



# Release Notes for the Cisco PGW 2200 Softswitch Release 9.8(1)

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**Revised: April 30, 2012**

The Cisco PGW 2200 Softswitch 9.8(1) release provides new features and significant performance improvements. These release notes describe the features and caveats for release 9.8(1).

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## Introduction

The Cisco PGW 2200 Softswitch is a next generation carrier-grade class 4 (transit) softswitch that has been deployed by over 600 service providers and enterprises.

The Cisco PGW 2200 Softswitch Release 9.8(1) expands current softswitch capabilities and introduces signaling path border element (SBE) into its feature portfolio. The session border controller (SBC) was introduced to replace the back-to-back media gateway pairs and allow native IP interconnects between

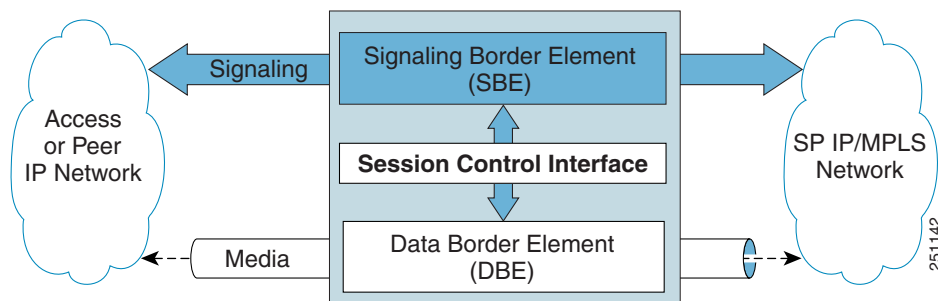


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**Americas Headquarters:**  
**Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA**

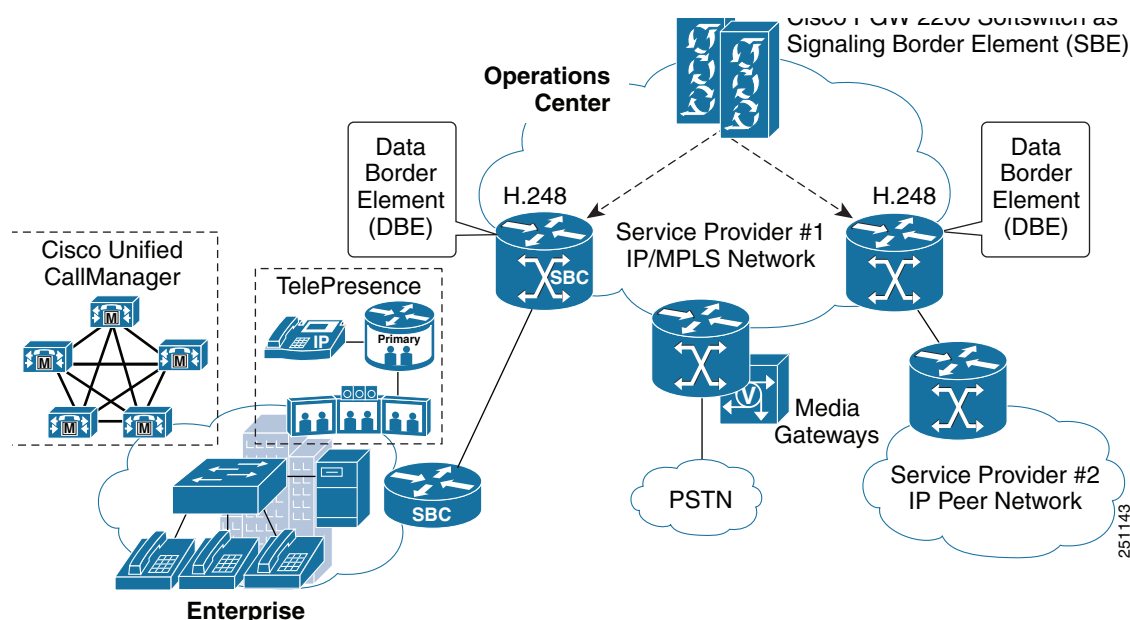
VoIP networks. SBC functions can be broadly divided into two logical subelements: signaling path border element (SBE) and data path border element (DBE). The SBE provides signaling functions such as protocol interworking (for example, H.323 to SIP), identity and topology hiding, and call admission control (CAC). The DBE provides media-related functions such as deep packet inspection and modification, media relay, and firewall support under SBE control. To date, the SBE and DBE logical elements have generally been realized within a single, physical SBC device. This model is referred to as unified SBC as shown in [Figure 1](#).

**Figure 1**      **The Unified SBC Model**



However, many carriers are finding that as their voice networks grow, the challenges of managing the networks grow proportionately. Service providers today want the option to decouple SBC data-path functions from signaling functions. They want to be able to distribute SBE functions in the network separately from the DBE element to simplify management, operations, and troubleshooting. In this distributed model, communication between the SBE and DBE takes place over a well-defined standard, such as ITU-T H.248 adopted in IP Multimedia Subsystem (IMS), which allows a multiplatform implementation of the SBE and DBE elements in the network. The distributed approach to SBCs is in alignment with the directional approach of IMS, ITU, and Telecoms and Internet converged Services and Protocols for Advanced Networks (TISPAN) architectures where the SBE functionality can be provided by a variety of different elements and applications in the network. [Figure 2](#) shows a SBE deployment with a variety of different network elements.

**Figure 2** Distributing the SBE and DBE Functions of Session Border Control



A flexible network component with integrated SBC supports both the unified and the distributed model. Networks continually grow and evolve, and a multimedia IP transport network that scales adequately today with a unified SBC will outgrow the unified model and necessitates a distributed approach. Operators want SBCs that can grow with their networks—they do not want to make capital-intensive complete equipment upgrades of in-service network elements. The Release 9.8 can cater to such market requirements, behaving as the centralized SBE and interworking with Cisco and potentially non-Cisco DBE via standard H.248 interfaces. The benefits of such architecture consists of:

- Centralized dial plan and optimal routing on the Cisco PGW 2200 Softswitch SBE vs. a distributed and sometimes incomplete dial plan in each unified SBC.
- Carrier grade and standard based billing on the Cisco PGW 2200 Softswitch SBE vs. billing records generated on each unified SBC.
- Simultaneous support of both VoIP network and Signaling System 7 (SS7)/public switched telephone network (PSTN) network with ITU-T/ANSI Intelligent Network (IN) capabilities vs. unified SBC is designed only for a pure VoIP network.
- Simplified and economic DBE close to customer edge network thus possible Capital and Operating Expenditure (Capex/Opex) saving.

## Platform Support

For a list of supported platforms see the following documents:

- [Cisco PGW 2200 Softswitch Hardware Installation Guide—Releases 7 & 9](#)
- [Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide](#)

## Software Required

For a list of software requirements, see Chapter 1, “Preparing for Sun Solaris Operating System and Cisco PGW 2200 Softswitch Software Installation”, of *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide* at the following URL:

[http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd_products_support_series_home.html)



### Caution

The Cisco PGW 2200 Softswitch and Cisco H.323 Signaling Interface (HSI) should be installed on dedicated platforms and should not reside with any other applications (SMTP, DNS, HTTP daemons, and so on). The Cisco PGW 2200 Softswitch and HSI cannot reside on the same platform.

## Cisco PGW 2200 Softswitch Software Compatibility Matrix

Table 1 provides compatibility matrix for Cisco PGW 2200 Softswitch software Release 9.8(1) and other Cisco products.

**Table 1** Cisco PGW 2200 Softswitch Software Compatibility Matrix

Component Type	Role	Hardware	Software Required
Cisco PGW Node	Call control	Cisco PGW 2200 Softswitch	Cisco PGW 2200 Softswitch Release 9.8(1)
—	—	HSI (H.323)	Release 4.3(2), with latest patch
ITP-L <sup>1</sup>	—	Cisco 2811 ITP-L, Cisco 2651 ITP-L	Cisco IOS Version 12.4(15)SW
iITP-L <sup>2</sup>	—	Cisco AS5400 Integrated ITP-L	Cisco IOS Version 12.4(7e)
Ethernet Switch/Router	—	Cisco Catalyst 2900XL	Current Release
	—	Cisco Catalyst 5500	Current Release
	—	Cisco Catalyst 6500	Current Release
CUCM <sup>3</sup>	IP PBX and key switch	CUCM	Version 7.1.3 <sup>4</sup> , Version 6.0.1, Version 5.1.2, Version 4.2
CME <sup>5</sup>	—	CME	Cisco IOS version 12.4(19)
Cisco Unity	—	Cisco Unity	Version 4.0
CUBE <sup>6</sup>	—	Cisco 2811	Cisco IOS Version 12.4(15)SW
ICM <sup>7</sup>	—	Cisco IPCC ICM	Version 7.2
ITP <sup>8</sup>	—	Cisco ITP 2651	Cisco IOS Version 12.4(15)SW
	—	Cisco ITP 2811	Cisco IOS Version 12.4(15)SW
Media Gateways (MGCP-controlled for PSTN trunking)	—	Cisco AS5350XM	Cisco IOS Version 12.4(7)SW
	—	Cisco AS5400XM	Cisco IOS Version 12.4(19)SW
	—	Cisco AS5850	Cisco IOS Version 12.4
	—	Cisco AS5850 with STM1 module	Cisco IOS Version 12.4
	—	Cisco MGX 8880 Media Gateway (VISM)	VISM 3.3.xx
	—	Cisco MGX 8880 Media Gateway (Cisco VXSM)	VXSM 5.4

**Table 1 Cisco PGW 2200 Softswitch Software Compatibility Matrix (continued)**

Component Type	Role	Hardware	Software Required
Media Gateways (MGCP-controlled for PBX access)	—	Cisco 2651XM, Cisco 36xx, Cisco 37xx	Cisco IOS Version 12.4(19)
	—	BRI backhaul: Cisco 1721, Cisco 1751, Cisco 1751v, Cisco 1761, Cisco 1761v 2612	Cisco IOS Version 12.4(19)
	—	PRI/Q.931 backhaul for call agents: Cisco 2691	Cisco IOS Version 12.3(7)T1
Media Gateways (Megaco-controlled for IP-IP gateway)	—	Cisco GSR 12K SBC	Version 3.7.0
	—	Cisco ASR 1000 Series SBC	Cisco IOS 12.2(33)XNA
	—	Cisco MGX 8880 Media Gateway (Cisco VXSM)	VXSM 5.5
Firewall	—	Cisco PIX 515, 525, or 535 Security Appliance	Cisco PIX Security Appliance Version 7.0
Network Management	—	Cisco BAMS <sup>9</sup>	Version 3.30 with latest patch
	—	Cisco MNM <sup>10</sup>	Version 2.8(1). For correlation of the MNM patches with the Cisco PGW 2200 Softswitch patches, see <a href="http://www.cisco.com/en/US/docs/net_mgmt/mnm/2.8.1/release/notes/CMNM_rn.html">http://www.cisco.com/en/US/docs/net_mgmt/mnm/2.8.1/release/notes/CMNM_rn.html</a>
	—	Cisco VSPT	Version 2.8(1). For correlation of the VSPT patches with the Cisco PGW 2200 Softswitch patches, see <a href="http://www.cisco.com/en/US/docs/net_mgmt/vspt/2.8/release/notes/vspt281.html">http://www.cisco.com/en/US/docs/net_mgmt/vspt/2.8/release/notes/vspt281.html</a>
	—	CTM <sup>11</sup> for MGX 8880 Media Gateway management	Version 8.0
	—	CiscoWorks LMS <sup>12</sup> for IOS and Catalyst devices	Version 2.5.1
Optional Software	—	Cisco IPM <sup>13</sup>	Version 2.3
	—	CIC <sup>14</sup>	Version 3.5

1. ITP-L = IP Transfer Point LinkExtender
2. iITP-L = integrated IP Transfer Point LinkExtender
3. CUCM = Cisco Unified Communications Manager
4. Compatibility between the CUCM Release 7.1.3 and the Cisco PGW 2200 Release 9.8.1 started with Cisco PGW 2200 Release 9.8.1 Patch S7P7 (Patch Level 7).
5. CME = Cisco Unified Communications Manager Express
6. CUBE = Cisco Unified Border Element
7. ICM = Cisco Unified Intelligent Contact Management
8. ITP = IP transfer point
9. BAMS = Billing and Measurement Server

10. MNM = MGC Node Manager
11. CTM = Cisco Transport Manager
12. LMS = LAN Management Solution
13. IPM = Internetwork Performance Monitor
14. CIC = Cisco Info Center

## Required Swap Space

The Cisco PGW 2200 Softswitch software needs to partition 4 GB of swap space. The Cisco Solaris 10 Operating System Jumpstart Disk used to install the solaris system automatically sets up the swap space. Setting swap space at installation is recommended; however, you can change swap space at a later date by adding a swap file or repartitioning the swap space using the format menu (for example, reassigning how many cylinders are in each partition). The swap space requirement is determined by the amount of traffic. As traffic increases, use the MML command **rtrv-ne-health** to observe the amount of swap space that is being used; you can decide to increase the swap space if more is needed.



