



Cisco Voice Services Provisioning Tool Release 1.6 User's Guide

November 30, 2001

Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

<http://www.cisco.com>

Tel: 408 526-4000

800 553-NETS (6387)

Fax: 408 526-4100

Text Part Number: OL-1349-01

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

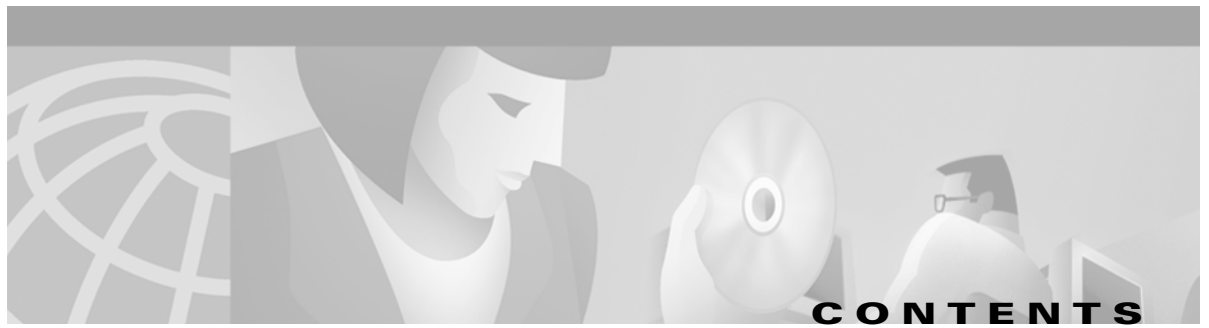
NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

AccessPath, AtmDirector, Browse with Me, CCIP, CCSI, CD-PAC, *CiscoLink*, the Cisco *Powered* Network logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, Fast Step, Follow Me Browsing, FormShare, FrameShare, GigaStack, IGX, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, the iQ Logo, iQ Net Readiness Scorecard, MGX, the Networkers logo, *Packet*, RateMUX, ScriptBuilder, ScriptShare, SlideCast, SMARTnet, TransPath, Unity, Voice LAN, Wavelength Router, and WebViewer are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, Discover All That's Possible, and Empowering the Internet Generation, are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, the Cisco IOS logo, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastSwitch, IOS, IP/TV, LightStream, MICA, Network Registrar, PIX, Post-Routing, Pre-Routing, Registrar, StrataView Plus, Stratm, SwitchProbe, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0108R)

Cisco Voice Services Provisioning Tool Release 1.6 User's Guide
Copyright © 2001, Cisco Systems, Inc.
All rights reserved.



Preface vii

Document Objective	vii
Audience	viii
Document Organization	viii
Terminology	viii
Document Conventions	ix
Documentation Suite	x
Hardware Documentation	x
Software Installation and Configuration Documentation	x
Gateway Documentation	xi
Documentation Map	xi
Obtaining Documentation	xii
World Wide Web	xiii
Documentation CD-ROM	xiii
Ordering Documentation	xiii
Documentation Feedback	xiii
Obtaining Technical Assistance	xiv
Cisco.com	xiv
Technical Assistance Center	xiv
Contacting TAC by Using the Cisco TAC Website	xiv
Contacting TAC by Telephone	xv
Document Change History	xv

CHAPTER 1-1

Voice Services Provisioning Tool Overview 1-1

Provisioning Introduction	1-1
VSPT Introduction	1-2
Installing the VSPT	1-2
Prerequisites	1-3
Preplanning	1-4
Upgrading VSPT Software	1-4
Saving Configuration Files	1-4
Uninstalling the VSPT Software	1-4
Installing the VSPT Software	1-5
VSPT Basics	1-6

- VSPT Field Definitions 1-6
- VSPT Data Entry Requirements 1-8
- Starting the VSPT 1-8
- Using the VSPT 1-9
 - Menu Bar 1-9
 - Buttons 1-11
- Defining Users and Permissions 1-11
- Exiting the VSPT 1-12

CHAPTER 2-1

Provisioning with VSPT Wizards 2-1

- Starting a New Provisioning Session 2-1
- Overview of the VSPT Wizards 2-3
- Using the Tandem Transit Solution Wizard 2-4
 - Configuring the Cisco MGC 2-4
 - Configuring SS7 Signaling Services 2-6
 - Configuring Media Gateway Control Links 2-10
 - Provisioning Session Results 2-12
 - Viewing Generated MML 2-14

CHAPTER 3-1

Manual Provisioning with the VSPT 3-1

- Configuring the Cisco MGC 3-1
 - Adding an MGC Host 3-2
 - Adding Ethernet Cards and Interfaces 3-4
- Configuring SS7 Signaling Services 3-7
 - Adding Adjacent Point Codes 3-7
 - Add Point Codes 3-8
 - Add Destination Point Codes 3-9
 - Add Origination Point Code 3-10
 - Add Linksets 3-11
 - Adding and Changing Linkset Properties 3-13
 - Add C7 IP Links 3-14
 - Add SS7 Subsystems (Mated Pairs) 3-17
 - Configure SS7 Paths 3-20
 - Configure SS7 Routes 3-22
 - Configure FAS Signaling 3-24
 - Add or Modify FASPath properties 3-26
- Configuring Media Gateway Control Links 3-27
 - Adding External Nodes 3-28

- Configuring MGWs 3-29
 - Adding a Broadband or Narrowband Service Card 3-32
 - Adding an IPFAS Signaling Service 3-34
 - Adding IP Links for IPFAS 3-37
 - Changing IPFAS Signaling Service Properties 3-40
 - Adding an MGCP Signaling Service 3-41
 - Adding and Changing MGCP Signaling Service Properties 3-43
 - Add an IP Link for MGCP 3-44
- Configuring Bearer Traffic 3-46
 - Importing Trunk Groups and Trunks 3-47
 - Add a Trunk Group 3-48
 - Adding Trunks 3-51
 - Deleting Trunks from a Trunk Group 3-53
 - Adding Route Groups and Routes 3-54
 - Hierarchical View of Provisioned Components 3-56
- Performing an Integrity Check 3-57
 - Checking Integrity for MGC Signaling Configuration 3-57
 - Checking Traffic Against MGC Configuration 3-58
- Viewing Generated MML 3-60
- Viewing Generated Cisco MGW Commands 3-60
- Deploying a New Configuration 3-61
- Backup and Restore 3-64
 - Schedule An Activity 3-64
 - Check Status of Backup or Restore 3-67

CHAPTER 4-1**Provisioning the Billing and Measurements Server 4-1**

- Starting a BAMS Provisioning Session 4-2
- BAMS Provisioning 4-4
 - Provisioning General Information 4-4
 - Provisioning Zones 4-6
 - Provisioning Trunk Group Information 4-10
 - Provisioning Measurements 4-13



Preface

This preface describes the objectives, audience, organization, and conventions of this document and explains how to find additional information on related Cisco products and services. It contains the following sections:

- Document Objective, page vii
- Audience, page viii
- Document Organization, page viii
- Terminology, page viii
- Document Conventions, page ix
- Documentation Suite, page x
- Obtaining Documentation, page xii
- Obtaining Technical Assistance, page xiv
- Document Change History, page xv

Document Objective

This document provides the information you need to install, configure, and use the Voice Services Provisioning Tool (VSPT), Version 1.6 . 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 Release 7 Software Installation and Configuration Guide* that ships with your system.



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, separate devices that perform the conversion between the TDM and data network formats.



Note

The Cisco PGW 2200 PSTN Gateway (hereafter referred to as Cisco PGW 2200) was formerly called the Cisco VSC3000. Some parts of this document may use this older name.

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	Introduces Release 1.6 of the 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	Introduces VSPT wizards and provides an example of configuring a Cisco Media Gateway Controller (MGC) through the use of a wizard.
Chapter 3	Manual Provisioning with the VSPT	Shows you how to use Release 1.6 of the VSPT to manually provision a Cisco MGC.
Chapter 4	Provisioning the Billing and Measurements Server	Provides directions for using Release 1.6 of the VSPT for provisioning a Billing and Measurements Server (BAMS).

Terminology

The following terms are used in this document:

Cisco MGC host—A Sun host server running Cisco media gateway controller software. If your product is the Cisco PSTN Gateway (PGW), this is also called an SC host. If your product is the Cisco VSC3000, this is also called a virtual switch controller (VSC) 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 VSC node—The logical grouping of the active and standby VSC hosts, the control signaling network, and the Cisco Signaling Link Terminals (SLTs).

Cisco MGC node—Either the Cisco SC node or the Cisco VSC node.

Simplex MGC node—A node that uses a single Cisco MGC host. Typically, this type of node is used for solution evaluation tests or for small installations. In this configuration, 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. If your product is the Cisco VSC3000, this is also called a simplex VSC node.

Continuous-service MGC node—A node that uses two Cisco MGC hosts to prevent system downtime caused by 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. If your product is the Cisco VSC3000, this is also called a continuous-service VSC node.

Document Conventions

Typographic conventions used in this guide are shown in Table 2.

Table 2 Conventions Used in this Guide

Convention	Meaning	Description / Comments
Boldface	Commands and keywords you enter as shown.	offset-list
<i>Italics</i>	Variables for which you supply values.	command <i>type interface</i> You replace the variable with specific information. In contexts that do not allow italics, such as online help, arguments are enclosed in angle brackets (<>).
Square brackets ([])	Optional elements.	command [abc] abc is optional (not required), but you can choose it.
Vertical bars ()	Separated alternative elements.	command [abc def] You can choose either abc or def, or neither, but not both.
Braces ({ })	Required choices.	command { abc def } You must choose either abc or def, but not both.
Braces and vertical bars within square brackets ([{ }])	A required choice within an optional element.	command [abc { def ghi }] You have three options: nothing abc def abc ghi
Caret character (^)	Control key.	The key combinations ^D and Ctrl-D are equivalent: Both mean “hold down the Control key while you press the D key.” Keys are indicated in capital letters and are not case sensitive.
A non-quoted set of characters	A string.	For example, when setting an SNMP community string to <i>public</i> , do not use quotation marks around the string; otherwise, the string will include the quotation marks.

Table 2 Conventions Used in this Guide (continued)

Convention	Meaning	Description / Comments
System prompts	Denotes interactive sessions, indicates that the user enters commands at the prompt.	The system prompt indicates the current command mode. For example, the prompt <code>Router (config) #</code> indicates global configuration mode.
Screen font	Terminal sessions and information the system displays.	
Angle brackets (< >)	Non-printing characters such as passwords.	
Exclamation point (!) at the beginning of a line	A comment line.	Comments are sometimes displayed by the Cisco IOS software.

**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

Consult the following related documentation for information about the Cisco MGC software and the solutions it supports, including the Cisco SS7 Interconnect for Access Servers Solution, the Cisco SS7 Interconnect for Voice Gateways Solution, and the Cisco Packet Tandem Solution.

Hardware Documentation

- *Cisco Media Gateway Controller Hardware Installation Guide*
- *Regulatory Compliance and Safety Information for Cisco Media Gateway Controller Hardware*

Software Installation and Configuration Documentation

- *Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide*
- *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*
- *Cisco Media Gateway Controller Software Release 7 Dial Plan Guide*
- *Cisco Media Gateway Controller Software Release 7 Operations, Maintenance, and Troubleshooting Guide*
- *Release Notes for Cisco Media Gateway Controller Software Release 7*
- *Cisco Media Gateway Controller Online Documentation Notice*

- *Cisco Media Gateway Controller SLT Documentation Notice*

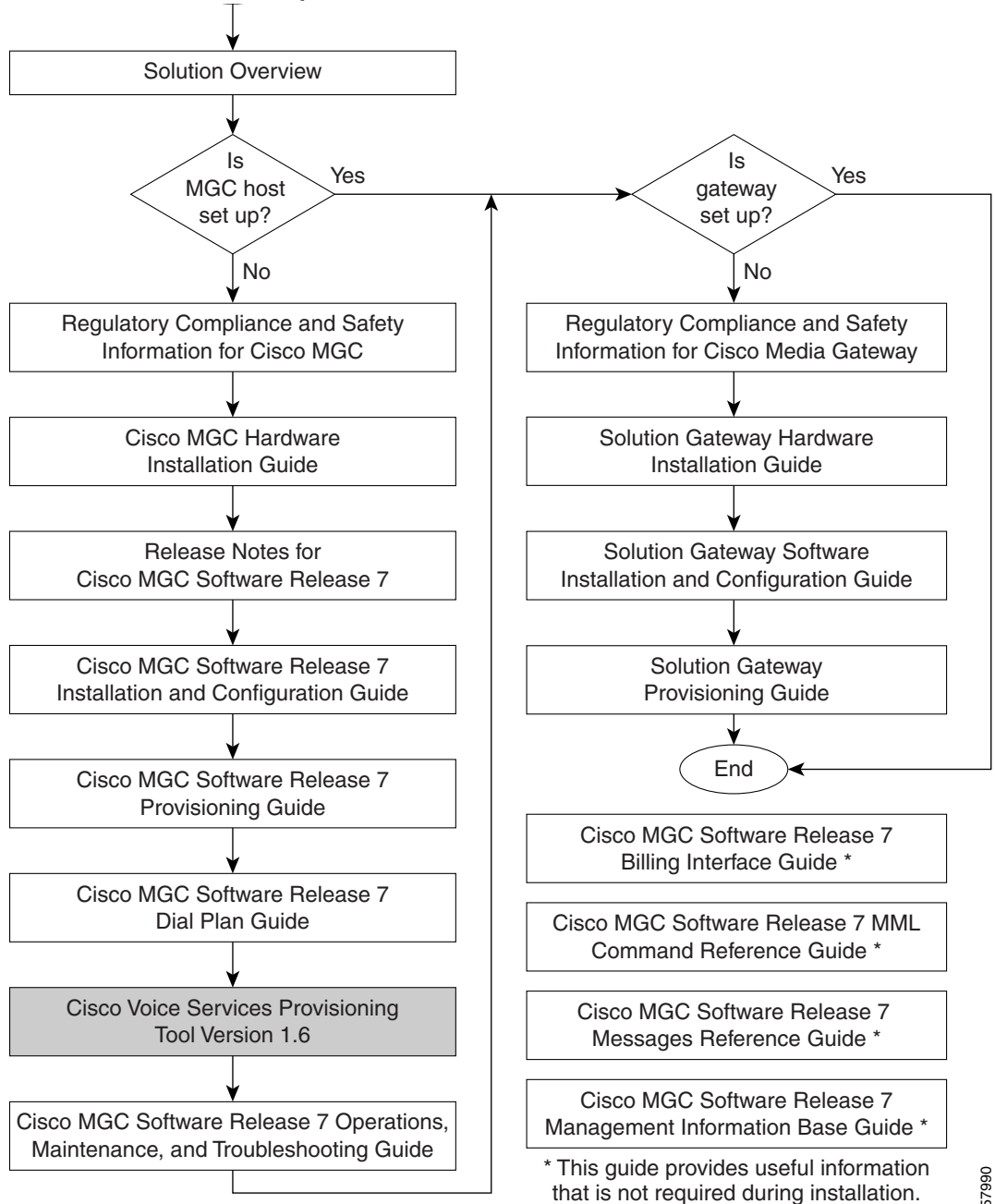
Gateway Documentation

Cisco DAS and H.323 VoIP Gateway Installation and Configuration Guide

Documentation Map

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

Figure 1 Documentation Map



57990

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

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

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships 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, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

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:

Attn Document Resource Connection
Cisco Systems, Inc.
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. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at any time, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

<http://www.cisco.com/tac>

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

<http://www.cisco.com/register/>

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

Document Change History

Table 0-3 Document Change History

Subject	Document No., Change Date	Change Summary
Online publication	OL-1349-01, October 18, 2001	Initial online publication.



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 all Cisco OPT solutions.



Note

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

Provisioning is the process of preparing a Cisco Media Gateway Controller (MGC) 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 Media Gateway Controllers.

This chapter introduces the Voice Services Provisioning Tool (VSPT), Release 1.6, and provides directions for obtaining and installing the software. In addition, it provides basic information for using the tool.

This chapter contains the following sections:

- Provisioning Introduction, page 1-1
- VSPT Introduction, page 1-2
- Installing the VSPT, page 1-2
- VSPT Basics, page 1-6
- Starting the VSPT, page 1-8
- Using the VSPT, page 1-9
- Defining Users and Permissions, page 1-11
- Exiting the VSPT, page 1-12

Provisioning Introduction

All solutions involving the Cisco MGC are configured with 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.

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 using this guide:

- 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” section on page 1-3, and the following documents
 - Cisco *Media Gateway Controller Hardware Installation Guide*
 - Cisco *Media Gateway Controller Software Release 9 Installation and Configuration Guide*

VSPT Introduction

The VSPT can be deployed as an integrated component of the Cisco MGC Node Manager or as a standalone application. It typically runs on a separate UNIX server and supports multiple users and provisioning sessions. It allows you to import an existing configuration, modify the configuration, and export it to the same or different devices. Alternately, it offers you high-level configuration steps that you can use to create the initial network provisioning information for a newly installed node, creating iterative entries from a single operation. It can also facilitate provisioning of individual call parameters, simplifying the provisioning of a large live network.

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.



Note

This document does not include instructions for dial plan provisioning. For dial plan information, refer to the *Cisco Media Gateway Controller Software Release 7 Dial Plan Guide*.

Installing the VSPT

If you are a registered Cisco Connection Online (CCO) user, you can download the VSPT software from the Cisco website. Before installing the VSPT, you must verify the following:

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

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

- The workstation hardware and software requirements have been met.
- The network connectivity has been established 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 (*sudo* access is not adequate).

**Tip**

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. You can create them using the worksheets provided in the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*. In addition, descriptions of the properties and values contained in the VSPT are included in Appendix A of the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide* and in the following chapter. Review this information before you begin provisioning and keep it available for reference during provisioning.

Prerequisites

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

- Sun SPARC station running Solaris version 2.6 or earlier.
- Sun Ultra-5 Workstation (333 MHz or faster).
- Sun Solaris 2.6 (5/98 release is recommended).
- Open windows with the Common Desktop Environment (CDE).
- Latest Solaris 2.6 recommend patch set. (Log in to <http://sunsolve.sun.com> then click on **Patches**).
- Cisco Media Gateway Controller Software Release 7.
- 8-bit video graphics card.
- Disk space:
 - Approximately 20 MB of disk space for installation
 - Directory /var/opt/data/
 - Approximately 1 MB for each configuration
 - Approximately 1 MB for each configuration snapshot
 - Directory /var/opt/log/
 - Approximately 0.5 MB for each deployment
- RAM:
 - Minimum: 128 MB
 - Recommended: 256 MB or greater
- Swap space:
 - Minimum: 128 MB
 - Recommended: 256 MB or greater
- Cisco Media Gateway Controller Software Release 7

**Note**

Running the VSPT on the same host as the Cisco MGC can adversely impact performance. We recommend using a separate server.

Preplanning

VSPT supports multiple solutions and enables you to provision components for these solutions. Some components may 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 an older release of the VSPT already installed (such as VSPT, Release 1.5) and you are upgrading to VSPT Release 1.6, the existing VSPT data is automatically migrated to VSPT Release 2.0; you do not need to uninstall the older release. However, if an incremental release is detected during the installation, you are prompted to uninstall the older release (for example, Release 1.5.1 cannot coexist with Release 1.5.2 and must first be uninstalled).



Note

Because the uninstall directory and files are removed during uninstall, **do not** run the uninstall script from within the /opt/CSCospgw directory.

Saving Configuration Files

Before uninstalling the VSPT software, you can save current configuration data and administrative information so users and logins do not have 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 command 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/VSVVosp<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

Use the following procedure to uninstall the software:

-
- Step 1** Enter the following commands:

```
>su -root
>cd /
>/opt/CSCO15/uninstall/uninstall
```

The uninstallation process removes all files and directories 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 log directories.

Step 2 Proceed with the VSPT software installation (see “Installing the VSPT Software” section on page 1-5).

Installing the VSPT Software

To install the software from the Cisco website, follow the procedure listed below:

-
- Step 1** Verify that the requirements listed in “Prerequisites” section on page 1-3 have been met.
- Step 2** Become the root user by entering the following command:
- ```
>su - root
```
- Step 3** Create the temporary directory `/var/tmp/CSCOvsp16-install` by entering the following command:
- ```
#mkdir -p /var/tmp/CSCOvsp16-install
```
- Step 4** Open a web browser, and go 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/CSCOvsp16-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** You can avoid the GUI and install the Cisco VSPT in TTY mode by entering the following 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, depending on which shell you are using, to set the `x-display` variable.

```
In “csh” or “tcsh”: setenv DISPLAY <hostname>:0
In “sh” or “ksh”: DISPLAY=<hostname>:0;export $DISPLAY
```

- Step 9** Follow the onscreen prompts.
- Step 10** Remove the `/var/tmp/CSCOvsp16-install` directory when the installation is complete by entering the following command:
- ```
#rm -rf /var/tmp/CSCOvsp16-install
```
- Step 11** Change to the installation directory, `/opt/CSCOvsp16`.

Step 12 Run the VSPT Release 1.6 program by entering the following command:

```
#./dart
```

Installation of the VSPT software is now complete. Table 1-1 lists the default VSPT directories and files. If you have questions or need assistance, see the “Obtaining Technical Assistance” section on page -xiv

Table 1-1 Installation Directories and Files

Directory	
/opt/CSCOVsp216 (home directory)	
dart	VSPT application script
classes/	Class and properties files
images/	
jre/	Java Runtime Environment
uninstall/	Uninstall script directory
version	VSPT version
/var/opt/CSCOVsp16 (home directory)	
data/	Configuration files
logs/	Log files
/etc	

VSPT Basics

This section describes VSPT fields and data entry requirements..

VSPT Field Definitions

Table 1-2 lists VSPT field names and their corresponding system components. For more information about system components, refer to the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*.

Table 1-2 Field Definitions

Field Name	Component Description
MGC Host	Origination point code (OPC), 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 Codes	The address of an STP ¹ that sends signaling messages to and receives signaling messages from the Cisco MGC.

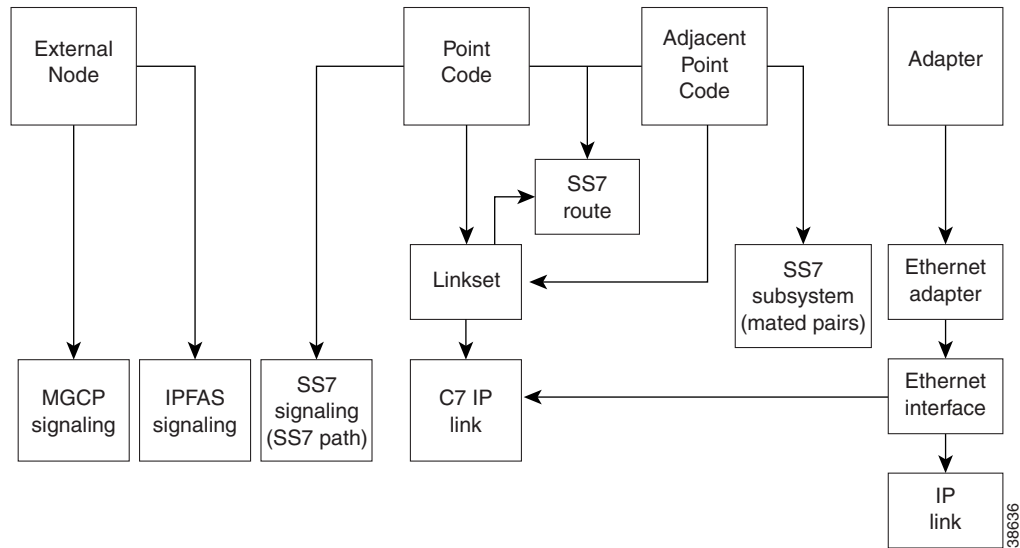
Table 1-2 Field Definitions (continued)

Field Name	Component Description
LinkSets	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 Pairs (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	Destination point code (DPC), the address of an endpoint, such as a PSTN ³ switch that carries the bearer traffic.
SS7 Path (SS7 Signaling Service)	An SS7 connection between the Cisco MGC and a specified point code.
SS7 Route	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	Any object in the network that is connected to the Cisco MGC, for example, a media gateway (Cisco MGW) and associated BSCs ⁴ . Note Cisco SLTs perform MTP layer 2 processing only. Therefore, they are not considered to be external nodes.
MGCP ⁵ Signaling Service	A signaling service between the Cisco MGC and a media gateway.
IPFAS Signaling Service	A signaling service (over IP) between the Cisco MGC and a media gateway.
IP Links for MGCP and IPFAS	Links 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 among the components listed in Table 1-2.

Figure 1-1 Component Relationships



VSPT Data Entry Requirements

When entering data into the VSPT windows, follow standard MML conventions for names and descriptions. MML names 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
- Must be lowercase

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 that 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 Release 7 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 Release 7 Provisioning Guide*.

Starting the VSPT

Perform the following steps to start the VSPT:

-
- Step 1** Log in to the VSPT server or access it from a machine with X-windows capability.
- Step 2** In a terminal window, enter:
- ```
>cd /opt/CSCOvsp16
```

The default directory is `/opt/CSCOvsp16`. Navigate to the appropriate directory if you installed the VSPT in a different location.

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

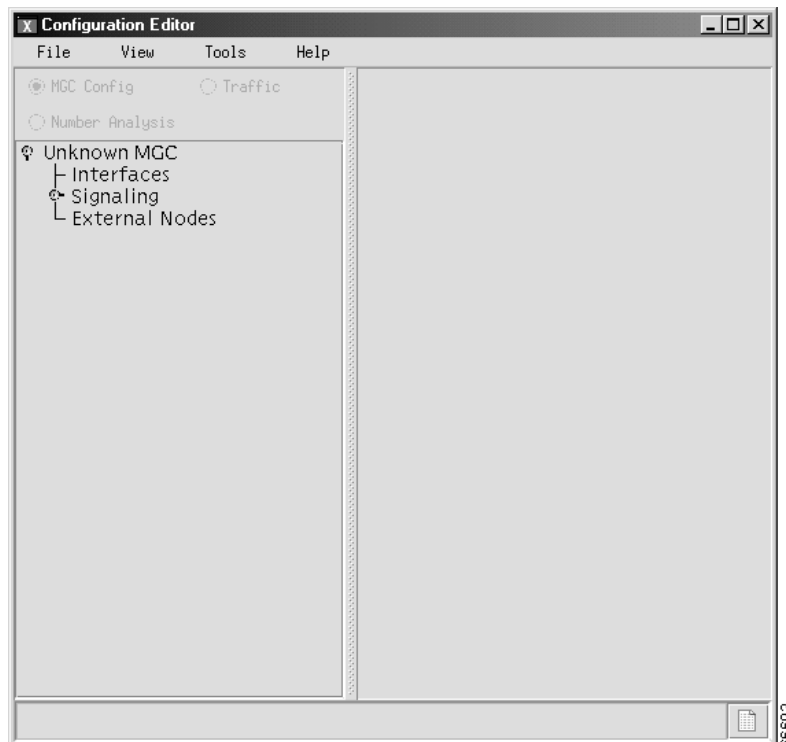
```
>./dart
```

The system opens the X-windows , and the login screen appears.

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

The default beta user name is **admin**, and the default password is also **admin**. The Welcome screen is displayed briefly during the login process, and then the main window appears (see Figure 1-2).

**Figure 1-2** Main 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

The File menu contains the choices listed in Table 1-3.

**Table 1-3 File Menu Choices**

| Choice | Description                                                                                                                                                                                                                                                                              |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New    | Begin a new configuration session.                                                                                                                                                                                                                                                       |
| Open   | Open an existing configuration.                                                                                                                                                                                                                                                          |
| Import | Import an existing configuration from a MGC, as well as import trunk group, trunk, routing, and dial plan files into the VSPT.                                                                                                                                                           |
| Export | Export files from the VSPT.                                                                                                                                                                                                                                                              |
| Save   | Save the current configuration: <ul style="list-style-type: none"> <li>• As Working</li> <li>• As Snapshot</li> <li>• As New Config</li> </ul> <p><b>Note</b> For more information on the different save options, see the “Starting a New Provisioning Session” section on page 2-1.</p> |
| Exit   | Stop any open provisioning sessions and close the VSPT.                                                                                                                                                                                                                                  |

The View menu contains the choices listed in Table 1-4.

**Table 1-4 View Menu Choices**

| Choice           | 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.              |

The Tools menu contains the choices listed in Table 1-5.

**Table 1-5 Tools Menu Choices**

| Choice          | Description                                                           |
|-----------------|-----------------------------------------------------------------------|
| Integrity Check | Check your configuration for inconsistencies and missing information. |
| Deploy          | Move the configuration to one or more target hosts and Cisco MGWs.    |
| Telnet          | Open a Telnet session.                                                |
| MGC Viewer      | View MGC configurations.                                              |
| MGX-8850 Wizard | View and configure MGX 8850 hosts.                                    |
| BAMS Config     | View and configure a Billing and Measurement Server (BAMS)            |

**Table 1-5 Tools Menu Choices**

| Choice             | Description                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------|
| State Operation    | View and configure the state of MGC components.                                                              |
| Screening Editor   | View and configure screening number provisioning.                                                            |
| Backup and Restore | Schedule and perform a backup or restore of an existing configuration.                                       |
| Make Seed File     | Use an existing configuration to create a text file that can be used by the Cisco Media Node Manager (CMNM). |

## Buttons

The VSPT provides buttons and explorer trees 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 a dial plan.

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

The Help menu selection displays the information about the current build release number.

## Defining Users and Permissions

After you install the VSPT, you should define users and their respective permissions.

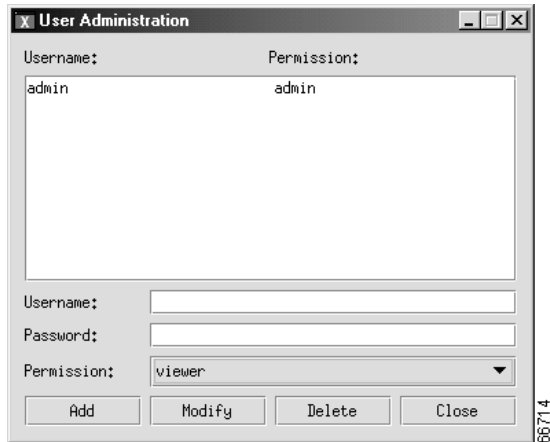
Use the following procedure to define users:

---

**Step 1** Click **Tools > User Admin**.

The screen in Figure 1-3 appears.

Figure 1-3 VSPT User Administration



**Step 2** Add, modify, or delete users 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 prompt.
- Click the close box in the upper right of the VSPT screen. Click **OK** at the prompt.



## Provisioning with VSPT Wizards

---

Wizards are utilities included in the Cisco VSPT to help you rapidly create a new deployment by providing a graphical user interface (GUI) for provisioning specific Cisco MGC configurations. A wizard leads you through the steps of provisioning the Cisco MGC and external components.

This chapter describes wizards and provides an example showing how you can use a wizard to configure a Cisco MGC. It includes the following sections:

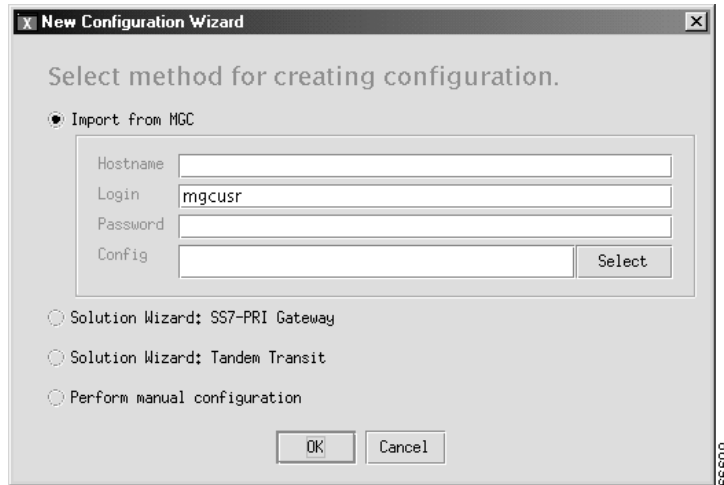
- Starting a New Provisioning Session, page 2-1
- Overview of the VSPT Wizards, page 2-3
- Using the Tandem Transit Solution Wizard, page 2-4

### Starting a New Provisioning Session

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

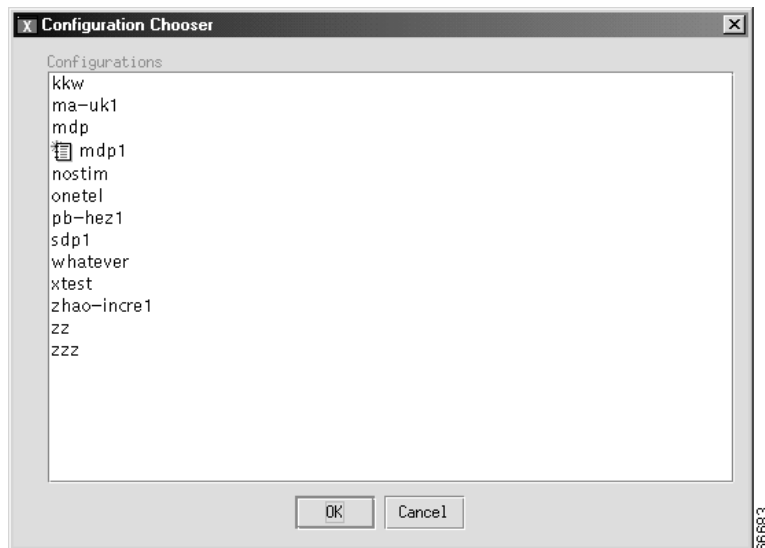
Figure 2-1 Select Method for Creating Configuration



- 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** and proceed to Chapter 3, or choose the wizard you want to use.

