



# Adding and Splitting QPSK Modulators for System Release 2.7/3.7/4.2 and Later

## Overview

### Introduction

When cable service providers expand or upgrade services, it is often necessary to add new quadrature phase-shift keying (QPSK) modulators and QPSK demodulators to the Digital Broadband Delivery System (DBDS). As a part of the upgrade, it is also occasionally necessary to move certain set-top boxes that are provisioned on an *existing* QPSK modulator to a *new* QPSK modulator and demodulator. This procedure is often referred to as “splitting” QPSK modulators.

### Who Should Perform This Procedure?

Adding new QPSK modulators and demodulators on the DBDS and splitting existing QPSK modulators must be performed with care. Do not attempt this procedure unless you are an experienced headend technician.

### When Should This Procedure be Performed?

This procedure should be performed during a maintenance window of approximately 1 to 3 hours due to the need to reboot the set-top boxes affected by the split.

### System Release Version

This document is written for sites operating System Release (SR) 2.7/3.7/4.2 and SR 2.7.1/3.7.1 or SR 4.2.1.

### Purpose

Maintaining optimum system performance during system upgrades and improvements is vital in providing high-quality, uninterrupted programming and services to subscribers. This document provides a procedure for successfully moving existing set-top boxes to new QPSK modulators and demodulators on the DBDS in order to minimize disruption or degradation of services to subscribers during network upgrades and improvements.

### Why Add or Split QPSK Modulators?

Several scenarios exist under which you would want to add or split QPSK modulators on your system. The following are examples of some of these scenarios:

- Changing the RF combining on your network
- Upgrading your data network to add new services such as high-speed data or Voice over Internet Protocol (VoIP) services
- Achieving better balance and distribution of set-top boxes on your hubs or your QPSK modulators

### Critical Assumptions

This document makes the following critical assumptions:

- You have decided that you need to split QPSK modulators on your network.
- You are preparing to split QPSK modulators on hubs running DAVIC only.
- You know what type of route you use (default or static) to send set-top box messages from the Digital Network Control System (DNCS) to set-top boxes.
- You have already configured your data communications including routes, routers, switches, and communications links.
- You have already configured your RF network.
- You know the IP addresses, MAC addresses, subnets, input attenuator levels, and frequencies you need to use for the new QPSK modulator.

### Scope

This document provides procedures for adding and splitting QPSKs in hubs that are running DAVIC only. If you are running both DAVIC and DOCSIS® on the same hub, do *not* use this document to add or split QPSKs for the hub. Instead, contact Cisco Services for assistance.

## Audience

This document is written for DBDS system operators and engineers, DNCS operators and engineers, field service and system upgrade installation engineers, and Cisco Services personnel. Individuals who use this document must be skilled and knowledgeable network technicians and headend engineers.

**Important:** Sites using the Passport resident application or other resident applications should contact their vendor for the latest procedure for rebooting set-top boxes.

## Document Version

This is the fourth release of this guide. In addition to minor text and graphic changes, the following table provides the technical changes to this guide.

Description	See Topic
Updated procedures for preparing the QPSK modulators and demodulators for the split	<i>Prepare the QPSK Modulators and Demodulators for the Split</i> (on page 14)

## Before You Begin

### Introduction

Adding and splitting QPSK modulators and demodulators requires extensive planning and preparation. Preceding the upgrade, you must plan the RF combining on your network; verify input attenuator settings and levels; and verify sufficient quantities and types of cables, combiners, pads, and rack space. In addition, you must install the new QPSK modulators and demodulators in the racks and then connect them to the Ethernet network.

#### Important:

- Add and split QPSK modulators and demodulators during a maintenance window. This process impacts service because you must restart numerous processes.
- Do *not* connect the new QPSK modulators and demodulators to the RF network at this time.
- If you are using *anything*-On-Demand (xOD) or video-on-demand (VOD) on your system, notify your video vendor to add the routes for the new QPSK modulator to the video servers.
- To reduce confusion, move only *one* set of QPSK demodulators at a time.

This section outlines the procedures you must follow before you can add and split QPSK modulators and demodulators on the DBDS.

### Configuring the Data Network

This document assumes that all network equipment (including switches, routers, the DNCS, and any other servers) is correctly configured with the necessary routing entries. If you are unsure about how to configure this equipment, contact Cisco Services and your network administrator before starting the split.

