Provisioning the USRM for SDV on the DNCS

Overview

Introduction

The Model D9510 Universal Session and Resource Manager (USRM) is an integral component of the Cisco® Service Exchange Network. Based on a standard Intel/Linux server, the USRM supports all major Video-on-Demand (VOD) and Switched Digital Video (SDV) interfaces and protocols. The USRM is integrated with the Digital Broadband Delivery System (DBDS) and enables systems to distribute and scale the real-time session and resource management functions of the Digital Network Control System (DNCS).

Important: USRM requires DNCS System Release (SR) 4.2.1.28 or later.

Purpose

This document provides instructions on setting up the DNCS to provision the USRM as an SDV server when the USRM is configured to operate in supervised mode. This document also assumes that you have already installed and configured the USRM for SDV.

Note: It is beyond the scope of this document to provide detailed procedures for installing and configuring the USRM or for setting up the USRM in unsupervised mode. For information on installing or configuring the USRM, refer to the *Universal Session and Resource Manager Installation and Operation Guide* (part number 4021139).

Audience

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

Related Publications

You may find the following publications useful as resources when you implement the procedures in this document.

- *Gigabit QAM Modulator Model D9479 Hardware Installation and Operation Guide* (part number 745431)
- *Provisioning the DNCS to Support SDV Services User's Guide* (part number 4012948)
- *Universal Session and Resource Manager Installation and Operation Guide* (part number 4021139)

Document Version

This is the second release of this document.

Introducing the USRM

This section gives you a brief introduction to the USRM and its capabilities.

Overview

The USRM is designed for high service-velocity as a flexible software platform supporting plug-in applications and interfaces. You can upgrade the high-availability platform to support new functionality without interrupting your existing services. New applications and interfaces inherit existing platform capabilities.

The USRM represents the next-generation evolution of the DBDS control system. It brings a new level of integrated control to VOD and SDV today, and is designed to quickly enable tomorrow's applications.

The USRM is available as a software upgrade to the Model D9500 SDV Server.

USRM Features

The USRM provides the following features:

- Available as a software upgrade to existing Model D9500 SDV servers
- Supports all major SDV and VOD interfaces and protocols
- Supports all major QAM types and control interfaces
- Integrated with our DBDS
- Available for non-DBDS systems
- More efficient intra-carrier QAM sharing through integrated resource management
- Designed as a high service-velocity platform with plug-in applications and interfaces
- New applications inherit platform services, including:
  - SNMP
  - Web interface
  - High-availability N for M redundancy
  - Run-time upgrade without service interruption
  - Real-time graphic display of resource usage
- Supports up to 300 service groups, 500 switched programs, and 25,000 set-tops per USRM
- Supports up to 150 QAM chassis per USRM

Configure the DNCS for USRM SDV

This section includes the procedures for setting up the DNCS to provision the USRM correctly when the USRM is configured to operate in supervised mode.

Overview

The procedures in this section provide instructions on setting up the DNCS to provision the USRM for SDV.

USRM Modes

The USRM can be configured to operate in one of two possible modes:

- **Supervised mode –** The USRM is provisioned using the DNCS (or another SNMP provisioner). When the USRM is started, the USRM software requests provisioning from the DNCS before the USRM begins to provide services.

  When the USRM boots, it issues an SNMP trap to the DNCS requesting provisioning. The DNCS uses SNMP to download to the USRM its configuration parameters that were set for it using the DNCS. This is referred to as *solicited provisioning*.

  In addition, *unsolicited provisioning* occurs when the USRM configuration parameters are pushed from the DNCS to the USRM whenever a change in the USRM configuration is entered into the DNCS.

- **Unsupervised mode –** Also known as *standalone* mode. The USRM is provisioned and configured directly using its web browser interface. No SNMP provisioner is available or used to provide provisioning and startup state.

Note: It is beyond the scope of this document to provide detailed procedures for installing and configuring the USRM or for setting up the USRM in unsupervised mode. For information on installing or configuring the USRM, refer to the *Universal Session and Resource Manager Installation and Operation Guide* (part number 4021139).

