



CHAPTER 2

Installing and Configuring Cisco HSI Software

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Introduction

This chapter contains instructions for installing and configuring the Cisco H.323 Signaling Interface (HSI). This chapter contains the following sections:

- [Installing the Operating System, page 2-1](#)
- [Installing the Cisco HSI, page 2-2](#)
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Installing the Operating System

The Cisco HSI Release 4.3 operates on a platform running the Sun Solaris 10 operating system.

The appropriate operating system must be installed before you install the Cisco HSI. Instructions for installing the operating system on the appropriate platform are in the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*, located at the following URL:

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



Note

Initially, see the following document for software requirements: *Release Notes for the Solaris 10 Environment Packages*.

After completing the operating system installation, return to this document for Cisco HSI installation procedures.

Installing the Cisco HSI

This section provides step-by-step instructions for installing the Cisco HSI.

Before You Start

Complete the preinstallation tasks listed in [Table 2-1](#) before installing the Cisco HSI. Use the checklist to ensure that each task is completed. Detailed instructions for completing some tasks follow the checklist.


Table 2-1 *Preinstallation Tasks Checklist*

| Check | Preinstallation Task |
|-------|--|
| | Ensure that the required operating system is installed on the appropriate hardware platform. |
| | Obtain the appropriate HSI software license required to operate the HSI software. See the “HSI Software Licensing” section on page 2-13. |
| | Configure group and user names, as described in the “Configuring Groups and Users” section on page 2-3. |
| | Gather the information listed in Table 2-2 and note it in the table for reference during the installation. |
| | Have your company internal support information and Cisco support contact information readily available so you can get help with the installation if needed. If you have questions or need assistance, see the section, “Obtaining Technical Assistance” in the Preface, page 1 . |

Configuring Groups and Users

You must configure groups and users for the Cisco HSI on each host server. A user must be a member of the “mgcgrp” group to use certain Cisco HSI functions, such as Man-Machine Language (MML).

To configure groups and users, complete the following steps:

-
- Step 1** Log in as root.
- Step 2** At the # prompt, enter the following commands:
- ```
mkdir -p /export/home/users/mgcusr
mkdir /export/builds
mkdir /export/patches
cd /export/home/users
groupadd -g 20000 mgcgrp
useradd -u 20001 -g 20000 -d /export/home/users/mgcusr -s /bin/csh mgcusr
chown mgcusr:mgcgrp mgcusr
passwd mgcusr <type password twice>
(Enter and confirm password)
```
- Step 3** Log out, then log in as **user mgcusr**, using the password you applied in Step 2.
- Step 4** Verify that you are in directory /export/home/users/mgcusr by entering the following command:
- ```
% pwd
```
- Step 5** Enter the following command:
- ```
% vi .cshrc
```
- Step 6** Enter the vi insert mode by entering the following command:
- ```
i (enter insert mode)
```
- Step 7** Enter the following text on the first line:
- ```
source /opt/GoldWing/currentPM/local/setup.gw.csh
```
-  **Note** You use the setup.gw.csh script to set up the Unix user environment variables so that the path /opt/GoldWing/currentPM/bin is added. This enables a user to execute the Cisco MML interface (the **mml** command) and also sets up useful Unix aliases.
- 
- Step 8** Save the file and quit vi by entering the following commands:
- ```
[Esc] (exit insert mode)
:wq (write file and quit)
```
- Step 9** Enter the following command:
- ```
chmod 777 .cshrc
```
-

## Cisco HSI Installation Information

Gather the information listed in [Table 2-2](#) before you begin the Cisco HSI installation. Use the Notes column in this table to record the information. Several steps in the installation procedure require you to provide this information. Refer to this table as you proceed through the Cisco HSI installation steps.

**Table 2-2 Cisco HSI Installation Information**

| Required Information                                                                                                           | Notes                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cisco HSI user name                                                                                                            | Default: mgcusr                                                                                                                                                                                        |
| Cisco HSI group name                                                                                                           | Default: mgcgrp                                                                                                                                                                                        |
| Gatekeeper IP address                                                                                                          | This is not required if the Cisco HSI is to operate in non-gatekeeper mode (in this mode, the Cisco PGW 2200 provides the destination IP address information to the HSI instead of a gatekeeper).      |
| Gatekeeper port                                                                                                                | Typically, this is port 1719.                                                                                                                                                                          |
| Gateway prefix                                                                                                                 |                                                                                                                                                                                                        |
| Terminal alias                                                                                                                 |                                                                                                                                                                                                        |
| Gatekeeper ID                                                                                                                  | This ID must match the entry configured in the gatekeeper.                                                                                                                                             |
| EISUP host port                                                                                                                | Typically 8003, but this entry must match the peer port setting of the IPLNK object in the PGW 2200 configuration.                                                                                     |
| PGW1 name (either the DNS <sup>1</sup> host name, if DNS is configured, or the IP address of the Cisco PGW 2200 <sup>2</sup> ) | The PGW1 name is the DNS host name (if DNS is configured) or the IP address of interface hme0 of the Cisco PGW 2200.                                                                                   |
| PGW1 port                                                                                                                      | This is the port number for EISUP from interface hme0 of the Cisco PGW 2200.<br><br>Typically 8003, but this entry must match the peer port setting of the IPLNK object in the PGW 2200 configuration. |

1. DNS = domain name system
2. PGW = PSTN Gateway

## Cisco HSI Software Directory Structure

The Cisco HSI application is distributed as a tar file (with filename GoldWing-xxxx.tar in which xxxx is the version ID, for example, GoldWing-4.3.2.tar) or as a CD-ROM.

