



Release Notes for Cisco H.323 Signaling Interface Release 4.1 and Related Patches

Introduction

The Cisco H.323 Signaling Interface (HSI) interoperates with the Cisco PSTN gateway 2200 (PGW 2200) to enable calls between the Public Switched Telephone Network (PSTN) and the H.323 network. The HSI provides:

- Translation of signaling protocols for establishing, controlling, and releasing calls
- Administration of network parameters and protocol capabilities
- System and call-related statistics
- Fault reporting
- Overload management
- Event logging
- Simple Network Management Protocol (SNMP) interface

The Cisco HSI 4.1 release supports H.323 Version 4.



Note

The Cisco HSI does not interoperate with the Cisco Security Agent product.

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

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Platform Support

Hardware

The Cisco HSI is targeted to run on a Sun Netra V120 platform with two 36 GB hard disk drives.

Software

The Cisco HSI runs on the Solaris 8 operating system.

Related Documentation

Before Installation

Before you install the Cisco HSI software, consult the [Cisco H.323 Signaling Interface User Guide](#) at:

After Installation

After you install the Cisco HSI software, consult the following related documentation for information on configuring and provisioning your system:

- [Cisco H.323 Signaling Interface User Guide](#)
- The *Provisioning Guide* for your solution

General Purpose Documents

- The *Gateway Installation Guide* for your solution
- [Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide](#)
- [Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide](#)
- [Cisco Media Gateway Controller Software Release 9 Provisioning Guide](#)

Installation Requirements

Installation Checklist

Before you attempt to install the HSI application software, you must obtain the following information:

- Cisco H.323 Signaling Interface base directory path
- Base directory path
- Cisco H.323 User name and group name
- Gatekeeper IP address and port number
- Gateway prefix
- Terminal alias
- Gatekeeper ID
- EISUP host port number
- VSC1 name and port number
- Installation node ID
- Hardware platform description
- Installation location
- Your company's internal support and Cisco support contact information

Installing the Cisco HSI

For installation instructions refer to the *Cisco H.323 Signaling Interface User Guide*. See [Chapter 2: Installing and Configuring Cisco HSI Software](#).

Installing HSI Software Patches

When you install an HSI software patch, the included updated binary, provisioning, library, and script files will be updated in the following directories depending on the type of file being delivered:

- /opt/GoldWing/currentPM/bin binaries
- /opt/GoldWing/currentPM/etc data files

Before installing a patch, you must shut down the Cisco HSI application, as the affected programs are part of the running system. To ensure that the HSI application has been shutdown, execute the following command:

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

Manual Patch Installation

Complete the following procedure to install a software patch:

Step 1 Change user to root.

Step 2 Use the following command to create a patch directory (if one does not exist) on the HSI machine:

```
mkdir /export/PATCHES
```

Step 3 Transfer the hsi-4_1_p<n>.tar.Z file into the new directory.



Note <n> represents the patch number that you are installing.

Step 4 To create a 4.1_P<n> directory, execute the following commands:

```
uncompress hsi-4_1_p<n>.tar.Z
tar xvf hsi-4_1_p<n>.tar.Z
```

Step 5 Ensure the HSI application is shutdown and all previous patches are uninstalled.

Step 6 Use the following commands to change to the 4.1_P<n> patch directory and install the patch:

```
cd ./4.1_P<n>
./install_patch.sh
```

Step 7 Use the following command to restart the HSI application:

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

Patch Removal

Complete the following procedure to remove a software patch:

-
- Step 1** Change user to root.
- Step 2** Issue the following command to shutdown the HSI application:

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

- Step 3** Use the following commands to change directories and uninstall the patch:

```
cd /export/PATCHES/4.1_P<n>
./uninstall_patch.sh
```



Note <n> represents the patch number that you are removing.

- Step 4** Issue the following command to restart the HSI application:

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

HSI 4.1 Patch 16 Information

This section includes information on:

- Caveats Resolved by Cisco HSI 4.1 Patch 16

Caveats Resolved by Cisco HSI 4.1 Patch 16

Identifier	Version	Severity	Description
CSCsi80243	4.1	2	HSI MML command rtrv-ne-health requires auto-free

Symptoms: Suspended calls were freed only by manually issuing the MML command **rtrv-ne-health**.

Resolution: Suspended calls are now automatically cleared periodically.

Identifier	Version	Severity	Description
CSCsi97726	4.1	3	The HSI crashed when processing NewCallConf/H323.

Symptoms: The HSI crashed during NewCallCon/H23.

Resolution: The HSI software is modified to eliminate this problem.

Identifier	Version	Severity	Description
CSCsi99563	4.1	3	HSI 4.1 Patch 14 crashed prior to upgrade to Patch 15.

Symptoms: HSI 4.1 Patch 14 crashed prior to upgrade to Patch 15.

Resolution: The problem is eliminated.

Identifier	Version	Severity	Description
CSCsi68645	4.1	3	The HSI dropped 10 to 15 percent of its calls.

Symptoms: An HSI dropped 10–15% of calls.

Resolution: This problem of dropped calls has been eliminated.

Identifier	Version	Severity	Description
CSCsi83681	4.1	2	HSI 4.1 coredumped as it processed an SNMP operation.

Symptoms: HSI coredumped while processing an SNMP module.

Resolution: The HSI is modified to eliminate this problem.

Identifier	Version	Severity	Description
CSCsj24795	4.1	3	The HSI suspended calls during setup.

Symptoms: Some calls were suspended during setup.

Resolution: The HSI is modified to eliminate this problem.

HSI 4.1 Patch 15 Information

This section includes information on:

- Caveats Resolved by Cisco HSI 4.1 Patch 15

Caveats Resolved by Cisco HSI 4.1 Patch 15

Identifier	Version	Severity	Description
CSCsh70912	4.1	3	The HSI performed incorrect layer1 protocol mapping between USI to BC.

Symptoms: The HSI did not correctly map between the EISUP.IAM.USI.Layer1 protocol and H225.SETUP.BC.Layer1 protocol.

Resolution: The HSI can now map EISUP.IAM.USI.Layer1 protocol to H225.SETUP.BC.Layer1 protocol.

To ensure backward compatibility, by default this feature is disabled.

To enable the feature, configure the parameter by issuing the following MML command:

```
prov-ed::name=SYS_CONFIG_DYNAMIC, MapUserInfoLayer1Protocol=Y
```

To disable the feature, issue the following MML command:

```
prov-ed::name=SYS_CONFIG_DYNAMIC, MapUserInfoLayer1Protocol=
```

Identifier	Version	Severity	Description
CSCsh74179	4.2	3	The HSI coredumped during an asymmetric codec treatment (ACT) test.

Symptoms: The HSI coredumped during a random ACT test.

Resolution: This problem is eliminated.

Identifier	Version	Severity	Description
CSCsh87586	4.2	3	A particular call instance was not processed correctly and the HSI crashed.

Symptoms: The HSI crashed while attempting to processed a particular call instance.

Resolution: This problem is eliminated.

Identifier	Version	Severity	Description
CSCsh48356	4.1 P7	3	Issuing the command rtrv-ne-health during call processing caused the call count to fail and the HSI core dumped

Symptoms: The MML command **rtrv-ne-health** while the HSI was processing calls caused the call count to fail and the HSI core dumped.

Resolution: This problem is eliminated.

HSI 4.1 Patch 14 Information

This section includes information on:

- Caveats Resolved by Cisco HSI 4.1 Patch 14

Caveats Resolved by Cisco HSI 4.1 Patch 14

Identifier	Version	Severity	Description
CSCsg60072	4.1	2	Enable support of cause code 14 (Ported number).