Process Overview

To configure the DNCS to provision a USRM that is configured for supervised mode, follow these steps.

Important: These steps assume that you have already installed and configured the USRM for SDV. Refer to the *Universal Session and Resource Manager Installation and Operation Guide* (part number 4021139) for more information.

1. Create a VASP entry for the USRM.
2. Define the USRM server.
3. Create a service group for USRM.
4. Enable USRM on the GQAM.
5. Bounce the GQAM.

   Note: This procedure is only necessary if you are modifying an existing GQAM modulator. If you installed a new GQAM modulator to use with the USRM, you can skip this procedure.

Each step is discussed in detail in the remainder of this document.

Create a VASP Entry for the USRM

Before you begin, you must have the IP address of the USRM server associated with the VASP entry you are adding.

1. On the DNCS Administrative Console, click the **DNCS** tab.
2. Click the **Network Element Provisioning** tab.
3. Click **VASP**. The VASP List window opens.
4. Click **File > New**. The Set Up VASP window opens.
5. For **VASP Type**, select **SDV Server**.
6. Click in the **ID** field and enter a unique number that you will use to identify this VASP entry. You can use up to 10 numeric characters.

   Note: We recommend that you use a numbering scheme that allows you to easily identify the type of service associated with each VASP entry.
7. Click in the **Name** field and enter the name of this VASP entry. You can use up to 80 alphanumeric characters.
8. Click in the **IP Address** field and enter the IP address for the USRM server associated with this VASP entry.
9. At the **Status** field, click the **In Service** option.
10. Click **Save**. The system saves the VASP entry information in the DNCS database and closes the Set Up VASP window. The VASP List window updates to include the new VASP entry.

11 Add the new VASP entry information to your network map.

12 Click **File > Close** to close the VASP List window and return to the DNCS Administrative Console.

Define the USRM Server

Important: A USRM must be set up for each VASP entry that you created.

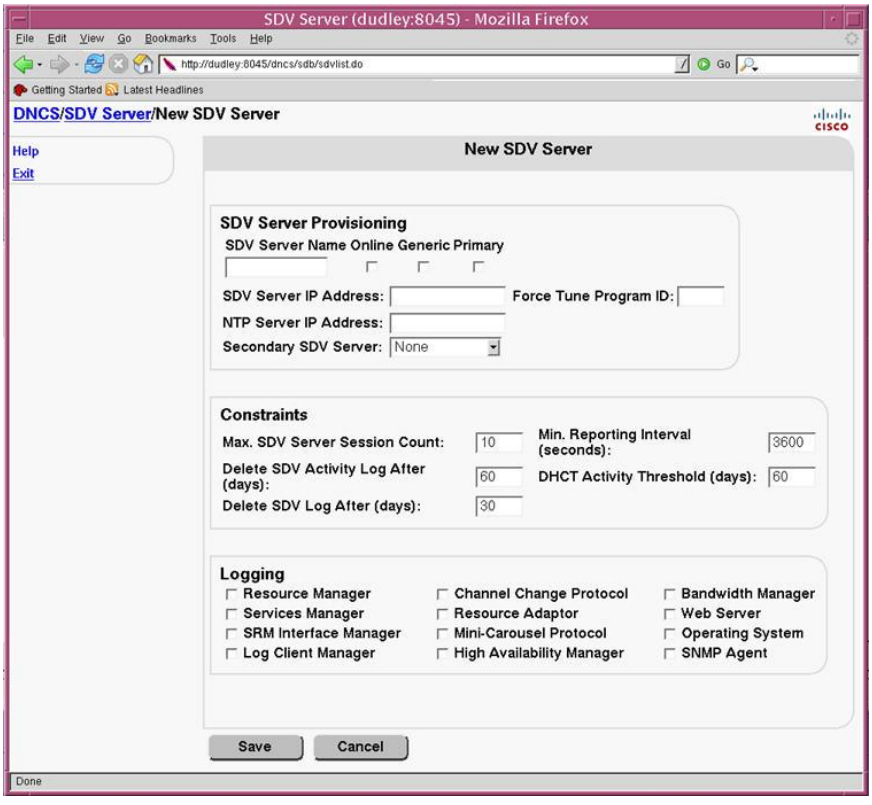
1 On the **Network Element Provisioning** tab of the DNCS Administrative Console, click **SDV Server**. The Switched Digital Video (SDV) Server List window opens.

