CHAPTER 3

Cisco VSPT Utilities

Cisco VSPT Release 2.8(1) provides utilities to accomplish the following tasks:

View Generated Output

The Cisco VSPT automatically generates output of various types which you can view using View menu commands:

- Generated MML commands
- Trunk group file
- Trunk group

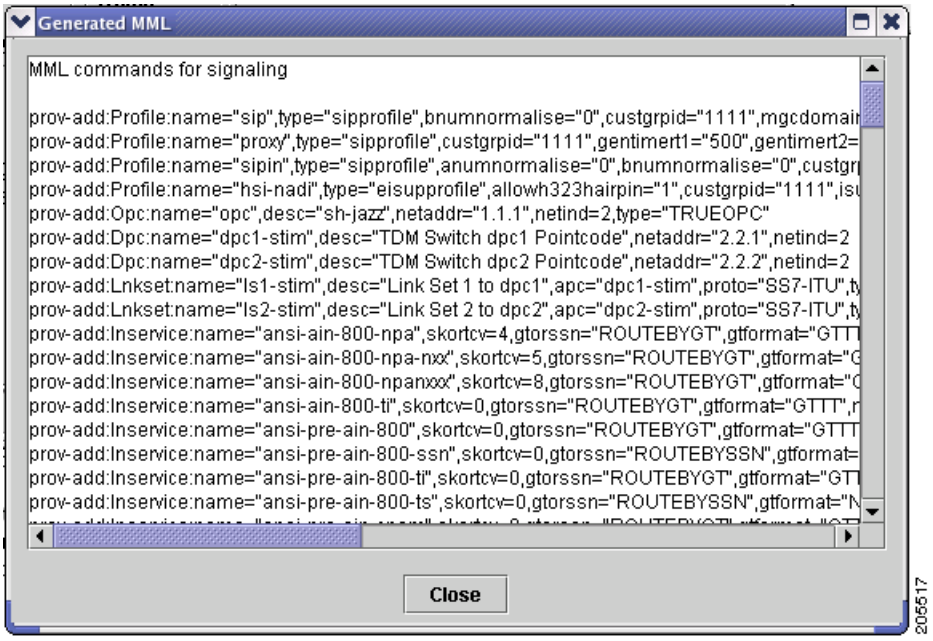
View Generated MML Commands

Cisco VSPT automatically generates MML commands to provision your Cisco PGW 2200 Softswitch and saves these commands in a file to be executed when you deploy the configuration.

To view the MML commands generated from your Cisco VSPT provisioning session, click **View > MML**.

A screen displaying generated MML, similar to the one shown in Figure 3-1, appears.

Figure 3-1 Generated MML Window

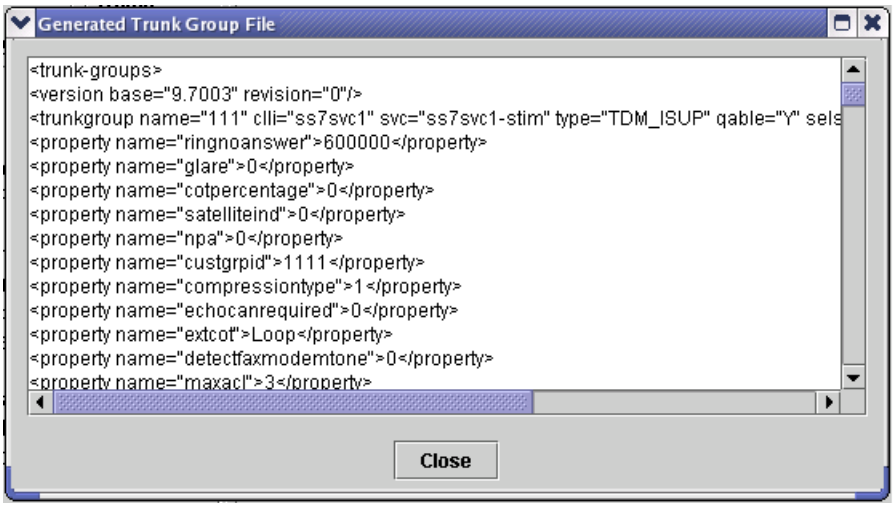


View Generated Trunk Group File

To view the trunk group files generated from your Cisco VSPT provisioning session, click **View > Trunk Group File**.

A screen displaying the generated trunk group file, similar to the one shown in Figure 3-2, appears.

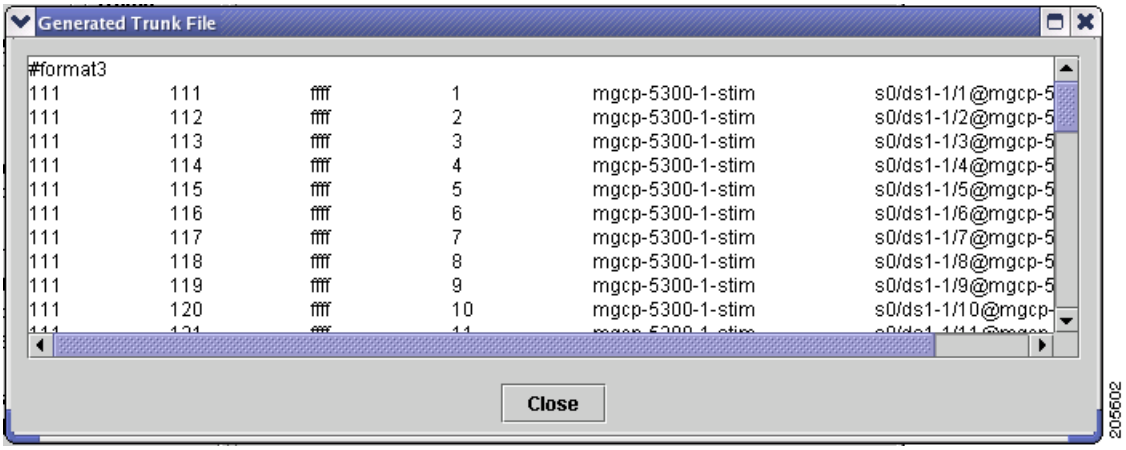
Figure 3-2 Generated Trunk Group File Window



View Generated Trunk File

To view the trunk file generated from your Cisco VSPT provisioning session, click **View > Trunk File**. A screen displaying the generated trunk file, similar to the one shown in Figure 3-3, appears.

