



CHAPTER 2

Cisco Voice Services Provisioning Tool Overview

Cisco Open Packet Telephony (OPT) provides the framework for delivering voice services over packet-based data, voice, and video networks.

OPT encompasses a broad range of hardware platforms and Cisco software, delivering a continuum of voice solutions from core infrastructure to enhanced services over circuit and packet networks. The Cisco Media Gateway Controller (MGC) is at the center of Cisco OPT solutions.

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

Individual releases of the VSPT are designed to be used with specific releases of the Cisco MGC software.

VSPT Release 2.6(1) is designed to be used with Cisco MGC Release 9.6(1). If you are using a different release of the Cisco MGC software, use Table 1-1 in the *Installation Guide* to identify the release of VSPT that you need.

This chapter introduces the VSPT and provides directions for obtaining, installing, and using the software. It contains the following sections:

- [Provisioning Introduction, page 2-2](#)
- [VSPT Introduction, page 2-2](#)
- [VSPT Basics, page 2-3](#)
- [Starting the VSPT, page 2-8](#)
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Provisioning Introduction

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

**Note**

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

Before starting a provisioning session, you must understand the network topology for your solution. Create a network drawing, and refer to it while configuring your network.

You should also perform the following tasks before starting a provisioning session:

- 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” in Chapter 1 of the *Installation Guide*, and the *Cisco Media Gateway Controller Software Installation and Configuration Guide (Releases 9.1 through 9.6)* at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/installation/software/SW2/pre97inst.html

VSPT Introduction

The VSPT allows you to import an existing configuration, modify the configuration, and export it to the same or different devices. The VSPT can also help you to provision individual call parameters. This simplifies the provisioning of a large live network.

Using the VSPT helps avoid common errors that might arise if devices are provisioned independently. It eliminates the need to enter duplicate data, and enables you to import and export configurations.

The VSPT generates configuration files necessary to provision the PGW 2200, including the following provisioning information:

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

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

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

- MGC Host—Active configuration or entire MGC system
- Catalyst 2900XL—Running-config and image in Flash
- Catalyst 5500—For switch module and RSM, configuration and image in Flash
- Catalyst 6509—For switch module and MSFC, configuration and image in Flash

- SLT 2600—Running-config and image in Flash
- BAMS Phase 3—Active configuration
- HSI Adjunct Server—Active configuration

VSPT can be installed with the CSCOk9000 package to support secure communications to SSH-enabled devices, the Cisco MGC host, the BAMS server, or the HSI server.

The following operations can use SSH:

- Provisioning of an SSH-enabled Cisco PGW 2200
- Launching of ssh rather than Telnet for communicating with SSH-enabled network devices through a command-line interface
- Use of SSH to secure X windows communications with the end-user display device
- Use of SSH in place of Telnet for the initial step (logging in to the component to be backed up and getting the configuration) in a backup and restore operation. The configuration is copied to a TFTP server using standard TFTP.

The VSPT can be deployed as an integrated component of the Cisco MGC Node Manager or as a standalone application. If it is installed on the Cisco MGC, call throughput might be affected when the VSPT is active.

VSPT typically runs on a standalone UNIX server that is also running the Cisco MGC Node Manager (Cisco MNM) and supports multiple users and provisioning sessions.

You can launch the VSPT from the managed object icon in the Cisco MNM Map Viewer. For information about Cisco MNM, refer to the *Cisco MGC Node Manager User's Guide* Release 2.6(1) at:

http://www.cisco.com/en/US/products/sw/netmgtsw/ps1912/prod_installation_guides_list.html

This document is designed to help you get started using the VSPT and does not include complete provisioning instructions, which are found in the *Cisco Media Gateway Controller Software Release 9 Provisioning Guide* at:

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/provisioning/guide/prvgde.html

Provisioning with the Voice Services Provisioning Tool is at:

http://www.cisco.com/en/US/products/sw/netmgtsw/ps2272/products_user_guide_list.html

Detailed instructions for provisioning dial plans are covered in the *Cisco Media Gateway Controller Software Release 9 Dial Plan Guide* at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/dial_plan/guide/dplan.html

Provisioning Dial Plans with the VSPT is at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/dial_plan/guide/DP_VSPT.html

VSPT Basics

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

VSPT Field Definitions

Table 2-1 lists VSPT field names that correspond to system components in the Cisco MGC, and their definitions. For more information about system components, see the *Cisco Media Gateway Controller Software Version 9 Provisioning Guide*.

This table is not a comprehensive list of provisioning components. It is a description of the major fields displayed in the MGC Config window.

