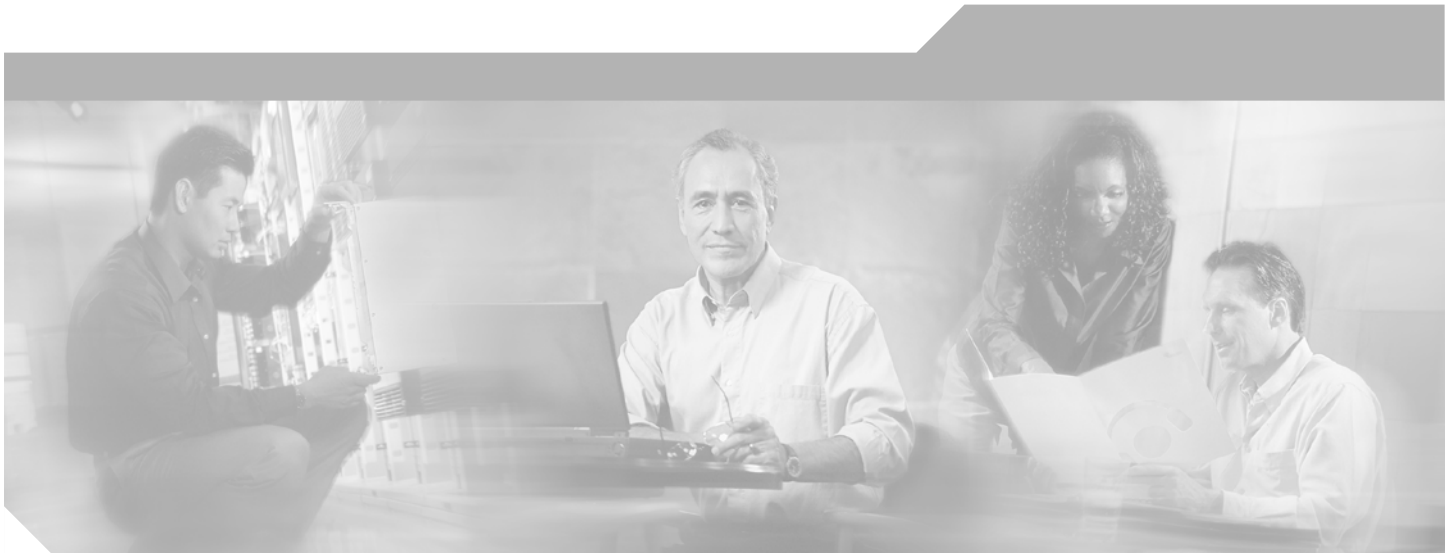

Cisco Voice Services Provisioning Tool User's Guide

Version 2.3(2)
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Preface

This preface describes the objectives, audience, organization, and conventions of this document. It contains the following sections:

Document Objective

This document provides the information you need to install, configure, and get started using the Voice Services Provisioning Tool (VSPT), Version 2.3(2). You should read the system-level documentation supplied with your system before using this guide. A complete list of these documents is included in the *Cisco Media Gateway Controller Software Version 9 Installation and Configuration Guide* that ships with your system.

Detailed provisioning instructions are beyond the scope of this Guide, and are covered in the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at:

http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm, in particular Chapter 3, Provisioning with the Voice Services Provisioning Tool at

http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/r9gui.htm

Detailed instructions for provisioning dial plans are covered in the *Cisco Media Gateway Controller Software Version 9 Dial Plan Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/dplan/index.htm, in particular Chapter 3, “Provisioning Dial Plans with the VSPT”, at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/dplan/dp_vspt.htm

Note This document uses the term *media gateway controller software* or *MGC application* to mean the Cisco MGC software that runs in the UNIX environment on a server. The term *MGC* refers to the combination of this software and the server. The Cisco MGC communicates with the SS7 network to process and route calls between a traditional time-division multiplexing (TDM) network and a packet data network. This routing takes place through a variety of media gateways, standalone devices that perform the conversion between the TDM and data network formats.

Note The Cisco PGW 2200 Softswitch was formerly known as the Cisco PGW 2200 PSTN Gateway. Older names of this product are the Cisco VSC 3000 and Cisco SC 2200. Some parts of this document may still use the older names.

Audience

This document is designed for network operators and administrators who have experience with telecommunications networks, protocols, and equipment and who have familiarity with data communications networks, protocols, and equipment. Software and hardware installers and network designers will also find this document useful.

Document Organization

Table 1 describes the major sections of this document.

Table 1 Document Organization

Chapter	Title	Description
Chapter 1	Voice Services Provisioning Tool Overview	This chapter introduces VSPT and provides directions for obtaining and installing the software. In addition, it provides basic information for using the tool.
Chapter 2	Provisioning with VSPT Wizards	This chapter introduces VSPT wizards and provides an example of configuring a Cisco Media Gateway Controller (MGC) through the use of a wizard.
Chapter 3	Voice Services Provisioning Tool Utilities	This chapter introduces additional tools included with VSPT Version 2 and provides directions for using them.

Terminology

The following terms are used in this document:

Cisco *MGC host*—A Sun host server running Cisco MGC software. If your product is the Cisco SC2200, this is also known as an SC host. If your product is the Cisco PGW 2200 Softswitch, this is also known as a PSTN Gateway host.

Cisco *SC node*—The combination of the Cisco SC2200 product and the control signaling network. The SC node consists of all solution components except the media gateway.

Cisco *MGC node*—The logical grouping of the active and standby MGC hosts, the control signaling network, and the Cisco Signaling Link Terminals (SLTs).

Simplex MGC node—A node that uses a single Cisco MGC host. Typically, nodes of this type are used for solution evaluation tests or for small installations. Any loss of service in the Cisco MGC host disrupts all call traffic. If your product is the Cisco SC2200, this is also called a simplex SC node.

Continuous-service MGC node—A node that uses two Cisco MGC hosts to prevent system downtime that might otherwise result from the failure of a single MGC host. Calls in progress are maintained when one MGC host fails. Continuous-service nodes use SLTs to preprocess SS7 signaling and distribute signaling to both MGC hosts. If a failover occurs, all stable calls are maintained. If your product is the Cisco SC2200, this is also called a continuous-service SC node.

Document Conventions

Notes use the following conventions:

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Documentation Suite

The following documentation provides information about the Cisco MGC software and the solutions it supports, including the Cisco SS7 Interconnect for Voice Gateways Solution, and the Cisco Packet Tandem Solution.

VSPT Release Notes

Release Notes for VSPT Version 2.3 (includes release information through this version):

http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/relnote/vspt23.htm

Cisco Media Gateway Controller Node Manager Documentation

The Cisco Media Gateway Controller Node Manager (Cisco MNM) provides an integrated graphical user interface for managing the Cisco PGW 2200 Softswitch node, and VSPT may be launched from Cisco MNM. The following documentation is available for Cisco MNM:

Cisco MNM User's Guide Version 2.3(2) at
http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/cmnm232/index.htm.

Cisco MNM Release Notes Version 2.3 at
http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/relnote/cmnm23.htm.

Unlike VSPT, where each version is designed to work with a specific version of Cisco MGC software, each version of Cisco MNM is backward-compatible with earlier Cisco MGC software versions.

Cisco MGC Documentation

The following documentation available for the Cisco MGC Release 9 is on the CD that ships with your software and at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/index.htm:

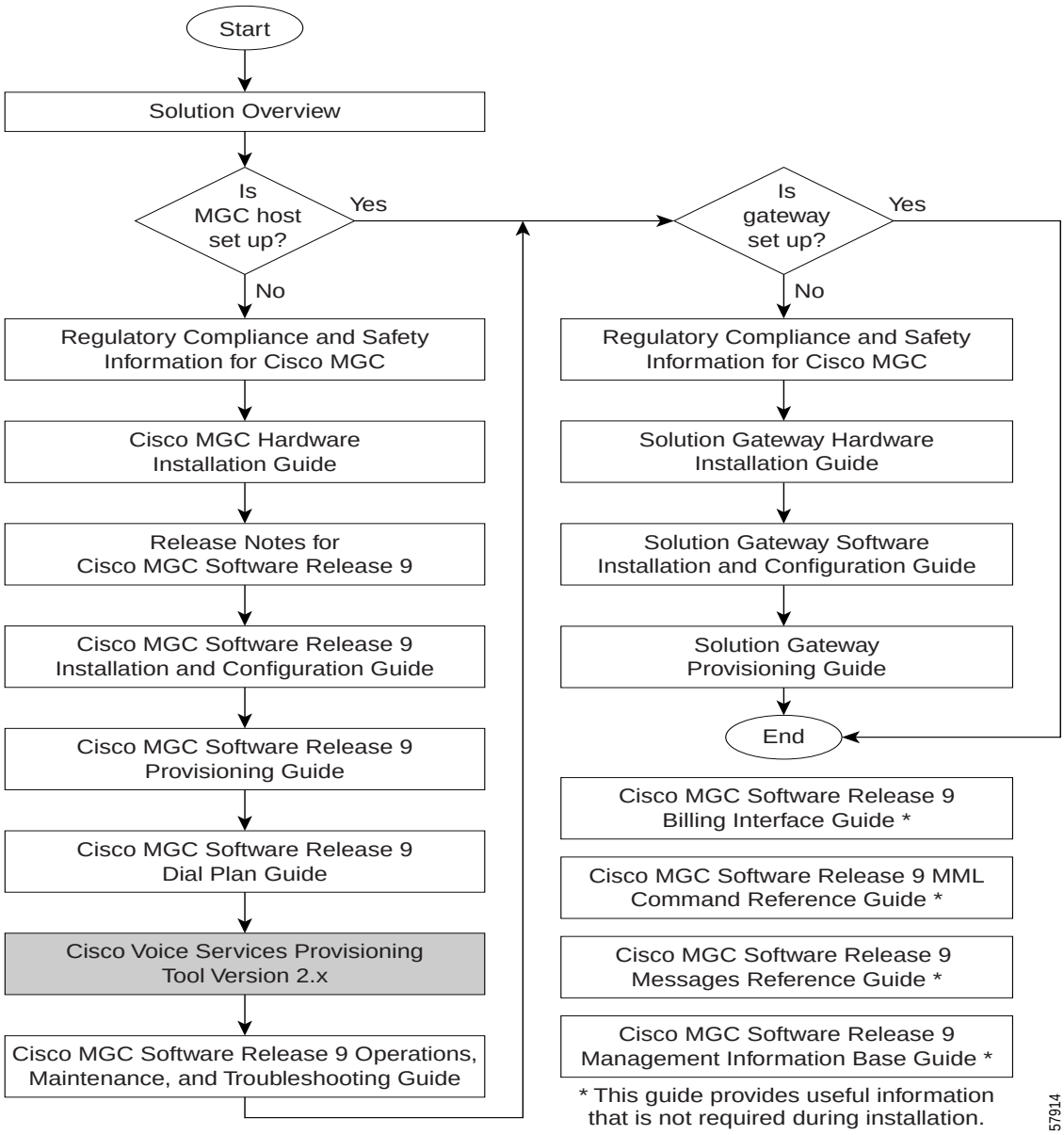
- *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*
- *Cisco Media Gateway Controller Software Release 9 Provisioning Guide*
- *Cisco Media Gateway Controller Software Release 9 Dial Plan Guide*
- *Cisco Media Gateway Controller Software Release 9 MML Command Reference*
- *Cisco Media Gateway Controller Software Release 9 Messages Reference Guide*
- *Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide*
- *Cisco Media Gateway Controller Hardware Installation Guide*
- *Cisco Media Gateway Controller Software Release 9 Billing Interface Guide*
- *Cisco MGC Software Release 9.3(2) Feature Modules*
- *Cisco Media Gateway Controller Management Information Base (MIB) Guide*
- *Cisco Signaling Link Terminal*
- *Cisco Billing and Measurements Server, Release 2* and *Cisco Billing and Measurements Server, Release 3.10*
- *H.323 Signaling Interface Guide*
- *Cisco Media Gateway Controller Software Release 9 Solutions*, with link to solution documentation at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/soln/index.htm.
- *Cisco Media Gateway Controller Sofware Master Index*
- *Voice Services Provisioning Tool Release User's Guides* for Version 2.1 through 2.3(2)
- *Release Notes for the Cisco Media Gateway Controller Software Release 9.* Includes Release Notes for Version 9, Cisco MNM 2.x, and VSPT 2.x, Solaris 2.6 and 8, and HSI 2.20.

If you are using Cisco MGC Release 7, you can find documentation at
http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel7/index.htm.

Documentation Map

Figure 1 shows the sequence in which the various manuals documenting Cisco telephony solutions should be read.

Figure 1 Documentation Map



Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

http://www.cisco.com

Translated documentation is available at the following URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Leave Feedback** at the bottom of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

http://tools.cisco.com/RPF/register/register.do

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.

Document Change History

Table 2 Change History

Subject	Document #, Change Date	Change Summary
Updated to document features new in VSPT 2.3(2)	OL-3541-01, December 05, 2002	Updated to document features new in Cisco MGC software release 9.3(2).
Updated to document features new in VSPT 2.3(1)	OL-1910-02, July 30, 2002	Updated to document HSI adjunct, 6509 LAN Switch, and integrated SLT.
Initial release, VSPT 2.2	OL-1910-01, February 15, 2002	Initial online release

Voice Services Provisioning Tool Overview

Cisco Open Packet Telephony (OPT) provides the framework for delivering voice services over packet-based data, voice, and video networks. OPT encompasses a broad range of hardware platforms and Cisco software, delivering a continuum of voice solutions from core infrastructure to enhanced services over circuit and packet networks. The Cisco Media Gateway Controller (MGC) is at the center of Cisco OPT solutions.

Provisioning a Cisco MGC is the process of preparing it to communicate with an SS7 network, with Cisco media gateways, and with the other components of an OPT solution. The Cisco Voice Services Provisioning Tool (VSPT) provides an easy-to-use graphical tool to provision Cisco MGCs.

Individual releases of the VSPT are designed to be used with specific releases of the Cisco MGC software. VSPT Version 2.3(2) is designed to be used with Cisco MGC Version 9.3(2). If you are using a different release of the Cisco MGC software, see Table 1-1to identify the release of VSPT that you need.

