



# CHAPTER 2

## Installing Cisco VSPT

The Cisco Voice Services Provisioning Tool (Cisco VSPT) provides an easy-to-use graphical tool to provision the Cisco PGW 2200 Softswitch running the Cisco PGW 2200 Softswitch software.

Individual releases of Cisco VSPT are designed to be used with specific releases of the Cisco PGW 2200 Softswitch. Cisco VSPT Release 2.8(1) is designed to be used with Cisco PGW 2200 Softswitch Release 9.8(1). If you are using a different release of the Cisco PGW 2200 Softswitch software, see the [“Determine the Correct Provisioning Tool Release” section on page 2-1](#) to identify the release of Cisco VSPT that you need.

- [Installing Cisco VSPT Release 2.8\(1\), page 2-2](#)
  - [Planning and Setting Up for Backup and Restore, page 2-4](#)
  - [Installing SSH on Cisco VSPT, page 2-6](#)
  - [Installing and Updating FlexLM License Control, page 2-8](#)
  - [Starting Cisco VSPT, page 2-10](#)
  - [Exiting the Cisco VSPT, page 2-10](#)
- [Installing an Earlier Version of Cisco VSPT, page 2-10](#)
- [Upgrading Cisco VSPT, page 2-10](#)
- [Uninstalling Cisco VSPT, page 2-10](#)

## Determine the Correct Provisioning Tool Release

You must install the provisioning tool release that is compatible with your Cisco PGW 2200 Softswitch and Cisco BAMS software. Select the correct provisioning tool version by referring to [Table 2-1](#). The following versions are included on the Cisco MGC Node Manager CD. Check the applicable Release Notes for possible later patches.

**Table 2-1** Cisco VSPT & Cisco PGW 2200 Softswitch Software Version Compatibility

Cisco VSPT Release	Cisco PGW 2200 Softswitch Software Release	Cisco BAMS Software Release
Cisco VSPT 2.8(1)	Cisco PGW 2200 Softswitch Release 9.8(1)	Cisco BAMS Phase 3 (3.20 and 3.30)

**Table 2-1 Cisco VSPT & Cisco PGW 2200 Softswitch Software Version Compatibility**

Cisco VSPT Release	Cisco PGW 2200 Softswitch Software Release	Cisco BAMS Software Release
Cisco VSPT 2.7(3)	Cisco PGW 2200 Softswitch Release 9.7(3)	Cisco BAMS Phase 3 (3.20 and 3.30)
Cisco VSPT 2.6(1)	Cisco PGW 2200 Softswitch Release 9.6(1)	Cisco BAMS Phase 3(3.13)

Instructions for installing the Cisco VSPT are provided later in this chapter.

## Installing Cisco VSPT Release 2.8(1)

Cisco VSPT Release 2.8(1) can be installed on Solaris 10 (Opteron and Sparc) platform.

Before installing Cisco VSPT Release 2.8(1), verify the following:

- You want to provision the Cisco PGW 2200 Softswitch running Cisco PGW 2200 Softswitch software Release 9.8(1). If you are provisioning an earlier version, see the “[Determine the Correct Provisioning Tool Release](#)” section on page 2-1.
- You have met the workstation hardware and software requirements. See the “System Requirements” section of the associated release notes.
- You have established network connectivity between your workstation and the network elements.
- The network elements have the correct release of software installed.
- You have identified your desired installation configuration, one of the options described in the “[Determine the Correct Provisioning Tool Release](#)” section on page 2-1.
- You have decided if you are installing SSH for secure communications with SSH-enabled components.



### Note

Cisco VSPT installation must be carried out from the Cisco VSPT server or a machine with X Window capability. Make sure you have root access on your Sun workstation.

Before you begin provisioning, you should have a list of components you want to provision, including the component names, IP addresses, properties, and other parameters. To create this list, use the instructions provided in the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* at

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/pgw/9/provisioning/guide/prvgde.html](http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/provisioning/guide/prvgde.html)



### Tip

In addition, descriptions of the properties and values contained in Cisco VSPT are included in Appendix A of the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide* and [Table 2-2](#) of this document. Review this information before you begin provisioning, and keep it available for reference during provisioning.

To install Cisco VSPT Release 2.8(1), perform the following procedure:

- Step 1** Verify that the requirements listed in the “[Determine the Correct Provisioning Tool Release](#)” section on page 2-1 have been met.
- Step 2** Open an X terminal window.

