



Release Notes for the Cisco Media Gateway Controller Software Release 9.3(1)T

June 26, 2007

These release notes describe the features and caveats for the Cisco media gateway controller (MGC) software Release 9.3(1)T.



Note

The Cisco MGC Software was formerly called the Cisco Telephony Controller software. Some documentation might use this older name.

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Introduction

Interoperability between the old world TDM (Time Division Multiplexing) networks and new world packet networks is an essential part of the technology adoption life cycle for packet networks. This release enhances the capability of the Cisco PGW 2200 PSTN Gateway to provide the bridge between the legacy public switched telephone network (PSTN) and next-generation packet networks - supporting SS7 interconnect for dial and H.323 and SIP networks and intelligent call control and routing for media gateway control protocol (MGCP), session initiation protocol (SIP) and H.323 networks.

The Cisco PGW 2200 provides a consistent and unified interconnection that can handle dialup services, MGCP, SIP, and H.323, as well as future standards. The PGW 2200 allows service providers to deploy and operate multiple network solutions while maintaining a stable interconnection to the PSTN.

Platform Support

For a list of supported platforms refer to the following documents:

- *Cisco Media Gateway Controller Hardware Installation Guide*
Chapter 1, Table 1-1, Cisco MGC Host Configurations, at the following url:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel7/hrdwrnst/index.htm>
- *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*
(Chapter 1) at the following url:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/swinstl/index.htm>.

Software Required

For a list of required software, refer to Chapter 1 of the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide* at the following url:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/swinstl/index.htm>.

Required Swap Space

For the Cisco MGC software, you need to partition 4 GB of 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, you should use the **top** command in UNIX to see how much swap space is being used; you should then decide if more is needed. You can use the MML command **rtrv-ne-health** to obtain information from the UNIX top from within MML.

Host Hardware Requirements

Host Minimum Server Requirements

Refer to the *Cisco Media Gateway Controller Hardware Installation Guide* for the host minimum hardware requirements. Before using the minimum hardware configuration, consult with your Cisco representative to determine the hardware that will give you the best performance results based on your network configuration, proposed traffic, and desired processing power.

Local Area Network Switch

Your application might use one or more local area network (LAN) switches from the Cisco Catalyst Switch family to connect the Cisco MGC host to the MGWs and to the Cisco SLTs.



Note

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



Note

A LAN switch is not provided with the Cisco MGC.

Supported Features

The features listed in [Table 1](#) were inherited from earlier releases of the Cisco MGC Software, and are still supported in Release 9.3(1)T.

Table 1 Supported Features in Release 9.3(1)T

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 automatic number identification (ANI) authorization	Adds security and prevents fraudulent use of the network.
Support for simultaneous Voice and Dial Calls on same Media Gateway	Provides scalable and flexible service
Support for TDM Switching (Hairpinning)	Provides scalable and flexible service
Support for toll-free and 8XX numbers through the service control point (SCP)	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 support	Provides verification of the voice path.

Table 1 *Supported Features in Release 9.3(1)T (continued)*

Feature	Purpose
Support for ISDN direct-access lines	Allows direct line access to the Cisco MGC.
Support for E-ISUP inter-MGC signaling	Provides scalable and flexible service.
Support for generic routing	Provides scalable and flexible service.
Support for MGCP 0.1	Allows the Cisco MGC to control media gateway connections.
Edge-to-edge security	Prevents fraudulent use of the network.
Support for carrier-grade quality of service (QoS)	Replaces the need for traditional TDM equipment.
Support for SS7-to-SS7, SS7-to-ISDN, SS7-to-Dial, SS7-to-SIP, SS7-to-H.323, ISDN-to-SIP, ISDN-to-H.323, and ISDN-to-ISDN 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 and passthrough	Provides scalable and flexible service.
Support for Cisco media gateways	Protects investment in Cisco equipment.
Provides a reliable IP link between Cisco MGC and access servers with Reliable User Datagram Protocol (RUDP)	No single point of failure in connection between media gateways and the Cisco MGC.
Call detail records for PSTN billing	Meets carrier-grade PSTN requirements to migrate existing voice revenue streams to the packet environment and to create new voice service opportunities. Provides a CDR viewer to view billing records.
Facility associated signaling provided by the Cisco SLTs (T1/E1 WIC, optional with SS7)	<ul style="list-style-type: none"> Grooms off the bearer channels and then delivers them to the media gateway. Delivers MTP-3 to the MGC host over IP.
High Availability platform	Established calls are maintained when there is a switchover from the active MGC host to its paired standby host.
Sun Solaris 8	<ul style="list-style-type: none"> Y2K compliant Open computing platform
<ul style="list-style-type: none"> Support for 1000+ destination point codes (DPCs) Support for up to six origination point codes (OPCs) Supports 504 PRI D channels 	<ul style="list-style-type: none"> Scales cost-effectively to central office size Flexible and scalable
Quasi-associated or fully associated signaling	Ready for international markets.
Complete continuity check (two-wire and four-wire)	Meets interconnect requirements.

Table 1 *Supported Features in Release 9.3(1)T (continued)*

Feature	Purpose
NEBS Level 3 compliant	Telco-ready.
Several simplex or high availability platform options	Cost-effective options.

Cisco MGC Management

[Table 2](#) provides an overview of the management components of the Cisco MGC.

Table 2 *Management Components of the Cisco MGC*

Management Component	Description
Cisco Voice Service Provisioning Tool (VSPT)	The Cisco VSPT is a configuration/provisioning tool for the Cisco PGW 2200 and controlled media gateways. You can use its facilities to create, copy, modify, and deploy the configuration for the Media Gateway Controller host.
Alarms	<p>The Cisco MGC supports a comprehensive set of alarms (in accordance with ITU X.733):</p> <ul style="list-style-type: none"> • Processing errors • QoS alarms • Equipment alarms • Communications alarms • Environment alarms <p>You can adjust the severity of alarms and thresholds to match your carrier's severity level definitions. 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>
PEG counts	<p>You can obtain a variety of usage statistics from the Cisco MGC. 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"> • Start time • Duration • Measured value • Category • Element measured
Cisco MGC Node Manager (CMNM)	Cisco MNM is a network management tool that provides network management for the Cisco PGW 2200 that is beyond the provisioning functionality provided by the VSPT.

Switching Protocols Supported

The PGW 2200 supports the SS7 and ISDN PRI (ANSI, ITU, and ETSI).

Related Documentation

Before Installation

Before you install the Cisco MGC software, consult the following related documentation for information about hardware installation and system requirements:

- *The Overview Guide* for your solution
- *Cisco Media Gateway Controller Hardware Installation Guide*:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/hrdwrnst/index.htm>
- *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/swinstl/index.htm>
- *Regulatory Compliance and Safety Information for the Cisco Media Gateway Controller*:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/rcsi/index.htm>
- *The Gateway Installation Guide* for your solution

After Installation

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

- *Cisco Media Gateway Controller Software Release 9 Provisioning Guide*:
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/prvgde/index.htm>
- *The Provisioning Guide* for your solution

The most recent patch set should be loaded. Patches can be found at the following url:

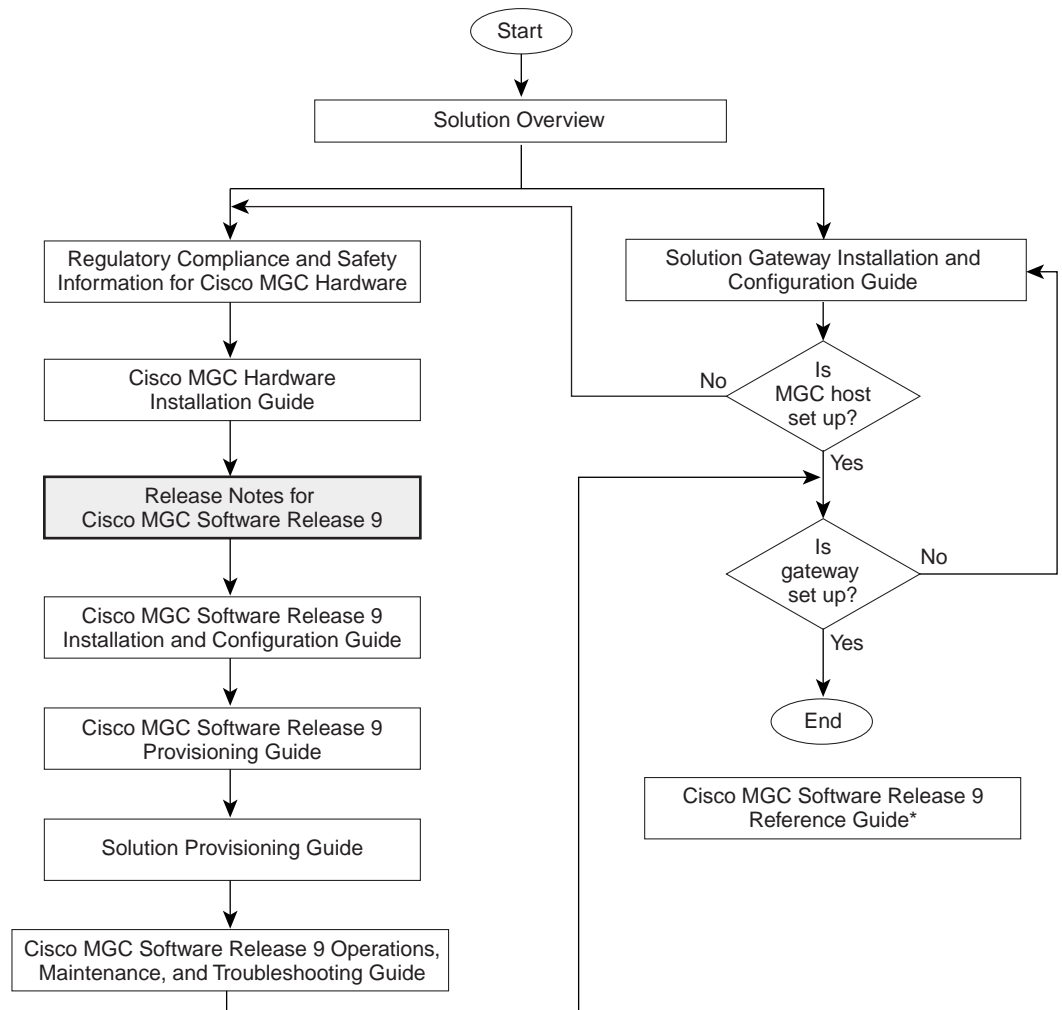
<http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>

General Purpose Documents

- *Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/omts/index.htm>
- *Cisco Media Gateway Controller Software Release 9 Messages Reference Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/errmsg/index.htm>
- *Cisco Media Gateway Controller Software Release 9 MML Command Reference Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/mmlref/index.htm>
- *Cisco Media Gateway Controller Software Release 9 Dial Plan Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/dplan/index.htm>

- *Cisco Media Gateway Controller Software Release 9 Billing Interface Guide*
http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/mgc_mib/index.htm
- *Cisco Media Gateway Controller Software Release 9 Management Information Base Guide*
http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/mgc_mib/index.htm

Documentation Map



* This guide provides useful information that is not required during installation.

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Installation Notes

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

Acquiring the Software

The Cisco MGC software is provided to customers 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, the software and patch information can be installed directly from the CD.

Complete the following procedure to obtain software patches from CCO:

-
- Step 1** From the Cisco Connection Online page, select the Software Center link (located under Service and Support).
The Technical Assistance Center page displays.
- Step 2** From the Technical Assistance Center page, select the Voice Software link (located under Software Products and Downloads).
The Voice Software page displays.
- Step 3** From the Voice Software page, select the Login option (located across the top of the page).
A login box displays.
- Step 4** Enter your CCO user name and password then press OK.
After authentication the Voice Software page displays.
- Step 5** Select the link for the desired software release. Software release links are located under the Cisco Media Gateway Controller heading.

Installing and Upgrading the Software



Warning

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 [Obtaining Technical Assistance, page 44](#)) or your Cisco account representative. Software release version incompatibility may cause service disruption.



Warning

Before upgrading, refer to the “New Version of Times Ten Database Software” ([page 28](#)).

If you are installing software Release 9.3(1)T for the first time, refer to the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide* for instructions.



Note

In the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*, observe the following change: In the “Configuring SNMP Support Resources” sections, SNMP MIB measurements are valid only on the active node. They are *not* replicated to the standby node.



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.

**Tip**

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

Before installing the 9.3(1)T software, you must remove all packages and remnants of previous releases of Media Gateway Controller, VSC, or PGW 2200 software, including drivers and utilities, because of structural changes within the executables, libraries, operating system, and packaging. You should start with a fresh system.

Protocol Families

The following protocol families are available in Release 9.3(1)T:

Table 3 Protocol Families for Release 9.3(1)T

Protocol Type	Protocol Family Number	Protocol Family Contents
Miscellaneous Protocols	01	BTNUP_BTNR167 BTNUP_IUP
	02	IETF_DCS IETF_SIP MGPCAS
SS7 Protocol Family	10	ANSISS7_92 ANSISS7_CLEAR ANSISS7_MCI ANSISS7_STANDARD GR317 GR317_C1 GR317_NOTPTX
PRI Protocol Family	20	ATT_41459 ATT_41459_C2 BELL_1268 BELL_1268_C3 BELL_SGCP
	21	ETS_300_102 ETS_300_102_C1 ETS_300_121 ETS_300_172 ETS_300_356

Table 3 Protocol Families for Release 9.3(1)T (continued)

Protocol Type	Protocol Family Number	Protocol Family Contents
Q761 Version 1 Protocol Family	30	Q761_ARGENTINA Q761_ARGENTINA_C2 Q761_AUSTRAL Q761_AUSTRAL_C2 Q761_BASE Q761_BELG_BCOM Q761_BELG_ISUP_CUJO Q761_BELG_MOBI
	31	Q761_CHILE Q761_CHINA Q761_CHINA_MOB Q761_DANISH Q761_INDIA Q761_JAPAN Q761_KOREAN Q761_NEWZEALAND
	32	Q761_97VER_BASE Q761_PERU Q761_PORTUGAL Q761_SIEMENS_MOBI Q761_SINGAPORE Q761_SINGAPORE_C2 Q761_TAIWAN Q761_THAILAND
	33	HKTA_2202 ISUPV1_POLI
Q761 Version 2 Protocol Family	40	ISUPV2_32DIG ISUPV2_AUSTRIAN ISUPV2_CZECH ISUPV2_DUTCH ISUPV2_FINNISH96 ISUPV2_FRENCH ISUPV2_GERMAN ISUPV2_JAPAN
	41	ISUPV2_JAPAN_C2 ISUPV2_NORWEGIAN ISUPV2_POLISH ISUPV2_SPANISH ISUPV2_SPANISH_C2 ISUPV2_SWISS ISUPV2_SWISS_C2 ISUPV2_TOKYO
	42	ISUPV2_VIETNAM

Table 3 Protocol Families for Release 9.3(1)T (continued)

Protocol Type	Protocol Family Number	Protocol Family Contents
Q761 Version 3 Protocol Family	50	ISUPV3 ISUPV3_FRENCH ISUPV3_UK ISUPV3_UK_AXE10 ISUPV3_UK_AXE10_BTNETCHAT ISUPV3_UK_BTNETCHAT
Q721 Protocol Family	60	Q721_BASE Q721_BRAZILIAN Q721_CHINA Q721_FRENCH Q721_PHILLIPINE
Q767 Protocol Family	70	Q767_BASE Q767_BRAZIL Q767_COLOMBIA Q767_GUATEMALA Q767_INDONESIA Q767_ITAL Q767_ITAL_INTERCONNECT Q767_MEXICAN
	71	Q767_RUSS Q767_SINGAPORE Q767_SPAN Q767_SWED Q767_TELSTRA Q767_TURKISH
Q931 Protocol Family	80	Q931 Q931_AUSTRALIA Q931_SINGAPORE

Software Patches

Patches are located in the following directory:

`/auto/nssu-release/PATCHES/9.3.1T`



Note

The protocol packaging has been improved so that you need only load and install protocols that you need. Previously, the entire protocol suite was packaged and delivered together.

With the improved packaging protocol:

- The 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 to support patching later in the release life cycle and 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 are built, the 000 is incremented by 1 (001).



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.

Use the patch script (new shell script provided with the standard installation) located in your /opt/SW directory (created during the initial base software installation) to confirm which patch packages you need to install (using the **patch status** command), and then copy these packages into your local directory (/opt/SW) from the release directory where you can use the script to install the patches.