Figure 3-3 Generated Trunk File Window



Perform an Integrity Check

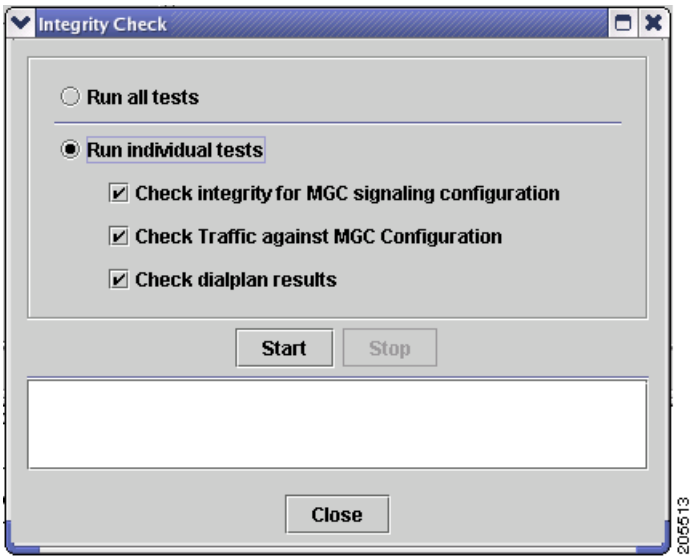
When provisioning is complete, you can perform an integrity check to prevent possible configuration errors. You can check one or all of the following:

- Integrity for the Cisco PGW 2200 Softswitch signaling configuration
- Traffic against the Cisco PGW 2200 Softswitch configuration
- Dial plan results

Use the following procedure to perform an integrity check of the currently open configuration:

Step 1 Click **Tools > Integrity Check**. The Integrity Check dialog box appears (Figure 3-4).

Figure 3-4 Integrity Check Dialog Box



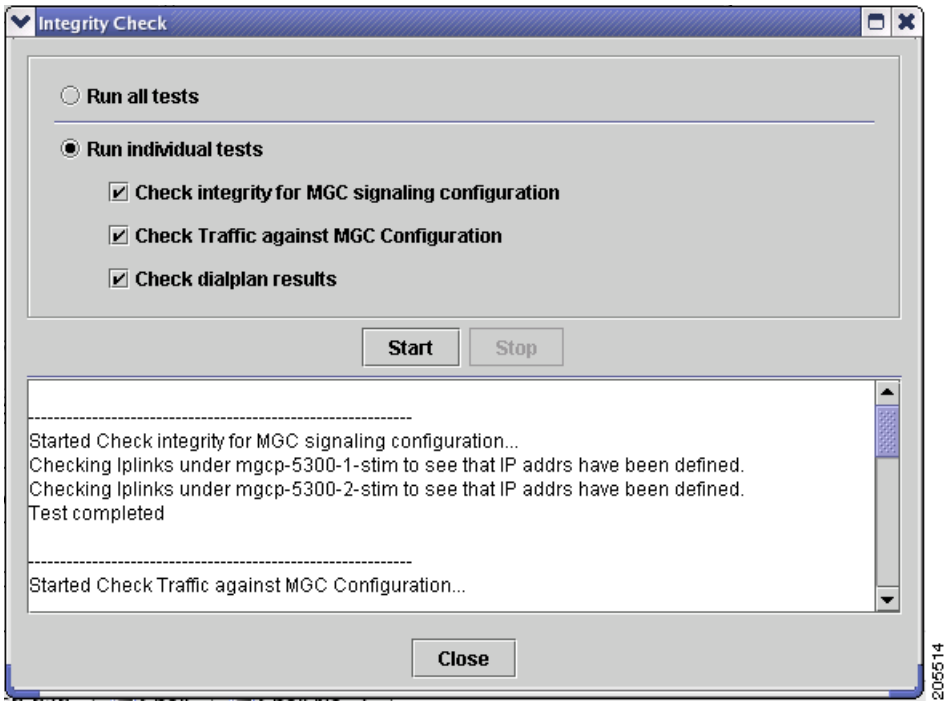
Step 2 Select the tests you want to run:

- Click **Run all tests** to run all three tests. See "Integrity Check Dialog Box Options" section on page 3-5 below for a description of each test.
- To run one or more individual tests, click **Run individual tests**. All tests are checked. Uncheck the tests you do not want to run.

Step 3 Click **Start**. Cisco VSPT runs the selected tests.

When the tests finish, a dialog box similar to the one in Figure 3-5 appears showing the results of the integrity checks.

Figure 3-5 Integrity Check Results



Integrity Check Dialog Box Options

This section describes the options in the Integrity Check dialog box.

Check Integrity for Cisco PGW 2200 Softswitch Signaling Configuration

When you perform an integrity check for Cisco PGW 2200 Softswitch signaling configuration, the Cisco VSPT does the following:

- Checks that the hostname is specified for Cisco PGW 2200 Softswitch
- Checks that logins and passwords are specified for Cisco PGW 2200 Softswitch
- Checks that Cisco PGW 2200 Softswitch ipaddrs are specified
- Checks that if Cisco PGW 2200 Softswitch failover is specified, the failover IPs are specified
- For IPFAS IPLNK:
  - Ensures that SigSlot/SigPort is specified
  - Checks SigSlot/SigPort on the MGX to ensure that the values are valid as specified on the MGX
  - Ensures that Cisco PGW 2200 Softswitch ports and Cisco PGW 2200 Softswitch ports match on the IPLNK
  - Checks that all IPLNKs under a single IPFASPATH map to the same port number
- Checks that point codes are correctly provisioned and only one true opc is defined
- Checks that if there are LIMD sigpaths, one iplink is defined at least

- Checks that a trunk group profile must contain some property provisioning
- Checks that signaling path for an external node is correctly provisioned (External node types are MGX8260, VISM, VXSM)
- Checks that if the property IPInScreening of one SIP signaling service is set to 2, a default trunk group of SIP_IN trunk type using that SIP signaling service must be provisioned

Note The number of IPFAS sessions using a given port is displayed because some IPLNKs might use different port IDs.