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

Figure 2-2 Select Configuration



- Step 5** Select the configuration to import, and click **OK**. The screen shown in Figure 2-3 is displayed, and checkmarks appear in the boxes as the configuration is imported.

**Figure 2-3 Importing Configuration**

**Step 6** The existing configuration is imported from your Cisco MGC.

## Overview of the VSPT Wizards

The VSPT includes two provisioning wizards:

- SS7-PRI Gateway—Offloads modem dial traffic from CLEC switches and either forwards the calls, using SS7, to the destination CLEC switches or translates the calls to ISDN PRI to terminate them on the NAS gateways.
- Tandem Transit—Offloads modem dial traffic from CLEC switches and forwards the calls to the Internet Protocol (IP) network.

Each wizard automatically guides you through many of the steps involved in provisioning your Cisco MGC. A VSPT wizard:

- Lets you create configuration files across multiple devices, for example, VSCs and Cisco MGX 8850s.
- Helps you avoid common errors when you are provisioning devices independently, for example, it ensures that you correctly match D channels for PRI.
- Lets you avoid having to repeatedly enter the same data.
- Creates the MML files and the *Cisco* MGX 8850 command files used to provision the VSC.

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

When you finish the provisioning session, the VSPT wizard saves your configuration as the “active” configuration, and it 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 Release 7 Provisioning Guide*.

---

## Using the Tandem Transit Solution Wizard

The VSPT utility, Solution Wizard: Tandem Transit, 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 2-10

When you finish using the VSPT wizard, you must still configure the trunk groups, trunks, and routes. For more information, see the “Configuring Bearer Traffic” section of Chapter 3.

**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 Release 7 Provisioning Guide*. 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 wizard:

- 
- Step 1** Start a new provisioning session.
  - Step 2** Click **File > New**.
  - Step 3** Click the **Solution Wizard: Tandem Transit** button, and click **OK**. A screen similar to the one in Figure 2-4 appears.

**Figure 2-4 Specifying Cisco MGC (VSC3000) Properties**

The screenshot shows a dialog box titled "New Wizard: Tandem Transit" with a close button (X) in the top right corner. The main area is titled "Specify MGC parameters" and contains three text input fields: "MGC Hostname:", "Login:", and "Password:". To the right of these fields is an "Import Settings" button. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". A vertical ID number "667689" is visible on the right side of the dialog box.

**Step 4** Enter the MGC IP address, for example, 161.44.157.1, in the MGC Hostname field.

**Step 5** Enter a login ID and a password.

**Step 6** Click **Next**. A screen similar to the one in Figure 2-5 appears.

**Figure 2-5 Specifying MGC IP Addresses**

The screenshot shows a dialog box titled "New Wizard: Tandem Transit" with a close button (X) in the top right corner. The main area is titled "Specify IP addresses for the MGC IP Addr" and contains two text input fields: "IP\_Addr1:" and "IP\_Addr2:". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". A vertical ID number "66706" is visible on the right side of the dialog box.

**Step 7** Enter the network addresses of the MGC (IP\_Addr1 and IP\_Addr2) in dotted notation, for example, 172.18.145.38.

- Step 8** Click **Next**. A screen similar to the one in Figure 2-6 appears, and SS7 signaling service provisioning begins.

**Figure 2-6** Specifying a Point Code

## Configuring SS7 Signaling Services

Use the following procedure to configure SS7 signaling services:

- Step 1** Enter a name for the point code, for example, OPC.
- Step 2** Enter a description of the point code, for example, Originating Point Code.
- Step 3** Enter the network address (**NetAddr**) of the MGC in dotted notation, for example, 172.44.102.39.
- Step 4** From the NetIndicator drop-down menu, choose the network indicator menu:
- International—Used if the node is an international gateway.
  - Spare—Used 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).
  - Reserved—For national use. Do not use.
- Step 5** Click **Next**. A screen similar to the one in Figure 2-7 appears.

**Figure 2-7** Specifying the Number of Adjacent Point Codes

Specify number of Adjacent Point Codes to create

Number of APCs: 2

< Back Next >

Cancel

66708

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

**Figure 2-8** Specifying Properties for Each APC

Specify parameters for APC #1

Name: STP-1

Description: Adjacent point code for STP

NetAddr: 2.2.1| ANSI

NetIndicator: <UNSET>

< Back Next >

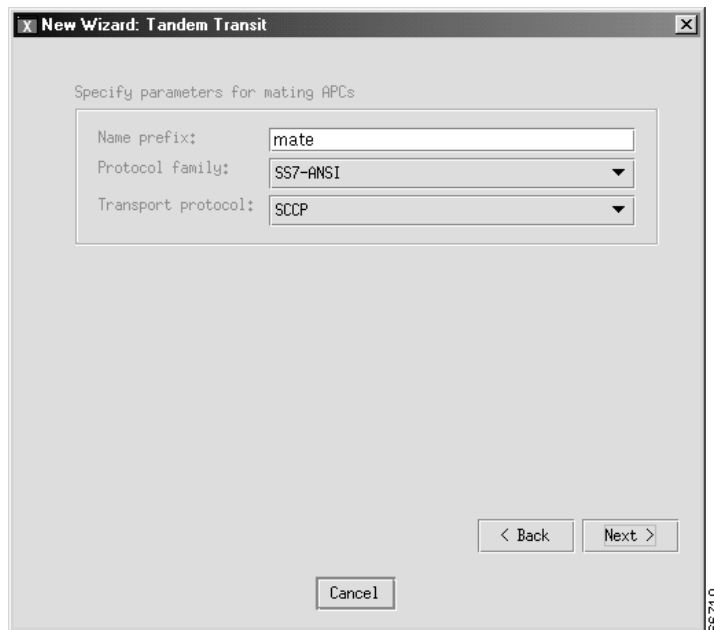
Cancel

66709

- Step 7** Enter a name for the APC.
- Step 8** Enter a description of the APC.

- Step 9** Enter the network address (**NetAddr**) of the APC in dotted notation; for example, 244.0.123.
- Step 10** From the NetIndicator drop-down menu, choose the network indicator:
- International—Used if the node is an international gateway.
  - Spare—Used 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).
  - Reserved. For national use. Do not use.
- Step 11** Click **Next**. A screen similar to the one in Figure 2-9 appears.
- Step 12** Repeat Step 7 through Step 11 for each APC. After you have configured properties for each APC you specified in Step 6, a screen similar to the one shown in Figure 2-9 appears.

**Figure 2-9** Specifying Properties for Mating APCs



- Step 13** Enter the name (the default APC mate).
- Step 14** Choose the protocol family.
- Step 15** Choose the transport protocol.
- Step 16** Click **Next**. A screen similar to the one in Figure 2-10 appears.

**Figure 2-10** Specifying a Protocol for Linksets

The screenshot shows a dialog box titled "New Wizard: Tandem Transit" with a close button (X) in the top right corner. The main heading is "Specify Protocol for Linksets". Below this, there are two input fields: "Name prefix:" with the text "lnkset" entered, and "Linkset protocol:" with a dropdown menu showing "SS7-ANSI". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". A small number "66711" is visible in the bottom right corner of the dialog area.

- Step 17** Enter the linkset name prefix (the default is lnkset).
- Step 18** From the Linkset protocol drop-down menu, choose the linkset protocol.
- Step 19** Click **Next**. A screen similar to the one in Figure 2-11 appears.

**Figure 2-11** Specifying Values for C7 IP Inks

The screenshot shows a dialog box titled "New Wizard: Tandem Transit" with a close button (X) in the top right corner. The main heading is "Specify Values for C7 IPInks". Below this, there are four input fields: "Name prefix:" with the text "c7ip" entered, "IP addr for SLT 1:" (empty), "IP addr for SLT 2:" (empty), and "Local port:" with the text "7000" entered. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". A small number "66712" is visible in the bottom right corner of the dialog area.

- Step 20** Enter the name prefix.

- Step 21** Enter the network addresses (IP addr for SLT 1 and **IP addr for SLT 2**) in dotted notation; for example, 172.18.145.38.
- Step 22** Enter the local port.
- Step 23** Click **Next**. A screen similar to the one in Figure 2-12 appears, and media gateway control links provisioning begins.

**Figure 2-12** Specifying the Number of Destination Point Codes



## Configuring Media Gateway Control Links

Use the following procedure to configure media gateway control links for this solution:

- 
- Step 1** Enter the number of the destination point code (DPC) to create.
  - Step 2** Click **Next**. A screen similar to the one in Figure 2-13 appears.

Figure 2-13 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, 172.18.145.38.
- 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** Enter the customer group table.
- Step 9** Enter the SS7 route name prefix.
- Step 10** Click **Next**. A screen similar to the one in Figure 2-14 appears.

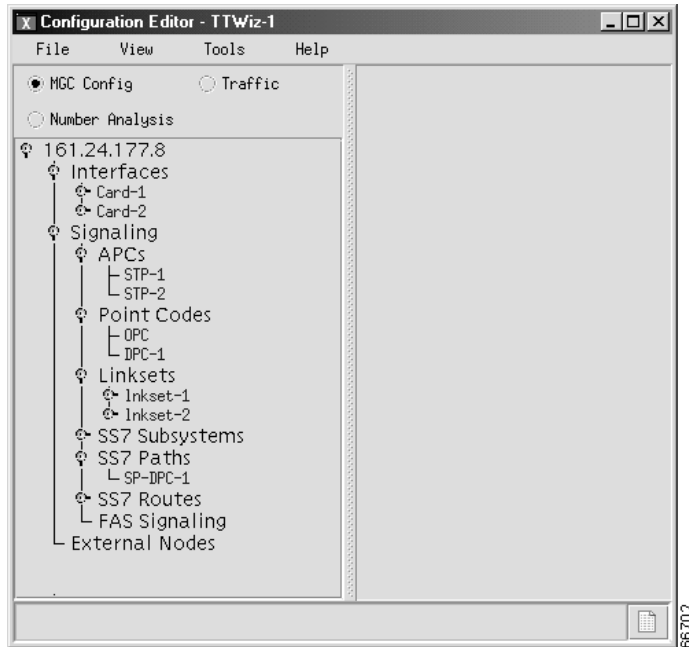
Figure 2-14 Importing VISM from the MGX 8850 Chassis

- Step 11** Enter the MGX 8850 host name in which the VISM cards are installed.
- Step 12** Enter the MGX 8850 login ID.
- Step 13** Enter the MGX 8850 password.
- Step 14** Click **Import VISM**. A list of the imported MGX 8850 switches appears in the lower portion of the screen.
- Step 15** Click **Finish**. Media gateway control links are provisioned, and you can now provision trunk groups, trunks, and routes for this solution. Refer to “Configuring Bearer Traffic” section on page 3-46.

## Provisioning Session Results

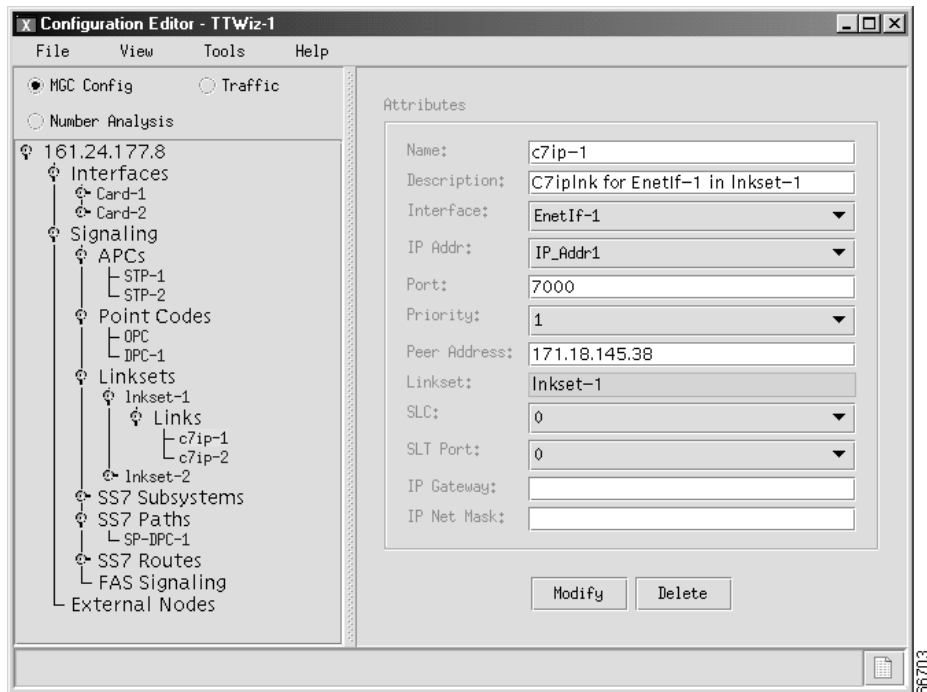
The results of the provisioning session you just completed are visible in the hierarchical tree on the left pane of the screen. You can expand the branches to view individual components, (see Figure 2-15).

Figure 2-15 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 2-16).

Figure 2-16 View a Selected Component Configuration



## Viewing Generated MML

To view the MML commands generated by the VSPT wizard, select **View > MML**. A screen displaying generated MML, similar to the one shown in Figure 2-17, appears.

**Figure 2-17** Generated MML

```

Generated MML

MML commands for signaling
prov-add:Card:name="Card-1",desc="Ethernet card 1",type="EN",slot=0
prov-add:Enetif:name="Enetif-1",desc="Ethernet interface 1",card="Card-1"
prov-add:Card:name="Card-2",desc="Ethernet card 2",type="EN",slot=1
prov-add:Enetif:name="Enetif-2",desc="Ethernet interface 2",card="Card-2"
prov-add:Apcname="STP-1",desc="Point code for STP",netaddr="2.2.1",netind=2
prov-add:Apcname="STP-2",desc="Point code for STP",netaddr="2.2.2",netind=2
prov-add:Ptcode:name="OPC",desc="Originating Point Code",netaddr="1.1.1",netind=2
prov-add:Ptcode:name="DPC-1",desc="Point code for STP",netaddr="3.3.1",netind=2
prov-add:Lnkset:name="Lnkset-1",desc="Lnkset for STP-1",apc="STP-1",proto="SS7-ANSI",typ
prov-add:C7iplnk:name="c7ip-1",desc="C7iplnk for Enetif-1 in Lnkset-1",if="Enetif-1",port=
prov-add:C7iplnk:name="c7ip-2",desc="C7iplnk for Enetif-2 in Lnkset-1",if="Enetif-2",port=
prov-add:Lnkset:name="Lnkset-2",desc="Lnkset for STP-2",apc="STP-2",proto="SS7-ANSI",typ
prov-add:C7iplnk:name="c7ip-3",desc="C7iplnk for Enetif-1 in Lnkset-2",if="Enetif-1",port=
prov-add:C7iplnk:name="c7ip-4",desc="C7iplnk for Enetif-2 in Lnkset-2",if="Enetif-2",port=
prov-add:Ss7path:name="SP-DPC-1",desc="SS7 path for DPC-1",side="network",mdo="ANSIS
prov-add:Ss7route:name="SR-DPC-1-1",desc="SS7 route for DPC-1 in Lnkset-1",dpc="DPC-1
prov-add:Ss7route:name="SR-DPC-1-2",desc="SS7 route for DPC-1 in Lnkset-2",dpc="DPC-1
prov-add:Ss7subsys:name="mate-1",desc="Description for mating APCs",svc="STP-1",proto=
prov-add:Ss7subsys:name="mate-2",desc="Description for mating APCs",svc="STP-2",proto=

MML commands for routing

MML commands for dialplan

Close
66704

```

If you have used a different solution wizard, you can view the commands generated by the wizard by clicking **View > <External Component>Commands**.

You cannot use the VSPT wizard to provision trunk groups, trunks, and routes. For more information about provisioning these components using the VSPT, see “Configuring Bearer Traffic” section on page 3-46.



## Manual Provisioning with the VSPT

---

Provisioning a Cisco MGC is a complex process that can be logically divided into the following steps:

- Configuring the Cisco MGC
- Configuring communications between the Cisco MGC and external SS7 signaling points (SPs), such as STPs
- Configuring call control links between the Cisco MGC and the media gateways
- Configuring bearer traffic

The provisioning procedures described in this chapter follow the sequence for provisioning a “typical” Cisco MGC configuration described in the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*. Please refer to that document for more detailed provisioning information.



### Note

---

The configuration of your MGC contain different components than those described in this chapter, requiring additional provisioning procedures. Please refer to the provisioning guide for your configuration for more detailed information.

---

This chapter shows how to use version 1.6 of the VSPT to provision a typical Cisco Media Gateway Controller (MGC) and contains the following sections:

- Configuring the Cisco MGC, page 3-1
- Configuring SS7 Signaling Services, page 3-7
- Configuring Media Gateway Control Links, page 3-27
- Configuring Bearer Traffic, page 3-46

## Configuring the Cisco MGC

To provision a Cisco MGC, configure the following basic network elements:

- Active MGC host
- Standby MGC host, if applicable
- Ethernet cards and interfaces installed in the Cisco MGC host

## Adding an MGC Host

The Cisco MGC host is a Sun workstation running the Cisco MGC software. Table 3-1 lists the MGC host properties. Use the information in the table to add an MGC host (and a standby host, if you are configuring a redundant MGC).

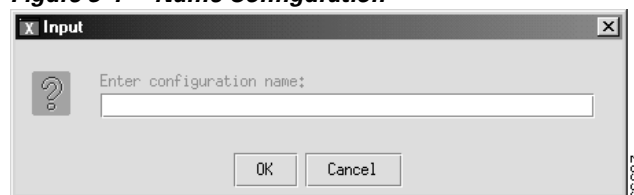
**Table 3-1 MGC Property Properties**

| Property Name      | Description                                                                                                       | Default | Valid Values |
|--------------------|-------------------------------------------------------------------------------------------------------------------|---------|--------------|
| MGC Hostname       | IP address that identifies the target MGC host                                                                    | None    | User defined |
| Login/Password     | Specifies the valid MGC login and password                                                                        | None    | User defined |
| BAMS Config        | Identifies the name of the Billing and Measurement Server (BAMS) configuration, in dotted decimal notation        | <UNSET> | x.x.x.x      |
| IP Addr:1          | IP address, in dotted decimal notation, of the MGC primary interface used for signaling and control               | None    | x.x.x.x      |
| IP Addr:2          | IP address, in dotted decimal notation, of a secondary interface used for signaling and control backup            | None    | x.x.x.x      |
| Failover           | Indicates if this is a failover configuration                                                                     | None    | No, Yes      |
| Failover IP Addr:1 | IP address, in dotted decimal notation, of the primary interface for signaling on the standby MGC (if included)   | None    | x.x.x.x      |
| Failover IP Addr:2 | IP address, in dotted decimal notation, of the secondary interface for signaling on the standby MGC (if included) | None    | x.x.x.x      |

Perform the following steps to add an MGC host and a standby host, if applicable. Where necessary, refer to Table 3-1 for property values.

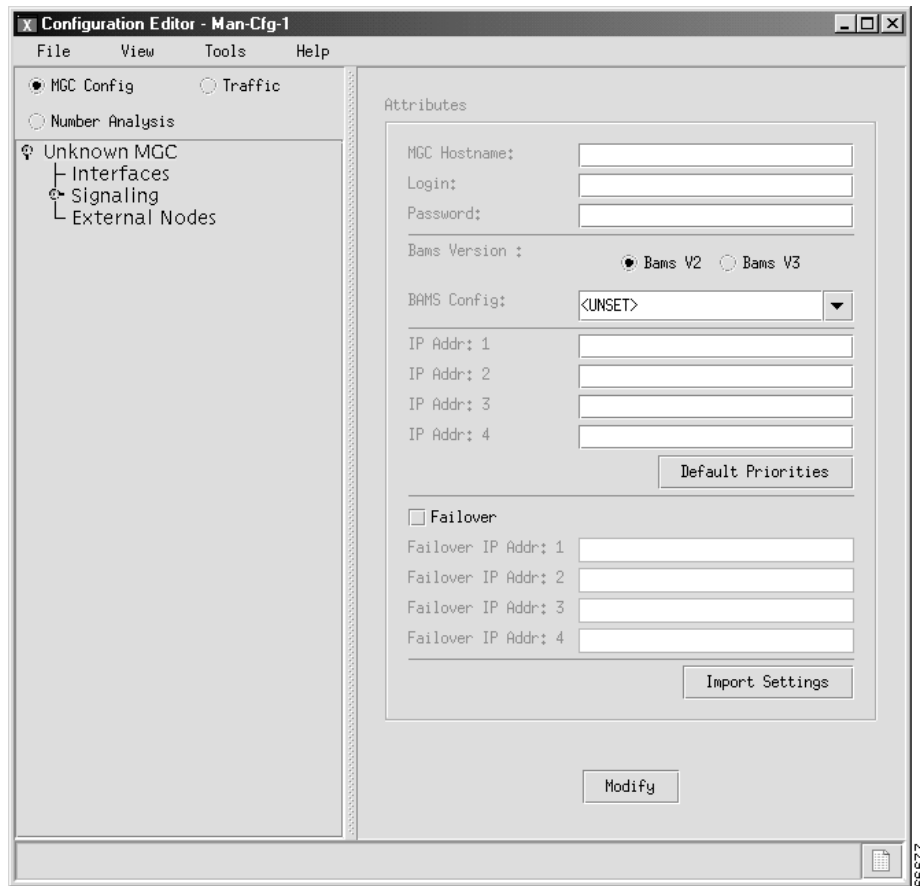
- Step 1** Start a new provisioning session, and click **File > New**. The screen shown in Figure 3-1 appears.

**Figure 3-1 Name Configuration**



- Step 2** Enter a name for the new configuration, and click **OK**.
- Step 3** Click the **Perform manual configuration** radio button, and click **OK**.
- Step 4** Click the **MGC Config** radio button, and click **Unknown MGC**. The screen shown in Figure 3-2 appears.

Figure 3-2 Adding a Cisco MGC Host



- Step 5** Enter the IP address of the MGC host, for example, 172.18.145.38.
- Step 6** Enter a valid MGC login ID and password.
- Step 7** Select the radio button corresponding to the version of the Billing and Management Server (BAMS) you are using, and select the BAMS configuration, if applicable.

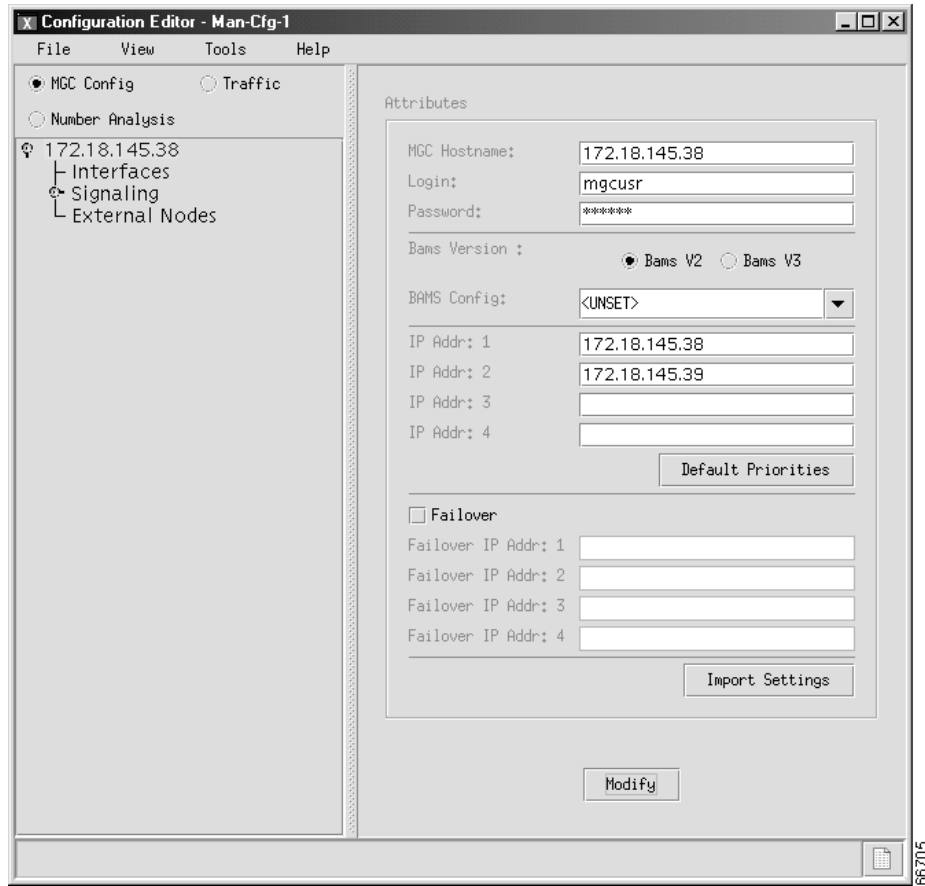


**Note** VSPT 1.6 currently supports BAMS Phase 2 only. See the current release notes for this application for further information about future support for BAMS Phase 3.

- Step 8** Enter the network addresses (IP Addr: 1 and IP Addr: 2) in dotted notation; for example, 172.18.145.3, or click **Import Settings** to import the network addresses.
- Step 9** Indicate whether the MGC has a failover MGC and, if it does, enter the network addresses (Failover IP Addr: 1 and Failover IP Addr: 2).

Click **Modify**. The hierarchical tree displaying “Unknown MGC” changes to the MGC host name you entered in Step 5, (see Figure 3-3), and “Modification complete” is displayed briefly on the bottom left section of the screen.

Figure 3-3 MGC Host Added



## Adding Ethernet Cards and Interfaces

Interfaces components identify connections to the network Ethernet cards or adapters installed in the Cisco MGC host. They permit IP communication between the Cisco MGC and the Cisco SLTs.

Table 3-2 lists interface properties. Use the values in the table as you add interfaces to your MGC.

Table 3-2 Interface Properties

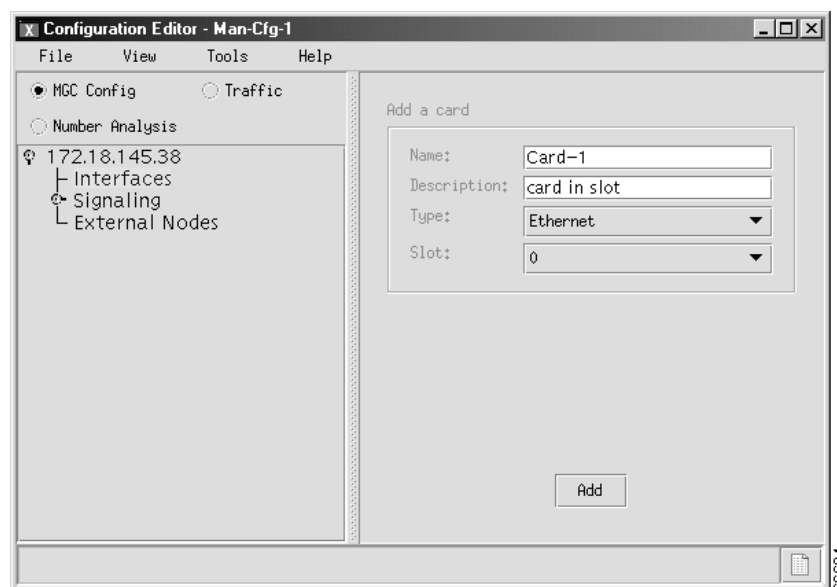
| Property    | MML Parameter | Description                           | Default | Valid Values                      |
|-------------|---------------|---------------------------------------|---------|-----------------------------------|
| Name        | name          | Identifies a physical card in the MGC | Card-x  | Up to 80 alphanumeric characters  |
| Description | desc          | Describes the adapter card            | Card    | Up to 128 alphanumeric characters |

**Table 3-2** Interface Properties (continued)

| Property | MML Parameter | Description                                                         | Default  | Valid Values                                                         |
|----------|---------------|---------------------------------------------------------------------|----------|----------------------------------------------------------------------|
| Type     | type          | Identifies the type of adapter card in the MGC                      | Ethernet | Ethernet—Ethernet<br>ATM—ATM card<br>ITK—E1/T1 card<br>V35—V.35 card |
| Slot     | slot          | Identifies the physical slot in which the adapter card is installed | 0        | 0 through 3                                                          |

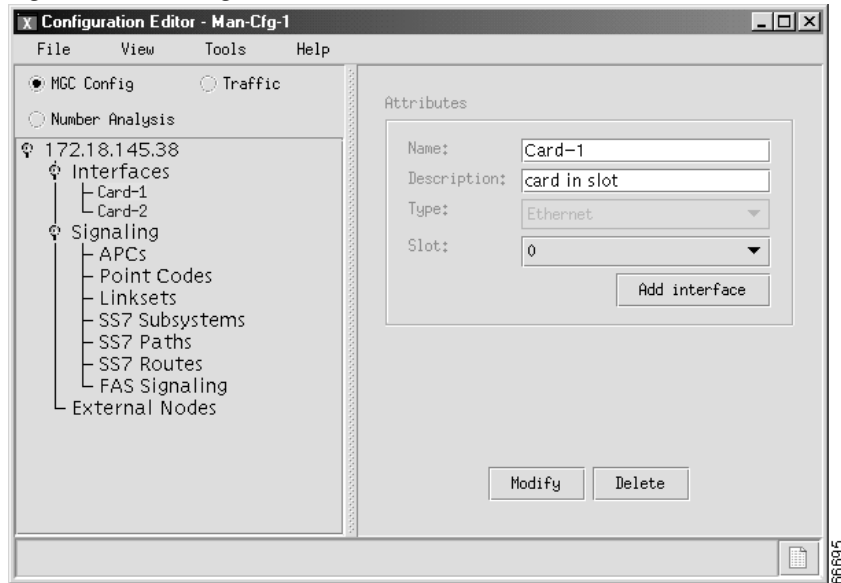
Perform the following steps to add an Ethernet interface to the Cisco MGC. If necessary, refer to Table 3-2 for property values.

- Step 1** Click **Interfaces** in the right pane of the main VSPT window. The screen shown in Figure 3-4 appears.

**Figure 3-4** Adding Interface Cards

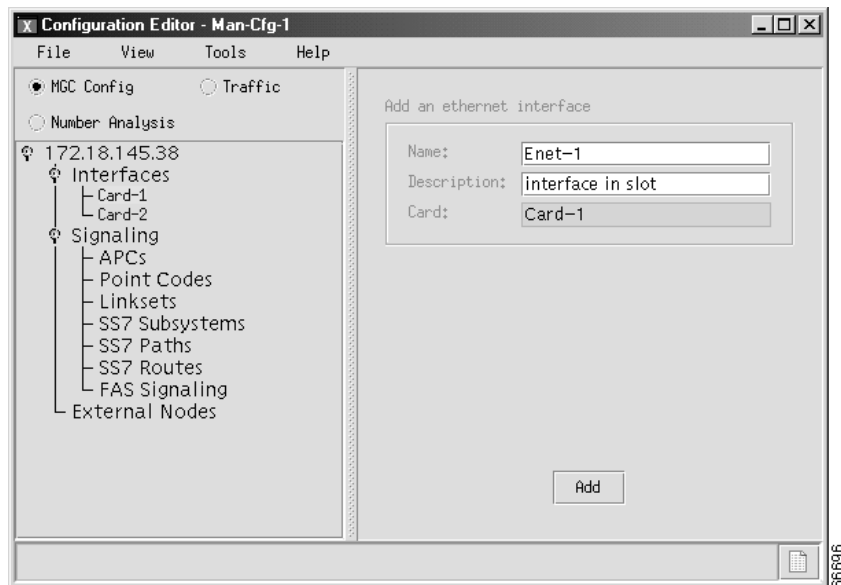
- Step 2** Enter the interface name.
- Step 3** Enter a description for the interface.
- Step 4** Select the card type.
- Step 5** Select the slot in which the card is installed.
- Step 6** Click **Add**. The hierarchical tree on the left pane of the main VSPT window changes to reflect the card you added.
- Step 7** Click the Ethernet interface card you are configuring on the hierarchical tree on the left pane of the main VSPT window. The screen shown in Figure 3-5 appears.