This chapter introduces the VSPT and provides directions for obtaining, installing, and using the software.

This chapter contains the following sections:

Provisioning Introduction

All solutions involving the Cisco MGC are configured through the use of one or more Cisco MGC hosts, one or more Signaling System 7 (SS7) network signaling options, and one or more media gateways that control bearer-traffic routing.

Note In this document, a *solution* is a logical combination of Cisco hardware and software configured to perform a specific network task.

Prior to starting any provisioning session, you should have a clear understanding of the network topology for your solution. Create a network drawing, and refer to it while configuring your network.

In addition, you should perform the following tasks before starting a provisioning session:

- Thoroughly plan your network configuration. Refer to the documentation for your solution for detailed network configuration information.
- Set up your system hardware, and install all required software. For more information, refer to Prerequisites, page 1-6, and the *Cisco Media Gateway Controller Software Version 9 Installation and Configuration Guide* at

  http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/swinstl/index.htm

VSPT Introduction

The VSPT allows you to import an existing configuration, modify the configuration, and export it to the same or different devices. Wizards guide you through high-level configuration steps to create the initial network provisioning information for a newly installed node, creating iterative entries from a single operation. The VSPT can also facilitate provisioning of individual call parameters, simplifying the provisioning of a large live network.

Using the VSPT helps avoid common errors that might arise if devices are provisioned independently, eliminates the need to enter duplicate data, and enables importing and exporting configurations to and from the Cisco PGW 2200. The VSPT generates configuration files necessary to provision the PGW 2200, including the following provisioning information:

- Signaling
- Trunk groups
- Trunks
- Routes
- Dial plans

The VSPT also allows provisioning Cisco Media Gateways (MGX), specifically the Cisco MGX 8850 with the Voice Interworking Service Module (VISM) Version 2.1, 2.2, 3.0, and 3.1. With the VSPT, you can carry out Cisco MGX 8850 chassis provisioning tasks and VISM provisioning tasks.

During a provisioning session, the VSPT automatically generates the Man Machine Language (MML) or command line interface (CLI) scripts used to configure network elements, assembles these commands into a batch file, and deploys the file to the appropriate network device.

The VSPT allows scheduled backups and restores of configurations on the following devices:

- The Cisco MGC host (active configuration)
- BAMS Phase2 (active configuration)
- BAMS Phase3 (active configuration of the system, plus eight nodes)
- The Cisco SLT 2600 (running configuration and image on flash)
- The Cisco Catalyst 5500 (configuration and image on flash)
- The Cisco Catalyst 2900XL (running configuration and image on flash)

The VSPT can be deployed as an integrated component of the Cisco MGC Node Manager or as a standalone application. If it is installed on the Cisco MGC, call throughput might be impacted when the VSPT is active. It typically runs on a standalone UNIX server that is also running the Cisco MGC Node Manager (Cisco MNM) and supports multiple users and provisioning sessions. You can launch the VSPT from the managed object icon in the CMNM map viewer. For information about Cisco MNM, refer to the *Cisco MNM User's Guide Version 2.3(2)* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/cmnm232/index.htm

This document is designed to help you get started using the VSPT, and does not include complete provisioning instructions, which are found in the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm, in particular Chapter 3, Provisioning with the Voice Services Provisioning Tool at

http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/r9gui.htm

Detailed instructions for provisioning dial plans are covered in the *Cisco Media Gateway Controller Software Version 9 Dial Plan Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/dplan/index.htm, in particular Chapter 3, "Provisioning Dial Plans with the VSPT", at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/dplan/dp_vspt.htm

Installing the VSPT

If you are a registered Cisco.com user, you can download the VSPT software from the Cisco web site. You must install the VSPT release that is compatible with your Cisco MGC software. This document describes the installation and use of VSPT Version 2.3(2). Refer to Table 1-1 for a guide to Cisco MGC and VSPT software release compatibility.

Table 1-1 VSPT & Cisco MGC Software Version Compatibility

VSPT Software Version	Cisco MGC Software Version	BAMS Software Version	New Features Added
VSPT 2.3(2)	Cisco MGC Version 9.3(2)	BAMs Phase 2, BAMS Phase 3 (3.10)	Support for provisioning features new in Cisco MGC Version 9.3(2) including: • Calling party category (CPC), transmission medium requirements (TMR), transit network selection (TNS), codec call type, and percentage-based routing (PBR) • Enhanced H.323 services • Dual CLI interworking with Voice over IP network, both signaling path and call control • Configurable ISUP timers • Polish ISUP Version 2 • Improved SIP failover support • Range checking of properties • Support for BAMS NICS output • Support for BAMS 1110 output • Support for VISM VoATM operating mode
VSPT 2.3(1)	Cisco MGC Version 9.3(1)	BAMs Phase 2, BAMS Phase 3 (3.10)	• Backup and restore of the HSI adjunct • VISM 2.2 and 3.0 Support • Backup and restore of the Catalyst 6509 when used as the PGW node's LAN switch • Support new result types • New, internally generated cause codes exported in the PGW 2200 dial plan • New Screening Editor is used for updating screening data.
VSPT 2.2(2)	Cisco MGC Version 9.2(1.5-2)	BAMS Phase 2, BAMS Phase 3	

Table 1-1 VSPT & Cisco MGC Software Version Compatibility

VSPT Software Version	Cisco MGC Software Version	BAMS Software Version	New Features Added
VSPT 2.2(2A)	Cisco MGC Version 9.2(1.5)	BAMs Phase 2, BAMS Phase 3	• Removal of support for TDM cards, (ITK, V.35) cards· • Support for BAMS Phase 3
VSPT 2.2(1C)	Cisco MGC Version 9.2(0-1)T	BAMs Phase 2, BAMS Phase 3	• Backup and restore MGC system files· • Netscape browser· • Screening editor to create and modify screening files. • Multiple provisioning sessions. • Online help
VSPT 2.1(4)	Cisco MGC Version 9.1(5)	BAMs Phase 2, BAMS Phase 3 (3.08)	• Support for multiple dial plans· • Provisioning Advice of Charge
VSPT 2.1(2.A)XA	Cisco MGC Version 9.1(3.4)XA	BAMs Phase 2, BAMS Phase 3 (3.08)	
VSPT 2.1(2.B)	Cisco MGC Version 9.1(3.0-9)T	BAMs Phase 2, BAMS Phase 3 (3.08)	
VSPT 2.0			• State Operations Utility • CAS signaling paths provisioning • Define trunk group profiles • Automatic Congestion Control provisioning • Define SIP signaling paths, SIP IP Links, and SIP trunk groups, and support for SIP routes • Support for multiple OPCs

Before installing the VSPT, you must verify the following:

- You have the appropriate release of the VSPT software. Visit the following Cisco web site to check the VSPT release number (a valid login to the VSPT Cisco web site is required):

  http://www.cisco.com > Software Center > Voice Software > Cisco Voice Services Provisioning Tool

- You have met the workstation hardware and software requirements. Refer to the Release Notes for your release of the Cisco MGC Version 9.3(2) and VSPT Version 2.3(2) software for a complete list of hardware requirements.
- You have established network connectivity between your workstation and the network elements.
- The network elements have the correct release of software installed.

Note Make sure you have root access on your Sun workstation.

Before you begin provisioning, you should have a list of components you want to provision, including the component names, IP addresses, properties, and other parameters. To create this list, use the instructions provided in the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm.

Tip . In addition, descriptions of the properties and values contained in the VSPT are included in Appendix A of the Cisco *Media Gateway Controller Software Version 9 Provisioning Guide* and in the following chapters. Review this information before you begin provisioning, and keep it available for reference during provisioning.

Prerequisites

To install the VSPT software, you must have at least the following:

- Sun Ultra 5 workstation (440MHz or faster) running the following software:
  - Sun Solaris 8 (April 2001 release recommended, latest Solaris 8 recommended patch set)
  - OpenWindows with the Common Desktop Environment (CDE)
- 8-bit video graphics card
- RAM: 128 MB
- Disk space:
  - 128 MB of free disk space in the installation directory
  - Approximately 4 MB of disk space in the /var partition is needed for each configuration session
- Swap space:
  - 128 MB of free swap space
- Cisco Media Gateway Controller Software Version 9.3(2)
- Swap space:
  - Minimum: 128 MB
  - Recommended: 256 MB or greater

Note The VSPT may also be installed on the same server as the Cisco MGC Node Manager client. It adds no additional hardware requirements in this configuration.

Preplanning

VSPT supports multiple solutions and offers the option to provision components for these solutions. Some components might not apply to your solution. Make sure you understand your solution component requirements. For information, refer to the provisioning guide for your solution.

Upgrading VSPT Software

If you have a previous release of the VSPT installed (such as VSPT Version 2.3(1) and you are performing a minor upgrade to VSPT Version 2.3(2)), the existing VSPT network configuration data is automatically moved to the new release. However, if a major earlier release is detected during the upgrade, (such as VSPT Version 1.6) and you are upgrading to VSPT Version 2, the existing VSPT network configuration data is not formatted for use with VSPT Version 2 and is not moved.

Two versions of the VSPT (such as VSPT 1.6 and 2) can exist on the same system; when you are upgrading, the older version is not automatically removed and must be manually uninstalled if you want to remove it. See the "Uninstalling the VSPT Software" section on page 1-7 for information.

Note Since the uninstall directory and files are removed during uninstall, **do not** change to the /opt/CSCO2X directory to run the uninstall script.

Saving Configuration Files

Before uninstalling the VSPT software, you can save current configuration data and administrative information so users and logins do not need to be recreated after the upgrade. Use the following procedure to save data and user information:

Step 1 Log in to the server as root.

Step 2 Create a temporary directory to hold the pertinent files.

Step 3 Use the following command to copy the password file, /var/opt/CSCOvspXX/etc/dartpwd.txt, to the temporary directory:

```
# cp -p /var/opt/CSCOvspXX/etc/dartpwd.txt /<temporary directory>/dartpwd.txt
```

Step 4 Change to the /var/opt/CSCOvspXX/data directory.

Step 5 Use the **tar** commend to archive all files in the directory.

Note The **tar** command preserves file permissions.

Step 6 Copy the archive file to the temporary directory.

After you upgrade the VSPT software, replace the /var/opt/CSCOvsp<New>/etc/dartpwd.txt file and the /var/opt/CSCOvsp<New>/data directory with the archive files you saved in the temporary directory.

Uninstalling the VSPT Software

The uninstallation process removes the /var/opt/<CSCOvspt2x> directory created by the installation process. If a directory contains a file that was not created during the installation process, it is not removed and is logged in the uninstall.log file. This might occur in the data and logs directories, and all application data stored in the /var/opt/<CSCOvsp2x> directory will not be deleted.

Use the following procedure to uninstall the software:

Step 1 Enter the following commands:

>su -root

>cd /

>/opt/CSCO2x/uninstall/uninstall

Step 2 Proceed with the VSPT software installation (see "Installing the VSPT Software" section on page 1-8).

Installing the VSPT Software

To install the software from the Cisco web site, follow this procedure:

Step 1 Verify that the requirements listed in the "Prerequisites" section on page 1-6 have been met.

Step 2 Become the root user by entering the following command:

```
>su - root
```

Step 3 Create the temporary directory /var/tmp/CSCOvsp23-install by entering the following command:

```
#mkdir -p /var/tmp/CSCOvsp23-install
```

Step 4 Open a web browser and browse to the following site:

http://www.cisco.com> Software Center > Network Management> Cisco Voice Services Provisioning Tool

Step 5 Select the desired release number.

Step 6 Download the software to the temporary directory /var/tmp/CSCOvsp23-install.

Step 7 Extract the software image using the following **tar** command:

```
#tar xvf <filename>.tar
```

Step 8 Run the setup program by entering the following command:

```
#./setup
```

Note As an alternative to Step 8, you can avoid the GUI and install the VSPT in TTY mode by entering the command **./setup -nodisplay** and following the onscreen prompts. An X server must be running, and the DISPLAY environment variable must be properly configured. Use one of the following commands to set the X display variable. Your choice of a command depends on which shell you are using.

In "csh" or "tcsh": **setenv DISPLAY <hostname>:0**
In "sh" or "ksh": **DISPLAY=<hostname>:0;export $DISPLAY**

Step 9 Follow the onscreen prompts.

Note If a previous version of the Cisco VSPT is installed on the workstation, you may be asked if you want to uninstall it, depending on the version to which you are upgrading. If you answer no, the installation is aborted.

Step 10 Remove the /var/tmp/CSCOvsp23-install directory when the installation is complete by entering the following command:

```
#rm -rf /var/tmp/CSCOvsp23-install
```

Step 11 Change to the installation directory, /opt/CSCOvsp23, by entering the following command:

```
#cd /opt/CSCOvspt23
```

Step 12 Enter the following command to start the VSPT:

```
#./vspt
```

Installation of the VSPT software is now complete. Table 1-2 defines the default VSPT directories and files. If you have questions or need assistance, see the Obtaining Technical Assistance section.

.

Table 1-2 VSPT Installation Directories and Files

/opt/CSCOvsp23	
vspt	VSPT application script
classes/	Class and property files
/docs	
/help	
images/	
jre/	Java Runtime Environment
/netscape	Netscape web browser files
uninstall/	Uninstall script directory
/utils	
version	VSPT version
/var/opt/CSCOvsp23 (home directory)	
data/	Configuration files
logs/	Log files
/etc	

Note The directories and files listed in Table 1-2 are for the most recent version of VSPT. Your directory structure may be different if you are using an older version or VSPT.

VSPT Basics

This section describes the requirements for entering provisioning data using the VSPT.

VSPT Field Definitions

Table 1-3 lists VSPT field names, which correspond to system components in the Cisco MGC, and their definitions. For more information about system components, refer to the Cisco *Media Gateway Controller Software Version 9 Provisioning Guide.*

.

