DTACS 3.0

Installation and Upgrade Guide for the Explorer Controller

Please Read

Important

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

Notices

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About This Guide

Introduction

This guide provides initial installation and upgrade instructions for the Cisco Digital Transport Adaptor Control System (DTACS) software application for sites that use the Explorer Controller (EC). The DTACS application manages and controls Digital Transport Adaptors (DTAs). DTAs are hardware components used within the DBDS network to convert digital channels into analog services. The DTACS application, combined with DTAs, allow Multiple System Operators (MSOs) to support customers who use standard definition televisions to access cable services.

Download Manuals

Sun Microsystems has made several Sun Netra T5220 and T5440 manuals available on the Internet. Download the *Sun Netra T5220 Server Service Manual* (part number 820-3012-12 , copyright July, 2008, Revision A) and other Sun Netra™ manuals from the following websites:

- http://docs.sun.com/app/docs/coll/netra-t5220?l=en
- http://docs.sun.com/app/docs/coll/netra-t5440?l=en

Should Sun Microsystems update the manuals, however, you may find discrepancies between the procedures in this book and those in the Sun documentation. In this case, the more recent version should supersede the older version.

Read the Entire Guide

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

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

Required Skills and Expertise

System operators or engineers who install, upgrade, or operate the DTACS server should have the following skills:

- Knowledge of UNIX
- A thorough understanding of the DBDS system

Document Version

This is the first formal release of this document.

1

DBDS Service Delivery Network

Introduction

This chapter illustrates how the Cisco DTACS server fits into the DBDS service delivery network. This chapter also describes how the DTACS server works with elements of the Explorer Controller (EC).

In This Chapter

DBDS Components

Overview of the Service Delivery Network

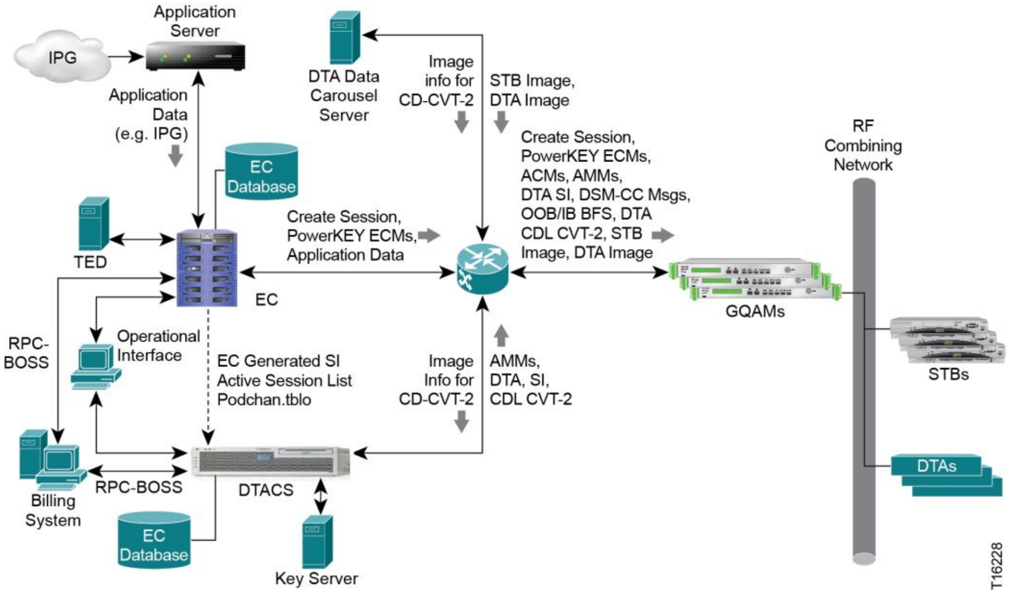
The DBDS is a network of hardware and software elements that delivers video, audio, digital data, and applications to a service provider's subscribers. The EC manages and provides information about elements in the network.

A DTA is a device that allows subscribers to view digital content on an analog cable-ready television without the use of a set-top. The DTACS server works with the EC to deliver content to DTAs in a subscriber's home.

DTACS software resides on the DTACS server and allows MSOs to perform the following tasks:

- Configure the DTACS server to work with the EC
- Synchronize the DTACS database with elements of the EC database
- Start, stop, and monitor processes running on the DTACS server
- Provision and manage DTA units

The following diagram illustrates the architecture of the DTACS server and shows how it works with elements of the EC.



2

Before You Begin

Introduction

This chapter provides procedures which must be completed on the EC before installing and configuring the Cisco DTACS.

In This Chapter

Update EC

You must perform the following tasks on the EC before you install DTACS software:

- Log in to the EC as the **root** user
- Verify that your system meets the software requirements

Log on to the EC

Follow these steps to log on to the EC.

1. Log on to the EC using an Administrator account.
2. When prompted to select a desktop environment, select the desktop that you wish to use.
3. Click **OK**. The display environment appears.
4. Open an xterm window and change to the **root** user. The password prompt for the root user appears.

   Example:

   ```
   $ xterm -sb -sl 100000 -e su - &
   ```
5. Type the password for the **root** user and press **Enter**. The prompt for the root user (#) appears.

Verify Software Requirements

You must verify that the correct versions of software are installed on the modulators and on the EC. The following list shows the versions of software that must be installed and operating correctly:

- Gigabit quadrature amplitude modulation (GQAM) software must be Version 4.5.3 or later.
- EC software must be Version 6.0.x or later, and any applicable emergency patches, approved for your site, must be installed, as well.

Note: These are *minimum* software versions. Your versions may be higher.

To check the software versions, type the following command and press **Enter**:

```
pkginfo -l [packagename] | grep VERSION
```

Example:

```
$ pkginfo -l SAIdncs |grep VERSION
VERSION 6.0.0.2
```

You must also verify that the package structure on EC corresponds to the service tiers you plan to make available to the DTAs.

Source Definition Requirement

Modulators using specified software versions must be the only quadrature amplitude modulation modulators (QAMs) used for sources that will be offered to DTAs.

Set Up QAM Sessions

The GQAM modulator receives data on a Gigabit Ethernet (GbE) input and, if necessary, encrypts the data before modulating it onto a radio frequency (RF) carrier for distribution to DTAs. The GQAM modulator can also send the modified data to network hubs, using up to 16 transport streams.

Before you install software on the DTACS server, you should log in to the EC and set up sessions on the GQAM. These sessions will be used on the DTACS server.

Consider the following before you begin provisioning GQAMs on the EC:

- You must provision the GigE port of the GQAM for use with the DTACS
- The DTACS GQAM must be available to its downstream plant regions (DPR)
- Although you can use any frequencies available to the GQAM, the following frequencies are the most efficient for use with DTAs:

Type	EIA	Frequency (Mhz)
STD	81	567
STD	82	573
STD	83	579
STD	84	585
STD	85	591
STD	100	651
STD	101	657
STD	68	489
STD	69	495
STD	126	807
HRC	81	564.0282
HRC	82	570.0285

Modify Ports on the Router

Contact your system administrator to find out which GQAM will be used for DTACS sessions.

After you obtain this information, you must perform the following steps:

1. Enable GigE GQAM ports for IP PIM sparse-mode.
2. Enable GigE GQAM ports for IP IGMP Version 3.
3. Enable multicast routing on the EC VLAN on the router.

For More Information

For specific information on provisioning GQAMs for the DTACS, see the EC online help or to the installation and configuration guide for your specific GQAM software release.

Which Procedures to Follow

First Time Installation

If you are installing DTACS software for the first time, go to ***Installing the DTACS Software for the First Time*** (on page 11). After completing the installation of the DTACS software, you will then complete the procedures in these chapters.

- ***DTACS Post-Installation Procedures*** (on page 21)
- ***Provision the DTACS*** (on page 57)

Upgrade of DTACS Software

If you are upgrading DTACS software, continue with the next procedure, Back Up the System (Upgrades Only). Then, go to this chapter to perform the DVD upgrade of DTACS software: ***Upgrade the DTACS Software Using a DVD*** (on page 143).

After upgrading the DTACS software, complete the post-upgrade procedures in ***DTACS Post-Upgrade Procedures*** (on page 163).

Back Up the System (Upgrades Only)

If you are upgrading an existing DTACS, you should back up the file system and database before you begin. Follow the procedures in *Explorer Controller Backup and Restore User Guide* (part number OL-27573).

3

Installing the DTACS Software for the First Time

This chapter describes the Sun Netra T5220 and T5440 servers on which you will install the Cisco DTACS software. In addition, this chapter contains procedures for installing DTACS software for the first time on the system.

Note: The Sun Netra T5220 and T5440 servers were tested by Telcordia Technologies, Inc. and were given the Telcordia Network Equipment Building Standards (NEBS) Level 3 certification.

In This Chapter

Introducing the DTACS Servers and the ILOM Port

The DTACS Servers

Cisco has chosen the Sun Netra T5220 and T5440 servers for the DTACS platform. These servers use Sun's UltraSPARC T2 processors and Solaris architecture, and are designed to easily mount within a standard computer rack.

These servers are configured with the following components:

Sun Netra T5220	**Sun Netra T5440**
Up to eight core 1.2-GHz UltraSPARC T2 processors	Up to eight core 1.2-GHz UltraSPARC T2 Plus processors; two processors per system
16 slots with up to 64 GB memory	32 slots with up to 128 GB memory
2 x 146 GB hard drive	4 x 146 GB hard drive
Integrated Lights Out Manager Management	Integrated Lights Out Manager Management
Four 10/100/1000 Mbps Ethernet ports	Four 10/100/1000 Mbps Ethernet
Serial Management Port	Serial Management Port
Network Management Port	Network Management Port
■ 2 eight-lane PCIe slots	■ 10 PCI slots: 8 PCIe
■ 4 four-lane PCIe slots	■ 2x PCI-Express slots
■ 2 PCI-X slots	■ 2 PCI-X slots
Two hot-swappable power supplies	Four 2+2 redundant, hot-swappable power supplies

Taken as a whole, the serial management port and the network management port of the DTACS servers constitute the Sun Integrated Lights Out Management (ILOM) port. The ILOM port is a system controller that allows the servers to be managed and administered from remote locations. Through the ILOM port, you can monitor and control the servers through a serial connection (using the SERIAL MGT port) or an Ethernet connection (using the NET MGT port).

Important: Your DTACS server should have the appropriate video and SCSI cards installed before the unit is shipped to you. Contact Cisco Services if these cards have not yet been installed.

Log On to the DTACS Server

Important: These instructions assume that the DTACS server has not yet been configured.

Complete the following steps to connect a laptop to the DTACS server and configure the network management port:

1. Connect a laptop computer to the serial management port of the DTACS server.
2. Start the HyperTerminal application on the laptop and configure the application with the following parameters:

   Note: The HyperTerminal application allows one computer to communicate with another computer.

   - Baud rate-9600
   - Data bits-8
   - Parity-none
   - Stop bit-1
   - Flow control-no

   Note: You must connect your laptop to the serial management port (SER MGT) of the ILOM, located on the back of the DTACS server, to configure the network management port (NET MGT).
3. If necessary, power on the DTACS server.
4. From the login prompt on the terminal, log in with the username **root** and the password **changeme**. The -> prompt appears. This is the prompt for the ILOM command line interface (CLI).
5. Do you want to change the ILOM root password?
   - If **yes**, type the following command and press **Enter**. Then, go to Step 6.
     ```
     /SP/users/root password
     ```
   - If **no**, go to ***Configure the Service Processor Network Management Port*** (on page 14).
6. When prompted, enter the new password, and then enter it a second time.

Configure the Service Processor Network Management Port

Complete the following steps to configure the network management port:

1 Type the following command and press **Enter** to disable DHCP for the network management port:

```
set /SP/network pendingipdiscovery=static
```

2 Type the following command and press **Enter** to set the IP address of the network management port:

```
set /SP/network pendingipaddress=<xxx.xxx.xxx.xxx>
```

Note: Replace <xxx.xxx.xxx.xxx> with the IP address for the network management port.

3 Type the following command and press **Enter** to set the Default Gateway for the network management port:

```
set /SP/network/pendingipgateway=<xxx.xxx.xxx.xxx>
```

Note: Replace <xxx.xxx.xxx.xxx> with the gateway IP address for the network management port.

4 Type the following command and press **Enter** to set the network mask for the network management port:

```
set /SP/network pendingipnetmask=<xxx.xxx.xxx.xxx>
```

Note: Replace <xxx.xxx.xxx.xxx> with the network mask for the network management port.

5 Type the following command and press **Enter** to configure the network management port to use SSH:

```
set /SP/services/ssh state=enabled
```

6 Type the following command and press **Enter** to enable the network management port:

```
set /SP/network state=enabled
```

7 Type the following command and press **Enter** to display the current network management port settings:

```
show /SP/network
```

8 If any of the settings are incorrect, retype the necessary command to set the parameter to the proper value and then repeat Step 7.

9 Type the following command and press **Enter** to complete and implement the new network management port settings:

```
set /SP/network commitpending=true
```

10 Type the following command and press **Enter** to display the current network management port settings and to verify that the settings are correct:

```
show /SP/network
```

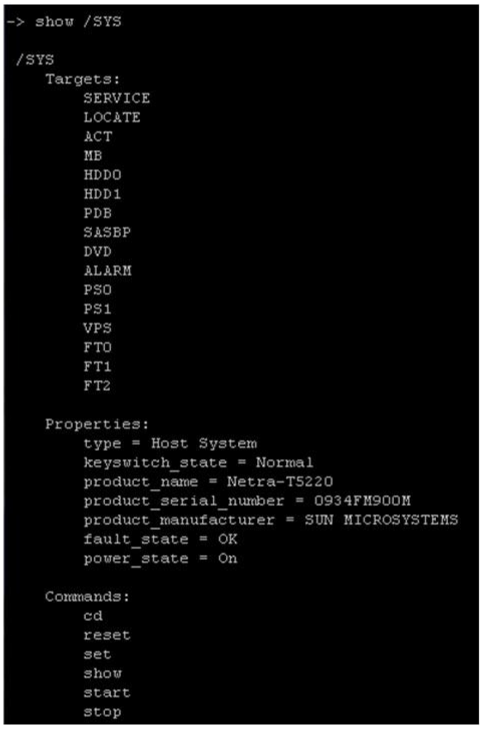
Example: Output should look similar to the following settings.

```
commitpending = (Cannot show property)
dhcp_server_ip = none
ipaddress = xx.xx.xxx.xx
ipdiscovery = static
ipgateway = xx.xx.xxx.x
ipnetmask = 255.255.255.0
macaddress = 00:14:4F:EB:4C:E1
pendingipaddress = xx.xx.xxx.xx
pendingipdiscovery = static
pendingipgateway = xx.xx.xxx.x
pendingipnetmask = 255.255.255.0
state = enabled
```

11 At the ILOM prompt (**-->**), type the following command and press **Enter** to check the power state of the system:

```
show /SYS
```

Example:



```
-> show /SYS

 /SYS
    Targets:
        SERVICE
        LOCATE
        ACT
        MB
        HDD0
        HDD1
        PDB
        SASBP
        DVD
        ALARM
        PS0
        PS1
        VPS
        FT0
        FT1
        FT2

    Properties:
        type = Host System
        keyswitch_state = Normal
        product_name = Netra-T5220
        product_serial_number = 0934FM900M
        product_manufacturer = SUN MICROSYSTEMS
        fault_state = OK
        power_state = On

    Commands:
        cd
        reset
        set
        show
        start
        stop
```

12 Does the output from Step 11 show that the power state (**power_state**) is **On**?

- If **yes**, go to Step 13.
- If **no** (**power_state = Off**), type the following command and press **Enter** to power on the system:

  ```
  start /SYS
  ```

13 At the -> prompt, type the following command and press **Enter**. A message asks if you want to start the console.

```
start /SP/console -f
```

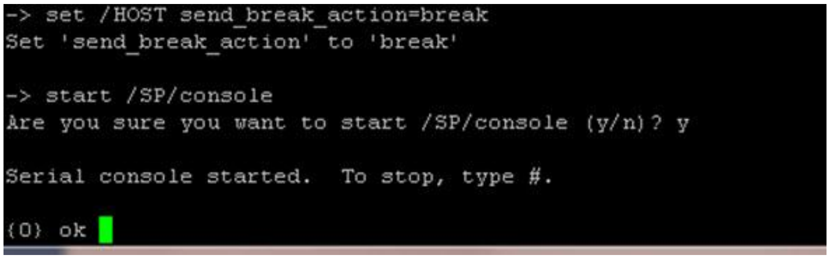
14 Type **y** for yes and press **Enter**. A message indicates that the console has started and instructs you to type #. to exit the console.

15 Do you see the **ok** prompt?

- If **yes**, go to the next procedure in this chapter.
- If **no**, type the following command and press **Enter** to send a break to the system and to display the **ok** prompt:

  ```
  set /HOST send_break_action=break
  ```

  Example:

  ```
  -> set /HOST send_break_action=break
  Set 'send_break_action' to 'break'

  -> start /SP/console
  Are you sure you want to start /SP/console (y/n)? y

  Serial console started.  To stop, type #.

  {0} ok
  ```

  Note: You may now be required to press the # and dot (.) keys simultaneously to return to the ILOM prompt.

Install the DTACS Software

This section provides the steps to install the DTACS software for the first time.

In the series of screens that follow, you will have to select a configuration parameter from a list of parameters. Use the arrow keys to navigate through your choices and make selections by pressing the **Spacebar**. The system usually places an **X** beside the selected parameter.

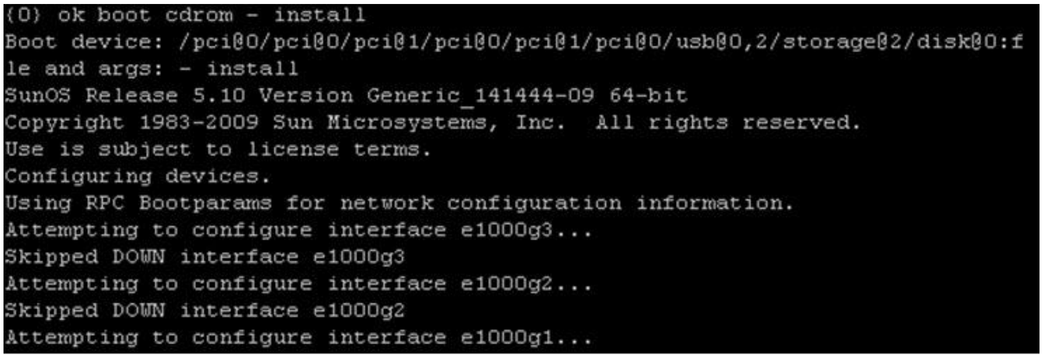
Important: Be certain that there are no network cables installed or connected to the DTACS at this time.

1 Insert the Maintenance DVD into the DVD drive of the DTACS.

2 At the **ok>** prompt, type the following command and press **Enter**. The server boots from the DVD.

```
boot cdrom - install
```

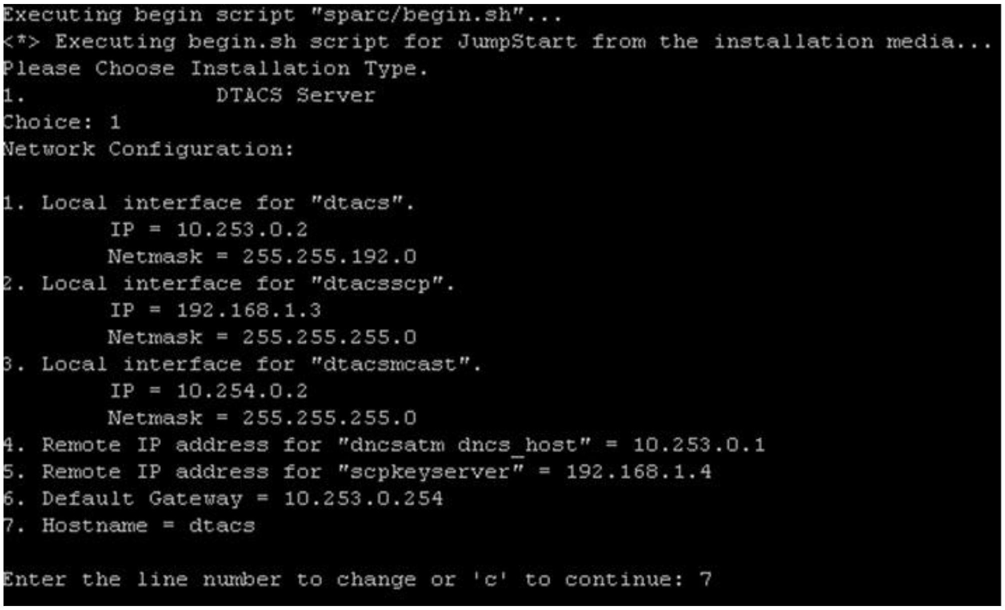
Result: The DTACS server reboots and the installation script begins.



```
{0} ok boot cdrom - install
Boot device: /pci@0/pci@0/pci@1/pci@0/pci@1/pci@0/usb@0,2/storage@2/disk@0:f
le and args: - install
SunOS Release 5.10 Version Generic_141444-09 64-bit
Copyright 1983-2009 Sun Microsystems, Inc.  All rights reserved.
Use is subject to license terms.
Configuring devices.
Using RPC Bootparams for network configuration information.
Attempting to configure interface e1000g3...
Skipped DOWN interface e1000g3
Attempting to configure interface e1000g2...
Skipped DOWN interface e1000g2
Attempting to configure interface e1000g1...
```

3 At the prompt where you specify which installation type the system is to perform, select **1** (DTACS Server) and press **Enter**.

4 At the prompt where you can change the IP address and hostname, either select the default choices or follow the on-screen instructions to make a change.



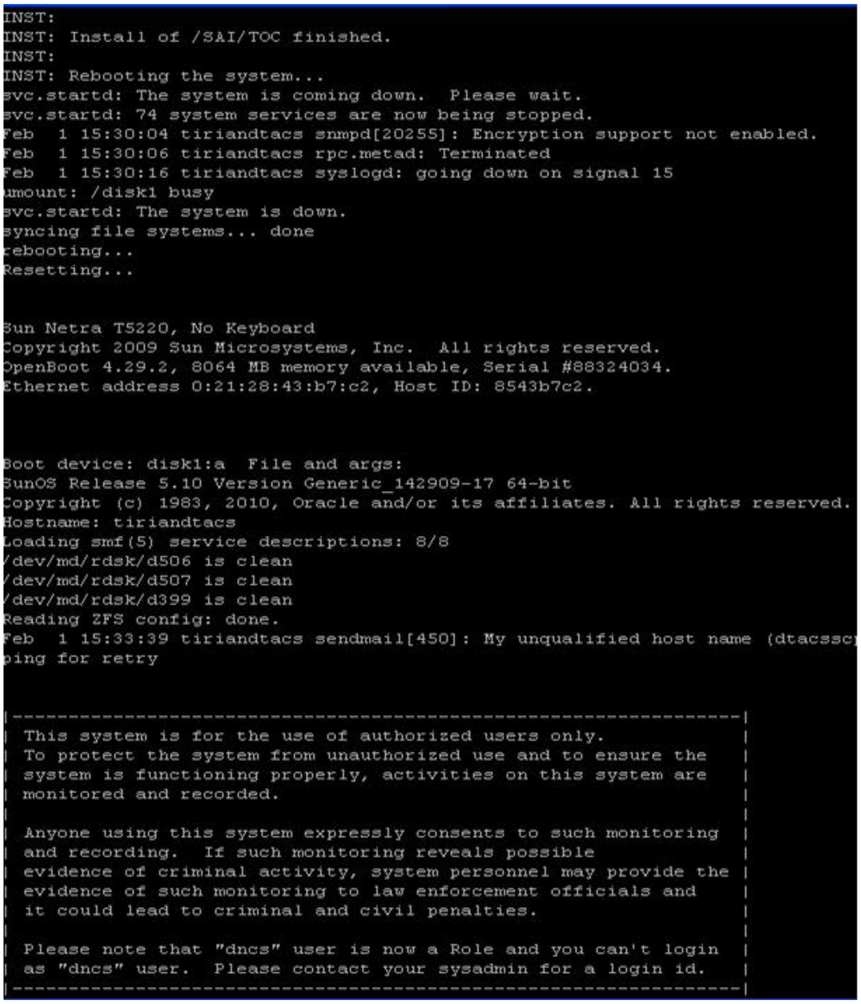
```
Executing begin script "sparc/begin.sh"...
<*> Executing begin.sh script for JumpStart from the installation media...
Please Choose Installation Type.
1.              DTACS Server
Choice: 1
Network Configuration:

1. Local interface for "dtacs".
        IP = 10.253.0.2
        Netmask = 255.255.192.0
2. Local interface for "dtacsscp".
        IP = 192.168.1.3
        Netmask = 255.255.255.0
3. Local interface for "dtacsmcast".
        IP = 10.254.0.2
        Netmask = 255.255.255.0
4. Remote IP address for "dncsatm dncs_host" = 10.253.0.1
5. Remote IP address for "scpkeyserver" = 192.168.1.4
6. Default Gateway = 10.253.0.254
7. Hostname = dtacs

Enter the line number to change or 'c' to continue: 7
```

5 Monitor the output as the DVD installation process goes through the steps of installing the individual SAI packages that are included with the DTACS software installation set.

6 Wait for the **Install of SAI/TOC finished** message, which indicates that the installation process completed successfully. The system reboots one more time.



```
INST:
INST: Install of /SAI/TOC finished.
INST:
INST: Rebooting the system...
svc.startd: The system is coming down.  Please wait.
svc.startd: 74 system services are now being stopped.
Feb  1 15:30:04 tiriandtacs snmpd[20255]: Encryption support not enabled.
Feb  1 15:30:06 tiriandtacs rpc.metad: Terminated
Feb  1 15:30:16 tiriandtacs syslogd: going down on signal 15
umount: /disk1 busy
svc.startd: The system is down.
syncing file systems... done
rebooting...
Resetting...


Sun Netra T5220, No Keyboard
Copyright 2009 Sun Microsystems, Inc.  All rights reserved.
OpenBoot 4.29.2, 8064 MB memory available, Serial #88324034.
Ethernet address 0:21:28:43:b7:c2, Host ID: 8543b7c2.



Boot device: disk1:a  File and args:
SunOS Release 5.10 Version Generic_142909-17 64-bit
Copyright (c) 1983, 2010, Oracle and/or its affiliates. All rights reserved.
Hostname: tiriandtacs
Loading smf(5) service descriptions: 8/8
/dev/md/rdsk/d506 is clean
/dev/md/rdsk/d507 is clean
/dev/md/rdsk/d399 is clean
Reading ZFS config: done.
Feb  1 15:33:39 tiriandtacs sendmail[450]: My unqualified host name (dtacssc
ping for retry


|----------------------------------------------------------------|
| This system is for the use of authorized users only.           |
| To protect the system from unauthorized use and to ensure the  |
| system is functioning properly, activities on this system are  |
| monitored and recorded.                                        |
|                                                                |
| Anyone using this system expressly consents to such monitoring |
| and recording.  If such monitoring reveals possible            |
| evidence of criminal activity, system personnel may provide the |
| evidence of such monitoring to law enforcement officials and   |
| it could lead to criminal and civil penalties.                 |
|                                                                |
| Please note that "dncs" user is now a Role and you can't login |
| as "dncs" user.  Please contact your sysadmin for a login id.  |
|----------------------------------------------------------------|
```

7 Log in as the **root** user using the password provided by Cisco Services.

Important: For security purposes, upon first login, the system prompts you to change the initial root password. Follow the on-screen instructions to change the password.

Create a dtacs User on the EC

Follow these steps to create a dtacs user on the EC:

1. Type the following command and press **Enter**:

   ```
   useradd -u 503 -g500 -c "dtacs user" -d/export/home/dtacs -s
   /bin/ksh -m -k/etc/skel dtacs; passwd dtacs
   ```

   Results:

   - A dtacs user is created on the EC.
   - A home directory (/export/home/dtacs) is created for the dtacs user on the EC.
   - A prompt for the new password appears.

2. Type the new password for the **dtacs** user and press **Enter**. A prompt to retype the password appears.
3. Type the password again and press **Enter**.

4

DTACS Post-Installation Procedures

Introduction

This chapter contains instructions for tasks that must be completed after DTACS software has been installed for the first time.

Important: Do not use these procedures after an upgrade. If you have upgraded the DTACS software, post-upgrade procedures are found in ***DTACS Post-Upgrade Procedures*** (on page 163).

In This Chapter

Check The Software Version Number

Follow these instructions to check the installed software versions on the DTACS server:

1 If necessary, insert the DTACS DVD into the DVD drive of the DTACS server.

2 Type the following command and press **Enter**. The system displays a listing of installed packages.

```
/cdrom/cdrom0/sai/scripts/utils/listpkgs -i
```

3 Compare the version numbers shown in the output from Step 2 with the following list:

```
SAIcomplat -- 3.0.32
SAIcURL -- 7.20.0-1_SunOS_sparc
SAIdtacs -- 3.0.0.12
SAIdtacshelp -- 3.0.0.3
SAIDTraceToolkit -- 0.99-1_SunOS_noarch
SAIexpat -- 2.0.1-2_SunOS_sparc
SAIguisupport -- 1.0_SunOS_sparc
SAIlame -- 3.97-1_SunOS_sparc
SAIlibpcap -- 1.0.0-1_SunOS_sparc
SAIlsof -- 4.83-1_SunOS_sparc
SAImodjk -- 1.2.30-1_SunOS_sparc
SAImod-auth-xradius -- 0.4.6-1_SunOS_sparc
SAINetSNMP -- 5.5-4_SunOS_sparc
SAIntp -- 4.2.6-1_SunOS_sparc
SAIopenssl -- 0.9.8h-1_SunOS_sparc
SAIpamradius -- 1.3.17-6_SunOS_sparc
SAIperl -- 5.8.9-3_SunOS_sparc
SAIroguewave -- 1.0-4_SunOS_sparc
SAIrsync -- 2.6.9-1_SunOS_sparc
SAIscponly -- 20080308-2_SunOS_sparc
SAIsnmp -- 3.2.24-2_SunOS_sparc
SAIsox -- 12.16-1_SunOS_sparc
SAIsudo -- 1.7.2p5-1_SunOS_sparc
SAIsux -- 1.0.1-1_SunOS_noarch
SAItomcat -- 5.5.17.0-1_SunOS_sparc
SAItop -- 3.7-2_SunOS_sparc
SAIvim -- 7.2-1_SunOS_sparc
SAIwireshark -- 1.2.7-1_SunOS_sparc
SAIxalan-j -- 2.7.1-1_SunOS_noarch
SAIxercesc -- 2.8.0-1_SunOS_sparc
SFWatk -- 1.24.0,REV=110.0.4.2009.02.26.22.56
SFWcairo -- 1.8.4,REV=110.0.4.2009.02.26.23.05
SFWfirefox -- 3.0.7,REV=2009.02.27.21.43.19
SFWglib2 -- 2.18.3,REV=110.0.4.2009.02.27.14.31
SFWgtk2 -- 2.14.5,REV=110.0.4.2009.02.26.23.30
```

```
SFWpango -- 1.22.3,REV=110.0.4.2009.02.26.23.21
SFWpixman -- 0.12.0,REV=110.0.4.2009.02.26.23.01
```

4 Do the actual installed versions match the list shown in Step 3?
Note: The build number may differ.

- If **yes**, you have completed this procedure.
- If **no**, call Cisco Services and inform them of the discrepancy.

Verify the Ownership of /dvs/dtacs/OCDL

Follow these steps to verify that the ownership of the /dvs/dtacs/OCDL directory is correct:

1. Log in as the **root** user to the DTACS server.
2. Type the following command and press **Enter** to change to the /dvs/dtacs directory:
   ```
   cd /dvs/dtacs
   ```
3. Type the following command and press **Enter** to view the ownership for the OCDL directory:
   ```
   ls -lrt
   ```
4. Does the system indicate that the ownership is dtacs:dtacs for the OCDL directory?
   - If **yes**, the directory ownership is correct.
   - If **no**, type the following command and press **Enter** to change the ownership:
     ```
     chown dtacs:dtacs OCDL
     ```

Connect to the Monitor and Keyboard

If you have a monitor and keyboard to install, you should set them up now. Complete the following steps to connect a monitor and keyboard to your server and to set the system environment to use the monitor and keyboard for output and input:

Important: Only perform this procedure if you are attaching a keyboard and monitor to your DTACS.

Note: You should still have access to the DTACS via the ILOM port and be logged in as the **root** user.

1 Type the following command and press **Enter** to shut down the system to the **ok** prompt:

```
shutdown -y -g0 -i0
```

2 At the **ok** prompt, type the following command and press **Enter**. The input device is now set to the keyboard.

```
setenv input-device keyboard
```

3 At the **ok** prompt, type the following command and press **Enter**. The output device is now set to the screen (monitor).

```
setenv output-device screen
```

4 Attach the monitor's video cable to the graphics card's video port on the back of the DTACS server, and then tighten the thumbscrews to secure the connection.

5 Connect the monitor's power cord to an AC outlet.

6 Connect the USB keyboard cable to one USB port on the back panel of the DTACS server.

7 Type the following command and press **Enter**. The system reboots, and the monitor and keyboard are now the active input and output devices for the server.

```
shutdown -y -g0 -i6
```

8 Log in as the **root** user.

Verify the DTACS User ID (for New Installs)

The DTACS server has enhanced security enabled. Enhanced security prevents the root user from logging in to the DTACS server remotely. You must use the DTACS server's console to log in as the **root** user.

Enhanced security also prevents you from directly logging into the server as the dtacs user. To access the dtacs account, you must log in as the root or administrative user and then assume the role of a dtacs user by typing the **sux - dtacs** command.

1. As the **root** user, type the following command and press **Enter** at the system prompt to verify that a DTACS user id exists on the DTACS server:
   ```
    sux - dtacs
   ```
2. Type **exit** and press **Enter** to return to the root user.
3. Type the following command and press **Enter**. The system prompts you to enter a new password for the dtacs user.
   ```
   passwd dtacs
   ```
4. Type a password for the dtacs user and press **Enter**. The system prompts you to re-enter the password.
5. Re-type the password for the dtacs user and press **Enter**.
6. Go to ***Add Additional User Accounts*** (on page 27) to create a new user ID with an administrative role.

Add Additional User Accounts

This procedure allows you to create UNIX shell login accounts, as well as DTACS WebUI login accounts. If you want to create ONLY a WebUI account, skip this procedure and go to ***Create DTACS WebUI Login Accounts*** (on page 35).

- If the procedure Verify the DTACS User ID (for New Installs) indicated that the dtacs user does not exist, use this procedure to create a dtacs role.
- After you verify the user ID, use this procedure to create DTACS user accounts with other roles.

Follow these steps to add new user roles for the DTACS server:

1 Log in to the DTACS server as the **root** user. The password prompt appears.

2 Type the password for the root user and press **Enter**. The root prompt appears.

3 Type the following command and press **Enter**. A menu similar to the following example appears.

```
/dvs/admin/create_users
```

Example:

```
--------------------------
Choose Type of User to Add
--------------------------
1: Add Regular User (has no DTACS privileges)
2: Add Operator (has DTACS read privileges)
3: Add Administrator (has DTACS read & write privileges)
Please enter choice or 'Q' to exit:
```

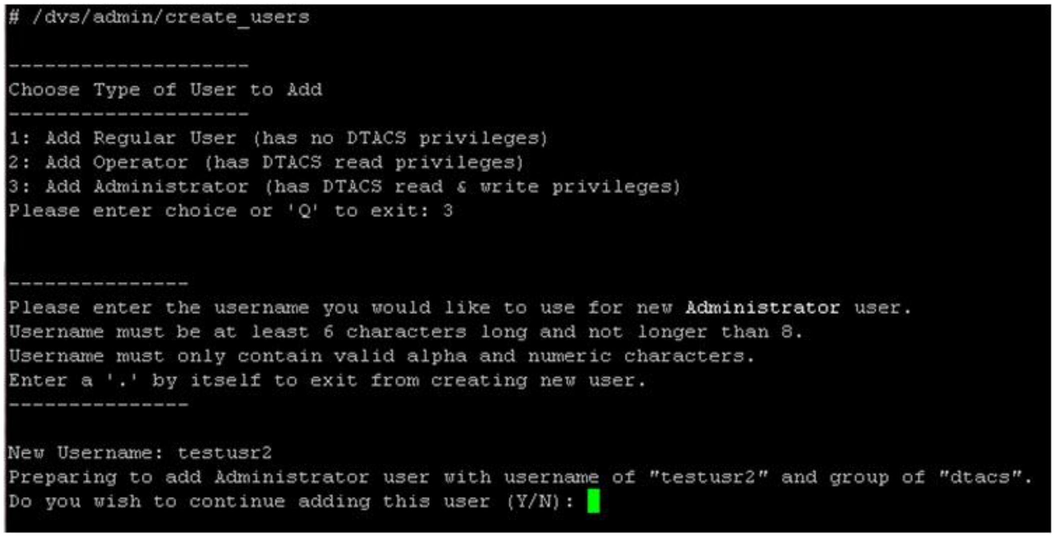
Notes: Review the following descriptions of the options available in Step 3 before proceeding.

- Option 1 creates a regular UNIX login to the DTACS server.
- Option 2 creates an operator user who has read privileges.
- Option 3 creates a DTACS administrator user who has read/write privileges and can log in to the DTACS WebUI administrative console to perform UI administrative tasks.

Important: Select the option that pertains to your needs. The examples in the rest of this procedure assume that you select Option 3.

4 Type **3** to add an administrator user and press **Enter**. A message prompts you to enter a username.

5 Type a username and press **Enter**. A message prompts you to continue.



```
# /dvs/admin/create_users

--------------------
Choose Type of User to Add
--------------------
1: Add Regular User (has no DTACS privileges)
2: Add Operator (has DTACS read privileges)
3: Add Administrator (has DTACS read & write privileges)
Please enter choice or 'Q' to exit: 3


---------------
Please enter the username you would like to use for new Administrator user.
Username must be at least 6 characters long and not longer than 8.
Username must only contain valid alpha and numeric characters.
Enter a '.' by itself to exit from creating new user.
---------------

New Username: testusr2
Preparing to add Administrator user with username of "testusr2" and group of "dtacs".
Do you wish to continue adding this user (Y/N):
```

6 Type **y** to continue and press **Enter**. A message prompts you to enter a new password.

7 Type the appropriate password and press **Enter**. A prompt to re-enter the new password appears.

8 Re-type the password and press **Enter**. The new user is created.

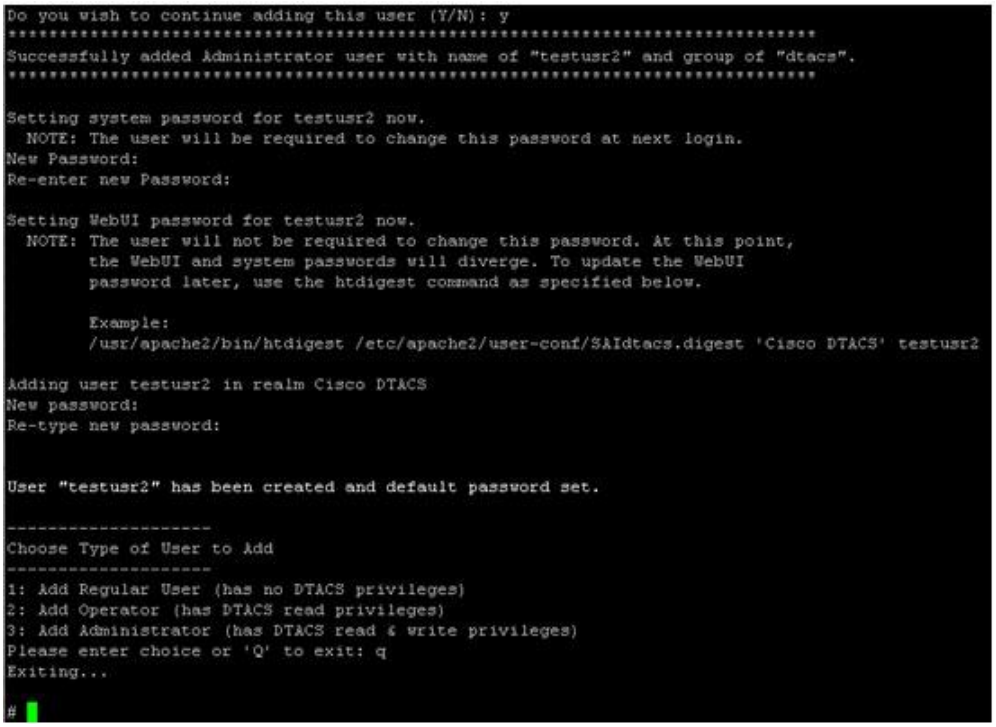
Notes:

- This is the password for the UNIX shell login.
- The system prompts you for the password yet again, and this time the password refers to the WebUI login.

9 Type the password for the WebUI login.

Note: The username and password that you used for the UNIX login can also be used for the WebUI.

10 Re-type the password for the WebUI login again and press **Enter**.



```
Do you wish to continue adding this user (Y/N): y
*******************************************************************************
Successfully added Administrator user with name of "testusr2" and group of "dtacs".
*******************************************************************************

Setting system password for testusr2 now.
  NOTE: The user will be required to change this password at next login.
New Password:
Re-enter new Password:

Setting WebUI password for testusr2 now.
  NOTE: The user will not be required to change this password. At this point,
        the WebUI and system passwords will diverge. To update the WebUI
        password later, use the htdigest command as specified below.

        Example:
        /usr/apache2/bin/htdigest /etc/apache2/user-conf/SAIdtacs.digest 'Cisco DTACS' testusr2

Adding user testusr2 in realm Cisco DTACS
New password:
Re-type new password:


User "testusr2" has been created and default password set.

--------------------
Choose Type of User to Add
--------------------
1: Add Regular User (has no DTACS privileges)
2: Add Operator (has DTACS read privileges)
3: Add Administrator (has DTACS read & write privileges)
Please enter choice or 'Q' to exit: q
Exiting...

#
```

Result: The script exits.

Set Environment Variables

By default, there will only be a few entries in the .profile file. These variables are sufficient for system operation. For most environment variables, the system selects the default values from the code or from other files. Changes to the .profile file may not be necessary on your system. Check with the network administrator of the site you are upgrading for any required changes.

Notes:

- You only need to complete this procedure if you are installing a new DTACS for the first time. If you are upgrading an existing DTACS, the .profile file from the earlier release is available. If required, you can add or modify entries in it.
- The default values are appropriate in most circumstances. Unless otherwise directed, you should choose the default values during initial setup and adjust them later, if necessary.

Important: Whenever you change an environment variable in the .profile file, you must then source the file. Type the following command and press **Enter**. (Be sure to type a space between the first . and /.) Then run the **dtacsStop**, **dtacsKill**, and **dtacsStart** commands as dtacs user, if the process are already running.

```
. /export/home/dtacs/.profile
```

Variable	Description
AMM_PERCENT_DATARATE	Used by ammDistributor to determine the maximum bandwidth to use as a percentage of the AMM IP stream datarate. The default rate is 80 percent and the allowed range is 20 to 80 percent.
COMM_MULTICAST_TTL	Overrides the Time-To-Live for IP packets sent by the dataPump.
IP_STREAMER_TTL	Overrides the Time-To-Live for IP packets sent by dtacsIpStreamer. The default is 10.
NIT_MSG_RATE (units ms)	Specifies the number of seconds between DTACS system updates of the SCTE-65 Network Information Table (NIT). The default value is 5000 ms, which is once every 5 seconds.
NTT_MSG_RATE (units ms)	Specifies the number of seconds between DTACS system updates of the SCTE-65 Network Text Table (NTT). The default value is 120,000 ms, which is once every 120 seconds.

Variable	Description
SI_INSERT_RATE (units ms)	Specifies the number of seconds between DTACS system updates of the SCTE-65 Short Virtual Channel Table (S-VCT). The default value is 15,000 ms, which is once every 15 seconds. **Note:** This variable determines the rate of the Virtual Channel Map (VCM) and the Source Name Subtable (SNS). The VCM is part of the SVCT, but the SNS is not part of the table.
SYSTEM_TIME_RATE (units seconds)	Specifies the number of seconds between DTACS system updates of the SCTE-65 System Time Table (STT). The default value is 5 seconds.
USP_GUIDE_DATA_PID_SECS (units seconds)	Specifies the number of seconds between DTACS transmissions of the Guide Data PID AMM. This value overrides the default of 30 seconds.
USP_MAX_SITE_ERRORS	Specifies the limit of USP site announce AMMs that have a different controllerId than the one with which the DTA is provisioned. Once this limit is reached, the DTA will not provide audio and video services.
USP_OSD_MESSAGE_SECS (units seconds)	Specifies the number of seconds between the DTACS system sending the On Screen Display AMM. This value overrides the default of 15 seconds.
USP_POST_RESET_WAIT_SECS (units seconds)	Overrides the time to wait after sending Reset/Boot AMMs of the DTA before sending Config/Connect AMMs. The default is 120 seconds.
USP_REPEAT_CONNECT	Turns on periodic retransmission of the Connect AMM for activated DTAs. The default is not to send the Connect AMMs. The variable must be set to an non-zero decimal value, otherwise it is ignored.
USP_SITE_ANNOUNCE_SECS (units seconds)	Overrides the time between transmission of the Site Announce AMM. The default is 20 seconds.

Variable	Description
USP_TIMEOUT_POLICY	Specifies whether the message timeout counter will reset whenever the DTA receives certain messages. Possible values are: ■ **BOTH:** The counter resets whenever the DTA receives either a broadcast message (such as site announce) or a unicast message (such as config). This is the default value. ■ **UNICAST:** The counter only resets when the DTA receives a unicast message.
DNCS_BOSS_PROXYING	Enables proxy of the BOSS calls to the EC on the DTACS. The default behavior is to disable this feature. DTACS handles seven BOSS transactions: ModifyDhctConfiguration, ModifyDhctAdminStatus, SetPin, ResetClientNvm, BootDhct, DhctInstantHit, DeregisterDhct for all DTA MAC addresses. The feature can be enabled by setting the variable DNCS_BOSS_PROXYING to 1 in the /dvs/dtacs/etc/bossServer.cfg file. This feature helps the operator decide how the BOSS transactions that are not intended for the DTA MAC addresses are handled. When the feature is enabled, all transactions except the seven transactions of ModifyDhctConfiguration, ModifyDhctAdminStatus, SetPin, ResetClientNvm, BootDhct, DhctInstantHit, DeregisterDhct will be simply forwarded as is to the EC. The above-mentioned seven transactions will be forwarded to EC only if the MAC Address of the transactions correspond to a DHCT, or else they are forwarded to dtacsBossServer for processing within DTACS.
BOSS_CONNECTION_TIMEOUT_SECS (seconds)	Specifies the number of seconds after which an out-of-use connection is considered stale. A value of 0 indicates that the timeouts do not apply. **Note:** By default, this environmental variable is not set and the connections do not timeout. To enable this feature, a value greater than 0 needs to be set for the environment variable. The feature is designed to overcome the issue where the TCP connections are dropped by the firewalls between the Billing System and the DTACS after some idle time. The feature allows the DTACS to time out on unused connections and close them.

Variable	Description
UI_POLL_INTERVAL (seconds)	The DTACS WUI polls the status of the process every UI_POLL_INTERVAL. This is set to 15 seconds by default. When you start or stop a DTACS service, the process status WUI on the DTACS system should reflect the status of the processes within about 15 seconds. The default value should be modified only if response issues are seen on the system.
MAX_CAROUSEL_CYCLE_SAFE_LIMIT (units seconds)	Specifies the safe limit for the Image Carousel Cycle Time in number of seconds beyond which the Indicator light next to the Image Carousel Cycle Time in the Image Management Web UI turns from green to yellow. The default value is 150 seconds.
MAX_CAROUSEL_CYCLE_THRESHOLD _LIMIT (units seconds)	Specifies the threshold limit for the Image Carousel Cycle Time in number of seconds beyond which the Indicator light next to the Image Carousel Cycle Time in the Image Management Web UI turns from yellow to red. The default value is 300 seconds.

Configure DTACS BOSS Proxying for the EC (Optional)

You can set up the billing system to send BOSS transactions to the EC, if you prefer. The DTACS will then forward any non-DTA-related transactions to the associated EC. Follow these steps to configure DTACS BOSS proxying for the EC.

Note: Your system may or may not use a BOSS proxy. If it does not, skip this section and go to the next procedure in this chapter.

1 Type the following command and press **Enter** to change to the /dvs/dtacs/etc directory:

```
cd /dvs/dtacs/etc
```

2 Type the following command and press **Enter** to see if the bossServer.cfg file exists:

```
ls -l *bossServer.cfg*
```

3 Does the system indicate that the bossServer.cfg file exists?

- If **yes**, then you do not need to do anything else. Go to the next procedure in this chapter.
- If **no**, go to Step 4.

4 Type the following command and press **Enter** to create a new bossServer.cfg file from the sample configuration file provided:

```
cp bossServer.cfg.sample bossServer.cfg
```

5 In a text editor, open the bossServer.cfg file.

6 In the bossServer.cfg file, set the **DNCS_BOSS_PROXYING** parameter to **1** to enable DTACS to proxy non-DTA-related BOSS transactions for the EC.

Example: `DNCS_BOSS_PROXYING = 1`

7 Save and close the bossServer.cfg file.

8 Type the following command and press **Enter** to view the ownership for the bossServer.cfg file:

```
ls -lrt bossServer.cfg
```

9 Does the system indicate that the ownership is *dtacs:dtacs*?

- If **yes**, the directory ownership is correct.
- If **no**, type the following command and press **Enter** to change the ownership.

```
chown dtacs:dtacs bossServer.cfg
```

10 Bounce (stop and restart) both the dtacsBossProxy and dtacsBossServer processes if they have already started.

Create DTACS WebUI Login Accounts

In this procedure, we create login accounts ONLY to the WebUI. This does not apply to UNIX shell login accounts.

1. Log in to the system as the **root** user.
2. Type the following command and press **Enter**:
   ```
   /usr/apache2/bin/htdigest /etc/apache2/user-
   conf/SAIdtacs.digest "Cisco DTACS" [username]
   ```
   Notes:
   - This is a single command.
   - Substitute the user account name for [username]. Do not type the brackets in the command.
3. Type the *new* web interface password for the user and press **Enter**.
4. Type the new password again and press **Enter**. The system compares the two password entries.
5. Did the **They don't match, sorry** message appear?
   - If **yes**, the two passwords do not match. Repeat this procedure from Step 2.
   - If **no**, the system prompt is returned and you are finished with this procedure.

Delete DTACS WebUI Accounts

Use this procedure to delete DTACS WebUI login accounts.

1. Log in to the system as the **root** user.
   a. At the prompt, type **su -** and press **Enter**.
   b. Type the **root** password and press **Enter**.
2. Open the /etc/apache2/user-conf/SAIdtacs.digest file with a text editor.
3. Delete, or comment out, the entire line that contains the username for which you want to disable access.
4. Save and close the SAIdtacs.digest file.

Configure Remote Access to the DTACS Web Interface

Complete the following steps to access the DTACS web interface remotely.

Important: You must obtain the hostname and IP address for your corporate network-facing interface from your System Administrator to complete this procedure. The following examples use *dtacs1* as the hostname and *10.78.203.57* as the IP address. These are examples, only.

1. Log in to the DTACS as the **root** user.
2. Open the /etc/hosts file with a text editor.

3 Add *dtacseth* to your corporate network interface entry in the /etc/hosts file.

Example: `192.0.2.1 dtacs1 dtacs1. loghost dtacseth`

4 Add dncsws to the loopback2 entry in the /etc/hosts file.

Example: `198.51.100.1      loopback2   dncsws`

5 Save and close the /etc/hosts file.

6 Open the /etc/apache2/user-conf/80.auth.conf file with a text editor.

7 Add *Allow from [machine/subnet IP Address]* before the "ErrorDocument" line.

Example:

```
#ident "@(#) %full_filespec: 80.auth.conf,4:ascii:Da=1 %"
<Location />
Order Allow,Deny
Allow from localhost
Allow from dtacs
Allow from dtacseth
# Access restrictions can be enforced here, so that valid users can only
# come from allowable hosts/(sub)networks e.g. :
Allow from 203.0.113.1/16
#To Access from all the machine/subnet, add/uncomment the below line.
#Allow from All
ErrorDocument 403 "<html><head><title>Error
403</title></head><body><h2>SECURITY WARNING</h2>Web connections are not
allowed from this location.</body></html>"
</Location>
```

8 Save and close the 80.auth.conf file.

9 Open the /etc/apache2/user-conf/httpd.ports file with a text editor.

10 Add an entry to "Listen to port 80" on the corporate-facing interface line.

Example:

```
#
#ident "@(#) %full_filespec: httpd.ports.dist,2:ascii:Da=2 %"
#
# This configuration file is for DTACS Web UI traffic.
# If $hostname is on a separate interface, it can be enabled too, but
# we won't do that automatically.
#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses (0.0.0.0)
#
# This configuration file is for DTACS Web UI traffic.
# If $hostname is on a separate interface, it can be enabled too, but
# we won't do that automatically.
Listen 0.0.0.0:8045
Listen 203.0.113.3:80
Listen dtacseth:80
```

11 Save and close the httpd.ports file.

12 Type the following command and press **Enter** to restart the Apache server process:
```
svcadm restart http
```

Supported Browser

When viewing the Web UIs (WUIs) in DTACS , we recommend using Firefox Version 3.0.7 for Solaris and Version 3.6.28 for Windows.

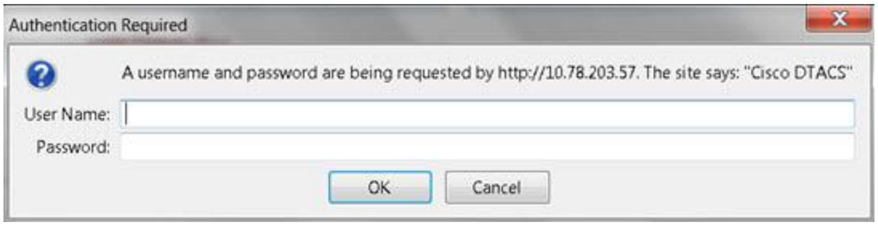
Firefox Version 24 ESR is supported for the DTACS 3.0.0.18P1 release, and beyond, for Windows.

Notes:

- Cisco engineers tested the WUIs with Firefox 3.0.7 on Solaris and Version 3.8.18 on the Windows operating systems.
- Firefox Version 4.0 and later is not supported until DTACS 3.0.0.18.
- Firefox Version 24 ESR is supported for the DTACS 3.0.0.18P1 release, and beyond. If you are using Firefox Version 24 ESR, refer to ***Correcting Dialog Box Errors in Firefox Version 24ESR*** (on page 222).
- The Safari and Opera browsers for Windows are not supported.

Accessing the Administrative Console

1 Navigate to the following location in the web browser on your computer:
```
http://[DTACS IP Address]/dtacs/
```
Example:
```
http://192.0.2.1/dtacs
```
Result: A login prompt appears.


Authentication Required

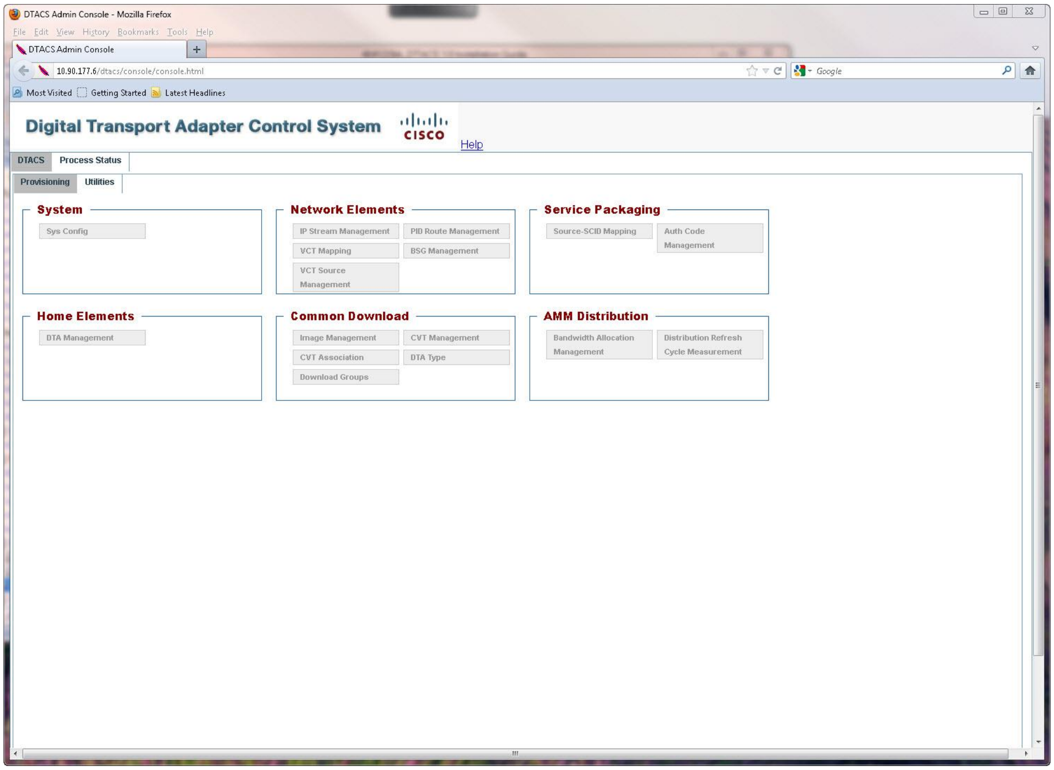
A username and password are being requested by http://10.78.203.57. The site says: "Cisco DTACS"

User Name:

Password:

2 Type your DTACS Administrator username and password, and click **OK**.

Result: The DTACS Administrative Console opens.



Configure DTACS dbSync Between the DTACS and the EC Host

This procedure provides steps to check the DTACS hosts and make required changes for the dtacsdbsync process to work with the associated EC host.

Verify User Ownership and Group Permissions

Important:

- This step takes place in the **root** xterm window of the DTACS server.
- The example that follows may differ from the output on your system; however, it should be similar.
- Do not change the group ID for any group.

Complete this step to verify that the ownership for dncs, dtacs, and dncsSSH users are correct on the DTACS server and also to verify that the dncs user belongs to the dncs group and the dtacs user belongs to the dtacs group.

Type the following command and press **Enter** to verify directory ownership for the dncsSSH, dncs, and dtacs users:

```
ls -ltr /export/home
```

Example: Output should be similar to the following example:

```
# ls -ltr /export/home
   .
   .
   .
 drwxr-x---   3 dncsSSH  dtacs     512 Feb 22 15:30 dncsSSH
 drwxr-x---   6 dncs     dncs      512 Feb 23 07:25 dncs
 drwxr-xr-x   7 dtacs    dtacs     512 Mar  3 10:19 dtacs
```

Open an xterm Window on the EC and DTACS Servers

To configure the DTACS server to run on the EC system, you will need to add or modify specific configurations and files on both the DTACS server and the EC. For this reason, we recommend opening two **root** xterm windows: one that accesses the EC server and one that accesses the DTACS server.

Important: Once this procedure is completed, we will refer to either the root xterm window on the DTACS or the EC server for the remaining procedures in this guide.

Complete the following steps to open one **root** xterm window on each server:

1. Open two xterm windows on the EC system.
2. In one xterm window, complete the following steps to log in as the **root** user on the EC.
   a. Type **su –** and press **Enter**. You are prompted to enter your password.
   b. Type the **root** password and press **Enter**. The root prompt appears.
3. In the other xterm window, access your DTACS server by entering the following command:
   ```
   ssh -X [userID]@[dtacsIP]
   ```
   Notes:
   - Substitute your user ID that was created on your DTACS server for [userID].
   - Substitute the IP address for the DTACS server for [dtacsIP].
   - Do not include any brackets in the command.
4. In the DTACS window, type **su –** and press **Enter** to change to the **root** user; then enter the password when prompted.

Add DTACS as a Trusted Host on the EC Server

Important: All steps in this procedure take place in the **root** xterm window on the EC server.

1. In the **root** xterm window on the EC server, verify the name of the DTACS server by typing the following command and pressing **Enter**:
   ```
   grep [dtacsIP] /etc/hosts
   ```
2. Locate the dtacs entry and record the first entry that follows the IP address for DTACS in the space provided.

   Host Name of DTACS Server: __________

   Example: In the following example, the output shows that the hostname of the DTACS server is **dtacshost**.
   ```
   # grep 192.0.2.1 /etc/hosts
   192.0.2.1    dtacshost  dtacs
   ```
   Notes:
   - The first name listed after the IP address is the hostname of the DTACS server; the other names are aliases.
   - This is only an example. The IP address and entries for dtacs may differ in your /etc/hosts file.

3 Check the etc/hosts.equiv file for the following [dtacshost] entries. If these entries do not exist, add them.

```
[dtacshost]  dtacs
[dtacshost]  dncs
[dtacshost]  root
```

Important: Substitute the hostname you recorded in Step 2 for [dtacshost]. Do not include the brackets.

4 Save and close the file.

Create the Private and Public Keys Between the EC and DTACS Servers

This procedure includes the steps that add the private/public keys between the EC and DTACS server. This procedure is necessary because of the Enhanced Security feature enabled in this system release.

1 Record the hostname for the DTACS server that you identified in Step 2 of the *Add DTACS as a Trusted Host on the EC Server* (on page 40) in the space provided.