Table 2-1 **Field Name Definitions**

Field Name	Definition
MGCP ¹ Signaling Service	Signaling service between the Cisco MGC and a media gateway.
IP Link for MGCP	Link for the MGCP signaling services.
MGC Host	Origination point code (OPC) is the address of the Cisco MGC you are provisioning.
Interfaces	Hardware card provisioning for the Ethernet cards in the Cisco MGC host.

Table 2-1 Field Name Definitions (continued)

Field Name	Definition
Point Codes	
Originating Point Code	Originating point code (OPC) is the address for the Cisco MGC.
Adjacent Point Code	Address of an STP ² that sends and receives signaling messages to and from the Cisco MGC.
Destination Point Code (DPC)	Address of an endpoint, such as a PSTN ³ switch that carries the bearer traffic.
Routing Keys	
M3UA Route Key	Transpath NE component that represents the M3UA Routing key, a child of an OPC.
SUA Route Key	Transpath NE component that represents an SUA Routing key, a child of an OPC.
Location Label	Sets up the value for Call Limiting.
LinkSet	Set of links from the MGC to an endpoint, such as an adjacent STP.
SS7 Subsystem	Logical connection between a pair of mated STPs that allows the Cisco MGC to route through either STP to an endpoint.
ISUP Timer Profile	ISDN User Part (ISUP) timer profile provisioned for signaling service.
INservice	Intelligent network services table; can be changed at any time and is dynamically reconfigurable.
SS7 Path (SS7 Signaling Service)	Connection between the Cisco MGC and a specified point code.
SS7 Route	Route for each signaling path from the Cisco MGC to the PSTN switch through the linksets you have created to the STPs.
IP Route	Static IP route.
M3UA Route	Route for each signaling path from the Cisco MGC to the PSTN switch through the SGNode using M3UA.
SUA Route	Route for each signaling path from the Cisco MGC to the PSTN switch through the SGNode using M3UA.

Table 2-1 Field Name Definitions (continued)

Field Name	Definition
SS7 Signaling Gateway	
SS7 SG Nodes	SS7 signaling gateway nodes.
SS7 SG Subsystem	SS7 signaling gateway subsystem.
SS7 SG Pairs	SS7 signaling gateway pair.
SS7 SG Sigpaths	SS7 service to a signaling gateway.
Line Number Translation	Line number translation represents a line number and internal number translation and is dynamically reconfigurable.
SIP	SIP (session initiation protocol) service, the connection between an MGC and a SIP server.
Auto Congestion Ctrl	
Response Category	Auto Congestion Control response categories that may be associated with a trunkgroup (MGC configuration) or a signaling path (SC configuration).
MCL Threshold	Definition of onset and abate values of different contributing factors for Machine Congestion Level (MCL).
MCL Callreject	The definition of call reject percentage in different MCLs.
Advice of Charge	
Holiday	Holiday table that allows you to distinguish specific days of the year and charge them differently from the actual day of the week that the holiday falls on.
Charge	Charge table that defines the tariff rates (table index key for tariff.dat) and their durations.
Tariff	Tariff table that contains the tariff rates and scale factors. Each row is referenced by a tariff ID that call processing obtains by accessing the Charge table.
Meter Tariff	Meter Tariff table that is indexed by the tariff identifier retrieved from the charge table. The charge result type from generic analysis indicates which type of tariff table is accessed.
Pricharge	Pricharge table that stores the charge information retrieved from the charge table. It is also used to generate AOC charge information for the subscribing user.
Pritariff	Pritariff table that stores the tariff information retrieval from tariff table. It is also used to generate AOC charge information for the subscribing user.
GTD Parameters	GTD (generic transparency descriptor) that transports ISUP messages and parameters, using a generic format, between the ingress and egress Cisco PGW 2200 Signaling Controllers.
External Node	Any object in the network that is connected to the Cisco MGC. For example, media gateways (Cisco MGWs) and associated BSCs ⁴ .
ITP	Internet Transfer Point (ITP) is a signaling gateway to the SS7 network.
DPNSS	DPNSS ⁵ signaling path that is backhauled over IP to/from a Network Access Server (destination).

Table 2-1 *Field Name Definitions (continued)*

Field Name	Definition
Association	An SCTP ⁶ association represents the connection between the Cisco MGC and a Cisco access server.
SGP	Signaling gateway process.
EISUP	EISUP signaling service or signaling path. The signaling path to an externally located MGC (destination).
C7 IP Link	Link to the SS7 network (for example, an SSP ⁷ or STP) from the Cisco MGC through a Cisco SLT.
Sessionset	A pair of backhaul IP links used on the PGW to communicate with external nodes that support IPFAS or BSMV0.
NASPath	Network access server (NAS) signaling path, the Q.931 protocol path between the MGC and the media gateway.

