Distributed Broadcast File System Configuration Guide

For System Releases 2.5, 3.5, and 4.0

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

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Preface

About This Guide

Introduction

Although many cable operators are able to transport data to Broadcast File System (BFS) Quadrature Amplitude Modulation modulators (QAMs) at different locations, there is currently no standard method for configuring a System Release (SR) 2.5, 3.5, or 4.0 system to support distributed BFS. Cisco® developed this guide to provide the recommended methods for configuring an SR 2.5, 3.5, and 4.0 system to support distributed BFS.

In addition, this guide provides instructions for enabling the Code Version Table (CVT) download method for distributed BFS. With the CVT download method, you must add a data carousel (the Operating System Manager [OSM]) onto the additional BFS QAM. The normal process for setting up a distributed BFS assumes that all BFS carousels have a source, a source definition, and a session. The OSM carousel for a CVT download does not follow this *normal* process. Therefore, sites that use a distributed BFS must take additional steps to manage this unique carousel.

Purpose

This guide provides a recommended method for setting up a system that supports both distributed BFS and the CVT download method. As you configure your system, you branch into different procedures depending on your network configuration. Specifically, you must complete additional procedures to enable OSM Automux if your site uses one or both of the following network configurations:

- The multiplexing device output program numbers do *not* match the program numbers going to the primary BFS QAM
- The distributed BFS QAMs and the primary BFS QAM do *not* share the same frequency.

If you decide to change your network configuration later on, you can always disable OSM Automux using the procedures provided in Chapter 4, **Disabling OSM Automux**. Chapter 5, **Removing the Distributed BFS Configuration From the DNCS**, details how to remove the entire distributed BFS configuration.

Audience

This guide is written for operators of Cisco's digital cable television systems. Cisco field service and on-site engineers who help system operators manage and troubleshoot their systems may also find the information in this guide useful.

Important: Users of this guide must be proficient with a text editor, such as vi.

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Software Version

This guide is written for systems running the following System Releases (SRs).

- SR 2.5
- SR 3.5
- SR 4.0

Document Version

This is the second release of this document.

Chapter 1
Distributed BFS Plant Configuration

Overview

Introduction

Cisco developed this guide to identify the recommended configurations to support distributed BFS.

Some service providers may choose to configure their plant with more than one BFS QAM. For these sites, the QAMs can be configured with overlapping frequencies or non-overlapping frequencies (split plant). The term *overlapping frequencies* means the distributed BFS QAMs use the same frequency as the primary BFS QAM. The term *non-overlapping frequencies* mean the distributed BFS QAMs and primary BFS QAM use different frequencies.

For any of these architectures, a multiplexing device can be added to provide a secondary video through the BFS QAMs. Examples of multiplexing devices include Cherry Pickers, Grooming BIGs, or BitMizer devices. You can also use a media converter, such as a SWIF-to-ASI converter, for a distribution BFS without adding content to your BFS QAM. No matter which multiplexing device you use, Cisco strongly recommends that you configure the multiplexing devices to output program numbers that match the program numbers going to the primary BFS QAM. This configuration ensures that the program numbers going into the distributed BFS QAMs match the program numbers going into the primary BFS QAM. The program numbers in the Broadband Integrated Gateway Program Allocation Table (BIG PAT) are very important when configuring the multiplexing devices to support the distributed BFS configuration. By configuring your multiplexing devices to use the same program numbers defined in the BIG PAT table, you can ensure that the program numbers match among the primary BFS QAM and all the distributed BFS QAMs.

If you match the program numbers *and* use overlapping frequencies, it is not necessary to use OSM Automux. Otherwise, you have to use OSM Automux to identify those QAMs that need to carry a unique Code Version Table (CVT).

Note: If you do not want the primary BFS QAM to provide an RF signal, you can configure one or more secondary BFS QAMs to provide all BFS data.

Continued on next page

In This Chapter

This chapter contains the following topics.

Data Transmission Options

Overview

Service providers may choose to configure their plant to use one of the following data interface cards:

- **Asynchronous Serial Interface** (ASI)
  - Direct ASI does not use a BIG
  - Inband data is sent directly from the DNCS to the BFS QAM and secondary QAMs through an ASI interface using a splitter or a multiplexing (MUX) device
- **SWIF**
  - SWIF requires the use of a BIG
  - Inband data is sent through the asynchronous transfer mode (ATM) interface
  - A media converter or a MUX device is required to convert SWIF input to another QAM input, such as ASI

Notes:

- Most multiplexing devices convert SWIF input to ASI input, which provides a method to manage and combine video streams. Instead of a multiplexing device, you can use a media converter to convert the SWIF input to one of the other QAM inputs, such as ASI. In either case, you cannot select SWIF as an input source to the additional BFS QAMs.
- The DNCS cannot send inband data through the ATM and ASI interfaces simultaneously.

ATM Distributed BFS Plant Configurations

Overview

This section details two types of ATM transport configurations for setting up a plant with one or more secondary BFS QAMs.

Note: The diagrams in this section include emulated MPEG devices. These devices do not exist physically in the plant; however, you must configure this device on the DNCS. The emulated MPEG allows the secondary BFS QAM to receive data through the ASI transport.

Designing the Plant to Use a MUX Device

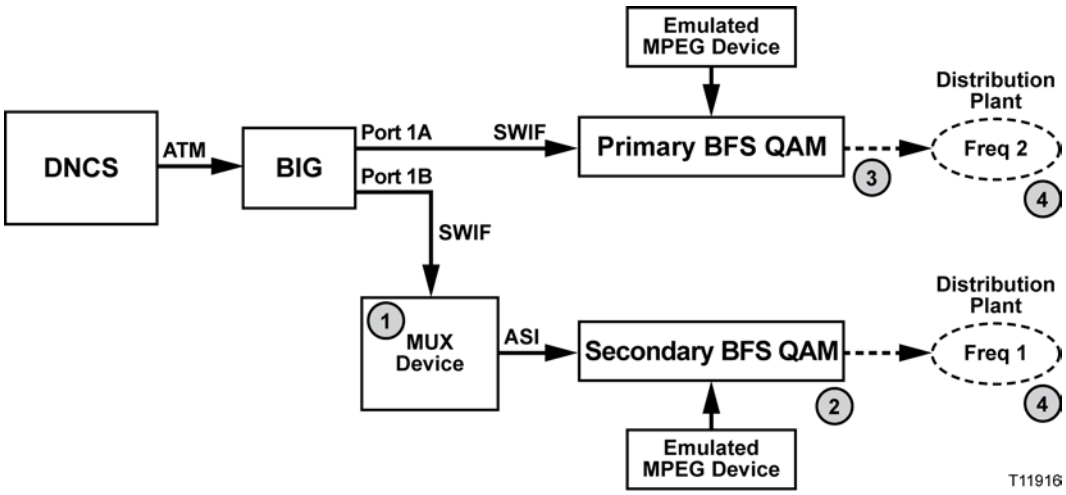
The numbers in the diagram refer to the following notes:

① The plant includes a MUX device to convert the SWIF input to ASI. The MUX device can send a separate signal to each secondary BFS QAM.

② The plant includes one or more secondary BFS QAMs.

③ The primary BFS QAM can optionally be configured to feed BFS data to the plant.

④ The primary BFS QAM and secondary BFS QAM can be at the same frequency or different frequencies (split plant).



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Designing the Plant to Use an ASI Splitter

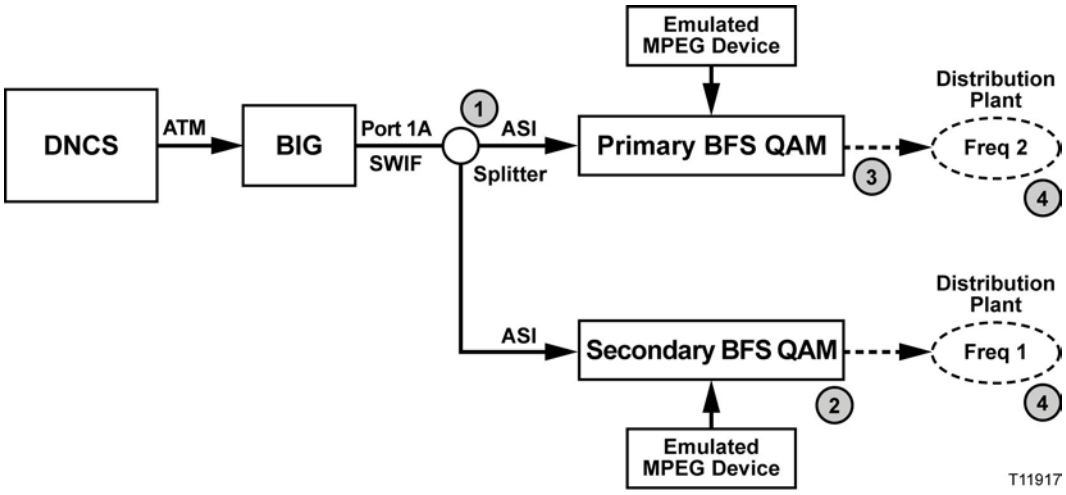
The numbers in the diagram refer to the following notes:

① The plant includes an ASI splitter to distribute the ASI stream to the primary and secondary BFS QAMs.

② The plant includes one or more secondary BFS QAMs.

③ The primary BFS QAM can optionally be configured to feed BFS data to the plant.

④ The primary BFS QAM and secondary BFS QAM can be at the same frequency or different frequencies (split plant).



ASI Distributed BFS Plant Configurations

Overview

This section details two types of ASI transport configurations for setting up a plant with one or more secondary BFS QAMs.

Note: The diagrams in this section include emulated MPEG devices. These devices do not exist physically in the plant; however, you must configure this device on the DNCS. The emulated MUX allows the secondary BFS QAM to receive data through the ASI transport.

Designing the Plant to Use a MUX Device

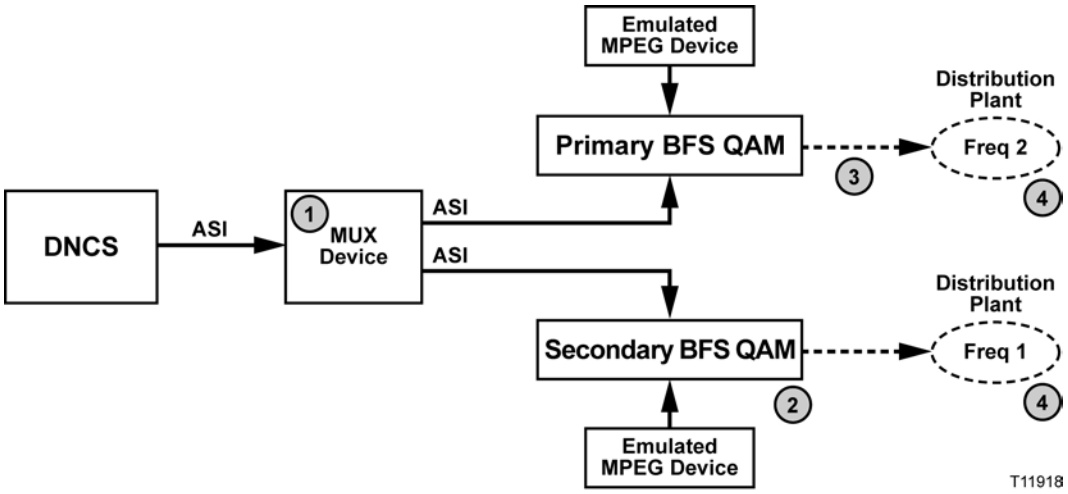
The numbers in the diagram refer to the following notes:

① The plant includes a MUX device to send a separate signal to each BFS QAM in the plant configuration.

② The plant includes one or more secondary BFS QAMs.

③ The primary BFS QAM can optionally be configured to feed BFS data to the plant.

④ The primary BFS QAM and secondary BFS QAM can be at the same frequency or different frequencies (split plant).



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Designing the Plant to Use an ASI Splitter

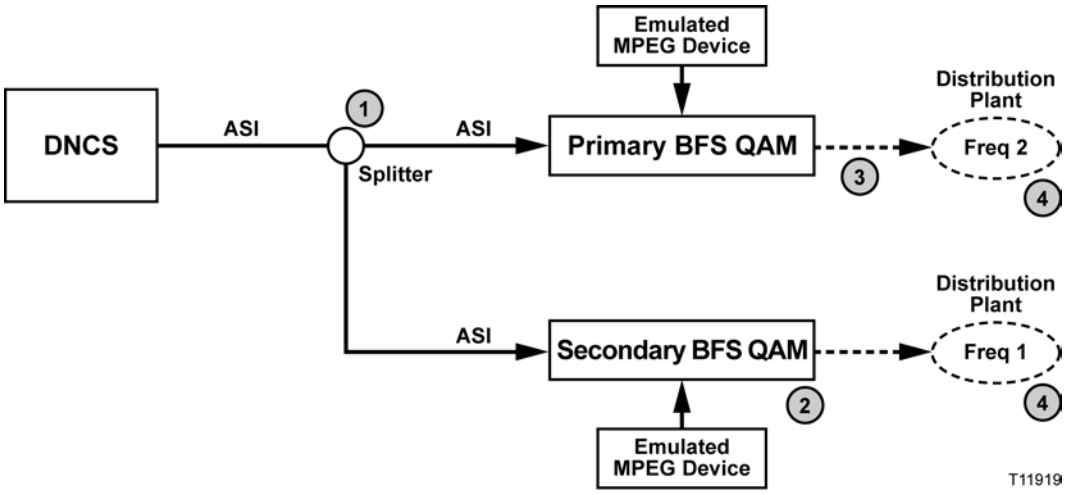
The numbers in the diagram refer to the following notes:

① The plant includes an ASI splitter to distribute the ASI stream to the primary and secondary BFS QAMs.