The installation script requires one of the following options:

- Option 1—**patch status** retrieves the status of the system. Use this option to determine which set of protocol packages are currently installed on your system. The installed protocol packages are required (must be downloaded) 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).
- Option 2—**patch all** automatically searches the local directory (/opt/SW) and the installed system to determine the most recent available patch and automatically updates the system with that patch level. 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 **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 any available patch level to 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 any available patch level to 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 is sample output of option 2, **patch all** which automatically searches the local directory and the installed system to determine the most recent available patch located in /opt/SW (protocol and system) and automatically updates the system with that patch level.

```
va-butterfly:104> patch all
The following patches are about to be removed from your system:
CSC000018
CSC001018
```

```

CSC002018
CSC010018
CSC020018
CSC021018
CSC030018
CSC031018
CSC032018
CSC033018
CSC040018
CSC041018
CSC050018
CSC060018
CSC070018
CSC071018
CSC080018
CSC0gs017

```

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

```

CSC000018.pkg
CSC001018.pkg
CSC002018.pkg
CSC010018.pkg
CSC020018.pkg
CSC021018.pkg
CSC030018.pkg
CSC031018.pkg
CSC032018.pkg
CSC033018.pkg
CSC040018.pkg
CSC041018.pkg
CSC050018.pkg
CSC060018.pkg
CSC070018.pkg
CSC071018.pkg
CSC080018.pkg
CSC0gs017.pkg

```

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

Before Installing a Patch

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

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

After the Cisco MGC has been shut down, verify the currently installed software load to ensure that the patch being installed is both compatible with and meant for the software currently installed. You can verify this using the following command:

```
# sudo pkgparam CSC0gu000
```

After shutting down the Cisco MGC and verifying the software load, you can proceed with the installation.

System Level Equivalency

Table 4 provides the system level equivalency for each protocol patch. For example, after installing CSCOnn003, release 9.3(1)T is equivalent to release 9.2(2) patch level CSCOgp014 (contains all patches and features included in release 9.2(2) up to patch CSCOgp014).

Table 4 System Level Equivalencies for Protocol Patches

Patch Number	System Level Equivalency
CSCOnn010	Release 9.2(2) patch level CSCOgp010
CSCOnn009	Release 9.2(2) patch level CSCOgp010
CSCOnn008	Release 9.2(2) patch level CSCOgp010
CSCOnn007	Release 9.2(2) patch level CSCOgp010
CSCOnn006	Release 9.2(2) patch level CSCOgp010
CSCOnn005	Release 9.2(2) patch level CSCOgp010
CSCOnn004	Release 9.2(2) patch level CSCOgp010
CSCOnn003	Release 9.2(2) patch level CSCOgp010
CSCOnn002	Release 9.2(2) patch level CSCOgp010
CSCOnn001	Release 9.2(2) patch level CSCOgp010

Table 5 provides the system level equivalency for each system patch. For example, after installing CSCOgs003, release 9.3(1)T is equivalent to release 9.2(2) patch level CSCOgs009 (contains all patches and features included in release 9.2(2) up to patch CSCOgs009).

Table 5 System Level Equivalencies for System Patches

Patch Number	System Level Equivalency
CSCOgs011	Release 9.2(2) patch level CSCOgs009
CSCOgs010	Release 9.2(2) patch level CSCOgs009
CSCOgs009	Release 9.2(2) patch level CSCOgs009
CSCOgs008	Release 9.2(2) patch level CSCOgs009
CSCOgs007	Release 9.2(2) patch level CSCOgs009
CSCOgs006	Release 9.2(2) patch level CSCOgs009
CSCOgs005	Release 9.2(2) patch level CSCOgs009
CSCOgs004	Release 9.2(2) patch level CSCOgs009
CSCOgs003	Release 9.2(2) patch level CSCOgs009
CSCOgs002	Release 9.2(2) patch level CSCOgs009
CSCOgs001	Release 9.2(2) patch level CSCOgs009

Patch Test Combinations

[Table 6](#) provides a list of the patch combinations that were used when testing. Use this list to determine which protocol and system patches should be installed before you run the MGC software. It does not matter which patch (protocol or software) is installed first.

Table 6 Patch Test Combinations

Protocol Patch	System Patch
CSCOnn010	CSCOgs011
CSCOnn009	CSCOgs010
CSCOnn009	CSCOgs009
CSCOnn008	CSCOgs008
CSCOnn007	CSCOgs006
CSCOnn006	CSCOgs007
CSCOnn006	CSCOgs006
CSCOnn005	CSCOgs005
CSCOnn004	CSCOgs004
CSCOnn003	CSCOgs003
CSCOnn002	CSCOgs002
CSCOnn001	CSCOgs001

CSCOnn010

Protocol patch CSCOnn010 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCuk39952	2	mdl-itu-ss7	Unresponded txd CGB followed by RSC cause locked CIC.
CSCdz59461	3	mdl-q761	CIC gets stuck on PGW upon glare condition.

This patch provides updates to:

- Q761 Protocol Suite
- Q767 Protocol Suite

Additional information:

- Patch CSCOnn009 is superseded by the fixes provided in patch CSCOnn010. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn009

Protocol patch CSCOnn009 resolves the following DDTs tickets:

Identifier	Severity	Component	Description
CSCdz36203	3	mdl-callctrl	Spontaneous switchover in PGW during Re-routing fo the call.

This patch provides updates to lcm.

Additional information:

- Patch CSCOnn008 is superseded by the fixes provided in patch CSCOnn009. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn008

Protocol patch CSCOnn008 resolves the following DDTs tickets:

Identifier	Severity	Component	Description
CSCdy84039	2	mdl-analysis	Incoming prefix number not removed.
CSCdy85304	3	mdl-callctrl	ITU-CIC-Selection (glare).
CSCdz14122	3	mdl-callctrl	Incorrect Handling of CallCutoffTimer in Standby PGW.
CSCdy84019	3	mdl-cdr	Nature Of Address Information is not checkpointed.
CSCdy85271	3	mdl-cdr	TAG 4106 FirstREL_TM is missing on CDR.

This patch provides updates to all protocols.

Additional information:

- Patch CSCOnn007 is superseded by the fixes provided in patch CSCOnn008. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn007

Protocol patch CSCOnn007 resolves the following DDTs tickets:

Identifier	Severity	Component	Description
CSCuk38086	2	mdl-callctrl	NAS pkg calls fail to connect using overlap on T7 timer expiry.
CSCdy84824	3	mdl-q761	MGCP cannot be deleted - Rel not sent - CIC stuck.

This patch provides updates to lcm.

Additional information:

- Patch CSCOnn006 is superseded by the fixes provided in patch CSCOnn007. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn006

Protocol patch CSCOnn006 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy50754	2	mdl-analysis	Use of dw2=99 negates any B-number digmodstring with patch gs9/nn009.
CSCdy50757	2	mdl-eisup	32 digit calling and called numbers are not going through EISUP.
CSCdy59912	2	protocol	Overdecadic digit support is missing for ISUPV2_SPANISH.
CSCuk36180	3	mdl-analysis	Route-Retry Redirection fails to modify Called Party Number in IAM.
CSCdy50563	3	mdl-callctrl	VSC should send endpoint level DLCX when a 515 error response rcvd.
CSCdy50765	3	mdl-cdr	CDR has wrong NOA when call goes through EISUP.
CSCuk37236	3	mdl-q767	Timer T7 expiry should have rel cause value 41 in ISUP variant.
CSCdy33093	6	other	NOA, Cause14, 32 Dig,Overdecadic for Spain (Telefonica/Spanish).

This patch provides updates to all protocols.

Additional information:

- Patch CSCOnn005 is superseded by the fixes provided in patch CSCOnn006. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn005

Protocol patch CSCOnn005 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCuk36770	1	mdl-callctrl	PGW to HSI call clears when Gateway notifies PGW of DTMF digit.
CSCdy36867	2	mdl-callctrl	MGCP Dial call fails when ST digit is received in SAM.
CSCdy37909	2	mdl-calletrl	PGW Fails to clear originating AAL2 SVC call.
CSCdy45102	2	mdl-callctrl	Hung calls.

Identifier	Severity	Component	Description
CSCuk36892	2	mdl-callctrl	ST:B digit modification does not work with MGCP DIAL.
CSCdx70846	2	mdl-in	INAP Prepaid: PGW fails to send END msg when engine mem reduction=1.
CSCdx82904	3	mdl-callctrl	INAP Prepaid: No credit available. PGW rejects continue msg from SCP.
CSCdy31804	3	mdl-q761	Q761_BELG not supporting overdecadics digits on 9.3(1)T.
CSCdy31763	3	mdl-q767	PGW not generating/passing REL-14 for Q767_ITAL and Q767_ITAL_C2.
CSCdy47864	3	mdl-q767	T9 not read from trunk group properties.
CSCdy47875	3	mdl-q767	CPG does not complete last leg of Q761-to-EISUP-to-Q767 call.