Table 1-3 Field Name Definitions

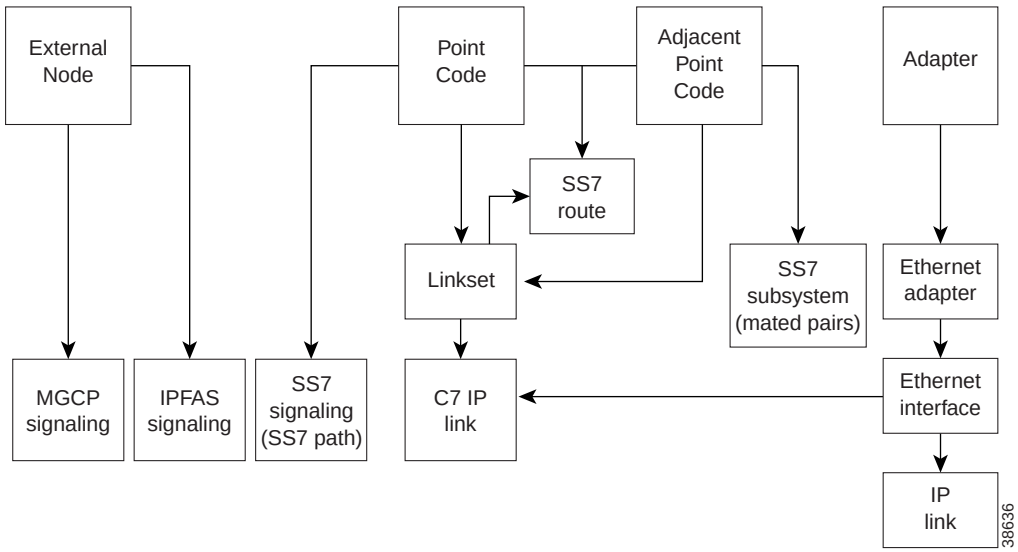
Field Name	Definition
MGC Host	An origination point code (OPC) is the address of the Cisco MGC you are provisioning.
Interfaces (Cards)	Ethernet hardware cards and virtual interfaces (connections) for the Ethernet cards in the Cisco MGC host.
Adjacent Point Code	An adjacent point code (APC) is the address of an STP[1] that sends and receives signaling messages to and from the Cisco MGC.
LinkSet	A LinkSet is a set of links from the MGC to an endpoint, such as an adjacent STP.
C7 IP Link	A link to the SS7 network (for example, an SSP[2] or STP) from the Cisco MGC through a Cisco SLT.
Mated Pair (SS7 Subsystem)	A logical connection between a pair of mated STPs that allows the Cisco MGC to route through either STP to an endpoint.
Point Code	A destination point codes (DPC) is the address of an endpoint, such as a PSTN[3] switch that carries the bearer traffic.
SS7 Path (SS7 Signaling Service)	An SS7 path is a connection between the Cisco MGC and a specified point code.
SS7 Route	An SS7 route is a route for each signaling path from the Cisco MGC to the PSTN switch through the linksets you have created to the STPs.
External Node	An external node is any object in the network that is connected to the Cisco MGC, for example, media gateways (Cisco MGWs) and associated BSCs[4].
MGCP[5] Signaling Service	An MGCP signaling service is a signaling service between the Cisco MGC and a media gateway.
IPFAS Signaling Service	An IPFAS signaling service is a signaling service (over IP) between the Cisco MGC and a media gateway.
IP Link for MGCP and IPFAS	An IP Link for MGCP and IPFAS is a link for the MGCP and IPFAS signaling services.

1. STP = signal transfer point.
2. SSP = service switching point.
3. PSTN = Public Switched Telephone Network.
4. BSC = Broadband Service Card.

5. MGCP = Media Gateway Control Protocol.

Figure 1-1 shows the relationship of VSPT field names and the corresponding system components.

Figure 1-1 Component Relationships



VSPT Data Entry Requirements

When you are entering data into the VSPT windows, follow standard MML conventions for names and descriptions. Each MML name must have the following characteristics:

- A maximum of 20 alphanumeric characters, including dashes
- No space, underscore, or special characters
- Must start with an alphabetic character

For example: **`name="dpc1"`**

MML descriptions can be as many as 128 characters and can include spaces and symbols. You should use a description that helps to identify the component or link that you are provisioning. For example, for an SS7 route, which indicates the signaling path from the Cisco MGC to a switch through a linkset, you could create a description “SS7 Route to PSTN Switch A through Linkset 1.” For more information about MML, refer to the Cisco *Media Gateway Controller Software Version 9 MML Command Reference Guide*.

The VSPT GUI enables you to step through the provisioning process in a logical sequence. The sequence of steps is described in the Cisco *Media Gateway Controller Software Version 9 Provisioning Guide*.

Starting the VSPT

Note See the Cisco *Media Gateway Controller Software Version 9 Installation and Configuration Guide* for information on setting up user privileges and access rights.

Perform the following steps to start the VSPT:

Step 1 Log in to the VSPT server or access it from a machine with X window capability.

Step 2 In a terminal window, change to the default directory:

>cd /opt/CSCOvsp23

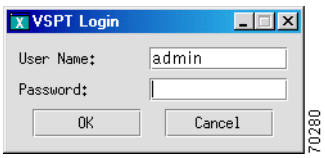
Navigate to the appropriate directory if you installed the VSPT in a different location.

Step 3 **Enter the following command to start the VSPT:**

>./vspt

The system opens X windows, and the login screen shown in Figure 1-2 appears.

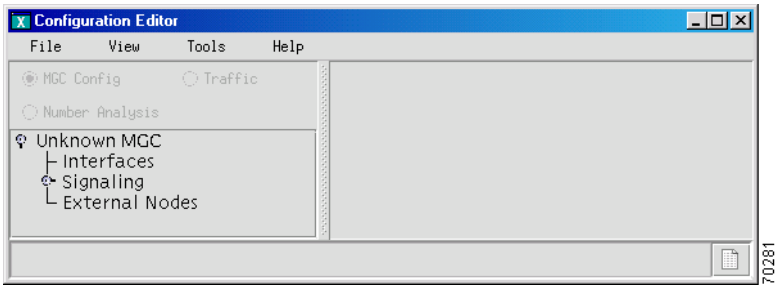
Figure 1-2 Login Screen



Step 4 Enter your user name and password, and click **OK**.

The default user uame is admin, and the password is also admin. The Welcome screen is displayed briefly during the login process, and the main window appears (see Figure 1-3).

Figure 1-3 Main VSPT Window



Using the VSPT

This section describes the VSPT menus and buttons and provides directions for using the tool functions.

Menu Bar

The VSPT provides a menu bar that contains the following selections:

- File
- View
- Tools
- Help

Table 1-4 lists the File menu choices.

Table 1-4 File Menu Command Choices

Command	Description
New	Begin a new configuration session
Open	Open an existing configuration
Import	Import an existing configuration from an MGC, or import trunk group, trunk, routing, or dial plan files into the VSPT
Export	Export configuration files from the VSPT to a specified directory
Save	Save the current configuration: • **As Working:** Use to save a new configuration, either a configuration imported from the Cisco PGW or a configuration created in VSPT and to save modifications to an existing configuration, overwriting the last version. The configuration is saved in the /var/opt/CSCOvsp23/data/mgc/mistral directory. • **As Snapshot:** Use to save modifications to an existing configuration under a new name in the ARCHIVE directory. The snapshot configuration is saved in /var/opt/CSCOvsp23/data/mgc/mistral/<*configname*>/ARCHIVE • **As New Config:** Use to save a modified configuration under a new name, leaving the original intact.
Exit	Stop any open provisioning sessions and close the VSPT

Table 1-5 lists the View menu command choices.

Table 1-5 View Menu Command Choices

Command	Description
MML	Show generated MML for the current configuration
MGW Commands	Show generated Cisco MGX 8850 commands for the current configuration
Trunk Group File	Show generated trunk group file for the current configuration
Trunk File	Show generated trunk file for the current configuration

Table 1-6 lists the Tools menu command choices.

Table 1-6 Tools Menu Command Choices

Command	Description
Integrity Check	Check your configuration for inconsistencies and missing information
Deploy	Move the configuration to one or more target hosts and Cisco media gateways (MGWs)
Telnet	Open a telnet session
MGC Viewer	View, activate, remove, and synchronize configurations on the MGC.
MGX 8850 Wizard	View and configure MGX 8850 hosts. Refer to the *Version* for information about the MGX 8850 Wizard.
BAMS Config	View and configure a Billing and Measurements Server (BAMS). Refer to the Billing and Measurements Server User's Guide for your release of BAMS for information about BAMS configuration.
State Operation	View and configure the state of MGC components.
Screening Editor	View and configure screening number provisioning. Refer to the Cisco MGC Software Version 9 Dial Plan Guide for information about using the VSPT Screening Editor.
Audit	Audit bearer trunk information between the Cisco MGC and the BAMS.
Backup and Restore	Create, modify, or delete scheduled backups or restores on the MGC Host, CAT2900XL, CAT5500, CAT6509, SLT2600, BAMS P2, BAMS P3, and HSI adjunct server components.
Make a Seed File	Use an existing configuration to create a text file that can be used by the Cisco MGC Node Manager (CMNM) to deploy or discover devices in the network.

Table 1-7 lists the Help menu command choices.

Table 1-7 Help Menu Command Choices

Command	Description
About VSPT	View information about the current version of VSPT, including the software release number
VSPT User's Menu	View online help information

Buttons

The VSPT provides buttons and explorer trees that you can use to move through the system. Click these buttons to add or change network components. The VSPT contains the following buttons:

- MGC Config—Add components and provision component properties
- Traffic—Create customer-specific files, including trunk groups, trunks, and routing
- Number Analysis—Provision dial plans

The left pane of the main VSPT screen displays selectable components. The right pane of the screen displays data entry fields. Click a component to select it. To see all of the subcomponents for the component you select, click the icon next to the component name to expand the component list.

Note For instructions for using the VSPT to provision components, component properties, trunk groups, trunks, and routing, refer to the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide*. For instructions for using the VSPT to provision a dial plan, refer to the *Cisco Media Gateway Controller Software Version 9 Dial Plan Guide.*

The Help menu selections display an html version of this guide and information about the current software release number.

Defining Users and Permissions

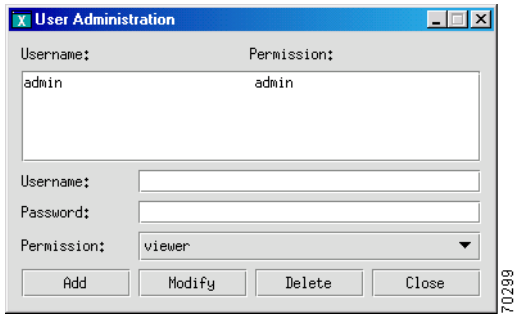
After you install the VSPT, you define users and their respective permissions using the following procedure:

Step 1 Log in to the server as root and start VSPT 2.

Step 2 Click **Tools > User Admin** on the menu bar.

The screen in Figure 1-4 appears.

Figure 1-4 VSPT User Administration



Step 3 Add, modify, or delete user definitions as follows:

- To add a user, enter a user name and password, click **Permission**, select the permission level, and click **Add**.
- To modify a user, select the user name, change the password or permission level, and click **Modify**.
- To delete a user, select the user name, and click **Delete**.

Exiting the VSPT

You can exit the VSPT at any time by performing one of these actions:

- Click **File > Exit**. Click **OK** at the resulting prompt.
- Click the close box in the upper right of the VSPT screen. Click **OK** at the prompt.

CHAPTER 2

Provisioning with VSPT Wizards

Wizards are utilities included in the Cisco Voice Services Provisioning Tool (VSPT) that can help you rapidly create a new MGC configuration deployment by providing a graphical user interface (GUI) for provisioning specific solutions. A wizard leads you through the steps of provisioning the Cisco MGC and the external components of the solution you choose.

Note A *solution* is a logical combination of Cisco hardware and software configured to perform a specific network task.

This chapter provides an example of using a wizard to configure a solution. It includes the following sections:

Starting a New Provisioning Session

When you start a new provisioning session, you can choose to base the configuration on an existing configuration, by using the Import from MGC option, or you can use a configuration wizard, or you can perform the configuration manually.

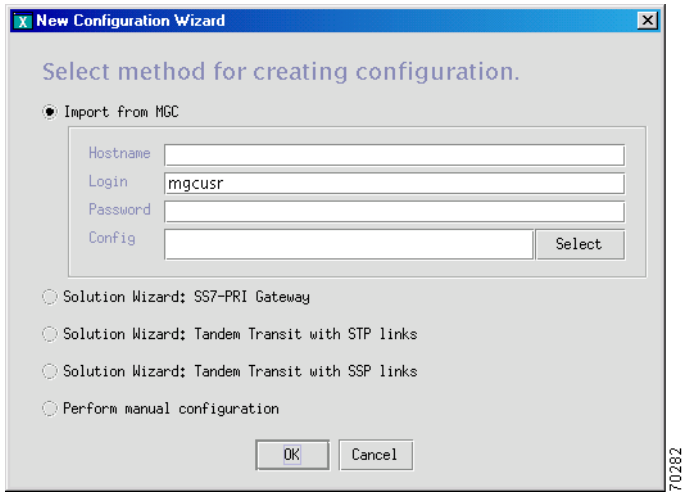
Use the following procedure to start a new VSPT provisioning session:

Step 1 Start and log in to the VSPT.

Step 2 Select **File > New** on the menu bar.

Step 3 Enter a name for the new configuration you will create, and click **OK**. The screen shown in Figure 2-1 appears.

Figure 2-1 Select Method for Creating Configuration

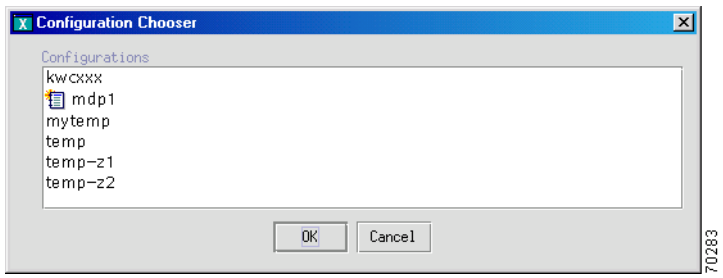


Step 4 If you want to import an existing configuration, click the **Import from MGC** radio button, and click **Select**; otherwise, click **Perform Manual Configuration**, or choose the solution wizard to use.

