Adding and Removing Applications on the BFS

For System Release 2.7/3.7/4.2 and Later

User Guide

Please Read

Important

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

Notices

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About This Guide

Introduction

The Broadcast File System (BFS) is a software module in the Digital Broadband Delivery System (DBDS) that is the primary means of communication between the Digital Network Control System (DNCS) and subscriber set-tops. Using a data carousel mechanism, the BFS stores files associated with applications that are installed and registered on the DNCS or the application server. These files are then transmitted frequently to set-tops.

Although many applications are pre-installed on the DNCS or application server, additional data sources (Cisco or third-party) associated with applications can be added to or deleted from the BFS data carousel as needed.

The procedures discussed in this user's guide describe the process required to add and delete BFS sources associated with applications onto the DNCS and DBDS network.

Important: These procedures are for applications other than tru2way™ (previously known as OCAP™) applications.

Purpose

This document provides an outline of the procedures for configuring applications on the DNCS. This document also includes detailed instructions for adding and deleting BFS sources from the data carousel.

Scope

The contents of this document apply to sites that are using DNCS system release (SR) 2.7, 3.7, 4.2, or later and sites that are providing information to set-tops within their system using one of the following configurations:

- A traditional configuration that includes a Broadband Integrated Gateway (BIG)
- A configuration, supported by SRs 2.7, 3.7, 4.2 or later, in which an ASI card installed on the DNCS carries information from the DNCS directly to the Data QAM (BIG QAM) without the need for a BIG

Important: It is vital to know which configuration you are using as you work through the procedures in this document. You will be directed to skip sections or steps based on your configuration.

Audience

This document is written for system operators who configure interactive services, our applications, and third-party applications onto the DBDS.

Document Version

This is the second formal release of this document.

1

Preparations to Add a BFS Carousel

Introduction

This chapter addresses how to prepare for the addition of a new BFS carousel on the DNCS. After you successfully complete these procedures, you will be ready to add the BFS carousel.

In This Chapter

Collect BFS Source Configuration Information

Overview

This section highlights the information that you need to gather from the DNCS administrator and the provider of the application that you are adding to your system. Source, server, and client information, related to the application, is needed for each carousel that is added to the DNCS.

Note: If you did not receive this information from your application provider, you should contact them to fill in the values to the following tables.

Source Information

Fill in the following table with the appropriate values for the source.

Field	Value from Provider	Example Value
Source Name		Test IB
Source ID[1]		220
Source Type (BFS or PowerKEY)		BFS
Transport Type (Inband or Out-of-Band)		Inband
Data Rate (Mbps)		.05
Block Size (bytes)		1024
Indication Interval (msec)		100

[1] *The system operator will select the source ID. The entry in this table is simply to verify if there is a preferred or suggested value.*

Server Information

Fill in the following table with the appropriate values for your server.

Field	Value from Provider	Example Value
Server Name		Test IB
Source		Test IB Source

Client Information

Fill in the following table with the appropriate values for your client.

Note: The information for the client is automatically set up for some applications (for example, *anything*-On-Demand [xOD]). Therefore, the Posting Method column allows you to indicate whether or not you need to set up the client information for your application.

Field	**Value from Provider**	**Example Value**	**Posting Method** **(Check One)**
Server Name		Test IB	__ Manual __ Application Driven
Mode (1-way only)		1-way	
Sources (for example, IPGday1)		Test IB Source	
<Directory, File, or Link Associations>			__ Manual __ Application Driven

BFS Performance Guidelines

Guidelines

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

- Although some applications may require their own data carousel, you are not required to configure a data carousel for each application. You may assign multiple files to the same carousel as long as you consider the current and future performance requirements of the DBDS network. The more files you assign to a given carousel, the longer it will take for the files to transfer to the DHCT.
- For applications that do not require their own data carousel, you can redistribute existing application files among the data carousels as you add new application files to your system. Consider the current and future transfer speed of files when you are opting to redistribute application files.
- Do not use system default data carousels for any third-party application files. Cisco reserves default carousels for system files only.
- Determine the data rate required for the third-party application from the third-party application vendor. Defining the appropriate data rate enhances performance of the data carousels. Refer to the *Recommendations for Data Carousel Rate Management Technical Bulletin* (part number 716377) for additional assistance in determining the data rate. Vendors for third-party applications will specify the carousel quantity, name, and bandwidth requirements for the application.
- Third-party application vendors specify the carousel quantity, name, and bandwidth requirements for the application.

Determine the Available Bandwidth on the BFS for Inband or Out-of-Band Sources

Overview

Note: *Prior* to adding a new inband or out-of-band source, you must determine the amount of unused bandwidth.

This section provides procedures to determine how much bandwidth is currently in use on the BFS for inband or out-of-band sources. Use this value to calculate the amount of unused bandwidth available for the application you want to add to the BFS. To determine the amount of bandwidth that is available for additional applications, perform the following calculation:

Total Available Bandwidth - Bandwidth in Use = Unused Bandwidth

Notes:

- The inband data rate for a 64 quadrature amplitude modulation (QAM) and 256-QAM modulator is 27 and 38 Mbps, respectively; this is due to modulation coding and error corrections (real rates are higher). The total available bandwidth for each QAM modulator is 25 Mbps and 36 Mbps, respectively; this is due to the bandwidth reservation on the Broadband Integrated Gateway (BIG) and the inaccuracy of the data rate control on the DNCS.
- The out-of-band data rate is 0.35 Mbps. Cisco recommends that you strive to keep the aggregate out-of-band data rate as low as possible.

Determining the Available Bandwidth on the BFS

1. From the DNCS Administrative Console, click the **DNCS** tab, and then click **Utilities**. The Utilities window appears in the forefront.
2. Click **xterm** to open an xterm window.
3. Type **cd doctor**.

4 Type **doctor -bv** and then press **Enter**. The inband and out-of-band data rates on the BFS carousel appear.

```
                                                    Datarate=     =Kbytes=
OK: System_Carousel      OOB     s(  0) up        .08 Mbps        4.248
OK: Out_of_Band          OOB     s(  1) up        .08 Mbps       11.333
OK: In_Band               IB     s(  2) up       1.00 Mbps    17367.628
OK: CAM_OOB              OOB     s(  3) up        .01 Mbps        0.186
OK: CAM_IB                IB     s(  4) up       1.00 Mbps            0
OK: IPG_OOB              OOB     s(  5) up        .08 Mbps      595.176
OK: IPG1_IB               IB     s(  6) up       1.00 Mbps      302.868
OK: PPV_OOB              OOB     s(  7) up        .01 Mbps         0.69
OK: PPV_IB                IB     s(  8) up       1.00 Mbps        0.564
OK: IPG2_IB               IB     s( 10) up       1.00 Mbps      305.876
OK: IPG3_IB               IB     s( 12) up       1.00 Mbps      300.424
OK: IPG4_IB               IB     s( 14) up       1.00 Mbps      297.980
OK: IPG5_IB               IB     s( 16) up       1.00 Mbps      309.824
OK: IPG6_IB               IB     s( 18) up       1.00 Mbps      296.288
OK: IPG7_IB               IB     s( 20) up       1.00 Mbps      290.836
OK: MMM_OOB              OOB     s( 21) up        .05 Mbps            0
OK: PPV_IB2               IB     s( 22) up       1.00 Mbps        0.376
OK: VCS                   IB     s(201) up       1.00 Mbps            0
OK: SP_OOB_Source        OOB     s(209) up        .01 Mbps        2.658
OK: SP_IB_Source          IB     s(210) up       1.00 Mbps      189.504
NOTE : The following contribute to the aggregate data rate but are managed
by OSM
OK: Bootloader            IB     s(199) up       3.00 Mbps   113696.000

Aggregate IB Carousel Datarate              =  16.00 Mbps
Error:  Aggregate OOB Carousel Datarate     =    .32 Mbps

BFS Session Status
============================================================
OK: All BFS sources have active sessions.
OK: All source ids have an associated source definition.


Miscellaneous BFS Check
============================================================
OK: Only 2 BFS carousel process is running for each BFS source.
OK: No duplicate datapump processes found.
OK: BFS source definitions are not duplicated.
OK: BFSDir entry is filemoduleinfo is BFSDir.
OK: None of the BFS sources are encrypted.


Output report file is /export/home/dncs/doctor/report.040618_0906.doc
BERLIN:/export/home/dncs/doctor>
```

Total IB (inband) and OOB (out-of-band) bandwidth in use

5 Are you determining the bandwidth for an inband or an out-of-band carousel?

- If **inband**, go to step 6.
- If **out-of-band**, go to step 8.

6 Locate the total bandwidth for inband carousels and then add 1 Mbps to the total to account for any overhead.

Example: In the example in step 4, the bandwidth is 16 Mbps. Add 1 to the 16 Mbps for a total of 17 Mbps.

7 Perform the calculation to determine the unused inband bandwidth on the BFS and then go to step 10.

Note: The data rate for a 64-QAM and 256-QAM modulator is 27 Mbps and 38 Mbps, respectively.

Result: In this example, a 64-QAM would have 8 Mbps of unused bandwidth; a 256-QAM would have 19 Mbps of unused bandwidth.

