



Cisco Unified IP Phone 7970G and 7971G-GE Release Notes for Firmware Release 8.2(1) (SCCP and SIP)

December 8, 2006

Use these release notes with a Cisco Unified IP Phone 7970G and 7971G-GE running SCCP or SIP firmware release 8.2(1).

The SCCP version of firmware release 8.2(1) is compatible with Cisco Unified CallManager releases 5.1, 5.0, 4.2, 4.1, 4.0, and 3.3.

The SIP version of firmware release 8.2(1) is compatible with Cisco Unified CallManager release 5.1 and 5.0.



Note

SIP firmware release 8.2(1) is designed and tested to interoperate with Cisco call control, most notably Cisco Unified CallManager release 5.1. Although SIP firmware is IETF RFC 3261 compliant, it is not supported by Cisco TAC or Engineering for use with non-Cisco call control systems.

Contents

These release notes provide the following information. You might need to notify your users about some of the information provided in this document.

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Related Documentation

Cisco Unified IP Phone Documentation

Refer to publications that are specific to your language, phone model and Cisco Unified CallManager release. Navigate from the following documentation URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

Cisco Unified CallManager Documentation

Refer to the Cisco Unified CallManager Documentation Guide and other publications specific to your Cisco Unified CallManager release. Navigate from the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm



Note

The *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)* describes new and changed 5.1(1) software features and acts as a supplement to the Cisco Unified CallManager Release 5.0(4) document set. Content in the *New and Changed* guide supersedes information contained in the 5.0(4) document set; however, chapters in the *New and Changed* guide may contain references to 5.0(4) documents. In such cases, refer to the 5.0(4) documents for more information.

New and Changed Information

Cisco Unified IP Phone firmware release 8.2(1) for SCCP supports several releases of Cisco Unified CallManager, including the latest releases. For a complete list of new and changed phone features introduced in these Cisco Unified CallManager releases, refer to the Release Notes for Cisco Unified CallManager 5.1. See the “[Related Documentation](#)” section on [page 2](#) for help locating these documents.

Cisco Unified IP Phone firmware release 8.2(1) for SIP supports Cisco Unified CallManager 5.1. For a complete list of new and changed phone features introduced in this Cisco Unified CallManager release, refer to the Release Notes for Cisco Unified CallManager 5.1. See the “[Related Documentation](#)” section on [page 2](#) for help locating these documents.

Table 1 provides an overview of the new features in firmware release 8.2(1).

Table 1 ***New Features for this Release***

Feature	Description	Reference for More Information
802.1X authentication	The phone implements the IEEE 802.1X standard by providing support for the EAP-MD5 option for 802.1X authentication.	Cisco Unified IP Phone administration guides
Arabic language support	Cisco Unified CallManager Release 5.1 supports Arabic locales on Cisco Unified CallManager user interfaces and Arabic text on phone screen displays for supported phone models.	Cisco Unified CallManager Administration Guide
Auto call select	The phone can be configured so that the call focus does not shift to the most recent incoming call.	Cisco Unified IP Phone administration guides
Display activates for incoming call	The phone can be configured so that the phone, in sleep mode, turns on its display when a call comes in.	Cisco Unified IP Phone administration guides
“More” softkey timer	Indicates the number of seconds that additional softkeys are displayed after the user presses more . If this timer expires before the user presses another softkey, the display reverts to the initial softkeys. The range is 0 (infinite timer) and 5 to 30 seconds. Default is 5 seconds.	Cisco Unified IP Phone administration guides
Real-Time Transport Control Protocol (RTCP) support	RTCP is the protocol used to transfer statistics between VoIP devices during an active call. With the release, RTCP can be enabled to provide additional information such as jitter, latency and round trip delay.	Cisco Unified IP Phone administration guides
Recording tone	The phone can be configured to play a beep tone on both endpoints for every call.	Cisco Unified IP Phone administration and user guides
SIP with SRST (SIP only)	Users no longer need to press # or Dial to dial after failover to SRST. Also, a configurable status line message indicates failover.	No additional reference

Table 1 ***New Features for this Release (continued)***

Feature	Description	Reference for More Information
Touchscreen illumination	Allows a user to turn off touchscreen illumination for a pre-determined time (as set by the system administrator).	Cisco Unified IP Phone administration and user guides
Wideband headset	Supports wideband headsets for increased audio sensitivity.	Cisco Unified IP Phone administration and user guides

Online Help Support

Firmware release 8.2(1) supports the online help feature on the Cisco Unified IP Phone 7971G-GE and 7970G.