The default installation directory is /opt/GoldWing. (GoldWing is an internal Cisco identifier for the Cisco HSI product.) Cisco recommends that you use the default installation directory to enable all scripts to reference the correct location.

The software automatically installs in this default location, under a subdirectory called 4.3.x (for example, /opt/GoldWing/4.3.2).

To enable all scripts to reference the current release of software, there are two software links called /opt/GoldWing/currentPM and /opt/GoldWing/currentGW that both point to the desired software release (for example, 4.3.2).

Table 2-3 shows the subdirectories of the /opt/GoldWing/currentPM directory.

**Table 2-3 CurrentPM Subdirectories**

| Subdirectory | Contents                                                       |
|--------------|----------------------------------------------------------------|
| ./bin        | All compiled executables.                                      |
| ./local      | All scripts.                                                   |
| ./etc        | Base configuration files.                                      |
| ./lib        | Shared libraries required by executables.                      |
| ./toolkit    | Toolkit files.                                                 |
| ./var        | Volatile directory that contains file locks and so on.         |
| ./var/log    | Default log directory.                                         |
| ./var/prov   | Provision system writes provisioning configuration files here. |
| ./var/trace  | Trace logs are written here.                                   |

Exported provisioning files are stored in /opt/GoldWing/export.

## Installing Cisco HSI

This section provides step-by-step instructions for installing a single Cisco HSI for use with a simplex PGW 2200 configuration (a configuration with one Cisco PGW 2200 host). To install a dual Cisco HSI for use with a redundant PGW 2200 configuration (a configuration with two Cisco PGW 2200 hosts), complete the steps in this section and then proceed to the “[Installing Multiple Cisco HSIs in a Redundant PGW 2200 Configuration](#)” section on page 2-11.

As part of the installation procedure, the Cisco HSI software prompts for some configuration values (for example, the IP address of the Cisco PGW 2200). This information is used to create a quick base configuration. When the software is installed, it operates using the base configuration. You can perform additional configuration later using the Cisco HSI MML user interface.

During the installation procedure, enter the correct values as presented in the prerequisites instead of dummy values, except for the gatekeeper IP address. As part of the quick base configuration, the Cisco HSI always assumes that it is to operate with a gatekeeper.

To operate the HSI in non-gatekeeper mode, you must enter an MML command later to change the operation mode. If you wish to operate the Cisco HSI in non-gatekeeper mode, you can enter a dummy value during the installation procedure for the gatekeeper IP address (for example, 10.20.30.40).



### Note

In the following installation procedure, the package name is OTTgw000 and the version of the software is 4.3.2; the /export/builds directory is used to install the system software.

To install the Cisco HSI, complete the following steps:

- Step 1** Verify that a Unix group and user have been created (see the section, “[Configuring Groups and Users](#)”).
- Step 2** Log in as root.
- Step 3** Issue the command: **cd /export/builds**

**Step 4** The initial step for downloading the HSI software depends upon the media from which you obtain the software:

- If you download the software from a server, it will be in a tar file. Issue the following command:

```
tar xvf GoldWing-4.3.2.tar
```

This command displays the following text:

```
x ./4.3.2/APPLICATIONS, 0 bytes, 0 tape blocks
x ./4.3.2/APPLICATIONS/OTTgw000.pkg, 38954496 bytes, 76083 tape blocks
x ./4.3.2/install.sh, 5223 bytes, 11 tape blocks
x ./4.3.2/uninstall.sh, 3053 bytes, 6 tape blocks
```



**Note** The byte and block counts for your installation might be different from those provided in the preceding example.

- If you download the software from a CD-ROM, insert the Cisco HSI 4.3.2 CD-ROM into the drive and issue the following commands:

```
mkdir builds/4.3.2
cp -r /cdrom/hsi_4.3.2/* /export/builds/4.3.2
```

**Step 5** At the # prompt, enter the following commands:

```
cd /export/builds/4.3.2
./install.sh
```



**Note** Be sure to type correct and valid entries when executing this installation script. The entries become part of the base configuration of the HSI (see the command description [restart-softw](#), [page A-23](#)). If, at a later date, a new and incorrect configuration is entered, the HSI reverts to the base configuration when it is restarted.