Note This imports the Cisco MGC configuration only; it does not import gateway configurations. To import configurations for gateways, after importing the MGC configuration, select each gateway and import its configuration.

If you import an existing configuration, the screen shown in Figure 2-2 appears.

Figure 2-2 Select Configuration



Step 5 Select the configuration to import, and click **OK**. The configuration will be imported from your Cisco MGC.

Overview of the VSPT Wizards

The VSPT includes the following solution provisioning wizards:

- SS7-PRI Gateway—Offloads modem dial traffic from competitive local exchange carrier (CLEC) switches and either forwards the calls, using SS7, to the destination CLEC switches or translates the primary rate access calls to integrated services digital network (ISDN PRI) to terminate them on the network access server (NAS) gateways.
- Tandem Transit with STP Links—Offloads modem dial traffic from CLEC switches and forwards the calls to the IP network through a signal transfer point (STP).
- Tandem Transit with SSP Links—Offloads modem dial traffic from CLEC switches and forwards the calls to the Interne Protocol (IP) network with no intermediate connection to STPs.

Each wizard automatically guides you through the steps involved in creating a provisioning configuration for a specific solution. A VSPT wizard:

- Lets you create configuration files across multiple devices, for example, MGCs and Cisco MGX 8850s
- Helps you avoid common errors when you are provisioning devices independently (for example, ensuring that you correctly match D-channels for PRI)
- Lets you avoid having to repeatedly enter duplicate data
- Creates the MML files and the Cisco MGX 8850 command files you use to provision the Cisco MGC and MGX 8850

The example in this chapter uses a wizard to provision a tandem transit with STP links solution, but the process is similar for all VSPT wizards. Specific components and steps vary, depending on the solution wizard you are using; for a complete description of solution components, refer to the documentation for that solution.

When you finish the provisioning session, the VSPT wizard saves your configuration as the “active” configuration, and that configuration cannot be modified. To make changes, you must save the configuration with another name and deploy the new provisioning session to make it active.

The number of configurations you can store might be limited by available disk space. Consider deleting old or unwanted configurations, or save them to another machine, if you do not have sufficient disk space.

Note The provisioning procedures described in this chapter follow the sequence for provisioning a “typical” Cisco MGC described in the Cisco *Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm.

Using the Tandem Transit with STP Solution Wizard

The VSPT utility, Solution Wizard: Tandem Transit with STP Links, guides you step-by-step through the following procedures:

- Configuring the Cisco MGC, page 2-4
- Configuring SS7 Signaling Services, page 2-6
- Configuring Media Gateway Control Links, page 2-8

When you finish using the VSPT wizard, you must still configure the trunk groups, trunks, and routes. For more information, see the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm.

Tip Before you begin provisioning, compile information about the solution components, including their names, IP addresses, and properties. Worksheets designed for collecting this information are provided in the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm. Complete them before you begin provisioning, and refer to them during provisioning.

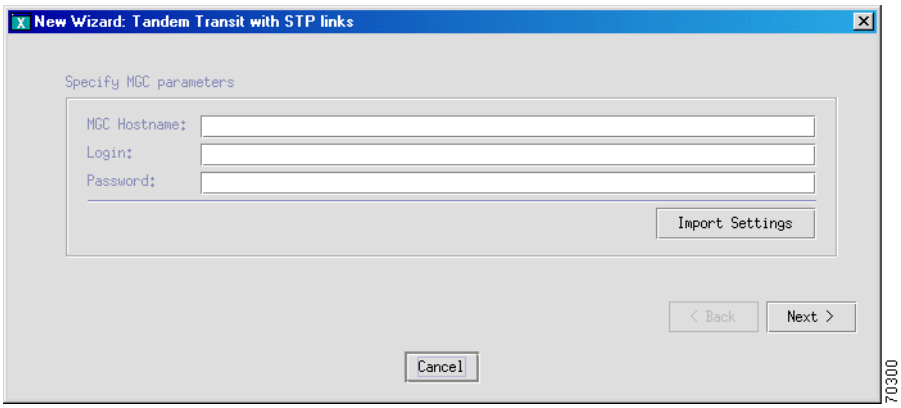
Configuring the Cisco MGC

Use the following procedure to provision a Cisco MGC using the Tandem Transit with STP solution wizard:

Step 1 Start a new provisioning session, and click **File > New** on the menu bar.

Step 2 Click the **Solution Wizard: Tandem Transit with STP** radio button, and click **OK**. A screen similar to the one in Figure 2-3 appears.

Figure 2-3 Specifying Cisco MGC Properties

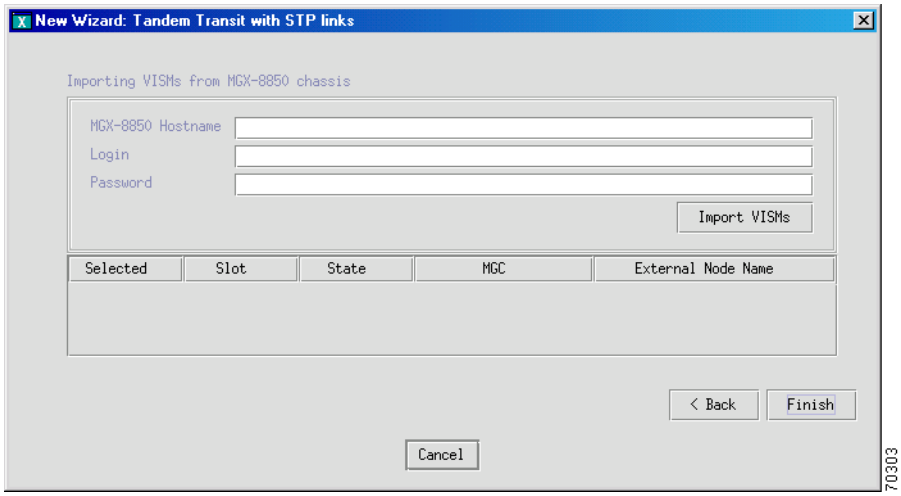


Step 3 Enter the MGC IP address, for example, 172.31.157.1, in the MGC Hostname field.

Step 4 Enter a login ID and a password.

Step 5 Click **Next**. A screen similar to the one in Figure 2-4 appears.

Figure 2-4 Specifying MGC IP Addresses



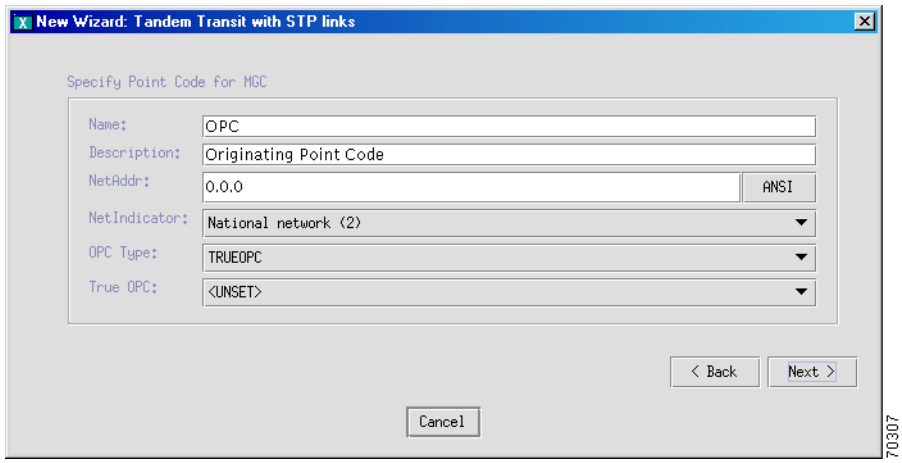
Step 6 Enter the network addresses of the MGC (IP_Addr1 and IP_Addr2) in dotted decimal notation, for example, 172.18.145.38.

Step 7 Click **Next**.

Step 8 If the Cisco MGC has a failover Cisco MGC, click the radio button next to **Has a failover MGC,** and enter the network addresses of the failover Cisco MGC (**IP_Addr1** and **IP_Addr2**). Use dotted decimal notation. If there is no failover Cisco MGC, click the radio button next to **Does not have a failover MGC**. The IP_Addr 1 and IP_Addr 2 fields are not valid and are grayed out when there is no failover MGC.

Step 9 Click **Next**. A screen similar to the one in Figure 2-5 appears, and SS7 signaling service provisioning begins.

Figure 2-5 Specifying a Point Code



Configuring SS7 Signaling Services

Use the following procedure to configure SS7 signaling services:

Step 1 Enter a name, for example, OPC, in the Name field on the screen shown in Figure 2-5.

Step 2 Enter a description of the OPC, for example, Originating Point Code.

Step 3 Enter the OPC network address (NetAddr) in dotted notation, for example, 1.1.2.

Step 4 From the NetIndicator drop-down menu, choose a network indicator menu. There are four options.

- International—Used if the node is an international gateway.
- Spare—In countries where multiple carriers share point codes, networks are differentiated by this indicator.
- National—Used if the node routes calls through the national network (default value).
- Reserved—For national use. Do not use.

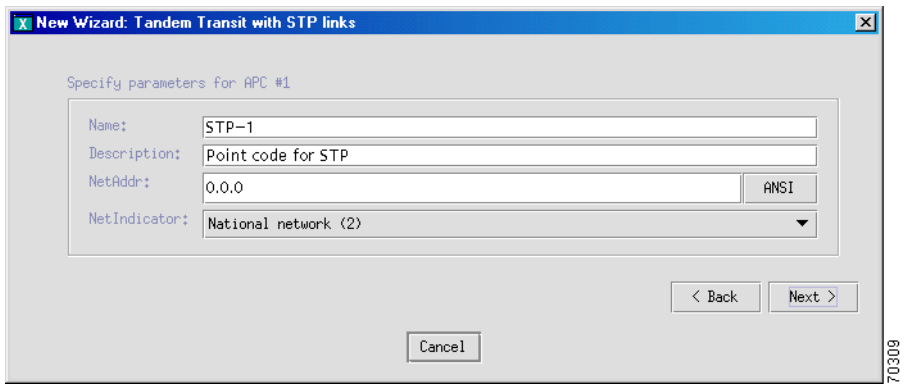
Step 5 From the OPC type indicator, choose either TRUEOPC or CAPOCP.

Step 6 Leave the True OPC indicator at <UNSET>.

Step 7 Click **Next**.

Step 8 Enter the number of adjacent point codes (APCs) to create, corresponding to the number of Cisco MGX 8850 switches to be provisioned. Click **Next**. screen similar to the one in Figure 2-6 appears.

Figure 2-6 Specifying Properties for Each APC



Step 9 Enter the APC name.

Step 10 Enter a description of the APC.

Step 11 Enter the network address (NetAddr) in dotted notation; for example, 2.2.1.

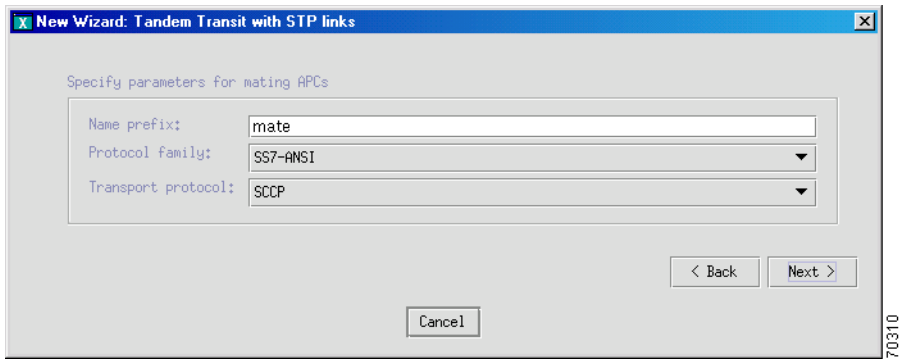
Step 12 From the NetIndicator drop-down menu, choose the network indicator:

- International—Used if the node is an international gateway.
- Spare—In countries where multiple carriers share point codes, networks are differentiated by this indicator.
- National—Used if the node routes calls through the national network (default value).
- Reserved—For national use. Do not use.

Step 13 Click **Next**. A series of screen similar to the one in Figure 2-6 appears sequentially for each APC you specified in Step 8.

Step 14 Repeat Step 9 through Step 13 for each APC screen. After you have configured properties for each APC you specified in Step 8, a screen similar to the one shown in Figure 2-7 appears.

Figure 2-7 Specifying Properties for Mating APCs



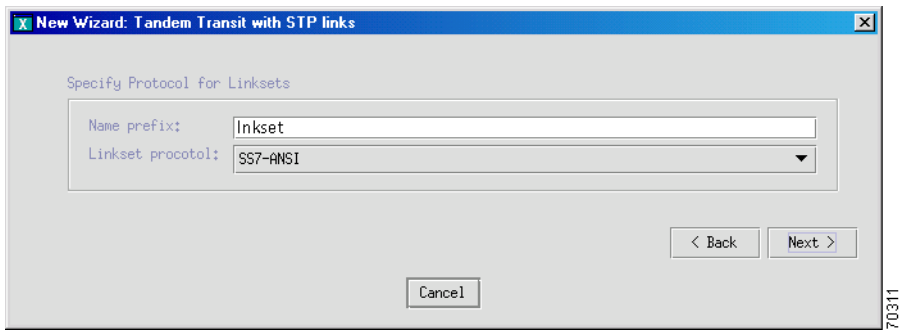
Step 15 Enter the name prefix for the subsystem (default is mate).

Step 16 Choose the protocol family.

Step 17 Choose the transport protocol.

Step 18 Click **Next**. A screen similar to the one in Figure 2-8 appears.