Symptoms: The HSI did not support cause code 14 (ported number).

Resolution: Now the HSI can be configured optionally to map release cause 14 (ported number) from ISUP to H.323. By default, this feature is disabled, for backward-compatibility. To enable the feature, configure the parameters `CC_EC_PortedNumber` and `CC_EC_NPQoRNumNotFound`, and then restart the HSI:

```
prov-ed:name=sys_config_static, CC_EC_PortedNumber=CC_EC_PortedNumber
prov-add:name=sys_config_static, CC_EC_NPQoRNumNotFound=CC_EC_PortedNumber
```

To disable the feature, revert to the previous configuration using the `restart-softw:xxxx` command (wherein the `xxxx` is the name of the previous configuration).

Identifier	Version	Severity	Description
CSCsg21415	4.1	3	For H.323->PSTN calls, BearerCap needs mapping to UserServiceInfo

Symptoms: The HSI was not mapping the BearerCap into the ISUP UserServiceInfo and TMR parameter for H.323 to PSTN calls.

Resolution: For certain networks, the HSI needs to map the BearerCap IE into the ISUP user service information parameter and the TMR parameter. To enable the feature, configure the parameter `MapBearerCapToUsi` to any text value, for example, "enabled":

```
prov-add:name=sys_config_dynamic, MapBearerCapToUsi=enabled
```

To disable the feature, delete the `MapBearerCapToUsi` parameter or set it to blank (""):

```
prov-ed:name=sys_config_dynamic, MapBearerCapToUsi=""
```

Identifier	Version	Severity	Description
CSCsg41439	4.1	3	Call counter value occasionally inconsistent.

Symptoms: In certain circumstances, the HSI counted calls inconsistently.

Resolution: The HSI will count calls correctly in setup.

HSI 4.1 Patch 13 Information

This section includes information on:

- Caveats Resolved by Cisco HSI 4.1 Patch 13

Caveats Resolved by Cisco HSI 4.1 Patch 13

Identifier	Version	Severity	Description
CSCsd15744	4.1	3	HSI 4.1 P11 crashed if it received a H225 Notify message with a 0 (zero) length Connected Number.

Symptoms: Occasionally, if HSI 4.1 P11 received an H225 Notify message with a zero-length Connected Number IE, the HSI server malfunctioned.

Resolution: HSI 4.1 Patch 13 is modified to eliminate this problem.

Identifier	Version	Severity	Description
CSCse00260	4.1	3	HSI 4.1 Patch 9 cores and stops processing calls.

Symptoms: Call processing stopped and the HSIs had to be restarted to re-enable call processing.

Resolution: HSI 4.1 Patch 13 is modified to eliminate this problem.

Identifier	Version	Severity	Description
CSCec15493	4.1	3	A mechanism is required to change log timestamps to reflect HSI system time.

Symptoms: The Cisco HSI logs events in files in the directory /opt/GoldWing/4.1/var/log and timestamps them according to GMT time, not system time.

Resolution: HSI 4.1 Patch 13 enables you to change the time stamping from GMT to system time by entering the following MML command:

```
prov-add:name=Logging,UseSysTimeEnabled=enabled"
```

To revert to the original behavior, delete the UseSysTimeEnabled parameter or set it to blank (""). You must restart the HSI to enable such changes to take effect.

Identifier	Version	Severity	Description
CSCsg04881	4.1	3	Incorrect encoding of 64 kbit Bearer Capability IE.

Symptoms: Octet 2 (length) and the extension bit of octet 4 (Transfer mode/ Information Transfer Rate) were encoded incorrectly. This caused the layer 1 protocol field to be incorrectly decoded.

Resolution: The HSI 4.1 Patch 13 software correctly encodes the 64 kbit Bearer Capability IE.

Identifier	Version	Severity	Description
CSCse53159	4.1	3	HSI calls blocked in Setup phrase.

Symptoms: Occasionally, using the MML command **rtrv-ne-health** to see the total number of active calls (setup and connected), the number of calls shown in the setup state continuously increased, which suggested that some of the calls remained stuck in the setup phase.

Resolution: The HSI software is modified to respond correctly to **the rtrv-ne-health** command.

Identifier	Version	Severity	Description
CSCsd82163	4.1	3	InjectPI8 parameter update.

Symptoms: Prior to HSI 4.1 Patch 13, if the InjectPI8 parameter was enabled, when the PSTN network sent an SS7 ACM message containing OPTIONAL_BACKWARD_CALL_IND with INBAND_INFO_IND = No Indication, the HSI inserted a progress indicator of value 8 in the H323 alerting message.

Resolution: HSI 4.1 Patch 13 extends the behavior associated with the InjectPI8 parameter to incoming Call Progress (CPG) messages also.

The InjectPI8 parameter retains the same behavior as before; but, now, if it is set to specific text values, it operates as follows:

- If it is set to the text value “NoInBand,” the HSI also sends the PI8 in the H.323 alerting message in response to the PSTN network sending a CPG with the optional backward-call-indicator parameter that contains an In-band information indicator with value 0, which means (no indication).
- If it is set to the text value “NoOptBCI,” the HSI also sends the PI8 in the H.323 alerting message if there is no optional backward-call-indicator parameter.
- If it is set to the text value “NoOptBCIorNoInBand,” the HSI sends the PI8 in the alerting message if there is either no optional backward call indicator field or there is a backward call indicator field with In-band information indicator set to 0 (no indication)
- If it is set to any other text value (for example, “enabled”), the parameter is processed exactly as it was processed by previous HSI 4.1 patches.

HSI 4.1 Patch 12 Information

This section includes information on:

- Caveats Resolved by Cisco HSI 4.1 Patch 12

Caveats Resolved by Cisco HSI 4.1 Patch 12

Identifier	Version	Severity	Description
CSCsb67321	4.1	3	The HSI must work with undotted Gxxx, which failed in HSI 4.1P11

Symptoms: Because IANA-assigned types do not use the dot notation, the HSI must support the undotted notation for certain G729b/8000 calls.

Resolution: The HSI now correctly handles the notation to manage G729a, G729b and G726 calls.

Identifier	Version	Severity	Description
CSCsc61368	4.1	3	HSI 4.1 did not connect H.323-originated T.38 fax calls with some versions of IOS.

Symptoms: HSI 4.1 did not proceed to connected status after negotiating logical channels with remote IOS H323 GW for a T.38 fax call.

Resolution: The HSI software has been modified so that it correctly establishes a Fax call as T.38.

Identifier	Version	Severity	Description
CSCsb79583	4.1	2	HSI rejected a call when a sessionId of zero was received for Fax leg.

Symptoms: During a Fax call from an H323 gateway off of the Cisco CallManager to the PSTN via PGW/HSI, the CCM sent a sessionId of zero to the HSI, in the OLC message for T38 Fax. The HSI then released the call indicating master/slave conflict due to the receipt of this value.

Resolution: The HSI software is modified to properly manage T38 Fax calls.

Identifier	Version	Severity	Description
CSCsc21279	4.1	3	The HSI Pavo feature caused occasional memory corruption.

Symptoms: Under rare circumstances, the HSI Pavo feature caused occasional memory corruption.

Resolution: The HSI software is modified so that the Pavo feature does not cause a memory problem.

Identifier	Version	Severity	Description
CSCsd21630	4.1	3	The HSI occasionally used informationTransferRate 24 (multirate) instead of 16 (64 kbps).

Symptoms: The HSI 4.1P 11 changed the initial mapping for informationTransferRate from 16 (64 kbit/s) to 24 (multirate) upon sending out H.323 setup.

Resolution: The HSI software is modified to establish the transfer rate properly.