② The plant includes one or more secondary BFS QAMs.

③ The primary BFS QAM can optionally be configured to feed BFS data to the plant.

④ The primary BFS QAM and secondary BFS QAM can be at the same frequency or different frequencies (split plant).



ATM and ASI Process Overview

Regardless of the particular ATM or ASI configuration you use, the basic process for setting up a distributed BFS is the same. In each case, you will perform the following tasks.

1. Configure the emulated MUX device.
2. Configure the secondary BFS QAM device.
3. Add the sessions to the secondary BFS QAM device.
4. Configure the system for CVT for the secondary BFS QAM.

   Note: You will complete some additional steps to configure OSM automux if you are using non-overlapping frequencies, different program numbers, or both.

Chapter 2
DNCS Configuration for Distributed BFS

Overview

Introduction

This chapter provides instructions for configuring a DNCS for Distributed BFS.

Time To Complete

With some small differences in the procedure for adding a BFS QAM, this procedure can take 2 to 4 hours to complete.

In This Chapter

This chapter contains the following topics.

Pre-Configuration Tasks

Overview

This section describes two important tasks you must complete before you begin configuring your system for distributed BFS.

Locate Your Network Map

It is essential to have key information in front of you when configuring your system for distributed BFS. Make sure you have your network map before you begin configuring your DNCS for Distributed BFS. If you cannot locate your network map, contact Cisco Services. You must also have the following information:

- Name you want to use to identify the device
- Type of output card installed in the device (ASI, DHEI, or SWIF)
- Number identifying the output port on the device that is physically connected to the input port on the associated service QAM
- Number identifying the output transport stream ID coming from the multiplexing device to the associated service QAM

Note: All of this information should be recorded on your network map. However, if it is not, contact your system administrator to obtain the information.

Decide If OSM Automux Is Required

As you configure your system, your answers to certain questions depend on whether OSM Automux is required. Before you begin configuring distributed BFS, determine if your system requires OSM Automux.

Your system requires OSM Automux if your site plans to use *one or both* of the following network configurations:

- Output program numbers on the multiplexing devices that do *not* match the program numbers going to the primary BFS QAM
- Distributed BFS QAMs and a primary BFS QAM that do *not* share the same frequency

Add an MPEG Source

Introduction

This section provides instructions for adding an emulated MUX to the DNCS for a distributed BFS. When you add an emulated MUX to the DNCS, you add it as an MPEG source, name it *BFS MUX*, and either choose or type *MUX* as the device type.

Note: The MPEG source device types serve only as placeholders.

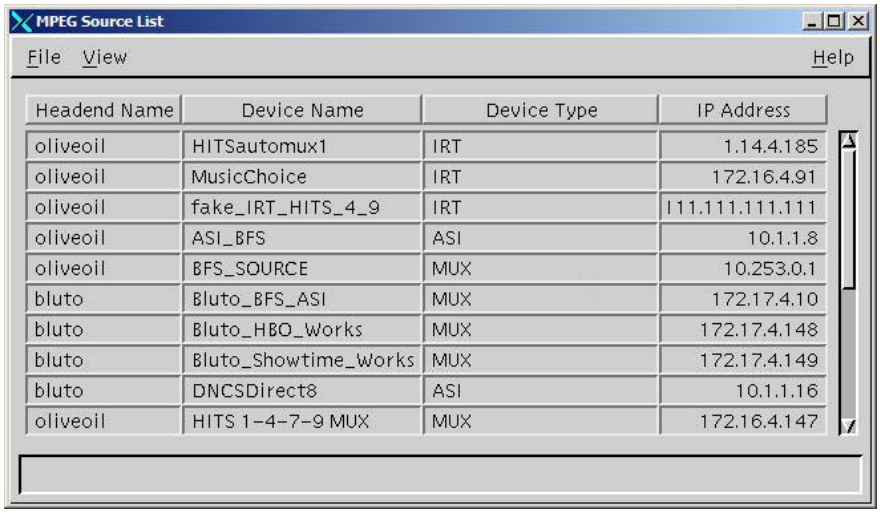
If you already have an emulated MUX and secondary BFS QAM configured, you can skip this section and go to **Add a New OSM Source, Source Definition, and Session**, later in this chapter.

When adding an MPEG source to the DNCS, you must set up the basic parameters and establish the connectivity from the MPEG source to the BFS QAMs.

Setting Up Basic Parameters for the MPEG Source

The first step in adding a device to your DNCS is to complete these steps to set up the basic parameters.

1. On the DNCS Administrative Console, click the **DNCS** tab, and then click the **Element Provisioning** tab.
2. Click **MPEG Source**. The MPEG Source List window opens.



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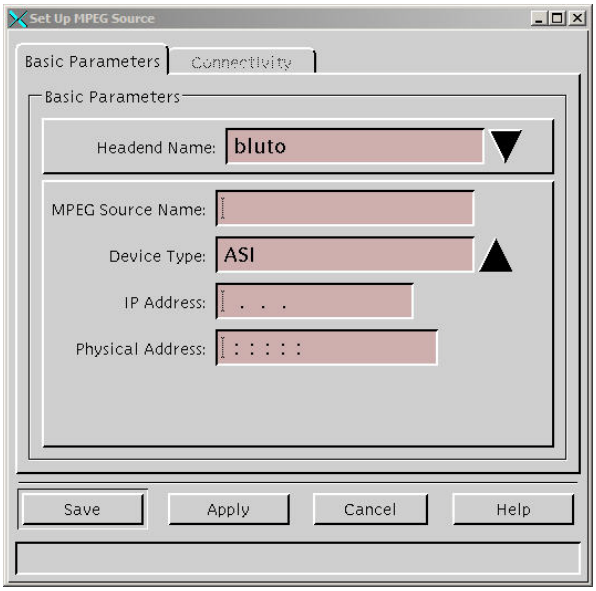
3. On the **File** menu, click **New**. The Set Up MPEG Source window opens with the Basic Parameters tab in the forefront.



4. Click the **Headend Name** arrow and select the headend to which you want to associate this MPEG source.

5. In the **MPEG Source Name** box, type the name of the device (for example, **CherryPicker1**). You can use up to 20 alphanumeric characters.

6. Click in the **Device Type** box and select or type **MUX**.

   Note: You may select any device type. However, for consistency Cisco recommends that you use MUX.

7. In the **IP Address** box, type an IP address for the device.

   Note: Because the DNCS does not manage this device, this IP address only serves as a placeholder; you cannot use the IP address to ping the device.

8. In the **Physical Address** box, type a MAC address for the device.

   Note: This MAC address also serves as a placeholder. You may use any address that complies with the standard. For example, A1:A1:A1:A1:A1:A1 or B2:B2:B2:B2:B2:B2.

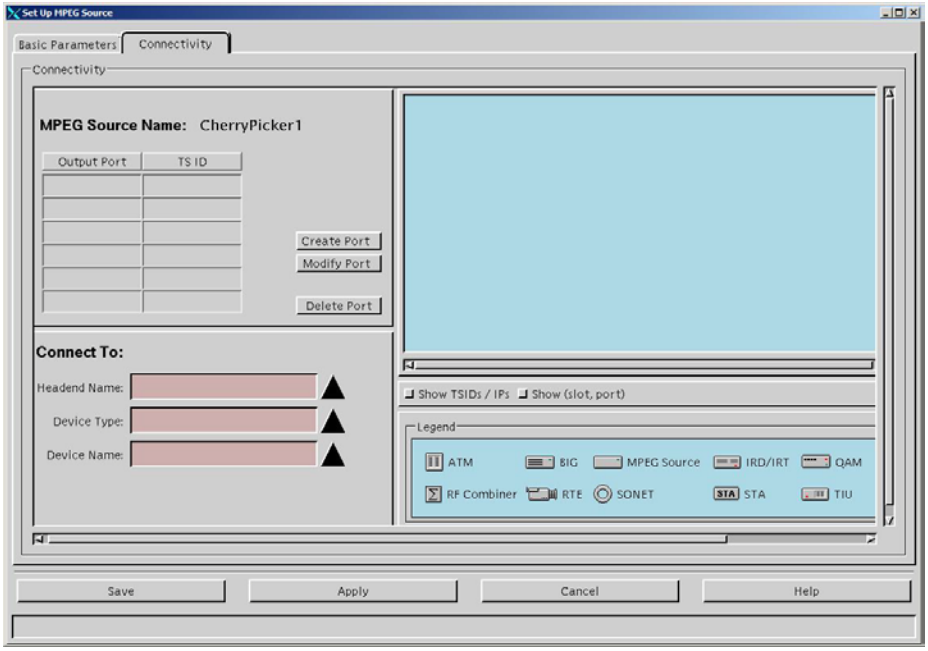
9. Click **Apply**. The system saves the basic parameters for this device in the DNCS database and the previously disabled Connectivity tab becomes available.

10. Go to **Establishing the Connectivity Parameters for the MPEG Source**, next in this section.

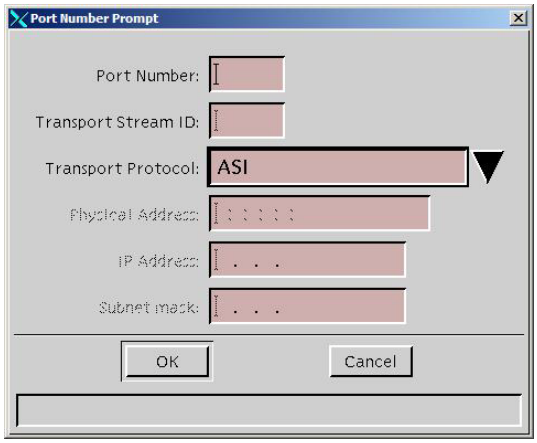
Establishing the Connectivity Parameters for the MPEG Source

The second step in adding a device to your DNCS is to establish the connectivity from the MPEG source to the BFS QAMs.

1. Click the **Connectivity** tab in the Setup MPEG Source window. The Connectivity tab appears in the forefront with an illustration of any devices already connected to this MPEG source. If no devices are connected, the illustration area is empty.



2. Click **Create Port**. The Port Number Prompt window opens.



3. In the **Port Number** box, type **1**. This number identifies the output port for the MPEG source.

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4. In the **Transport Stream ID** box, type the number that identifies the transport stream going from this MPEG source to the associated BFS QAM.

   Note: This number must correspond with the ASI input (usually on your network map) on the associated QAM.

5. Record the Transport Stream ID in the following space:

   Transport Stream ID: _____

   Note: You will need this number if you add an additional BFS QAM to the DNCS.

6. In the Transport Protocol field, select **ASI**.

   Note: Typically, multiplexing devices or translators use ASI transport mode. If you are setting up an emulated MUX for a multiplexing device, select ASI.

7. Click **OK**.

   Results:

   - The information is saved on your system.
   - The Port Number Prompt window closes.
   - The Connectivity window is updated to include the new port and transport stream information.

8. Click **Save** to exit the MPEG Source window and return to the MPEG Source List window.

9. Click **File** and select **Close** to close the MPEG Source List window.

10. Do you need to add additional MPEG sources for additional secondary BFS QAMs?

    - If **yes**, repeat the **Setting Up Basic Parameters for the MPEG Source** procedure and steps 1 through 9 of this procedure for each additional MPEG source. Then go to step 11.
    - If **no**, go to step 11.

11. Do you already have additional BFS QAM(s) on your DNCS to associate with the MPEG source(s)?

    - If **yes**, go to **Setting Up Additional BFS QAM and MPEG Source Connectivity** in the **Add an Additional BFS QAM to the DNCS** section, next in this chapter.
    - If **no**, your next step is to add an additional BFS QAM to the DNCS. Go to **Add an Additional BFS QAM to the DNCS**, next in this chapter.

Add an Additional BFS QAM to the DNCS

Introduction

After you add an emulated MUX to the DNCS, your next step is to add another BFS QAM to the DNCS database to receive data from that device. This section provides instructions for adding a BFS QAM to the DNCS.

Note: If you already have another BFS QAM in your system, you do not need to add one.

Before You Begin

Before you add another BFS QAM to the DNCS, you must have your network map. If you cannot locate your network map, contact Cisco Services. You must also have the following information:

- Name of the headend containing the QAM
- Name used to identify the QAM
- IP address for the QAM (from your system administrator)
- MAC address for the QAM
- Subnet mask for the QAM (from your system administrator)
- Type of input interface that will be receiving data from the associated device (ASI, DHEI, or SWIF)

  Note: Verify that the QAM you are using has inputs compatible with the outputs of your multiplexing device.
- A number that identifies the transport stream going from the QAM out to the hubs on your system
- Type of modulation the QAM uses (ITU B, 64 QAM or ITU B, 256 QAM)
- Frequency of the channel being used to send data from the QAM to the hubs on your system
- Names of the hubs you want to receive data from this QAM
- A number that identifies the input port on this QAM
- Name of the headend containing the associated device
- Type of device being used to send data to this BFS QAM (based on the device you chose when you added a device to the DNCS [for example, MUX])
- Name of the device you entered when you added the device to the DNCS
- The number you entered as the output port of the device that is physically connected to the input port on this BFS QAM

Note: All of this information should be recorded on your network map. However, if it is not, contact your system administrator to obtain the information.