8 Locate the total bandwidth for out-of-band carousels (0.32 Mbps).

9 Perform the calculation to determine the unused out-of-band bandwidth on the BFS and then go to step 10.

10 Compare the amount of unused bandwidth to the amount of bandwidth needed for your application.

11 Is there enough bandwidth available to add the new application?

- If **yes**, choose one of the following options:
  - If you are adding inband carousels, go to ***Verify the Presence of a VCI for Inband BFS Sources*** (on page 8).
  - If you are adding out-of-band carousels, go to ***Select a Source ID for the New BFS Source*** (on page 9).
- If **no**, refer to the *Recommendations for Data Carousel Rate Management Technical Bulletin* for details on how to increase bandwidth on your system.

Verify the Presence of a VCI for Inband BFS Sources

Overview

Important! This procedure only needs to be completed if your system is based on the traditional configuration that includes a BIG. Go to ***Select a Source ID for the New BFS Source*** (on page 9) if your system is using an ASI card for BFS transport.

The traditional configuration includes a BIG that sends data to a BIG QAM or Data QAM. In this configuration, a media converter or an ATM switch resides between the DNCS and the BIG. Because the media converter is a passive device, no special configuration is necessary. When an ATM switch is used, each inband data carousel requires its own virtual circuit indicator (VCI). This section describes how to check the number of BFS sessions on your system to determine whether or not any unused VCIs are present for the inband BFS carousel.

Your DBDS network was initially installed and reserved with 20 Virtual Channel Indicator (VCI) connections (values 256-275) on the ATM switch. The VCIs are used to carry inband BFS information from the DNCS to the BIG. Because you will be creating a new inband source, you must make sure that a VCI is available for its use.

Checking the Availability of VCIs

Complete the following steps to determine if there are enough unused VCIs available for the inband BFS carousel.

Note: If you need detailed instructions for this procedure, refer to the manual that came with your ATM switch.

1. Check the switch to determine the number of unused VCIs.
2. Are there enough unused VCIs for the inband BFS carousel?
   - If **yes**, go to ***Select a Source ID for the New BFS Source*** (on page 9).
   - If **no**, add more VCIs to the switch and then go to ***Select a Source ID for the New BFS Source*** (on page 9).

     Note: Having unused VCIs does not present any issues to your system; therefore, Cisco recommends that you create 5 to 10 extra VCIs.

Select a Source ID for the New BFS Source

Overview

This section describes how to select a source ID for your new BFS source. Selecting a source ID is dependent upon the scheme that you are using for creating inband or out-of-band sources.

Recommendations for Selecting a Source ID for the New Source

The goal of this set of recommendations is simply to encourage sites to use a similar configuration. The DNCS does not pose any limitations on BFS source IDs (other than forcing them to be 201 or greater). We encourage you to select a scheme that will be easy for you to support and track as your system grows.

- Reserve a range of values for BFS-related sessions.
- Inband sources should use even source IDs; out-of-band sources should use odd source IDs.

  Note: This ID numbering is not required; however, it does mirror the way that the default BFS sources are transported.
- Avoid mixing sources used for services and sources used for the BFS. Having the BFS sources spread throughout the source list makes troubleshooting and overall system management difficult.
- If this is the first time you are creating BFS sources, Cisco suggests that you use IDs starting with 201 for out-of-band sources and 202 for inband sources. If the 201-300 range of source IDs is unavailable, then Cisco suggests that you use the 9000 to 9999 range (or any other range of numbers not presently used for other types of services).
- Ensure that the range of values you select includes room for future growth.

2

Add New BFS Sources

Introduction

This chapter describes how to add new BFS sources. BFS sources can include either Cisco or third-party applications and any associated files.

Important! These instructions include procedures to add and configure a BFS carousel for a new application. To add the new application on the DNCS, refer to the instructions that are unique to that application.

In This Chapter

Verify the Number of Sessions Before Adding an Inband Source

Overview

When a new inband source is added to your system, it will increase the overall session count on the QAM. By verifying the session count *prior* to adding the new inband source, you can determine whether the new inband source was successfully added at the end of these procedures.

Verifying the Number of Sessions on the QAM

Important: If your system is running in an RCS environment, you will need to locate the respective QAM that will carry the new session.

1 Facing the front of the QAM modulator, press the **OPTIONS** button to cycle through the QAM menu screens until you see the **Session Count** screen.

Example: The following diagram shows an example of the Session Count screen.

2 Record the number of sessions in the space provided.

Total Session Count: _____

Note: The session count will be referenced *after* you have completed the remaining procedures in this chapter. This value will allow you to verify that you have successfully added all sessions on the QAM after you have changed its configuration.

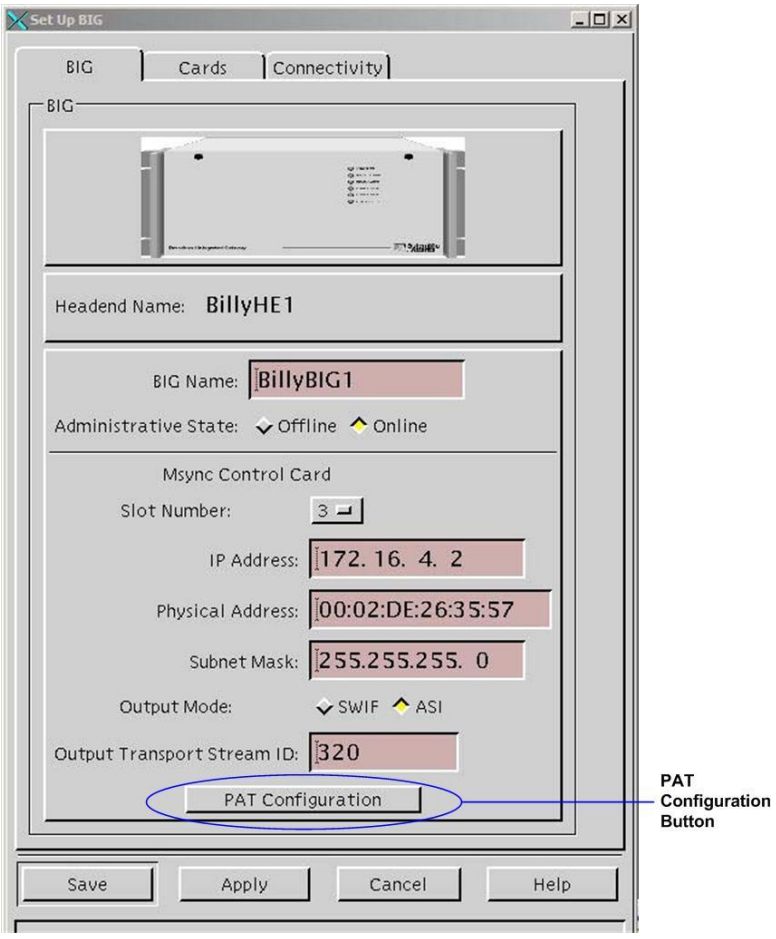
Add a New Inband Carousel to the BIG PAT Table

Overview

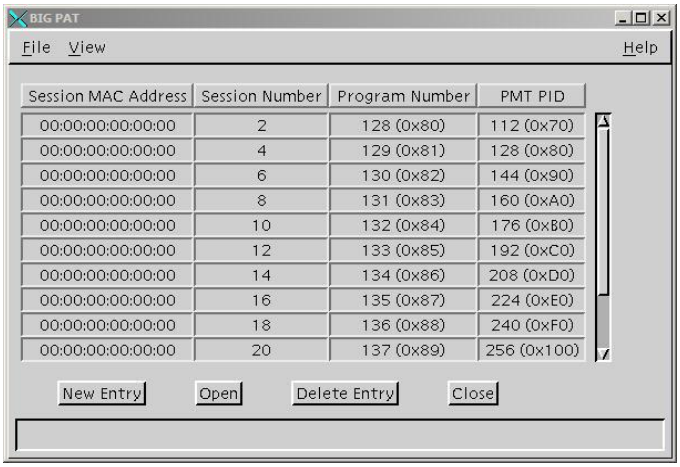
This section includes the procedures for adding a new inband carousel to the BIG PAT table. The procedures differ slightly for those systems using a BIG and those using an ASI card (does not require a BIG). Please note the system configuration you are using and follow the procedures for this task carefully.