### Note

Solaris uses swap as a file system cache in addition to virtual memory paging. It is normal to observe both physical and virtual memory completely consumed on Solaris. It is better to monitor usage with **vmstat -p** and **vmstat -p l** along with **iostat -xtc**. For more information about verifying available virtual memory, see Chapter 3, “Cisco PGW 2200 Softswitch Platform Operations”, of *Cisco PGW 2200 Softswitch Operations, Maintenance, and Troubleshooting Guide*.

## Host Hardware Requirements

This section describes the hardware requirements for the Cisco PGW 2200 Softswitch software.

### Host Minimum Server Requirements

See *Cisco PGW 2200 Softswitch Hardware Installation Guide—Releases 7 and 9* for the host minimum hardware requirements. Before using the minimum hardware configuration, consult with your Cisco representative to determine the hardware that gives you the best performance results based on your network configuration, proposed traffic, and desired processing power.

## Media Gateway Hardware Requirements

Table 2 lists URLs for release notes that document media gateways.

**Table 2** Media Gateway Release Notes Locations

Media Gateway Release Notes	Release Notes Location
MGX 8880 Voice Interworking Service Module	<a href="http://www.cisco.com/en/US/products/hw/gatecont/ps3869/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/gatecont/ps3869/prod_release_notes_list.html</a>
MGX 8000 Voice Gateway	<a href="http://www.cisco.com/en/US/products/hw/gatecont/ps3869/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/gatecont/ps3869/prod_release_notes_list.html</a>
AS5350 Universal Gateway	<a href="http://www.cisco.com/en/US/docs/ios/12_1/12_1_xq/release/notes/rn5350xq.html">http://www.cisco.com/en/US/docs/ios/12_1/12_1_xq/release/notes/rn5350xq.html</a>

**Table 2** *Media Gateway Release Notes Locations*

Media Gateway Release Notes	Release Notes Location
AS5400 Universal Gateway	<a href="http://www.cisco.com/en/US/docs/ios/12_1/12_1xd/release/notes/rn5400xd.html">http://www.cisco.com/en/US/docs/ios/12_1/12_1xd/release/notes/rn5400xd.html</a>
AS5850 Universal Gateway	<a href="http://www.cisco.com/en/US/docs/ios/12_1/12_1xv/release/notes/rn5850xv.html">http://www.cisco.com/en/US/docs/ios/12_1/12_1xv/release/notes/rn5850xv.html</a>

## LAN Switch

Your application might use one or more LAN switches from the Cisco Catalyst Switch family to connect the Cisco PGW 2200 Softswitch host to the media gateways (MGWs) and to the Cisco IP Transfer Point LinkExtenders (ITP-Ls) or Cisco IP Transfer Points (ITPs).


**Note**

User documentation refers to the Cisco Catalyst 5500 switch family (Network Equipment-Building System (NEBS)-compliant). The Cisco Catalyst 2900 XL is another NEBS-compliant LAN switch that can be used for a small configuration, but current Cisco PGW 2200 Softswitch user documentation does not address the Cisco Catalyst 2900 XL. See the Cisco Catalyst 2900 XL documentation for information about this switch.


**Note**

A LAN switch is not provided with the Cisco PGW 2200 Softswitch.

## Supported Features

[Table 3](#) lists features that were inherited from earlier releases of the Cisco PGW 2200 Softswitch software and are still supported in Release 9.8(1).

**Table 3** *Supported Features in Release 9.8(1)*

Feature	Purpose
Long-distance service through both indirect and direct access	Replaces the need for traditional TDM equipment.
Support for domestic and international dialing plans	Provides scalable and flexible service.
Support for ANI <sup>1</sup> authorization	Adds security and prevents fraudulent use of the network.
Support for toll-free and 8XX numbers through the SCP <sup>2</sup>	Allows callers to use the free phone and premium services across the Tandem/Transit network.
Centralized element manager	Provides a method to configure and monitor the network.
ISUP PSTN interconnect with full COT <sup>3</sup> support	Provides verification of the voice path.
Support for ISDN direct-access lines	Allows direct line access to the Cisco PGW 2200 Softswitch.

**Table 3**      **Supported Features in Release 9.8(1) (continued)**

<b>Feature</b>	<b>Purpose</b>
Support for E-ISUP inter-MGC signaling	Provides scalable and flexible service.
Support for advanced call routing	Provides scalable and flexible service.
Support for MGCP 1.0	Allows the Cisco PGW 2200 Softswitch to control media gateway connections.
Support for carrier-grade QoS <sup>4</sup>	Replaces the need for traditional TDM equipment.
Support for SS7-to-SS7, SS7-to-ISDN, SS7-to-SIP, SS7-to-H.323, ISDN-to-SIP, ISDN-to-H.323, ISDN-to-ISDN, DPNSS-H323, and DPNSS-SS7 call types	Provides scalable and flexible service.
Support for voice-band telephony	Provides scalable and flexible service.
Support for ISDN data calls	Provides scalable and flexible service.
Support for real-time fax relay	Provides scalable and flexible service.
Support for modem passthrough	Provides scalable and flexible service.
Support for Cisco media gateways	Protects investment in Cisco equipment.
Provides a reliable IP link between Cisco PGW 2200 Softswitch and access servers with RUDP <sup>5</sup>	No single point of failure in the connection between media gateways and the Cisco PGW 2200 Softswitch.
Call detail records for PSTN billing	Meets carrier-grade PSTN requirements for moving existing voice revenue streams to the packet environment and for creating new voice service opportunities. Provides a CDR viewer for viewing billing records.
Facility associated signaling provided by the Cisco SLTs (T1/E1 WIC, optional with SS7)	<ul style="list-style-type: none"> <li>• Grooms off the bearer channels and delivers them to the media gateway.</li> <li>• Delivers MTP-3 to the Cisco PGW 2200 Softswitch host over IP.</li> </ul>
High Availability platform	Established calls are maintained when there is a switchover from the active Cisco PGW 2200 Softswitch host to its paired standby host.
Sun Solaris 10	<ul style="list-style-type: none"> <li>• Y2K compliant</li> <li>• Open computing platform</li> </ul>
<ul style="list-style-type: none"> <li>• Support for 1500+ DPCs<sup>6</sup></li> <li>• Support for up to six OPCs<sup>7</sup> plus 40+ Capability Point Codes</li> <li>• Supports 504 PRI D channels</li> </ul>	<ul style="list-style-type: none"> <li>• Scales cost-effectively to central office size</li> <li>• Flexible and scalable</li> </ul>
Quasi-associated or fully associated signaling	Ready for international markets.
Complete continuity check (two-wire and four-wire)	Meets interconnect requirements.

**Table 3** *Supported Features in Release 9.8(1) (continued)*

Feature	Purpose
NEBS <sup>8</sup> Level 3 compliant	Telco-ready.
Several simplex or high availability platform options	Cost-effective options.
<ol style="list-style-type: none"> <li>1. ANI = automatic number identification</li> <li>2. SCP = service control point</li> <li>3. COT = continuity test</li> <li>4. QoS = quality of service</li> <li>5. RUDP = Reliable User Datagram Protocol</li> <li>6. DPCs = destination point codes</li> <li>7. OPCs = originating point codes</li> <li>8. NEBS = Network Equipment-Building System</li> </ol>	

## Cisco PGW 2200 Softswitch Management

Table 4 provides an overview of the management components of the Cisco PGW 2200 Softswitch.

**Table 4** *Cisco MGC Management Components*

Management Component	Description
Cisco Voice Services Provisioning Tool (VSPT)	Cisco Voice Services Provisioning Tool (VSPT) provides an easy-to-use graphical tool to provision the Cisco PGW 2200 Softswitch, certain gateways and the Billing and Measurement Server (BAMS). VSPT can be used to create, copy, modify, and deploy configurations. VSPT 2.8(1) is now included with the Cisco MGC Node Manager 2.8(1) and is no longer available as a download option.
Alarms and SNMP traps	<p>Cisco PGW 2200 Softswitch supports a comprehensive set of alarms (in accordance with ITU X.733).</p> <ul style="list-style-type: none"> <li>• Processing error alarms</li> <li>• QoS alarms</li> <li>• Equipment alarms</li> <li>• Communications alarms</li> <li>• Environment alarms</li> </ul> <p>You can also configure the system to generate real-time alarms to local or remote terminals. All alarms are written to a log file in an uncompressed format for easy retrieval.</p>

Table 4 Cisco MGC Management Components (continued)

Management Component	Description
Measurements and statistics	<p>You can obtain a variety of usage statistics from the Cisco PGW 2200 Softswitch. The data is recorded real-time and written to a file. You can specify the statistics to be collected and the time intervals for collection and writing to file. Each PEG count record includes:</p> <ul style="list-style-type: none"> <li>• Start time</li> <li>• Duration</li> <li>• Measured value</li> <li>• Category</li> <li>• Element measured</li> </ul>
Cisco MGC Node Manager (MNM)	<p><i>Cisco MNM</i> is a management system for VoIP networks, including the Cisco PGW 2200 Softswitch, BAMS, HSI, SLT, and Catalyst switches. MNM contains a map viewer to manage large, evolving networks, an alarm browser, and performance management features. MNM allows individual components to be easily configured and managed.</p>

## New Features in This Release

This section describes new features introduced in Cisco PGW 2200 Softswitch Release 9.8(1).

- [Display Name and Connected Number Interworking, page 11](#)
- [Domain-Based Routing, page 12](#)
- [Enhanced Clear Channel Codec Support, page 12](#)
- [Enhanced Generic Number Handling, page 12](#)
- [Enhanced Video Support, page 13](#)
- [Generic Call Tagging, page 13](#)
- [H.248 Protocol-Phase 2, page 14](#)
- [Inter-CUCM SIP Trunk Service Transparency for MWI, KPML, and COLP, page 15](#)
- [ISUP and SIP-I Interworking for DPNSS CBWF Relay, page 16](#)
- [Licensing Features for the Cisco PGW 2200 Softswitch, page 17](#)
- [MLPP Local Handling in ISUP, PRI, and SIP, page 17](#)
- [MLPP Relay in PRI to SIP/ISUP Interworking, page 17](#)
- [MLPP Support for ISUP and SIP Interworking and SIP to SIP Transparency, page 17](#)
- [Nortel Release Link Trunk \(RLT\) Support, page 18](#)
- [QSIG Tunneling over SIP, page 18](#)
- [Secure Real-time Transport Protocol Support, page 18](#)
- [SIP Profiles, page 19](#)
- [SIP-I Protocol, page 19](#)
- [Support for Tel URI in SIP Diversion Header, page 19](#)
- [Support of PAID Tel URI, page 20](#)
- [Support of SIP P-Headers for 3GPP, page 20](#)

- [Suppression of Redirecting Number and Information](#), page 21
- [TCP Transport for SIP Phase II](#), page 22
- [TG Advance](#), page 22

## Display Name and Connected Number Interworking

This feature introduces a comprehensive structure for handling the parameters associated with the following features for calls between ISUP and SIP endpoints:

- Calling Line Identification Presentation (CLIP)
- Connected Line Identification Presentation (COLP)
- Calling Line Identification Restriction (CLIR)
- Connected Line Identification Restriction (COLR)

These parameters allow the Cisco PGW 2200 Softswitch to support interworking between ISUP and SIP networks for basic call features, call forwarding features, and call transfer feature. Call forwarding feature includes Call Forwarding Unconditional (CFUC), Call Forwarding No Answer (CFNA), and Call Forwarding Busy (CFB).

The Display Name and Connected Number Interworking feature also enables the Cisco PGW 2200 Softswitch to handle display name and number identity interworking between PBX and SIP for basic calls, call forwarding, and call transfer.

CLIP/COLP provides call control and security functions for residential telephone users. In addition, display name is part of the calling line identity (CLI). Using CLI information within networks enhances the existing support for call processing, billing, emergency call handling, customer care, operator assistance services and advanced services.

With this feature, the Cisco PGW 2200 Softswitch can map display name and connected number between SIP and ISUP, and between SIP and QSIG. It also supports the prefix modification for connected number, redirection number, and transferred number.

This feature provides the following benefits:

- Cisco PGW 2200 Softswitch can transit display name and connected number between SIP, SS7, and QSIG.




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**Note** Only the ISUPv2\_GERMAN variant is supported for SS7-related calls in this feature.

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- Cisco PGW 2200 Softswitch enables prefix modification for connected number, redirection number, and transferred number.
- Cisco PGW 2200 Softswitch enables number modification for the original called number.

This feature has the following limitations:

- This feature is not applicable to the half-call scenario calls, such as Network Consultation Transfer (NCT) scenario and Route Optimization (RO) scenario.
- If the call is transferred under Cisco Unified Communications Manager (CUCM), when the Cisco PGW 2200 Softswitch receives an UPDATE message from the CUCM, it does not know the state of transferred call (Alerting or Answered). ISUP just sends CPG with *call transfer active*.




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**Note** For more information, see the [Display Name and Connected Number Interworking](#) feature module.

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## Domain-Based Routing

This feature enhances the Cisco PGW 2200 Softswitch analysis and routing functions to allow the Cisco PGW 2200 Softswitch to route calls based on user and domain names. These changes allow the Cisco PGW 2200 Softswitch to simultaneously route calls using E.164 numbers, domain names, user names, or a combination of E.164 and non-E.164 data.

Domain-based routing also introduces domain-based call screening functions and translation tables to map E.164 numbers to domain and user names and vice versa.

