)	Blocksize (in Kbytes)
8 mm	54	2/4	3774874	16
8 mm	112	5/10	9437184	32
8 mm	160	7/14	13212058	128
4 mm	90	2/4	3774874	16
4 mm	120	4/8	7549747	32
4 mm	125	12/24	22649242	128
4-mm	150	20/40	36864000	128

Appendix H

The auditQam Utility

Overview

Introduction

The auditQam utility provides a mechanism whereby you can query, audit, and reset QAM, MQAM, and GQAM modulators. This appendix provides detailed information on running the auditQam utility.

In This Appendix

This appendix contains the following topic.

Topic	See Page
Running the auditQam Utility	H-2

Running the auditQam Utility

Introduction

The information in this section describes how to query, audit, and reset QAM, MQAM, and GQAM modulators.

Querying QAMs

When troubleshooting a session issue, you may need to compare the session list in the DNCS with the session list for the QAM. You can use the *-query* option of the auditQam utility to create a report of the session list from a QAM. Then, you can compare this list to the actual session list in the DNCS. If the lists do not match, you can perform an audit to synchronize the session lists.

Complete the following steps to query a QAM.

1. If necessary, open an xterm window on the DNCS.
2. Type **auditQam -query [qam ip address] [qam port number]** and then press **Enter**.
Result: The system generates a session list for the QAM.
Notes:
 - For QAMs, you can only query port number 2.
 - For MQAMs, you can query port number 1, 2, 3, or 4.
 - For GQAMs, you can query port numbers 1 through 16.
3. From the DNCS Administrative Console, select the **Utilities** tab.
4. Click **Session List**.
Result: The Monitor Session Filter window opens.
5. Ensure the Session Type and Session State fields are set to **All**, and click **OK**.
Result: The Session List window opens.
6. Click **QAM Name, Port, Frequency** to sort by QAM name. Then, find the QAM name associated with the IP address you queried.
7. Look at the port number you queried and compare the list of sessions from the QAM with the list of sessions on the DNCS.
8. Do the session lists match?
 - If **yes**, perform additional troubleshooting tasks to determine the root cause of the issue.
 - If **no**, perform an audit to synchronize the two session lists. See the next section for more information on performing an audit from the command line.

Running the auditQam Utility, Continued

Auditing QAMs

You can synchronize the session list between the DNCS and a QAM by using the *-reset* option of the auditQam utility. The DNCS maintains the master session list. Therefore, if the QAM lists a session that the DNCS does not, that session is discarded. However, if the DNCS lists a session that the QAM does not, the session is added to the QAM's session list.

Important: Active Sessions on the QAM may be temporarily interrupted when you audit the QAM. Complete this task during a maintenance window whenever possible.

Complete the following steps to audit a QAM.

1. If necessary, open an xterm window on the DNCS.
2. Type **auditQam -audit [qam ip address]** and press **Enter**.

Result: The session list for the QAM is synchronized with the master session list from the DNCS.

Running the auditQam Utility, Continued

Resetting QAMs

Use the `-reset` option of the auditQam utility to reset QAM, MQAM, or GQAM modulators from the command line of the DNCS. Resetting the modulator from the command line is usually faster than resetting the modulator through the GUI of the DNCS. When you have dozens of modulators to reset, consider creating a script that contains a list of the QAM IP addresses that need to be reset. An example of a script follows.

Example Script

To avoid any impact on VOD performance, Cisco recommends that you only reset one QAM at a time for both the DNCS E450 and V880 platforms. Therefore, your script should resemble the following example:

```
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 1
```

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

If you want to reset only a few QAMs, complete this procedure for each QAM.

1. If necessary, open an xterm window on the DNCS.
2. Type **auditQam -reset [qam ip address]** and then press **Enter**.

Result: The system shuts down and reinitializes the QAM. During this process, the system performs an audit to ensure the session list for the QAM matches the session list from the DNCS.

Appendix I

SR 2.5/3.5 Direct ASI Installation and Configuration Procedures

Overview

Introduction

To make the DNCS more compatible with international requirements and to reduce network infrastructure complexity, Cisco has removed the requirement for a Broadband Integrated Gateway (BIG) to help transmit Broadcast File System (BFS) data to QAMs. The BFS now produces a full transport stream, and no longer feeds an MPEG stream to the BIG for further processing and multiplexing.

The DNCS is now configurable so that inband data can be transmitted through the current asynchronous transfer mode (ATM) interface or through a new asynchronous serial interface (ASI). This appendix provides instructions for installing and configuring the ASI.

In This Chapter

This chapter contains the following topic.

Topic	See Page
Check for the Existence of the ASI Package	I-2
Install the ASI Card	I-3
Install the ASI Package	I-4
Check the Status of the ASI Card	I-5
Enable the ASI Feature	I-7
Record Configuration Data	I-9
Create an MPEG Source	I-12
Set Up a BFS Session for the ASI MPEG Source	I-15
Set Up the QAM	I-17
Set Up the BFS Host	I-20
Set Up the BFS Source	I-23
Set the BIG Offline	I-25
Stop the BFS and OSM Processes	I-26
Tear Down BFS Sessions	I-29
Clear Completed, Pending, or Failed Sessions	I-30
Restart the BFS and OSM Processes	I-31

Check for the Existence of the ASI Package

Checking for the Existence of the ASI Package on the DNCS

Before installing the ASI card, determine whether the ASI package currently exists on the DNCS. If it currently exists on the DNCS, you will have to remove it. Follow these instructions to check for the ASI package and then to remove it, if necessary.

Note: Normally, systems without an ASI card should not have an ASI package.

❑ 1. If necessary, open an xterm window on the DNCS.

❑ 2. Type **pkginfo -l SAIasi** and then press **Enter**.

Result: The system displays information about the ASI package, if it exists.

❑ 3. After completing step 2, did the ASI package exist on the DNCS?

- If **yes**, go to step 4 to begin removing the package.
- If **no**, go to **Install the ASI Card**, next in this appendix.

❑ 4. Follow these instructions to log on to the xterm window as root user.

a) Type **su -** and then press **Enter**.

Result: The **password** prompt appears.

b) Type the root password and then press **Enter**.

❑ 5. Type **pkgrm SAIasi** and then press **Enter**.

Result: The system removes the ASI package from the DNCS.

❑ 6. Go to **Install the ASI Card**, next in this appendix.

Install the ASI Card

Installing the ASI Card

After deleting (if necessary) the ASI package from the DNCS, follow these instructions to install the ASI card.

- ❑ 1. Follow these instructions, if necessary, to log on to the xterm window as root user.

Note: If you had to remove the ASI package in the previous procedure, you should already be root user.

- a) Type **su -** and then press **Enter**.

Result: The **password** prompt appears.

- b) Type the root password and then press **Enter**.

- ❑ 2. Type **shutdown -y -g0 -i0** and then press **Enter**.

The DNCS shuts down and the **ok** prompt appears.

- ❑ 3. Turn off power to the DNCS.

- ❑ 4. Remove the cover to the DNCS and install the ASI card into one of the following slots:

- Slot 2 if you have an Enterprise 250 DNCS
- Slot 5 if you have an Enterprise 450 DNCS
- Slot 7 if you have a Sun Fire V880 DNCS

- ❑ 5. Put the cover back on the DNCS.

- ❑ 6. Turn on power to the DNCS.

- ❑ 7. Log on to the DNCS as **root** user.

- ❑ 8. Did the DNCS processes start after you turned on the power?

- If **yes**, follow the **Stopping the DNCS** procedure in Appendix A to stop the DNCS; then go to **Install the ASI Package**, next in this appendix.
- If **no**, go to **Install the ASI Package**, next in this appendix.

Install the ASI Package

Installing the ASI Package

After installing the ASI card into the DNCS, follow these instructions to install the ASI package.

Note: If you have properly followed the instructions in the previous procedure, you should be logged on as root user to the DNCS.

- ❑ 1. Type `. /dvs/dnccs/bin/dnccsSetup` and then press **Enter**.

Important: Be sure to type the dot followed by a space prior to typing `/dvs`.

Result: The system establishes the root user environment.

- ❑ 2. Insert the CD labeled similarly to **SAIasi** into the cdrom drive of the DNCS.

- ❑ 3. Type `df -n` and then press **Enter**.

Result: A list of the mounted filesystems appears.

Note: The presence of `/cdrom` in the output confirms that the system correctly mounted the CD.