Figure 3-5 Adding an Interface



**Step 8** Click **Add Interface**. The screen shown in Figure 3-6 appears.

Figure 3-6 Interface Parameters



**Step 9** Enter a name.

**Step 10** Enter a description.

**Step 11** The **Card** field contains the name of the card for which you are adding an interface. Verify that you have selected the correct card.

**Step 12** Click **Add**.

**Step 13** Repeat Step 7 through Step 12 for each card you configured.

## Configuring SS7 Signaling Services

SS7 signaling services identify all signaling types processed by the Cisco MGC. To configure SS7 signaling services, you must:

- Add Point Codes, page 3-8
- Add Linksets, page 3-11
- Add C7 IP Links, page 3-14
- Add SS7 Subsystems (Mated Pairs), page 3-17
- Configure SS7 Paths, page 3-20
- Configure SS7 Routes, page 3-22

### Adding Adjacent Point Codes

Adjacent point codes (APCs) are the SS7 network addresses of the STPs (or SSP directly connected to the SLT) that connect to the MGC node. The MGC node communicates with external SSPs and SCPs through an STP.

Table 3-3 lists the APC properties. Use the values in the table as you add APCs to the Cisco MGC.

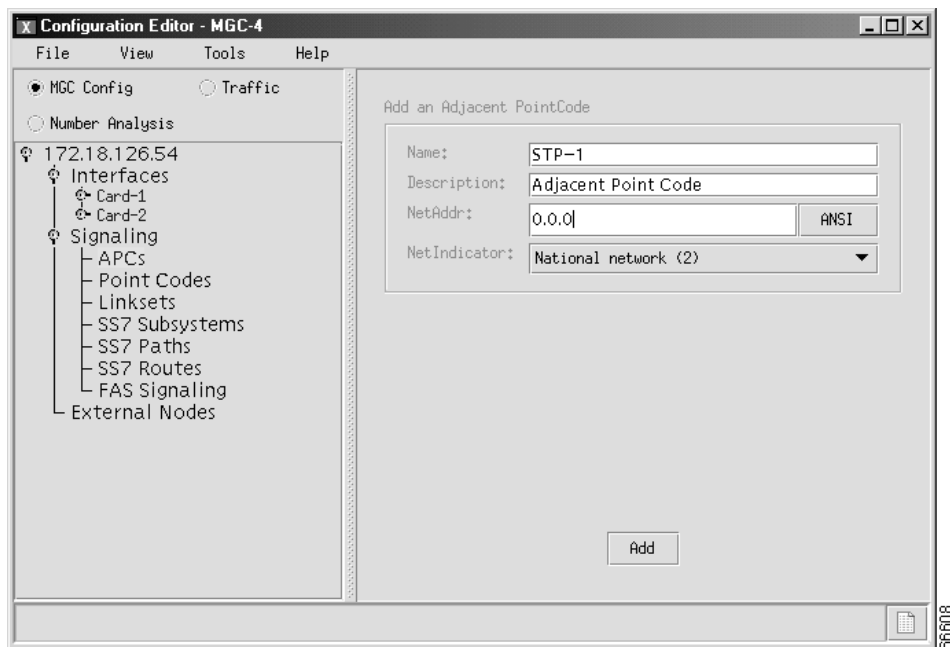
**Table 3-3** APC Properties

| Property     | MML Parameter | Description                                                                        | Default  | Valid Values                                                                   |
|--------------|---------------|------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------|
| Name         | name          | Identifies the adjacent point code MML name.                                       | STP-x    | Up to 80 alphanumeric characters                                               |
| Description  | desc          | Describes the point code. Use up to 128 alphanumeric characters.                   | APC      | Up to 128 alphanumeric characters                                              |
| NetAddr      | netaddr       | Enter point code in this field. Valid for both ITU and North American point codes. | 0.0.0    | User defined                                                                   |
| NetIndicator | netind        | Identifies the type of node receiving the point code.                              | National | International (reserved for international) or National (reserved for national) |

Use the following procedure to add the APCs for STPs. Where necessary, refer to Table 3-3 for property values.

- Step 1** Click the icon next to Signaling to expand the hierarchical tree in the left pane of the main VSPT window, and click **APCs**. The screen shown in Figure 3-7 appears.

Figure 3-7 Adding Adjacent Point Codes



- Step 2** Enter the name. (For example, STP-1.)
- Step 3** Enter the description. (For example, Adjacent Point Code.)
- Step 4** Enter the network address in dotted notation (for example, 172.18.145).
- Step 5** On the NetIndicator drop-down menu, select the desired value:
  - International network—Used if the node is an international gateway.
  - Spare (for international use)—Used in countries where multiple carriers share point codes; networks are differentiated by this indicator.
  - National network—Used if the node routes calls through the national network.
  - Reserved—For national use. Do not use.
- Step 6** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the adjacent point code you added (STP-1).
- Step 7** To add additional APCs, repeat Step 1 through Step 6 for each APC.

## Add Point Codes

Every signaling point in the SS7 network is identified by a unique point code. Provision point codes using the following subsections:

- Add Destination Point Codes, page 3-9
- Add Origination Point Code, page 3-10

**Note**

Point codes provide the basis for the addressing scheme for the SS7 network. ITU point codes contain 14 bits, and ANSI point codes contain 24 bits.

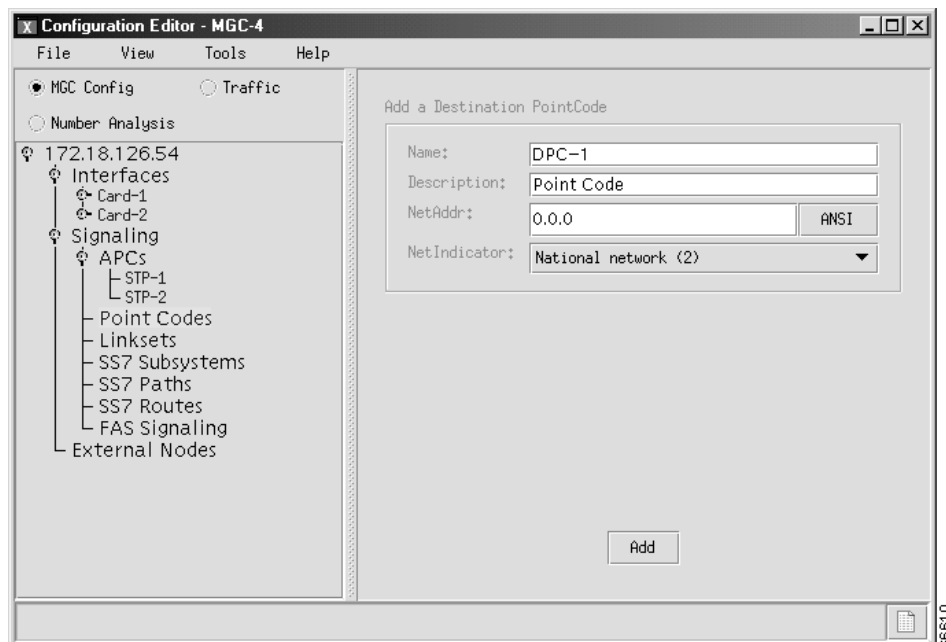
## Add Destination Point Codes

A destination point code (DPC) is an SS7 network address that identifies an SS7 network node, such as an STP, SSP, or media gateway, with which the MGC node communicates.

Use the following procedure to add the DPCs for the ILEC and CLEC switches:

- Step 1** Click **Signaling > Point Codes** on the left pane of the main VSPT window. A screen similar to that shown in Figure 3-8 appears.

**Figure 3-8 Adding DPC**



- Step 2** Enter the DPC name.
- Step 3** Enter the description of the DPC.
- Step 4** Enter the network address of the DPC in dotted notation, for example, 172.18.145.3.
- Step 5** On the NetIndicator drop-down menu, select the network indicator:
- International network—Used if the node is an international gateway (default value).
  - Spare (for international use)—Used in countries where multiple carriers share point codes; networks are differentiated by this indicator.
  - National network—Used if the node routes calls through the national network.
  - Reserved—For national use. Do not use.

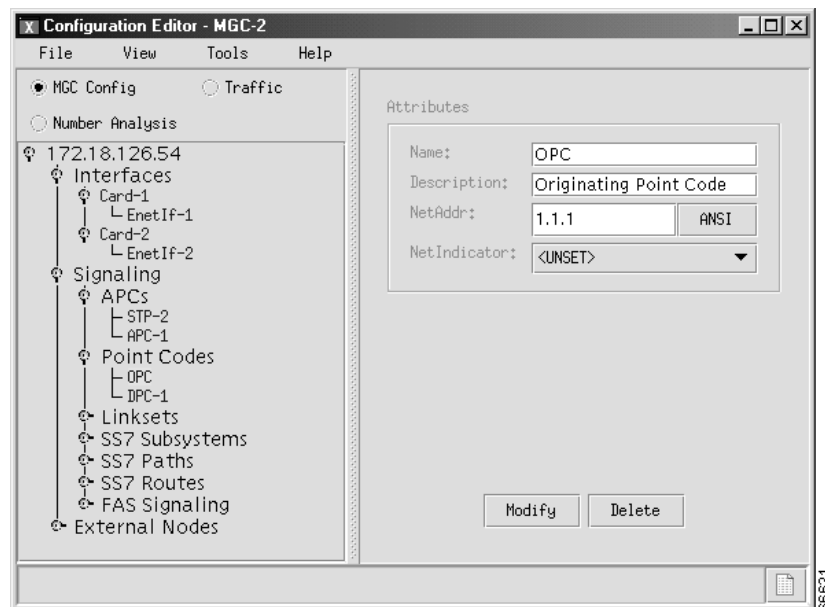
- Step 6** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the destination point code you added.

## Add Origination Point Code

The origination point code (OPC) is an SS7 network address that identifies a Cisco MGC. Use the following procedure to configure the OPCs for the Cisco MGC:

- Step 1** Click **Signaling > Point Codes > OPC** in the left pane of the main VSPT window. A screen similar to the one shown in Figure 3-9 appears:

**Figure 3-9 Add OPC**



- Step 2** Enter the name of the OPC.
- Step 3** Enter the description of the OPC.
- Step 4** Enter the net address of the OPC, and specify whether it is ANSI or ETSI.
- Step 5** On the NetIndicator drop-down menu, select the desired value:
- International network—Used if the node is an international gateway.
  - Spare (for international use)—Used in countries where multiple carriers share point codes; networks are differentiated by this indicator.
  - National network—Used if the node routes calls through the national network.
  - Reserved—For national use. Do not use.
- Step 6** Click **Modify**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the OPC you added.

## Add Linksets

A linkset is a logical group of links that transport SS7 signals to the Cisco MGC. Linksets can consist of the following:

- Links from the Cisco MGC (OPC) to an adjacent STP (APC)
- Links from the Cisco MGC (OPC) to a destination (a DPC acting as an APC, if there is no STP)

Table 3-4 lists linkset properties. Use the values in the table as you add linksets to your MGC.

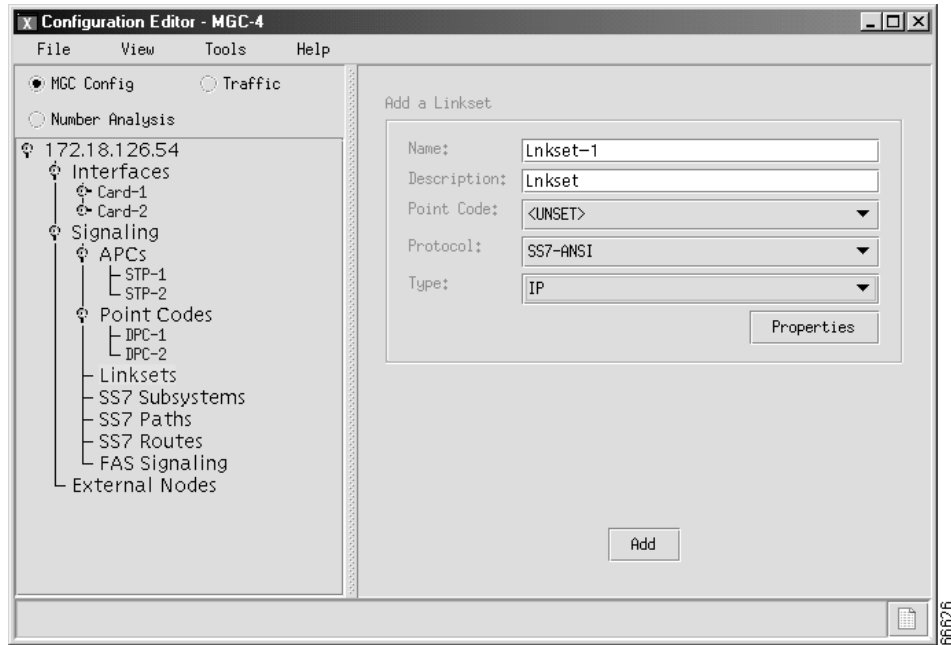
**Table 3-4 Linkset Properties**

| Property    | MML Parameter | Description                                                                           | Default  | Valid Values                                                 |
|-------------|---------------|---------------------------------------------------------------------------------------|----------|--------------------------------------------------------------|
| Name        | name          | Identifies the linkset MML name<br>Must start with an alphabetical character.         | Lnkset-x | Up to 10 alphanumeric characters                             |
| Description | desc          | Describes the linkset                                                                 | Lnkset   | Up to 128 alphanumeric characters                            |
| Point Code  | apc           | Identifies the adjacent point codes components for the SS7 node providing the linkset | <UNSET>  | User defined.                                                |
| Protocol    | proto         | Identifies the protocol family associated with this linkset                           | SS7-ANSI | SS7-ITU<br>SS7-ANSI<br>SS7-UK<br>SS7-China<br>SS7-Japan      |
| Type        | type          | Indicates how the signaling link is terminated on the Cisco MGC                       | IP       | IP (when SLTs and used)<br>TDM (when adapter cards are used) |

Use the following procedure to add the linksets between the MGC node and the STPs. Where necessary, refer to Table 3-4 for property values:

- 
- Step 1** Click **LinkSets**. The screen shown in Figure 3-10 appears.

Figure 3-10 Adding Linksets



- Step 2** Enter the linkset name. (For example, Linkset-1.)
- Step 3** Enter the description of the linkset. (For example, Linkset.)
- Step 4** On the Point Code drop-down menu, select the desired APC or DPC component for this linkset. (For example, STP-1.)
- Step 5** On the Protocol drop-down menu, select the desired protocol:
  - SS7-ANSI
  - SS7-China
  - SS7-ITU
  - SS7-Japan
  - SS7-UK
- Step 6** On the Type drop-down menu, select the link termination type.
- Step 7** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the linkset you added.



**Note** After creating the linksets, you must create the links in each linkset by adding C7 IP links. Refer to the “Add C7 IP Links” section on page 3-14.

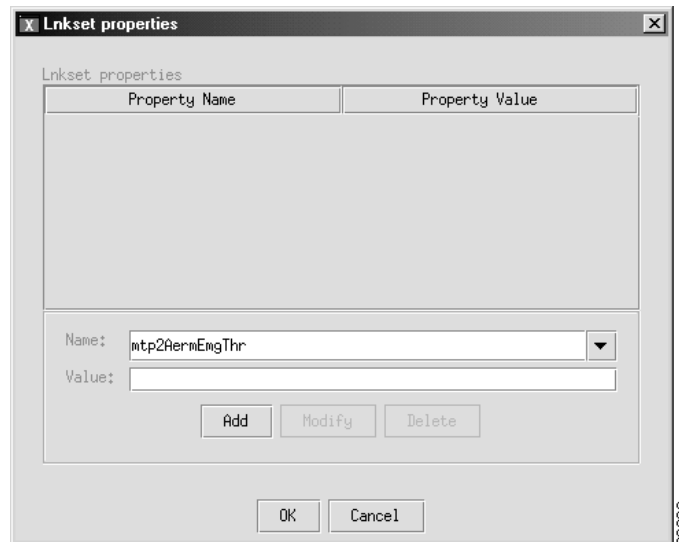
## Adding and Changing Linkset Properties

You can add and change the properties of a linkset after it is created, including message and timer values. Changes apply to all linksets you create. You do not have to change the default properties. For a list of linkset properties, default values, and descriptions, see the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*.

Perform the following steps to add or change linkset properties:

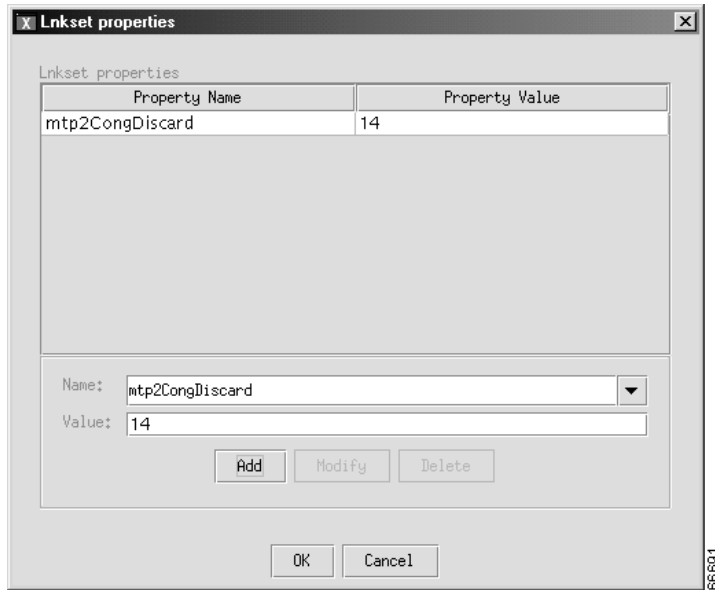
- Step 1** Highlight the appropriate linkset in the left pane, and click **Properties** to display the list of properties. The screen shown in Figure 3-11 appears.

**Figure 3-11 Adding and Changing Linkset Properties**



- Step 2** To add a property, select the property in the Name drop-down list, enter a value in the Value text box, and click **Add**. The screen shown in Figure 3-12 appears, with the property and value added. After a property has been added, its value can be modified.

Figure 3-12 Linkset Property Added



- Step 3** To modify an existing property, click the name of the property in the screen shown in Figure 3-11.
- Step 4** In the value field, overwrite the property value with the desired value.
- Step 5** Click **Modify**.
- Step 6** Click **OK** when you are finished modifying properties.



**Note**

You cannot modify properties until after you have created the linkset.

### Add C7 IP Links

You must configure links for all physical connections bearing signals that enter and exit the Cisco MGC. This includes SS7 signals from the SSP (ILEC switch) and signal links to the media gateway.

A C7 IP link component identifies one link within a linkset that enters the Cisco MGC through an SLT. Table 3-5 lists the C7 IP link properties. Use the values in the table as you add links to linksets.

Table 3-5 C7 IP Link Properties

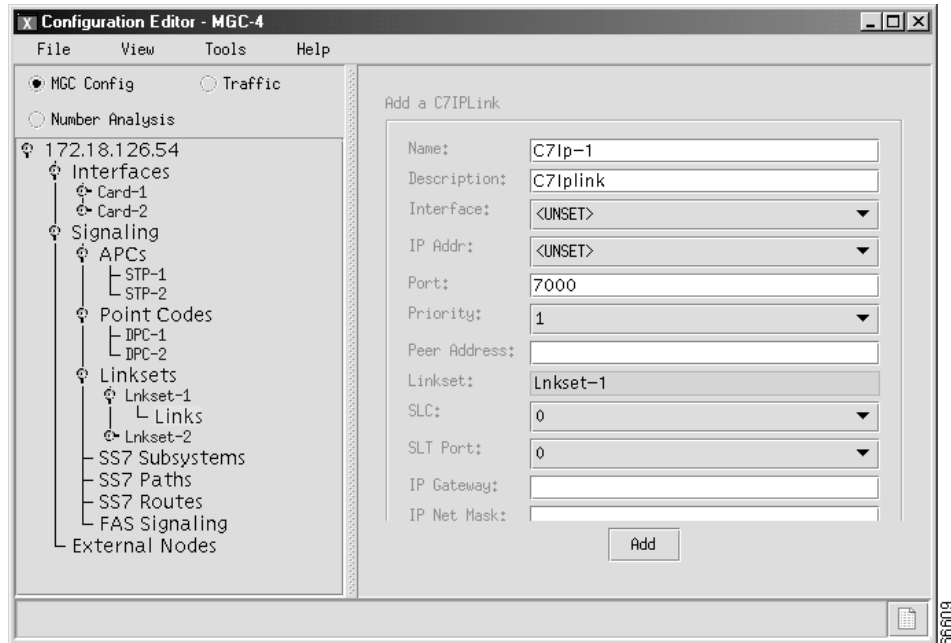
| Property     | MML Parameter | Description                                                                                                | Default  | Valid Values                                                        |
|--------------|---------------|------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------|
| Name         | name          | Identifies the MML name for the link.                                                                      | C7ip-1   | Up to 10 alphanumeric characters, beginning with an alpha character |
| Description  | desc          | Describes the link.<br>Up to 128 alphanumeric characters.                                                  | C7Iplink | Up to 128 alphanumeric characters                                   |
| Interface    | if            | Selects the interface on which the link is entering the VSC3000.                                           | <UNSET>  | User defined                                                        |
| IP Addr      | ipaddr        | Identifies the IP address of the VSC3000 set in the IP_Addr field in the XECfgParm.dat file.               | <UNSET>  | Addr1<br>Addr2<br>Addr3<br>Addr4                                    |
| Port         | port          | Identifies the UDP port of the VSC3000 that listens for the signaling communications.                      | 7000     | Any non-well known UDP port greater than 1024                       |
| Priority     | pri           | Identifies the priority value of the link.                                                                 | 1        | 1 through 4<br>Give links the same priority for load sharing        |
| Peer Address | peeraddr      | Identifies the IP address of the Cisco SLT.                                                                | None     | User defined                                                        |
| Linkset      | lnkset        | Displays the linkset to which this link belongs.                                                           | None     | User defined                                                        |
| SLC          | slc           | Unique identifier for the link.<br>Corresponds to the Signaling Link Code (SLC) received from the carrier. | 0        | 0 through 15                                                        |
| SLT Port     | sltport       | Identifies the WIC port of the Cisco SLT for the link.                                                     | 0        | 0 through 3                                                         |
| IP Gateway   | ipgateway     | Identifies the IP address, in dotted decimal notation, of the gateway.                                     | None     | x.x.x.x                                                             |
| IP Net Mask  | ipnetmask     | Identifies the IP net mask, in dotted decimal notation, of the gateway.                                    | None     | x.x.x.x                                                             |

Add a C7 IP link for each physical SS7 link that is connected to the SS7 network through the Cisco SLT. Each link corresponds to a linksets you created in the “Add Linksets” section on page 3-11.

Use the following procedure to add C7 IP links. Where necessary, refer to Table 3-5 for property values.

- Step 1** Under LinkSets, in the left pane of the main VSPT window, click **Lnkset-1** (the linkset you created in the “Add Linksets” section on page 3-11). The screen shown in Figure 3-13 appears.

Figure 3-13 Adding C7 IP Links



- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** On the Interface drop-down menu, select the Ethernet interface for this link.
- Step 5** On the IP Addr drop-down menu, select the IP address of the Cisco MGC:
- Addr1
  - Addr2
  - Addr3
  - Addr4



**Note** The numbered address for this value is found in the XECfgParm.dat file you set up during your initial system configuration. See the Cisco *Media Gateway Controller Software Release 7 Installation and Configuration Guide* for more information.

- Step 6** Enter the number of a UDP port on the Cisco MGC. You can use any unused UDP port number, but you should not use ports 1 through 1024 (these are reserved for other applications).
- Step 7** Enter a priority. The value range is 1 through 4, and 1 is the highest priority.



**Note** To enable loadsharing, use the same priority (1) for each C7 IP link. Traffic is routed equally over the links if there is a failure.

- Step 8** Enter the IP address of the Cisco SLT in the peer address field.



**Note** You do not enter a peer port value, because the actual peer port value is found in the \*.stPort field in the XECfgParm.dat file you set up during your initial system configuration. See the *Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide* for more information.

- Step 9** Click **Linkset**, and choose the linkset for this link.
- Step 10** Enter the appropriate signaling link code (SLC) for the line between the Cisco SLT and the STP. The SLC can be any integer from 0 through 15.
- Step 11** Enter the SLT port. This is the physical port on the Cisco SLT.



**Note** The SLT port number must be unique for a given link on a particular Cisco SLT. For example, if you have a 2T WAN interface card (WIC) in slot 0 of the Cisco SLT, you can use port value 0 for the first link you configure. The second link on that WIC uses the port value 1.

- Step 12** Enter the IP address of the gateway in the IP Gateway field.
- Step 13** Enter the subnet mask of the gateway in the IP Net Mask field.
- Step 14** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the C7 IP link you added.

## Add SS7 Subsystems (Mated Pairs)

An SS7 subsystem allows the Cisco MGC to route traffic over the C-links between mated STPs to provide network reliability. The links to these STPs are defined in the “Add Linksets” section on page 3-11.

The SS7 subsystem provides local number portability (LNP) support through an SCP. Because the SS7 subsystem is an instance of an application, you need to configure a subsystem for each application type of service (for example, LNP). The SS7 subsystem is also used to connect an STP to an SCP database for AIN queries. In this case, there is no mated STP.

Table 3-6 lists SS7 subsystem properties. Use the values in the table as you add SS7 subsystems to your MGC.

**Table 3-6 SS7 Subsystem Properties**

| Property       | MML Parameter | Description                                     | Default       | Valid Values                       |
|----------------|---------------|-------------------------------------------------|---------------|------------------------------------|
| Name           | name          | Identifies the MML name for this SS7 subsystem. | Ss7ss-1       | Up to 80 alphanumeric characters.  |
| Description    | desc          | Describes the subsystem.                        | SS7 Subsystem | Up to 128 alphanumeric characters. |
| Subsystem Type |               | Identifies the type of subsystem.               | None          | Mating APCs<br>AIN Services        |

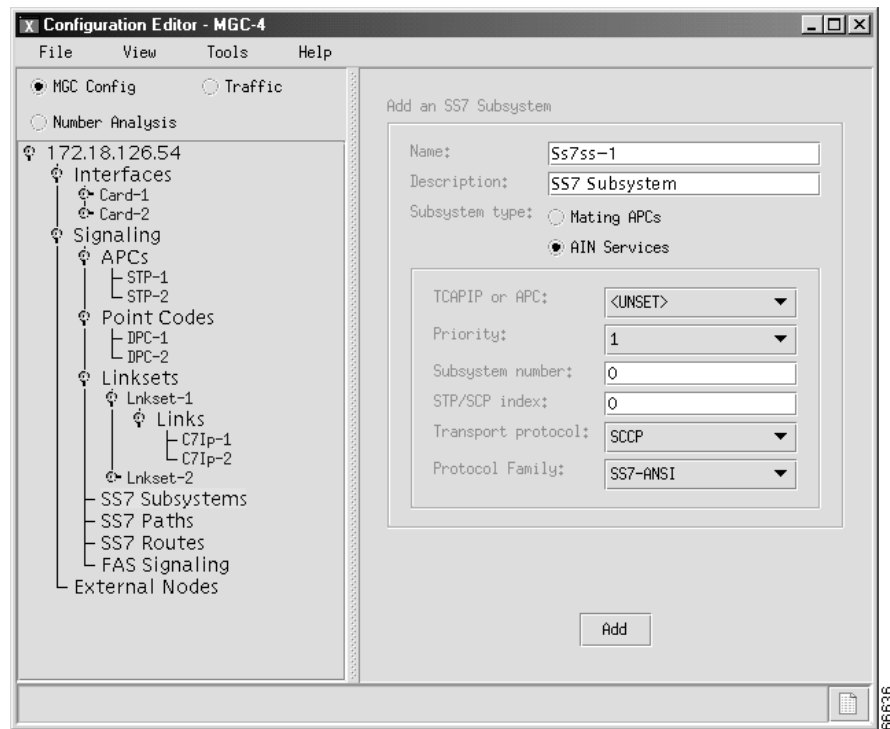
Table 3-6 SS7 Subsystem Properties (continued)

| Property           | MML Parameter | Description                                                                                               | Default | Valid Values        |
|--------------------|---------------|-----------------------------------------------------------------------------------------------------------|---------|---------------------|
| TCAP/IP or APC     | svc           | Identifies the STP (or STP pair) to be used for TCAP messages.                                            | <UNSET> | User defined.       |
| Priority           | pri           | Identifies the priority value of the route. Used for load sharing.                                        | 1       | 1 through 16        |
| Subsystem number   | ssn           | Identifies the desired SCP services. The value is provider specific.                                      | 0       | x.x.x.x             |
| STP/SCP Index      | stpscpind     | Identifies each SCP in a virtual switch configuration.                                                    | 0       | 0 through 99        |
| Transport Protocol | transproto    | Identifies the transport protocol used for TCAP messages. Accessing SCPs with SS7 uses the SCCP protocol. | TCP/IP  | SCCP<br>TCP/IP      |
| Protocol Family    | proto         | Identifies the protocol family used for SS7 messages.                                                     | <UNSET> | SS7-ANSI<br>SS7-ITU |

Use the following procedure to add SS7 subsystems for the STPs. Where necessary, refer to Table 3-6 for property values.

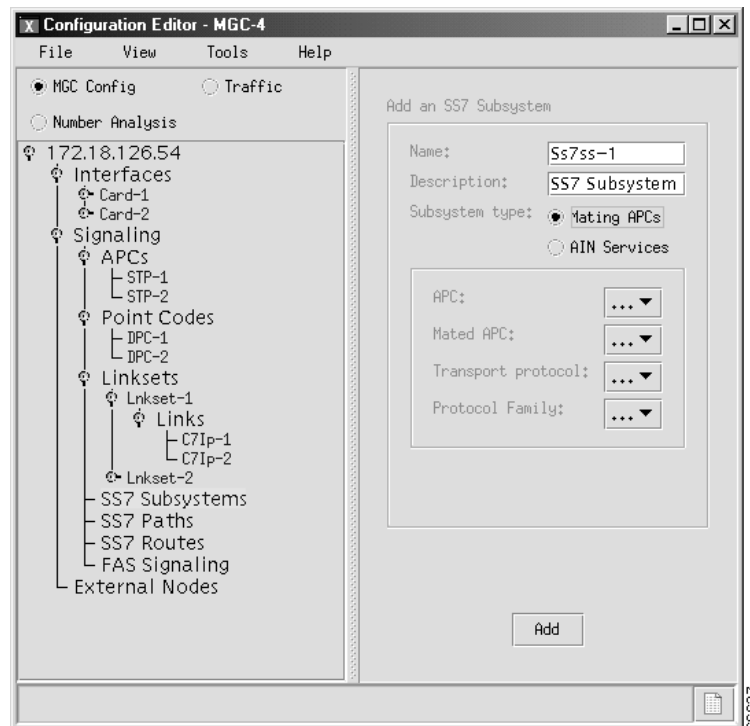
- Step 1** Click **Signaling > SS7Subsystems** in the left pane of the main VSPT window. The screen shown in Figure 3-14 appears.

Figure 3-14 Adding Mated pairs



- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** Select the appropriate radio button for the subsystem type you are adding. If you are identifying mated STPs, click the **Mating APCs** button. If you are using the subsystem for AIN queries, click the **AIN Services** button. In this example we are mating APCs. After you click the **Mating APCs** button, the screen displayed in Figure 3-15 appears:

**Figure 3-15 Configure Mated Subsystem**



- Step 5** Enter the name.
- Step 6** Enter the description.
- Step 7** Select the subsystem type.
- Step 8** On the Mated APC drop-down menu, select the APC of the second STP of the mated pair.
- Step 9** On the Transport Protocol drop-down menu, click **TCPIP** when identifying mated STPs. For AIN, click **SCCP** or **TCPIP**.
- Step 10** On the Protocol Family drop-down menu, select the protocol family:
- SS7-ANSI—Use when identifying mated STPs or using the subsystem for AIN queries.
  - SS7-China
  - SS7-ITU—Use when identifying mated STPs or using the subsystem for AIN queries
  - SS7-Japan
  - SS7-UK.