For the Cisco Unified IP Phone 7971G-GE, online help requires Cisco Unified CallManager 4.2 or later.

For the Cisco Unified IP Phone 7970G, online help requires Cisco Unified CallManager 4.2(3).

To access online help, follow these steps:

Procedure

-
- Step 1** Press the **Application Menu** button.
- Step 2** Navigate to the Help menu item.
- Step 3** Press the **Select** softkey.
-

Installation Notes

This section contains these topics:

- [Installing Firmware Release 8.2\(1\) for SCCP, page 4](#)
- [Installing Firmware Release 8.2\(1\) for SIP, page 5](#)

Installing Firmware Release 8.2(1) for SCCP

This section describes how to install firmware release 8.2(1) for SCCP.

Firmware Upgrade Issues for SCCP

Note the following firmware upgrade issues:

- If you are currently running firmware earlier than 6.0(2) on a Cisco Unified IP Phone 7970G and 7971G-GE and want to upgrade to 8.0(x), you must first install an intervening 7.0(x) load to prevent upgrade failure. Cisco recommends using the most recent 7.0(3) load as the intervening load to avoid lengthy upgrade times.

- If you are currently running firmware 6.0(2) to 7.0(2) on a Cisco Unified IP Phone 7970G and 7971G-GE and want to upgrade to 8.0(x), you can do so directly. However, expect the upgrade to take twice as long as usual.

Cisco Unified IP Phone Expansion Module 7914

If you are using the Cisco Unified IP Phone Expansion Module 7914, you must upgrade the expansion module to firmware release **S00105000200** before using the phone to support relevant 8.2(1) features on your expansion module.

You can download the installation program, which is named **cmterm-7914-sccp.5-0-2.exe**, and the readme file from Cisco.com at this location:

<http://www.cisco.com/cgi-bin/tablebuild.pl/ip-7900ser>

Firmware Installation Procedure for SCCP

Before using the Cisco Unified IP Phone 7970G and 7971G-GE with Cisco Unified CallManager release 3.3 or later, you must install the latest firmware on all Cisco Unified CallManager servers in the cluster.

Before You Begin

If you are upgrading from an earlier firmware version, see the “[Firmware Upgrade Issues for SCCP](#)” section on page 4.

To download and install the firmware, follow these steps:

Procedure

-
- Step 1** Go to the following URL:
<http://www.cisco.com/cgi-bin/tablebuild.pl/ip-7900ser>
- Step 2** To download the firmware for Cisco Unified IP Phone 7970G and 7971G-GE, click one of the following hyperlinks and follow the prompts:
- For Cisco Unified CallManager 4.2 and earlier:
cmterm-7970_7971-sccp.8-2-1.exe
 - For Cisco Unified CallManager 5.0 and later:
cmterm-7970_7971-sccp.8-2-1.cop
- Step 3** To download the Readme file, which contains installation instructions for the corresponding firmware, go back to the URL shown in [Step 1](#) and click the appropriate hyperlink.
cmterm-7970_7971-sccp.8-2-1-readme.htm
- Step 4** Follow the instructions in the Readme file to install the firmware.
-

Installing Firmware Release 8.2(1) for SIP

This section describes how to install firmware release 8.2(1) for SIP.

Firmware Upgrade Issues for SIP

If you are currently running firmware 6.0(2) to 7.0(2) on a Cisco Unified IP Phone 7970G and 7971G-GE and want to upgrade to 8.0(x), be aware that upgrading will take up to twice as long to complete as usual.