Host Name of DTACS Server: ______________________________________

2 In the **root** xterm window of the DTACS server, open the /export/home/informix/etc/sqlhosts file in a text editor.

3 Open a new line at the end of the file and add the following entry:

```
dncsatmDbServer ontlitcp dncsatm informixOnline
```

4 Save and close the sqlhosts file on the **DTACS** server.

5 In the **root** xterm window of the EC server, check the /export/home/informix/etc/sqlhosts file for the following entry. If the entry does not exist, add it.

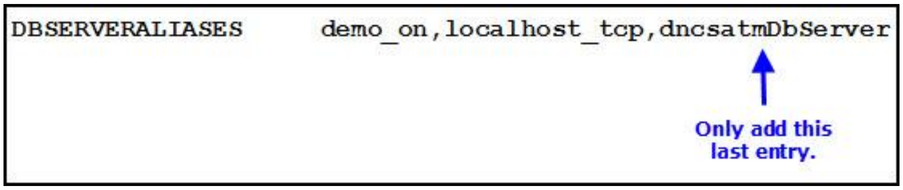
```
dncsatmDbServer ontlitcp dncsatm informixOnline
```

6 Save and close the file on the EC server.

7 In the **root** xterm window of the EC server, check the /export/home/informix/etc/onconfig file for the dncsatmDbServer entry at the end of the DBSERVERALIASES variable. Add the variable if it does not exist.

Important: This is an example; the entries for DBSERVERALIASES may differ on your system. Ensure that dncsatmDbServer is the last entry in this line.

Example:



```
DBSERVERALIASES     demo_on,localhost_tcp,dncsatmDbServer
```

8 Did you modify the onconfig file in the previous step?

- If **yes**, then type the following command and press **Enter** to start the Informix listener for the dncsatmDbServer:
  ```
  onmode -P start dncsatmDbServer
  ```
- If **no**, continue with Step 9.

9 In the **root** xterm window on the EC server, type the following command and press **Enter**. The **Enter the host name of the site you are adding** message appears.

```
siteCmd -S
```

10 Type the hostname of the DTACS server (recorded in Step 2) and then press **Enter**. The **Enter the IP address of the site you are adding** message appears.

Example: `dtacshost`

Note: Replace the hostname in this example with the actual hostname for your DTACS server (recorded in Step 2).

11 Type the IP address of the DTACS server (used in Step 1) and then press **Enter**. The **Do you want to continue?** message appears.

Example: `192.0.2.1`

Note: Replace the IP address in this example with the actual IP address for your DTACS server (used in Step 1).

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

Results:

- A message appears that states that the system is backing up and adding an entry to the /etc/hosts file.
- The **Do you want to continue?** message appears and you are prompted for the root password of the DTACS server.

13 When prompted, type the **root** password for the DTACS server and press **Enter**. The system displays a series of messages about generating various keys and a **Done** message appears when it is finished.

14 Type the following command and press **Enter** to change to the **dncs** user:

Note: You should still be working in the **root** xterm window of the EC.

```
sux - dncs
```

15 Type the following command and press **Enter**:

```
ssh -X -i /export/home/dncsSSH/.ssh/siteKey dncsSSH@[DTACS hostname]
```

Note: Substitute the hostname of your DTACS server (recorded in Step 1) for [DTACS hostname]. Do not include the brackets.

Result: The system logs you on to the DTACS server as dncsSSH user. You are now connected to the DTACS server and the host for the DTACS server is permanently added to the list of known hosts on the EC.

16 Type **su -** and press **Enter**. The password prompt appears.

17 Type the **root** password for the DTACS server and press **Enter**.

18 Type the following command and press **Enter** to change to the **dncs** user:

```
sux - dncs
```

19 Type the following command and press **Enter**:

```
ssh -X -i /export/home/dncsSSH/.ssh/siteKey dncsSSH@dncsatm
```

Result: The system logs you on to the EC as dncsSSH user and the **Are you sure you want to continue connecting?** message appears.

Note: If an error message appears about **conflicting keys**, open the /export/home/dncs/.ssh/known_hosts file, and delete the entry that corresponds to the dncsatm. Then, save the file and repeat this step.

20 Type **y** and press **Enter**. You are now connected to the EC. The hostname for the EC is permanently added to the list of known hosts on the DTACS server.

21 Type **exit** and press **Enter** until the xterm windows close and you are entirely logged out as dncsSSH user on the DTACS and the EC servers. Your current window should be the root user in the EC xterm window.

Revise the sshd_config File on the DTACS Server

Important: All steps in this procedure take place in the **root** xterm window of the DTACS server.

1 Open the /etc/ssh/sshd_config file in a text editor.

2 Edit the **PermitRootLogin yes** entry to the following:

```
PermitRootLogin no
```

3 Save and close the sshd_config file.

4 Type the following command and press **Enter** to restart the SSH service.

```
svcadm restart ssh
```

Test dbSync on the DTACS Server

Important: All steps in this procedure take place in the **root** xterm window of the DTACS server.

Complete the following procedure to ensure that the DTACS database successfully syncs with the EC database.

1 In the **root** xterm window of the DTACS server, type the following command and press **Enter** to switch to the **dncs** user:

```
sux - dncs
```

2 Type the following command and press **Enter** to establish the correct DTACS environment:

```
. /dvs/dtacs/bin/dtacsSetup
```

Note: Make sure that there is a space between the period (**.**) and the forward slash (**/**).

3 Type the following command and press **Enter** to verify that you can access the EC database:

```
dbaccess dncsdb@dncsatmDbServer -
```

Example: Output should be similar to the following example:

```
$ dbaccess dncsdb@dncsatmDbServer -
    Database selected
    >
```

4 Press the **Ctrl** and **c** (Ctrl-C) keys simultaneously to exit from the dbaccess utility.

5 Type the following command and press **Enter** to initiate a synchronization of the DTACS database:

```
dtacsdbsync -S
```

6 Did a **Dbsync Succeeded** message appear at the end of the script?

- If **yes**, the synchronization was successful. Go to the next procedure.
- If **no**, contact Cisco Services for assistance.

Install Patches

If you have any patch software for the DTACS server, install it now. Instructions for installing the patch software should accompany the DVD that contains the software.

Configuring the NTP

Configuring the NTP Server

Complete the following steps to sync the NTP server on the DTACS server with the time server on the EC.

1 Open an xterm window.

2 Type the following command and press **Enter** to verify that xntpd is not running before you continue:

```
pgrep -lf ntp
```

Note: If xntpd is running, a message similar to the following will appear.

```
136 /dvs/tools/ntp/bin/ntpd -c /etc/inet/ntp.conf -p /etc/ntp.pid -l
/var/adm/log/
```

3 As the **root** user, type the following command and press **Enter** to verify network connectivity to the NTP server:

```
/dvs/tools/ntp/bin/ntpdate -d <IP of NTP Servers>
```

Example: **/dvs/tools/ntp/bin/ntpdate -d 192.0.2.1**

Results: The system should respond with both transmit and receive packets followed by time information sent from the NTP server. If the final line of the output states "no server suitable for synchronization found", then either a problem exists with the NTP server or a network issue is preventing a connection. Verify the IP address with your Network Administrator and attempt this command again. If you are still unable to resolve this problem, contact Cisco Services for assistance.

4 Type **su -** and press **Enter** to change to the root user.

5 Use the vi editor to add the NTP server IP addresses to the /etc/hosts file. Add the IP and hostname of each NTP server.

Example:

```
192.0.2.1     dncsatm
```

Notes:

- There should already be a dncsatm entry in the /etc/hosts file.
- You can also include additional NTP server entries in the /etc/hosts file.

6 Type the following command and press **Enter** to change to the /etc/inet directory. The /etc/inet directory becomes the working directory.

```
cd /etc/inet
```

7 Type the following command and press **Enter** to make a copy of the existing ntp.conf file:

```
cp ntp.conf ntp.conf.bak
```

8 Use the vi editor to edit the ntp.conf file so that the first lines contain an entry for each NTP server that you choose to use.

Example:

```
server dncsatm mode 10 prefer
server 203.0.113.3 #local clock will engage if GPS fails
fudge dncsatm stratum 13
driftfile /etc/ntp.drift
```

Note: Simply replace the IP address with the NTP server name defined in the /etc/hosts file.

9 Type **:wq!** to save these changes and exit the vi editor.

10 Type the following command and press **Enter** to stop the ntpd process:

```
/etc/init.d/xntpd stop
```

11 Type the following command and press **Enter** to re-start the ntpd process.

```
/etc/init.d/xntpd start
```

12 Type the following command and press **Enter** to verify that the ntpd process is running.

```
pgrep -fl ntp
```

Example:

```
29840 /usr/local/xntpd/ntpd -c /etc/inet/ntp.conf -p /etc/ntp.pid -l
/var/adm/log/ntp
```

13 Type **ntpq** and press **Enter** to display the ntpq prompt.

14 Type **peers** and press **Enter** to verify the EC is the clock being used.

Example:

```
   remote      refid       st t when poll reach    delay    offset    disp
======================================================================
 LOCAL(0)   LOCAL(0)        5 l   21   64   377     0.00     0.000    0.94
*dncsatm   198.51.100.1    4 u   28   64   377     1.46   -15.339    0.94
```

Notes:

- The appearance and content of the results will vary according to your System release version.
- The asterisk (*) in front of the dncsatm (as shown in the above example) indicates that the DTACS is using the EC ATM as a reference clock and that the DTACS server is synchronized to the EC.
- **Important:** If the asterisk (*) is in front of LOCAL, then the DTACS is not synchronized to the EC. It is synchronized with the hardware clock on the server. This situation must be corrected immediately.

15 At the ntpq> prompt, type **lass** and press **Enter**.

Results: A result similar to the following examples appear on the screen.

Example:

```
ind assID status  conf reach auth condition  last_event cnt
===========================================================
  1 27724  9014   yes   yes  none    insane   reachable  1
  2 27725  9614   yes   yes  none  sys.peer   reachable  1
```

Note: The device numbers listed in the first column of the following output correspond with the devices listed in the ntpq> peers output from the example in Steps 13 and 14.

16 Use the date command on the EC and DTACS servers to verify the time on both servers.

EC Example:

```
Mon Nov 23 15:36:46 EST 2009
```

DTACS Example:

```
Mon Nov 23 15:31:15 EST 2009
```

Note: In this example above, the DTACS time is 5min 31sec behind the EC. NTP will automatically synchronize the servers once the time difference is less than two minutes.

17 If you need to synchronize the servers, type **`date hhmm.ss`** (where hhmm.ss is the target time on the EC) and press **Enter** to reset the DTACS time. The DTACS time is reset to match the EC.

Example: **`# date 1536.46`**

Start DTACS Process and the WUI

Before Using the DTACS WUIs

Before you start using the DTACS WUI, note these important points:

Understanding Channel Maps

The channel map of a BSG is determined by the channel map of the EC Hub ID that is associated with the BSG.

Understand PID Routes

PID routes are created automatically for the ports that are part of the BSG. Therefore, you must configure VCTs before you edit PID Routes.

Understand Running Multiple Instances of Firefox

When you launch multiple Firefox windows from your system, multiple sessions with the same profile will be created. This creates session conflicts. To understand how to avoid this by using different profiles for different session, refer to the following procedures in Appendix B.

- *Creating a New Firefox Profile in Solaris* (on page 215)
- *Creating a New Firefox Profile in Windows* (on page 218)

Starting DTACS Processes

Important: If you attempt to start a DTACS process from the command line while all of the DTACS server processes are already running, you could cause the process to core dump or otherwise disrupt the normal operation of the DTACS server. If this occurs, you should send the core files and logs to Cisco for evaluation.

1. Type the following command and then press **Enter** to assume the dtacs role. A prompt for the role's password appears.

   ```
   sux - dtacs
   ```

   Important: If you have not yet created a password for the dtacs user, open a new window and switch to **root**. Type **passwd dtacs** and enter a password when prompted. Re-enter the password when prompted.
2. Type the dtacs password and press **Enter**. A system prompt appears and /export/home/dtacs becomes the active directory.
3. Type the following command and press **Enter**. The dtacs processes start.

   ```
   dtacsStart
   ```

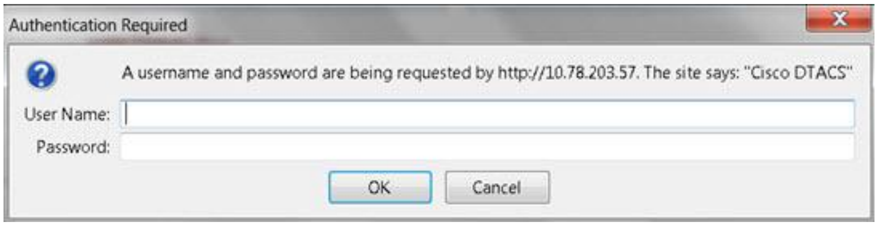
   Important: Be certain that you are starting the DTACS processes as the **dtacs** user. Do not start the processes as the root user.

4 Type the following command and press **Enter** to start the software and launch the interface, if the DTACS WUI has not already launched:

```
dtacsWUIStart
```

Results:

- If you are launching Firefox for the first time, click **Install Now** to install the application.
- The message **Launching the DTACS Web UI page in Firefox** appears.
- A prompt for the DTACS User Name and Password appears.



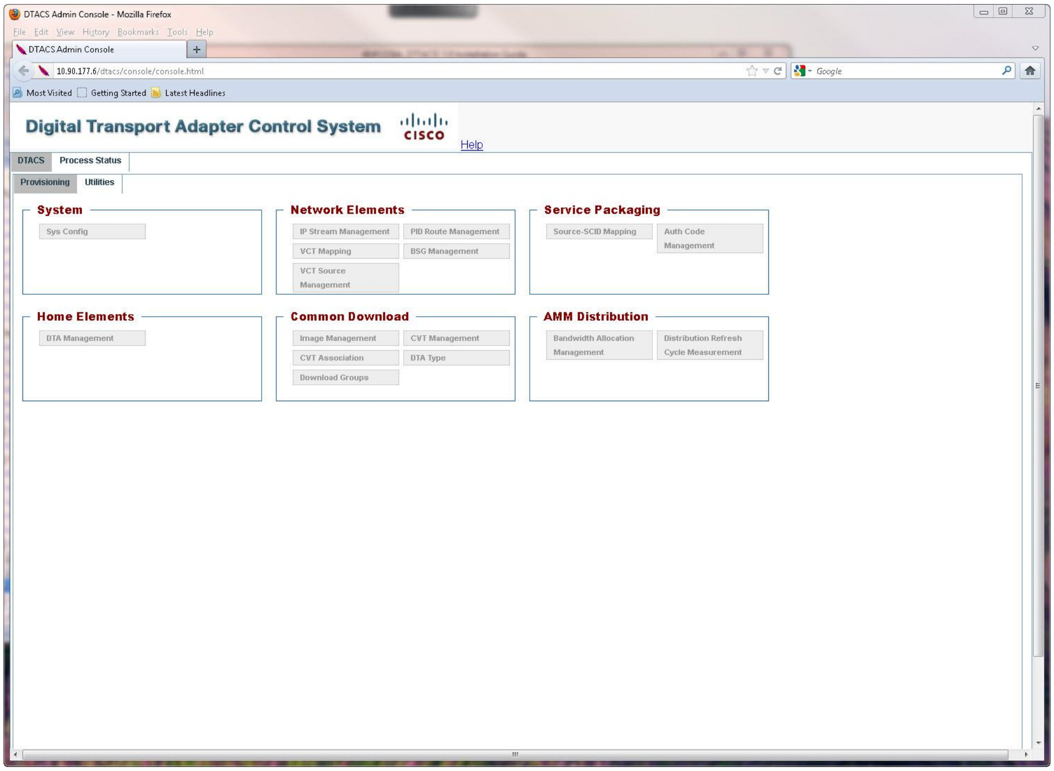
Authentication Required

A username and password are being requested by http://10.78.203.57. The site says: "Cisco DTACS"

User Name:

Password:

5 Type the **User Name** and **Password** and click **OK**. The DTACS web user interface (WUI) appears.



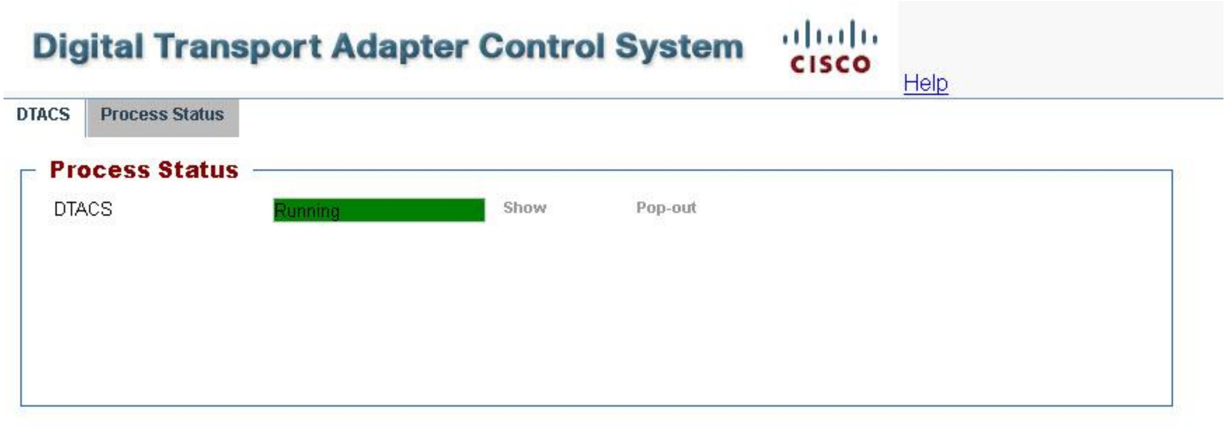
DTACS Admin Console - Mozilla Firefox

10.90.177.6/dtacs/console/console.html

Digital Transport Adapter Control System

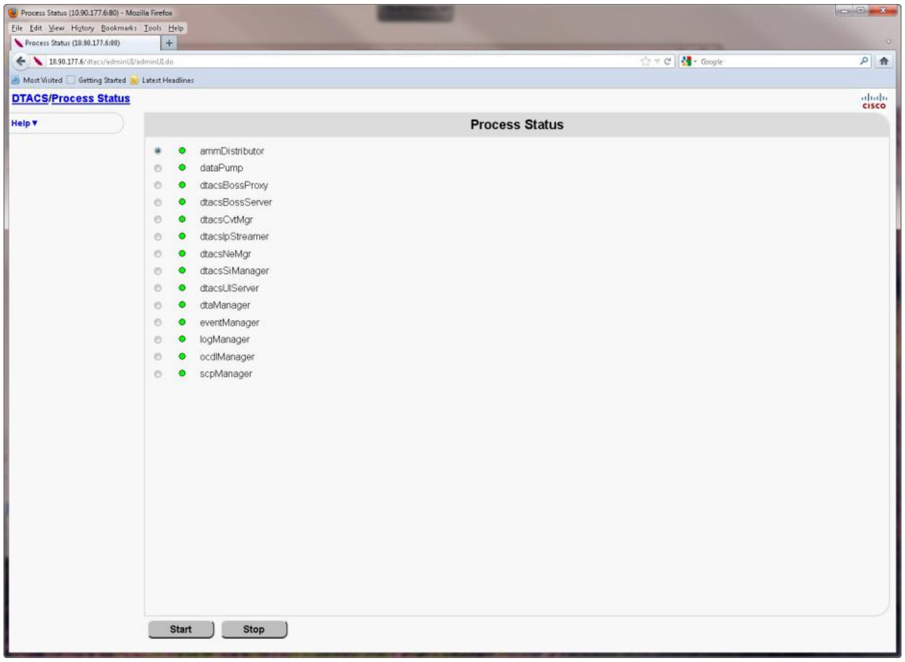
6 Before proceeding to access the Web UI pages, complete the steps in ***Clearing the Firefox Browser Cache*** (on page 212).

7 Click the **Process Status** tab to view the processes.



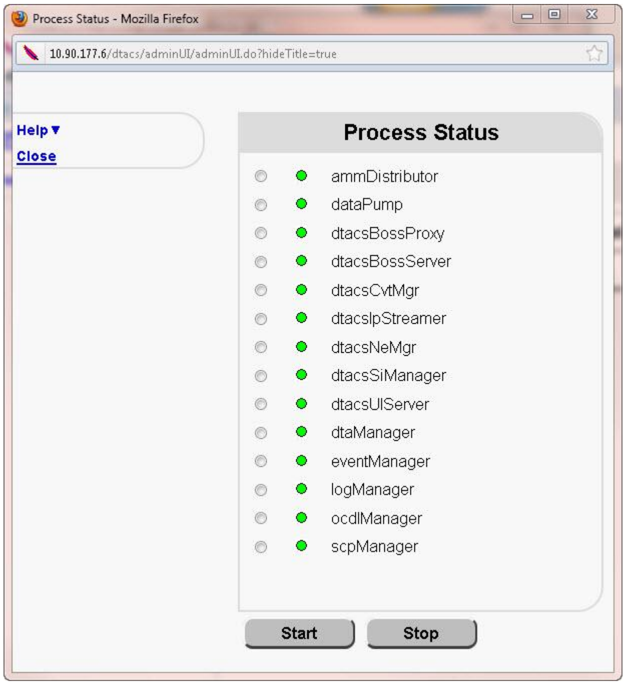
8 Select one of the following to view status processes:

- Click **Show** to view the status of the processes in the current window.


Process Status (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Process Status (10.90.177.6:80)
10.90.177.6/dtacs/adminUI/adminUI.do
Most Visited
Getting Started
Latest Headlines
Google
DTACS/Process Status
cisco
Help ▾
Process Status
Start
Stop

- ● ammDistributor
- ● dataPump
- ● dtacsBossProxy
- ● dtacsBossServer
- ● dtacsCvtMgr
- ● dtacsIpStreamer
- ● dtacsNeMgr
- ● dtacsSiManager
- ● dtacsUIServer
- ● dtaManager
- ● eventManager
- ● logManager
- ● ocdlManager
- ● scpManager

- Click **Pop-Out** to view the status of the processes in a separate window.


Process Status - Mozilla Firefox
10.90.177.6/dtacs/adminUI/adminUI.do?hideTitle=true
Help ▾
Close
Start
Stop

Process Status

○ ● ammDistributor
○ ● dataPump
○ ● dtacsBossProxy
○ ● dtacsBossServer
○ ● dtacsCvtMgr
○ ● dtacsIpStreamer
○ ● dtacsNeMgr
○ ● dtacsSiManager
○ ● dtacsUIServer
○ ● dtaManager
○ ● eventManager
○ ● logManager
○ ● ocdlManager
○ ● scpManager

Each process running on the DTACS is listed next to a green, yellow, or red indicator. The color of the indicator shows the status of the process.

- Red means a process has stopped.
- Green means a process is running.
- Yellow means a process has paused.

Note: The color of the indicator may lag slightly behind the actual status of the process. If you stop or start a process, it may take a few seconds before the indicator changes color to show the change in status.

DTACS Processes

The following table briefly describes each of the DTACS processes.

Process	Description
ammDistributor	This process transmits Authorization Management Messages (AMMs) to Digital Transport Adapters (DTAs).
dataPump	This process pumps out encoded images to a specific IP/port combination.
dtacsBossProxy	This process handles backend processing of BOSS transactions that are not supported by DTACS.
dtacsBossServer	This process provides BOSS interfaces to DTACS.
dtacsCvtMgr	This process works with CD2-CVT files. It allows you to create, edit, delete and transmit CD2-CVT file data.

Process	Description
dtacsNeMgr	This process provisions and maintains network configurations that are used to setup PID routes and insert Simple Content Protection and Multi-Program Keys.
dtacsIpStreamer	Transmits data supplied by other DTACS processes as MPEG elementary streams to specified IP addresses (multicast or unicast).
dtacsSiManager	This process generates SI and channel map data.
dtacsUIServer	This process proxies WUI requests to the appropriate back-end process(es) and the Informix database. The dtacsUIServer process also returns responses from back-end processes and the database to the WUI.
dtaManager	This process provisions and manages DTA devices.
eventManager	This process provides a way to notify system components of events.
logManager	This process is an internal process that manages debug logging levels of DTACS packages.
ocdlManager	This process handles requests from the WUI. It creates and manages associations and related CVTs, encodes images and interacts with the database to persist related data.
scpManager	This process provides key management for Simple Content Protection (SCP).

Test dbSync from the DTACS WebUI

1. Click **Sys Config** in the WUI. The DTACS System Configuration window opens.
2. Click the **DB Sync** tab and then click **DB Sync** to initiate the DTACS database synchronization process.

   Note: After a few moments, the **Status** in the DB Sync Status History table is refreshed automatically every three seconds.
3. Select one of the following options:
   - If the **Status** is **In Progress**, wait a few seconds for the status to refresh.

     Note: The time taken by the DB Sync process is based upon the amount of data that needs to be synchronized from the EC. We recommend that operators wait to access the DTACS user interfaces until after this process has completed because there may be much data that needs to be updated.
   - If the **Status** is **Completed** and if the entry in the **DB Sync End Time** column is current, then the synchronization was successful. Go to the next procedure in this chapter.
   - If the **Status** is **Failed**, and if the description reveals that the synchronization is still in progress, repeat this procedure after a few seconds.

     Note: Contact Cisco Services if you are not able to synchronize the database successfully.

Execute the postUpgrade Script on the DTACS Host

The DTACS postUpgrade script performs post-install and post-upgrade checks, enables cron jobs, checks for filesystem space utilization, as well as other functions.

1 Insert the DTACS DVD into the DVD drive of the DTACS server.

2 Type the following command and then press **Enter**. A list of the mounted file systems appears.

```
df -n
```

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

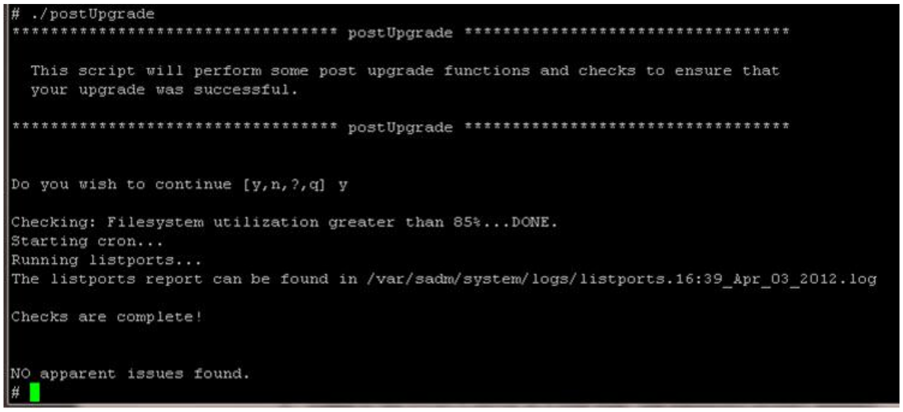
3 As the **root** user, type the following command and press **Enter** to source in the DTACS environmental variables:

```
. /dvs/dtacs/bin/dtacsSetup
```

4 As the **root** user, type the following command and press **Enter**. A confirmation message appears.

```
/cdrom/cdrom0/sai/scripts/postUpgrade
```

5 Type **y** and press **Enter**. The system executes the postUpgrade script.



```
# ./postUpgrade
********************************** postUpgrade **********************************

  This script will perform some post upgrade functions and checks to ensure that
  your upgrade was successful.

********************************** postUpgrade **********************************


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

Checking: Filesystem utilization greater than 85%...DONE.
Starting cron...
Running listports...
The listports report can be found in /var/sadm/system/logs/listports.16:39_Apr_03_2012.log

Checks are complete!


NO apparent issues found.
#
```

5

Provision the DTACS

Introduction

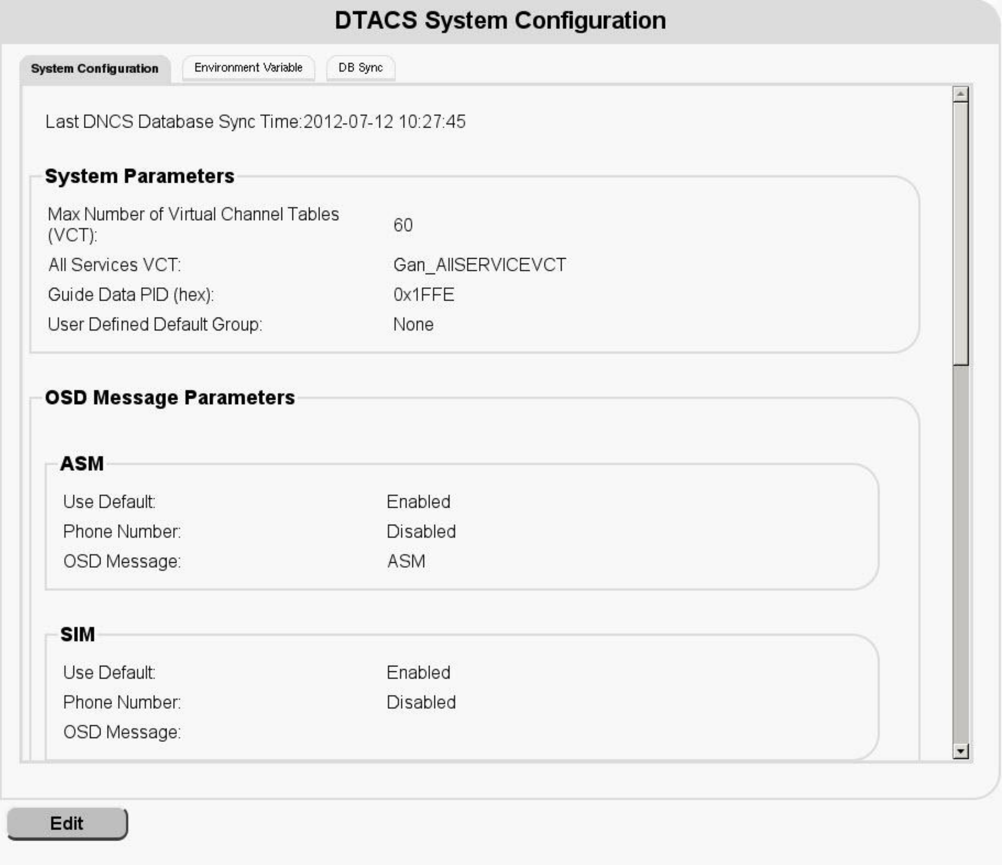
This chapter explains how to provision the Cisco DTACS after you have installed the software for the first time.

In This Chapter

Configure the DTACS System

To begin configuring the DTACS, click **Sys Config** on the DTACS WUI.

Result: The DTACS System Configuration window opens.



DTACS System Configuration

Last DNCS Database Sync Time:2012-07-12 10:27:45

System Parameters

Max Number of Virtual Channel Tables (VCT):	60
All Services VCT:	Gan_AllSERVICEVCT
Guide Data PID (hex):	0x1FFE
User Defined Default Group:	None

OSD Message Parameters

ASM

Use Default:	Enabled
Phone Number:	Disabled
OSD Message:	ASM

SIM

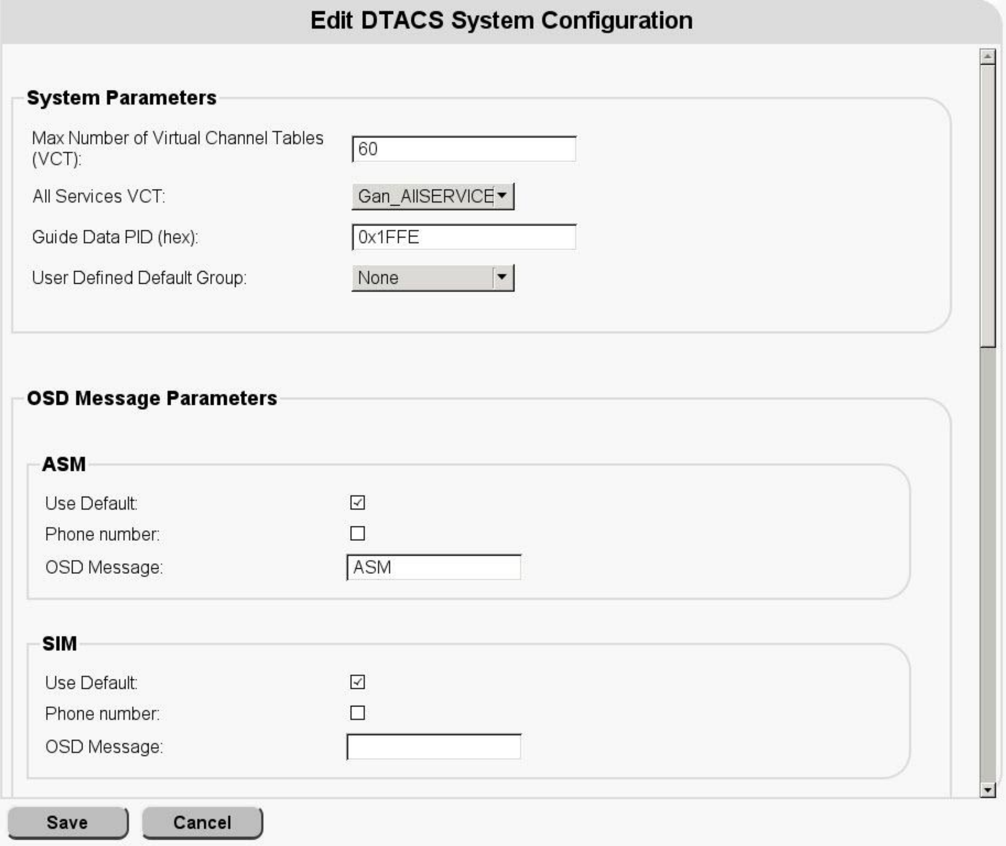
Use Default:	Enabled
Phone Number:	Disabled
OSD Message:	

Edit a System Configuration

Follow these steps to edit a DTACS system configuration.

1 Click **Edit** in the DTACS System Configuration window.

Result: The Edit DTACS System Configuration window opens.



Edit DTACS System Configuration

System Parameters

Max Number of Virtual Channel Tables (VCT): 60

All Services VCT: Gan_AllSERVICE

Guide Data PID (hex): 0x1FFE

User Defined Default Group: None

OSD Message Parameters

ASM

Use Default: ☑

Phone number: □

OSD Message: ASM

SIM

Use Default: ☑

Phone number: □

OSD Message:

2 Click in the field that you want to edit. Use the scroll bar to access fields that are not visible.

Note: The **All Services VCT** list includes all the VCTs configured in the VCT mapping. To add a VCT, refer to ***Add a New VCT*** (on page 64).

Refer to the following table for information on how to configure the various fields.

Field	Description
System Parameters	
Max Number of Virtual Channel Tables (VCT)	Maximum number of VCTs used within a DTACS. **Note:** Must be a whole number between 1 and 120.
All Services VCT	Used when a DTA device has been enabled but has not yet been assigned a valid VCT ID.
Guide Data PID (hex)	The PID that the DTACS uses to send guide data to DTAs.

Field	Description
OSD Message Parameters	
Use the following information to configure OSD messages: ■ To use the default message, select the **Use Default** option and leave the other fields unselected or blank. ■ To use a custom phone number, deselect the **Use Default** option. Then, select the **Phone number** field and add a phone number to the **OSD Message** field. ■ To use a custom message, deselect the **Use Default** and **Phone number** fields. Then, add the message to the **OSD Message** field. The message contains a sequence of displayable 7-bit ASCII characters. Valid characters are in the range of 0x20 to 0x7D. **Note:** The **Use Default**, **Phone number**, and **OSD Message** fields are also applicable to the ASM, SIM, and NAM messages.	
AMM Parameters (Authorization Management Message	
AMM Time Window (days)	Used to calculate the expiration date of the AMM.
AMM PID (hex)	A hexadecimal value inserted into the header of each AMM. This value indicates that the message contains AMM data.
SCID Time Window (days)	This value specifies the amount of time in days for which the SCID cannot be reused after it has been deleted.
Site Announce Message Parameters	
Use Universal Location ID	If selected (a check mark appears in the box), all Site Announcement messages from this DTACS are overridden with the Location ID of 0 (zero). **Important:** This is a special case used for splitting or merging plants. Contact Cisco Services for more information.
Provider Phone Number	The service provider phone number.
Configuration Message Parameters	
Location ID (hex)	A unique identifier for a headend associated with a specific DTACS. This ID is inserted into Site Announcement broadcast messages and DTA Network Config unicast messages. **Valid values:** A hexadecimal number from 0x00000001 to 0xFFFFFFFF. Zero is an invalid entry.

Field	Description
Activation Timeout (hours)	The DTACS periodically sends this value to DTAs within AMM messages. This is known as refreshing the timeout value. ■ If a DTA receives timeout values within this specified time period (in hours), the DTA remains activated. ■ If a DTA does not receive timeout values within this time period, the DTA is deactivated. **Valid values:** Any whole number from 1 to 65535.
UTC Offset:	The difference between UTC (GMT) time and local time.
Use Daylight Saving Time (DST)	■ Enabled (checked) indicates that the system uses DST. ■ Disabled (unchecked) indicates that the system does not use DST.
Daylight Saving Time Parameters	
Daylight Saving Time Zone	The local DST time zone. **Note:** Currently only contains the US zone.
Daylight Saving Time Offset (minutes)	The local DST offset. **Valid values:** Any whole number from –1430 to 1439.
Daylight Saving Time Start	The day and time defined as when DST begins.
Daylight Saving Time End	The day and time defined as when DST ends.

3 Click **Save** to save your changes.

Sync the Database

Whenever you make changes to the EC that also affect the DTACS, you need to synchronize the two databases so that the changes are reflected at the DTACS. Use these instructions to synchronize the databases:

1 In the DTACS WUI, click **Sys Config**.

2 Click the **DB Sync** tab.

3 Click **DB Sync** to initiate the DTACS database synchronization process.

Note: The table refreshes automatically every 3 seconds.

4 Check the **Status** field in the **DB Sync Status History** table in the database. If the status shows **In Progress**, wait a few seconds for the status to update.

Configure Daylight Saving Time

Follow these steps to configure Daylight Saving Time (DST) on the DTACS:

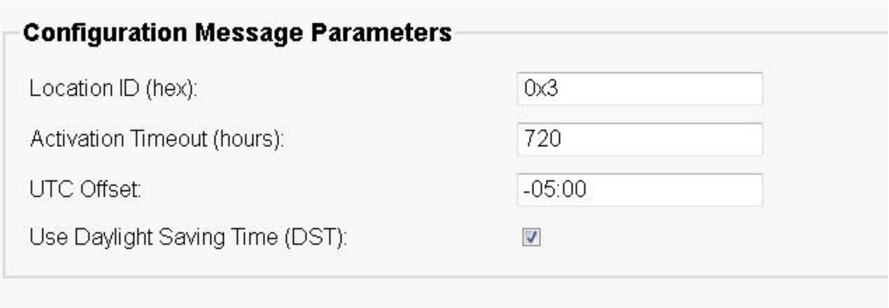
1 Click **Sys Config** on the main DTACS WUI.

Result: The DTA Control System Configuration window opens.

2 Click **Edit** to access the Edit DTACS System Configuration window.

3 Be sure that the **Use Daylight Saving Time (DST)** check box is checked in the **Configuration Message Parameters** area.

Example:

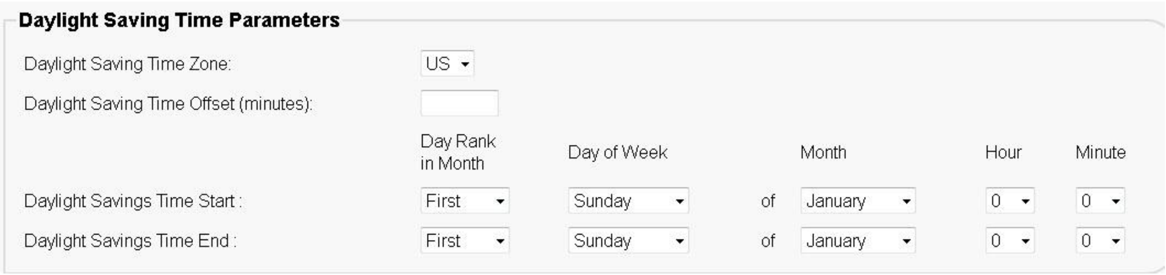


Configuration Message Parameters

Location ID (hex):	0x3
Activation Timeout (hours):	720
UTC Offset:	-05:00
Use Daylight Saving Time (DST):	☑

4 Locate the **Daylight Saving Time Parameters** area in the Edit DTACS System Configuration window.

Example:



Daylight Saving Time Parameters

Daylight Saving Time Zone: US

Daylight Saving Time Offset (minutes):

	Day Rank in Month	Day of Week		Month	Hour	Minute
Daylight Savings Time Start :	First	Sunday	of	January	0	0
Daylight Savings Time End :	First	Sunday	of	January	0	0

5 Enter the settings for the DST rules that apply to your location. The following table lists descriptions for the DST settings.

Field	Description
Daylight Saving Time Zone	The name of the daylight saving time zone currently in use.
Daylight Saving Time Offset (minutes)	The time shift (in minutes) relative to standard time. **Example:** If daylight saving time is one hour ahead, you would enter **60** in this field. When a 0 (zero) is entered in this field, it indicates that the associated DST rule is to be ignored and not applied to the associated DST Zone ID. This range is a whole number from -1430 to 1439.
Daylight Saving Time Start	
Day Rank in Month	The day of the month that the DST rule becomes effective. **Example:** The first, second, third, fourth, or last Sunday of the month.
Day of Week	The day of the week that the DST rule becomes effective.
Month	The month the DST rule becomes effective.
Hour	The hour the DST rule becomes effective, expressed in 24-hour time so that there is no need for a.m., p.m., or any other units of measure. Select any integer from 0 to 23.
Minute	The number of minutes after the Start Hour that the DST rule becomes effective. This value is expressed in 24-hour time so that there is no need for a.m., p.m., or any other units of measure. Select any integer from 0 to 59.
Daylight Savings Time End	
Day Rank in Month	The day of the month that the DST rule ends. **Example:** The first, second, third, fourth, or last Sunday of the month.
Day of Week	The day of the week that the DST rule ends.
Month	The month the DST rule ends.
Hour	The hour the DST rule ends, expressed in 24-hour time so that there is no need for a.m., p.m., or any other units of measure. Select any integer from 0 to 23.
Minute	The number of minutes after the End Hour that the DST rule ends. This value is expressed in 24-hour time so that there is no need for a.m., p.m., or any other units of measure. Select any integer from 0 to 59.

6 Click **Save** to save your settings.

Manage Virtual Channel Tables

The DTA Control System's web-based user interface provides a way to manage Virtual Channel Tables (VCTs). The DTACS user interface allows you to manage the association of packages to VCTs. You can use this user interface to view, edit, add, and delete VCTs.

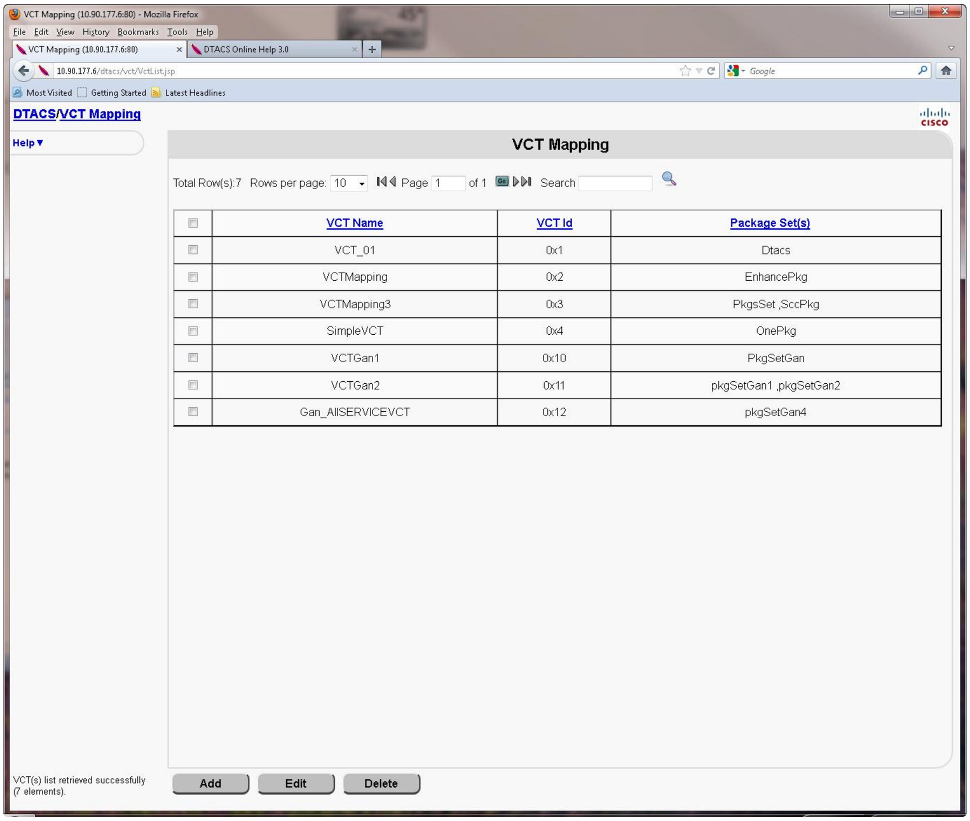
Add a New VCT

Follow these steps to add a new VCT.

Note: When you create a new VCT, any sources associated with packages that are included in the BSG channel map are automatically added to the associated VCT. However, if you edit the VCT later to assign new packages, then the sources contained in those packages are *not* automatically added to the VCT. You must add those sources separately.

1 From the Digital Transport Adaptor Control System main WUI, click **VCT Mapping** in the **Network Elements** section.

Result: The VCT Mapping window opens.


VCT Mapping (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
VCT Mapping (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/vct/VctList.jsp
Google
Most Visited
Getting Started
Latest Headlines
DTACS/VCT Mapping
Help ▾
cisco

VCT Mapping

Total Row(s):7 Rows per page: 10 Page 1 of 1 Search

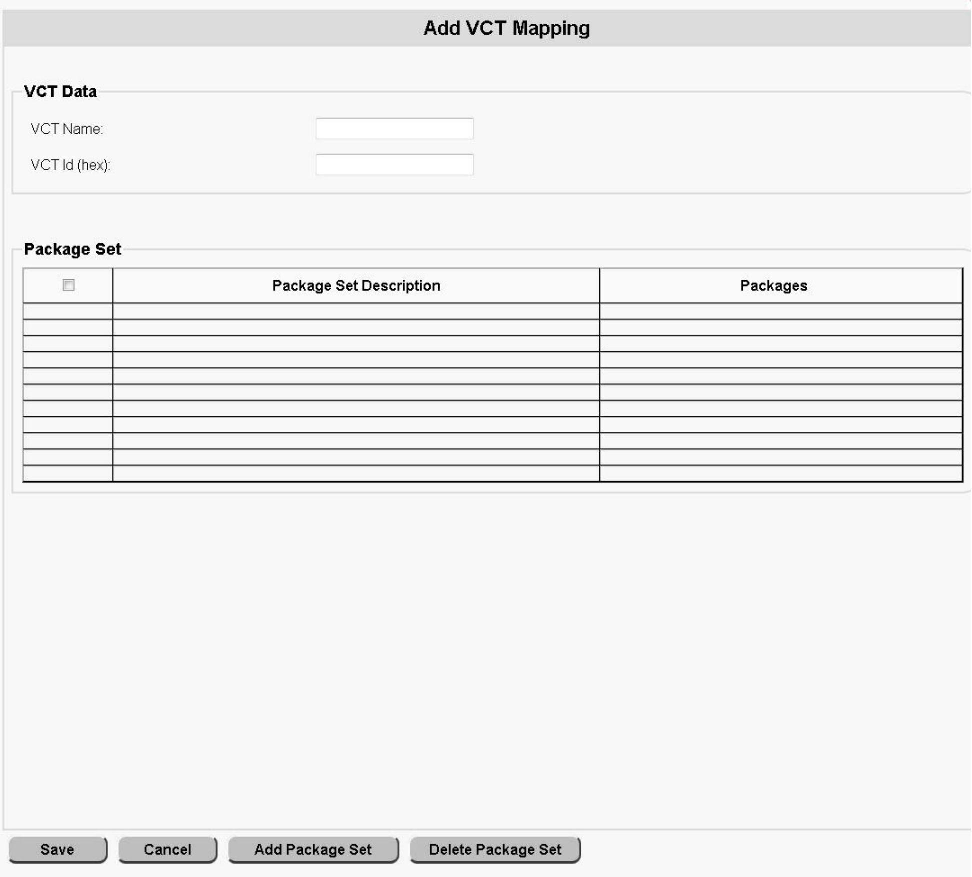
□	VCT Name	VCT Id	Package Set(s)
□	VCT_01	0x1	Dtacs
□	VCTMapping	0x2	EnhancePkg
□	VCTMapping3	0x3	PkgsSet ,SccPkg
□	SimpleVCT	0x4	OnePkg
□	VCTGan1	0x10	PkgSetGan
□	VCTGan2	0x11	pkgSetGan1 ,pkgSetGan2
□	Gan_AllSERVICEVCT	0x12	pkgSetGan4

VCT(s) list retrieved successfully (7 elements).

Note: The VCT Mapping window allows you to manage VCTs. The DTAs use the VCT ID to retrieve their associated SI data among other sets of data that might be available. You can use this window to view, add, edit, and delete VCTs.

2 Click **Add**.

Result: The Add VCT Mapping window opens.

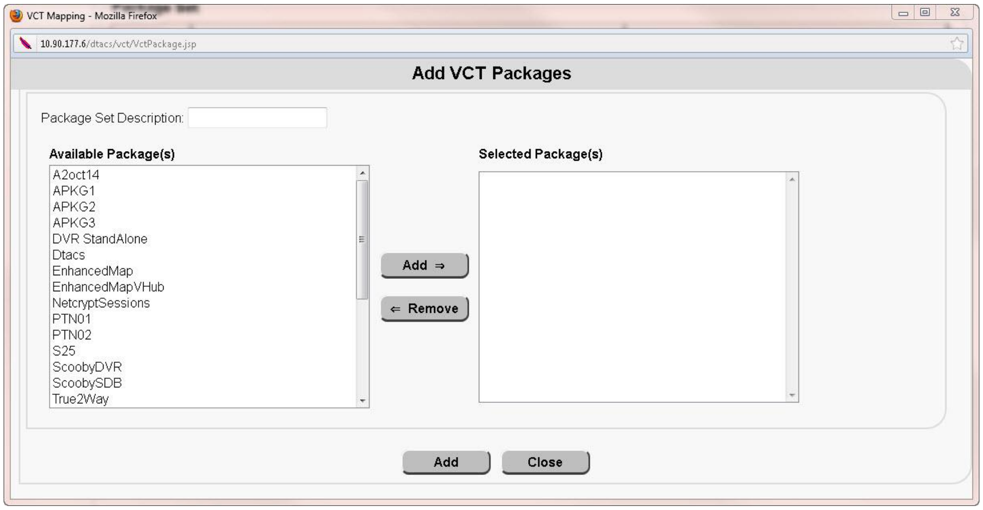


3 In the **VCT Name** field, type the name of the new VCT that you want to add.

4 In the **VCT Id (hex)** field, type the ID of the new VCT in hexadecimal format.

5 Click **Add Package Set**.

Result: The Add VCT Packages window opens.



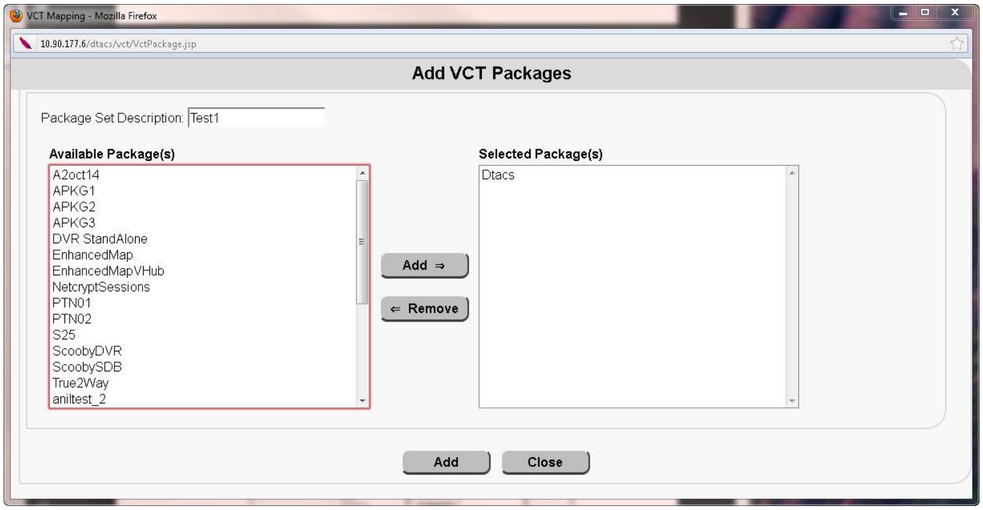
6 In the **Package Set Description** field, enter the name of the package set.

Note: Package sets are unique groups of packages available to specific VCTs. You can have as many as 10 package sets for each VCT in your system.

7 Select a package that you want to assign to the VCT from the **Available Package(s)** list, and then click **Add**.

Result: The package moves from the **Available Package(s)** column and into the **Selected Package(s)** column.

Example: Your window should look similar to the following example at this point.


VCT Mapping - Mozilla Firefox
10.90.177.6/dtacs/vct/VctPackage.jsp
Add ⇒
⇐ Remove
Add
Close

Add VCT Packages

Package Set Description: Test1

Available Package(s)

A2oct14
APKG1
APKG2
APKG3
DVR StandAlone
EnhancedMap
EnhancedMapVHub
NetcryptSessions
PTN01
PTN02
S25
ScoobyDVR
ScoobySDB
True2Way
aniltest_2

Selected Package(s)

Dtacs

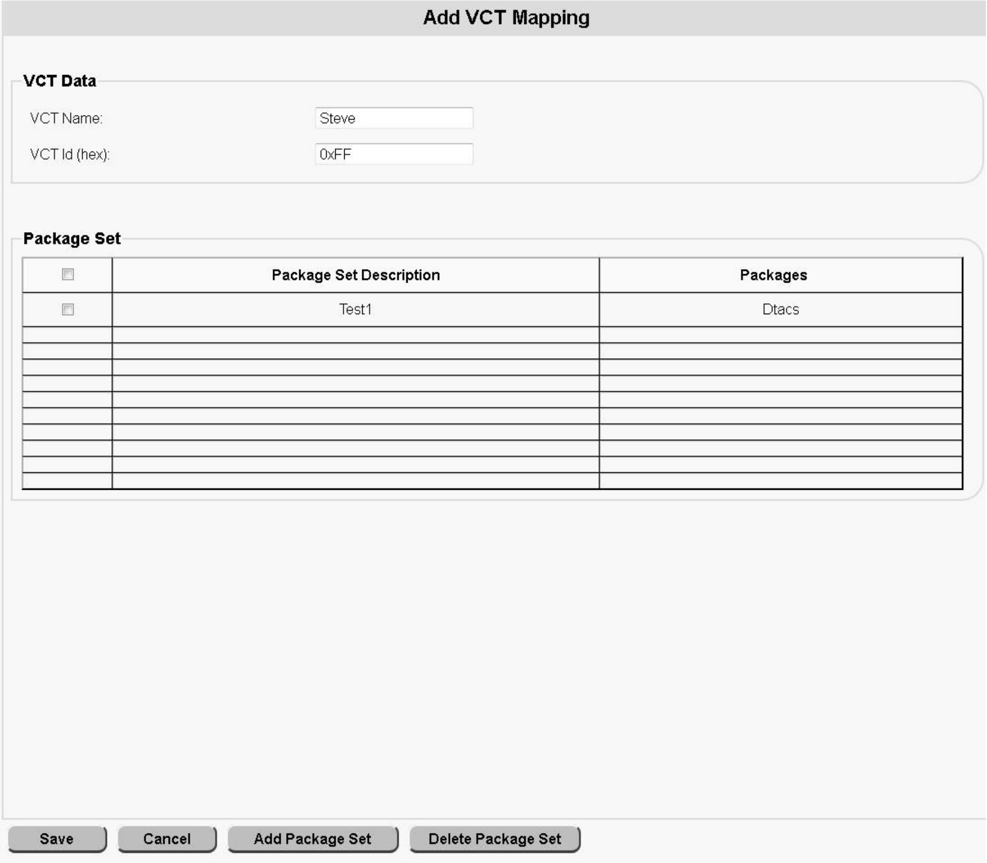
8 Repeat Step 7 as often as necessary to add packages to the new VCT.

9 Click **Add** (at the bottom of the window).

Result: The **Package set [Pkg_name] created successfully** message appears.

10 Click **OK** on the message.

Note: The Add VCT Mapping window will update with the new package data after you close the window.



Add VCT Mapping

VCT Data

VCT Name: Steve

VCT Id (hex): 0xFF

Package Set

☐	Package Set Description	Packages
☐	Test1	Dtacs

11 Click **Save** to save the changes to this VCT and then close the Add VCT Mapping window.

Edit a VCT

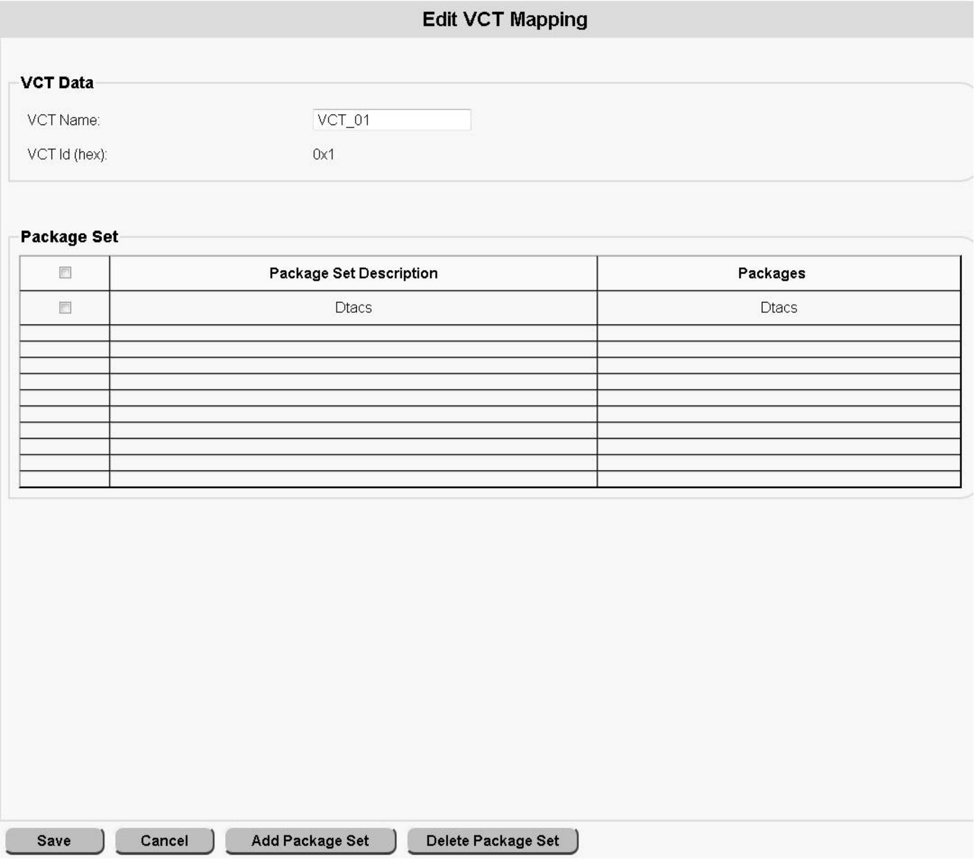
Follow these steps to view and edit VCTs.

1 From the Digital Transport Adaptor Control System main WUI, click **VCT Mapping** in the **Network Elements** section.

Result: The VCT Mapping window opens.

2 Check the check box next to the VCT that you want to edit and then click **Edit**.

Result: The Edit VCT Mapping window opens.



Edit VCT Mapping

VCT Data

VCT Name: VCT_01

VCT Id (hex): 0x1

Package Set

□	Package Set Description	Packages
□	Dtacs	Dtacs

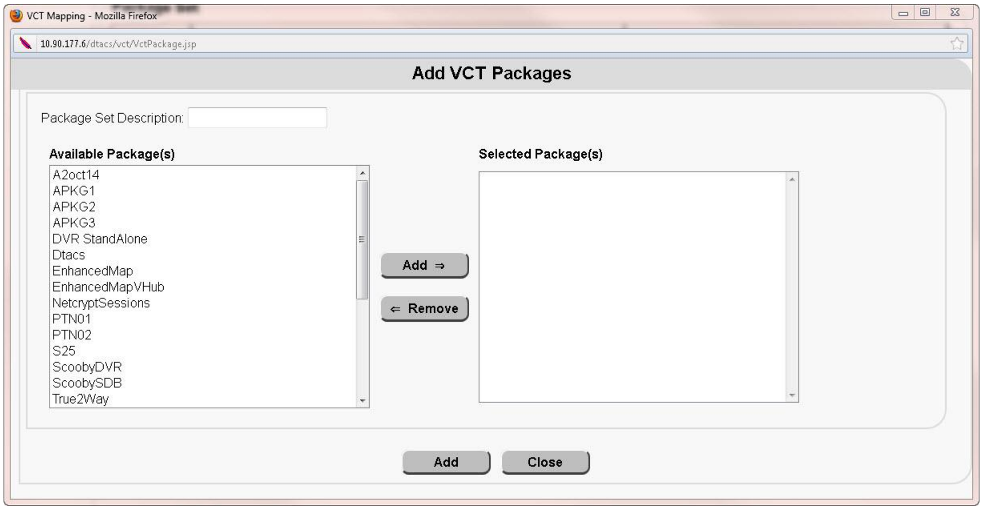
3 Choose one of the following options:

- To add a new package set to an existing VCT, go to ***Add a New Package Set to an Existing VCT*** (on page 69).
- To delete a package set from a VCT, go to ***Delete a Package Set from an Existing VCT*** (on page 69).