To add an additional BFS QAM to the DNCS, complete all of the instructions in this section in the order in which they appear.

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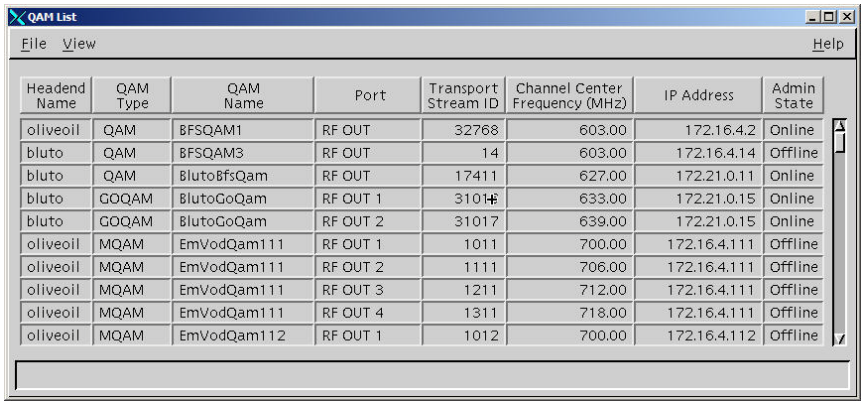
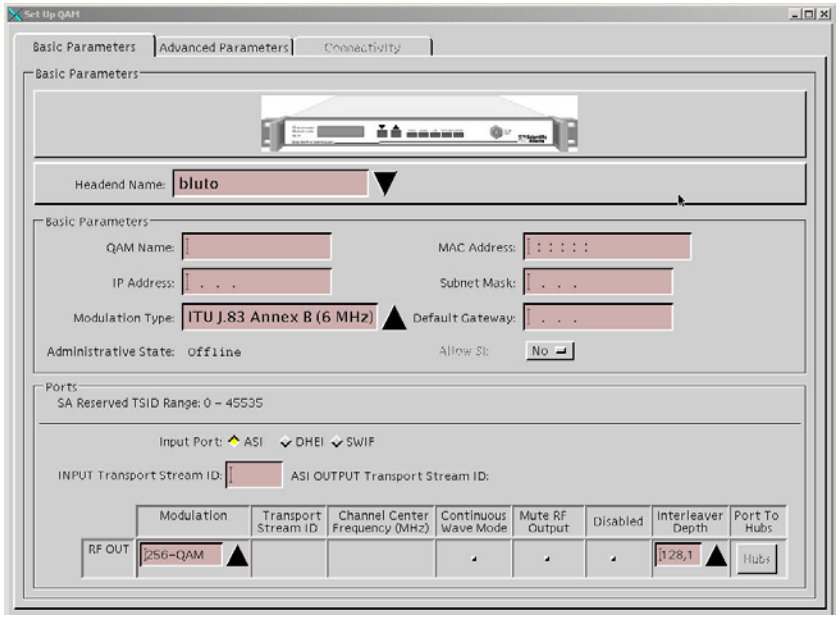
Setting Up Basic Parameters for the BFS QAM

The first step in adding an additional BFS QAM is to set up the basic parameters for the BFS QAM.

1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Click the **Element Provisioning** tab and then click **QAM**. The QAM List window opens.



3. Click the **File** menu, click **New**, and then select **QAM**. The Set Up QAM window opens with the Basic Parameters tab in the forefront.



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4. Click the **Headend Name** arrow and select the headend in which this service QAM resides.
5. In the **QAM Name** box, type the name you will use to identify this QAM (for example, **BFSQAM3**).

   Note: You can use up to 15 alphanumeric characters. Be sure to use a name that is consistent with the naming scheme used on your network map.
6. In the **IP Address** box, type the IP address for this QAM.
7. Click the **Modulation Type** arrow and select the modulation type.
8. In the **MAC Address** box, type the MAC address for this QAM.
9. In the **Subnet Mask** box, type the subnet mask based on the following guidelines:
   - If your system uses a standard network configuration, type **255.255.255.0**.
   - If your system uses another type of network configuration, type the subnet mask as assigned by your system administrator.
10. In the **Default Gateway b**ox, type the IP address of the default gateway.
11. For the Input Port, click the **ASI** option.
12. Will the QAM carry inband SI (system information)?
    - If **yes**, select **Yes** for Allow SI.
    - If **no**, select **No** for Allow SI.
13. In the **INPUT Transport Stream ID** box, type the transport stream ID.

    Note: This ID must be the same as the output transport stream ID from the MPEG source. You recorded this number in step 5 of the **Establishing the Connectivity Parameters for the MPEG Source** procedure in the **Add an MPEG Source** section of this chapter.
14. In the **RF OUT** row, complete the following information:
    a) Click the **Modulation Type** arrow and select the type of modulation this QAM uses.
    b) In the **Transport Stream ID** box, type the last octet of the IP address. This number identifies the transport stream going from this QAM out to the hubs on your system.
    c) In the **Channel Center Frequency (MHz)** box, type the channel frequency that you will use to send service information to set-tops on this headend. Cisco recommends that you enter a value in 6 MHz increments from 91 to 867.

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15. Click **Apply**.

    Results:

    - The system saves the QAM information you have entered up to this point in the DNCS database.
    - The Hubs button in the Port To Hubs column becomes active.

16. Click **Hubs**. The RF Output Port window opens.

    Notes:

    - The Basic Parameters area of this window shows the data that you entered for key RF output fields.
    - The Associate Hubs area shows the hubs that are available to receive content data from this QAM modulator.

17. Make sure the Selected Hubs field shows no hub names so that this QAM modulator sends BFS and SI data to all hubs in the headend.

    Note: To remove a hub name from the Selected Hubs field, select the hub name, and then click **Remove**. The hub name moves to the Available Hubs field.

18. Click **Save** to save this information into the DNCS database and close the RF Output Port window.

19. Your next step is to set up the advanced parameters for the BFS QAM. Go to **Setting Up Advanced Parameters for the BFS QAM**, next in this section.

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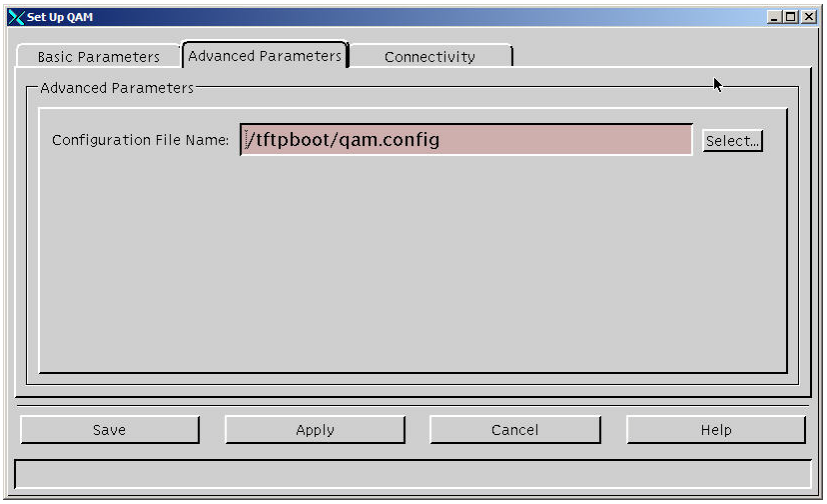
Setting Up Advanced Parameters for the BFS QAM

After you set up the basic parameters for an additional BFS QAM, the next step is to configure the advanced parameters.

1. On the Set Up QAM window, click the **Advanced Parameters** tab.

   Important: The system inserts the **Configuration File Name** automatically. Do *not* change this field without first consulting with Cisco Services. The system configuration file specifies the software version that the QAM should be operating.



2. Click **Apply**. The system saves the QAM modulator information you have entered thus far into the DNCS database and enables the Port To Hubs button.

3. Click **Save**. The system saves this information into the DNCS database and closes the RF Output Port window.

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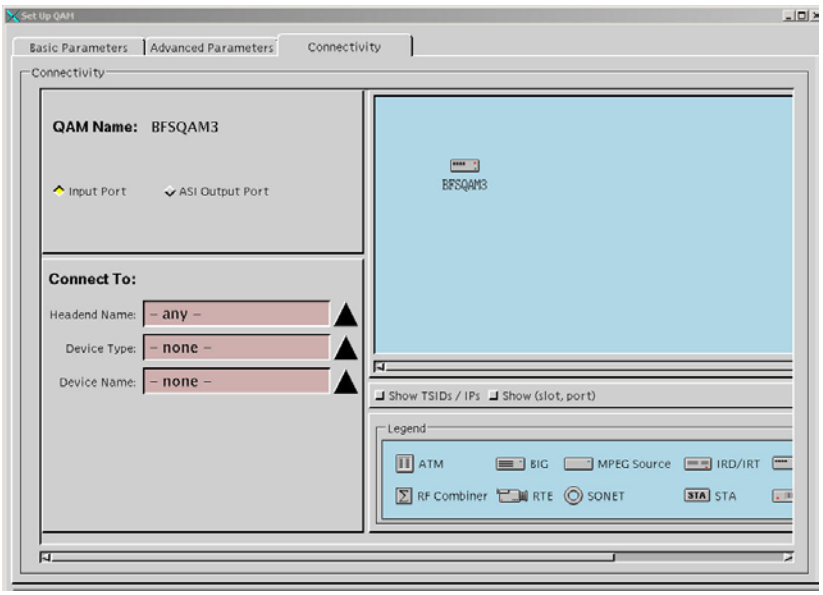
Setting Up Additional BFS QAM and MPEG Source Connectivity

Complete these steps to set up the connectivity between the additional BFS QAM and the MPEG source or associated device.

1. On the Set Up QAM window, click the **Connectivity** tab. The Connectivity tab opens with a graphical representation of the devices already connected to this QAM (if any).



2. If not already selected, click the **Input Port** option in the **QAM Name** area. When this option is selected, the button will turn yellow.

3. In the **Connect To** area, click the **Headend Name** arrow and select the headend that contains the device that is physically connected to this QAM.

4. Click the **Device Type** arrow and select the type of device being used to send data to this QAM (for example, MUX).

   Note: We chose MUX as the device type when we added the device to the DNCS earlier in this section.

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5. Click the **Device Name** arrow and select the name you entered for the device.

   Notes:

   - The options that appear on the window after this step are dependent upon the Device Type you selected in step 4.
   - When entering information in this window, remember that the information is about the multiplexing device or translator you are associating with the additional BFS QAM.
   - If the transport stream IDs do not match, a device will not appear.

6. Click **Apply**. The system saves this information into the DNCS database.

7. Your next step is to activate the QAM by placing it online. Go to **Activating the Additional BFS QAM**, next in this section.

Activating the Additional BFS QAM

After you set up the connectivity between the additional BFS QAM and the MPEG source or associated device, complete these steps to activate the BFS QAM by placing it online.

Note: You can activate a BFS QAM only after all parameters for the QAM have been saved to the DNCS database and the QAM has finished its boot process. Therefore, you may have to wait a few minutes before you can complete this task.

1. On the Set Up QAM window, click the **Basic Parameters** tab to bring it to the forefront.

2. For **Administrative State**, click the **Online** option.

3. Click **Save** and then click **Close**. The system saves the QAM information, closes the Set Up QAM window, and updates the QAM List window to include the new QAM.

4. Do you need to add another BFS QAM?

   - If **yes**, complete the steps in **Setting Up Basic Parameters for the BFS QAM procedure**, earlier in this section; then go to step 5.
   - If **no**, close the QAM List window from the **File** menu.

5. Your next step is to set up the CF sessions that will be transporting data from the multiplexing device to the BFS QAMs. Go to **Set Up CF Sessions for the Additional BFS QAMs**, next in this chapter.

Set Up CF Sessions for the Additional BFS QAMs

Introduction

The DBDS uses sessions to deliver data to the set-tops through the BFS QAM. In a distributed BFS plant, additional BFS QAMs are set up in the system to deliver data to set-tops in remote locations. Each BFS QAM typically has twelve sessions. For each additional QAM, you must set up additional source definitions and sessions. This section provides instructions for setting up CF sessions for the additional BFS QAMs in a distributed BFS.

To set up the CF sessions for the additional BFS QAMs in a distributed BFS, complete all of the instructions in this section in the order in which they appear.