Identifier	Version	Severity	Description
CSCsd04453	4.1	3	HSI did not handle a redirecting number if it was modified in the PGW, on CCM-PGW-CCM calls.

Symptoms: When the PGW modified the Redirecting Number in a CCM to PGW to CCM call, the HSI inserted the original un-modified Redirecting Number into the Setup to the terminating CCM. The un-modified Redirecting Number was then displayed on the destination IP phone instead of the modified number.

Resolution: The HSI software is modified to properly display the Redirecting Number.

Identifier	Version	Severity	Description
CSCsd07748	4.1	3	A PSTN Calling party number with no digits was not handled correctly.

Symptoms: The HSI did not manage a calling party number properly when its length was set to 0 (zero).

Resolution: The HSI software is modified to properly manage the call scenario that caused the problem.

HSI 4.1 Patch 11 Information

This section includes information on:

- Cisco HSI Support for Clear Channel
- Cisco HSI Support for G.726
- Cisco HSI Support for G.729 Annex A and G.729 Annex B
- Caveats Resolved by Cisco HSI Patch 11

Cisco HSI Support for Clear Channel

The Clear Channel capability (identified as G.Clear or gclear in this document) enables support for both voice and data calls on a network. However, the end applications are responsible for packet loss and error recovery. For more information, refer to the document [G.Clear, GSMFR, and G.726 Codecs and Modem and Fax Passthrough for Cisco Universal Gateways](#).

**Note**

In association with the Cisco HSI, the Cisco PGW must be running release 9.5(2) patch set gs034/nn028, or later, to use G.Clear.

The Cisco HSI interoperates with Cisco voice gateways (for example, the Cisco AS54xx series or VISM), which advertises G.Clear capability via MGCP signaling using the following methods: G.Clear, G.nX64, CCD. The Cisco HSI automatically selects the correct method depending on the gateway that originates or terminates the call.

Refer to [Appendix A: “MML User Interface and Command Reference”](#) in the *Cisco H.323 Signaling Interface User Guide* for information about the use of Cisco HSI MML commands.

[Table 1](#) presents examples of configuration commands that may be required to implement a particular G.Clear configuration.

Table 1 Configuring Clear Channel

Clear Channel Parameters	Example Value	Example Configuration
H245, caps.table[i].audio.gclear	“ClearChid” Note The string “ClearChid” is case-sensitive; it must be entered exactly as displayed in all command examples in this table.	prov-add:name=h245, caps.table[9].audio.gclear="ClearChid" prov-add:name=h245, caps.table[10].audio.gclear="ClearChid"
H245, caps.table[i].audio.entryNo	1010, 1011, 1012... Note This parameter should be set to a unique integer value.	prov-add:name=h245, caps.table[9].entryNo=1010 prov-add:name=h245, caps.table[10].entryNo=1011
H245, chan[i].audio.gclear	“ClearChid”	prov-add:name=h245, chan[9].audio.gclear=ClearChid" prov-add:name=h245, chan[10].audio.gclear="ClearChid"
H245, chan[i].name	“ClearChid”	prov-add:name=h245, chan[9].name="ClearChid" prov-add:name=h245, chan[10].name="ClearChid"
H245, modes[i].audio.gclear	“ClearChid”	prov-add:name=h245, modes[9].audio.gclear="ClearChid" prov-add:name=h245, modes[10].audio.gclear="ClearChid"
H245, modes[i].name	“ClearChid”	prov-add:name=h245, modes[9].name="ClearChid" prov-add:name=h245, modes[10].name="ClearChid"

Cisco HSI Support for G.726

The G.726 codec enables transcoding a PCM channel to or from an ADPCM data stream. The standard supports four data rates: 16, 24, 32 and 40 kbit/sec.

G.726 capability is advertised by the Cisco HSI and other H.323 gateways/endpoints in H.225 faststart elements, in H.245 (tunneled or a separate TCP/IP connection) terminal capability (TCS) messages, and open logical channel (OLC) messages.

Currently, H.323 devices use several different methods to advertise G.726. ITU G.726 Annex B defines one method, referred to in this document as g726-generic. Cisco H.323 gateways (for example, the Cisco AS5400) support an alternate method referred to as g726-cisco. There is another method used by the OpenH323 project; however, the Cisco HSI does not support that method.

MGCP gateways advertise G.726 capability using the method described in RFC 3551 (RTP Profile for Audio and Video Conferences with Minimal Control). The four data rates use dynamic payloads; however, the 32kbit/sec data rate, alternatively, can have a static payload value of 2 (this alternative value is being phased out).

You can configure the Cisco HSI for 32kbit/sec MGCP support using dynamic or static payload values. In addition, you can configure the Cisco HSI to support g726-generic and/or g726-cisco for the H.323 signaling. If possible, it is best to select g726-cisco for your network because it offers additional flexibility.

The g726-generic method cannot indicate the data rate in H.245 TCS messages. The ITU standard specifies that the data rate is only advertised in the OLC messages.



Note

The H.245 ASN.1 syntax supports advertising the bit rate in TCS messages; however, G.726 Annex B prohibits advertising the bit rate in TCS messages. The Cisco HSI advertises the bit rate in the TCS messages as a “hint”; however, H.323 gateways/endpoints might not extract the field and take advantage of the presence of the bit rate in the TCS message.

The fact that the g726-generic method cannot indicate the data rate in an H.245 TCS message is not a problem if the MGCP gateway and your network are designed to support all data rates for this codec. However, if all data rates are not supported, it is possible for the remote endpoint/gateway to select a non-preferred or non-supported data rate in the OLC message.



Note

For example, a data-rate preference list may establish the following order: G.726-16kbit/sec (highest preference), G.711-Alaw (second preference), G.726-24kbit/sec (lowest preference). In this case, a remote endpoint could select G.726-24kbit/sec in the OLC message; whereas, the Cisco HSI would prefer G.726-16kbit/sec. In this example, the next preferred codec ought to be G.711 A-law and not G.726-24kbit/sec. However, the g726-generic limitation enables the remote endpoint to select the least preferred codec.

If a data-rate preference list specifies only a single rate (for example, G.726-16kbit/sec), it is not possible to advertise this fact in the TCS message. Subsequently, the remote endpoint may attempt to open the media stream using an unsupported data rate (perhaps, G.726-24kbit/sec).

Whenever OLC messages are exchanged and a non-supported G.726 data rate is detected, to prevent unnecessary call clearing, the Cisco HSI always attempts to send the data rate selection to the MGCP gateway. If the MGCP gateway does not support the selected data rate, it sends a message to the Cisco PGW to clear the call.

If a non-preferred G.726 data rate is selected over a higher-preference codec, the HSI will continue with the call using the non-preferred data rate. This is preferable to the alternative (aborting the media stream, invoking an empty capability exchange followed by a re-negotiation of codecs and new OLC messaging). The alternative causes call processing delay and overhead associated with switching media streams.

**Note**

The `g726-cisco` method avoids impaired or delayed processing because it advertises the data rate in the TCS messaging.

Refer to [Appendix A: “MML User Interface and Command Reference”](#) in the *Cisco H.323 Signaling Interface User Guide* for information about Cisco HSI MML commands.

[Table 2](#) presents examples of configuration commands that may be required to implement a particular G.726 configuration.