Add a New Package Set to an Existing VCT

1. To add a new package set to the VCT, click **Add Package Set**.

   Result: The Add VCT Packages window opens.



2. In the **Package Set Description** field, enter the name of the package set.
3. Select a package set that you want to assign to the VCT from the **Available Package(s)** list, and then click **Add**.

   Result: The package set moves from the **Available Package(s)** column and into the **Selected Package(s)** column.
4. Repeat Step 3 as often as necessary to add up to 10 packages to the VCT.
5. Click **Add** (at the bottom of the window).

   Result: The **Package set [Pkg_name] created successfully** message appears.
6. Click **OK** in the message.

   Result: The Add VCT Mapping window updates with the new package data.

Delete a Package Set from an Existing VCT

1. To delete a package set, click the check box next to the package that you want to delete, and then click **Delete**.

   Result: A confirmation message appears.
2. Click **OK** in the confirmation message.

   Result: The system deletes the package set from the VCT.

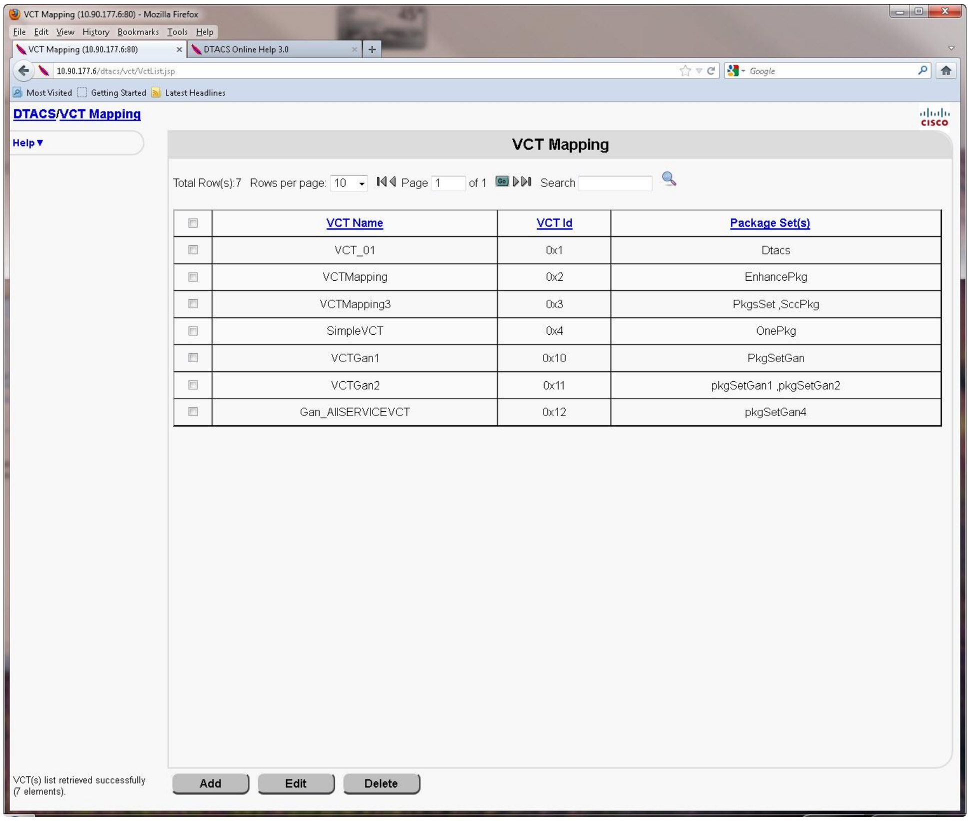
Delete a VCT

Follow these steps to delete a VCT.

Note: You cannot delete a VCT that is being used by any DTA.

1 From the Digital Transport Adaptor Control System main WUI, click **VCT Mapping** in the **Network Elements** section.

Result: The VCT Mapping window opens.


VCT Mapping (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
VCT Mapping (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/vct/VctList.jsp
Google
Most Visited
Getting Started
Latest Headlines
DTACS/VCT Mapping
Help ▾
Add
Edit
Delete

VCT Mapping

Total Row(s):7 Rows per page: 10 Page 1 of 1 Search

□	VCT Name	VCT Id	Package Set(s)
□	VCT_01	0x1	Dtacs
□	VCTMapping	0x2	EnhancePkg
□	VCTMapping3	0x3	PkgsSet ,SccPkg
□	SimpleVCT	0x4	OnePkg
□	VCTGan1	0x10	PkgSetGan
□	VCTGan2	0x11	pkgSetGan1 ,pkgSetGan2
□	Gan_AllSERVICEVCT	0x12	pkgSetGan4

VCT(s) list retrieved successfully (7 elements).

2 Click the check box next to the VCT that you want to delete on the VCT Mapping window.

Result: A check mark appears in the check box.

3 Click **Delete**.

Result: A confirmation message appears.

4 Click **OK**.

Result: A message appears indicating that the VCT was deleted successfully.

Provisioning a Broadcast Service Group

Important: If you want to provision a BSG and have the 1C-MCLU feature enabled, see instead Provision the Broadcast Service Group for the 1C-MCLU Feature.

A Broadcast Service Group (BSG) is a group of QAM channels that service a subset of the DTA device population. A single QAM channel can be associated with a single BSG. This section contains the procedures necessary to provision a BSG.

Note: BSG provisioning is also known as QAM localization.

BSG Overview

Some sites do not have a single homogeneous RF downstream plant frequency plan. Consequently, sites with multiple frequency plans require a separate, unique set of SI data flows for each unique RF plan.

These RF plans are called downstream plant regions (DPR). These DPRs are referred to as a logical construct within the DTACS called broadcast service groups (BSGs). To support a video network with multiple DPRs, several constraints must be addressed.

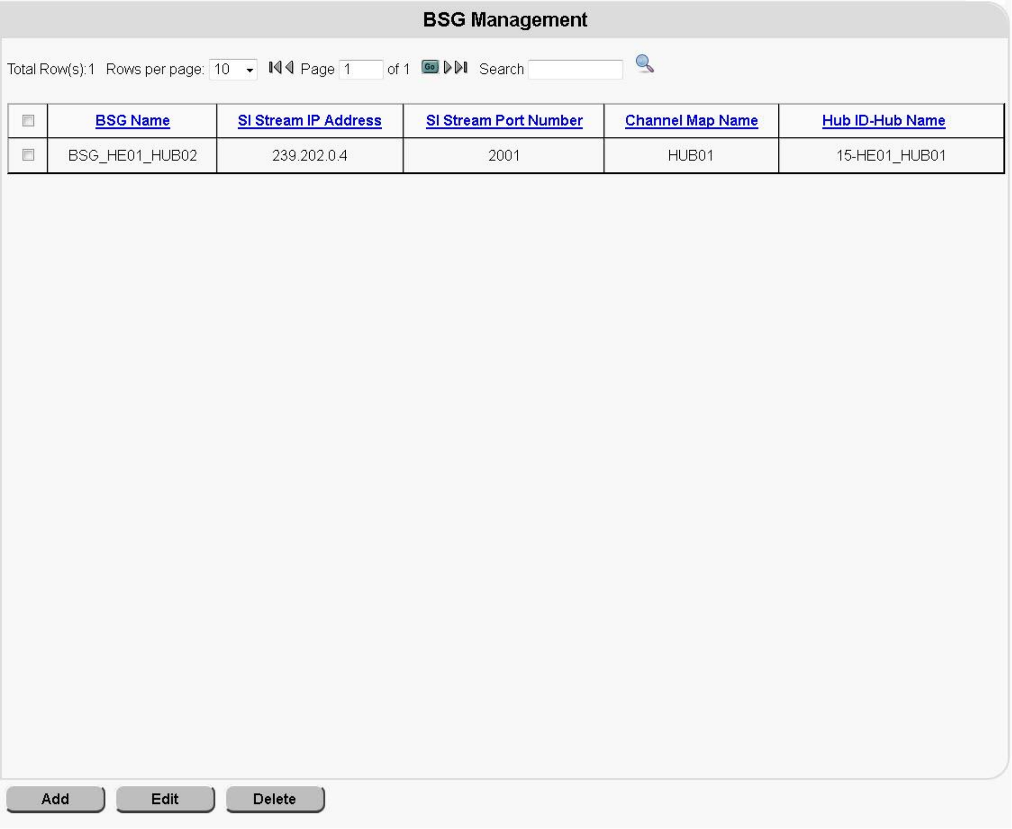
- **Billing System:** The billing system associates a rate code with a specific service package. The service package is passed to the DTACS, which uses the package to define a set of services (channel lineups) for DTA client devices. However, service packages and their associated channel lineup information as defined on the billing system are not aware of any anomalies that may exist in the plant that affect delivery of those services. Therefore, locating the DTA client devices within the video network for the purpose of supplying it with a valid set of services is necessary.
- **VCT ID:** A video network with several different frequency plans (DPRs) needs to reuse the same VCT ID (authorization code) for each of these DPRs. However, the channel maps associated with a redundant VCT ID (which is used by more than one DPR) may have differing content.
- **QAMs:** For DTA client devices to located services on QAMs, all QAM carriers within a DPR must be associated with a single BSG. This means that no QAM RF channels are shared between two different BSGs. ("BSG straddle" is when a QAM carrier illuminates two BSGs. This is strictly forbidden.) All QAMs involved in delivering content to DTA client devices are assumed to be localized at the edge of the network.

Add a BSG

Follow these instructions to add a BSG to the DTACS:

1 From the Digital Transport Adaptor Control System main WUI, in the **Network Elements** section, click **BSG Management**.

Result: The BSG Management window opens.



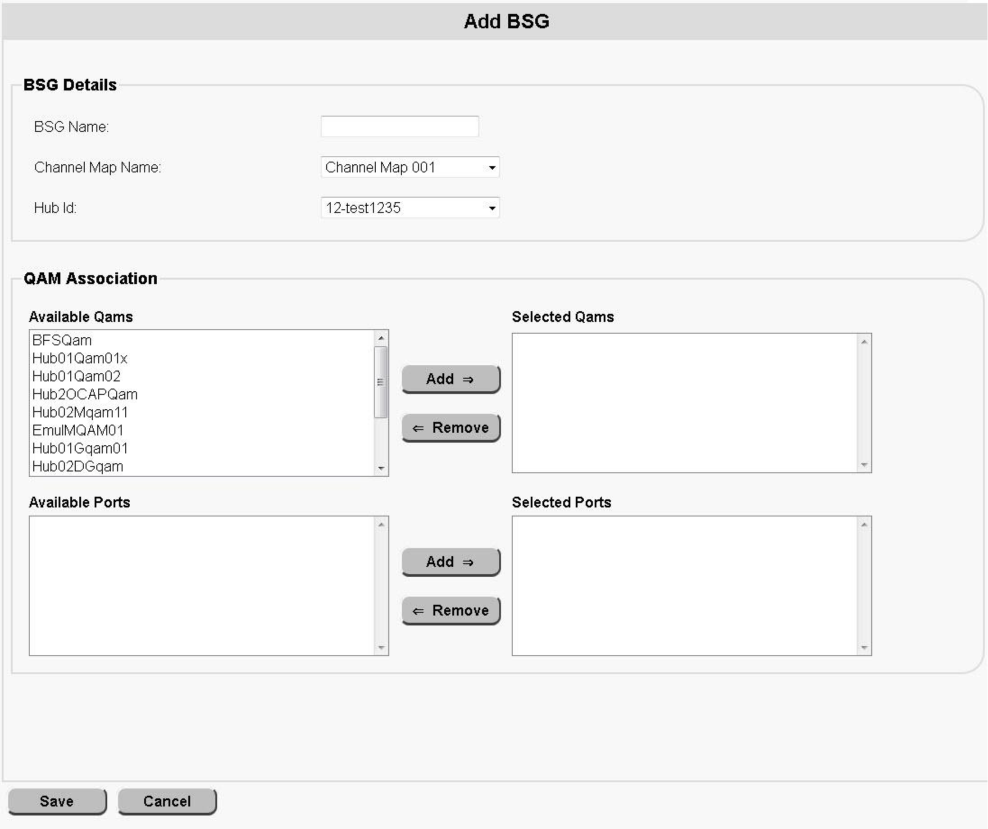
BSG Management

Total Row(s):1 Rows per page: 10 Page 1 of 1 Search

□	BSG Name	SI Stream IP Address	SI Stream Port Number	Channel Map Name	Hub ID-Hub Name
□	BSG_HE01_HUB02	239.202.0.4	2001	HUB01	15-HE01_HUB01

2 Click **Add**.

Result: The Add BSG window opens.



Add BSG

BSG Details

BSG Name:

Channel Map Name: Channel Map 001

Hub Id: 12-test1235

QAM Association

Available Qams: BFSQam, Hub01Qam01x, Hub01Qam02, Hub2OCAPQam, Hub02Mqam11, EmulMQAM01, Hub01Gqam01, Hub02DGqam

Selected Qams

Available Ports

Selected Ports

3 Follow these instructions to configure the fields on the Add BSG window:

a In the **BSG Name** field, type the name of the new BSG.

b In the **Channel Map Name** field, choose the name of the channel map associated with this BSG.

c In the **Hub ID** field, choose the name of the hub associated with this BSG.

Note: A Hub ID of 0 (zero) represents the hub of the default channel map.

d Choose a QAM in the **Available Qams** list and click **Add** to add that QAM to the **Selected Qams** list.

e Choose an RF port in the **Available Ports** list and click **Add** to add that port to the **Selected Ports** list.

Note: Available ports will be listed in the WUI once you select the QAMs in the Selected Qams list.

4 Click **Save**. The **BSG details saved successfully** message appears.

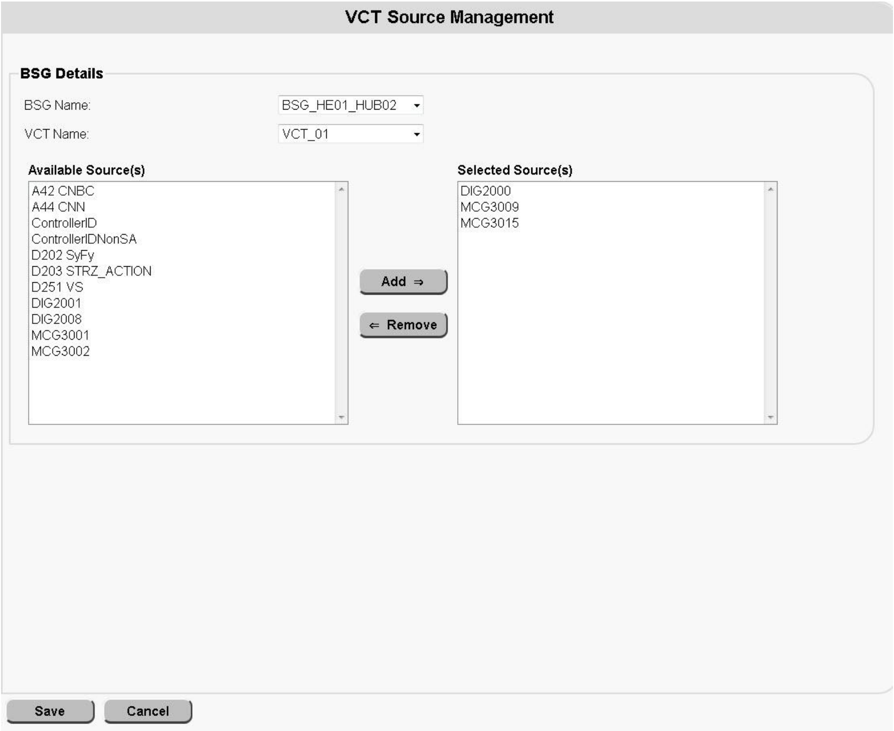
Associate Sources With a BSG

After adding your BSG(s), follow these instructions to associate sources with the BSG:

Note: The first time you open this WUI, package sources associated with the VCT will move to Selected Source(s) automatically.

1 On the Digital Transport Adaptor Control System main WUI, click **VCT Source Management** (in the **Network Elements** section).

Result: The VCT Source Management window opens.



VCT Source Management

BSG Details

BSG Name: BSG_HE01_HUB02

VCT Name: VCT_01

Available Source(s)

A42 CNBC
A44 CNN
ControllerID
ControllerIDNonSA
D202 SyFy
D203 STRZ_ACTION
D251 VS
DIG2001
DIG2008
MCG3001
MCG3002

Selected Source(s)

DIG2000
MCG3009
MCG3015

2 In the **BSG Name** field, select the BSG that you want to associate with a VCT.

3 In the **VCT Name** field, select the VCT to which you are adding a source.

4 Select a source in the **Available Sources** list and click **Add** to add that source to the **Selected Sources** list.

5 Click **Save**.

Note: The first time you open the BSG/VCT mapping WUI, the sources part of the packages associated with the VCT are moved to **Selected Sources** automatically.

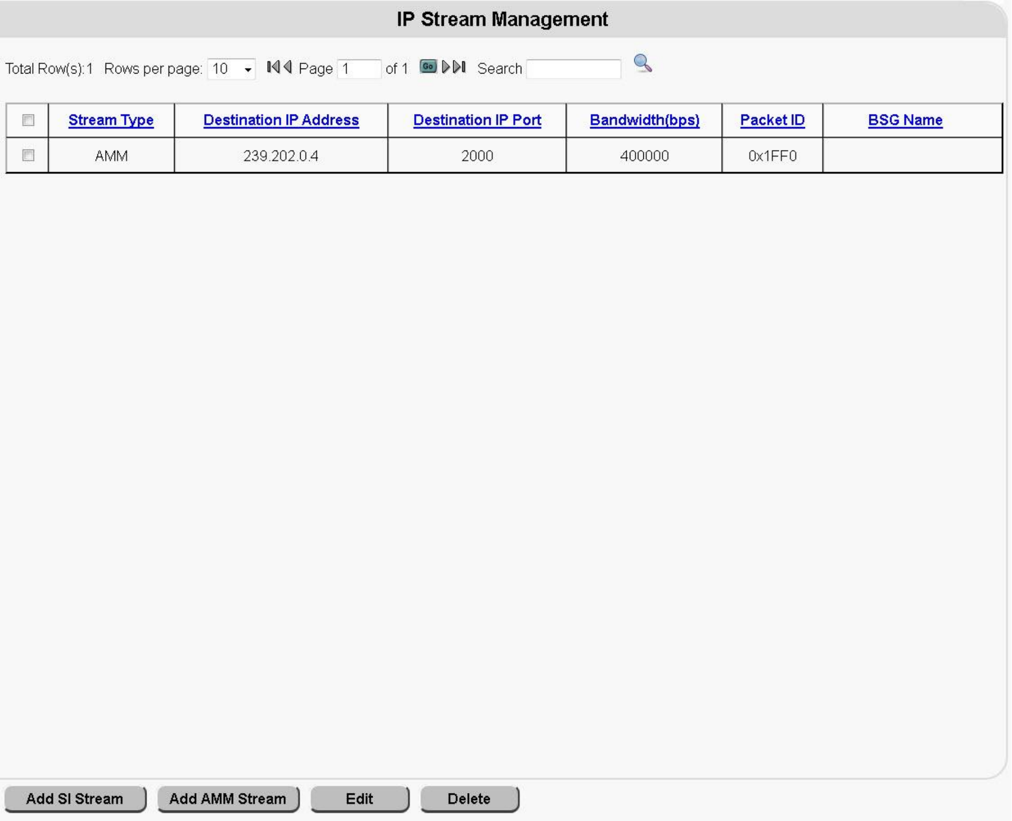
Setting Up IP Streams

Add IP Streams

Follow these steps to add IP Streams:

1 From the Digital Transport Adaptor Control System main WUI, click **IP Stream Management** (in the **Network Elements** section).

Result: The IP Stream Management window opens.



IP Stream Management

Total Row(s):1 Rows per page: 10 Page 1 of 1 Search

□	Stream Type	Destination IP Address	Destination IP Port	Bandwidth(bps)	Packet ID	BSG Name
□	AMM	239.202.0.4	2000	400000	0x1FF0	

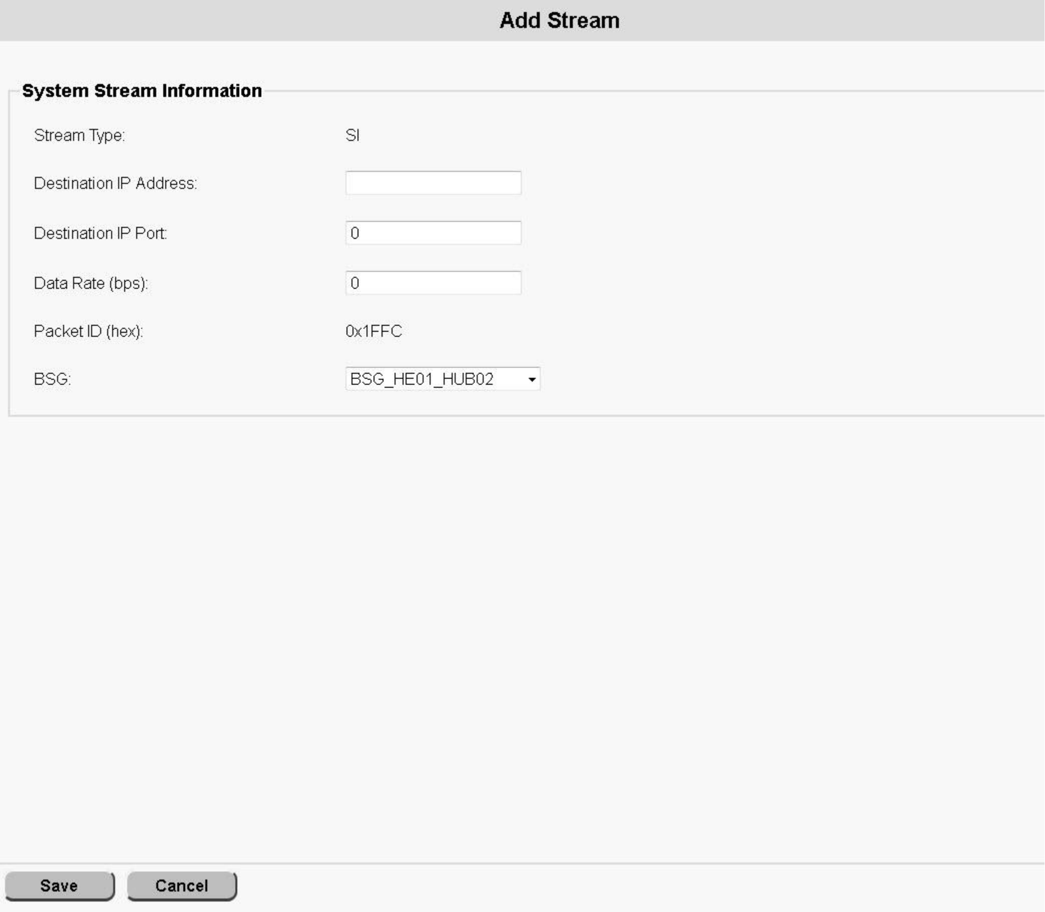
2 Click either **Add SI Stream** or **Add AMM Stream**, depending upon which type of stream that you want to add.

Notes:

- **SI Stream** refers to a System Information Message stream.
- **AMM Stream** refers to a Authorization Management Message stream.
- All of the AMM data messages are sent to every DTA. Therefore, you can only add one AMM stream.

Example: For this example, we will add an SI stream.

Result: The Add Stream window opens.



Add Stream

System Stream Information

Stream Type:	SI
Destination IP Address:	
Destination IP Port:	0
Data Rate (bps):	0
Packet ID (hex):	0x1FFC
BSG:	BSG_HE01_HUB02

3 Follow these instructions to configure your IP stream.

a Notice that the **Stream Type** field is filled in and cannot be edited. This is based upon the stream type that you selected to add.

b In the **Destination IP Address** field, type the unique IP address associated with this stream.

c In the **Destination IP Port** field, type the UDP port associated with this stream.

d In the **Data Rate (bps)** field, enter the data rate, in bits per second, that is to be transmitted when using this stream.

e Notice that the **Packet ID** field contains a predefined packet identifier (PID) that cannot be edited.

Note: The following values should be displayed:

- For SI — The PID is configured on the system as **`0x1FFC`**. This cannot be edited.
- For AMM — The PID is configured on the System Configuration (Sys Conf) WUI and cannot be edited on this window.

f From the **BSG Name** list (applicable to SI streams, only), choose the BSG name associated with this SI stream.

4 Click **Save**.

Results:

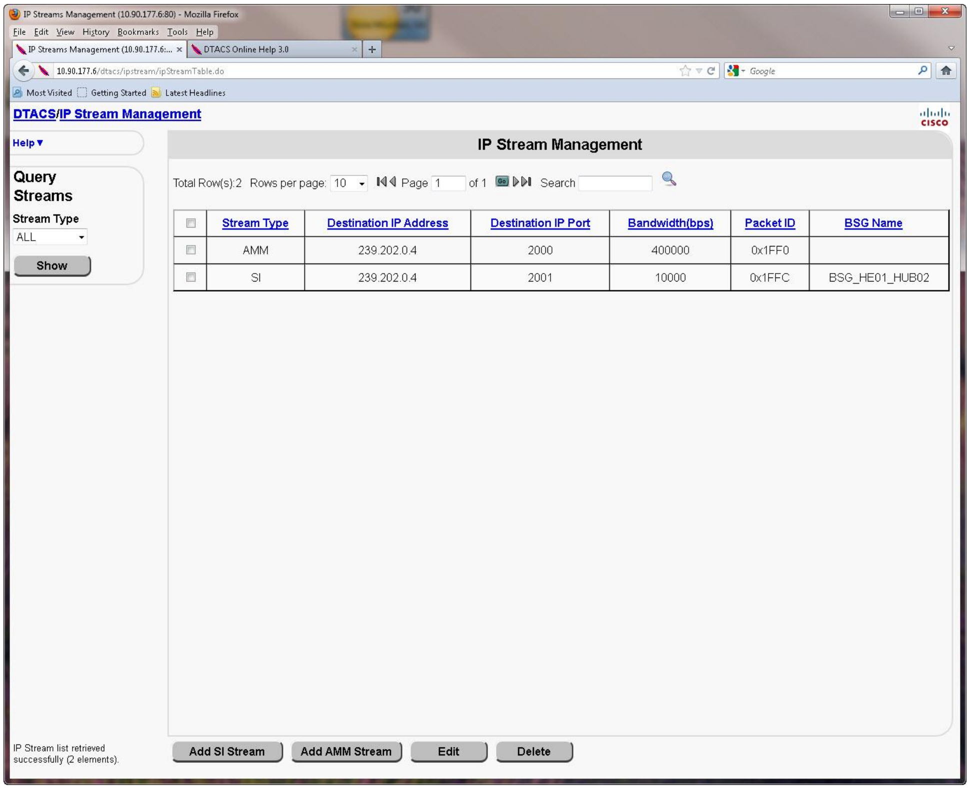
- The **IP Stream created successfully** message appears.
- The IP Stream Management window reappears.

Query IP Streams

Follow these steps to select and query IP streams:

1 From the Digital Transport Adaptor Control System main WUI, click **IP Stream Management** (in the **Network Elements** section).

Result: The IP Stream Management window opens.


IP Streams Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
IP Streams Management (10.90.177.6:...
DTACS Online Help 3.0
10.90.177.6/dtacs/ipstream/ipStreamTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/IP Stream Management
Help ▾
Query Streams
Stream Type
ALL
Show
IP Stream Management
Total Row(s):2 Rows per page: 10 Page 1 of 1 Search
Add SI Stream
Add AMM Stream
Edit
Delete

□	Stream Type	Destination IP Address	Destination IP Port	Bandwidth(bps)	Packet ID	BSG Name
□	AMM	239.202.0.4	2000	400000	0x1FF0	
□	SI	239.202.0.4	2001	10000	0x1FFC	BSG_HE01_HUB02

IP Stream list retrieved successfully (2 elements).

2 From the Query Streams Stream Type list, choose the types of IP streams that you want to view. You can view all streams together, or you can choose to view only SI streams or only AMM streams.

3 Click **Show** to view the IP Streams List.

Notes:

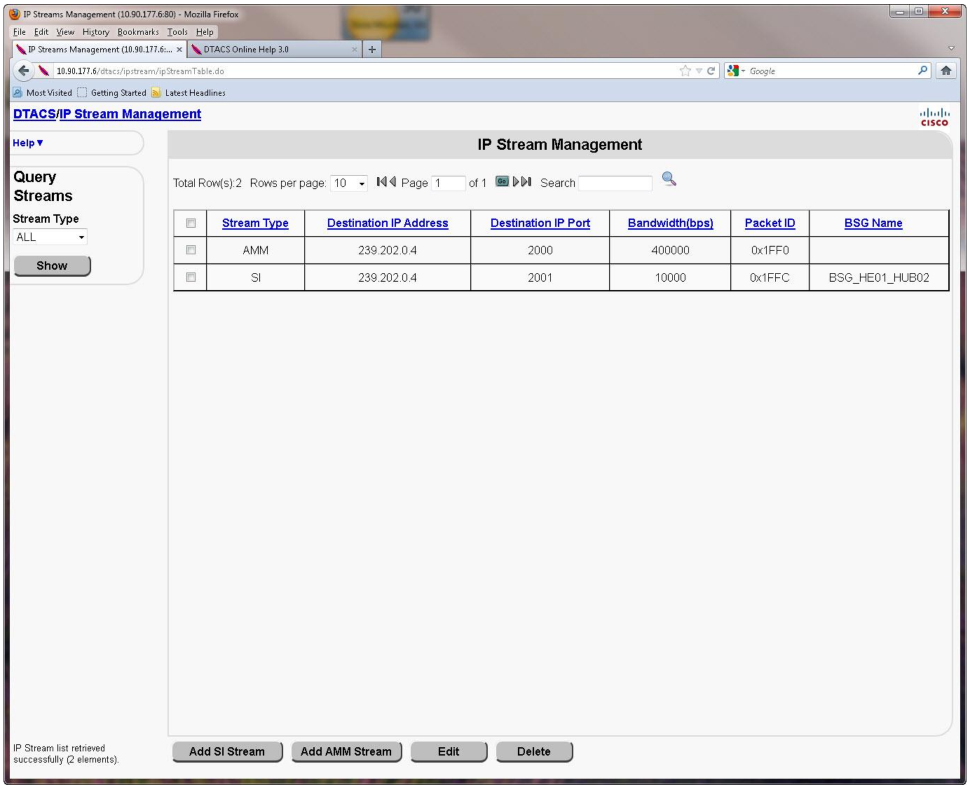
- The example in Step 2 shows all streams (SI and AMM).
- You cannot change the data on this page. If you want to change IP stream data, you must click **Edit.**

Edit an IP Stream

Follow these steps to edit a stream information:

1 From the Digital Transport Adaptor Control System main WUI, click **IP Stream Management** (in the **Network Elements** section).

Result: The IP Stream Management window opens.



IP Streams Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
IP Streams Management (10.90.177.6:...
DTACS Online Help 3.0
10.90.177.6/dtacs/ipstream/ipStreamTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/IP Stream Management
Help ▾
Query Streams
Stream Type
Show
Add SI Stream
Add AMM Stream
Edit
Delete

IP Stream Management

Stream Type: ALL

Total Row(s):2 Rows per page: 10 Page 1 of 1 Search

□	Stream Type	Destination IP Address	Destination IP Port	Bandwidth(bps)	Packet ID	BSG Name
□	AMM	239.202.0.4	2000	400000	0x1FF0	
□	SI	239.202.0.4	2001	10000	0x1FFC	BSG_HE01_HUB02

IP Stream list retrieved successfully (2 elements).

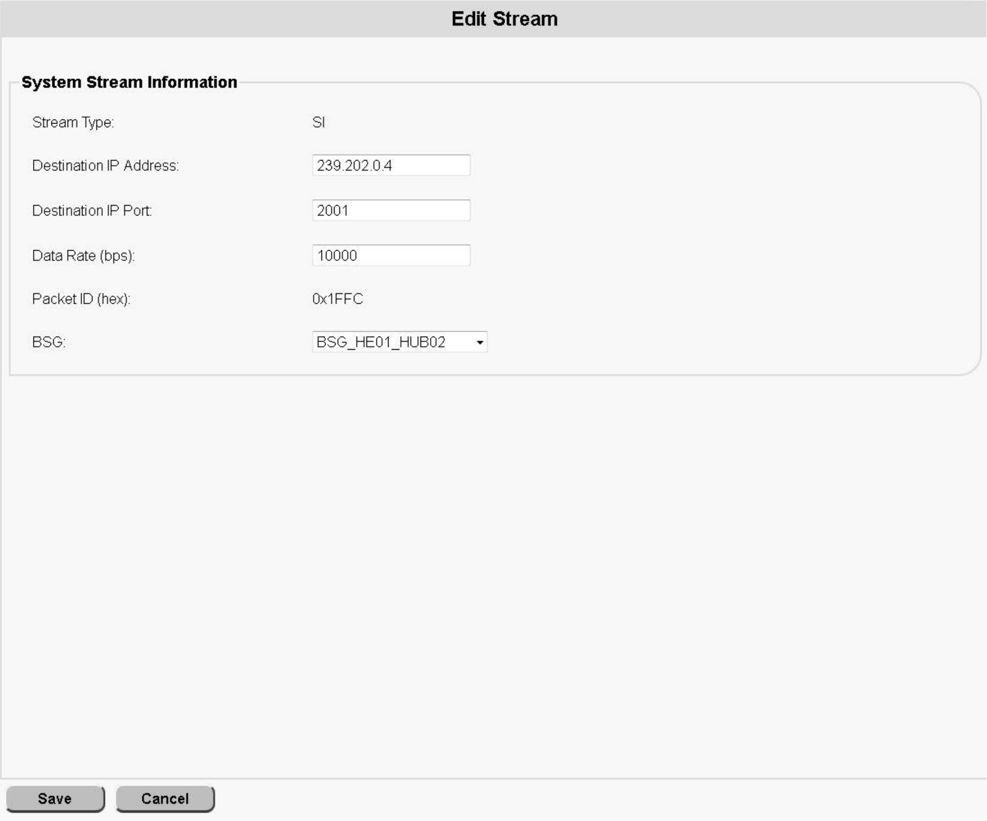
2 From the **Query Streams Stream Type** list, choose the types of IP streams that you want to view. You can view all streams together, or you can choose to view only SI streams or only AMM streams.

3 Click **Show** to view the IP Streams List.

4 Click the check box next to the stream that you want to edit.

5 Click **Edit**.

Result: The Edit Stream window opens.



Edit Stream

System Stream Information

Stream Type: SI

Destination IP Address: 239.202.0.4

Destination IP Port: 2001

Data Rate (bps): 10000

Packet ID (hex): 0x1FFC

BSG: BSG_HE01_HUB02

6 Enter whatever new data is required and then click **Save**.

Results:

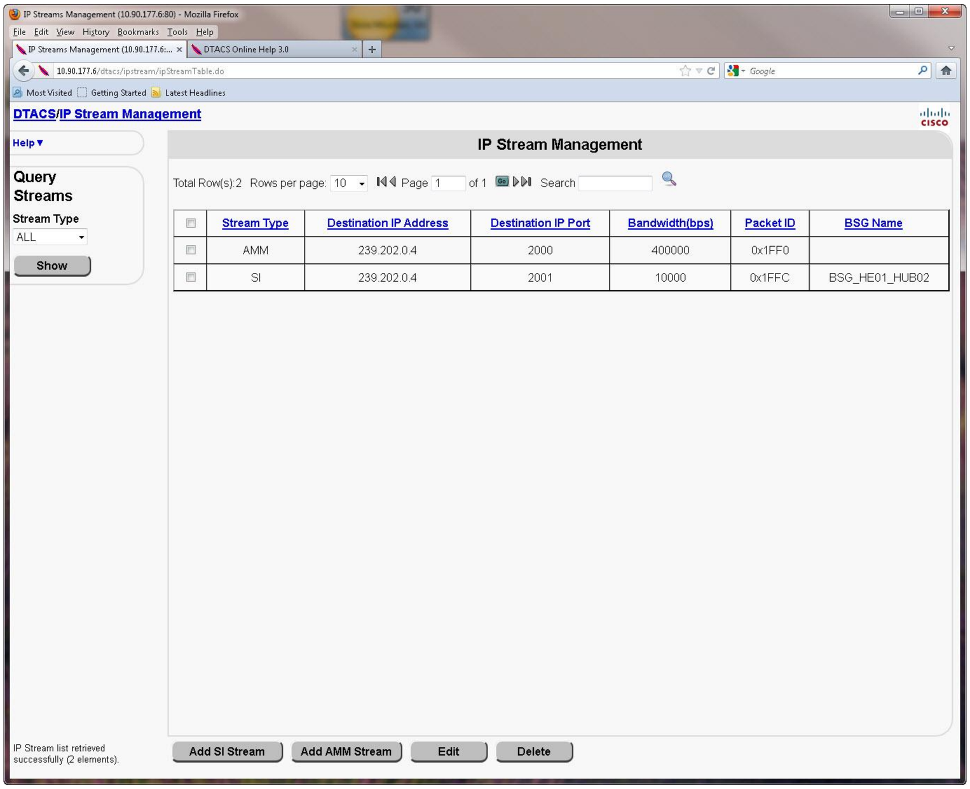
- The **IP Stream updated successfully** message appears.
- The IP Stream Management window reappears.

Delete an IP Stream

Follow these instructions to delete an IP stream:

1 From the Digital Transport Adaptor Control System main WUI, click **IP Stream Management** (in the **Network Elements** section).

Result: The IP Stream Management window opens.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IP Streams Management (10.90.177.6:...
DTACS Online Help 3.0
10.90.177.6/dtacs/ipstream/ipStreamTable.do
Google
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DTACS/IP Stream Management
Help ▾
Query Streams
Stream Type
ALL
Show
Add SI Stream
Add AMM Stream
Edit
Delete

IP Stream Management

Total Row(s):2 Rows per page: 10 Page 1 of 1 Search

□	Stream Type	Destination IP Address	Destination IP Port	Bandwidth(bps)	Packet ID	BSG Name
□	AMM	239.202.0.4	2000	400000	0x1FF0	
□	SI	239.202.0.4	2001	10000	0x1FFC	BSG_HE01_HUB02

IP Stream list retrieved successfully (2 elements).

2 From the **Query Streams Stream Type** list, choose the types of IP streams that you want to view. You can view all streams together, or you can choose to view only SI streams or only AMM streams.

3 Click **Show** to view the IP Streams List.

4 Click the check box next to the **Stream Type** that you want to delete.

5 Click **Delete**.

Result: A confirmation message appears.

6 Click **OK** to delete the stream. A **success** message appears.

Edit User-Defined PID Routes

There may be situations where you need to provision data sources for PID Routes (passthru PIDs) for PSIP, EAS, and other data, rather than using TSRs to pass the data through the entire transport stream.

Using passthru PID routes allows the data to flow through the QAM on carriers that contain DTA-related content. When you provision passthru PID routes for BSG-associated QAM carriers with active content, the DTACS sets up additional PID routes (AMM, SI/CVT with user-defined PID route sources) on those QAM carriers.

In order to set up a passthru PID route, you must first create the PID route source and then add a PID to that route.

Manage User-Defined Source Types

The Manage User Defined Source Types page allows you to add, edit, and delete source types for PID routes.

Add a User-Defined Source Type

Follow these instructions to add a passthru PID definition to a user-defined source in the DTACS:

1. In the **Network Elements** section of the DTACS WUI, click **PID Route Management**. The PID Route Management window opens.
2. Click **User Defined PID Route**.
3. Click **Manage User Defined Source Types**. The Manage User Defined Source Types window opens.
4. Click **Add**. The Manage User Defined Source Types window opens.
5. Type the **Source Name** in the space provided.
6. Type an **Output PID**.

   Note: You can add multiple output PIDs to the user-defined source.
7. Click **Save**. The DTACS creates the PID definition for the source you selected.

Edit a User-Defined Source Type

Follow these instructions to edit a passthru PID definition for a user-defined source in the DTACS:

1. In the **Network Elements** section of the DTACS WUI, click **PID Route Management**. The PID Route Management window opens.
2. Click **User Defined PID Route**.
3. Click **Manage User Defined Source Types**. The Manage User Defined Source Types window opens.
4. Click to select the source that you want to edit.
5. Click **Edit**. The Edit User Defined Source Types window opens.

6 Edit the **Source Type** and the **Output PID** as needed.

Note: Each user-defined source can have multiple output PIDs.

7 If you need to add another output PID, click **Add** and enter the PID in the space provided.

8 Click **Save**.

Delete a User-Defined Source Type

Follow these instructions to delete a passthru PID from a user-defined source:

1 In the **Network Elements** section of the DTACS WUI, click **PID Route Management**. The PID Route Management window opens.

2 Click **User Defined PID Route**.

3 Click **Manage User Defined Source PIDs**. The Manage User Defined Source PIDs window opens.

4 Click to select the PID definition that you want to delete.

5 Click **Delete**. A confirmation message appears.

6 Click **OK**. The PID definition is removed from the user-defined source and from the DTACS.

EAS Source Configuration

For the EAS aggregation to be enabled at the GQAM, the QAM PSIP/EAS Aggregation feature must be enabled on the EC.

1 On the Administrative Console, click the E**C** tab.

2 Click the **Network Element Provisioning** tab.

3 Click **EAS Source**. The EAS Data Sources List window opens

4 Click **Add** to open the Add EAS Data Source window.

5 Enter the following values.

- **Source Name** — A unique name that describes this data source
- **Data Rate (bps)** — The data rate for the source, in bps. Valid values are from 0 - 1,000,000 bps.
- **Destination IP Address** — The multicast IP address the QAM must join to receive the EAS messages
- **Destination UDP Port** — A user-selected, available, and non-reserved port number (for example, 2002)

- **Unicast Source IP Addresses**
  - **1st Source IP Address** — Required. The unicast IP address of the primary source of the multicast. This is only available if the **Destination IP Address** is a multicast IP address.
  - **2nd Source IP Address** - Optional. The unicast IP address of the secondary source of the multicast. This is only available if the **Destination IP Address** is a multicast IP address and when there is an IP address in the **1st Source IP Address** field.
  - **3rd Source IP Address** - Optional. The unicast IP address of the tertiary source of the multicast. This is only available if the **Destination IP Address** is a multicast IP address and when there is an IP address in the **2nd Source IP Address** field.

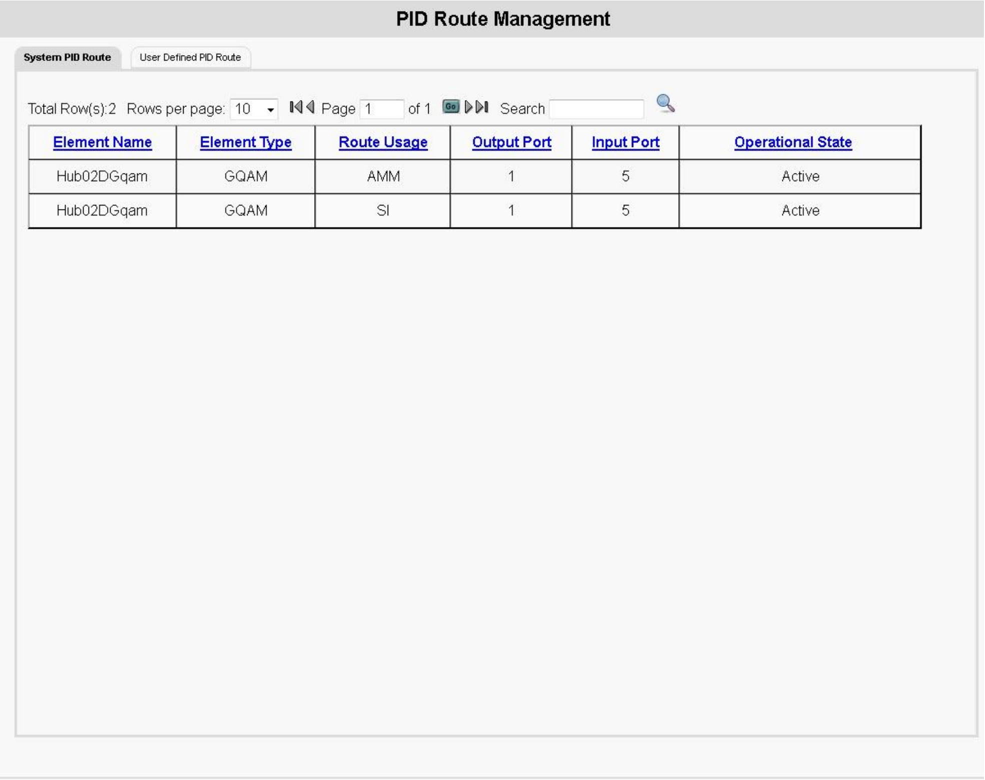
6. Click **Save**. The source is listed in the EAS Data Source List window.
7. Click **QAM** from the **Network Element Provisioning** tab.
8. On the **Filter** tab, select **By Field: QAM Type** and **By Value: GQAM**. This lists the GQAMs available in the system on the QAM List window.
9. Select the row containing the GQAM entry and click **Edit**. The Edit QAM window opens.
10. Click the **PSIP/EAS** tab.
11. Click (to enable) the check box for the **EAS Source** and select the EAS Source created in the EAS Sources window for the **Data Source** field.
12. Repeat Step 11 for the required GQAM ports on which the EAS source data should be configured.
13. Click **Save**. The QAM List window opens.

Create a User-Defined PID Route Source

Follow these instructions to add a user-defined PID route source in the DTACS.

1 From the Digital Transport Adaptor Control System main WUI, click **PID Route Management** (in the **Network Elements** section).

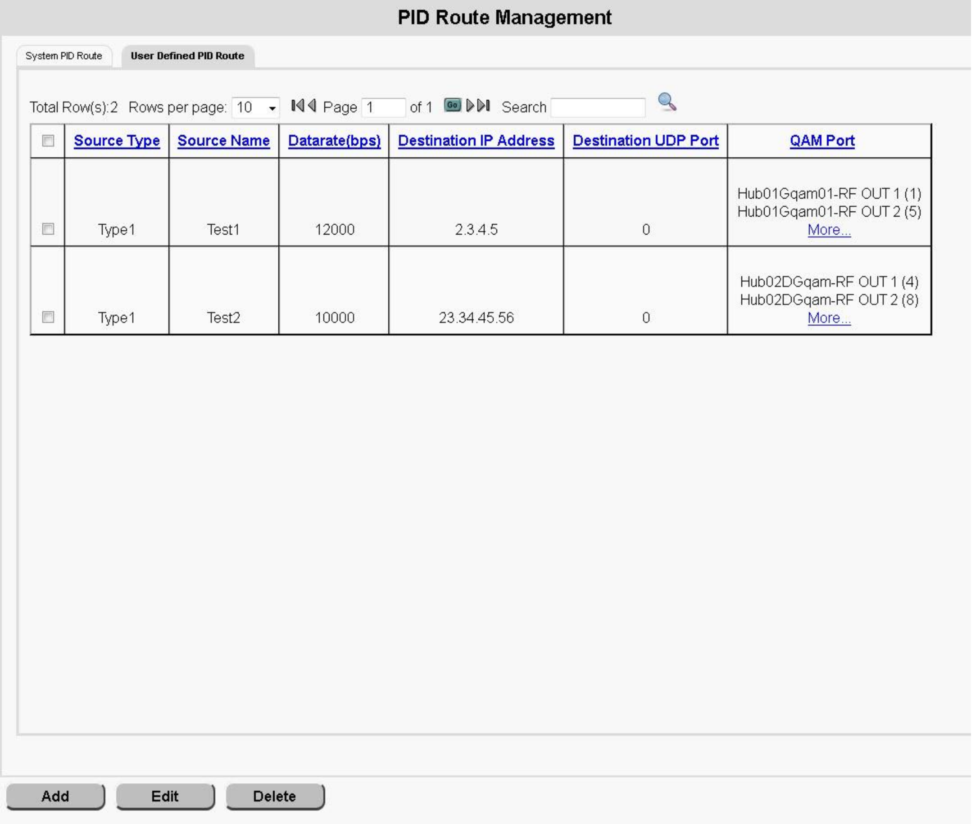
Result: The PID Route Management window opens, listing the PID routes available to the DTACS.



Element Name	Element Type	Route Usage	Output Port	Input Port	Operational State
Hub02DGqam	GQAM	AMM	1	5	Active
Hub02DGqam	GQAM	SI	1	5	Active

2 Click the **User Defined PID Route** tab.

Result: The PID Route Management window updates to list all of the user-defined PID routes.

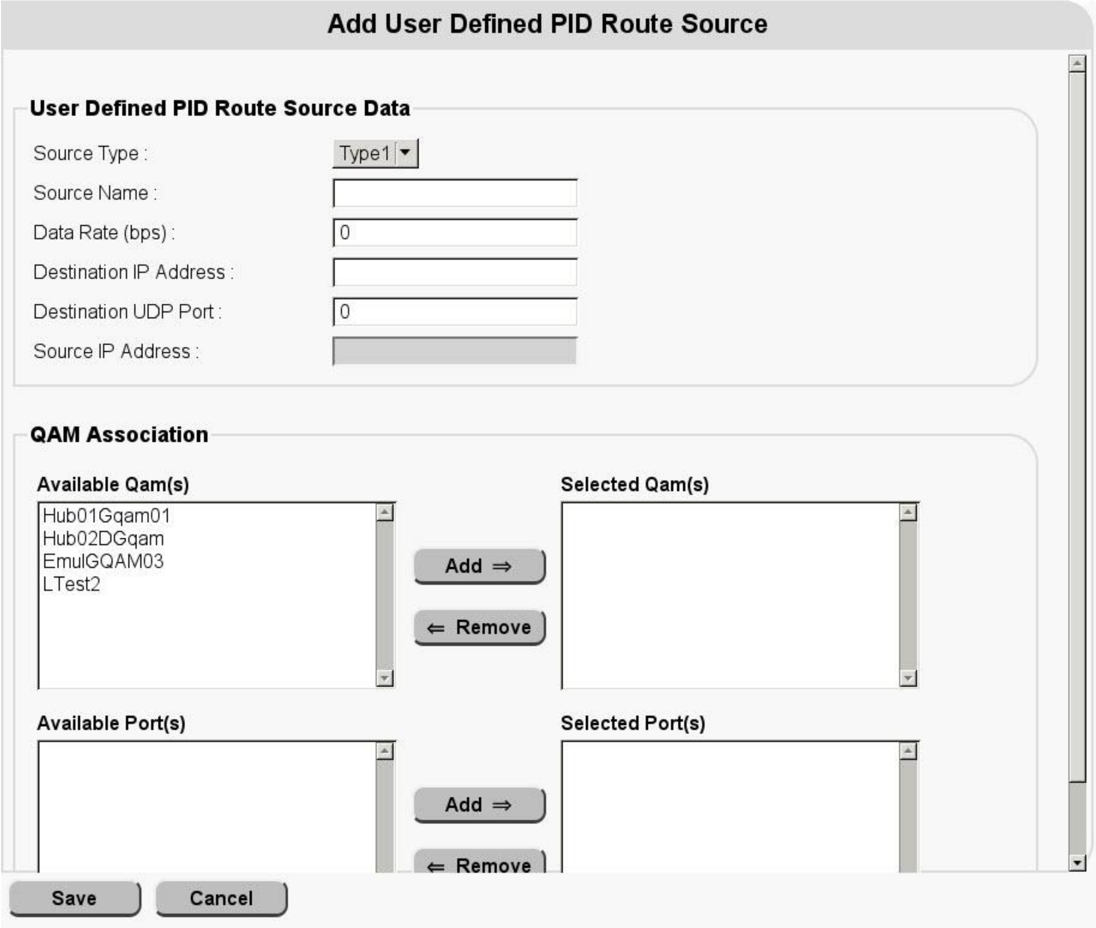


PID Route Management

□	Source Type	Source Name	Datarate(bps)	Destination IP Address	Destination UDP Port	QAM Port
□	Type1	Test1	12000	2.3.4.5	0	Hub01Gqam01-RF OUT 1 (1) Hub01Gqam01-RF OUT 2 (5) More...
□	Type1	Test2	10000	23.34.45.56	0	Hub02DGqam-RF OUT 1 (4) Hub02DGqam-RF OUT 2 (8) More...

3 Click **Add**.

Result: The Add User Defined PID Route Source window opens.



Add User Defined PID Route Source

User Defined PID Route Source Data

Source Type :	Type1
Source Name :	
Data Rate (bps) :	0
Destination IP Address :	
Destination UDP Port :	0
Source IP Address :	

QAM Association

Available Qam(s):

Hub01Gqam01
Hub02DGqam
EmulGQAM03
LTest2

Selected Qam(s)

Available Port(s)

Selected Port(s)

4 Follow these instructions to configure the fields on the Add User Defined PID Route Source window:

a In the **Source Type** field, select the appropriate source type.

b In the **Source Name** field, type the unique name of the source you are adding. This is an alphanumeric field.

c In the **Data Rate (bps)** field, type the data rate for the data being carried by the PIDs (in bps).

Note: Typically, this data rate is somewhere around 200,000 bps for the combined PSIP and EAS PIDs (100,000 bps for each).

d In the **Destination IP Address** field, type the multicast IP address the QAM should join to get the PIDs.

Notes:

- If you are using the PID for PSIP, this is the multicast address of the video feed.
- If you are using the PID for EAS, this is the EAS multicast address.

e In the **Destination UDP Port** field, type the destination UDP port for the source (from 1 to 65535).

Note: This is only required if the Destination IP address is a unicast address, rather than a multicast address.

f In the **Available Qams** list, select the appropriate QAM and click **Add** to move the QAM to the **Selected Qams** list.

g In the **Available Ports** list, select a port and click **Add** to move the port to the **Selected Ports** list.

h In the **1st Source IP Address** field, type the first multicast IP address for the source, if applicable.

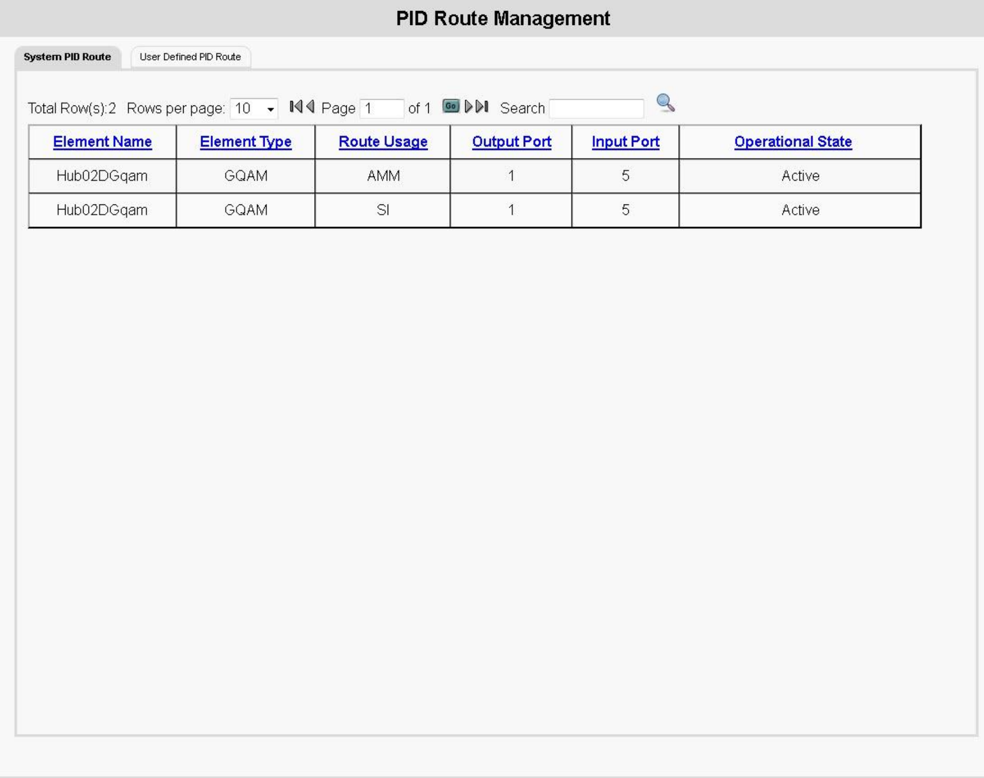
5 Click **Save**. A message indicating successful execution appears.

Edit a User-Defined PID Route Source

Follow these instructions to edit a user-defined PID route source in the DTACS:

1 From the Digital Transport Adaptor Control System main WUI, click **PID Route Management** (in the **Network Elements** section).

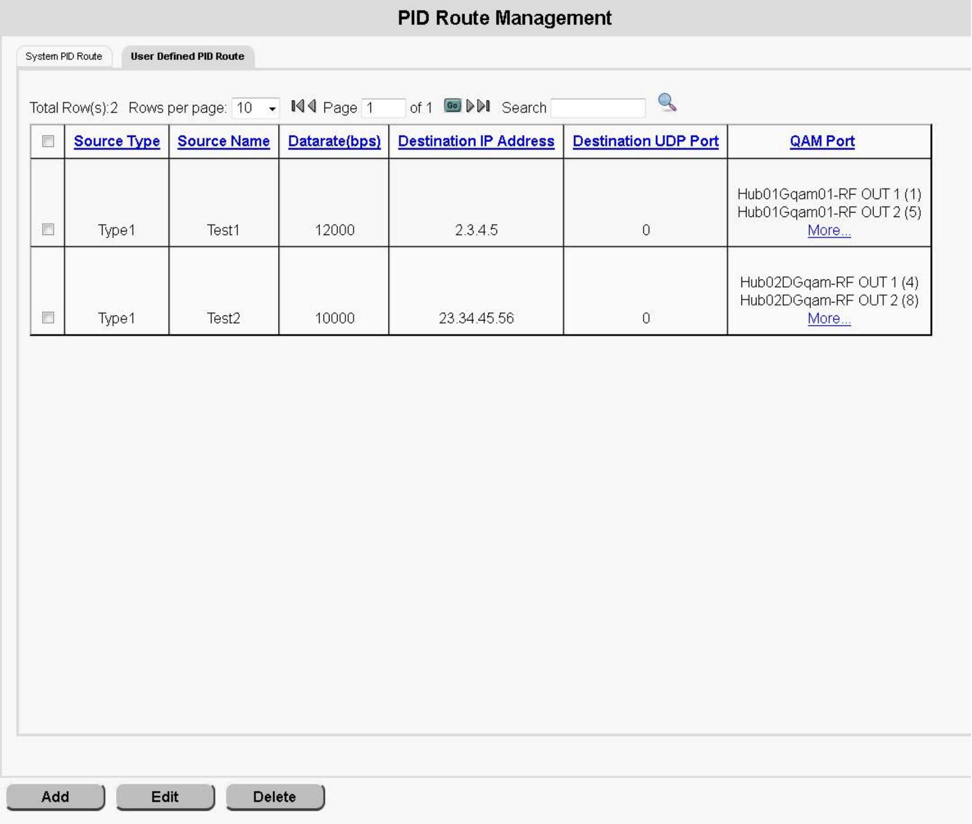
Result: The PID Route Management window opens, listing the PID routes available to the DTACS.



Element Name	Element Type	Route Usage	Output Port	Input Port	Operational State
Hub02DGqam	GQAM	AMM	1	5	Active
Hub02DGqam	GQAM	SI	1	5	Active

2 Click the **User Defined PID Route** tab.

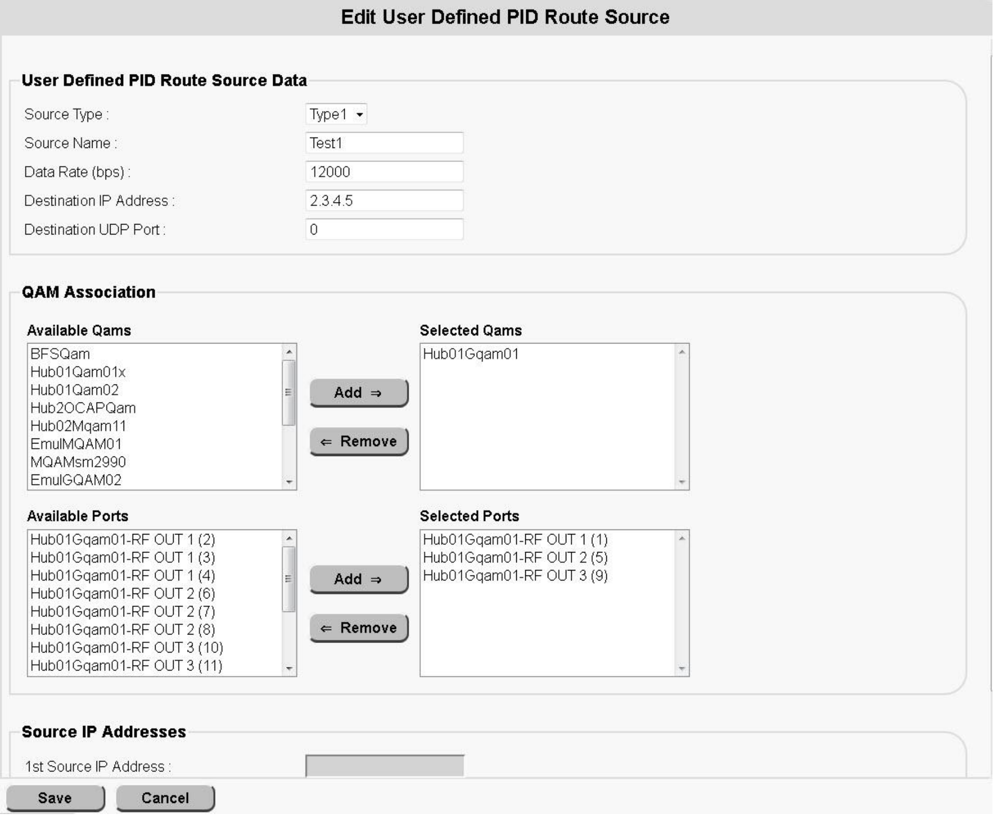
Result: The PID Route Management window updates to list all of the user-defined PID routes.