- ❑ 4. Type `cd /cdrom/cdrom0` and then press **Enter**.

- ❑ 5. Type `./install_pkg` and then press **Enter**.

Result: Software installs which prepares the DNCS for Direct ASI support.

- ❑ 6. Type `eject cd` and then press **Enter**.

Result: The CD ejects from the DNCS.

- ❑ 7. Go to **Check the Status of the ASI Card**, next in this appendix.

Check the Status of the ASI Card

Checking the Status of the Direct ASI Card

After installing the ASI card and the ASI package, follow these instructions to test the status of the card.

Note: If you have followed the instructions in the appendix properly, the DNCS processes should already be shut down and you should be logged into the DNCS as root user.

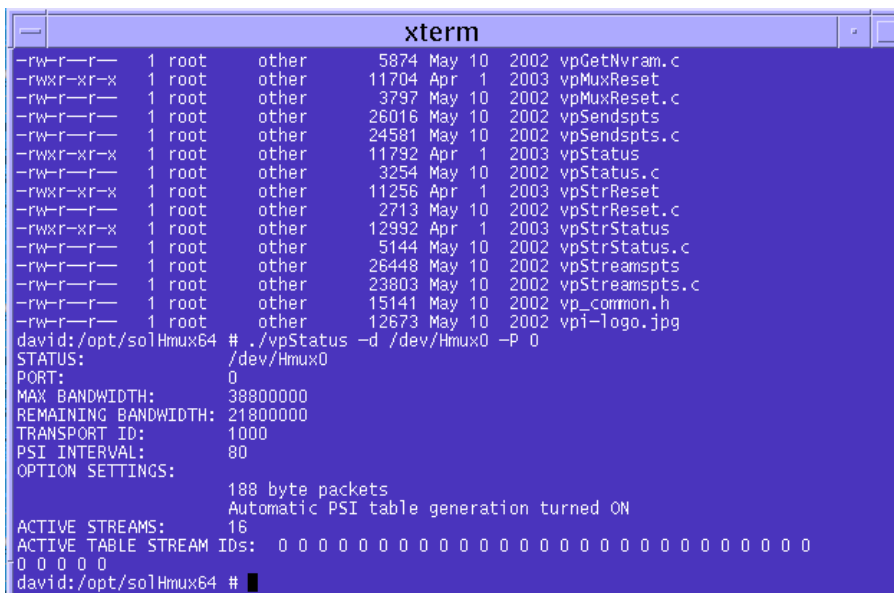
- ❑ 1. Type `cd /opt/solHmux64` and then press **Enter**.

Result: The `/opt/solHmux64` directory becomes the working directory.

- ❑ 2. Type `./vpStatus -d /dev/Hmux0 -P 0` and then press **Enter**.

Result: The system displays the status of the ASI card.

Example: Your results should look similar to, but not exactly like, the following example.



```
xterm
-rw-r--r-- 1 root other 5874 May 10 2002 vpGetNvram.c
-rwxr-xr-x 1 root other 11704 Apr 1 2003 vpMuxReset
-rw-r--r-- 1 root other 3797 May 10 2002 vpMuxReset.c
-rw-r--r-- 1 root other 26016 May 10 2002 vpSendspts
-rw-r--r-- 1 root other 24581 May 10 2002 vpSendspts.c
-rwxr-xr-x 1 root other 11792 Apr 1 2003 vpStatus
-rw-r--r-- 1 root other 3254 May 10 2002 vpStatus.c
-rwxr-xr-x 1 root other 11256 Apr 1 2003 vpStrReset
-rw-r--r-- 1 root other 2713 May 10 2002 vpStrReset.c
-rwxr-xr-x 1 root other 12992 Apr 1 2003 vpStrStatus
-rw-r--r-- 1 root other 5144 May 10 2002 vpStrStatus.c
-rw-r--r-- 1 root other 26448 May 10 2002 vpStreamspts
-rw-r--r-- 1 root other 23803 May 10 2002 vpStreamspts.c
-rw-r--r-- 1 root other 15141 May 10 2002 vp_common.h
-rw-r--r-- 1 root other 12673 May 10 2002 vpi-logo.jpg
david:/opt/solHmux64 # ./vpStatus -d /dev/Hmux0 -P 0
STATUS: /dev/Hmux0
PORT: 0
MAX BANDWIDTH: 38800000
REMAINING BANDWIDTH: 21800000
TRANSPORT ID: 1000
PSI INTERVAL: 80
OPTION SETTINGS:
                188 byte packets
                Automatic PSI table generation turned ON
ACTIVE STREAMS: 16
ACTIVE TABLE STREAM IDs: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0
david:/opt/solHmux64 #
```

Note: An improperly installed ASI card will yield either no results or results that clearly show an error.

- ❑ 3. Do the results from step 3 show the ASI card to be properly installed?
 - If **yes**, go to **Enable the ASI Feature**, next in this appendix.
 - If **no**, go to **Reconfiguring the ASI Card**, next in this section

Check the Status of the ASI Card, Continued

Reconfiguring the ASI Card

If the results from the previous procedure, **Checking the Status of the Direct ASI Card**, show the card to be either improperly installed or configured, contact Cisco Services. Engineers from Cisco Services will provide instructions for running the `configureASI.pl` script.

Enable the ASI Feature

Enabling the ASI Feature

After installing the ASI package onto the DNCS, follow these instructions to enable the ASI card.

- ❑ 1. Follow these instructions to log on to the xterm window as root user.

- a) Type **su -** and then press **Enter**.

- Result:** The **password** prompt appears.

- b) Type the root password and then press **Enter**.

- ❑ 2. Remove the existing input cable from the back of the data QAM.

- ❑ 3. Replace the input cable with the cable from the ASI card that you just installed into the DNCS.

Note: Plug the cable into the connector labeled **ASI IN**.

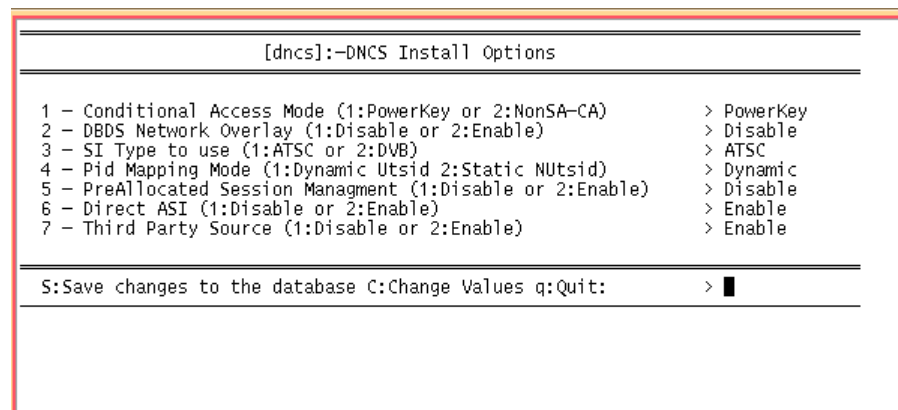
- ❑ 4. In an xterm window on the DNCS, type **cd /dvs/dncs/bin** and then press **Enter**.

Result: The **/dvs/dncs/bin** directory becomes the working directory.

- ❑ 5. Type **.AddDncsFEATURESupport.sh** and then press **Enter**.

Note: Be sure to type the dot preceding the file name.

Result: The DNCS Install Options window opens.



- ❑ 6. Set menu item 6, **Direct ASI**, to **Enable**.

Note: Press **Enter** until you reach item 6 and then press **c** to change the value from Disable to Enable, if necessary.

Enable the ASI Feature, Continued

- ❑ 7. Press **s** to save the configuration.
- ❑ 8. Type **q** to exit from the DNCS Install Options window.
- ❑ 9. Follow the **Restarting the DNCS** procedure in Appendix B to restart the DNCS.
- ❑ 10. Go to **Record Configuration Data**, next in this appendix.

Record Configuration Data

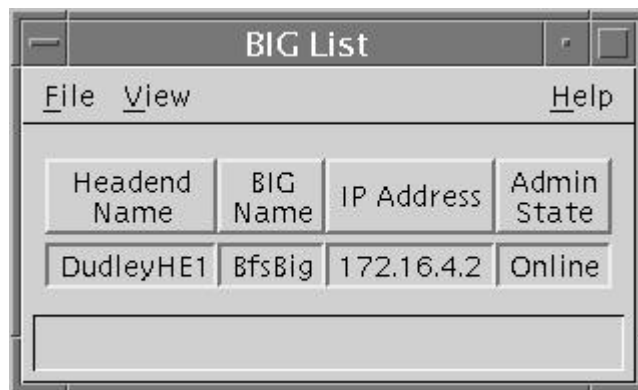
Recording Configuration Details

After enabling the ASI feature on the DNCS, take a few minutes to record the BFS transport stream ID (TSID) and the QAM connection details regarding the Direct ASI card.