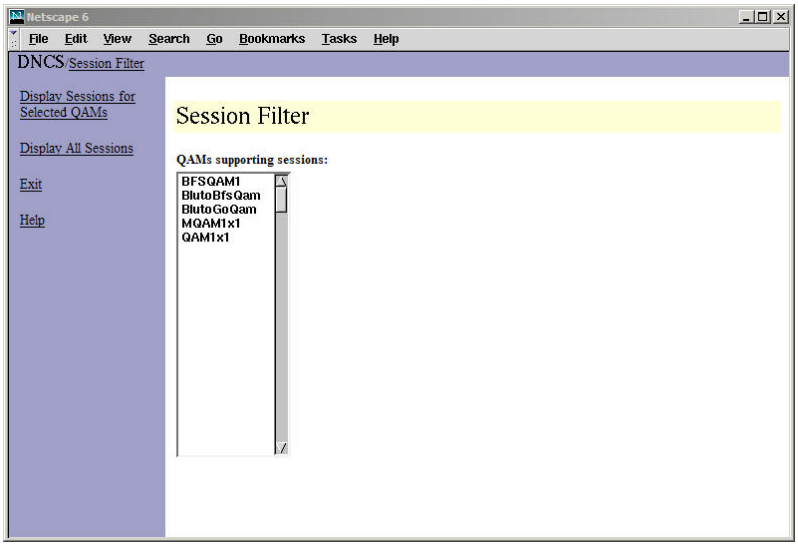
Important: If you have already configured the twelve BFS sessions on the additional BFS QAM, skip this section and the rest of this chapter. Go to Chapter 3, **Enabling CVT Downloads on the DNCS**.

Obtaining and Recording BFS QAM Session Information

Complete the following steps to obtain BFS QAM Session Information from the DNCS.

Note: Use the **Worksheet** at the end of this chapter to record your information.

1. On the DNCS tab of the DNCS Administrative Console, click the **Utilities** tab.
2. Click **Session List**. The Session Filter window opens.



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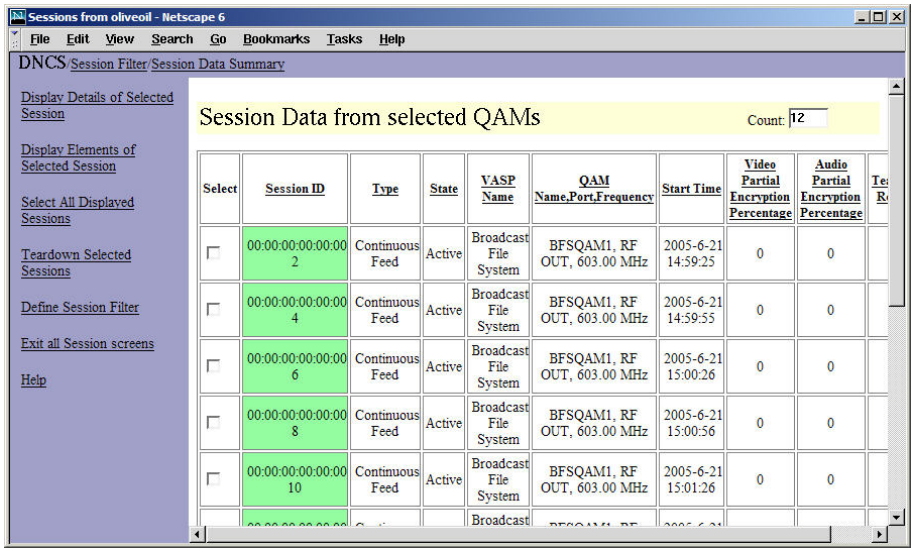
3. Click the appropriate QAM from the Session Filter list and then click **Display Sessions for Selected QAMs**. The session data for the QAM you selected appears.

   Note: The session ID number is typically all zeros plus the source ID number.

   Example: The Session List window in step 2 lists the session IDs plus the source IDs starting with **00:00:00:00:00:00:00 2** for the first eleven BFS carousels. The twelfth carousel is the OSM carousel whose session ID *by default* is **00:00:00:00:00:00:00 199**.



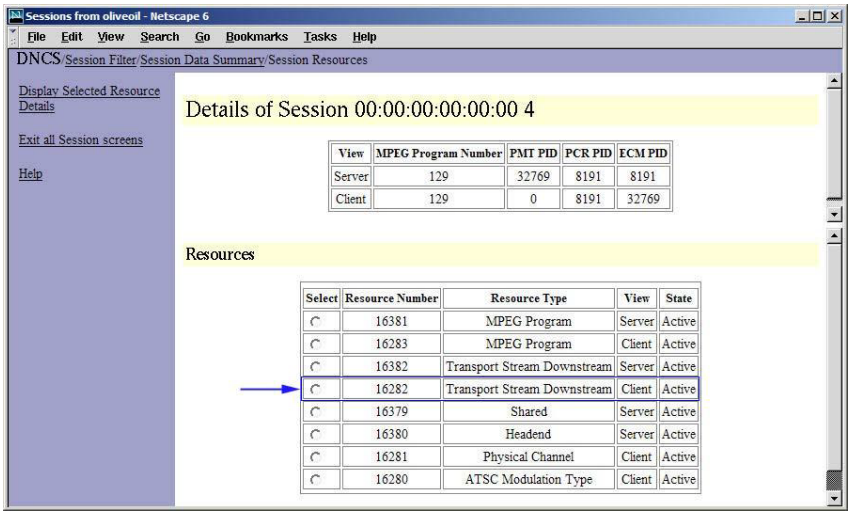
4. Click a checkmark in the selection box adjacent to the session ID for which you want to set up the CF session.

5. Write down the Session ID number and the QAM name on the **Worksheet** at the end of this chapter.

   Note: If your system requires OSM Automux, record **00:00:00:00:00:00:00 199** as the session ID number.

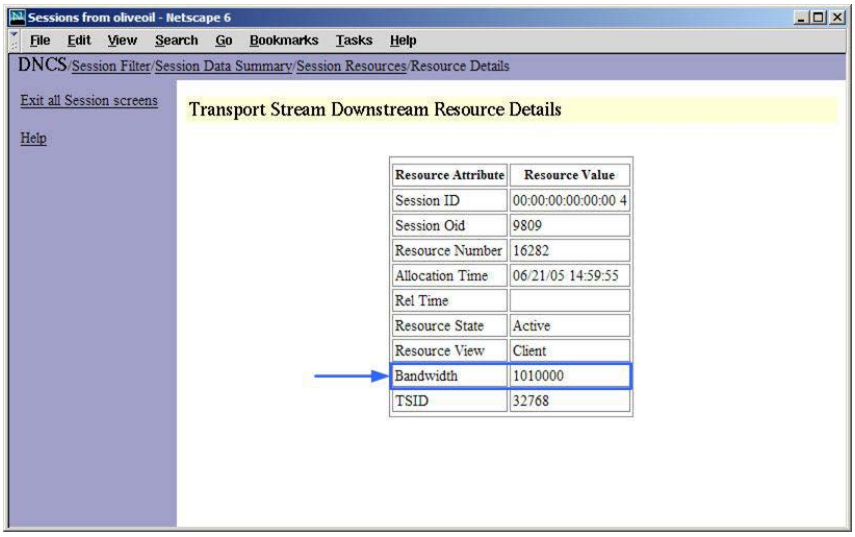
Continued on next page

6. With the desired session selected, click **Display Details of Selected Session**. The Details of Session window opens.



7. In the Select column, click the **Transport Stream Downstream** box that also displays "Client" in the View column, and then click **Display Selected Resource Details**.

   Result: The Transport Stream Downstream Resource Details window opens and displays attributes and values for the session.



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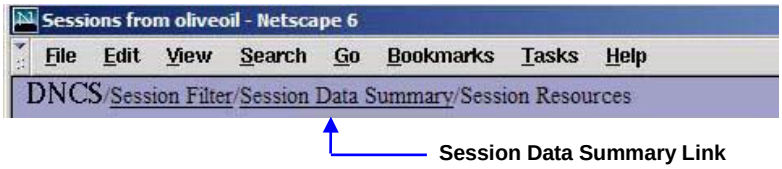
8. Locate and convert the bandwidth displayed from bytes per second (bps) to megabytes per second (Mbps) by dividing the number by 1000000.

   Example: 500000 bps divided by 1000000 = 0.5 Mbps

9. Write down the converted bandwidth on the **Worksheet** at the end of this chapter.

10. Click the **Session Data Summary** link at the top of the window.



   Result: The Session Data window reappears.

11. Repeat steps 4 through 10 for BFS sessions 2 through 22 and for the OSM session.

12. Click **Exit all Session screens**.

13. On the DNCS Administrative Console, click the **DNCS** tab, and then click the **Element Provisioning** tab.

14. Click **BIG**. The BIG List window opens.

15. Select the headend corresponding to your primary BFS QAM.

16. On the **File** menu, click **Open**. The Set Up BIG window opens.

17. Click the **PAT Configuration** button near the bottom of the window. The BIG PAT window opens.

18. From the BIG PAT table, note the program numbers for sessions 2 through 22 and the OSM session on the **Worksheet** at the end of this chapter.

19. Click **Close** in the BIG PAT window.

20. Click **Cancel** in the Setup BIG window.

21. Click the **File** menu and then click **Close**. The BIG List window closes.

22. Go to **Setting Up Source Definitions and CF Sessions**, next in this section, to set up the source definition and build the CF sessions for the BFS QAMs.

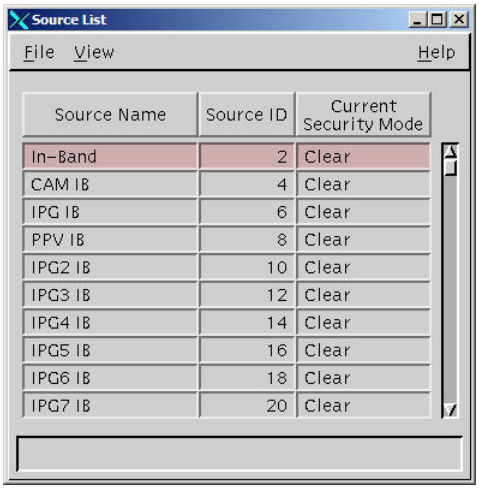
Continued on next page

Setting Up Source Definitions and CF Sessions

After obtaining the session information for the BFS QAM, your next step is to set up the source definitions and build the CF sessions for the additional BFS QAMs.

Complete the following steps to set up the source definition and build the CF sessions for the additional BFS QAMs.

1. On the DNCS tab of the DNCS Administrative console, click the **System Provisioning** tab, and then click **Source**. The Source List window opens.
2. Click the Source ID column twice to sort the source IDs from the lowest to the highest number.
3. Click to highlight the row of the source name and source ID for which you want to build an additional CF session (for example, **In-Band 2**).



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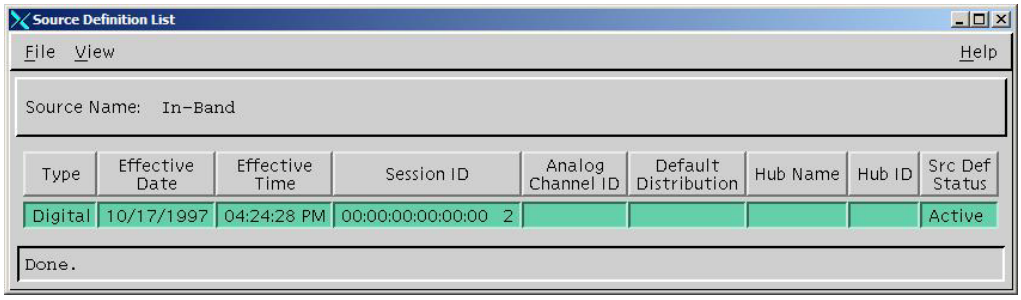
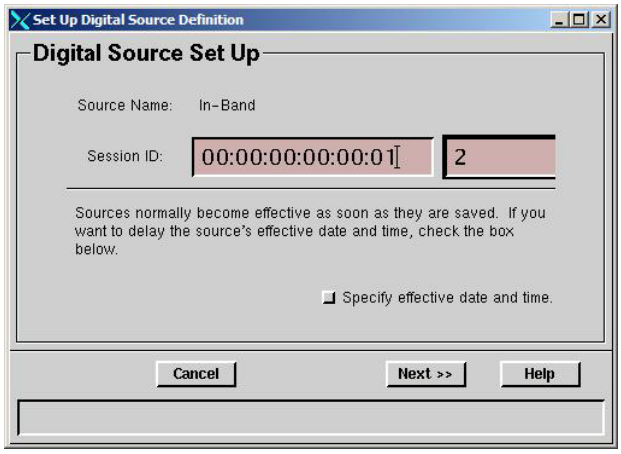
4. On the **File** menu, click **Source Definitions**. The Source Definition List window opens listing the available source definition(s) with their session IDs for the source you selected.



5. On the **File** menu, click **New Digital**. The Set Up Source Definition window opens.

6. For **Session ID**, type a unique session ID number in the first box and the source ID number in the second box.

   Example: The session ID for the In-Band source shown on the Source Definition List window is **00:00:00:00:00:00 2**. Therefore, the next unique session ID for the In-Band source will be **00:00:00:00:00:01 2** as shown in the following illustration.