□	Source Type	Source Name	Datarate(bps)	Destination IP Address	Destination UDP Port	QAM Port
□	Type1	Test1	12000	2.3.4.5	0	Hub01Gqam01-RF OUT 1 (1) Hub01Gqam01-RF OUT 2 (5) More...
□	Type1	Test2	10000	23.34.45.56	0	Hub02DGqam-RF OUT 1 (4) Hub02DGqam-RF OUT 2 (8) More...

3 Select the source that you want to edit, and click **Edit**.

Result: The Edit User Defined PID Route Source window opens.



Edit User Defined PID Route Source

User Defined PID Route Source Data

Source Type : Type1

Source Name : Test1

Data Rate (bps) : 12000

Destination IP Address : 2.3.4.5

Destination UDP Port : 0

QAM Association

Available Qams

BFSQam
Hub01Qam01x
Hub01Qam02
Hub2OCAPQam
Hub02Mqam11
EmulMQAM01
MQAMsm2990
EmulGQAM02

Selected Qams

Hub01Gqam01

Available Ports

Hub01Gqam01-RF OUT 1 (2)
Hub01Gqam01-RF OUT 1 (3)
Hub01Gqam01-RF OUT 1 (4)
Hub01Gqam01-RF OUT 2 (6)
Hub01Gqam01-RF OUT 2 (7)
Hub01Gqam01-RF OUT 2 (8)
Hub01Gqam01-RF OUT 3 (10)
Hub01Gqam01-RF OUT 3 (11)

Selected Ports

Hub01Gqam01-RF OUT 1 (1)
Hub01Gqam01-RF OUT 2 (5)
Hub01Gqam01-RF OUT 3 (9)

Source IP Addresses

1st Source IP Address :

4 Edit whatever fields are appropriate. refer to ***Create a User-Defined PID Route Source*** (on page 84) for information on the various fields.

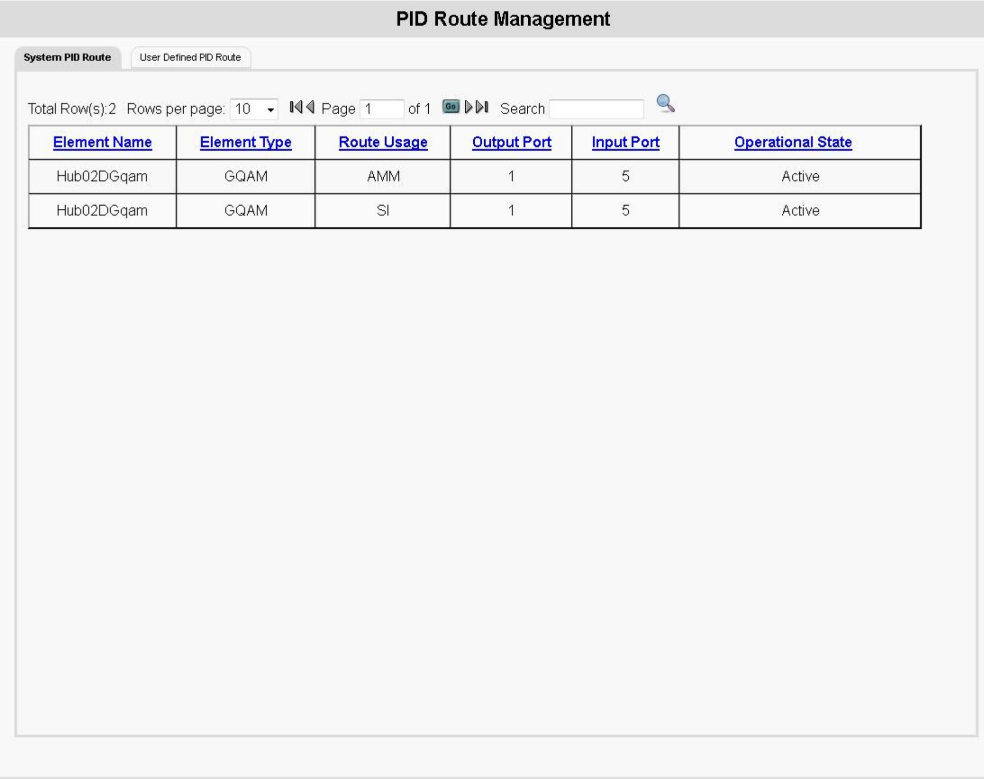
5 Click **Save** when you are finished. A message indicating successful execution appears.

Delete a User-Defined PID Route Source

Follow these instructions to delete a user-defined PID route source in the DTACS:

1 From the Digital Transport Adaptor Control System main WUI, click **PID Route Management** (in the **Network Elements** section).

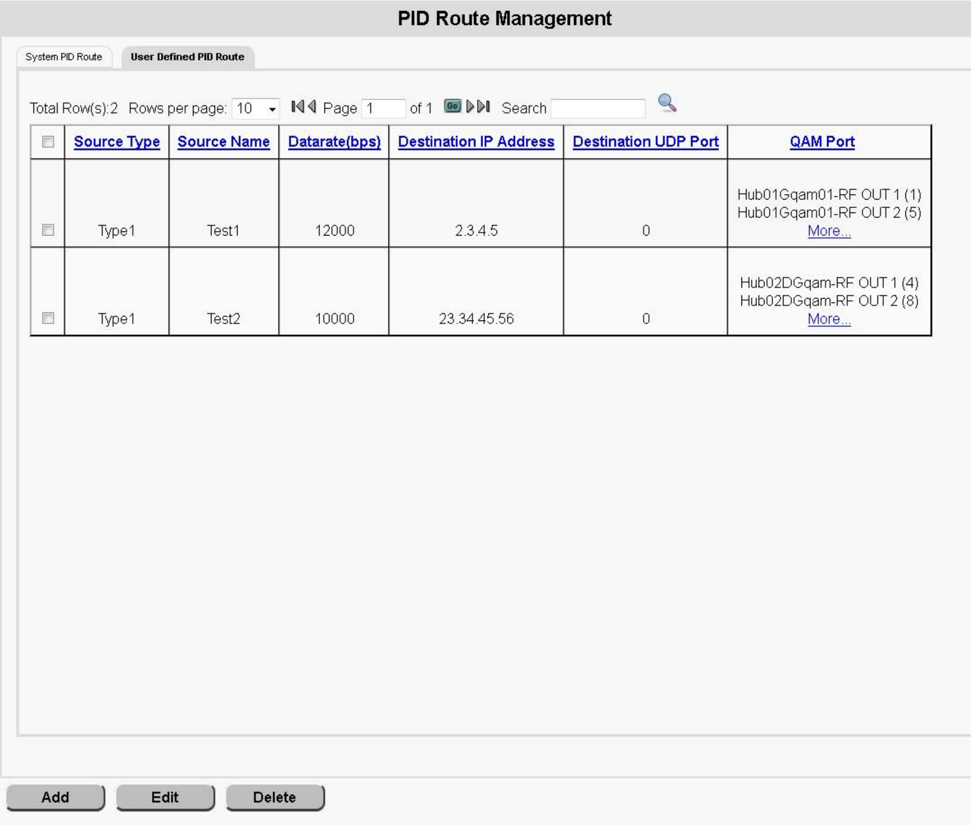
Result: The PID Route Management window opens, listing the PID routes available to the DTACS.



Element Name	Element Type	Route Usage	Output Port	Input Port	Operational State
Hub02DGqam	GQAM	AMM	1	5	Active
Hub02DGqam	GQAM	SI	1	5	Active

2 Click the **User Defined PID Route** tab.

Result: The PID Route Management window updates to list all of the user-defined PID routes.



□	Source Type	Source Name	Datarate(bps)	Destination IP Address	Destination UDP Port	QAM Port
□	Type1	Test1	12000	2.3.4.5	0	Hub01Gqam01-RF OUT 1 (1) Hub01Gqam01-RF OUT 2 (5) More...
□	Type1	Test2	10000	23.34.45.56	0	Hub02DGqam-RF OUT 1 (4) Hub02DGqam-RF OUT 2 (8) More...

3 Click the check box next to the PID route source that you want to delete.

4 Click **Delete**.

Result: A confirmation message appears.

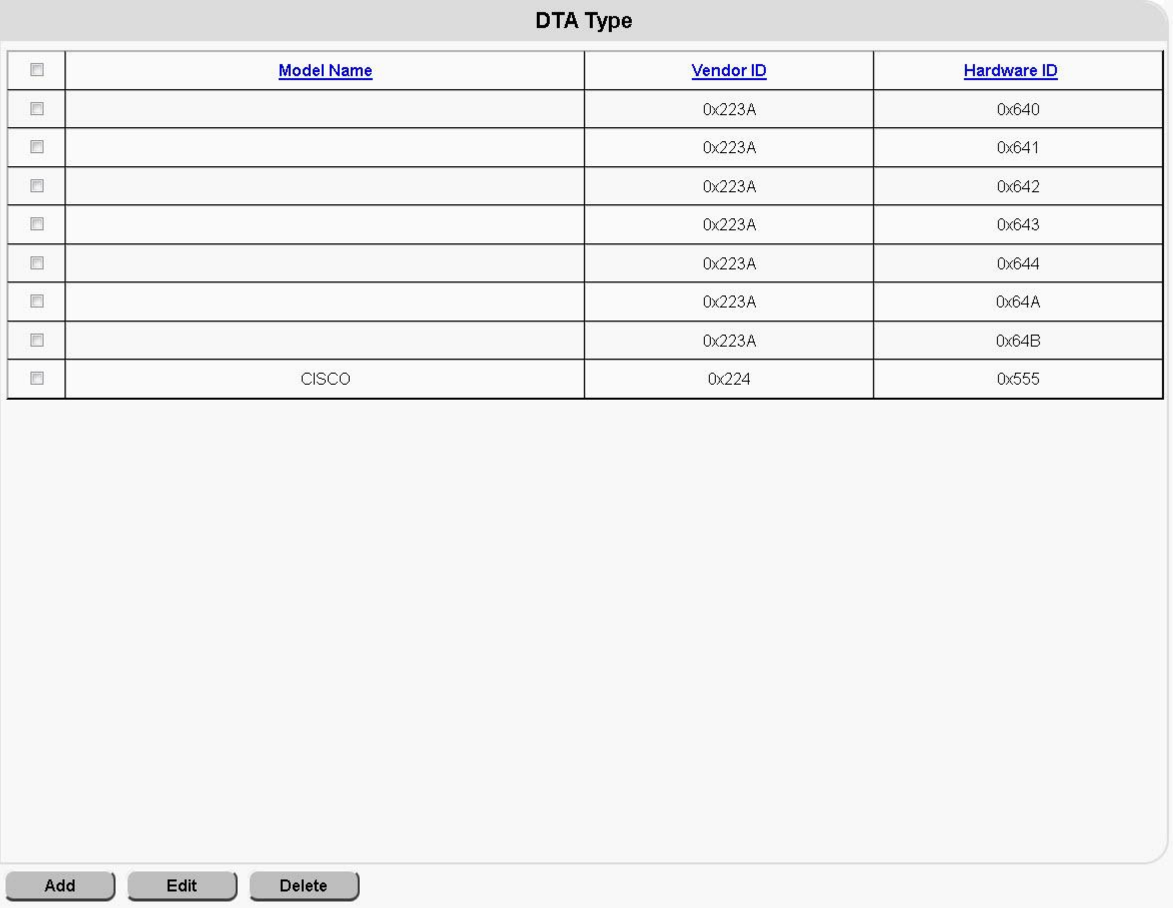
5 Click **OK** in the confirmation message. A message indicating successful execution appears.

Manage DTA Types

The DTA Type allows you to manage the DTA types in your system.

View DTA Types

To view DTA types, in the **Common Download** section of the DTACS Provisioning main window, click **DTA Type**. The DTA Type window opens, listing the available DTA types in the DTACS.



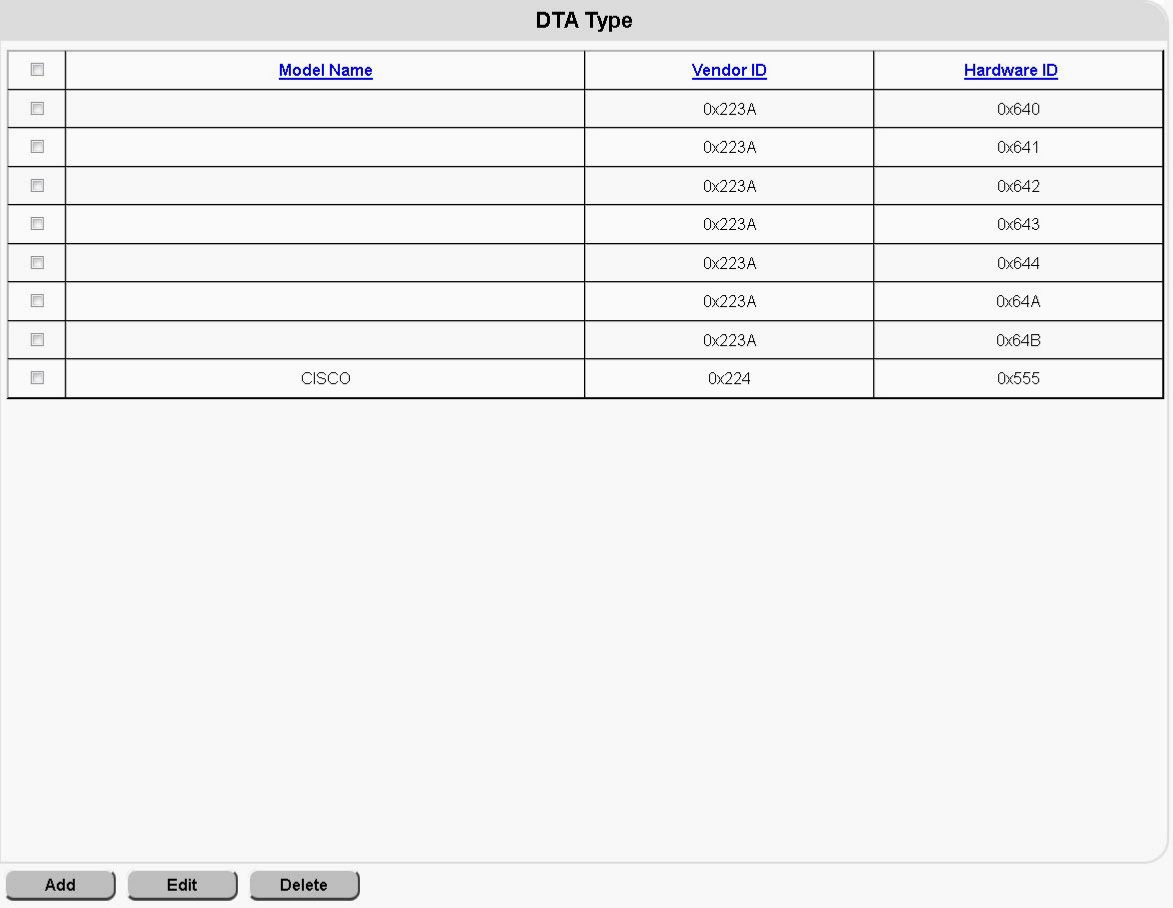
DTA Type

□	Model Name	Vendor ID	Hardware ID
□		0x223A	0x640
□		0x223A	0x641
□		0x223A	0x642
□		0x223A	0x643
□		0x223A	0x644
□		0x223A	0x64A
□		0x223A	0x64B
□	CISCO	0x224	0x555

Add a DTA Type

Follow these instructions to add a DTA Type in the DTACS:

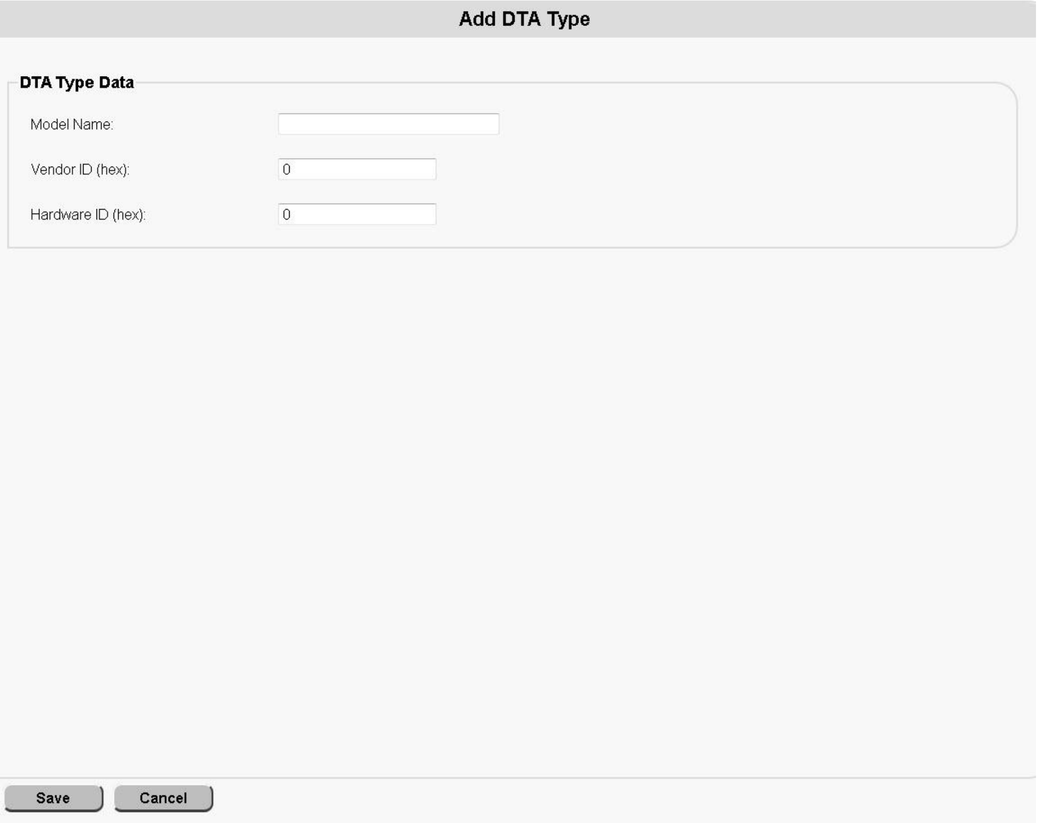
1 In the Common Download section of the DTACS Provisioning main window, click **DTA Type**. The DTA Type window opens, listing the available DTA types in the DTACS.



DTA Type

□	Model Name	Vendor ID	Hardware ID
□		0x223A	0x640
□		0x223A	0x641
□		0x223A	0x642
□		0x223A	0x643
□		0x223A	0x644
□		0x223A	0x64A
□		0x223A	0x64B
□	CISCO	0x224	0x555

2 Click **Add**. The Add DTA Type window opens.


Add DTA Type

DTA Type Data

Model Name:

Vendor ID (hex): 0

Hardware ID (hex): 0

3 Use this information to complete the fields on the Add DTA Type window:

- **Model Name** — Type the model name of the DTA type.
- **Vendor ID (hex)** — Type the hexadecimal number associated with the vendor in the :0xAABB format.
- **Hardware ID (hex)** — Type the hexadecimal number associated with that vendor's hardware ID in the :0xAABB format.

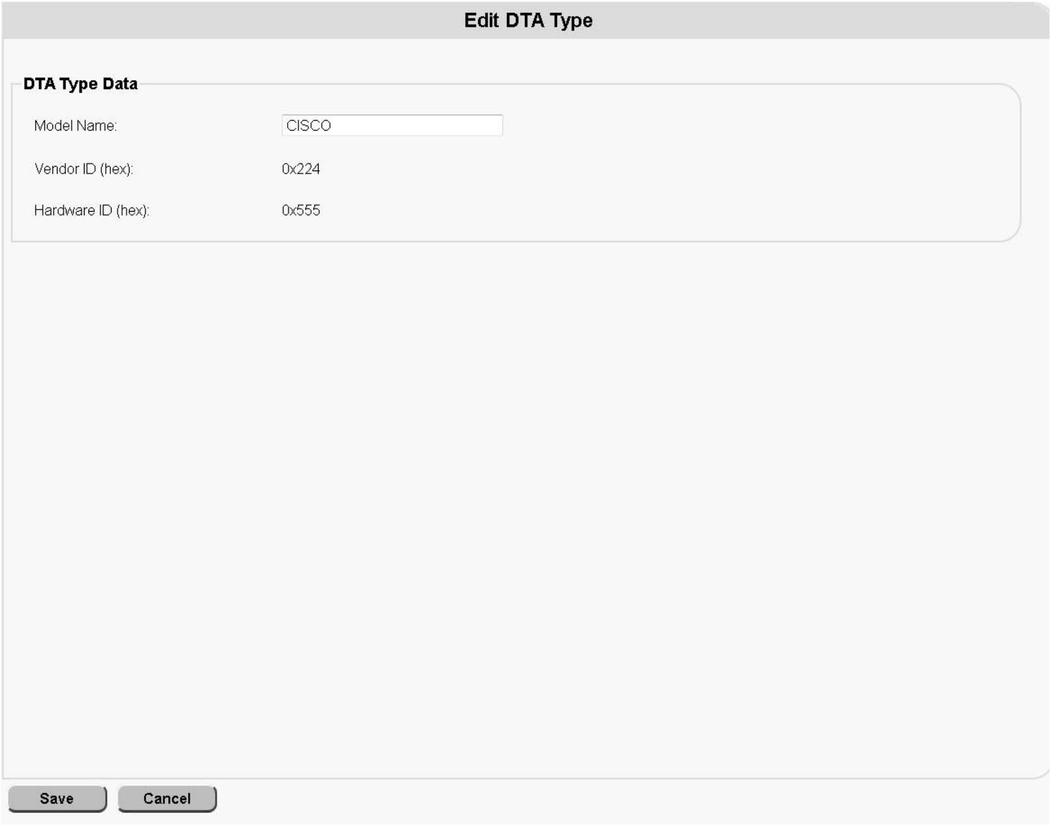
Edit a DTA Type

Follow these instructions to edit a DTA Type in the DTACS:

1 In the **Common Download** section of the DTACS Provisioning main window, click **DTA Type**. The DTA Type window opens, listing the available DTA types in the DTACS.

2 Select the DTA Type to be edited.

3 Click **Edit**. The Edit DTA Type window opens.



Edit DTA Type

DTA Type Data

Model Name: CISCO

Vendor ID (hex): 0x224

Hardware ID (hex): 0x555

Note: The only field that you can edit is the **Model Name**. To change any of the other parameters, you must delete and re-add the DTA type.

4 Edit the **Model Name** field appropriately.

5 Click **Save**.

Delete DTA Types

Follow these instructions to delete a DTA type in the DTACS:

Note: You cannot delete a DTA type that is associated with a CVT. You must remove the DTA type from the CVT before you can delete the DTA type.

1 In the **Common Download** section of the DTACS Provisioning main window, click **DTA Type**. The DTA Type window opens.

2 Select the DTA type that you want to delete.

3 Click **Delete**. A confirmation window opens.

4 Click **OK**.

Common Download

Configure the DTACS Source on the EC

Follow these instructions to set up a source on the EC for the DTACS carousel:

1. On the Administrative Console, click the EC tab.
2. Click the **System Provisioning** tab.
3. Click **Source** to open the Source List window.
4. Click **New** to open the New Source window.
5. In the **Source Name** field, type a name to identify the source.
   Example: DTACS CDL Carousel
6. In the **Source ID** field, type a unique number to identify this source.
   Notes:
   - You must use a number that is greater than 200 to identify this source.
   - Write down the source ID that you use. You will refer to it later.
7. Click **Save**.
8. Do you already have a GQAM configured to use with the DTACS common download?
   - If **yes**, go to ***Configure the DTACS GQAM for the Common Download*** (on page 96).
   - If **no**, add a DTACS GQAM from the EC.

Configure the DTACS GQAM for the Common Download

This procedure describes how to configure an existing DTACS GQAM for the common download.

Important: Before beginning this procedure, note these important steps:

- Be sure that the GQAM has sufficient bandwidth available to modulate the DTA images to the DTAs, typically 1 to 2 Mbps.
- The GQAM that you use or set up must use the GbE connection to communicate to the headend.
- This procedure is for an existing GQAM that can be used for the DTACS common download feature. If you need to add a GQAM for this purpose, refer to the EC online help.

Follow these instructions to configure the DTACS GQAM for common download:

1. On the Administrative Console, click the EC tab.
2. Click the **Network Element Provisioning** tab.
3. Click **GQAM**. The GQAM List window opens.

4 Select the GQAM that you are configuring and click **Edit**.

5 Select an output port on the GQAM that has sufficient bandwidth available for modulating the DTA images to the DTAs (typically, 1 to 2 Mbps).

6 Write down this port number and frequency for later use.

Add a Multicast Source Definition to the EC

Follow these instructions to add a source definition to the EC:

1 On the Administrative Console, click the E**C** tab.

2 Click the **System Provisioning** tab.

3 Click **Source**. The Source List window opens.

4 Select the row containing the service source you need to define and then select **Source Definitions**. The Source Definition List window opens for the source you selected.

5 Click **Add** to open the Set Up Definition window.

6 Select the **Digital Source Definition**.

7 Enter the **Session ID** for this session.

Notes:

- The left part of the Session ID is the session MAC address. Type 12 zeros (the system inputs the colons for you).
- The right part of the Session ID is the source ID you used when you added the DTACS.

8 If you need to specify when this source will become active, select **Specify effective date and time** to enter that information. If left unselected (unchecked), the source will become available immediately.

9 Select the **Multicast through a GQAM** option.

10 Configure the Multicast Digital Session Definition window.

- **Session ID** — The Session ID field has two parts, the left Session ID and the right Session ID.
  - **Left Session ID** — The session MAC address. Type 12 zeros (the system inputs the colons for you).
  - **Right Session ID** — The source ID you used when you added the content source.
- **Bandwidth (Mbps)** — The bandwidth available to this source. Typically, this will be 1 to 2 Mbps, defined by the limits of the DTA or by the bandwidth available on the GQAM.
- **QAM Name** — Select the GQAM you configured for DTACS common download.
- **Output Carrier** — The GQAM output port you defined for the DTACS common download.
- **Program Number** — The MPEG program number.

- **Source IP Address 1** — The IP address of the DTACS interface that the dataPump (DTACS carousel) uses to stream the DTA images.
- **Source IP Address 2** — The second IP address of the DTACS interface that the dataPump (DTACS carousel) uses to stream the DTA images. If not used, leave empty.
- **Source IP Address 3** — The third IP address of the DTACS interface that the dataPump (DTACS carousel) uses to stream the DTA images, if used. If not used, leave empty.
- **Input Destination Multicast IP Address** — The unique (dedicated) multicast IP address that the dataPump (DTACS carousel) uses to send the image stream. This multicast IP address is the address that the GQAM should join via the headend router to receive the image stream.

  Important: For this field, use a unique IP address; do not use the other DTACS multicast IP addresses (that support PID routes, SI, CVT, or AMM).
- **UDP Port** — A user-selected, available, and non-reserved port number (for example, 2002).

11 Click **Save**. The source is listed in the Source Definition List window and should display as active.

Sync the Database

Whenever you make changes to the EC that also affect the DTACS, you need to synchronize the two databases so that the changes are reflected at the DTACS. Use these instructions to synchronize the databases:

1 In the DTACS WUI, click **Sys Config**.

2 Click the **DB Sync** tab.

3 Click **DB Sync** to initiate the DTACS database synchronization process.

Note: The table refreshes automatically every 3 seconds.

4 Check the **Status** field in the **DB Sync Status History** table in the database. If the status shows **In Progress**, wait a few seconds for the status to update.

Create the Images Directory on the DTACS

You now need to create the images directory on the DTACS so that you can store DTA code files (known as images) on the DTACS.

1 Log in to the DTACS as the **root** user.

2 Type the following command and press **Enter**:

```
cd /dvs/dtacs
```

3 Type the following command and press **Enter** to create the images directory in the /dvs/dtacs directory:

```
mkdir images
```

Copy the Image Files to the Image Directory

In this procedure, you will copy the image files to the images directory that you just created.

1 Obtain the DTA image files according to your site's standard procedure.

2 Copy those image files into the /dvs/dtacs/images directory.

Configure the Common Download Carousel

Use the information in this section to configure the Common Download carousel.

Carousel Configuration Settings

The following fields are used to manage the DTACS Common Download carousel:

Field	Description
Carousel Parameters	
Image Storage Directory	Defines the download file path where the image is stored on the DTACS (/dvs/dtacs/images). You can use up to 128 characters in this field.
Data Rate (bps)	Determines the maximum data rate (in bps) the DTACS can use to distribute the image. **Valid values:** Between 1 and 5,000,000 bps **Recommended values:** Between 1000000 and 2000000 bps
Block Size (bytes)	Determines the maximum size of the blocks (in bytes) that the carousel transmits to DTAs. **Valid values:** Between 800 and 4070 bytes **Recommended value:** 1024 **Important:** This value must not exceed the system MTU.
Program Number	The MPEG program number defined for the dataPump (DTACS carousel) GQAM session. **Example:** 132
Destination Location	
IP Address	The unique (dedicated) multicast IP address defined for the dataPump (DTACS carousel) GQAM session.
IP Port	The port number defined for the dataPump (DTACS carousel) GQAM session. **Valid values:** Between 1024 and 65535
Download Time	
Image Carousel Cycle Time (sec)	How often the carousel cycles, in seconds. **Note:** This field is not editable on this screen.

View the Common Download Carousel Settings

Follow these instructions to view the common download carousel settings on the DTACS:

1. In the **Common Download** section of the DTACS WUI, click **Image Management**. The Image Management window opens.
2. Click **Carousel Configuration**. The Carousel Configuration window opens, listing the configuration parameters for the carousel.

Configuring the Common Download Carousel

Follow these instructions to configure the common download carousel of the DTACS:

1. In the **Common Download** section of the DTACS WUI, click **Image Management**. The Image Management window opens.
2. Click **Carousel Configuration**. The Carousel Configuration window opens.
3. Click **Edit**. The Edit Carousel Configuration window opens.
4. Edit information as described in **Carousel Configuration Settings**.
5. Click **Save**.

Image Management

View Image Management

To view Image Management on the DTACS, in the Common Download area of the DTACS Provisioning window, click **Image Management**. The Image Management window opens.

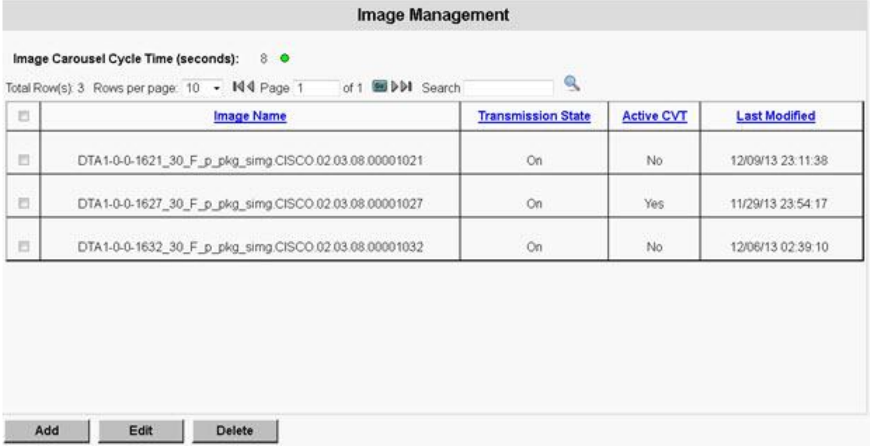


Image Management

Image Carousel Cycle Time (seconds): 8 ●

Total Row(s): 3 Rows per page: 10 Page 1 of 1 Search

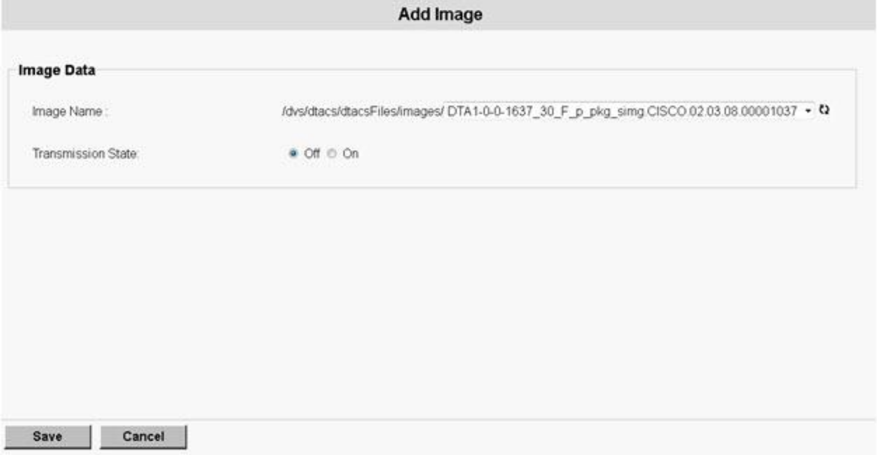
□	Image Name	Transmission State	Active CVT	Last Modified
□	DTA1-0-0-1621_30_F_p_pkg_simg.CISCO.02.03.08.00001021	On	No	12/09/13 23:11:38
□	DTA1-0-0-1627_30_F_p_pkg_simg.CISCO.02.03.08.00001027	On	Yes	11/29/13 23:54:17
□	DTA1-0-0-1632_30_F_p_pkg_simg.CISCO.02.03.08.00001032	On	No	12/06/13 02:39:10

Add an Image

Follow these instructions to add an image to the DTACS:

1 In the Common Download section of the DTACS Provisioning window, click **Image Management**. The Image Management window opens, listing the images on the DTACS.

2 Click **Add**. The Add Image window opens.



Add Image

Image Data

Image Name: /dvs/dtacs/dtacsFiles/images/ DTA1-0-0-1637_30_F_p_pkg_simg.CISCO.02.03.08.00001037

Transmission State: ● Off ○ On

3 Use this information to complete the fields in the Add Image window:
- **Image Name** — Choose the Image Name from the drop-down list.
- **Transmission State** — Click the appropriate Transmission State, either **Off** or **On**.

Edit an Image

Follow these instructions to edit a DTACS image:

1 In the Common Download area of the DTACS Provisioning window, click **Image Management**. The Image Management window opens, listing the available Images on the DTACS.

2 Select an **Image Name** to be edited.

3 Click **Edit**. The Edit Image window opens.

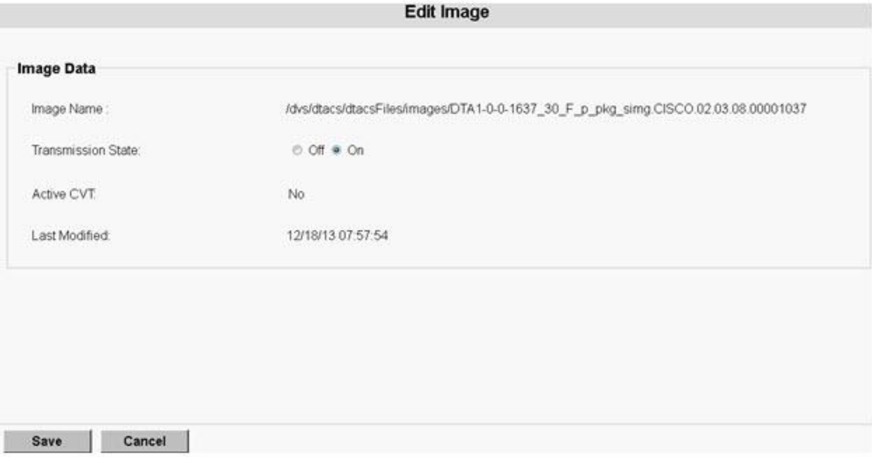

Edit Image

Image Data

Image Name : /dvs/dtacs/dtacsFiles/images/DTA1-0-0-1637_30_F_p_pkg_simg.CISCO.02.03.08.00001037

Transmission State: ○ Off ● On

Active CVT: No

Last Modified: 12/18/13 07:57:54

Note: The only field that you can edit is the **Transmission State**. To change any of the other parameters, you must delete and re-add an Image.

4 Edit the **Transmission State** field appropriately.

5 Click **Save**.

Delete an Image

Follow these instructions to delete an Image on the DTACS:

Note: You may receive the following warning message if the Image has a CVT association:

```
Warning: Deleting Image with transmission state ON and  Active CVT might
cause downloads to fail and DTA(s) might stop delivering video. Are you sure
you want to continue?
```

1 In the Common Download area of the DTACS Provisioning window, click **Image Management**. The Image Management window opens.

2 Select an **Image Name** that you want to delete.

3 Click **Delete**. A confirmation window opens.

4 Click **OK**.

Manage CVTs

Configure the CVT Repeat Rate

When CVT associations are created, CVTs are sent to all DTAs by the DTACS in repeated intervals. In the DTACS implementation, the CVT repeat rate is set to 60 seconds, as a default. This repeat rate is specified in the cvtMgr.cfg file.

If the cvtMgr.cfg file is not already present in the /dvs/dtacs/etc file, copy the cvtMgr.cfg.sample file from /dvs/dtacs/etc as cvtMgr.cfg. Then, edit the file.

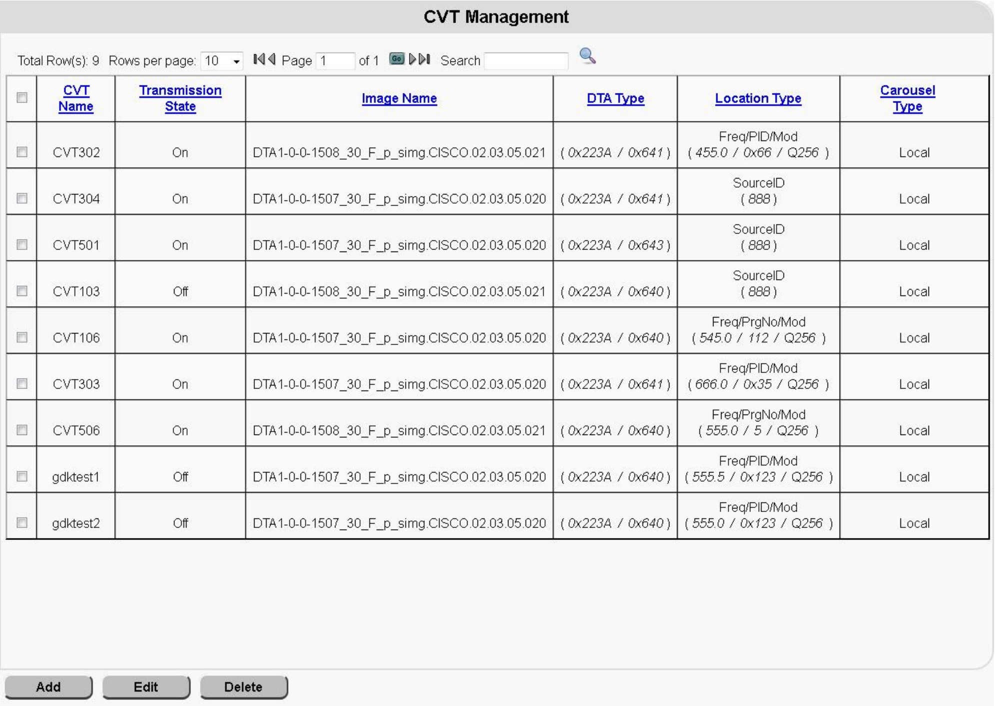
```
CVT_REPEAT_RATE=60
```

Note: To cause your change to the CVT_REPEAT_RATE parameter, bounce the dtacsCvtMgr process.

Add a CVT

Follow these instructions to add a CVT to the DTACS:

1 In the Common Download section of the DTACS Provisioning main screen, click **CVT Management**. The CVT Management window opens.

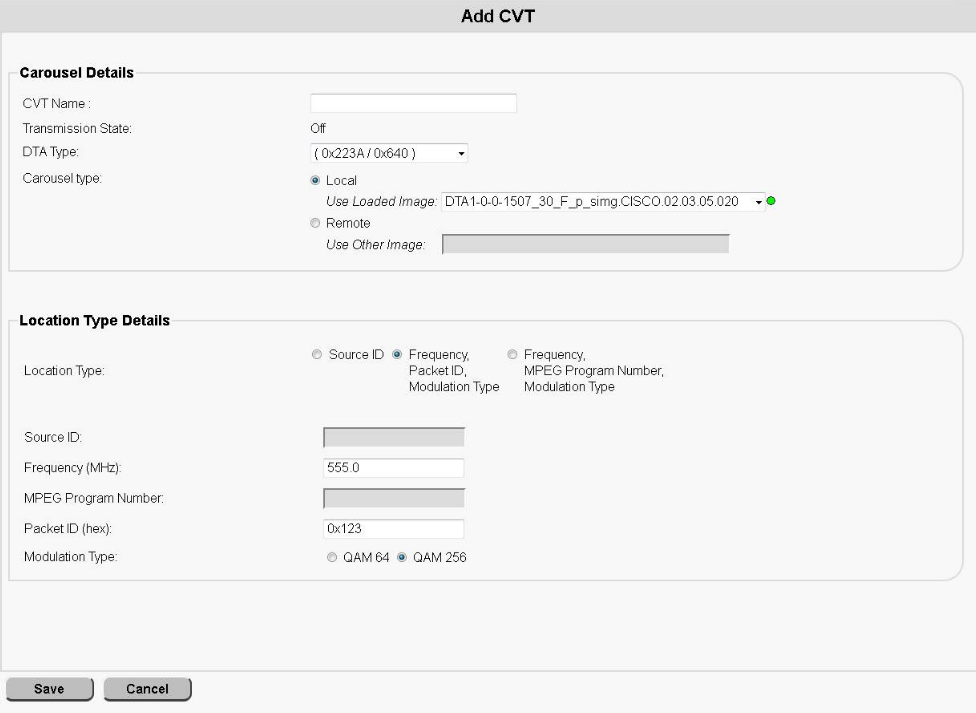


CVT Management

Total Row(s): 9 Rows per page: 10 Page 1 of 1 Search

□	CVT Name	Transmission State	Image Name	DTA Type	Location Type	Carousel Type
□	CVT302	On	DTA1-0-0-1508_30_F_p_simg.CISCO.02.03.05.021	(0x223A / 0x641)	Freq/PID/Mod (455.0 / 0x66 / Q256)	Local
□	CVT304	On	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x641)	SourceID (888)	Local
□	CVT501	On	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x643)	SourceID (888)	Local
□	CVT103	Off	DTA1-0-0-1508_30_F_p_simg.CISCO.02.03.05.021	(0x223A / 0x640)	SourceID (888)	Local
□	CVT106	On	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x640)	Freq/PrgNo/Mod (545.0 / 112 / Q256)	Local
□	CVT303	On	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x641)	Freq/PID/Mod (666.0 / 0x35 / Q256)	Local
□	CVT506	On	DTA1-0-0-1508_30_F_p_simg.CISCO.02.03.05.021	(0x223A / 0x640)	Freq/PrgNo/Mod (555.0 / 5 / Q256)	Local
□	gdktest1	Off	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x640)	Freq/PID/Mod (555.5 / 0x123 / Q256)	Local
□	gdktest2	Off	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	(0x223A / 0x640)	Freq/PID/Mod (555.0 / 0x123 / Q256)	Local

2 Click **Add**. The Add CVT window opens.



Add CVT

Carousel Details

CVT Name :

Transmission State: Off

DTA Type: (0x223A / 0x640)

Carousel type: ● Local

Use Loaded Image: DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020

○ Remote

Use Other Image:

Location Type Details

Location Type: ○ Source ID ● Frequency, Packet ID, Modulation Type ○ Frequency, MPEG Program Number, Modulation Type

Source ID:

Frequency (MHz): 555.0

MPEG Program Number:

Packet ID (hex): 0x123

Modulation Type: ○ QAM 64 ● QAM 256

3 Follow these instructions to configure the Add CVT window:

a In the **CVT Name** field, enter the unique name of the CVT entry.

Note: You cannot edit this field later, once it has been saved.

b The **Transmission State** field determines whether this CVT is being transmitted. It is **On** if the CVT is active for any CVT association.

Note: This field cannot be edited during an add or edit operation.

c Click the down-arrow of the **DTA Type** field and select the appropriate DTA type for the CVT you are adding.

Note: You cannot edit this field later, once it has been saved.

d In the **Carousel type** field. select either **Local** to use a loaded image, or select **Remote** to use another type of image.

e In the **Location Type** field, which specifies the location of the download code, select one of the following:

- **Source ID**
- **Frequency, Packet ID, Modulation Type**
- **Frequency, MPEG Program Number, Modulation Type**

Note: How you configure the rest of this window depends upon the **Location Type** you specified.

f In the **Source ID** field, enter the source of the program, if relevant.

g In the **Frequency** field, enter the frequency (in MHz) used to transmit the CVT to the DTAs, if relevant.

Note: Valid values are in 0.25 MHz intervals.

h In the **MPEG Program Number** field, enter the MPEG program number that corresponds to this CVT, if relevant.

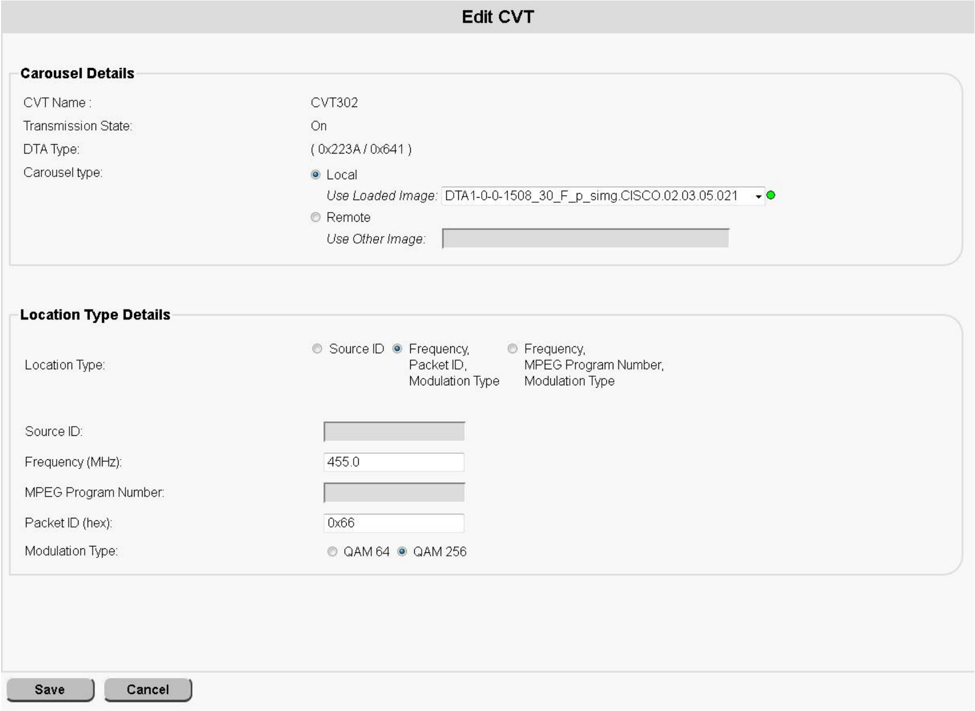
   i. In the **Packet ID** field, enter the PID that corresponds to this CVT, if relevant.
   j. The **Modulation Type** field specifies the type of modulation used for this CVT, if relevant. Select either **QAM 64** or **QAM 256**.

4. Click **Save**. A message indicating successful execution appears.

Edit a CVT

Follow these instructions to edit an existing CVT:

1. In the Common Download section of the DTACS Provisioning main screen, click **CVT Management**. The CVT Management window opens.
2. Click the checkbox to the left of the CVT that you want to edit, and then click **Edit**. The Edit CVT window opens showing the data with which that CVT was configured.



Edit CVT

Carousel Details

CVT Name : CVT302

Transmission State: On

DTA Type: (0x223A / 0x641)

Carousel type: ● Local

Use Loaded Image: DTA1-0-0-1508_30_F_p_simg.CISCO.02.03.05.021

○ Remote

Use Other Image:

Location Type Details

Location Type: ○ Source ID ● Frequency, Packet ID, Modulation Type ○ Frequency, MPEG Program Number, Modulation Type

Source ID:

Frequency (MHz): 455.0

MPEG Program Number:

Packet ID (hex): 0x66

Modulation Type: ○ QAM 64 ● QAM 256

3. Edit the CVT appropriately and then click **Save**. A message indicating successful execution appears.

Delete a CVT

Follow these instructions to delete a CVT from the DTACS:

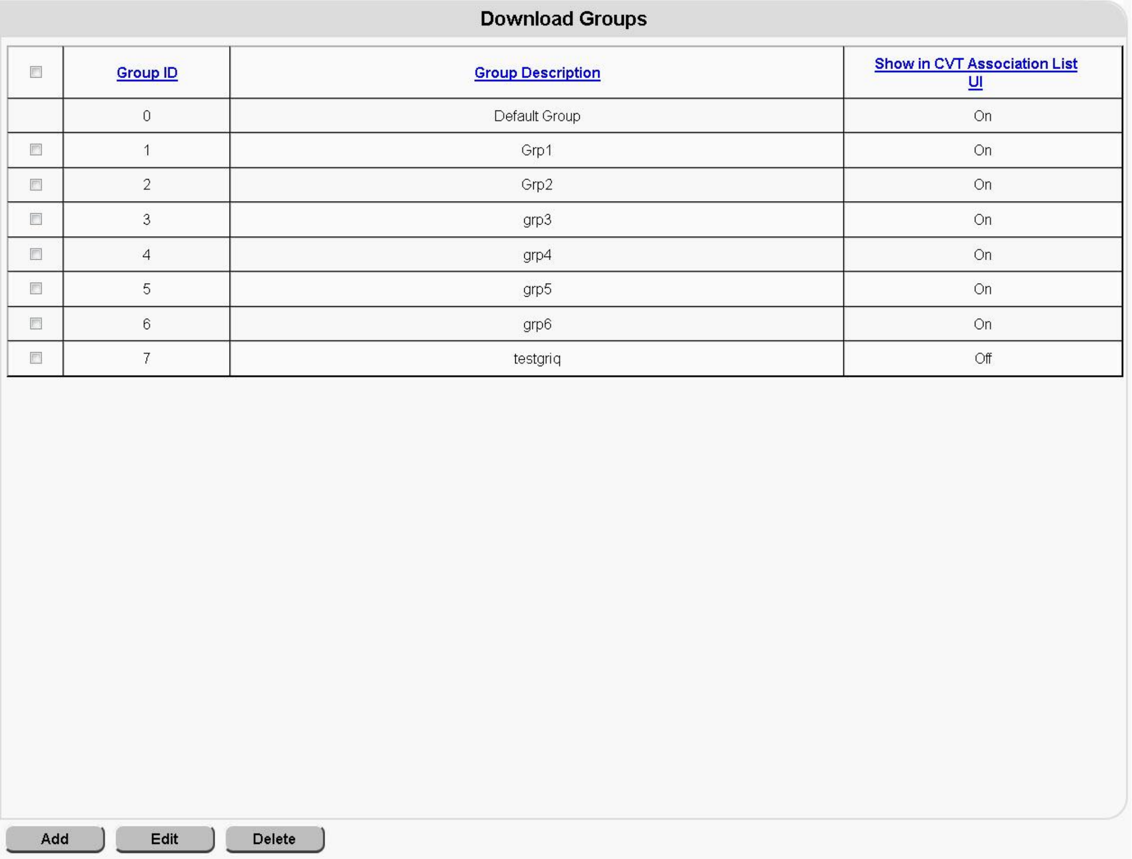
1. In the Common Download area of the DTACS Provisioning main screen, click **CVT Management**. The CVT Management window opens.
2. Click the check box to the left of the CVT that you want to delete, and then click **Delete**.

   Result: A confirmation message appears.
3. Click **OK** to delete the CVT. A message indicating successful execution appears.

Manage Download Groups

View Download Groups

To view Download Groups on the DTACS, in the **Common Download** area of the DTACS Provisioning main window, click **Download Groups**. The Download Groups window opens.



Download Groups

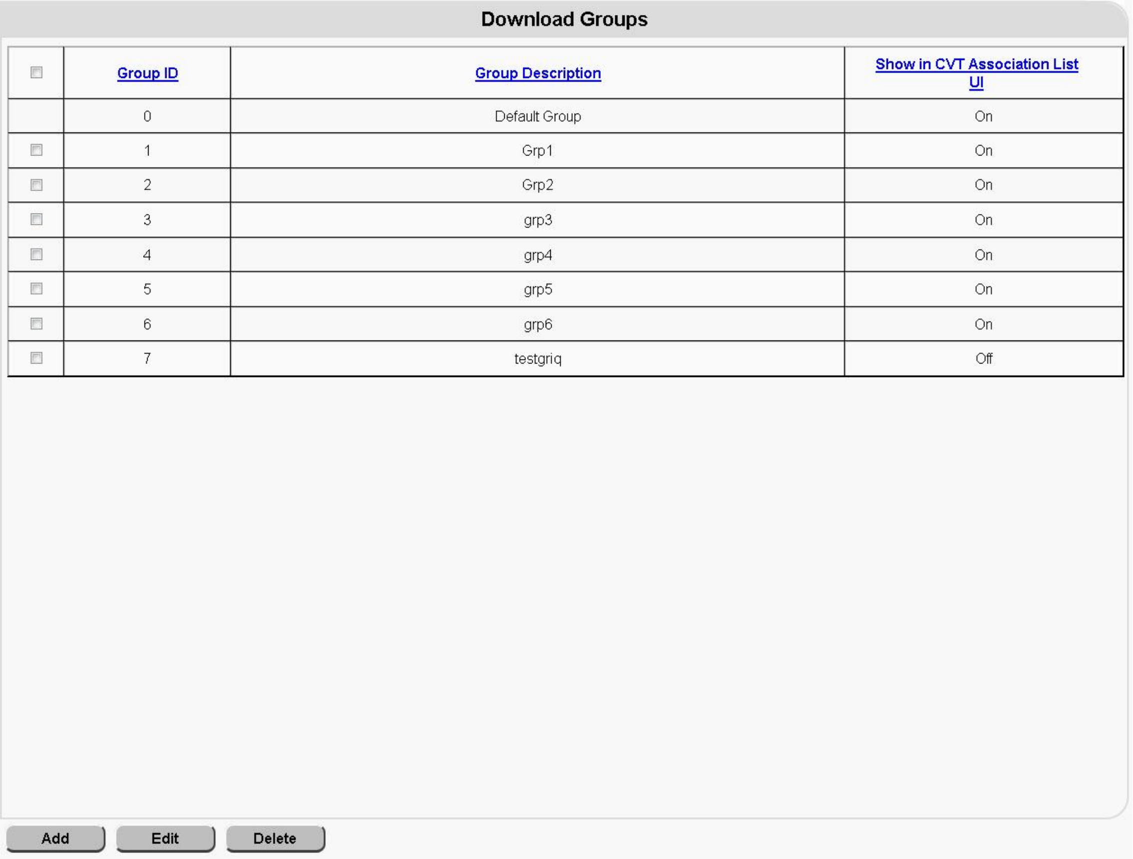
□	Group ID	Group Description	Show in CVT Association List UI
	0	Default Group	On
□	1	Grp1	On
□	2	Grp2	On
□	3	grp3	On
□	4	grp4	On
□	5	grp5	On
□	6	grp6	On
□	7	testgriq	Off

Add a Download Group

Follow these instructions to add a download group in the DTACS:

Note: You can have as many as 15 download groups.

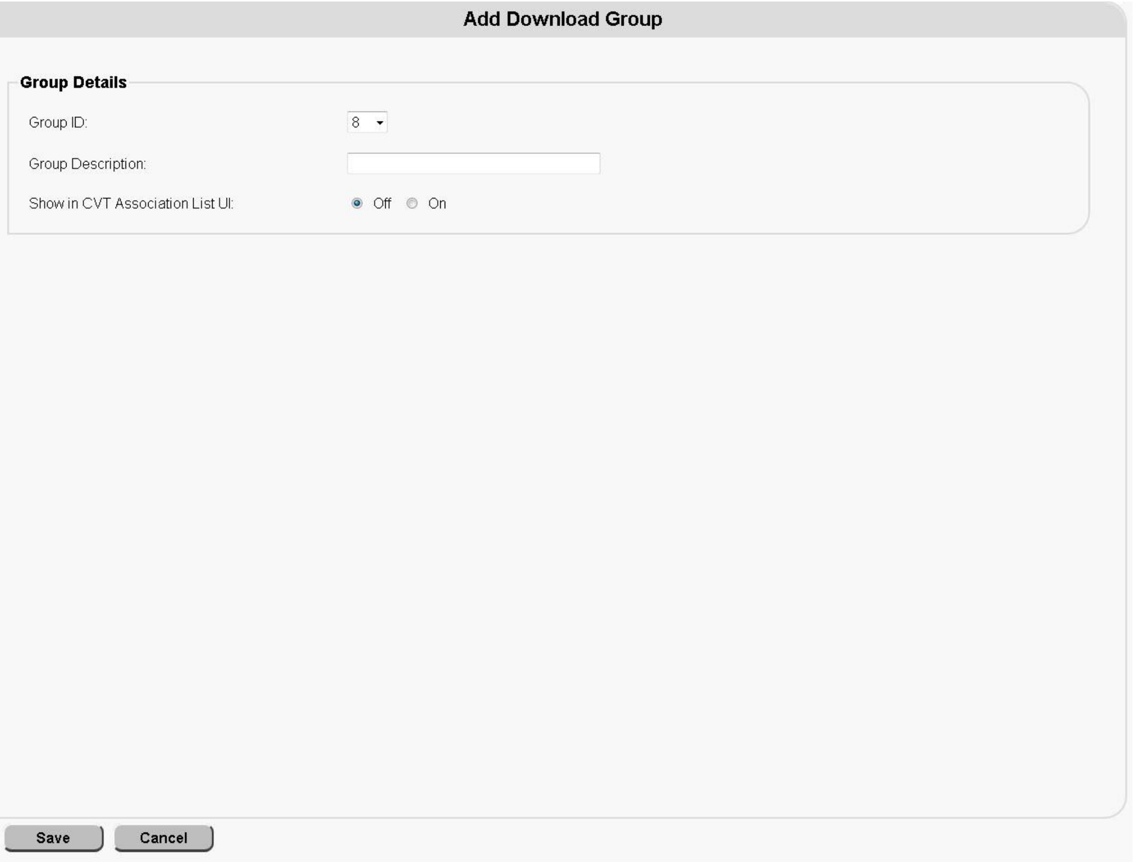
1 In the **Common Download** area of the DTACS Provisioning main window, click **Download Groups**. The Download Groups window opens.



Download Groups

□	Group ID	Group Description	Show in CVT Association List UI
	0	Default Group	On
□	1	Grp1	On
□	2	Grp2	On
□	3	grp3	On
□	4	grp4	On
□	5	grp5	On
□	6	grp6	On
□	7	testgriq	Off

2 Click **Add**. The Add Download Group window opens.



Add Download Group

Group Details

Group ID: 8

Group Description:

Show in CVT Association List UI: ● Off ○ On

3 Complete the following fields on the Add Download Group window:

- **Group ID** — Choose the group ID from the drop-down list. You can have as many as 15 download groups in the DTACS.
- **Group Description** — Type a description for the group.
- **Show in CVT Association List UI** — Determines whether this group is listed in the CVT Association user interface. Select one of the following options:
  - **Off** - (default) Do not show this group in the CVT Association user interface list.
  - **On** - Show this group in the CVT Association user interface list.

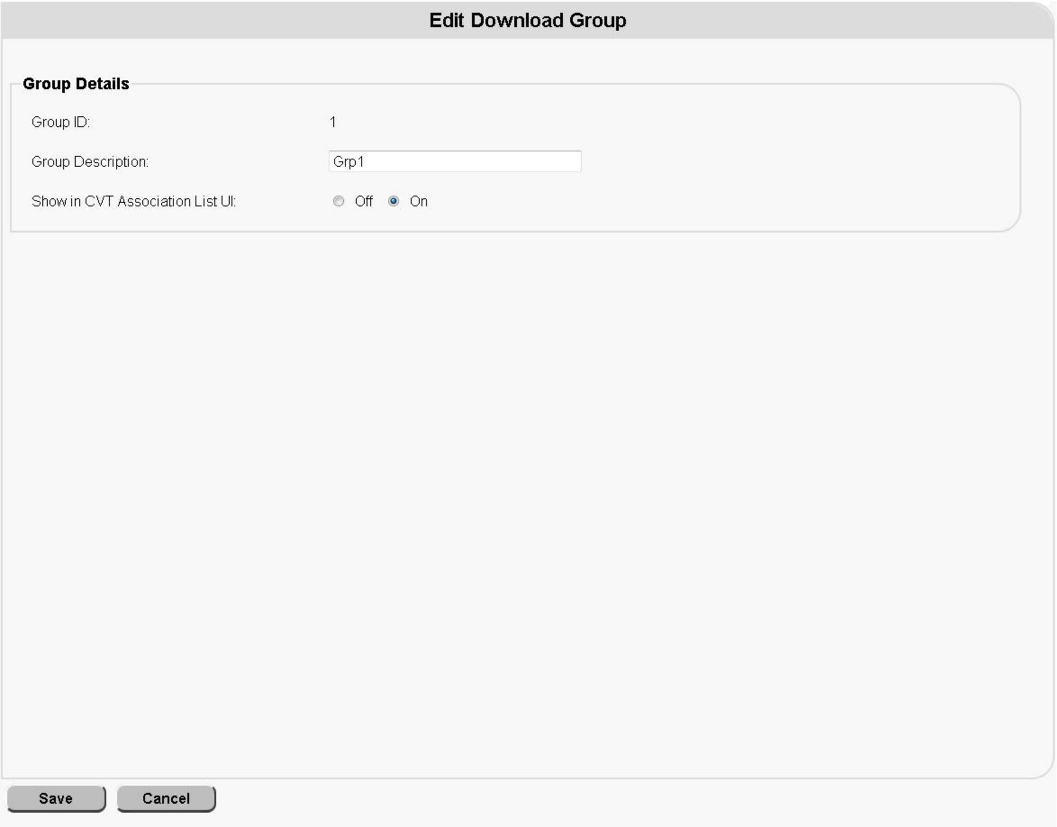
Edit a Download Group

Follow these instructions to edit a download group in the DTACS:

1 In the **Common Download** area of the DTACS Provisioning main window, click **Download Groups**. The Download Groups window opens.