Note: This data may be useful for troubleshooting purposes later on.

- ❑ 1. From the DNCS Administrative Console, select the **Element Provisioning** tab.
- ❑ 2. Click **BIG**.

Result: The BIG List window opens.



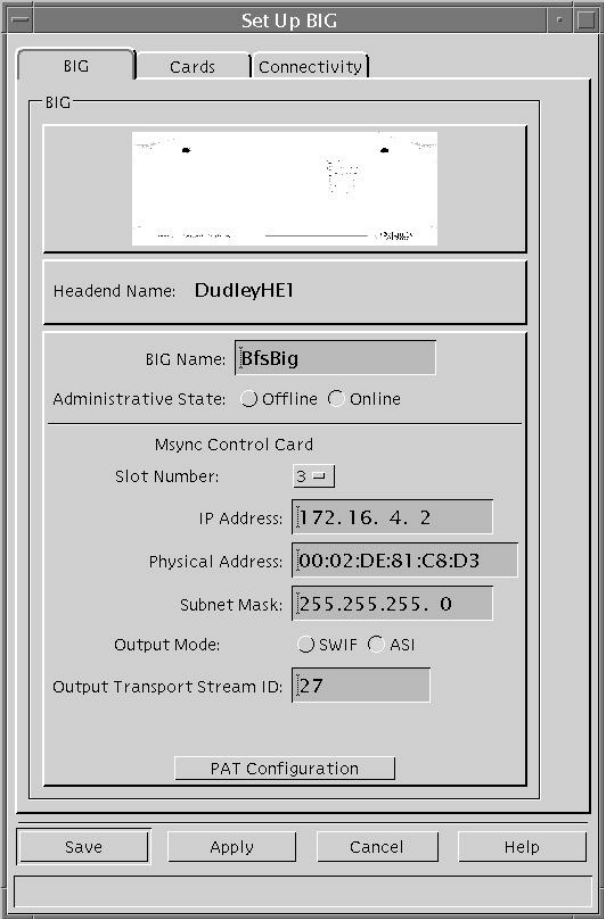
- ❑ 3. Double-click the **BfsBig** entry.

Result: The Set Up BIG window opens.

Record Configuration Data, Continued

- ❑ 4. On a sheet of paper, record the **Output Transport Stream ID**.

Note: In this example, the Output Transport Stream ID value is 27.



The screenshot shows the 'Set Up BIG' window with the 'BIG' tab selected. The window contains the following fields and controls:

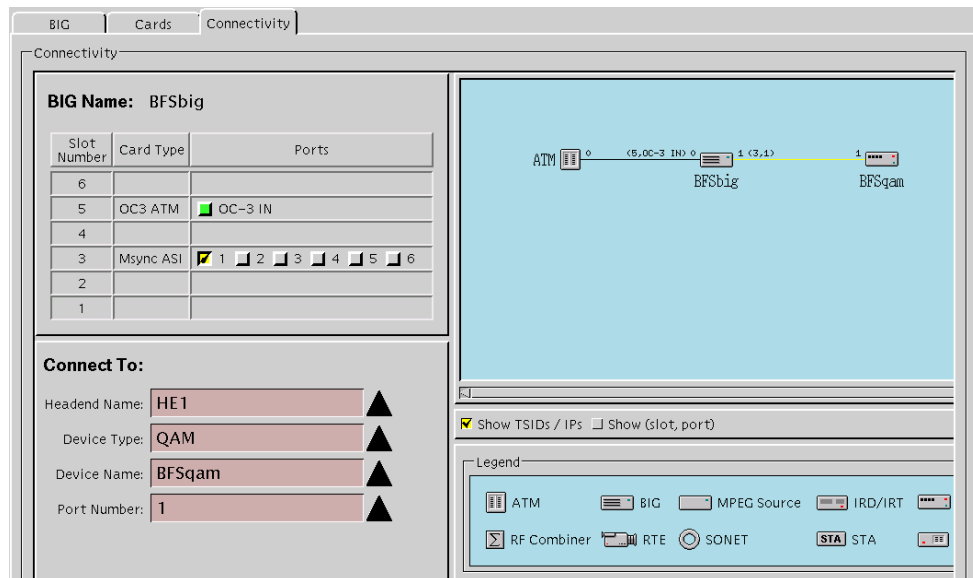
- BIG** tab (selected), **Cards** tab, **Connectivity** tab.
- BIG** section: A diagram showing a network topology with a central node and several peripheral nodes.
- Headend Name:** **DudleyHE1**
- BIG Name:** **BfsBig**
- Administrative State:** ☐ Offline ☐ Online
- Msync Control Card** section:
 - Slot Number:** **3**
 - IP Address:** **172.16.4.2**
 - Physical Address:** **00:02:DE:81:C8:D3**
 - Subnet Mask:** **255.255.255.0**
 - Output Mode:** ☐ SWIF ☐ ASI
 - Output Transport Stream ID:** **27**
- PAT Configuration** button.
- Save**, **Apply**, **Cancel**, **Help** buttons at the bottom.

- ❑ 5. Click the **Connectivity** tab.
Result: The window updates to show connection data.
- ❑ 6. Click and drag the right border of the window to expand it.

Record Configuration Data, Continued

- ❑ 7. Click **Show TSIDs / IPs**.

Result: The window updates to show additional connection detail.



- ❑ 8. Click the SWIF Transmit or Msync ASI port currently connected to the BFS QAM.
Result: In the **Connect To** area of the window, the system displays the **Headend Name**, **Device Type**, **Device Name**, and **Port Number**.
- ❑ 9. On a sheet of paper, record the data displayed in step 8.
- ❑ 10. Click **Cancel** to close the window.

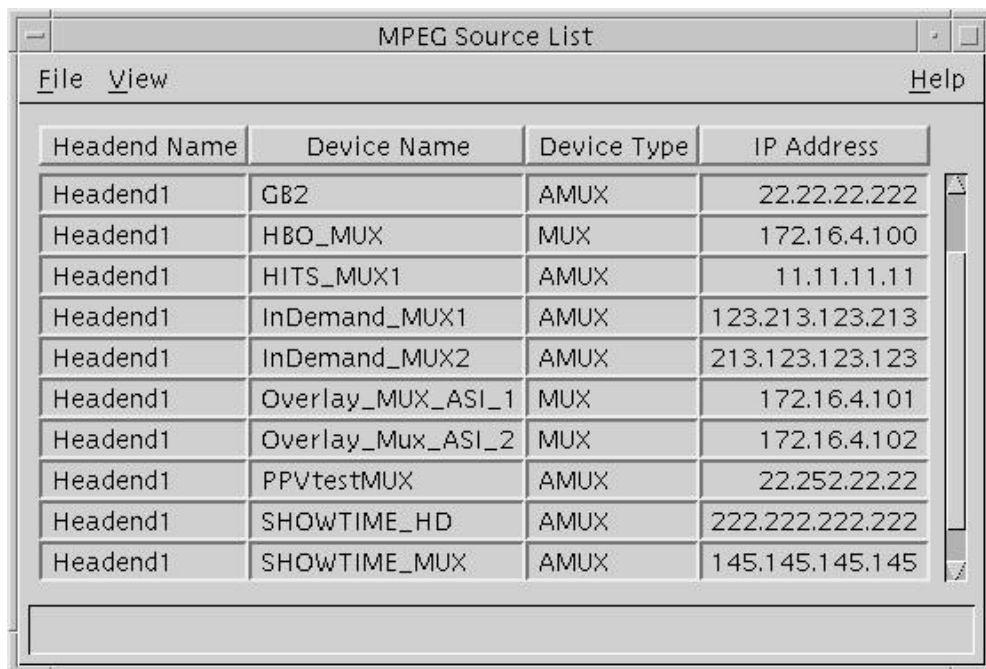
Create an MPEG Source

Creating an MPEG Source

After enabling the Direct ASI feature from the DNCS Install Options window, you should now create an MPEG source. Follow these instructions to create an MPEG source.