The following text displays:

```
Processing package instance <OTTgw000> from
</export/builds/4.3.2/APPLICATIONS/OTTgw000.pkg>
Cisco HSI (GoldWing) H323 Adjunct Processor V4.3(2)
(sparc) 4.3.2
Copyright (c) 2007 Cisco Systems, Ltd.
All Rights Reserved
This product is protected by copyright and distributed under
licenses restricting copying, distribution and decompilation.
Enter GoldWing base directory path (default /opt/GoldWing) [?,q]
```

**Step 6** Press **Enter** to select the default GoldWing base directory path. The following text displays:

```
Enter SNMP base directory path (default /opt/GoldWing/currentPM/bin) [?,q]
```

**Step 7** Press **Enter** to select the default SNMP base directory path.

The following text displays:

```
Enter base directory path (default /opt/GoldWing/4.3.2) [?,q]
```

**Caution**

We strongly recommend that you select the default base directory path. Operational issues might arise if other directories are used.

- Step 8** Press **Enter** to select the default base directory path. The following text displays:

```
Enter GoldWing user name
```

- Step 9** Type the Cisco HSI user name **mgcusr** and press **Enter** (the default user name is cisco). The following text displays:

```
Enter GoldWing group name
```

- Step 10** Type the Cisco HSI group name **mgcgrp** and press **Enter** (the default user group name is sysadmin). The following text displays:

```
Enter GateKeeper IP Address
```

- Step 11** If you are using a gatekeeper with the Cisco HSI, you must enter a valid gatekeeper IP address. If you intend to run the Cisco HSI in non-gatekeeper mode, you can enter an invalid IP address (for example, 10.20.30.40). You must modify the configuration later to operate the Cisco HSI in non-gatekeeper mode by entering an MML command.

Type the gatekeeper IP address (see [Table 2-2](#)) and press **Enter**. The following text displays:

```
Enter GateKeeper Port
```

- Step 12** Type the gatekeeper port (see [Table 2-2](#)) and press **Enter** (the default port is 1719). The following text displays:

```
Enter GateWay Prefix
```

- Step 13** Type the gateway prefix (see [Table 2-2](#)) and press **Enter**.

**Note**

The gateway prefix is any E.164 numeric value (for example, 9 or 044). The Cisco HSI uses the prefix to register to the gatekeeper. (For operating the HSI in non-gatekeeper mode, the gateway prefix can be any value.)

When a call is made from the H.323 network (that is, an H.323 endpoint or gateway) with this prefix, the gatekeeper directs the call to the Cisco HSI, which automatically forwards the call to the Cisco PGW. After the HSI is installed, you can add more prefix entries to the configuration by entering MML configuration commands.

The following text displays:

```
Enter Terminal Alias
```

**Note**

The terminal alias can be a text string (for example, hsi1@OuterLondonDomain.com, which used to identify the HSI).

- Step 14** Type the terminal alias (see [Table 2-2](#)) and press **Enter**. The following text displays:

```
Enter GateKeeper Id
```

- Step 15** Type the gatekeeper ID (see [Table 2-2](#)) and press **Enter**.



**Note** Typically, the gatekeeper ID (or gatekeeper name) is a text string assigned to the gatekeeper. The gatekeeper ID value that you enter must match exactly the gatekeeper configuration. The value is case-sensitive. For Cisco gatekeepers, use the IOS command **zone local** to define the gatekeeper ID.

The following text displays:

```
Enter EISUP Host Port
```

**Step 16** Type the EISUP host port (see [Table 2-2](#)) and press **Enter**.



**Note** The EISUP host port is typically 8003, but it must match the peer port setting of the IPLNK object in the PGW 2200 configuration.

The following text displays:

```
Enter PGW1 Name
```

**Step 17** Type the PGW1 name and press **Enter**.



**Note** The PGW1 name is either the DNS host name (if DNS is configured) or the IP address of the PGW 2200.

The following text displays:

```
Enter PGW1 Port
```

**Step 18** Type the PGW1 port number (see [Table 2-2](#)) and press **Enter**.



**Note** The PGW1 port is typically 8003, but it must match the port setting of the IPLNK object in the PGW 2200 configuration.

The following text displays:

```
Enter Installation NodeId
```

**Step 19** Type the installation node ID (see [Table 2-2](#)) and press **Enter**.



**Note** The installation node ID is a text field typically used by network designers for identification purposes. Entering a value in this field does not affect functionality.

The following text displays:

```
Enter Hardware Platform
```

**Step 20** Type the hardware platform name (see [Table 2-2](#)) and press **Enter** (typically, accept the default platform name). The following text displays:

```
Enter Installation Location
```

**Step 21** Type the installation location (see [Table 2-2](#)) and press **Enter**.



**Note** The installation location field is a text field typically used by network designers for identification purposes. Entering a value in this field does not affect functionality.