Check Traffic Against Cisco PGW 2200 Softswitch Configuration

When you perform an integrity check of traffic against the Cisco PGW 2200 Softswitch configuration, the Cisco VSPT does the following:

- When D channels are defined as FAS and NFAS PRI in the trunk group/trunk section, verifies that there are corresponding IPFASPATH signaling services with corresponding IPLNKs
- Checks if there are any defined IPFASPATH signaling services defining a D channel but no corresponding trunk group or trunk in the traffic information with a corresponding NFAS/FAS PRI
- Checks that signaling services defined for trunk groups exist in the configuration
- Checks CIC conflicts for trunk groups sharing the same SS7 or IP signaling service (one CIC is used only in one trunk among the trunk groups sharing the same SS7 or IP signaling service)

Check Dial Plan Results

When you perform an integrity check for the dial plan, the Cisco VSPT does the following:

- Checks that the route names in the route results actually exist on the traffic side
- Checks that the resultset is not empty
- Checks that the resultset contains existing conditional route, codecString and CPCMOD
- Checks that the IN_TRIGGER result contains a valid STP/SCP index which is defined in MGC Config window > SS7 Subsystem

Background Information

In the dial plan, the Bdigittree maps a called digit string to select the desired result. For the Bdigittree, the digit string indicates what it should do when a call destined for the number xxx-xxxx is received. The selected value identifies what to do with the call. The result set contains results (processing actions for the call). One of the results can be a route result. Associated with the route result is the name of a route (from the traffic branch) that shows the trunk groups that exist within a route. This implies that the call should be routed onto the specified route and routed onto one of the trunk groups within the route.

Deploy a Configuration

When you finish defining a configuration, you must deploy that configuration to the Cisco PGW 2200 Softswitch.

Note A new configuration should not be deployed during times of peak load on the Cisco PGW 2200 Softswitch.

A configuration created in Cisco VSPT can be deployed to a Cisco PGW 2200 Softswitch as a new configuration or incrementally. Deploying incrementally allows you to quickly deploy modifications to an existing configuration without having to redeploy the entire configuration. Cisco VSPT also allows you to visually check the incremental commands it generates before deploying those commands to the Cisco PGW 2200 Softswitch.

If theCisco PGW 2200 Softswitch has SSH enabled, you should deploy the configuration using the SSH protocol.

Deploying a New Configuration

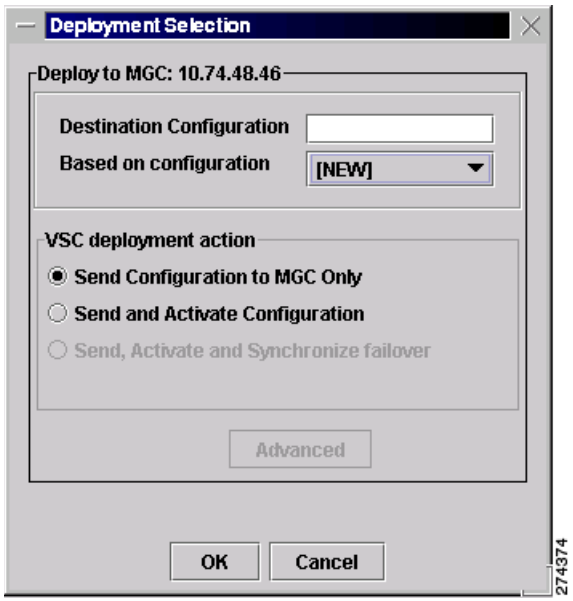
Use the following procedure to deploy a new configuration.

Note If you want to delete a component and plan to reuse the component name, first delete the component, deploy the session, and verify that the component name has been deleted before reusing the name.

Step 1 Click **Tools > Deploy** on the main Cisco VSPT menu.

The screen shown in Figure 3-6 appears.

Figure 3-6 Deploying a Configuration



Step 2 Indicate how you want to deploy the configuration:

To deploy to the Cisco PGW 2200 Softswitch only, do one of the following:

- If you want to send the configuration to the Cisco PGW 2200 Softswitch but not activate it, click the button next to **Send Configuration to MGC Only**.

- If you want to send the configuration to the Cisco PGW 2200 Softswitch and activate it, click the button next to **Send and Activate Configuration**.
- If you have a continuous-service configuration with two Cisco PGW 2200 Softswitch hosts, click the button next to **Send, Activate and Synchronize failover**. The configuration is saved on the active host and copied to the standby host. You must restart the standby server after reconfiguration to apply changes.

Note If you select an option other than New, the Advanced button is enabled. For information about the options this button provides, see the "Configuring an Incremental Deployment" section on page 3-9.

Step 3 Choose a configuration in the **Based on configuration** drop-down list. This list displays all existing configurations on the selected Cisco PGW 2200 Softswitch and the [LAST IMPORT] and [NEW] options.

- Last Import-The Cisco VSPT compares your provisioning session to the last imported configuration and deploys only changes you have made.

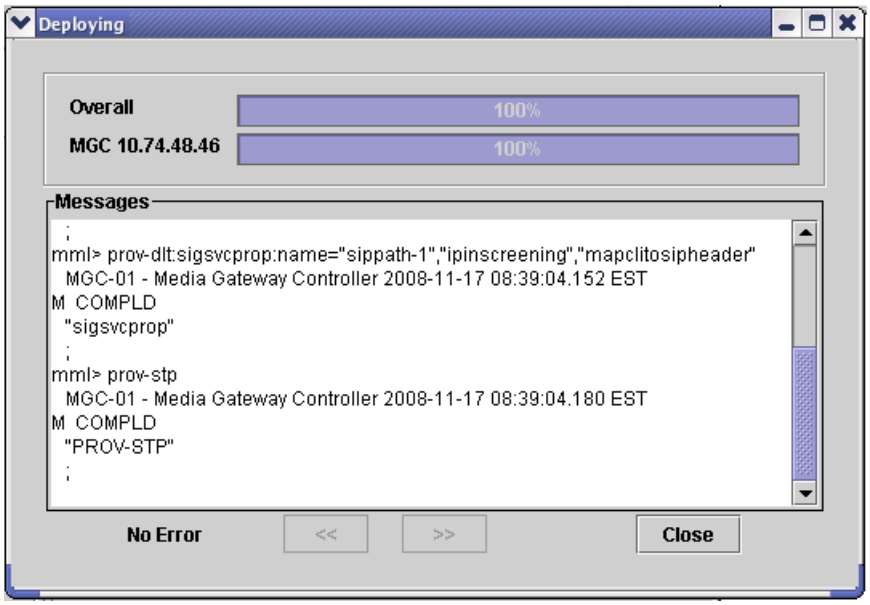
Note The LAST IMPORT option allows multiple users to modify an existing configuration. However, they must each be modifying a different area of the configuration for this option to work properly.

- New—Your entire provisioning session is deployed as a new configuration.
- Existing Configurations—Cisco VSPT imports the selected configuration from the Cisco PGW 2200 Softswitch, compares the differences between that configuration and your current provisioning session, and deploys changes you have made.

Note Since you are deploying a new configuration, make sure to choose the New option in the Based on configuration drop-down list.

Step 4 Click **OK**. The screen shown in Figure 3-7 appears and displays the status as the current provisioning session is deployed.