Adding a New Inband Carousel to the BIG PAT Table

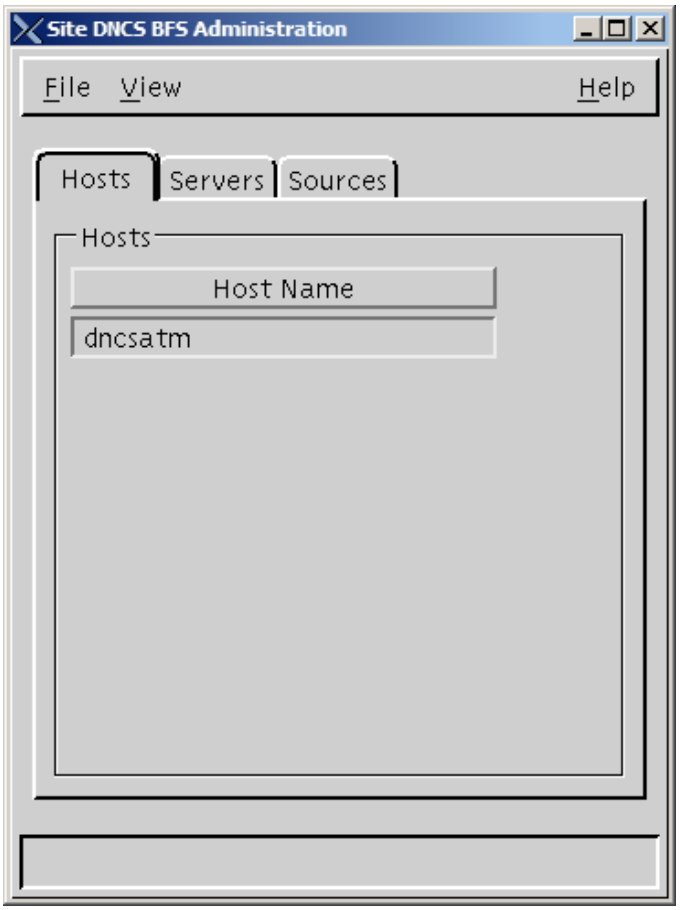
1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Does your system include a BIG (your system is *not* using an ASI card)?
   - If **yes**, go to step 3.
   - If **no**, go to step 6.
3. Click the **Network Element Provisioning** tab and click **BIG**.
4. Double-click the **BFS BIG**. The Set Up BIG window opens.



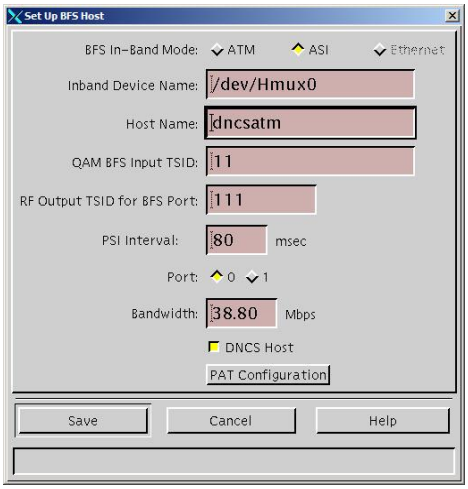
5 Click **PAT Configuration** to open the BIG PAT window and go to step 9.



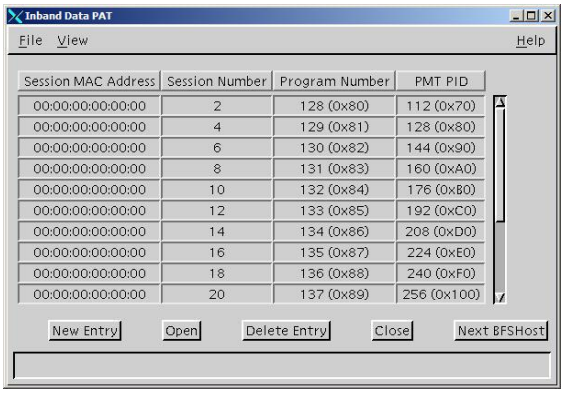
6 Click the **Application Interface Modules** tab and click **BFS Admin**. The BFS Administration window opens.



7 Select the appropriate host, click **File**, and select **Open**. The Set up BFS Host window opens.



8 Click **PAT Configuration**. The Inband Data PAT window opens.



9 Click **New Entry**. The BIG PAT Setup window opens.

10 Type 12 zeros (00:00:00:00:00:00) in the Session MAC Address field and press **TAB**.

Note: You do not have to type the colons in this field.

11 In the **Session Number** field, enter an even-numbered value that is greater than 200 and record it here _____.

Notes:

- For recommendations on selecting a session number, go to ***Select a Source ID for the New BFS Source*** (on page 9).
- Sessions 1 through 200 are reserved for system-built sessions.
- For consistency purposes, Cisco recommends that you use this same session number while building the BFS Source.
- The values in the Program Number field and the PMT PID field appear automatically.

12 Click **Save**.

13 Do you need to add additional inband data carousels to the list?

- If **yes**, repeat steps 9 through 12.
- If **no**, click **Close** to close the PAT list.

14 Choose one of the following options:

- **Systems with a BIG:** From the Set Up BIG window, click **Save** and then click **Cancel**.
- **Systems with ASI:** From the Set Up BIG window, click **Save**.

15 Choose one of the following options:

- **Systems with a BIG:** From the BIG List window, click **File** and select **Close**.
- **Systems with ASI:** From the BFS Administration window, click **File** and select **Close**.

16 Go to ***Create a BFS Source and Source Definition for the Inband Source*** (on page 17).

Create a BFS Source and Source Definition for the Inband Source

Overview

This section describes how to create a BFS source on the DNCS and how to create a source definition for the BFS source.

Adding a BFS Source and Creating a Source Definition

Complete the following steps to create a BFS source on the DNCS and to create a source definition for the BFS source.

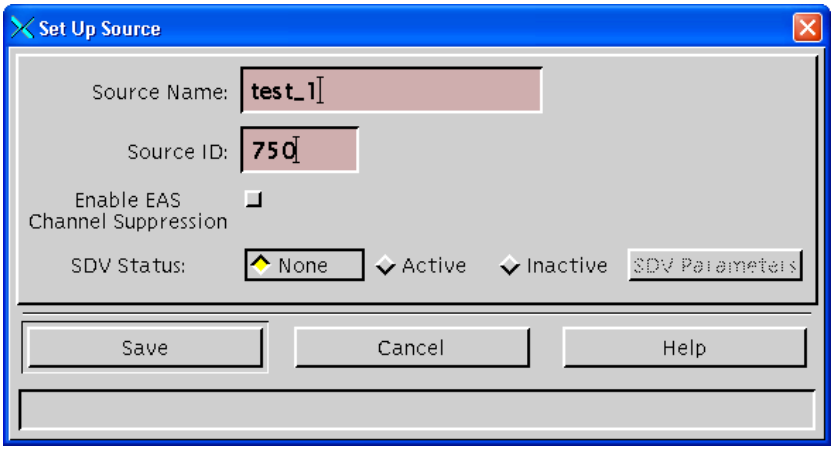
Note: This process activates the source definition and also creates the session.

1 Are you creating a new BFS source?

- If **yes**, go to step 2.
- If **no** and you need to create a new server, go to *Create a BFS Source for a New Inband or Out-of-Band Carousel* (on page 22).

2 On the DNCS Administrative Console, click the **DNCS** tab, click the **System Provisioning** tab, and then click **Source**. The Source List window opens.

3 Select **File** and click **New** to open the Set Up Source window.



4 Click in the **Source Name** field and type a name for the source.

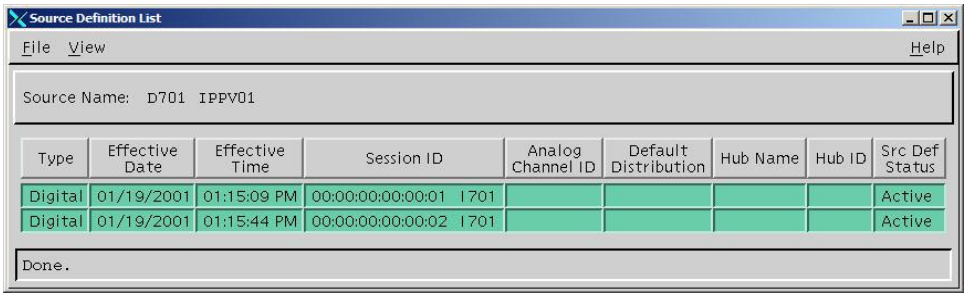
Note: Enter an appropriate source name to describe what type of data this source will carry.

5 Click in the **Source ID** field and type the session number that you recorded in step 11 of *Adding a New Inband Carousel to the BIG PAT Table* (on page 13).

6 Click **Save**. The new source appears in the Source List window.

7 From the **Source List** window, select the source you just created.

8 From the **File** menu, select **Source Definitions**. The Source Definition List window opens.

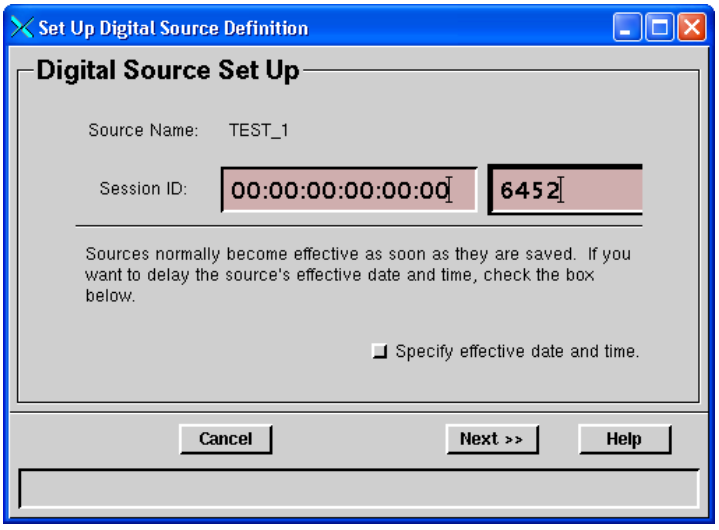


9 Keep this window open and go to one of the following sections:

- Setting Up a New SA Digital Source
- *Setting Up a New Non-SA Digital Source* (on page 20)

Setting Up a New SA Digital Source

1 From the Source Definition List window, click **File** and select **New Digital**. The Digital Source Set Up window opens.