The following is an example of the screen that displays:

```
Executing checkinstall script.
Modified Environment is:

BASEDIR=/opt/GoldWing/4.3.2
GWHOME=/opt/GoldWing
GWUSR=mgcusr
GWGRP=mgcgrp
GWCONF_IP="10.70.54.53"
GWCONF_PORT="1719"
GWCONF_PREFIX="0208"
GWCONF_ALIAS="cisco@OuterLondonDomain.com"
GWCONF_GKID="OuterLondon"
GWCONF_HOST_PORT=8003
GWCONF_VSC1_NAME=goliath
GWCONF_VSC1_PORT=8003
GWCONF_NODEID="H323-GW1"
GWCONF_HARDWARE="Sun Netra T1"
GWCONF_LOCATION="H323 - GW1"

The selected base directory </opt/GoldWing/4.3.2> must exist before installation is
attempted.
Do you want this directory created now [y,n,?,q]
```

**Step 22** Type **y** to create the version directory. The following text displays:

```
Using </opt/GoldWing/4.3.2> as the package base directory.
Processing package information.
Processing system information.
Verifying disk space requirements.
Checking for conflicts with packages already installed.
Checking for setuid/setgid programs.
This package contains scripts which will be executed with super-user
permission during the process of installing this package.
Do you want to continue with the installation of <OTTgw000> [y,n,?]
```

**Step 23** Review the output before you continue the installation. Type **y** to continue. The files are installed. The following text displays:

```
Installing Cisco HSI (GoldWing) H323 Adjunct Processor V4.3(2) as <OTTgw000>
Installing part 1 of 1.
/etc/init.d/CiscoGW
/opt/GoldWing/4.3.2/bin/GWmain
/opt/GoldWing/4.3.2/bin/PMmain
/opt/GoldWing/4.3.2/bin/mml
/opt/GoldWing/4.3.2/bin/msg.conf
/opt/GoldWing/4.3.2/bin/parse
/opt/GoldWing/4.3.2/etc/GWmain.base.conf
/opt/GoldWing/4.3.2/etc/GWmain.default.conf
/opt/GoldWing/4.3.2/etc/GWmain.static.conf
/opt/GoldWing/4.3.2/etc/H323SkeletonFileSimple.dat
/opt/GoldWing/4.3.2/etc/parse.exclude.list
/opt/GoldWing/4.3.2/etc/parse.list
/opt/GoldWing/4.3.2/lib/libgwMib_shlib.so
/opt/GoldWing/4.3.2/var/prov/active_config <symbolic link>
[verifying class <none>]
```

```
[verifying class <script>]
Executing postinstall script.
Installed package instance is: OTTgw000
Installation of <OTTgw000> was successful.
Installed package instance environment variables are:

PKGINST=OTTgw000
VERSION=4.3.2
BASEDIR=/opt/GoldWing/4.3.2
GWHOME=/opt/GoldWing
MGCUSR=mgcusr
MGCGRP=mgcgrp

Setting link /opt/GoldWing/currentPM.
Setting link /opt/GoldWing/currentGW.
```

Installation of the Cisco HSI is now complete. The directory /opt/GoldWing now displays as follows:

```
drwxr-xr-x 7 cisco sysadmin 512 Jan 9 18:31 4.3.2
lrwxrwxrwx 1 cisco sysadmin 19 Jan 9 18:31 currentGW -> /opt/GoldWing/4.3.2
lrwxrwxrwx 1 cisco sysadmin 19 Jan 9 18:31 currentPM -> /opt/GoldWing/4.3.2
-rwxrwxr-x 1 root other 3053 Jan 9 18:31 uninstall.sh
```



**Note** The HSI might generate checksum errors at the completion of the installation. It is safe to ignore these errors, which are normal because the installation process modifies some of the installation files (for example, IP addresses and gatekeeper IDs). The UNIX pkgchk function detects such changes to the installation files.



**Note**

The links currentPM and currentGW point to the currently active version of the Cisco HSI. The uninstall script has been copied here for convenience, but it can be run only by root user.

To check the Cisco HSI installation, enter **pkgchk OTTgw000**.



**Note**

The package name is OTTgw000. If more than one instance of the package is installed, the package name has a suffix (for example, OTTgw000.2, OTTgw000.3, and so on).

Outside of the /opt/GoldWing directory, the start/stop script CiscoGW is copied to the /etc/init.d directory.

When the installation is complete, a file named PKINST is written to the base directory on the installed software.



**Caution**

Do not modify the PKINST file. It contains information derived from the installation, and the uninstall script uses the PKINST file in the version directory to determine which package name to remove if more than one instance of the package is installed.

## Installing Multiple Cisco HSIs in a Redundant PGW 2200 Configuration

Typically, the Cisco PGW 2200 is deployed as a two-box solution, in an Active-Standby configuration (the two boxes are referred to as a PGW *node*).

The Cisco HSI operates permanently in an Active configuration. You can deploy additional HSIs for N+1 redundancy. All the HSIs are active permanently, and the PGW load balances calls across the HSIs. If one HSI goes offline, the PGW continues to load balance the calls across the remaining HSIs.