Figure 3-7 Deployment Progress



Note In a continuous-service configuration, the XECfgParm.dat file on each machine must be configured. If you experience problems, verify the integrity of the XECfgParm.dat files on both machines. See Chapter 3, "Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher" in the *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide*.

Configuring an Incremental Deployment

An incremental deployment allows you to modify an existing configuration and deploy only the modified areas to the Cisco PGW 2200 Softswitch. Modifications can be made more quickly, and errors affecting unmodified areas are minimized. In addition, provisioning modifications made by other users in separate areas are not affected.

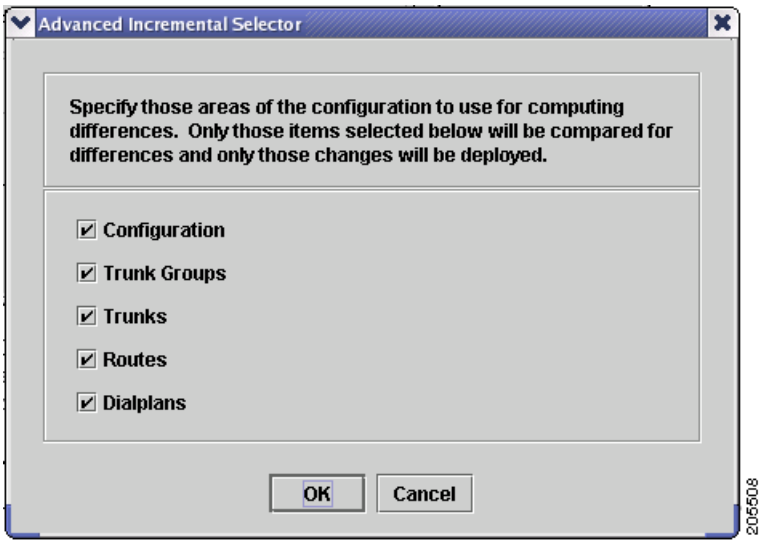
Note The Cisco PGW 2200 Softswitch does not support some incremental deployment processes. If you have a problem with an incremental deployment, examine the MML commands to ensure that you have properly configured the desired components. Modify the component presenting the problem, or cancel the deployment and redeploy the component as a new configuration.

Use the following procedure to configure an incremental deployment:

Step 1 Follow Step 1 to Step 3 described in the "Deploying a New Configuration" section on page 3-7.

Step 2 Click **Advanced** in the window shown in Figure 3-8. The screen shown in Figure 3-8 appears.

Figure 3-8 Incremental Deployment Component Selector



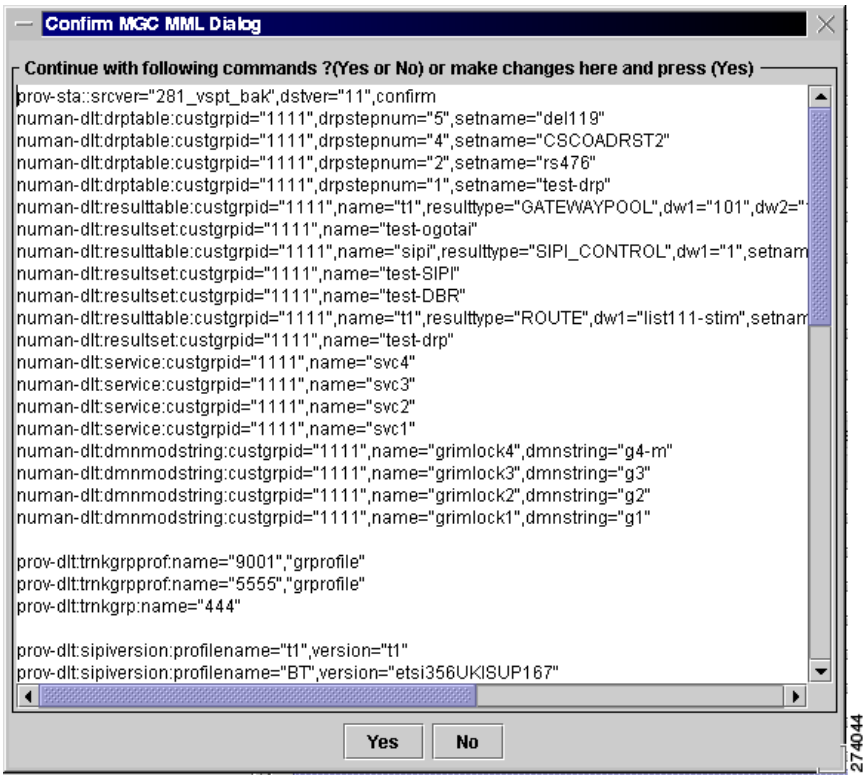
If you have only made configuration changes to one or more of the areas listed, you can direct the Cisco VSPT to compare only those areas with the current configuration, and your modifications can be deployed more quickly.

Note If you select areas in this window, be sure to include all areas that you have modified.

Step 3 Select one or more component types to deploy, and click **OK**.

Step 4 Go to Step 4 in the "Deploying a New Configuration" section on page 3-7, and complete the procedure described there. When you click **OK**, a screen similar to the one displayed in Figure 3-9 appears.

Figure 3-9 Confirm MML Commands



Step 5 Inspect the MML commands, modify them if desired, and click **Yes** to continue with the incremental deployment. Click **No** to reissue the deployment as a new configuration.

Remote Shell

Cisco VSPT provides a utility to open a Telnet session and connect directly to a device. Once you have established your Telnet connection, you can log in to the device and execute commands remotely on the device through the Telnet interface.

If you have installed SSH for Cisco VSPT and the remote device also supports SSH, you can select the ssh utility instead of Telnet.

Use the following procedure to open a Telnet or ssh session with a network device:

Step 1 Click **Tools > Remote Shell**. A screen similar to that shown in Figure 3-10 appears.

Figure 3-10 Select Remote Network Device

Step 2 Click **Go**.

A Telnet or SSH window opens for you to log in to the device.

MGC Viewer

The MGC Viewer allows you to view, activate, remove, and synchronize configurations on the Cisco PGW 2200 Softswitch. If you are communicating with an SSH-enabled Cisco PGW 2200 Softswitch, you can use SSH instead of Telnet for the communication.

Use the following procedure to view configurations on a Cisco PGW 2200 Softswitch:

Step 1 Click **Tools > MGC viewer** on the main Cisco VSPT menu. On the MGC Configuration screen that appears, click **File > Open MGC**.

A screen similar to the one in Figure 3-11 appears.