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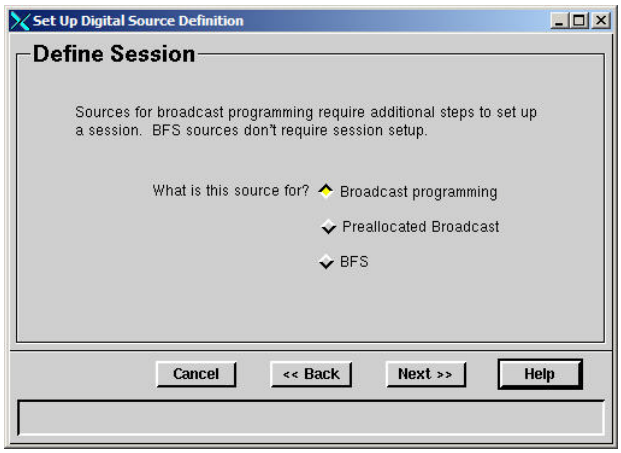
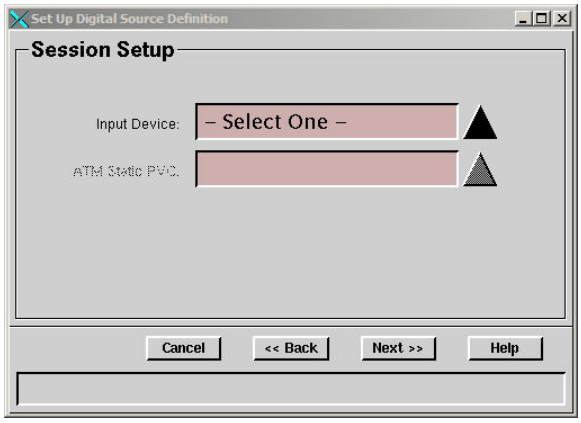
7. Click **Next**. The Define Session dialog box opens.



8. Verify that the **Broadcast programming** option (the default) is selected and click **Next**. The Session Setup window opens.

   Important: You must always select **Broadcast programming** when setting up a session for distributed BFS.



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9. In the **Input Device** box, select the name of the device you created when you added a device to the DNCS in the **Add an MPEG Source** section, earlier in this chapter, and then click **Next**. The Output Selection Policy window opens.

10. Click **Auto-select outputs (1 per headend)** and click **Next**. The Wrap-up window opens.

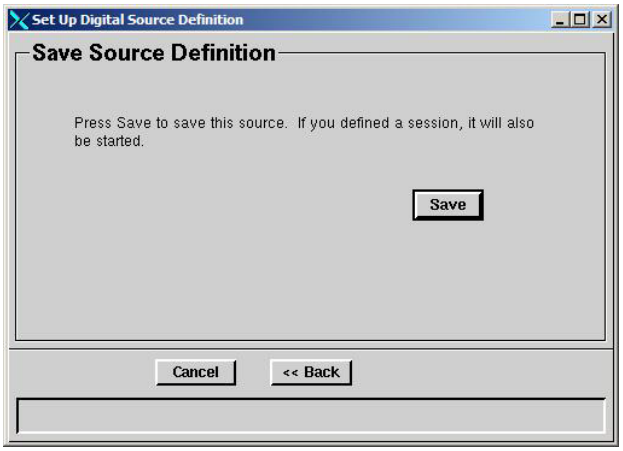
11. In the **MPEG Program Number** box, type the MPEG program number corresponding to the BFS session you are duplicating for the source.

    Note: Use the information you recorded in the **Worksheet** at the end of this chapter.

12. In the **Bandwidth** box, type the bandwidth corresponding to the BFS session you are duplicating for the source.

    Note: Use the information you recorded in the **Worksheet** at the end of this chapter.

13. Click **Next**. The Save Source Definition dialog box opens.



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14. Click **Save**. The system saves the source definition, starts the session, and returns to the Source Definition List window.
15. Close the Source Definition List window and return to the Source List window.
16. Repeat steps 5 to 15 for each BFS source; and then go to step 17.
17. Close the Source List window and return to the DNCS Administrative Console.
18. Go to **Add a New OSM Source, Source Definition, and Session**, next in this chapter.

Add a New OSM Source, Source Definition, and Session

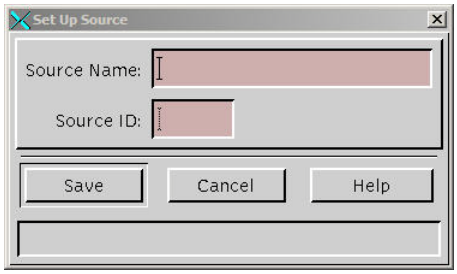
Introduction

This section provides instructions for adding a new OSM Source with a new source definition and session.

Adding a New OSM Source, Source Definition, and Session

Complete these steps to add a new OSM Source with a new source definition and session.

1. On the DNCS tab of the DNCS Administrative Console, select the **System Provisioning** tab.
2. Click **Source**. The Source List window opens.
3. On the **File** menu, click **New**. The Set Up Source window opens.



4. In the **Source Name** box, type **OSM2**.
5. In the **Source ID** box, type **299**.
6. Click **Save**. The system saves the new source, closes the Set Up Source window and the new source appears in the Source List window.

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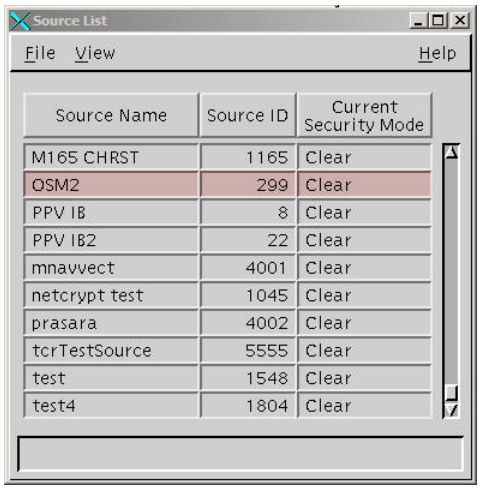
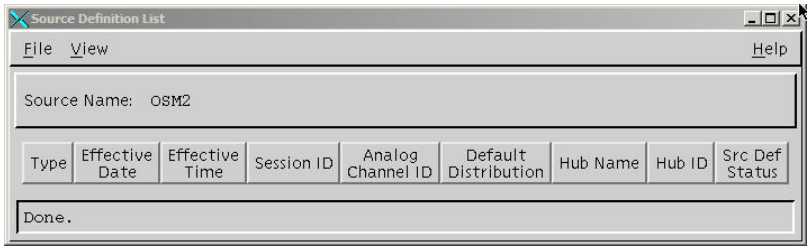
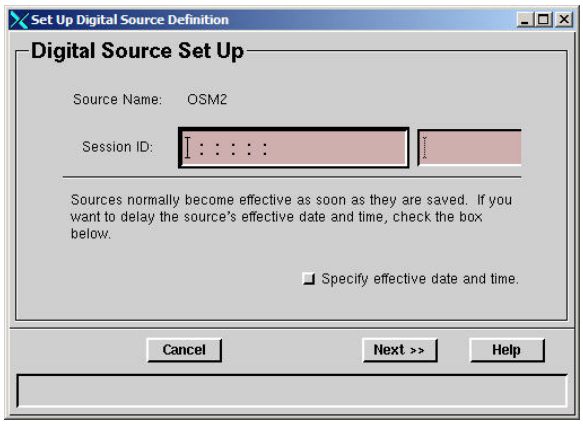
7. In the Source List window, select the row of the new OSM2 source.



8. On the **File** menu, click **Source Definitions**. The Source Definition List window opens and displays information about the new OSM2 source.



9. On the **File** menu, click **New Digital**. The Set up Digital Source Definition window opens and displays the Digital Source Set Up area.



10. For the **Session ID**, type all zeros in the left box, and then type **299** in the right box. For example, **00:00:00:00:00:01 299**.

Continued on next page

11. Click **Next**. The Define Session area of the window appears.
12. Select the **Broadcast programming** option and click **Next**. The Session Setup area of the window appears.
13. In the **Input Device** box, select the correct MUX device, and then click **Next**. The Output Selection Policy area of the window appears.
14. Click the **Auto-select outputs (1 per headend)** option and click **Next**. The Wrap-up window appears.
15. In the **MPEG Program Number** box, type the MPEG program number corresponding to the BFS session you are duplicating for the source.

    Note: Use the information you recorded in the **Worksheet** at the end of this chapter.
16. In the **Bandwidth** box, type the bandwidth corresponding to the BFS session you are duplicating for the source.

    Note: Use the information you recorded in the **Worksheet** at the end of this chapter.
17. Click **Next**. The Save Source Definition area of the window appears.
18. Click **Save**. The system saves your source definition and session, closes the Set Up Digital Source Definition window, and returns to the Source Definition List window.
19. From the Source Definition List window, click the **File** menu and select **Close**.
20. From the Source List window, click the **File** menu and select **Close**. The DNCS Administrative Console returns to the forefront.
21. Do you need to add an additional BFS QAM?
    - If **yes**, repeat the steps in **Add an Additional BFS QAM to the DNCS**, earlier in this chapter.
    - If **no**, your next step is to enable CVT downloads on the DNCS. Go to Chapter 4 for instructions on how to enable CVT downloads.

Worksheet

Record Session Information

In this chapter you verify the existing session information of the specific BFS QAMs for which you want to build additional CF sessions. Use this worksheet to record the session IDs, MPEG program numbers, QAM names, and bandwidths of the existing sessions.

Important: If your system requires OSM Automux, record **00:00:00:00:00:00 199** as the session ID for the OSM session.

QAM Name	Session ID	Bandwidth	MPEG Program Number

Chapter 3
Enabling CVT Downloads on the DNCS

Overview

Introduction

The CVT download method loads client software onto Explorer® set-tops at a speed *more than twice as fast* as the previous Operating System Manager (OSM) download method. This chapter describes the recommended method for enabling CVT downloads in a network with BFS QAMs that are each operating at the same (overlapping) or at different (non-overlapping) frequencies. If you are familiar with the OSM method, keep in mind that the CVT method works a little differently. For example, the CVT method does not use the carousels created and managed by BFS. Instead, the OSM process creates and manages its own carousel for the delivery of images identified in the CVT table. In addition, specific to a distributed BFS configuration, the secondary QAMs use continuous feed (CF) sessions to distribute the BFS and OSM data to the secondary QAMs.

Time To Complete

Configuring the CVT download method can take up to two hours to complete.

In This Chapter

This chapter contains the following topics.

Add an MPEG Source to the DNCS

Introduction

The first step in configuring a CVT download method in your overlapping or non-overlapping frequency network is to add an MPEG source to your DNCS. This section provides information on adding an MPEG source to the DNCS.

Adding an MPEG Source

If you have not already added one, your next step is to add an MPEG source to its corresponding QAM on the DNCS. See the **Add an MPEG Source** section in Chapter 2 of this guide for the instructions.

After you add the MPEG source to its corresponding QAM on the DNCS, your next step is to verify that all DNCS processes are running. Go to **Confirm That All DNCS Processes Are Running**, next in this chapter.

Confirm That All DNCS Processes Are Running

Introduction

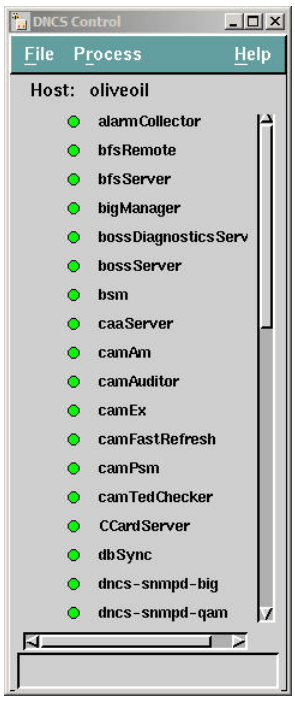
After adding an MPEG source to the DNCS, your next step in configuring a CVT download method on your network is to confirm that all DNCS processes are running (displaying a *green* working state).

Confirming That All DNCS Processes Are Running

Complete these steps to confirm that all DNCS processes are running.

1. On the DNCS Administrative Console Status window, click **Monitor** in the DNCS area.

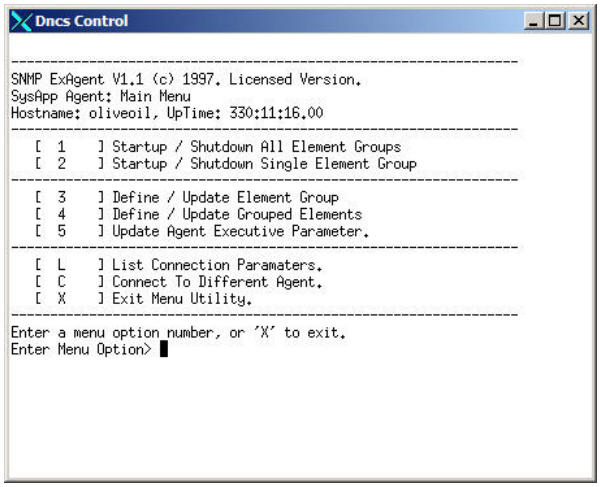
Result: The DNCS Monitor window opens.



Note: Some processes restart automatically in response to an error. If this happens, the status indicator cycles through red, yellow, and green as the process shuts itself down, restarts, and then becomes active. If a process remains in a red or yellow working state, this indicates that the process is not functioning properly.

Continued on next page

2. After allowing the system to cycle through the processes, do any of the current working states still appear with red or yellow indicators?
   - If an indicator appears **red**, go to step 3.
   - If an indicator appears **yellow**, stop here and contact Cisco Services.
   - If all indicators appear green, go to step 16.
3. On the DNCS tab of the DNCS Administrative window, click the **Utilities** tab.
4. Click **xterm**. An xterm window opens.
5. At the dncs prompt, type **dncsControl** and press **Enter**. A Dncs Control window opens.