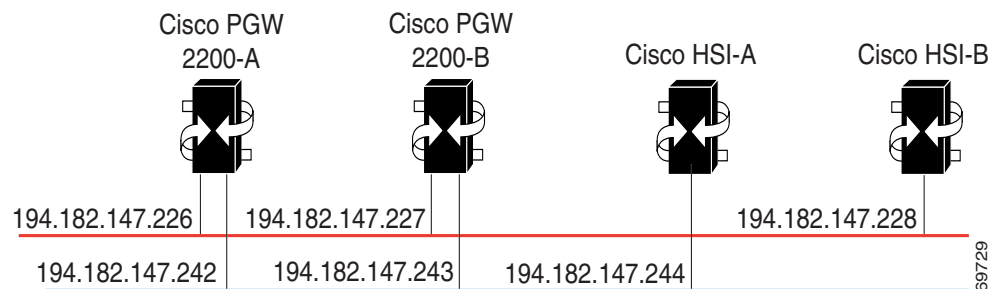


### Note

The Cisco HSI operates in a load balancing mode. Therefore, you should deploy at least two HSIs in a network. This enables the Cisco PGW 2200 to load balance calls between the HSIs. Each HSI communicates by using H.323 through network interface hme0 only.

Figure 2-1 illustrates a typical PGW/HSI solution.

**Figure 2-1 Dual Cisco HSI with a Redundant PGW 2200 Configuration**



During the HSI installation procedure, one EISUP link is configured. You can configure an additional EISUP link for communications from the HSI interface hme1 to the Cisco PGW interface hme1 by issuing MML command line interface commands.

You can configure two more EISUP links to enable the HSI to communicate (by way of the interfaces hme0 and hme1) to the standby PGW, in case the standby PGW becomes active.

Figure 2-1 shows an Active-Standby PGW node, and a single Cisco HSI (in practice, another HSI should be used for load balancing). In the illustration, the red network has address 194.182.147.226/28 (the subnet mask is 255.255.255.240) and the blue network has address 192.182.147.240/28.

The IP addresses and desired EISUP port numbers are:

- pgw1 interface0 194.182.147.226 port 8003
- pgw1 interface1 194.182.147.242 port 8003
- pgw2 interface0 194.182.147.227 port 8003
- pgw2 interface1 194.182.147.243 port 8003
- hsi interface0 194.182.147.228 port 8003
- hsi interface1 194.182.147.244 port 8003

After the HSI **install.sh** script runs, the following parameters are configured (VSCA refers to PGW1):

- sys\_config\_static HOST\_PORT\_NUMBER1 = 8003
- sys\_config\_static HOST\_PORT\_NUMBER2 = 0
- sys\_config\_static VSCA\_IPADDR1 = 194.182.147.226

- `sys_config_static VSCA_IPADDR2 = 194.182.147.226`
- `sys_config_static VSCA_PORT_NUMBER1 = 8003`
- `sys_config_static VSCA_PORT_NUMBER2 = 8003`

## Configuring a Redundant Deployment

The following steps show the MML commands one can use to configure the deployment illustrated in Figure 2-1.

---

**Step 1** Login as root user.

**Step 2** Start up the Cisco HSI by entering the command:

```
/etc/init.d/CiscoGW start
```

**Step 3** Log out of root user, and log in as user mgcusr.

**Step 4** Start the Cisco MML command line interface by entering the command:

```
mml
```

**Step 5** Copy the initial configuration to “base\_conf” so that you can refer to it later if necessary. (The configuration file name “base\_conf” is a suggestion. It can be replaced with any text.)

```
prov-sta: srcver=active, dstver=base_conf
prov-cpy
```

**Step 6** Start another configuration based on the active configuration:

```
prov-sta: srcver=active, dstver=fig2.2
```

**Step 7** Configure the HSI to use the two local interfaces hme0 and hme1:

```
prov-ed: name=sys_config_static, HOST_PORT_NUMBER2 = 8003
prov-add: name=sys_config_static, HOST_IPADDR1 = 194.182.147.228
prov-add: name=sys_config_static, HOST_IPADDR2 = 194.182.147.244
```

**Step 8** Configure the second IP address of PGW1:

```
prov-ed:name=sys_config_static, VSCA_IPADDR2 = 194.182.147.242
```

**Step 9** Configure details for PGW2 (referred to as VSCB):

```
prov-add: name=sys_config_static, VSCB_IPADDR1 = 194.182.147.227
prov-add: name= sys_config_static, VSCB_IPADDR2 = 194.182.147.243
prov-add: name= sys_config_static, VSCB_PORT_NUMBER1 = 8003
prov-add: name= sys_config_static, VSCB_PORT_NUMBER2 = 8003
```

**Step 10** Copy the newly configured parameters to the configuration file:

```
prov-cpy
```

**Step 11** Restart the software:

```
restart-softw
```

---

## MML Command Examples

The MML commands presented in the preceding configuration example are described in detail in Appendix A: “MML User Interface and Command Reference”. These commands are described briefly in the following list:

- **prov-sta: srcver=active, dstver=xxx**—This command starts a provisioning session. The word “active” is a key word; but, it can be replaced with the name of an existing configuration. The new configuration “xxx” is stored in /opt/GoldWing/currentPM/var/prov/xxx.
- **prov-ed: name=mml\_type, mml\_item=xxx**—In this command, *mml\_type* is usually set to *sys\_config\_static*, *sys\_config\_dynamic*, *ras*, *q931* or *h245*. The value specified for *mml\_type* depends on the *mml\_item* that is being edited. The term *mml\_item* is the name of the parameter that is being edited. The value of *xxx* is a numeric or text value, depending on the parameter. (If *xxx* is specified as a text value, optionally you can enclose it in quotes “.”)
- **prov-add: name=mml\_type, mml\_item=xxx**—This command is used to add additional parameters that are not already part of the configuration.
- **prov-cpy**—This command stores and deploys the active configuration. However, some parameters require a restart, which can be achieved by stopping and starting the HSI using /etc/init.d/CiscoGW [stop | start] or by issuing the MML command **restart-softw**.
- **restart-softw [:xxx]**—In this command, the optional *xxx* value can be set to restart the HSI using an alternate configuration. For example, the command **restart-softw:base\_conf** would restart the HSI using the configuration stored at /opt/GoldWing/currentPM/var/base\_conf.