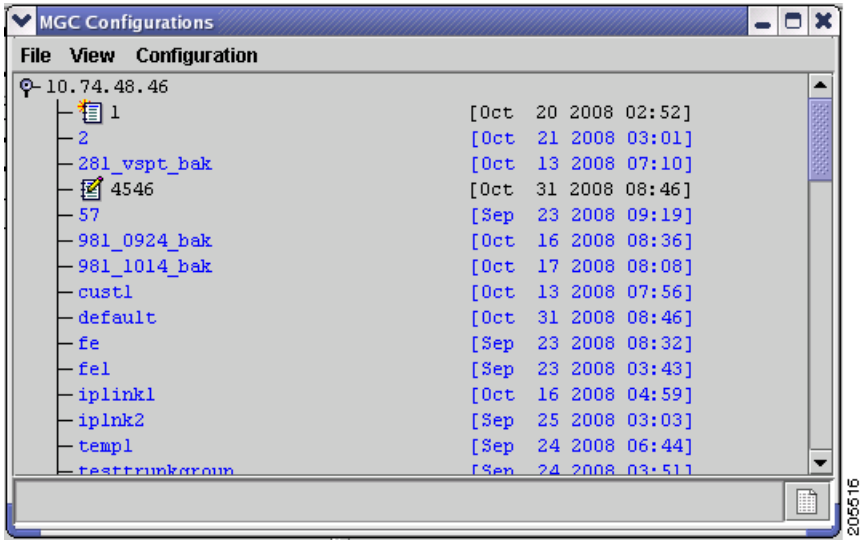
Figure 3-11 Select Cisco PGW 2200 Softswitches

Step 2 Select the desired protocol:

- Choose **SSH** if SSH is enabled on the device.
- Choose **None** if SSH is not enabled on the device.

Step 3 Enter the host name of the Cisco PGW 2200 Softswitch in the **Hostname** box, enter the Cisco PGW 2200 Softswitch login and password, and click **OK**. A screen similar to the one in Figure 3-12 appears and lists all configurations on the specified Cisco PGW 2200 Softswitch.

Figure 3-12 MGC Configurations



Step 4 Click **Configuration** on the MGC Viewer menu bar, and select one of the following actions:

Activate—Activate the configuration

Synchronize—Synchronize with the current configuration

Delete—Delete the configuration

Cisco BAMS Configuration

The Cisco BAMS Configuration utility enables you to create, copy, modify, and deploy a configuration for the Cisco BAMS server. You can use Cisco VSPT to provision general BAMS information, zones, trunk group information, measurements, system and other information.

You can find the detailed provisioning procedures in the section, "Starting a Cisco BAMS Provisioning Session", and the section "Cisco BAMS Server Configuration" in Chapter 3 Provisioning with VSPT of *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* at,

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9.8/Provisioning/Guide/R9GUI.html

Before you use VSPT to provision a Cisco BAMS, you need to provision the Cisco BAMS and the Cisco PGW 2200 Softswitch for using the Cisco BAMS.

- Provision the Cisco PGW 2200 Softswitch for using Cisco BAMS—See the section "Configuring the Cisco MGC for Using BAMS", and the section "Enabling SFTP on Cisco BAMS and the Cisco PGW 2200" in Chapter 2, "Setup and Installation" at

  http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/bams/3.30/guide/330ch2.html

- Provision the Cisco BAMS—See the section “Configuring BAMS” in Chapter 2, “Setup and Installation” at the preceding link and the section “Updating the Poll Table” in Chapter 5, “Using BAMS Tag IDs” at

  http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/bams/3.30/guide/330ch5.html

Note To set up a pair of active and standby Cisco PGW 2200 Softswitches for a Cisco BAMS, you need to provision on both active and standby Cisco PGW 2200 Softswitches.

State Operation

The State Operation utility enables you to query the active configuration on the Cisco PGW 2200 Softswitch for the state of managed objects. After a query, you can modify the state of an object and apply the update to the Cisco PGW 2200 Softswitch. If you are querying the state of an SSH-enabled Cisco PGW 2200 Softswitch, you can use SSH instead of Telnet for the communication.

Use the following procedure to query the state of managed objects on the Cisco PGW 2200 Softswitch:

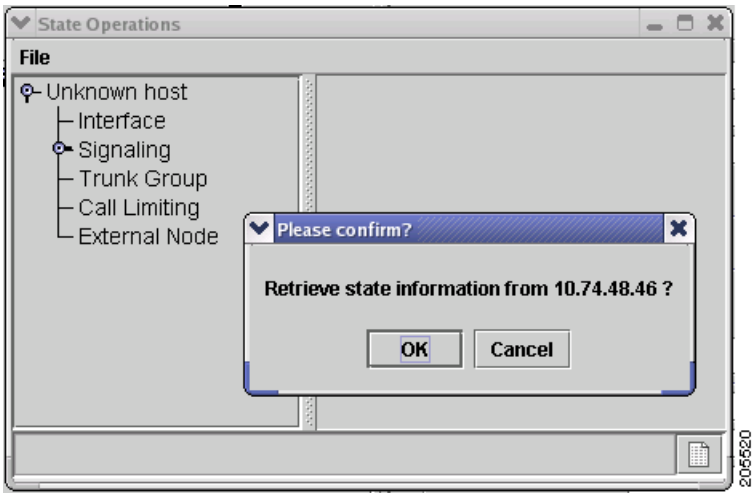
Step 1 Click **Tools > State Operation** on the main Cisco VSPT menu. The Protocol Options dialog box appears.

Step 2 Select the desired protocol:

- Choose **SSH** if SSH is enabled on the device.
- Choose **None** if SSH is not enabled on the device.

A screen similar to the one in Figure 3-13 appears.

Figure 3-13 State Operation Dialog

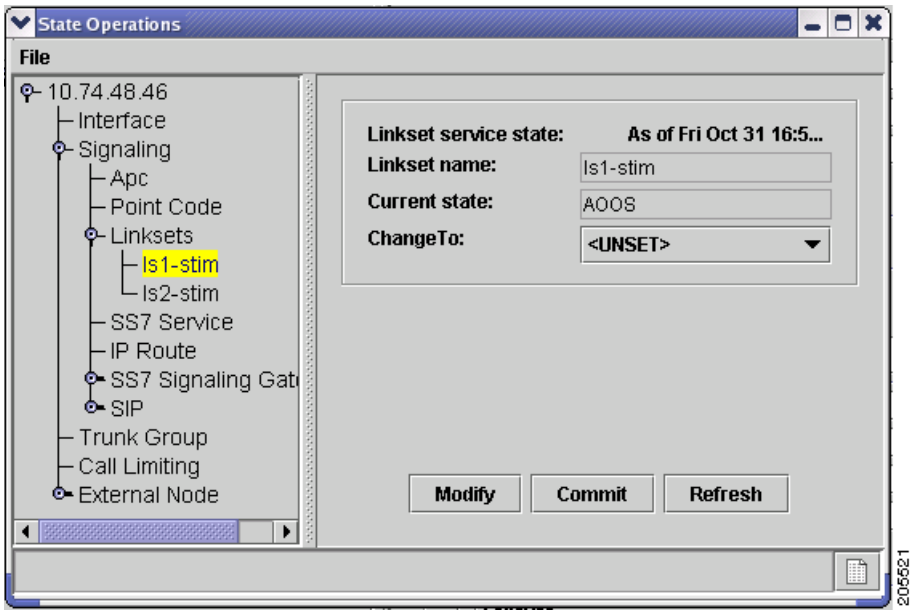


Step 3 Click OK.