1. MGCP = Media Gateway Control Protocol.
2. STP = signal transfer point.
3. PSTN = Public Switched Telephone Network.
4. BSC = Broadband Service Card.
5. Digital Private Network Signaling System
6. SCTP = Stream Control Transmission Protocol
7. SSP = service switching point.

VSPT Data Entry Requirements

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

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

For example: `name="dpc1"`

MML descriptions can be as many as 128 characters and can include spaces and symbols. You should use a description that helps to identify the component or link that you are provisioning.

For example, for an SS7 route, which indicates the signaling path from the Cisco MGC to a switch through a linkset, you could create a description "SS7 Route to PSTN Switch A through Linkset 1."

For more information about MML, see the *Cisco Media Gateway Controller Software Release 9 MML Command Reference Guide*.

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

Starting the VSPT


Note

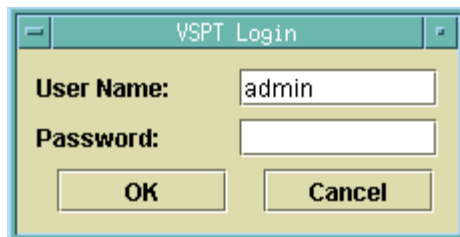
See the *Cisco Media Gateway Controller Software Version 9 Installation and Configuration Guide* for information on setting up user privileges and access rights.

To start the VSPT, use this procedure:

- Step 1** Do one of the following to start VSPT standalone:
- Log in to the VSPT server or access it from a machine with X window capability.
 - In a terminal window, change to the default directory:
 - **>cd /opt/CSCOvsp26**
 - Navigate to the appropriate directory if you installed the VSPT in a different location.
 - Enter the following command to start the VSPT:
 >./vspt

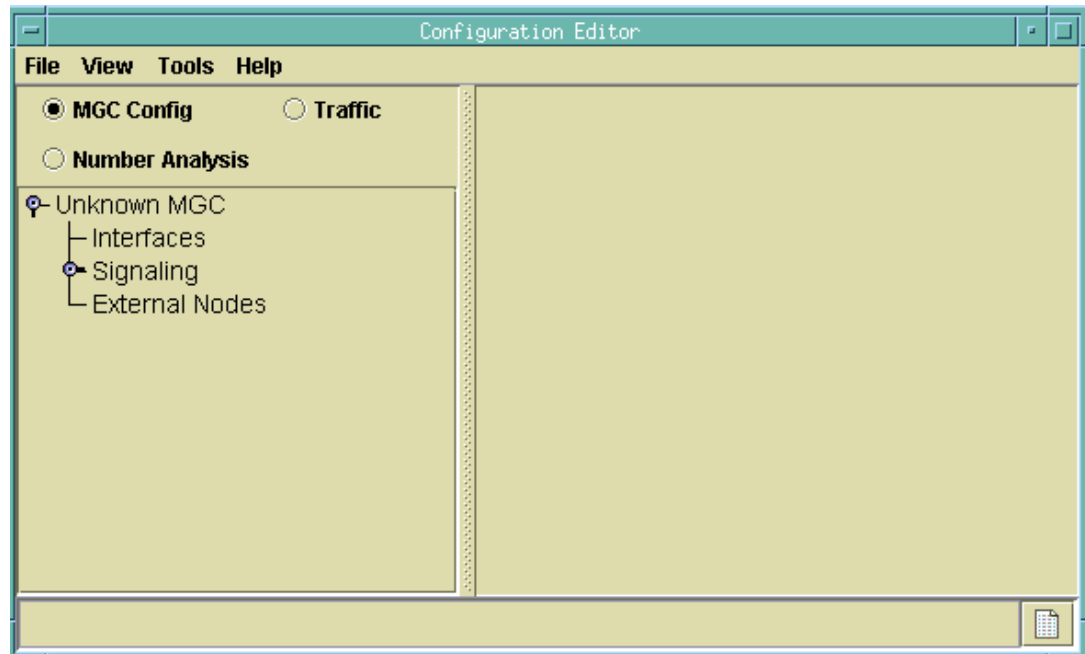
The login screen shown in [Figure 2-1](#) appears.

Figure 2-1 Login Screen



- Step 2** Enter your user name and password and click **OK**.
 The default user name is admin, and the password is also admin.
 The Welcome screen is displayed briefly during the login process, and the Main VSPT window appears (see [Figure 2-2](#)).

Figure 2-2 Main VSPT Window



Using the VSPT

This section describes the VSPT menus and Configuration Editor views and gives instructions for using the tool functions.