## HSI Software Licensing

After you install the Cisco HSI software, you must install a license file before you can operate the HSI.



### Caution

Proper interoperation of the Cisco HSI 4.3 with the Cisco PGW 2200 Softswitch requires that the Cisco PGW 2200 Softswitch is running release 9.7(3) or later.

## Requesting the License File

Contact the Cisco TAC (<http://www.cisco.com>) for a demonstration license or to request a license when a Cisco PGW 2200 is obtained. The Cisco TAC might require the machine identifier in order to generate a license. You can get the machine identifier by issuing the Unix command **hostid**.

### Example

```
telnet hsi-1
Last login: Sat May 27 20:27:14 from cisco.com
hsi-1:~> hostid
8311c97b
```

The Cisco HSI 4.3 release requires Cisco PGW 9.7(3) or later to operate. For backward compatibility, HSI 4.3 will operate for a short period (30 days) with older releases of the PGW (new features such as Annex M.1 support will not work until the PGW is upgraded). During the 30 days, you must upgrade the PGW to release 9.7(3) or later.

## Installing the License File

After you receive the license file by email, you must install it on the Cisco HSI. Copy the license file into the directory `/opt/GoldWing/license` directory. Restart the Cisco HSI to enable the license file to take effect.

## Verifying the License

Issue the following MML command to ensure that the license file is installed correctly:

```
gw mml> rtrv-lics

H323 Signalling Gateway Sat Dec 30 22:41:00 2006
M SUCC

HSI licensing current operation status:
License check not in progress
Current status (Node license):
Node license feature passed ok, successful
Current status (PGW interworking license):
HSI is licensed to interwork with 9.6 PGW or later

New license check invoked.
```

The preceding example indicates that the Cisco HSI recognized that the HSI node (or machine identifier) successfully matches the license file, that the Cisco HSI is correctly licensed to run, and that the HSI can run on PGW 9.6 or later (the 30 days has not expired).

If you issue the **rtrv-lics** command immediately after the HSI is restarted, the license file may not have been read yet. In this case, the Cisco HSI assumes that the license is valid and continues to function. The **rtrv-lics** command output would appear as follows:

```
gw mml> rtrv-lics

H323 Signalling Gateway Sat Dec 30 22:50:24 2006
M SUCC

HSI licensing current operation status:
License not read yet, results below assume a valid license for now
Current status (Node license):
Node license feature passed ok, successful
Current status (PGW interworking license):
HSI is licensed to interwork with 9.6 PGW or later

Please re-enter 'rtrv-lics' in a while.
```

If the HSI cannot find the license file, or if the license file is invalid, the **rtrv-lics** command output would appear as follows:

```
gw mml> rtrv-lics

H323 Signalling Gateway Sat Dec 30 22:50:33 2006
M SUCC

HSI licensing current operation status:
License check not in progress
Current status (Node license):
Node license feature failed! Please contact Cisco TAC www.cisco.com/tac
Current status (PGW interworking license):
HSI is not licensed to interwork with 9.6 PGW, only 9.7 or later

New license check invoked.
```

In this case, if you contact the Cisco TAC or your Cisco representative and provide the output from the Unix **hostid** command, Cisco will issue a new license file.

**Caution**

---

Each Cisco HSI requires a license file. If you move the HSI software to different hardware, request a new license file from the Cisco TAC.

---

## Viewing License File Operations

The Cisco HSI can deposit detailed information in the log file. When you initially set up the HSI, or if the Cisco TAC requires additional information, the log file can provide useful information.

To enable the debug, enter the following MML command:

```
set-log:eisup:level=0x0008
```

This command sets the minimal log level for license file operations to be deposited in the HSI log file.

**Caution**

---

Do not execute the **set-log** command on a live network, unless the Cisco TAC requests you to do so.

---

To obtain greater detail, you can set the log level to 0x1509 or 0xffff.

**Caution**

---

Do not set the log level to 0x1509 or 0xffff on a live network.

---

## Starting the Cisco HSI

To start the Cisco HSI, execute the start script as the root user and enter the following command:

```
/etc/init.d/CiscoGW start
```

**Note**

---

The Cisco HSI can be started and stopped only by the root user.

---

## Stopping the Cisco HSI

To stop the Cisco HSI, log in as root user and enter the following command:

```
/etc/init.d/CiscoGW stop
```

# Configuring the Cisco HSI

To configure the Cisco HSI, use the MML command line interface. If the `/opt/GoldWing/currentPM/local/setup.gw.csh` file is sourced, the MML is in the user path.