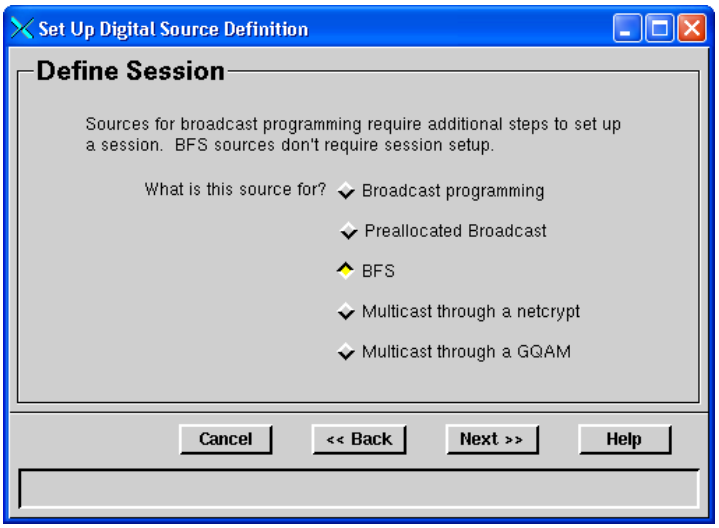
2 From the Digital Source Set Up window, click in the left **Session ID** field and type the session MAC address that you used when you added an inband data carousel to the BIG PAT table.

Example: 00:00:00:00:00:00

3 Click in the right **Session ID** field and type the source ID that you used when you added the source.

Note: If you would like to set an effective date and time for this session, click the **Specify effective date and time** option; however, it is not required.

4 Click **Next**. The Define Session window opens.

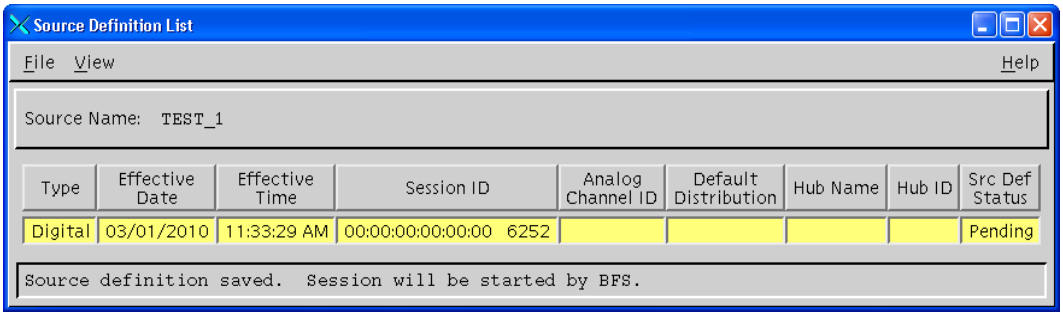


5 Select **BFS** and click **Next**. The Save Source Definition window opens.

6 Click **Save**.

Results:

- The system saves the source definition to the DNCS database and creates the session that you built for the source.
- The Source Definition List now updates to include the new source information.



7 From the Source Definition List window, click **File** and select **Close**.

8 Does each PAT inband carousel that you created have a DNCS source listed in the Source List?

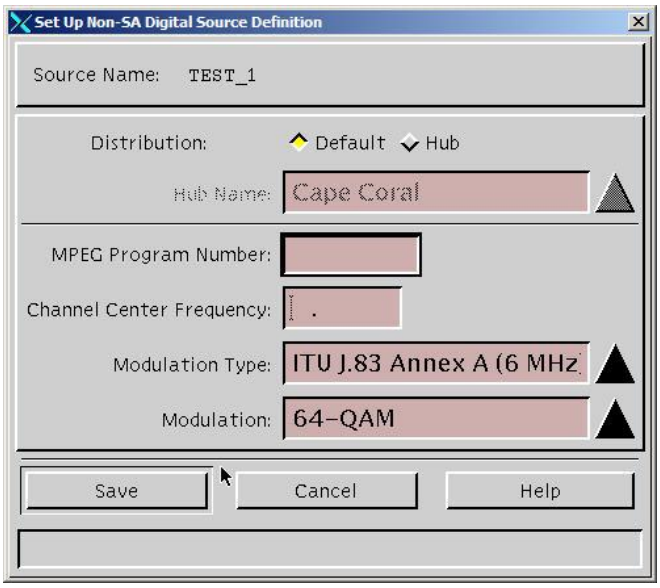
- If **yes**, go to step 9.
- If **no**, go to *Adding a BFS Source and Creating a Source Definition* (on page 17) and repeat steps 3 through 9.

9 From the Source List window, click **File** and select **Close**.

10 Go to *Create a BFS Source for a New Inband or Out-of-Band Carousel* (on page 22).

Setting Up a New Non-SA Digital Source

1 From the Source Definition List window, click **File** and select **New non-SA Digital**. The Set Up Non-SA Digital Source Definition window opens.



2 From the Distribution option, select **Default** or **Hub**.

3 Did you select Hub as the distribution type?

- If **yes**, click the arrow in the **Hub Name** field and select the appropriate hub.
- If **no**, go to step 4.

4 For the **MPEG Program Number**, enter the MPEG program number that you want to assign to the video stream.

5 For the **Channel Center Frequency**, enter the appropriate frequency for the tuner.

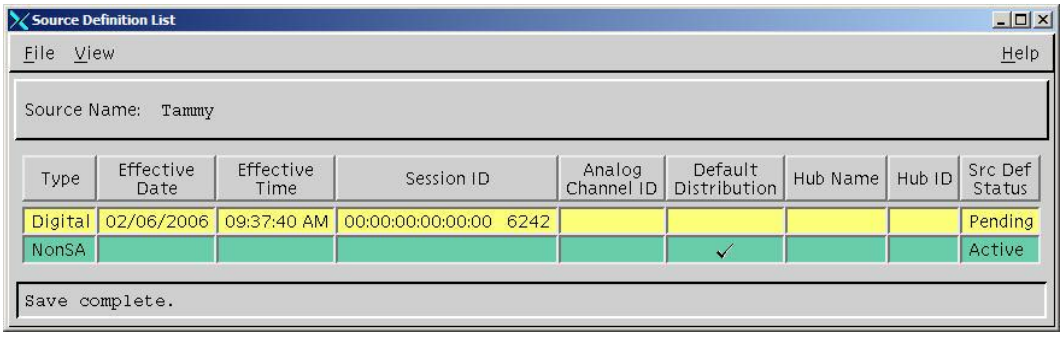
6 For the **Modulation Type**, click the arrow to select the appropriate digital transmission type.

7 For the **Modulation**, click the arrow to select the appropriate QAM modulator.

8 Click **Save**. An Information message appears and informs you that you must restart SI Manager to reflect any non-SA source definitions.

Note: You will restart SI Manager at the end of this procedure.

9 Click **OK**. The NonSA source is added to the Source Definition List window.



10 From the Source Definition List window, click **File** and select **Close**.

11 Does each PAT inband carousel that you created have a DNCS source listed in the Source List?

- If **yes**, go to step 12.
- If **no**, return to ***Adding a BFS Source and Creating a Source Definition*** (on page 17), and repeat steps 3 to 9.

12 From the Source List window, click **File** and select **Close**.

13 Stop and restart SI Manager.

Note: To restart SI Manager, refer to the *Digital Control System Online Help*.

14 Go to ***Create a BFS Source for a New Inband or Out-of-Band Carousel*** (on page 22).

Create a BFS Source for a New Inband or Out-of-Band Carousel

Overview

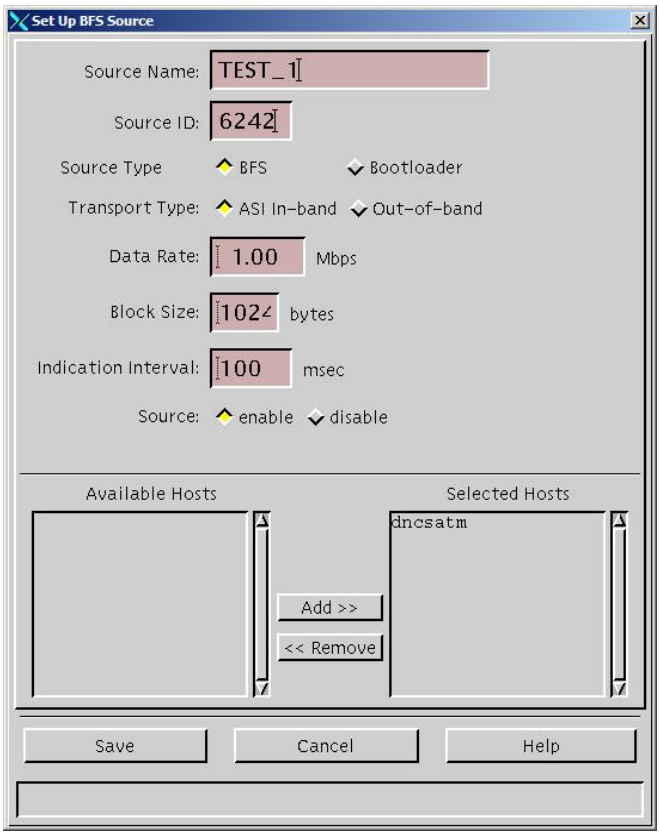
This section describes how to create a BFS source for the carousel (application) that you are adding to your system. BFS sources can be inband or out-of-band, and they are required for a new carousel.