2 Select the download group that you want to edit.

3 Click **Edit**. The Edit Download Group window opens.



Edit Download Group

Group Details

Group ID: 1

Group Description: Grp1

Show in CVT Association List UI: ○ Off ● On

Note: You cannot edit the **Group ID** field. To change the **Group ID**, you must delete and re-add the group.

4 Edit the appropriate field(s).

5 Click **Save**.

Delete Download Groups

Follow these instructions to delete a download group in the DTACS:

1 In the **Common Download** area of the DTACS Provisioning main window, click **Download Groups**. The Download Groups window opens.

2 Choose the group that you want to delete.

3 Click **Delete**. A confirmation window opens.

4 Click **OK**.

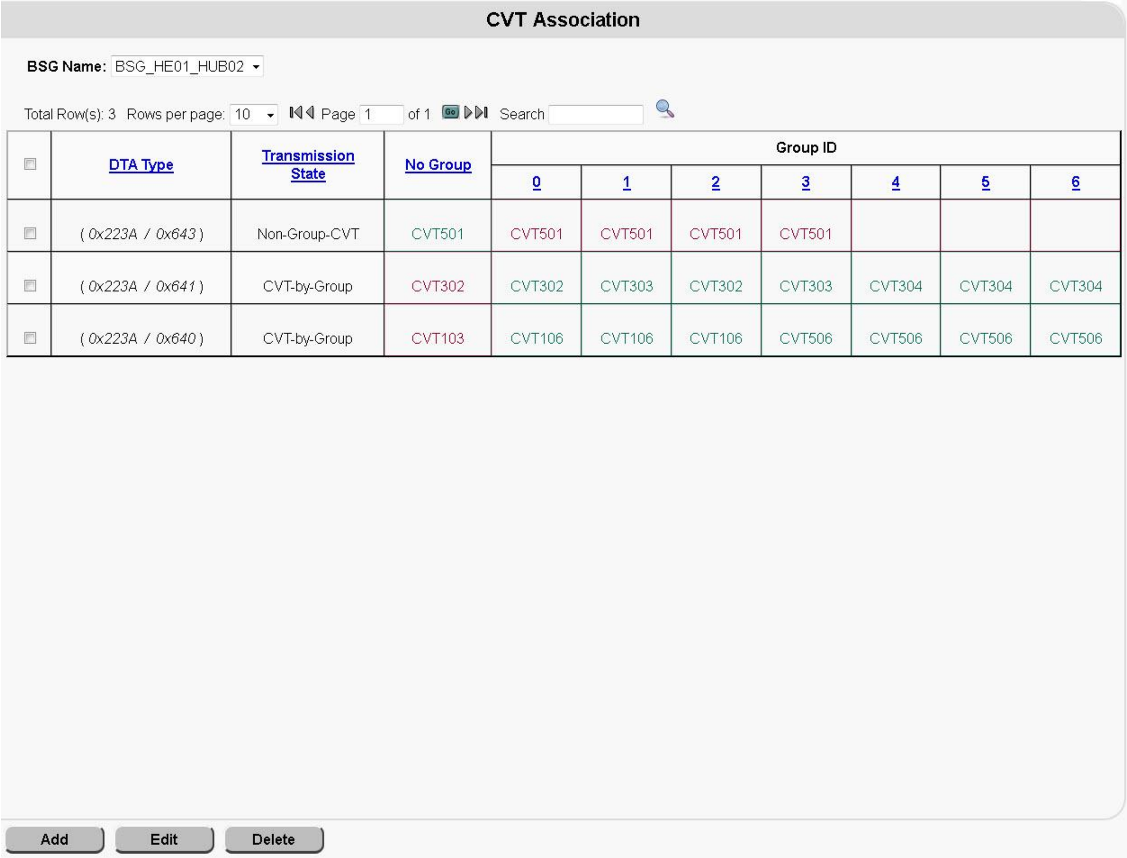
Associate CVTs

The CVT Association allows you to associate CVTs provisioned already for various models to every BSG and DTA type pair. A CVT becomes active only when you create the association with a **Transmission State** of **Non-Group-CVT** or **CVT-by-Group**.

View CVT Associations

Follow these instructions to view CVT associations in the DTACS:

1 In the **Common Download** area of the DTACS Provisioning main window, click **CVT Association**. The CVT Association window opens.



CVT Association

BSG Name: BSG_HE01_HUB02

Total Row(s): 3 Rows per page: 10 Page 1 of 1 Search

□	DTA Type	Transmission State	No Group	Group ID						
				0	1	2	3	4	5	6
□	(0x223A / 0x643)	Non-Group-CVT	CVT501	CVT501	CVT501	CVT501	CVT501			
□	(0x223A / 0x641)	CVT-by-Group	CVT302	CVT302	CVT303	CVT302	CVT303	CVT304	CVT304	CVT304
□	(0x223A / 0x640)	CVT-by-Group	CVT103	CVT106	CVT106	CVT106	CVT506	CVT506	CVT506	CVT506

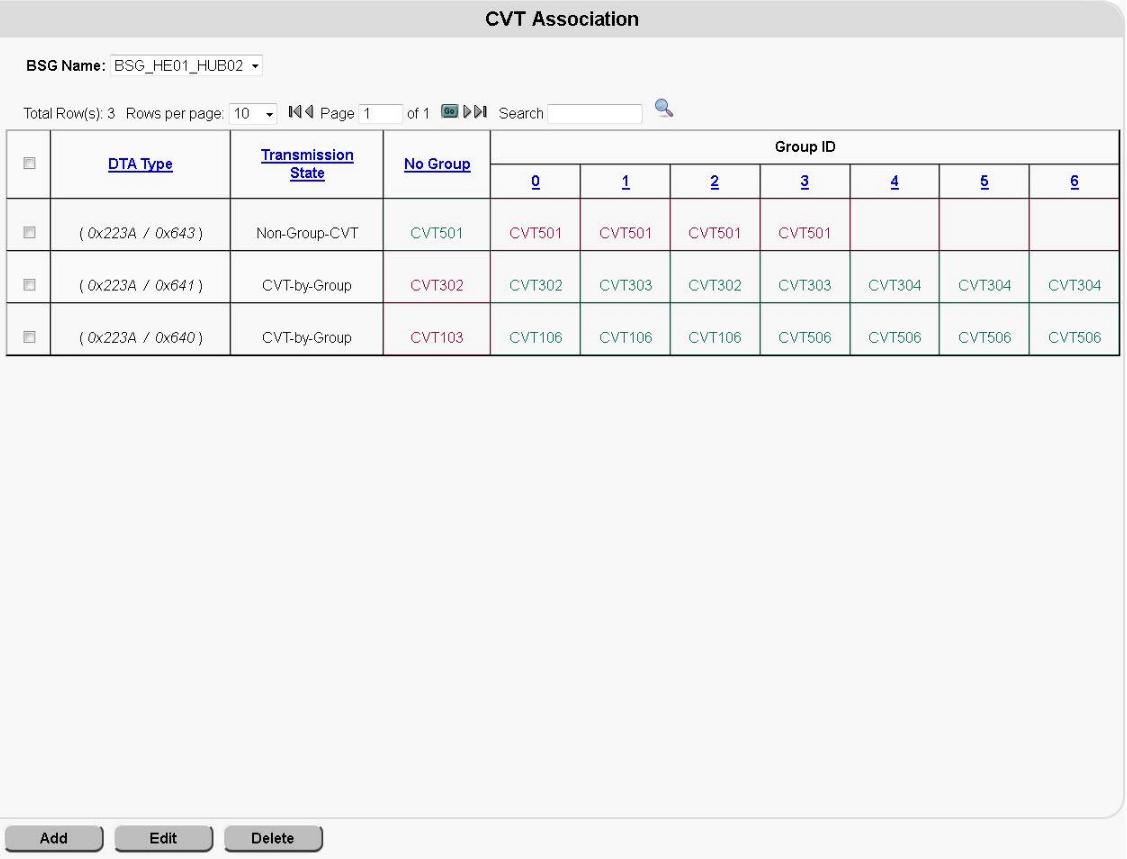
Note: The green color indicates the CVTs that are being transmitted. The red color indicates the ones that are not being transmitted. The transmission state of the association determines the color of the CVTs shown in this list

2 Choose the **BSG Name** from the list. The CVTs associated with that BSG are listed in the table.

Add a CVT Association

Follow these instructions to add a CVT association in the DTACS:

1 In the **Common Download** area of the DTACS Provisioning main window, click **CVT Association**. The CVT Association window opens.



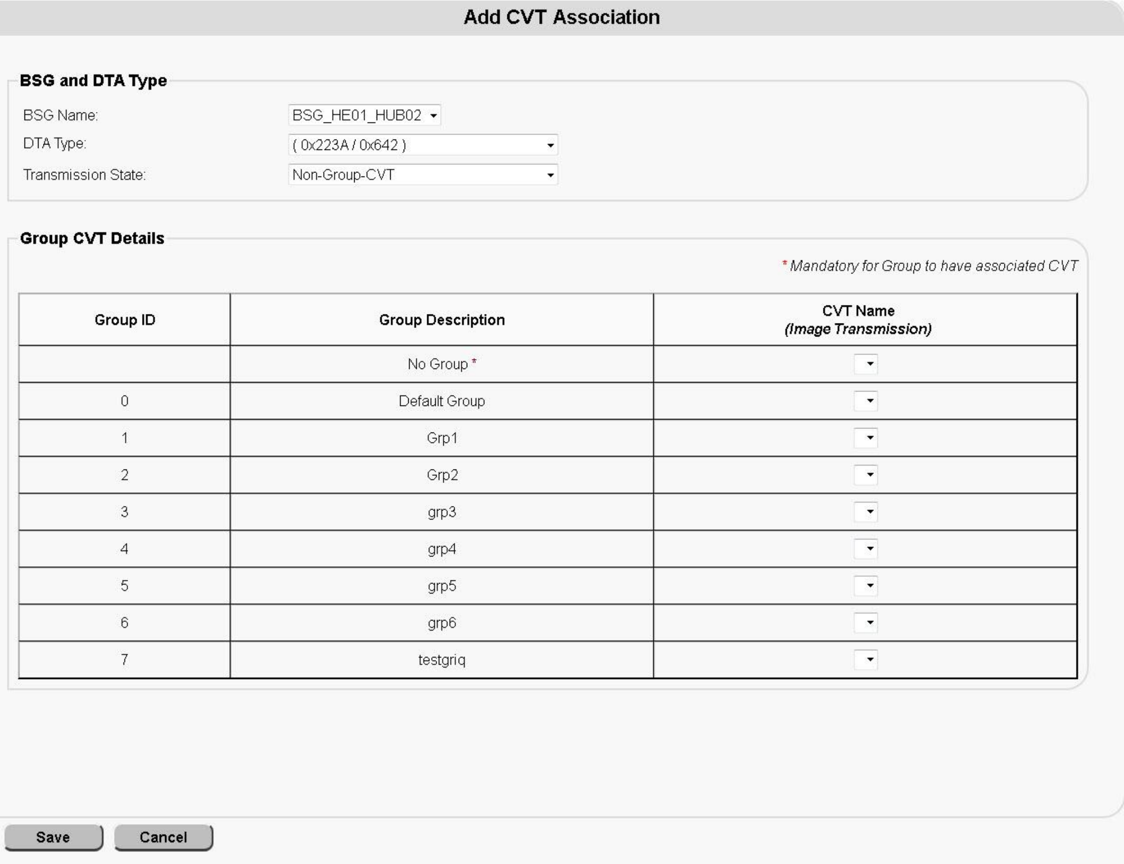
CVT Association

BSG Name: BSG_HE01_HUB02

Total Row(s): 3 Rows per page: 10 Page 1 of 1 Search

□	DTA Type	Transmission State	No Group	Group ID						
				0	1	2	3	4	5	6
□	(0x223A / 0x643)	Non-Group-CVT	CVT501	CVT501	CVT501	CVT501	CVT501			
□	(0x223A / 0x641)	CVT-by-Group	CVT302	CVT302	CVT303	CVT302	CVT303	CVT304	CVT304	CVT304
□	(0x223A / 0x640)	CVT-by-Group	CVT103	CVT106	CVT106	CVT106	CVT506	CVT506	CVT506	CVT506

2 Click **Add**. The Add CVT Association window opens.



Add CVT Association

BSG and DTA Type

BSG Name:	BSG_HE01_HUB02
DTA Type:	(0x223A / 0x642)
Transmission State:	Non-Group-CVT

Group CVT Details

** Mandatory for Group to have associated CVT*

Group ID	Group Description	CVT Name *(Image Transmission)*
	No Group *	
0	Default Group	
1	Grp1	
2	Grp2	
3	grp3	
4	grp4	
5	grp5	
6	grp6	
7	testgriq	

3 Use the following information to configure the fields on the Add CVT Association window:

- **BSG Name** — Choose the name of the BSG associated with this CVT from the drop-down list.
- **DTA Type** — Choose the DTA Type associated with this CVT from the drop-down list.

  Note: The CVT association will be created for the BSG - DTA type pair.
- **Transmission State** — Select the transmission state for this CVT.
  - **No-CVT** — The CVT association is created, but the CVTs are not sent to the BSG. CVT selection is not mandatory for groups and non-groups.
  - **Non-Group-CVT** — The CVT association is created and the CVT is sent without a group descriptor to the BSG. CVT selection is mandatory for non-groups, not mandatory for groups.
  - **CVT-by-Group** — The CVT association is created and the CVTs are transmitted to the BSG with group descriptors, containing a **Group ID**. Each CVT corresponds to a group. CVT selection is mandatory for groups, not mandatory for non-groups.
- **Group ID** — Displays the group ID.
- **Group Description** — Displays the description of the group.

- **CVT Name (Image Transmission)** — Displays all available CVTs for the selected DTA Type. Select the **CVT Name** associated with this group from the drop-down list.

Note: The Add CVT Association window supports multiple operations to be performed in this window. Hence, all fields are editable. The WUI control does not take the user back to the CVT Association main window after saving the additions. Click **Cancel** to return to the CVT Association main window.

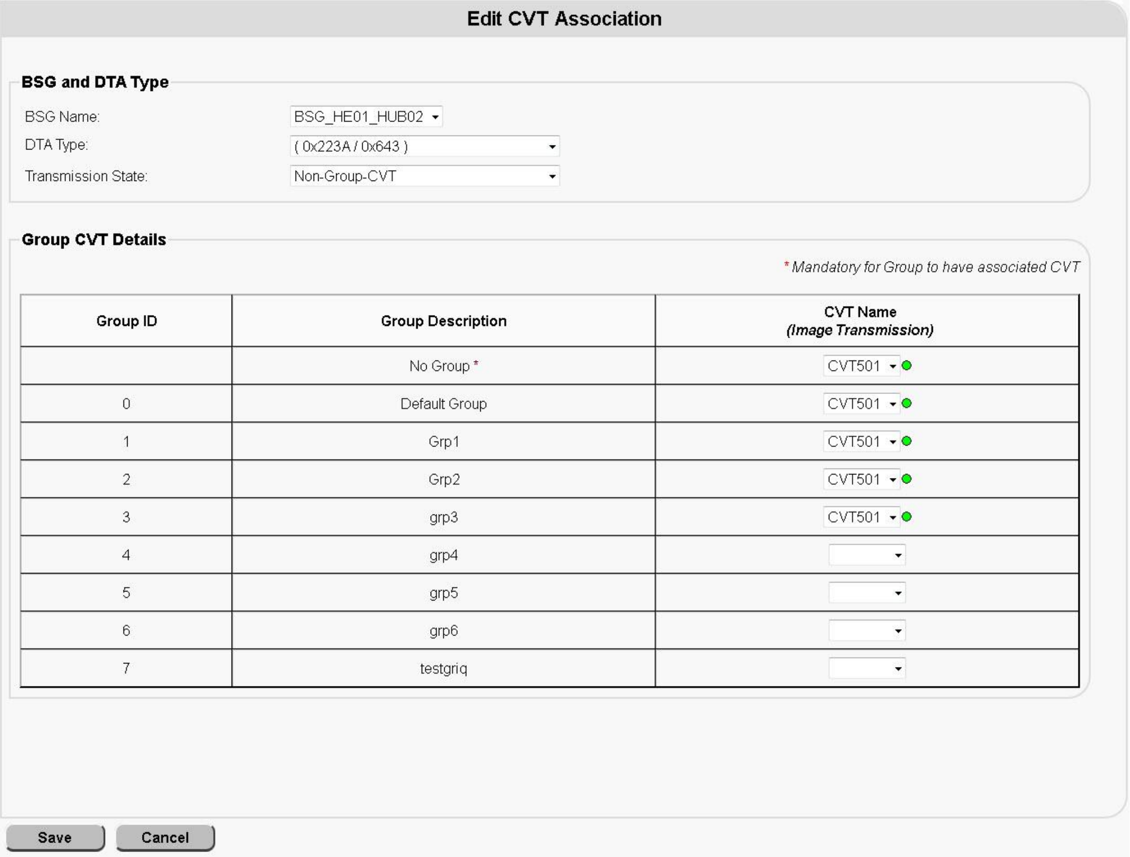
Edit a CVT Association

Follow these instructions to edit a CVT association in the DTACS:

1 In the **Common Download** area of the DTACS Provisioning main window, click **CVT Association**. The CVT Association window opens.

2 Select the CVT Association that you want to edit.

3 Click **Edit**. The Edit CVT Association window opens.



Edit CVT Association

BSG and DTA Type

BSG Name: BSG_HE01_HUB02

DTA Type: (0x223A / 0x643)

Transmission State: Non-Group-CVT

Group CVT Details

* *Mandatory for Group to have associated CVT*

Group ID	Group Description	CVT Name *(Image Transmission)*
	No Group *	CVT501 ●
0	Default Group	CVT501 ●
1	Grp1	CVT501 ●
2	Grp2	CVT501 ●
3	grp3	CVT501 ●
4	grp4	
5	grp5	
6	grp6	
7	testgriq	

4 Edit whatever fields need to be edited.

5 Click **Save**.

Note: The Edit CVT Association window supports multiple operations to be performed in this window. Hence, all fields are editable. The WUI control does not take the user back to the CVT Association main window after saving the edits. Click **Cancel** to return to the CVT Association main window.

Delete CVT Associations

Follow these instructions to delete a CVT association in the DTACS:

1 In the **Common Download** section of the DTACS Provisioning main window, click **CVT Association**. The CVT Association window opens.

2 Select the CVT Association that you want to delete.

3 Click **Delete**. A confirmation window opens.

4 Click **OK**. The CVT association is removed from the DTACS.

Configure Source-SCID Mapping

You can identify channels available for viewing by a DTA by identifying sources on the Source - SCID Mapping window. The DTACS assigns unique Simple Channel IDs (SCIDs) to sources identified as DTACS sources.

The Source - SCID Mapping screen allows you to choose a source as a DTACS source from the available list of sources, to modify the SCC parameters of a source, and to delete a DTACS source.

Note: If the DLNA feature is enabled or disabled, the WUI needs to restarted by closing the existing browser and reopening it.

View Source-SCID Mappings

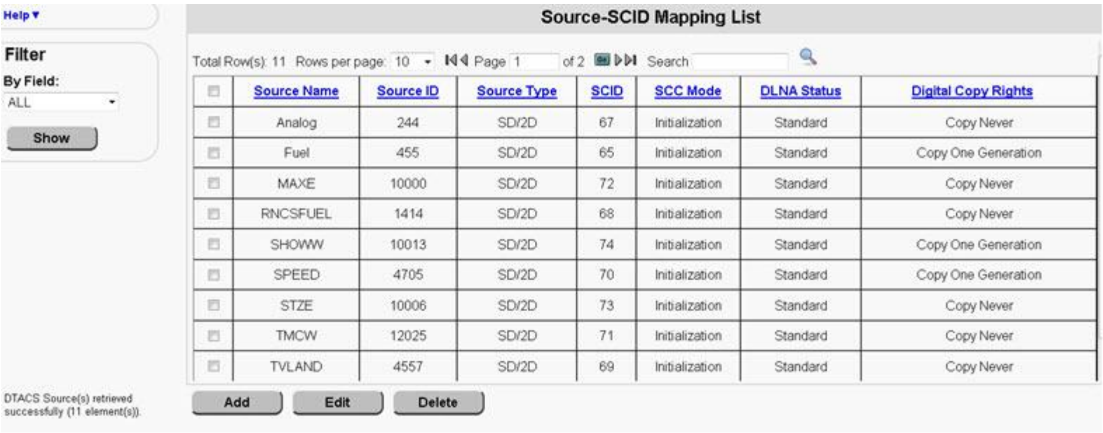
1 In the **Service Packaging** area of the DTACS Provisioning window, click **Source - SCID Mapping**. The Source-SCID Mapping List window opens.

2 From the **Filter** list, choose the type of mapping that you want to view. The options are:

- **All**
- **Source ID**
- **Source Name**
- **Source Type**
- **SCID**
- **SCC Mode**

3 Click **Show**. The Source-SCID Mapping List window opens, displaying the mappings that you selected for both DLNA range and Standard range SCIDs.

Note: This example, with the DLNA feature enabled, shows All Sources with mapped SCIDs.



Source-SCID Mapping List

Total Row(s): 11 Rows per page: 10 Page 1 of 2 Search

□	Source Name	Source ID	Source Type	SCID	SCC Mode	DLNA Status	Digital Copy Rights
□	Analog	244	SD/2D	67	Initialization	Standard	Copy Never
□	Fuel	455	SD/2D	65	Initialization	Standard	Copy One Generation
□	MAXE	10000	SD/2D	72	Initialization	Standard	Copy Never
□	RNCSFUEL	1414	SD/2D	68	Initialization	Standard	Copy Never
□	SHOWW	10013	SD/2D	74	Initialization	Standard	Copy One Generation
□	SPEED	4705	SD/2D	70	Initialization	Standard	Copy One Generation
□	STZE	10006	SD/2D	73	Initialization	Standard	Copy Never
□	TMCW	12025	SD/2D	71	Initialization	Standard	Copy Never
□	TVLAND	4557	SD/2D	69	Initialization	Standard	Copy Never

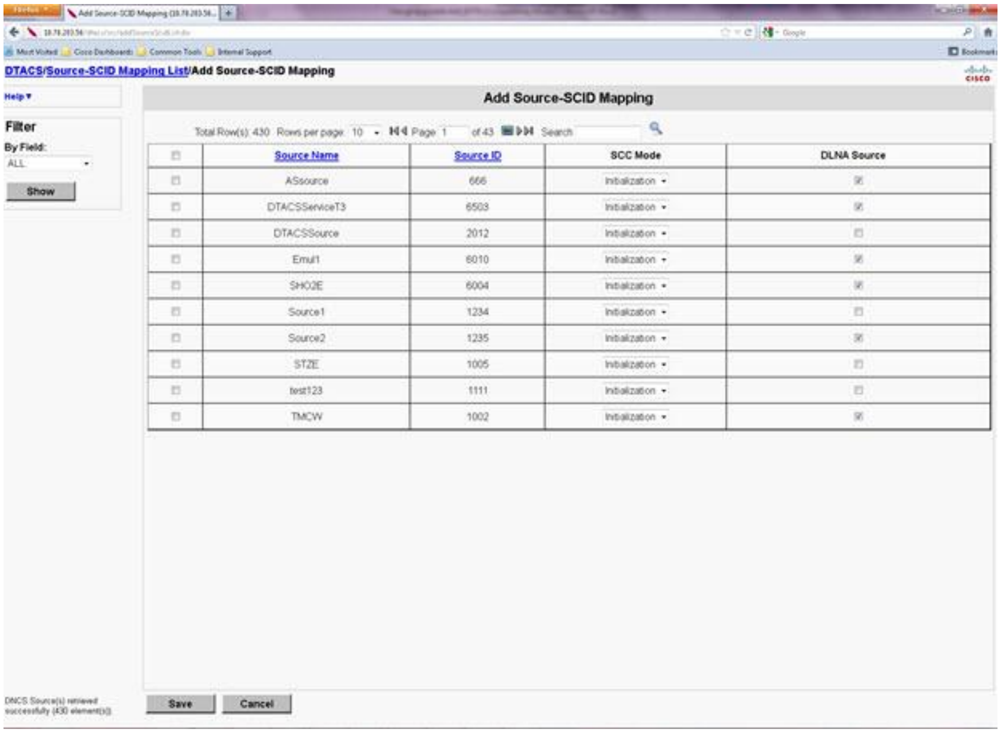
DTACS Source(s) retrieved successfully (11 element(s)).

Add a Source - SCID Mapping

1 In the **Service Packaging** area of the DTACS main window, click **Source - SCID Mapping**. The Source-SCID Mapping List window opens.

2 Click **Add**. The Add Source-SCID Mapping window opens.

Note: This example, with the DLNA feature enabled, shows the Sources that need to be mapped to SCIDs.



DTACS/Source-SCID Mapping List/Add Source-SCID Mapping

Add Source-SCID Mapping

Total Row(s): 430 Rows per page: 10 Page 1 of 43

□	Source Name	Source ID	SCC Mode	DLNA Source
□	ASsource	666	Initialization	☒
□	DTACSServiceT3	6503	Initialization	☒
□	DTACSSource	2012	Initialization	□
□	Emul1	6010	Initialization	☒
□	SHO2E	6004	Initialization	☒
□	Source1	1234	Initialization	□
□	Source2	1235	Initialization	☒
□	STZE	1005	Initialization	□
□	test123	1111	Initialization	□
□	TMCW	1002	Initialization	☒

DNCS Source(s) retrieved successfully (430 element(s))

3 Select the **Source(s)** to which you want to map.

4 Select the **SCC Mode** for this mapping.

5 Select the **DLNA Source** check box for this mapping in **DLNA** range and un-check the **DLNA Source** for this mapping in **Standard** range.

6 Use the following information to complete your configuration:

- **Source Name** — The name of the source in the mapping.
- **Source ID** — The unique, numerical ID of the source.
- **Source Type** — The type of source in the mapping.
- **Source Compression Type** — The type of compression used on the source.
- **Digital Copy Rights** — The rights of the source for subscriber copying.

  Note: If there are no segments for the source, the Digital Copy Rights is always set to **Copy Never**.
- **SCID** — The Simple Channel ID of the source in the mapping.

- **SCC Mode** — The SCC mode of the mapping. Choose one of the following options:
  - **Initialization**: SCC is not enabled, and the service is allowed to be viewed by any DTA.
  - **Enable**: Normal SCC operation. The SCID from the ACM must be set to **1** in the SCC AMM bitmap for the service to be allowed (either in the clear or encrypted).
  - **Preview**: ACM processing is similar to **Enabled** mode, but the SCID of the service is ignored. This mode is recommended for Free Preview modes.
- **DLNA Source** — The sources that have the DLNA Source enabled have the SCIDs generated in the DLNA range. The sources that have the DLNA Source disabled have the SCIDs generated in the Standard range.

7. Click **Save**.

Edit a Source - SCID Mapping

1. In the **Service Packaging** section of the DTACS main window, click **Source - SCID Mapping**. The Source-SCID Mapping List window opens.
2. Click the drop-down list in the **Filter** section and choose the type of mapping that you want to view. The options are:
   - **All**
   - **Source ID**
   - **Source Name**
   - **Source Type**
   - **SCID**
   - **SCC Mode**
3. Click **Show**. The Source-SCID Mapping List window opens, displaying the mappings that you selected.
4. Select the mapping that you want to edit.
5. Click **Edit.** The Edit Source-SCID Mapping window opens.
6. Select the **SCC Mode** for this mapping.
7. Edit whatever fields need to be changed.
8. Click **Save** when you are finished.

Delete a Source - SCID Mapping

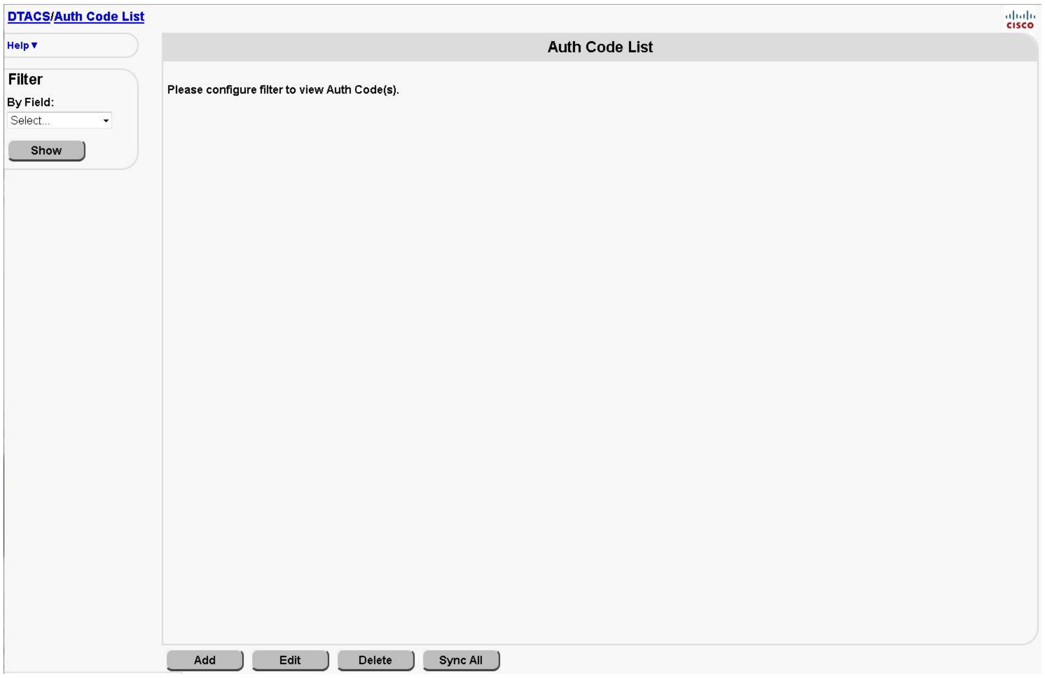
1. In the **Service Packaging** section of the DTACS main window, click **Source - SCID Mapping**. The Source-SCID Mapping List window opens.
2. Click the Source-SCID Mapping List and choose the type of mapping that you want to view. The options are:
   - **All**
   - **Source ID**
   - **Source Name**
   - **Source Type**
   - **SCID**
   - **SCC Mode**
3. Click **Show**. The Source-SCID Mapping List window opens, displaying the mappings that you selected.
4. Select the mapping that you want to delete.
5. Click **Delete**. A confirmation window opens.
6. Click **OK**.

Manage Authorization Codes

Authorization codes manage authorizations on the DTACS. The information in this section allows you to create new authorization codes, to associate and disassociate sources to authorization codes, to delete authorization codes, and to associate a Group ID to an authorization code.

View Authorization Codes

1 In the **Service Packaging** area of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.

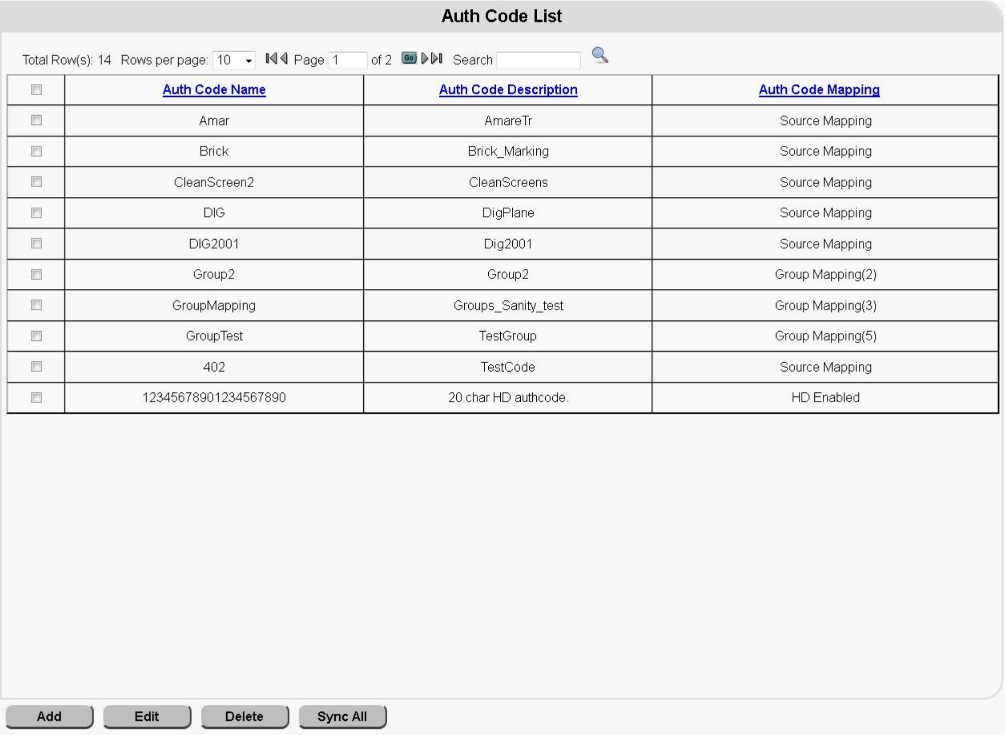


Please configure filter to view Auth Code(s).

2 Click the Auth Code List and choose the type of mapping that you want to view: **All** or **Auth Code Name**.

3 Click **Show**. The Auth Code List window opens, displaying the authorization codes that you selected.

Example: The following example shows All Authorization Codes:



Auth Code List

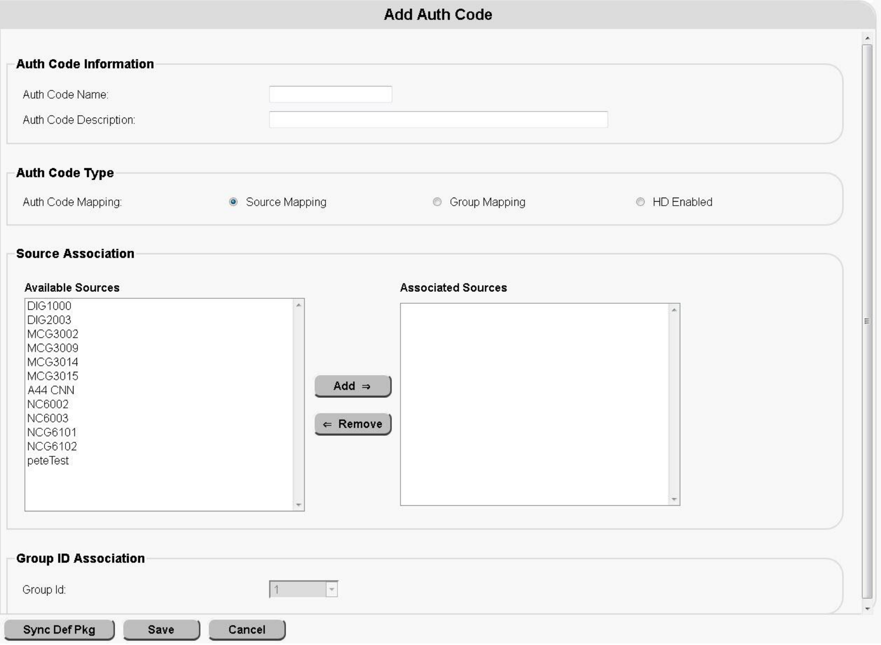
Total Row(s): 14 Rows per page: 10 Page 1 of 2 Search

□	Auth Code Name	Auth Code Description	Auth Code Mapping
□	Amar	AmareTr	Source Mapping
□	Brick	Brick_Marking	Source Mapping
□	CleanScreen2	CleanScreens	Source Mapping
□	DIG	DigPlane	Source Mapping
□	DIG2001	Dig2001	Source Mapping
□	Group2	Group2	Group Mapping(2)
□	GroupMapping	Groups_Sanity_test	Group Mapping(3)
□	GroupTest	TestGroup	Group Mapping(5)
□	402	TestCode	Source Mapping
□	12345678901234567890	20 char HD authcode.	HD Enabled

Add Authorization Codes

1 In the **Service Packaging** section of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.

2 Click **Add**. The Add Auth Code window opens.



Add Auth Code

Auth Code Information

Auth Code Name:

Auth Code Description:

Auth Code Type

Auth Code Mapping: ● Source Mapping ○ Group Mapping ○ HD Enabled

Source Association

Available Sources: DIG1000, DIG2003, MCG3002, MCG3009, MCG3014, MCG3015, A44 CNN, NC6002, NC6003, NCG6101, NCG6102, peteTest

Associated Sources:

Group ID Association

Group Id: 1

3 Use the following information to configure the Add Auth Code window:

- **Auth Code Name** — The unique, alphanumeric name of this authorization code.

  Important:

  - This name does not need to be a package name.
  - This name can be same as the package name on the EC for any authorization code mapped to a Source/Group ID/HD Enabled.
  - This name cannot be part of any package sets defined in the DTACS to identify VCTs.
  - You can enter up to 20 alphanumeric characters in this field.
  - This field is not editable.
- **Auth Code Description** — A description of the authorization code. You can enter up to 64 alphanumeric characters in this field.
- **Auth Code Mapping** — Select the type of mapping that this code uses.
  - **Source Mapping (default):** This authorization code will map to sources. See the notes in the Auth Code Name field in regards to naming conventions associated with this option. Selecting this option enables the fields in the Source Association section.
  - **Group Mapping:** This authorization code will map to a group. Selecting this option enables the field in the Group ID Association section.
  - **HD Enabled:** This authorization code is high-definition video-enabled.

    Note: This checkbox will be available for selection when at least one HD authorization code is available in the system.
- **Available Sources** — Sources available in the DTACS for the authorization code. Select a source in the **Available Sources** list and click **Add** to add that source to the **Associated Sources** list.

  Note: This section is only active if **Source Mapping** is selected in the **Auth Code Mapping** field.
- **Associated Sources** — Sources assigned to this authorization code. Select a source in the **Associated Sources** list and click **Remove** to remove that source from the **Associated Sources** list.

  Note: This section is only active if **Source Mapping** is selected in the **Auth Code Mapping** field.
- **Group ID** — Select the group associated with this authorization code.

  Note: This field is only active if **Group Mapping** is selected in the **Auth Code Mapping** field.

4 Does the source-mapped authorization code need to be synchronized with the packages on the EC?

- If **yes**, go to the next step.
- If **no**, you are finished with this procedure.

5 Click **Sync Def Pkg** to synchronize the authorization code with the package on the EC.

6 Click **Save**. A message indicating successful execution appears.

Edit Authorization Codes

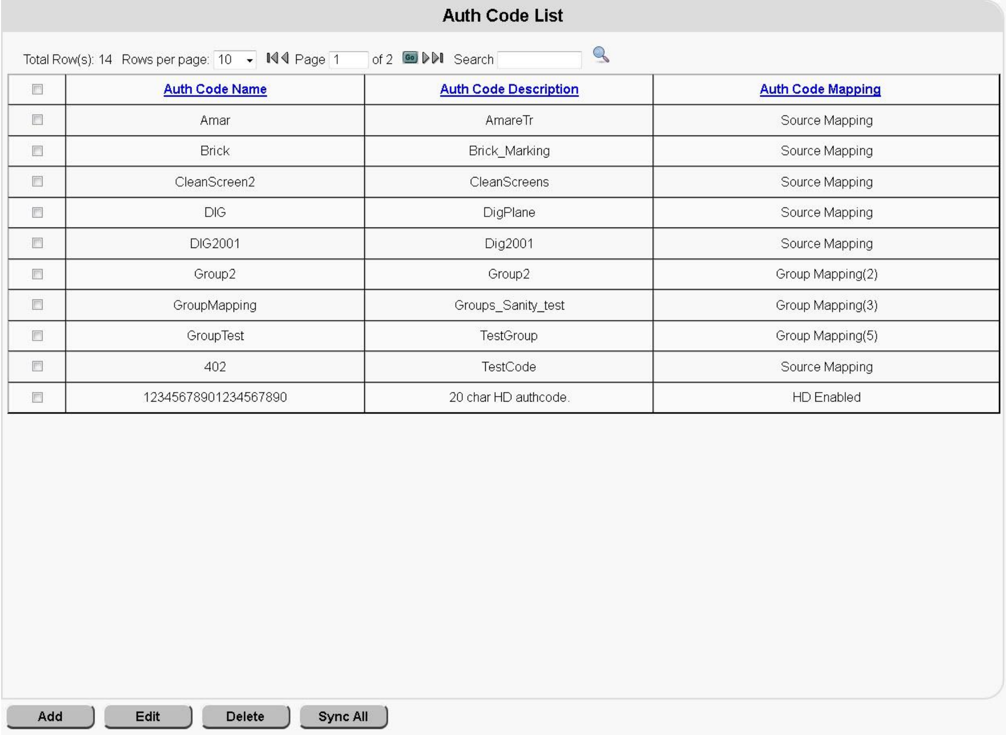
Follow these instructions to edit an authorization code:

1 In the **Service Packaging** area of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.

2 Click the drop-down list in the **Filter** section and choose the type of mapping that you want to view: **All** or **Auth Code Name**.

3 Click **Show**. The Auth Code List window opens, displaying the authorization codes you selected.

Example: The following example shows All Authorization Codes.



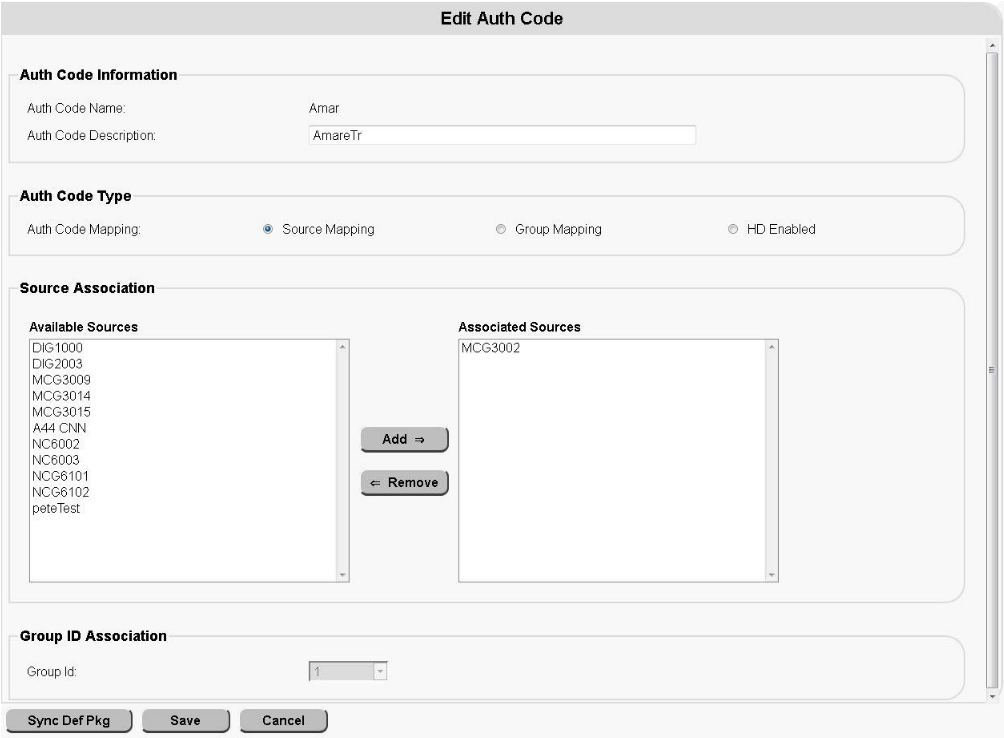
Auth Code List

Total Row(s): 14 Rows per page: 10 Page 1 of 2 Search

□	Auth Code Name	Auth Code Description	Auth Code Mapping
□	Amar	AmareTr	Source Mapping
□	Brick	Brick_Marking	Source Mapping
□	CleanScreen2	CleanScreens	Source Mapping
□	DIG	DigPlane	Source Mapping
□	DIG2001	Dig2001	Source Mapping
□	Group2	Group2	Group Mapping(2)
□	GroupMapping	Groups_Sanity_test	Group Mapping(3)
□	GroupTest	TestGroup	Group Mapping(5)
□	402	TestCode	Source Mapping
□	12345678901234567890	20 char HD authcode.	HD Enabled

4 Select the authorization code that you want to edit.

5 Click **Edit**. The Edit Auth Code window opens.



Edit Auth Code

Auth Code Information

Auth Code Name: Amar

Auth Code Description: AmareTr

Auth Code Type

Auth Code Mapping: ● Source Mapping ○ Group Mapping ○ HD Enabled

Source Association

Available Sources

DIG1000
DIG2003
MCG3009
MCG3014
MCG3015
A44 CNN
NC6002
NC6003
NCG6101
NCG6102
peteTest

Associated Sources

MCG3002

Group ID Association

Group Id: 1

6 Edit the fields as appropriate.

Note: The **Auth Code Name** field is not editable. To change the name, you must delete and re-add the authorization code.

7 Does the source-mapped authorization code need to be synchronized with the packages on the EC?

- If **yes**, go to the next step.
- If **no**, you are finished with this procedure.

8 Click **Sync Def Pkg** to synchronize the authorization code with the package on the EC.

9 Click **Save**. A message indicating successful execution appears.

Delete Authorization Codes

Follow these instructions to delete an authorization code from the DTACS:

1. In the **Service Packaging** area of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.
2. Click the drop-down list in the **Filter** section and choose the type of mapping that you want to view: **All** or **Auth Code Name**.
3. Click **Show**. The Auth Code List window opens, displaying the authorization codes that you selected.
4. Select the authorization code(s) that you want to delete.
5. Click **Delete**. A confirmation window opens.
6. Click **OK**. A message indicating successful execution appears.

Synchronize All Authorization Codes with EC Packages

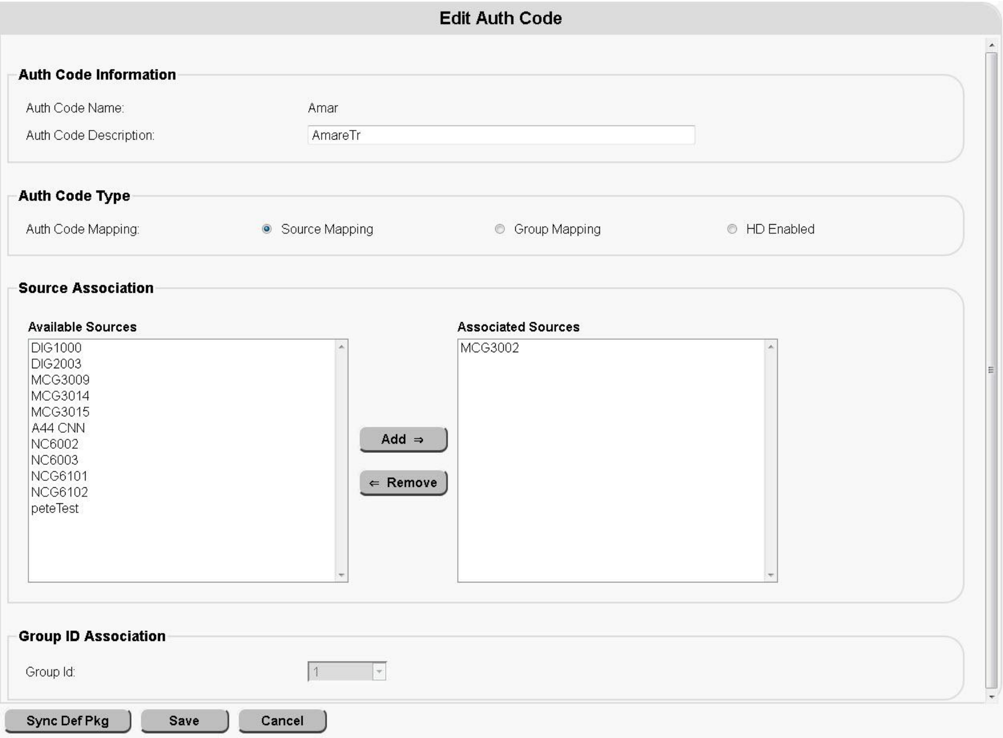
1. In the **Service Packaging** area of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.
2. Click the drop-down list in the **Filter** section and choose the type of mapping that you want to view: **All** or **Auth Code Name**.
3. Click **Show**. The Auth Code List window opens, displaying the authorization codes that you selected.
4. Select the Source Mapping Auth Code(s) that you want to synchronize.
5. Click **Sync All**.

Synchronize an Authorization Code with the EC Package

When you add or edit a source-mapped code (the Auth Code Mapping parameter is set to Source Mapping), follow this procedure if you need to synchronize the code with the EC package:

1. In the **Service Packaging** section of the DTACS Provisioning window, click **Auth Code Management**. The Auth Code List window opens.
2. Click the drop-down list in the **Filter** section and choose the type of mapping you want to view: **All** or **Auth Code Name**.
3. Click **Show**. The Auth Code List window opens, displaying the authorization codes you selected.

4 Click **Edit**. The Edit Auth Code window opens.



Edit Auth Code

Auth Code Information

Auth Code Name: Amar

Auth Code Description: AmareTr

Auth Code Type

Auth Code Mapping: ● Source Mapping ○ Group Mapping ○ HD Enabled

Source Association

Available Sources:

DIG1000
DIG2003
MCG3009
MCG3014
MCG3015
A44 CNN
NC6002
NC6003
NCG6101
NCG6102
peteTest

Associated Sources:

MCG3002

Group ID Association

Group Id: 1

5 Click **Sync Def Pkg** to synchronize the authorization code with the package on the EC.

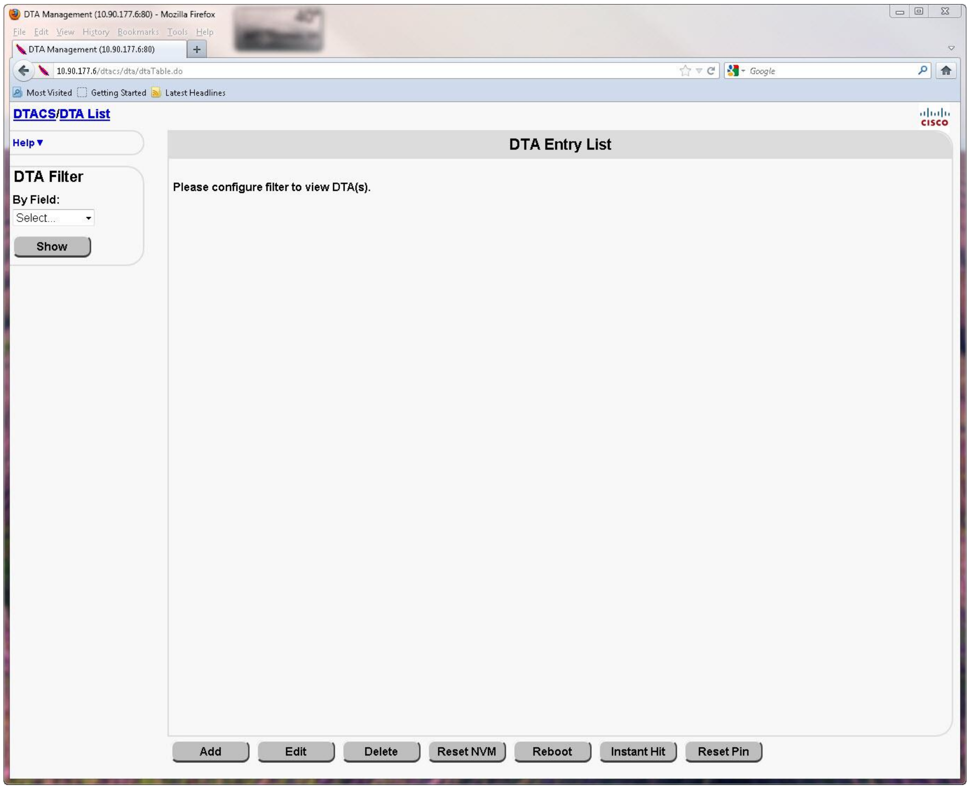
6 Click **Save**.

Manage DTAs

View a DTA

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



Please configure filter to view DTA(s).

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

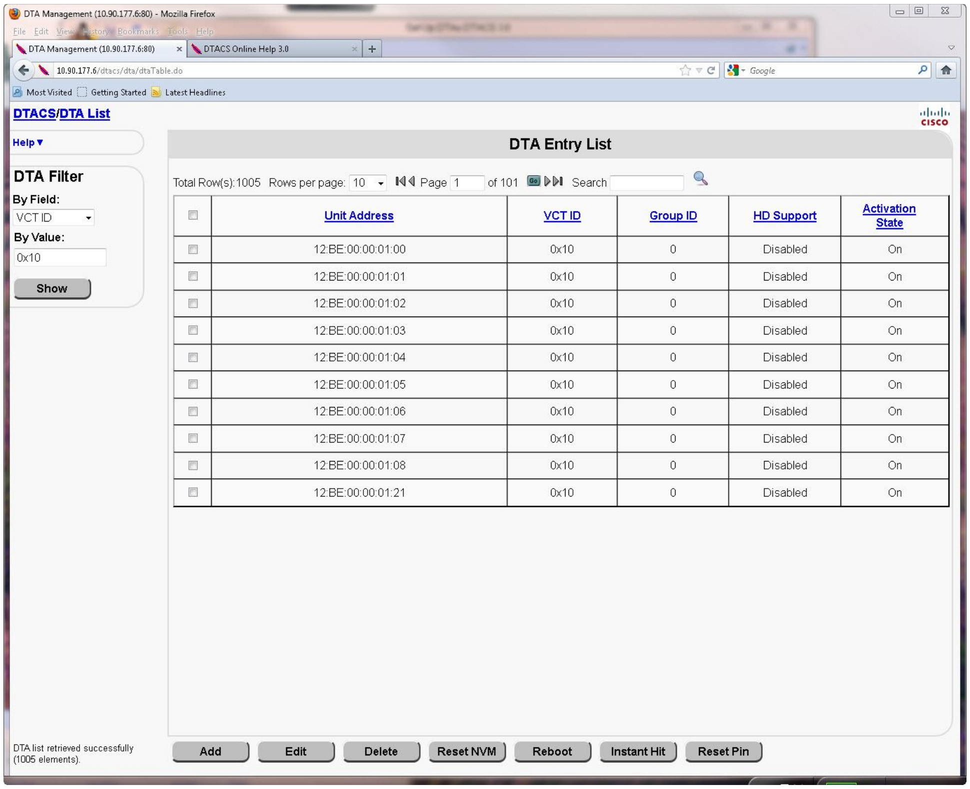
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will filter upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.



DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/DTA List
cisco
Help ▾

DTA Filter

By Field: VCT ID

By Value: 0x10

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

□	Unit Address	VCT ID	Group ID	HD Support	Activation State
□	12:BE:00:00:01:00	0x10	0	Disabled	On
□	12:BE:00:00:01:01	0x10	0	Disabled	On
□	12:BE:00:00:01:02	0x10	0	Disabled	On
□	12:BE:00:00:01:03	0x10	0	Disabled	On
□	12:BE:00:00:01:04	0x10	0	Disabled	On
□	12:BE:00:00:01:05	0x10	0	Disabled	On
□	12:BE:00:00:01:06	0x10	0	Disabled	On
□	12:BE:00:00:01:07	0x10	0	Disabled	On
□	12:BE:00:00:01:08	0x10	0	Disabled	On
□	12:BE:00:00:01:21	0x10	0	Disabled	On

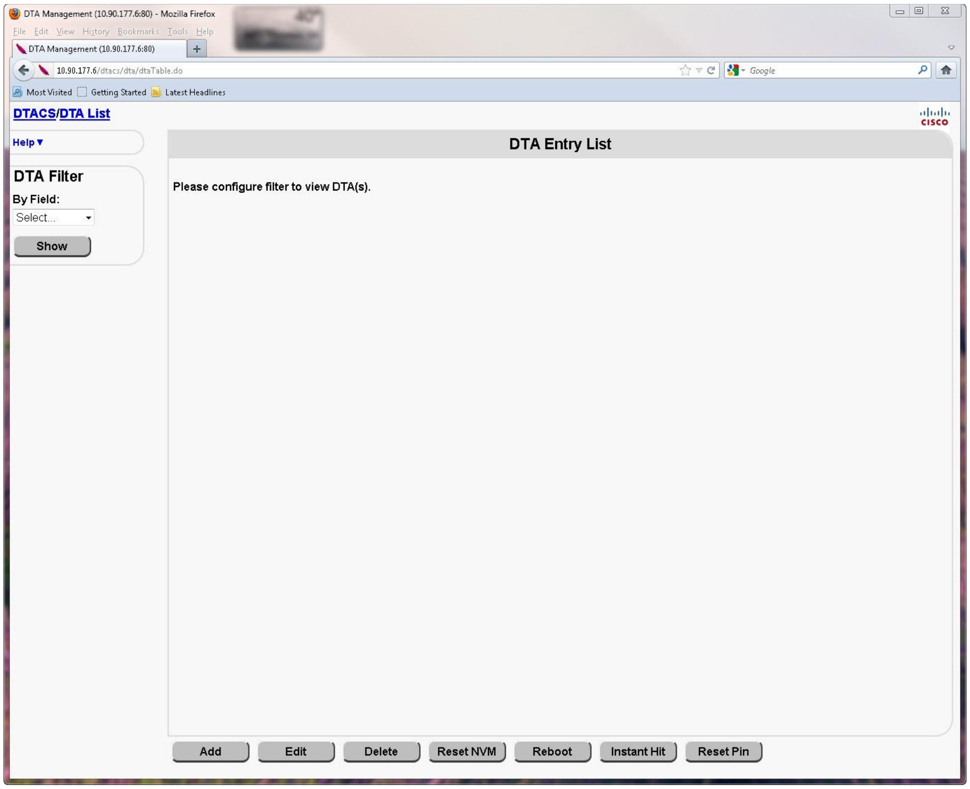
DTA list retrieved successfully (1005 elements).

5 Select one of the buttons at the bottom of the page to continue setting up the DTAs. Each function is covered in one of the following sections.

Add a DTA

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

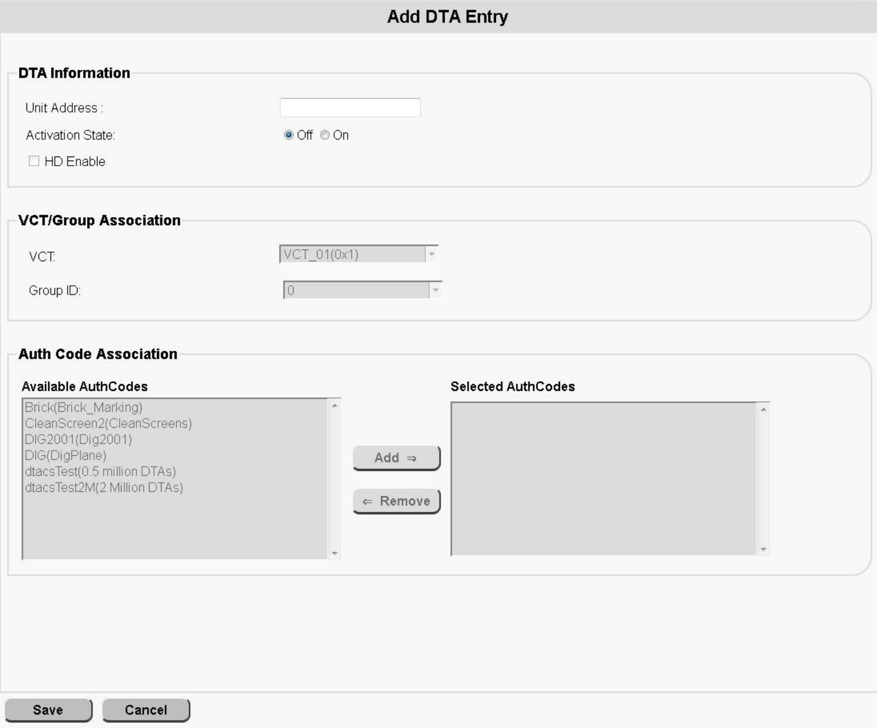
Result: The DTA Entry List window opens.


DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited Getting Started Latest Headlines
DTACS/DTA List
Help ▾
DTA Filter
By Field:
Select...
Show
DTA Entry List
Add
Edit
Delete
Reset NVM
Reboot
Instant Hit
Reset Pin

Please configure filter to view DTA(s).

2 Click **Add**.

Results: The Add DTA Entry window opens.