**Note**

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For more information, see the [Domain-Based Routing](#) feature module.

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## Enhanced Clear Channel Codec Support

The clear channel codec guarantees bit integrity of a digital signal 0 (DS-0) transferred through a gateway. It supports the transporting of nonvoice circuit data sessions through a VoIP network. It enables the VoIP networks to transport data calls.

Before the introduction of this feature, the Cisco PGW 2200 Softswitch supported the clear channel codec for TDM-to-SIP data calls. That is, the Cisco PGW 2200 Softswitch could handle data calls that originated from the TDM side and ended on the Session Initiation Protocol (SIP) side.

The Enhanced Clear Channel Codec Support feature completes clear channel codec support to SIP-to-TDM data calls. Based on incoming SIP messages and user configurations, the Cisco PGW 2200 Softswitch sends certain clear channel codecs to gateways and sets the transmission medium requirement (TMR) value for data calls properly. With this feature, users can make TDM data calls through the SIP network. In addition, users can customize clear channel codecs that media gateways use for data calls.

**Note**

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For more information, see the [Enhanced Clear Channel Codec Support](#) feature module.

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## Enhanced Generic Number Handling

The Enhanced Generic Number Handling feature enables the Cisco PGW 2200 Softswitch to pass a Generic Number field into a SIP INVITE message when it receives an ISUP IAM message (United Kingdom variant—ISUPV3\_UK) that includes a Number Qualifier field, and that field contains the value “intra-nw-use”.

**Note**

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This feature is restricted to deployments in which the ISUP side is provisioned for the United Kingdom variant (ISUPV3\_UK).

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The Cisco PGW 2200 Softswitch performs this message conversion when it determines that it must set up a call between an ISUP network on the originating side and a SIP network on the destination side. In this case, the Cisco PGW 2200 Softswitch ignores the contents of the Generic Number field in the ISUP IAM message and forwards the calling number to a device on the SIP network side.

**Note**

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For more information, see the [Enhanced Generic Number Handling](#) feature module.

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## Enhanced Video Support

The Enhanced Video Support feature expands video capabilities on the Cisco PGW 2200 Softswitch. Before the introduction of this feature, the Cisco PGW 2200 Softswitch handled Session Initiation Protocol (SIP) video calls in a basic way. It was not possible to hold or transfer SIP video calls, and you did not have control of media streams for SIP video calls. Working together with data border elements (DBEs) (Cisco ASR 1000 DBE), the Cisco PGW 2200 Softswitch now handles SIP video calls more comprehensively:

- Strong control of audio and video streams—Cisco PGW 2200 Softswitch anchors audio and video streams on DBEs (such as Cisco ASR 1000 DBE). The Cisco PGW 2200 Softswitch, coworking with DBEs, provides the following functions for audio and video traffic:
  - Virtual private network (VPN) discrimination
  - Topology hiding
  - Gate control
  - Media latching for remote network address translation (NAT) traversal
  - Delayed-offer to early-offer conversion
- Flexibility to control video call admissions—This feature enables you to control video call admissions based on trunk group capabilities or number analysis results.
- Video codec negotiation and selection—You can customize video codec capabilities at three levels to affect the codec selection process.
- Video call hold, call transfer, and conferencing services—This feature allows you to hold or transfer a video call. You can also use video conferencing services on the Cisco PGW 2200 Softswitch.
- Video call fallback to audio calls—If the Cisco PGW 2200 Softswitch cannot handle a video call because of video codec shortages or other reasons, it converts the video call into an audio call.



**Note**

For more information, see the [Enhanced Video Support](#) feature module.

## Generic Call Tagging

The Generic Call Tagging feature enables a service provider to configure the Cisco PGW 2200 Softswitch to perform additional routing operations beyond the pre-existing manner of route selection. If you apply a generic call tag in Pre-analysis, A-number analysis, or B-number analysis, the Cisco PGW 2200 Softswitch can perform another level of route selection defined by the tag, which extends the route selection algorithms for certain calls. This feature enables you to refine route selection.

When you use the Generic Call Tagging feature, you influence the progression of call route selection:

**Dial Plan**—You must configure a new dial plan result called *CALL\_TAG*, which you can configure to be present for the Pre-analysis, A-number analysis, or B-number analysis stages of routing analysis. The Cisco PGW 2200 Softswitch processes the *CALL\_TAG* result type by associating it with a data word, in which you provide a name for a particular tag list.

The identity you specify for a tag list must be an alphanumeric character string (upper or lower case) of a maximum of 32 characters. There is no limit to the number of name or value pairs (or just tags without values) that you can contain in a tag list. If you specify a tag name without a value, the Cisco PGW 2200 Softswitch supplies the default value “true”.

**Tag List Table**—Cisco PGW 2200 Softswitch constructs a tag list table with which it can decide whether a particular trunk group can service a call based on the presence of a tag. By constructing a tag list table, you can “blacklist” (or skip) any number of trunk groups from servicing calls that bear particular tags.

**Routing Analysis**—When the Cisco PGW 2200 Softswitch reaches the point in route analysis at which it must select a trunk group to service a call, it consults the tag list table to find a trunk group that is allowed to service the call.

To implement the Generic Call Tagging feature, you must perform the following procedures.

1. Provision the taglist.
2. Provision tag/value pairs.
3. Create the CALL\_TAG result type associated with the taglist provisioned in Step 1.
4. Associate a trunk group with the taglist provisioned in Step 1.

The Generic Call Tagging feature enables you to use your own naming conventions to suit your location and purposes. The primary intent is to associate tags with particular trunk groups. This enables you to designate the trunk groups over which you wish to route certain calls. You can associate a tag with a trunk group to prevent the trunk group from routing a call that requires handling defined by the tag. This effectively blacklists the trunk group from routing calls of a designated type. For example, you could prevent some trunk groups from routing a call that requires fax transmission.

**Note**

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For more information, see the [Generic Call Tagging](#) feature module.

---

## H.248 Protocol-Phase 2

H.248 Protocol-Phase 2 enables the Cisco PGW 2200 Softswitch to perform media anchoring on ingress or egress border gateways for IP traffic. This feature includes a simple service policy decision module (SPDM), which determines whether a session border element (SBE) should perform media anchoring and, if so, identifies which border gateway performs the media anchoring based on service requirements. The border gateway control interface conforms to the ITU-SG16/IETF specification of the H.248 protocol and an additional optional package.

H.248-Phase 2 gives the Cisco PGW 2200 Softswitch the capacity to anchor media on ingress or egress border gateways for IP traffic, no matter whether a call is TDM to IP, IP to TDM, or IP to IP. With H.248-Phase 2, the Session Border Element (SBE) engine can select border gateways in gateway pools, and, through the use of H.248, instruct these border gateways to anchor the Realtime Transport Protocol (RTP) or Real Time Conferencing Protocol (RTCP) media streams.

**Note**

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For more information, see the [H.248 Protocol - Phase 2](#) feature module.

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## Inter-CUCM SIP Trunk Service Transparency for MWI, KPML, and COLP

The Inter-CUCM SIP Trunk Service Transparency for MWI, KPML, and COLP feature enables the Cisco PGW 2200 Softswitch to handle out of dialog/in dialog SUBSCRIBE and NOTIFY messages, in addition to the existing support for INVITE message. With this feature, Cisco PGW 2200 Softswitch can transparently transit the following information in Back to Back User Agent (B2BUA) mode:

- Message Waiting Indication (MWI) Status via Unsolicited NOTIFY
- In-Dialog Key Press Stimulus package (KPML) requests
- Connected Line Presentation (COLP)

The details of these messages are described in the following sections.

### Message Waiting Indication

This feature enables the Cisco PGW 2200 Softswitch to interwork with the Cisco Unity, which sends voicemail MWI by unsolicited NOTIFY. With this feature, Cisco PGW 2200 Softswitch can relay unsolicited MWI information and the responses in MWI flows. These responses include:

- 200 Ok
- 202 Accepted
- 403 Forbidden
- 404 Not Found
- 480 Temporarily Unavailable
- 481 Subscription does not exist
- 489 Bad Event
- 503 Service Unavailable



#### Note

---

The Cisco PGW 2200 Softswitch does not parse the message contents, and allows the message-summary event that is sent by CUCM.

---

The Cisco PGW 2200 Softswitch performs the following actions to support the MWI status relaying:

- Sends unsolicited NOTIFY based on the configured routing mechanism that is using either the configured dial plan or domain based routing.
- Does not maintain any dialogs for these unsolicited NOTIFY, and deletes the context as soon as the final response reaches the Cisco PGW 2200 Softswitch.
- Waits only for Timer E to get a final response, and then clears the context information.

### SIP Key Press Stimulus Package

The Cisco PGW 2200 Softswitch supports SIP messaging for Dual Tone Multi-Frequency (DTMF) that takes place between a Signaling Connection Control Part (SCCP) phone hosted by a Cisco Unified Call Manager (CUCM) and a SIP gateway via a SIP trunk. DTMF support is implemented by the bidirectional subscriptions for DTMF notification between the CUCM and the SIP gateway. NOTIFY messages are exchanged when a digit is pressed from the called and calling party phones. After the call is released, the CUCM and the SIP gateway terminate both local and remote KPML subscriptions. CUCM sends a 489–Bad Event message to the Cisco PGW 2200 Softswitch or receives the same message from the Cisco PGW 2200 Softswitch.

The Cisco PGW 2200 Softswitch relays KPML payload (in XML form) in SIP messages SUBSCRIBE/NOTIFY in B2BUA mode. These KPML requests are passed in-dialog. Cisco PGW 2200 Softswitch is also able to relay the responses possible in KPML flows, such as 200 Ok, 480 Temporarily Unavailable, 404 Not Found, 503 Service Unavailable, 403 Forbidden, 481 Subscription does not exist, 489 Bad Event, and 202 Accepted. Cisco PGW 2200 Softswitch does not parse the message contents and allows KPML event.

### Connected Line Presentation

Connected Line Presentation (COLP) is a service that provides caller with the identity to which he connected. For example if someone dials 01234 567890, but the call is diverted to another number, COLP provides the identity of the person that is actually connected to. The identity is typically the telephone number of the connected party.

This feature enables the Cisco PGW 2200 Softswitch to send PAID and Remote-Party-ID headers of UPDATE in B2BUA mode. The Cisco PGW 2200 Softswitch relays display name and user part of the URI in PAID and Remote-Party-ID headers in SIP messages, such as UPDATE,180 Ringing, and 200 OK.



#### Note

For more information, see the [Inter-CUCM SIP Trunk Service Transparency for MWI, KPML, and COLP](#) feature module.

## ISUP and SIP-I Interworking for DPNSS CBWF Relay

The ISUP and SIP-I Interworking for DPNSS CBWF Relay feature allows a user who receives a busy signal, such as extension busy or network congestion, to request an automatic callback when trying to make a call through a private network.

A calling party can register for the feature with the originating PBX that requests the terminating PBX to monitor the called extension. When the called extension and the transmission path across the network become free, the user who invoked the feature is notified by a ring tone that the called extension is available. The user can then call back, and a call is set up from the user to the extension that is free.

With this feature, the Cisco PGW 2200 Softswitch can transparently relay DPNSS signaling encapsulated in ISUP signaling to SIP-I and vice versa. The Cisco PGW 2200 Softswitch neither controls nor has the knowledge of the DPNSS call states and message flows, and takes decisions pertaining to call setup, processing, and release purely from the ISUP-to-SIP-I interworking perspective and vice versa. This feature supports the protocol interworking of ISUP (UK ISUP version 3 variant) with SIP-I (encapsulating UK ISUP version 3 variant) carrying DPNSS signaling for CBWF and vice versa.



#### Note

For more information, see the [ISUP and SIP-I Interworking for DPNSS CBWF Relay](#) feature module.

## Licensing Features for the Cisco PGW 2200 Softswitch

The Cisco PGW 2200 Softswitch release 9.8(1) introduces licensing control for TimesTen in-memory database and the Session Border Element (SBE) interface or IP-IP Gateway. The TimesTen license keeps track of the Number Portability and Full Number Translations. The SBE interface license is needed when Cisco PGW 2200 Softswitch is used as an SBE in the Cisco Session Border Controller solution.



**Note**

For more information, see the [Licensing Features for the Cisco PGW 2200 Softswitch](#) feature module.

## MLPP Local Handling in ISUP, PRI, and SIP

This feature describes the local handling functionalities for MLPP in protocol ISUP, PRI, and SIP. The PGW 2200 Softswitch handles the pre-emption of calls as the MLLP's supplementary service. A new value, 2, is set to the existing property MlppSupport in order to enable local handling support for MLPP.



**Note**

For more information, see the [MLPP Local Handling in ISUP, PRI, and SIP](#) feature module.

## MLPP Relay in PRI to SIP/ISUP Interworking

The MLPP Relay in PRI to SIP/ISUP Interworking feature for the Cisco PGW 2200 Softswitch supports MLPP for PRI-PRI and PRI-SIP/ISUP interworking without local handling and vice versa. With this feature, Cisco PGW 2200 Softswitch interoperates PRI with SIP peers such as CUCM and switches interoperating with SS7 in the customer deployment/PSTN to facilitate PRI-SIP and PRI-ISUP prioritized call handling transparently.