Menus

The VSPT menu bar contains these menus:

- File
- View
- Tools
- Help

These menus are described in the following sections.

File Menu

Table 2-2 describes File menu commands.

Table 2-2 File Menu Commands

Command	Description
New	Begin a new configuration session
Open	Open an existing configuration

Table 2-2 File Menu Commands (continued)

Command	Description
Import	Import an existing configuration from an MGC, or import trunk group, trunk, routing, or dial plan files into the VSPT
Export	Export configuration files from the VSPT to a specified directory
Save	<p>Save the current configuration:</p> <ul style="list-style-type: none"> • As Working: Use to save a new configuration, either a configuration imported from the Cisco PGW or a configuration created in VSPT. Use also to save modifications to an existing configuration, overwriting the last version. The configuration is saved in the /var/opt/CSCOVsp26/data/mgc/mistral directory. • As Snapshot: Use to save modifications to an existing configuration under a new name in the ARCHIVE directory. The snapshot configuration is saved in /var/opt/CSCOVsp26/data/mgc/mistral/configname/ARCHIVE. • As New Config: Use to save a modified configuration under a new name, leaving the original intact.
Exit	Stop any open provisioning sessions and close the VSPT.

View Menu

Table 2-3 describes View menu commands.

Table 2-3 View Menu Commands

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

Tools Menu

Table 2-4 describes Tools menu commands.

Table 2-4 Tools Menu Commands

Command	Description
Integrity Check	Check your configuration for inconsistencies and missing information.
Deploy	Move the configuration to one or more target hosts and Cisco media gateways (MGWs).
Remote Shell	Open a Telnet or SSH session.
MGC Viewer	View, activate, remove, and synchronize configurations on the MGC.
BAMS Config	View and configure a Billing and Measurements Server (BAMS). See the Billing and Measurements Server <i>User's Guide</i> for your release of BAMS for information about BAMS configuration.
State Operation	View and configure the state of MGC components.
Screening Editor	View and configure screening number provisioning. See the <i>Cisco MGC Software Release 9 Dial Plan Guide</i> for information about using the VSPT Screening Editor.
Audit	Audit bearer trunk information between the Cisco MGC and the BAMS.
Backup and Restore	Create, modify, or delete scheduled backups or restores on the Cisco MGC Host, Catalyst 2900XL, Catalyst 5500, Catalyst 6509, SLT 2600, BAMS P3, and HSI server components.
Administrators	
Change Password	Change your password.
User Administration	Add, modify, or delete users.

Help Menu

Table 2-5 describes Help menu commands.

Table 2-5 Help Menu Commands

Command	Description
VSPT User Guide	View a local version of the VSPT User Guide.
About VSPT	View information about the current version of VSPT, including the software release number.

Configuration Editor Views

You create, view, and modify configurations using the VSPT Configuration Editor, which has three different views.

To select a view, click one of the radio buttons at the top of the Configuration Editor window:

- MGC Config—MGC Configuration view. Use to add components and provision component properties.
- Traffic—Traffic view. Use to create customer-specific files, including trunk groups, trunks, and routing.
- Number Analysis—Number Analysis view. Use to provision dial plans.

In each view, the left pane displays selectable components in an Explorer-type tree view.

The right pane displays data entry fields for the selected component.

Click a component to select it. To see all of the subcomponents for the component you select, click the icon next to the component name to expand the component list.

For instructions for using the VSPT to provision components, component properties, trunk groups, trunks, and routing, see the *Cisco Media Gateway Controller Software Release 9 Provisioning Guide*.

For instructions for using the VSPT to provision a dial plan, refer to the *Cisco Media Gateway Controller Software Release 9 Dial Plan Guide*.

Defining Users and Permissions

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

-
- Step 1** Log in to the server as root.
 - Step 2** Start VSPT, either by first starting Cisco MGC Node Manager and then starting VSPT, or by starting it standalone.
 - Step 3** Click **Tools > User Admin**.
The User Administration screen in [Figure 2-3](#) appears.

Figure 2-3 VSPT User Administration

Username:	Permission:
admin	admin

Username:

Password:

Permission:

- Step 4** To add a user, do the following:
- a. Enter a user name and password.
 - b. From the Permission dropdown list, select the desired permission level, **Viewer**, **User**, or **Admin**.
 - c. 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 by performing one of these actions:

-
- Step 1** Click **File > Exit**.
- Step 2** Click **OK** at the resulting prompt.
-

Or

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- Step 1** Click the close box in the upper right of the VSPT window.
- Step 2** Click **OK** at the prompt.
-