### Planning RF Combining

Before you begin, you must have your network map. Use your network map to plan the RF combining for the additional QPSK modulators and demodulators on your DBDS.

### Verifying Input Attenuator Settings and Levels

Before you begin, you must carefully plan and determine your input attenuator settings based on the requirements of your system.

## Preparing Cables, Combiners, Pads, and Racks

Before you begin, you must verify that you have the required quantities and types of cables, combiners, pads, and racks to add the new QPSK modulators and demodulators to your DBDS.

**Important:** You will also need at least one properly functioning set-top box to connect to the new QPSK modulator in order to verify system functionality.

## Download the hubfix.sh Script

### Introduction

The hubfix.sh script clears the IP addresses, QPSK modulator IDs, and QPSK demodulator IDs for the set-top boxes from the DNCS database with respect to a single hub. This section describes how to download the hubfix.sh script from the Cisco FTP site to your PC, and then how to transfer the script to your DNCS.

Complete the following steps to obtain the hubfix.sh script from the Cisco FTP site and transfer the script to the /dvs/dncls/bin directory on the DNCS.

- 1 Use FTP to copy the hubfix.sh script from the PC to the DNCS, and place it in the **/dvs/dncls/bin** directory.

The script can be accessed using the following information:

- **FTP Site:** ftp.sciatl.com or 172.18.45.203
- **User:** anonymous
- **Password:** your email address
- **Directory containing script for external users:**  
/pub/scicare/TOOLS/QPSKmigration
- **Directory containing script for internal users:**  
/external\_pub/scicare/TOOLS/QPSKmigration
- **File name of script:** hubfix.sh

**Note:** Be sure to use the **ascii** option when transferring the script.

- 2 In an xterm window on the DNCS, type **cd /dvs/dncls/bin** and press **Enter**. The /dvs/dncls/bin directory becomes the working directory.
- 3 Type **sum -r /dvs/dncls/bin/hubfix.sh** and press **Enter** to display the following output:  

```
DNCS $ sum -r hubfix.sh
04269      3  hubfix.sh
```
- 4 Did the result appear correctly as shown in the previous step?
  - If **yes**, continue with this procedure.
  - If **no**, contact Cisco Services.
- 5 Type **chmod 755 /dvs/dncls/bin/hubfix.sh** and press **Enter**. Executable permissions are applied to the hubfix.sh script.
- 6 Type **chown dncls:dncls /dvs/dncls/bin/hubfix.sh** and press **Enter**. The dncls user is the owner of the script. The hubfix.sh script is ready for use later in this document.

# Add and Provision the QPSK Modulators

## Introduction

After you have installed the new QPSK modulators and connected them to the Ethernet network, you must follow the process in this section to provision the new QPSK modulators.

## Before You Begin

Before you add a QPSK modulator, you must have your network map, which should contain the following required information:

- IP address for the QPSK modulator
- MAC address for the QPSK modulator
- Subnet mask for the QPSK modulator
- IP address of the default router associated with the QPSK modulator
- Base IP address for all set-top boxes within the domain of the QPSK modulator
- Subnet mask for all set-top boxes within the domain of the QPSK modulator
- RF output frequency assigned to the QPSK modulator
- Frequency for the QPSK demodulators
- Input attenuator settings
- Broadcast IP address for the base IP subnet for the *existing* QPSK modulator
- Broadcast IP address for the base IP subnet for the *new* QPSK modulator

### Notes:

- All of this information should be recorded on your network map. However, if it is not, contact your system administrator to obtain the information or contact Cisco Services for assistance.
- Do not proceed with these instructions until you have all of the required information from the above bulleted list.

## Process Overview

The following task list is provided as a process overview for adding a QPSK modulator to the DNCS. Refer to the *DNCS Online Help, (PC)*, 4.2.1.2 (part number 4017651) for detailed instructions on how to complete steps 1 through 4 below. Detailed instructions for completing steps 5 and 6 are provided later in this document.

- 1 Define new hubs where necessary.
- 2 Define new node sets where necessary.
- 3 Set up the basic parameters for the new QPSK modulator.
- 4 Set up the advanced parameters for the new QPSK modulator.
- 5 Set up the QPSK demodulators you are adding or moving to the new QPSK modulator. See *Move and Provision the QPSK Demodulators* (on page 9).
- 6 Associate hubs to QAM modulators where necessary. See *Verifying Hub/QAM Association* (on page 12).