The Cisco VSPT queries the Cisco PGW 2200 Softswitch.

Step 4 Expand the hierarchical tree in the left pane of the State Operations window to locate and highlight the object. See Figure 3-14.

Figure 3-14 State Operations



Step 5 From this window, you can modify the state by choosing the desired state from the **ChangeTo** drop-down list. Click **Modify** to change the state in this window, and click **Commit** to change the state on the Cisco PGW 2200 Softswitch. To query the object again, click **Refresh**.

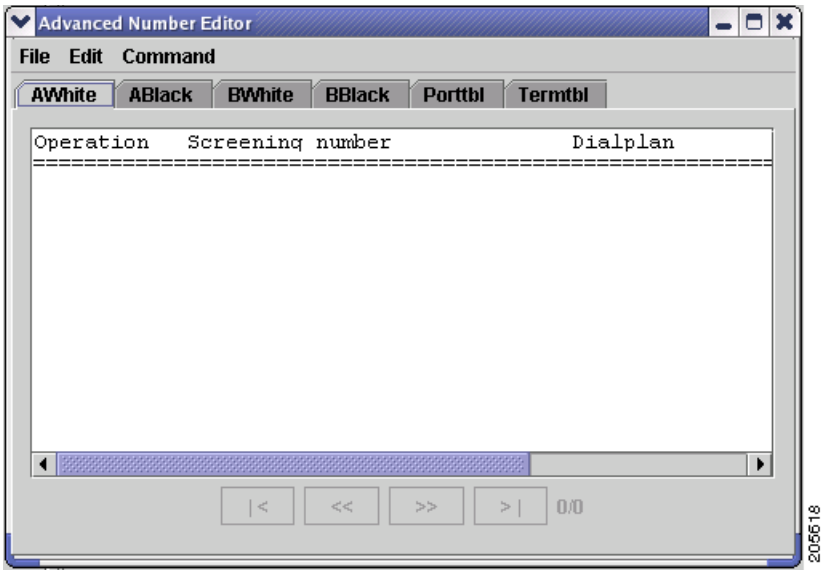
Advanced Number Editor

You can use the advanced number editor to edit the call screening list, the ported number table, and the number termination table:

- A-number Whitelist
- A-number Blacklist
- B-number Whitelist
- B-number Blacklist
- Ported Number Table
- Number Termination Table

Click **Tools > Advanced Number Editor** and you see a window similar to the one in Figure 3-15. For details on the advanced number editor, see Chapter 3, "Provisioning Dial Plans with VSPT" of the *Cisco PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

Figure 3-15 Advanced Number Editor Window



Perform an Audit

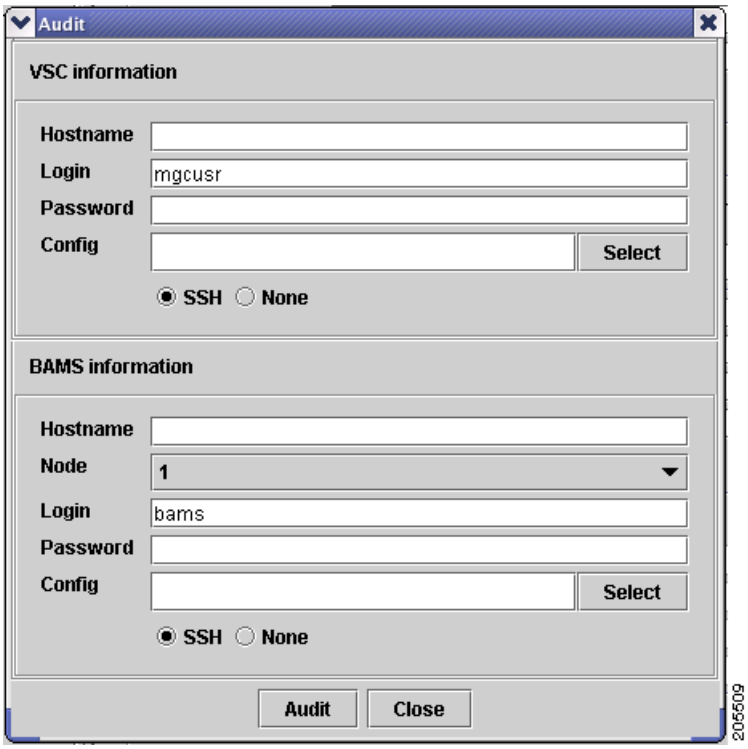
You can use an audit to ensure that both the Cisco PGW 2200 Softswitch and a Cisco BAMS server supporting the Cisco PGW 2200 Softswitch host have consistently configured signal paths. The audit involves examining signal path and bearer channel data on both servers, comparing the data, and reporting any differences. If you are auditing an SSH-enabled Cisco PGW 2200 Softswitch, you can use SSH instead of Telnet for the communication.

Use the following procedure to perform an audit:

Step 1 Click **Tools > Audit**.

The window similar to Figure 3-16 appears.

Figure 3-16 Audit



Step 2 Enter the Cisco PGW 2200 Softswitch hostname, login, and password in the top pane of the window.

