



# Installing and Configuring Cisco HSI Software

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## Introduction

This chapter contains instructions for the system administrator on how to install, configure, upgrade, and remove the Cisco H.323 Signaling Interface (HSI). This chapter contains the following sections:

- [Hardware and Software Requirements, page 2-1](#)
- [Installing the Sun Solaris 8 Operating System, page 2-1](#)
- [Installing the Cisco HSI, page 2-2](#)
- [Starting the Cisco HSI, page 2-10](#)
- [Stopping the Cisco HSI, page 2-10](#)
- [Configuring the Cisco HSI, page 2-11](#)
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## Hardware and Software Requirements

The Cisco HSI is targeted to run on a Sun Netra T1 100/105 platform with an 18-GB hard disk drive, a Sun Netra 120 platform with a 36-GB hard disk drive, or a Sun Fire V120 platform with a 36-GB hard disk drive. These platforms run on the Sun Solaris 8 operating system.

## Installing the Sun Solaris 8 Operating System

The Sun Solaris 8 operating system must be installed before installing the Cisco HSI. Instructions for installing Solaris 8 on the Sun Netra T1 100/105, Sun Netra 120, and Sun Fire V120 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/re19/swinstl/index.htm>

After completing the Solaris 8 operating system installation, return to this document for Cisco HSI installation procedures.

## Partitioning an 18-GB Hard Disk Drive

The Solaris 8 installation procedures require you to configure the disk partitions on the Sun Netra T1 100/105 18-GB hard disk drive. [Table 2-1](#) provides information you will need to customize the disk partitions.

*Table 2-1 18-GB Disk Drive*

Slice Number	Slice Name	Slice Size (Mb)
0	/	512
1	swap	4096
2	overlap	17269
3	/opt	6144
4	/var	1024
5	/usr	1024
7	/export/home	4096

## Partitioning a 36-GB Hard Disk Drive

The Solaris 8 installation procedures require you to configure the disk partitions on the Sun Netra 120 36-GB hard disk drive and the Sun Fire V120 36-GB hard disk drive. [Table 2-2](#) provides information you will need to customize the disk 0 (c1t0d0) partitions. Disk 1 (c1t1d0) partitions are not used in this release.

*Table 2-2 36-GB Disk 0 Partitions*

Slice Number	Slice Name	Slice Size (Mb)
0	/	1024
1	swap	4096
2	overlap	34730
3	/opt	25600
4	/var	1024
5	/usr	2048
6		0
7	/export	936

## 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 2-3](#) 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 2-3 Preinstallation Tasks Checklist*

Check	Preinstallation Task
	Ensure that Solaris 8 is installed on the Sun Netra T1 100/105, Sun Netra 120, or Sun Fire V120 platform, as described in the <a href="#">“Installing the Sun Solaris 8 Operating System” section on page 2-1</a> .
	Configure group and user names, as described in the <a href="#">“Configuring Groups and Users” section on page 2-3</a> .
	Gather the information listed in <a href="#">Table 2-4</a> 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 <a href="#">Obtaining Technical Assistance</a> on page xvi.

## Configuring Groups and Users

You must set up 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 have just 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**
- 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 2-4](#) 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 2-4 Cisco HSI Installation Information*