- ❑ 1. From the DNCS Administrative Console, click the **Element Provisioning** tab and then select **MPEG Source**.

Result: The MPEG Source List window opens.



The screenshot shows a window titled "MPEG Source List" with a menu bar containing "File", "View", and "Help". Below the menu bar is a table with four columns: "Headend Name", "Device Name", "Device Type", and "IP Address". The table contains 12 rows of data. A vertical scrollbar is visible on the right side of the table.

Headend Name	Device Name	Device Type	IP Address
Headend1	GB2	AMUX	22.22.22.222
Headend1	HBO_MUX	MUX	172.16.4.100
Headend1	HITS_MUX1	AMUX	11.11.11.11
Headend1	InDemand_MUX1	AMUX	123.213.123.213
Headend1	InDemand_MUX2	AMUX	213.123.123.123
Headend1	Overlay_MUX_ASI_1	MUX	172.16.4.101
Headend1	Overlay_Mux_ASI_2	MUX	172.16.4.102
Headend1	PPVtestMUX	AMUX	22.252.22.22
Headend1	SHOWTIME_HD	AMUX	222.222.222.222
Headend1	SHOWTIME_MUX	AMUX	145.145.145.145

- ❑ 2. Click **File** and then select **New**.

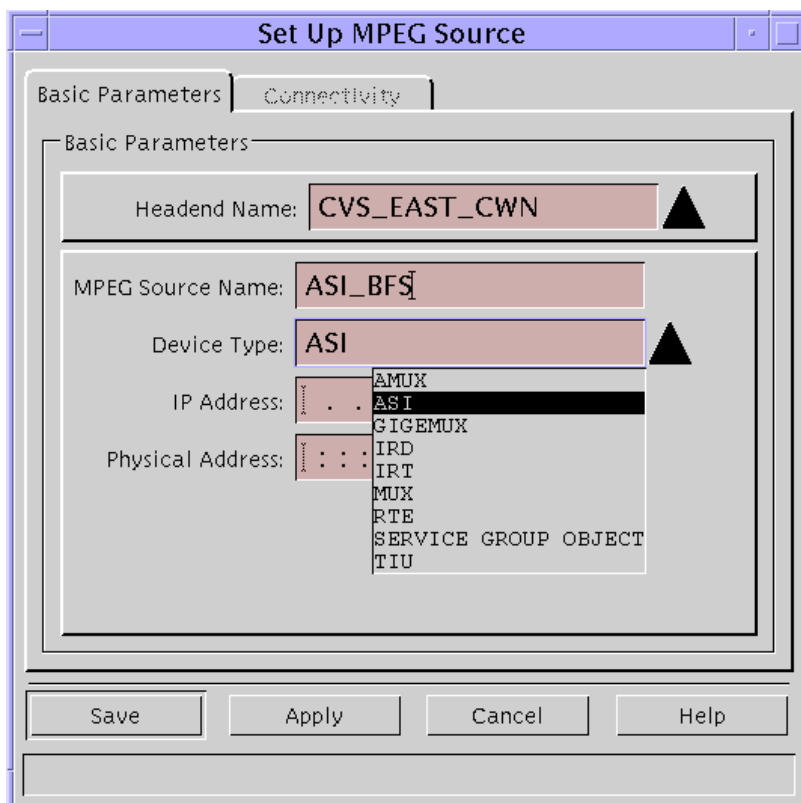
Result: The Set Up MPEG Source window opens.

Create an MPEG Source, Continued

- ❑ 3. Follow these instructions to configure the Set Up MPEG Source window.
 - a) Click the arrow next to the **Headend Name** field and choose the appropriate headend.
 - b) Type **ASI_BFS** in the **MPEG Source Name** field.
 - c) Type **ASI** in the **Device Type** field.

Note: If ASI is already configured, you can click the arrow next to the Device Type field and select **ASI**.
 - d) Type any IP address and MAC address in the **IP Address** and **Physical Address** fields.

Note: The actual IP address and MAC address you use are not important.



- e) Click **Save**.

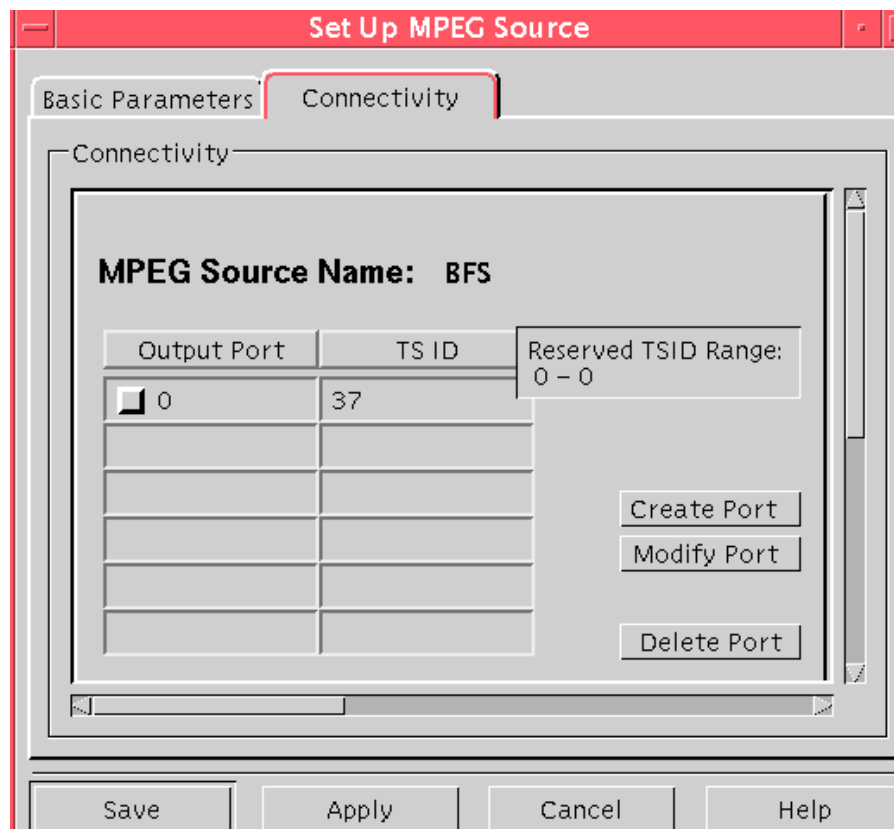
Result: The **Connectivity** tab becomes active.

- ❑ 4. Click the **Connectivity** tab on the Set Up MPEG Source window.

Create an MPEG Source, Continued

- ❑ 5. Configure the Connectivity portion of the Set Up MPEG Source window with an Output Port of **0** and a transport stream ID (TSID) that is equal to the input TSID for the BFS QAM.

Example: When you have finished configuring the Connectivity portion, the Set Up MPEG Source window should look similar to the following example:



- ❑ 6. Click **Save**.

Result: The system saves the newly created MPEG source.

- ❑ 7. Go to **Set Up a BFS Session for the ASI MPEG Source**, next in this appendix.

Set Up a BFS Session for the ASI MPEG Source

Setting Up a BFS Session for the ASI MPEG Source

Follow these instructions to set up a BFS session for the ASI MPEG source.

- ❑ 1. From the DNCS Administrative Console, select the **System Provisioning** tab.
- ❑ 2. Click **Source**.
Result: The Source List window opens.
- ❑ 3. Click **File** and then select **New**.
Result: The Set Up Source window opens.
- ❑ 4. Follow these instructions to configure the Set Up Source window.
 - a) In the **Source Name** field, type **ASI_BFS**.
 - b) In the **Source ID** field, type a unique source ID that is greater than 201.
Note: The Source List window, which is still open, lists all source IDs currently in use.
 - c) Click **Save**.
Result: The Source List window updates and the Set Up Source window closes.
- ❑ 5. On the Source List window, highlight the newly created BFS ASI source.
- ❑ 6. Click **File** and then select **Source Definition**.
Result: The Source Definition List window opens.
- ❑ 7. Click **File** and then select **New Digital**.
Result: The Set Up Digital Source Definition window opens.
- ❑ 8. Follow these instructions to configure the Set Up Digital Source Definition window.
 - a) In the first part of the Session ID field, type all zeros.
Example: 00:00:00:00:00:00
 - b) In the second part of the Session ID field, type the source ID that you defined in step 4.
- ❑ 9. Click **Next**.
Result: The Define Session portion of the Set Up Digital Source Definition window appears.