Firmware Installation Procedure for SIP

Before using the Cisco Unified IP Phone 7970G and 7971G-GE with Cisco Unified CallManager 5.0 or later, you must install the latest firmware on all Cisco Unified CallManager servers in the cluster.

To download and install the firmware, follow these steps:

Procedure

-
- Step 1** Go to the following URL:
<http://www.cisco.com/cgi-bin/tablebuild.pl/ip-7900ser>
- Step 2** Double-click the following hyperlink, and follow the prompts to download the firmware:
cmterm-7970_7971-sip.8-2-1.cop
- Step 3** Go back to the URL shown in [Step 1](#), double-click the following hyperlink, and follow the prompts to download the Readme file, which contains installation instructions for the corresponding firmware:
cmterm-7970_7971-sip.8-2-1-readme.htm
- Step 4** Follow the instructions in the Readme file to install the firmware.
-

Important Notes

This section contains these topics:

- [Failover Time Using TCP is Faster than Failover Time with UDP \(SIP Only\), page 6](#)
- [Wideband Speech Codes and MOS Scores, page 7](#)
- [How a Cisco Unified IP Phone Determines the TFTP Server Address, page 7](#)

Failover Time Using TCP is Faster than Failover Time with UDP (SIP Only)

You can configure SIP profiles for the Cisco Unified IP Phone 7970G and 7971G-GE to operate with Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) by using the SIP Phone Security Profile Configuration window in Cisco Unified CallManager Administration.

If you select TCP as a transport protocol, the failover time between primary, secondary, and tertiary Cisco Unified CallManagers is approximately 5 seconds or less. If you select UDP, the failover time is approximately 120 seconds. The TCP phone recovers faster since it detects the TCP link failure faster (less than 5 seconds) where the UDP phone depends on SIP KeepAlive entirely; this can take up to 120 seconds. This scenario applies to a Cisco Unified CallManager 'clean' shutdown.

In the case of a Cisco Unified CallManager crash or a router crash, the failover time for a TCP phone and a UDP phone are about the same. In this case, both the TCP and UDP phones rely on SIP KeepAlive to detect the link failure.

Wideband Speech Codes and MOS Scores

Cisco Voice Transmission Quality (CVTQ) index does not support wideband (7 kHz) speech codecs, as ITU has not defined the extension of the technique to wideband. Therefore, MOS scores that correspond to G.711 performance are reported for G.722 calls to allow basic quality monitoring.

Reporting G.711-scale MOS scores for wideband calls through the use of CVTQ allows basic quality classifications to be indicated as good/normal or bad/abnormal. Calls with high scores (approximately 4.5) indicate high quality/low packet loss, and lower scores (approximately 3.5) indicate low quality/high packet loss.

Unlike MOS, the Conceal Ratio and Concealed Seconds metrics remain valid and useful for both wideband and narrowband calls.

For more information, refer to the “Troubleshooting and Maintenance” section of your Cisco Unified IP Phone administration guide.

How a Cisco Unified IP Phone Determines the TFTP Server Address

A Cisco Unified IP Phone (firmware release 8.0(4) and later) follows an order of precedence for selecting the TFTP server address if the phone receives conflicting information from the DHCP server. For complete information on how the phone selects its TFTP server address, see the “Cisco TFTP” chapter of the *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)*.

Caveats

This section contains these topics:

- [Using Bug Toolkit, page 7](#)
- [Open Caveats, page 8](#)
- [Resolved Caveats, page 9](#)

Using Bug Toolkit

Known problems (bugs) are graded according to severity level. These release notes contain descriptions of:

- All severity level 1 or 2 bugs.
- Significant severity level 3 bugs.

You can search for problems by using the Cisco Software Bug Toolkit.

To access Bug Toolkit, you need the following items:

- Internet connection
- Web browser

- Cisco.com user ID and password

To use the Software Bug Toolkit, follow these steps:

Procedure

-
- Step 1** To access the Bug Toolkit, go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.
 - Step 2** Log on with your Cisco.com user ID and password.
 - Step 3** Click the **Launch Bug Toolkit** hyperlink.
 - Step 4** To look for information about a specific problem, enter the bug ID number in the “Enter known bug ID” field and click **Search**.
-

Open Caveats

Table 2 lists Severity 1, 2 and 3 defects that are open for Cisco Unified IP Phone 7970G and 7971G-GE using the SCCP and SIP versions of firmware release 8.2(1).