Figure 2-8 Specifying a Protocol for Linksets

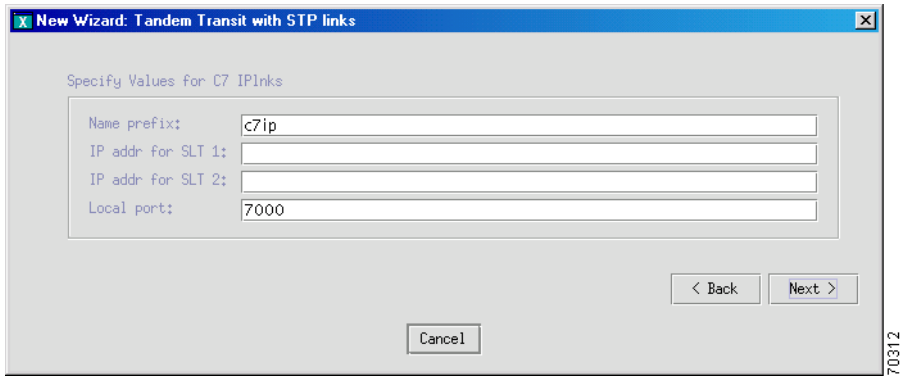


Step 19 Enter the name prefix for the linkset (default is lnkset).

Step 20 From the Linkset protocol drop-down menu, choose the linkset protocol for the linkset you are configuring.

Step 21 Click **Next**. A screen similar to the one in Figure 2-9 appears.

Figure 2-9 Specifying Values for C7 IP lnks



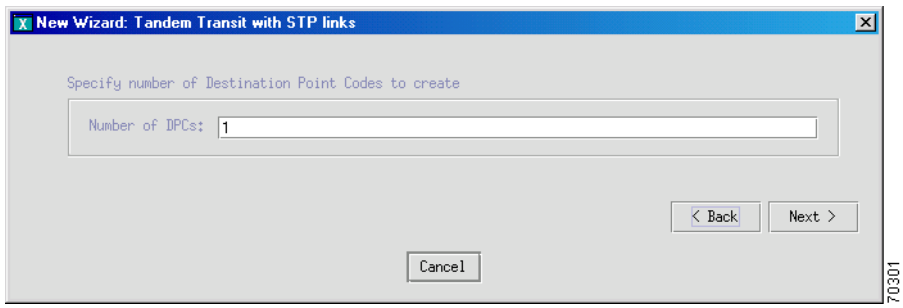
Step 22 Enter the name prefix (the default is c7ip).

Step 23 Enter the network addresses (IP addr for SLT 1 and IP addr for SLT 2) in dotted notation; for example, **172.16.145.38** and **172.16.145.40**.

Step 24 Enter the local port on the SLT.

Step 25 Click **Next**. A screen similar to the one in Figure 2-10 appears, and you can begin configuring media gateway control links.

Figure 2-10 Specifying the Number of Destination Point Codes



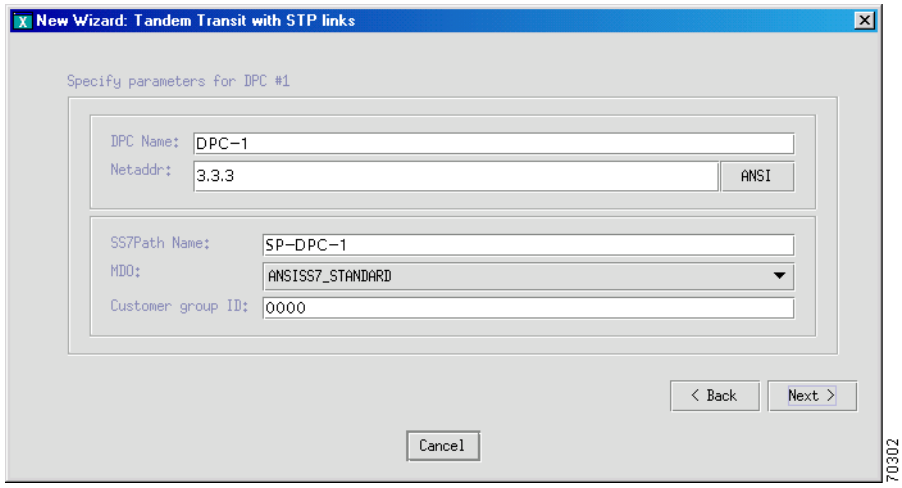
Configuring Media Gateway Control Links

Use the following procedure to configure MGC links for this solution.

Step 1 Enter the number of DPCs to create, in the window shown in Figure 2-10.

Step 2 Click **Next**. A screen similar to the one in Figure 2-11 appears.

Figure 2-11 Specifying Properties for Each DPC



Step 3 Enter the DPC name.

Step 4 Enter the network address of the destination network element in dotted notation; for example, 172.16.145.38.

Step 5 Enter the SS7 path name.

Step 6 From the MDO drop-down menu, choose the protocol for this signaling service, for example, ANSISS7_STANDARD.

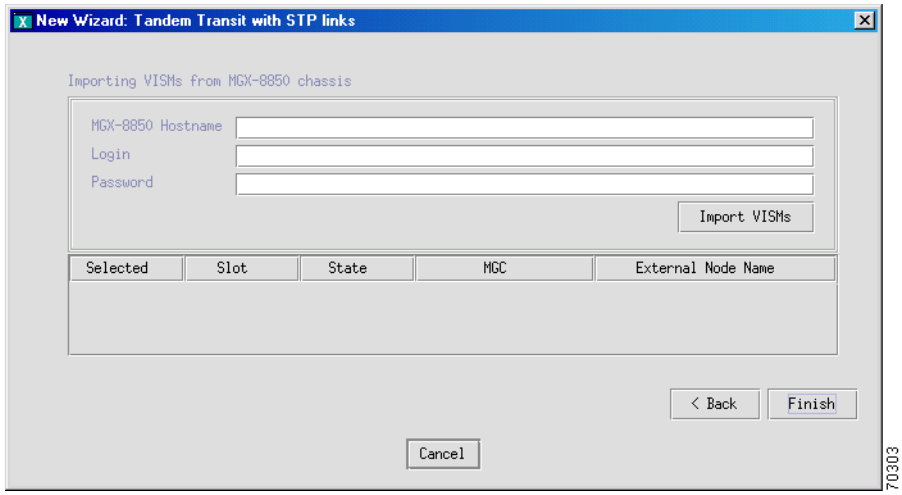
Step 7 Enter the Customer group ID.

Step 8 Click **Next**.

Step 9 Enter the SS7 route name prefix, and click **Next**.

Step 10 A screen similar to the one in Figure 2-12 appears.

Figure 2-12 Importing VISMs from the MGX 8850 Chassis



Step 11 Enter the name of the MGX 8850 host in which the VISM cards are installed.

Step 12 Enter the login ID for the MGX 8850 host.

Step 13 Enter the password.

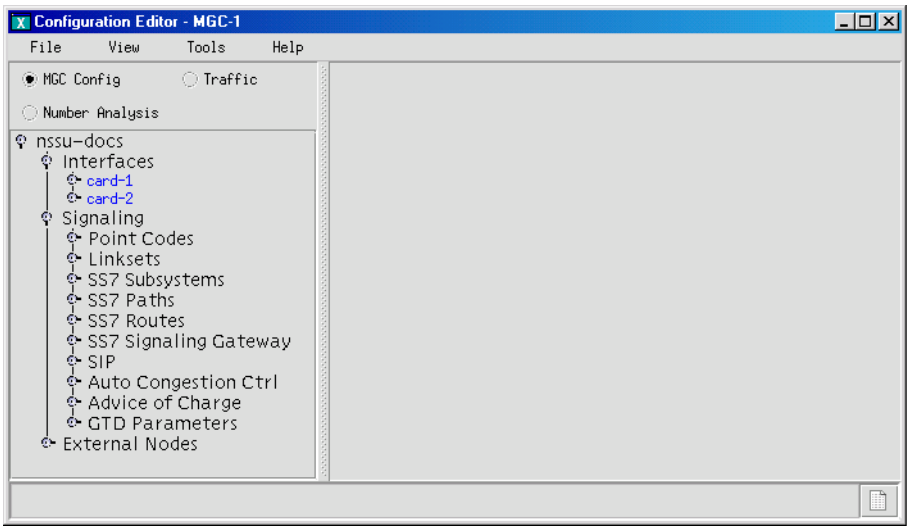
Step 14 Click **Import VISMs**. A list of the imported MGX 8850 switches appears in the lower portion of the screen.

Step 15 Click **Finish**. You can now provision trunk groups, trunks, and routes for this solution. Refer to the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm.

Provisioning Session Results

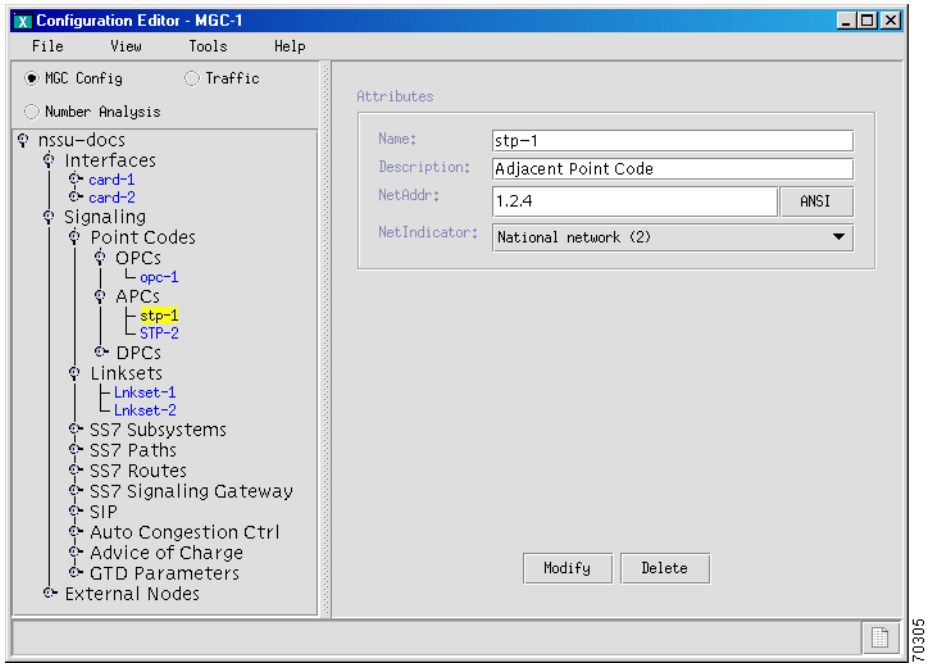
The results of the provisioning session you just completed are visible in the hierarchical tree in the left pane of the main VSPT screen, as shown in Figure 2-13.

Figure 2-13 Expanded Hierarchical Tree Showing Results of Provisioning Session



You can expand the branches to view individual components. To view the provisioning information for a particular system component, click on the component name. Information about the selected component is shown on the right-hand side of the screen (see Figure 2-14 for an example).

Figure 2-14 View a Selected Component Configuration



You cannot use the VSPT wizard to provision trunk groups, trunks, and routes. For more information about provisioning these components using the VSPT, see the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm.

Viewing Generated MML

To view the MML commands generated by the VSPT wizard, refer to the "View Generated MML Commands" section on page 3-4.

Voice Services Provisioning Tool Utilities

VSPT Version 2.3(2) provides many utilities, including tools to accomplish the following tasks:

Perform an Integrity Check

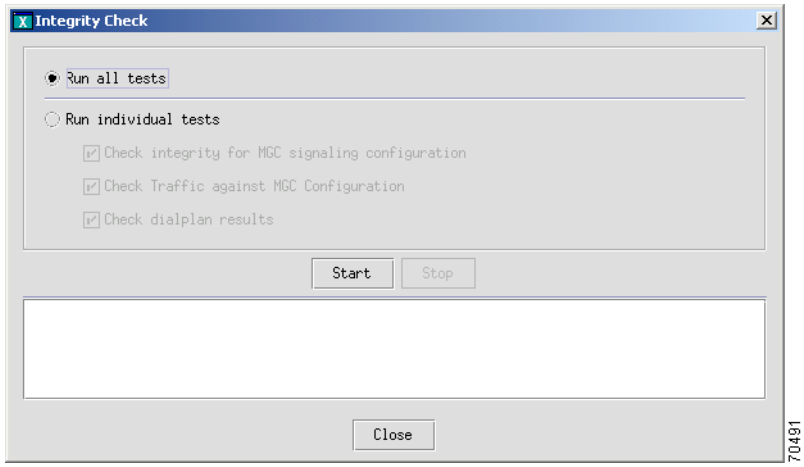
When provisioning is complete, you can perform an integrity check to prevent possible configuration errors. You can check one or all of the following:

- Integrity for the MGC signaling configuration
- Traffic against the MGC 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 eppears (Figure 3-1).

Figure 3-1 Integrity Check



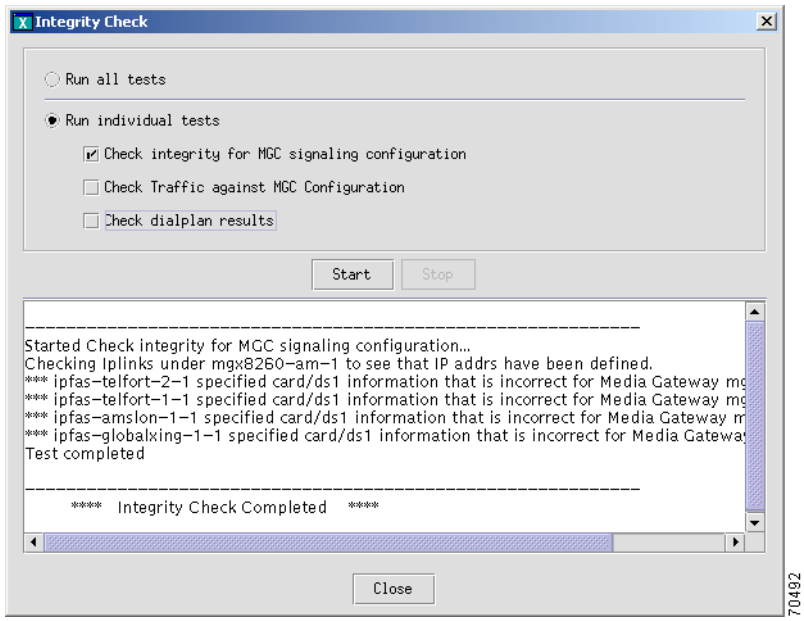
Step 2 Select the tests you want to run:

- Click **Run all tests** to run all three tests. See Integrity Check Dialog Box Options 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**. VSPT runs the selected tests.