This patch provides updates to the Q767 protocol suite.

Additional information:

- Patch CSCOnn004 is superseded by the fixes provided in patch CSCOnn005. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn004

Protocol patch CSCOnn004 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy13891	2	mdl-connctrl	EISUP-PRI calls fail when DTMF and Detect Fax tone is set on PGW.
CSCdx70841	3	mdl-callctrl	INAP Prepaid: New alarms not generated.
CSCdx95599	3	mdl-cdr	CDB 1060 sometimes contains information redundant with 1010.
CSCdx78840	3	mdl-connctrl	Extra MDCX sent by MDL for incoming COT call.

This patch provides updates to all protocols.

Additional information:

- Patch CSCOnn003 is superseded by the fixes provided in patch CSCOnn004. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn003

Protocol patch CSCOnn003 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCuk35982	1	mdl-connctrl	All calls fail on answer from PGW to HSI.

This patch provides updates to the LEG_CONTROLLER[mdo/so].

Additional information:

- Patch CSCOnn002 is superseded by the fixes provided in patch CSCOnn003. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn002

Protocol patch CSCOnn002 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdx86010	1	mdl-ni2	PGW does status query for IS call to gateway after switchover.
CSCdy00950	1	mdl-callctrl	MUTE CALL (mute and released calls after linked dialplan).
CSCuk35769	1	mdl-connctrl	All calls fail on answer from HSI to PGW.
CSCuk34826	1	mdl-eisup	Calls from HSI to PGW via 2 EISUP links have no speech path.
CSCdx36677	2	mdl-connctrl	PGW2200 MGCP ATM extensions unusable starting in Release 9.
CSCdx72617	2	mdl-cdr	INAP prepaid:New CDR tag 4079 is not populated in CDBs.
CSCdy06463	2	mdl-connctrl	Fax tone detect TG prop causes all H.323 calls to fail.
CSCdx72981	3	mdl	Kill-call and CDR problems [Want write TimeStamp according to XECfg].
CSCdx84758	3	mdl-cdr	Release missing in CDR if stp-call used.

Additional information:

- Patch CSCOnn001 is superseded by the fixes provided in patch CSCOnn002. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOnn001

Protocol patch CSCOnn001 resolves the following DDTs tickets:

Identifier	Severity	Component	Description
CSCdx77263	2	mdl-callctrl	Incorrect SDP information sent in CRCX for outbound COT.
CSCdx78530	2	mdl-callctrl	INAP prepaid:S:rg not sent via mgcp to GW to send tone.
CSCdx70282	2	mdl-in	INAP prepaid:Generic TCAP trigger timer must be disabled 4 pp call.
CSCdx85928	3	mdl	IAM will not unblock a remotely blocked circuit in Q767.
CSCdx82357	3	mdl-analysis	INAP prepaid:trigger.dat needs changing for TCAP body type in ACRs.
CSCdx78543	3	mdl-callctrl	INAP prepaid:trigger.dat RA 17 field 3 should be 17.
CSCdx78822	3	mdl-callctrl	INAP prepaid:ACR+Timexpired should be sent when morecredit not read.
CSCdx82302	3	sccp-tcap	INAP prepaid:Some INAP tags contain incorrectly formatted parameter tags.

Additional information:

- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOgs011

System patch CSCOgs011 resolves the following DDTs tickets:

Identifier	Severity	Component	Description
CSCdz48207	3	engine	Error incorrectly printed in platform log is misleading.
CSCdz54291	3	engine	PGW - crash after switch over.
CSCdz57344	3	engine	Engine cannot free up bearChan after receiving channel mgmt calls.
CSCdz68258	3	engine	Add Call duration in Suspected mute call log in PGW.
CSCdz63496	3	iocceisup	EISUP hog CPU.
CSCdz35922	3	provision	Deleted CONDRTE name still appears in prov-exp.
CSCdz67508	3	provision	MGC-01 case mismatch in master and slave after prov-dply.

This patch provides updates to the following:

- libpom.so
- libpolfiles.so
- libpolroute.so

- libda.so
- libpolnuman.so
- libpolcomp.so
- libcmg.so
- libcxn.so
- libeng.so
- EISUP
- ISDNL3
- mml
- pom

Additional information:

- Patch CSCOs010 is superseded by the fixes provided in patch CSCOs011. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.
- For information on provisioning restrictions imposed while upgrading to patches that support the Seamless Upgrade feature, refer to [Seamless Upgrade](#) under the New Features section.

CSCOs010

System patch CSCOs010 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdz43424	3	engine	Do not allow dynamic deletion of Trunk with active call.
CSCdz37190	3	iocceisup	EISUP hog CPU.
CSCdz46120	3	procm	PGW OOS due to IPLINK de-provision.
CSCdz39233	4	engine	Need more debug info for mute call.

This patch provides updates to the following:

- libcxn.so
- EISUP
- ISDNL3
- procM
- librmg.so

Additional information:

- Patch CSCOs009 is superseded by the fixes provided in patch CSCOs010. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.
- For information on provisioning restrictions imposed while upgrading to patches that support the Seamless Upgrade feature, refer to [Seamless Upgrade](#) under the New Features section.

CSCOs009

System patch CSCOs009 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdz36200	3	engine	Incorrect clear cause.

This patch provides updates to the following:

- libcmg.so
- libeng.so

Additional information:

- Patch CSCOs008 is superseded by the fixes provided in patch CSCOs009. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.
- For information on provisioning restrictions imposed while upgrading to patches that support the Seamless Upgrade feature, refer to [Seamless Upgrade](#) under the New Features section.

CSCOs008

System patch CSCOs008 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy50801	3	engine	Incorrect release cause code in CDR record.
CSCdy84024	3	engine	Need to print out error log if mute call is detected.
CSCdy69352	3	iocceisup	EISUP link not function correctly after migrating 9.2(2) to 9.3(1)T.
CSCuk37532	3	mdl-in	INAP prepaid:Incorrect table entry for MR 20 (msg should be ENd (3))
CSCdz14249	3	measm	Meas Mgr counts duplicate measurements against max limit.
CSCdy84029	4	ioccxgcp	MGCP Retry message in platform.log should be printed at all levels.

This patch provides updates to all libraries and binaries.

Additional information:

- Patch CSCOs007 is superseded by the fixes provided in patch CSCOs008. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.
- For information on provisioning restrictions imposed while upgrading to patches that support the Seamless Upgrade feature, refer to [Seamless Upgrade](#) under the New Features section.

CSCOs007

System patch CSCOs007 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy62704	2	engine-sj	Calls are not checkpointed with standby running 9.1(5).
CSCuk37836	3	sccp-tcap	SSN is seen IS but PGW has not sent SST message SCP SSN is not IS.

This patch provides updates to the following:

- libcxn.so
- librmg.so
- libeng.so
- libcmg.so
- TCAP

Additional information:

- Patch CSCOs006 is superseded by the fixes provided in patch CSCOs007. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.
- Applying this patch causes a service outage. Replication will not occur between a platform that has the patch installed and a platform that does not have the patch installed.
- For information on provisioning restrictions imposed while upgrading to patches that support the Seamless Upgrade feature, refer to [Seamless Upgrade](#) under the New Features section.

CSCOs006

System patch CSCOs006 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy63752	1	mml	Unable to prov more than 32 links error msg with valid batch file.
CSCuk36683	2	engine	ST: PGW responds to NTFY from 5350 with 400 Transient Error.
CSCdy50773	2	engine	SC cored when doing manual switchover.
CSCdy50778	2	engine	Core dump, while not able to export dialplans.
CSCdy50784	2	replicator	Active calls are randomly dropped when testing failover sc2200.
CSCdy68993	2	ioccxgcp	PROT_ERR_XGCP_BLD_CVID in platform.log.
CSCdy50790	3	engine	COT_FAIL CIC stuck indefinitely upon failover.
CSCdy50801	3	mdl-cdr	Incorrect release cause code in CDR record.

Identifier	Severity	Component	Description
CSCdy50808	3	iocm	OFF_DUTY state of MGCP/IP-LNK does not match between ACTIVE & STANDBY.
CSCdy50814	3	mml	MML core dumps on prov-export.
CSCdy50379	6	engine	Seamless upgrade support.

This patch provides updates to the following:

- libpom.so
- libpxelog.so
- libpolnuman.so
- libpolroute.so
- libpolfiles.so
- libcxn.so
- librmg.so
- libeng.so
- libcmg.so
- pom
- replicator
- sagt
- ioChanMgr
- mml
- mmSAgt
- foverd

Additional information:

- Patch CSCOGs005 is superseded by the fixes provided in patch CSCOGs006. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOGs005

System patch CSCOGs005 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdx94748	2	flovrr	Switchover takes too long when active process crashes.
CSCdy30965	3	iocm	Setting of EISUP-links leads to mismatch status on EISUP-DEST.