**Step 3** If you are not already logged in as root, become the root user by entering the following command:

```
% su - root
```

**Step 4** Ensure that the X Windows display is set as follows:

- In csh or tcsh: `setenv DISPLAY <hostname>:<display number>`
- In sh or ksh: `DISPLAY=<hostname>:<display number> ; export $DISPLAY`



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**Note** The default value for the display number is 0. Replace the value <hostname> with the hostname of your machine.

---

**Step 5** Insert the Cisco VSPT 2.8(1) CD in the CD-ROM drive.

**Step 6** Change the directory using the following command.

```
# cd /cdrom/cdrom0/dart
```

**Step 7** Enter the following command to install the software:

```
# ./setup
```

The Cisco VSPT InstallShield Wizard opens, displaying the Welcome window.

**Step 8** Click **Next**.

The License Agreement window displays.

**Step 9** Accept the license agreement and click **Next**.

The Destination Folder window displays, indicating the default destination directory.

**Step 10** Click **Next** to accept the default destination directory, or select **Change** to provide a different directory path. If you want to use a directory destination other than the default, enter the appropriate directory path and click **Next**.

The Query Backup User Panel window displays.

**Step 11** Optional: Enter the Backup User ID (your backup server login ID), and click **Next**.



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**Note** During installation you are asked to designate a Backup User ID. Only a user logged in with this ID can carry out backup and restore operations. See the [“Specify a Backup User ID During Installation” section on page 2-5](#) for more information. This is applicable only if you are conducting backup operations. All other features of Cisco VSPT function without the entering of a backup user ID.

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The Ready to Install window displays.

**Step 12** Click **Install Now**.

Cisco VSPT 2.8(1) installation take place and the Installation Summary window displays upon completion.

**Step 13** Click **Exit**.

The Cisco VSPT InstallShield Wizard closes.

**Step 14** If you are using the Cisco VSPT Backup and Restore feature, enable TFTP and FTP on the backup server. See the [“Planning and Setting Up for Backup and Restore” section on page 2-4](#).

**Step 15** If you are installing SSH for Cisco VSPT, see the [“Installing SSH on Cisco VSPT” section on page 2-6](#).

- Step 16** Install FlexLM license control. (See “Installing and Updating FlexLM License Control” section on page 2-8.)
- Step 17** Go on to the “Starting Cisco VSPT” section on page 2-10.

Table 2-2 defines the default Cisco VSPT files and directories.

**Table 2-2 Provisioning Tool Installation Files and Directories**

File or Directory	Description
<b>/opt/CSCOvsp28</b>	
vspt	Provisioning tool application script
/classes	Class and property files
/config	Configuration related to license
/docs	
/expect	Expect is a tool for automating interactive applications such as telnet, ftp, passwd, fsck, rlogin, tip, and so on.
/flexlm	FlexLM software
/help	Online help files
/images	Images or logos used in VSPT
/jre/	Java Runtime Environment
/uninstall	Uninstall script directory
/utils	Utilities for VSPT
/version	Provisioning Tool version
<b>/var/opt/CSCOvsp28</b>	
/data	Configuration files
/logs	Log files
/etc	XML files



**Note**

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

## Planning and Setting Up for Backup and Restore

You typically use Cisco VSPT Backup to back up the configuration on a supported component, such as a Cisco PGW 2200 Softswitch, onto a different server (the backup host). The configuration can then be restored if needed on the original machine.

For example, if you are backing up a Cisco PGW 2200 Softswitch host, Cisco VSPT logs in to the Cisco PGW 2200 Softswitch host, copies the configuration, and the Cisco PGW 2200 Softswitch transfers it to the backup host using FTP/TFTP. The backup host must have TFTP and FTP enabled.

If you are going to use Backup and Restore, you should do the following:

- [Specify a Backup User ID During Installation, page 2-5](#)
- [Select a Backup Host, page 2-5](#)
- [Enable TFTP on the Backup Host, page 2-6](#)

## Specify a Backup User ID During Installation

During Cisco VSPT installation, you are prompted for a Backup ID. The Backup ID is the UNIX ID of a user account authorized to use Cisco VSPT to perform configuration backups. Depending on your security policy, this might be the ID of a particular individual, or an ID created specifically for the purpose and usable by one or more individuals authorized to perform backups.

In order for a user to schedule backups or perform immediate backups, Cisco VSPT must be started from a UNIX shell with the backup ID, in either of two ways:

- If Cisco VSPT is launched from Cisco MGC Node Manager (Cisco MNM), the user must have started the Cisco EMF client with the Backup ID. If the user's normal ID is different from the backup ID, the user must start a new Cisco MNM session with the backup ID.
- From the command line in a UNIX shell opened with the backup ID.