When the tests finish, a screen similar to the one in Figure 3-2 appears showing the results of the integrity checks.

Figure 3-2 Integrity Check Results



Integrity Check Dialog Box Options

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

Integrity for MGC Signaling Configuration

When you perform an integrity check for MGC signaling configuration, the VSPT does the following:

- Checks that the hostname is specified for MGC
- Checks that login/passwords are specified for MGC
- Checks that MGC ipaddrs are specified
- Checks that if MGC failover is specified, the failover IPs are specified
- Checks that MGX hostname is specified
- Checks that MGX login/password is specified
- Checks the MGX IPaddrs
- For EXTNODES where the configuration refers to an MGX, checks PeerAddrs on IPLNK to ensure that they are addresses on the specified MGX
- For IPFAS IPLNK:
  - Ensures that SigSlot/SigPort is specified
  - Checks SigSlot/SigPort on MGX to ensure that the values are valid as specified on the MGX
  - Ensures that MGC ports and MGX ports match on the IPLNK
  - Checks that all IPLNK under a single IPFASPATH map to the same port number

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

Traffic Against MGC Configuration

When you perform an integrity check of traffic against the MGC configuration, the 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/trunk in the traffic information with a corresponding NFAS/FAS PRI.
- Checks that signaling services defined for trunk groups exist in the configuration

Dial Plan Results

The dial plan integrity check validates that the route names used within the dial plan route results actually exist on the traffic side.

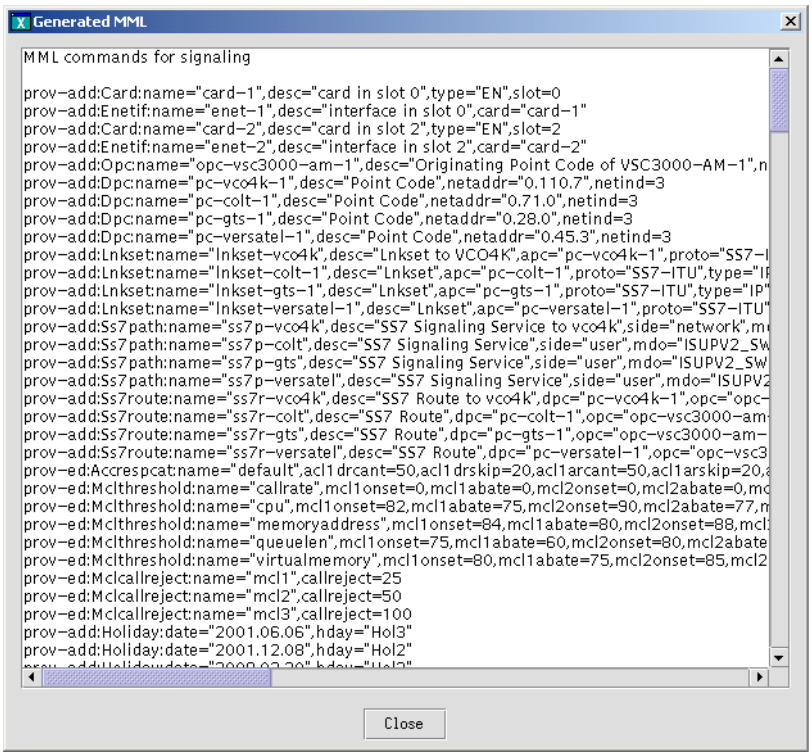
Background Information

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.

View Generated MML Commands

The VSPT automatically generates MML commands to provision your Cisco MGC and saves these commands in a file to be executed when you deploy the configuration. To view the MML commands generated from your VSPT provisioning session, click **View > MML** on the VSPT menu bar. A screen displaying generated MML, similar to the one shown in Figure 3-3, appears.

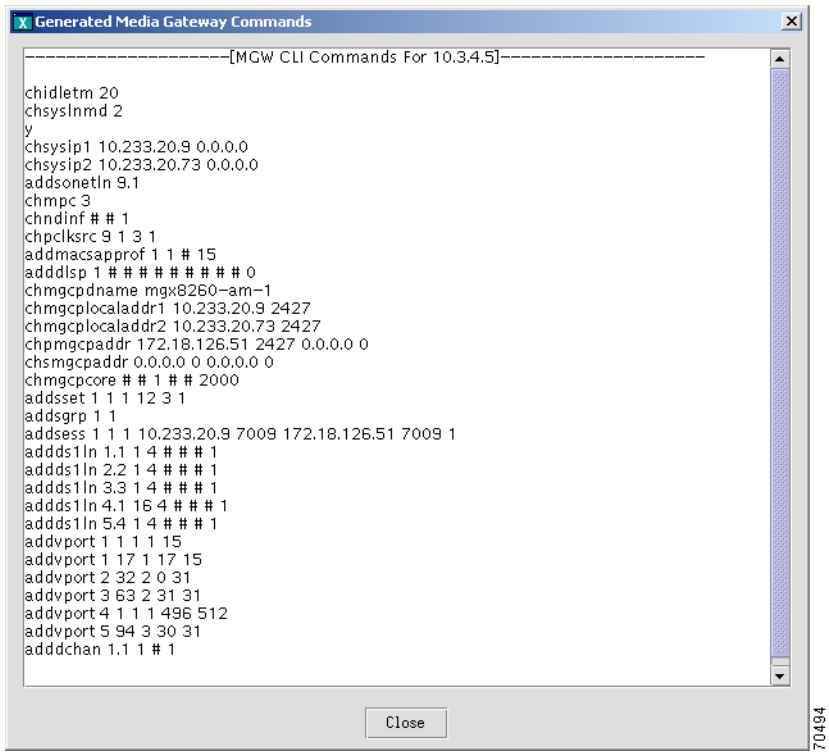
Figure 3-3 First Generated MML Screen



View Generated Cisco MGW Commands

To view the Cisco MGW commands generated from your provisioning session, click **View > MGW Commands** on the main VSPT menu bar. A screen with generated Cisco MGW commands, similar to that shown in Figure 3-4, appears.

Figure 3-4 Example of Generated Cisco MGW Commands



Deploy a Configuration

When you finish defining a configuration, you must deploy that configuration to the Cisco MGC. You can deploy to the Cisco MGC alone, to the Cisco MGC and one or more gateways, or to gateways only.

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

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

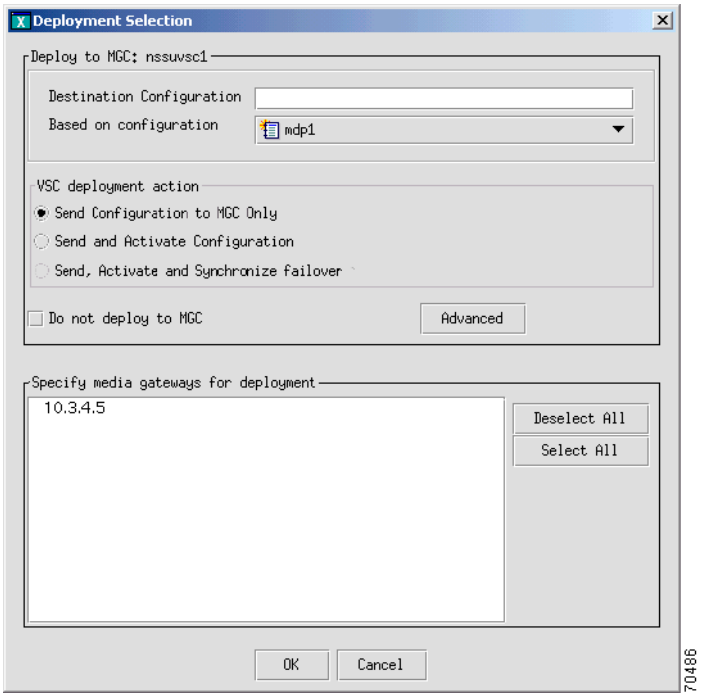
Deploying a New Configuration

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 VSPT menu bar (see Figure 1-3 on page 1-12). The screen shown in Figure 3-5 appears.

Figure 3-5 Deploying a Configuration



Step 2 Indicate how you want to deploy the configuration:

- To deploy to the Cisco MGC only, do one of the following:
  - If you want to send the configuration to the MGC but not activate it, click the button next to **Send Configuration to MGC Only**.
  - If you want to send the configuration to the MGC and activate it, click the button next to **Send and Activate Configuration**.
  - If you have a continuous-service configuration with two Cisco MGC 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.
- To deploy to the Cisco MGC and one or more selected gateways, select one of the above three options and in Step 4 also select one or more gateways from the list in **Specify media gateways for deployment**.
- To deploy to selected gateways only (and not the Cisco MGC): Check the box next to **Do not deploy to MGC** and in Step 4 select one or more gateways from the list in **Specify media gateways for deployment**.

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 3-8.

Step 3 Select a configuration in the **Based on configuration** drop-down list. This list displays all existing configurations on the selected MGC and the [LAST IMPORT] and [NEW] options.

- Last Import—The 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—VSPT imports the selected configuration from the Cisco MGC, compares the differences between that configuration and your current provisioning session, and deploys changes you have made.

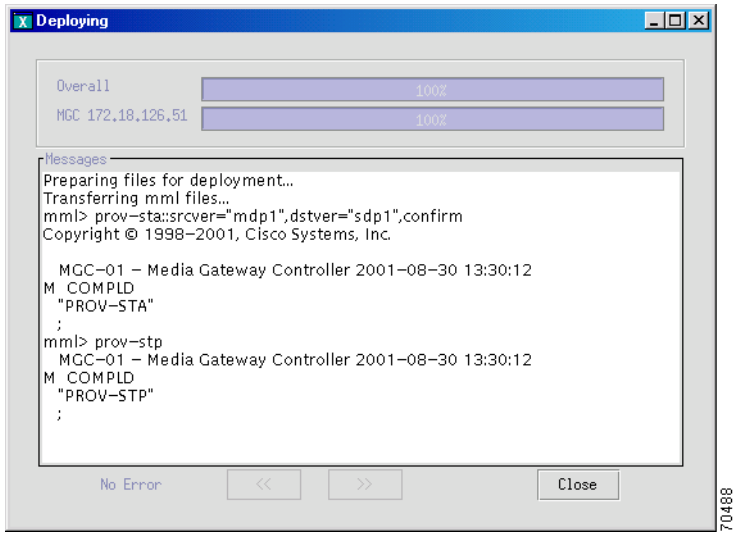
Note Since you are deploying a new configuration, make sure to choose the New option in the Based on configuration drop-down list.

Step 4 Select the gateways you want to deploy, if applicable.

Note To select multiple gateways, you can use standard selection methods: Shift+click to select a contiguous range, Ctrl+click to select or deselect noncontiguous gateways.

Step 5 Click **OK**. The screen shown in Figure 3-6 appears and displays the status as the current provisioning session is deployed.

Figure 3-6 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. Refer to Chapter 2, "Installing Cisco Media Gateway Controller Software," in the *Cisco Media Gateway Controller Software Version 9 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 MGG. 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.

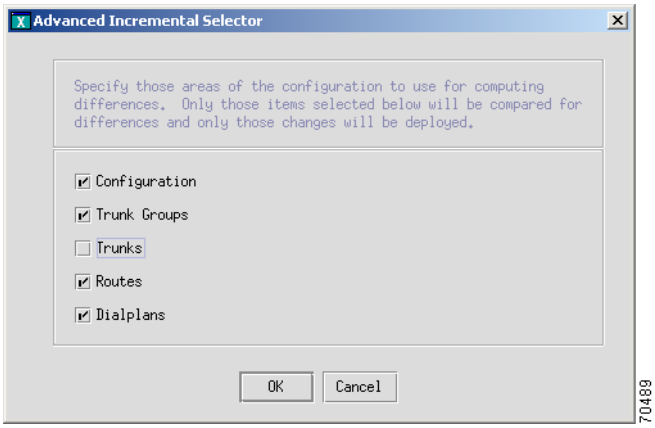
Note The Cisco MGC does not support some incremental deployment processes. If you have a problem with an incremental deployment, examine the MML commands to ensure that you have properly configured the desired components. Modify the component presenting the problem, or cancel the deployment and redeploy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

Use the following procedure to configure an incremental deployment:

Step 1 Follow Step 1 through Step 4 in the "Deploying a New Configuration" section on page 3-5.

Step 2 Click **Advanced** in the window shown in Figure 3-5. The screen shown in Figure 3-7 appears.

Figure 3-7 Incremental Deployment Component Selector



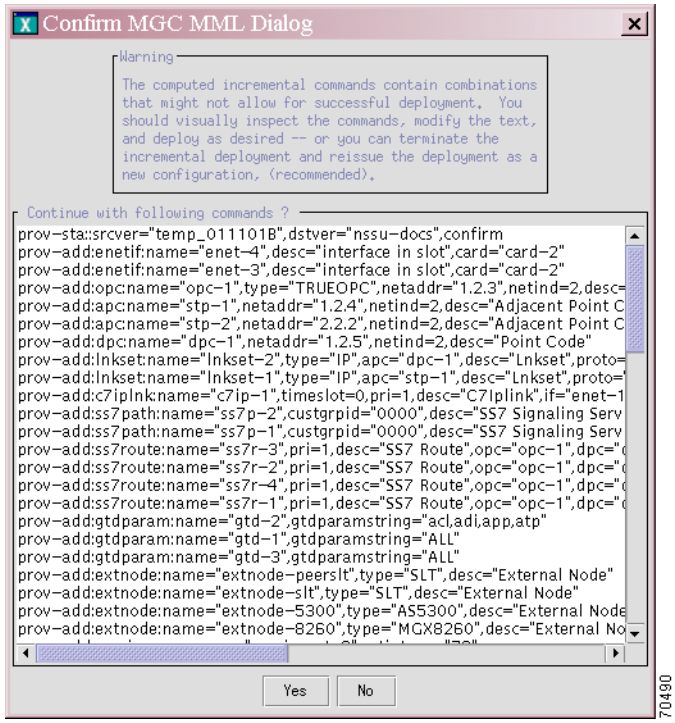
If you have only made configuration changes to one or more of the areas listed, you can direct the VSPT to compare only those areas with the current configuration, and your modifications can be deployed more quickly.