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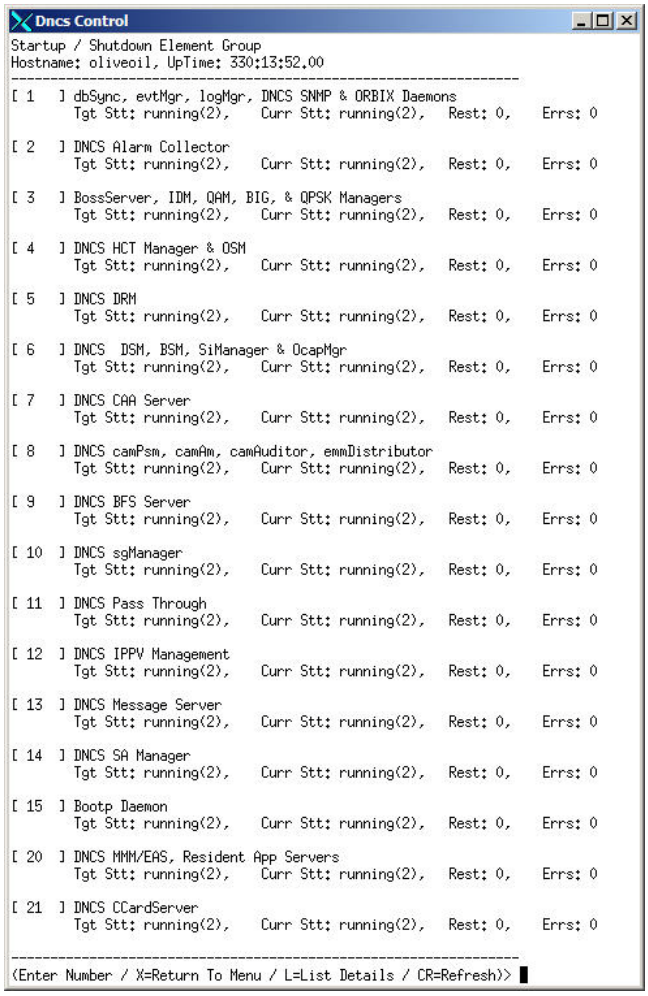
6. In the Dncs Control window, type **2** and press **Enter.** The system displays a list of options.



7. Types the number associated with the process group that is showing stopped, and press **Enter**.

8. Type **e** and press **Enter** to enter the element list.

9. Type the number associated with the stopped process and press **Enter**.

10. Type **2** and press **Enter**.

Continued on next page

11. Type **y** and press **Enter**.
12. Type **x** and press **Enter** to return to the Dncs Control window.
13. Are there any other processes that need to be started?
    - If **yes**, repeat steps 7 through 12.
    - If **no**, go to step 14.
14. Type **x** and press **Enter** until you return to the $ prompt.
15. At the $ prompt, type **exit** and press **Enter**.
16. Do all distributed BFS QAMs use the same frequency and modulation as the primary or local BFS QAM?
    - If **yes**, go to step 17.
    - If no, you must use the OSM Automux configuration. Go to **Add OSM Entries to the DNCS .profile File**, next in this chapter.
17. Do all BFS QAMs, including the primary BFS QAM, use the same program number for the OSM session?
    - If **yes**, you do not need the OSM Automux configuration. Go to **Test the Distributed BFS Configuration**, later in this chapter.
    - If **no**, you must use the OSM Automux configuration. Go to **Add OSM Entries to the DNCS .profile File**, next in this chapter.

Add OSM Entries to the DNCS .profile File

Introduction

If your configuration requires the OSM Automux file, your next step is to add the following two OSM entries to the DNCS .profile file as described in this section:

- OSM_AUTOMUX=y
- export OSM_AUTOMUX

Important:

- You must have a working knowledge of vi or another text editor to edit this file.
- When using the OSM Automux configuration, CVT is no longer inserted on all Cisco QAMs. CVT is only inserted on the QAMs listed in the **osmAutoMux.cfg** file. Those QAMs that no longer carry CVT should be rebooted to clear out the old CVT.

Adding OSM Entries to the DNCS .profile File

Complete these steps to add **OSM_AUTOMUX=y** and export the entry to the DNCS .profile userid file.

1. At the dncs prompt, type **cd /export/home/dncs** and press **Enter** to change to the dncs directory.
2. Open the **.profile** file in a text editor (such as vi).
3. Go to the last empty line in the file and add the following two commands on separate lines:

   OSM_AUTOMUX=y
   export OSM_AUTOMUX

4. Save the changes to the file and exit the editor. The system returns to the dncs prompt.
5. Close all open windows in all environments, including environments Two, Three, and Four.
6. On the Solaris toolbar, click the **Exit** button.

   Result: The system logs you out and closes all open windows; then, the DNCS Login window opens with the welcome message.

7. Type the user name (typically **dncs**) and press **Enter**. The password prompt appears.

Continued on next page

8. Type the password and press **Enter**. The system activates the .profile changes.
9. Using the mouse, place the cursor anywhere on the DNCS desktop, and then click the middle mouse button. A menu appears with a list of options.
10. Click **Administrative Console** to open the DNCS Administrative Console and the Status windows.
11. Your next step is to gather information for the osmAutoMux.cfg file. Go to **Gather Required Information for the osmAutoMux.cfg File,** next in this chapter.

Gather Required Information for the osmAutoMux.cfg File

Introduction

You must describe the network topology to the OSM in order to support bootloader in an Automux environment. To do this, you enter the following types of records in the /dvs/dvsFiles/OSM/osmAutoMux.cfg file.

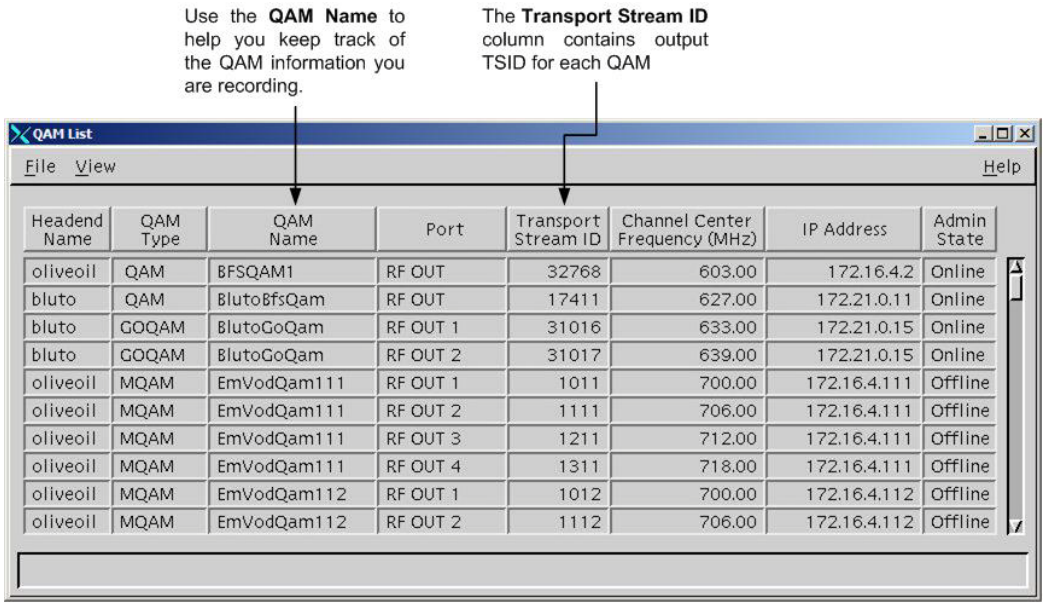
- QAM (QAM transport stream ID to headend mapping)
- HUB (hub ID to headend mapping)
- SESS (session to headend mapping)

This section provides procedures for gathering all of the information you need to build your osmAutoMux.cfg file. You can record the information you gather in the worksheets provided on pages 3-13 through 3-16 or in your own worksheets.

Obtaining Output TSIDs

Notes:

- For this procedure, record values in the QAM Record worksheet provided on page 3-13 or in your own worksheets.
- For this procedure, you will pull the QAM Name and Transport Stream ID values from the QAM List window.



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Complete these steps to find and record the output TSID information required for the osmAutoMux.cfg file.

1. From the DNCS Administrative Console, click the **Element Provisioning** tab.
2. Click **QAM**. The QAM List window opens.
3. Using the information in the QAM List window, record the name and the output TSID for each of the following QAM types in the order presented.
   - Primary (local) BFS QAM for the primary headend
   - Video QAMs for the primary headend
   - Secondary BFS QAM for the secondary headend
   - Video QAMs for the secondary headend
   - (if applicable) BFS QAM for an additional headend
   - (if applicable) video QAMs for an additional headend

   Important: You may have multiple rows for each output on a BFS QAM. For example, if you are using and MQAM as a BFS QAM, the QAM List window contains a separate row for each output on the MQAM. Record the output TSID for each output on the MQAM (4 outputs).
4. If you have additional headends, continue the same pattern described in step 3 to record the QAM Name and Output TSID for the BFS QAM and all video QAMs for each headend.
5. When you have finished recording the output TSIDs for the BFS QAMs and video QAMs in each headend, select **File** and choose **Close** to close the QAM List window.

Obtaining Headend IDs

Complete these steps to obtain headend IDs. For the primary BFS QAM in the primary headend, you must query the database for the real headend ID. For your other headends, use an artitray but unique number for each headend ID.

1. From an xterm window, log on to the DNCS as root.
2. Type the following command and press **Enter**.

   dbaccess dncsdb –

   Result: The message **Database selected** appears.

Continued on next page

3. Type the following command and press **Enter**.

   Select * from headend

   Result: An output similar to the following appears.

he_id	he_name	he_em_hostname	optimctrl
7	MFG	TEST	3

   1 row(s) retrieved.

4. Record the value under **he_id** as the headend ID for the primary BFS QAM and the video QAMs in the primary headend in the QAM Record worksheet.

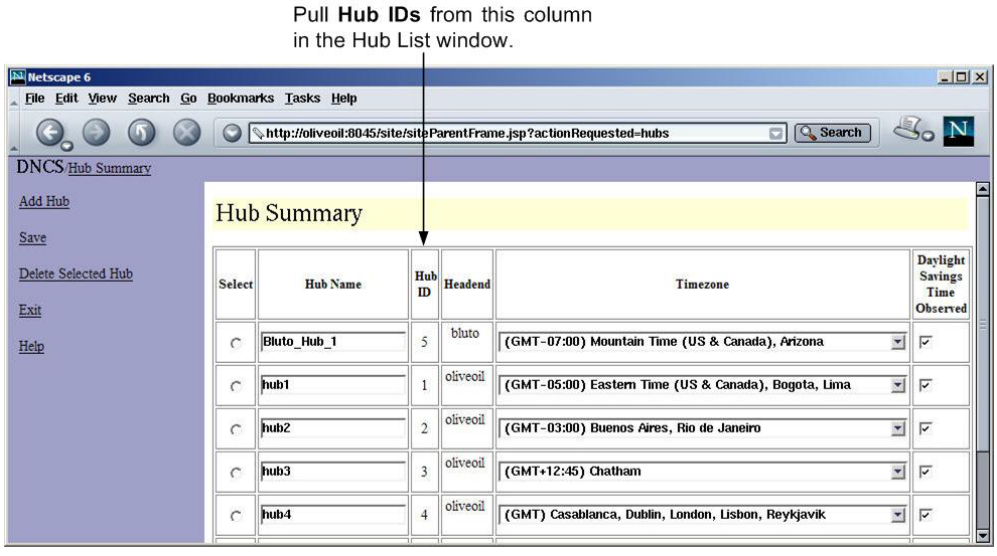
5. Type **exit** and close the xterm window.

6. For your other headends, use an arbitrary but unique number for each headend ID. For example, you could assign a headend ID of 2 to the secondary BFS QAM and all video QAMs in the secondary headend. You could assign a headend ID of 3 to the tertiary BFS QAM and all video QAMs in the tertiary headend, and so on. Record the values you devise in the QAM Record worksheet.

Obtaining Hub IDs

Notes:

- For this procedure, record values in the Hub worksheet provided on page 3-15 or in your own worksheet.
- For this procedure, you will pull the Hub IDs from the Hub List window.



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Complete these steps to find and record the Hub ID information required for the osmAutoMux.cfg file.

1. Record the real headend ID for the primary headend and the arbitrary yet unique headend IDs you defined for your additional headends.
2. From the DNCS Administrative Console, click the **Element Provisioning** tab.
3. Click **Hub**. The Hub Summary window opens.
4. Using the information in the Hub ID column, record the correct Hub ID associated with each Headend ID.

Obtaining OSM Session Information

Notes:

- For this procedure, record values in the Session Record worksheet provided on page 3-16 or in your own worksheet.
- For this procedure, you will pull the Session ID for the OSM session for each BFS QAM from the Session List window.

Complete these steps to find and record the Session ID information required for the osmAutoMux.cfg file.

1. From the DNCS Administrative Console, click the **Utilities** tab.
2. Click **Session List**. The Monitor Session Filter window opens.
3. Click **OK**. The Session List window opens.
4. Click the **VASP Name** column heading to sort the session list by VASP type. The OSM sessions should sort to the top of the window. If not, scroll to the group of OSM sessions.
5. Using the information in the Session ID column of the Session List window, record the correct Session ID associated with each BFS QAM for each headend.