### Note

Please make sure that the Backup ID has the right to add a new crontab task, because the backup task could be a scheduled task that is controlled by Solaris crontab.

## If You Reinstall Cisco VSPT with a Different Backup ID

If you reinstall Cisco VSPT and select a different backup ID, you must manually delete two files that are not automatically removed in reinstallation. (This is because the files are read-only and owned by root.)

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**Step 1** Log in as **root**.

**Step 2** Change the directory using the following command:

```
# cd /var/opt/CSCovsp28/logs/
```

**Step 3** Delete the two files, `now.log`, and `testValidTFTP`, using the following command:

```
# rm now.log
# rm testValidTFTP
```

---

## Select a Backup Host

The backup host to which configurations are copied can be any of the following:

- The same machine where Cisco MNM is installed (and typically Cisco VSPT is also installed), referred to as the network management host
- The same machine where Cisco VSPT is installed, if this is different from the Cisco MNM machine, and if this is not a Cisco PGW 2200 Softswitch host
- A separate machine used for backups

**Note**

Using a Cisco PGW 2200 Softswitch host as a backup host is not recommended and is specifically not supported if you are using SSH.

## Enable TFTP on the Backup Host

Cisco VSPT uses Trivial File Transfer Protocol (TFTP) as the transfer utility to transfer configuration files from the Cisco PGW 2200 Softswitch (or Cisco BAMS) to the backup host. Although UNIX systems include TFTP, by default it is not enabled. To be able to send configuration files to a backup host, you must first enable TFTP on that host.

Before you begin, be sure that you are using a Solaris or Solaris-like TFTP server. Unlike some TFTP servers, the Sun Solaris TFTP server allows a file to be written to the server using TFTP only if the file already exists on the system and is writable by the root user.

TFTP software that has the behavior of the Solaris TFTP software must be used (the file must exist and have write permissions by the root user before the TFTP transfer can be successful). This is because Cisco VSPT creates the file with root write permission before attempting to back up the file using TFTP. TFTP server implementations that require the file not to exist before the backup is attempted do not work.

### To Enable TFTP

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**Step 1** In the file `/etc/inetd.conf`, uncomment this line:

```
tftp dgram udp wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```

Thus:

```
#tftp dgram udp wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```

**Step 2** Create the TFTP user home directory using the following commands:

```
# mkdir /tftpboot
# chown root /tftpboot
# chmod 777 /tftpboot
```

**Step 3** Restart `inetd` using the following commands:

```
# ps -ef | grep inetd*
# kill -HUP <inetd-pid>
```

**Step 4** Verify that TFTP is working:

```
# cp /etc/hosts /tftpboot/.
# cd /tmp
# tftp <machine-name>
tftp> get hosts
```

---

## Installing SSH on Cisco VSPT

SSH on Cisco VSPT is available on Cisco PGW 2200 Softswitch Release 9.8(1) on Solaris 10 platform. Check if you already have the `ssh` program in the `/usr/bin`. If you already have SSH installed, ignore this section.

The SSH security package used for Cisco VSPT is the same CSCOk9000 package used on the Cisco PGW 2200 Softswitch, Cisco BAMS, and Cisco HSI server. To install this package on Cisco VSPT, use the same procedure as for those devices. In addition, you need to check and modify a variable if the base path of ssh and sftp is not the default.

Before you begin, Cisco VSPT should have software Release 2.8(1) installed.

**Note**

We recommend installing SSH on Cisco VSPT (and Cisco MGC Node Manager) before you install it on the Cisco PGW 2200 Softswitch, so that you can use the element managers to monitor the installation process on the Cisco PGW 2200 Softswitch and other managed components.

**Step 1** Download the security package, CSCOk9000. You must first secure authorization.

**Note**

There are U.S. Government restrictions on the exporting of cryptographic technology. The Secure Shell (SSH) program falls under the umbrella of those restrictions. The security package (CSCOk9000) is registered and located in a restricted area from which only authorized customers can download.

**Step 2** Stop Cisco VSPT.

If Cisco VSPT is a co-resident on the Cisco PGW 2200 Softswitch server and CSCOk9000 is already installed, go on to Step 4. If not, go on to Step 3.