Note If you select areas in this window, make 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 6 in the "Deploying a New Configuration" section on page 3-5, and complete the procedure described there. When you click **OK**, a screen similar to the one displayed in Figure 3-8 appears.

Figure 3-8 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.

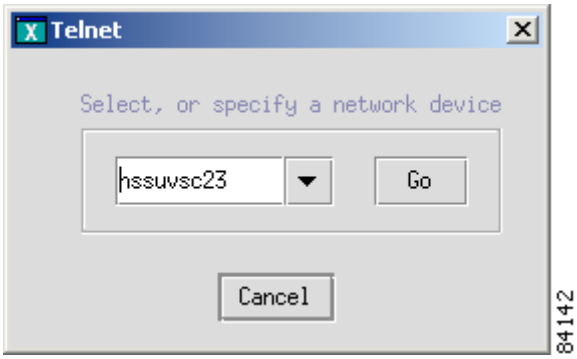
Telnet

Telnet is an application based on the Telnet protocol that allows you to connect to remote computers. VSPT Version 2 provides a utility to open a telnet session directly to a network device. Once you have established your telnet connection, you then log in to that device and execute commands remotely on the device through your telnet interface.

Use the following procedure to open a telnet session with a network device:

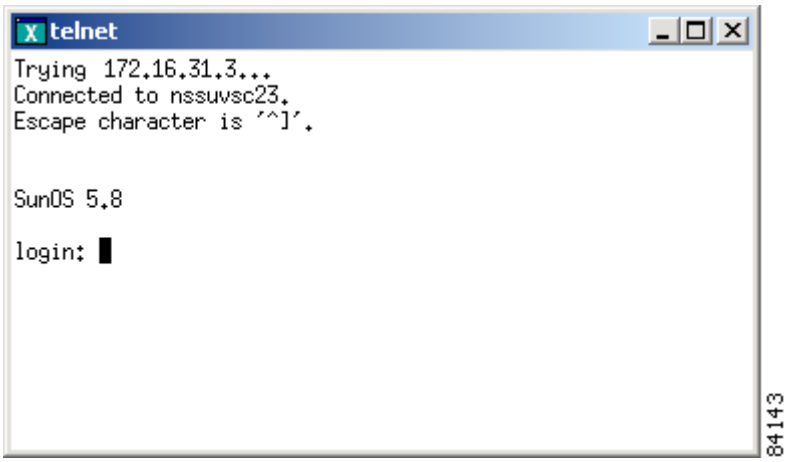
Step 1 Click **Tools** > **Telnet** on the main VSPT menu. The screen shown in Figure 3-9 appears.

Figure 3-9 Select Remote Network Device



Step 2 Select a device from the list, or enter the name or IP address of a device on your network, and click **Go**. A screen similar to the one shown in Figure 3-10 appears.

Figure 3-10 Log In to Remote Device

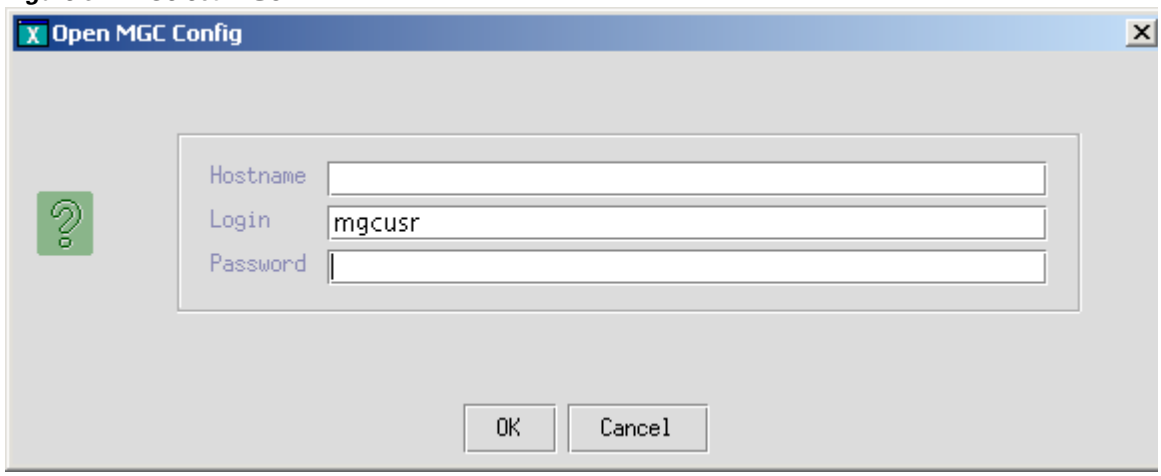


MGC Viewer

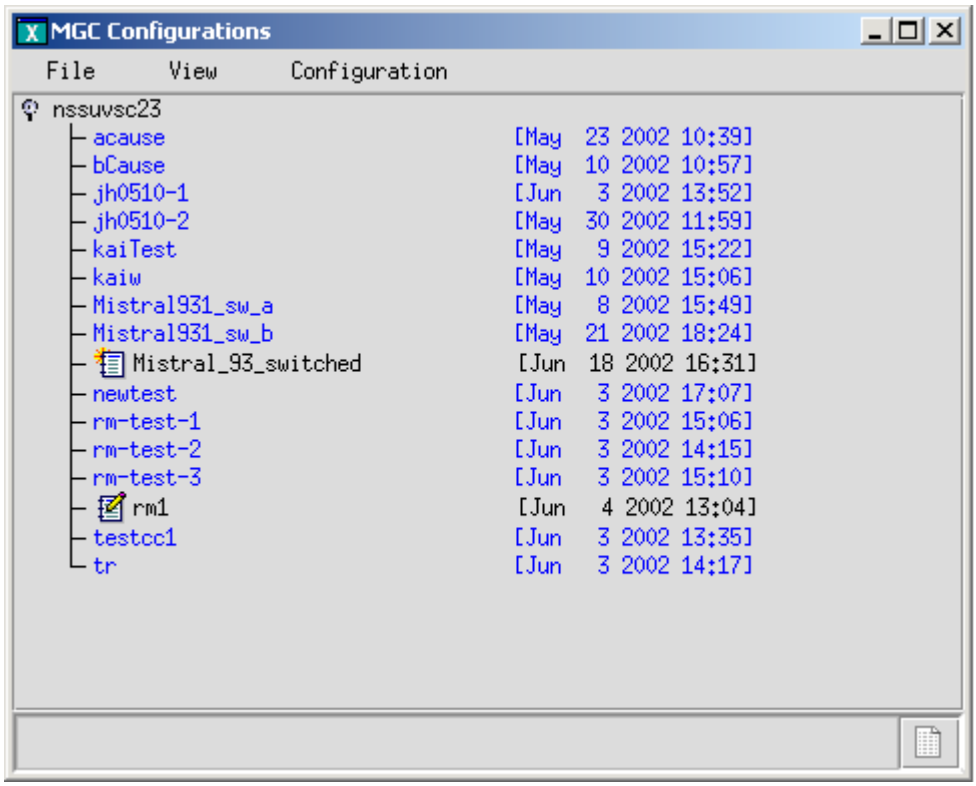
The MGC Viewer allows you to view, activate, remove, and synchronize configurations on the MGC. Use the following procedure to view configurations on a Cisco MGC:

Step 1 Click **Tools > MGC viewer** on the main 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 MGC



Step 2 Enter the host name of the MGC in the **Hostname** box, enter the MGC login and password, and click **OK**. A screen similar to the one in appears and lists all configurations on the specified MGC.



Step 3 Click **Configuration** on the MGC Viewer menu bar, and select one of the following actions:

Activate—

Synchronize—

Delete—

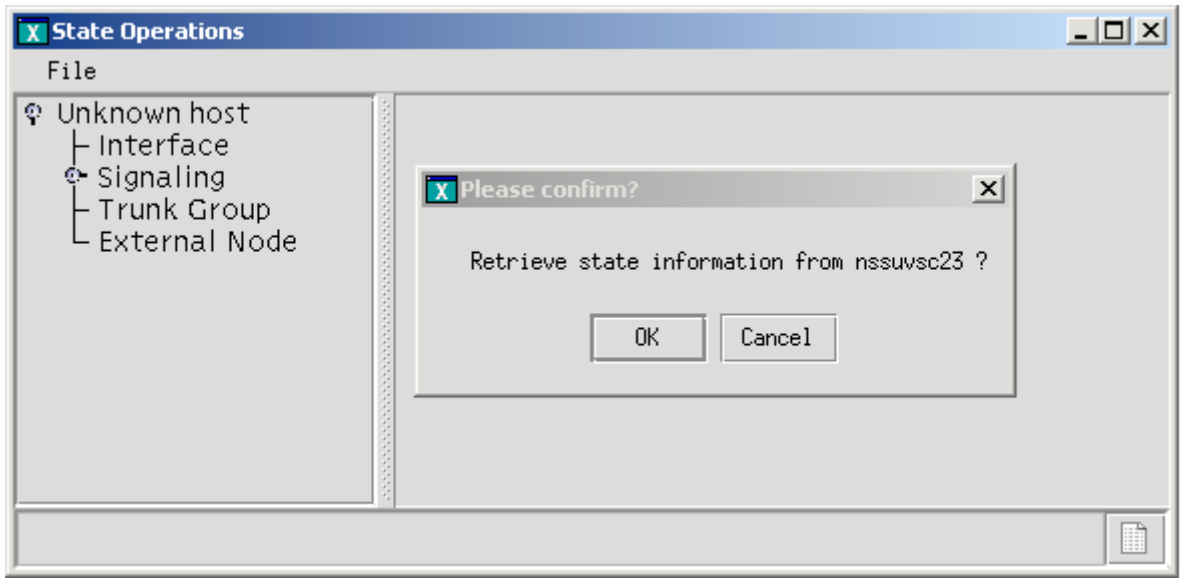
State Operation

The State Operation utility provides the ability to query the active configuration on the Cisco MGC for the state of managed objects. After a query, you can modify the state of an object and apply the update to the MGC.

Use the following procedure to query the state of managed objects on the Cisco MGC:

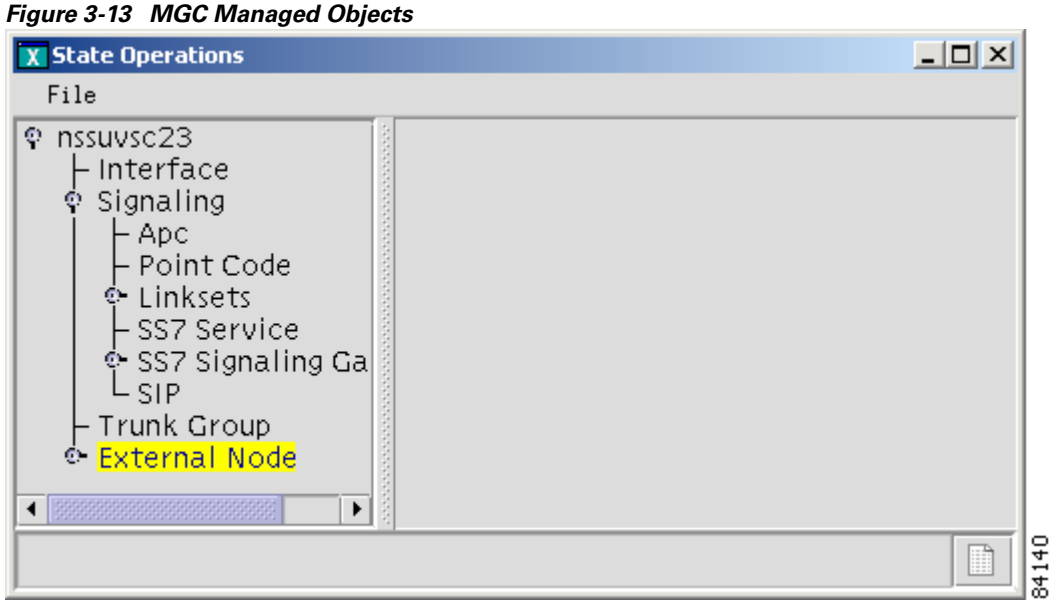
Step 1 Click **Tools > State Operation** on the main VSPT menu. A screen similar to the one in appears.

Figure 3-12 State Operation Dialog



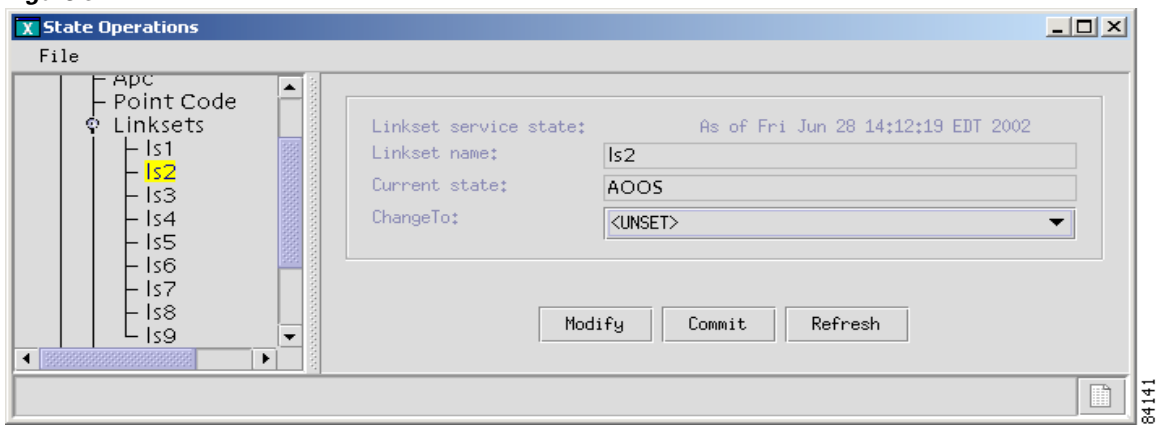
Step 2 Click OK. The VSPT queries the MGC and a screen similar to the one in appears.