# Move and Provision the QPSK Demodulators

## Introduction

After you have installed the new QPSK demodulators and connected them to the proper QPSK modulator, you must follow the instructions in this section to move and provision the new QPSK demodulators.

## Before You Begin

Before you move a QPSK demodulator, you need the latest version of the signonCount utility. Contact Cisco Services to obtain the latest version of this utility before you begin this procedure.

**Note:** If any QPSK Demodulators are model number D9494, ensure that QPSK-G software release is loaded on the QPSK modulator. For more information see *Operations Alert Bulletin: Introducing the New Model D9494 QPSK Demodulator* (part number 4022034).

You also need your network map, which should contain the following required information:

- Name of the QPSK modulator physically connected to this QPSK demodulator
  - Port number where this QPSK demodulator is physically connected to the QPSK modulator
  - Name of the node set you want to associate with this QPSK demodulator
- Important:** We recommend that you assign each QPSK demodulator to a unique node set.
- Service channel frequency of the QPSK demodulator connected to this QPSK modulator

## When Should I Perform This Procedure?

You can set up *new* QPSK demodulators at any time. If you are moving *existing* QPSK demodulators, perform this procedure in a maintenance window.

**Important:** If you are moving *existing* QPSK demodulators, do *not* connect the *new* QPSK modulators and demodulators to the RF network at this time.

## Removing QPSK Demodulators

- 1 In an xterm window on the DNCS, type **doctor -nv** to verify network connectivity and communication between the network devices.
- 2 Test a set-top box connected to each QPSK modulator involved in the split to verify that there are no disruptions to services.
- 3 In an xterm window, start the signonCount utility to monitor the progress of set-top box reboots.
- 4 On the DNCS Administrative Console, click the **DNCS** tab.
- 5 Click the **Network Element Provisioning** tab.
- 6 Click **QPSK/CMTS** to open the QPSK/CMTS List window.
- 7 Select the QPSK modulator from which you need to remove the existing QPSK demodulator.
- 8 Click **File** and select **Demodulators**. The QPSK Modem window opens with an illustration of the QPSK modulator and its eight possible port connections.
- 9 Select the QPSK demodulator you want to delete.
- 10 Select **File** and click **Delete Demod**. You are prompted to confirm the deletion.
- 11 Click **Yes**. The QPSK demodulator is removed from the QPSK modulator.
- 12 Do you have any other QPSK demodulators on this QPSK modulator that you want to remove?
  - If **yes**, repeat this procedure from step 8.
  - If **no**, continue with this procedure.
- 13 Click **File** and select **Close** to close the QPSK Modem window.
- 14 Do you need to remove additional QPSK demodulators?
  - If **yes**, repeat this procedure from step 7.
  - If **no**, go to *Adding QPSK Demodulators* (on page 10).

## Adding QPSK Demodulators

- 1 In the QPSK/CMTS List window, select the new QPSK modulator to which you need to add QPSK demodulator(s).

**Note:** If you need to set up a new QPSK modulator, refer to the *DNCS Online Help, (PC), 4.2.1.2* (part number 4017651).
- 2 Click **File** and select **Demodulators**. The QPSK Modem window opens with an illustration of the QPSK modulator and its eight possible port connections.
- 3 Click **File** and select **New Demod** to open the Set Up QPSK Demodulator window.
- 4 Choose the QPSK port to which the demodulator will be connected.

- 5 Click the **Node Set Name** arrow and select the node set you want to associate with this QPSK demodulator.

**Note:** We recommend that you assign each QPSK demodulator to a unique node set. If you need to add hubs or nodes, refer to the *DNCS Online Help, (PC), 4.2.1.2* (part number 4017651) for detailed instructions.

- 6 How is the QPSK demodulator going to be used?
  - If the QPSK demodulator is used for the service channel, enter the service channel frequency of the modulator in the **Frequency** field for the demodulator.
  - If the QPSK demodulator is used for the *backup* service channel, enter the backup service channel frequency of the modulator in the **Frequency** field for the demodulator.

**Important:** All frequencies must be either a service channel frequency or a backup service channel frequency.

- 7 Click **Save**.