Add DTA Entry

DTA Information

Unit Address :

Activation State: ● Off ○ On

□ HD Enable

VCT/Group Association

VCT: VCT_01(0x1)

Group ID: 0

Auth Code Association

Available AuthCodes

Brick(Brick_Marking)
CleanScreen2(CleanScreens)
DIG2001(Dig2001)
DIG(DigPlane)
dtacsTest(0.5 million DTAs)
dtacsTest2M(2 Million DTAs)

Selected AuthCodes

3 Follow these instructions to configure the Add DTA Entry window:

a In the **Unit Address** field, type the MAC address of the DTA that you want to add.

b In the **Activation State** field, click either **Off** or **On**, depending upon whether the DTA is to be active or not.

c Click to select the **HD Enable** field if you want to enable high-definition video on this DTA.

Note: This field is only editable if at least one authorization code in the system is HD-enabled.

d In the **VCT** field, click the arrow and select the name of the VCT associated with the DTA that you are adding.

e Click the arrow to the right of the **Group ID** field to select the group to which the DTA you are adding will belong.

f In the **Available AuthCodes** field, select an authorization code and then click **Add** to move that authorization code to the **Selected AuthCodes** list.

Note: The authorization codes that are displayed are those codes that are mapped to sources and are not authorized to the DTA.

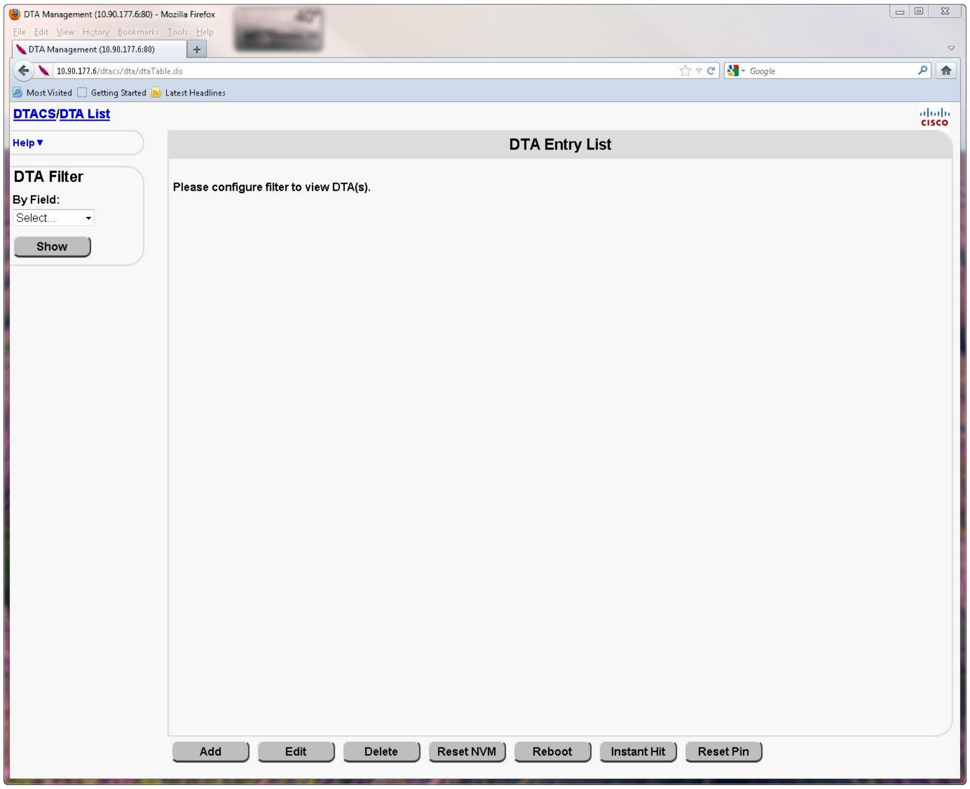
4 Click **Save**. A message indicating successful execution appears.

Edit a DTA

Follow these steps to edit a DTA:

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/DTA List
Help ▾
Show
Add
Edit
Delete
Reset NVM
Reboot
Instant Hit
Reset Pin

DTA Entry List

Please configure filter to view DTA(s).

DTA Filter

By Field: Select...

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

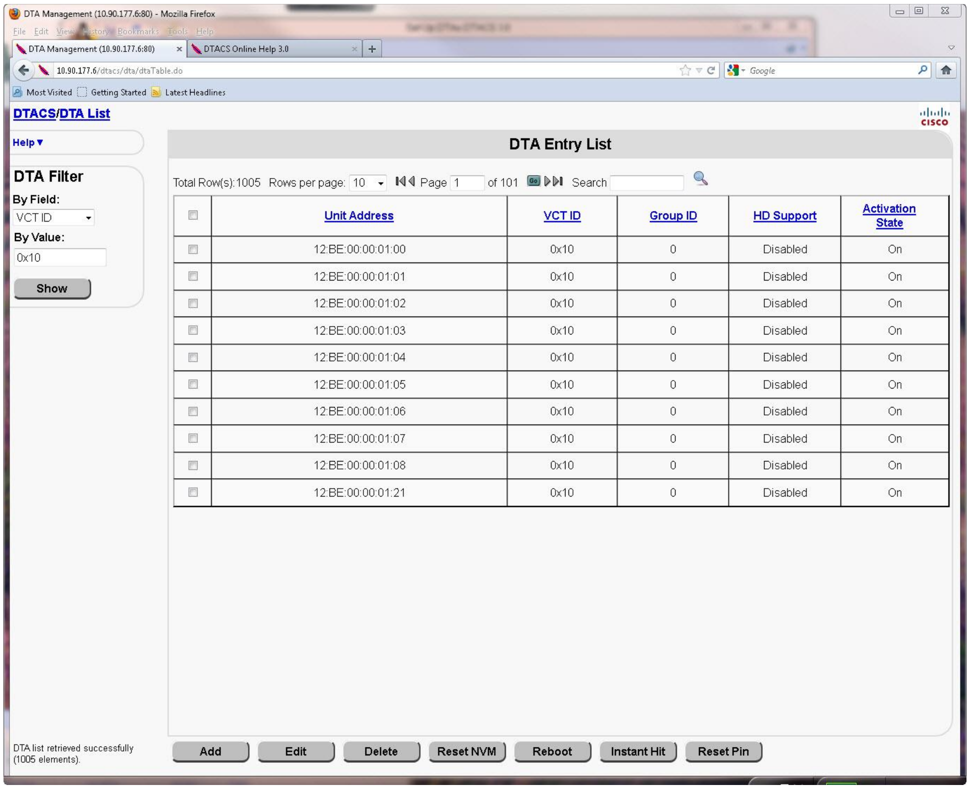
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will filter upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.



DTA Filter

By Field: VCT ID

By Value: 0x10

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

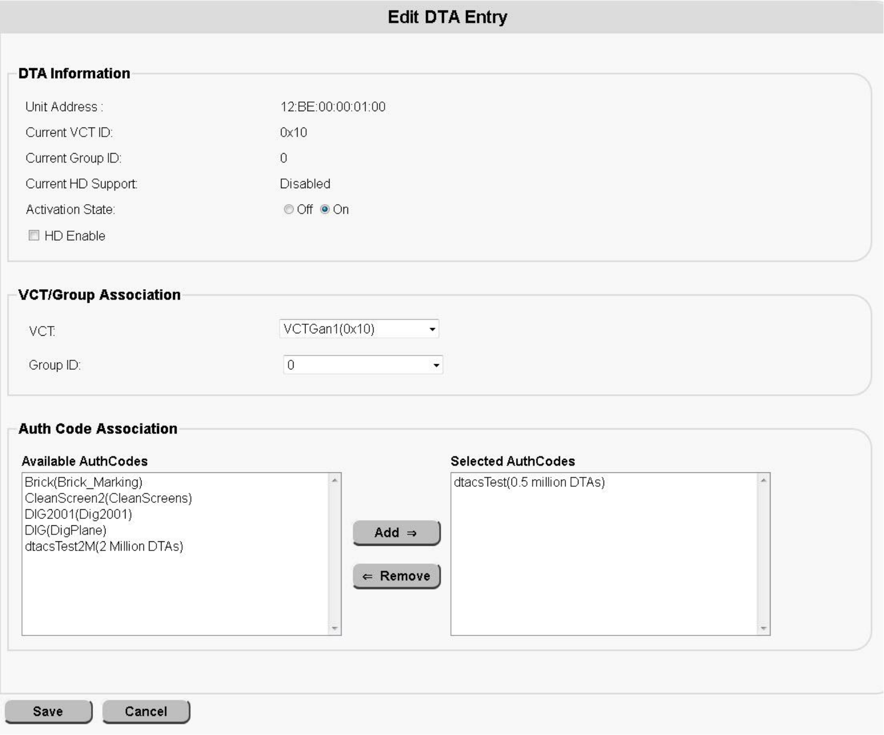
□	Unit Address	VCT ID	Group ID	HD Support	Activation State
□	12:BE:00:00:01:00	0x10	0	Disabled	On
□	12:BE:00:00:01:01	0x10	0	Disabled	On
□	12:BE:00:00:01:02	0x10	0	Disabled	On
□	12:BE:00:00:01:03	0x10	0	Disabled	On
□	12:BE:00:00:01:04	0x10	0	Disabled	On
□	12:BE:00:00:01:05	0x10	0	Disabled	On
□	12:BE:00:00:01:06	0x10	0	Disabled	On
□	12:BE:00:00:01:07	0x10	0	Disabled	On
□	12:BE:00:00:01:08	0x10	0	Disabled	On
□	12:BE:00:00:01:21	0x10	0	Disabled	On

DTA list retrieved successfully (1005 elements).

5 Click the check box of the DTA that you want to edit.

6 Click **Edit**.

Result: The Edit DTA Entry window opens.



Edit DTA Entry

DTA Information

Unit Address : 12:BE:00:00:01:00

Current VCT ID: 0x10

Current Group ID: 0

Current HD Support: Disabled

Activation State: ○ Off ● On

□ HD Enable

VCT/Group Association

VCT: VCTGan1(0x10)

Group ID: 0

Auth Code Association

Available AuthCodes

Brick(Brick_Marking)
CleanScreen2(CleanScreens)
DIG2001(Dig2001)
DIG(DigPlane)
dtacsTest2M(2 Million DTAs)

Selected AuthCodes

dtacsTest(0.5 million DTAs)

7 Follow these instructions to update the appropriate fields on the Edit DTA Entry window:

a In the **Activation State** field, click either **Off** or **On**, depending upon whether the DTA is to be active or not.

b Click to select the **HD Enable** field if you want to enable high-definition video on this DTA.

Note: This field is only editable if at least one authorization code in the system is HD-enabled.

c In the **VCT** field, select the name of the VCT associated with the DTA you are adding.

d Click the arrow to the right of the **Group ID** field to select the group to which the DTA you are adding will belong.

e In the **Available AuthCodes** field, select an authorization code and then click **Add** to move that authorization code to the **Selected AuthCodes** list.

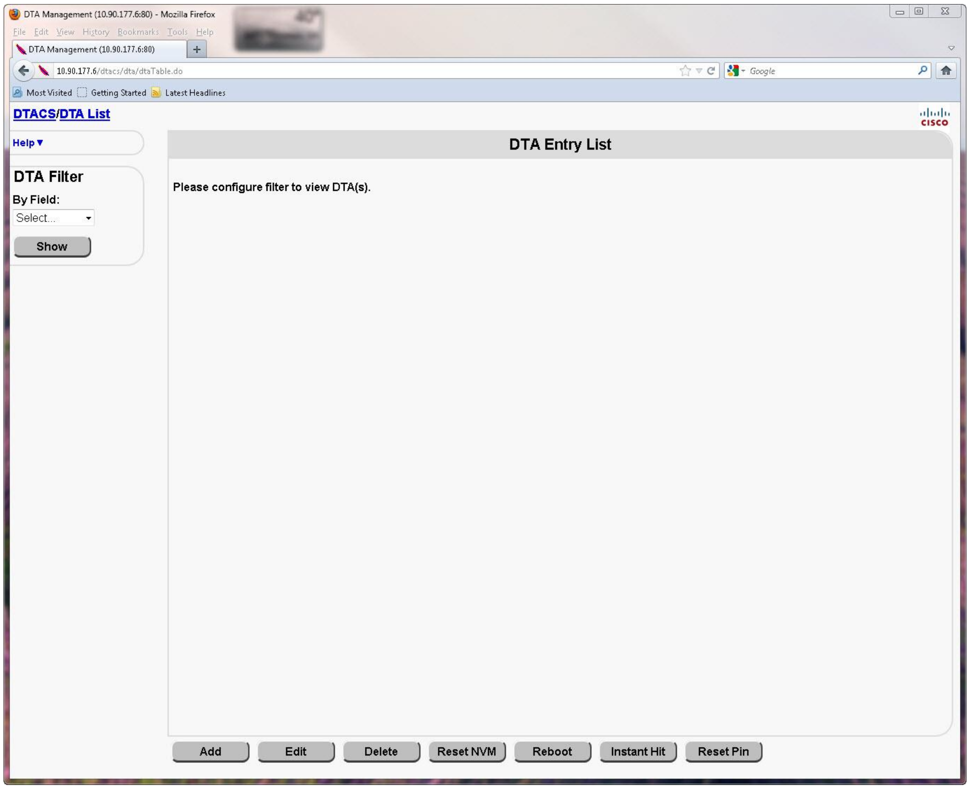
Note: The authorization codes that are displayed are those codes that are mapped to sources and are not authorized to the DTA.

8 Click **Save**. A message indicating successful execution appears.

Delete a DTA

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



Please configure filter to view DTA(s).

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

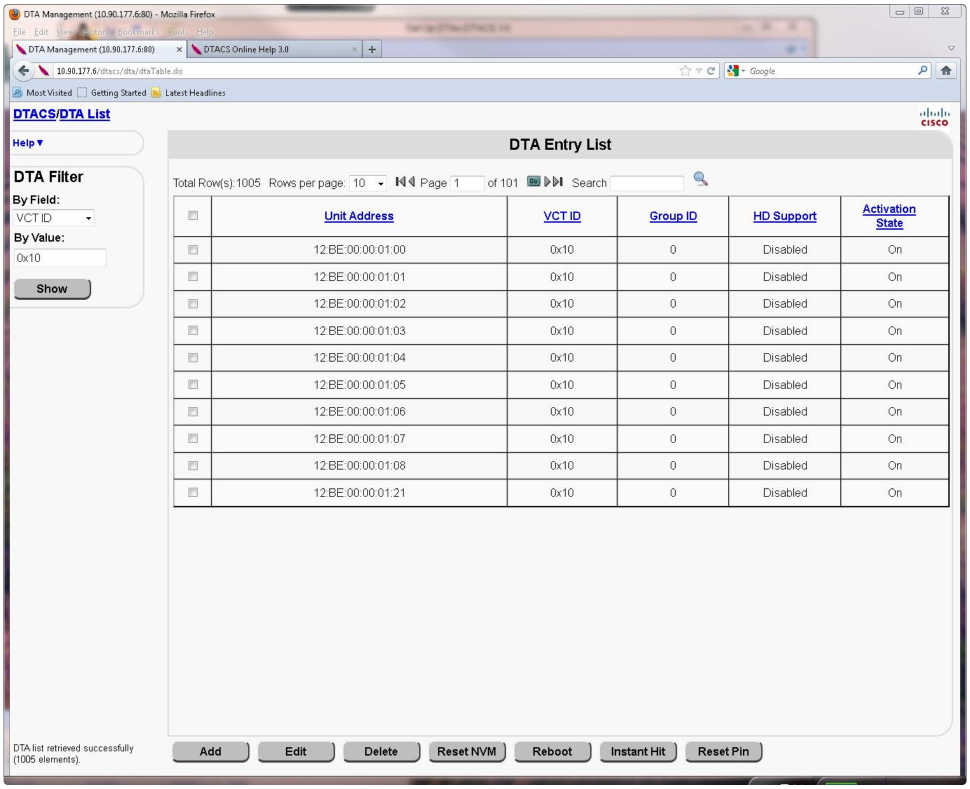
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will sort upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.



DTA Filter

By Field: VCT ID

By Value: 0x10

Show

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

☐	Unit Address	VCT ID	Group ID	HD Support	Activation State
☐	12:BE:00:00:01:00	0x10	0	Disabled	On
☐	12:BE:00:00:01:01	0x10	0	Disabled	On
☐	12:BE:00:00:01:02	0x10	0	Disabled	On
☐	12:BE:00:00:01:03	0x10	0	Disabled	On
☐	12:BE:00:00:01:04	0x10	0	Disabled	On
☐	12:BE:00:00:01:05	0x10	0	Disabled	On
☐	12:BE:00:00:01:06	0x10	0	Disabled	On
☐	12:BE:00:00:01:07	0x10	0	Disabled	On
☐	12:BE:00:00:01:08	0x10	0	Disabled	On
☐	12:BE:00:00:01:21	0x10	0	Disabled	On

DTA list retrieved successfully (1005 elements).

5 Click the check box of the DTA or DTAs that you want to delete.

6 Click **Delete**.

Result: A confirmation message appears.

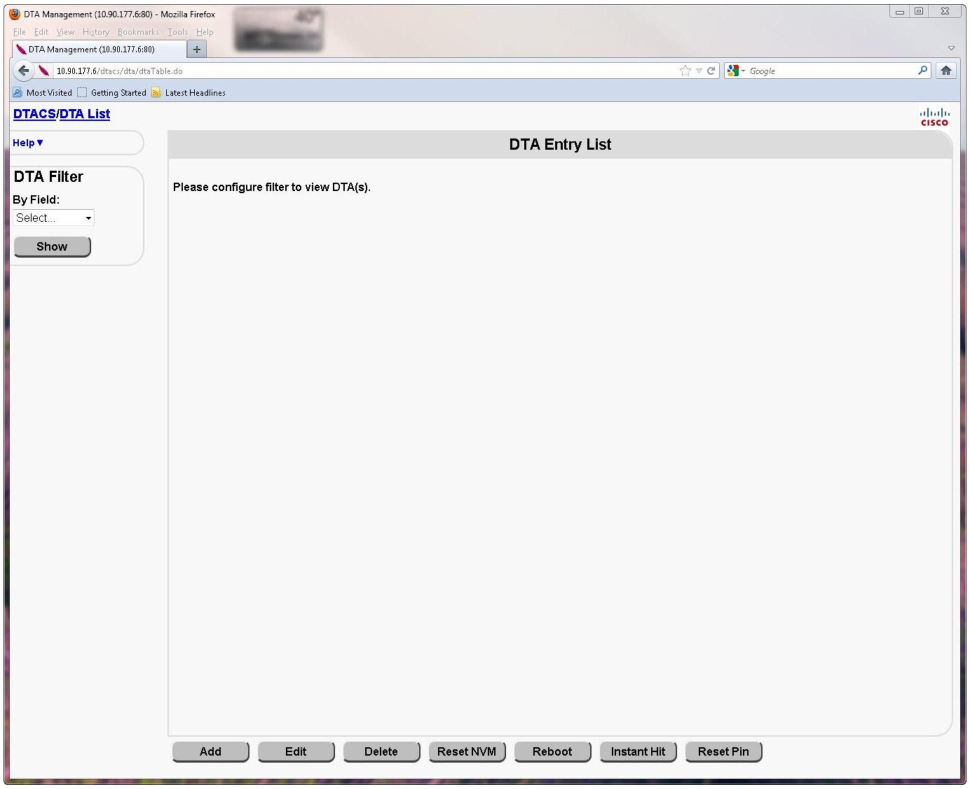
7 Click **OK**.

Result: The DTA or DTAs are removed from the DTACS and a message indicating successful execution appears.

Reset the NVM of a DTA

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



Please configure filter to view DTA(s).

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

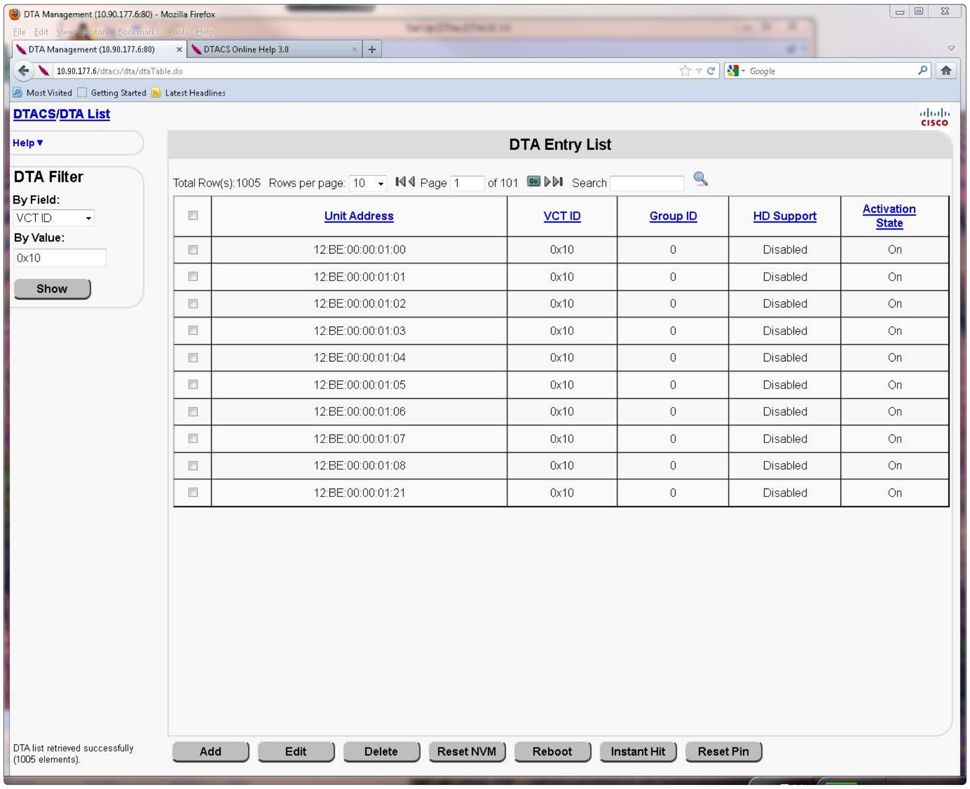
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will sort upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.


DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/DTA List
Help ▾

DTA Filter

By Field: VCT ID

By Value: 0x10

Show

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

□	Unit Address	VCT ID	Group ID	HD Support	Activation State
□	12:BE:00:00:01:00	0x10	0	Disabled	On
□	12:BE:00:00:01:01	0x10	0	Disabled	On
□	12:BE:00:00:01:02	0x10	0	Disabled	On
□	12:BE:00:00:01:03	0x10	0	Disabled	On
□	12:BE:00:00:01:04	0x10	0	Disabled	On
□	12:BE:00:00:01:05	0x10	0	Disabled	On
□	12:BE:00:00:01:06	0x10	0	Disabled	On
□	12:BE:00:00:01:07	0x10	0	Disabled	On
□	12:BE:00:00:01:08	0x10	0	Disabled	On
□	12:BE:00:00:01:21	0x10	0	Disabled	On

DTA list retrieved successfully (1005 elements).

5 Click the check box of the DTA or DTAs that you want to reset.

6 Click **Reset NVM**.

Result: A confirmation message appears.

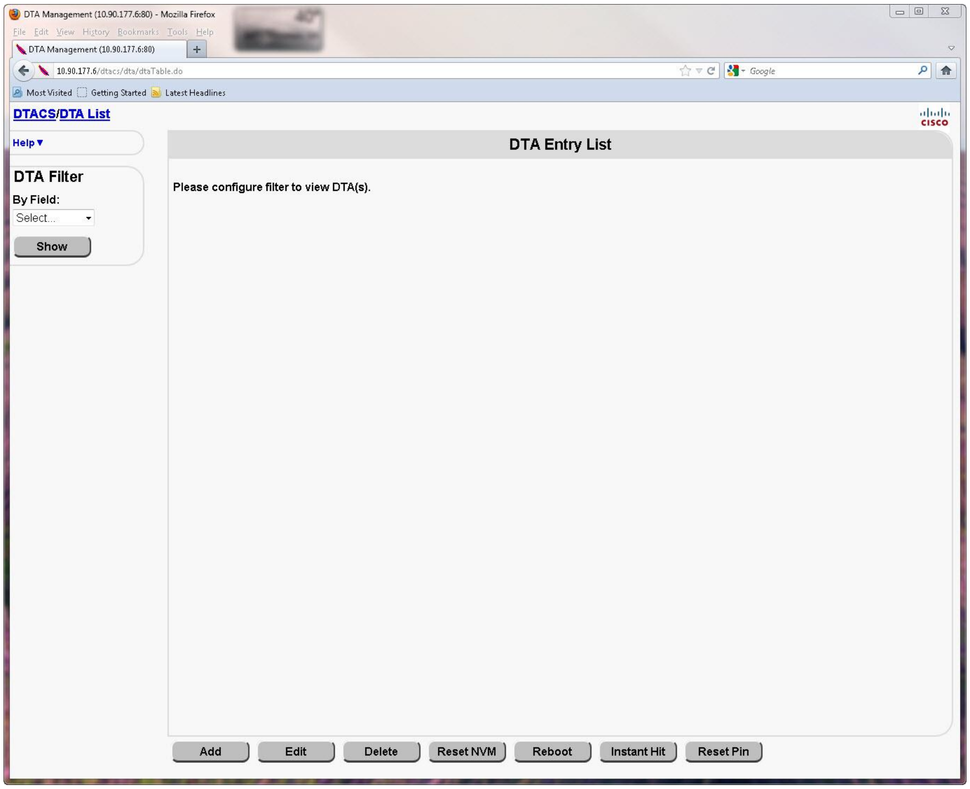
7 Click **OK**.

Result: The DTACS resets the NVM and a message indicating successful execution appears.

Reboot a DTA

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



Please configure filter to view DTA(s).

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

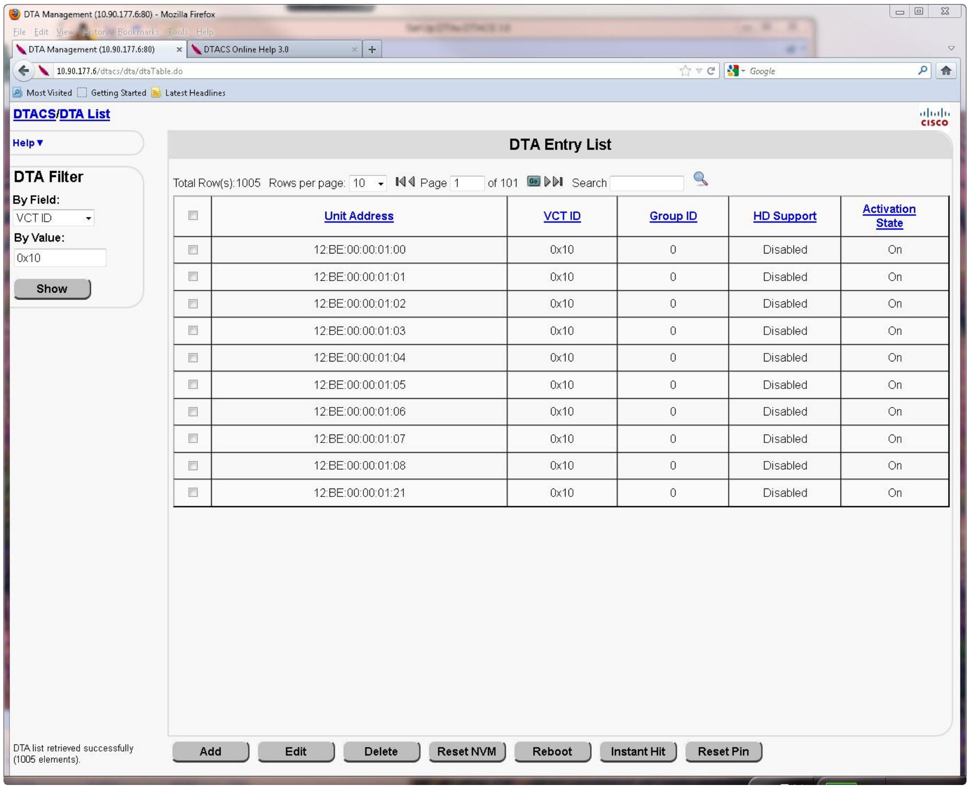
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will sort upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.


DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/DTA List
Help ▾
Add
Edit
Delete
Reset NVM
Reboot
Instant Hit
Reset Pin

DTA Filter

By Field: VCT ID

By Value: 0x10

Show

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

□	Unit Address	VCT ID	Group ID	HD Support	Activation State
□	12:BE:00:00:01:00	0x10	0	Disabled	On
□	12:BE:00:00:01:01	0x10	0	Disabled	On
□	12:BE:00:00:01:02	0x10	0	Disabled	On
□	12:BE:00:00:01:03	0x10	0	Disabled	On
□	12:BE:00:00:01:04	0x10	0	Disabled	On
□	12:BE:00:00:01:05	0x10	0	Disabled	On
□	12:BE:00:00:01:06	0x10	0	Disabled	On
□	12:BE:00:00:01:07	0x10	0	Disabled	On
□	12:BE:00:00:01:08	0x10	0	Disabled	On
□	12:BE:00:00:01:21	0x10	0	Disabled	On

DTA list retrieved successfully (1005 elements).

5 Click the checkbox of the DTA or DTAs that you want to reboot.

6 Click **Reboot**.

Result: A confirmation message appears.

7 Click **OK**.

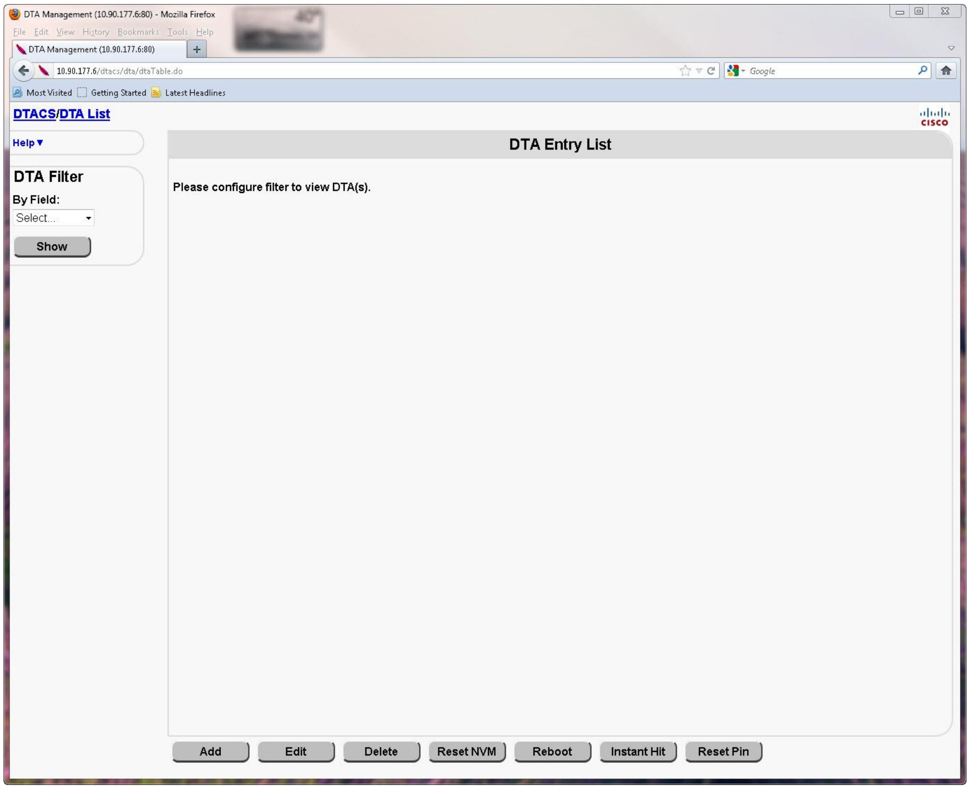
Result: The DTACS reboots the DTA.

Send an Instant Hit to a DTA

An Instant Hit refreshes the EMMs of a DHCT or DTA. Follow these instructions to send an Instant Hit to a DTA:

1 From the Digital Transport Adaptor Control System main WUI, click **DTA Management** (in the **Home Elements** section).

Result: The DTA Entry List window opens.



Please configure filter to view DTA(s).

2 In the **DTA Filter** area, in the **By Field** field, select one of the criterion upon which you can sort.

Notes:

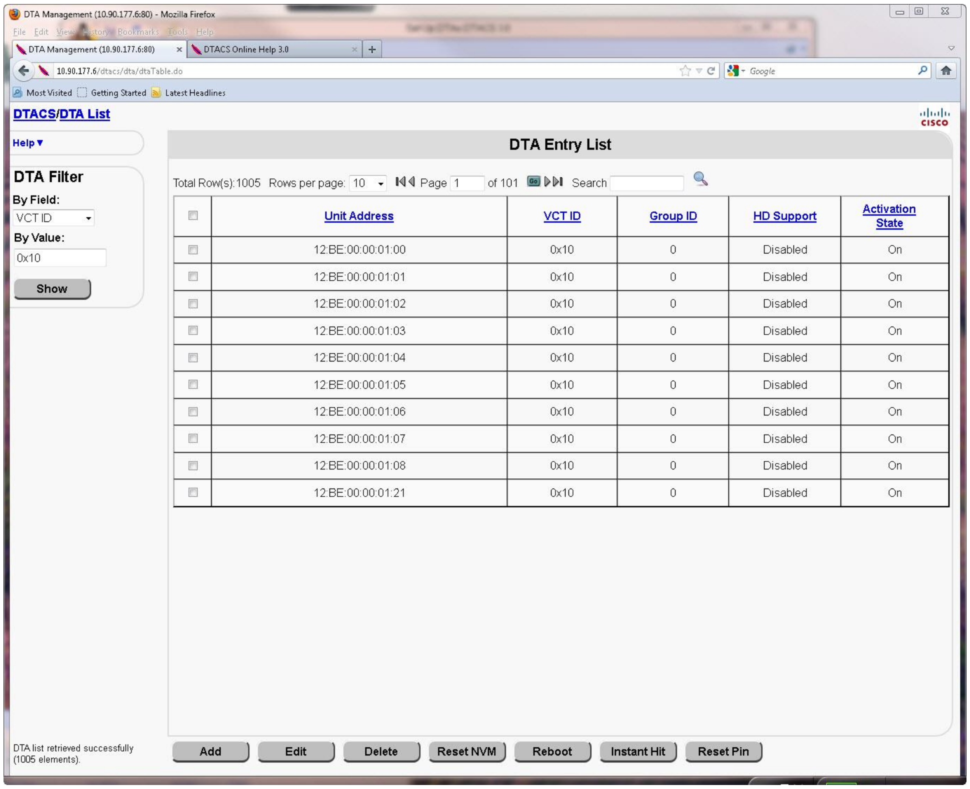
- Options are **Unit Address**, **VCT ID**, and **Group ID**.
- For this example, we will sort upon **VCT ID**.

3 Select **VCT ID** and then type a valid VCT ID.

Example: `0x10`

4 Click **Show**.

Result: The window updates to display the results of the filter action.



DTA Management (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
DTA Management (10.90.177.6:80)
DTACS Online Help 3.0
10.90.177.6/dtacs/dta/dtaTable.do
Google
Most Visited
Getting Started
Latest Headlines
DTACS/DTA List
Help ▾

DTA Filter

By Field: VCT ID

By Value: 0x10

Show

DTA Entry List

Total Row(s):1005 Rows per page: 10 Page 1 of 101 Search

□	Unit Address	VCT ID	Group ID	HD Support	Activation State
□	12:BE:00:00:01:00	0x10	0	Disabled	On
□	12:BE:00:00:01:01	0x10	0	Disabled	On
□	12:BE:00:00:01:02	0x10	0	Disabled	On
□	12:BE:00:00:01:03	0x10	0	Disabled	On
□	12:BE:00:00:01:04	0x10	0	Disabled	On
□	12:BE:00:00:01:05	0x10	0	Disabled	On
□	12:BE:00:00:01:06	0x10	0	Disabled	On
□	12:BE:00:00:01:07	0x10	0	Disabled	On
□	12:BE:00:00:01:08	0x10	0	Disabled	On
□	12:BE:00:00:01:21	0x10	0	Disabled	On

DTA list retrieved successfully (1005 elements).

5 Click the checkbox of the DTA or DTAs to which you want to send an instant hit.

6 Click **Instant Hit**.

Result: A confirmation message appears.

7 Click **OK**.

Result: The DTACS sends an instant hit to the DTA.

Run the setGroupIdToDta Script

The setGroupIdToDta script is used to set the specified group ID for a set of DTAs provided as input. Follow these instructions to run the setGroupIdToDta script:

Important: Before you run this procedure, you need to have an input text file prepared. The text file, called setGroupIdSample.txt in the example used in this procedure, contains the list of MAC address to be processed.

Example (of contents of file):

```
12:BF:CA:DE:11:11

12:BF:CA:DE:11:12
```

1. Open an xterm window on the DTACS as the **dtacs** user.
2. Type the following command and press **Enter** to change to the appropriate directory:

   ```
   cd /dvs/dtacs/bin
   ```
3. Type the following command and press **Enter** to run the script:

   ```
   ./setGroupIdToDta -g [group_id] -f setGroupIdSample.txt
   ```

   Important: The following options are mandatory:

   - *-g* – group_id. Must be a valid group ID in the DTACS system.
   - *-f* – file path. Specify the text file (complete path) which contains the list of DTA MAC addresses.

   Result: The specified group ID is set for the list of DTAs in the file.

6

Upgrade the DTACS Software Using a DVD

Introduction

This chapter provides procedures to upgrade the Cisco DTACS server using a DVD. You will use these procedures to perform a major upgrade.

Important: This procedure makes use of Live Upgrade, which is a Solaris utility that allows operating system or application upgrades in an inactive boot environment while the active boot environment continues to run without interruption. Therefore, *do not shut down the DTACS processes* until you are instructed to do so.

In This Chapter

Note and Delete Image Associations

During the upgrade, image associations are deleted. Unless image associations are recreated after the upgrade, images and CVTs will not be transmitted by the DTACS. In this procedure, you will write down, on a sheet of paper, all of your image associations.

1. In the DTACS main window, click the **Provisioning** tab.
2. Click **Image Association**. The DTA Image Association Management window opens.
3. Click the check box to the left of an image association and then click **Edit**. The Edit DTA Image Association window opens.
4. On a sheet of paper, write down the **Image Name**, **Vendor ID**, and **Hardware ID** for the image.
5. Click **Cancel** to return to the DTA Image Association Management window.
6. Repeat Steps 3 through 5 for each image association on the DTA Image Association Management window.
7. Highlight all listed image associations on the DTA Image Association Management window and click **Delete**. Then, click **OK** in the confirmation window.Verify that the **Successfully deleted all requested Image Association entries** message is displayed.
8. Click **Exit** to close the DTA Image Association Management window.

Note and Delete CVT Provisioning

During the upgrade, CVT entries are deleted. Unless CVT entries are recreated after the upgrade, these images will not be transmitted by the DTACS. In this procedure, you will write down, on a sheet of paper, all of your CVT image entries.

1 In the DTACS main window, click **CVT Provisioning**. The CVT Provisioning window opens.

2 Click the check box to the left of the first entry and then click **Edit**. The Edit CVT window opens for the selected entry.

3 On a sheet of paper, write down the following information for the selected CVT entry:

- **CVT Name**
- **Image Name**
- **Vendor ID**
- **Hardware Version ID**
- **Transmission State**
- **Location Type**
- Location Type Dependent Values
  - **Source ID**
  - **MPEG Program Number**
  - **Packet ID**
  - **Frequency** (MHz)
  - **Modulation Type**

4 Click **Cancel** to return to the CVT Provisioning window.

5 Click the check box to the left of the next entry and then click **Edit**.

6 Repeat this procedure from Step 3 for each CVT entry on the CVT Provisioning window.

7 When you are finished, highlight each entry on the CVT Provisioning window and click **Delete**. Then, click **OK** in the confirmation window. Verify that each CVT image has been successfully deleted.

8 Close the CVT Provisioning window.

Note DLNA Packages

In a subsequent procedure, ***Create SCIDs for Existing VCT Sources*** (on page 176), while running the createScidVctSource script, the file DLNAPackages.txt needs to be passed as an argument. This file should contain the list of packages which are assigned to VCTs and contain all DLNA services. To prepare for this, complete the following steps:

1. Go to the VCT Provisioning WUI.
2. Click VCTs, one by one, and click **Edit**.
3. On a sheet of paper, write down the list of DLNA packages assigned to the VCTs.

Validating User Defined Sources for PID Routes

During the upgrade, user-defined PID routes will also be migrated to the new version. To ensure proper migration, validation of user-defined PID routes is necessary. In this procedure, we note and remove user-defined sources for PID routes that do not have the source PIDs assigned.

1. In the DTACS main window, click the **Provisioning** tab.
2. Click **PID Route Provisioning**. The PID Route Provisioning window opens.
3. Click **View/Define Sources** in the left upper part of the window. The User Defined Sources for PID Routes window opens, listing all the user-defined sources that are configured.
4. On a sheet of paper, write down the all the source names found under the column called **Name**.
5. Click **Manage Source PIDs** in the left upper part of the window. The PID Definitions for User Defined Sources window opens, listing all the PID definitions configured for User defined sources.
6. From the PID definition list, write down the sources obtained in Step 4, for which the **Output PID** has been configured.
7. Click the **User Defined Sources for PID Routes** link on top of the window, to display the User Defined Sources for PID Routes again.
8. Refer the names of the User Defined Sources that you recorded and click the check box to the left of the User Defined Source, if it does not have a defined Source PID.
9. Click **Delete** and then click **OK** in the confirmation window. Verify that all the selected sources are deleted.
10. Click **Exit** to close the User Defined Sources for PID Routes window.

Validating BSG

The new version of DTACS does not allow BSGs to exist under the same hub ID. So, before the upgrade, it is necessary to make sure that all the BSGs are assigned to individual hub IDs.

1. In the DTACS main window, click the **Provisioning** tab.
2. Click **BSG Provisioning**. The BSG Provisioning window opens.
3. From the list of BSGs displayed, see if two or more BSGs have the same Hub ID. If they do, edit one of the BSGs with same Hub ID by clicking the check box to the left of the BSG and clicking **Edit**. The Edit BSG window opens.
4. From the drop-down list for **Hub ID**, choose a different Hub ID, one that is not used by any other BSG.
5. After the changes are complete, click **Save**.
6. Repeat Steps 3 through 5 for each BSG that shares a Hub ID with another BSG.
7. Click **Exit** to close the BSG Provisioning window.

Mount the DVD

If you are upgrading a DTACS 1.2 or older system, you must manually mount the upgrade/installation DVD. Follow these instructions if you are upgrading a DTACS 1.2 or older system.

Depending upon your current Solaris patch set, the DVD may not mount automatically. If your DVD does not mount automatically, use this procedure to mount it manually, as **root** user:

1 Inspect the DVD to ensure that it is clean. There should be no smudges on the DVD. Some small, light scratches may be be present; this is fine.

2 On the DTACS, as **root** user, type the following command and press **Enter** to stop the Solaris Volume Manager.

```
svcadm -v disable -s volfs
```

3 Type the following command and press **Enter** to check for the presence of the DVD drive and to record the disk from the Logical Node entry. Then, record the disk from the Logical Node entry in the space provided.

```
rmformat -l
```

Note: The "l" in the command is a lowercase L.

Disk from the Logical Node: _____

4 Insert the system release DVD into the CD-ROM drive of the server.

5 Type the following command and press **Enter** to determine whether the system mounted /cdrom/cdrom.

```
df -n
```

6 Did the system mount /cdrom/cdrom?

- If **yes**, go to Step 8.
- If **no**, continue with Step 7.

7 Type the following command and press **Enter** to create the mount point for the DVD.

```
mkdir -p /cdrom/cdrom
```

8 Type the following command and press **Enter** to mount the DVD.

Important: Although the rmformat command shows the device as /dev/rdsk/c0t0d0s2, use /dev/dsk/c0t0d0s0 for the mount command. You may need to replace "c0t0" depending on your hardware. For example, if **rmformat** shows the logical node as /dev/rdsk/c0t1d0s0, you would use /dev/dsk/c0t1d0s0 with the mount command.

```
mount –F hsfs /dev/dsk/[/dev/dsk/[disk]] /cdrom/cdrom
```

Note: Substitute the appropriate device syntax for *c#t#d#s0* from the **rmformat –l** output from Step 3.

Example: `mount –F hsfs /dev/dsk/c0t0d0s0 /cdrom/cdrom`

Important: If /cdrom/cdrom is busy, make sure the mount point is not already in use or that you are not already in the /cdrom directory. You cannot mount to cdrom if you are in the directory.

Upgrade DTACS Software

In the next few procedures, you will:

- Attach the file system mirrors
- Run the preUpgradeChecks script
- Run the doLiveUpgrade script to upgrade the DTACS software

Attaching File System Mirrors

Follow this procedure to temporarily attach the file system mirrors on the T5220 or T5440 DTACS server. File system mirrors refer to the mirrors of the DTACS server that contain file system data.

1 As the **root** user, type the following command and press **Enter**. The system displays the status of all the metadevices on the DTACS server.

```
metastat | more
```

Note: Press the **spacebar**, if necessary, to page through the output.

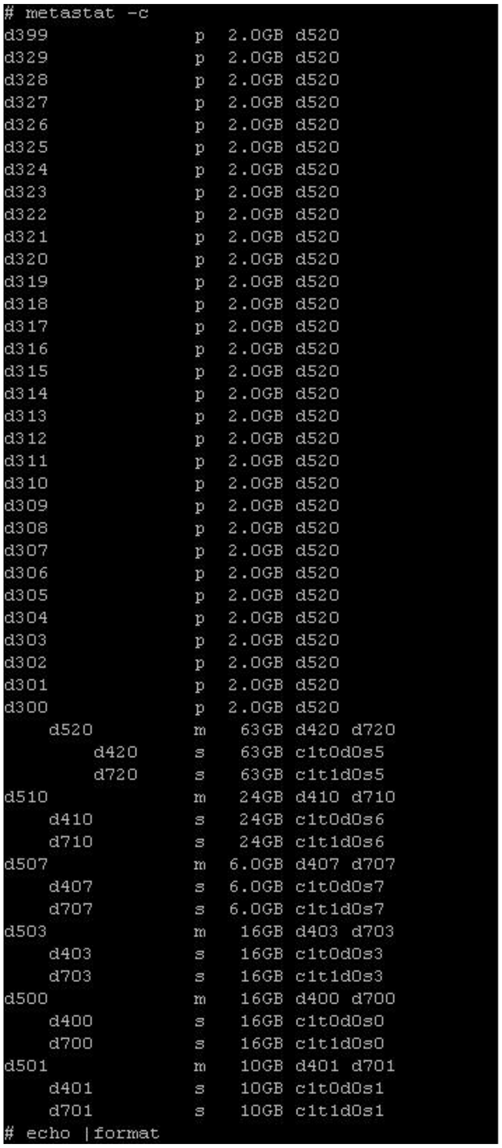
2 Do all of the metadevices display a state of **Okay**?

- If **yes**, go to Step 3.
- If **no**, call Cisco Services.

3 Type the following command and press **Enter** to verify whether or not the mirrors are attached. Each device should be mirrored and should have two submirrors listed under each mirror device:

```
metastat -c
```

Example:



```
# metastat -c
d399             p  2.0GB d520
d329             p  2.0GB d520
d328             p  2.0GB d520
d327             p  2.0GB d520
d326             p  2.0GB d520
d325             p  2.0GB d520
d324             p  2.0GB d520
d323             p  2.0GB d520
d322             p  2.0GB d520
d321             p  2.0GB d520
d320             p  2.0GB d520
d319             p  2.0GB d520
d318             p  2.0GB d520
d317             p  2.0GB d520
d316             p  2.0GB d520
d315             p  2.0GB d520
d314             p  2.0GB d520
d313             p  2.0GB d520
d312             p  2.0GB d520
d311             p  2.0GB d520
d310             p  2.0GB d520
d309             p  2.0GB d520
d308             p  2.0GB d520
d307             p  2.0GB d520
d306             p  2.0GB d520
d305             p  2.0GB d520
d304             p  2.0GB d520
d303             p  2.0GB d520
d302             p  2.0GB d520
d301             p  2.0GB d520
d300             p  2.0GB d520
    d520         m   63GB d420 d720
        d420     s   63GB c1t0d0s5
        d720     s   63GB c1t1d0s5
d510             m   24GB d410 d710
    d410         s   24GB c1t0d0s6
    d710         s   24GB c1t1d0s6
d507             m  6.0GB d407 d707
    d407         s  6.0GB c1t0d0s7
    d707         s  6.0GB c1t1d0s7
d503             m   16GB d403 d703
    d403         s   16GB c1t0d0s3
    d703         s   16GB c1t1d0s3
d500             m   16GB d400 d700
    d400         s   16GB c1t0d0s0
    d700         s   16GB c1t1d0s0
d501             m   10GB d401 d701
    d401         s   10GB c1t0d0s1
    d701         s   10GB c1t1d0s1
# echo |format
```

Important: If any metadevice is followed by an indicator listed in parentheses, then the metadevice is not Okay. Contact Cisco Services.

4 Are all of the mirrors attached?

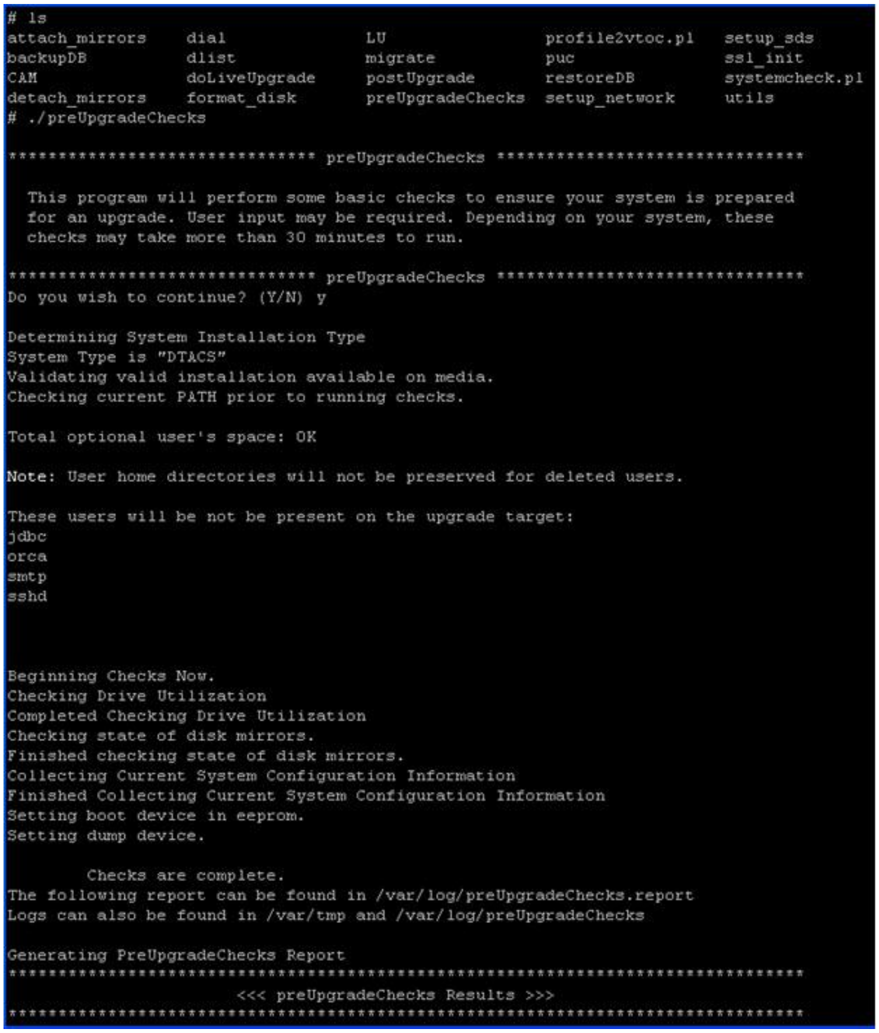
- If **yes**, go to the next procedure.
- If **no**, type the following command and press **Enter**.
  /cdrom/cdrom0/sai/scripts/attach_mirrors
  Note: Attaching the mirrors may take an hour or longer.

Running the DTACS preUpgradeChecks Script

This procedure describes how to run an automated system check to determine if your system is acceptable for the DTACS upgrade. If it is, you can continue with the upgrade; if it is not, you must correct any errors that are found and then rerun this procedure.

1 As the **root** user, type the following command and press **Enter** to source in the DTACS environmental variables.
`. /dvs/dtacs/bin/dtacsSetup`

2 From the **root** xterm window, type the following command and press **Enter.**
`/cdrom/cdrom/sai/scripts/preUpgradeChecks`
Result: The **Do you wish to continue** message appears.

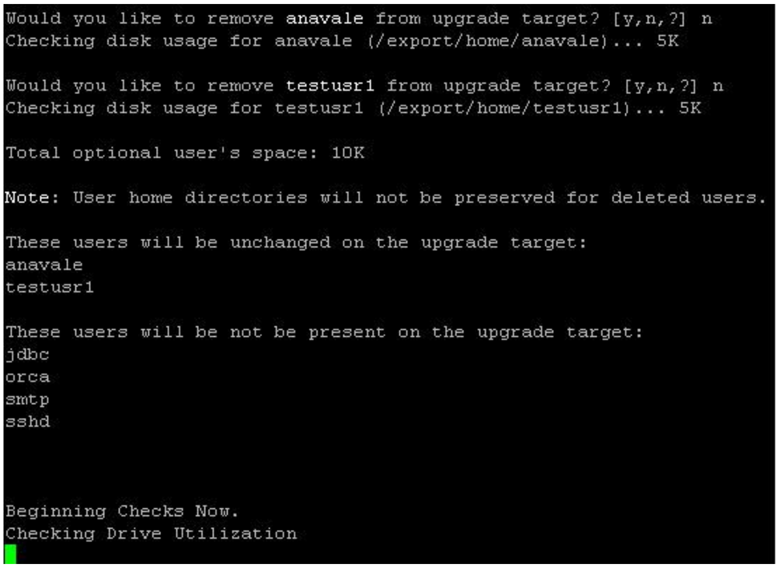


```
# ls
attach_mirrors    dial             LU               profile2vtoc.pl   setup_sds
backupDB          dlist            migrate          puc               ssl_init
CAM               doLiveUpgrade    postUpgrade      restoreDB         systemcheck.pl
detach_mirrors    format_disk      preUpgradeChecks setup_network     utils
# ./preUpgradeChecks

******************************* preUpgradeChecks *******************************

  This program will perform some basic checks to ensure your system is prepared
  for an upgrade. User input may be required. Depending on your system, these
  checks may take more than 30 minutes to run.

******************************* preUpgradeChecks *******************************
Do you wish to continue? (Y/N) y

Determining System Installation Type
System Type is "DTACS"
Validating valid installation available on media.
Checking current PATH prior to running checks.

Total optional user's space: OK

Note: User home directories will not be preserved for deleted users.

These users will be not be present on the upgrade target:
jdbc
orca
smtp
sshd



Beginning Checks Now.
Checking Drive Utilization
Completed Checking Drive Utilization
Checking state of disk mirrors.
Finished checking state of disk mirrors.
Collecting Current System Configuration Information
Finished Collecting Current System Configuration Information
Setting boot device in eeprom.
Setting dump device.

        Checks are complete.
The following report can be found in /var/log/preUpgradeChecks.report
Logs can also be found in /var/tmp and /var/log/preUpgradeChecks

Generating PreUpgradeChecks Report
********************************************************************************
                       <<< preUpgradeChecks Results >>>
********************************************************************************
```

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

Results:

- The script validates the system's readiness for the upgrade and reports any issues.
- The system lists any users that can be potentially removed from the system.



```
Would you like to remove anavale from upgrade target? [y,n,?] n
Checking disk usage for anavale (/export/home/anavale)... 5K

Would you like to remove testusr1 from upgrade target? [y,n,?] n
Checking disk usage for testusr1 (/export/home/testusr1)... 5K

Total optional user's space: 10K

Note: User home directories will not be preserved for deleted users.

These users will be unchanged on the upgrade target:
anavale
testusr1

These users will be not be present on the upgrade target:
jdbc
orca
smtp
sshd



Beginning Checks Now.
Checking Drive Utilization
```

4 Would you like to grant the dncs Administrator access to user(s)?

- If **yes**, type **y** and press **Enter**.
- If **no**, type **n** and press **Enter**.

The system prompts **Would you like to remove user from upgrade target?**.

– **If yes, type y and press Enter.**

– **If no, type n and press Enter**.

Important: Step 4, as described, pertains only to DTACS 1.2 to DTACS upgrades. If this is a DTACS to DTACS upgrade (as in a lab, for example), the following prompt appears, instead:

Do you want to remove the user(s) from the upgrade target?

If yes, type y and press Enter. If no, type n and press Enter.

5 Did any errors or warnings appear?

- If **yes**, correct these issues and repeat this procedure.

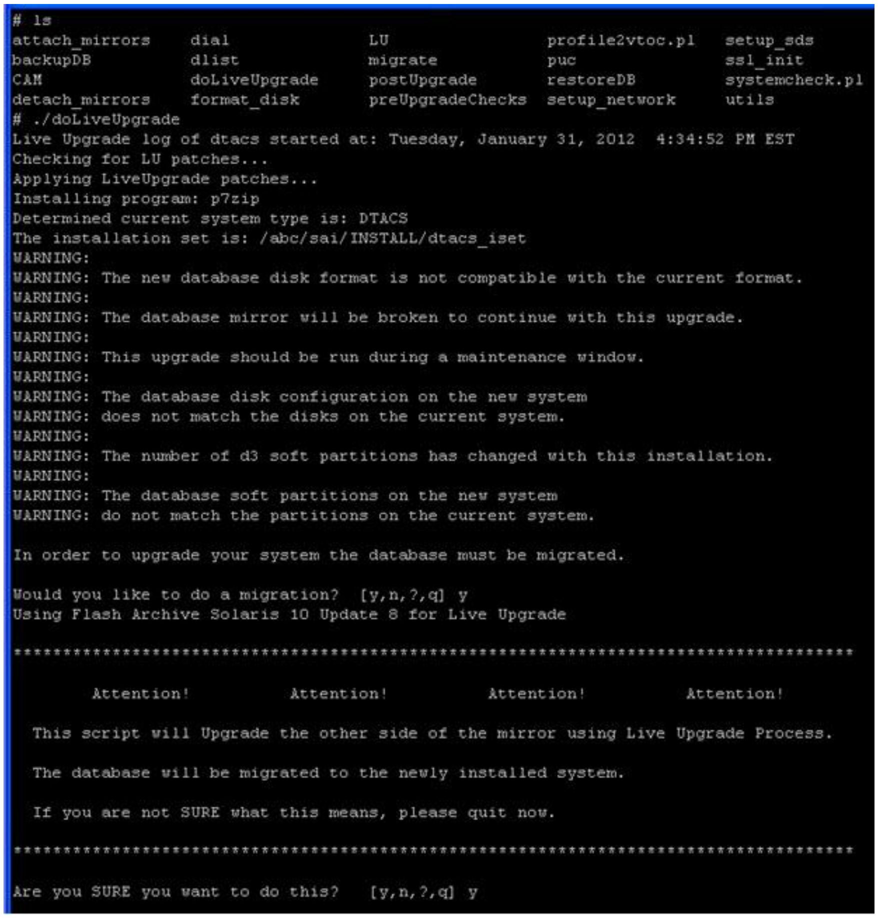
  Note: If errors continue to persist or if you need assistance with correcting an issue, contact Cisco Services.
- If **no**, continue with the next procedure in this chapter.

Upgrading the DTACS Server

Note: Execution of the doLiveUpgrade script can be done few hours before the scheduled maintenance window.

Important: Before you begin, be sure that you have backed up the file system and DTACS database, each to a separate tape. Refer to Back Up the System (Upgrades Only) for more information. Do not neglect these steps. It is most important that a current backup exists before the upgrade.

1 From a **root** xterm window, type the following command and press **Enter**. The system displays a message about the Live Upgrade, the database migration, and asks if you want to continue.
/cdrom/cdrom0/sai/scripts/doLiveUpgrade



```
# ls
attach_mirrors    dial              LU                profile2vtoc.pl   setup_sds
backupDB          dlist             migrate           puc               ssl_init
CAM               doLiveUpgrade     postUpgrade       restoreDB         systemcheck.pl
detach_mirrors    format_disk       preUpgradeChecks  setup_network     utils
# ./doLiveUpgrade
Live Upgrade log of dtacs started at: Tuesday, January 31, 2012  4:34:52 PM EST
Checking for LU patches...
Applying LiveUpgrade patches...
Installing program: p7zip
Determined current system type is: DTACS
The installation set is: /abc/sai/INSTALL/dtacs_iset
WARNING:
WARNING: The new database disk format is not compatible with the current format.
WARNING:
WARNING: The database mirror will be broken to continue with this upgrade.
WARNING:
WARNING: This upgrade should be run during a maintenance window.
WARNING:
WARNING: The database disk configuration on the new system
WARNING: does not match the disks on the current system.
WARNING:
WARNING: The number of d3 soft partitions has changed with this installation.
WARNING:
WARNING: The database soft partitions on the new system
WARNING: do not match the partitions on the current system.

In order to upgrade your system the database must be migrated.

Would you like to do a migration?  [y,n,?,q] y
Using Flash Archive Solaris 10 Update 8 for Live Upgrade

*************************************************************************************

        Attention!          Attention!          Attention!          Attention!

  This script will Upgrade the other side of the mirror using Live Upgrade Process.

  The database will be migrated to the newly installed system.

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

*************************************************************************************

Are you SURE you want to do this?   [y,n,?,q] y
```

2 Type **y** and then press **Enter** to proceed with the Live Upgrade process.
Results:

- The Live upgrade process detaches the 700 side (mirror) sub-mirrors of each metadevice, except for database-related metadevices.
- The Live upgrade process completes the rest of the upgrade process as shown in the screenshot in Step 1.
- The DTACS OS flar image is extracted on the 700 side (mirror) of the disks of the DTACS server. This step may take 30 minutes or longer to complete.