**Note**

For more information, see the [MLPP Relay in PRI to SIP/ISUP Interworking](#) feature module.

## MLPP Support for ISUP and SIP Interworking and SIP to SIP Transparency

This feature enables the Cisco PGW 2200 Softswitch to support Multilevel Precedence and Preemption (MLPP), which permits validated users to place priority calls. *Precedence* assigns a priority level to a call. *Preemption* refers to a process that terminates a call of lower priority, which is using a device that is targeted by a call of higher priority. Precedence assures that a higher-priority call can access the target device.

The implementation of MLPP defined by this feature only supports the relay of prioritized call signaling information in Back to Back User Agent (B2BUA) mode for SIP-to-SIP calls. This feature also enables the Cisco PGW 2200 Softswitch to map call signaling information for SIP-to-ISUP calls and for ISUP-to-SIP calls.



**Note**

The Cisco PGW 2200 Softswitch only supports the *relaying* of MLPP information in SIP-to-ISUP interworking scenarios and for SIP service transparency. No local handling is supported.

**Note**

For more information, see the [MLPP Support for ISUP and SIP Interworking and SIP to SIP Transparency](#) feature module.

## Nortel Release Link Trunk (RLT) Support

The Nortel Release Link Trunk (RLT) Support feature extends the existing RLT mechanism on the Cisco PGW 2200 Softswitch. Cisco PGW 2200 Softswitch can release a call when it receives a SIP REFER message. This feature allows you to optimize trunk facilities because SS7 circuits are released after call bridging or redirection occurs. With this feature, Cisco PGW 2200 Softswitch can interwork with the switches that are configured to accept RLT message sequences.

**Note**

For more information, see the [Nortel Release Link Trunk \(RLT\) Support](#) feature module.

## QSIG Tunneling over SIP

The Cisco Unified Communications Manager (CUCM) clusters are used to interwork directly by tunneling QSIG for callback scenarios. With this feature, interworking among CUCMs can be enhanced by tunneling QSIG over the Session Initiation Protocol (SIP) through Cisco PGW 2200 Softswitch, which acts as a transit switch.

The QSIG Tunneling over SIP feature provides a new interface for QSIG Tunneling over SIP protocol in Cisco PGW 2200 Softswitch for callback scenarios. This feature enables transparent interworking between Call Managers by tunneling the QSIG information in the SIP messages.

Applying this feature, Cisco PGW 2200 Softswitch will interwork with the Call Managers (single-cluster or multiple-cluster configurations) on SIP interfaces as a transit switch.

**Note**

For more information, see the [QSIG Tunneling over SIP](#) feature module.

## Secure Real-time Transport Protocol Support

The Secure Real-time Transport Protocol Support feature enables the Cisco PGW 2200 Softswitch to handle MGCP-based TDM and SIP calls that have media authentication and encryption of the Secure Real-time Transport Protocol (SRTP). This feature adds security to media traffic in your network. The Cisco PGW 2200 Softswitch can fall back from SRTP to non-secure Real-time Transport Protocol (RTP).

**Note**

MGCP-based TDM calls are calls that originate from or terminate on MGCP-based TDM trunks. SIP calls are calls that originate from or terminate on SIP trunks.

**Note**

For more information, see the [Secure Real-time Transport Protocol Support](#) feature module.

## SIP Profiles

This feature introduces new service profiles for SIP, EISUP, and other protocols. Service profiles improve provisioning and security for the Cisco PGW 2200 Softswitch by allowing you to create a customized set of call properties and assign it to a call trunk group.

This feature includes four new profile types:

- SIP profiles—Profiles for SIP trunk groups.
- EISUP profiles—Profiles for EISUP trunk groups.
- Domain profiles—Profiles based upon a domain name. Domain profiles are for SIP interfaces only.
- Common profiles—General profile type that can handle SIP and EISUP trunk groups as well as properties from other protocols. SIP and EISUP profiles can contain references to a common profile.



**Note**

For more information, see the [SIP Profiles](#) feature module.

## SIP-I Protocol

This feature, SIP-I (SIP with encapsulated ISUP), is an ITU-defined SIP extension which allows IP networks to provide services that are supported by ISUP networks, for example, malicious call identification. The feature allows the Cisco PGW 2200 Softswitch to interwork between SIP-I and ISUP, and also to interwork between SIP-I and other protocols such as SIP, H.323, PRI, and QSIG. Where PSTN services are required in IP networks, SIP trunks with SIP-I support can be the preferred method for supplying these services, because the ISUP content is encapsulated in SIP message headers.

The Cisco PGW 2200 Softswitch supports ITU, ANSI, German, UK, Finnish ISUP, and Russian (CSCsv88752) encapsulated in SIP-I messages, which allows a high degree of interworking for many services across a SIP-I configured link. You can provision the closest base or the closest country-specific SIP-I variant if you are using SIP-I for other ISUP variants. The service interoperability level between SIP-I and other protocols such as SIP, H.323, PRI, and QSIG, is lower than the interoperability level between SIP-I and ISUP, but is nearly equivalent to the interoperability level between those protocols and ISUP today.

The SIP-I Protocol feature is useful in a next-generation network (NGN) emulation model, where the Cisco PGW 2200 Softswitch, working with the Cisco BTS 10200 Softswitch in a SIP solution, communicates with other NGNs using SIP-I. This new feature is also useful for bridging existing PSTN networks without TDM interconnections being required.

Russian SIP-I support was added in CSCsv88752.



**Note**

For more information, see the [SIP-I Protocol](#) feature module.

## Support for Tel URI in SIP Diversion Header

Diversion information in incoming SIP messages, such as INVITE and 3xx, may have tel URI. Currently, the Cisco PGW 2200 Softswitch supports only the SIP URI in the Diversion header. The Suppression of Redirecting Number and Information feature enables the Cisco PGW 2200 Softswitch to relay the Diversion headers received with incoming SIP requests or responses to the outgoing SIP network. If

multiple Diversion headers are present, the Cisco PGW 2200 Softswitch relays information pertaining to all the Diversion headers to the outgoing SIP network. The Cisco PGW 2200 Softswitch will also parse and handle the tel-URI-formatted Diversion headers in the SIP.

**Note**

For more information, see the [Support for Tel URI in SIP Diversion Header](#) feature module.

## Support of PAID Tel URI

The Support of PAID Tel URI feature enables the Cisco PGW 2200 Softswitch to parse the Telephone Uniform Resource Identifier (tel URI) information, and pass it from the P-Asserted-Identity (PAID) header to Calling Line Identification (CLI) of ISUP message.

Before this feature, when the Cisco PGW 2200 Softswitch received a PAID header from SIP, it stored the SIP URI of the PAID and used it to build the calling party number. Tel URI in PAID header was ignored.

With this feature, when both tel URI and SIP URI are present in the message, the Cisco PGW 2200 Softswitch uses the tel URI in preference to SIP URI. If a SIP INVITE message contains multiple PAID headers, the Cisco PGW 2200 Softswitch uses the first Tel URI of PAID header.

The following examples shows an incoming PAID header with tel URI:

```
P-Asserted-Identity: "ego ego"<tel:+4533591161>
```

The Cisco PGW 2200 Softswitch does not support the instance where other parameters are present in the tel URI. For example, PGW does not support the following type of Tel URI in PAID:

```
tel: +1-800-234-5678;cic=2345
```

The Support of PAID Tel URI feature addresses the support of tel URI in PAID header for SIP-to-ISUP calls and ISUP-to-SIP calls. Calls originated from EISUP side and terminated on SIP side are also supported. All the variants of ISUP and the protocols that ISUP uses, including EISUP, are supported. This feature is not applicable to SIP-SIP calls. That is, the Cisco PGW 2200 Softswitch does not parse tel URI in SIP-SIP calls. Except for the URI, no other parameters are supported for this feature. The Cisco PGW 2200 Softswitch does not support Tel URI of any form in any of the SIP headers.

**Note**

For more information, see the [Support of PAID Tel URI](#) feature module.

## Support of SIP P-Headers for 3GPP

The Support of SIP P-Headers for 3GPP feature extends handling capabilities of SIP P-headers on the Cisco PGW 2200 Softswitch. The Cisco PGW 2200 Softswitch supports three more SIP P-headers for Third Generation Partnership Project (3GPP):

- P-Charging-Function-Addresses
- P-Charging-Vector
- P-Access-Network-Info

This feature enables service providers to correlate charging and access network information across multiple entities within a user-defined trusted zone. Service providers can use these two types of information saved as call detailed records (CDRs) for further analysis and actions.

In a typical deployment, the Cisco PGW 2200 Softswitch interworks voice services between two IP Multimedia Subsystem (IMS) core networks. It also interworks voice service among PSTN networks and IMS core networks. Each Cisco PGW 2200 Softswitch pair functions as a Breakout Gateway Control Function (BGCF) server or a Media Gateway Controller Function (MGCF) server.

This feature provides the following benefits:

- Service providers can be aware of the type of access network that the call arrived from (for example, cell site identifier) and store these records.
- Service providers can match records from SIP devices (for example, proxies, softswitches, and application servers) for improved CDR or billing purposes.
- Service providers can supply to SIP devices (for example, proxies, softswitches, and application servers) in their network the IP address of the billing entity for a subscriber so that the subscriber is billed accordingly.

The Support of SIP P-Headers for 3GPP feature has the following restrictions and limitations:

- Cisco PGW 2200 Softswitch supports the three SIP P-headers in SIP messages for session establishment only. These messages are
  - SIP messages: INVITE, 180 Ringing, 181 Call Is Being Forwarded, 183 Session Progress, and 200 OK
  - EISUP messages: initial address message (IAM), call progress message (CPG), address complete message (ACM), answer message (ANM), and connect message (CON)
- Cisco PGW 2200 Softswitch does not support the three SIP P-headers for mid-call services: call hold, call resume, and call transfers.



**Note**

For more information, see the [Support of SIP P-Headers for 3GPP](#) feature module.

## Suppression of Redirecting Number and Information

When a call that is made from the ISUP (ETS\_300\_356) to the Session Initiation Protocol (SIP) is redirected to the ISUP (ETS\_300\_356), the following information is sent in Initial Address Messages (IAM) or Address Complete Messages (ACM):

- Original Called Number in an IAM
- Redirecting Number in an IAM
- Call Diversion Information in an ACM
- Redirection Information in an IAM
- Redirection Number in an ACM

The Suppression of Redirecting Number and Information feature enables the optional suppression of the above parameters in IAMs and ACMs. In incoming messages, these parameters are parsed and processed for all existing call logics. The decision about suppression is taken when encoding or packing the ISUP messages in the outgoing direction of the Cisco PGW 2200 Softswitch. The ISUP trunk group properties are used to configure the suppression.



**Note**

For more information, see the [Suppression of Redirecting Number and Information](#) feature module.

## TCP Transport for SIP Phase II

The TCP Transport for SIP Phase I feature introduced support for multiple transport protocols on the PGW 2200 Softswitch in Release 9.7(3). This feature extends the benefits of TCP Transport for SIP Phase I by adding more flexible configuration options for the UDP and TCP transport protocols.

This feature provides the following benefits:

- Dynamic mode that provides simultaneous support for TCP and UDP
- Improved compatibility with RFC 3263, 3261, 2915, and 2782
- Support for switching between TCP and UDP during a session
- Support for calls that use a different transport protocol in each call leg
- Support for DNS-based selection of a call's transport protocol and destination address



**Note**

For more information, see the [TCP Transport for SIP Phase II](#) feature module.

## TG Advance

In the current instance of normal Trunk group (TG) advance, if the number of advances meets or exceeds the \*.MaxNumTGAdvances value defined in XECfgParm.dat, the failure cause is set to Temporary Failure, and the treated cause code that started the reattempt cycle will not be passed to the originating side. The cause code will always be Temporary Failure, no matter what the terminating call release cause code is.

With the introduction of the TG Advance feature, the release cause code is passed transparently to the originating side in case of a failure from a terminating call leg.



**Note**

For more information, see the [TG Advance](#) feature module.

## Installation Notes

This section contains information and procedures you can use to remove, upgrade, or install the Cisco PGW 2200 Softswitch software. It also contains information about software patches.

## Acquiring the Software

The Cisco PGW 2200 Softswitch software is provided to users on CD. Before installing the software, check the solution release notes and the web for the most current patch level. If the information on the CD matches the information provided on the web and in the solution release notes, you can install the software and patches directly from the CD.

If the web information is more current, complete the following procedure to obtain software patches from Cisco.com.

## Release 9.8(1) Patch 4 and Earlier

Software files for Patch 4 and earlier are located in the following directories.



### Note

You must be logged into [www.cisco.com](http://www.cisco.com) to see these patches.

Media Gateway Controller 9.8(1) Sparc Version:

<http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-981-sparc>

Media Gateway Controller 9.8(1) Opteron Version:

<http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-981-opteron>

## Release 9.8(1) Patch 5 and Later

Use the following procedure to locate the software files for Patch 5 and later:

- 
- Step 1** From the Cisco.com page, select the **Download Software** link (located under Support). The Download Software page displays.
- Step 2** From the Software Center page, select the **Voice and Unified Communications** link. A login box displays.
- Step 3** Enter your Cisco.com user name and password and press **OK**. After authentication, a list of Voice and Unified Communications products displays.
- Step 4** Select links in the following sequence:
1. IP Telephony
  2. Call Control
  3. Cisco PGW 2200 Softswitch
  4. Cisco PGW 2200 Software Version 9
- Step 5** Select the links for the desired software release.
- Step 6** Download the latest patch file, `patch981sparc.sh` or `patch981opteron.sh`.