2 Click one of the following, based on the System Release you are using:

- For SR 4.2.1, click **New**.
- For SR 4.3, click **Add**.

Result: The New Switched Digital Video (SDV) Server window opens.

Note: The following screen example is from DNCS SR 4.3. (The screen in SR 4.2.1 looks slightly different.)



3 From the **SDV Server Name** field, enter a name that corresponds to the hub to which the USRM is providing service.

Note: We suggest that you enter the same name that you set up for the new VASP entry.

4 Select or enter the following values; however, we recommend that you maintain the default settings for the following fields:

- **SDV Server Provisioning**
  - **Online**: Select **Online** to indicate that this USRM is connected within the networked system.
  - **Primary**: Select the **Primary** check box to indicate that this USRM is the main USRM in the system; do not select this option if this SDV server is a backup SDV server (backs up a failed primary SDV server).
  - **SDV Server IP Address**: Enter the IP address for the USRM server that you are provisioning.

    Note: This is the same IP address that you defined for the VASP entry.
  - **NTP Server IP Address**: Enter the IP address for the NTP (Network Time Protocol) server. In most cases, this is the IP address of the DNCS. If your DNCS does not function as the NTP server, enter the IP address of the server that provides time synchronization services to the USRM.
  - **Secondary SDV Server**: If you are provisioning a primary USRM, select a secondary (backup) USRM to provide a level of redundancy in the event of a primary USRM outage; if you are provisioning a secondary USRM, select **None**.
  - **Force Tune Program ID**: Enter the source ID for the program that the DHCT/tuner is forced to tune to if it is removed from a USRM channel.

    Note: This source ID should not be an ID for a USRM service.
- **Constraints**
  - **Max SDV Server Session Count**: Enter a value (for example, 1500) to set the maximum number of sessions for which the USRM is allowed.
  - **Delete SDV Activity Log After (days)**: Retain the default value (60); this is the threshold value that dictates when USRM activity logs are automatically deleted.
  - **Delete SDV Log After (days)**: Retain the default value (30); this is the threshold value that dictates when USRM event logs will be automatically deleted from the system.
  - **Minimum Reporting Interval (secs)**: Retain the default value (3600); this is the interval that the SDV client sends user activity information to the USRM.
  - **DHCT Activity Threshold (days)**: Retain the default value (60); this is the value that, when reached, allows you to delete a DHCT that is not in communication with the system.
- **Logging**: Select any of the logs that you would like the USRM to monitor.

5 Click **Save** to save the values to the new USRM. You are returned to the Switched Digital Video (SDV) Server List window.

6 Do you need to create an additional USRM?

- If **yes**, click the **SDV Server** link in the top area of the window (DNCS/SDV Server/New SDV Server) and then repeat this procedure from step 2.
- If **no**, click **Exit** to close the Switched Digital Video (SDV) Server List window.

Create the Service Group for USRM

1 On the **Network Element Provisioning** tab of the DNCS Administrative Console, click **Service Group**. The Service Group Data window opens.