   Note: Using the information in the Session ID column of the Session List window, record the correct Session ID associated with each BFS QAM for each headend.
6. For each BFS QAM, record the headend ID associated with the headend the BFS QAM feeds.

   Important: Record the real headend ID provided by Cisco Services for the OSM session for the primary BFS QAM (in the primary headend).

QAM Record Worksheet

Complete the following worksheet before editing the osmAutoMux.cfg file. The QAM Name column is provided to help you ensure your record information for all necessary QAMs. You do not have to enter the name of your QAM in the OSM Configuration file.

QAM Name	Output TSID	Headend ID

Continued on next page

QAM Record Worksheet, Continued

QAM Name	Output TSID	Headend ID

Hub Record Worksheet

Complete this worksheet to record the correct Hub ID to Headend ID associations.

Headend ID	Hub ID

Session Record Worksheet

Complete this worksheet to record the correct OSM session information for each BFS QAM.

Note: The OSM session ID for the BFS QAM in the primary headend is 00:00:00:00:00:00 199.

OSM Session MAC Address	OSM Session ID	Headend ID
00:00:00:00:00:00	199	

Gather the following information for each data QAM in your system. Record this information in the worksheet on the following page.

- **Output TSID**. To find the numeric *output* transport stream ID for the QAM, open the Set Up QAM window by clicking QAM from the Element Provisioning tab.
- **Headend ID**. Write down the exact headend ID for the "real" headend QAM that is included in your system. This Headend ID will be repeated in each of the three record types you enter in the osmAutoMux.cfg file (QAM, HUB, and SESS records).

  Notes:

  – If arbitrary QAMs are set up in your system, choose arbitrary numbers to make tracking the configuration easier. This number does not have to match the actual headend ID. Each QAM must have its own unique number.

  – If real QAMs are set up in your system, you must enter the actual headend ID for the headend device.
- **Session MAC Address**. Write down the 12-character HEX MAC address *without* the colons (:). The session MAC Address is determined by the value that was used when sessions were built.
- **Session ID.** Session IDs range from 2 to 22. For the OSM session, the session ID for the primary OSM session is 199. The session ID for the secondary OSM session is 299.
- **Hub ID.** To find the numeric Hub ID, go to the Hub Summary window by clicking Hub under the Element Provisioning tab.

Continued on next page

Worksheet

Note: The QAM column is provided to help you ensure you record information for all necessary QAMs. You do not have to enter the name of your QAM in the OSM Configuration file

QAM	Output TSID	Headend ID	Session MAC Address	Session ID	Hub ID

Review Record Layout Examples

Overview

Review the sample record layouts in this section. Note that the record tags (**QAM**, **HUB**, and **SESS**) must always begin in column 1. Each field must be separated by **|.**

QAM Record Layout

QAM|*OUTPUT TSID*|*HEADEND ID*

QAM|101|100

HUB Record Layout

HUB|*HUB ID*|*HEADEND ID*

HUB|1|100

SESS Record Layout

SESS|*SESSMAC*|*SESSID*|*HEADEND ID*

SESS|000000000000|199|100

Putting It All Together

This sample file describes a simple system with two headends identified as 100 and 200.

Sample	Features of This Sample System
QAM|101|100 QAM|203|200	Two QAMs: one with an output transport stream ID of 101 in headend 100 and one with an output transport stream ID of 203 in headend 200
HUB|1|100 HUB|6|200	Two hubs: hub ID 1 is in headend 100, and hub ID 6 is in headend 200.
SESS|000000000000|199|100 SESS|000000000001|299|200	Two sessions for the OSM: session ID 00:00:00:00:00:00 199 is for headend 100, and session ID 00:00:00:00:00:01 299 is for headend 200.

Configure the osmAutoMux.cfg File

Introduction

Using the information you recorded in your worksheets, configure the dvs/dvsFiles/OSM/osmAutoMux.cfg file. Note that the records tags (**QAM**, **HUB**, and **SESS**) must always begin in column 1. Each field must be separated by |.

QAM Record Layout
QAM|OUTPUT TSID|HEADEND ID

HUB Record Layout
HUB|HUB ID|HEADEND ID

SESS Record Layout
SESS|SESSMAC|SESSID\HEADEND ID

Configuring the osmAutoMux.cfg File

Complete these steps to configure the /dvs/dvsFiles/OSM/osmAutoMux.cfg file.

1. In the xterm window, type **cd /dvs/dvsFiles/OSM** and press **Enter** to change to the OSM directory.
2. Open the **osmAutoMux.cfg** file in a text editor (such as vi). A new osmAutoMux.cfg file opens and the cursor moves to the upper left corner of the window.
3. Type in the record entries for the QAMs, HUBs and SESSs using the correct format for each record type.

   Notes:

   - All the records must begin in column 1 and end with a line feed character.
   - The order of the records is not important. However, to make it easier to maintain this file, it is recommended that you group all QAM records together, all HUB records together, and all SESS records together.
   - If desired, you can add comments to specific records in the file using the # sign. For example, you could identify the primary BFS QAM I n the file using the following comment:

     QAM|100|1 #Primary BFS QAM for Primary HE

   - If desired, you can add comments to separate groups of records in the file. For example, you could identify the beginning of the HUB records for a specific headend using the following comment:

     # HUBS IN HEADEND 1
     HUB|7|1

Continued on next page

4. When you finish typing the record entries, save the text file and exit the text editor.

   Note: In Automux Mode, the OSM reads the configuration from the **/dvs/dvsFiles/OSM/osmAutoMux.cfg** ASCII text file only once at startup.

   Important: If you make any changes to this file, you must stop and restart the OSM process.

5. Go to **Test the Distributed BFS Configuration**, next in this chapter.

Test the Distributed BFS Configuration

Introduction

Your next step is to verify that you successfully set up your distributed BFS configuration.

To verify that you have successfully set up your distributed BFS configuration, you must test the operation of the set-tops in your system to ensure that they are receiving data from all the BFS QAMs.

Testing a Distributed BFS

To test a successful set up of your distributed BFS, complete these steps to check the set-top operation.

Note: Perform this test for each BFS QAM on each hub.

1. Unplug a test set-top on a remote headend and plug it back in.
2. Wait for about 3 minutes for the set-top to reboot.
3. Using your remote control, buy an impulse pay-per-view (IPPV) movie.
4. Tune to all digital channels.
5. Verify that 7 days of IPG information is available.
6. Stage a set-top.
7. Is the set-top operating normally?
   - If **yes**, you have successfully completed this procedure.
   - If **no**, contact Cisco Services for assistance.

Chapter 4
Disabling OSM Automux

Overview

Introduction

This chapter contains the instructions for disabling OSM Automux only. For example, if you move from a non-overlapping configuration to an overlapping configuration, you may want to disable OSM Automux.

If you are using OSM Automux and you want to remove the *entire* distributed BFS configuration from your system, you must complete this chapter and then go to Chapter 5 to complete the removal process.

Before You Begin

Your first step to disable OSM Automux is to confirm that all DNCS processes are running. See the **Confirm That All DNCS Processes Are Running** section in Chapter 3 of this guide for the procedure.

In This Chapter

This chapter contains the following topics.

Verify Your Configuration

Overview

Before you remove OSM Automux, ensure your system meets *both* of the following requirements:

- The distributed BFS QAMs use the same frequency as the primary BFS QAM.
- All BFS QAMs use the same program number for the OSM session.

Complete the following procedures to verify both of these requirements are met.

Checking BFS QAM Frequencies

Complete these steps to verify all distributed BFS QAMs use the same frequency as the primary BFS QAM.

1. On the DNCS Administrative Console, click the **DNCS** tab and then the **Element Provisioning** tab.
2. Click **QAM**. The QAM List window opens.
3. Select the row corresponding to the **primary** BFS QAM.
4. Note the frequency in the **Channel Center Frequency** column and record the frequency.

   Primary BFS QAM Frequency: _____
5. From the QAM List, verify that the frequency for each of your secondary BFS QAMs matches the frequency you recorded in step 4.
6. When you have finished verifying frequencies, close the QAM List window from the **File** menu.
7. Did the frequencies for every secondary BFS QAM match the frequency for the primary BFS QAM?
   - If **yes**, continue to the next check, **Verifying Program Numbers**.

     Important: The frequencies must be the same for *all* BFS QAMs, including the local BFS QAM, to meet this requirement.
   - If **no**, do *not* remove OSM Automux.

Continued on next page

Verifying Program Numbers

Complete these steps to verify that all BFS QAMs use the same program number for the OSM session.

1. On the DNCS Administrative Console, click the **DNCS** tab and then the **Element Provisioning** tab.
2. Click **BIG**. The BIG List window opens.
3. Select the headend corresponding to your primary BFS QAM. Then, on the **File** menu, click **Open**. The Set Up BIG window opens.
4. Click the **PAT Configuration** button near the bottom of the window. The BIG PAT window opens.
5. Check and record the Program Number for the OSM session in the BIG PAT table.

   Program Number for OSM Session: _____
6. Close the BIG PAT window, the Set Up BIG window, and the BIG List window using the **Close** or **Cancel** buttons, or the **File** menu.
7. On the DNCS Administrative Console, click the **DNCS** tab and then the **System Provisioning** tab.
8. Click **Source**. The Source List window opens.
9. Select the row corresponding to the secondary OSM source. If you followed this guide to create this source, the source is named **OSM2**.
10. On the **File** menu, click **Source Definitions**. The Source Definition List window opens.
11. Complete the following steps for *each row* in the list.
    a) Double-click the row to open the Set Up Digital Source Definition window.
    b) Note the **Program Number**.

Continued on next page

12. After you have verified the source definition for each row in the Source Definition List window, click **Close** in the Set Up Digital Source Definition window. Then close the Source Definition List and Source List windows from the **File** menu.

13. Were all the program numbers the same for the OSM session?

    - If **yes**, go to **Remove OSM Entries From the DNCS .profile userid File**, next in this chapter.

      Important: The program numbers must be the same for *all* BFS QAMs, including the local BFS QAM, to meet this requirement.

    - If **no**, do *not* remove OSM Automux.

Remove OSM Entries From the DNCS .profile userid File

Introduction

After verifying your configuration, remove the following two OSM entries from the DNCS .profile userid file:

- OSM_AUTOMUX=y
- export OSM_AUTOMUX

Removing OSM Entries From The DNCS .profile userid File

Complete these steps to remove the OSM_AUTOMUX=y and export OSM_AUTOMUX entries from the DNCS .profile userid file.

1. On the DNCS tab of the DNCS Administrative Console, click the **Utilities** tab.
2. Click **xterm**. An xterm window opens.
3. Type **cd /export/home/dncs** and press **Enter** to change to the dncs directory.
4. Type **cp .profile .profile.TODAYSDATE** and press **Enter**.

   Example: TODAYSDATE=020106
5. Open the .profile file in a text editor (such as vi).
6. Go to the line that contains the **OSM_AUTOMUX=y** entry and delete the line.
7. Go to the line that contains the **export OSM_AUTOMUX** entry and delete the line.
8. Save the changes to the file and exit the text editor. The system returns to the dncs prompt.

Stop the OSM Process

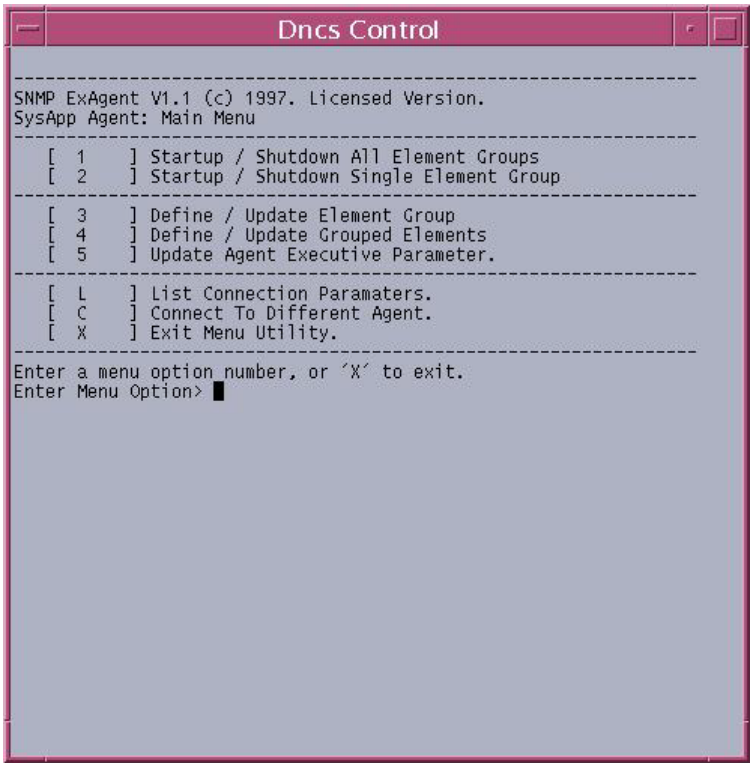
Introduction

After you have updated the DNCS .profile userid file, your next step is to stop the OSM process.

Stopping the OSM Process

Complete these steps to stop the OSM process.

1. On the DNCS tab of the DNCS Administrative window, click the **Utilities** tab.
2. Click **xterm**. An xterm window opens.
3. At the dncs prompt, type **dncsControl** and press **Enter**. A Dncs Control window opens.