**Results:**

- An information window opens and directs you to check the associated modulator service channel frequency. This window appears because you chose an RF input frequency other than the default RF input frequency. If you are confident that you entered either a correct service channel frequency or a backup service channel frequency, you can ignore this information window.
  - The Set Up QPSK Demodulator window closes, and the QPSK Modem window opens with the new QPSK demodulator appearing in the illustration.
- 8 Click **OK** to close the information window.
  - 9 Click **File** and select **Close** to close the QPSK Modem window.
  - 10 Do you need to move another QPSK demodulator to this QPSK modulator?
    - If **yes**, repeat this procedure from step 3.
    - If **no**, click **File** and select **Close** to close the QPSK/CMTS List window. Go to step 11.
  - 11 Do you need to add additional QPSK demodulators?
    - If **yes**, repeat this procedure from step 1.
    - If **no**, go to *Physically Removing QPSK Demodulators* (on page 11).

## Physically Removing QPSK Demodulators

- 1 Remove the RF and network cables from the QPSK demodulators to be moved, move the demodulators, and then replace *only* the network cable.
- 2 Connect the other end of the network cable to the appropriate port on the back panel of the new QPSK modulator.

**Important:** Do *not* connect the RF cable.

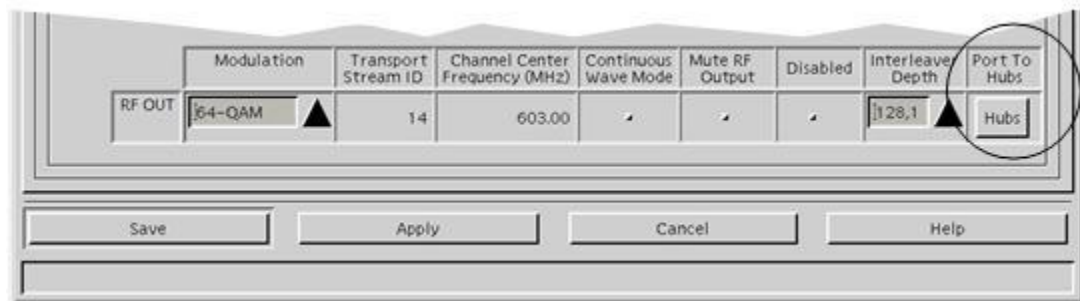
## Move and Provision the QPSK Demodulators

- 3 Power on the new QPSK modulators and demodulators using the Power switches on the back panels.
- 4 Wait about 15 minutes for the QPSK modulators and demodulators to receive software and correctly provision on the DNCS.
- 5 Verify that the QPSK modulators and demodulators correctly received software and were correctly provisioned on the DNCS.
- 6 Refer to your QPSK software installation instructions for further information on verifying the software download.

## Verifying Hub/QAM Association

Complete the following steps to verify QAMs are associated with the correct hubs.

- 1 On the DNCS Administrative Console, click the **DNCS** tab.
- 2 Click the **Network Element Provisioning** tab.
- 3 Click **QAM** to open the QAM List window.
- 4 From the list of QAMs, select the QAM you want to verify.
- 5 Click **File** and select **Open** to open the Set Up QAM window.
- 6 From the Basic Parameters tab, click the **Hubs** button under the Port to Hubs column that appears in the bottom right area of the window.



**Result:** The RF Output Port window opens and shows the list of Available Hubs and Selected Hubs.

**Important:** If you want to send data from this QAM modulator to *all* hubs in the headend, make sure no hubs appear in the **Selected Hubs** field. Any QAM with no hubs selected is actually feeding all hubs.

- 7 Is the QAM you selected associated with the correct hub(s)?
  - If **yes**, click **Cancel** and go to step 10.
  - If **no**, continue this procedure.
- 8 Add and remove hubs from the **Selected Hubs** list as necessary. Keep in mind that no hubs should appear in the Selected Hubs list if you want the QAM to feed all hubs.
- 9 Click **Save** in the RF Output Port window.
- 10 Click **Save** in the Set Up QAM window.

## Move and Provision the QPSK Demodulators

- 11 Repeat this procedure from step 4 for each QAM in the list.
- 12 When you have finished repeating this procedure for each QAM in the list, select **File** and click **Close** to close the QAM List window.

# Prepare the QPSK Modulators and Demodulators for the Split

## Introduction

Prior to splitting the existing QPSK modulators, you must prepare the new QPSK modulators and demodulators for the split. This section provides a procedure for preparing the new QPSK modulators and demodulators.