Important! The application developer should provide the information required for the BFS source you need to add for the new carousel.

Creating a BFS Source for the New Carousel

1. From the DNCS Administrative Console, click the **Application Interface Modules** tab, and then click **BFS Admin**. Depending upon your system configuration, the following window opens:
   - If you are using a typical DBDS with no RCS, the BFS Administration window opens. Go to step 3.
   - If you are using an RCS configuration, the Please Select a Site window opens. Go to step 2.
2. From the File menu, select **All Sites**. The Site AllSites BFS Administration window opens.
3. Click the **Sources** tab from either the BFS Administration window or the Site AllSites BFS Administration window.

4 Click **File** and select **New**. The Set Up BFS Source window opens.



5 Click in the Source Name field and type a name that describes the data carousel.

6 Click in the Source ID field and enter a value that is greater than 200 and record it here: _____

Important! If this is an inband source, Cisco recommends that you enter the same source ID that you recorded in step 11 of the ***Adding a New Inband Carousel to the BIG PAT Table*** (on page 13) procedure.

Notes:

- Enter an even number for an inband source and an odd number for an out-of-band source.
- Sessions 1 to 200 are reserved for system-built sessions.
- For recommendations on selecting a source ID, see ***Select a Source ID for the New BFS Source*** (on page 9).

7 For Source Type, select **BFS**.

8 For Transport Type, select the appropriate choice from one of the following options.

- For a DBDS that includes a BIG, select **In-band** or **Out-of-band.**
- For a DBDS that includes an ASI card, select **ASI In-band** or **Out-of-band.**

9 For the Data Rate, Block Size, and Indication Interval, type the values provided by your vendor.

Notes:

- The data rate is typically between 0.5 and 1.0 Mbps. The maximum value allowed is 2.0 Mbps.
- For optimal performance, Cisco recommends a block size of 4000 bytes for inband sources and 1024 bytes for out-of-band sources.

10 Click **enable** so that the carousel can transmit data.

Notes:

- When the Source option is set to **disable**, the BFS session remains active, but the carousel does not transmit any data. Disabling this option is useful when the server using the source is not ready.
- System Releases later than SR 2.7/3.74.2 may show **Data Pump** instead of **Source** with options **run** and **stop**, respectively, instead of **enable** and **disable**.

11 From the Available Hosts field, click to select the appropriate host (typically dncsatm [non-RCS] or AllSitesHost [RCS]) and click **Add**. The selection moves to the Selected Hosts list.

12 Click **Save**. The Set Up BFS Source window closes and the carousel is saved in the DNCS database.

13 Do you need to add other data carousels to this BFS?

- If **yes**, repeat steps 4 through 12 to add another data carousel to the BFS.
- If **no**, you have successfully added a BFS source. Keep the BFS Administration window open and go to ***Authorize the BFS Server for a New Inband or Out-of-Band Carousel*** (on page 25).

Authorize the BFS Server for a New Inband or Out-of-Band Carousel

Overview

This section describes how to authorize the BFS server for an inband or out-of-band carousel. Authorizing the BFS server allows the BFS to send the data carousel to the BFS client on the DNCS.

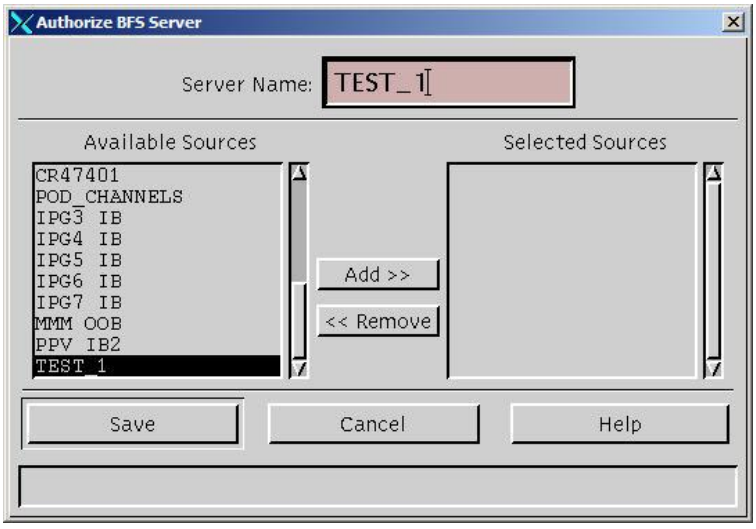
Note: If you are using the RCS option and want to set up a third-party application so that it is automatically available to any future sites that you may build, use the All Sites option on the Please Select a Site window to add an inband or out-of-band data carousel for the application. (To use the All Sites option, click File and select All Sites from the Please Select a Site window.) When you add an inband or out-of-band data carousel to the Site All Sites BFS Administration window, the system automatically makes the third-party application available to any future sites that you build. When using the All Sites option, it is not necessary to register the server with the BFS Client.

Authorizing the BFS Server for the New Carousel

1 From the BFS Administration window (non-RCS) or the Site AllSites BFS Administration window (RCS), click the **Servers** tab.

Note: If you are running SR 2.7, a column for Third Party may appear. Select the appropriate check box to indicate if this server is that of a third party.

2 Click **File** and select **New**. The Authorize BFS Server window opens.



3 Click in the **Server Name** field and type a name to identify the server.

Important! Make sure that the name exactly matches the name of the application. Otherwise, the BFS may be unable to send the application data to the set-tops.

4 From the Available Sources list, select the source that you want this server to use to carry the files, and then click **Add**. The selection moves to the Selected Sources list.

Important! Make sure to select all sources that will support the server. Otherwise, the application that this server supports will not function properly, and subscribers will be unable to use the service provided by the application.

5 Do you need to add additional sources to the Selected Source list?

- If **yes**, repeat step 4.
- If **no**, click **Save**. The system saves the server information to the DNCS database and closes the Authorize BFS Server window.

6 Click **File** and select **Close**.

Results:

- The BFS Administration window closes.
- The bfsServer process indicator (DNCS Control window) changes to yellow.

7 Do you need to add other data carousels to the BFS?

- If **yes**, repeat steps 2 through 6.
- If **no**, go to step 8.

8 Is your system running in an RCS environment?

- If **yes**, go to step 9.
- If **no**, go to ***Create the Client BFS Server for the Inband or Out-of-Band Carousel*** (on page 27).

9 Will this application provide data to other sites?

- If **yes**, select the appropriate site from the Please Select a Site window and go to step 10.
- If **no**, go to ***Create the Client BFS Server for the Inband or Out-of-Band Carousel*** (on page 27).

10 From the Please Select a Site window, click **File** and choose **All Sites**. The Site AllSites BFS Administration window opens.

11 Click the **Servers** tab and then repeat steps 2 through 9.

12 From the Please Select a Site window, click **File** and select **Close**.

13 Go to ***Create the Client BFS Server for the Inband or Out-of-Band Carousel*** (on page 27).

Create the Client BFS Server for the Inband or Out-of-Band Carousel

Overview

This section describes how to register the BFS server with the BFS client. When a server registers with the BFS client, the BFS regularly broadcasts data held on the server to the access network. The BFS sends this data on data carousels to all set-tops in the system. However, set-tops retrieve information carried on data carousels for only the applications they are authorized to receive.

Some applications will register the server, as well as its contents, with the BFS client. If the application you are adding *does* register the server, follow the instructions provided by the developer of the application. If the application you are adding *does not* automatically register the server, use the procedures provided in this section to manually create the server and, if needed, to register the files.

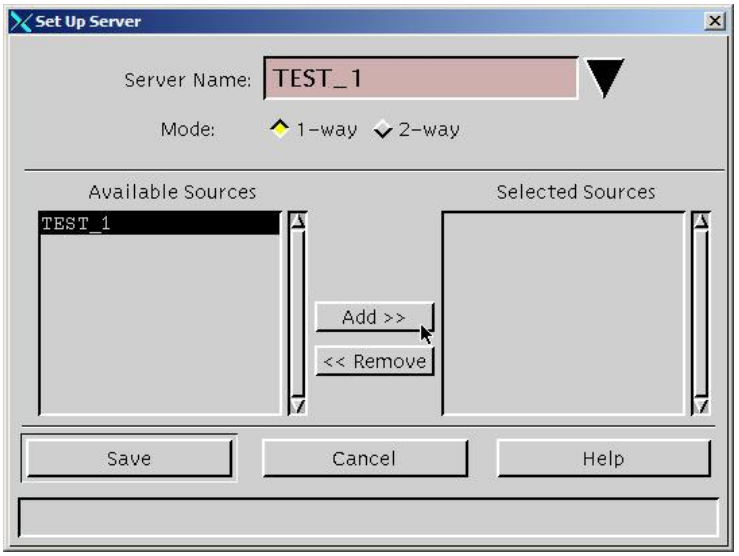
Important! If your system is running in an RCS environment, perform the procedures within this section for each site that will use the new applications.