### Caution

Be sure that you download the *latest* patch file, `patch981sparc.sh` or `patch981opteron.sh`. If you do not download the *latest* patch, your system might lose data from the TimesTen database during the patch upgrade.

---

## Installing and Upgrading the Software

Read all notices and statements in this section.

## Important Notices and Statements

**Note**

If you are installing software Release 9.8(1) for the first time, see *Cisco PGW 2200 Softswitch Release 9.8 Installation and Configuration Guide* for instructions.

**Note**

In *Cisco PGW 2200 Softswitch Software Release 9.8 Installation and Configuration Guide*, observe the following change: In the “[Configuring SNMP Support Resources](#)” section, SNMP MIB measurements are valid only on the active node. They are *not* replicated to the standby node.

**Caution**

Before upgrading from a current version of Software Release 9 to a higher level, you must verify software release version compatibility by contacting Cisco TAC (see the “[Obtaining Documentation and Submitting a Service Request](#)” section on page 52) or your Cisco account representative. Software release version incompatibility may cause service disruption.

**Caution**

When upgrading a redundant system, verify that the `pom.dataSync` parameter (located in `/opt/CiscoMGC/etc/XECfgParm.dat`) is set to **false** to maintain calls and preserve your configuration.

**Caution**

No validation is performed on the IDs you enter. If you enter an invalid ID, the utilities package does not add any accounts.

**Caution**

Some features might not work as expected when upgrading to Release 9.8(1). Features such as session refresh, midcall updates, and DTMF propagation might not work as expected for calls that were established before the start of the upgrade because complete call continuity across upgrade and switchover is not supported, which means that although established calls are replicated during upgrade, the data that is replicated is limited to basic call information.

Perform the following procedure to ensure that DTMF propagation works when upgrading to Release 9.8(1).

- Perform configuration export and migration to Release 9.8(1) in the laboratory.
- On the upgraded version available in the lab, create and execute a list of test cases revolving around the core functionality for which deployment is being used. Pay special attention to the test cases involving the set of configured optional trunk group properties in the current deployment. This is because in some cases, the parameter value interpretation and changes in usage occur, and these might not be documented for all the cases. These test cases should also include scenarios revolving around billing (CDR generation and interpretation) for the most common call flows in the deployment.
- Check the versions of PGW adjuncts for compatibility with the new PGW version. If required, consult the Cisco Technical Assistance Center.
- Please keep the rollback procedure at hand when you are going to upgrade your system.

**Tip**

If you have trouble installing the utilities package, make sure that you do not have a transpath group in your group file (located in /etc).

## Additional Cautions and Notes for Patch 5 and Later

All the cautions and notes in this section apply to Patch 5 and later.

**Caution**

Be sure that you have downloaded the *latest* patch file, `patch981sparc.sh` or `patch981opteron.sh`, as described in the “[Release 9.8\(1\) Patch 5 and Later](#)” section on page 23. If you have not downloaded the *latest* patch, your system might lose data from the TimesTen database during the patch upgrade.

**Caution**

You must delete TimesTen replications between the active and standby Cisco PGW 2200 Softswitch pair before the upgrade. During the patch upgrade and downgrade period, ensure that you do not enable operation of the data replicator and TimesTen replicator. After the upgrade, restore the TimesTen replicator on the active and standby pair of the Cisco PGW 2200 Softswitch. For instructions on how to disable and restore the replicator, see [Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide](#).

**Caution**

Be sure to use `./backupDb.sh ttbackup.tar` to back up the TimesTen database before starting the upgrade. If you do not back up the database, and your system experiences a database problem during the upgrade, you have no way to restore any lost data.

**Note**

Before the upgrade, start the TimesTen daemon. If the TimesTen daemon is not running, use the command `/etc/init.d/tt start` with the root privilege. For instructions on how to start and stop the TimesTen daemon, see [Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide](#).

## Using the Patch Upgrade Procedure

To install software patches, use the procedure provided in the technical note [Patch Upgrade Procedure for Cisco PGW 2200 Softswitch Release 9.6 and Later](#).

The protocol packaging has been improved so that you need only load and install protocols that you require. Previously, the entire protocol suite was packaged and delivered as a unit. With the improved packaging protocol:

- Standard installation script allows you to specify which protocol set(s) are required on your platform.
- Only packages containing the desired protocols are installed as part of the standard installation.

The same number of packages available with the initial release still exists; however, they have a new nomenclature that is required for support of patching later in the release life cycle. You have the option to install only the packages containing required protocols.

The protocol packages are labeled `CSCOnnvvv`:

nn—Indicates the specific protocols you need for your environment.

vvv—Indicates the version level of the patch.

For example, at the time of the release you are given protocol patch CSC001000.pkg. The 01 indicates a specific protocol applicable to your environment; 000 indicates the revision level. The next time a set of protocol patches is built, the 000 is incremented by 1 (001).


**Caution**

Be sure that you have downloaded the *latest* patch file, patch981sparc.sh or patch981opteron.sh, as described in the “[Release 9.8\(1\) Patch 5 and Later](#)” section on page 23. If you have not downloaded the *latest* patch, your system might lose data from the TimesTen database during the patch upgrade.


**Note**

If you encounter issues with PGW operation, please ensure that the latest patch version is installed before trying to obtain technical support.


**Note**

You must always install the 00 protocol package when upgrading a protocol patch level. If the 00 protocol package is not installed, the upgrade attempt fails. The Protocol File Missing alarm displays.

Be sure that you have downloaded the latest patch file as explained in the “[Release 9.8\(1\) Patch 5 and Later](#)” section on page 23. Navigate to the /opt/SW/SxxPxx directory (for example, /opt/SW/S5P5), and copy the packages you want to apply into your local directory (/opt/SW/SxxPxx) for installation.

The installation script requires one of the following options:

- Option 1—**patch status** gives you an output showing which protocol patches are installed on the system. The installed protocol packages are required (must be downloaded) for you to update the software. The exception is if you need a new protocol that was not previously delivered. In this case, you need to download an extra package (the package that the new protocol is delivered in). This option should be run before the current patches are removed from the system.
- Option 2—**patch all** automatically searches the current directory, /opt/SW/SxxPxx (for example, /opt/SW/S5P5), and the installed system to determine the most recent available patch, and automatically updates the system with that patch. This applies to protocol and system patches. All uninstall and install activities are handled by the script. The command for this is patch all. The patch all command does not require a second argument.
- Option 3—**patch system [latest | <alternate patch number>]** specifies the exact patch level for system patches you choose to install on the system. You can specify that any available patch level be installed. All uninstall and install activities are handled by this script. This option requires one of the following arguments:
  - latest—Installs the most recently downloaded patch. This argument should be used with the system and protocol commands used in options 3 and 4.
  - <number>—Indicates the patch number <vvv> that you want to install. This argument should be used with the system and protocol commands used in options 3 and 4.
- Option 4—**patch protocol [latest | <alternate patch number>]** specifies the exact patch level for protocol patches you choose to install on the system. You can specify that any available patch level be installed. All uninstall and install activities are handled by this script. This option requires one of the following arguments:
  - latest—Installs the most recently downloaded patch. This argument should be used with the system and protocol commands used in options 3 and 4.

- <number>—Indicates the patch number <vvv> that you want to install. This argument should be used with the system and protocol commands used in options 3 and 4.

The following shows a sample output of option 2, **patch all**, which automatically searches the current directory and the installed system to determine the most recent available patch located in /opt/SW/SxxPxx, for example, /opt/SW/S5P5 (protocol and system), and automatically updates the system with that patch level:

```
bash-3.00# ./patch all
```

Note:

From Release 9.8(1), PGW may change TimesTen database schema during patch application, please make sure

- (1) TimesTen database has been backed up before applying the patch
- (2) TimesTen replication has been stopped before applying the patch
- (3) TimesTen daemon keeps running during patch application

```
Have these preconditons all been met? [y] [y,n,?,q] y
```

```
The following patches are about to be removed from your system:
```

```
CSC00004
CSC001004
CSC002004
CSC010004
CSC020004
CSC030004
CSC031004
CSC032004
CSC033004
CSC040004
CSC041004
CSC042004
CSC050004
CSC060004
CSC070004
CSC071004
CSC080004
CSC0gs004
```

```
The following patch(es) are about to be added to your system from the local directory:
```

```
CSC000005.pkg
CSC001005.pkg
CSC002005.pkg
CSC010005.pkg
CSC020005.pkg
CSC030005.pkg
CSC031005.pkg
CSC032005.pkg
CSC033005.pkg
CSC040005.pkg
CSC041005.pkg
CSC042005.pkg
CSC050005.pkg
CSC060005.pkg
CSC070005.pkg
CSC071005.pkg
CSC080005.pkg
CSC0gs005.pkg
```

```
Are you sure this add/remove scenario is correct? [y] [y,n,?,q]
```

## System Level Equivalency

Table 5 provides the system level equivalency for each protocol patch. For example, after you install CSCOnn006, Release 9.8(1) is equivalent to Release 9.7(3) patch level CSCOnn025 (contains all patches and features included in Release 9.7(3) up to patch CSCOnn025).

**Table 5** System Level Equivalencies for Protocol Patches

Patch Number	System Level Equivalency
Release 9.8(1) S16P16	9.7(3) Patch CSCOnn025
Release 9.8(1) S15P15	9.7(3) Patch CSCOnn025
Release 9.8(1) S14P14	9.7(3) Patch CSCOnn025
Release 9.8(1) S13P13	9.7(3) Patch CSCOnn025
Release 9.8(1) S12P12	9.7(3) Patch CSCOnn025
CSCOnn011	9.7(3) Patch CSCOnn025
CSCOnn010	9.7(3) Patch CSCOnn025
CSCOnn009	9.7(3) Patch CSCOnn025
CSCOnn008	9.7(3) Patch CSCOnn025
CSCOnn007	9.7(3) Patch CSCOnn025
CSCOnn006	9.7(3) Patch CSCOnn025
CSCOnn005	9.7(3) Patch CSCOnn017
CSCOnn004	9.7(3) Patch CSCOnn017
CSCOnn003	9.7(3) Patch CSCOnn017
CSCOnn002	9.7(3) Patch CSCOnn017
CSCOnn001	9.7(3) Patch CSCOnn017

Table 6 provides the system level equivalency for each system patch. For example, after installing CSCOGs006, release 9.8(1) is equivalent to release 9.7(3) patch level CSCOGs025 (contains all patches and features included in release 9.7(3) up to patch CSCOGs025).

**Table 6** System Level Equivalencies for System Patches

Patch Number	System Level Equivalency
Release 9.8(1) S16P16	9.7(3) Patch CSCOGs025
Release 9.8(1) S15P15	9.7(3) Patch CSCOGs025
Release 9.8(1) S14P14	9.7(3) Patch CSCOGs025
Release 9.8(1) S13P13	9.7(3) Patch CSCOGs025
Release 9.8(1) S12P12	9.7(3) Patch CSCOGs025
CSCOGs011	9.7(3) Patch CSCOGs025
CSCOGs010	9.7(3) Patch CSCOGs025
CSCOGs009	9.7(3) Patch CSCOGs025
CSCOGs008	9.7(3) Patch CSCOGs025
CSCOGs007	9.7(3) Patch CSCOGs025

**Table 6** System Level Equivalencies for System Patches (continued)

Patch Number	System Level Equivalency
CSCOGs006	9.7(3) Patch CSCOGs025
CSCOGs005	9.7(3) Patch CSCOGs017
CSCOGs004	9.7(3) Patch CSCOGs017
CSCOGs003	9.7(3) Patch CSCOGs017
CSCOGs002	9.7(3) Patch CSCOGs017
CSCOGs001	9.7(3) Patch CSCOGs017

## Patch Test Combinations

Table 7 provides a list of the patch combinations that were used during testing. Use this list to determine which protocol and system patches should be installed before you run the Cisco PGW 2200 Softswitch software. It does not matter which patch (protocol or system) is installed first.

**Table 7** Patch Test Combinations

Protocol Patch	System Patch
Release 9.8(1) S16P16	Release 9.8(1) S16P16
Release 9.8(1) S15P15	Release 9.8(1) S15P15
Release 9.8(1) S14P14	Release 9.8(1) S14P14
Release 9.8(1) S13P13	Release 9.8(1) S13P13
Release 9.8(1) S12P12	Release 9.8(1) S12P12
CSCOnn011	CSCOGs011
CSCOnn010	CSCOGs010
CSCOnn009	CSCOGs009
CSCOnn008	CSCOGs008
CSCOnn007	CSCOGs007
CSCOnn006	CSCOGs006
CSCOnn005	CSCOGs005
CSCOnn004	CSCOGs004
CSCOnn003	CSCOGs003
CSCOnn002	CSCOGs002
CSCOnn001	CSCOGs001

# Resolved Caveats Listed by Patch Number

This section lists the caveats resolved in each patch.