**Important:** Do not connect the new QPSK modulators and demodulators to the RF network at this time.

This preparation process involves the following tasks:

- Place the existing QPSKs involved in the split into Broadcast mode
- Reboot the set-top boxes on each QPSK modulator involved in the split using the `listQpsk -b` utility
- Run `hubfix.sh` on the DNCS for all QPSKs in the existing hub
- Stop the Application Server processes, and then stop the DNCS processes
- Start the DNCS processes, and then start the Application Server processes
- Take the existing QPSKs out of broadcast mode
- Recycle power on the initial QPSKs and power up new modulators
- Reboot the set-top boxes on each QPSK modulator involved in the split using the `listQpsk -b` utility

## Place QPSKs Involved in the Split into Broadcast Mode

- 1 On the DNCS Administrative Console, click the **DNCS** tab.
- 2 Click the Network Element Provisioning tab.
- 3 Click **QPSK/CMTS** to open the QPSK/CMTS List window.
- 4 Select the QPSK modulator that you want to split from the list.
- 5 Click **File** and select **Open** to open the Set Up QPSK Modulator window.
- 6 In the Options area of the Basic Parameters tab, configure the following settings:
  - Check **Broadcast Only Mode**
  - Uncheck (disable) **Database Persistence** if it is checked (enabled)
  - Click **Save**
- 7 Verify that the QPSK you selected in step 4 is still selected.

- 8 Was Database Persistence enabled for the QPSK modulator being split?
  - If **yes**, you must clear the persistent database records for all DHCT IP addresses associated with this QPSK modulator. Proceed to step 9.
  - If **no**, proceed to step 11.
- 9 Click **File** and select **Reset and Clear DB**. A question displays prompting you to confirm that you want to reset the QPSK modulator, associated demodulator, and clear the status of all DHCTs that the modulator feeds.
- 10 Click **Yes**. The persistent database records for this QPSK modulator are cleared, the QPSK modulator is reset, and all DHCTs associated with this QPSK modulator are rebooted. Proceed to step 13.
- 11 Click **File** and select **Reset**. A question displays prompting you to confirm that you want to reset the QPSK modulator and associated demodulators.
- 12 Click **Yes**. The QPSK modulator is reset and all DHCTs associated with this QPSK modulator are rebooted.
- 13 Did you have to uncheck Database Persistence with the QPSK modulator that you just reset?
  - If **yes**, proceed to step 14.
  - If **no**, proceed to step 17.
- 14 From the QPSK/CMTS List window re-select the QPSK modulator that you just reset.
- 15 Click **File** and select **Open** to open the Set Up QPSK Modulator window.
- 16 In the Options area of the Basic Parameters tab, check **Database Persistence** and then click **Save**. This re-enables Database Persistence for this QPSK Modulator.
- 17 Repeat steps 4 through 16 for each additional QPSK that you want to split.

## Reboot Set-Tops on Affected QPSKs Using the listQpsk Utility

Follow these instructions to begin monitoring your set-top sign-on count rate.

- 1 If necessary, open an xterm window on the DNCS.
- 2 Type **signonCount** and then press **Enter**.
- 3 Open a second xterm window on the DNCS.
- 4 Type **listQpsk 9999** and then press **Enter** to determine the hub ID for the QPSK modulator associated with the set-tops that you need to reboot.
- 5 Type **listQpsk -b [modulator ID or modulator name]** and then press **Enter**.

**Note:** Substitute the ID or the name of the QPSK modulator for [modulator ID or modulator name].

**Example:** Type **listQpsk -b QPSK1** and then press **Enter**.
- 6 At the message prompt, type **y** and then press **Enter** to reboot the set-tops assigned to the specified modulator.

## Prepare the QPSK Modulators and Demodulators for the Split

- 7 Use the signonCount utility to monitor the set-tops assigned to your specified QPSK modulator.
- 8 When the number of set-top sign-ons begins to decrease, repeat steps 4 through 8 for each additional QPSK involved in the split.

## Run hubfix.sh on the DNCS for All QPSKs in the Existing Hub

- 1 From an xterm window on the DNCS, log on as **dncs** user.
- 2 Type **/dvs/dnccs/bin/hubfix.sh** and press **Enter**. A message similar to the following appears:

```
Qmod_modem_id qmod_name
```

```
4 QPSK1
```

```
5 QPSK2
```

```
6 DummyTest1
```

**Which hub number (QPSK) do you want to clean?**

- 3 Type the number of the existing hub you want to clean and press **Enter**.