Table 2 Configuring G.726

G.726 Parameter	Example Value	Configuration Example
Configuring the Payload Type for the MGCP		
<code>sys_config_static, UseG726StaticPayload</code>	“enabled”, “true”, “” Note If this parameter is set to any text value, the Cisco HSI uses static payload value '2' to represent G.726 32kbit/sec to the MGCP gateway. If the parameter is deleted or is set to an empty string (“”), the HSI uses the default, dynamic-payload behavior.	<pre>prov-add:name=sys_config_static, UseG726StaticPayload="enabled" prov-ed:name=sys_config_static, UseG726StaticPayload=""</pre>
Configuring Cisco HSI g726-cisco		
<code>H245, caps.table[i].audio.g726-cisco</code>	“G726r16”, “G726r24”, “G726r32”, “G726r40” Note These string values are case-sensitive, and must be entered exactly as displayed in the commands in this table.	<pre>prov-add:name=h245, caps.table[5].audio.g726-cisco="G726r16" prov-add:name=h245, caps.table[6].audio.g726-cisco="G726r24"</pre>

Table 2 *Configuring G.726 (continued)*

G.726 Parameter	Example Value	Configuration Example
H245, caps.table[i].entryNo	7261, 7262, ... Note Set this parameter to a unique integer value	prov-add:name=h245, caps.table[5].entryNo=7261 prov-add:name=h245, caps.table[6].entryNo=7262
H245, chan[i].audio.g726-cisco	"G726r16" "G726r24" "G726r32" "G726r40"	prov-add:name=h245, chan[5].audio.g726-cisco="G726r16" prov-add:name=h245, chan[6].audio.g726-cisco="G726r24"
H245, chan[i].name	"G726r16" "G726r24" "G726r32" "G726r40"	prov-add:name=h245, chan[5].name="G726r16" prov-add:name=h245, chan[6].name="G726r24"
H245, modes[i].audio.g726-cisco	"G726r16" "G726r24" "G726r32" "G726r40"	prov-add:name=h245, modes[5].audio.g726-cisco="G726r16" prov-add:name=h245, modes[6].audio.g726-cisco="G726r24"
H245, modes[i].name	"G726r16" "G726r24" "G726r32" "G726r40"	prov-add:name=h245, modes[5].name="G726r16" prov-add:name=h245, modes[6].name="G726r24"
Configuring Cisco HSI g726-generic		
H245, caps.table[i].audio.g726-generic	"generic"	prov-add:name=h245, caps.table[7].audio.g726-generic="generic" prov-add:name=h245, caps.table[8].audio.g726-generic="generic"
H245, caps.table[i].audio.g726-generic.bitOrder	1,2 or 3 Note This field is a bitmask of 8 bits, and can take any value from 0..255. Refer to G.726 Annex B, section B4.2 for a more detailed description. The value in this field must match the value advertised by the H.323 endpoint/gateways.	prov-add:name=h245, caps.table[7].audio.g726-generic.bitOrder=2 prov-add:name=h245, caps.table[8].audio.g726-generic.bitOrder=3

Table 2 *Configuring G.726 (continued)*

G.726 Parameter	Example Value	Configuration Example
H245, caps.table[i].audio.g726-generic.maxSPP	30, 40 Note This field is an integer value from 0..65535.	prov-add:name=h245, caps.table[7].audio.g726-generic.maxSPP=30 prov-add:name=h245, caps.table[8].audio.g726-generic.maxSPP=40
H245, caps.table[i].entryNo	7263, 7264 Note Set this parameter to a unique integer value.	prov-add:name=h245, caps.table[7].entryNo=7263 prov-add:name=h245, caps.table[8].entryNo=7264
H245, chan[i].audio.g726-generic	“generic”	prov-add:name=h245, chan[7].audio.g726-generic="generic" prov-add:name=h245, chan[8].audio.g726-generic="generic"
H245, chan[i].audio.g726-generic.bitOrder	1,2 or 3	prov-add:name=h245, caps.table[7].audio.g726-generic.bitOrder=2 prov-add:name=h245, caps.table[8].audio.g726-generic.bitOrder=3
H245, chan[i].audio.g726-generic.maxSPP	30, 40	prov-add:name=h245, chan[7].audio.g726-generic.maxSPP=30 prov-add:name=h245, chan[8].audio.g726-generic.maxSPP=40
H245, chan[i].name	“g726-generic-16” “g726-generic-24” “g726-generic-32” “g726-generic-40”	prov-add:name=h245, chan[7].name="g726-generic-16" prov-add:name=h245, chan[8].name="g726-generic-24"
H245, modes[i].audio.g726-generic	“generic”	prov-add:name=h245, modes[7].audio.g726-generic="generic" prov-add:name=h245, modes[8].audio.g726-generic="generic"
H245, modes[i].audio.g726-generic.bitOrder	1, 2 or 3	prov-add:name=h245, modes.table[7].audio.g726-generic.bitOrder=2 prov-add:name=h245, modes.table[8].audio.g726-generic.bitOrder=3
H245, modes[i].audio.g726-generic.maxSPP	30, 40	prov-add:name=h245, modes[7].audio.g726-generic.maxSPP=30 prov-add:name=h245, modes[8].audio.g726-generic.maxSPP=40
H245, modes[i].name	“g726-generic-16” “g726-generic-24” “g726-generic-32” “g726-generic-40”	prov-add:name=h245, modes[7].name="g726-generic-16" prov-add:name=h245, modes[8].name="g726-generic-24"

Cisco HSI Support for G.729 Annex A and G.729 Annex B

Table 3 presents examples of configuration commands that may be required to implement a particular configuration of G.729 Annex A or G.729 Annex B.

Table 3 Configuring G.729 Annex A and G.729 Annex B

G.729 Parameter	Example Value	Example Configuration
H245,caps.table[i].audio.g729AnnexA	2, 3	prov-add:name=h245, caps.table[4].audio.g729AnnexA=2 prov-add:name=h245, caps.table[5].audio.g729AnnexB=3 Note In these examples, the values 2 and 3 represent the desired packetization period.
H245,caps.table[i].entryNo	7290, 7291, 7292	prov-add:name=h245, caps.table[4].entryno=7290 prov-add:name=h245, caps.table[5].entryno=7291 prov-add:name=h245, caps.table[6].entryno=7292
H245,chan[i].name	"g729AnnexA" "g729AnnexB"	prov-add:name=h245, chan[4].name="g729AnnexA" prov-add:name=h245, chan[5].name="g729AnnexB"
H245,chan[i].audio.g729AnnexA	2, 3	prov-add:name=h245, chan[4].audio.g729AnnexA=2 prov-add:name=h245, chan[5].audio.g729AnnexB=3
H245,modes[i].name	"g729AnnexA" "g729AnnexB"	prov-add:name=h245,modes[4].name="g729AnnexA" prov-add:name=h245,modes[5].name="g729AnnexB"
H245,modes[i].audio.g729AnnexA	""	prov-add:name=h245, modes[4].audio.g729AnnexA="" prov-add:name=h245, modes[5].audio.g729AnnexB=""

Caveats Resolved by Cisco HSI 4.1 Patch 11

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 11.

Identifier	Version	Severity	Description
CSCee46411	4.1	3	HSI needs to support G729a and G279b.

Symptoms: HSI needs to support G729a and G279b. calls fail when these codecs are selected.

Resolution: The HSI now supports the G.729 Annex A and G.729 Annex B codecs.

Identifier	Version	Severity	Description
CSCuk51918	4.1	2	Call from PBX endpoint to CCM tapi softphone fails.

Symptoms: Calls fail when the codes G.729 Annex A and G.729 Annex Bare used with Cisco CallManager.

Resolution: The dynamic payload value for the G.729 Annex A codec has been changed to 110; the dynamic payload value for the G.729 Annex B codec has been changed to 111.

Identifier	Version	Severity	Description
CSCsa66293	4.1	6	Handle codec mismatch.