## Release 9.8(1) S16P16

Release 9.8(1) S16P16 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtx54513	2	engine	PGW does not update cached SDP.
CSCty97423	2	mdl-sip	Redirecting number present in IAM after 302 (teluri) response from TCC side.
CSCtz11534	2	pkg	"propSet.xml.dat " opening and ending tags mismatch in validation tag.
CSCth89516	3	ioccsip	PGW does not parse 500 errors SIP message with space after header name.
CSCtt04217	3	engine	PGW does not forward 183 session in progress.
CSCtu02137	3	engine	PGW replies with a wrong SDP to re-INVITE or refresh INVITE.
CSCtx12266	3	ioccsip	B-number changes before sending the inap query to SCP.
CSCtx39474	3	engine	SS7-EISUP-SIP call is not resuming.
CSCtx70833	3	protocol	No 183 is sent after E-ACM is received.
CSCtx70867	3	ioccsip	RPID generation problem when Topology-Hiding is enabled.
CSCti28029	4	mdl-q761	PGW does not transparently transfer CPC across EISUP.
CSCts41333	4	mdl-sip	Hung call in ISUP to SIP-I call flow.
CSCtt20946	4	engine	License Rejecting Reason SBE interface in PGW CDR.
CSCtt99645	4	engine	Issue in handling NEW SDP coming from terminating side before answer.
CSCto31148	6	engine	Newly active PGW sent RSC on the circuit having transient state.
CSCtx11785	6	mdl-callctrl	PGW should ignore the CANCEL received after sending a 200 OK for Initial.
The following defects are released with limited testing (unit testing only).			
CSCtx58605	2	iocceisup	PGW rejects EISUP NOTIF with a H323 Join Request.
CSCtx98059	2	engine	When engine is coring, standby node goes to OOS.
CSCts45811	4	protocol	B-number is concatenated when OOverlap is configured and terminating reselection happens.

## Release 9.8(1) S15P15

Release 9.8(1) S15P15 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtg20032	2	ioccm3ua	PGW SCTP assoc intermitently re establish after network.
CSCtr11781	2	engine	Hold timer is not reset after receiving.
CSCtr28583	2	engine	PGW loses privacy header in 200 OK in SIP-SIP call.
CSCtr44662	2	ioccsip	ACK for 200ok is not sent on from PGW to CSCF.
CSCte51748	3	engine	Call does not reselect TKG with INAP controlled calls.
CSCtq67629	3	engine	PGW fax transfer fail after session refresh INVITE.
CSCtq77661	3	mdl-sip	PGW not sending SIP info out.
CSCtr66486	3	engine	PGW sends MDCX to gateway and MDCX message fails because of leg2 state.
CSCtr69566	3	mdl-cdr	Wrong Value for Dialed Number Nature of Address.
CSCts05184	3	mdl-analysis	Video Calls are being failed when COT=1 in IAM.
CSCts15101	3	engine	PGW always selects secondary path to send traffic on sctp associations.
CSCtc09373	4	mdl-lcm	Double Commit of CSCtb05775.
CSCtr22547	4	mdl-sip	Got SDP in 1st 183 & local ringback played on getting 2nd 183 w/o SDP.
CSCtr50392	4	mml	MML help for Mlppsupport have missing suggestion.
CSCtn05782	6	engine	Comma seperated multi codec use in call breaks BAMS parser.
CSCto70617	6	engine	PGW High CPU utilization.
CSCtq78782	6	mdl-lcm	PGW ignoring T38 re invite.
CSCtr40620	6	engine	Hairpining (tdm switched) for ISUP/ISUP calls and ringback tone for MGCP.

The following defects have undergone only unit testing.

CSCtr15065	2	ioccsip	PGW into race condition when getting a Call hold before SIP ACKPGW.
CSCtn46869	3	mdl-lcm	Hung call in IN_TRIGGER scenario.

## Open Defect in 9.8(1)S15P15 Release

### New defect

Identifier	Severity	Component	Headline
CSCts66527	3	mdl-sip	MLPP local handling doesnot work when mlppsupport is set.

### Legacy Defect

Identifier	Severity	Component	Headline
CSCtk69988	2	ioccm3ua	PGW SCTP assoc intermitently re establish after network.
CSCtu01301	3	design	PGW can't handle faulty h248 responses from MGX
CSCto64058	3	engine	Cic gets stuck in INTERFACE DISABLED state.
CSCtt99645	3	engine	Issue in handling the "NEW SDP" coming from term. side before answer.
CSCtt04217	3	engine	PGW doesn't forward 183 session in progress.
CSCtt47211	3	install	Installation of CSCOh036 package disrupts functioning of TFTP on Opteron.
CSCtk70485	3	mdl-pri	No REL sent by PGW to PRI side for REL(cause value=46) from ISUP side.
CSCtt70724	3	mdl-sip	Comma is attached with parameter Supported value in BYE.
CSCtr62044	3	performance	Media issue with PSTN call - PGW VM.
CSCtr61559	3	upgrade	Solaris 10 install on Sun Opteron X4270 platforms: No disks found Error.

## Release 9.8(1) S14P14

Release 9.8(1) S14P14 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtn24780	2	engine	Second CPG race condition causes FACILjavascript:SWESubmitForTY to fail.
CSCto40526	2	engine	MCL 3 and call blocking when going from 9.7(3) S29P29 to 9.8(1) S12P12.
CSCtq44828	2	mdl-sip	RPID missing phone number in refresh INVITE.
CSCtq60171	2	ioccsip	TCP socket creation.
CSCtq81432	2	mdl-sip	SDP missing in refresh INVITE from 9.8(1) after upgrade.
CSCti72354	3	engine	COT causes one way audio for PGW 9.7 -> EISUP -> PGW 9.8 call flow.
CSCtj62056	3	install	PGW MGC_Toolkit does not convert CDRs.
CSCti03681	3	engine	PGW sends REL with cause value 8 in place of cause value 46 at OCC side.
CSCtq17300	3	mdl-lcm	Handling of release messages at PGW in LCM module is not correct.
CSCtq61570	3	ioccsip	IPinmapping entry getting incorrectly picked
CSCtg91916	4	mml	Removing a percent route failed trough batch mml.
CSCth27707	4	mmdb	9.7(3)S29P29 timesten database error in platform.log.
CSCtk95441	4	engine	PGW reads incorrect value of remote retrieval indicator.
CSCtn49455	4	engine	PGW DefaultDN is mapped to A-number instead of From header in CDR.
CSCto33664	4	engine	Originating CIC hangs when COT fails on terminating side.
CSCtj03366	6	engine	Make REDIRECTION_INFO optional from EISUP IAM message.
CSCtn77652	6	engine	PGW PN number is not modified by AInternationalPrefix/ANationalPrefix.
CSCto76476	6	mdl-lcm	SIPQ enhancement for Sip Call Back.
CSCto85936	6	engine	Configurable payload number for clear channel codecs.

The following defects have undergone only unit testing.

CSCtq45712	2	ioccsip	TCP processing threads in PGW stuck in mutex lock.
CSCtn32100	3	mdl-eisup	CLI issue on transfer to another H-UCS site is an unknown no.
CSCtn62466	3	engine	Both RSSN links go down if one of them is down.
CSCtn67594	3	engine	No ringback tone. PGW sends 183 progress without SDP instead of 180 ringing.
CSCto13403	3	engine	PGW does not send RLC after REL (41) from PSTN.
CSCtf83754	4	engine	"PEER LINK A/B FAILURE" alarms even if link is good.

Identifier	Severity	Component	Headline
CSCtl97001	6	mdl-in	PGW 9.8 needs to support the Cancel message.
CSCtn16827	6	mdl-analysis	No Ringback Tone—PGW is not propagating PI value 1.
CSCto02123	6	iocceisup	There is no media when blind transfer PSTN call back to PSTN phone.

## Release 9.8(1) S13P13

Release 9.8(1) S13P13 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtl86738	2	engine	PGW MLPP PRI facility is not understood by customer PBXs.
CSCth89591	3	mdl-mgcp	PGW H.248 handling: handling of 5xx response to Subtract.
CSCti37107	3	engine	Prefix convert table matching logic is wrong.
CSCtj20858	3	mdl-lcm	PGW 9.8 cut through value of 2 is handled incorrectly.
CSCtk07615	3	mdl-analysis	From field is not mapped to CgPN when DefaultDN set and NP query are performed.
CSCtl12708	3	ioccc7	9.8(1) ISDN to PSTN calls, some cics hung.
CSCtn16638	3	mdl-lcm	Echo cancellation rollback CSCth60299 & CSCti27728.
CSCtd72295	4	mdl-in	INAP/CS1 in Finland does not support MT=end.
CSCtf35928	4	engine	DialPlan loading failed—call cannot be made successfully.
CSCtj43749	4	mdl-sip	Hung calls are seen after upgrading to 9.8.
CSCtk55008	4	mdl-sip	SIP diversion field needs to be case sensitive.
CSCtk83382	4	provision	Unable to delete value of bearername in SIPtrngrp.
CSCtk95540	4	engine	Originating CIC hangs when COT fails on terminating side.
CSCtk95995	4	engine	Race condition corrupts MAP memory and causes core dump and switchover.
CSCtl21313	4	engine	Provisioning behavior of respectSipUriUserParm on trngrpprop.
CSCtl85748	4	engine	In SIP to SS7 calls, after hold resume, echo cancellation turns off.
CSCtg96385	6	mdl-sip	Support for TEL URI in sip P-asserted identity header.
CSCth55985	6	engine	RMODDIG and AMODDIG both in same analysis for RedirNumForAnalysis =2.
CSCti39584	6	mdl-q761	Handling of interworking of ISUP and SIPI messages for RBWF.
CSCtj15312	6	mdl-sip	PGW 9.8 CLI for calling party incorrectly displayed.

## Release 9.8(1) S12P12

Release 9.8(1) S12P12 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtj88130	2	engine	PGW sending release with redirect info.
CSCtj97283	2	iocc eisup	The link which is already INservice is again Restored to Inservice
CSCth07784	3	sccp-tcap	TCAP load sharing among ss7 routes not working.
CSCth74855	3	engine	Call flow failure for call hold scenario if the end point is SIP Phone.
CSCti05448	3	mdl-sip	PGW2200//SIP to SIP call results in call failure
CSCti37107	3	engine	Prefix Convert table matching logic is wrong.
CSCti47789	3	ioccpriip	PGW 9.7(3) P27 - No ringback SS7 to PRI call.
CSCti70779	3	ioccc7	SR 615078427 - PGW 9.8 dropping calls for SIP-I - Generic number present.
CSCtj15582	3	ioccsip	Ipinmapping fails due to incorrect out of dialog validation.
CSCtj21058	3	flovrr	PGW Disconnects with cause Response to STATUS ENQUIRY after failover.
CSCtj41838	3	mdl-dpnss	RO for transferred calls not working.
CSCtj58660	3	engine	PGW Memory corruption when copying to sipIduMsg buffer.
CSCtj61068	3	engine	PGW GTD expects 3x CRLF to parse last GTD boundary.
CSCtj62056	3	install	PGW MGC_Toolkit doesn't convert CDRs.
CSCtj96572	3	engine	From field not mapped to AddClgPN when Tel URI is present.
CSCth28640	4	ioccsip	Sending SIP:488 when not accepting the SDP rather than SIP:500.
CSCti27728	4	mdl-q761	Echo control device not included.
CSCsj70270	6	mdl-eisup	checking user=phone param for SIP username mapping to E.164.
CSCtf56167	6	engine	TgAdvance release cause code transparency from terminating call leg.
CSCtj76717	6	mdl-lcm	MLPP Enhancement for PTO - SIP/ISUP interworking

## CSCOnn011

Patch CSCOnn011 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtf11414	2	mdl-sip	P-Asserted ID user=phone stripped in SIP to SIP calls in PGW.
CSCtj01451	2	mdl-sip	PGW P10 where Unsolicited Notify method for MWI is been rejected by 488.
CSCti10018	3	mdl-analysis	SPPGW 9.8(1)P7: set uniq NOA for CgPN failed in Opteron.
CSCti10779	3	mdl-sip	Precedence info not relayed by PGW for transfer between clusters.
CSCtb82635	4	snmp	<a href="#">SNMP Returns Wrong Status for Physical E1000G Interfaces.</a>
CSCtd46412	4	mdl-eisup	PGW CPC not transparently transferred across EISUP.
CSCtf80906	4	engine	Precautionary checks for replicator on 'size' param in communication.
CSCth84684	4	iocceisup	Switchover causes EISUP trunk to be stuck in Undefined Status.
CSCtb43272	6	mdl-sip	PGW support for GIC, RNN and CDI parameters in SIP-GTD.
CSCtf25066	6	engine	PGW has stopped processing calls silently.
CSCtf26100	6	engine	Detect hanging circuits on PGW.

### SNMP Returns Wrong Status for Physical E1000G Interfaces

The SNMP returns wrong status for physical E1000G interfaces procedure is used to check the status of the physical E1000G interfaces on the Cisco PGW 2200 Softswitch. The following procedure should only be used by customers who need to check the status of the physical E1000G interfaces.