| Required Information                                                                                                                        | Notes                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Base Directory Path                                                                                                                         | <b>Note</b> We strongly recommend that you accept the default base directory path.                                             |
| Cisco HSI User Name                                                                                                                         | Default: mgcusr                                                                                                                |
| Cisco HSI Group Name                                                                                                                        | Default: mgcgrp                                                                                                                |
| Gatekeeper IP Address                                                                                                                       |                                                                                                                                |
| Gatekeeper Port                                                                                                                             | Default: 1719                                                                                                                  |
| Gateway Prefix                                                                                                                              |                                                                                                                                |
| Terminal Alias                                                                                                                              |                                                                                                                                |
| Gatekeeper ID                                                                                                                               | <b>Note</b> This ID must match the entry configured in the gatekeeper.                                                         |
| E-ISUP host port                                                                                                                            | <b>Note</b> Typically 8003, but this entry must match the peer port setting of the IPLNK object in the PGW 2200 configuration. |
| VSC1 <sup>1</sup> name (either the DNS <sup>2</sup> host name, if DNS is configured, or the IP address of the Cisco PGW 2200 <sup>3</sup> ) |                                                                                                                                |
| VSC1 Port                                                                                                                                   | <b>Note</b> Typically 8003, but this entry must match the peer port setting of the IPLNK object in the PGW 2200 configuration. |
| Installation Node Id                                                                                                                        |                                                                                                                                |
| Hardware Platform                                                                                                                           | Sun Netra T1 (Default)<br>Sun Netra 120<br>Sun Fire V120                                                                       |
| Installation Location                                                                                                                       |                                                                                                                                |

1. VSC = virtual switch controller
2. DNS = domain name system
3. PGW = PSTN Gateway

The Cisco HSI application software is distributed in the OTTgw000.pkg file, which is in a Sun Packaging Stream file format.

The Cisco HSI application software is distributed as a tar file with a name format GoldWing-xxxx.tar, where xxxx is the version ID: for example, GoldWing-2.20.tar.

The default installation directory is /opt/GoldWing. You can specify a different directory. More than one version of the software can exist. The parent directory is in /opt/GoldWing/2.20.

Links point to the current active version of the Cisco HSI application, as follows:

- currentPM points to the current version to use for all software except the call processing application.
- currentGW points to the version that may not be the latest version of the call processing application. (GWmain)

Table 2-5 shows the subdirectories of the /opt/GoldWing/currentPM directory.

**Table 2-5** *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 config files here |
| ./var/trace  | Trace logs are written here                            |

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

## Installing the 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 a Dual Cisco HSI for a Redundant PGW 2200 Configuration”](#) section on page 2-10.



### Note

In the following installation procedure, the package name is OTTgw000 and the version of the software is 2.20; the /export/BUILDS directory is used to install the system software.

To install the Cisco HSI, complete the following steps:

- Step 1** Verify that the Sun Solaris 8 operating system is installed. See the “[Installing the Sun Solaris 8 Operating System](#)” section on page 2-1 for more information.
- Step 2** Insert the Cisco HSI software CD in the CD-ROM drive.
- Step 3** Log in as root and enter the following commands at the # prompt:

```
# cd /export/home
# tar xvf /mnt/cdrom/GoldWing-2.20.tar
```

The following text displays:

```
x ./2.20/APPLICATIONS, 0 bytes, 0 tape blocks
x ./2.20/APPLICATIONS/OTTgw000.pkg, 38954496 bytes, 76083 tape blocks
x ./2.20/install.sh, 5223 bytes, 11 tape blocks
x ./2.20/uninstall.sh, 3053 bytes, 6 tape blocks
```

- Step 4** At the # prompt, enter the following commands:

```
# cd /export/BUILDS/2.20
# ./install.sh
```

The following text displays:

```
Processing package instance <OTTgw000> from
</export/BUILDS/2.20/APPLICATIONS/OTTgw000.pkg>
GoldWing H323 Adjunct Processor V0.1.6
(sparc) 2.20
Copyright (c) 2001 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 5** Press **Enter** to select the default HSI base directory path.



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

The following text displays:

```
Enter base directory path (default /opt/GoldWing/2.20) [?,q]
```

- Step 6** Press **Enter** to select the default base directory path. The following text displays:
- ```
Enter GoldWing user name
```
- Step 7** 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 8** 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 9** Type the gatekeeper IP address (see [Table 2-4](#)) and press **Enter**. The following text displays:
- ```
Enter GateKeeper Port
```

- Step 10** Type the gatekeeper port (see [Table 2-4](#)) and press **Enter** (the default port is 1719). The following text displays:

```
Enter GateWay Prefix
```

- Step 11** Type the gateway prefix (see [Table 2-4](#)) and press **Enter**.



---

**Note** The gateway prefix is the prefix that, when dialed from the H.323 network, causes the Cisco HSI to route the call over E-ISUP to the PGW 2200.

---

The following text displays:

```
Enter Terminal Alias
```

- Step 12** Type the terminal alias (see [Table 2-4](#)) and press **Enter**. The following text displays:

```
Enter GateKeeper Id
```

- Step 13** Type the gatekeeper ID (see [Table 2-4](#)) and press **Enter**.



---

**Note** The gatekeeper ID must match the entry configured in the gatekeeper.

---

The following text displays:

```
Enter E-ISUP Host Port
```

- Step 14** Type the E-ISUP host port (see [Table 2-4](#)) and press **Enter**.



---

**Note** The E-ISUP 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 VSC1 Name
```

- Step 15** Type the VSC1 name and press **Enter**.



---

**Note** The VSC1 name is either the DNS host name (if DNS is configured) or the IP address of the PGW 2200.

---

The following text displays:

```
Enter VSC1 Port
```

- Step 16** Type the VSC1 port number (see [Table 2-4](#)) and press **Enter**.



---

**Note** The VSC1 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 17** Type the installation node ID (see [Table 2-4](#)) 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 18** Type the hardware platform name (see [Table 2-4](#)) and press **Enter** (typically, accept the default platform name). The following text displays:

```
Enter Installation Location
```

**Step 19** Type the installation location (see [Table 2-4](#)) 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/2.20
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/2.20> must exist before installation is
attempted.
Do you want this directory created now [y,n,?,q]
```

**Step 20** Type **y** to create the version directory. The following text displays:

```
Using </opt/GoldWing/2.20> 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 21** Review the output before you continue the installation. Type **y** to continue. The files are installed. The following text displays:

```
Installing GoldWing H323 Adjunct Processor V0.1.6 as <OTTgw000>
## Installing part 1 of 1.
```



```

/etc/init.d/CiscoGW
/etc/rc3.d/S95CiscoGW <symbolic link>
/opt/GoldWing/2.20/bin/GWmain
/opt/GoldWing/2.20/bin/PMmain
/opt/GoldWing/2.20/bin/mml
/opt/GoldWing/2.20/bin/msg.conf
/opt/GoldWing/2.20/bin/parse
/opt/GoldWing/2.20/etc/GWmain.base.conf
/opt/GoldWing/2.20/etc/GWmain.default.conf
/opt/GoldWing/2.20/etc/GWmain.static.conf
/opt/GoldWing/2.20/etc/H323SkeletonFileSimple.dat
/opt/GoldWing/2.20/etc/parse.exclude.list
/opt/GoldWing/2.20/etc/parse.list
/opt/GoldWing/2.20/lib/libgwMib_shlib.so
/opt/GoldWing/2.20/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=2.20
BASEDIR=/opt/GoldWing/2.20
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 2.20
lrwxrwxrwx  1 cisco  sysadmin   19 Jan  9 18:31 currentGW -> /opt/GoldWing/2.20
lrwxrwxrwx  1 cisco  sysadmin   19 Jan  9 18:31 currentPM -> /opt/GoldWing/2.20
-rwxrwxr-x  1 root   other    3053 Jan  9 18:31 uninstall.sh

```



#### 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 can only be run 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, and the link /etc/rc3.d/S95CiscoGW is created to facilitate automatic startup of the Cisco HSI on system reboot.

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 a Dual Cisco HSI for a Redundant PGW 2200 Configuration



### Caution

To ensure the successful installation of a dual Cisco HSI, after [Step 21](#) of the “[Installing the Cisco HSI](#)” section on [page 2-5](#), make sure that you provision the software for the active host first before proceeding to [Step 1](#) below. See “[Configuring the Cisco HSI](#)” section on [page 2-11](#) for configuration information.