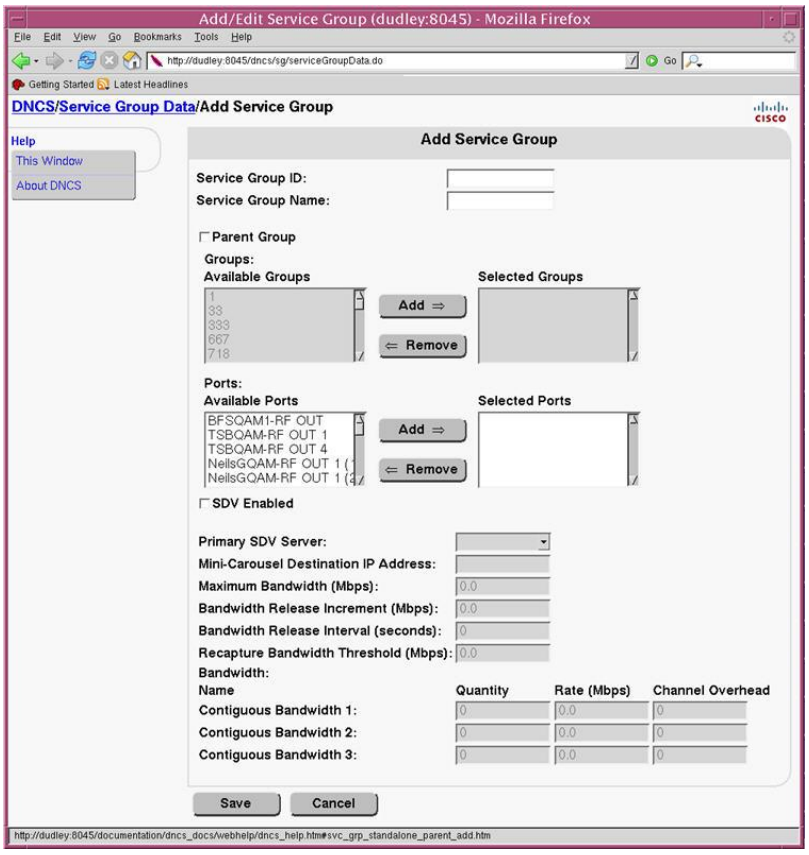
Note: The SDV column only displays if SDV services are enabled for your system.

2 Click one of the following, based on the System Release you are using:

- For SR 4.2.1, click **Add Service Group**.
- For SR 4.3, click **Add**.

Result: The Add Service Group table opens.

Note: The following screen example is from DNCS SR 4.3. (The screen in SR 4.2.1 looks slightly different.)



3 Click in the **Service Group ID** field and enter a unique number to identify the service group.

Important: Make certain that this field contains only numerical characters and that the field contains no leading spaces. Entering alphabetical characters or a leading space in this field can cause the service group and associated resources assigned to the service group to become non-editable or non-viewable.

4 Click in the **Service Group Name** field and enter a name for the service group.

Note: You can use numbers and letters. We recommend that you establish a naming scheme that allows you to easily identify the service or modulator providing it, and which hub they serve.

5 Select the **Parent Group** check box.

Important: USRM does not support child service groups.

6 In the Available Ports list, click to select the port of the USRM that will provide data for this service group and then click **Add**. The selected port moves from the Available Ports list into the Selected Ports list.

Note: You can remove ports by selecting the name of the port you want to remove in the Selected Ports list and clicking **Remove**.

7 Select the **SDV Enabled** check box and then refer to *Provisioning the DNCS to Support SDV Services User's Guide* (part number 4012948) for details on creating a service group for SDV services.

Note: The SDV Enabled option only displays if SDV services are enabled for your system.

8 Click **Save**. The system closes the Add Service Group table and displays the Service Group Data window, which now lists the service group that you just added.

9 Add the new service group to your network map.

10 Do you need to add another service group?

- If **yes**, repeat this procedure from step 2.
- If **no**, click **Exit** to close the Service Group Data window and return to the DNCS Administrative Console.

Note: You can add up to 300 service groups to each USRM.

Enabling USRM on the GQAM Modulator

You must enable USRM on the GQAM modulator so that the GQAM can process the USRM mini-carousel.

Note: You must have GQAM release 4.0.17 or later to enable USRM on your GQAM modulators.

1. On the **Network Element Provisioning** tab of the DNCS Administrative Console, click **QAM**. The QAM list opens.
2. Select one of the 16 ports of the GQAM modulator that you want to designate as the USRM GQAM.