Symptoms: Calls are not torn down for 10 seconds if there is a codec mismatch.

Resolution: You can now provision the Cisco HSI to release calls immediately if a codec mismatch occurs. To enable the HSI to resolve instances of codec mismatch, enter the following MML provisioning command:

```
prov-add:name=sys_config_dynamic, RelCallOnFailedChanNegotiation="enabled"
```

HSI 4.1 Patch 10 Information

This section includes information on:

- Caveats resolved by Cisco HSI Patch 10

Caveats Resolved by Cisco HSI 4.1 Patch 10

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 10.

Identifier	Version	Severity	Description
CSCuk54922	4.1	3	Redirecting Number needs to be mapped for a customer.

Symptoms: There is no redirecting number in IAM. Redirecting number functionality is missing.

Resolution: Redirecting Number functionality has been added to the HSI software.

To enable this new functionality, provision it by entering the following MML command:

```
prov-add:name=sys_config_static,Q931RedirSupported="enabled"
```

Identifier	Version	Severity	Description
CSCuk55640	4.1	3	ACF destinationInfo needs to be mapped to cdpn.

Symptoms: HSI does not allow the gatekeeper to modify the called party number (for H323-originated calls).

Resolution: The HSI now reads the contents of the ACF destinationInfo field and uses this data as the called party number.

To enable this new functionality, provision it by entering the following MML command:

```
prov-add:name=sys_config_static,UseIncomingGkDestInfo="enabled"
```

Identifier	Version	Severity	Description
CSCsa62963	4.1	3	HSI coredump on __OfTH323CallInstanceImpPprotocolHandlesv

Symptoms: The HSI coredumped during low call volume, on __OfTH323CallInstanceImpPprotocolHandlesv which is a bit of code that is always exercised, and has not been modified.

Resolution: The HSI software is modified to eliminate the operation that caused the coredump.

Identifier	Version	Severity	Description
CSCsa63575	4.1	3	Two OpenLogicalChannel resulted in no media stream.

Symptoms: This problem occurs when both of the following are true:

1. During call hold/transfer/conference, more than one codec in the terminalCapabilitySet message from the H323 client gateway matches the configured codecs on the HSI.
2. The H323 client gateway sends an OLCAck before sending an OLC.

Resolution: The HSI software is modified so that it does not generate additional message incorrectly.

HSI 4.1 Patch 9 Information

This section includes information on:

- Packetization Period Enhancement
- Caveats resolved by Cisco HSI Patch 9

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 9.

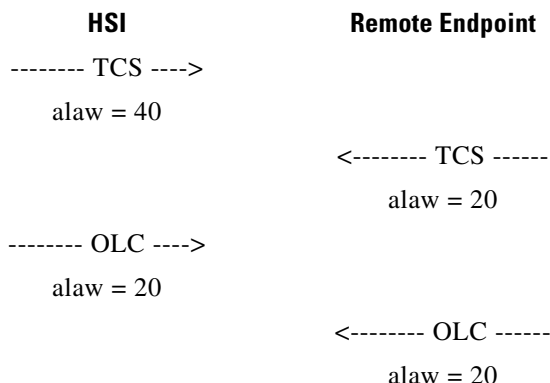
Identifier	Version	Severity	Description
CSCuk52948	4.1	2	A stack resource leak was observed in a call-hold/call-resume call flow.

Symptoms: The HSI failed to process calls after over 100,000 invocations of the Empty Capability Set (ECS) feature.

Resolution: The stack resource leak that was caused by the invocation of the ECS feature has been corrected.

Packetization Period Enhancement

Cisco HSI 4.1 Patch 9 introduces the HSI Packetization Period Enhancement. The HSI Packetization Period Enhancement enables reducing the configured packetization value to a lower value to ensure compatible packetization between the HSI and a remote endpoint that requires a lower value. The HSI synchronizes the packetization value with a remote endpoint as follows:



Enabling Dynamic Packetization

A new parameter is available in Cisco HSI 4.1 Patch 9 that enables the HSI to synchronize the packetization value with the packetization required by a remote endpoint.

The new HSI parameter is `DynamicPacketizationSupported`. To enable Dynamic Packetization Support, issue the following MML command:

```
prov-add:name=sys_config_dynamic, DynamicPacketizationSupported="enabled"
```

Caveats Resolved by Cisco HSI 4.1 Patch 9

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 9.

Identifier	Version	Severity	Description
CSCuk52948	4.1	2	A stack resource leak was observed in a call-hold/call-resume call flow.

Symptoms: The HSI failed to process calls after over 100,000 invocations of the Empty Capability Set (ECS) feature.

Resolution: The stack resource leak that was caused by the invocation of the ECS feature has been corrected.

Identifier	Version	Severity	Description
CSCef66652	4.1	3	HSI inserts the terminal alias if the Calling Party Number is not present in a call setup message.

Symptoms: The HSI inserts the H323-ID into the H.225 srcAddress parameter if there is no Calling Party Number in the EISUP IAM message.

Resolution: The HSI software now removes the incorrect H323-ID from the srcAddress parameter when there is no Calling Party number available.

Identifier	Version	Severity	Description
CSCuk51925	4.1	3	HSI does not handle Notification with SDP and ConnNum.

Symptoms: HSI does not correctly handle a EISUP Notification message containing SDP and connected number for H.323 Fast Start calls.

Resolution: The HSI software now ignores the connected name/number when the EISUP Notification message contains both the SDP and the connected name/number.

Identifier	Version	Severity	Description
CSCuk53362	4.1	3	Enable WATCHDOG stack logging on the HSI.

Symptoms: The HSI did not have WATCHDOG stack logging available when the radlog::start command was issued. This log is important in determining the available stack resources.

Resolution: The WATCHDOG has been added in the stack log configuration file and a new function call has been added, which dumps the WATCHDOG log every 60 minutes.

HSI 4.1 Patch 8 Information

This section include information on:

- Caveats resolved by Cisco HSI 4.1 Patch 8

Caveats Resolved by Cisco HSI 4.1 Patch 8

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 8.

Identifier	Version	Severity	Description
CSCef06415	4.1	3	The HSI became overloaded and unregistered to the gatekeeper.

Symptoms: The HSI incorrectly went to 99% CPU occupancy and it subsequently entered the overload state.

Resolution: The stack software was modified to properly process an incoming RAS message that was not being decoded correctly.

Identifier	Version	Severity	Description
CSCee86658	4.1	3	The HSI maps the value of the TMR parameter instead of the value of the USI parameter to the Bearer Capability.

Symptoms: The HSI ignores the value received in the USI parameter and uses the value in the TMR parameter to populate the Bearer Capability IE. The H.246 Annex C specification states that the USI value should be used to populate the Bearer Capability IE.

Resolution: The new property, MapUsiToBearerCap, has been added to the HSI to enable the user to map the value of the USI parameter correctly. Issue the following MML command to configure the MapUsiToBearerCap property:

```
prov-add:name=sys_config_dynamic, mapusitobearercap="enabled"
```

Identifier	Version	Severity	Description
CSCuk52397	4.1	3	The Screening Indicator is mapped incorrectly for a dual-CLI implementation.

Symptoms: The Screening Indicator in the Calling Party Number is incorrect for a dual-CLI setup. The HSI incorrectly uses the Screening Indicator from the Calling Party Number IE, Octet 3a. It should use the Screening Indicator from the UUIE.

Resolution: The HSI software has been modified so that the Screening Indicator uses the UUIE value rather than the value Octet 3a when it populates the Calling Party Number for a dual-CLI implementation.

HSI 4.1 Patch 7 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 7

Caveats Resolved by Cisco HSI 4.1 Patch 7

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 7.