**Example:** Based on the output in the previous step, you would type **4** to clean QPSK1.

**Result:** A message similar to the following appears:

```
Database selected
```

```
36 row(s) updated
```

```
Database closed
```

- 4 Repeat steps 2 and 3 for the QPSKs impacted by the changes. Then, continue with this procedure.
- 5 Power off the existing QPSK modulators involved in the split.
- 6 Make the RF connections required for the QPSK modulators and demodulators involved in the split and complete any other combining changes needed.

## Stop the System Components

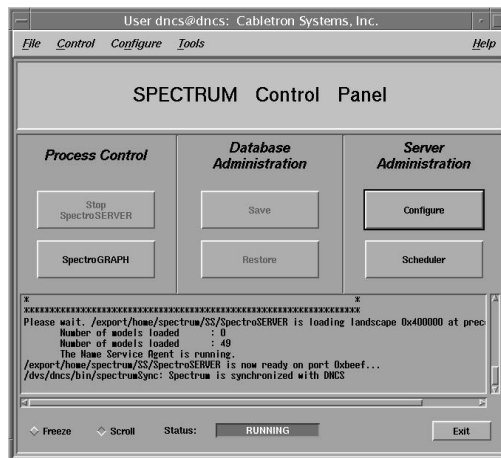
Use the procedures in this section to stop Spectrum, the Application Server, and the DNCS.

### Stopping Spectrum

- 1 From the DNCS Administrative Console Status window, click **Control** in the NMS section of the window. The Select Host to run on window appears.



- 2 Select the appropriate **Host Machine** and then click **OK**. The Spectrum Control Panel appears.



- 3 Click **Stop SpectroSERVER**. A confirmation message appears.
- 4 Click **OK** at the confirmation message. The Status message on the Spectrum Control Panel shows **Inactive**.
- 5 Click **Exit** on the Spectrum Control Panel. A confirmation message appears.
- 6 Click **OK** at the confirmation message. The Spectrum Control Panel closes.

### Stopping the Application Server

This section provides procedures for stopping either a SARA Server or a third-party server. Choose the procedure that pertains to your system.

#### Stopping the Application Server at SARA Sites

- 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**. The Applications Control window appears.
- 3 Type **2** (for Startup/Shutdown Single Element Group), and then press **Enter**. 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.

#### Stopping the Application Server at Aptiv Sites

- 1 Press the middle mouse button on the Application Server and select **Passport Stop**.

## Prepare the QPSK Modulators and Demodulators for the Split

- 2 From an xterm window on the Application Server, type **CheckServices** and then press **Enter**. 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.  
**Note:** If the word **No** does not appear next to each driver within a minute or two, repeat steps 2 and 3 again.

## 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.

## Restart System Components

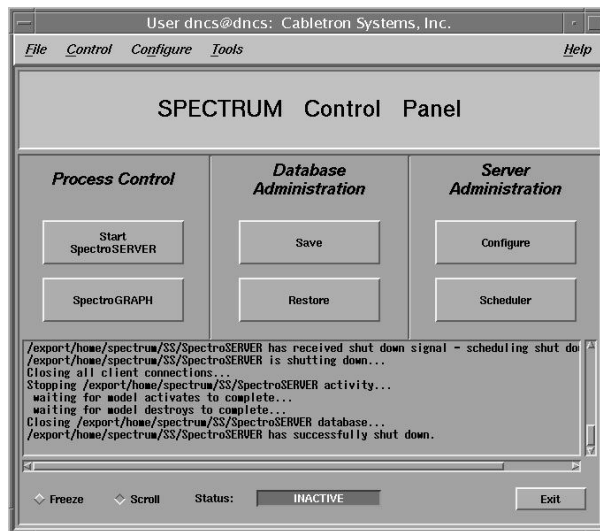
Use the procedures in this section to restart Spectrum, the DNCS, and the Application Server.

### Restarting Spectrum

**Important:** Skip this procedure if you are using DBDS Alarm Manager instead of Spectrum.

- 1 From the DNCS Administrative Console Status window, click **Control** in the NMS section of the window. The Select Host to run on window opens.

- 2 Select the appropriate **Host Machine**, and then click **OK**. The Spectrum Control Panel window opens.



- 3 On the Spectrum Control Panel window, click **Start SpectroSERVER**. The Spectrum Network Management System starts.
- 4 On the Spectrum Control Panel window, click **Exit**. A confirmation message appears.
- 5 Click **OK** on the confirmation message. The Spectrum Control Panel window closes.