Note: If you have used the All Sites option to add a server to the Site AllSites BFS Administration window, it is not necessary to registser the server with the All Sites BFS Client.

Creating the Client BFS Server

1. From the DNCS Administrative Console, click the **Application Interface Modules** tab, and select **BFS Client**. The Broadcast File Server List window opens. Depending upon your system configuration, the following window opens:
   - If you are using a typical DBDS with no RCS, the Broadcast File Server List window opens. Go to step 3.
   - If you are using an RCS, the Please Select a Site window opens. Go to step 2.
2. Select the site you want to update and click **File** and then select **All Sites**. The Broadcast File Server List window for that site opens.

3 Click **File** and select **New Server**. The Set Up Server window opens.



4 Click the **Server Name** arrow and select the BFS server that you created (authorized) for your new application.

Note: The BFS sources associated with the BFS server you selected appear in the Available Sources section.

5 For **Mode**, select **1-way**.

6 From the Available Sources list, click to select one of the sources that you have added to the BFS, and then click **Add**. The selection moves to the Selected Sources section.

7 Click **Save**.

- The system saves the server information in the DNCS database.
- The Set Up BFS Server window closes.
- A cabinet icon, which represents the server you created, appears in the BFS List.

8 Do you need to add files or links for this server?

- If **yes**, select the new cabinet, click **File** and select either **New File** or **New Link**, as appropriate.

  Note: For help with creating a new file or link for this carousel, refer to the *Digital Control System Online Help*.
- If **no**, go to step 9.

9 Do you need to register another server with this BFS client?

- If **yes**, repeat steps 3 through 8 until all new servers are defined.
- If **no**, go to step 10.

10 Is your system running in an RCS environment?

- If **yes**, go to step 11.
- If **no**, click **File** and select **Close** from the Broadcast File Server List window.

11 Are there other RCS sites that will use the new application?

- If **yes**, repeat steps 3 through 9.
- If **no**, click **File** and select **Close** from the Please Select a Site window.

12 Go to one of the following sections:

- If you added an inband source, go to ***Verify the Number of Sessions After Adding an Inband Source*** (on page 30).
- If you added an out-of-band source, go to ***Verify the BFS Carousel Sessions and Bandwidth Usage*** (on page 32).

Verify the Number of Sessions After Adding an Inband Source

Overview

This section describes how you can ensure that the new inband source was successfully added to your system.

Verifying the Number of Sessions on the QAM

Important! If your system is running in an RCS environment, you will need to locate the respective QAM that is carrying the new session.

1 Facing the front of the QAM modulator, press the **OPTIONS** button to cycle through the QAM menu screens until you see the **Session Count** screen.

Example: The following diagram shows an example of the Session Count screen.

2 Record the number of sessions in the space provided.

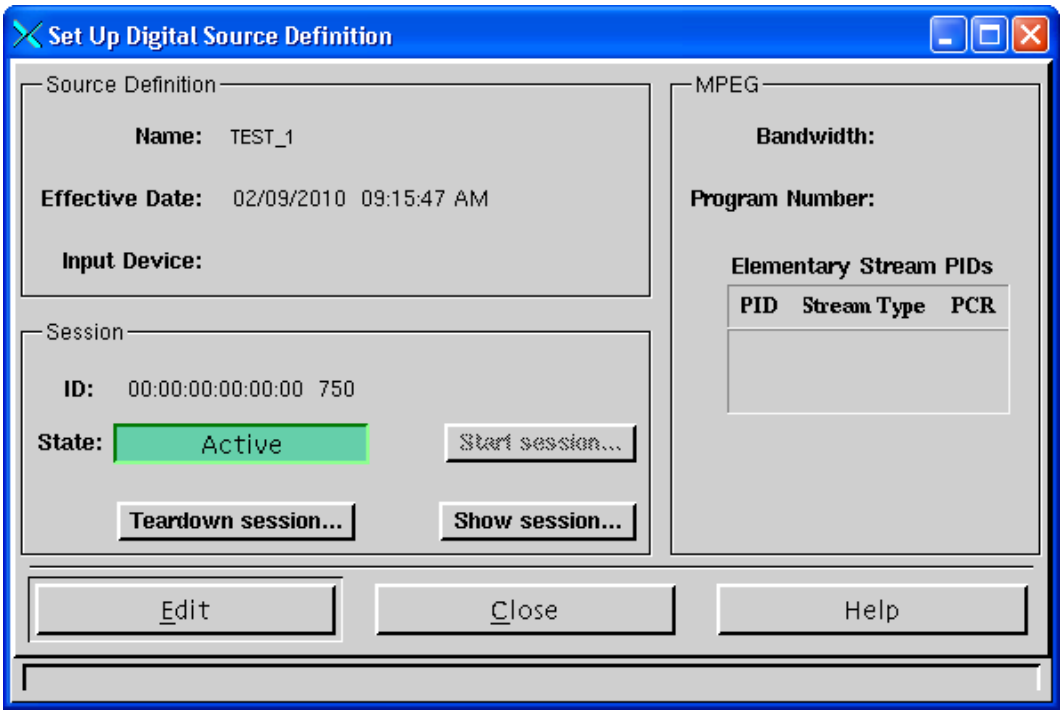
Total Session Count: _____

3 Did the session count increase appropriately from the value you recorded in *Verifying the Number of Sessions on the QAM* (on page 12)?

- If **yes**, go to *Verify the BFS Carousel Sessions and Bandwidth Usage* (on page 32).
- If **no**, from the DNCS Administrative Console, click the **System Provisioning** tab and then click **Source**.

4 Select the source you created, click **File** and select **Source Definitions**.

5 Select the digital source definition, click **File** and select **Open**. The Set Up Digital Source Definition window opens.



6 Is the session active?

- If **yes**, call Cisco Services.
- If **no**, click **Teardown Session** to tear down and rebuild the session.

7 Wait a few moments until the sessions are rebuilt.

8 Facing the front of the QAM modulator, press the **OPTIONS** button to cycle through the QAM menu screens until you see the Session Count screen.

9 Did the session count increment appropriately?

- If **yes**, go to *Verify the BFS Carousel Sessions and Bandwidth Usage* (on page 32).
- If **no**, call Cisco Services.

Verify the BFS Carousel Sessions and Bandwidth Usage

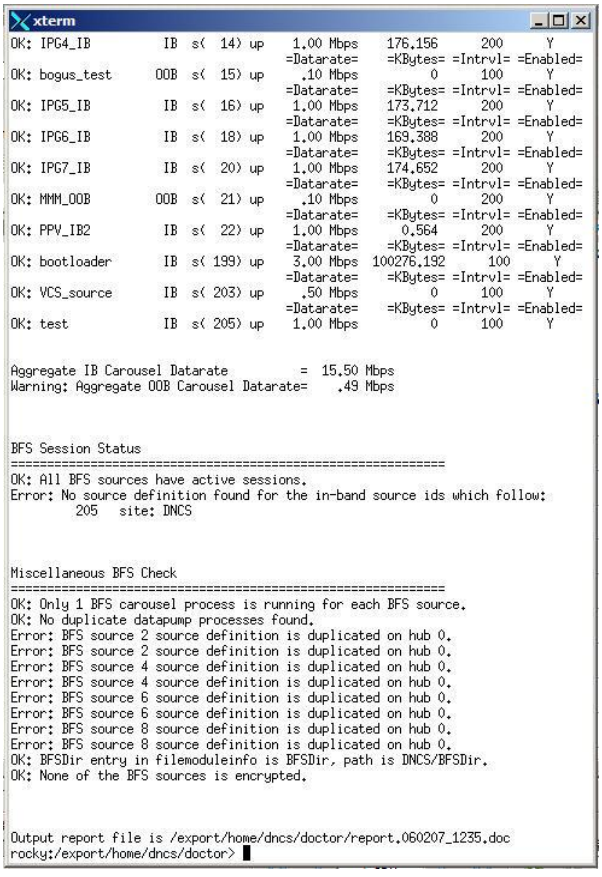
Overview

This section provides procedures to verify that each new inband and/or out-of-band session you created exists on the BFS carousel and that the total bandwidth for the carousel has not been compromised.

Note: Refer to ***Determine the Available Bandwidth on the BFS for Inband or Out-of-Band Sources*** (on page 5) for information about bandwidth limits.

Verifying Inband and Out-of-Band Sessions and Bandwidth Usage

1. From the DNCS Administrative Console, click **DNCS** and then click **Utilities**.
2. Click **xterm**. An xterm window opens.
3. Type **cd doctor**.
4. Type **doctor -bv** and press **Enter**. The BFS carousel and session status, along with information about the inband and out-of-band data rate usage on the BFS carousel appears.