(See [Chapter 3, “Provisioning the Cisco HSI”](#) and [Appendix A, “MML User Interface and Command Reference”](#) for more information).

The following example shows a typical user interaction with the MML interface.

```
hsi-1:~> mml
Connecting to port 10129 on host hsi-1

Welcome to the GoldWing H323 Signalling Gateway.

gw mml>
gw mml> rtrv-ne
 H323 Signalling Gateway Sat Dec 30 23:15:16 2006
M RTRV

Type : H323 Signalling Gateway
Hardware : Sun Fire V210
Vendor : Cisco Systems, Inc.
Location : H323-GW1
Primary IP Addr: 10.52.70.151
Version : 4.3.2
Platform Status:
 Signalling gateway: Running
 Call processing: Active

gw mml> prov-rtrv: list
 H323 Signalling Gateway Sat Dec 30 23:15:30 2006
M RTRV

No provisioning session is active.
The following provisioning sessions are available:

fig2.2 * base_conf old_conf

gw mml>
```

In this example, the user entered the **rtrv-ne** command, which retrieves general network element details. The **prov-rtrv:list** command lists all the configurations that have been stored. The active configuration is marked with an asterisk (\*).

**Caution**

Do not modify configuration files directly. Modify files by using the Cisco MML interface.

# Installing Cisco HSI Patches

Over time, you can access Cisco HSI 4.3 patches online (<http://www.cisco.com>), or through your contact at Cisco. A patch is supplied as a single file (for example, `hsi-4_3_2_p1.tar.Z`) along with a readme file, which is a text file.

Always refer to the readme file for the exact patch install instructions and for any additional information about requirements.

Typically, a patch incorporates the contents of all preceding patches. Therefore, you need to install only the latest patch. When a new patch is released, you uninstall the current patch. Patch uninstall and installation is typically a 5 minute process. Detailed instructions are provided in the readme file.

If more than one version of the Cisco HSI is available, you can perform the patch installation procedure without downtime. In this case, you upgrade one HSI while the other HSIs continue to run. After you upgrade the initial HSI and it is restored to operation, you upgrade the next HSI, and so on.

## Minimizing Dropped Calls During Patch Installation

The following procedure provides a method to minimize the number of H.323 calls that are dropped when you install an HSI patch.

- 
- Step 1** Initiate an MML session by issuing the **mml** command.
- Step 2** Issue the **stp-callproc** command to enable active H.323 calls to remain connected and to stop all new calls through the HSI.

```
stp-callproc: timeout=600
```

If configured to do so, the Cisco PGW 2200 reattempts blocked calls through the other HSIs. After 600 seconds (10 minutes) the Cisco HSI drops any calls that are still active (that is, if the users have not gone on-hook after 10 minutes).

- Step 3** Wait 10 minutes and then issue the **rtrv-ne** command.
- The **rtrv-ne** command should return a message that indicates that the call processing state is idle.
- Step 4** Issue the **quit** command to exit the MML session.
- Step 5** As root user, stop the Cisco HSI by issuing the following command:

```
/etc/init.d/CiscoGW stop
```

- Step 6** Install the HSI patch.
- Step 7** Restart the HSI.
-

# Upgrading the Cisco HSI to a New Release

Before removing an old version of the Cisco HSI, install the new version of the software. You can export a provisioning session to a flat file in a format that can be used as input to another provisioning session (see `prov-exp` in [Appendix A, “MML User Interface and Command Reference,”](#) for more information).

**Note**

To upgrade to Cisco HSI 4.3.2, if you have not partitioned disks according to the information provided in the partitioning tables presented in the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*, you must repartition the disks and reinstall the operating system.

Also, see the document: *Release Notes for the Cisco Media Gateway Controller Software Release 9.7(3)*.

When you upgrade the Cisco HSI version, the following conditions apply:

- The Cisco HSI must be stopped first before installation is allowed to proceed.
- The installation of the new software does not overwrite the existing installed version.
- The installation of a new version creates a new version directory in the `/opt/GoldWing` parent directory. The links `currentPM` and `currentGW` are updated to point to this new version.
- The system should be restarted to enable the re-initialization of the SNMP processes. The craftsperson needs to change the user to root and issue the following Unix command:

```
shutdown -i 6 -g 0 -y
```

**Note**

To revert to a previous version of the software, manually modify the `currentPM` and `currentGW` links in the `/opt/GoldWing` parent directory to point to the previous version.

The `uninstall.sh` script uses the `PKINST` file in the version directory to determine which package name to remove.

**Caution**

When upgrading the Cisco HSI, you must install the security package `CSC0h013` before you remove (uninstall) the preceding version of the HSI software. If you do not, the `CSC0h013` security package will not operate. This step is not required if you are performing a fresh installation of the Cisco HSI.

## Migrating from HSI 4.1 or 4.2 to HSI 4.3

If you are upgrading from HSI 4.2 and plan to use the same configuration (including IP addresses) and wish to migrate the configuration from the old HSI machine to the new HSI machine, complete the following steps.