### Restarting the DNCS

- 1 Click the middle mouse button on the DNCS and select **DNCS Start**. The DNCS processes start.
- 2 Click the middle mouse button on the DNCS and select **Administrative Console**. The DNCS Administrative Console opens.
- 3 From the DNCS Administrative Console Status window, click **DNCS Control**.

#### Results:

- The DNCS Control window opens.
  - Green indicators begin to replace red indicators on the DNCS Control window.
- 4 From an xterm window on the DNCS, type **dncsControl** and then press **Enter**. The DnCS Control utility window opens.
  - 5 Type **2** (for Startup / Shutdown Single Element Group) and then press **Enter**. The DnCS Control window updates to list the status of all of the processes and servers running on the DNCS.

## Prepare the QPSK Modulators and Demodulators for the Split

- 6 Wait for the DnCS Control window to list the current status (Curr Stt) of all the processes and servers as **running**.

### Notes:

- The DnCS Control window updates automatically every few seconds, or you can press **Enter** to force an update.
- The indicators on the DNCS Control window all become green when the processes and servers have restarted.

## Restarting the Application Server

### Restarting the Application Server at SARA Sites

- 1 Press the middle mouse button on the Application Server and select **App Serv Start**.
- 2 From an xterm window on the Application Server, type **appControl** and then press **Enter**. The Applications Control window opens.
- 3 Select option **2** on the Applications Control window. The system displays a list of Application Server processes and their current status.  
**Note:** The system updates the display periodically, or you can press **Enter** to force an update.
- 4 When the Application Control window indicates that the current state (**Curr Stt**) of each process is running, follow the on-screen instructions to close the Applications Control window.

### Restarting the Application Server at Aptiv Sites

Complete the following steps to verify that the Passport 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 **CheckServices** and then press **Enter**. 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, indicating that the process has started?
  - If **yes**, you have completed this procedure.
  - 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 drivers associated with the Passport resident application.

## Take Existing QPSKs Out of Broadcast Mode

- 1 On the DNCS Administrative Console, click the **DNCS** tab.
- 2 Click the Network Element Provisioning tab.
- 3 Click **QPSK/CMTS** to open the QPSK/CMTS List window.
- 4 Select the QPSK modulator that you want to split from the list.
- 5 Click **File** and select **Open** to open the Set Up QPSK Modulator window.
- 6 In the Options area of the Basic Parameters tab, uncheck **Broadcast Only Mode**, and then click **Save**.
- 7 Repeat steps 4 through 6 for each additional QPSK that you want to split.

## Power Cycle the Existing QPSKs and Power On New Modulators

- 1 From the back of the QPSK modulators and demodulators, power off for each modulator and demodulator.
- 2 Wait a minimum of 5 minutes before proceeding to step 3.  
**Note:** Make sure that you allow at least 5 minutes between powering off, then powering on the modulators and demodulators involved in the split. This measure ensures that each modulator's database of signed-on set-top information is cleared from the QPSK's memory.
- 3 After 5 minutes has elapsed, power on both the existing and new QPSK modulators and demodulators, and then verify that all modulators and demodulators boot and provision correctly.

## Reboot Set-Tops on Each QPSK Involved in the Split Using the listQpsk Utility

Follow these instructions to begin monitoring your set-top sign-on count rate.

- 1 If necessary, open an xterm window on the DNCS.
- 2 Type **signonCount** and then press **Enter**.
- 3 Open a second xterm window on the DNCS.
- 4 Type **listQpsk 9999** and then press **Enter** to determine the hub ID for the QPSK modulator associated with the set-tops that you need to reboot.
- 5 Type **listQpsk -b [modulator ID or modulator name]** and then press **Enter**.  
**Note:** Substitute the ID or the name of the QPSK modulator for [modulator ID or modulator name].  
**Example:** Type **listQpsk -b QPSK1** and then press **Enter**.
- 6 At the message prompt, type **y** and then press **Enter** to reboot the set-tops assigned to the specified modulator.

#### **Prepare the QPSK Modulators and Demodulators for the Split**

- 7 Use the signonCount utility to monitor the set-tops assigned to your specified QPSK modulator.
- 8 When the number of set-top sign-ons begins to decrease, repeat steps 4 through 8 for each additional QPSK involved in the split.



## For 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.



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