Only one active provisioning session is permitted and provisioning is permitted only on the active Cisco HSI.

Exit the provisioning session on the active host and continue to [Step 1](#) below. If software is not provisioned after it is installed on the active host, the standby host is not synchronized with the active host. As a result, a forced switchover might fail.



### Note

To view a sample configuration of a dual Cisco HSI installation, see [Appendix G](#), “[Dual Cisco HSI with a Redundant PGW 2200 Configuration](#).”

To install a dual Cisco HSI for a redundant PGW 2200 configuration (a configuration with two Cisco PGW 2200 hosts), complete the following steps:

- Step 1** Continuing from [Step 21](#) of the “[Installing the Cisco HSI](#)” section on [page 2-5](#), exit server 1.
- Step 2** Log in to server 2 as root and go to the # prompt.
- Step 3** Insert the Cisco HSI CD in the CD-ROM drive.
- Step 4** Follow the installation instructions found in [Step 3](#) through [Step 21](#) of the “[Installing the Cisco HSI](#)” section on [page 2-5](#).

Installation of the dual Cisco HSI for a redundant PGW 2200 configuration is now complete.

## 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 application runs as root user because this is a requirement of a Simple Network Management Protocol (SNMP) subagent application. If this script is not run as root, the SNMP subagent fails to connect to the master agent.

## 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 access the user interface, use the **mml** command (see [Chapter 3, “MML User Interface”](#) for more information). If the `setup.gw` file has been sourced, it is in the user path. Use the provisioning commands to configure the Cisco HSI as required (see [Chapter 5, “Provisioning the Cisco HSI”](#) and [Appendix A, “MML Commands”](#) for more information).

## Upgrading the Cisco HSI

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

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

- The Cisco HSI must first be stopped before installation is allowed to proceed.
- The installation of the same version of the software overwrites the existing installed version of the software.
- The installation of a new version results in a new version directory being created in the `/opt/GoldWing` parent directory. The links `currentPM` and `currentGW` are updated to point to this new version.



**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.

## 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 2.20
lrwxrwxrwx  1 cisco  sysadmin    19 Jan  9 18:31 currentGW -> /opt/GoldWing/2.20
lrwxrwxrwx  1 cisco  sysadmin    19 Jan  9 18:31 currentPM -> /opt/GoldWing/2.20
-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 2.20
```

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/2.20
The following package is currently installed:
OTTgw000      GoldWing H323 Adjunct Processor V0.1.6
(sparc) 2.20
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/2.20/local/setup.gw
/opt/GoldWing/2.20/local/pmStart.sh
/opt/GoldWing/2.20/local/gwhalt
/opt/GoldWing/2.20/local/CiscoGW
## Removing pathnames in class <none>
/opt/GoldWing/2.20/local
/opt/GoldWing/2.20/lib/libgwMib_shlib.so
/opt/GoldWing/2.20/lib
/opt/GoldWing/2.20/etc/parse.list
/opt/GoldWing/2.20/etc/parse.exclude.list
/opt/GoldWing/2.20/etc/H323SkeletonFileSimple.dat
/opt/GoldWing/2.20/etc/GWmain.static.conf
/opt/GoldWing/2.20/etc/GWmain.request.conf
/opt/GoldWing/2.20/etc/GWmain.default.conf
/opt/GoldWing/2.20/etc/GWmain.conf
/opt/GoldWing/2.20/etc/GWmain.base.conf
/opt/GoldWing/2.20/etc
/opt/GoldWing/2.20/bin/parse
/opt/GoldWing/2.20/bin/msg.conf
/opt/GoldWing/2.20/bin/mml
/opt/GoldWing/2.20/bin/PMmain
/opt/GoldWing/2.20/bin/GWmain
/opt/GoldWing/2.20/bin
/opt/GoldWing/2.20/PKGINST
/etc/rc3.d/S95CiscoGW
/etc/rc3.d <shared pathname not removed>
/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.
```