Set Up a BFS Session for the ASI MPEG Source, Continued

- ❑ 10. Select the **BFS** source and then click **Next**.

Result: The Save Definition portion of the Set Up Digital Source Definition window appears.

- ❑ 11. Click **Save**.

Result: The system saves the newly defined BFS session

- ❑ 12. Go to **Set Up the QAM**, next in this appendix.

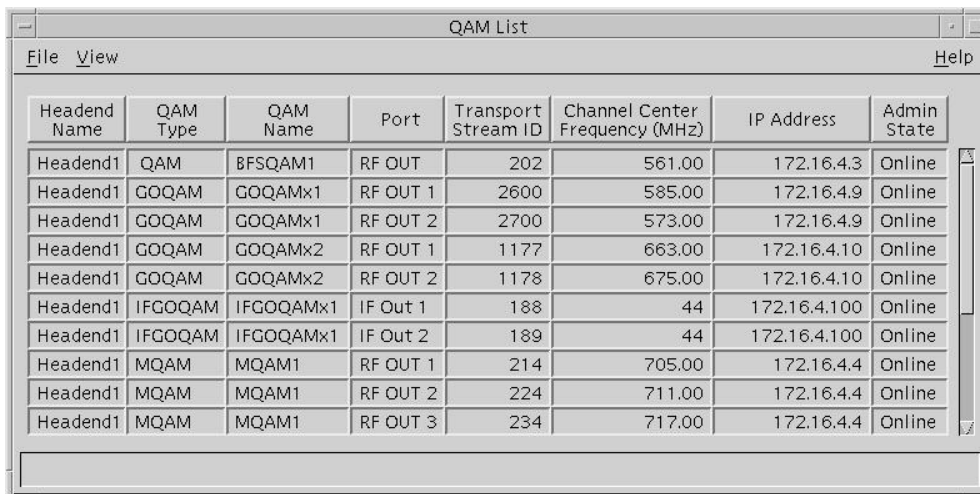
Set Up the QAM

Setting Up the QAM

After creating the MPEG source, follow these instructions to set up the QAM.

1. From the DNCS Administrative Console, click **Element Provisioning** and then select **QAM**.

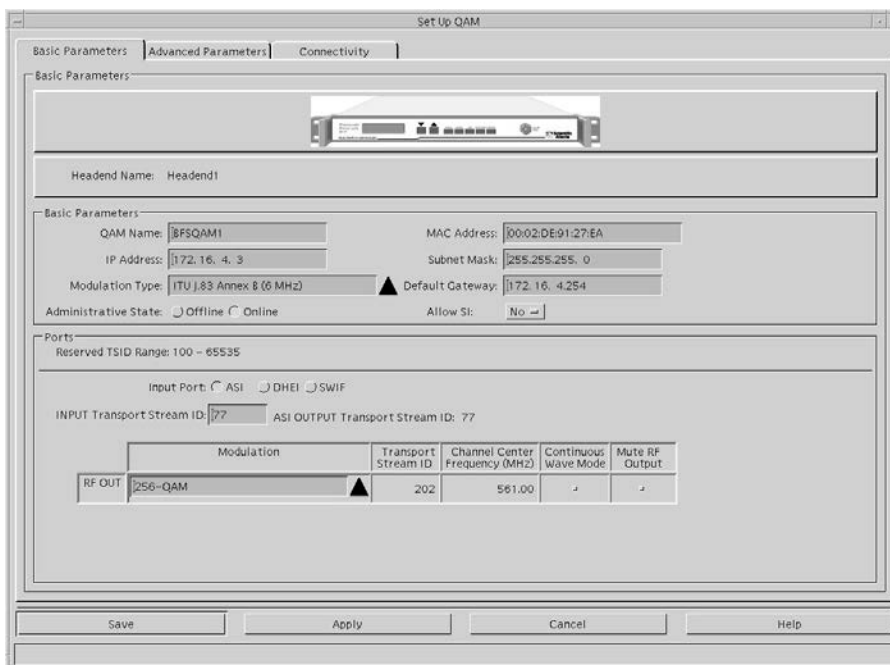
Result: The QAM List window opens.



Headend Name	QAM Type	QAM Name	Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
Headend1	QAM	BFSQAM1	RF OUT	202	561.00	172.16.4.3	Online
Headend1	GOQAM	GOQAMx1	RF OUT 1	2600	585.00	172.16.4.9	Online
Headend1	GOQAM	GOQAMx1	RF OUT 2	2700	573.00	172.16.4.9	Online
Headend1	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	MQAM	MQAM1	RF OUT 1	214	705.00	172.16.4.4	Online
Headend1	MQAM	MQAM1	RF OUT 2	224	711.00	172.16.4.4	Online
Headend1	MQAM	MQAM1	RF OUT 3	234	717.00	172.16.4.4	Online

2. Double-click the BFS QAM.

Result: The Set Up QAM window opens.



Set Up QAM

Basic Parameters | Advanced Parameters | Connectivity

Basic Parameters:

Headend Name: Headend1

QAM Name: BFSQAM1 MAC Address: 00:02:DE91:27:EA

IP Address: 172.16.4.3 Subnet Mask: 255.255.255.0

Modulation Type: ITU J.83 Annex B (6 MHz) Default Gateway: 172.16.4.254

Administrative State: ☐ Offline ☒ Online Allow SI: No

Ports

Reserved TSID Range: 100 - 65535

Input Port: ☐ ASI ☐ DHEI ☐ SWIF

INPUT Transport Stream ID: 77 ASI OUTPUT Transport Stream ID: 77

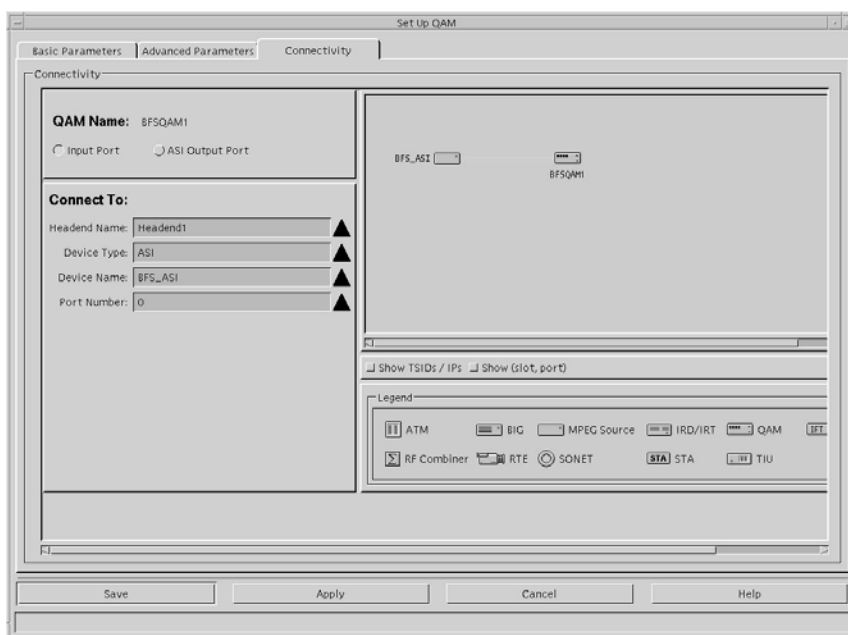
Modulation	Transport Stream ID	Channel Center Frequency (MHz)	Continuous Wave Mode	Mute RF Output
RF OUT 256-QAM	202	561.00		

Save Apply Cancel Help

Set Up the QAM, Continued

- ❑ 3. On the Set Up QAM window, configure the **Input Port** field to **ASI**.
- ❑ 4. Configure the **INPUT Transport Stream ID** field with the same value that you used as the TSID on the Set Up MPEG Source window in a previous procedure, **Creating an MPEG Source**.
- ❑ 5. Click the **Connectivity** tab.
- ❑ 6. Follow these instructions to configure the remainder of the Set Up QAM window.
 - a) Click the arrow to the right of the **Headend Name** field and choose the appropriate headend.
 - b) Click the arrow to the right of the **Device Type** field and choose the appropriate device.
 - c) Click the arrow to the right of the **Device Name** field and choose the appropriate device name.
 - d) Click the arrow to the right of the **Port Number** field and set the port number to **0** (zero).

Example: When you are finished, the Set Up QAM window should look similar to the following example:



Set Up the QAM, Continued

- ❑ 7. Click **Save**.

Result: The system saves the QAM configuration.