Identifier	Version	Severity	Description
CSCuk51016	4.1	3	HSI fails to map progress indicators (PIs) from ANM to H.225 Connect.

Symptoms: The HSI did not send a Progress Indicator in the CONNECT message after having received a ANM message that included a Backward call indicator parameter.

Resolution: The software has been modified to add mapping capability (according to the H.246 Annex C specification) from this call flow.

Identifier	Version	Severity	Description
CSCuk51149	4.1	3	Carrier Code mapping required.

Symptoms: The HSI is required to map a special tech prefix to the circuitInfo.

Resolution: Added new property, CarrierCodeMapping, to allow the user to enable this functionality. The syntax for the MML command to implement this property is:

```
prov-add:name=sys_config_static,carriercodemapping="enabled"
```

Identifier	Version	Severity	Description
CSCed58673	4.1	3	H.245 connection not established after faststart call.

Symptoms: The HSI does not open the H.245 connection when it receives the H.245 address in the same message as the faststart elements.

Resolution: A new property, InitiateTCSAfterFSCall, has been created to open the H.245 TCP connection for this FS call. The syntax for the MML command to implement this property is:

```
prov-add:name=sys_config_dynamic,initiatetcsafterfscall="enabled"
```

HSI 4.1 Patch 6 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 6

Caveats Resolved by Cisco HSI 4.1 Patch 6

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 6.

Identifier	Version	Severity	Description
CSCdx05888	4.1	3	Alternate Gatekeeper GKID not set correctly result in RRJ.

Symptoms: The HSI fails to register to the statically defined alternate gatekeeper because the GKID field is incorrect.

Resolution: Added support for the statically defined alternate gatekeeper in the HSI 4.1 release.

Identifier	Version	Severity	Description
CSCee07275	4.1	3	HSI needs configurable BC User Info Layer 1 Protocol.

Symptoms: This problem is seen when using a third-party VoIP Gateway (GW Alcatel 7505) and the HSI sets the User Info Layer 1 Protocol parameter inside the H.225 Bearer Capability IE to the default value of '00000'.

Resolution: Added new property, DefaultBCLayer1Protocol, to enable the user to set the Layer 1 protocol field to their required value. The valid values are:

- 0—Unknown (default)
- 2—G.711 μ -law
- 3—G.711 A-law
- 5—H.221 and H.242

Identifier	Version	Severity	Description
CSCuk49292	4.1	3	No Speech cut-through for a CCM -> DPNSS call, if sdpxmit=1 on the PGW.

Symptoms: When calling from the CCM IP phone to DPNSS via HSI/PGW, the speech path is not cut-through if the parameter sdpxmiton is set to 1 on the PGW.

Resolution: The HSI is updated to handle this call-flow.

Identifier	Version	Severity	Description
CSCee14849	4.1	3	HSI support for Progress Indicator PI=4.

Symptoms: The HSI does not handle the PI-4 (Call has returned to ISDN) indicator.

Resolution: The HSI is updated to adhere to the H.246 Annex C specification for the handling of progress indicators.

Identifier	Version	Severity	Description
CSCed93926	4.1	3	PGW/HSI Progress Indicator 2 is not mapped.

Symptoms: The HSI does not handle the PI-2 (Destination address non-ISDN) indicator.

Resolution: The HSI is updated to adhere to the H.246 Annex C specification for the handling of progress indicators.

Identifier	Version	Severity	Description
CSCed85375	4.1	3	Handling of a REL message with illegal parameter on PGW.

Symptoms: The HSI discards the whole REL message rather than just the illegal parameter.

Resolution: The HSI now discards the illegal parameter and continues to process the REL message.

Identifier	Version	Severity	Description
CSCeb37131	4.1	3	HSI is not sending RRQ to Alternate Gatekeeper.

Symptoms: The HSI fails to send a RRQ RAS message to the statically defined alternate gatekeeper when the primary gatekeeper fails.

Resolution: Added support for the statically defined alternate gatekeeper in the HSI 4.1 release.

HSI 4.1 Patch 5 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 5

Caveats Resolved by Cisco HSI 4.1 Patch 5

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 5.

Identifier	Version	Severity	Description
CSCed65788	4.1	3	No Progress Indicator (PI) is mapped from a CONNECT to a CON message, if NO alerting message is sent.

Symptoms: The ISUP CON message does not contain the appropriate fields such as the Inband Indicator in the Optional Backward Call Indicator parameter.

Resolution: Transit/map the PI IE from the H.225 Connect message according to the H.246 Annex C specification.

Identifier	Version	Severity	Description
CSCed29825	4.1	3	T38 fax negotiation fails with Quintum gateway.

Symptoms: The HSI does not negotiate T38 correctly when interworking with Quintum gateways. This causes the call to fail and to be released.

Resolution: Added functionality to allow the HSI to initiate a TCS exchange. This feature is enabled by the property:

Package: SYS_CONFIG_DYNAMIC

Property: InitiateTCSAfterFSCall

MML Command Example

```
> prov-add:name=sys_config_dynamic,InitiateTCSAfterFSCall="Enabled"
```

Identifier	Version	Severity	Description
CSCeb54497	4.1	3	Potentially, prov-exp can overwrite older configurations.

Symptoms: HSI does not check for existing configuration names before exporting a configuration. Potentially, users can overwrite backup configurations by error.

Resolution: The user is restricted from exporting the configuration to a destination directory that already exists.

Identifier	Version	Severity	Description
CSCec26570	4.1	4	HSI core dumps when a call is forwarded multiple times

Symptoms: The HSI cores when a call with an invalid GUID is call forwarded multiple times.

Resolution: The handling of multiple calls with the same GUID is resolved in the latest version of the stack.

Identifier	Version	Severity	Description
CSCea80086	4.1	2	HSI-Tech prefix; HSI maps # to A

Symptoms: HSI maps the character # to A instead of C when it receives # from an H323 end point.

Resolution: This issue is resolved with the following provisioning command:

```
> prov-ed:name=ccpackage,hash=C
```

The default value for property CCPackage.Hash will be changed from 'A' to 'C' in the next major release.

Identifier	Version	Severity	Description
CSCed70091	4.1	2	HSI needs PROGRESS support for IP network announcements.

Symptoms: A caller from the PSTN hears no announcements from a Network Announcement Function in response to an invalid number. In this case, the NetCentrex CCS correctly sends a PROGRESS with PI8 (see H.246AnnexC.7.1.4.1 07/2003); but, the PROGRESS is ignored by the HSI.

Resolution: The HSI now maps the H.225 Progress with PI-8 to an EISUP ACM/CPG message with the Inband Indicator set to 1.

Identifier	Version	Severity	Description
CSCed57802	4.1	2	No ringback occurs when HSI-hairpins a call and inserts PI=1 in the ALERTING message.

Symptoms: The HSI incorrectly inserts a Progress Indicator IE equal to 1 in the H.225 ALERTING message for hairpin calls.

Resolution: The HSI now does not insert the PI-1 IE into the H.225 ALERTING for hairpin calls.

Identifier	Version	Severity	Description
CSCed42531	4.1	3	The SETUP UUIE bears an incorrect ScreeningIndicator and PresentationIndicator - for H.246AnnexC.

Symptoms: The ScreeningIndicator and the PresentationIndicator fields are incorrect in the SETUP UUIE.

Resolution: The dual CLI functionality is modified to adhere to the H.246 Annex C specification.

Identifier	Version	Severity	Description
CSCed42401	4.1	2	A core dump by HSI occurred on engineering build for ec69033.

Symptoms: The HSI core dumps in response to a certain load condition identified in the performance testing (not seen in live solutions).