**Note** If you have multiple linksets to an STP that use different protocol families, you must also have multiple SS7 subsystems, one for each linkset that uses a specific protocol.

- Step 11** Click **Add**. The hierarchical tree on the left pane of the main VSPT window changes to reflect the mated pair you added.

## Configure SS7 Paths

An SS7 signaling service identifies the path over which the MGC node communicates, using a specific protocol, with a remote MGC or switch. The MML component name is SS7PATH. Table 3-7 lists the SS7 signaling service properties. Use the values in the table as you add SS7 paths to your MGC.

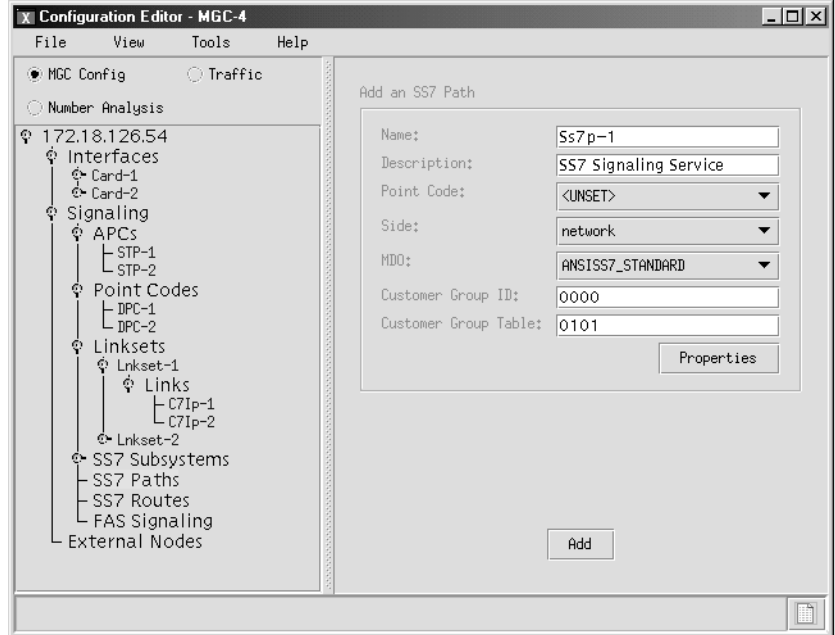
**Table 3-7 SS7 Signaling Service Properties**

| Property             | MML Parameter | Description                                                                                                                                                                                      | Default              | Valid Values                                    |
|----------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------|
| Name                 | name          | Identifies the SS7 service path.                                                                                                                                                                 | None                 | Up to 10 alphanumeric characters.               |
| Description          | desc          | Describes the SS7 service path.                                                                                                                                                                  | None                 | Up to 128 alphanumeric characters.              |
| Point Code           | dpc           | Specifies the point code of the SSP in the service path.                                                                                                                                         | <UNSET>              | User defined.                                   |
| Side                 | side          | Distinguishes the network equipment (like a switch) from the user equipment (like a terminal adapter or PBX). (Used for ISDN systems.)                                                           | network              | Network<br>User                                 |
| MDO                  | mdo           | Identifies the protocol (MDO file name) for this SS7 service path. You select the MDO file name from a drop-down list.                                                                           | ANSISS7_S<br>TANDARD | See list.                                       |
| Customer Group ID    | custgrpID     | Contains a unique identifier for the number analysis file. (Used with nailed solutions only.)                                                                                                    | 0000                 | 000–9999 Up to 4-digit alphanumeric characters. |
| Customer Group Table | custgrptbl    | Contains the number analysis table index used in combination with the Customer Group ID as a unique key to identify the number analysis file used for this signal service. (Not currently used.) | 0101                 | 0000–9999                                       |

Use the following procedure to add SS7 signaling service paths to the switch (identified by the DPC). If you have a signaling service from the Cisco MGC to a PSTN switch, use the SS7 path component to add the service to your configuration. Where necessary, refer to Table 3-7 for property values.

- Step 1** Click **SS7 Paths** in the left pane of the main VSPT window. The screen shown in Figure 3-16 appears.

Figure 3-16 Adding SS7 Paths



- Step 2** Enter the name of the SS7 signaling path.
- Step 3** Enter the description of the SS7 signaling path.
- Step 4** On the Side drop-down menu, select the side (Q.931 call model side):
- Network
  - User
- Step 5** On the Point Code drop-down menu, select the destination point code (the point code of the PSTN switch) for this signaling service.
- Step 6** On the MDO drop-down menu, select the protocol for this signaling service; for example, ANSISS7\_STANDARD. Supported protocols are:
- ANSISS7\_CLEAR
  - ANSISS7\_MCI
  - ANSISS7\_SPRINT
  - ANSISS7\_STANDARD
  - BTNUP\_BTNR167
  - BTNUP\_IUP
  - BTNUP\_NRC
  - ETS\_300\_356
  - HKTA\_2202
  - ISUPV1\_POLI
  - ISUPV2\_FINNISH96
  - ISUPV2\_FRENCH
  - ISUPV2\_GERMAN

- ISUPV2\_JAPAN
- ISUPV2\_KPNPB
- ISUPV2\_JAPAN
- ISUPV2\_SWISS
- ISUPV3\_UK
- NORTEL\_IBN7
- Q721\_BASE
- Q721\_CHINA
- Q721\_FRENCH
- Q761\_ARGENTINA
- Q761\_AUSTRAL
- Q761\_BASE
- Q761\_BELG\_MOBI
- Q761\_CHILE
- Q761\_CHINA
- Q761\_KOREAN
- Q761\_SINGAPORE
- Q761\_TAIWAN
- Q767\_BASE
- Q767\_ITAL
- Q767\_ITAL\_INTERCONNECT
- Q767\_MEXICAN
- Q767\_RUSS
- Q767\_SPAN
- Q767\_SWED
- Q767\_TELSTRA
- T113\_BELL

**Step 7** Enter the customer group ID.

**Step 8** Enter the customer group table.

**Step 9** Click **Add**. The hierarchical tree on the left pane of the main VSPT window changes to reflect the SS7 path you added.

---

## Configure SS7 Routes

An SS7 route is a path, through a linkset, between one MGC node and another MGC node or a switch. In the following example, the SS7 routes indicate the linksets that carry SS7 signals between the MGC node and the ILEC Class 5 switch or CLEC Class 5 switch.

You must define a separate route for each remote switch.

Table 3-8 lists the SS7 route properties. Use the values in the table as you add SS7 routes to your MGC.

**Table 3-8 SS7 Route Properties**

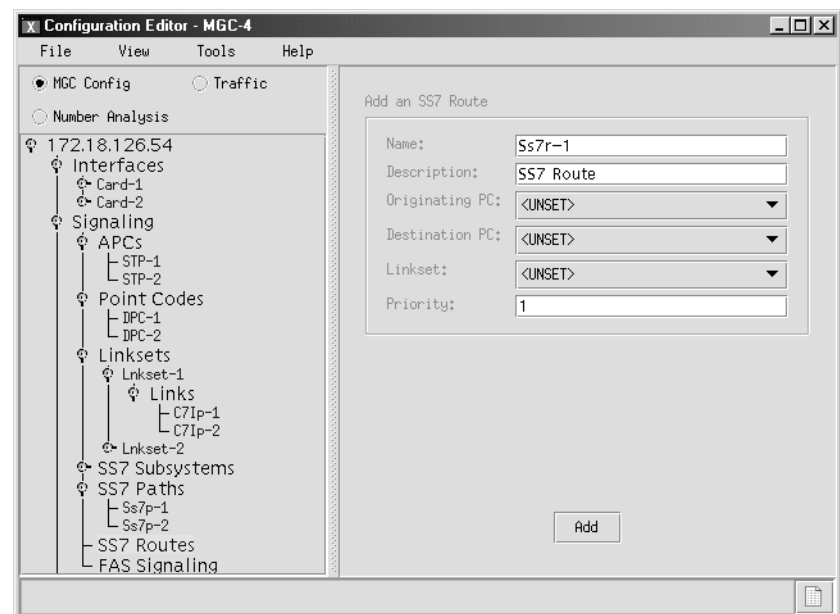
| Property       | MML Parameter | Description                                                                                         | Default   | Valid Values                      |
|----------------|---------------|-----------------------------------------------------------------------------------------------------|-----------|-----------------------------------|
| Name           | name          | Identifies the MML name for a route set.                                                            | Ss7r-1    | Up to 10 alphanumeric characters  |
| Description    | desc          | Description of the route.                                                                           | SS7 Route | Up to 128 alphanumeric characters |
| Originating PC | opc           | Select the MML name of the MGC point code.                                                          | <UNSET>   | User defined                      |
| Destination PC | dpc           | Select the point code of the destination switch delivering bearer traffic to the solution.          | <UNSET>   | User defined                      |
| Linkset        | lnkset        | Select the linkset over which the SS7 signals travel.                                               | <UNSET>   | User defined                      |
| Priority       | pri           | Sets the priority value of the route. Create load sharing by setting all routes to the same number. | 1         | 1 through 4                       |

You must add an SS7 route for each signaling path from the Cisco MGC to the PSTN switch through the linksets you have created to the STPs. You should create two routes to the PSTN switch, with each route passing through a different STP of a mated pair.

Use the following procedure to add SS7 routes to the MGC. Where necessary, refer to Table 3-8 for property values.

- Step 1** Click **SS7 Routes** in the left pane of the main VSPT window. The screen shown in Figure 3-17 appears.

**Figure 3-17 Adding SS7 Routes**



88635

- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** On the Originating PC drop-down menu, select the origination point code for this route.
- Step 5** On the Destination PC drop-down menu, select the signal destination point code of the PSTN switch.
- Step 6** On the Linkset drop-down menu, select the linkset for this route.
- Step 7** Enter the priority.



**Note** Routes can share signaling traffic. To enable load sharing, set the priorities the same for each route.

- Step 8** Click **Add**. The hierarchical tree on the left pane of the main VSPT window changes to reflect the SS7 route you added.

## Configure FAS Signaling

A facility associated signaling (FAS) service uses the same path for signaling and voice circuits. Table 3-9 lists the FAS signaling service properties. Use the values in the table as you add FAS signaling services to your MGC.

**Table 3-9 FAS Signaling Service Properties**

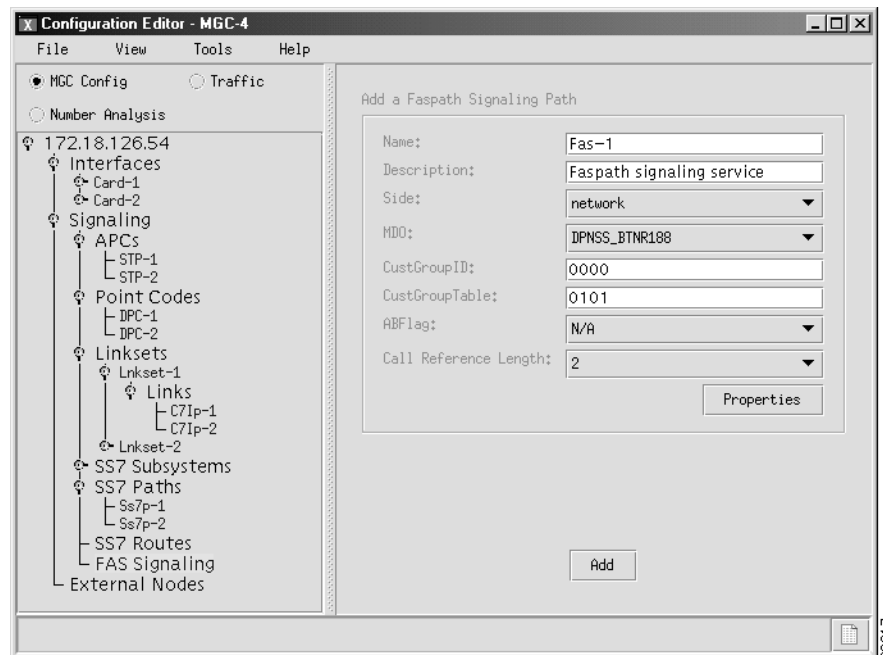
| Property             | MML Parameter | Description                                                                                                                                                                | Default                   | Valid Values                       |
|----------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|
| Name                 | name          | Identifies the MML name of the FAS signaling service.                                                                                                                      | Fas-1                     | Up to 10 alphanumeric characters   |
| Description          | desc          | Describes the FAS signaling service.                                                                                                                                       | Faspath signaling service | Up to 128 alphanumeric characters. |
| Side                 | side          | Distinguishes the network equipment from the user equipment.                                                                                                               | network                   | network<br>user                    |
| MDO                  | mdo           | Identifies the protocol (MDO file name) for this FAS signaling service. You select the MDO file name from a drop-down list.                                                |                           | See list                           |
| Customer Group ID    | custgrpid     | Contains a unique identifier for the number analysis file.                                                                                                                 | 0000                      | 0000–9999                          |
| Customer Group Table | custgrptbl    | Contains the number analysis table index used in combination with the customer group ID as a unique key to identify the number analysis file used for this signal service. | 0101                      | 0101                               |

**Table 3-9 FAS Signaling Service Properties (continued)**

| Property              | MML Parameter | Description                                                               | Default         | Valid Values                     |
|-----------------------|---------------|---------------------------------------------------------------------------|-----------------|----------------------------------|
| A/B Flag              | abflag        | Specifies DPNSS a or b side.                                              | n               | A side<br>B side<br>n—NA         |
| Call Reference Length | crlen         | Identifies the field length (1 or 2 bytes) for the call reference number. | 2—standard ETSI | 0—DPNSS<br>1—1 byte<br>2—2 bytes |

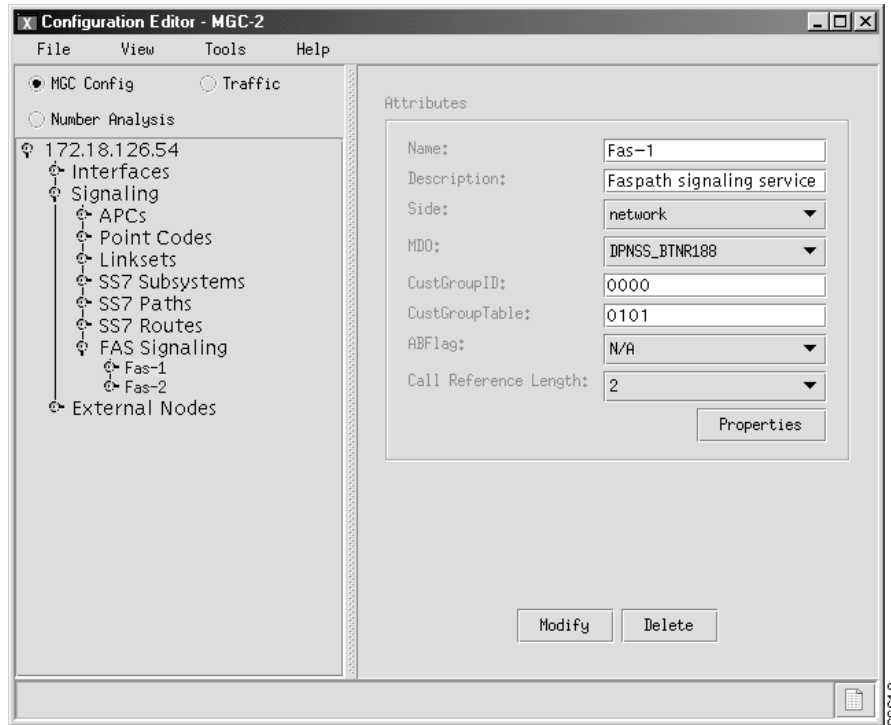
Use the following procedure to configure FAS signaling for the Cisco MGC. Where necessary, refer to Table 3-9 for property values.

- Step 1** Click **Signaling > FAS Signaling** in the left pane of the main VSPT window. The screen shown in Figure 3-18 is displayed.

**Figure 3-18 Add FAS Signaling**

- Step 2** Click **Add**. The screen shown in Figure 3-19 is displayed.

Figure 3-19 Configure FAS Signaling



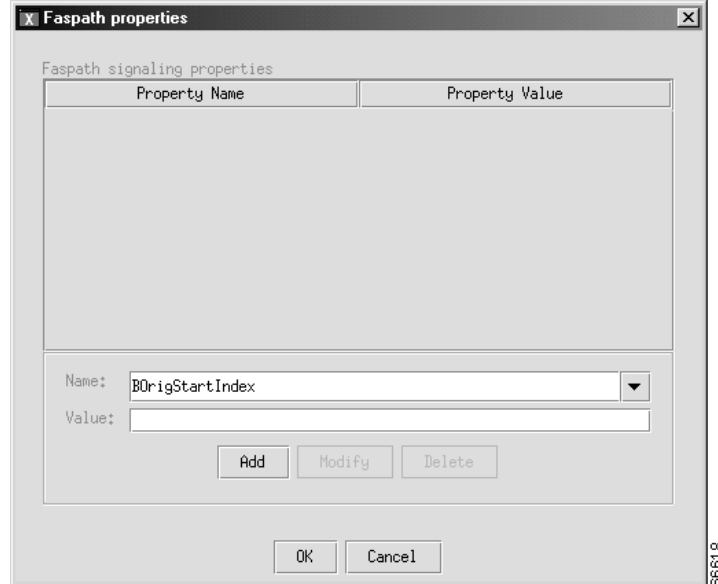
- Step 3** Enter the name.
- Step 4** Enter the description.
- Step 5** On the Side drop-down menu, select the Q.931 call side model:
- Network
  - User
- Step 6** On the MDO File Name drop-down menu, select the protocol for this signaling service.
- Step 7** Enter the customer group ID (formerly the VNETID).
- Step 8** Enter the customer group table.
- Step 9** On the A/B Flag drop-down menu, select a value.
- Step 10** On the Call Reference Length drop-down menu, select 0, 1, or 2.
- Step 11** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the FAS signaling service you added.

## Add or Modify FASPath properties

Use the following procedure to add or modify FASPath properties:

- Step 1** Click **Properties** in the window shown in Figure 3-19. The screen shown in Figure 3-20 is displayed.

Figure 3-20 FASPath Properties



- Step 2** To add a property, select the property in the Name drop-down list.
- Step 3** Enter the property value in the Value drop-down list.
- Step 4** Click **Add**. The new property and value appear on the top portion of the screen.
- Step 5** To modify a property, click the property you want to change.
- Step 6** In the value field, overwrite the property value with the desired value.
- Step 7** Click **Modify**.
- Step 8** Click **OK** when you are finished adding or modifying properties.

## Configuring Media Gateway Control Links

Media gateway (MGW) control links provide the communication path used by the signaling controller to control the bearer traffic passing through each media gateway. Configure MGW control links using the components in the following paragraphs.



### Note

You need to configure cards and interfaces for MGW control links just as you configured the cards and interfaces used for signaling links. You might be able to use the same cards and interfaces previously planned for your MGW control links. For information on configuring cards and interfaces, refer to the “Configuring the Cisco MGC” section on page 3-1.

## Adding External Nodes

An external node is a node with which the MGC communicates, either directly or indirectly. Here the media gateway is the external node. Table 3-10 lists the external node properties. Use the values in the table as you add external nodes to your MGC.

**Table 3-10 External Node Properties**

| Field Name  | MML Parameter | Description                                   | Default       | Valid Values                                                                                                                                                        |
|-------------|---------------|-----------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name        | name          | Identifies the MML name for the external node | External-1    | Up to 10 alphanumeric characters; must start with a letter                                                                                                          |
| Description | desc          | Describes the external node.                  | External Node | Up to 128 alphanumeric characters                                                                                                                                   |
| Type        | type          | Lists the various external nodes supported.   | <UNSET>       | <UNSET><br>AS3660<br>AS5200<br>AS5300<br>AS5350<br>AS5400<br>AS5800<br>AS5850<br>AS7200<br>CAT8510<br>CAT8540<br>LS1010<br>MGC<br>MGX8260<br>SCP<br>UNKNOWN<br>VISM |

Use the external node component to add MGWs. You must create an external node for each MGW.



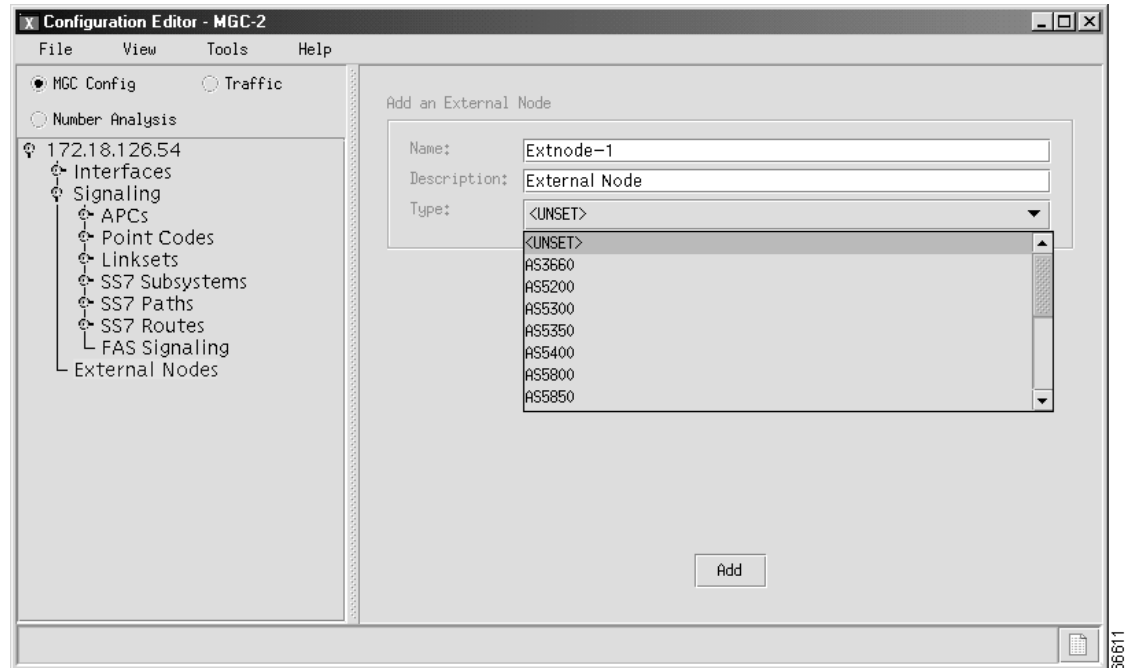
**Note**

Cisco SLTs perform MTP layer 2 processing only, and you do not need to add them as external nodes when provisioning.

Use the following procedure to add an external node to the MGC. Where necessary, refer to Table 3-10 for property values.

- Step 1** Click **External Node** in the left pane of the main VSPT window. The screen shown in Figure 3-21 appears.

Figure 3-21 Adding External Nodes



- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** On the Type drop-down menu, select the type of external node you are adding. For example, click **MGX8260**, and click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the external node that you added (for example, Cisco MGX 8260).

## Configuring MGWs

An MGW is the interface between the QoS packet network and the PSTN/ISDN network. A gateway digitizes and compresses voice calls from the PSTN, creating IP packets for routing to another gateway (for forwarding to the PSTN) or to a terminal.



### Note

The components to be configured vary according to the type of external node you have added.

Table 3-11 lists the MGW properties. Use the values in the table as you configure MGWs.

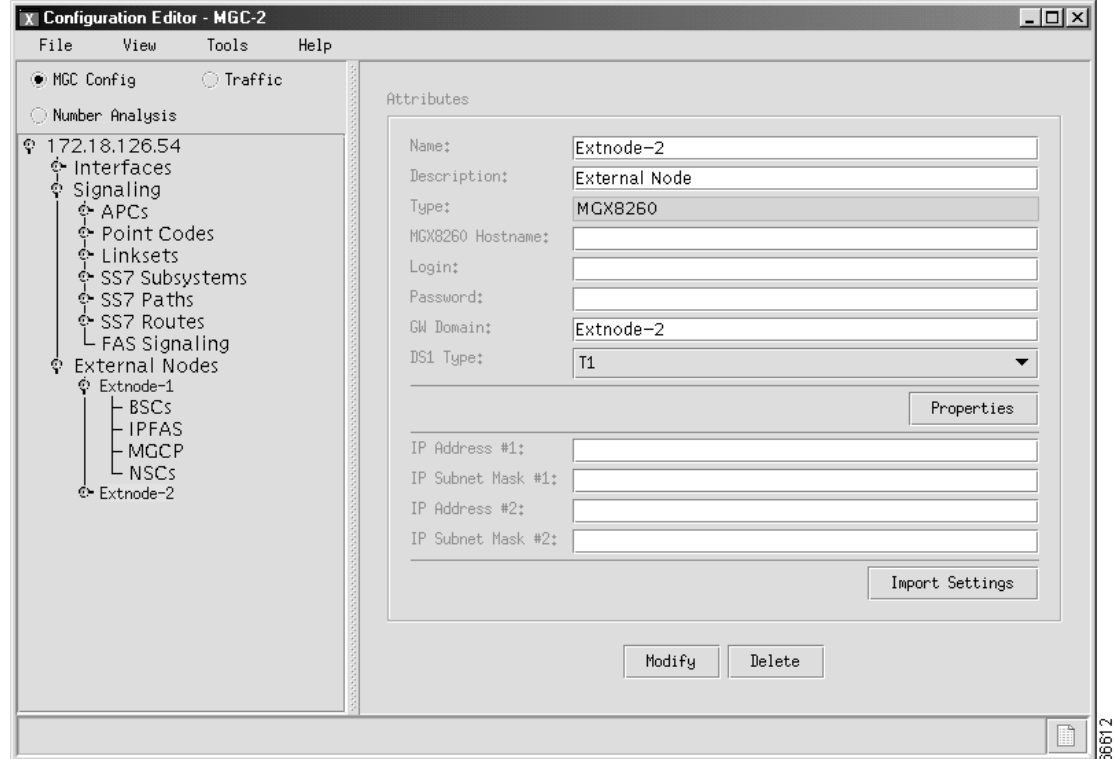
Table 3-11 MGW Properties

| Field Name          | Description                                                                                                                                                            | Default                                | Valid Values                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------|
| Name                | MML name for external node                                                                                                                                             | <gateway name>                         | Up to 80 alphanumeric characters                |
| Description         | Description of the external node.                                                                                                                                      | None                                   | Up to 128 alphanumeric characters               |
| Type                | Previously defined external node type.                                                                                                                                 | <MGX8260>                              | User defined                                    |
| MGX Hostname        | Identifies the target MGX8260's IP address.                                                                                                                            | None                                   | User defined                                    |
| Login / Password    | Configures valid MGX login and password.                                                                                                                               | None                                   | User defined                                    |
| MGCP Domain         | Defines the domain name used by the VSC3000 when it sends MGCP connection messages that control bearer/trunk circuits.                                                 | None                                   | User defined                                    |
| DS1 Type            | Specifies the DS1 as E1 (Europe) or T1 (North America).                                                                                                                | T1                                     | E1<br>T1                                        |
| IP Address #1       | IP address, in dotted decimal notation, of the MGX's primary IP interface, used for signaling and control.                                                             | None                                   | x.x.x.x                                         |
| IP Subnet Mask #1   | Defines the IP mask, in dotted decimal notation, for this IP interface.                                                                                                | None                                   | x.x.x.x                                         |
| IP Address #2       | IP address, in dotted decimal notation, of a secondary interface used for signaling or control backup.                                                                 | None                                   | x.x.x.x                                         |
| IP Subnet Mask #2   | Defines the IP mask for this IP interface.                                                                                                                             | None                                   | No, Yes                                         |
| Clock Source Slot   | Identifies the card slot on the MGX 8260 that is providing the timing source. Ignored if internal clock is selected.                                                   | 9                                      | 9–16                                            |
| Clock Source Line   | Identifies the DS1/DS3 line number from which timing is derived. Ignored if internal clock is selected.                                                                | 1 (if slot 9–10<br>501 (if slot 11-16) | 1–16<br>501–06                                  |
| Clock Source Type   | Defines the source for timing.                                                                                                                                         | external                               | broadband<br>narrowband<br>external<br>internal |
| Clock Src Card Type | External clock can be derived from the Building Integrated Timing Source (BITS) input or an OC-3 optical input on the SCC card. Ignored if internal clock is selected. | bits                                   | bits<br>oc3                                     |
| Rack Number         | Physical identification of rack.                                                                                                                                       | <UNSET>                                | 1–7                                             |
| Network Mode        | Determines how the MGC node is used.                                                                                                                                   | Local                                  | local<br>VoATM<br>VoIP                          |

Use the following procedure to configure the external node as an MGW. Where necessary, refer to Table 3-11 for property values.

- Step 1** Click the external node that you just added, in the left pane of the main VSPT window. A screen similar to the one shown in Figure 3-22 appears.

Figure 3-22 Configuring an MGW



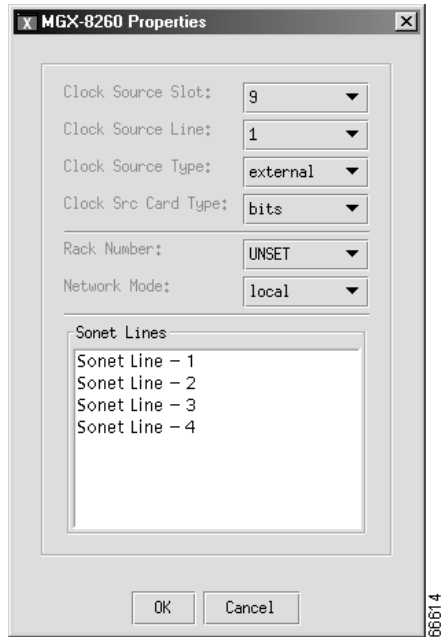
- Step 2** Enter a name for the external node
- Step 3** Enter a description of the external node.
- Step 4** Enter an IP address in the MGX 8260 Hostname field.
- Step 5** Enter a valid Cisco MGW login ID and password.
- Step 6** Enter the gateway domain.



**Note** You can import settings from the Cisco MGW you specified with the MGX 8260 hostname by clicking **Import Settings**. You see the screen shown in Figure 3-22 while the settings are being imported.

- Step 7** Click **Properties**. The screen shown in Figure 3-23 appears.

Figure 3-23 Properties



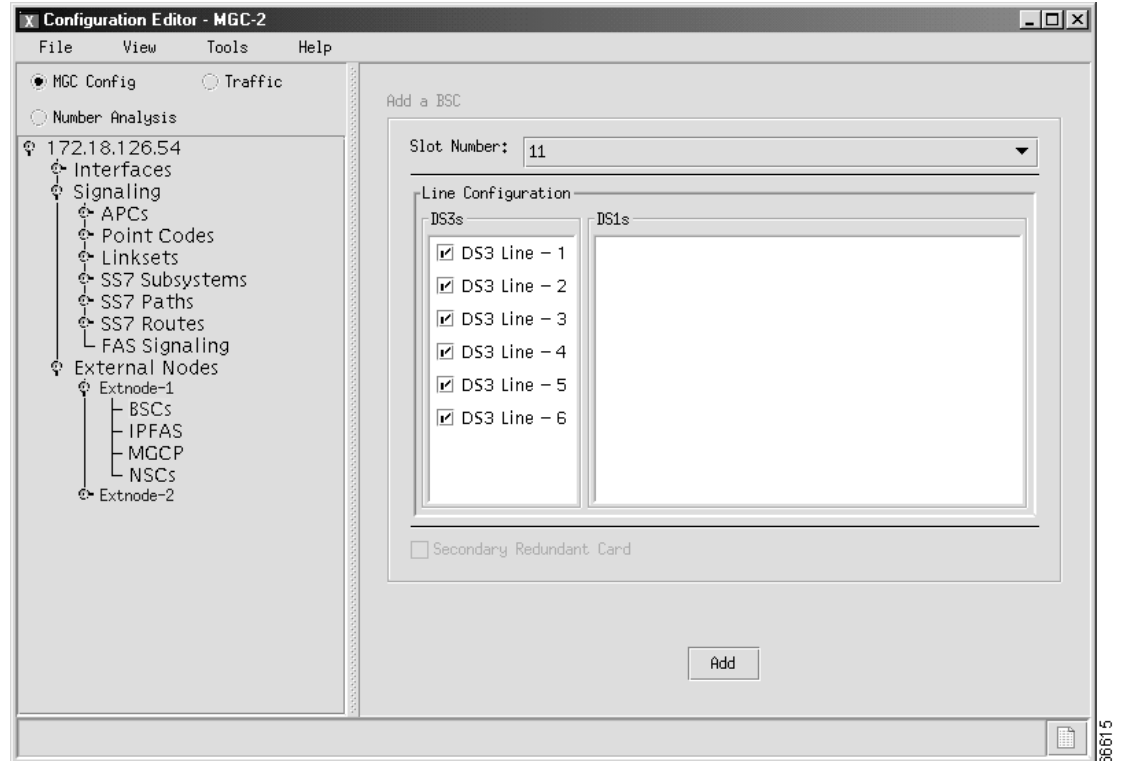
- Step 8** On the Clock Source Slot, Clock Source Line, Clock Source Type, and Clock Src Card Type drop-down menus, select the desired value for each, and click **OK**.
- Step 9** If you did not import the settings, enter the network addresses and masks (IP Address #1, IP Subnet Mask #1, IP Address #2, and IP Subnet Mask #2) in dotted notation; for example, 172.18.145.3.
- Step 10** Click **Modify**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the MGW you added.