Note: A message may appear that concerns the QAM connection with Spectrum. You can ignore such a message. Click **Save** one or two more times until the QAM configuration is saved without any messages.

- ❑ 8. Go to **Set Up the BFS Host**, next in this appendix.

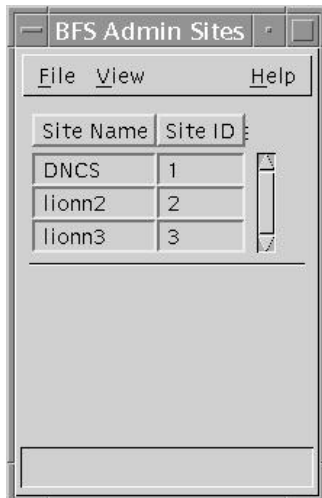
Set Up the BFS Host

Setting Up the BFS Host

After setting up the QAM, follow these instructions to set up the BFS host.

- ❑ 1. From the DNCS Administrative Console, click the **Application Interface Module** tab and then select **BFS Admin**.

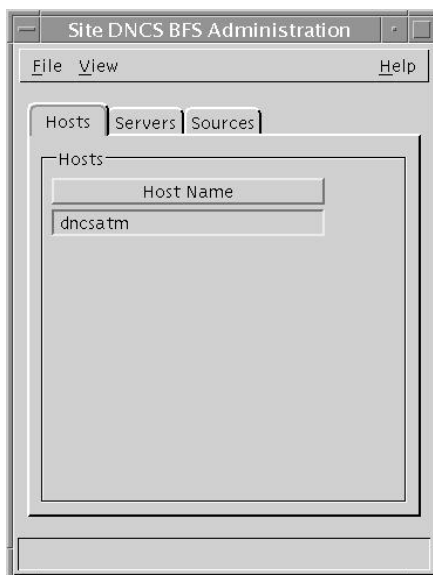
Result: The BFS Admin Site window opens.



- ❑ 2. Double-click the site name of the system you are setting up.

Result: The Site [BFS site] BFS Administration window opens.

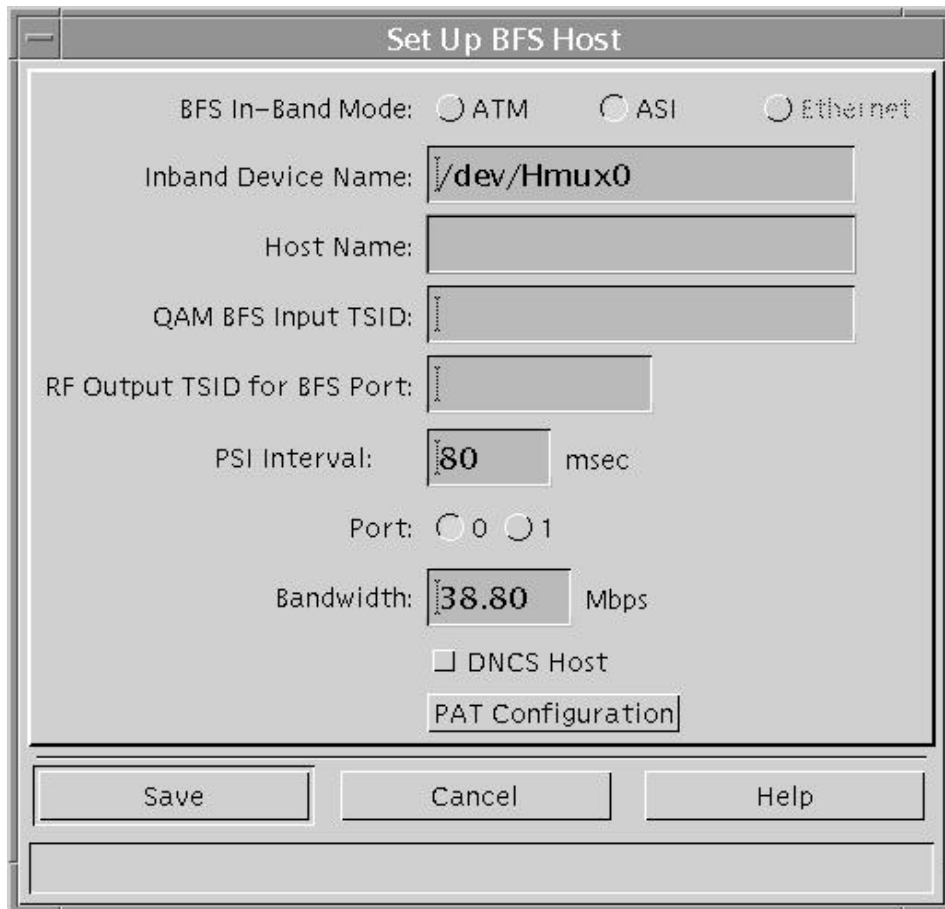
Note: If your site does not support RCS, this window does not appear. Instead, the window in step 3 appears.



Set Up the BFS Host, Continued

- ❑ 3. Select the **Hosts** tab; then double-click on the existing DNCS host.

Result: The Set Up BFS Host window opens.



The image shows a dialog box titled "Set Up BFS Host". It contains several configuration fields and options:

- BFS In-Band Mode:** Three radio buttons are present: ☐ ATM, ☐ ASI, and ☐ Ethernet.
- Inband Device Name:** A text field containing the value `/dev/Hmux0`.
- Host Name:** An empty text field.
- QAM BFS Input TSID:** An empty text field.
- RF Output TSID for BFS Port:** An empty text field.
- PSI Interval:** A text field containing the value `80`, followed by the unit `msec`.
- Port:** Two radio buttons labeled `0` and `1`.
- Bandwidth:** A text field containing the value `38.80`, followed by the unit `Mbps`.
- DNCS Host:** A checkbox that is currently unchecked.
- PAT Configuration:** A button located below the checkbox.
- Buttons:** At the bottom of the dialog are three buttons: `Save`, `Cancel`, and `Help`.

Set Up the BFS Host, Continued

- ❑ 4. Follow these directions to configure the Set Up BFS Host window.
 - a) In the **BFS In-Band Mode** field, select **ASI**.
 - b) In the **Inband Device Name** field, type **/dev/Hmux0**.
 - c) In the **Host Name** field, type the name of the DNCS host.
Example: dnccsatm
 - d) In the **QAM BFS Input TSID** field, type the value that represents the output TSID for the BFS MPEG source.
 - e) In the **RF Output TSID for BFS Port** field, type the value that represents the output TSID for the BFS QAM or the BFS port on an MQAM.
 - f) In the **PSI Interval** field, type **80**.
 - g) In the **Port** field, select **0**.
 - h) In the **Bandwidth** field, type **38.80**.
 - i) Are you configuring Direct ASI on a DNCS (rather than an RNCS)?
 - If **yes**, click **DNCS Host**.
 - If **no**, skip to step 5.
- ❑ 5. Click **PAT Configuration**.
Result: The Inband Data PAT window opens.
- ❑ 6. Click **Close** on the Inband Data PAT window.
- ❑ 7. Click **Save** on the Set Up BFS Host window.
Result: The system saves the BFS host configuration.
- ❑ 8. Go to **Set Up the BFS Source**, next in this appendix.

Set Up the BFS Source

Setting Up the BFS Source

After setting up the BFS host, follow these instructions to set up the inband BFS source.

- ❑ 1. From the DNCS Administrative Console, click the **Application Interface Module** tab and then select **BFS Admin**.