5 Are your sessions listed in the Doctor report?

- If **yes**, go to step 6.
- If **no**, call Cisco Services.

6 Is the inband and out-of-band data rate within the limits?

- If **yes**, you have completed these procedures.
- If **no**, remove the BFS sources from this carousel and add them to a new carousel.

  Note: To remove the BFS sources, go to ***Delete BFS Sources*** (on page 35). To add the BFS sources to a new carousel, repeat the procedures within this chapter.

3

Delete BFS Sources

Introduction

If you decide to remove an application from the data carousel, you must delete the BFS sources from the data carousel. This section provides procedures for deleting a BFS carousel that is associated with the application you are removing from the DNCS.

Important! To delete the application from the DNCS, refer to the instructions that are unique to that application.

CAUTION:

Because the procedures for deleting inband BFS sources from the data carousel requires you to tear down all BFS sessions, Cisco recommends that you perform these procedures during a maintenance window.

In This Chapter

Verify the Number of Sessions Before Deleting an Inband Source

Overview

When a source is deleted from the system, the session count on the QAM carrying that inband source will decrease. By verifying the session count prior to deleting an inband source, you can determine whether the inband source was successfully deleted at the end of these procedures.

Verifying the Number of Sessions on the QAM

Important! If your system is running in an RCS environment, you will need to locate the respective QAM that is carrying the session you wish to delete.

1 Facing the front of the QAM modulator, press the **OPTIONS** button to cycle through the QAM menu screens until you see the **Session Count** screen.

Example: The following diagram shows an example of the Session Count screen.

2 Record the number of sessions in the space provided.

Total Session Count: _____

Note: The session count will be referenced *after* you have completed the remaining procedures in this chapter. This value will allow you to verify that you have successfully deleted all sessions on the QAM after you have changed its configuration.

Delete Client BFS Servers for Inband or Out-of-Band Carousels

Overview

This section describes the procedures for deleting the client BFS servers from the DNCS for either an inband or out-of-band carousel. Deleting the client BFS servers removes the registration of the data carousel from the BFS client.

Deleting Client BFS Servers

1. From the DNCS Administrative Console, click the **Application Interface Modules** tab, and then click **BFS Client**. Depending on your system configuration, the following window opens:
   - If you are using a typical DBDS with no RCS, the Broadcast File Server List window opens. Go to step 3.
   - If you are using an RCS, the Please Select a Site window opens. Go to step 2.
2. Click the **File** menu and select **All Sites**. The Broadcast File Server List window opens.
3. From the Broadcast File Server List window, select the server that you want to delete.
4. Click the **File** menu and select **Delete**. A confirmation prompt appears.
5. Click **Yes** to confirm this deletion. The cabinet is deleted from the list.
6. Do you need to remove another client BFS server?
   - If **yes**, repeat steps 3 through 5.
   - If **no**, go to step 7.
7. Is your system running in an RCS environment?
   - If **yes**, go to step 8.
   - If **no**, click **File** and select **Close** from the Broadcast File Server List window and then go to ***Delete the BFS Server Authorized for the Inband or Out-of-Band Carousels*** (on page 38).
8. Are there other RCS sites that will use the application you are deleting?
   - If **yes**, repeat steps 2 through 6 until the application is deleted from all of the appropriate RCS sites.
   - If **no**, click **File** and select **Close** from the Please Select a Site window.
9. Go to ***Delete the BFS Server Authorized for the Inband or Out-of-Band Carousels*** (on page 38).

Delete the BFS Server Authorized for the Inband or Out-of-Band Carousels

Overview

This section describes the procedures for deleting the BFS server that is authorized for the data carousel from the DNCS.

Deleting BFS Servers

1. From the DNCS Administrative Console, click the **Application Interface Modules** tab, and then click **BFS Admin**. Depending on your system configuration, the following window opens:
   - If you are using a typical DBDS with no RCS, the BFS Administration window opens. Go to step 3.
   - If you are using an RCS, the Please Select a Site window opens. Go to step 2.
2. From the File menu, select **All Sites**. The Site AllSites BFS Administration window opens.
3. Click the **Servers** tab.
4. Select the server that is associated with the data carousel for the application you plan to delete.
5. Click **File** and select **Delete**. A confirmation prompt appears.
6. Click **Yes** to confirm the deletion request.
7. Are you running an RCS system?
   - If **yes**, go to step 8.
   - If **no**, keep the BFS Administration window and go to ***Delete BFS Sources from the Data Carousel for Inband or Out-of-Band Carousels*** (on page 39).
8. Does the application you deleted provide data to other sites?
   - If **yes**, repeat steps 4 through 7.
   - If **no**, keep the BFS Administration window and go to ***Delete BFS Sources from the Data Carousel for Inband or Out-of-Band Carousels*** (on page 39).

Delete BFS Sources from the Data Carousel for Inband or Out-of-Band Carousels

Overview

This section describes the procedures for deleting the BFS sources associated with the application you want to delete from an inband or out-of-band data carousel.

Deleting BFS Sources from the Data Carousel

1. From the BFS Administration window, click the **Sources** tab.
2. Select the data carousel associated with the application you are deleting.
3. Are you deleting an inband or an out-of-band carousel?
   - If **inband**, go to step 4.
   - If **out-of-band**, go to step 5.
4. Record the source ID for the inband data carousel here: _____

   Note: You will need to know the source when you remove the application from the BIG PAT table.
5. Click **File** and select **Delete**. A confirmation window appears.
6. Click **Yes** to confirm this deletion.
7. Do you need to delete other data carousels from the BFS?
   - If **yes**, repeat steps 3 through 6.
   - If **no**, go to step 8.
8. Is your system running in an RCS environment?
   - If **yes**, go to step 9.
   - If **no**, click **File** and select **Close** from the BFS Administration window. Then go to ***Remove an Application from the Source List*** (on page 41).
9. Are there other RCS sites that were using the data carousels that you deleted?
   - If **yes**, select another site from the Please Select a Site window and go to step 1.
   - If **no**, click **File** and select **Close** from the Site DNCS BFS Administration window. Then go to step 10.
10. Click **File** and click **Select**. The Site DNCS BFS Administration window.
11. From the Site AllSites BFS Administration window, click **File** and select **Close**.

12 From the Please Select a Site window, click **File** and select **Close**.

13 Go to ***Remove an Application from the Source List*** (on page 41).

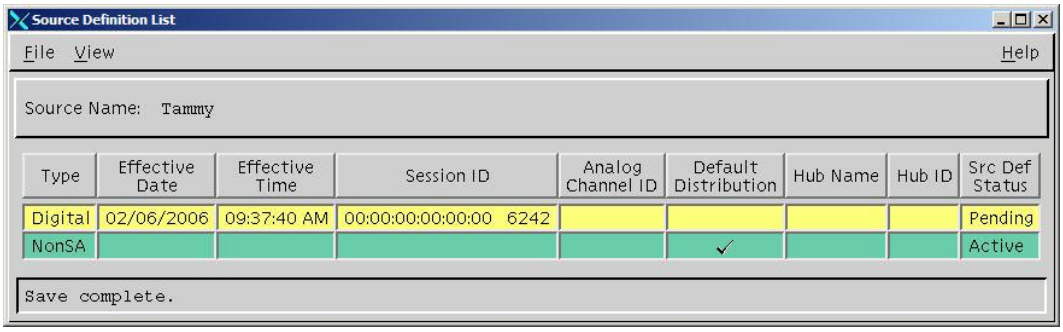
Remove an Application from the Source List

Overview

This section describes the procedures for removing the application from the source list on the DNCS.

Removing an Application From the Source List

1. From the DNCS Administrative Console, click the **DNCS** tab, and then click the **System Provisioning** tab.
2. Click **Source** to open the Source List window.
3. Select the source for this application.
4. Click **File** and select **Source Definitions**. The Source Definitions List opens.



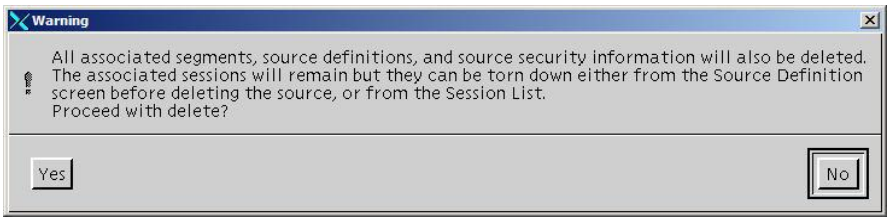
5. Are there any source definitions associated with this source?
   - If **yes**, go to step 6.
   - If **no**, go to step 11.
6. Select a session, click **File** and select **Delete**. A confirmation window appears.
7. Click **Yes** to confirm the deletion.
8. Did you delete an SA digital source?
   - If **yes**, a message appears and asks you if you want to tear down the session associated with this source. Click **Yes** and go to step 9.
   - If **no** and are you are deleting a non-SA source, a message appears informing you that SI Manager must be restarted. Click **OK** and go to step 9.