## Adding a Broadband or Narrowband Service Card

A broadband switching card (BSC) provides high density TDM switching capability to the MGX8260. If a BSC is installed in the external gateway, provision it beginning with Step 1, below. If a narrowband service card (NSC) is installed, start with Step 5.

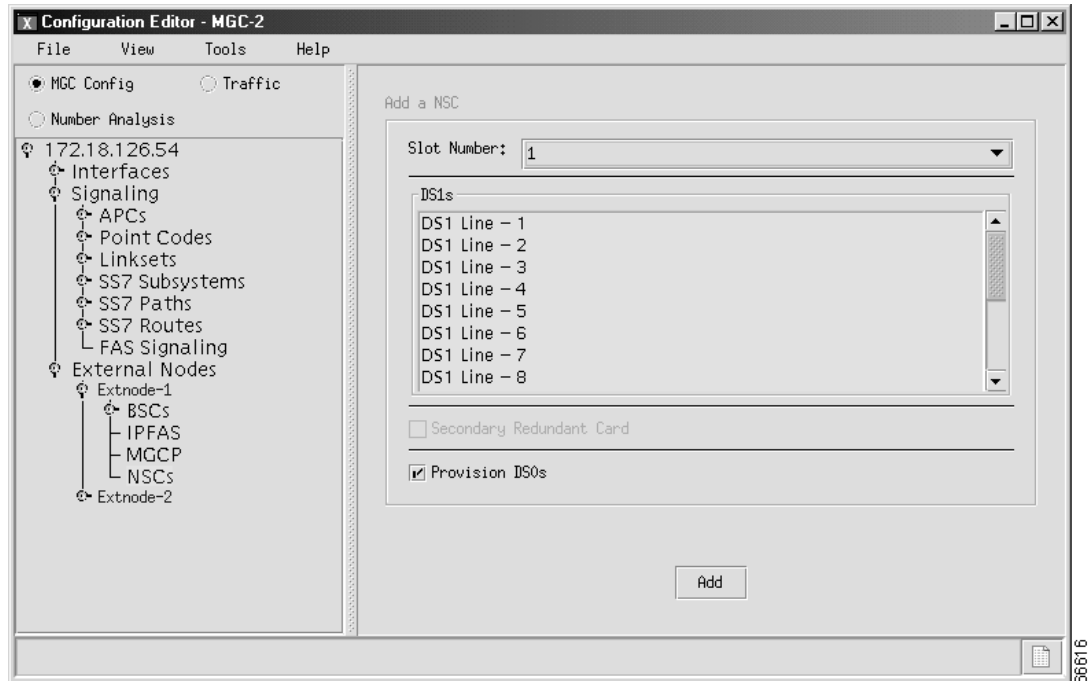
- Step 1** Expand the tree under the MGW in the left pane of the main VSPT window, and click **BSC**. A screen similar to the one shown in Figure 3-24 appears.

Figure 3-24 Configured BSCs



- Step 2** Select the slot number of the card in the Slot Number drop-down list.
- Step 3** Indicate whether it is a secondary redundant card, and select the appropriate DS3 line numbers.
- Step 4** Click **Add**, to add the BSC.
- Step 5** To provision an NSC installed in the external gateway, expand the tree under the media gateway, and click **NSC**. The screen shown in Figure 3-25 appears.

Figure 3-25 Add an NSC



- Step 6** Select the slot number of the NSC in the Slot Number drop-down list.
- Step 7** Select one or more DS1 lines by clicking on them to highlight them.
- Step 8** To automatically provision the DS0s on the line, click the **Provision DS0s** checkbox.
- Step 9** Indicate whether the card is a secondary redundant card.
- Step 10** Click **Add**. The hierarchical tree in the left of the screen changes to reflect the service card you added.

## Adding an IPFAS Signaling Service

An Internet Protocol Facility Associated Signaling (IPFAS) signaling service defines the FAS or NFAS over IP transport service or signaling path from a MGC node to a media gateway. Table 3-12 lists the IPFAS signaling service properties.

Table 3-12 IPFAS Signaling Service Properties

| Property    | MML Parameter | Description                                        | Default                     | Valid Values                       |
|-------------|---------------|----------------------------------------------------|-----------------------------|------------------------------------|
| Name        | name          | Identifies the MML name of the IPFAS service path. | Ipfas-1                     | Up to 10 alphanumeric characters.  |
| Description | desc          | Describes the IPFAS service path.                  | Ipfaspath signaling service | Up to 128 alphanumeric characters. |

Table 3-12 IPFAS Signaling Service Properties (continued)

| Property              | MML Parameter | Description                                                                                                                                                                                              | Default         | Valid Values                                                                   |
|-----------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------|
| External Node         | extnode       | Identifies the external node.                                                                                                                                                                            | None            | User defined.<br>Up to 10 alphanumeric characters; cannot start with a number. |
| Side                  | side          | Distinguishes the network equipment (like a switch) from the user equipment (like a terminal adapter or PBX). (Used for ISDN systems.)                                                                   | network         | network<br>user                                                                |
| MDO                   | mdo           | Identifies the protocol (MDO file name) for this IPFAS service path. You select the MDO file name in a drop-down list.                                                                                   | Bell_1268       | See list.                                                                      |
| Customer Group ID     | custgrpId     | Contains a unique identifier for the number analysis file. (Used with nailed solutions only.)                                                                                                            | 0000            | 0000 – 9999                                                                    |
| Customer Group Table  | custgrptbl    | Contains the number analysis table index used in combination with the customer group ID as a unique key to identify the number analysis file used for this signal service. (Not used with this release.) | 0101            | 0101                                                                           |
| A/B Flag              | abflag        | Specifies DPNSS a or b side<br>(Field is ignored for ETSI.)                                                                                                                                              | n               | A side<br>B side<br>n-NA                                                       |
| Call Reference Length | crlen         | Identifies the field length (1 or 2 bytes) for the call reference number.                                                                                                                                | 2—standard ETSI | 0—DPNSS<br>1—1 byte<br>2—2 bytes                                               |

Use the following procedure to add the ipfaspaths from the media gateway. The MML component name is IPFASPath. In the following example, it is the PRI backhaul path from the media gateway. Where necessary, refer to Table 3-12 for property values.

- Step 1** Click **IPFAS** in the left pane of the main VSPT screen, and click **Add** under the first textbox in the right pane. The screen shown in Figure 3-26 appears.

Figure 3-26 Adding an IPFAS Signaling Service

The screenshot shows a dialog box titled "Add an IP FAS Signal Path". The main title bar says "Add a FAS over IP Signaling Path". The fields are as follows:

- Name: ipfas-1
- Description: ipfaspath signaling service
- External node: Extnode-1
- Side: network
- MDO: BELL\_1268
- Customer Group ID: 0000
- A/B Flag: N/A
- Call Reference Length: 2
- MGW Card Slot: <UNSET>
- IS1 start: <UNSET>
- Step Interval: (None)
- Number to create: (None)
- UDP Port number: 7007

Buttons: Properties, Add, Close.

**Step 2** Enter the name.

**Step 3** Enter the description.

**Step 4** On the Side drop-down menu, select the side (Q.931 call model side):

- Network
- User

**Step 5** On the MDO File Name drop-down menu, select the protocol for this signaling service; for example, BELL\_1268 or ATT\_41459. Supported protocols are:

- ATT\_41459
- ATT\_41459\_C2
- BELL\_1268
- BELL\_1268\_C3
- ETS\_300\_102
- ETS\_300\_102\_C1
- ETS\_300\_121
- ETS\_300\_172
- NTT\_INS\_1500

**Step 6** Enter the customer group ID (formerly VNETID).

**Step 7** On the A/B Flag drop-down menu, select a value.

- Step 8** On the Call Reference Length drop-down menu, select 0, 1, or 2.
- Step 9** On the MGW Card Slot drop-down menu, select a value.
- Step 10** On the DS1 start drop-down menu, select a value.
- Step 11** Enter a step interval.
- Step 12** Enter the number of IPFASPaths to create multiple IPFASPaths.



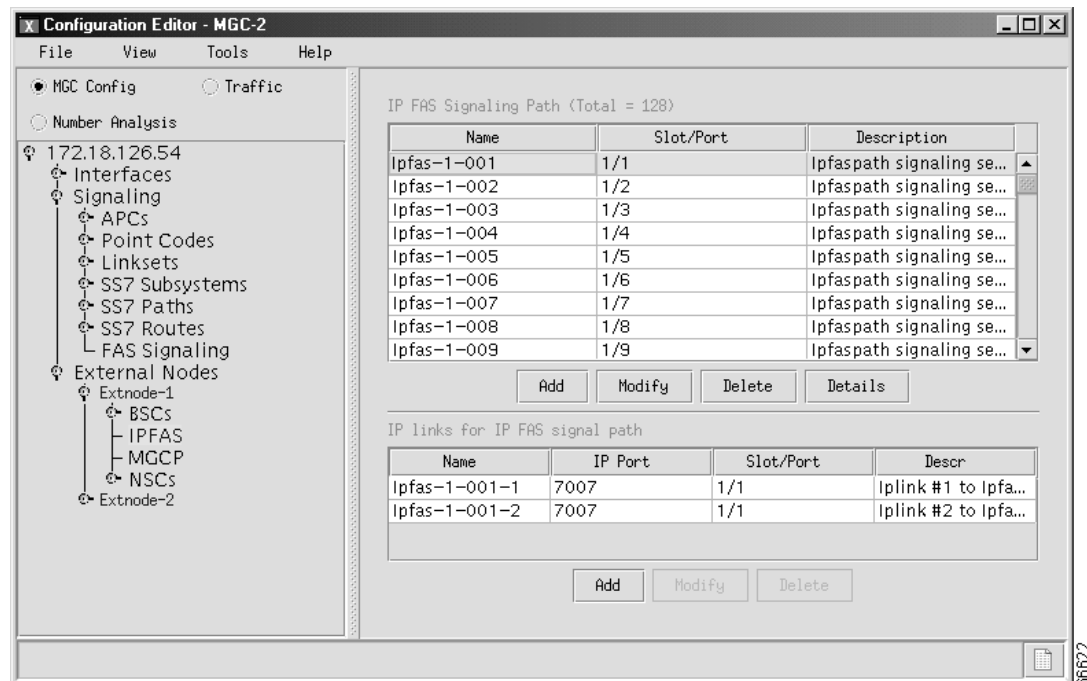
**Note** You cannot have more than 168 IP links using the same UDP connection (same local port, local IP address, remote port, and remote address).

- Step 13** Click **Add**. The top portion of the screen changes to reflect the IPFAS signaling service you added, and the D channel for the IP FAS signal path is displayed in the lower portion of the screen (see Figure 3-27).



**Note** Each FAS PRI defined in the Cisco MGW requires its own IPFASPath. Define an IPFASPath for each PRI D channel on the Cisco MGW.

**Figure 3-27 IPFAS Signaling Service Added**



## Adding IP Links for IPFAS

AN IP link for IPFAS identifies the IP link connection to support the IPFAS service between an MGC node Ethernet interface and an MGW. Table 3-13 lists the IP link properties. Use the values in the table as you add IP links to the MGC.

Table 3-13 IP Link Properties

| Property     | MML Parameter | Description                                                                                                              | Default            | Valid Values                                  |
|--------------|---------------|--------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------|
| Name         | name          | Identifies the MML name for the IP link.                                                                                 | Mgcp-1-1           | Up to 80 alphanumeric characters              |
| Description  | desc          | Describes the link.<br>Up to 128 alphanumeric characters.                                                                | Iplink#1 to Mgcp-1 | Up to 128 alphanumeric characters             |
| Interface    | if            | Select the interface used for VSC to gateway communications.                                                             | None               | User defined                                  |
| IP Addr      | ipaddr        | Identifies the IP address of the VSC set at the IP_Addr fields in the XECfgParm.dat file.                                | IP_Addr1           | IP_Addr1<br>IP_Addr2<br>IP_Addr3<br>IP_Addr4  |
| Port         | port          | Identifies the UDP port on the VSC for gateway communications.                                                           | 2427               | Any non-well known UDP port greater than 1024 |
| Priority     | pri           | Identifies the priority value of the link. Give links same priority for load sharing                                     | 1                  | 1                                             |
| Peer Address | peeraddr      | Identifies the IP address configured for the gateway.                                                                    | x.x.x.x            | User defined                                  |
| Peer Port    | peerport      | Identifies the port on the gateway that receives messages.                                                               | 2427               | Any non-well known UDP port greater than 1024 |
| Signal Slot  | sigslot       | Identifies the physical slot of the card that supports the IPFAS D-channel.<br>This value is only used to support IPFAS. | 0                  | 0—none<br>1 through 16                        |
| Signal Port  | sigport       | Identifies the DS1 port that is carrying the PRI D-channel (Q.931 signaling). This value is only used to support IPFAS.  | 0                  | 0—none<br>1 through 336                       |
| Service      | svc           | Identifies the signaling service that this link supports.                                                                | None               | User defined                                  |

Use the following procedure to add IPFASPath IP links. Where necessary, refer to Table 3-13 for property values.

- Step 1** Highlight the IPFAS signaling path in the top pane of the window shown in Figure 3-27, and click the **Add** button in the lower pane of the window. The window shown in Figure 3-28 appears.

Figure 3-28 Add an IP Link

The screenshot shows a dialog box titled "Add an IP link". It contains the following fields and values:

|               |             |
|---------------|-------------|
| Name:         | IpInk-1     |
| Description:  | IpInk       |
| Interface:    | <UNSET>     |
| IP Addr:      | <UNSET>     |
| Port:         | 7007        |
| Priority:     | 1           |
| Peer Address: | <UNSET>     |
| Peer Port:    | 7007        |
| Signal Slot:  | 1           |
| Signal Port:  | <UNSET>     |
| IP Gateway:   |             |
| IP Net Mask:  |             |
| Service:      | Ipfas-1-003 |

Buttons: Add, Close

- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** On the Interface drop-down menu, select the Ethernet interface for this link.
- Step 5** On the IP Addr drop-down menu, select the IP address of the Cisco MGC.
- IP Addr1
  - IP Addr2
  - IP Addr3
  - IP Addr4



**Note** The address for this value, in dotted decimal notation, is found in the XECfgParm.dat file you set up during your initial system configuration. See the *Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide* for more information.

- Step 6** Enter a number for the UDP port on the Cisco MGC. You can use any unused UDP port number, but you should not use 1 through 1024 (these are reserved for other applications).
- Step 7** On the Priority drop-down menu, select a priority. The value range is 1 through 4, and 1 is the highest priority.
- Step 8** On the Peer Address drop-down menu, select the peer address.
- Step 9** Enter the port number in the peer port field.
- Step 10** On the Signal Slot and Signal Port drop-down menus, select values.

**Caution**

Because of a 0-based and 1-based addressing issue, the SigSlot number does not correspond to the card number on the Cisco MGW, and the SigPort number does not correspond to the DS1 number on the Cisco MGW.

- Step 11** Enter the IP gateway and the IP net mask.
- Step 12** Click **Add**. The new IP links for the IP FAS signaling path appear in the lower portion of the window.
- Step 13** Continue adding IP links to the IP FAS signaling paths, as needed.

## Changing IPFAS Signaling Service Properties

You can modify the properties of the IPFAS signaling services you have created. These properties apply to all IPFAS signaling services you create. You do not have to change the default properties. For a list of signaling service properties, default values, and descriptions, see the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*.

Use the following procedure to add or change IPFAS signaling service properties:

- Step 1** On the screen shown in Figure 3-27, select a IPFAS signaling service on the top portion of the screen, and click **Modify**. The screen shown in Figure 3-29 appears.

**Figure 3-29 Adding and Changing IPFAS Signaling Properties**

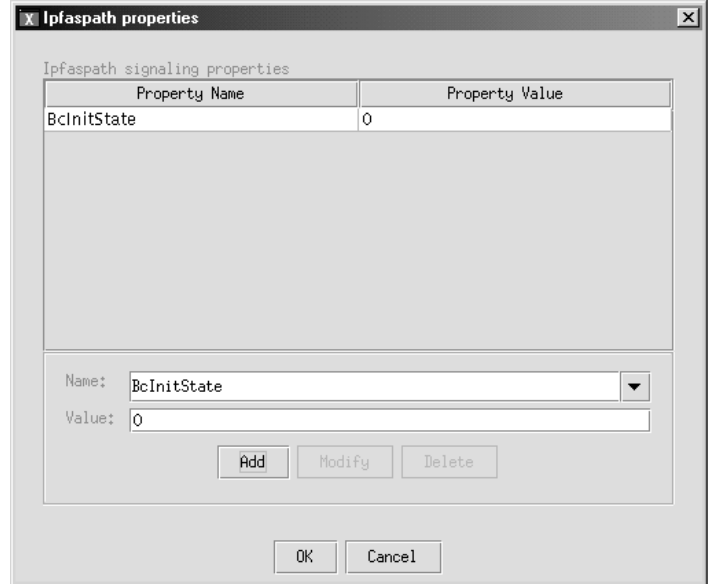
|                        |                             |
|------------------------|-----------------------------|
| Name:                  | Ipfas-1-004                 |
| Description:           | Ipfaspath signaling service |
| External node:         | Extnode-1                   |
| Side:                  | network                     |
| HDO:                   | BELL_1268                   |
| Customer Group ID:     | 0000                        |
| A/B Flag:              | N/A                         |
| Call Reference Length: | 2                           |

Properties

OK Cancel

- Step 2** To modify the IPFAS path configuration, change the property on this screen.
- Step 3** To modify a property, click **Properties**. The screen shown in Figure 3-30 appears.

Figure 3-30 IPFAS Signaling Service Property Added



- Step 4** To add a property, select the property in the Name drop-down list.
- Step 5** Enter the property value in the Value drop-down list.
- Step 6** Click **Add**. The new property and value appear on the top portion of the screen.
- Step 7** To modify a property, click the property you want to change.
- Step 8** In the value field, overwrite the property value with the desired value.
- Step 9** Click **Modify**.
- Step 10** Click **OK** when you are finished adding or modifying properties.



**Note** You cannot modify properties until after you have created the IPFAS signaling service.

## Adding an MGCP Signaling Service

The MGCP signaling service specifies the path that the MGC node uses to communicate with an MGW. The MML component name is MGCPPATH. Table 3-14 lists the MGC signaling service properties. Use the values in the table as you add an MGCP signaling service.

Table 3-14 MGC Signaling Service Properties

| Property      | MML Parameter | Description                                             | Default                    | Valid Values                      |
|---------------|---------------|---------------------------------------------------------|----------------------------|-----------------------------------|
| Name          | name          | Identifies the MML name for the MGCP signaling service. | Mgcp-1                     | Up to 10 alphanumeric characters  |
| Description   | desc          | Describes the service path.                             | Mgcppath Signaling Service | Up to 128 alphanumeric characters |
| External Node | extnode       | Identifies the gateway for this signaling service.      | None                       | User defined                      |

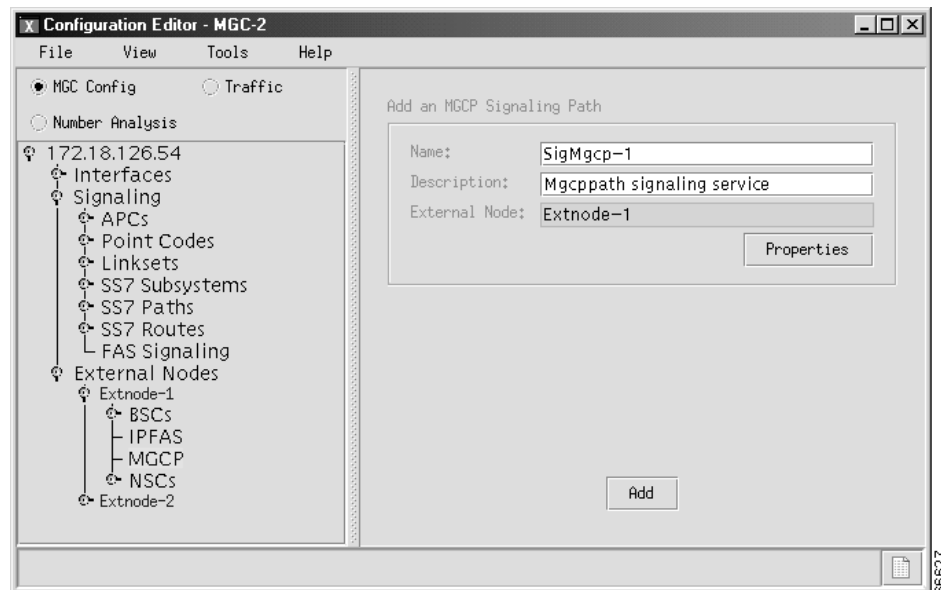
**Note**

You must set the `mgcpDomainNameRemote` and `mgcpHeartbeatInterval` properties for all MGCP signaling services defined in your Cisco MGC. For more information, see the “Adding and Changing MGCP Signaling Service Properties” section on page 3-43.

Use the following procedure to add MGCP signaling service paths to the MGW. Where necessary, refer to Table 3-14 for property values.

- Step 1** Click **MGCP** on the left pane of the main VSPT screen. The screen shown in Figure 3-31 appears.

Figure 3-31 Adding MGCP Signaling Service



- Step 2** Enter the name.

- Step 3** Enter the description.

- Step 4** Click **Add**. The hierarchical tree in the left pane of the main VSPT window changes to reflect the MGCP link you added.

## Adding and Changing MGCP Signaling Service Properties

Add or change the properties of the signaling service you have created. Your additions or changes are applied to all signaling services you create. You do not have to change the default properties. For a list of signaling service properties, default values, and descriptions, see the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*.

You must set the following properties for all MGCP signaling services defined in your Cisco MGC:

- `mgcpDomainNameRemote = heartbeat@media gateway MGCP domain name`

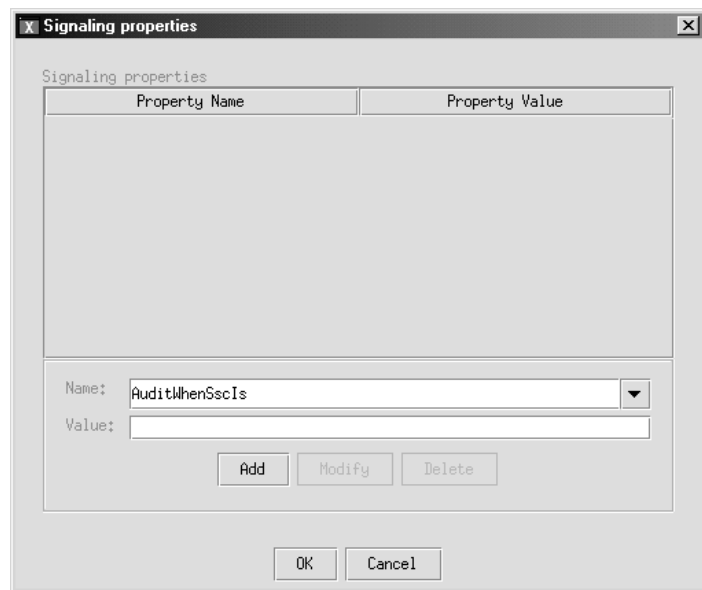
The media gateway MGCP domain name is a property of the MGW object. You can derive the MGCP domain name from the MGCP path object because each MGCP path object refers to an external node and each external node refers to an MGW.

- `mgcpHeartbeatInterval = 1`

Use the following procedure to add or change MGCP signaling service properties:

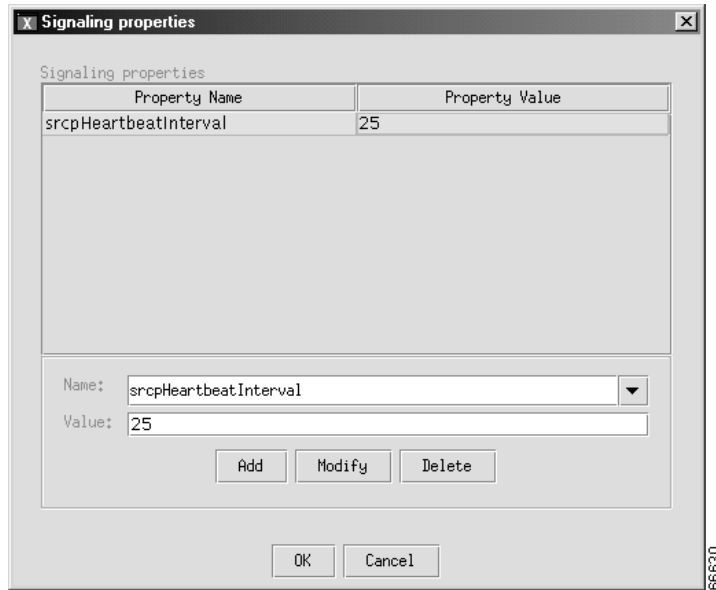
- Step 1** Highlight the MGCP signaling service you just added, and click **Properties** to display the list of properties. The screen shown in Figure 3-32 appears.

**Figure 3-32 Adding and Changing MGCP Signaling Properties**



- Step 2** If you want to add a property, select the property from the Name drop-down list, enter a value, and click **Add**. The screen shown in Figure 3-33 appears with the property added.

Figure 3-33 MGCP Signaling Service Property Added



- Step 3** To modify a property, click the property you want to change.
- Step 4** In the value field, overwrite the property value with the desired value.
- Step 5** Click **Modify**.
- Step 6** Click **OK** when you are finished.



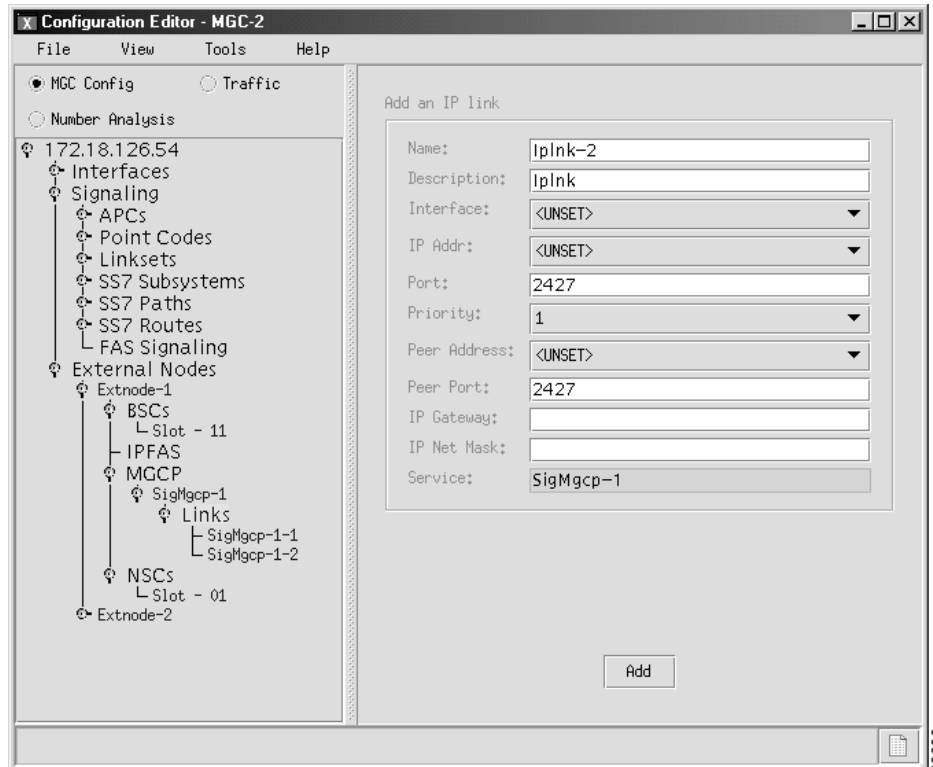
**Note** You cannot modify properties until after you have created the MGCP signaling service.

### Add an IP Link for MGCP

An IP link for MGCP identifies the connection that supports the MGCP service between an MGC Ethernet interface and a media gateway. Use the following procedure to add an MGCP IP link:

- Step 1** In the left pane of the main VSPT window, expand the tree under MGCP, highlight the signaling service for which you want to add an IP link, and click **Links**. The screen shown in Figure 3-34 appears.

Figure 3-34 Adding MGCP IP Links



- Step 2** Enter the name.
- Step 3** Enter the description.
- Step 4** On the Interface drop-down menu, select the Ethernet interface for this link.
- Step 5** On the IP Addr drop-down menu, select the IP address of the Cisco MGC.
- IP Addr1
  - IP Addr2
  - IP Addr3
  - IP Addr4



**Note** The numbered address for this value is found in the XECfgParm.dat file you set up during your initial system configuration. See the *Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide* for more information.

- Step 6** Enter a number of the UDP port on the Cisco MGC. You can use any unused UDP port number (2427 is recommended for MGCP), but you should not use 1 through 1024 (these are reserved for other applications).
- Step 7** On the Priority drop-down menu, select a priority. The value range is 1 through 4, and 1 is the highest priority.
- Step 8** On the Peer Address drop-down menu, select the peer address.
- Step 9** Enter the port number in the peer port field.

- Step 10** Verify that the Service field lists the MGCP service to which you want to add a link.
- Step 11** Click **Add**. The hierarchical tree on the left of the screen changes to reflect the MGCP IP link you added.

## Configuring Bearer Traffic

Bearer traffic includes information on the trunk groups, trunks, and trunk routing required by an MGC to direct calls. It uses this information in conjunction with a dial plan to perform number analysis and route selection.

A trunk is a speech path between any two switches. Trunks are DS0 endpoints; one trunk can ride on one DS0, or one DS0 can carry one trunk. A trunk group is a collection of DS0 circuits arranged so that dialing a single trunk number provides access to the entire trunk group, and a trunk route is a set of trunk groups.

The configuration example in this section uses SS7 and PRI trunks.

The two main scenarios you are likely to follow when setting up the MGC node for call routing are described in Table 3-15.

**Table 3-15** *Setting Up the MGC Node for Call Routing*

| If you want to:                  | Perform these steps:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Create a new configuration       | <ul style="list-style-type: none"> <li>• Add all of the trunk groups, one by one, using the instructions in the “Add a Trunk Group” section on page 3-48.</li> <li>• Add all of the trunks to the configured trunk groups, trunk group by trunk group, using the instructions in the “Adding Trunks” section on page 3-51.</li> <li>• Add all of the route groups, one by one, using the instructions in the “Adding Route Groups and Routes” section on page 3-54.</li> <li>• Build a dial plan using the instructions in the <i>Cisco Media Gateway Controller Software Release 7 Dial Plan Guide</i>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                      |
| Modify an existing configuration | <ul style="list-style-type: none"> <li>• Load the existing configuration into the VSPT:               <ul style="list-style-type: none"> <li>– If you are modifying a local configuration, click <b>File &gt; Open</b>, and specify the configuration you want to modify.</li> <li>– If you are modifying a configuration on an MGC, click <b>File &gt; Import</b>, and specify the configuration you want to import.</li> </ul> </li> <li>• Add, modify, or delete trunk groups using the instructions in the “Add a Trunk Group” section on page 3-48.</li> <li>• Add or delete trunks on a trunk group basis, using the instructions in the “Adding Trunks” section on page 3-51.</li> <li>• Add, modify, or delete route groups using the instructions in the “Adding Route Groups and Routes” section on page 3-54.</li> <li>• Build a dial plan using the instructions in the <i>Cisco Media Gateway Controller Software Release 7 Dial Plan Guide</i>.</li> </ul> |

**Caution**

You must provision SS7 components before the PRI components. When trunk groups are provisioned by the importing of customer trunk group files, all of the existing trunk groups and trunks are deleted. PRI trunk groups and trunks are provisioned by the use of individual MML commands, which do not delete all of the existing trunk groups and trunks. If the PRI components are provisioned before SS7 components, all of the PRI trunk groups and trunks are deleted.