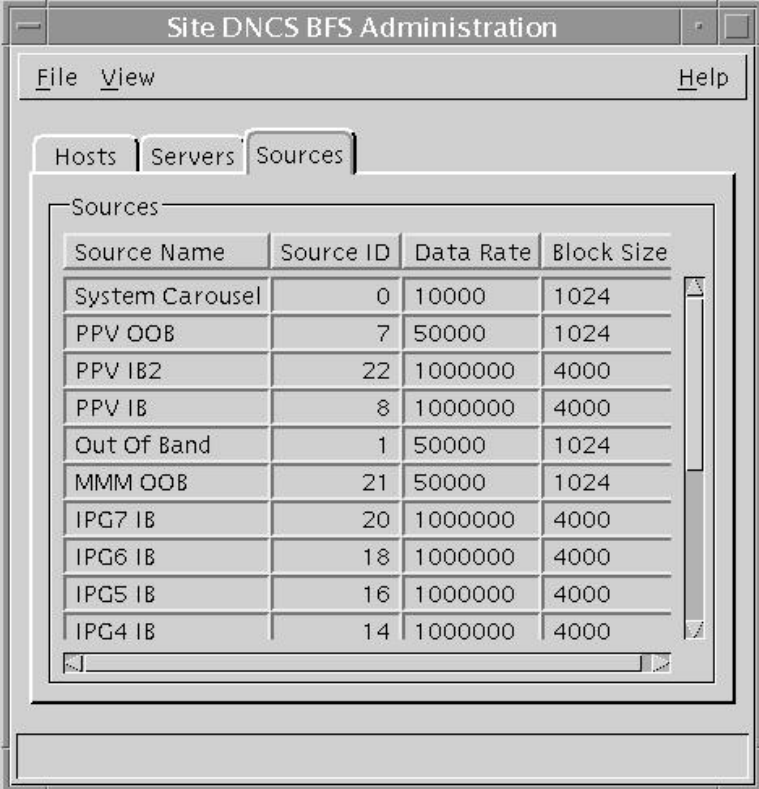
Result: The BFS Admin Site window opens.

- ❑ 2. Double-click the site name of the site you are setting up.

Result: The Site [BFS site] BFS Administration window opens.

- ❑ 3. Click the **Sources** tab.

Result: The window updates to list all BFS sources.



The screenshot shows a window titled "Site DNCS BFS Administration". It has a menu bar with "File", "View", and "Help". Below the menu bar are three tabs: "Hosts", "Servers", and "Sources". The "Sources" tab is selected. Inside the "Sources" tab, there is a table with the following data:

Source Name	Source ID	Data Rate	Block Size
System Carousel	0	10000	1024
PPV OOB	7	50000	1024
PPV IB2	22	1000000	4000
PPV IB	8	1000000	4000
Out Of Band	1	50000	1024
MMM OOB	21	50000	1024
IPG7 IB	20	1000000	4000
IPG6 IB	18	1000000	4000
IPG5 IB	16	1000000	4000
IPG4 IB	14	1000000	4000

Set Up the BFS Source, Continued

- ❑ 4. Click **File** and then select **New**.

Result: The Set Up BFS Source window opens.

- ❑ 5. Follow these instructions to configure the Set Up BFS Source window.
 - a) In the **Source Name** field, type **ASI_BFS**.
 - b) In the **Source ID** field, type a unique number greater than 201.
 - c) In the **Source Type** field, select **BFS**.
 - d) In the **Transport Type** field, select **ASI In-band**.
 - e) In the **Data Rate** field, type **1.0**.
 - f) In the **Block Size** field, type **4000**.
 - g) In the **Indication Interval** field, type **100**.
 - h) Select **enable**.
 - i) In the **Available Hosts** field, highlight the hostname of the DNCS and then click **Add**.

Result: The hostname of the DNCS moves to the **Selected Hosts** column.

- j) Click **Save**.

Result: The system saves the BFS source configuration.

- ❑ 6. Go to **Set the BIG Offline**, next in this appendix.

Set the BIG Offline

Setting the BIG Offline

After setting up the BFS source, follow these instructions to set the BIG offline.

- ❑ 1. From the DNCS Administrative Console, select the **Element Provisioning** tab.

- ❑ 2. Click **BIG**.

Result: The BIG List window opens.

- ❑ 3. Double-click the BIG.

Result: The Set Up BIG window opens.

- ❑ 4. At the **Administrative Status** field, select **Offline**.

- ❑ 5. Click **Save**.

Result: The system saves the BIG status to be offline.

- ❑ 6. Go to **Stop the BFS and OSM Processes**, next in this appendix.

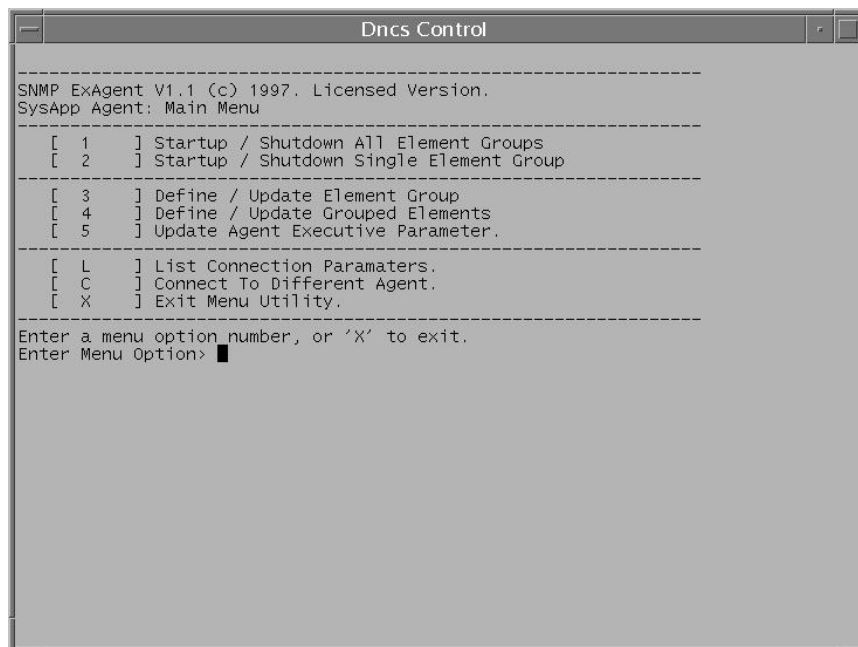
Stop the BFS and OSM Processes

Stopping the BFS and OSM Processes

After setting the BIG offline, you need to stop the BFS and OSM processes on the DNCS next. Follow these instructions to stop the processes.

- ❑ 1. If necessary, open an xterm window on the DNCS.
- ❑ 2. Type **dncsControl** and then press **Enter**.

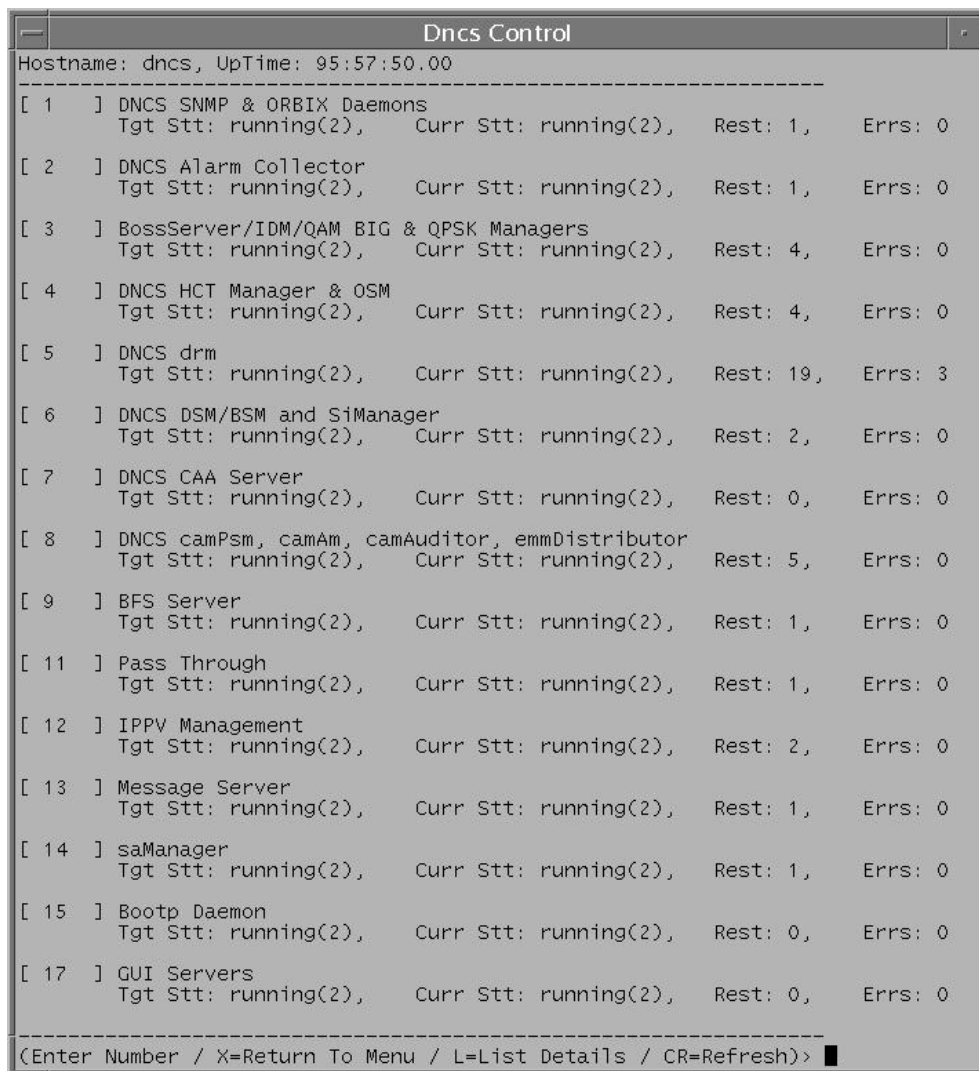
Result: The DnCS Control window opens.