   Important: Although each GQAM modulator that has been provisioned is listed sixteen times, you only need to select one port to open the Set Up GQAM window.
3. Click **File > Open**. The Set Up GQAM window opens.
4. Click the **Basic Parameters** tab.
5. In the Basic Parameters section of the screen, select the **Assigned to USRM** option.

6. Click **Apply**. The change is applied to the selected GQAM.
7. Click **Cancel** to close the Set Up GQAM window and return to the QAM list.
8. Do you need to assign another GQAM modulator to USRM?
   - If **yes**, repeat this procedure from step 2.
   - If **no**, leave the QAM list open and go to ***Resetting the GQAM Modulator*** (on page 11).

   Note: Each USRM can support up to 150 GQAM chassis.

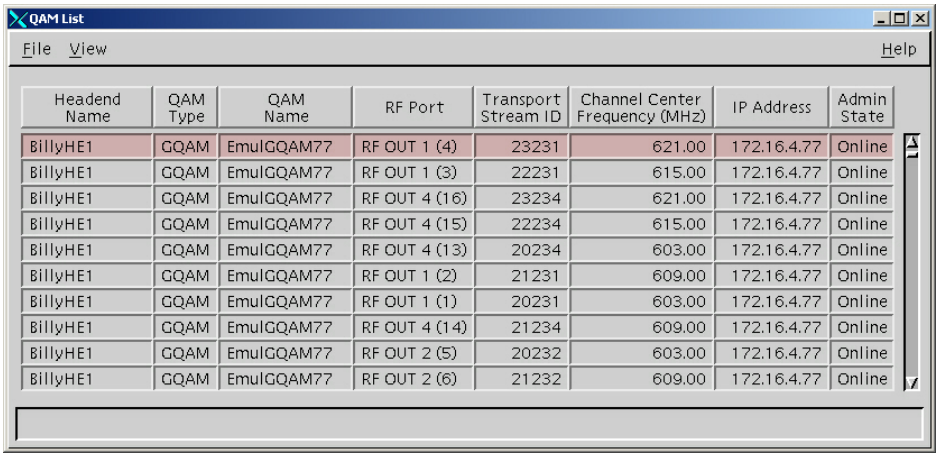
Resetting the GQAM Modulator

Resetting the GQAM modulator allows the GQAM to receive the updated USRM mini-carousel that the set-tops need to be able to receive USRM-processed services.

Note: This procedure is only necessary if you are modifying an existing GQAM modulator. If you installed a new GQAM modulator to use with the USRM, you can skip this procedure.

1 From the QAM list, select the GQAM modulator that you want to reset by highlighting it in the QAM List window.

Important: Although each GQAM modulator that has been provisioned is listed sixteen times, select only one of the sixteen modulators listed.



Headend Name	QAM Type	QAM Name	RF Port	Transport Stream ID	Channel Center Frequency (MHz)	IP Address	Admin State
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (4)	23231	621.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (3)	22231	615.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (16)	23234	621.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (15)	22234	615.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (13)	20234	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (2)	21231	609.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 1 (1)	20231	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 4 (14)	21234	609.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 2 (5)	20232	603.00	172.16.4.77	Online
BillyHE1	GQAM	EmulGQAM77	RF OUT 2 (6)	21232	609.00	172.16.4.77	Online

2 Click **File > Reset**. The Question window opens and asks you to confirm the reset of the GQAM.

3 Click **Yes**. The QAM List window displays the following message:
The reset request has been received by QAM modulator <Name of GQAM>

Notes:

- The <Name of GQAM> represents the name of the modulator you just reset.
- It may take several minutes for each modulator to reset.

4 Do you see the IP address for the GQAM you reset in the bootpd log file?

- If **yes**, continue with this procedure.
- If **no**, call Cisco Services.

5 Repeat this procedure for up to three additional modulators.

Important: Never reset more than four modulators at once, or you may cause GQAMs to have to retry downloads due to traffic congestion on the network.

6 Click **File > Close** to close the QAM List window.

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

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