**Step 1** On the HSI running Release 4.2, issue the following commands:

```
mml>
 prov-sta:srcver=active, dstver=dummy1
 prov-exp:all:dirname=my42
 proc-stp::confirm
quit
cd /opt/GoldWing/export/my42
copy the config.mml file to a safe place
```

**Step 2** On the new HSI 4.3 machine, after the Solaris 10 operating system and HSI 4.3 are installed, copy the config.mml file to a location on the new machine (for example, the home directory).

**Step 3** If you are installing the Cisco HSI on the Netra 210 or V210, go to step 4.

If you are installing the Cisco HSI on the high performance platform, Netra 240, enter the following:

```
/opt/GoldWing/currentPM/bin/migrate config.mml
```

This generates a file named 43\_migrated.mml.



**Note** The `/opt/GoldWing/currentPM/bin/migrate` function configures higher overload thresholds, which are required for the high performance platform

**Step 4** Copy the license file to the directory `/opt/GoldWing/license`.

**Step 5** Start the HSI.

**Step 6** If you are installing the Cisco HSI on the Netra 210 or V210, configure the HSI by logging in as mgusr and issuing the command:

```
% mml> -b config.mml
```

If you are installing the Cisco HSI on the high performance platform (Netra 240), configure the HSI by logging in as mgusr and issuing the command:

```
% mml> -b 43_migrated.mml
```

**Step 7** Restart the HSI by issuing one of the following commands:

```
/etc/init.d/CiscoGW [stop|start]
```

```
mml>
restart-softw
```

# Removing the Cisco HSI

To remove the Cisco HSI, complete the following steps:

**Step 1** Log in as root.

**Step 2** Enter the following command to stop the Cisco HSI:

```
/etc/init.d/CiscoGW stop
```

**Step 3** Enter the following commands:

```
cd /opt/GoldWing
```

```
ls -l
```

The following is an example of the screen that displays:

```
drwxr-xr-x 7 cisco sysadmin 512 Jan 9 18:31 4.3.2
lrwxrwxrwx 1 cisco sysadmin 19 Jan 9 18:31 currentGW -> /opt/GoldWing/4.3.2
lrwxrwxrwx 1 cisco sysadmin 19 Jan 9 18:31 currentPM -> /opt/GoldWing/4.3.2
-rwxrwxr-x 1 root other 3053 Jan 9 18:31 uninstall.sh
```

**Step 4** Enter the **uninstall** command and specify the version of the software that you want to uninstall, for example:

```
./uninstall.sh 4.3.2
```

The following text displays:

```
Warning: This script will remove the package OTTgw000
Do you wish to proceed? [n] [y,n,?,q]
```

**Step 5** Type **y** and press **Enter**. The following text displays:

```
Deleting generated files in /opt/GoldWing/4.3.2
The following package is currently installed:
OTTgw000 GoldWing H323 Adjunct Processor V0.1.6
(sparc) 4.3.2
Do you want to remove this package?
```

**Step 6** Type **y** and press **Enter**. The following text displays:

```
Removing installed package instance <OTTgw000>
This package contains scripts which will be executed with super-user
permission during the process of removing this package.
Do you want to continue with the removal of this package [y,n,?,q]
```

**Step 7** Type **y** and press **Enter**. The following text displays:

```
Verifying package dependencies.
Processing package information.
Executing preremove script.
Removing pathnames in class <script>
/opt/GoldWing/4.3.2/local/setup.gw
/opt/GoldWing/4.3.2/local/pmStart.sh
/opt/GoldWing/4.3.2/local/gwhalt
/opt/GoldWing/4.3.2/local/CiscoGW
Removing pathnames in class <none>
/opt/GoldWing/4.3.2/local
/opt/GoldWing/4.3.2/lib/libgwMib_shlib.so
/opt/GoldWing/4.3.2/lib
/opt/GoldWing/4.3.2/etc/parse.list
/opt/GoldWing/4.3.2/etc/parse.exclude.list
/opt/GoldWing/4.3.2/etc/H323SkeletonFileSimple.dat
```

```
/opt/GoldWing/4.3.2/etc/GWmain.static.conf
/opt/GoldWing/4.3.2/etc/GWmain.request.conf
/opt/GoldWing/4.3.2/etc/GWmain.default.conf
/opt/GoldWing/4.3.2/etc/GWmain.conf
/opt/GoldWing/4.3.2/etc/GWmain.base.conf
/opt/GoldWing/4.3.2/etc
/opt/GoldWing/4.3.2/bin/parse
/opt/GoldWing/4.3.2/bin/msg.conf
/opt/GoldWing/4.3.2/bin/mml
/opt/GoldWing/4.3.2/bin/PMmain
/opt/GoldWing/4.3.2/bin/GWmain
/opt/GoldWing/4.3.2/bin
/opt/GoldWing/4.3.2/PKGINST
/etc/init.d/CiscoGW
/etc/init.d <shared pathname not removed>
/etc <shared pathname not removed>
Executing postremove script.
Updating system information.

Removal of <OTTgw000> was successful.
```

---