## Importing Trunk Groups and Trunks

You can import the trunk groups and trunks to make them available to the MGC. Consider importing a trunk group for initial provisioning only. When you import a trunk group, all of the existing trunk groups are replaced by the imported trunk groups, and all existing trunks are deleted.

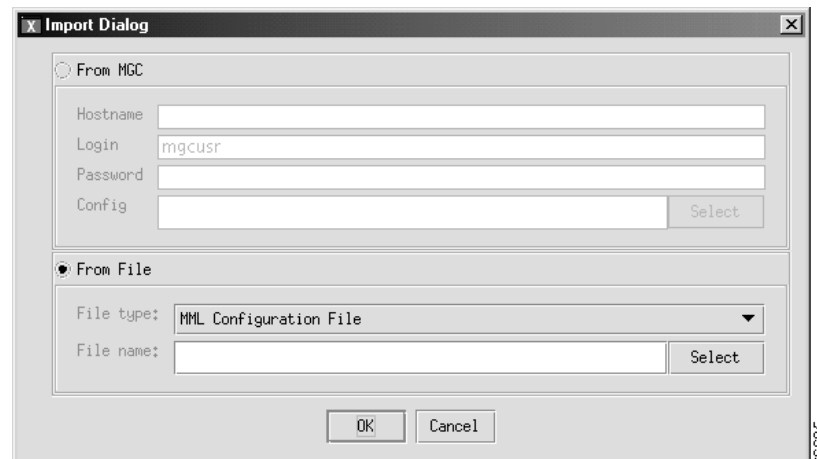
**Note**

The trunk file must contain all trunks (CIC) in a trunk group.

Perform the following steps to import a trunk group or trunk:

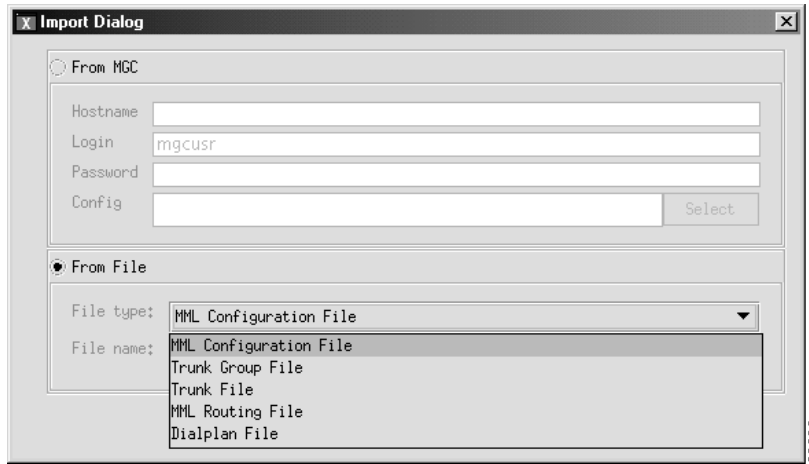
- Step 1** Click **File > Import**. The screen shown in Figure 3-35 appears.

**Figure 3-35** Importing Files



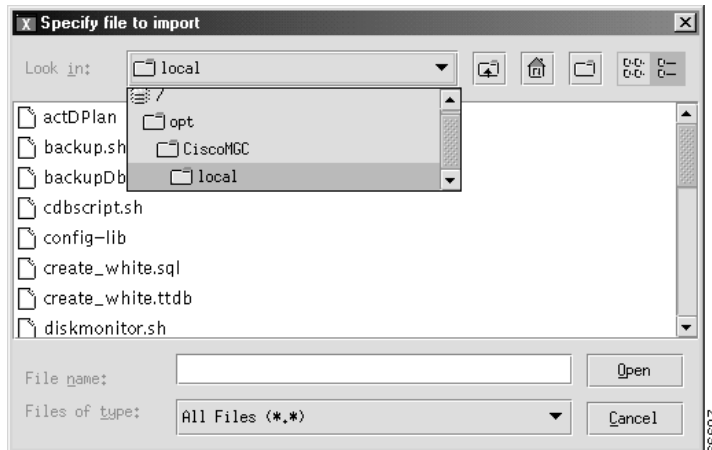
- Step 2** Click **From File**, and on the File type drop-down menu, select the type of file you want to import (see Figure 3-36).

Figure 3-36 Imported File Type



**Step 3** Enter the name of the file you want to import. If you do not know the name of the file, click **Select**. The screen shown in Figure 3-37 appears and displays a list of files available for importation.

Figure 3-37 Selecting the File to Import



**Step 4** Locate the the file you want to import, and click **Open**. The screen shown in Figure 3-36 appears again, and the full path name of the file you selected appears in the file name box.

**Step 5** Click **OK**. The file you selected is imported.

## Add a Trunk Group



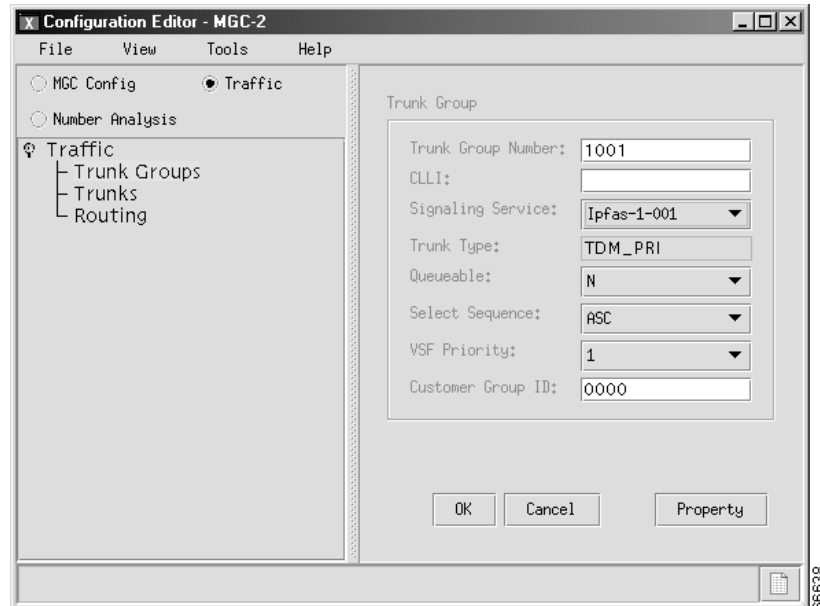
**Tip**

For information about importing the trunk group file, see the “Importing Trunk Groups and Trunks” section on page 3-47.

Use the following procedure to add a trunk group:

- Step 1** Click the **Traffic** radio button in the top portion of the main VSPT screen.
- Step 2** Click **Trunk Groups > Add**. The screen shown in Figure 3-38 appears.

**Figure 3-38** Defining a Trunk Group



**Note** For a complete description of trunk group properties and values, refer to the Cisco Media Gateway Controller Software Release 7 Provisioning Guide.

- Step 3** Enter the trunk group number.
- Step 4** Enter the Common Language Location Identification (CLLI).
- Step 5** On the Signal Service drop-down menu, select the type of signal service.
- Step 6** On the Trunk Type drop-down menu, select the type of trunk.
- Step 7** On the Queueable drop-down menu, indicate whether or not the trunk group can be queued.
- Step 8** On the Select Sequence drop-down menu, select the sequence.
- Step 9** On the VSF Priority drop-down menu, select the priority.
- Step 10** Enter the customer group ID.
- Step 11** To configure additional properties for this trunk group, click the **Property** button. A screen similar to the one displayed in Figure 3-39 appears.

Figure 3-39 Trunk Group Properties

The screenshot shows a dialog box titled "Trunk Group Property" with a list of configuration parameters. Each parameter has a corresponding input field, either a text box or a dropdown menu. The parameters and their values are as follows:

| Property Name                       | Value                    |
|-------------------------------------|--------------------------|
| Ring No Answer (0-255):             | 100                      |
| Glare:                              | Yield to Double Seizures |
| COT Percentage (0-100):             | 0                        |
| Satellite:                          | N                        |
| Numbering Plan Area (0 or 200-999): | 0                        |
| Carrier ID (0000-9999):             | 0288                     |
| Screen Fail Action:                 | N                        |
| B Originating Start Node:           | 1                        |
| B Terminating Start Node:           | 2                        |
| Compression Type:                   | A-Law                    |
| Echo Canceller Required:            | N                        |
| External COT:                       | Loop                     |
| Detect Fax Modem Tone:              | 0                        |
| Maximum ACL:                        | 3                        |
| ACL Duration:                       | 5                        |
| ACC Response Control Inhibit:       | Off                      |
| ISUP Transparency Disabled:         | Disabled                 |
| AOC Enabled:                        | Disabled                 |
| Carrier Screening:                  | To not apply             |
| Orign Carrier ID:                   | 00                       |
| Notify Setup Complete:              | 0                        |
| Reattempts (0-65535):               | 3                        |
| Queuing (0-65535):                  | 0                        |
| Cutthrough (0-65535):               | 2                        |

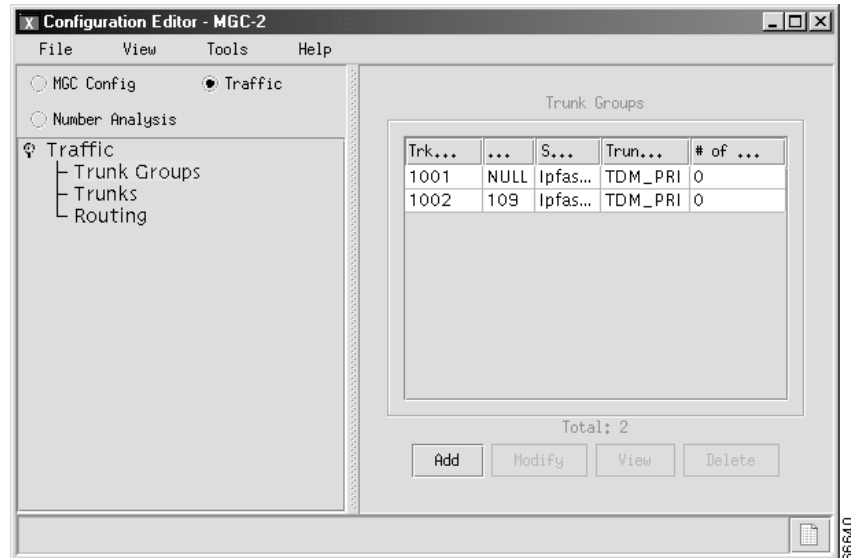
At the bottom of the dialog box are two buttons: "OK" and "Cancel". A small vertical number "66639" is visible on the right side of the dialog box.

**Step 12** Configure any of the properties displayed in this window by modifying the selected property value.

**Step 13** When you are done modifying properties, click **OK** to return to the previous window.

**Step 14** Click **OK**. The screen shown in Figure 3-40 appears, with the trunk group added.

Figure 3-40 Trunk Group Added

**Note**

After you have added a trunk group, you cannot delete it if there are still trunks defined in the trunk group or if there are existing route groups that refer to the trunk group. To maintain the integrity of the data in the traffic configuration branch, you have to first delete all trunks in the trunk group and remove any references to the trunk group from the route groups; then you can delete the trunk group.

## Adding Trunks

Use the following procedure to add trunks to a trunk group:

- Step 1** Click **Traffic > Trunks** in the left pane of the main VSPT window, and click **Add**. The screen shown in Figure 3-41 appears.

Figure 3-41 Adding a Trunk

Configuration Editor - MGC-2

File View Tools Help

MGC Config  Traffic

Number Analysis

☞ Traffic

- └ Trunk Groups
- └ Trunks
- └ Routing

Trunk Group Number: 1001

Media Gateway Name: Extnode-1

MGCP Domain: Extnode-1

First CIC Number (0-65535): 1

Slot Number: 1

DS1 Number: 1

First DS0 Number: 1

DS1 Type: T1

Trunk Signaling Type

SS7

Number of Trunk members: 24

PRI FAS

PRI NFAS

Number of Trunk members: 23

DS1 with D Channel: 1

Cancel More > Finish

86642

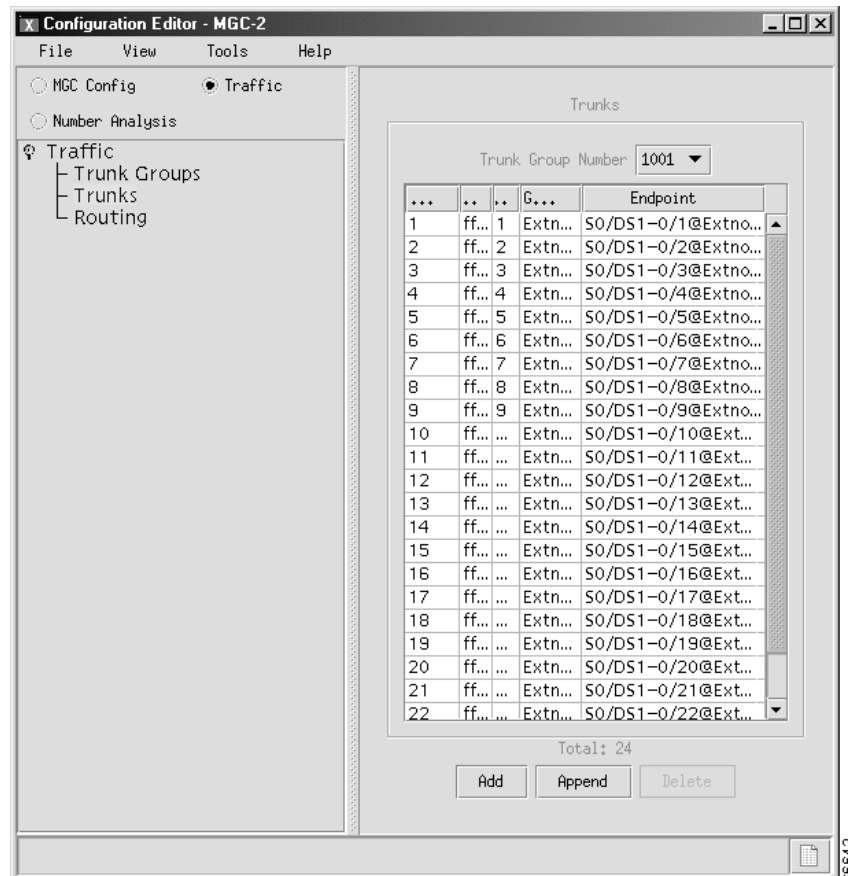
- Step 2** On the Trunk Group Number drop-down menu, select the number of the trunk group you are configuring.
- Step 3** On the Gateway Name drop-down menu, select the gateway (external node). This step might not be required if the gateway can be determined by trunk group signaling.
- Step 4** Enter the MGC domain name.
- Step 5** Enter the first trunk CIC number.
- Step 6** On the Slot Number drop-down menu, select the slot number.
- Step 7** Enter the DS1 number.
- Step 8** Enter the first DS0 number.
- Step 9** Enter the DS1 type. The trunk type is displayed.
- Step 10** Click **SS7**, **PRI FAS**, or **PRI NFAS**, and enter the appropriate properties:
- **SS7**—Enter the number of trunk members.
  - **PRI FAS** and **PRI NFAS**—Enter the number of trunk members and the number of the DS1 with the D channel.



**Note** For **PRI**, one channel is reserved for signaling (D channel). For **FAS**, it is channel 24. For **NFAS**, it is channel 24, but on only one DS1.

- Step 11** Enter the number of trunk members in the trunk group.
- Step 12** Click **More** if you want to add more trunks into other trunk groups.
- Step 13** When you are done adding trunks to a trunk group, click **Finish**, and the screen shown in Figure 3-42 appears.

**Figure 3-42** Trunks Added



66643

## Deleting Trunks from a Trunk Group

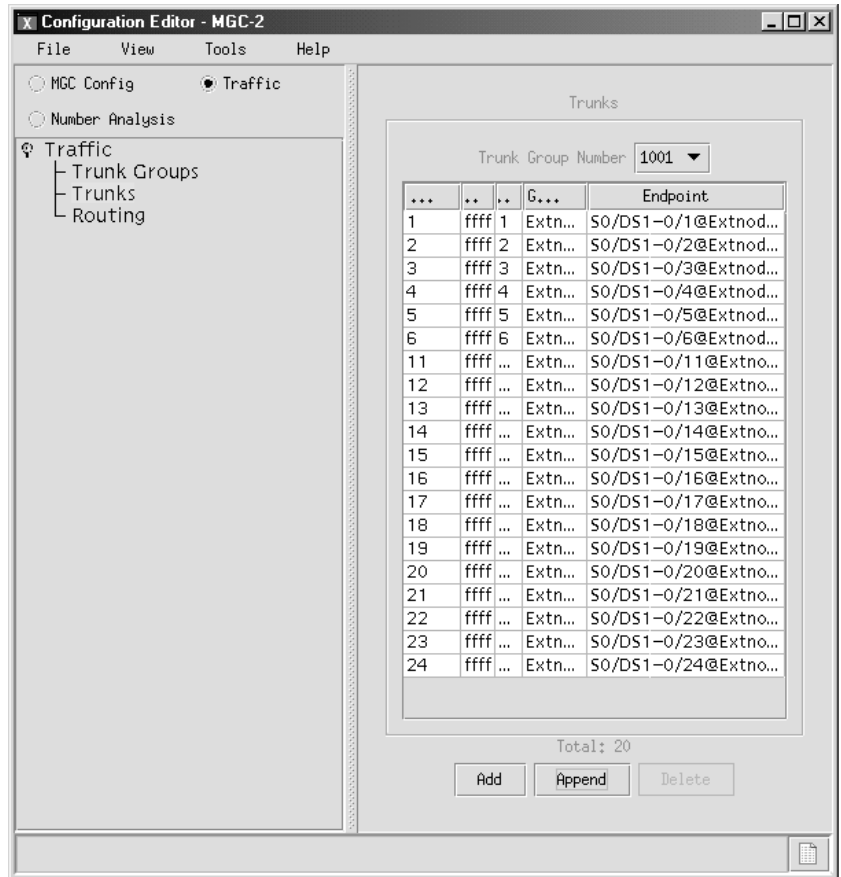
Use the following procedure to delete individual trunks from a trunk group:

- Step 1** On the Trunks Added screen shown in Figure 3-42, use the Trunk Group Number drop-down menu to select the trunk group from which you want to delete trunks.
- Step 2** Select the individual trunks you want to delete:
- To delete all the trunks in a trunk group, click **Delete All**.
  - To select a range of trunks, click on the first trunk in the range, hold down the **Shift** key, and click the last trunk in the range.

- To select nonsequential trunks, hold down the **Control** key, and click each trunk.

**Step 3** When you have finished selecting trunks, click **Delete** to delete the selected trunks. A screen similar to the one displayed in Figure 3-43 is displayed.

**Figure 3-43 Trunks Deleted**

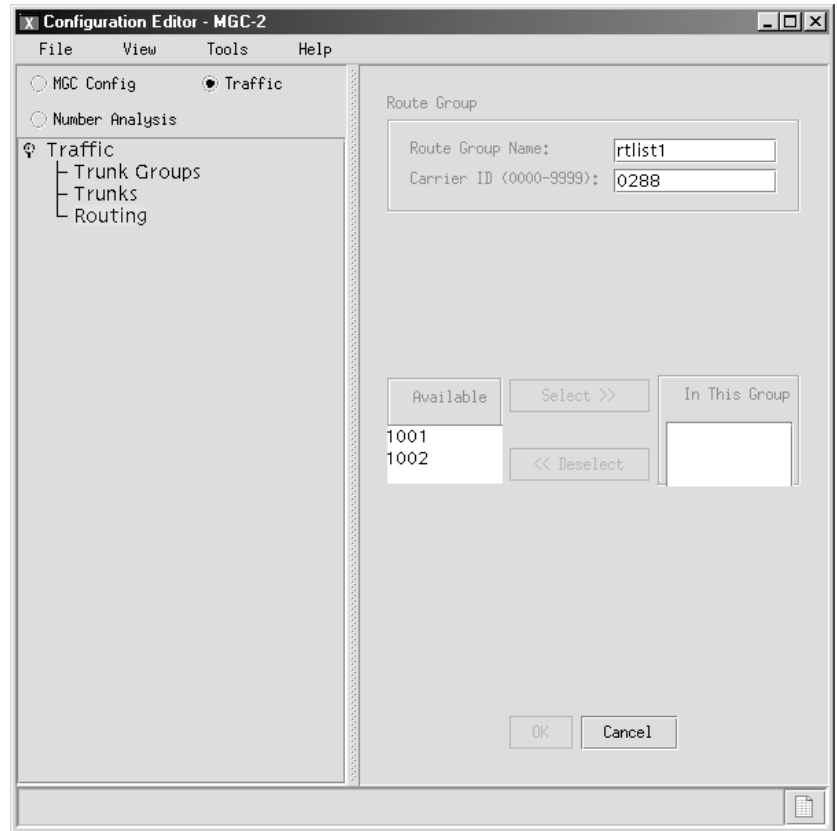


## Adding Route Groups and Routes

A route group is a collection of routes going to the same endpoint. Define the route groups, and then associate a trunk group with each route group. Use the following procedure to add a route group:

**Step 1** Click **Routing** in the left pane of the main VSPT window, and click **Add**. The screen shown in Figure 3-44 appears.

Figure 3-44 Adding a Route



**Step 2** Enter a route group name.

**Step 3** Enter a carrier ID.

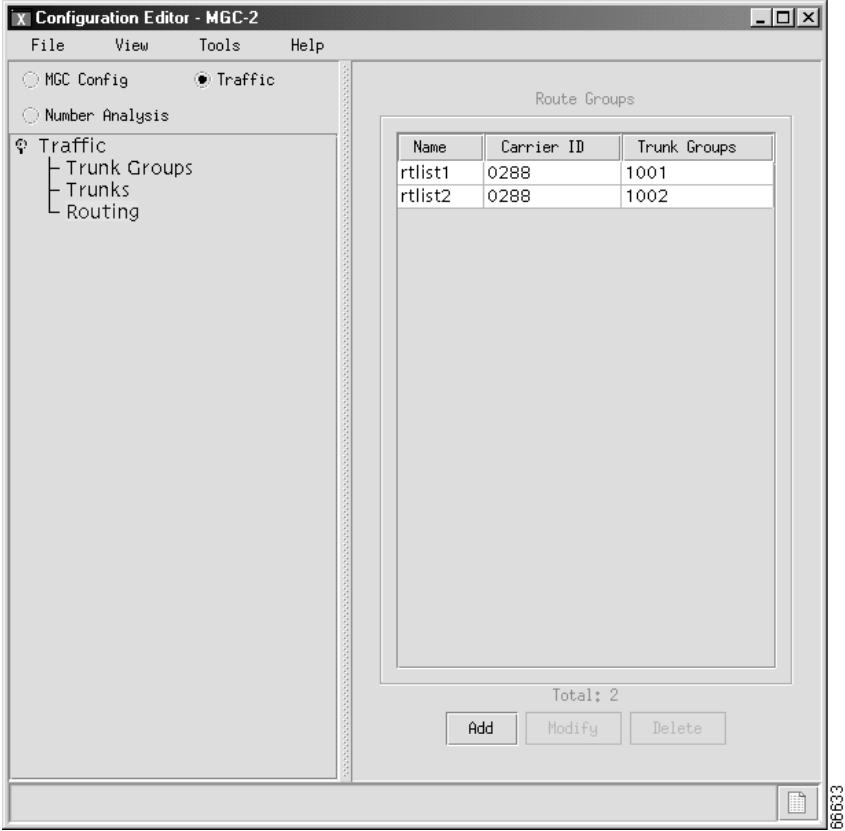
**Step 4** To associate the route group with a previously defined trunk group, select a group in the Available box, and click **Select**.



**Tip** To select more than one trunk group, hold down the **Control** key while you select each group.

**Step 5** When you are done adding route groups, click **OK**. The screen shown in Figure 3-45 appears with the route groups added.

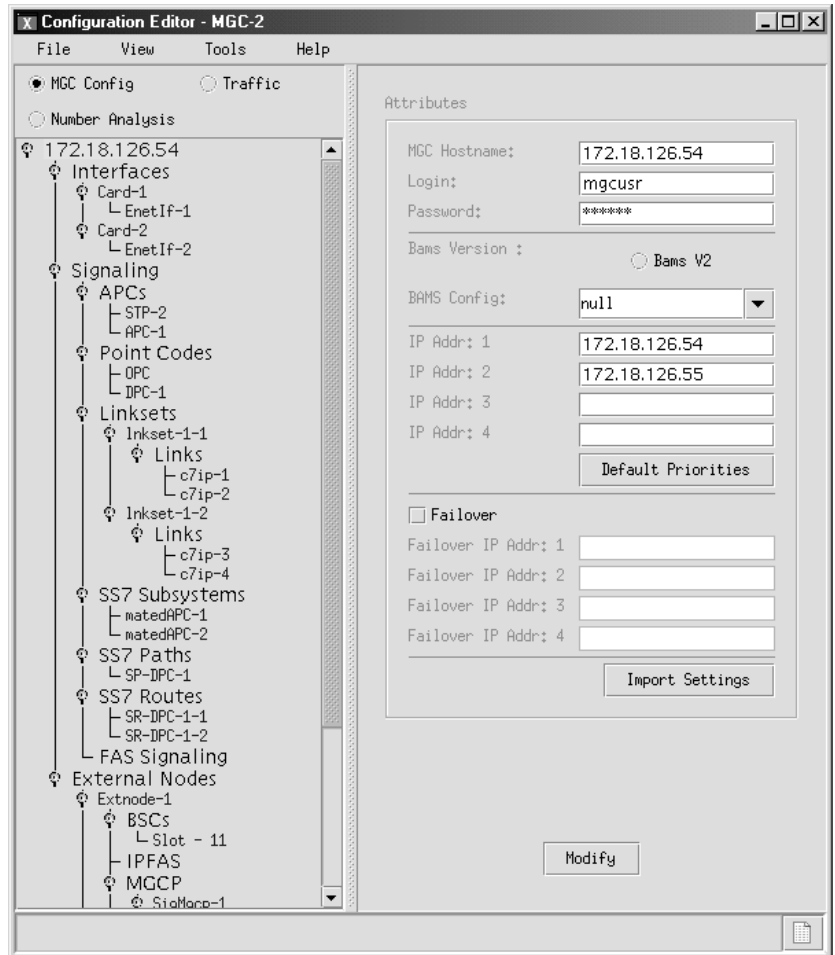
Figure 3-45 Route Group Added



### Hierarchical View of Provisioned Components

The results of the provisioning session you completed are visible in the hierarchical tree in the left pane of the main VSPT screen. You can expand the branches to view individual component (see Figure 3-46).

Figure 3-46 Hierarchical Tree of Components



## Performing an Integrity Check

When provisioning is complete, you can perform an integrity check to prevent possible configuration errors. The integrity check verifies:

- Integrity for MGC signaling configuration
- Traffic against MGC configuration
- Dial plan results

Each integrity check is explained in more detail in the following subsections.

## Checking Integrity for MGC Signaling Configuration

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

- Checks that the hostname is specified for the MGC
- Checks that the login/password is specified for the MGC

- Checks that MGC ipaddrs are specified
- Checks that if MGC failover is specified, then the failover IPs are specified
- Checks that the MGX hostname is specified
- Checks that the MGX login and password are specified
- Checks the MGX IPaddrs
- For EXTNODES where it refers to an MGX, checks PeerAddrs on IPLNK to ensure that they are addresses on the specified MGX
- For IPFAS IPLNKs:
  - Ensures that SigSlot/SigPort are specified
  - Checks SigSlot/SigPort on MGX to ensure that they are valid as specified on the MGX
  - Ensures that MGC ports and MGX ports match on the IPLNK
  - Checks that all IPLNKs 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.

---

## Checking Traffic Against MGC Configuration

When you perform an integrity check of traffic against the MGC configuration, the VSPT does the following:

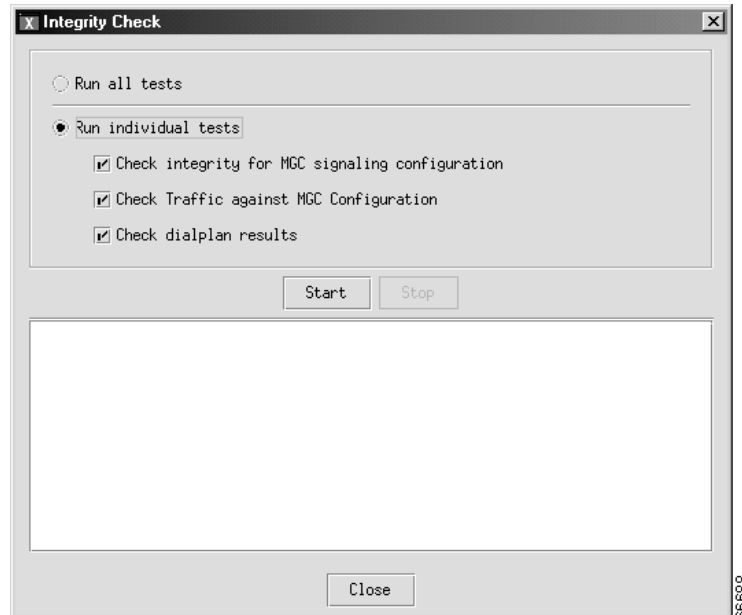
- When D channels are defined as FAS and NFAS PRI in the trunk group/trunk section, verifies that IPFASPath signaling services with corresponding IPLNKs are configured
- If IPFASPath signaling services defining a D channel are configured, checks that corresponding trunk group/trunk in the traffic information, and a corresponding NFAS/FAS PRI, is defined
- Checks that signaling services defined for trunk groups exist in the configuration

For information about an integrity check of dial plan results, refer to the Cisco *Media Gateway Controller Software Release 7 Dial Plan Guide*.

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

- 
- Step 1** On the main VSPT menu bar, click **Tools > Integrity Check**. The screen shown in Figure 3-47 appears.

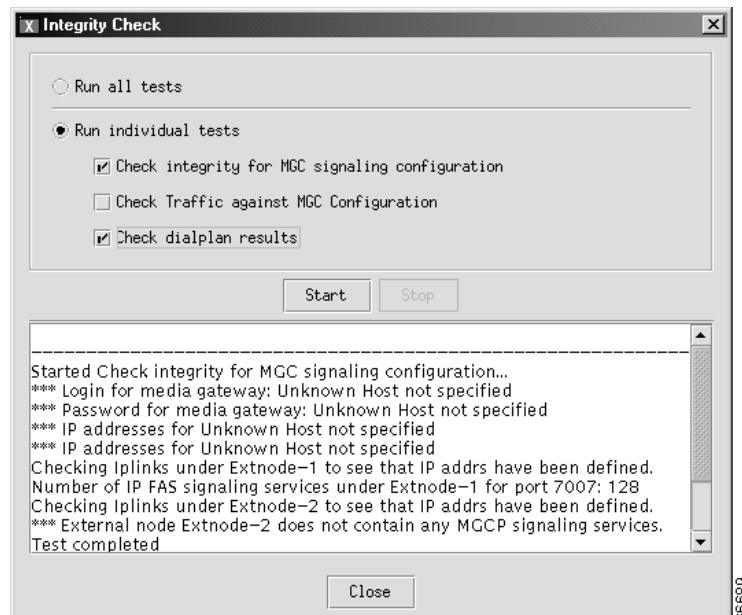
Figure 3-47 Integrity Check



**Step 2** Indicate the tests you want to run, and click **Start**.

When the tests finish, a screen similar to the one in Figure 3-48 appears and displays the results of the integrity checks performed.