This patch provides updates to the following:

- libxe.so

- TCAP
- ioChanMgr
- engine.no_smartalloc
- engine.smartalloc

Additional information:

- Patch CSCOGs004 is superseded by the fixes provided in patch CSCOGs005. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOGs004

System patch CSCOGs004 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdx72956	2	engine	MGCPDIAL_AUTH_TIMER not armed when PGW fails over.
CSCdy24062	3	other	Software Inventory Control program cannot find MGC files.
CSCdy14388	3	other	Software Inventory Control does not handle Solaris patches properly.
CSCdx74306	6	other	NOA Cause14 32 Digit and Overdecadic for Spain/Italy/Belgium featurette.

This patch provides updates to the following:

- chk_inv
- replicator
- libcmg.so
- libcxn.so
- libeng.so
- librmg.sochk_inv
- replicator
- libcmg.so
- libcxn.so
- libeng.so
- librmg.so

Additional information:

- Patch CSCOGs003 is superseded by the fixes provided in patch CSCOGs004. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

- CSCdy14388—The Software Inventory Control feature has been modified to be less restrictive on the Solaris patches.
 - Patches that are installed but not in the input patch list or in the input patch list but not installed are treated as warnings—they may or may not cause problems for the MGC Software.
 - Patches that are installed but have a version number different from the version number in the input patch list are reported as errors.
 - Warning messages are only displayed if the verbose option (-v) is set.

The Software Inventory Control feature requires the Solaris patch cluster version 2.0(4) or higher due to changes in the input data files.

CSCOgs003

System patch CSCOgs003 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdy06579	3	mdl-tools	Statically linked MDL programs fail with most recent libc.so.

This patch provides updates to the following:

- sim
- ca

Additional information:

- Patch CSCOgs002 is superseded by the fixes provided in patch CSCOgs003. The superseded patch is removed when using the patch utility script to install a newer version of the patch.
- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOgs002

System patch CSCOgs002 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdx91385	1	ioccxgcp	Reload RSIP doesnt recover BLK=GATEWAY CICs in PGW.
CSCdx84544	2	pxelgger	Not able to execute mml commands after running load test for 12 hours.
CSCdx91374	2	engine	VSC releases CICs prior to receive GRA or CGUA.
CSCdx91387	2	engine	GRS not acked after HW failure.
CSCdx93662	2	flovrr	Crashing process can loop indefinitely.

Additional information:

- Patch CSCOgs001 is superseded by the fixes provided in patch CSCOgs002. The superseded patch is removed when using the patch utility script to install a newer version of the patch.

- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

CSCOs001

System patch CSCOs001 resolves the following DDTS tickets:

Identifier	Severity	Component	Description
CSCdx69182	2	engine	Checkpointing is not happening correctly when call is in progress.
CSCdx78344	2	engine	ExtNode type from extNodes.dat not being dynamically re-configured.
CSCdx78381	3	provision	Result Name in Empty Cause Value Parameter.
CSCdx64128	3	sccp-tcap	Prepaid INAP calls are not released after fail-over.
CSCdx82312	3	sccp-tcap	INAP prepaid:ACReports enclose Call Results in Universal Seq Tag.
CSCdx82364	3	sccp-tcap	INAP prepaid:TCAP defaults received DestID to 2 octs when tx TC-CONT.

Additional information:

- Refer to the [Patch Test Combinations](#) section of this document to determine which protocol and system patches are needed.

New Features in This Release

Seamless Upgrade

The Seamless Upgrade feature has been incorporated in release 9.3(2). To support seamless upgrade from earlier releases to 9.3(2), software changes have been installed using patches. For release 9.3(1)T, you must have a patch level greater than or equal to CSCOs006.



Caution

When upgrading the PGW 2200 platform from a patch level which does not support Seamless Upgrade to a patch level which does support seamless upgrade, the pom.dataSync parameter (located in XECfgParm.dat) must be set to false. If this parameter is not set to false, the standby system will not transition to the standby state; instead it will remain OOS.



Note

Provisioning is not supported when the system is run on mismatched patches (one PGW node has a pre-Seamless Upgrade patch level and its peer has a Seamless Upgrade supported patch).



Note

When both PGW 2200 nodes have been upgraded to a Seamless Upgrade supported patch level, normal provisioning can be done.

The following mml commands should not be used if one PGW 2200 node has a pre-Seamless Upgrade patch level and its peer has a Seamless Upgrade supported patch:

- prov-sta
- prov-cpy
- prov-dply
- prov-sync



Note

The latest version of a patch is always required. Refer to CCO to determine the latest patch version available.

NOA, Cause14, 32 Digit Support for Sweden

This feature implements the following features:

- Mapping and generation of country specific NOA values for ported calls
- Mapping of cause 14 for QoR
- Support for 32 Digits

NOA, Cause14, 32 Digit, and Overdecadic for Spain, Italy, and Belgium

This feature (CSCdx74306) implements the following features on three ITU protocols (Spanish, Italian, and Belgium ISUP):

- Mapping and generation of country specific NOA values for ported calls
Italy=1, Belgium=2, Spain=126
- Mapping of cause 14 for QoR
- Support for 32 Digits and Overdecadic

New Version of Times Ten Database Software



Note

If you are migrating from MGC software Release 9.1(5), the requirement to migrate the Times Ten Database information was fulfilled during the 9.1(5) installation and no longer applies when installing this release.

If you are migrating from a MGC software release prior to 9.1(5), prior to uninstalling the previous release of the MGC software, you must run the following command:

```
/opt/TimesTen32/32/bin/ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

If you do not run the **migrate** command before uninstalling the previous release, the following message displays when you install the new release:

```
A backup file was found for the database, but no migration file.
```

A migration file is required before you can upgrade to the latest release of Times Ten. If the previous message displays, complete one of the following procedures.

Option 1

Step 1 Reinstall the previous release of the MGC and run the following command:

```
/opt/TimesTen32/32/bin/ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

Step 2 Uninstall the previous release.

Step 3 Reinstall the software.

Option 2

Step 1 If you do not want to save the data from the previous release, remove the file:

```
/opt/CiscoMGC/etc/export.ttdb
```

Step 2 Reinstall the software.



Note After upgrading the software on both machines, run the `setup_replication.sh` script on the standby MGC.

Solaris 8 Run Time Environment

Release 9.3(1)T can only be installed on a platform loaded with the Solaris 8 operating system using a clean installation or upgrade procedure.

Protocol File Rename

This featureette (CSCdv65596) renames existing protocols (removes customer names) using a generic naming scheme.

Advice Of Charge Support for India ISUP

This featureette (CSCdv77879) implements Advice of Charge (AOC) for India ISUP. It:

- generates a charge message with a charge band number and sends it to a preceding exchange—passes the charge message generated by the terminating switch back to the originating switch.
- passes a charge message from a succeeding exchange to a preceding exchange—generates the charge message and sends it to the originating switch.

Requests are passed using generic transparency descriptor (GTD) support. GTD transports ISUP messages and parameters, using a generic format, between the ingress and egress PGW 2200S in signaling mode.

The following criteria is used in the design and implementation of this feature:

- The outgoing destination is equivalent to the called party number (CDPN) or B-number.
- The incoming trunk category (group) is determined by the customer group ID, which in turn determines the dial plan.
- The resulting dial plan is used to perform the B-number analysis in order to determine the charge band number (CHBN).
- The CHBN is not calculated based on the time of day and type of day, it is a provisioned value in the dial plan.
- In order for the PGW2200 to act as a charge determination point (CDP), the existing AOC enabled/disabled property has to be enabled.
- The pass on capability of the received CRG message by the PGW2200 to the preceding exchange requires that the ISUP transparency disabled property be false or have a value of zero (0).

Provisioning of Dual CLI

This feature (CSCdw72061) provides PC-to-phone capabilities from Microsoft XP SIP Clients and enables you to populate Dual CLI fields in an outgoing IAM message. Both CLIs are fixed values for all SIP clients and overwrite any CLI information received in the SIP invite message.

This feature adds two new trunk group parameters, Default Presentation CLI and Presentation CLI APRI Handling and support for populating the generic number CLI in transmitted IAM messages for UK-ISUP with the presentation CLI .