**Step 3** Install the CSCOk9000 package on the Cisco VSPT server machine. For instructions, see the steps in *Cisco Media Gateway Controller Software Installation and Configuration Guide (Releases 9.1 through 9.6)*, “Installing CSCOk9000 on the Cisco PGW 2200 Host.”

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/pgw/9/installation/software/SW2/pre97inst.html](http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/installation/software/SW2/pre97inst.html).

**Step 4** If the base path of ssh and sftp is not the default /opt/ssh/bin, modify the sshPath variable in the configuration file:

```
/opt/CSCOVsp28/classes/com/cisco/transpath/dart/editor/configEditor.properties
sshPath=/usr/local/bin
```

Where /usr/local/bin is the location where ssh and sftp are installed.

After you install the CSCOk9000 package, both secure and nonsecure utilities are enabled. Users can use Telnet or ssh, FTP or sftp. If you want to disable nonsecure utilities, go on to Step 5.

**Step 5** (Optional) To disable nonsecure utilities, use the following toggles:

**Note**

The scripts toggle\_telnet.sh and toggle\_ftp.sh, are located in the /opt/sun\_install directory.

- To disable FTP (making only sftp available):  
`/opt/sun_install/toggle_ftp disable`
- To re-enable FTP (making both FTP and sftp available):  
`/opt/sun_install/toggle_ftp enable`

## Uninstalling SSH on Cisco VSPT

If you need to uninstall SSH, use the procedure described in *Cisco Media Gateway Controller Software Installation and Configuration Guide (Releases 9.1 through 9.6)*, “Fallback Procedures” at

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/pgw/9/installation/software/SW2/pre97inst.html](http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/installation/software/SW2/pre97inst.html)

This re-enables FTP and Telnet and uninstalls the CSCOk9000 package.

## Installing and Updating FlexLM License Control

### Installing FlexLM License Control


Cisco VSPT 2.8(1) supports the FlexLM license control. Licenses must be installed before starting the Cisco VSPT after the Cisco VSPT installation.

#### Obtaining FlexLM License File

There are two ways to obtain the FlexLM license file for Cisco VSPT 2.8(1).

If the Cisco VSPT is installed alone or with Cisco PGW 2200 Softswitch, you get the license file after the purchase of Cisco MGC Node Manager with Cisco VSPT included.

Follow the steps below to obtain a license key file.

- 
- Step 1** Go to Cisco Product License Registration site at
- <https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet>
- Step 2** Fill in the Product Authorization Key (PAK). The PAK is provided on the Cisco EMF product CD sleeve that came in the Cisco MGC Node Manager Media Kit package.
- Step 3** Click **Submit**.
- Step 4** Verify that the product information shown on the screen is correct, and then click **Continue**.
- Step 5** Select the version of the Cisco VSPT product you are licensing in the Version number field.
- Step 6** Enter the hostname of the server where the Cisco VSPT product is installed. You can obtain the server’s hostname by entering the hostname command at the server’s command line prompt.
-  **Note** The server hostname must not include a period (.).
- 
- Step 7** Enter the host ID of the server where the Cisco VSPT product is installed. (The host ID is a hexadecimal string that identifies the system; it is not the IP address.) You can obtain the server’s host ID by entering the **hostid** command at the server’s command line prompt.
- Step 8** Read the End-User License Agreement and select **I Accept**. You must accept to get a license.
- Step 9** Verify the registrant information shown on the screen.
- Step 10** Click **Continue**.
- Step 11** Verify the summarized information and click **Submit**.

The license request is submitted. The Cisco VSPT license key file is returned to you as an e-mail attachment.

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If the Cisco VSPT is installed with Cisco MNM, the license file for Cisco VSPT is the same license file with Cisco EMF license file. You can find the related information in “Obtain a Cisco EMF License”, *Cisco Media Gateway Controller Node Manager Installation Guide* at the following URL:

[http://www.cisco.com/en/US/docs/net\\_mgmt/mnm/2.8.1/install/guide/MNM\\_install.html](http://www.cisco.com/en/US/docs/net_mgmt/mnm/2.8.1/install/guide/MNM_install.html)

## Installing FlexLM License File

Use the following command to install the license file:

```
# cp license.lic /opt/CSCOVsp28/config/licenses/
```

## Updating FlexLM License Control

You need to update the license file when the old license file is expired.

Because Cisco VSPT can be installed alone or installed with Cisco MNM, Cisco PGW 2200 Softswitch, steps for updating FlexLM license control are a little different accordingly.

Perform the following steps to update licenses.