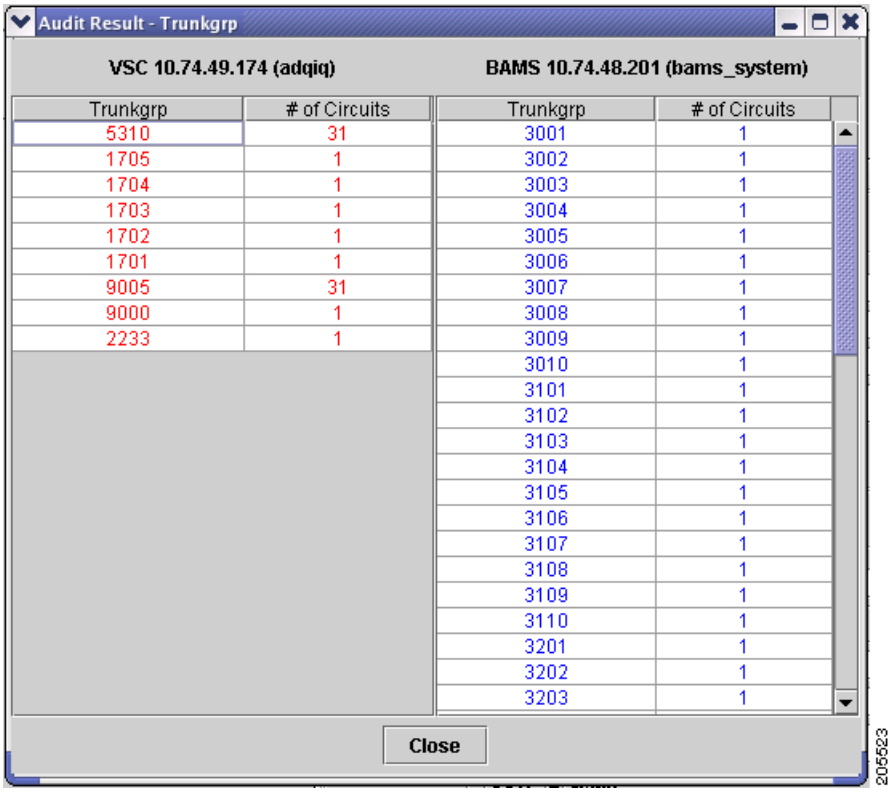
Step 3 To specify the configuration to audit, click **Select**, highlight the configuration to audit, and click **OK**.

Step 4 Enter the Cisco BAMS hostname, login, and password in the bottom pane of the window.

Step 5 To specify the configuration to audit, click **Select**, highlight the configuration to audit, and click **OK**.

Step 6 Click **Audit**. A screen similar to the one displayed in Figure 3-17 appears.

Figure 3-17 Audit Results



The left pane displays the signal path and bearer channel data configured on the Cisco PGW 2200 Softswitch host, and the right pane displays the same data configured on the Cisco BAMS server.

Back Up and Restore

The Cisco VSPT backup and restore tool allows you to create, modify, and delete scheduled backups and restores hourly, daily, weekly, monthly, or on demand.

You can perform backup and restore activities on any of the following devices if they have been configured for the Cisco PGW 2200 Softswitch:

- Cisco PGW 2200 Softswitch Host—Active configuration or entire Cisco PGW 2200 Softswitch system
- Cisco Catalyst 2900XL—Running-config and image in Flash
- Cisco Catalyst 5500—For switch module and RSM, configuration and image in Flash
- Cisco Catalyst 6509—For switch module and MSFC, configuration and image in Flash
- Cisco ITP-L (SLT) 2600—Running-config and image in Flash
- Cisco BAMS Phase 3—Active configuration
- Cisco HSI Adjunct Server—Active configuration

The backup and restore tool also provides the status of each activity and generates user-viewable status logs.

Before you begin:

- You must have selected an appropriate backup host and enabled TFTP on that machine.
- Make sure there is enough space on the backup host for the backup files.
- You must start Cisco VSPT from a UNIX shell with the Backup ID. The Backup ID is specified during installation. You can start Cisco VSPT in either of two ways:
  - If Cisco VSPT is launched from Cisco MGC Node Manager (Cisco MNM), you must have started the Cisco EMF client with the Backup ID. If your normal ID is different from the Backup ID, you must start a new Cisco MNM session with the Backup ID.
  - From the command line in a UNIX shell opened with the Backup ID.
- Make sure the timeout value is adequate for the backup process to be finished. To adjust the timeout values, modify the following two parameters in the configuration file: /opt/CSCOvsp28/classes/com/cisco/transpath/dart/editor/configEditor.properties.
  - Modify the value of parameter DefaultTimeOut to adjust the timeout value for shell command. The default value is three minutes.
  - Modify the value of parameter Backup.timeout to adjust the timeout value for system backup and FTP session. The default value is 30 minutes.

  If you receive an error message, “Time out interact...“during the backup process, you can modify the value of Backup.timeout to a larger number to solve the problem.

Note The system backup could take long time and the backup files could be very large. It is strongly recommended that you perform the system backup at non-busy time.

About the Backup and Restore Process

The Backup process includes these main steps:

- Cisco VSPT connects to the managed component using Telnet or, if the component is SSH enabled, using a secure ssh connection. (You must have specified the component's IP address, login, and password, and you must have selected the security policy, None or SSH, in the Add... Schedule dialog box when you set up the backup.)
- The managed component makes a TFTP connection (as a client) to the TFTP server on the backup host.
- As a TFTP client, the managed component puts the configuration file onto the backup host. TFTP is used whether or not SSH is enabled. (You must have specified the backup host's IP address, Login, and Password in the Add Schedule dialog box.) TFTP must be enabled on the backup host.

The Restore process includes these main steps:

- Cisco VSPT connects to the managed component using Telnet or, if the component is SSH enabled, using a secure ssh connection.
- The managed component makes a TFTP connection (as a client) to the TFTP server on the backup host.
- As the TFTP client, the managed component gets the backup file (tar file) from the backup host and places it in a temporary location (/tmp).

- The managed component untars the tar file from the temporary location into the /opt/CiscoMGC/etc/cust_specific/ directory location.

Schedule a Backup or Restore

To schedule a backup or restore, use the following procedure:

Step 1 Click **Tools > Backup and Restore** on the main Cisco VSPT menu bar. The Backup and Restore window appears listing components that can have scheduled backups.