- Default Presentation CLI—Numeric string affecting calls ingressing on a designated trunk group.
- Presentation CLI APRI Handling— Valid values are:
 - Match Network CLI—Causes the restriction indicator on the presentation CLI to duplicate the value for the Network CLI.
 - Always Present—Causes the restriction indicator to always be set to Present regardless of the Network CLI setting. This parameter is applicable to the egress trunk group (UK-ISUP in this case).

Software Inventory Control

This feature (CSCdw11922) detects incompatible software versions residing on test systems in the various Cisco testing facilities. Each software release provides a file containing checksum information for all the libraries and executables being installed. The Software Inventory Control utility generates checksums on the production system then compares those checksums with the values in the installation master file. A discrepancy indicates that the software on the box does not match the software that was originally installed.



Note

This feature does not identify the source of a problem or the correct software to install. It does indicate if a problem exists prior to the testing of incompatible software.

**Caution**

The Software Inventory Control feature uses a 32-bit CRC to calculate checksums. A 32-bit CRC can give over 4 billion possible CRC values (2^{32} or 4,294,967,296). With so many CRC values it is possible for two different pieces of data to have the same CRC.

Software Inventory Control Feature Modification

The Software Inventory Control feature has been modified (CSCdy14388) to be less restrictive on the Solaris patches.

- Patches that are installed but not in the input patch list or in the input patch list but not installed are treated as warnings—they may or may not cause problems for the MGC Software.
- Patches that are installed but have a version number different from the version number in the input patch list are reported as errors.
- Warning messages are only displayed if the verbose option (-v) is set.

**Note**

The Software Inventory Control feature requires the Solaris patch cluster version 2.0(4) or higher due to changes in the input data files.

Route and Advance and Redirection on Cause Code

This feature (CSCdv89959) provides the PGW with the capability to support route advance (redirection) as a result of cause analysis. Cause analysis is provoked when a release message is received from the gatekeeper or subsequent TDM switch that supplies a specific reason to invoke analysis.

It invokes a trunk group or route advance (backward indication/request for redirection) when a call enters a cause analysis (the previous call attempt failed). If the previous call failure returns a new destination number (redirection number or new CdPN), the new number is used in analysis to determine a new destination (return to analysis result type is encountered).

Circuit Reservation

This feature (CSCdw60619) provides the capability to reserve a percentage of the trunks in a trunk group for incoming calls. When the specified percentage is reached any new outgoing traffic that would normally be routed to the trunk group is routed to the next available alternate trunk group.

The *engine.CircuitReservation* parameter is used to turn the circuit reservation function on and off. It has two values: true and false. The default value is false. This feature is dynamically reconfigurable.

MGCP Controlled TDM Switching (Hairpinning)

This feature enables the PGW 2200 to initiate TDM switching (also referred to as TDM hairpinning). Previously, calls that ingress and subsequently egress using the same MGW engaged two DSP's in the signal path. This feature removes the DSP's from the circuit when a call's ingress and egress point is on the same MGW. It requires that the PGW 2200 signal via MGCP using the Local Connection Option (L) Network Type (nt) LOCAL value when a call ingresses and subsequently egresses via trunk groups existing on the same MGW.

MGCP NAS Package

This feature adds support for the Network Access Server (NAS) Package for Media Gateway Control Protocol (MGCP) on the Cisco AS5350, Cisco AS5400, and Cisco AS5850 universal gateways (ITU specification location: <http://www.ietf.cnri.reston.va.us/internet-drafts/draft-foster-mgcp-nas-03.txt>). With this implementation, data calls can be terminated on a trunking media gateway that is serving as a NAS.

These capabilities are enabled by the universal port functionality of the Cisco AS5350, Cisco AS5400, and Cisco AS5850, which allows these platforms to operate simultaneously as network access servers and voice gateways to deliver universal services on any port at any time. These universal services include dial access, real-time voice and fax, and wireless data access.

The MGCP NAS package implements signals and events to create, modify, and tear down data calls. The events include signaling the arrival of an outbound call (IP to Public Switched Telephone Network [PSTN]) to the media gateway controller (call agent), reporting carrier loss and call authorization status, and receiving callback requests. The following types of calls can be terminated as data calls:

- Data within the voice band (analog modem)
- ISDN data (digital modem)
- Data over voice when using a call agent that recognizes this call type and delivers these calls as digital data to the NAS

The NAS package provides support for all dial-in services, including the following:

- Virtual Private Network (VPN) with Layer 2 Tunneling Protocol (L2TP)
- Scalable Multichassis Multilink PPP (MMP) across multiple channels
- MGCP 0.1
- Call preauthentication with MGCP dial calls

INAP for PrePaid Services

This feature (CSCdw28224) implements an IN interface that supports prepaid calling services on the PGW 2200. You can preselect a carrier or manually insert a Carrier Access Code (calling party) when dialing the destination. This service is combined with a prepaid accounting function to ensure effective and efficient revenue collection.



Note

The PGW does not have the capability to preserve IN transactions after failover of the platform. PGW aborts all IN transactions after failover. IN calls in answer state are released either immediately after failover or are carried on until the normal call clearing procedures release them.

The `engine.RelINAPCallsAfterSWOver` parameter defines the treatment of INAP calls in answer state after platform switchover. This parameter is used for calls that require INAP interaction even after the answer state. Currently, this parameter is used only for Prepaid INAP calls.

Valid values for the `engine.RelINAPCallsAfterSWOver` parameter are:

- True—Release all the INAP calls after switchover
- False—Do not release INAP calls after switchover

The default setting for this parameter is true.

If the engine.`RelINAPCallsAfterSWOver` parameter is set to `True`, the PGW releases all calls immediately. If the value is set to `False`, the PGW does not take any action for the INAP prepaid calls; the calls are treated as normal POTS calls.

Support for IRI/ORI in Q.767

A new .mdo file, `Q767_SINGAPORE.mdo`, has been created to support the Q767 Singapore IRI/ORI featurette (`CSCdv77873`).

Mandatory CLI Over Trunk Group

This featurette (`CSCdw43415`) causes the PGW 2200 and gateways to generate an Information Request (INR) back to the preceding switch to request the Calling Line ID (CLI) if it is not received on a particular incoming trunk group (TKG). The INR can be sent by an exchange while the call is in progress to request additional information from another exchange, for example, PGW 2200 back to the PSTN switch.

The preceding switch (from PSTN switch back to the PGW 2200) responds with an INF, or information message, and provides additional information back to the original requesting switch (the PGW 2200). One of the optional parameters returned in the INF is the calling party number, which is what is required as the CLI.

The INR query must only be sent if the Trunk Group on the route server has been configured to request a calling number if it is missing. If the calling number is not returned in the INF or a if INF is not returned then the call may be released, routed to an announcement or continued normally based on Trunk Group configuration.



Note

When using this featurette, the existing `clipess` property on the PGW 2200 must be set to 0 (disable) for the `sigpath`.

Invite Without Session Description Protocol

This featurette provides the following SIP enhancements:

- Support for Invite (or re-invite) without Session Description Protocol (SDP). Includes accepting the SDP in a subsequent 200 OK or ACK message. This feature allows a B2BUA connected to a PGW 2200 to originate and transfer calls to support features such as click to dial.
- Support for Serial 18x response with or without SDP. The PGW 2200 can interwork with a B2BUA executing call forward no answer from devices that require remote ringback to devices that support local ringback or announcements.
- Support for 302 response with a contact (first SIP URL) having a SIP URL other than the PGW domain name. The PGW issues a new invite to the SIP URL without going through number analysis.



Note

The Session Description Protocol is used to pass information between the Media Gateways so they know how to talk to each other.

BTNUP 3.1 KHz Custom Configuration

This featurette (CSCdx05822) extends the function of the existing defaultBC property to include BTNUP-based trunk groups. The property can be set to SPEECH or 3_1_KHZ. The default setting is SPEECH.

If the property is set to 3_1_KHZ, PGW converts the outgoing ISDN 3.1KHz (CAT3) call over the BTNUP TrunkGroup to ISDN speech (CAT2) call. This property has no impact on outgoing ISDN data (CAT1) and speech (CAT2) calls over the BTNUP TrunkGroup.