     Note: For help with restarting SI Manager, refer to the *Digital Network Control System Online Help*.
9. Do you need to delete another source definition?
   - If **yes**, repeat steps 6 through 8.
   - If **no**, go to step 10.
10. From the Source Definition List window, click **File** and select **Close**.

11 From the Source List window, select the source you want to delete.

12 Click **File** and select **Delete**. A confirmation window appears.

13 Click **Yes** to confirm the deletion. A warning message appears.



14 Read the warning message, and if you would like to continue with the deletion, click **Yes**.

15 From the Source List window, click **File** and select **Close**.

16 Did you delete a non-SA source?

- If **yes**, stop and restart SI Manager. Then go to step 17.

  Note: To stop and restart SI Manager, refer to the *Digital Control System Online Help*.

- If **no**, go to step 17.

17 Is the data carousel associated with the application you are removing inband?

- If **yes**, go to ***Remove the Inband BFS Carousel from the BIG PAT Table*** (on page 43).
- If **no**, you have completed all procedures for removing an out-of-band data carousel.

Remove the Inband BFS Carousel from the BIG PAT Table

Overview

This section describes the procedures for removing an inband BFS carousel from the BIG PAT Table.

Deleting the Application From the BIG PAT Table

Important! Before you begin this procedure, make sure you know the source ID for the application source.

1. From the DNCS Administrative Console, click the **DNCS** tab.
2. Does your system include a BIG (your system is not using an ASI card)?
   - If **yes**, click the **Network Element Provisioning** tab and then click **BIG**. The BIG List window opens.
   - If **no**, go to step 5.
3. From the BIG List window, double-click the **BFS BIG**. The Set Up BIG window opens.
4. Click **PAT Configuration** to open the BIG PAT window and go to step 8.
5. From the DNCS Administrative Console, click **Application Interface Modules**, and click **BFS Admin**. The BFS Administration window opens.
6. Select the appropriate host, click **File** and select **Open**. The Set Up BFS Host window opens.
7. Click **PAT Configuration**. The Inband Data PAT window opens.
8. Select the application session you want to delete and click **Delete Entry**. A message appears and prompts you to confirm the deletion request.
9. Click **Yes** to confirm the deletion. A confirmation message appears.
10. Click **OK**.
11. Do you need to delete an additional inband data carousel?
    - If **yes**, repeat steps 8 through 10.
    - If **no**, go to step 12.

12 Realign the PAT table entries in ascending order (optional).

Note: It is not necessary for the PAT table entries to be in ascending order for the system to operate properly. It is simply an option for sites that want maintain an orderly PAT table.

a On a sheet of paper, write down every entry in the BIG PAT or Inband Data PAT window with a session number greater than the session number for the data carousel you deleted.

Important! Make sure to record the Session MAC address and the session number for each entry.

b Follow these instructions to delete each entry with a session number greater one you deleted.

i Highlight an out-of-order entry and click **Delete Entry**. A confirmation window opens.

ii Click **OK**. The system deletes the out-of-order entry.

Note: Ignore any BFS restart messages that may appear. You will stop and restart the BFS processes later in this chapter.

c Click **New Entry**. The BIG PAT Setup window opens.

d On the BIG PAT Setup window, type the Session MAC Address and Session Number for the next out-of-order entry that you recorded on your sheet of paper from step 12.

Note: The Program Number and PMT PID fields are already filled in. Use the default data for these entries.

e Click **Save**. The system saves the just-added entry in proper ascending order.

f Repeat steps c through e for each out-of-order entry that you recorded on the sheet of paper.

Note: When you have completed this procedure, all Program Numbers and PMT PIDs will be in ascending order.

13 Choose one of the following options:

- **Systems with a BIG**: From the Set Up BIG window, click **Save** and click **Cancel**.
- **Systems with an ASI**: From the Set Up BIG window, click **Save**.

14 Choose one of the following options:

- **Systems with a BIG**: From the BIG List window, click **File** and select **Close**.
- **Systems with an ASI**: From the BFS Administration window, click **File** and select **Close**.

15 Go to *Stop the BFS Server Processes* (on page 45).

Stop the BFS Server Processes

Stopping the BFS Server Processes

1. If the DNCS Control window is not already open, click the **Control** button in the DNCS area of the DNCS Administrative Console Status.

   Result: The DNCS Control window opens.
2. Select **bfsServer**.
3. Click **Process** and then select **Stop Process**. A confirmation message opens.
4. Click **Yes** to stop the bfsServer process. The indicator next to bfsServer turns red.

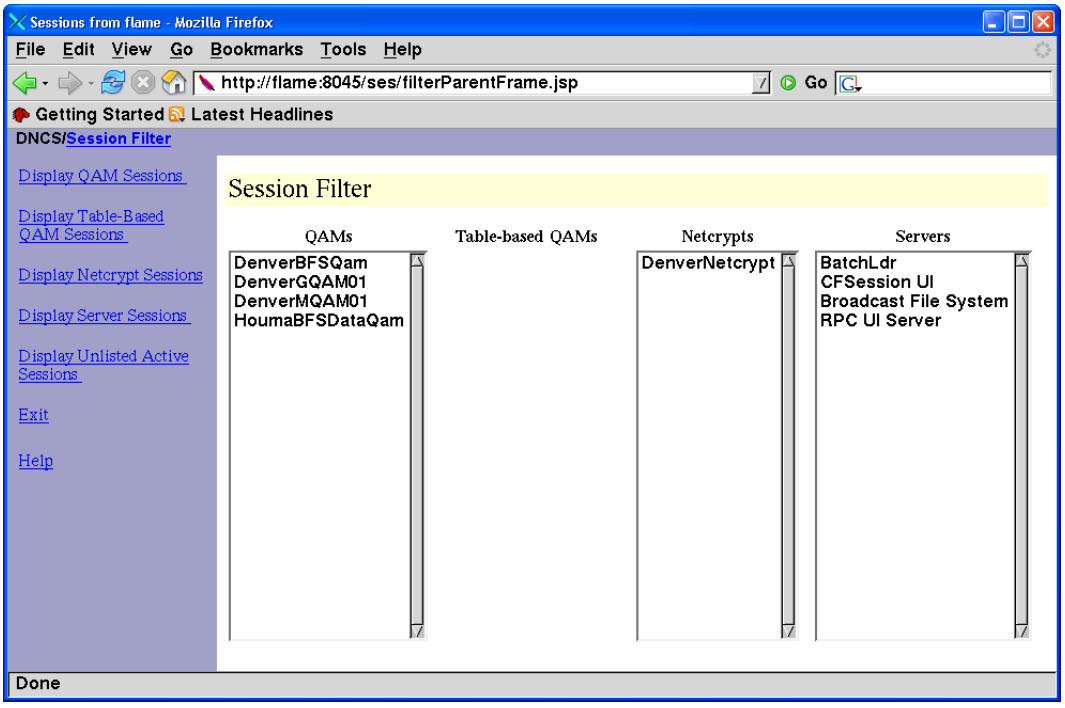
Tear Down and Rebuild BFS Sessions

Overview

This section provides procedures for tearing down and rebuilding BFS sessions. This procedure is required after you delete entries from the PAT table.

Tearing Down and Rebuilding BFS Sessions

1 From the DNCS tab, click the **Utilities** tab, and then click **Session List**. The Session Filter window opens.



2 Select the **BFS QAM** and click **Display QAM Sessions**. The Session Data Summary window opens with the session data for the BFS QAM.

Note: Versions later than SR 2.7/3.7/4.2 may open a Session *List* Filter window when you click **Session List**. From this window, you must select the BFS QAM and then **Display** to open the Session Summary window with the BFS QAM session data.

3 Click the **Select** box adjacent to each session to select all sessions.

4 Click **Teardown Selected Sessions** (**Tear Down** for versions later than SR 2.7/3.7/4.2). BFS will tear down all sessions, but will not start rebuilding them until the BFS server processes are restarted.

5 Go to ***Restart the BFS Server Processes*** (on page 47).

Restart the BFS Server Processes

Restarting the BFS Server Processes

1. Open the DNCS Control window.
2. From the list of processes, select **bfsServer**.
3. On the Process menu, click **Start Process**.
4. Wait for the indicator next to bfsServer to turn green. A green indicator next to bfsServer means the process has restarted.
5. Sessions should begin rebuilding. Return to the Session Data Summary window (Session Data window for versions later than SR 2.7/3.7/4.2) to monitor the progress.

   Note: It may take a few minutes for all of the sessions to rebuild.
6. When all sessions have been rebuilt, exit the window.

Verify the Number of Sessions After Deleting an Inband Source

Overview

This section describes how you can ensure that the inband source was successfully removed from your system.

Verifying the Number of Sessions on the QAM

Important! If your system is running in an RCS environment, you will need to locate the respective QAM in which the session was removed.

1 Facing the front of the QAM modulator, press the **OPTIONS** button to cycle through the QAM menu screens until you see the **Session Count** screen.

Example: The following diagram shows an example of the Session Count screen.

2 Record the number of sessions in the space provided.

Total Session Count: _____

3 Did the session count decrease appropriately from the value you recorded in *Verify the Number of Sessions Before Deleting an Inband Source* (on page 36)?

- If **yes**, you have successfully completed these procedures.
- If **no**, call Cisco Services.

4

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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