Resolution: Extra error handling has been included in the H.323 stack.

Identifier	Version	Severity	Description
CSCec26693	4.1	2	HSI not sending REL (no answer) to the Cisco PGW 2200 and calls stay active on the PGW.

Symptoms: HSI does not send a REL message to the PGW when the WAIT_CONFIRM timer expires.

Resolution: HSI now sends an EISUP REL message to the PGW when the WAIT_CONFIRM timer expires.

Identifier	Version	Severity	Description
CSCeb54583	4.1	3	For HSI, the MML needs to provide more checks on prov-sta command syntax.

Symptoms: HSI MML does not verify that the user has entered a valid dstver name.

Resolution: The **prov-sta** command does not accept the parameter dstver with an empty string.

HSI 4.1 Patch 4 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 4

Caveats Resolved by Cisco HSI 4.1 Patch 4

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 4.

Identifier	Version	Severity	Description
CSCea28559	2.21	3	HSI should allow transparency to cause location.

Symptoms: The HSI should be able to pass the cause location through transparently when required. Currently, the location is configured to a static value for all calls.

Resolution: The HSI now maps the cause location as specified in H.246 Annex C.

Identifier	Version	Severity	Description
CSCeb73301	2.21 P5	3	HSI drops overlap receiving call upon receiving H323NotificationInd.

Symptoms: The HSI fails to handle the EISUP Notification message in the overlap state.

Resolution: The call control functionality is updated to handle this call scenario.

Identifier	Version	Severity	Description
CSCec14111	4.1	3	Ghost calls in HSI

Symptoms: Sometimes HSI register hung calls.

Resolution: State machines are updated to reduce the possibility of getting hung calls on the HSI.

Identifier	Version	Severity	Description
CSCec51583	4.1 P2	2	Ingress HSI core dumped under load after 50 hours.

Symptoms: HSI had a core dump after 50 hours of traffic running a load of 3 cps.

Resolution: The stack has been modified to resolve this issue.

Identifier	Version	Severity	Description
CSCec61257	4.1	3	MML logging is required on HSI.

Symptoms: Logging of MML sessions is required on the HSI.

Resolution: MML sessions are now logged (in file var/log/mml_usernameProcessID_datestamp.log).

Identifier	Version	Severity	Description
CSCec69033	4.1 P3	2	Egress and Ingress HSIs are core dumped multiple times under load.

Symptoms: HSIs running 4.1 Patch level-P3 dumped a core after a while (4-10 hours) during medium stress load test.

Resolution: The stack has been modified to resolve this problem.

Identifier	Version	Severity	Description
CSCec86352	4.1	3	HSI appends # to EISUP for overlapped sending calls.

Symptoms: The HSI appends the '#' digit to the dialled number in overlap calls when the number is not complete.

Resolution: The digit handling for overlap calls is corrected.

Identifier	Version	Severity	Description
CSCec08908	4.1	2	HSI behaved incorrectly when PGW failed over under load.

Symptoms: Sometimes the HSI core dumps when the PGW fails over, under load.

Resolution: A timer race condition has been fixed, which resolves the issue.

Identifier	Version	Severity	Description
CSCed02811	4.1	3	HSI does not send RLC when IAM was received without Stop-Digit.

Symptoms: The HSI fails to send the RLC (Release Complete) message to the PGW when the call is an overlap scenario and the H.323 endpoint releases with the cause No Route to Destination.

Resolution: The call control functionality is updated to handle this call scenario.

Identifier	Version	Severity	Description
CSCed11309	4.1	2	HSI support for Progress Indicator = 1.

Symptoms: The HSI does not map the Progress Indicator - 1 as specified in H.246 Annex C.

Resolution: The HSI now maps the Progress Indicator - 1.

Identifier	Version	Severity	Description
CSCed26409	4.1	3	Release Complete mapping for facilityCallDeflection.

Symptoms: Currently the PGW/HSI maps the releaseCompleteReason “facilityCallDeflection” to “31 - normal unspecified.” According to the H.323 Implementors Guide the correct mapping would be “16 - Normal Call Clearing”.

Resolution: Corrected the mapping for releaseCompleteReason 'facilityCallDeflection.'

Identifier	Version	Severity	Description
CSCuk48280	4.1	3	HSI sends incorrect gkid in ARQ msg to Alternate GK.

Symptoms: The HSI uses the correct gatekeeper Identifier in the registrationRequest message to the Alternate gatekeeper. However, the HSI uses the incorrect gatekeeperIdentifier in the admissionRequest message to the Alternate gatekeeper. It is using the gatekeeperIdentifier from the primary gatekeeper.

Resolution: The stack now uses the correct gkid in the ARQ message.

HSI 4.1 Patch 3 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 3

Caveats Resolved by Cisco HSI 4.1 Patch 3

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 3.

Identifier	Version	Severity	Description
CSCuk46070	4.1 P1	3	Calls fail if the HSI receives the connect very soon after alert.

Symptoms: Calls on the HSI fail if the connect is received very soon after the alerting.

Resolution: The HSI software is modified to not fail after receiving a connect soon after an alert.

Identifier	Version	Severity	Description
CSCeb54635	2.21	2	Notification message is not sent upon CPG with inband information.

Symptoms: MDCX is not sent to the NAS when Inband Information is in CPG message available. MDCX is sent to the NAS when Inband Information is sent in the ACM message.

Resolution: The HSI now maps the inband indicator in the ISUP CPG message to a PI-8 IE. The HSI will send a H.225 Progress message if required to initiate the H.245 negotiation.

HSI 4.1 Patch 2 Information

This section includes information on:

- Caveats resolved by Cisco HSI 4.1 Patch 2

Caveats Resolved by Cisco HSI 4.1 Patch 2

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 2.

Identifier	Version	Severity	Description
CSCuk46070	4.1 P1	3	Calls fail if the HSI receives the connect very soon after an alert.

Symptoms: Calls on the HSI fail if the connect is received very soon after the alerting.

Resolution: The HSI software is modified so that it does not fail after receiving a connect soon after an alert.

Identifier	Version	Severity	Description
CSCec09031	4.1 P1	3	NotifyMsgEnabled is missing in the H323Skeleton file.

Symptoms: NotifyMsgEnabled is a new property introduced as part of the HSI Notify feature; but, it is missing in the H323SkeletonFileSimple.dat file.

Resolution: The parameter NotifyMsgEnabled has been added to the H323SkeletonFileSimple.dat file.

Identifier	Version	Severity	Description
CSCec24296	4.1 P1	3	HSI is not sending the connected number in a Notify message to the Cisco CallManager.

Symptoms: HSI is not sending the connected number in a Notify message to the Cisco CallManager.

Resolution: The HSI software has been modified to send the appropriate connected number in a Notify message to the Cisco CallManager

Identifier	Version	Severity	Description
CSCec18271	4.1 P1	1	HSI is stripping IEs on H.225 ALERT.

Symptoms: The HSI stripped the progress indicator PI from the ALERT message, which is sent by the terminating gateway. The originating gateway did not open a backward voice path. Therefore, the calling party did not hear the correct tone generated from the terminating PBX or switch.

Resolution: The HSI now maps the PI-8 in the H.225 Alerting message to the Inband Indicator in the CPG message.

HSI 4.1 Patch 1 Information

Cisco HSI 4.1 Patch 1 includes HSI Notify Support.

HSI Notify Support

Cisco Call Manager uses H.225 NOTIFY messages during call transfer to indicate the Transferees name and number information to the calling party. That is, when A calls B, and B transfers the call to C, the information about C is sent to A using the H.225 NOTIFY message.