LNP Enhancements to Q.761_Portugal Protocol

This featurette (CSCdx21249) adds enhancements required to certify the PGW 2200 for PTT interconnect using the Portuguese ISUP variant in the Media Gateway Controller (MGC) code. The enhancements are:

- Support for Overdecadic Digits—if a number is ported, the SCP provides a prefix that must be passed outbound to the PTT to allow the correct OLO to receive the call for the subscriber. The format of the prefix to send to the PTT is DXXXYYY<called party number>. The overdecadic D is sent in front of the number. As a requirement, the PGW must support all overdecadic digits (A-F) in Q761_Portugal protocol.
- Mapping of Cause Value 14 in Portugal—switches must act on or generate external cause 14 releases to pass interconnect. The PGW must map external cause 14 releases to an internal release cause code. The PGW must support number portability when operating as an originating switch, transit switch, recipient switch, or donor switch supporting the following scenarios:
 - PGW is the Transit Switch and receives a cause 14 from a donor switch. PGW passes the cause 14 to the originating switch which performs the LNP lookup
 - PGW is the Donor Switch and after recognizing the number has been ported, generates a cause 14 and passes the cause 14 to the originating switch which performs the destination LNP lookup.
 - PGW is the Originating Switch and receives a cause 14 from a donor switch. PGW performs the destination LNP lookup.
 - PGW is the Recipient Switch and routes the ported call.
- Do Not Reject Calls if ACM Contains Multiple PCI (parameter compatibility indicators) Option—currently, the PGW either fails the call with a cause 95 or completes the call but sends CFN messages. The PGW cannot fail calls if the ACM contains multiple options (multiple PCI parameters). As a requirement, because the PCI is not a repeatable parameter, the PGW should act on the first PCI parameter, and ignore the subsequent parameters. This applies to all messages that contain PCI parameters.

New Shared Memory Segment

The /etc/system file has been updated to support an upgrade to the Times Ten packaging. The update causes the install to prompt you for a reboot the first time the software release is installed.

36 GB Disk Drive Upgrade

This featurette enables you to upgrade your system from a 18 GB to a 36 GB disk drive. This patch should only be installed if you want to use a 36 GB disk drive.

This featurette provides changes to the following packages:

- Log and Spool Package (CSCOh005) — This package is used by both Solaris 8 and Solaris 2.6 based MGC platforms to partition the second disk and mount it on the file system at `/opt/CiscoMGC/var/log` and `/opt/CiscoMGC/var/spool`. The following modifications were made to package CSCOh005:
 - CSCOh005 has been modified to work with arbitrary disk sizes.
 - A check has been added to ensure that DiskSuite is not using a second disk. If a second disk is used, the installation aborts and you are prompted to disable DiskSuite's use of the second disk. This allows you (if using a Cisco configured system) to use the Log and Spool Package to increase the usable disk space.
 - User prompts have been added for the mount points of the two partitions being created. This allows you to use the second disk when the base directory of the MGC software is changed. The default is the current hard coded values `/opt/CiscoMGC/var/log` and `/opt/CiscoMGC/var/spool`. This also allows you to change the default base directory during the MGC application installation.
 - The ration this package uses to divide up the second disk between the log and spool directories has been changed. Currently each directory gets 50%. This has been changed to use 40% of the disk for the log directory and 60% for the spool directory. This provides more room for CDRs.
- CSCOh006—Veritas Volume Manager 2.6 Package— This package installs version 2.6 of the Veritas Volume Manager software on Solaris 2.6 based MGCs. It does not contain disk size dependencies.
- CSCOh000—Veritas Volume Manager 3.1 Package— This package installs version 3.1 of the Veritas Volume Manager software on Solaris 2.6 based MGCs. It does not contain disk size dependencies.
- Solaris 8 Operating System Installation — The Solaris 8 and Solstice DiskSuite installation instructions have been modified to include the following:
 - Added partition table for 36G disk drive for PGW host platform.
 - Added partition table for 36G disk drive for BAMS platform (first and second disk).
 - Added partition table for 36G disk drive for HSI platform (with input from HSI team).
 - Modified the upgrade procedure to indicate when to replace hard drives if replacing disks at the same time as OS and MGC application.
 - Added upgrade procedure for replacing hard drives without upgrading OS and MGC application.
 - Added a section explaining how to uninstall DiskSuite or disable its use of the second disk. This allows the second disk to be used for the log and spool directories.
- Solaris 2.6 Operating System Installation
 - Added partition table for 36G disk drive for MGC Host platform
 - Added upgrade procedure for replacing hard drives without upgrading OS and MG application.

The following configurations are not supported:

- More than two disks in a Netra t 1400/1405

- Mixed disk sizes in the same chassis
- External disks other than the st A1000 disk array with eight 36G drives for the BAMS product only

Polish ISUP V2

This featurette introduces an ISUP variant for Poland based on ISUP version 2.

B-Digit Modification Enhancement

For Hong Kong Local Number Portability (LNP), if a number is ported, the corresponding Gateway Number (GN) is appended to the called party number (CdPN) in the IAM. The PGW 2200 uses the European number portability configuration (E_PORTED_NUM) which gives the number as GN+CdPN. Another result type is created to allow the B-digit modification to delete the CdPN portion and send out just the GN.

In Hong Kong, there are currently 650k ported numbers, each with a unique GN. Since this number has a variable length (between 2 and 12 digits long), this implementation could not be used. This featurette strips the E_PORTED_NUM out put of GN+CdPN from the last digit backward, since the CdPN has a fixed number of digits.

Known Issues and Operational Recommendations

This section contains information about known issues and the corresponding workarounds in the Cisco MGC software release 9.3(1)T.



Note

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

Using prov-cpy/prov-sync To Commit Configuration Changes on a Fault-Tolerant System

When using the prov-cpy/prov-sync combination to commit configuration changes on a fault-tolerant system the standby might not fully synchronize with the active which results in the second switchover failing. The following non-service affecting workarounds can be used if this problem occurs:

- Use **prov-dply**, instead of the **prov-cpy/prov-sync** combination to commit each phase of provisioning on a fault-tolerant system. The **prov-dply** command ensures that both sides are completely synchronized.
- After using the **prov-cpy/prov-sync** combination to commit configuration changes, stop and restart the standby. Restarting the standby resynchronizes all states correctly.



Note

For more information refer to DDTS number CSCdw63484.

Modifying the OPC of an SS7 Route

When prov-ed is used to modify the OPC of an SS7ROUTE or SS7PATH, the PGW software must be stopped and restarted before changes take affect. Stopping and restarting the system results in a service-affecting outage. To make a change without stopping and restarting the PGW, complete the following procedure:

-
- Step 1** Start a provisioning session on the active machine.
- Step 2** Use prov-dlt to remove the following components:
- SS7ROUTE,
 - all associated trunks to the SS7PATH
 - SS7PATH
 - DPC
- Step 3** Execute the prov-dply command.
- Step 4** Start a second provisioning session on the active machine.
- Step 5** Use prov-add to add the following components:
- DPC
 - SS7PATH
 - all associated trunks to the SS7PATH
 - SS7ROUTE (with the new OPC and linkset changes)
- Step 6** Execute the prov-dply command.
-

PGW Does Not Respond to SNMP Queries Due to CIAgent Dead

CSCuk36237—Failure of the Cisco MGC to respond to SNMP requests can be caused by a variety of problems. Starting with Release 9.2 of the Cisco MGC software, the Cisco MGC uses Sun Microsystems' Solaris 8 as its operating system. Solaris 8 is a 64-bit operating system, and some older hardware platforms cannot support it. SNMP failure can occur in your Cisco MGC system if your system hardware does not meet the requirements of the Cisco MGC software.

Another possibility is that when the Solaris 8 operating system was installed on your system, the 32-bit kernel was selected instead of the 64-bit kernel. In such situations, the application that handles SNMP functions on the Cisco MGC, CIAgent, may fail and be unable to restart.

To diagnose the source of the SNMP failure refer to the *Diagnosing SNMP Failure* section of the Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide at the following url:

<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/re19/omts/index.htm>

TimesTen Database Failure During MGC Installation

During installation of MGC 9.2(x) and above, it may be necessary to reboot your machine after installation of CSCOga000 (the first package installed) before you can properly install the TimesTen database and associated packages. If a reboot is required but not done, the installation fails.



Note

This problem may occur intermittently. For more information on this issue, refer to CSCdx93500.

Workaround for Releases 9.2 and 9.3

Complete the following procedure if your TimesTen Database fails during MGC installation:

Step 1 Uninstall all existing packages:

```
./uninstall <Enter>
```

Step 2 Reboot your system:

```
init 6 <Enter>
```

Step 3 As root, execute the following commands:

```
modload /kernel/sys/semsys
modload /kernel/sys//shmsys
modload /kernel/sys/msgsys
```

Step 4 Run MGC application installation:

```
./install.sh
```

Update to TimesTen 4.3

TimesTen 4.3 has been updated to address performance issues (CSCdx35643). Additionally, the TimesTen directory name has been changed from /opt/TimesTen4.1 to /opt/TimesTen.