Stop the BFS and OSM Processes, Continued

- ❑ 3. Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**.

Result: The DnCS Control window updates to show all the servers and processes running on the DNCS.



DnCS Control				
Hostname: dnCS, UpTime: 95:57:50.00				
[1]	DNCS SNMP & ORBIX Daemons	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[2]	DNCS Alarm Collector	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[3]	BossServer/IDM/QAM BIG & QPSK Managers	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 4, Errs: 0
[4]	DNCS HCT Manager & OSM	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 4, Errs: 0
[5]	DNCS drm	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 19, Errs: 3
[6]	DNCS DSM/BSM and SiManager	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 2, Errs: 0
[7]	DNCS CAA Server	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 0, Errs: 0
[8]	DNCS camPsm, camAm, camAuditor, emmDistributor	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 5, Errs: 0
[9]	BFS Server	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[11]	Pass Through	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[12]	IPPV Management	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 2, Errs: 0
[13]	Message Server	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[14]	saManager	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 1, Errs: 0
[15]	Bootp Daemon	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 0, Errs: 0
[17]	GUI Servers	Tgt Stt: running(2),	Curr Stt: running(2),	Rest: 0, Errs: 0
<Enter Number / X=Return To Menu / L=List Details / CR=Refresh>				

- ❑ 4. Type the number associated with **BFS Server** and then press **Enter**.

Result: The DnCS Control window updates to display a message prompting you to enter the target status for the entire element group or to type E to display the individual elements of the group.

- ❑ 5. Type **1** (for stopped) and then press **Enter**.

Result: A confirmation message appears.

Stop the BFS and OSM Processes, Continued

- ❑ 6. Type **y** (for yes) and then press **Enter**.
Result: After a few moments, the DnCS Control window updates to display the current state (**Curr Stt**) of the selected group.
- ❑ 7. Wait until the current state of the BFS Server group is **Stopped**.
Note: The DnCS Control window updates automatically every few seconds or you can press **Enter** to force an update.
- ❑ 8. When the current state of the BFS Server group is **Stopped**, type the number associated with **DNCS HCT Manager & OSM** and then press **Enter**.
Result: The DnCS Control window updates to display a message prompting you to enter the target status for the entire element group or to type **E** to display the individual elements of the group.
- ❑ 9. Type **e** and then press **Enter**.
Note: The DnCS Control window updates to display the individual elements of the DNCS HCT Manager & OSM group.
- ❑ 10. Type the number associated with **/dvs/dnCS/bin/OSM** and then press **Enter**.
Result: The DnCS Control window updates to display a message prompting you to enter the target status of the selected element.
- ❑ 11. Type **1** (for stopped) and then press **Enter**.
Result: A confirmation message appears.
- ❑ 12. Type **y** (for yes) and then press **Enter**.
Result: After a few moments, the DnCS Control window updates to display the current state (**Curr Stt**) of the selected element.
- ❑ 13. Wait until the current state of the **/dvs/dnCS/bin/OSM** process is **Stopped**.
Note: The DnCS Control window updates automatically every few seconds or you can press **Enter** to force an update.
- ❑ 14. When the current state of the **/dvs/dnCS/bin/OSM** process is **Stopped**, follow the on-screen instructions to exit from the dnCSControl utility.
- ❑ 15. Go to **Tear Down BFS Sessions**, next in this appendix.

Tear Down BFS Sessions

Tearing Down BFS Sessions

After stopping the BFS and OSM processes, tear down the BFS sessions. Follow these instructions to tear down the BFS sessions.

- ❑ 1. From the DNCS Administrative Console, select the **Utilities** tab.
- ❑ 2. Click **Session List**.

Result: The Sessions window opens.

Select	Session ID	Type	State	YASP Name	QAM Name, Port, Frequency	Start Time	PID Mapping	Tear Down
☐	00:00:00:00:00:00 2	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 4	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 6	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 8	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 10	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 12	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 14	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 16	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 18	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 20	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 22	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	
☐	00:00:00:00:00:00 1000	Continuous Feed	Active	Broadcast File System	BFSqam, RF OUT, 603.00 MHz	2004-3-12 14:56:43	dynamic	

- ❑ 3. Highlight the BFS sessions and then click **Teardown Selected Sessions**.

Result: A confirmation message appears.

- ❑ 4. Click **OK**.

Result: The system tears down the BFS sessions.

- ❑ 5. Go to **Clear Completed, Pending, or Failed Sessions**, next in this appendix.

Clear Completed, Pending, or Failed Sessions

Clearing Completed, Pending, or Failed Sessions

Follow these instructions to clear completed, pending, or failed sessions.

- ❑ 1. If necessary, open an xterm window on the DNCS.
- ❑ 2. Type **clearDbSessions -c** and then press **Enter**.

Important: Complete this step even if the Session List window, in the previous procedure – **Tear Down BFS Sessions**, shows no sessions.

- ❑ 3. Go to **Restart the BFS and OSM Processes**, next in this section.

Restart the BFS and OSM Processes

Restarting the BFS and OSM Processes

You are now ready to restart the BFS and OSM processes, which you stopped earlier in this appendix. Follow these instructions to restart the BFS and OSM processes.

Note: When you restart the BFS processes, the system rebuilds the PAT Configuration table. It may take up to 10 minutes for the PAT Configuration table to be rebuilt.

- ❑ 1. If necessary, open an xterm window on the DNCS.

- ❑ 2. Type **dncsControl** and then press **Enter**.

Result: The DnCS Control window opens.

- ❑ 3. Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**.

Result: The DnCS Control window updates to show all the servers and processes on the DNCS.

- ❑ 4. Type the number associated with **BFS Server** and then press **Enter**.

Result: The DnCS Control window updates to display a message prompting you to enter the target status for the entire element group or to type **E** to display the individual elements of the group.

- ❑ 5. Type **2** (for running) and then press **Enter**.

Result: A confirmation message appears.

- ❑ 6. Type **y** (for yes) and then press **Enter**.

Result: After a few moments, the DnCS Control window updates to display the current state (**Curr Stt**) of the selected group.

- ❑ 7. Wait until the current state of the BFS Server group is **Running**.

Note: The DnCS Control window updates automatically every few seconds or you can press **Enter** to force an update.

Restart the BFS and OSM Processes, Continued

- ❑ 8. When the current state of the BFS Server group is **Running**, type the number associated with **DNCS HCT Manager & OSM** and then press **Enter**.
Result: The DnCS Control window updates to display a message prompting you to enter the target status for the entire element group or to type E to display the individual elements of the group.
- ❑ 9. Type **e** and then press **Enter**.
Note: The DnCS Control window updates to display the individual elements of the DNCS HCT Manager & OSM group.
- ❑ 10. Type the number associated with **/dvs/dnCS/bin/OSM** and then press **Enter**.
Result: The DnCS Control window updates to display a message prompting you to enter the target status of the selected element.
- ❑ 11. Type **2** (for running) and then press **Enter**.
Result: A confirmation message appears.
- ❑ 12. Type **y** (for yes) and then press **Enter**.
Result: After a few moments, the DnCS Control window updates to display the current state (**Curr Stt**) of the selected element.
- ❑ 13. Wait until the current state of the **/dvs/dnCS/bin/OSM** process is **Running**.
Note: The DnCS Control window updates automatically every few seconds or you can press **Enter** to force an update.
- ❑ 14. When the current state of the **/dvs/dnCS/bin/OSM** process is **Running**, follow the on-screen instructions to exit from the dnCSControl utility.

Powering Down the BFS BIG

Conclude your procedure for configuring your system for Direct ASI by turning off power to the BFS BIG.



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February 2013 Printed in USA

Part Number 78-738190-01 Rev B