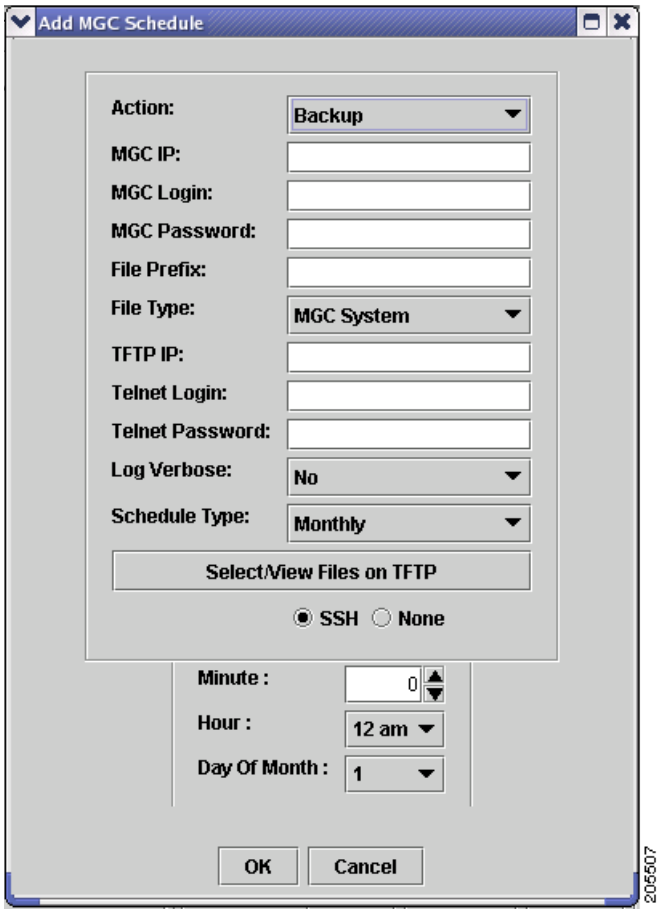
Step 2 Click the component for which you want to schedule a backup.

In the following example, the Cisco PGW 2200 Softswitch component configuration is backed up. On the right side of the window, the schedules list for that component appears.

Note If you want to perform a restore, you must have a backup file already created and available on the Cisco PGW 2200 Softswitch or other managed component.

Step 3 In the Add/View Schedules pane, click **Add**. A screen similar to the one shown in Figure 3-18 appears.

Figure 3-18 Add MGC Schedule



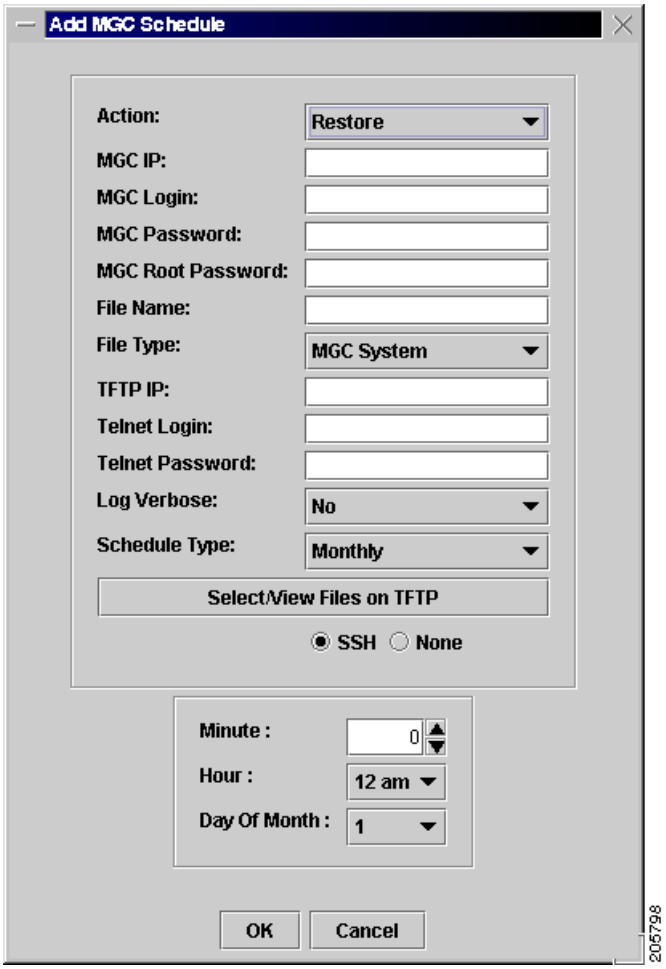
Note The fields available in the dialog box vary according to the component selected.

Step 4 From the **Action** drop-down list, choose the action you want to perform.

Choices include Backup and Restore.

If you choose Restore, a screen similar to the one shown in Figure 3-19 appears.

Figure 3-19 Add MGC Schedule – Restore



Step 5 Enter information for the component you are backing up or restoring:

- Enter the IP address of the Cisco PGW 2200 Softswitch.
- Enter the Cisco PGW 2200 Softswitch login and password.

Note If you want to perform a restore for the Cisco PGW 2200 Softswitch system, you must enter the Cisco PGW 2200 Softswitch root password as well.

Step 6 In the File Name field, enter a name for the backup file.

Step 7 In the File Type drop-down list, select one of the following:

- MML Config—Backs up MML files for the active configuration on the Cisco PGW 2200 Softswitch
- MGC System—Backs up MML files for the active configuration (as does MML Config), plus the Times Ten database, the XEconfigParm.dat file, and UNIX configuration files

Step 8 Enter TFTP information for the server to which you are backing up (destination for the configuration file):

- Enter the IP address of the TFTP server.

- Enter the TFTP login and password.

Step 9 Specify whether or not to use verbose log mode. Verbose mode records all commands issued by the Cisco VSPT and any system responses.

Step 10 Select whether to connect to the component you are backing up using **SSH** or Telnet (**None**).

Note The operation itself is executed with TFTP or in the case of the Cisco PGW 2200 Softswitch system, FTP.

Step 11 Select the schedule type. Choices include:

- Monthly
- Daily
- Hourly
- Weekly
- Now
- Later

Step 12 Select the protocol to use for connecting to and logging in to the component you are backing up:

- Choose **SSH** to use ssh.
- Choose **None** to use Telnet.

Step 13 Select the hour and minute that the backup should begin.

Step 14 Click **OK.** The backup activity is scheduled, and the scheduled event appears in the schedule list.

After the backup has been completed, the status of the activity is immediately available. The backup file with the name you specified is available for use with Cisco VSPT.

Check Status of Backup or Restore

The Cisco VSPT generates status logs that provide information about each scheduled activity. The status log displays the following information for the activity:

- Date and time when activity began
- Success or failure
- File name on the TFTP server
- Directory of configuration files
- Image file name

If you specified verbose log mode, the status log also displays the sequence of commands issued by the Cisco VSPT and any system responses.

Use the following procedure to check the status of a backup or restore activity:

Step 1 In the left pane of the backup and restore tool window, click the device that has been backed up or restored. Click the **Status** tab in the right pane.

Step 2 Highlight the backup or restore for which you want information.

Step 3 Select the appropriate button for the action you want to perform. Choices are:

- Show status—Displays the log file for the activity.
- Acknowledge—Removes the text from the Status window and deletes the log file from the server.
- Clear—Removes the text from the Status window, but the log file remains on the server.