Reboot Failed After Disabling Disk Mirroring and Installing log_pool

Because Disk Suite is installed when the security patch is applied, the security patch saves the /etc/system file with Disk Suite. When Disk Suite and the security patch are removed, the old /etc/system with Disk Suite is restored; the changes that Disk Suite made to the /etc/system file are removed. The system attempts to boot the first disk, but the /etc/system file tells it to change the root device to a Disk Suite device that is no longer present. To correct this problem, you must remove the security patch prior to removing Disk Suite.



Caution

You must remove the security patch prior to removing Disk Suite.

For more information on this issue refer to CSCdx66605.

ETS_300_121 Protocol Variant Belongs to the SS7-ITU Family

Two protocols (ETS_300_121 and ETS_300_365) were delivered in the wrong package. During installation, the ETS_300_121 and ETS_300_356 protocols were listed under package CSC021000.pkg (PRI protocol family). In variants.dat they were listed as part of the SS7-ITU family.

The two protocols have been moved into the Q761 Variant 1 Protocol Family Series of packages. The following packaging files were modified to reflect this change.

```
Checked in "./g/g/Makefile" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/020/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/021/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/030/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/031/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/032/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./g/g/033/prototype" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/1".
Checked in "./install-files/install.sh" version
"/main/br_nssu_9main/br_nssu_9tech/br_nssu_92/br_nssu_93/br_nssu_931T/2".
```

For more information on this issue refer to CSCdx67700.



Note

Because of packaging modifications, there are now 16 protocol packages going forward in Release 9.3.



Note

For information on the modifications made to the install.sh script refer to the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*.

BELL_SGCP Protocol Package Location

The BELL_SGCP protocol is now in protocol package 02. This protocol package was previously located in protocol package 20.

New/Enhanced Tags

The following new or enhanced tags have been implemented in release 9.3(1)T:

Table 7 *New/Enhanced Tags*

Tag Number	Tag Descriptor/Description	Affected CDB(s)
4078	Charge Band Number—Used to support Advice of Charge information	1030, 1040, 1110
4079	Furnish Charging Number—Returned by the SCP during an IN Prepaid Service call dialogue. This tag contains charge data that is written to the CDR.	1030, 1040, 1110
4080	Original Charged Number—Contains the digits from the Original Called Party Number. Original Called Number might be present during the following conditions: <ul style="list-style-type: none"> • 1—Original called number parameter received in the IAM message if SS7 call is redirected. • 2—A distant end TDM switch sends the PGW (over SS7) a release message containing a cause parameter, redirection information parameter, redirection number parameter, and possibly a redirection number restriction parameter. 	All

For more information on tags and call data blocks, refer to the *Cisco Media Gateway Controller Software Release 9 Billing and Interface Guide* at the following url:

<http://www.cisco.com/univercd/cc/td/doc/product/access/sc/re19/billinf/index.htm>

Caveats

This section describes resolved and open caveats for Cisco MGC software Release 9.3(1)T.

Resolved Caveats for Software Release 9.3(1)T

Table 8 lists resolved caveats sorted by severity, then identifier, then component.

Table 8 *Resolved Caveats for Software Release 9.3(1)T*

Identifier	Severity	Component	Description
CSCdx86010	1	mdl-ni2	PGW does status query for IS call to gateway after switchover.
CSCdx91385	1	ioccxgcp	Reload RSIP doesnt recover BLK=GATEWAY CICs in PGW.
CSCdy00950	1	mdl-callctrl	MUTE CALL (mute and released calls after linked dialplan).

Table 8 Resolved Caveats for Software Release 9.3(1)T (continued)

Identifier	Severity	Component	Description
CSCuk34826	1	mdl-eisup	Calls from HSI to PGW via 2 EISUP links have no speech path.
CSCdx36677	2	mdl-connctrl	PGW 2200 MGCP ATM extensions unusable starting in Mistral.
CSCdx91374	2	engine	VSC releases CICs prior to receive GRA or CGUA.
CSCdx91387	2	engine	GRS not acked after HW failure.
CSCdx93662	2	flovrr	Crashing process can loop indefinitely.
CSCdx94748	2	flovrr	Switchover takes too long when active process crashes.
CSCdy06463	2	flovrr	Fax tone detect TG prop causes all H.323 calls to fail.
CSCdy50754	2	mdl-analysis	Use of dw2=99 negates any B-number digmodstring with patch gs009/nn009.
CSCdy50757	2	mdl-eisup	32 digit Calling and Called numbers are not going through EISUP.
CSCdy50773	2	engine	SC cored when doing manual switchover.
CSCdy50778	2	engine	Core dump, while not able to export dialplans.
CSCdy50784	2	replicator	Active calls are randomly dropped when testing failover SC2200.
CSCdx72981	3	mdl	Kill-call and CDR problems (Want write TimeStamp according to XECfg).
CSCdx84758	3	mdl-cdr	Release missing in CDR if stp-call used.
CSCdx85928	3	mdl	IAM will not unblock a remotely blocked circuit in Q767.
CSCdx95599	3	mdl-cdr	CDB 1060 sometimes contains information redundant with 1010.
CSCdy14388	3	other	Software Inventory Control does not handle Solaris patches properly.
CSCdy30965	3	iocm	Setting of EISUP-links leads to mismatch status on EISUP-DEST.
CSCdy47864	3	mdl-q767	T9 not read from trunk group properties.
CSCdy47875	3	mdl-q767	CPG does not complete last leg of Q761-to-EISUP-to-Q767 call.
CSCdy50563	3	mdl-callctrl	VSC should send endpoint level DLCX when a 515 error response received.
CSCdy50765	3	mdl-cdr	CDR has wrong NOA when call goes through EISUP.
CSCdy50790	3	engine	COT_FAIL CIC stuck indefinitely upon failover.
CSCdy50801	3	mdl-cdr	Incorrect release cause code in CDR record.
CSCdy50808	3	iocm	OFF_DUTY state of MGCP/IP-LNK is mismatch between ACTIVE & STANDBY.
CSCdy50814	3	mml	MML core dumps on prov-export.

Open Caveats for Software Release 9.3(1)T

Contact your Cisco representative to obtain status on software problem reports (SPRs). For more information on IOS caveats, see the IOS release notes for your platform. [Table 9](#) is sorted by severity, then identifier, then component.



Note For sustainable runs, we recommend that all log priority processes be set to Error.

Table 9 Open Caveats for Software Release 9.3(1)T

Identifier	Severity	Component	Description	Explanation/Workaround
CSCuk37362	2	mdl-callctrl	INAP Prepaid: Calls complete when SCP connection not IS, rel on Ta3.	When the SCP link is OOS calls should not complete. Calls are completing and then disconnecting on Ta3 expiry.
CSCuk37364	2	mdl-in	INAP Prepaid: Apply Charging-Final Report, missing data, and bad format.	The apply charging /final report after call termination does not contain valid information. The data is encoded as a string but the LI indicator is not included. The data itself does not seem to be valid UTC time.
CSCuk37403	3	mdl-in	INAP Prepaid: Probs with handling Incorrect message content from SCF.	Test cases in INAP test document fail some negative cases.
CSCuk37426	3	mdl-in	INAP Prepaid: Out of Sequence Dialog (TC-END) but call completes	<p>During testing of the INAP prepaid solution, the following problem was discovered with test case 7.5.5:</p> <p>7.5.5 Out of Sequence INAP message received by SSP. End with Apply charging in response to initialDP.</p> <p>The PGW does not clear the call when it receives the TC-END but continues and completes the call.</p> <p>The SCP/SCF now has a closed dialog for that call. The call should be released and the dialog locally released.</p>
CSCuk37427	3	mdl-in	INAP Prepaid: No SCF resp to ODisc causes no Apply Charging Final rep.	<p>During testing of the INAP Prepaid solution, the following test case failed:</p> <p>7.5.8.3 Non receipt of INAP message by SSP - no response to TC-Continue with event report BCSM ODisconnect.</p> <p>Acompleted call is disconnected, the PGW sends an ODisconnect BCSM event to the SCP/SCF. The SCF fails to respond. The PGW Ta3 timer expires and the call clears. No Apply Charging Final Report is sent to the SCP/SCF.</p>

Table 9 Open Caveats for Software Release 9.3(1)T (continued)

Identifier	Severity	Component	Description	Explanation/Workaround
CSCuk37532	3	mdl-in	INAP Prepaid: Incorrect table entry for MR 20 (msg should be END (3)).	Workaround: None.

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

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Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

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