To check the status of the physical E1000G interfaces, use the following procedure:

- 
- Step 1** Download the snmpdm and mib2agt files from the following URL:  
<http://www.cisco.com/cisco/software/release.html?mdfid=277708611&softwareid=282074253&os=Solaris&release=9.8%281%29&relind=AVAILABLE&rellifecycle=&reltype=latest>
  - Step 2** Copy both the snmpdm file and the mib2agt file to the /opt/CiscoMGC/snmp directory.
  - Step 3** Run the **cd /opt/CiscoMGC/snmp** command to change the directory.
  - Step 4** Run the **vi startcia.sh** command.
  - Step 5** Replace the line /opt/CiscoMGC/snmp/snmpdm -tcplocal -nodrweb with /opt/CiscoMGC/snmp/snmpdm -ip\_proto -tcplocal -nodrweb.
  - Step 6** Run the **pgrep snmpdm** command, and note the process ID that is displayed, for use in the next step.
  - Step 7** Run the **kill -9 PID-from-previous-step** command to stop the current process.
  - Step 8** Run the **pgrep mib2agt** command, and note this process ID that is displayed, for use in the next step.

**Step 9** Run the **kill -9 PID-from-previous-step** command to stop the current process.

## CSCOnn010

Patch CSCOnn010 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtd73981	4	mdl-lcm	Double Commit of CSCsz82836.
CSCtf75631	3	mdl-sip	PGW 9.8(1) not handling correcting the Session Refresh Requests.
CSCtg21903	6	mdl-callctrl	Support of data codec like CLEARMODE, G.nX64, G.Clear in SDP.
CSCtg41550	3	mdl-sip	PGW strips hostname of FROM URI for referred call.
CSCtg52135	3	mdl-sip	SIP URI with 1 char and 1 digit in host portion yields 400 bad request.
CSCtg56898	3	engine	PGW 9.8(1) S7P7 one way audio. Wrong media port.
CSCth35774	2	mdl-sip	PGW2200: Unacceptable characters in the Contact header results in a par.

## CSCOnn009

Patch CSCOnn009 resolves the following caveats:

Identifier	Severity	Component	Description
CSCtf05488	2	engine	PGW not resuming call.
CSCte54127	3	other	Double commit of CSCtd46230.
CSCte91272	3	ioccisdnl3	PGW MGC 9.8(1) S7P7 ETS_300_102 LLC truncated or omitted.
CSCtf30707	3	upgrade	XECfgParm.dat migration doesn't copy value for CallLimitingControl.
CSCtd40458	6	mdl-callctrl	REFER to RLT version 2 mapping.
CSCtf19393	6	mdl-lcm	OLC/CPC Enhancement.  Execute the following CLI command to add both the properties default OLI and default CPC:  <code>prov-add:trnkgrpprop:name="233",defaultoli="5",defaultcpc="7"</code>
CSCtf77123	3	engine	Double commit of CSCta91465.

## CSCOnn008

Patch CSCOnn008 resolves the following caveats:

Identifier	Severity	Component	Description
CSCtd17854	2	mdl-sip	PGW does not forward 491 response to originating leg leading to no audio.
CSCtc47154	3	mdl-lcm	ISUP - SIPI Cause analysis.
CSCtd60208	3	mdl-cdr	Field display_name(4059) is not in Answer Call Event in CDR.
CSCtd66585	3	install	DI Problem during PGW startup for patch S8P8.
CSCtc51004	4	engine	Double Commit of CSCsv78723.
CSCtf04242	4	ioccc7	PGW98 Incorrect FCI Flag.
CSCtc94812	6	provision	prov-dply takes too long to be processed.
CSCtd14197	6	mdl-sip	PGW advertises support for UPDATE method when term leg does not support.
CSCtd50096	6	engine	Workaround on PGW against SBC not handling hairpinned calls.

## CSCOnn007

Patch CSCOnn007 resolves the following caveats:

Identifier	Severity	Component	Description
CSCtc76135	2	mdl-callctrl	PGW refuses with SIP488 and attempt to switch to T389.8.
CSCtb87695	3	mdl-mgcp	Missing fields in the SDP/Origin when PGW is SBE and ASR is DBE.
CSCtc87047	3	engine	PGW 9.8(1) SIP to EISUP call is dropped after hold/unhold.
CSCta75092	6	enhancement	PGW supports 3GPP P-headers.
CSCta77122	6	mdl-sip	Connected Name and Connected Number Interworking.

## CSCOnn006

Patch CSCOnn006 resolves the following caveats:

Identifier	Severity	Component	Description
CSCtb36490	6	mdl-mgcp	9.8(1) PGW rework to support SRTP with G.Clear from CUCM.
CSCtb90673	6	mdl-tools	build spe.pl to bytecode and include update process to compile procedure.

## CSCOnn005

Patch CSCOnn005 resolves the following caveats:

Identifier	Severity	Component	Description
CSCsz93760	2	mdl-eisup	981S4P4: no voice path H323-SIP call transfer PRI
CSCsx98442	3	mdl-lcm	SS7 Hairpin call fail when localannbehavior=2 on 981S3P3
CSCsz38423	3	mdl-cdr	Assign new CDE tags value to 4052/4053 in 9.8(1)
CSCsz83008	3	mdl-sip	SIP to MGCP calls have wrong LCO when CODEC result set used with SIP-I
CSCsz84269	3	mdl-eisup	981S4P4:H323 hairpin call not work
CSCsz96408	3	mdl-sip	981S4P4: No "+" in PAID when NOA=International for COLP
CSCta41597	3	mdl-lcm	9.8(1) COLR do not have presentation restricted
CSCta43840	3	mdl-cdr	981S4P4: Empty value for CDR Tag 3001
CSCta48842	3	mdl-lcm	981S4P4: PGW treat CCM's SRTP Data Invite as RTP data call
CSCta48885	3	mdl-lcm	981S4P4: t38fax is included in CRCX LCO for SRTP Data Call
CSCta52627	3	mdl-lcm	981S4P4: data codec overwritten by GWdefaultAudioCodec in LCO
CSCta97812	3	engine	PGW will not resume call to SS7 side after hold and midcall
CSCsw79633	6	enhancement	Featurette generic tagging
CSCsz81319	6	mdl-cdr	981S4P4: No ingress media info in CDR when making SIP early offer calls
CSCta12784	6	mdl-cdr	IAM_SetupRx_TM and IAM_SetupTx_TM do not record last SAM timestamp

## CSCOnn004

Patch CSCOnn004 resolves the following caveats:

Identifier	Severity	Component	Description
CSCsw63159	2	mdl-lem	9.8(1)MCP_16core: blind transfer call hung when gateway replies error
CSCsu21578	6	mdl-callctrl	Support multi-stream terminations for TelePresence
CSCsx13857	6	mdl-callctrl	Echo cancel does not work properly
CSCsx52649	6	mdl-sip	Featurette: SIP SDP mapping to ISUP for TMR/FCI
CSCsx69430	6	mdl-callctrl	Support SRTP and G.Clear enhancement on PGW

## CSCOnn003

Patch CSCOnn003 resolves the following caveats:

Identifier	Severity	Component	Description
CSCsx54201	2	mdl-lem	982S2P2: Start MPM get lost when ACK arrives late.
CSCsv81226	6	mml	9.8(1): make SIP.udp2tcp_byte_xover a trunkgroup (profile) property.
CSCsv88752	6	mdl-callctrl	Russian SIP-I support on PGW.

## CSCOnn002

Patch CSCOnn002 resolves the following caveats:

Identifier	Severity	Component	Description
CSCsv09405	3	mdl-sip	981S1P1: No 200 OK to INFO(MPM) during hold service invoked.
CSCsv25958	3	mml	981S1P1: DelayedOfferToEarlyOfferInterworking missing in properties.dat.
CSCsv48269	3	mdl-analysis	9.8(1)p1: The service is impacted when the rtrnkgrp parameter is not set.
CSCsv20533	6	mdl-mgcp	Including egress TG vrf information in the originating side IP gateway.

## CSCOnn001

Patch CSCOnn001 resolves the following caveats:

Identifier	Severity	Component	Description
CSCsr30557	3	mdl-lcm	9801: Call released when pressing hold for SIP(VXSM) to SIP (DBE) call.
CSCsr36779	3	mdl-lcm	9801: SIP(VXSM) to SIP(VXSM) CFU to H323 one way voice path.
CSCsr93398	3	mdl-sip	9805: Wrong PAID address in Resume INVITE Message.
CSCsr99568	3	mdl-lcm	9805: SIP call failed across EISUP because message buffer wrong.
CSCsu33220	3	mdl-lcm	981FSP: SIPI(FIN)-ISUP CLI mapping not correct.
CSCsu39426	3	mdl-lcm	981: No response for Multiple INFO(MPM) for SIP-SIPI call.
CSCsu39666	3	mdl-lcm	98(1): SIP/PRI Calling Name to Q931+ Display I.E wrong.
CSCsu62209	3	mdl-sip	981: SIP Non-E164 DBR call fail when no PAID header.
CSCsu66990	3	ioccxgcp	981: SS7 call fails when set EchoCanRequired=1.
CSCsu78892	3	engine	9806: vrfname cannot be loaded for IPIPGW.
CSCsr75375	4	other	Code porting from 9.7 to 9.8 on wenxie part.
CSCsu53687	6	mdl-sip	9.8(1) Sim does not treat header name case insensitive in multipart MIME.

## CSCOgs011

Patch CSCOgs011 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCth60266	2	engine	Terminations/CICs gets unavailable at MGX VXSM after PGW 2200 switchover

## CSCOs010

Patch CSCOs010 resolves the following caveats:

Identifier	Severity	Component	Headline
CSCtd72295	4	mdl-in	INAP/CS1 in Finland does not support MT=end - hariskum
CSCtd76238	5	engine	DBDip log level should be Debug instead of Error
CSCtg35063	3	engine	PGW 9.8(1) may discard "ChargeInformation" ISUP message
CSCth10940	3	engine	PGW 9.8(1) may discard "ChargeInformation" ISUP message when cuthrough=2
CSCth26374	2	mdl-cdr	Double commit of CSCsy84261-AOC charge units for final AOCperiodictimer interval are not recorded
CSCth28008	2	mdl-pri	Double commit of CSCta59018-PRI timeslots lock IN when receiving STATUS_ENQ on P25S25
CSCth42478	3	engine	Double commit of CSCta17303-PGW engine core and fails over
CSCth49445	4	mdl-lcm	Double Commit of CSCte18906. - CIC state not cleared after pril3 link goes down
CSCth60299	4	mdl-lcm	Double Commit of CSCte89998
CSCti10842	3	engine	PGW Clears terminating call ID while destroying terminating

## CSCOs009

Patch CSCOs009 resolves the following caveats:

Identifier	Severity	Component	Description
CSCte91272	3	ioccisdn13	PGW MGC 9.8(1) S7P7 ETS_300_102 LLC truncated or omitted
CSCtf65482	3	engine	Accidental memory corruption
CSCtd40458	6	mdl-callctrl	REFER to RLT version 2 mapping
CSCtf19393	6	mdl-lcm	OLC/CPC Enhancement Execute the following CLI command to add both the properties default OLI and default CPC:  prov-add:trnkgrpprop:name="233",defaultoli="5",defaultcpc="7"
CSCtf77123	3	engine	Double commit of CSCta91465

## CSC0gs008

Patch CSC0gs008 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCtd66105	2	engine	9.8(1)S8P8: Engine Core while setting D or E type AOC service
CSCtd30439	3	mml	9.8(1)S7P7: Incomplete command would be finished for crptmesg prov
CSCtd60208	3	mdl-cdr	Field display_name(4059) is not in Answer Call Event in CDR
CSCtf21187	3	other	Double commit of CSCtf10515
CSCtf04242	4	ioccc7	PGW98 Incorrect FCI Flag
CSCtc94812	6	provision	prov-dply takes too long to be processed
CSCtd14197	6	mdl-sip	PGW advertises support for UPDATE method when term leg does not support
CSCtd50096	6	engine	Workaround on PGW against SBC not handling hairpinned calls

## CSC0gs007

Patch CSC0gs007 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCtc86854	3	mml	PROV-DPLY reporting wrong error count
CSCtc89911	3	upgrade	Backup TTDB tables before deleting during patch downgrade
CSCtd39625	3	provision	981S7P7R2: report error when provisioning sipsatellitedindenable
CSCtc96698	4	mml	9.8(1)S7P7R1: mml command numan-add:crptmsg wrong
CSCta75092	6	enhancement	PGW supports 3GPP P-headers

## CSCOs006

Patch CSCOs006 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCsz63147	2	engine	981S4P4: Engine core dump while dynamic provisioning with high traffic
CSCtb69438	3	ioem	CSipPath provision_Component cannot be found error when execute "prov-cpy"
CSCtb90675	3	replicator	9.8(1): Modified the notes for setup replicator

## CSCOs005

Patch CSCOs005 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCta20203	2	mmdb	981S4P4: engine CoreDump
CSCsw29999	3	design	981S2P2: stop and start pgw causes h248 iplnk cannot get into IS
CSCsz13590	3	engine	9.8(1)S3: engine core dump when P-Assert-id header contain anomalistic C-
CSCsz38423	3	mdl-cdr	Assign new CDE tags value to 4052/4053 in 9.8(1)
CSCsz38461	3	mml	981S3P3: prov-cpy timeout on sun fire v120
CSCsz52152	3	snmp	981S3P3: Sagt core dump
CSCsz62943	3	ioccsip	981S4P4: PGW only listening one TCP port if configured with MIT from new
CSCta07594	3	toolkit	9.8(1)S4: TV function is not working in 981S4
CSCtb35826	3	mml	Exporting function missing
CSCsw79633	6	enhancement	Featurette generic tagging
CSCtb24588	6	measm	9.8(1): PGW enhancement to send CDB 1071 for PRI trunk groups

## CSC0gs004

Patch CSC0gs004 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCsx81298	2	iocceisup	981S3P3: EISUP coredump when prov-dply
CSCsx71897	3	engine	981: engine memory leak if long time SIP to SIP call
CSCsy65965	3	ioccisdn13	ISDNBRI does not support Opteron platform
CSCsu21578	6	mdl-callctrl	Support multi-stream terminations for TelePresence
CSCsx69430	6	mdl-callctrl	Support SRTP and G.Clear enhancement on PGW

## CSC0gs003

Patch CSC0gs003 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCsw21968	2	engine	9.8(1)S2: Engine core dump in SIP (DBE) to SIP call with large CDB.
CSCsv94195	3	alrmm	981: error log was printed in the platform.log after starting PGW.
CSCsv03948	6	enhancement	PGW performance improvement on 16 cores system.
CSCsv81226	6	mml	9.8(1): make SIP.udp2tcp_byte_xover a trunkgroup (profile) property.
CSCsv88752	6	mdl-callctrl	Russian SIP-I support on PGW.
CSCsw79047	6	mdl-sip	9.8(1): Multi-IN-IP Non default port cannot accept OPTIONS.