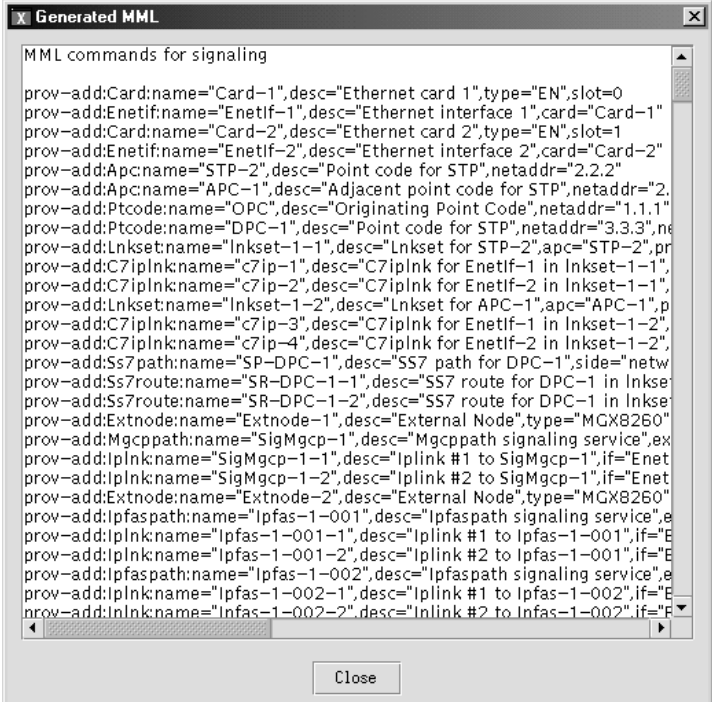
Figure 3-48 Integrity Check Results



## Viewing Generated MML

The VSPT application automatically generates the MML commands to provision your Cisco MGC and saves these commands in a file to be executed when you deploy the configuration. If you want to view the MML commands generated from your VSPT provisioning session, click **View > MML**. Screens displaying generated MML commands, similar to the one shown in Figure 3-49, appear.

**Figure 3-49** First Generated MML Screen



The screenshot shows a window titled "Generated MML" with a scrollable text area containing the following MML commands:

```

MML commands for signaling
prov-add:Card:name="Card-1",desc="Ethernet card 1",type="EN",slot=0
prov-add:Enetif:name="Enetif-1",desc="Ethernet interface 1",card="Card-1"
prov-add:Card:name="Card-2",desc="Ethernet card 2",type="EN",slot=1
prov-add:Enetif:name="Enetif-2",desc="Ethernet interface 2",card="Card-2"
prov-add:Apcname="STP-2",desc="Point code for STP",netaddr="2.2.2"
prov-add:Apcname="APC-1",desc="Adjacent point code for STP",netaddr="2.
prov-add:Ptcodename="OPC",desc="Originating Point Code",netaddr="1.1.1"
prov-add:Ptcodename="DPC-1",desc="Point code for STP",netaddr="3.3.3",ne
prov-add:Lnkset:name="Lnkset-1-1",desc="Lnkset for STP-2",apc="STP-2",pr
prov-add:C7iplnk:name="c7ip-1",desc="C7iplnk for Enetif-1 in Lnkset-1-1",
prov-add:C7iplnk:name="c7ip-2",desc="C7iplnk for Enetif-2 in Lnkset-1-1",
prov-add:Lnkset:name="Lnkset-1-2",desc="Lnkset for APC-1",apc="APC-1",p
prov-add:C7iplnk:name="c7ip-3",desc="C7iplnk for Enetif-1 in Lnkset-1-2",
prov-add:C7iplnk:name="c7ip-4",desc="C7iplnk for Enetif-2 in Lnkset-1-2",
prov-add:Ss7path:name="SP-DPC-1",desc="SS7 path for DPC-1",side="netw
prov-add:Ss7route:name="SR-DPC-1-1",desc="SS7 route for DPC-1 in Lnkse
prov-add:Ss7route:name="SR-DPC-1-2",desc="SS7 route for DPC-1 in Lnkse
prov-add:Extndename="Extndename-1",desc="External Node",type="MGX8260"
prov-add:Mgcppath:name="SigMgcp-1",desc="Mgcppath signaling service",ex
prov-add:Ipplnkname="SigMgcp-1-1",desc="Ipplnk #1 to SigMgcp-1",if="Enet
prov-add:Ipplnkname="SigMgcp-1-2",desc="Ipplnk #2 to SigMgcp-1",if="Enet
prov-add:Extndename="Extndename-2",desc="External Node",type="MGX8260"
prov-add:Ipfaspath:name="Ipfas-1-001",desc="Ipfaspath signaling service",e
prov-add:Ipplnkname="Ipfas-1-001-1",desc="Ipplnk #1 to Ipfas-1-001",if="E
prov-add:Ipplnkname="Ipfas-1-001-2",desc="Ipplnk #2 to Ipfas-1-001",if="E
prov-add:Ipfaspath:name="Ipfas-1-002",desc="Ipfaspath signaling service",e
prov-add:Ipplnkname="Ipfas-1-002-1",desc="Ipplnk #1 to Ipfas-1-002",if="E
prov-add:Inlnkname="Infas-1-002-2",desc="Inlnk #2 to Infas-1-002",if="E

```

A "Close" button is located at the bottom of the window. The number "66716" is visible in the bottom right corner of the window frame.

## Viewing Generated Cisco MGW Commands

To view the Cisco MGW commands generated from your provisioning session, click **View > MGW Commands**. A screen with generated Cisco MGW commands, similar to that shown in Figure 3-50, appears.

Figure 3-50 Generated Cisco MGW Commands

```

-----[MGW CLI Commands For 127.95.67.4]-----
chidletm 20
chsyslnmd 1
y
chsysip1 127.95.67.4 255.255.255.0
chsysip2 127.95.67.5 255.255.255.0
chmpc 1
chndinf # # 1
chpcksrc 9 1 3 1
addmacsapprof 1 # # 2
adddsp 1 # # # # # # # 0
chmgcpdname Extnode-1
chmgcplocaladdr1 127.95.67.4 2427
chmgcplocaladdr2 127.95.67.5 2427
chmgcpaddr 172.18.126.54 2427 172.18.126.55 2427
chsmgcpaddr 0.0.0.0 0 0.0.0.0 0
chmgcpcore # # 1 # # 2000
addssset 1 1 1 11 168 1
addssgrp 1 1
address 1 1 1 127.95.67.4 7007 172.18.126.54 7007 1
address 1 1 2 127.95.67.5 7007 172.18.126.55 7007 1
addds3ln 11.501 6
addds1ln 1.1 16
addds1ln 11.1 168
addvport 1 1 1 1 23
addvport 1 25 2 1 23
addvport 1 49 3 1 23
addvport 1 73 4 1 23
addvport 1 97 5 1 23

```

## Deploying a New Configuration

When you finish defining a configuration, you must deploy that configuration to the Cisco MGC. A new configuration should not be deployed during times of peak load on the Cisco MGC.

The new configuration can be deployed completely or in parts, known as an incremental deployment. Deploying incrementally allows you to verify each component type configuration before proceeding to the next component deployment.

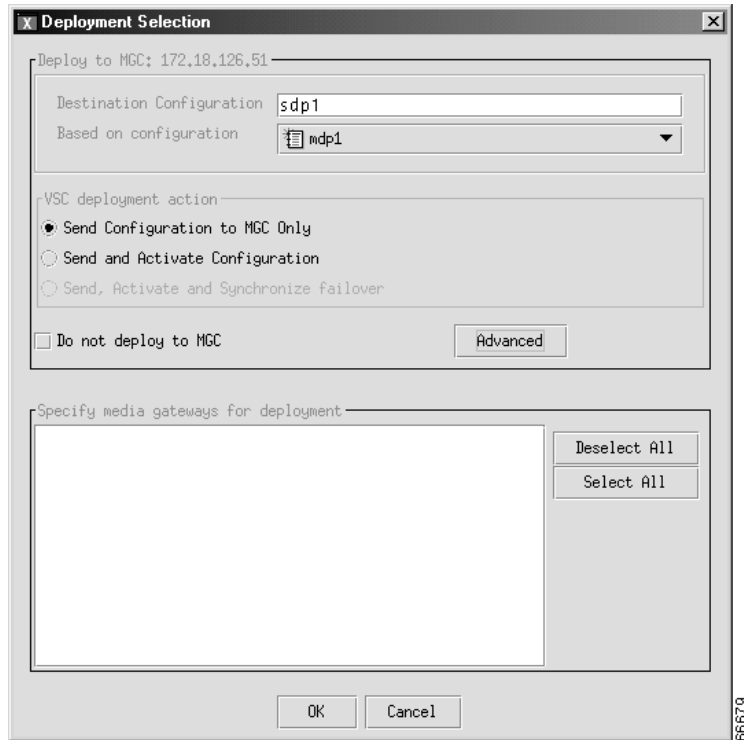
The Cisco MGC does not support some incremental deployment processes. If you have problems with an incremental deployment, you should visually inspect the commands to ensure that you have properly configured the desired components. Modify those presenting the problem, or cancel the deployment and redeploy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

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

Use the following procedure to deploy a new configuration:

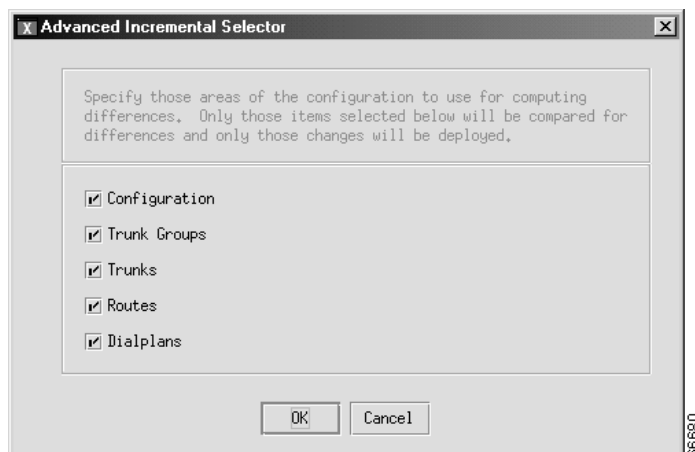
- 
- Step 1** Click **Tools > Deploy** on the main VSPT menu. The screen shown in Figure 3-51 appears.

Figure 3-51 Deploying a Configuration



- Step 2** Enter the name for the configuration on the destination MGC.
- Step 3** Select the configuration it is based on from the Based on configuration drop-down list.
- Step 4** To incrementally deploy a configuration component type, click Advanced. The screen shown in Figure 3-52 appears.

Figure 3-52 Incremental Deployment Component Selector



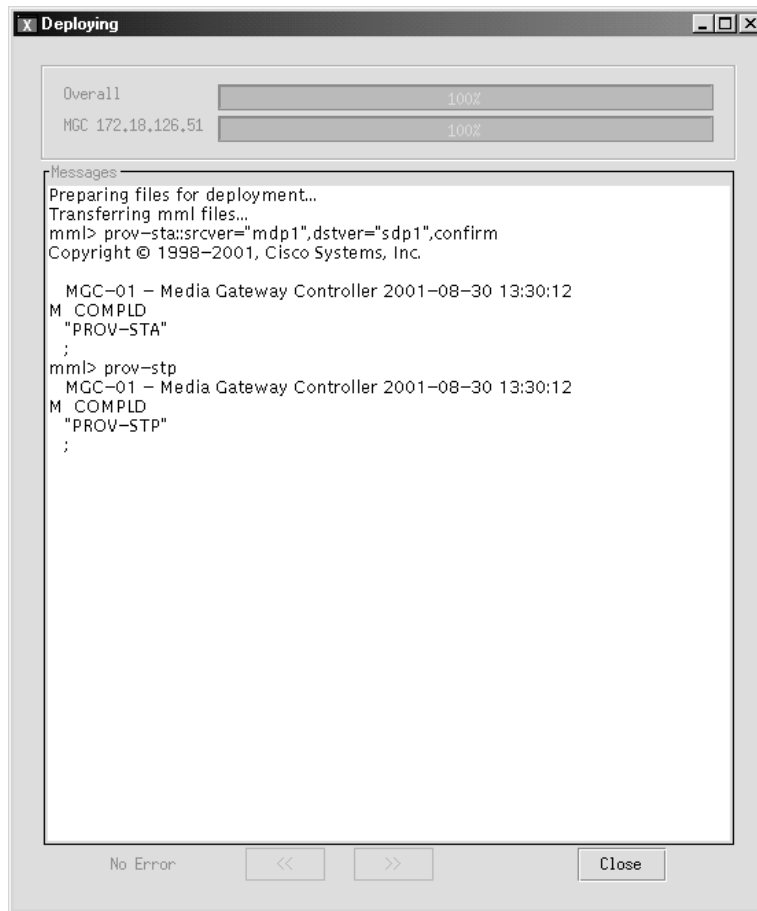
- Step 5** Select one or more component types to deploy, and click **OK**.
- Step 6** Indicate how you want to deploy the configuration:

- 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 before the changes will become active.
- If you do not want to deploy to the MGC but only to MGXs, click the box next to **Do not deploy to MGC**.

**Step 7** Select the gateways you want to deploy, if applicable.

**Step 8** Click **OK**. A screen similar to the one shown in Figure 3-53 appears and displays the status as the current provisioning session is deployed.

**Figure 3-53** Deployment Progress



**Note**

---

In a continuous-service configuration, the XECfgParm.dat file on each machine must be configured. If you experience problems, verify the XECfgParm.dat files on both machines. Refer to Chapter 2, “Installing Cisco Media Gateway Controller Software,” in *Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide*.

---

## Backup and Restore

The VSPT backup and restore tool enables a user to create, modify, and delete scheduled backups and restores hourly, daily, weekly, or monthly or on demand. Backup and restore activities can be performed on any of the following devices that have been configured for the MGC:

- MGC host—Active configuration
- CAT5500—Configuration and image on Flash
- CAT2900XL—Running-config and image on Flash
- SLT2600—Running-config and image on Flash
- BAMS P2—Active configuration
- BAMS P3—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 used by only one UNIX login, specified during the installation process.

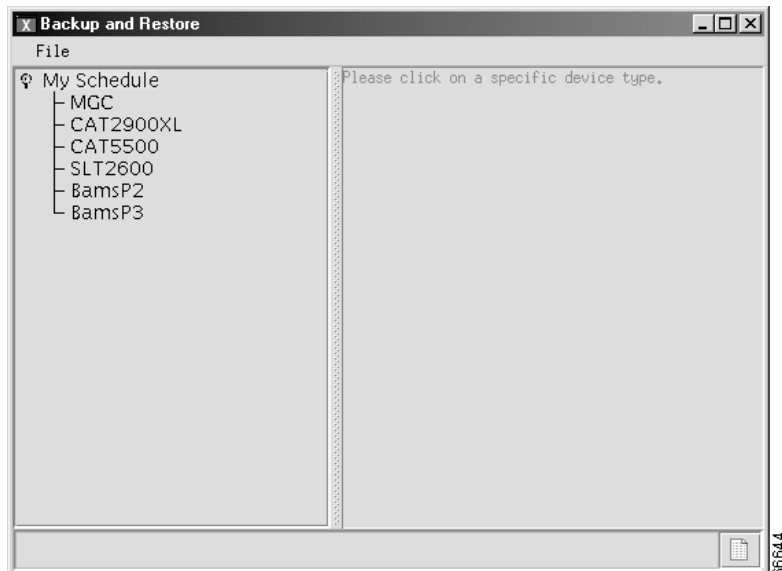
---

## Schedule An Activity

Use the following procedure to open the VSPT backup and restore tool and schedule an activity:

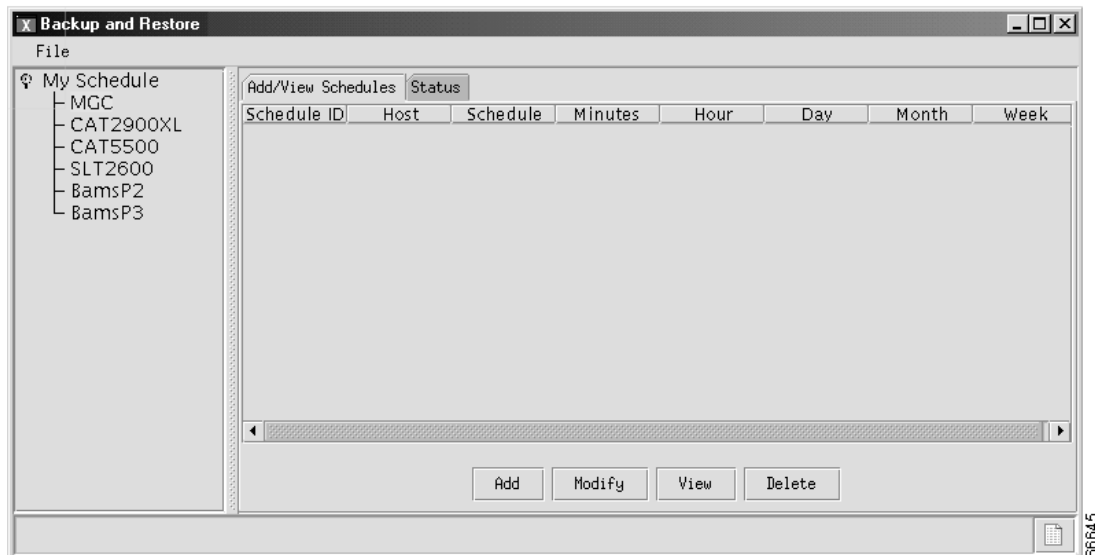
- 
- Step 1** Click **Tools > Backup and Restore** on the main VSPT menu bar. The screen shown in Figure 3-54 appears.

Figure 3-54 Backup and Restore Utility



- Step 2** Click the component for which you want to schedule a backup or restore. In the following example, the MGC is backed up. A screen similar to the one shown in Figure 3-55 appears when you click the MGC component.

Figure 3-55 Scheduling a Backup or Restore



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

- Step 3** To schedule a backup or restore, 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 3-56 appears.

Figure 3-56 Schedule an Activity

The screenshot shows a window titled "Add MGC Schedule". Inside, there are several input fields and dropdown menus. The "Action" dropdown is set to "Backup". Below it are text boxes for "MGC IP:", "MGC Login:", and "MGC Password:". Then "File Name:" and "File Type:" (set to "Configuration"). Below that are "TFTP IP:", "TFTP Login:", and "TFTP Password:". Then "Log Verbose:" (set to "No") and "Schedule Type:" (set to "Monthly"). A button labeled "Select/View Files on TFTP" is below these. At the bottom, there is a scheduling section with "Minute:" (0), "Hour:" (12 am), and "Day Of Month:" (1). At the very bottom are "OK" and "Cancel" buttons. A small number "86646" is visible in the bottom right corner of the dialog.

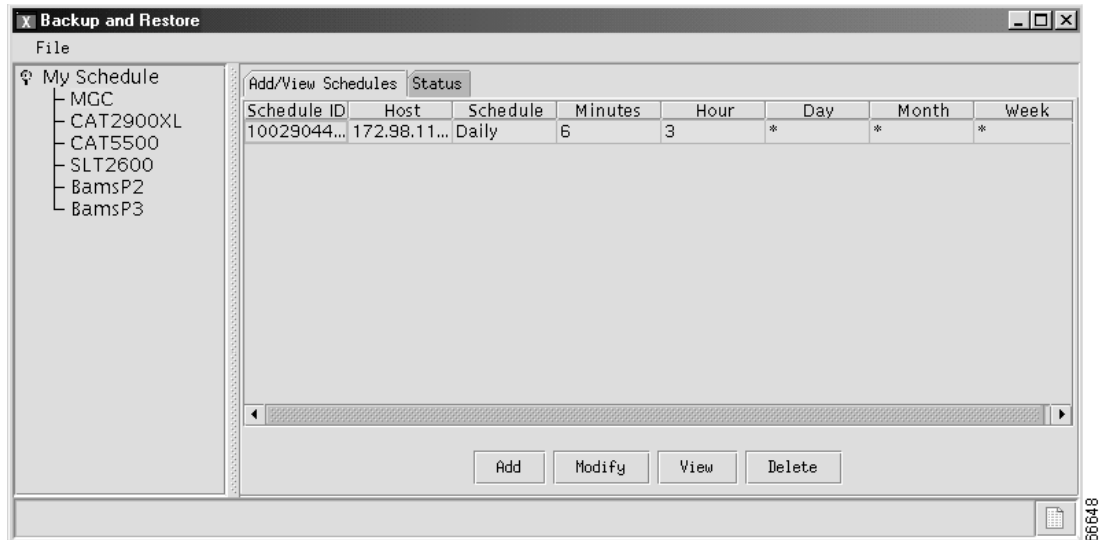


**Note** The fields available here will vary according to the component you selected.

- Step 4** Select the action you want to perform in the Activity field. Valid 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** Enter the IP address of the TFTP server.
- Step 9** Enter the TFTP login and password.
- Step 10** Specify whether or not to use verbose log mode. Verbose mode records all commands issued by the VSPT and any system responses.
- Step 11** Select the schedule type. Valid choices include:
  - Monthly
  - Daily
  - Hourly
  - Weekly
  - Now

- Later
- Step 12** Select the hour and minute that the backup should begin.
- Step 13** Click **OK**. The backup activity is scheduled, and a screen similar to the one shown in Figure 3-57 appears.

**Figure 3-57 Display Activity Schedule**



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

## Check Status of Backup or Restore

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

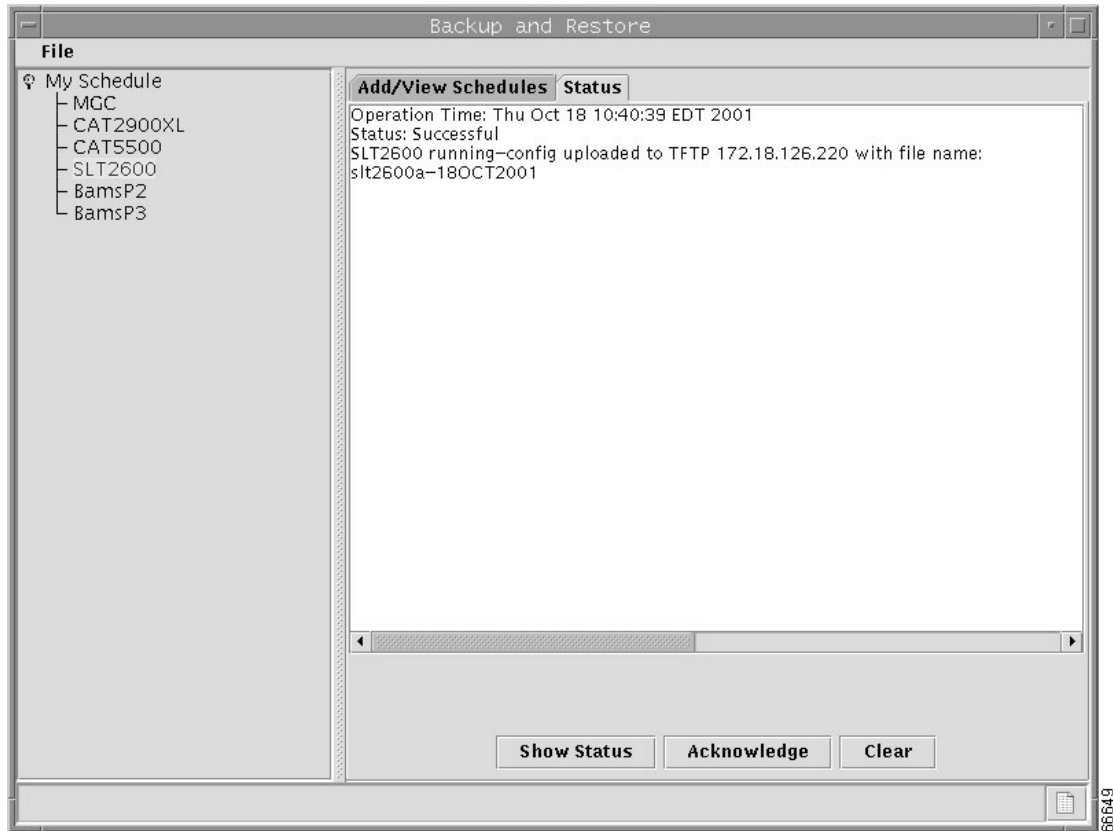
- Date and time
- Success or failure
- File name on the TFTP server
- Directory of configuration files
- Image file name

If you have 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** Click the device that has been backed up or restored, in the left pane of the backup and restore tool window, and click the **Status** tab in the right pane. A screen similar to the one shown in Figure 3-58 appears and shows the status of the activity.

Figure 3-58 Backup and Restore Status Tab



- Step 2** For more information or to delete the log file, 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

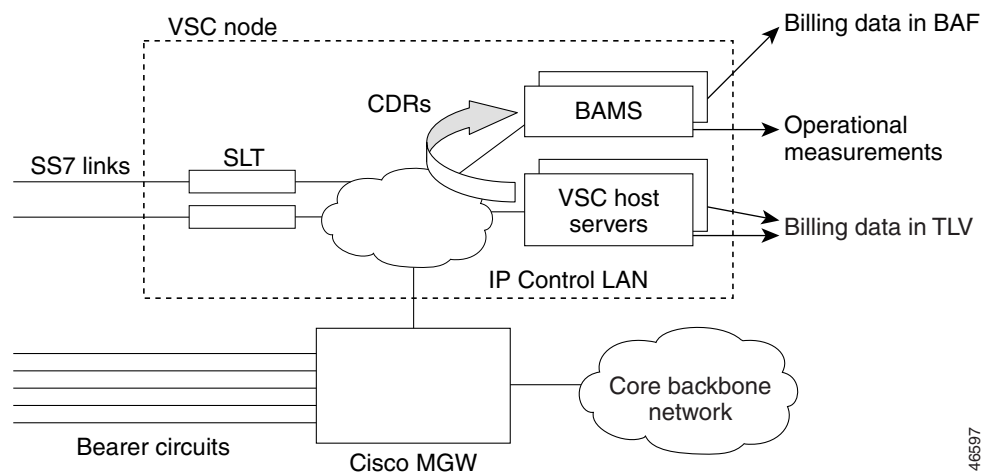


## Provisioning the Billing and Measurements Server

The Cisco Billing and Measurements Server (BAMS) provides enhanced billing and measurement functions corresponding to those found in a traditional Class 4 tandem switch. The BAMS server collects, formats, and stores billing and measurement data from the Cisco MGC. The data can then be processed by a billing system and other measurement collection and reporting systems. BAMS runs on a standalone server designed to interface with the Cisco MGC.

.Figure 4-1 provides an overview of the BAMS components.

**Figure 4-1 BAMS Overview**



The VSPT helps you create, copy, modify, and deploy a configuration for the BAMS server. The BAMS provisioning session can exist as a standalone provisioning application using MML commands.

The VSPT performs the following tasks when you are configuring BAMS:

- Generates an MML batch file either from scratch or based on a preexisting configuration
- Imports and exports configuration information from and to a host
- Deploys the current configuration to a host
- Supports incremental deployment
- Displays the current MML batch file

- Imports the TrunkGroup file from the Cisco MGC host to keep trunk group information synchronized
- Performs an integrity check to ensure that the current configuration check is valid

The steps necessary to provision a BAMS are:

- General provisioning
  - Define country codes
  - Define map types
  - Define tollfree prefixes
- Zone provisioning
  - Create zones in the Zone\_Information table for separate rating zones
  - Assign NPA-NXX prefixes to appropriate zones
  - For each from/to zone pair, define the appropriate rating type for that zone pair
  - Define rating exceptions in the rate-exception table
- Trunk group provisioning
  - Configure trunk groups that map to trunk groups on the MGC. These trunk groups define the default originating and terminating NPAs and the number of circuits in a trunk group.
  - Define a SigPath table for a dial configuration, because dial configurations have no trunk groups, routing files, or dial plans. Map SigpathID/bearer channelnumbers to trunk group number/member numbers.
- Measurements provisioning—Configure threshold alarms by means of the Threshold Crossing Alarms table (TCA-TBL).



**Note**

---

VSPT Release 1.6 currently supports BAMS Phase 2 only. See the current VSPT release notes for further information about future support for BAMS Phase 3.

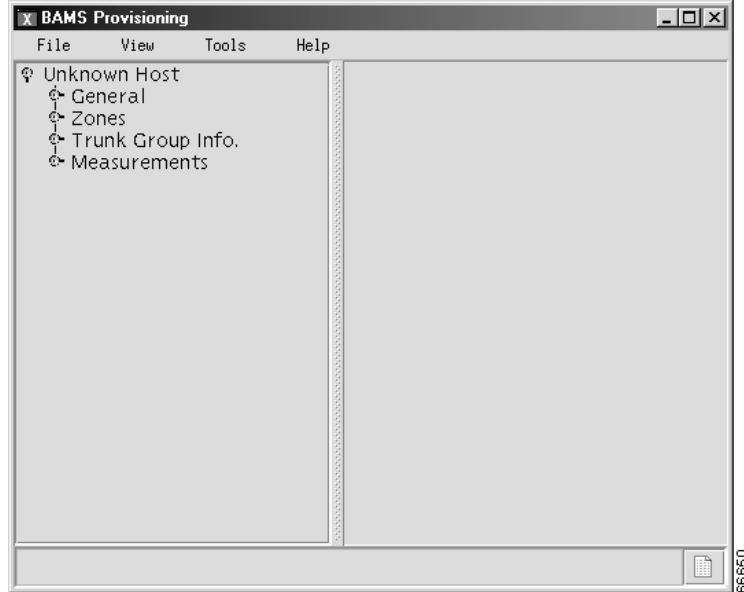
---

## Starting a BAMS Provisioning Session

Use the following procedure to provision a BAMS:

- 
- Step 1** Start and log in to the VSPT. The main VSPT window is displayed.
  - Step 2** Click **File > Open** on the main VSPT menu bar, to open an existing configuration, and go to Step 5. If you want to start a new configuration, go to the next step. For more information, see the “Starting a New Provisioning Session” section on page 2-1.
  - Step 3** Click **Tools > BAMS Config**. The screen shown in Figure 4-2 appears.

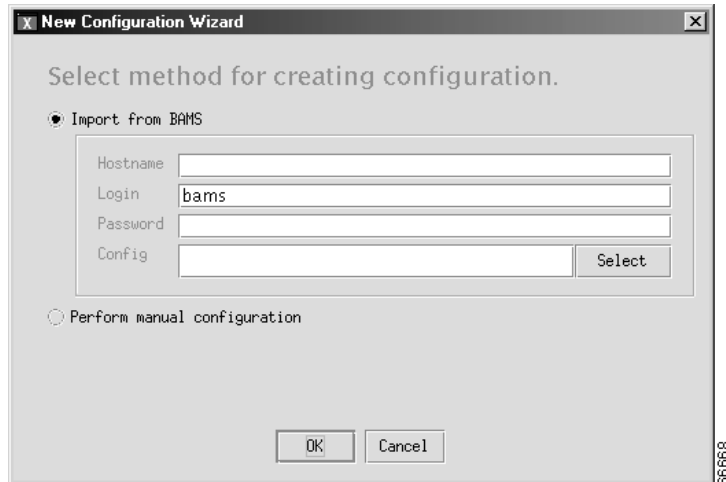
Figure 4-2 BAMS Configuration Screen



**Step 4** Click **File > New**.

**Step 5** Enter a name for the provisioning session you are creating. For more information on BAMS naming restrictions, refer to the *Cisco Media Gateway Controller Software Release 7 Provisioning Guide*. Click **OK**. The screen shown in Figure 4-3 appears.

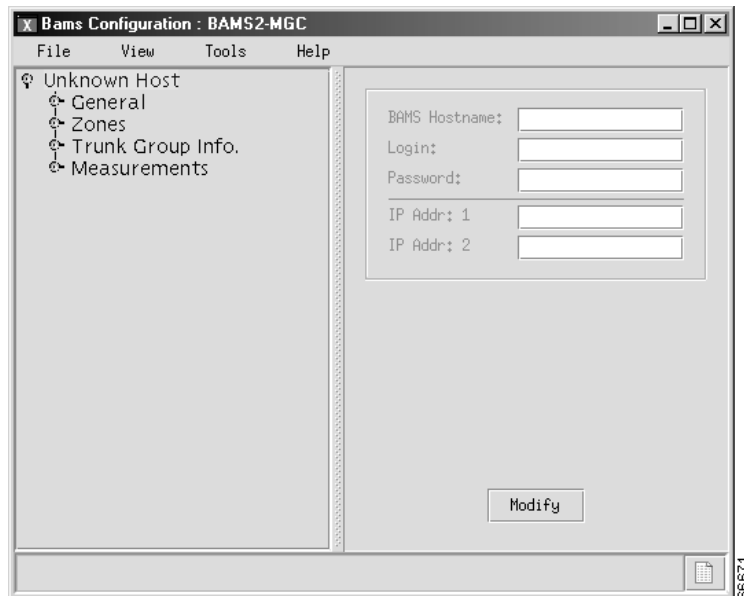
Figure 4-3 New Configuration Wizard



**Step 6** If you want to import an existing configuration from a BAMS, click the **Import from BAMS** radio button. Enter the host name, login, password, and the configuration you want to import. If you do not know the name of the configuration, click **Select**, highlight the configuration you want in the list that is displayed, and click **OK**.