If the Cisco VSPT is installed alone or with Cisco PGW 2200 Softswitch, follow the steps below to update licenses.

---

**Step 1** Back up the license file under /opt/CSCOVsp28/config/licenses.

**Step 2** Stop licenses server

```
# /opt/CSCOVsp28/flexlm/avlms stop
```

A list of running license managers is displayed if you have several running servers.

**Step 3** Enter the number of the ATL license manager if you have several running servers.

**Step 4** Install the updated license file:

```
# cp license.lic /opt/CSCOVsp28/config/licenses/
```

---

If the Cisco VSPT is installed with Cisco MNM, follow the steps below to update licenses.

---

**Step 1** Back up the license files under /opt/CSCOVsp28/config/licenses and /opt/cemf/config/licenses.

**Step 2** Stop licenses server

```
# /opt/CSCOVsp28/flexlm/avlms stop
```

A list of running license managers is displayed if you have several running servers.

**Step 3** Enter the number of the ATL license manager if you have several running servers

**Step 4** Install the updated license file:

```
# cp license.lic /opt/CSCOVsp28/config/licenses/  
# cp license.lic /opt/cemf/config/licenses/
```

**Step 5** Restart the Cisco EMF using the following commands:

```
# /opt/cemf/bin/cemf stop  
# /opt/cemf/bin/cemf start
```

---

## Starting Cisco VSPT

See “[Starting the Cisco VSPT](#)” section on page 1-11.

## Exiting the Cisco VSPT

See “[Exiting the Cisco VSPT](#)” section on page 1-16.

## Installing an Earlier Version of Cisco VSPT

Follow the procedure described in the *Cisco Voice Services Provisioning Tool User Guide* of an earlier release to install an earlier version of Cisco VSPT. You must install the base version before installing a patch. See “[Related Documentation](#)” section on page -v.

## Upgrading Cisco VSPT

To upgrade Cisco VSPT, you install the new version as described in the “[Installing Cisco VSPT Release 2.8\(1\)](#)” section on page 2-2 section. Depending on the version you are upgrading from, you may need to take some steps beforehand:

- Because two versions of Cisco VSPT (such as Cisco VSPT 2.7(3) and 2.8(1)) can exist on the same system, when you are upgrading, the older version is not automatically removed. If you do not want to use both versions, you can manually uninstall the older version. See the “[Uninstalling Cisco VSPT](#)” section on page 2-10 section. (However, keeping the old version is harmless.) Uninstallation removes the software, but not the configuration data files.
- If you want to use configuration files created in a previous version, you must copy them. Of course, the configuration will not include components new in the Cisco PGW 2200 Softswitch Release 9.8(1).

## Uninstalling Cisco VSPT

### Uninstalling an Earlier Version of Cisco VSPT

If you upgrade to Cisco VSPT Release 2.8(1) and no longer need an earlier version, follow these procedures to uninstall an earlier version.

The uninstallation process removes the `/var/opt/<CSCOvsp2x>` directory (where `2x` is the Cisco VSPT release, such as 28 for Release 2.8(1)) created by the installation process. If a directory contains a file that was not created during the installation process, it is not removed and is logged in the `uninstall.log` file. This might occur in the data and logs directories. All application data stored in the `/var/opt/<CSCOvsp2x>` directory is retained.



---

**Note** Since the uninstall directory and files are removed during uninstall, *do not* change to the `/opt/CSCOvsp2x` directory to run the uninstall script.

---

**Step 1** Enter the following commands and press **Enter**:

```
# su - root
# cd /
# /opt/CSCOvsp2x/uninstall/
```

**Step 2** Proceed with the new Cisco VSPT software installation (see the [“Installing Cisco VSPT Release 2.8\(1\)”](#) section on page 2-2).



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**Note** If your next installation specifies a different backup ID, you must manually delete certain files. See the [“If You Reinstall Cisco VSPT with a Different Backup ID”](#) section on page 2-5.

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## Uninstalling Cisco VSPT Release 2.8(1)

Perform the following steps to uninstall Cisco VSPT Release 2.8(1):

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**Step 1** Login as root.

**Step 2** Go to the root directory

```
# cd /
```

**Step 3** Uninstall Cisco VSPT Release 2.8(3) using the following command:

```
# /opt/CSCOvsp28/uninstall/uninstall
```

**Step 4** (Optional) If Cisco VSPT is installed with CMNM, restart CEMF

```
# /opt/cemf/bin/cemf stop
# /opt/cemf/bin/cemf start
```

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