## CSCOs002

Patch CSCOs002 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCsv87924	2	mgcp	981S2P2: mgcp core dump happened when running showtime automation scripts.
CSCsu78516	3	toolkit	simWriter does not work on special trace file.
CSCsu81266	3	design	9.8(1): mini_parse.pl cannot find the interpreter.
CSCsu92065	3	pom	981S1P1: POM coredump on sigtran regression.
CSCsv06053	3	mml	Change “sourcescreenfile” to “sourceblackfile”.
CSCsv11882	3	ioccxgcp	981: PGW sends a part of Transaction Acknowledgement message.
CSCsv36054	3	upgrade	98(1): Some potential migration issues 9.8(1).
CSCsv20533	6	mdl-mgcp	Including egress TG vrf information in the originating side IP gateway.

## CSCOs001

Patch CSCOs001 resolves the following caveats. See the [“Patch Test Combinations”](#) section on page 29 of this document to determine which protocol and system patches are needed.

Identifier	Severity	Component	Description
CSCsv06599	2	upgrade	PRI Tariff Table is lost after migration.
CSCsr03936	3	mdl-sip	981B: MDL trc file corrupts with MDO when TCC SIP with DNS Query, then tcc peer replies with a 302 message.
CSCsr99568	3	mdl-lcm	9805: SIP call failed across EISUP because message buffer is wrong.
CSCsu46745	3	snmp	9803: SNMP cannot get measurements on Opteron.
CSCsu53537	3	other	9.8(1) an error shows up when config-db is executed.
CSCsu53632	3	toolkit	981: sparc chk_inv fails
CSCsu61896	3	mml	MML batch provision fails while users add services and source domain blacklists at same time.
CSCsu78748	3	other	9.8(1): error shows when setting PermSize by using config-db.
CSCsu78892	3	engine	9806: vrfname cannot be loaded for IPIPGW.
CSCsu99224	3	ioccxgcp	981: iplnk to DBE never goes up when restart PGW.
CSCsu92087	4	engine	Port CSCsu79291 (9.7) to 9.8.
CSCsu61987	6	mml	981: Add attribute “index” of insipheader and outsipheader to config.mml.

# Protocols Supported

Table 8 lists the protocols supported by the Cisco PGW 2200 Softswitch. In this table, Switch Type refers to variations in the switch implementation of a particular protocol. Switch Type 0 means that there is no switch-specific implementation.

**Table 8 Supported Protocol Variants**

Protocol Variant Name	Protocol Family	Switch Type
ANSISS7_2K	SS7-ANSI	0
ANSISS7_92	SS7-ANSI	0
ANSISS7_C2	SS7-ANSI	20
ANSISS7_C3	SS7-ANSI	0
ANSISS7_E1	SS7-ANSI	23
ANSISS7_STANDARD	SS7-ANSI	0
ANSISS7_STANDARD_SIPI	SIP-I	0
ATT_41459	ISDNPRI	17
ATT_41459_C2	ISDNPRI	17
BELL_1268	ISDNPRI	22
BELL_1268_C2	ISDNPRI	22
BTNUP_BTNR167	SS7-UK	5
BTNUP_IUP	SS7-UK	5
DPNSS_BTNR188	DPNSS	26
dummy	AVM	0
dummy	H248	0
dummy	LI	0
dummy	MGCP	0
dummy	RA	0
dummy	SGCP	0
dummy	TCAPOverIP	0
dummy	VSI	0
EISUP	EISUP	0
ETS_300_102	ISDNPRI	27
ETS_300_102_C2	ISDNPRI	27
ETS_300_121	SS7-ITU	0
ETS_300_172	ISDNPRI	29
ETS_300_356	SS7-ITU	0
GR317	SS7-ANSI	0
HONGKONG	SS7-ITU	0
IETF_SIP	SIP	0

**Table 8 Supported Protocol Variants (continued)**

Protocol Variant Name	Protocol Family	Switch Type
ISUPV1_POLI	SS7-ITU	0
ISUPV2_AUSTRIAN	SS7-ITU	0
ISUPV2_AUSTRIAN_C2	SS7-ITU	0
ISUPV2_CZECH	SS7-ITU	0
ISUPV2_DUTCH	SS7-ITU	0
ISUPV2_FINNISH96	SS7-ITU	0
ISUPV2_FINNISH96_SIPI	SIP-I	0
ISUPV2_FRENCH	SS7-ITU	0
ISUPV2_GERMAN <sup>1</sup>	SS7-ITU	0
ISUPV2_GERMAN_SIPI	SIP-I	0
ISUPV2_ISRAEL	SS7-ITU	40
ISUPV2_JAPAN	SS7-JAPAN	10
ISUPV2_JAPAN_C2	SS7-JAPAN	0
ISUPV2_NORWEGIAN	SS7-ITU	0
ISUPV2_POLISH	SS7-ITU	0
ISUPV2_SPANISH	SS7-ITU	0
ISUPV2_SPANISH_C2	SS7-ITU	0
ISUPV2_SWISS	SS7-ITU	0
ISUPV2_SWISS_C2	SS7-ITU	0
ISUPV2_VIETNAM	SS7-ITU	0
ISUPV3	SS7-ITU	0
ISUPV3_FRENCH	SS7-ITU	0
ISUPV3_UK	SS7-UK	0
ISUPV3_UK_C2	SS7-UK	15
ISUPV3_UK_C3	SS7-UK	0
ISUPV3_UK_C4	SS7-UK	15
ISUPV3_UK_SIPI	SIP-I	0
Q721_BASE	SS7-ITU	5
Q721_BRAZILIAN	SS7-ITU	5
Q721_BRAZILIAN_C2	SS7-ITU	5
Q721_CHINA	SS7-CHINA	5
Q721_FRENCH	SS7-ITU	5
Q721_PHILLIPINE	SS7-ITU	5
Q761_97VER_BASE	SS7-ITU	0
Q761_97VER_RUSS	SS7-ITU	0
Q761_97VER_RUSS_C2	SS7-ITU	0

**Table 8 Supported Protocol Variants (continued)**

Protocol Variant Name	Protocol Family	Switch Type
Q761_97VER_RUSS_SIP	SIP-I	0
Q761_99VER_AUSTRAL_C3	SS7-ITU	0
Q761_99VER_BASE	SS7-ITU	0
Q761_99VER_BASE_SIP	SIP-I	0
Q761_ARGENTINA	SS7-ITU	0
Q761_ARGENTINA_C2	SS7-ITU	0
Q761_AUSTRAL	SS7-ITU	0
Q761_AUSTRAL_C2	SS7-ITU	0
Q761_BASE	SS7-ITU	0
Q761_BELG	SS7-ITU	0
Q761_BELG_97VER	SS7-ITU	0
Q761_CHILE	SS7-ITU	0
Q761_CHINA	SS7-CHINA	0
Q761_CHINA_C2	SS7-CHINA	0
Q761_DANISH	SS7-ITU	0
Q761_GERMAN <sup>2</sup>	SS7-ITU	0
Q761_INDIA	SS7-ITU	0
Q761_KOREAN	SS7-ITU	0
Q761_MALAYSIAN	SS7-ITU	0
Q761_NEWZEALAND	SS7-ITU	0
Q761_PERU	SS7-ITU	0
Q761_PORTUGAL	SS7-ITU	0
Q761_SINGAPORE	SS7-ITU	0
Q761_SINGAPORE_C2	SS7-ITU	0
Q761_TAIWAN	SS7-ITU	0
Q761_THAILAND	SS7-ITU	0
Q767_AUSTRALIA	SS7-ITU	0
Q767_BASE	SS7-ITU	0
Q767_BRAZIL	SS7-ITU	0
Q767_BRAZIL_C2	SS7-ITU	0
Q767_COLOMBIA	SS7-ITU	0
Q767_GUATEMALA	SS7-ITU	0
Q767_INDONESIA	SS7-ITU	0
Q767_ITAL	SS7-ITU	0
Q767_ITAL_C2	SS7-ITU	0
Q767_MEXICAN	SS7-ITU	0

**Table 8** Supported Protocol Variants (continued)

Protocol Variant Name	Protocol Family	Switch Type
Q767_NIGERIAN	SS7-ITU	0
Q767_RUSS	SS7-ITU	0
Q767_RUSS_C2	SS7-ITU	0
Q767_SINGAPORE	SS7-ITU	0
Q767_SPAN	SS7-ITU	0
Q767_SWED	SS7-ITU	0
Q767_TURKISH	SS7-ITU	0
Q931	ISDNPRI	27
Q931_AUSTRALIA	ISDNPRI	19
Q931_SINGAPORE	ISDNPRI	27
QBE	CTI-QBE	0

1. ISUPV2\_GERMAN has ETS\_300\_356 as the base variant and GERMAN as the country variant.
2. Q761\_GERMAN has Q761 as the base variant, SIEMENS as the country variant, and MOBILCOM as the customer variant.

## Known Issues and Operational Recommendations

This section contains information about known issues and the corresponding workarounds in the Cisco PGW 2200 Softswitch software release 9.8(1).



### Note

For more information about Cisco IOS issues and workarounds, see the Cisco IOS release notes for your platform.

## System File vars.pm Error After Migration from Release 9.7(3) to Release 9.8(1)

After you have migrated from Cisco PGW 2200 Softswitch Release 9.7(3) CSCOs027/CSCOnn027 to Release 9.8(1) CSCOs007/CSCOnn007 and later, there is an error in the /opt/CiscoMGC/lib/perl5/5.00503/vars.pm file after installation.

The following line shows line 17 of vars.pm after installation:

```
if ($sym =~ tr/A-Za-Z_0-9//c) {
```

Correct line 17 should be:

```
if ($sym =~ tr/A-Za-z_0-9//c) {
```

The workaround for this known issue is to manually change line 17 of vars.pm file from "if (\$sym =~ tr/A-Za-Z\_0-9//c) {" to "if (\$sym =~ tr/A-Za-z\_0-9//c) {" and save the file. The CDETS number for this issue is CSCtf30543.

## The Hostagt Process Sometimes Takes Up High CPU (Nearly 50%)

You could do following things to resolve this problem:

- Kill the hostagt process manually
- A script that monitors the hostagt process and restarts this process when it takes up high CPU consistently for certain time.



### Note

The related patches (hostagentMon.pkg and steps\_to\_run.tar) are added under *Media Gateway Controller (MGC) System Patches* on CCO at the following URL:

<http://www.cisco.com/cisco/software/type.html?mdfid=277708611&flowid=5334>

## Caveats

Use the Bug Toolkit to query caveats. The tool is located at the following URL:

[http://www.cisco.com/cgi-bin/Support/Bugtool/launch\\_bugtool.pl](http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl)

## Related Documentation

This document contains information that is related to SoftwareRelease 9.8(1). The documents that contain additional information related to the Cisco PGW 2200 Softswitch are at the following URL:

[http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd_products_support_series_home.html)

You can find the Cisco PGW 2200 Softswitch documentation map at the following URL:

[http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/products\\_documentation\\_roadmaps\\_list.html](http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/products_documentation_roadmaps_list.html)

## Before Installation

Before installing the Cisco PGW 2200 Softswitch software, consult the following related documentation for information about hardware installation and system requirements:

- *Overview Guide* for your solution
- *Cisco PGW 2200 Softswitch Hardware Installation Guide—Releases 7 and 9*
- *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide*
- *Regulatory Compliance and Safety Information for the Cisco PGW 2200 Softswitch*
- *Gateway Installation Guide* for your solution

## After Installation

After installing the Cisco PGW 2200 Softswitch software, consult the following related documentation for information on configuring and provisioning your system:

- *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide*
- *Provisioning Guide* for your solution

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

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