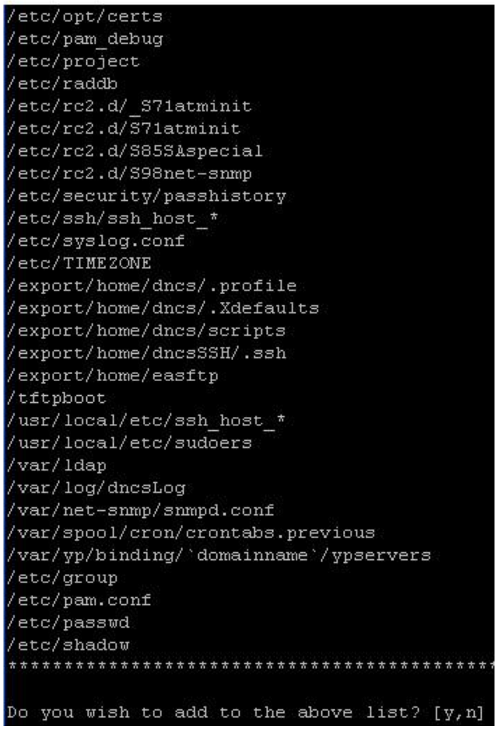
- Upon completion of extracting the flar image, the upgrade process lists the default key files which will be backed up and restored on the 700 side (mirror) of the disk. It also prompts you to manually add any additional files/directories (specify absolute path for each) as key files to be restored on the upgraded disk. Indicate **y** to add more Key files, or **n** to proceed with the default list of Key files.

  Important: You must back up the directory path where your download images reside (for example, /dvs/dtacs/dtacsFiles).

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

Results:

- The system lists the key files and directories that will be backed up and restored as part of the upgrade.
- The system asks if you want to add to the above list.



```
/etc/opt/certs
/etc/pam_debug
/etc/project
/etc/raddb
/etc/rc2.d/_S71atminit
/etc/rc2.d/S71atminit
/etc/rc2.d/S85SAspecial
/etc/rc2.d/S98net-snmp
/etc/security/passhistory
/etc/ssh/ssh_host_*
/etc/syslog.conf
/etc/TIMEZONE
/export/home/dncs/.profile
/export/home/dncs/.Xdefaults
/export/home/dncs/scripts
/export/home/dncsSSH/.ssh
/export/home/easftp
/tftpboot
/usr/local/etc/ssh_host_*
/usr/local/etc/sudoers
/var/ldap
/var/log/dncsLog
/var/net-snmp/snmpd.conf
/var/spool/cron/crontabs.previous
/var/yp/binding/`domainname`/ypservers
/etc/group
/etc/pam.conf
/etc/passwd
/etc/shadow
********************************************

Do you wish to add to the above list? [y,n]
```

4 Examine the list of key files and directories that will be backed up. Do you want to add any key files or directories?

- If **yes**, type **y** and press **Enter**, then follow the on-screen instructions. When you are finished, type **n** and press **Enter**.
- If **no**, type **n** and press **Enter**.

Result: The system generates a key file list and backs up the key files.

5 Did the backup of key files complete without error?
   - If **yes**, the system resets the eeprom boot device and doLiveUpgrade completes.
   - If **no**, contact Cisco Services.

6 Type the following command and press **Enter** to review the installation log file.

```
more /var/sadm/system/logs/dtacs_LiveUpgrade.log
```

Note: Troubleshoot any issues you encounter to the best of your ability. Call Cisco Services for assistance, if required.

Maintenance Window Activities

Stop the cron Jobs

As the **root** user, type the following command and press **Enter**. The system stops all cron jobs on the DTACS server.

```
svcadm -v disable -s cron
```

Stop the DTACS Processes

⚠ **CAUTION:**

The remaining procedures in this chapter and the following chapter need to be completed in a maintenance window.

Stop DTACS Processes

1 From an administrator window, type the following command and press **Enter**:
```
sux - dtacs
```
2 Enter the password for the dtacs user when prompted.

3 Type the following command and press **Enter**. A confirmation message appears.
```
dtacsStop
```
4 Type **y** to continue. The DTACS processes stop.

5 Type the following command and press **Enter** to ensure that the DTACS processes have stopped:
```
dtacsKill
```
6 Type the following command and press **Enter** to verify that the processes have stopped:
```
pgrep -fl dvs
```
Notes:

- You can also monitor the processes from the WUI.
- The only /dvs/dtacs/bin entry should be dtacsInitd. Ignore the /bin/ksh /dvs/dtacs/bin/dtacsResMon script.

7 Close all DTACS-related WUIs.

8 Type **exit** and press **Enter** to exit the dtacs user. You are now an administrative user.

9 As the **root** user, type the following command and press **Enter**:
```
showActiveSessions
```
Result: One of the following messages appears:

- A message indicating that the **INFORMIXSERVER is Idle**
- A message listing active sessions

10 Did the message in Step 9 indicate that there are active sessions?

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

  i Type the following command and press **Enter**. The system removes all active sessions from the database.
  `killActiveSessions`

  ii Type the following command and press **Enter**.
  `showActiveSessions`

  iii If a message appears indicating that there are active sessions, wait a few minutes and then repeat Steps (i) and (ii). Call Cisco Services if there are still active sessions after you repeat Steps (i) and (ii), AND if you do not see a message indicating that the **INFORMIXSERVER is Idle**.

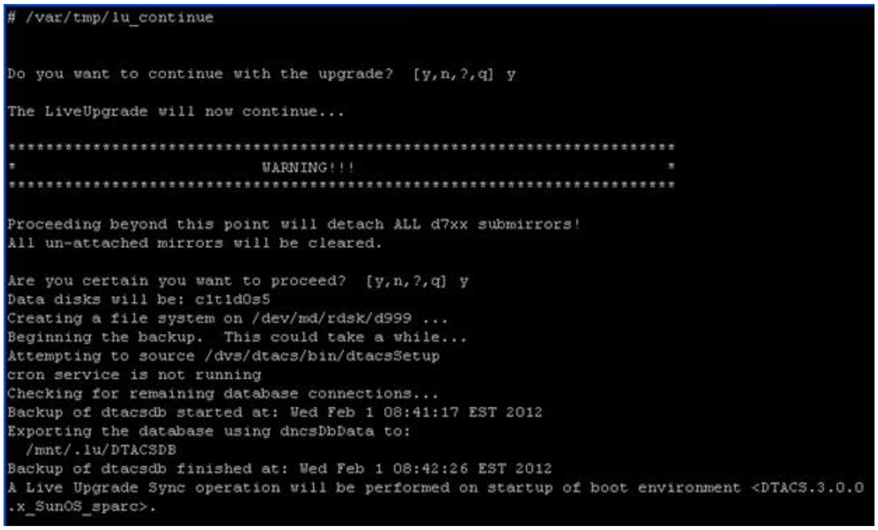
  Note: If the system shows that some active sessions exist, and, at the same time, it shows a message indicating that the **INFORMIXSERVER is Idle**, you can go to next procedure of this chapter

- If **no**, go to the next procedure in this chapter.

Run the lu_continue Script on the DTACS

1 As the **root** user, type the following command and press **Enter**:
`/var/tmp/lu_continue`

Result: A confirmation message appears asking the user if they want to continue.



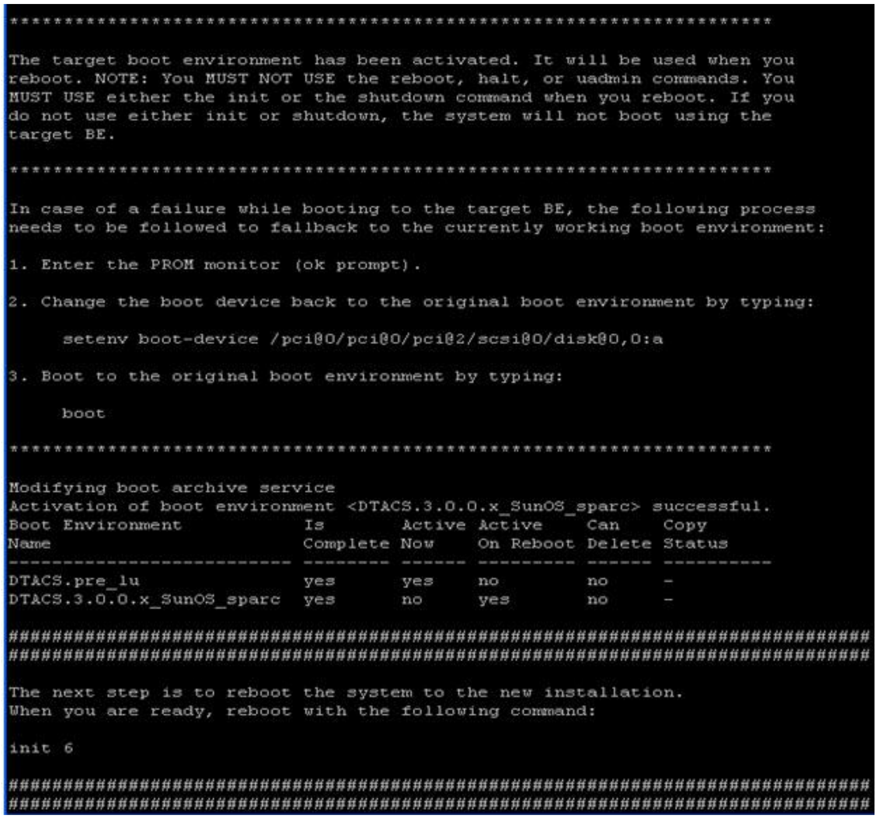
```
# /var/tmp/lu_continue


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

The LiveUpgrade will now continue...

***********************************************************************
*                          WARNING!!!                                 *
***********************************************************************

Proceeding beyond this point will detach ALL d7xx submirrors!
All un-attached mirrors will be cleared.

Are you certain you want to proceed?  [y,n,?,q] y
Data disks will be: c1t1d0s5
Creating a file system on /dev/md/rdsk/d999 ...
Beginning the backup.  This could take a while...
Attempting to source /dvs/dtacs/bin/dtacsSetup
cron service is not running
Checking for remaining database connections...
Backup of dtacsdb started at: Wed Feb 1 08:41:17 EST 2012
Exporting the database using dncsDbData to:
  /mnt/.lu/DTACSDB
Backup of dtacsdb finished at: Wed Feb 1 08:42:26 EST 2012
A Live Upgrade Sync operation will be performed on startup of boot environment <DTACS.3.0.0
.x_SunOS_sparc>.
```

2 Type **y** and press **Enter**. Another message appears asking the user if they are certain that they want to continue.

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

Results:

- The lu_continue script executes.
- Upon completion, the upgrade process displays information regarding the current boot environment of the primary disk, which is currently in active status and the alternate/new boot environment of the mirrored disk that will became active upon reboot. Additionally, it displays information regarding the steps to roll-back in the event of an issue, and instructions on how to proceed with the upgrade process.



```
**********************************************************************

The target boot environment has been activated. It will be used when you
reboot. NOTE: You MUST NOT USE the reboot, halt, or uadmin commands. You
MUST USE either the init or the shutdown command when you reboot. If you
do not use either init or shutdown, the system will not boot using the
target BE.

**********************************************************************

In case of a failure while booting to the target BE, the following process
needs to be followed to fallback to the currently working boot environment:

1. Enter the PROM monitor (ok prompt).

2. Change the boot device back to the original boot environment by typing:

     setenv boot-device /pci@0/pci@0/pci@2/scsi@0/disk@0,0:a

3. Boot to the original boot environment by typing:

     boot

**********************************************************************

Modifying boot archive service
Activation of boot environment <DTACS.3.0.0.x_SunOS_sparc> successful.
Boot Environment           Is       Active Active    Can    Copy
Name                       Complete Now    On Reboot Delete Status
-------------------------- -------- ------ --------- ------ ----------
DTACS.pre_lu               yes      yes    no        no     -
DTACS.3.0.0.x_SunOS_sparc  yes      no     yes       no     -

###############################################################################
###############################################################################

The next step is to reboot the system to the new installation.
When you are ready, reboot with the following command:

init 6

###############################################################################
###############################################################################
```

4 Type the following command and press **Enter**:

```
init 6
```

Results: The DTACS reboots several times before the upgrade process completes.

- On the first reboot, the upgrade process restores the key files and sets up the mirror-side (700) disk by creating sub-mirrors and metadevices.
- On the second reboot, the upgrade process creates the database framework, installs the SAI packages (including the DTACS application), migrates the DTACS database and build, and sets up optimal system security. Depending upon the size of the database, this operation can take as long as 45 minutes to complete.
- Upon completion, you will see the **Install of SAI/TOC finished** message, which indicates that the upgrade process completed successfully.
- The system now reboots for the final time and the CDE login window appears.

Note: Ignore the following message if it appears during installation of the packages:

```
svcs -xv unable to switch to multiuser mode" and "svcs -xv  unable to
start the apache
```

Log into the Upgraded DTACS

This procedure describes how to log in to the DTACS after the Live Upgrade has completed.

Important: After the upgrade, complete the following steps only if you have to change the root, dtacs, and/or dncs passwords. If you do not have to change any of these passwords, skip this procedure and go to the next procedure in this guide.

1. From the CDE login window, type the following command and press **Enter**. You are prompted for the **root** password.

   ```
   root
   ```

2. Type the **root** password and press **Enter**. A message appears informing you that the current password has expired and that you need to create a new password for the root account.
3. Click **OK**. An xterm window opens and prompts you to enter a new root password.

   Important: Place your cursor in the xterm window displayed in the top left corner of the screen.

4. Type the new password and press **Enter**. You are prompted to re-enter the new password.
5. Re-enter the password and press **Enter**. The CDE login reappears.
6. Log on to the DTACS as the **root** user.
7. When prompted to select a desktop environment, click **CDE Desktop**.
8. Click **OK**. The display environment appears.
9. Open a **root** xterm window on the DTACS.

   Note: The **dncs** user password must now be reset. You may reset it to the original password if you wish.

10. From the **root** xterm window, type the following command and press **Enter** to reset the dncs user password.

    ```
    passwd -r files dncs
    ```

11. Type the password for the dncs user and then press **Enter**. You are prompted to re-enter the password.
12. Re-type the password for the dncs user and press **Enter**.
13. Repeat from Step 10 for any additional required regular UNIX accounts on the DTACS.

7

DTACS Post-Upgrade Procedures

Introduction

This chapter contains procedures that must be completed after the Cisco DTACS software has been upgraded.

Important: Do not use these procedures after installing the DTACS software for the first time. Procedures that must be followed after installing the DTACS software for the first time are found in ***DTACS Post-Installation Procedures*** (on page 21).

In This Chapter

DTACS Upgrades and Environmental Variables

If at any time during the DTACS upgrade process, you have a need to edit an environmental variable, the information in ***Set Environment Variables*** (on page 30) provides a good description of those variables you might have a need to change.

Check The Software Version Number

Follow these instructions to check the installed software versions on the DTACS server:

1. If necessary, insert the DTACS DVD into the DVD drive of the DTACS server.
2. Type the following command and press **Enter**. The system displays a listing of installed packages.

   ```
   /cdrom/cdrom0/sai/scripts/utils/listpkgs -i
   ```

3. Compare the version numbers shown in the output from Step 2 with the following list:

   ```
   SAIcomplat -- 3.0.32
   SAIcURL -- 7.20.0-1_SunOS_sparc
   SAIdtacs -- 3.0.0.12
   SAIdtacshelp -- 3.0.0.3
   SAIDTraceToolkit -- 0.99-1_SunOS_noarch
   SAIexpat -- 2.0.1-2_SunOS_sparc
   SAIguisupport -- 1.0_SunOS_sparc
   SAIlame -- 3.97-1_SunOS_sparc
   SAIlibpcap -- 1.0.0-1_SunOS_sparc
   SAIlsof -- 4.83-1_SunOS_sparc
   SAImodjk -- 1.2.30-1_SunOS_sparc
   SAImod-auth-xradius -- 0.4.6-1_SunOS_sparc
   SAINetSNMP -- 5.5-4_SunOS_sparc
   SAIntp -- 4.2.6-1_SunOS_sparc
   SAIopenssl -- 0.9.8h-1_SunOS_sparc
   SAIpamradius -- 1.3.17-6_SunOS_sparc
   SAIperl -- 5.8.9-3_SunOS_sparc
   SAIroguewave -- 1.0-4_SunOS_sparc
   SAIrsync -- 2.6.9-1_SunOS_sparc
   SAIscponly -- 20080308-2_SunOS_sparc
   SAIsnmp -- 3.2.24-2_SunOS_sparc
   SAIsox -- 12.16-1_SunOS_sparc
   SAIsudo -- 1.7.2p5-1_SunOS_sparc
   SAIsux -- 1.0.1-1_SunOS_noarch
   SAItomcat -- 5.5.17.0-1_SunOS_sparc
   SAItop -- 3.7-2_SunOS_sparc
   SAIvim -- 7.2-1_SunOS_sparc
   SAIwireshark -- 1.2.7-1_SunOS_sparc
   SAIxalan-j -- 2.7.1-1_SunOS_noarch
   SAIxercesc -- 2.8.0-1_SunOS_sparc
   SFWatk -- 1.24.0,REV=110.0.4.2009.02.26.22.56
   SFWcairo -- 1.8.4,REV=110.0.4.2009.02.26.23.05
   SFWfirefox -- 3.0.7,REV=2009.02.27.21.43.19
   SFWglib2 -- 2.18.3,REV=110.0.4.2009.02.27.14.31
   ```

```
SFWgtk2 -- 2.14.5,REV=110.0.4.2009.02.26.23.30
SFWpango -- 1.22.3,REV=110.0.4.2009.02.26.23.21
SFWpixman -- 0.12.0,REV=110.0.4.2009.02.26.23.01
```

4 Do the actual installed versions match the list shown in Step 3?

Note: The build number may differ.

- If **yes**, you have completed this procedure.
- If **no**, call Cisco Services and inform them of the discrepancy.

Verify the Ownership of /dvs/dtacs/OCDL

Follow these steps to verify that the ownership of the /dvs/dtacs/OCDL directory is correct:

1. Log in as the **root** user to the DTACS server.
2. Type the following command and press **Enter** to change to the /dvs/dtacs directory:
   ```
   cd /dvs/dtacs
   ```
3. Type the following command and press **Enter** to view the ownership for the OCDL directory:
   ```
   ls -lrt
   ```
4. Does the system indicate that the ownership is dtacs:dtacs for the OCDL directory?
   - If **yes**, the directory ownership is correct.
   - If **no**, type the following command and press **Enter** to change the ownership:
     ```
     chown dtacs:dtacs OCDL
     ```

Configure DTACS BOSS Proxying for the EC (Optional)

You can set up the billing system to send BOSS transactions to the EC, if you prefer. The DTACS will then forward any non-DTA-related transactions to the associated EC. Follow these steps to configure DTACS BOSS proxying for the EC.

Note: Your system may or may not use a BOSS proxy. If it does not, skip this section and go to the next procedure in this chapter.

1. Type the following command and press **Enter** to change to the /dvs/dtacs/etc directory:
   ```
   cd /dvs/dtacs/etc
   ```
2. Type the following command and press **Enter** to see if the bossServer.cfg file exists:
   ```
   ls -l *bossServer.cfg*
   ```
3. Does the system indicate that the bossServer.cfg file exists?
   - If **yes**, then you do not need to do anything else. Go to the next procedure in this chapter.
   - If **no**, go to Step 4.
4. Type the following command and press **Enter** to create a new bossServer.cfg file from the sample configuration file provided:
   ```
   cp bossServer.cfg.sample bossServer.cfg
   ```
5. In a text editor, open the bossServer.cfg file.
6. In the bossServer.cfg file, set the **DNCS_BOSS_PROXYING** parameter to **1** to enable DTACS to proxy non-DTA-related BOSS transactions for the EC.

   Example: `DNCS_BOSS_PROXYING = 1`
7. Save and close the bossServer.cfg file.
8. Type the following command and press **Enter** to view the ownership for the bossServer.cfg file:
   ```
   ls -lrt bossServer.cfg
   ```
9. Does the system indicate that the ownership is *dtacs:dtacs*?
   - If **yes**, the directory ownership is correct.
   - If **no**, type the following command and press **Enter** to change the ownership.
     ```
     chown dtacs:dtacs bossServer.cfg
     ```
10. Bounce (stop and restart) both the dtacsBossProxy and dtacsBossServer processes if they have already started.

DTACS dbSync Post-Upgrade Checks

This section provides steps to verify the EC host and to make any required post-upgrade changes on the DTACS host for the dtacsdbsync process to work with the associated EC host.

Verify User Ownership and Group Permissions

Important:

- This step takes place in the **root** xterm window of the DTACS server.
- The example that follows may differ from the output on your system; however, it should be similar.
- Do not change the group ID for any group.

Complete this step to verify that the ownership for dncs, dtacs, and dncsSSH users are correct on the DTACS server and also to verify that the dncs user belongs to the dncs group and the dtacs user belongs to the dtacs group.

Type the following command and press **Enter** to verify directory ownership for the dncsSSH, dncs, and dtacs users:

```
ls -ltr /export/home
```

Example: Output should be similar to the following example:

```
# ls -ltr /export/home
   .
   .
   .
 drwxr-x---   3 dncsSSH  dtacs     512 Feb 22 15:30 dncsSSH
 drwxr-x---   6 dncs     dncs      512 Feb 23 07:25 dncs
 drwxr-xr-x   7 dtacs    dtacs     512 Mar  3 10:19 dtacs
```

Open an xterm Window on the EC and DTACS Servers

To perform the required checks, we recommend opening two **root** xterm windows: one that accesses the EC server and one that accesses the DTACS server.

Complete the following steps to open two **root** xterm windows on each server:

1 Open two xterm windows on the EC system.

2 In one xterm window, complete the following steps to log in as **root** user on the EC:

  a Type **su -** and press **Enter**. You are prompted to enter your password.

  b Type the **root** password and press **Enter**. The root prompt appears.

3 In the other xterm window, access your DTACS server by entering the following command and pressing **Enter**.

```
ssh -X [userID]@[dtacsIP]
```

Notes:

- Substitute your user ID that was created on your DTACS server for [userID].
- Substitute the IP address for the DTACS server for [dtacsIP].
- Do not include any brackets in the command.

4 In the DTACS window, type **su -** and press **Enter** to change to the **root** user; then, enter the password when prompted.

Check that the DTACS is a Trusted Host on the EC Server

Important: All steps in this procedure take place in the **root** xterm window on the EC server.

1 In the **root** xterm window on the EC, type the following command and press **Enter** to check that the DTACS server entry exists in the /etc/hosts file of the EC:

```
grep [dtacsIP] /etc/hosts
```

2 Locate the dtacs entry and record the first entry that follows the IP address for DTACS in the space provided.

Host Name of DTACS Server: __________

Example: In the following example, the output shows that the hostname of the DTACS server is **dtacshost**.

```
# grep 203.0.113.3 /etc/hosts
203.0.113.3    dtacshost
```

Notes:

- The first name listed after the IP address is the hostname of the DTACS server; the other names are aliases
- This is only an example. The IP address and entries for dtacs may differ in your /etc/hosts file.

Create the Private and Public Keys Between the EC and DTACS Servers

This procedure includes the steps that add the private/public keys between the EC and DTACS server. This procedure is necessary because of the Enhanced Security feature enabled in this system release.

Important: Before beginning this procedure, familiarize yourself with two error messages that might appear under some scenarios, as well as how to handle the error messages. See ***Possible Error Messages When Creating Keys*** (on page 172).

1 Record the hostname for the DTACS server that you identified in Step 2 of ***Check that the DTACS is a Trusted Host on the EC Server*** (on page 170) in the space provided.

Host Name of DTACS Server: ____

2 In the **root** xterm window of the DTACS server, open the /export/home/informix/etc/sqlhosts file in a text editor.

3 Open a new line at the end of the file and add the following entry:

```
dncsatmDbServer ontlitcp dncsatm informixOnline
```

4 Save and close the sqlhosts file on the DTACS server.

5 In the **root** xterm window on the EC, type the following command and press **Enter**. The **Enter the host name of the site you are adding** message appears.

```
siteCmd -S
```

6 Type the hostname of the DTACS server (recorded in Step 1) and then press **Enter**. The **Enter the IP address of the site you are adding** message appears.

Example: **`dtacshost`**.

7 Type the IP address of the DTACS server and then press **Enter**. The **Do you want to continue?** message appears.

Example: **`203.0.113.3`**

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

Results:

- A message appears that states that the system is backing up and adding an entry to the /etc/hosts file.
- You are prompted for the root password of the DTACS server.

9 When prompted, type the **root** password for the DTACS server and press **Enter**. The system displays a series of messages about generating various keys and a **Done** message appears when it is finished.

10 Type the following command and press **Enter** to change to the **dncs** user.

Note: You should still be working in the root xterm window of the EC server.

```
sux - dncs
```

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

```
ssh -X -i /export/home/dncsSSH/.ssh/siteKey dncsSSH@[DTACS
hostname]
```

Note: Substitute the hostname of your DTACS server (recorded in Step 1) for [DTACS hostname]. Do not include the brackets.

Result: The system logs you on to the DTACS server as dncsSSH user. You are now connected to the DTACS server and the host for the DTACS server is permanently added to the list of known hosts on the EC.

12 Type **su -** and press **Enter.** The password prompt appears.

13 Type the **root** password for the DTACS server and press **Enter**.

14 Type the following command and press **Enter** to change to the **dncs** user:

```
sux - dncs
```

15 Type the following command and press **Enter**:

```
ssh -X -i /export/home/dncsSSH/.ssh/siteKey dncsSSH@dncsatm
```

Result: The system logs you on to the EC as dncsSSH user and the **Are you sure you want to continue connecting?** message appears.

Note: If an error message appears about **conflicting keys**, open the known_hosts file, and delete the entry that corresponds to the dncsatm. Then, save the file and repeat this step.

16 Type **yes** and press **Enter**. You are now connected to the EC. The hostname for the EC is permanently added to the list of known hosts on the DTACS server.

17 Type **exit** and press **Enter** until the xterm windows close and you are entirely logged out as dncsSSH user on the DTACS and the EC servers. Your current window should be the root user in the EC xterm window.

Possible Error Messages When Creating Keys

- Under certain circumstances, the following error message might appear when you execute Step 5 (siteCmd -S) of the ***Create the Private and Public Keys Between the EC and DTACS Servers*** (on page 170):

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@    WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!     @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle
attack)!
It is also possible that the RSA host key has just been changed.
The fingerprint for the RSA key sent by the remote host is
38:4e:2f:b3:a4:48:b2:c4:0c:e0:c0:3b:3e:ea:40:65.
Please contact your system administrator.
Add correct host key in /.ssh/known_hosts to get rid of this message.
Offending key in /.ssh/known_hosts:3

RSA host key for dtacs has changed and you have requested strict
checking.
Host key verification failed.
lost connection

ERROR: Unable to repair keys for dtacs, repair must be made manually.
 Exiting
```

If this is the case, the corrective action is to delete Line 3 in the /export/home/dncs/.ssh/known_hosts file, and then re-execute Step 5. We know that Line 3 must be deleted by the sentence in the message: "Offending key in /.ssh/known_hosts:3."

- Under certain circumstances, the following error message might appear when you execute Step 11 (ssh -X -i /export/home/dncsSSH/.ssh/siteKey dncsSSH@[DTACS hostname]) of the ***Create the Private and Public Keys Between the EC and DTACS Servers*** (on page 170):

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@    WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!  @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle
attack)!
It is also possible that the RSA host key has just been changed.
The fingerprint for the RSA key sent by the remote host is
38:4e:2f:b3:a4:48:b2:c4:0c:e0:c0:3b:3e:ea:40:65.
Please contact your system administrator.
Add correct host key in /export/home/dncs/.ssh/known_hosts to get rid of
this message.
Offending key in /export/home/dncs/.ssh/known_hosts:1

RSA host key for dtacs has changed and you have requested strict
checking.
Host key verification failed.
```

If this is the case, the corrective action is to delete Line 1 in the /export/home/dncs/.ssh/known_hosts file, and then re-execute Step 11. We know that Line 1 must be deleted by the sentence in the message: "Offending key in /export/home/dncs/.ssh/known_hosts:1."

Revise the sshd_config File on the DTACS Server

Important: All steps in this procedure take place in the **root** xterm window of the DTACS server.

1. Open the /etc/ssh/sshd_config file in a text editor.
2. Edit the **PermitRootLogin yes** entry to the following:
   `PermitRootLogin no`
3. Save and close the sshd_config file.
4. Type the following command and press **Enter** to restart the SSH service.
   `svcadm restart ssh`

Test dbSync on the DTACS Server

Important: All steps in this procedure take place in the **root** xterm window of the DTACS server.

Complete the following procedure to ensure that the DTACS database successfully syncs with the EC database:

1. In the **root** xterm window of the DTACS server, type the following command and press **Enter** to switch to the **dncs** user:
   ```
   sux - dncs
   ```
2. Type the following command and press **Enter** to establish the correct DTACS environment:
   ```
   . /dvs/dtacs/bin/dtacsSetup
   ```
   Note: Make sure that there is a space between the period (**.**) and the forward slash (**/**).
3. Type the following command and press **Enter** to verify that you can access the EC database:
   ```
   dbaccess dncsdb@dncsatmDbServer -
   ```
   Example: Output should be similar to the following example:
   ```
   $ dbaccess dncsdb@dncsatmDbServer -
       Database selected
       >
   ```
4. Press the **Ctrl** and **c** keys simultaneously (Ctrl-C) to exit from the dbaccess utility.
5. Type the following command and press **Enter** to initiate a synchronization of the DTACS database:
   ```
   dtacsdbsync -S
   ```
6. Did a **Dbsync End Event - Succeeded** message appear at the end of the script?
   - If **yes**, the synchronization was successful. Go to the next procedure.
   - If **no**, contact Cisco Services for assistance.

Create DTACS WebUI Accounts

Important: This procedure applies ONLY to Live Upgrades of DTACS, going from Version 1.2.0.x to Version 3.x.

For all UNIX accounts which were created on older version of the DTACS server with dtacs read/write privileges, an associated WebUI account using the same login name needs to be created to log in to the WebUI.

1. As the **root** user, type the following command and press **Enter** to create the user:
   ```
   /usr/apache2/bin/htdigest /etc/apache2/user-
   conf/SAIdtacs.digest "Cisco DTACS" <your_username>
   ```
2. For additional WebUI accounts repeat Step 1, using the same syntax.

Run the setDLNARange Script to Configure SCID Ranges

After an upgrade to DTACS Version from DTACS Version 1.2, the setDLNARange script must be run, as described in this procedure. This procedure must be executed before the system processes are restarted and before executing the createScidVctSource script.

Note: The setDLNARange script sets the DLNA_RANGE_SIZE field to the specified SCID range value in the database.

Important: This procedure pertains only to DTACS Version upgrades from DTACS Version 1.2. Subsequent upgrades to DTACS Version do not require this procedure.

1. Open an xterm window on the DTACS as **dtacs** user.
2. Type the following command and press **Enter**:
   ```
   cd /dvs/dtacs/bin
   ```
3. Type the following command and press **Enter**:

   ./setDLNARange <SCID_Range_Value>

   Results:

   - The SCID_Range_Value is set to the DLNA_RANGE_SIZE field in the database.
   - The message **Success: DLNA Feature is set to Enable with DLNA_RANGE_SIZE : <SCID_Range_Value>** should appear.

   Note: The setDLNARange script accepts SCID range values from 0 to 499. The DLNA_RANGE_SIZE is set to 0 to disable the DLNA feature. Any other value in the range enables the DLNA feature in the system.

Create SCIDs for Existing VCT Sources

After an upgrade to DTACS from DTACS 1.2, the createScidVctSource script must be run, as described in this procedure. This procedure must be executed before the system processes are restarted. This procedure pertains only to DTACS upgrades from DTACS 1.2. Subsequent DTACS upgrades do not require this procedure.

1 Open an xterm window on the DTACS as **dtacs** user.

2 Type the following command and press **Enter**:

```
cd /dvs/dtacs/bin
```

3 Edit the file DLNAPackages.txt file using the text editor of your choice, such as vi. Specify name(s) of package(s) which have all DLNA services. If there are multiple packages, enter one per line.

Notes:

- Use your notes from ***Note DLNA Packages*** (on page 146) when completing this step.
- If DLNA package(s) in the EC are not provisioned with all DLNA services, provision them with the required DLNA services in the EC and run the dbSync command, as described in ***DTACS dbSync Post-Upgrade Checks*** (on page 169).

4 Type the following command and press **Enter**:

```
./createScidVctSource –f DLNAPackages.txt
```

Result: The system creates SCIDs for the existing VCT sources in Standard and DLNA ranges. All valid sources of packages provided in the DLNAPackages.txt file fall under the DLNA range and all other sources in the standard range.

Note: The system creates SCIDs in the DLNA range for all valid sources of packages provided in the DLNAPackages.txt file.

Failure of This Script

Important: The execution of this script fails if there are more than 500 unique VCT sources because the SCID has a maximum limit of 500. Upon script failure, the operator has two options to create the SCIDs for the existing VCT sources. Both of these options can be exercised only when the DTACS processes are running.

- Option 1: Choose the sources for which SCID needs to be created from the Source SCID Mapping WUI.
- Option 2: Remove sources from the Selected Sources dual columns of the VCT Source Management window such that the maximum limit of 500 is not exceeded. Then, stop the DTACS processes, run the createScidVctSource script, and restart the processes.

Run the dtacsHDEnableScript Program

After an upgrade to DTACS Version from DTACS Version 1.2, the dtacsHDEnableScript must be executed, as described in this procedure. This procedure must be executed before the system processes are restarted.

Note: The dtacsHDEnableScript program sets the hdEnable flag to true in the database.

Important: This procedure pertains only to DTACS Version upgrades from DTACS Version 1.2. Subsequent upgrades to DTACS Version do not require this procedure.

1 Open an xterm window on the DTACS as **dtacs** user.

2 Type the following command and press **Enter**:

```
cd /dvs/dtacs/bin
```

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

```
./dtacsHDEnableScript hdEnableMac.txt
```

Result: The hdEnable flag sets to true in database.

Note: The hdEnableMac.txt configuration file contain the list of patterns of MAC address to be processed.

The following are the example formats in the hdEnableMac.txt configuration file.

Example 1: Sets the hdEnable flag to true for all MAC address starting with 12:BF:

```
12:BF%
```

Example 2: Sets the hdEnable flag to true for individual MAC addresses:

```
12:BF:CA:DE:11:11
12:BF:CA:DE:11:12
```

Configure Remote Access to the DTACS Web Interface

Configure Remote Access to the DTACS Web Interface

Complete the following steps to access the DTACS web interface remotely.

Important: You must obtain the hostname and IP address for your corporate network-facing interface from your System Administrator to complete this procedure. The following examples use *dtacs1* as the hostname and *10.78.203.57* as the IP address. These are examples, only.

1 Log in to the DTACS as the **root** user.

2 Open the /etc/hosts file with a text editor.

3 Add *dtacseth* to your corporate network interface entry in the /etc/hosts file.

Example: **`192.0.2.1 dtacs1 dtacs1. loghost dtacseth`**

4 Add dncsws to the loopback2 entry in the /etc/hosts file.

Example: **`198.51.100.1      loopback2   dncsws`**

5 Save and close the /etc/hosts file.

6 Open the /etc/apache2/user-conf/80.auth.conf file with a text editor.

7 Add *Allow from [machine/subnet IP Address]* before the “ErrorDocument” line.

Example:

```
#ident "@(#) %full_filespec: 80.auth.conf,4:ascii:Da=1 %"
<Location />
Order Allow,Deny
Allow from localhost
Allow from dtacs
Allow from dtacseth
# Access restrictions can be enforced here, so that valid users can only
# come from allowable hosts/(sub)networks e.g. :
Allow from 203.0.113.1/16
#To Access from all the machine/subnet, add/uncomment the below line.
#Allow from All
ErrorDocument 403 "<html><head><title>Error
403</title></head><body><h2>SECURITY WARNING</h2>Web connections are not
allowed from this location.</body></html>"
</Location>
```

8 Save and close the 80.auth.conf file.

9 Open the /etc/apache2/user-conf/httpd.ports file with a text editor.

10 Add an entry to "Listen to port 80" on the corporate-facing interface line.

Example:

```
#
#ident "@(#) %full_filespec: httpd.ports.dist,2:ascii:Da=2 %"
#
# This configuration file is for DTACS Web UI traffic.
# If $hostname is on a separate interface, it can be enabled too, but
# we won't do that automatically.
#
# Listen: Allows you to bind Apache to specific IP addresses and/or
# ports, instead of the default. See also the <VirtualHost>
# directive.
#
# Change this to Listen on specific IP addresses as shown below to
# prevent Apache from glomming onto all bound IP addresses (0.0.0.0)
#
# This configuration file is for DTACS Web UI traffic.
# If $hostname is on a separate interface, it can be enabled too, but
# we won't do that automatically.
Listen 0.0.0.0:8045
Listen 203.0.113.3:80
Listen dtacseth:80
```

11 Save and close the httpd.ports file.

12 Type the following command and press **Enter** to restart the Apache server process:

```
svcadm restart http
```

Install Patches

If you have any patch software for the DTACS server, install it now. Instructions for installing the patch software should accompany the DVD that contains the software.

Check DTACS Processes Using the WebUI

Before Using the DTACS WUIs

Before you start using the DTACS WUI, note these important points:

Understanding Channel Maps

The channel map of a BSG is determined by the channel map of the EC Hub ID that is associated with the BSG.

Understand PID Routes

PID routes are created automatically for the ports that are part of the BSG. Therefore, you must configure VCTs before you edit PID Routes.

Understand Running Multiple Instances of Firefox

When you launch multiple Firefox windows from your system, multiple sessions with the same profile will be created. This creates session conflicts. To understand how to avoid this by using different profiles for different session, refer to the following procedures in Appendix B.

- *Creating a New Firefox Profile in Solaris* (on page 215)
- *Creating a New Firefox Profile in Windows* (on page 218)

Understand Environment Variables

By default the .profile file from the previous DTACS release will be available after the upgrade to DTACS .

If you wish to modify the .profile file, follow the steps in Set Environment Variables.

Starting DTACS Processes

Important: If you attempt to start a DTACS process from the command line while all of the DTACS server processes are already running, you could cause the process to core dump or otherwise disrupt the normal operation of the DTACS server. If this occurs, you should send the core files and logs to Cisco for evaluation.

1 Type the following command and then press **Enter** to assume the dtacs role. A prompt for the role's password appears.

```
sux - dtacs
```

Important: If you have not yet created a password for the dtacs user, open a new window and switch to **root**. Type **passwd dtacs** and enter a password when prompted. Re-enter the password when prompted.

2 Type the dtacs password and press **Enter**. A system prompt appears and /export/home/dtacs becomes the active directory.

3 Type the following command and press **Enter**. The dtacs processes start.

```
dtacsStart
```

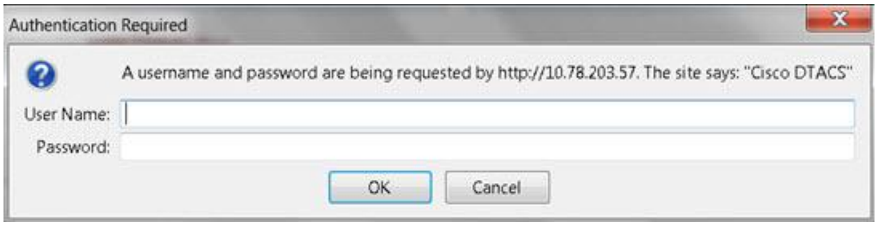
Important: Be certain that you are starting the DTACS processes as the **dtacs** user. Do not start the processes as the root user.

4 Type the following command and press **Enter** to start the software and launch the interface, if the DTACS WUI has not already launched:

```
dtacsWUIStart
```

Results:

- If you are launching Firefox for the first time, click **Install Now** to install the application.
- The message **Launching the DTACS Web UI page in Firefox** appears.
- A prompt for the DTACS User Name and Password appears.



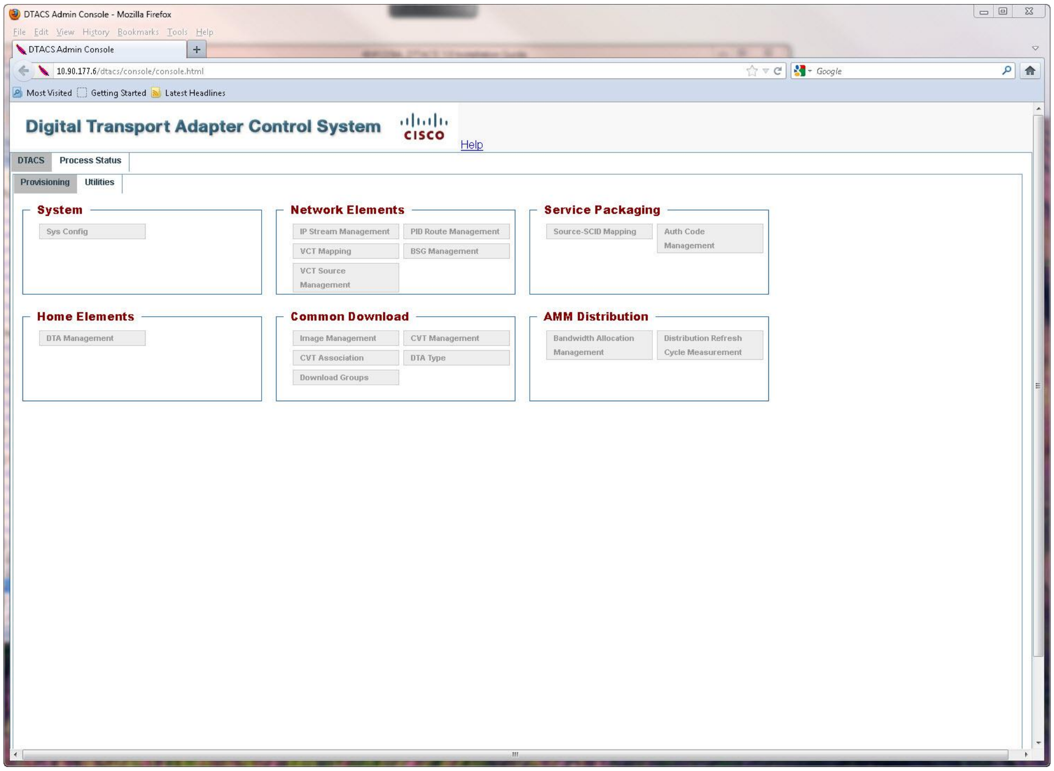
Authentication Required

A username and password are being requested by http://10.78.203.57. The site says: "Cisco DTACS"

User Name:

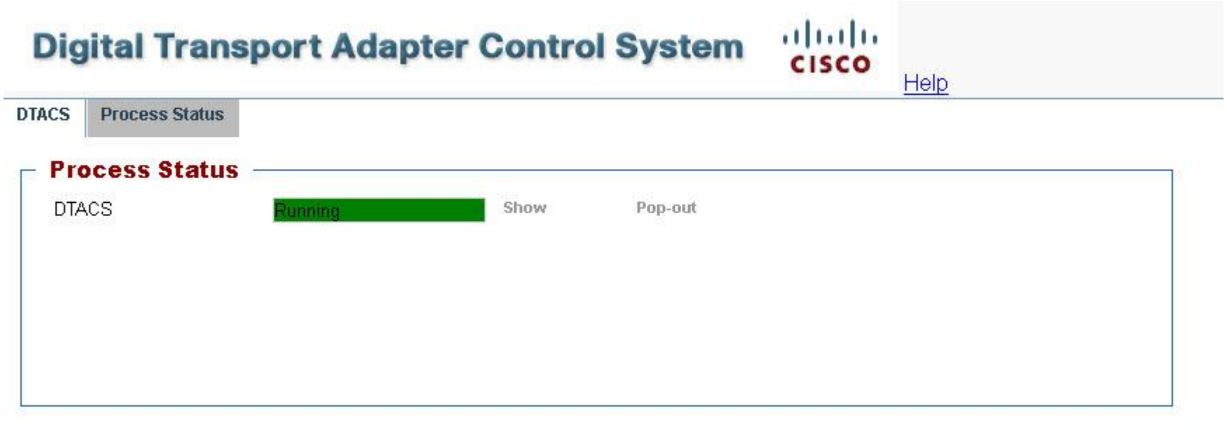
Password:

5 Type the **User Name** and **Password** and click **OK**. The DTACS web user interface (WUI) appears.



6 Before proceeding to access the Web UI pages, complete the steps in *Clearing the Firefox Browser Cache* (on page 212).

7 Click the **Process Status** tab to view the processes.

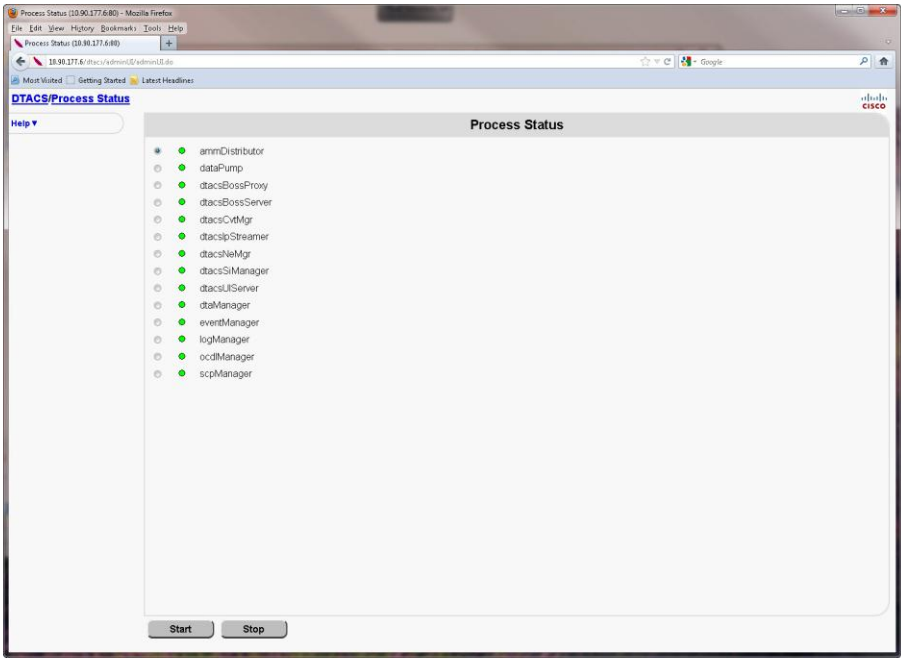


Process Status

DTACS	Running	Show	Pop-out

8 Select one of the following to view status processes:

- Click **Show** to view the status of the processes in the current window.

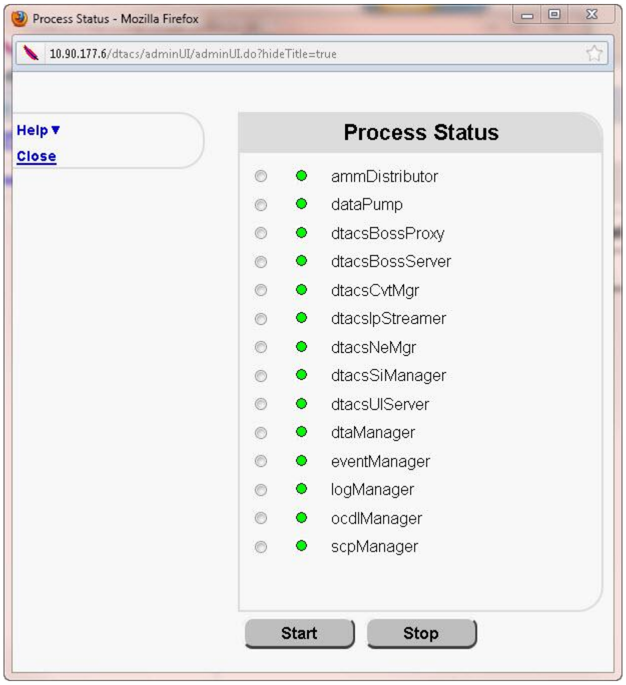


Process Status (10.90.177.6:80) - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Process Status (10.90.177.6:80)
10.90.177.6/dtacs/adminUI/adminUI.do
Most Visited
Getting Started
Latest Headlines
DTACS/Process Status
CISCO
Help ▾
Start
Stop

Process Status

● ● ammDistributor
○ ● dataPump
○ ● dtacsBossProxy
○ ● dtacsBossServer
○ ● dtacsCvtMgr
○ ● dtacsIpStreamer
○ ● dtacsNeMgr
○ ● dtacsSiManager
○ ● dtacsUIServer
○ ● dtaManager
○ ● eventManager
○ ● logManager
○ ● ocdlManager
○ ● scpManager

- Click **Pop-Out** to view the status of the processes in a separate window.


Process Status - Mozilla Firefox
10.90.177.6/dtacs/adminUI/adminUI.do?hideTitle=true
Help ▾
Close
Start
Stop

Process Status

○ ● ammDistributor
○ ● dataPump
○ ● dtacsBossProxy
○ ● dtacsBossServer
○ ● dtacsCvtMgr
○ ● dtacsIpStreamer
○ ● dtacsNeMgr
○ ● dtacsSiManager
○ ● dtacsUIServer
○ ● dtaManager
○ ● eventManager
○ ● logManager
○ ● ocdlManager
○ ● scpManager

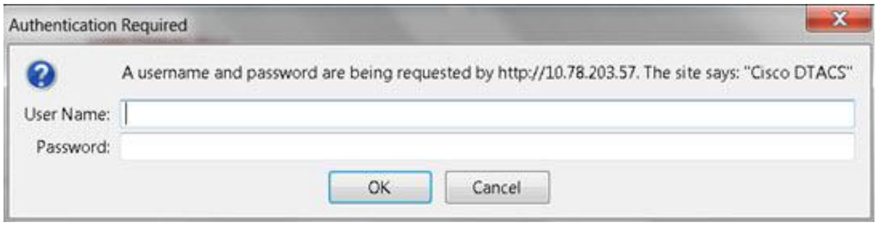
Each process running on the DTACS is listed next to a green, yellow, or red indicator. The color of the indicator shows the status of the process.

- Red means a process has stopped.
- Green means a process is running.
- Yellow means a process has paused.

Note: The color of the indicator may lag slightly behind the actual status of the process. If you stop or start a process, it may take a few seconds before the indicator changes color to show the change in status.

Accessing the Administrative Console

1 Navigate to the following location in the web browser on your computer:
`http://[DTACS IP Address]/dtacs/`
Example:
`http://192.0.2.1/dtacs`
Result: A login prompt appears.

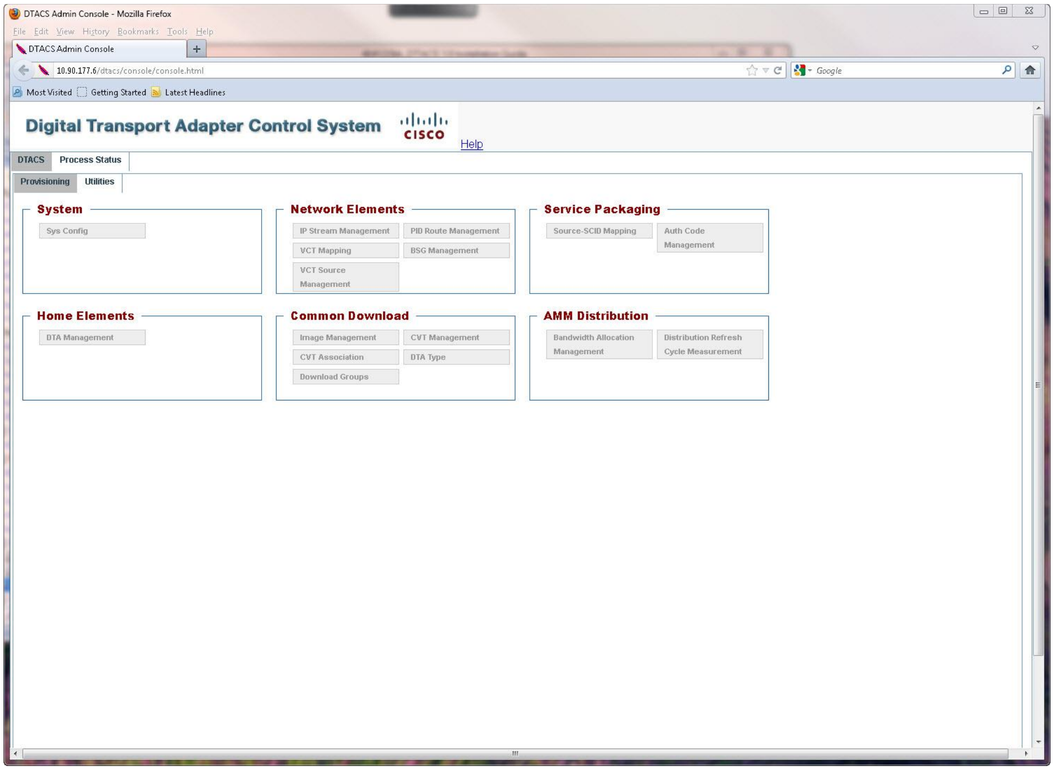


A username and password are being requested by http://10.78.203.57. The site says: "Cisco DTACS"

User Name:

Password:

2 Type your DTACS Administrator username and password, and click **OK**.
Result: The DTACS Administrative Console opens.



DTACS Processes

The following table briefly describes each of the DTACS processes.

Process	Description
ammDistributor	This process transmits Authorization Management Messages (AMMs) to Digital Transport Adapters (DTAs).
dataPump	This process pumps out encoded images to a specific IP/port combination.
dtacsBossProxy	This process handles backend processing of BOSS transactions that are not supported by DTACS.
dtacsBossServer	This process provides BOSS interfaces to DTACS.
dtacsCvtMgr	This process works with CD2-CVT files. It allows you to create, edit, delete and transmit CD2-CVT file data.
dtacsNeMgr	This process provisions and maintains network configurations that are used to setup PID routes and insert Simple Content Protection and Multi-Program Keys.
dtacsIpStreamer	Transmits data supplied by other DTACS processes as MPEG elementary streams to specified IP addresses (multicast or unicast).

Process	Description
dtacsSiManager	This process generates SI and channel map data.
dtacsUIServer	This process proxies WUI requests to the appropriate back-end process(es) and the Informix database. The dtacsUIServer process also returns responses from back-end processes and the database to the WUI.
dtaManager	This process provisions and manages DTA devices.
eventManager	This process provides a way to notify system components of events.
logManager	This process is an internal process that manages debug logging levels of DTACS packages.
ocdlManager	This process handles requests from the WUI. It creates and manages associations and related CVTs, encodes images and interacts with the database to persist related data.
scpManager	This process provides key management for Simple Content Protection (SCP).

Test dbSync from the DTACS WebUI

1. Click **Sys Config** in the WUI. The DTACS System Configuration window opens.
2. Click the **DB Sync** tab and then click **DB Sync** to initiate the DTACS database synchronization process.

   Note: After a few moments, the **Status** in the DB Sync Status History table is refreshed automatically every three seconds.
3. Select one of the following options:
   - If the **Status** is **In Progress**, wait a few seconds for the status to refresh.

     Note: The time taken by the DB Sync process is based upon the amount of data that needs to be synchronized from the EC. We recommend that operators wait to access the DTACS user interfaces until after this process has completed because there may be much data that needs to be updated.
   - If the **Status** is **Completed** and if the entry in the **DB Sync End Time** column is current, then the synchronization was successful. Go to the next procedure in this chapter.
   - If the **Status** is **Failed**, and if the description reveals that the synchronization is still in progress, repeat this procedure after a few seconds.

     Note: Contact Cisco Services if you are not able to synchronize the database successfully.

Execute the postUpgrade Script on the DTACS Host

The DTACS postUpgrade script performs post-install and post-upgrade checks, enables cron jobs, checks for filesystem space utilization, as well as other functions.

1 Insert the DTACS DVD into the DVD drive of the DTACS server.

2 Type the following command and then press **Enter**. A list of the mounted file systems appears.

```
df -n
```

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

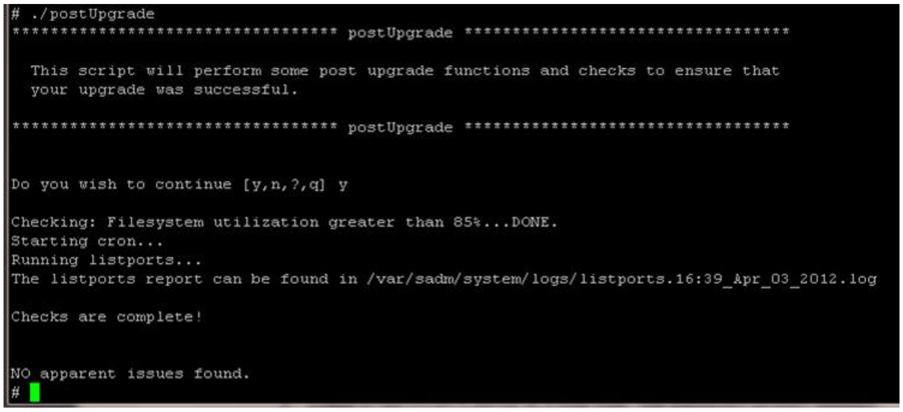
3 As the **root** user, type the following command and press **Enter** to source in the DTACS environmental variables:

```
. /dvs/dtacs/bin/dtacsSetup
```

4 As the **root** user, type the following command and press **Enter**. A confirmation message appears.

```
/cdrom/cdrom0/sai/scripts/postUpgrade
```

5 Type **y** and press **Enter**. The system executes the postUpgrade script.



```
# ./postUpgrade
********************************** postUpgrade **********************************

  This script will perform some post upgrade functions and checks to ensure that
  your upgrade was successful.

********************************** postUpgrade **********************************


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

Checking: Filesystem utilization greater than 85%...DONE.
Starting cron...
Running listports...
The listports report can be found in /var/sadm/system/logs/listports.16:39_Apr_03_2012.log

Checks are complete!


NO apparent issues found.
# 
```

Attach Mirrors After a DVD Live Upgrade

Complete the following procedure *only* if you have upgraded the DTACS software from a DVD.

Important: Be sure that you complete this procedure during the current maintenance window on the night of the server upgrade. If you wait until the following night to complete this procedure, the server will operate an entire day without its disk-mirroring functions in place.

Important Note to Consider

You should follow the procedure in this chapter only under one of the following circumstances:

- You are satisfied with the upgrade and want to commit the system changes. Rolling back an upgrade *after* completing this procedure is time-consuming and takes significant effort.
- You have rolled back from an unsuccessful DVD upgrade and want to synchronize the mirrors.

Attaching Mirrors After a DVD Live Upgrade

In this procedure, you will enable the server's disk-mirroring function of the server. Complete the following steps to log on to the DTACS server and attach the server's mirrors.

Note: It may take up to 60 minutes to complete this process.

1. Verify that the Maintenance DVD is in the DVD drive. If the DVD has been removed, insert it into the DVD drive.
2. Type the following command and then press **Enter**. A list of the mounted file systems appears.

   ```
   df -n
   ```

   Note: The presence of /cdrom in the output confirms that the system correctly mounted the DVD.
3. Log on to the DTACS server as the **root** user.
4. Type the following command and press **Enter**. A confirmation message appears.

   ```
   /cdrom/cdrom0/sai/scripts/attach_mirrors
   ```
5. Type **y** and press **Enter**. The system executes a script that attaches submirrors to their respective mirrors.
6. When the disk-mirroring function completes, type **eject cdrom** and press **Enter**.
7. Remove the Maintenance DVD from the DVD drive.
8. Type **exit** and then press **Enter**. The root user logs out of the DTACS server.

Restore Image Associations

In this procedure, you will restore image associations. Use the sheet of paper on which you recorded information in *Note and Delete Image Associations* (on page 144).

1 Obtain the sheet of paper on which you recorded your location information and image associations.

2 On the DTACS main window, under **Common Download**, click **Image Management**.

Result: The Image Management window opens.