Figure 3-13 MGC Managed Objects



Step 3 Expand the hierarcal tree in the left pane of the State Operations window to locate and highlight the object for which you want to know the state. In this example, we will display the state of linkset2. A window similar to the one in will appear and the right pane will display information about the state of the object you selected.

Figure 3-14



Step 4 From this window, you can modify the state by selecting the desired state in the **ChangeTo** box. Click **Modify** to change the state in this window, and click **Commit** to change the state on the Cisco MGC. To query the object again, click **Refresh**.

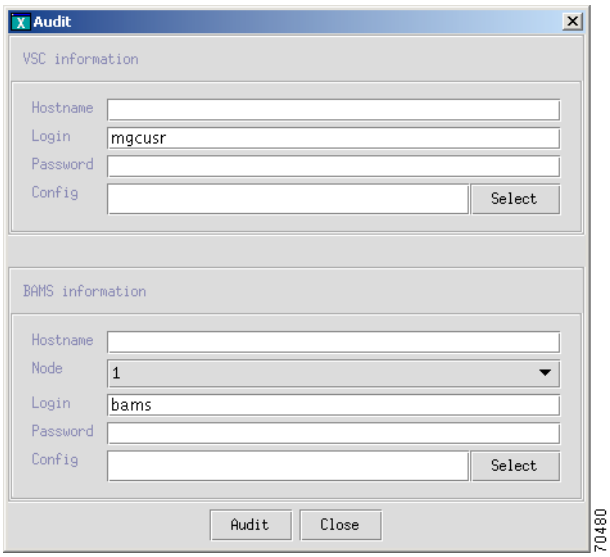
Perform an Audit

You can use an audit to ensure that both the Cisco MGC and a BAMS server supporting the MGC host have consistently configured signal paths. The audit involves examines signal path and bearer channel data on both servers, comparing the data, and reporting any differences.

Use the following procedure to perform an audit:

Step 1 Click **Tools** > **Audit** on the main VSPT menu. The screen shown in Figure 3-15 appears.

Figure 3-15 Perform an Audit



Step 1 Enter the MGC hostname, login, and password in the top pane of the window.

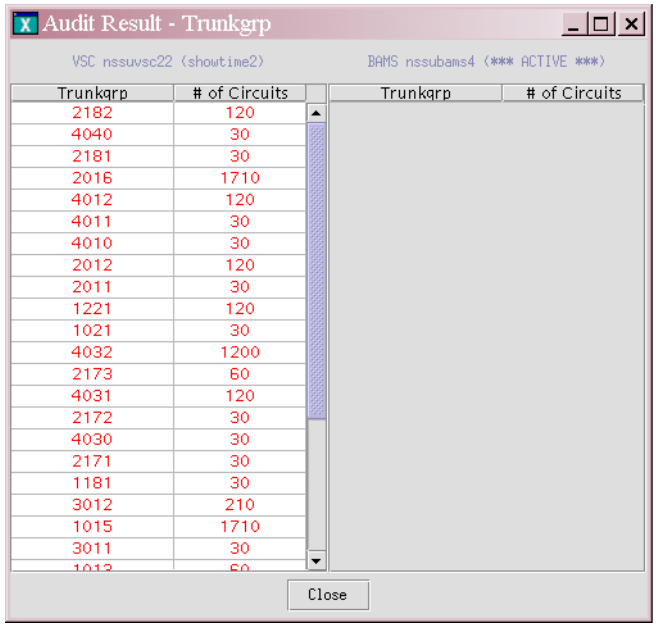
Step 2 To specify the configuration to audit, click **Select**, highlight the configuration to audit, and click **OK**.

Step 3 Enter the BAMS hostname, login, and password in the bottom pane of the window.

Step 4 To specify the configuration to audit, click **Select**, highlight the configuration to audit, and click **OK**.

Step 5 Click **Audit**. A screen similar to the one displayed in Figure 3-16 appears.

Figure 3-16 Audit Results



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

Back Up and Restore

The 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 back up and restore activities on any of the following devices if they have been configured for the MGC:

- MGC Host—Active configuration
- CAT5500—Configuration and image in Flash
- CAT2900XL—Running-config and image in Flash
- SLT2600—Running-config and image in Flash
- BAMS P2—Active configuration
- BAMS P3—Active configuration
- HSI Adjunct Server—Active configuration

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

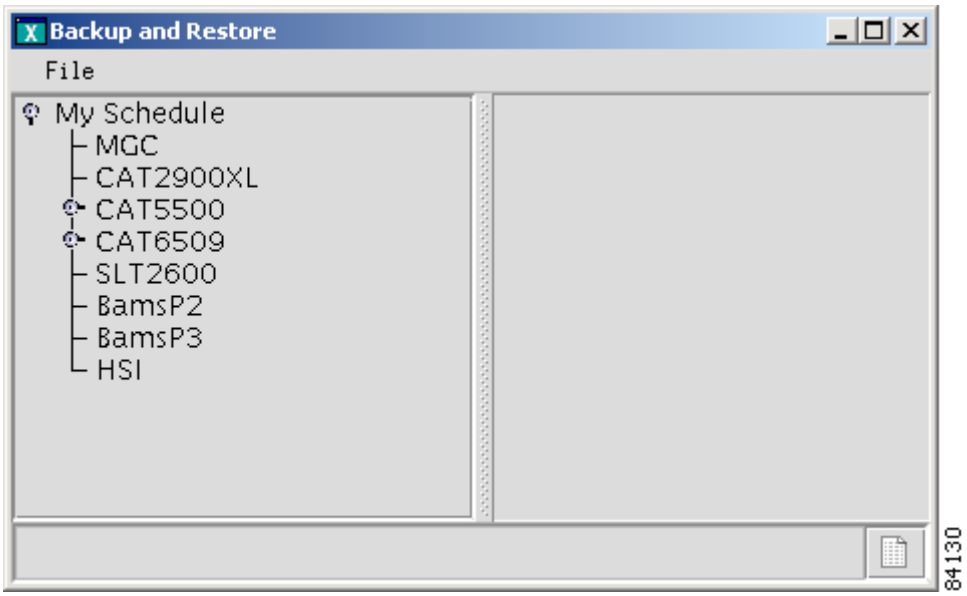
Note This tool operates in coordination with the MGC server operating system and can be performed by one UNIX login (specified during the installation process).

Schedule a Backup or Restore

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

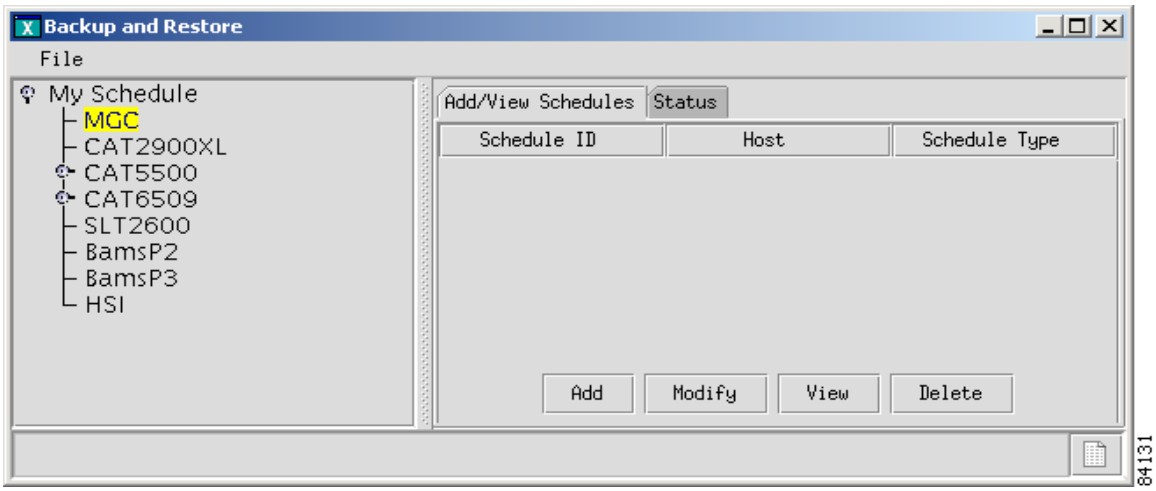
Step 1 Click **Tools** > **Backup and Restore** on the main VSPT menu bar. The screen shown in Figure 3-17 appears.

Figure 3-17 Backup and Restore Utility



Step 2 Click the component for which you want to schedule a backup. In the following example, the MGC component configuration is backed up. A screen similar to the one shown in Figure 3-18 appears when you click the MGC component.

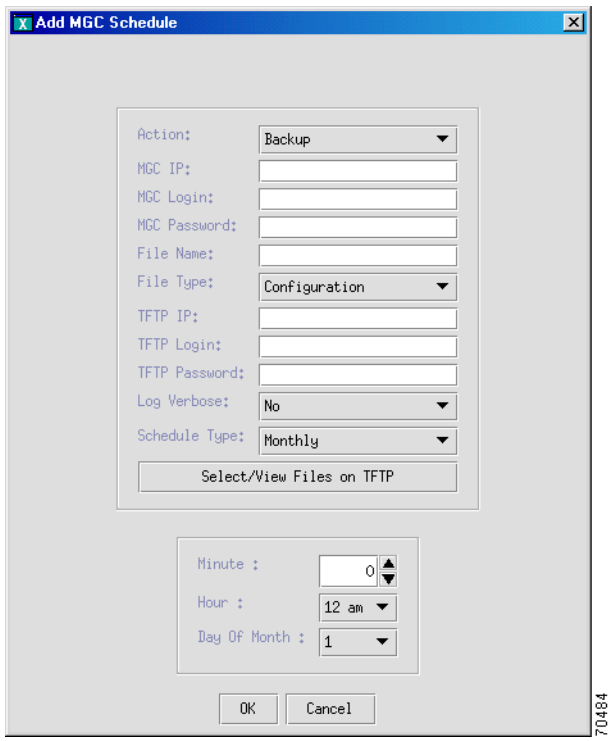
Figure 3-18 Scheduling a Backup or Restore



Note If you want to perform a restore, you must have a backup file already created and available on the MGC.

Step 3 Highlight the component you want to back up or restore in the left pane of the main backup and restore tool window, and click **Add**. A screen similar to the one shown in Figure 3-19 appears.

Figure 3-19 Schedule an Activity



Note The fields available on the Schedule an Activity screen vary according to the component selected.

Step 4 In the Activity field, select the action you want to perform. Choices include backup and restore.

Step 5 Enter the IP address of the Cisco MGC.

Step 6 Enter the MGC login and password.

Step 7 Enter a name for the backup file.

Step 8 In the File Type drop-down list, select one of the following:

- MGC System—Backs up data files for the active configuration, the Times Ten database, the XEconfigParm.dat file, and UNIX configuration files.
- MML Config—Backs up exported MML files for the active configuration on the MGC

Step 9 Enter the IP address of the TFTP server.

Step 10 Enter the TFTP login and password.

Step 11 Specify whether or not to use verbose log mode. Verbose mode records all commands issued by the VSPT and any system responses.

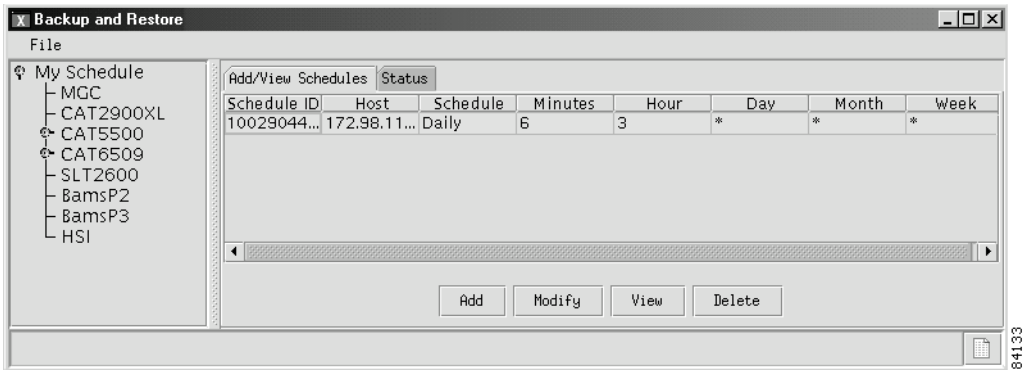
Step 12 Select the schedule type. Choices include:

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

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

Step 14 Click **OK.** The backup activity is scheduled, and a screen similar to the one shown in Figure 3-20 appears.

Figure 3-20 Display Activity Schedule



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 the VSPT.

Check Status of Backup or Restore

The 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 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.

Make a Seed File

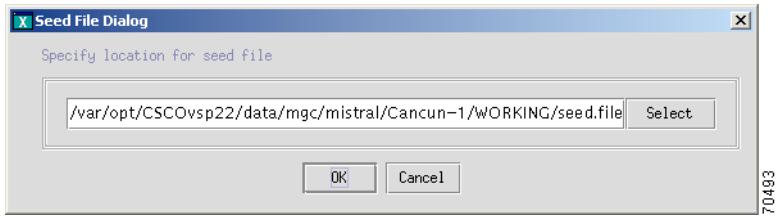
A *seed file* is a file created by the VSPT that contains the IP addresses of all of the devices in the Cisco MGC network, plus the relationship (hierarchy) between the devices. With this file, Cisco MNM can automatically deploy all the elements in the network that have been configured with the VSPT.

For information about deploying a seed file, refer to the *Cisco MNM Version 2.3(2) User's Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/cmnm232/index.htm

Use the following procedure to make a seed file:

Step 1 Click **Tools > Make a Seed File** on the main VSPT menu. The screen shown in Figure 3-21 appears:

Figure 3-21 Make a Seed File



Step 2 Enter the path and a filename, or click **Select** and specify a directory for the file. You can also choose the default, which is /var/opt/<basedir>/data/mgc/mistral/<configuration name>/WORKING/seed.file.

Step 3 Click **OK**. A seed file is created in the directory you specified.

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