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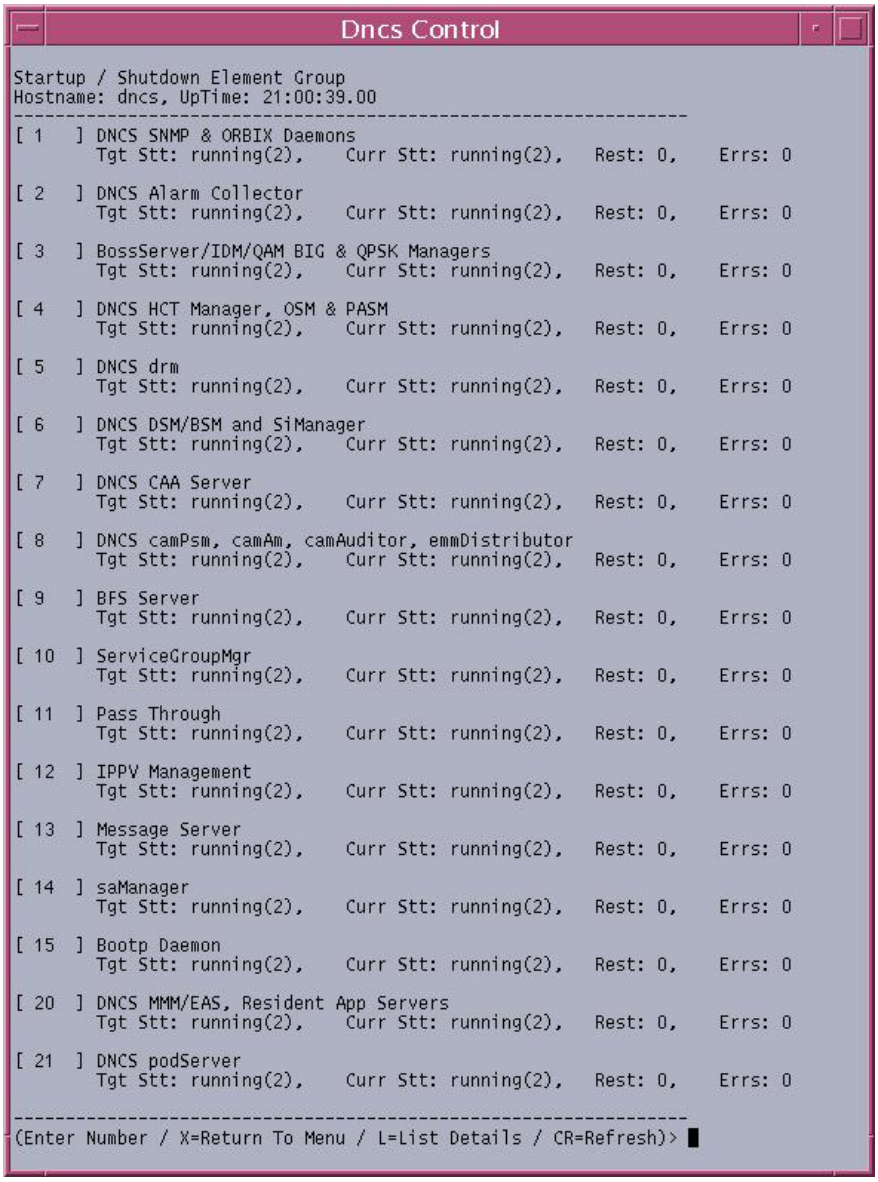
4. In the Dncs Control window, type **2** and press **Enter.** The system displays a list of options.



5. Type the number corresponding to the OSM process group and press **Enter**.

6. Type **e** and press **Enter**.

Continued on next page

7. Type the corresponding to OSM process and press **Enter**. The following information appears:

   Enter target status for element, in the range 1-3.
   Possible values are:

   [1] stopped(1)
   [2] running(2)
   [3] paused(3)

   Default value: running(2)

   cpElmtExecTargetState--------?>

8. Type the number corresponding to "stopped" and press **Enter**.
9. Type **y** to confirm. The system refreshes and shows the OSM process as stopped.
10. Wait 10 seconds, and then press **Enter** to refresh the screen. The system refreshes and shows the OSM session as stopped.
11. Close all open windows.
12. On the Solaris toolbar, click the **Exit** button. The system logs you out and closes all open windows; then, the DNCS Login window opens with the Welcome message.
13. Type the user name (typically dncs) and press **Enter**. The password prompt appears.
14. Type the password and press **Enter**. The system updates the .profile changes to all windows and processes.
15. Using the mouse, place the cursor anywhere on the DNCS desktop, and then click the middle mouse button. A menu appears with a list of options.
16. Click **Administrative Console**. The DNCS Administrative Console and the Status windows open.
17. Go to **Restart the OSM Process**, next in this chapter.

Restart the OSM Process

Introduction

After you have stopped the OSM process, exited and re-entered the CDE, your next step is to restart the OSM process.

Restarting the OSM Process

Complete these steps to restart the OSM process.

1. On the DNCS tab of the DNCS Administrative Console, click the **Utilities** tab.
2. Click **xterm**. An xterm window opens.
3. Type **dncsControl** and press **Enter**. A Dncs Control window opens and displays the Main Menu.
4. Type the number corresponding to **Startup / Shutdown Single Element Group** and press **Enter**.
5. Type the number corresponding to the OSM process group and press **Enter**.
6. Type **e** and press **Enter**.
7. Type the number corresponding to the OSM process and press **Enter**. The following information appears:

   Enter target status for element, in the range 1-3.
   Possible values are:

   [1] stopped(1)
   [2] running(2)
   [3] paused(3)

   Default value: running(2)
   cpElmtExecTargetState--------?>
8. Type the number corresponding to **running** and press **Enter**.
9. Type **y** and press **Enter** to confirm.
10. Wait about 10 seconds and press **Enter**. The OSM process starts running.

Chapter 5
Removing the Distributed BFS Configuration From the DNCS

Overview

Introduction

This chapter provides instructions for removing a Distributed BFS configuration from the DNCS.

Important: If you are using OSM Automux (a non-overlapping configuration), ensure you have completed the procedures in Chapter 4 before you complete the procedures in this chapter.

In This Chapter

This chapter contains the following topics.

Remove the OSM Source, Source Definition, and Session

Introduction

This section provides instructions for removing the OSM source with the source definition and session.

Removing the OSM Source, Source Definition, and Session

Complete these steps to remove the OSM source, source definition, and session.

1. On the DNCS Administrative Console, click the **DNCS** tab if it is not already in the forefront.
2. Click the **System Provisioning** tab if it is not already in the forefront.
3. Click **Source**. The Source List window opens.
4. Highlight the OSM carousel (OSM2). Then, click the **File** menu and select **Source Definitions**.
5. Highlight the source definition to be deleted. Then, click the **File** menu and select **Delete**.
6. Close the Source Definition List window, click the **File** menu and select **Close**.
7. Keep the Source List window open and go to **Remove CF Sessions for the Additional BFS QAMs**, next in this chapter.

Remove CF Sessions for the Additional BFS QAMs

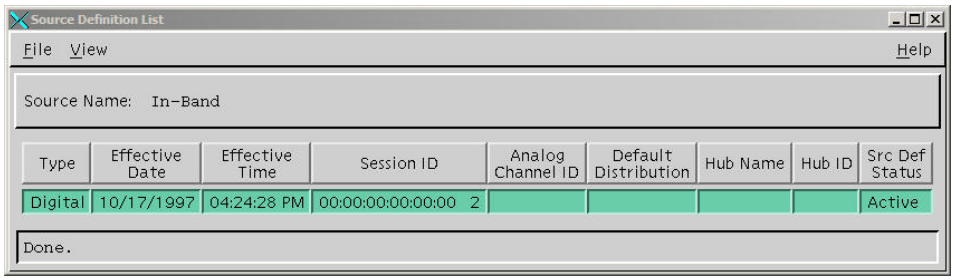
Introduction

This section provides instructions for removing CF sessions for the additional BFS QAMs.

Removing CF Sessions for the Additional BFS QAMs

Complete the following steps to delete the CF sessions for the additional BFS QAMs.

1. From the Source List window, click the **Source ID** column twice to sort the source IDs from the lowest to the highest number.
2. Click to highlight the row of the source name and source ID you want to delete for the BFS QAM CF Session.
3. Click the **File** menu and select **Source Definitions**. The Source Definition List window opens and lists the available source definition(s) with their session IDs for the source you selected.



4. Click to highlight the session that you want to remove relative to the BFS QAM that you are planning to delete.
5. Click the **File** menu and select **Delete**.
6. From the Source Definition List window, click the **File** menu and select **Close**.
7. Repeat steps 2 through 6 for each CF session to be deleted.
8. From the Source List window, click the **File** menu and select **Close**.

Remove the Additional BFS QAMs

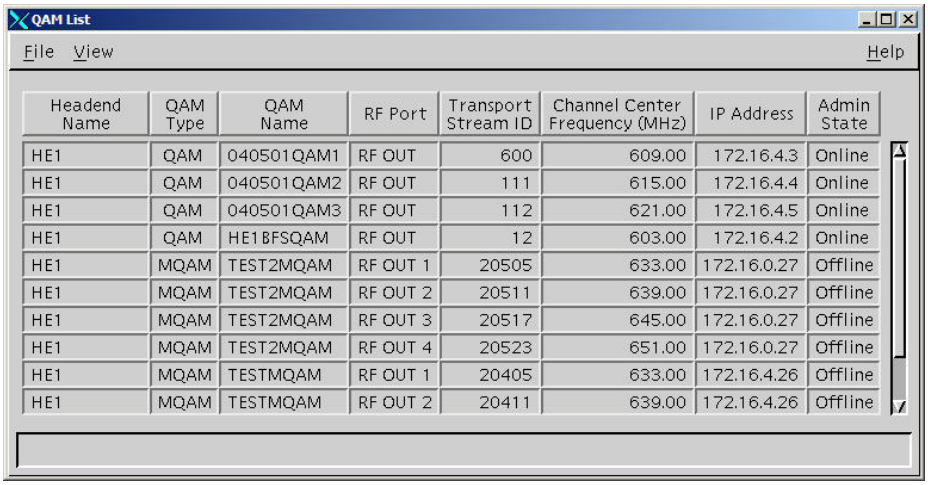
Introduction

This section provides instructions for removing additional BFS QAMs.

Removing the BFS QAMs

Complete these steps to remove the additional BFS QAMs.

1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Click the **Element Provisioning** tab.
3. Click **QAM**. The QAM List window opens.



Headend Name	QAM Type	QAM Name	RF Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
HE1	QAM	040501QAM1	RF OUT	600	609.00	172.16.4.3	Online
HE1	QAM	040501QAM2	RF OUT	111	615.00	172.16.4.4	Online
HE1	QAM	040501QAM3	RF OUT	112	621.00	172.16.4.5	Online
HE1	QAM	HE1BFSQAM	RF OUT	12	603.00	172.16.4.2	Online
HE1	MQAM	TEST2MQAM	RF OUT 1	20505	633.00	172.16.0.27	Offline
HE1	MQAM	TEST2MQAM	RF OUT 2	20511	639.00	172.16.0.27	Offline
HE1	MQAM	TEST2MQAM	RF OUT 3	20517	645.00	172.16.0.27	Offline
HE1	MQAM	TEST2MQAM	RF OUT 4	20523	651.00	172.16.0.27	Offline
HE1	MQAM	TESTMQAM	RF OUT 1	20405	633.00	172.16.4.26	Offline
HE1	MQAM	TESTMQAM	RF OUT 2	20411	639.00	172.16.4.26	Offline

4. Highlight the respective additional BFS QAM to be deleted. Then, click the **File** menu and select **Delete**.
5. Repeat step 4 for any additional BFS QAMs you need to delete.

Remove MPEG Sources

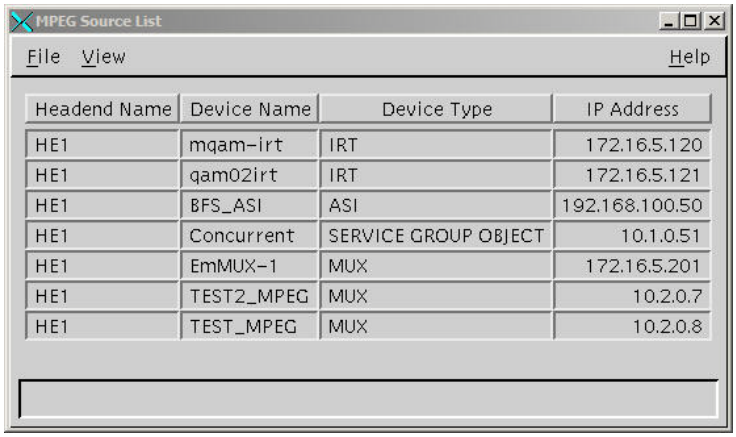
Introduction

This section provides instructions for removing the MPEG source associated with additional BFS QAMs in your system.

Removing MPEG Sources

Complete these steps to remove MPEG sources.

1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Click the **Element Provisioning** tab.
3. Click **MPEG Source**. The MPEG Source List window opens.



4. Highlight the respective MPEG source. Then, click the **File** menu and select **Delete**.
5. Repeat step 4 for any additional MPEG sources you need to delete.

Chapter 6
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.

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