The HSI now supports this message to correctly interoperate with Cisco Call Manager.

Caveats

This section includes information on:

- Caveats Resolved in HSI 4.1 Patch 1
- Open Caveats in HSI 4.1

Caveats Resolved in HSI 4.1 Patch 1

The following anomalies identified in the operation of the Cisco HSI are resolved by HSI 4.1 Patch 1.

Identifier	Version	Severity	Description
CSCeb52644	4.1	2	HSI coredumps upon receiving H.225 SETUP with GTD.

Symptoms: When making calls from SS7 ingressing on a VIA gateway which is receiving and passing ISUP optional parameters via GTD, the inbound HSI coredumps when it receives the H.225 SETUP from the VIA gateway which contains this GTD info.

Resolution: The HSI now handles the buffer correctly.

Identifier	Version	Severity	Description
CSCuk45568	4.1	2	HSI takes 7 seconds to send release when IP phone releases.

Symptoms: When the call is released on the IP phone it takes the HSI 7 seconds to send the release to the PGW.

Resolution: This issue is resolved in new version of the stack.

Identifier	Version	Severity	Description
CSCeb72081	4.1	2	HSI is dropping Notify message with ECS unjoin request.

Symptoms: HSI is ignoring the un-join request coming from the PGW with the SDP parameter included in the message.

Resolution: The software has been modified is to handle this situation by processing the unjoin request and discarding the invalid SDP parameter.

Identifier	Version	Severity	Description
CSCuk45387	4.1	3	Empty Capability Set (ECS) Invocation occasionally causes system instability.

Symptoms: ECS invocation results in cores occasionally.

Resolution: Software is modified so that pointers to objects are correctly updated.

Identifier	Version	Severity	Description
CSCuk45307	4.1	3	HSI accidentally ignores SDP information in NOTIFICATION messages.

Symptoms: The HSI is ignoring SDP information in Notification messages when it should not.

Resolution: Changed logic so that the HSI does not ignore SDP when it should process it.

Identifier	Version	Severity	Description
CSCea70571	4.1	3	HSI should drop digit D instead of mapping it to *.

Symptoms: HSI is mapping digit 'D' to '*' when the received number includes digit D. Instead the HSI should drop digit D.

Resolution: The HSI now stripes the 'D' digits.

Identifier	Version	Severity	Description
CSCuk45165	4.1	2	HSI releases CFNR calls that starts on CCM and end on PSTN.

Symptoms: The HSI releases the call when the CFNR service is activated in this call scenario.

Resolution: This call scenario was not supported due to CSCuk45387. The resolving of this DDTS has removed this limitation.

Identifier	Version	Severity	Description
CSCeb72113	4.1	3	HSI is not sending H.225 INFORMATION message to CCM if originator initiates Bxfer.

Symptoms: HSI is not sending H.225 INFORMATION message to CCM if originator initiates blind call transfer.

Resolution: The logic is corrected to send the message in this call scenario.

Identifier	Version	Severity	Description
CSCeb63140	4.1	3	HSI is releasing call with invalid release cause (120).

Symptoms: HSI is sending release cause 120 to CCM in the H.225 RLC message when CCM releases the call by sending the H.245 EndSessionCommand. Cause 120 is not a valid cause in the Q850 specification.

Resolution: The HSI now checks to see if it has received a H.225 RLC message when it is processing the H.245 EndSessionCommand. It will use the release cause from the RLC if it is available otherwise it will use a valid default release cause to clear the call.

Identifier	Version	Severity	Description
CSCeb54928	4.1	2	Connected Name/Number not displayed on IP phone for hairpinned calls.

Symptoms: Connected name and Connected number are not displayed on IP phone if it is h323-hairpinned call.

Resolution: The logic is corrected to process the Connected Name/Number for this call scenario.

Identifier	Version	Severity	Description
CSCeb46231	4.1	2	EISUP defaults screening indicator to NONE.

Symptoms: Make a call from DPNSS to Cisco Call Manager. PGW receives ISRM with NPR-A supplementary service. When the IAM is sent out on EISUP side, it defaults the screening indicator to zero and presentation restricted. When HSI receives the IAM, it omits the octet 3a in the outgoing SETUP and presentation restriction info is missing and Number is presented to end-user.

Resolution: Modified code so that if a no screening indicator is present, it is defaulted to 'Network Provided' (as specified in Q.951).

Identifier	Version	Severity	Description
CSCeb40098	4.1	2	Alternate GK functionality does not work properly.

Symptoms: The HSI fails to attempt to register to the alternate gatekeeper when the primary gatekeeper in not available.

Resolution: The alternate gatekeeper functionality is now activated on the stack.

Identifier	Version	Severity	Description
CSCeb37232	4.1	3	PMmain core dumps after rtrv-config while all log levels are 0.

Symptoms: PMmain core dumped while processing the MML command **rtrv-config** on HSI 4.1 while all log levels were 0.

Resolution: The software has been modified to resolve this issue.

Identifier	Version	Severity	Description
CSCeb35609	4.1	2	HSI is releasing slow start ECS calls if CFNR is configured.

Symptoms: HSI is releasing slow start ECS calls if CFNR is configured. This happens for both IOS and Cisco Call Manager originated calls.

Resolution: This call scenario was not supported due to CSCuk45387. The resolving of this DDTS has removed this limitation.

Identifier	Version	Severity	Description
CSCec03935	4.1	3	Long duration calls are not sustained if routed by HSI.

Symptoms: The calls are getting disconnected after a duration of 12-20 minutes. The IRR flow from the HSI to the GK doesn't contain GUID and CONFERENCE ID except the first one. The GK cannot correlate the light weight IRRs with respect to the call established and, after waiting for 3 times the IRR timeout value which by default in Cisco GK is 4 minutes, the GK disconnects the call.

Resolution: The following provisioning is required to resolve this issue:

```
prov-add:name=ras,compare15bitRasCrv
```

The HSI must be restarted to enable this provisioning change.

Open Caveats

This section lists caveats identified in the operation of HSI 4.1 or preceding releases.

Identifier	Version	Severity	Description
CSCeb54635	2.21	3	Notification message is not sent upon reception of a CPG with inband information.

Symptoms: The HSI fails to send a H.225 Progress message to the remote H.323 endpoint with a Progress Indicator 8 parameter.

Workaround: None.

Identifier	Version	Severity	Description
CSCuk45415	4.1	2	HSI does not map any specific DPNSS release causes.

Symptoms: The HSI fails to map DPNSS release causes such as BUSY. It currently maps this cause to Normal Unspecified.

Workaround: None.

Identifier	Version	Severity	Description
CSCuk32236	2.20	3	HSI does not report the unavailability of the PGW when starting.

Symptoms: When starting the HSI with the PGW not available, the HSI do not report the unavailability of the PGW.

Workaround: None.

Identifier	Version	Severity	Description
CSCeb60409	4.1	3	prov-dlt is not working for some properties.

Symptoms: The MML command **prov-dlt** does not work for some properties. A workaround is to

Workaround: Use the MML command **prov-ed**:

Example

```
prov-ed:name=SYS_CONFIG_STATIC,NotifyMsgEnabled=""
```

Identifier	Version	Severity	Description
CSCuk33095	2.20p1	3	When the overload level 1 is reached, an internal alarm is not raised.

Symptoms: When the Overload level 1 is reached, an internal alarm is not raised (rtvr-alm) but an SNMP trap is generated.

Workaround: None

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

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Cisco TAC Website

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

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://tools.cisco.com/RPF/register/register.do>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

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

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation and attach any necessary files.

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- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

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- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access *Packet* magazine at this URL:

<http://www.cisco.com/go/packet>

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

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