If you want to manually configure the BAMS, select the **Perform manual configuration** radio button, and click **OK**. The screen shown in Figure 4-4 appears.

Figure 4-4 BAMS Configuration



- Step 7** Enter the BAMS IP address in the BAMS hostname field.
- Step 8** Enter a the BAMS login ID and password.
- Step 9** Enter the network addresses (IP Addr 1 and IP Addr 2) in dotted notation; for example, 172.18.145.3.
- Step 10** Click **Modify**, and begin BAMS provisioning.

## BAMS Provisioning

This section provides directions for using the VSPT to provision a BAMS server. The VSPT performs the following procedures:

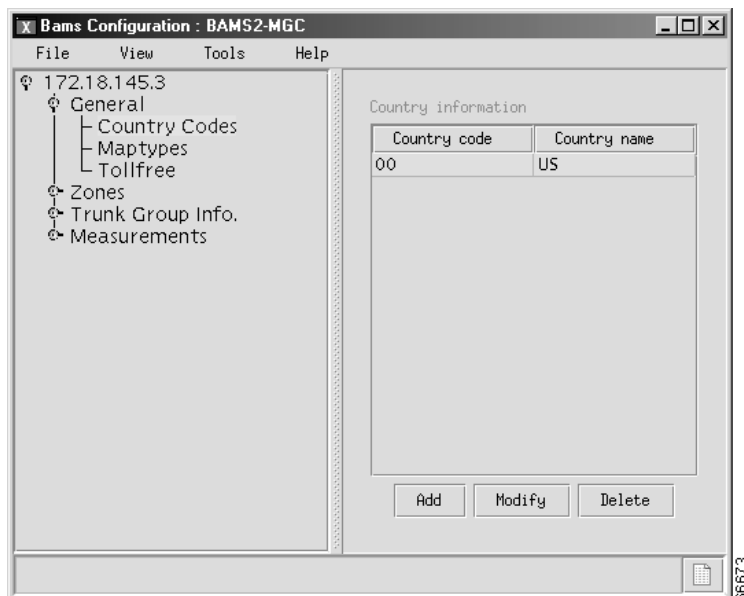
- Provisioning General Information, page 4-4
- Provisioning Zones, page 4-6
- Provisioning Trunk Group Information, page 4-10
- Provisioning Measurements, page 4-13

## Provisioning General Information

Provisioning general BAMS information includes defining country codes, map types, and tollfree prefixes. Use the following procedure to configure general BAMS information:

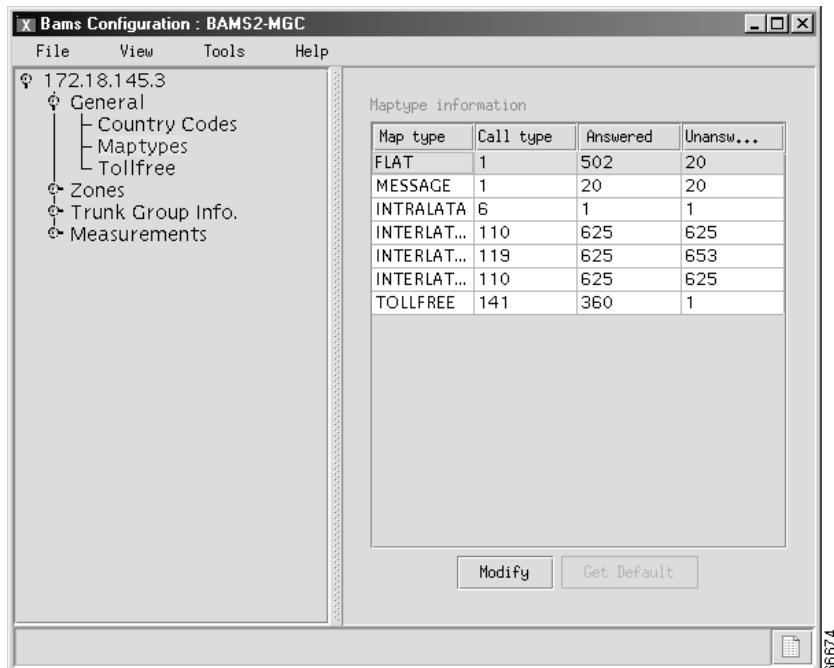
- Step 1** Click the icon next to **General** in the left pane of the main VSPT screen to expand the hierarchical tree.
- Step 2** Highlight **Country Codes**, and click **Add** in the right pane of the main VSPT window.
- Step 3** Enter the country code and country name, and click **OK**. The screen shown in Figure 4-5 appears.

Figure 4-5 Country Code Added



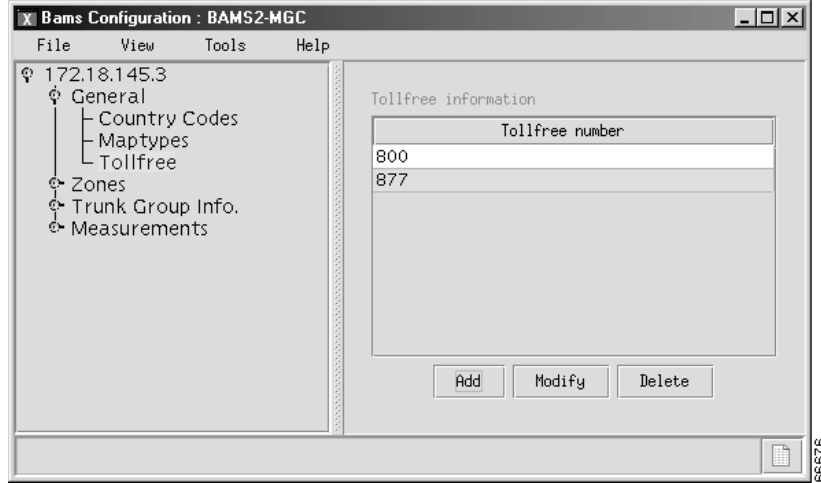
- Step 4** Click **Maptypes**, in the right pane of the main VSPT window, and click **Get Defaults** in the left pane. The screen shown in Figure 4-6 appears.

Figure 4-6 Maptype Information Added



- Step 5** Click **Tollfree** in the left pane of the main VSPT window, and click **Add** in the right pane.
- Step 6** Enter a tollfree code and click **OK**. The screen shown in Figure 4-7 appears.

Figure 4-7 Tollfree Information Added



- Step 7** If you want to configure more tollfree codes, click **Add** and repeat Step 6 for each code you want to configure.

## Provisioning Zones



### Note

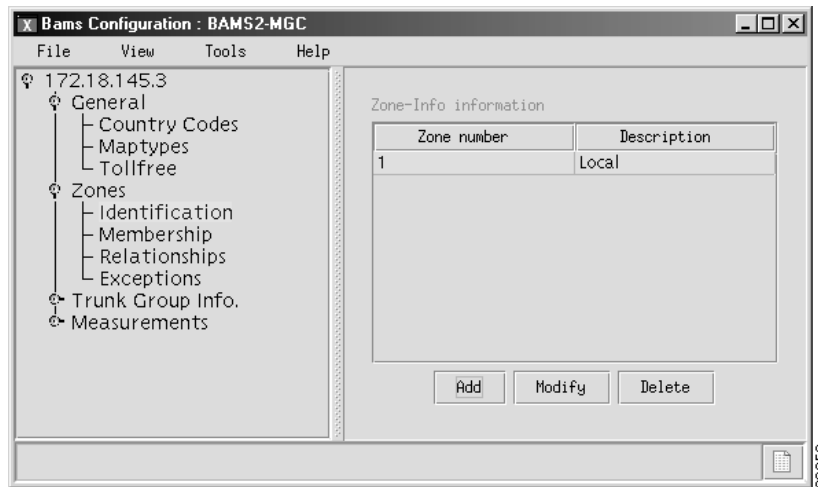
If you do not need BAF output, proceed to “Provisioning Measurements” section on page 4-13.

Zoning provides a mechanism for differentiating between rating types. Each supported NPANXX combination must be a member of a zone.

Use the following procedure to provision zones:

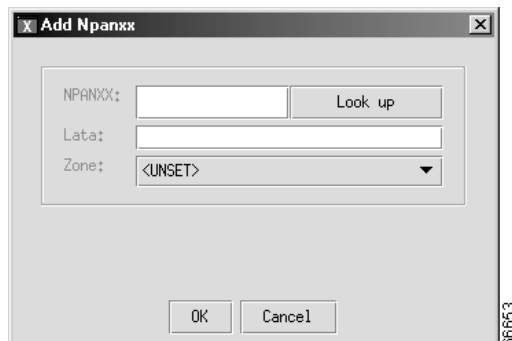
- Step 1** Click **Zones > Identification**, in the left pane of the main VSPT window, and click **Add** in the right pane.
- Step 2** Enter the zone number and description, and click **OK**.
- Step 3** Enter the zone number and description and click **OK**. The screen shown in Figure 4-8 appears.

Figure 4-8 Zone Information Added



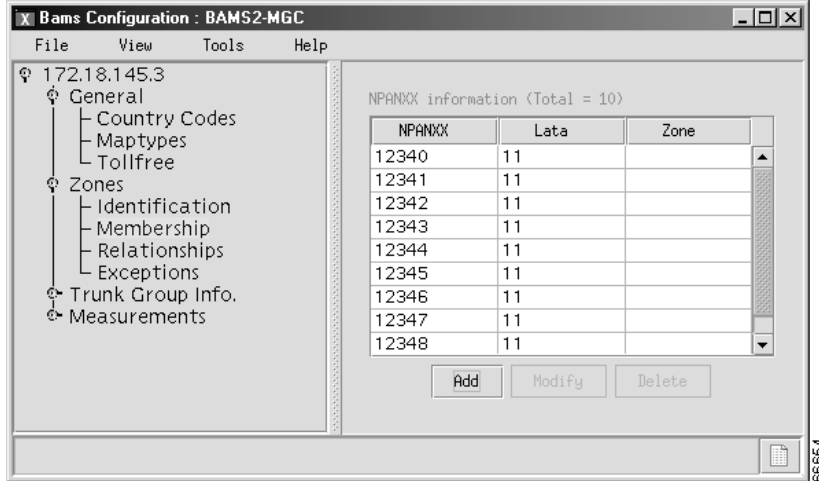
- Step 4** Click **Membership** in the left pane of the window shown in Figure 4-8, and click **Add** in the right pane. The screen shown in Figure 4-9 appears.

Figure 4-9 Add Npanxx



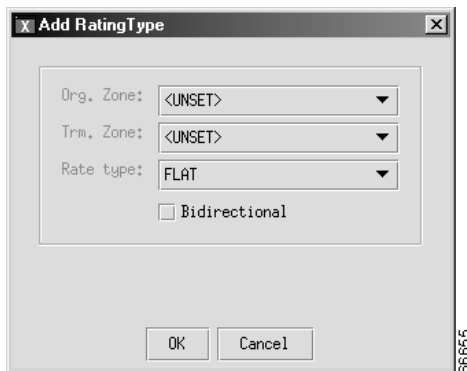
- Step 5** Enter the six-digit NPANXX numbers. You can enter several numbers by separating them with commas, for example, 123456,345678,567890. You can obtain A/Bdig numbers from the MGC by clicking **Look up** to display the dial plans defined on the MGC appears.
- Step 6** Select a dial plan, and click **OK**. A screen displaying all A/Bdig numbers appears.
- Step 7** Select one or more dial plans, and click **OK**.
- Step 8** The screen shown in Figure 4-9 reappears. Enter the LATA, and select the zone.
- Step 9** Click **OK**. The screen shown in Figure 4-10 appears.

Figure 4-10 Membership Information Added



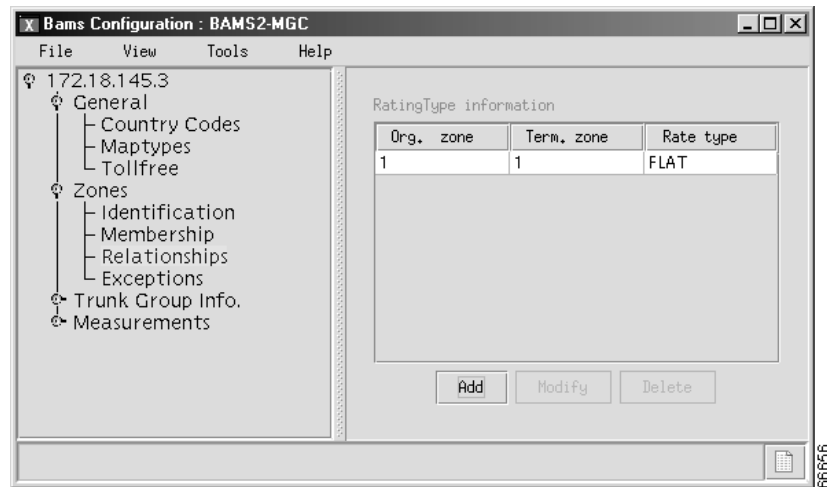
- Step 10** Click **Relationships** in the left pane of the window shown in Figure 4-10, and click **Add** on the right pane. The screen shown in Figure 4-11 appears.

Figure 4-11 Add Rating Type



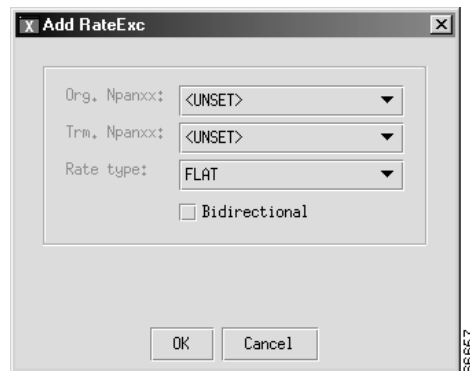
- Step 11** Select the origination zone, termination zone, and rate type. Indicate whether or not the relationship is bidirectional. If you select bidirectional, two entries are added to the table; otherwise, one entry is added.
- Step 12** Click **OK**. The screen shown in Figure 4-12 appears.

Figure 4-12 Rating Type Information Added



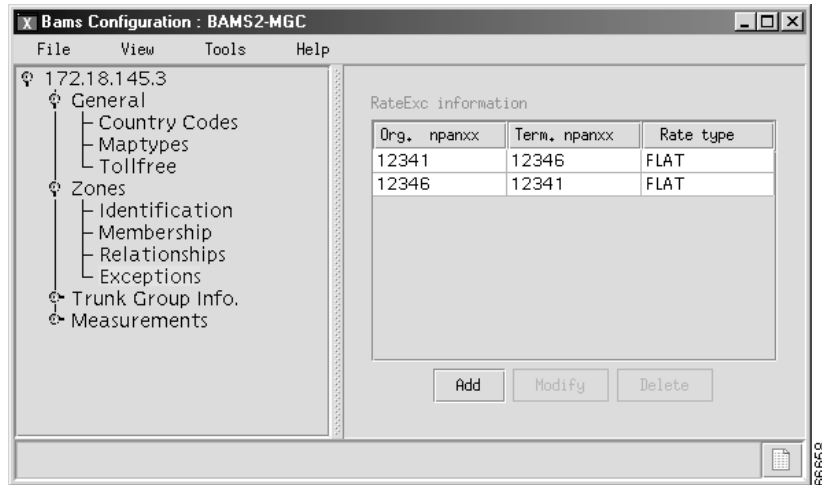
- Step 13** Click **Exceptions**, in the left pane of the window shown in ,Figure 4-12, and click **Add** in the right pane. The screen shown in Figure 4-13 appears.

Figure 4-13 Add Rate Exception



- Step 14** Select the origination NPANxx, termination NPANxx, and rate type. Indicate whether or not the relationship is bidirectional.
- Step 15** Click **OK**. The exception is added, and the screen shown in Figure 4-14 appears.

Figure 4-14 Exception Added



## Provisioning Trunk Group Information

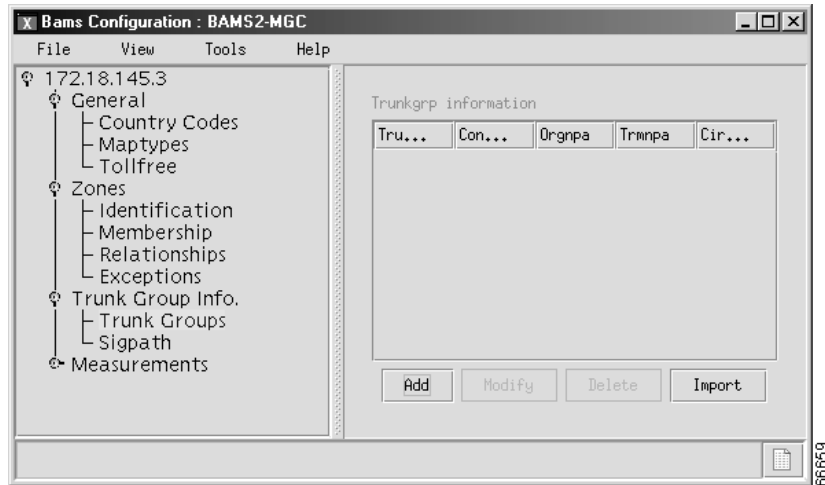
Provisioning trunk group information includes:

- Defining trunk groups that map to trunk groups on the Cisco MGC
- Specifying default origination and termination NPAs and the number of circuits in the trunk group
- Defining a SigPath table for dial configurations

Use the following procedure to provision trunk group information:

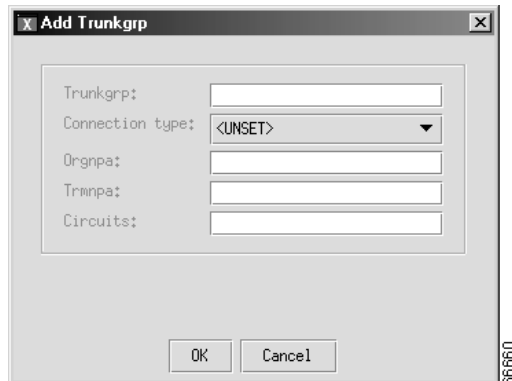
- Step 1** Click the icon next to Trunk Group Info. in the left pane of the window shown in Figure 4-14, to expand the hierarchical tree.
- Step 2** Click **Trunk Groups**. The screen shown in Figure 4-15 appears.

Figure 4-15 Configure BAMS Trunk Groups



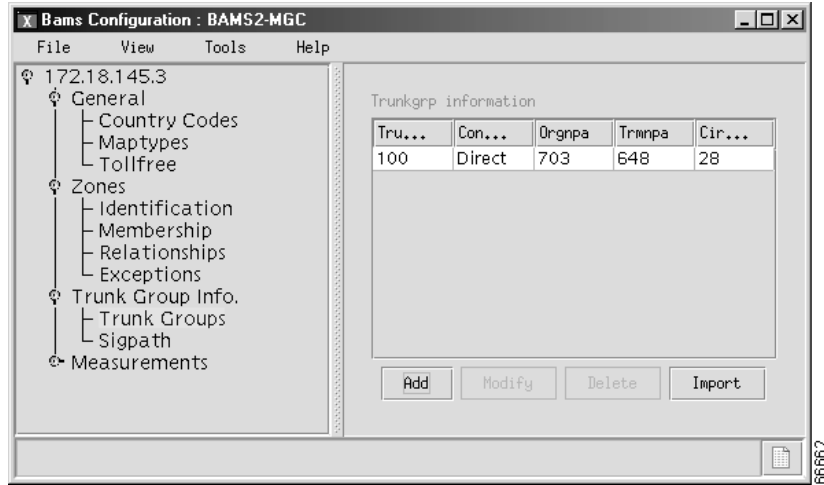
- Step 3** To import trunk groups from the MGC, click **Import**, and click **OK** at the confirmation prompt.
- Step 4** Click **OK**. All trunk groups on the MGC are displayed in the trunk group screen.
- Step 5** To add individual trunk groups, click **Add**. The screen shown in Figure 4-16 appears.

Figure 4-16 Add Trunkgrp



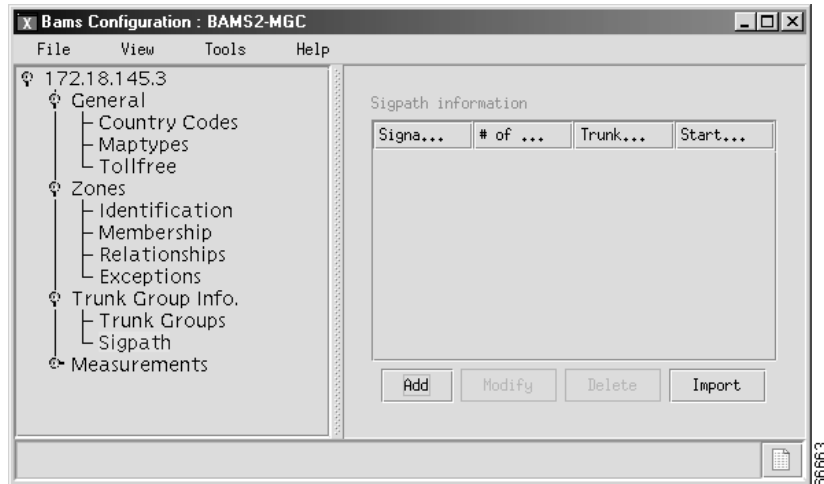
- Step 6** Enter the trunk group, select the connection type, and enter the origination NPA, termination NPA, and circuits.
- Step 7** Click **OK**. The screen shown in Figure 4-17 appears.

Figure 4-17 Trunk Group Added



**Step 8** Click **Sigpath**. The screen shown in Figure 4-18 appears.

Figure 4-18 Configure a BAMS Sigpath



**Step 9** You add a Sigpath only if the MGC is nailed up. You can import from the MGC by clicking **Import**.

**Step 10** To add a Sigpath, click **Add**. The screen shown in Figure 4-19 appears.

Figure 4-19 Add Sigpath

The 'Add Sigpath' dialog box has the following fields:

- Sigpath id:(Hex):
- # of Bearerchan:
- Trunk group #:
- Starting trunk #:

Buttons: OK, Cancel

- Step 11** Enter the Sigpath ID in hexadecimal, enter the number of bearer channels for this sigpath, select the trunk group number, and enter the starting trunk number. Click **OK**. The screen shown in Figure 4-20 appears.

Figure 4-20 Sigpath Added

The 'Bams Configuration : BAMS2-MGC' window shows the following configuration:

- File View Tools Help
- 172.18.145.3
- General
  - Country Codes
  - Maptypes
  - Tollfree
- Zones
  - Identification
  - Membership
  - Relationships
  - Exceptions
- Trunk Group Info.
  - Trunk Groups
  - Sigpath**
- Measurements

Sigpath information table:

| Signa... | # of ... | Trunk... | Start... |
|----------|----------|----------|----------|
| 2A01     | 1        | 100      | 1        |

Buttons: Add, Modify, Delete, Import

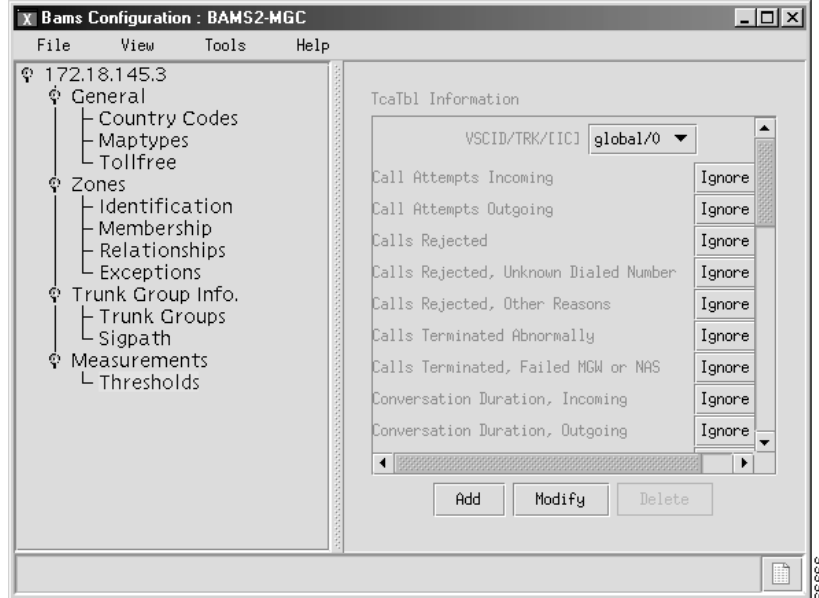
## Provisioning Measurements

BAMS generates and maintains measurements, which are performance indicators that constitute a history of traffic statistics on a network. Each measurement value represents an accumulation of activity that took place during a specific interval.

Use the following procedure to configure measurement types and properties:

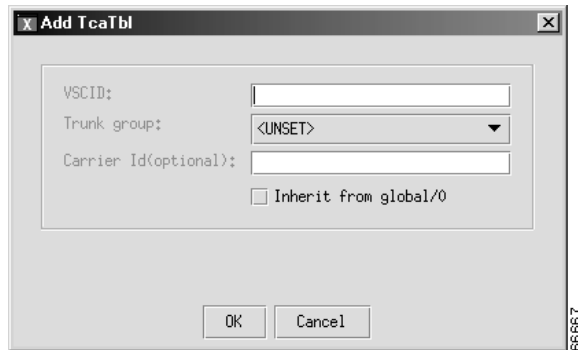
- Step 1** Click the icon next to Measurements in the left pane of the main VSPT screen to expand the hierarchical tree. Click **Thresholds**. The screen shown in Figure 4-21 appears.

Figure 4-21 Configuring BAMS Thresholds



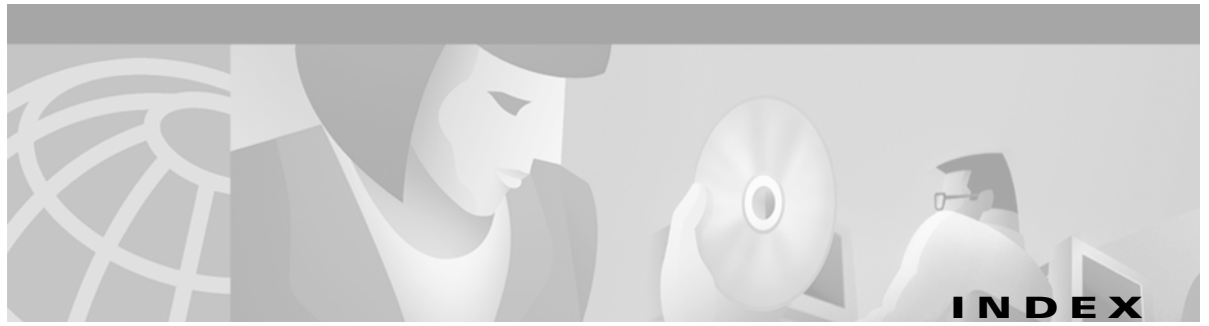
- Step 2** You can set thresholds for the item displayed in the drop-down menu next to VSCID/TRK/[IC]. Select a value from the drop-down menu next to the threshold you want to change. When you have finished setting thresholds, click **Modify** and all threshold configurations are saved.
- Step 3** To add an item to the drop-down menu next to VSCID/TRK/[IC], click **Add**. The screen shown in Figure 4-22 appears.

Figure 4-22 Add TcaTbl



- Step 4** Enter the VSCID, select the trunk group, and enter the carrier ID.
- Step 5** Indicate whether it should inherit from global/0. If you select **inherit from global/0**, you can then modify individual thresholds to meet your needs.
- Step 6** Click **OK**. The item you added is now accessible in the drop-down menu next to VSCID/TRK/[IC].

After the BAMS server is provisioned, you must deploy the new configuration. Refer to the “Deploying a New Configuration” section on page 3-61 for instructions.



---

## A

- active configuration 2-3
- adapter
  - adding 3-5
  - component 1-6
- adding
  - adapter 3-5
  - C7IPLink 3-14
  - card 3-4
  - DPC 3-9
  - external node 3-28
  - FAS over IP transport service 3-34
  - IPFASPath links 3-37
  - linkset 3-11
  - MGCP IP links 3-44
  - MGCP signaling service 3-41
  - OPC 3-7
  - SS7 route 3-22
  - SS7 signaling service 3-20
  - SS7 subsystem 3-17

---

## C

- C7IPLink
  - adding 3-14
  - component 1-7
- call reference length 3-37
- card
  - adding 3-4, 3-5
  - hardware 1-6
- changing your configuration 2-3
- Cisco Voice Services Provisioning Tool (VSPT) 1-2

- command
  - deploy 1-10
  - exit 1-10
  - sync 1-10
- committing your configuration 3-63
- component
  - C7IPLink 1-7
  - DPC 1-7, 3-10
  - external node 1-7
  - ExtNode 1-7, 2-4, 3-28
  - IPLink 1-7
  - linkset 1-7
  - MGCPath 3-41
  - MGW control link 3-27
  - OPC 1-6
  - point code 1-6
  - SigIPFAS 1-7
  - SigMGCP 1-7
  - SigSS7 3-20
  - SS7 route 1-7
  - SS7 subsystem 1-7
- components, relationships between 1-8
- configuration
  - changing 2-3
  - committing 3-63
  - deploying 3-63
  - MGW control link 3-27
  - signal links 3-14
- customer group ID 2-11, 3-22, 3-36
- customer group table 3-22

---

**D**

deploy command 1-10  
deployment problem 3-61  
destination point code (DPC) 1-7  
documentation, obtaining xii  
DPC  
    adding 3-9  
    component 1-7, 3-10

---

**E**

exit command 1-10  
exiting the VSPT 1-12  
external node  
    adding 3-28  
    component 1-7  
ExtNode component 1-7, 2-4, 3-28

---

**F**

FAS over IP transport service, adding 3-34

---

**H**

Help menu 1-10

---

**I**

importing trunk group and trunk files 3-47  
interface, Ethernet 1-6  
international network indicator 2-6, 2-8, 3-8, 3-9, 3-10  
IP address 3-39  
IPFASPath links 3-35  
IPFASPath links, adding 3-37  
IPLink, component 1-7

---

**L**

linkset  
    adding 3-11  
    changing properties 3-13  
    component 1-7  
logging in to the VSPT 1-8  
login screen 1-9

---

**M**

menu  
    Help 1-10  
    Session 1-9  
    View 1-9  
menu bar 1-11  
menus 1-10  
MGCP IP links, adding 3-44  
MGCP signaling service, adding 3-41  
MGCPPath, component 3-41  
MGW control link, configuration 3-27

---

**N**

national network indicator 2-6, 2-8, 3-8, 3-9, 3-10  
network indicator 2-6, 2-8, 3-9  
    international 2-6, 2-8, 3-8, 3-9, 3-10  
    national 2-6, 2-8, 3-8, 3-9, 3-10  
    reserved 2-6, 2-8, 3-8, 3-9, 3-10  
    spare 2-6, 2-8, 3-8, 3-9, 3-10  
Number Analysis tab 1-11

---

**O**

obtaining documentation xii  
OPC  
    adding 3-7  
    component 1-6

origination point code (OPC) 1-6

---

## P

parameters, changing linkset 3-13, 3-43

peer port 3-39, 3-45

point code, component 1-6

priority, setting 3-39

protocols 2-11, 3-21

provisioning session, starting 3-1

---

## R

relationships between components 1-8

reserved network indicator 2-6, 2-8, 3-8, 3-9, 3-10

reusing a component name 3-61

route 3-54

---

## S

Session menu 1-9

setting priority 3-39

SigIPFAS, component 1-7

SigMGCP, component 1-7

signal links, configuration 3-14

SigSS7, component 3-20

spare network indicator 2-6, 2-8, 3-8, 3-9, 3-10

SS7 route

adding 3-22

component 1-7

SS7 signaling service, adding 3-20

SS7 subsystem

adding 3-17

component 1-7

SS7Path 3-20

starting

provisioning session 3-1

VSPT 1-8

STP, mated pair 1-7

sync command 1-10

---

## T

tab

Number Analysis 1-11

Telephony Controller 1-11

Traffic 1-11

Telephony Controller tab 1-11

tips before provisioning 1-3

Traffic tab 1-11

trunk group and trunk files, importing 3-47

trunk route 3-46

trunks 3-46

---

## U

unknown MGC 3-2

---

## V

View menu 1-9

VSPT

exiting 1-12

logging in 1-8

starting 1-8

---

## X

XECfgParm.dat file 3-16, 3-17, 3-39, 3-45

X-windows 1-8, 1-9