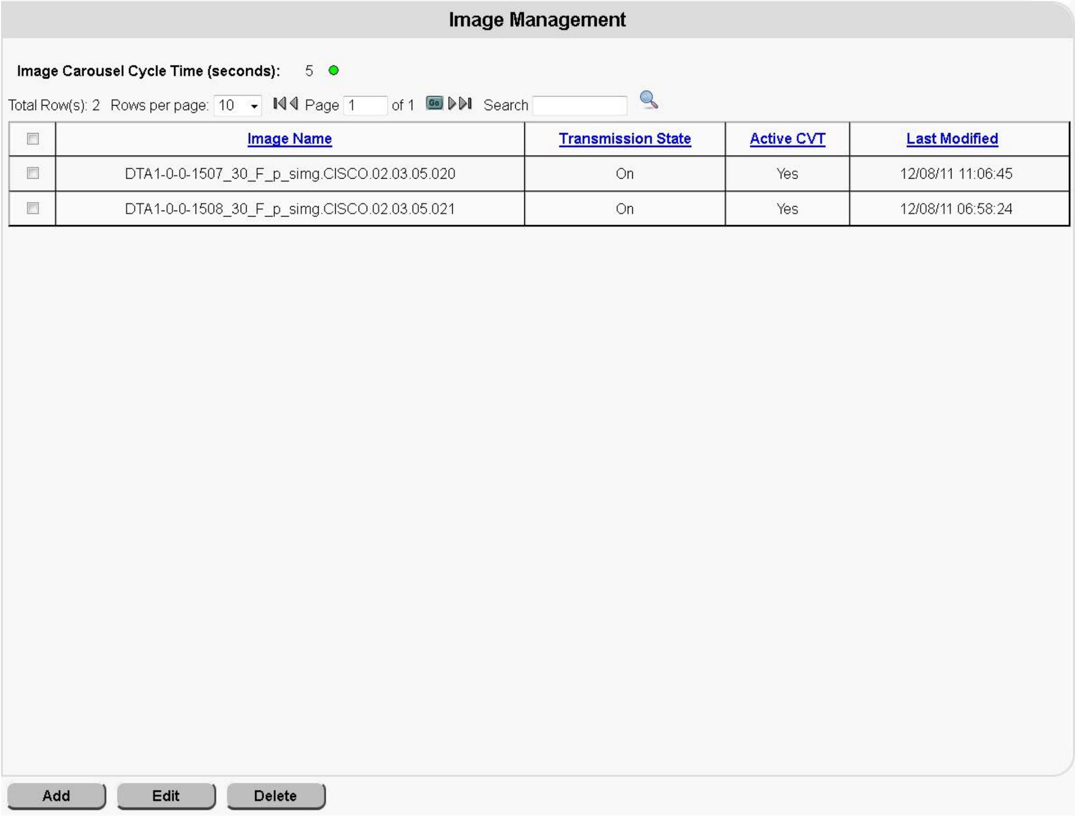


Image Management

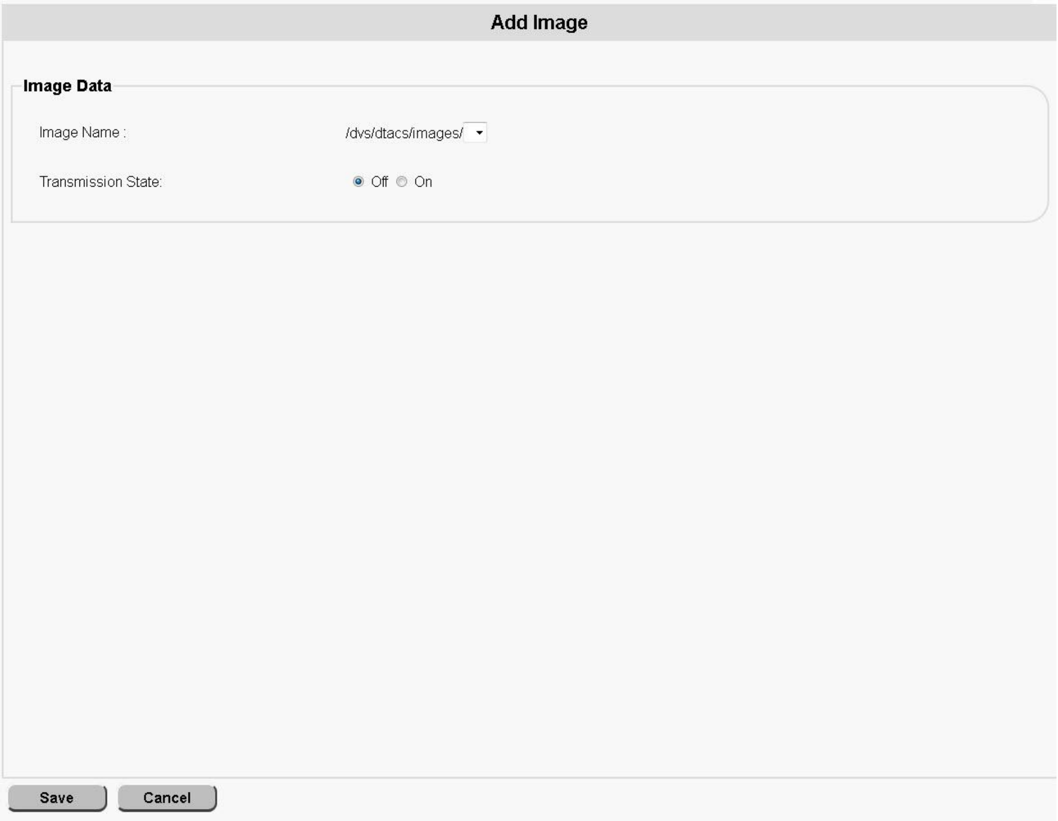
Image Carousel Cycle Time (seconds): 5 ●

Total Row(s): 2 Rows per page: 10 Page 1 of 1 Search

□	Image Name	Transmission State	Active CVT	Last Modified
□	DTA1-0-0-1507_30_F_p_simg.CISCO.02.03.05.020	On	Yes	12/08/11 11:06:45
□	DTA1-0-0-1508_30_F_p_simg.CISCO.02.03.05.021	On	Yes	12/08/11 06:58:24

3 Click **Add**.

Result: The Add Image window opens.



Add Image

Image Data

Image Name : /dvs/dtacs/images/

Transmission State: ● Off ○ On

4 Using the sheet of paper on which you previously noted the image associations, add the image data back to the system, clicking **Save** after each addition. Repeat this process for each image association that you recorded.

Note: The Transmission State needs to be set to **On**.

Note: For DTACS , **Vendor ID** and **Hardware ID** no longer pertain.

Restore Remote CVTs

1. Obtain the sheet of paper on which you recorded the CVT information in ***Note and Delete CVT Provisioning*** (on page 145).
2. Follow the steps in ***Add a CVT*** (on page 103) for all the CVTs on this sheet of paper.
3. Follow these instructions for each CVT on the sheet of paper with a **Transmission State** of **On**.
   - **a** Complete the steps in ***Add a CVT Association*** (on page 111) for these CVTs.
   - **b** For each of these CVT associations, select the Transmit State of Non-Group-CVT.
   - **c** Repeat Steps a and b for all BSGs.

Notes:

- The upgrade will still be successful even if all of the remote CVTs were not deleted.
- However, there may be some stale or inconsistent CVT entries (cvt_config and cvt_attr tables) in the database.
- Delete any remaining CVTs from the WebUI.
- Contact Cisco Services should you encounter any difficulties or if you do not understand the rationale for these steps.

8

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.

A

Managing DTACS User Accounts

This appendix contains procedures for managing user accounts on the Cisco DTACS server. The appendix includes descriptions of user accounts, password expiration rules and role-based access control.

In This Appendix

DTACS Security

Administrative Users

Administrative users (admins) are the only users who can assume the dtacs role. Users who do not have administrative privileges cannot access the DTACS WUI. The following sections include information about managing all types of users.

Operating System Defaults

- **Operating System:** Solaris 10
- **Security Features:**
  - **Secure by Default** - OS is installed with minimal network services
  - **Networking**
    - SSH is the only network listening service installed by default for remote access; others are set to off or configured for only local machine access
    - X11 forwarding is also enabled for remote UI access using SSH
  - **Restricted Network Resources** - Authorized users have access to all network resources, but the system itself has very little exposure to the network, making unauthorized access very difficult
  - **System Monitoring** - Basic Security Module (BSM) provides monitoring of system events for logging and auditing

Operating system defaults are set up during system installation.

Important: We recommend that you do not change the system defaults so that you can retain the highest level of system security. Cisco is not responsible for any damage that might occur to your DTACS or network if you choose to change the system defaults.

Role-Based Access Control

We have implemented role-based access control as part of the DTACS operating system. Role-based access control allows system admins to assign control of parts of the system to specific users. System admins can also limit system access to specific users.

A system admin can give users permissions to run certain commands or access to certain files. They can also prevent users from running commands or accessing files. Role-based access control allows increased flexibility in the assignment of system permissions.

The following table lists the three most important roles and account types available on the DTACS system. The table also contains a description of their permission levels.

	Files		Commands	Database		
Role/Account	**Read**	**Write**	**Execute**	**Read**	**Write**	**Alter**
Root	Y	Y	Y	Y	Y	Y
DTACS Role	Y	Y	Y	Y	Y	Y
DTACS Admin Account	Y	N	N	N	N	N

This section is a more detailed description of the roles and accounts available on the DTACS server.

root User

The root user is the system administrator account and has all privileges and rights.

- Login access to the system using the root user is limited to direct local access, such as from the local console.
- You can switch to the root user from another account that is logged in locally or remotely.
- You must use the root user to create all customer-specific login accounts.
- The root user has permission to switch to the dtacs role.
- The root user is the database administrator.

dtacs Role

The dtacs role is the DTACS application administrator and user.

- You should perform all DTACS application activities (including starting and stopping the DTACS applications, WUI access, application file management, diagnostic script execution, and log configuration) using the dtacs role.
- You must use the dtacs role to start the Administrative Console.
- Access to the dtacs role is limited to the root user and DTACS Administrator accounts. These are the only accounts with permission to switch to the dtacs role.
- You cannot log in directly to the DTACS using "dtacs" and the dtacs role password.
- The DTACS now uses SFTP instead of FTP, because SFTP is a more secure method of transferring data.

DTACS Administrator

DTACS Administrator accounts are the only system accounts (other than root) that have permission to switch to the dtacs role.

- These accounts are created when needed by the DTACS system administrator using the create_users script.
- These accounts can be used on the DTACS only to view logs and other application files.

System Access

- Can log into the DTACS server's operating system (Solaris)
- Can read or write files on the DTACS server
- Can execute applications on the DTACS server
- Can switch to the dtacs role

DTACS Operator

DTACS Operator accounts can be used on the DTACS only to view logs and other application files.

- These accounts are created when needed by the DTACS system administrator using the create_users script.
- These accounts do not have permission to switch to the dtacs role.

System Access

- Can log into the DTACS server's operating system (Solaris)
- Can read or write files on the DTACS server
- Cannot execute applications on the DTACS server
- Cannot switch to the dtacs role

Regular Users

Regular user accounts do not have permission to view DTACS logs or other application files.

- These accounts are created when needed by the DTACS system administrator using the create_users script.
- These accounts do not have permission to switch to the dtacs role.

System Access

- Can log into the DTACS server's operating system (Solaris)
- Cannot read or write files on the DTACS server
- Cannot execute applications on the DTACS server
- Cannot switch to the dtacs role

User Accounts

This section describes how to create and delete user accounts.

Create a User Account

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:
   /dvs/admin/create_users

   Result: The Choose Type of User to Add menu appears.

```
--------------------------
Choose Type of User to Add
--------------------------
1: Add Regular User (has no DTACS privileges)
2: Add Operator (has DTACS read privileges)
3: Add Administrator (has DTACS read & write privileges)
Please enter choice or 'Q' to exit:
```

4. Select the user type for the account that you want to add.
5. Type the name of the new user account and press **Enter**. The user name must be between 6 and 8 alphanumeric characters and cannot contain special characters. The **Do you wish to continue adding this user (Y/N)?** message appears.
6. Type **y** (for yes) and press **Enter**.
7. Type the **password** for the user and press **Enter**.
8. Type the **password** for the user again and press **Enter**. The create_users program exits.

Delete a User Account

Use this procedure to delete users that were added using the create_users script.

1 Log in to the DTACS server as **root**.

2 Review the user files in the user's home directory and move any files that should be retained to another directory, outside the user's home directory.

3 In an xterm window, type the following command and press **Enter**. The system deletes the user's home directory.

```
userdel -r [username]
```

Note: Substitute the user's name for [username].

4 Type the following command and press **Enter**. The system removes the user from the /etc/project file.

```
projdel user.[username]
```

Note: Substitute the user's name for [username].

5 Is the user you are deleting a Regular User?

- If **yes**, type the following command and press **Enter**. The system deletes the group associated with that user.

  ```
  groupdel [username]
  ```

  Note: Substitute the user's name for [username].
- If **no**, you are finished with this procedure.

Important: Even when you delete a user, the user's name still exists in the password history file. We recommend that you do not edit this file.

If you delete a user, then add the same user again, the user's old password history remains in effect and the password history file contains the user's last five passwords. The user cannot change their password to one of the five passwords in the password history file.

Who Am I?

To determine who is logged in to a session, you can type one of the following commands from the DTACS server's command line and press **Enter**:

```
id
```

```
/usr/ucb/whoami
```

Note: If you add /usr/ucb to your default path, you only need to type **whoami** and press **Enter**.

The system returns the user ID of the user currently logged in to the session.

Log On

Follow this procedure to log in to the CDE at the DTACS server terminal:

1. At the DTACS server terminal, type your **user name** and press **Enter**.
2. At the prompt, type your **password** and press **Enter**.
3. Before you execute any DTACS commands (such as dtacsStart or dtacsStop), type **sux - dtacs** and press **Enter**.
4. Before you launch any DTACS user interface windows (such as the Administrative Console), type the following commands and press **Enter**.

   ```
   export DISPLAY= : 0.0
   xhost +
   ```

You can only have one active session for SSH, SFTP, and CDE sessions for any user name.

Note: This does not apply to the dtacs role or to the root user.

This restriction can be changed for a user by modifying the project file entry for that user.

Override Session Limitations on DTACS

1. Log in to the DTACS as **root**.
2. Type the following command and press **Enter**:

   ```
   projmod -K 'project.max-tasks=(priv,x,deny)' user.[username]
   ```

   Notes:

   - The **x** in (priv,x,deny) is the number of active sessions the user is allowed to have open at a time.
   - Substitute the user name for **[username]**.

Session Security Enhancements

The DTACS Server will close a user session that has been idle for a configurable period of time. After a session is closed, users must log back into the system.

- Session locking default time: 30 minutes (1800 seconds)
- Recovery: User logs in again

Notes:

- The session locking time does not affect the root user.
- Session locking also affects SSH, xterms, consoles on the CDE, and shells launched during a session.

Important: Whenever you change an environment variable in .profile, you must then source the file. Type **. /export/home/dtacs/.profile** and press **Enter**. (Be sure to type a space between the first. and /.) Then run the **dtacsStop**, **dtacsKill**, and **dtacsStart** commands as the dtacs user.

Change the Session Timeout Default for a User

1. Open an xterm window on the DTACS server.
2. Type the following command and press **Enter**:
   ```
   cd /export/home/[user account]
   ```
3. Open the **.profile** file in a UNIX text editor.
4. Add the following lines to the .profile file:
   ```
   export TIMEOUT=[seconds]
   export TMOUT=[seconds]
   ```
   Notes:
   - Do not type the brackets **[ ]** in the command.
   - Enter the time as a number of seconds.

     Examples:
     - To enter a session locking time of **5 minutes**, add the following lines:
       ```
       export TIMEOUT=300
       export TMOUT=300
       ```
     - To enter a session locking time of **15 minutes**, add the following lines:
       ```
       export TIMEOUT=900
       export TMOUT=900
       ```
   - We recommend that you keep the session locking time to as short a time as possible. This helps prevent unauthorized use of your system.
5. Save the .profile file and close the text editor.
6. In the xterm window, type the following command and press **Enter**. The system will use the updated .profile file.
   ```
   . ./.profile
   ```
   Note: Be sure to type a space between the first two periods.

Password Management

Regardless of password management rules enforced by a system, users must still be encouraged to choose difficult to guess passwords. Proper system management of passwords is important but the primary responsibility for strong passwords ultimately rests with the user.

Users must select a very strong password. Strong passwords have the following general characteristics:

- Contain 8 or more characters
- Contain at least 2 alphanumeric characters and at least one numeric or special character
- Do **not** consist of only one character type (**aaaaaaa** or **11111111**)
- Do **not** contain any aspects of a date
- Are **not** proper names
- Are **not** telephone numbers or similar numeric groups
- Are **not** user IDs, user names, group IDs, or other system identifiers
- Do **not** contain more than two (2) consecutive occurrences of the same character
- Are **not** consecutive keyboard patterns (for example, **qwerty**)

System Password Retention

The system sets the following restrictions on re-using passwords:

- The system retains the last 5 passwords each user uses.
- The system does not allow you to re-use any of the last 5 passwords each user has used.

Changing a User Account Password

We recommend that you change the default passwords for the root and for the dtacs role at a minimum to increase the security level on the DTACS. Our recommendations for other account passwords are as follows:

- **informix account:** Changing the informix account password is not necessary since this account is locked by default.
- **dtacsSSH account:** Changing the dtacsSSH account password is not necessary since this user is not directly used by an operator, and the default password is either not known or documented.
- **easftp and dtacsftp accounts:** These account passwords should be done only in coordination with the administrator of the EAS and the VOD systems.

A user account password can be changed by the user or by the system administrator.

Changing Your Own Password

Note: Users can change their own account password. Only administrators can change other users' account passwords.

1. Open an xterm window on the DTACS server.
2. At the login prompt, type the following command and press **Enter**. The system prompts you for your existing password.
   ```
   passwd -r files
   ```
3. Enter your **existing password** and press **Enter**. The system will prompt you for your new password.
4. Enter your **new password** and press **Enter**. The system prompts you to re-enter your new password.
5. Type your **new password** again and press **Enter**. The system compares your two password entries. If they match, the **password successfully changed** message appears. If they do not match, you must re-enter the new password.
6. Type **exit** and press **Enter** to close the xterm window.
7. Log out of the DTACS server.
8. Log in to the DTACS server with your new password.

Changing Another User's Password

Note: Users can change their own account password. Only administrators can change other users' account passwords.

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:
   ```
   passwd -r files [username]
   ```
   Example: Type **passwd -r files jonesx** and press **Enter**.
4. Type the new password for the user and press **Enter**.
5. Type the **new password** again and press **Enter**. The system compares your two password entries. If they match, the **password successfully changed** message appears. If they do not match, you must re-enter the new password.
6. Type **exit** and press **Enter** to close the xterm window.
7. Have the user log out of the DTACS server.
8. Have the user log in to the DTACS server with the new password. If you used the **-f** option, the user must enter the one-time password you created. Then, the system prompts the user to create a new password.

Changing the Root Password

Note: Users can change their own account password. Only administrators can change other users' account passwords.

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:
   ```
   passwd -r files root
   ```
4. Type the new password for the root user and press **Enter**.
5. Type the new password again and press **Enter**. The system changes the root password.

Password Expiration Period

By default, the system requires that all user accounts change their passwords after 13 weeks. The system also displays a warning 2 weeks before the deadline. After that time, if the user has not changed their account password, the user account is locked.

Important: This expiration period is applicable to **all** users, including root, dtacsSSH, informix, dtacsftp, easftp, any custom accounts, and the dtacs role.

- Default number of weeks a password is valid: 13
- Default time period from password expiration the user receives a warning message to change passwords: 2
- Recovery: Administrator must reset the user account by changing the password

You can change or disable the password expiration period applied when adding new users or changing passwords, and change or disable an individual user's password expiration period.

Change the Password Expiration Period

You can change the password expiration period applied when creating new users or changing passwords.

Important:

- New users added to the server after the password expiration period has changed automatically inherit the new password expiration period.
- Existing users' individual expiration periods remain in force until the user's password is changed (either by an administrator or by the user).
- Unless the system password expiration period is disabled, all user accounts will inherit the system password expiration period each time they change their passwords, even if the user's expiration period has been disabled.
- If you set the value of MAXWEEKS to -1, you disable password expiration.

Changing the System Password Expiration Period

Use this procedure to change the password expiration period for the entire system:

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:
   ```
   cd /etc/default
   ```
4. Open the passwd file in a UNIX text editor.
5. Locate the following line in the passwd file:
   export MAXWEEKS=13

6. Change the expiration period to the number of weeks that you prefer.

   Note: We recommend that you keep the expiration period as short as possible. This helps prevent unauthorized use of your system.

7. Locate the following line in the passwd file:

   export WARNWEEKS=2

8. Change the warning period to the number of weeks that you prefer.
9. Save the passwd file and close the text editor.
10. Type **exit** and press **Enter** to close the xterm window.

Change a User Password Expiration Period

Use this procedure to change the password expiration period for an individual user account:

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:

   ```
   passwd -r files -x [days] [username]
   ```

   Notes:

   - Type the number of days before a user password expired for **[days]**.
   - Type the username for **[username]**.

4. Verify the expiration period by typing the following command and pressing **Enter.**

   ```
   passwd -s [username]
   ```

   Example: Type **passwd -s dtacs** and press **Enter**. The system displays a message similar to the following:

   ```
   dtacs      PS           09/02/09             91      14

   user       pw_status    date         MIN     MAX     WARN
   ```

   - The **date** (09/02/08) is the date the password was set by the user (dtacs).
   - The **MIN** (blank) is the minimum number of days before a user is allowed to change the password. We recommend that you leave this field blank.
   - The **MAX** (91) is the number of days after the date that the password is valid.
   - The **WARN** (14) is the number of days before the password expires that a warning banner is displayed.
   - Type **exit** and press **Enter** to close the xterm window.

Disable the Password Expiration Period

You can disable the password expiration period that is applied when creating new users or when changing passwords or for an individual user.

Important:

- New users added to the server after the password expiration period has changed automatically inherit the new password expiration period.
- Existing users' individual expiration periods remain in force until the user's password is changed (either by an administrator or by the user).
- Unless the system password expiration period is disabled, all user accounts will inherit the system password expiration period each time they change their passwords, even if the user's expiration period has been disabled.
- If you set the value of MAXWEEKS to -1, you disable password expiration.

Disable the Password Expiration Period for the System

Use this procedure to *disable the password expiration period* for the entire system:

1. Open an xterm window on the DTACS server.
2. Log in to the DTACS server as **root**.
3. Type the following command and press **Enter**:
   ```
   cd /etc/default
   ```
4. Open the passwd file in a UNIX text editor.
5. Locate the following line in the passwd file:
   ```
   export MAXWEEKS=13
   ```
6. Change the expiration period to **–1** (negative one).
7. Locate the following line in the passwd file:
   ```
   export WARNWEEKS=2
   ```
8. Change the warning period to **–1** (negative one).
9. Save the passwd file and close the text editor.
10. In the xterm window, type the following command and press **Enter**. The system will use the updated passwd file.
    ```
    source . ./passwd
    ```
11. Type **exit** and press **Enter** to close the xterm window.

Important: Existing users' individual expiration periods remain in force until the user's password is changed (either by an administrator or by the user).

Disable the Password Expiration Period for a User

Use this procedure to *disable the password expiration period for an individual user account*. We recommend that you follow this procedure for the following user accounts at a minimum:

- root
- dtacs
- informix
- dtacsSSH
- dtacsftp
- easftp

1 Open an xterm window on the DTACS server.

2 Log in to the DTACS server as **root**.

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

```
passwd -r files -x –1 [account name]
```

Note: Type the username for **[account name]**.

4 Verify the expiration period by typing the following command and pressing **Enter**:

```
passwd -s [username]
```

Example: Type **passwd –r files –s dtacs** and press **Enter**. The system displays a message similar to the following:

```
dtacs     PS

user      pw_status     date         MIN      MAX      WARN
```

Note: Only PS should be listed after the account name for an account with a disabled expiration period. If numbers appear after the PS, repeat Step 4.

5 Type **exit** and press **Enter** to close the xterm window.

Important: Unless the system password expiration period is disabled, all user accounts will inherit the system password expiration period each time they change their passwords, even if the user's expiration period has been disabled.

B

Troubleshooting the DTACS Server

This appendix contains information about procedures that you can use to troubleshoot issues on the Cisco DTACS server.

In This Appendix

Correcting Java Errors in Firefox

These procedures may be used to help resolve Firefox exceptions that may occur when using a local computer's Firefox browser to connect to the remote DTACS server (for example, when using a Firefox browser on a PC to establish a UI connection to the remote DTACS server). These procedures do not apply when the DTACS Firefox browser is exported to a remote machine.

Follow these steps to correct Java errors in Firefox:

1. Clear the Firefox Browser Cache.
2. If the issues are not resolved, stop and restart the Tomcat process.

Clearing the Firefox Browser Cache

With the Firefox browser open on the local machine, perform the following steps in the browser.

Note: The browser does not need to be connected to the DTACS while performing these steps.

If you are using Firefox Version 3.6:

1. Choose **Tools** > **Clear Recent History.**
2. In the **Time range to clear** list, choose **Everything.**
3. In the **Details** area, clear the check box beside every item *except* **Cache.**
4. Click **Clear Now**.
5. Close the Firefox browser and re-open it to establish a new connection to the DTACS UIs.

If you are using Firefox Version 3.0:

1. Choose **Tools** > **Clear Private Data.**
2. Clear the check box beside every item *except* **Cache**.
3. Click **Clear Private Data Now**.
4. Close the Firefox browser and re-open it to establish a new connection to the DTACS UIs.

Stopping the Tomcat Process

Follow these steps to stop the Tomcat process on the DTACS server:

1. Choose **File > Exit** from the File menu on the DTACS WUI to close the Firefox browser connection to the DTACS.
2. Open an xterm connection to the DTACS and type **su - root** to change to the **root** user.
3. Type the password for the root user at the password prompt.

4 Type the following command and press **Enter** to stop the Tomcat process.

```
svcadm disable apache-tomcat
```

5 Type the following command and press **Enter** to monitor the state of apache-tomcat. When the state changes to disabled, then proceed with starting apache-tomcat.

```
svcs -a | grep apache-tomcat
```

Removing Files from the webui Directory

Follow these steps to remove files from the webui work directory on the DTACS server:

1 Type teh following command and press Enter at the root prompt to change to the webui work directory.

```
cd /dvs/dtacs/webui/work
```

> ⚠ **CAUTION:**
>
> **Verify that you are in the correct directory (`/dvs/dtacs/webui/work/`) before you type the next command.**
>
> **When you type the next command you will delete all files in the directory.**

2 At the prompt, type **pwd** and press **Enter** to verify that you are in the webui work directory. The directory name appears at the system prompt.

3 At the root prompt, type the following command and press **Enter** to remove all files from the webui work directory.

```
rm -rf*
```

Starting the Tomcat Process

1 Log into the DTACS as the **root** user.

2 Type the following command and press **Enter** to start the Tomcat process.

```
svcadm enable apache-tomcat
```

3 Type the following command and press **Enter** to monitor the state of apache-tomcat. When the state changes to **online**, then proceed to the next step.

```
svcs -a | grep apache-tomcat
```

4 Type **exit** and press **Enter** to log out the root user.

5 Launch the Firefox browser and connect to the DTACS UI.

If Firefox issues still exist, then call Cisco Services for assistance in resolving the error.

Clearing the Firefox Cache

1. Type **cd /export/home/dtacs/.mozilla/** at the root prompt to change to the Mozilla directory.
2. Type **ls** at the prompt to verity that the Firefox directory exists.
3. Type **cd firefox** to change to the Firefox directory
4. Type **ls** to view all files in the Firefox directory. Note the name of the ******.default directory.

   Note: The asterisks (*******) are place holders for the first part of the .default filename.
5. Type **cd *******.default** to change to the default directory.
6. Type **ls** to view the contents of the default directory. Verify that the Cache directory exists.
7. Type **cd Cache** to change to the Cache directory.
8. Type **ls** to view the contents of the Cache directory.

   > ⚠ **CAUTION:**
   >
   > **Verify that you are in the Firefox Cache directory (/export/home/dtacs/.mozilla/firefox/*******.default/Cache/) before you type the next command.**
   >
   > **When you type the next command you will delete all files in the directory.**
9. Type **pwd** at the prompt to verify that you are in the Firefox Cache directory. The directory name appears at the system prompt.
10. Type **rm -rf *** to remove files in the directory.
11. Type **ls** at the prompt to verify that all files have been removed from the directory.
12. Start the DTACS WUI.

Note: After restarting Tomcat, wait for few minutes before opening DTACS WUIs. The Tomcat server takes several minutes to restart and bind to the DTACS WUI interface.

Creating a New Firefox Profile in Solaris

The Firefox Profile Manager allows you to create an additional profile while retaining your original profiles. This is useful, not only for having separate settings for multiple users, but also for avoiding HTTP sessions between opened browsers.

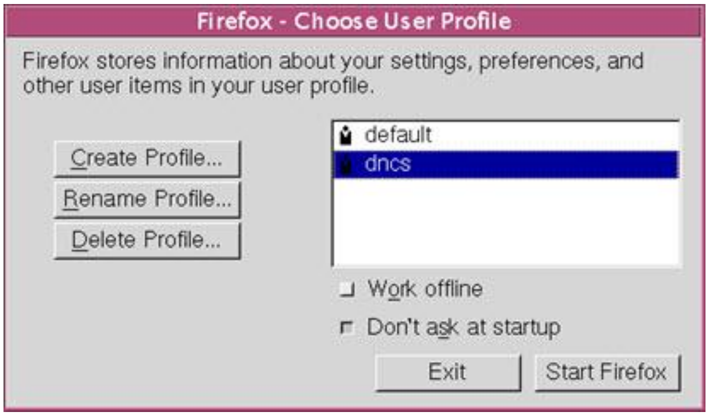
Important: Do not delete any existing profiles unless you are absolutely sure that you will never need them again.

1 If Firefox is running, close it completely.

2 Type the following command and press **Enter** to open the Firefox profile manager:

```
/opt/sfw/lib/firefox3/firefox -no-remote -ProfileManager
```

Result: The Choose User Profile window opens.



Firefox - Choose User Profile

Firefox stores information about your settings, preferences, and other user items in your user profile.

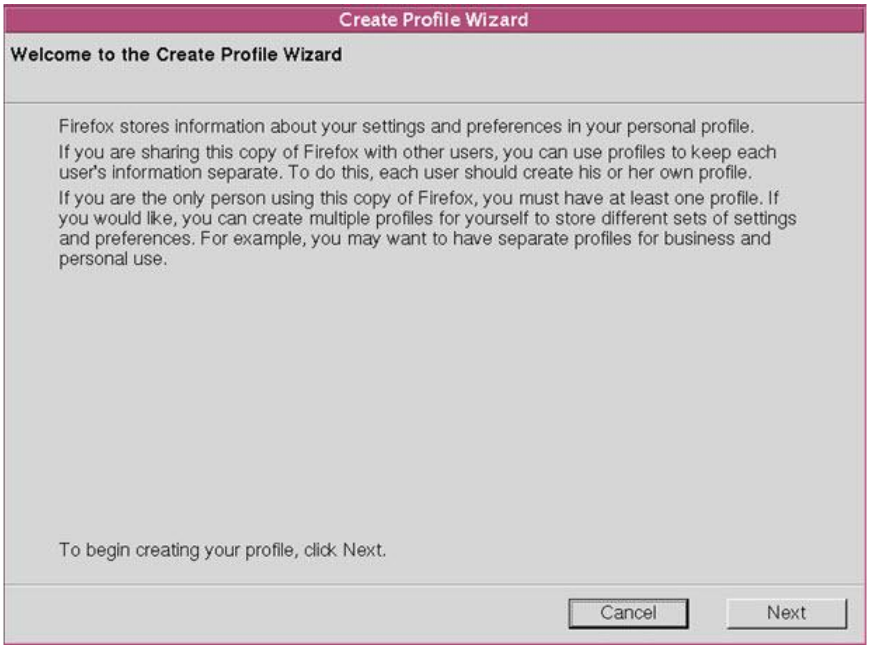
- default
- dncs

□ Work offline

□ Don't ask at startup

3 Click **Create Profile**.

Result: The Create Profile Wizard window opens.



Create Profile Wizard

Welcome to the Create Profile Wizard

Firefox stores information about your settings and preferences in your personal profile.

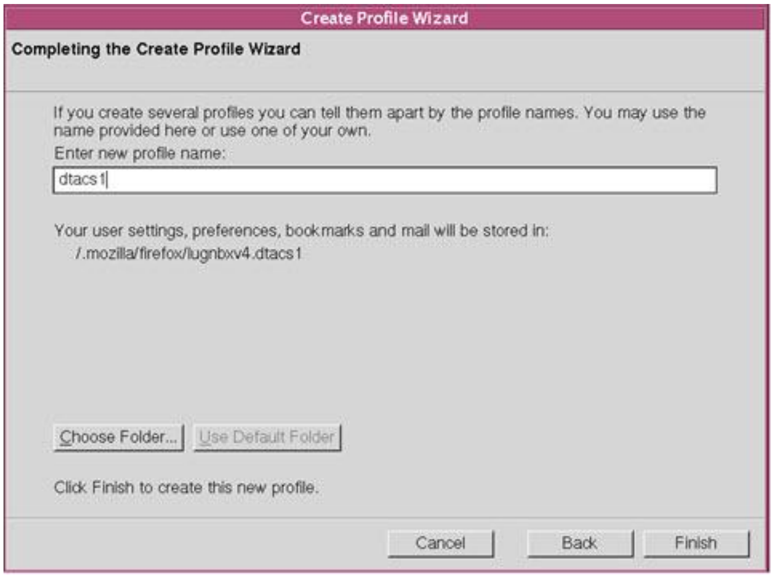
If you are sharing this copy of Firefox with other users, you can use profiles to keep each user's information separate. To do this, each user should create his or her own profile.

If you are the only person using this copy of Firefox, you must have at least one profile. If you would like, you can create multiple profiles for yourself to store different sets of settings and preferences. For example, you may want to have separate profiles for business and personal use.

To begin creating your profile, click Next.

4 Click **Next**.

5 In the **Enter new profile name** text box that becomes available, type in a name and click **Finish**.



Create Profile Wizard

Completing the Create Profile Wizard

If you create several profiles you can tell them apart by the profile names. You may use the name provided here or use one of your own.

Enter new profile name: dtacs1

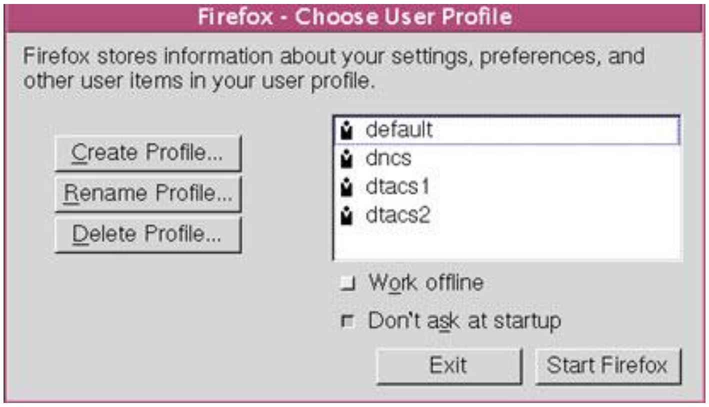
Your user settings, preferences, bookmarks and mail will be stored in:
/.mozilla/firefox/lugnbxv4.dtacs1

Click Finish to create this new profile.

Result: The Choose User Profile window opens.

6 Un-check the **Don't ask at startup** field.

Note: You can change this later.



Firefox - Choose User Profile

Firefox stores information about your settings, preferences, and other user items in your user profile.

- default
- dncs
- dtacs1
- dtacs2

□ Work offline

☑ Don't ask at startup

7 Click **Start Firefox** to have Firefox start up with the user that you have selected.

Notes:

- The Firefox - Choose User Profile window will now appear whenever you start Firefox. If you decide that you no longer want to see this window, check the **Don't ask at startup** field the next time it appears. The last selected profile will then start automatically when you next start Firefox. You will need to start the Profile Manager again to switch profiles. You can select one of the available profiles and start Firefox.
- Alternatively, you can start Firefox through the command line, as described in the following bullets:
  - To start a Firefox linking the created profile dtacs1:
    ```
    /opt/sfw/lib/firefox3/firefox -P dtacs1 -no-remote
    http://localhost:8045/dtacs
    ```
  - To start a Firefox linking the created profile dtacs2:
    ```
    /opt/sfw/lib/firefox3/firefox -P dtacs2 -no-remote
    http://localhost:8045/dtacs
    ```

Result: Firefox browsers will now work with two different profiles, with no clash between them.

Creating a New Firefox Profile in Windows

The Firefox Profile Manager allows you to create an additional profile while retaining your original one. This is useful, not only for having separate settings for multiple users, but also for simultaneous access to same WUIs with multiple windows.

Important: Do not delete any existing profile unless you are absolutely sure that you will never need it again.

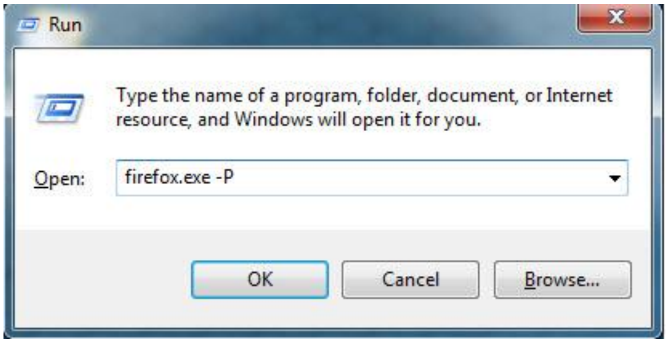
Note: The following set of instructions assumes a standard Firefox installation on a standard Windows operating system.

1 If Firefox is running, close it completely by choosing **File** > **Exit**.

2 Click **Run** from the Windows Start menu.

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

```
firefox.exe -P
```

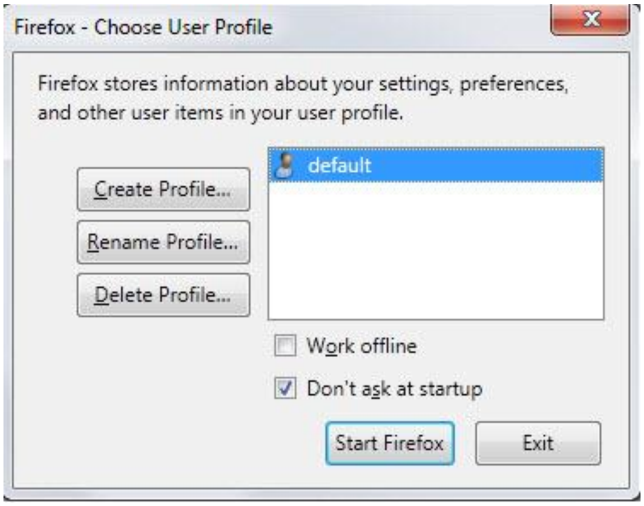


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: firefox.exe -P

4 Click **OK**.

Result: The Choose User Profile window opens.



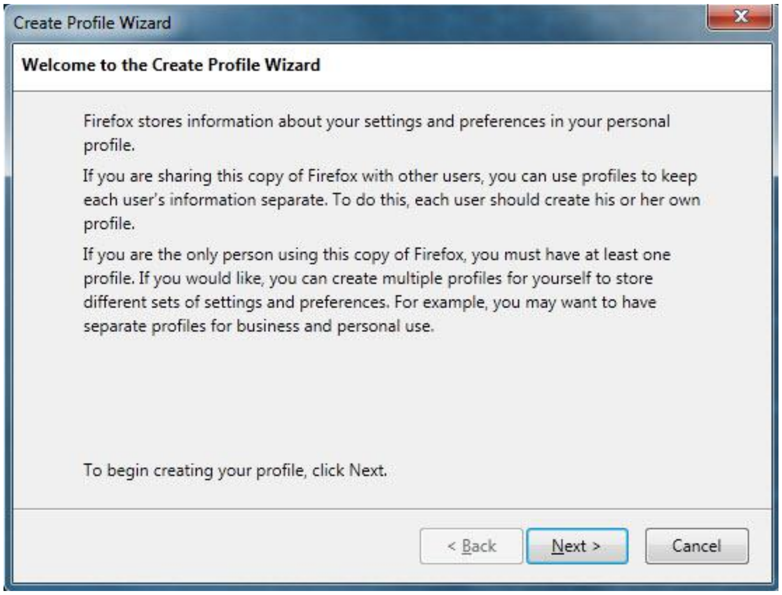
Firefox stores information about your settings, preferences, and other user items in your user profile.

□ Work offline

☑ Don't ask at startup

5 Click **Create Profile**.

Result: The Create Profile Wizard window opens.



Create Profile Wizard

Welcome to the Create Profile Wizard

Firefox stores information about your settings and preferences in your personal profile.

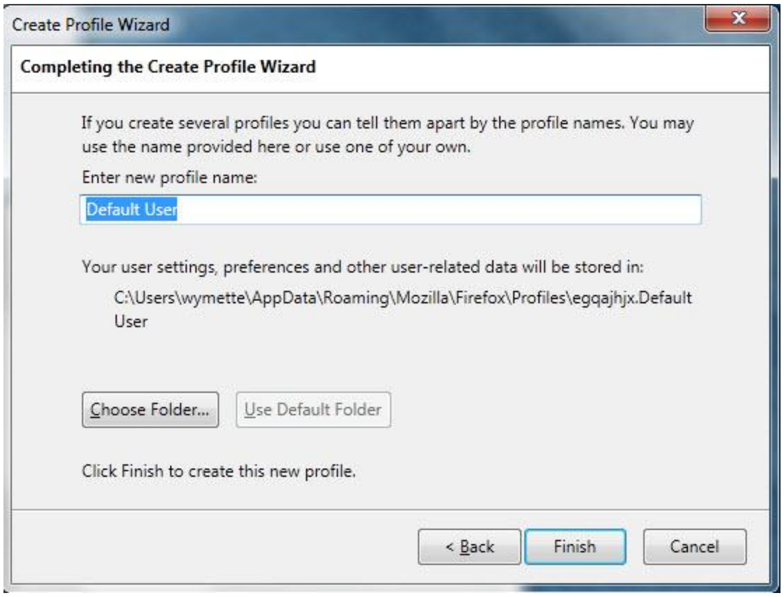
If you are sharing this copy of Firefox with other users, you can use profiles to keep each user's information separate. To do this, each user should create his or her own profile.

If you are the only person using this copy of Firefox, you must have at least one profile. If you would like, you can create multiple profiles for yourself to store different sets of settings and preferences. For example, you may want to have separate profiles for business and personal use.

To begin creating your profile, click Next.

6 Click **Next**.

7 In the **Enter new profile name** text field that becomes available, type in a new profile name and click **Finish**.



Create Profile Wizard

Completing the Create Profile Wizard

If you create several profiles you can tell them apart by the profile names. You may use the name provided here or use one of your own.

Enter new profile name: Default User

Your user settings, preferences and other user-related data will be stored in:

C:\Users\wymette\AppData\Roaming\Mozilla\Firefox\Profiles\egqajhjx.Default User

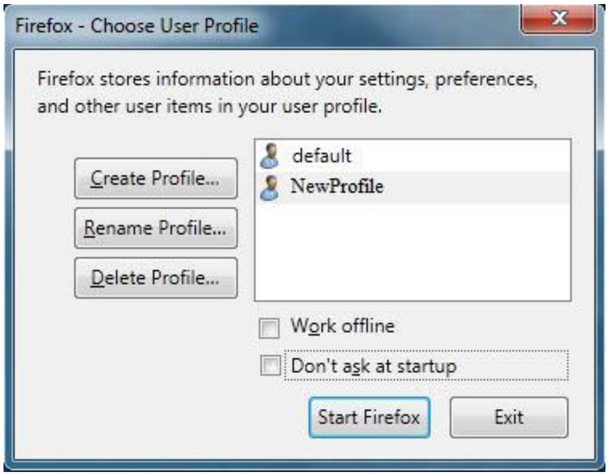
Click Finish to create this new profile.

Important: Do not click **Choose Folder** unless you are familiar with the warnings provided under **Custom profile location for Firefox**.

Result: The Choose User Profile window opens.

8 On the Choose User Profile window, uncheck the **Don't ask at startup** check box.

Note: You can change this later.



Firefox - Choose User Profile

Firefox stores information about your settings, preferences, and other user items in your user profile.

□ Work offline

□ Don't ask at startup

9 Click **Start Firefox** to start Firefox with the new profile.

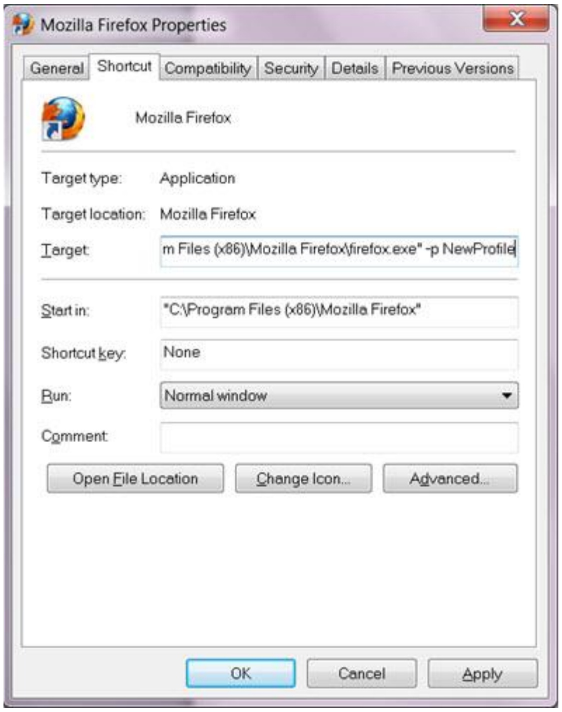
Note: The 'Firefox - Choose User Profile' window will now appear whenever you start Firefox. If you decide that you no longer want to see this window, check the **Don't ask at startup** check box the next time it appears. The last selected profile will then start automatically when you next start Firefox. You must start the Profile Manager again to switch profiles.

Linking Profiles to Firefox

This procedure describes how to create a shortcut to Firefox by linking to the created profiles.

1 Right-click **firefox.exe** and select **Properties**.

Result: The Mozilla Firefox Properties window opens.



Mozilla Firefox Properties

Mozilla Firefox

Target type: Application

Target location: Mozilla Firefox

Target: m Files (x86)\Mozilla Firefox\firefox.exe" -p NewProfile

Start in: "C:\Program Files (x86)\Mozilla Firefox"

Shortcut key: None

Run: Normal window

Comment:

2 Click the **Shortcut** tab (if it is not already selected). Then, in the **Target** field, type the following command and press **Enter**.

```
"<firefox installation path>\firefox.exe" -p <New Profile
Name> -no-remote
```

Note: The quotation marks are required.

Example: `"C:\Program Files (x86)\Mozilla Firefox\firefox.exe" -p dtacs1 -no-remote`

3 Create as many shortcuts as the number of profiles you have created.

4 Type the following command in the Run dialog box and press **Enter** to run Firefox:

```
firefox -p <profile name> -no-remote
```

Correcting Dialog Box Errors in Firefox Version 24ESR

This procedure should be used to help resolve the Firefox issue of creating additional dialog boxes while launching the application. This issue may occur in Firefox Version 24 ESR.

Follow these steps to prevent the additional Firefox dialogs boxes from being created:

1. Copy the Preference name "dom.successive_dialog_time_limit" into memory.
2. Type **about:config** into the URL text field.
3. Did a warning message appear?
   - If **yes**, click **I'll be careful, I Promise**.
   - If **no**, go to the next step.
4. Right-click in the **Preferences** area and choose **New** > **Integer**.
5. Paste the Preference name (copied into memory in Step 1) and click **OK**.
6. Enter `0` (zero) and click **OK**.

   Note: Whenever there are changes in the Firefox version auto-upgrade, be sure that this configuration is retained.

C

Backup and Restore the DTACS File System and Database

This appendix contains procedures to save up data on the Cisco DTACS to tape media. This stored information can be used to restore the DTACS if the system suffers an outage.

In This Appendix

Back Up the DTACS File System

Consider the following points about a backup of the DTACS server file system:

System Shutdown No Longer Required for File System Backups

System operators do not have to shut down their system in order to back up the DTACS server file system.

Important: Even though you are not required to shut down the system components, we recommend that you schedule your file system backups for periods of lowest system activity.

Recommended Frequency

We recommend that you perform a complete system backup at least once a month, just prior to upgrading to new system software, and immediately after the upgrade.

Filesystem Backup Script Options

The script that backs up the file system is called backupFileSystems. You can run the backupFileSystems script with the following options:

- *-l* — Local-tape-drive. Specifies tape drive to use on local host computer.
  (for example - **`/dev/rmt/0h`**)
- *-r* — Remote-tape-drive. Specifies tape drive on a remote host computer.
  (for example - **`sparky:/dev/rmt/0h or 192.0.2.1:/dev/rmt/0h`**)
- *-B* — Backup directory. Specifies the directory to which the backup of the file system will be saved.
  The backup directory must be on an NFS-mounted filesystem.
- *-v* — verbose. Verbose output.
- *-t* — Tape label. Backup tape label. This must be a unique string with no spaces.
- *-h* — Help. Provides a brief description of the valid options.

Backing Up the DTACS File System

1. Insert the DVD labeled similarly to **DTACS Install/Upgrade DVD** into the DVD drive of the DTACS server.

   Note: Insert the DVD associated with the version that the DTACS is currently running. For example, if you are currently running DTACS Version 3.x.0.14, the install/upgrade DVD associated with Version 3.x.0.14 should be used.
2. Type **df -n** and press **Enter**. A list of mounted file systems appears.

   Note: The presence of /cdrom in the output confirms that the system correctly mounted the DVD.
3. Label a blank tape with the following information:

   DTACS File System Backup [Date]
   [Site Name]
   [Software Version]
   DTACS DVD x.x.x
4. Log in as the **root** user.
5. Insert the blank tape into the tape drive of DTACS server and wait for the green light to stop flashing.
6. Type the following command and press **Enter**. The system backs up the DTACS file system, ejects the tape, and displays a message when the backup is complete.

   ```
   /cdrom/cdrom0/sai/backup_restore/backupFileSystems -v
   ```
7. When the backup is complete, remove the tape and store it in a safe place.
8. Type **eject cdrom** and then press **Enter**.

Back Up the DTACS Database

This section provides procedures for backing up the DTACS database to tape.

Database Backup Script Options

The script that backs up the databases is called backupDatabase. You can run the backupDatabase script with the following options:

- *-b* — Blocks. Specifies the block size of the tape device to which the database backup is written.

  Note: If *-b* is not specified, the system uses a default tape block size appropriate for your tape drive. If the system is unable to determine your tape drive, the system uses 32.
- *-s* — Size. Specifies the size of the tape device to which the database backup is written.

  If *-s* is not specified, the system uses a default tape size appropriate for your tape drive. If the system is unable to determine your tape drive, the system uses 8000000.
- *-l* — Local-tape-drive. Specifies tape drive to use on local host.
  (for example - /dev/rmt/0h)
- *-r* — Remote-tape-drive. Specifies tape drive on a remote host.
  (for example - sparky: /dev/rmt/0h or 192.0.2.1: /dev/rmt/0h)
- *-c* — Check-database. Checks the integrity of the databases. (Does not fix if errors are found.)
- *-n* — Non-interactive. Non-interactive, useful when running from cron.
- *-v* — Verbose. Verbose output.
- *-h* — Help. Provides a brief description of the valid options.

Backing Up the DTACS Database

Use this procedure to back up the DTACS database to the tape.

Notes:

- The EC and the Application Server can be running while you back up the DTACS database.
- It may take up to 30 minutes to back up a DTACS database.

1. Insert the DVD labeled similarly to **DTACS Install/Upgrade DVD** into the DVD drive of the DTACS server.

   Note: Insert the DVD associated with the version that the DTACS is currently running. For example, if you are currently running DTACS Version 3.0.0.14, the install/upgrade DVD associated with Version 3.0.0.14 should be used.
2. Type **df -n** and then press **Enter**. A list of the mounted filesystems appears.

   Note: The presence of /cdrom in the output confirms that the system correctly mounted the DVD.
3. Label your backup tape with the following information:

   DTACS Server Database Backup [Day of the Week]
   [Site Name]
   [Software Version]
   DTACS DVD x.x.x
4. Insert the tape into the tape drive of the DTACS and wait until the green light stops flashing.
5. Type the following command and press **Enter**. The system establishes the root user environment.

   ```
   . /dvs/dtacs/bin/dtacsSetup
   ```

   Important: Be sure to type the dot, followed by a space, prior to typing /dvs.
6. Type the following command and then press **Enter**. The system displays the following message: **Please mount tape 1 on /dev/rmt/0h and then press Return to continue**.

   ```
   /cdrom/cdrom0/sai/backup_restore/backupDatabase -v
   ```
7. Press **Enter**. The system displays the following message and prompts you to press **Enter**:

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

   Result: The system backs up your Informix database. A **Successfully completed the database backup** message appears when the backup has completed successfully.
8. Type **eject cdrom** and then press **Enter**.
9. Remove the DVD and tape(s) and store them in a safe place.

Restore the DTACS File System

Consider the following points about the restoration of the DTACS file system:

Prerequisite

You need the tape from your most recent backup of the file system before restoring the file system.

Important: Be sure your tapes are write-protected before you use them to restore the system.

File System Restore Script Options

The script that restores the DTACS file system is called restoreFileSystems. You can run the restoreFileSystems script with the following options:

- **-l** - Local-tape-drive. Specifies tape drive to use on local host computer.
  (for example - /dev/rmt/0h)
- **-r** - Remote-tape-drive. Specifies tape drive on a remote host computer.
  (for example - sparky:/dev/rmt/0h or 192.0.2.1: /dev/rmt/0h)
- **-B** - Backup directory. Specifies the directory that contains the backup from which the file system will be restored. The backup directory must be on an NFS-mounted filesystem.
- **-v** - Verbose. Verbose output.
- **-i** - Interactive. Runs the restoration script in interactive mode.
- **-h** - Help. Provides a brief description of the valid options.

Note: The -l, -r, and -B options are mutually exclusive of one another; only one of them can be used.

Restoring the DTACS File System

Complete the following steps to prepare to restore the DTACS file system:

Important: You need to know the IP address and the netmask of the DTACS server in order to complete this procedure.

1. As **dtacs** user, type **dtacsStop** and press **Enter**. The DTACS processes are stopped.
2. As **dtacs** user, type **dtacsKill** and press Enter to ensure that the DTACS processes have stopped.

3 Insert the DVD labeled similarly to **DTACS Install/Upgrade DVD** into the DVD drive on the DTACS server.

Note: Insert the DVD associated with the version that the DTACS is currently running. For example, if you are currently running DTACS Version 3.0.0.14, the install/upgrade DVD associated with Version 3.0.0.14 should be used.

4 Type the following command and press **Enter**. The system halts all processes and an ok prompt appears.

```
shutdown -y -g0 -i0
```

5 At the ok prompt, type the following command and press **Enter**. The DTACS server boots into the OpenWindows environment.

```
boot cdrom - SAshell
```

6 Type the following command and press **Enter**. The system restores the DTACS file system and displays a message when the restoration completes.

```
cdrom/cdrom0/sai/backup_restore/restoreFileSystems -v
```

7 Type the following command and press **Enter**. The DTACS server reboots.

```
shutdown -y -g0 -i6
```

8 Log in as the **root** user.

9 Follow the procedures in ***Restore the DTACS Database*** (on page 230) to restore the DTACS database. After restoring the database, return to Step 10 in this procedure.

10 Type the following command and press **Enter**. The system warns you that the submirrors for controller 2 will be attached.

```
/cdrom/cdrom0/sai/backup_restore/mirrState -a
```

11 Type **y** and press **Enter** to proceed. The system enables the disk mirroring functions on the DTACS server.

Note: This could take up to an hour to complete.

12 Type **eject cdrom** and press **Enter**. The system eject the DVD.

13 As **dtacs** user (**sux - dtacs**), type **dtacsStart** and press **Enter**. The DTACS processes are started.

Restore the DTACS Database

This section contains information that guides you through the process of restoring the DTACS database.

Database Restore Script Options

The script that restores the database is called restoreDatabase. You can run the restoreDatabase script with the following options:

- *-l* — Local-tape-drive. Specifies tape drive to use on local host.
  (for example - **`/dev/rmt/0h`**)
- *-r* — Remote-tape-drive. Specifies tape drive on a remote host.
  (for example - **`sparky: /dev/rmt/0h or 192.0.2.1: /dev/rmt/0h`**)
- *-c* — Check-database. Checks the integrity of the databases. (Does not fix if errors are found.)
- *-v* — Verbose. Verbose output.
- *-p* — Physical-restore. Performs only a physical restoration of the database and does not restore the logical logs.
- *-i* — Interactive. Runs the restoration in interactive mode.
- *-h* — Help. Provides a brief description of the valid options.

Restoring the DTACS Database

Complete the following steps to restore the DTACS database.

Note: You need the tape from your most recent database backup in order to restore the DTACS database.

Important: Be sure your tape is write-protected before you use it to restore the database.

1. As **dtacs** user (**sux - dtacs**), type **dtacsStop** and press **Enter**. The DTACS processes are stopped.
2. As **dtacs** user, type **dtacsKill** and press **Enter** to ensure that the DTACS processes have stopped.
3. If necessary, open an xterm window on the DTACS.
4. As the **root** user, type the following command and press **Enter**. The system established the root user environment.

   ```
   . /dvs/dtacs/bin/dtacsSetup
   ```

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

5 Type the following command and press **Enter**:

```
/export/home/informix/libexec/formatDbSpace
```

Note: If this command fails or generates an error message, contact Cisco Services for assistance.

6 Insert the DVD labeled similarly to **DTACS Install/Upgrade DVD** into the DVD drive of the DTACS server.

Note: Insert the DVD associated with the version that the DTACS is currently running. For example, if you are currently running DTACS Version 3.x.0.14, the install/upgrade DVD associated with Version 3.x.0.14 should be used.

7 Insert your most recent copy of the DTACS database backup tape into the tape drive of the DTACS and wait for the green light on the tape drive to stop flashing.

8 Type the following command and press **Enter**. The **Is there more than 1 tape in this backup? [Y/N]** message appears.

```
/cdrom/cdrom0/sai/backup_restore/restoreDatabase -v
```

9 Type **n** and press **Enter**. The system displays a message about ensuring that the backup tape is in the drive.

10 Press **Enter**. The system restores the database.

11 When the **Successfully restored the database message** appears, remove the tape and store it in a safe place.

12 Did you restore the file system on the DTACS server?

- If **yes**, return to Step 10 in *Restoring the DTACS File System* (on page 228).
- If **no**, go to Step 13.

13 As **dtacs** user (**sux - dtacs**), type **dtacsStart** and press **Enter**. The DTACS processes are started.

Possible Error Condition

After completing the file system and database restoration, in some cases the following error message may appear when you try to restart the DTACS processes:

error: Can't connect to localhost:18090 (connect: Connection refused)

No interfaces up to talk to dncsInitd

Should this error appear on your system, follow these instructions:

1 Log in to the system as the **root** user.

2 Type the following command and press **Enter**:

```
rm /etc/no_system_start
```

3 Log in to the system as **dtacs** user.

4 Rerun the `dtacsStart` command.

D

DTACS Rollback Procedure

These Cisco DTACS rollback procedures are intended for field service engineers who encounter problems while upgrading an existing DTACS system. Prior to executing the DTACS rollback procedures, contact Cisco Services.

In This Appendix

Which Rollback Procedure Should I Use?

Three rollback procedures exist for rolling back the DTACS upgrade. Read the following choices to help you decide which rollback procedure to use:

- If you need to roll back a major upgrade, and you *have not* already run the procedure under Attach Mirrors After a DVD Live Upgrade, then use the procedure under ***Activate the Old System Release*** (on page 235) to roll back.

  Note: It should take you about 10 minutes to roll back the T5220 or T5440 DTACS server using this procedure.

- If you need to roll back a major upgrade, and you *have* already run the procedure under Attach Mirrors After a DVD Live Upgrade, then use the procedures to restore the DTACS file system and database in Backup and Restore the DTACS File System and Database.

  Note: It may take as long an hour to roll back the T5220 or T5440 DTACS server.

Activate the Old System Release

Restoring the Old System Release

Follow this procedure to restore the system software that was in place prior to the unsuccessful upgrade to the DTACS:

1 Write down the version of the system release are that you trying to restore:

  ____

2 If necessary, as the dtacs user (**sux - dtacs**), type **dtacsStop** and press **Enter** to stop the DTACS processes.

3 As the **root** user, type the following command and press **Enter** to stop all active sessions:

```
killActiveSessions
```

4 As the **root** user, type the following command and press **Enter**. The system resets the default boot device to the original disk.

```
eeprom boot-device=disk:a
```

5 Type the following command and press **Enter**. The system reboots and activates the old software.

```
shutdown -y -g0 -i6
```

  Important: Do not use the reboot or halt command to reboot the server.

6 Did the DTACS reboot without error?

  - If **yes**, go to Step 7.
  - If **no**, contact Cisco Services.

7 Log in to the CDE of the DTACS server as **admin** user.

8 Open the EC WUI and navigate to **EC->Network Element Provisioning->QAM**, Then, select the list of the GQAMs that serve the DTACS and reset them.

9 As dtacs user, type **dtacsStart** and press **Enter**. The DTACS processes are started.

10 Change to the **root** user.

11 If present, remove the DTACS DVD from the server and insert the DVD pertaining to the previous system release.

12 Type the following command and press **Enter** to attach mirrors:

```
/cdrom/cdrom/sai/scripts/attach_mirrors
```

E

Enable RADIUS and LDAP Support in a DBDS for DTACS-3.0

Introduction

To configure RADIUS and LDAP, refer to *Enabling RADIUS and LDAP Support for DTACS 3.0* (part number OL-31517).

F

Check the Core Files on the DTACS Server

Introduction

This appendix describes how to run the dtacsHealthCheck utility which system operators can use to examine core files on the Cisco DTACS server.

In This Appendix

Checking the Core Files on the DTACS Server

DTACS 3.0 is provided with a utility called *dtacsHealthChecker* than can be used to fetch core file information. System operators should use the *-g* option when running the utility. The -g option fetches general information, such as installed software information, database utilization, database extents, and core file information. Follow these instructions to run the dtacsHealthChecker utility.

1 Log in to the DTACS and be sure that you are running in the **dtacs** role.

2 In the DTACS console, type the following command and press **Enter** to change to the /dvs/dtacs/bin directory:

```
cd /dvs/dtacs/bin
```

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

```
./dtacsHealthChecker -g
```

4 Examine the output for the **List of the last 10 core events** label. This list contains data pertaining to the DTACS core files.

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