For more information about an individual defect, you can access the online record for the defect by clicking the Identifier or going to the URL shown. You must be a registered Cisco.com user to access this online information.

Because defect status continually changes, be aware that Table 2 reflects a snapshot of the defects that were open at the time this report was compiled. For an updated view of open defects, access Bug Toolkit as described in the [Using Bug Toolkit, page 7](#).

Table 2 Open SCCP and SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE

Identifier	Headline and Bug Toolkit Link
CSCsc48289	Cisco Unified IP Phone 7970 boot fails; DSP Sync error after factory reset http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsc48289
CSCsd65512	UI Overlap while in User Preference > Rings Window http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd65512
CSCse83880	Java Virtual Memory (JVM) out of memory if debugs are on and failover or fallback occurs repeatedly http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse83880
CSCsf03175	Cisco Unified IP Phone 7970/7971 generates sunvm.cnu.30.core during Cisco Unified CallManager failover fallback http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf03175
CSCsf07505	Cisco Unified IP Phone 7971/70 and 7961/41 re-append parameters with a redirected authentication http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf07505
CSCsf09033	NewCall softkey is available when maximum number of calls is reached http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf09033

Table 2 Open SCCP and SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE (continued)

Identifier	Headline and Bug Toolkit Link
CSCsg15587	Static pops with G.711 unicast paging http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg15587
CSCsg20339	GUI is stuck after changing contrast http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg20339
CSCsg43852	Speed Dial button does not display phone service when configured http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg43852
CSCsg72856	Phone does not dial directory number when dialed from Placed Call list in SRST mode http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg72856
CSCsg75464	Phone takes up to 15 minutes to re-register when CDP is turned off on switch http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg75464
CSCsg80124	Line text label on Cisco Unified IP Phone Expansion Module 7914 does not display space character http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg80124

Resolved Caveats

This section contains these topics:

- [Resolved SIP Caveats, page 9](#)
- [Resolved SCCP and SIP Caveats, page 10](#)

Resolved SIP Caveats

[Table 3](#) lists Severity 1, 2 and 3 defects that are resolved for Cisco Unified IP Phone 7970G and 7971G-GE using the SIP version of firmware release 8.2(1).

For more information about an individual defect, you can access the online record for the defect by clicking the Identifier or going to the URL shown. You must be a registered Cisco.com user to access this online information.

Because defect status continually changes, be aware that [Table 3](#) reflects a snapshot of the defects that were open at the time this report was compiled. For an updated view of open defects, access Bug Toolkit as described in the “Using Bug Toolkit” section on [page 7](#).

Table 3 Resolved SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE

Identifier	Headline and Bug Toolkit Link
CSCsd74844	Phone is stuck in UseRemote state http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd74844
CSCsd80603	Conference call is on Alert mode with 8-0-2-4S load http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd80603

Table 3 Resolved SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE (continued)

Identifier	Headline and Bug Toolkit Link
CSCse03136	Speed Dial feature needs feature parity between SIP and SCCP http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse03136
CSCse11119	Phone does not accept receive only for multicast Music on Hold (MOH) http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse11119
CSCse16078	Phone uses default softkey template with Cisco Unified CallManager after fallback http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse16078
CSCse62809	Phone calling/called information is not correct http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse62809
CSCse69731	Memory leak occurs when application NOTIFY API encounters an error http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse69731
CSCse98992	Phone cannot handle long Unicode caller ID/linetext http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse98992
CSCsf21198	Cisco Unified CallManager Key Press Markup Language (KPML) fails to work after failover to SRST http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf21198
CSCsf24260	Phone does a core dump while running the call features automation script http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf24260
CSCsf26575	Outgoing and incoming ring tones are played at same time http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf26575
CSCsg15497	Phone crashes running Codenomicon SIP test 4913 http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg15497

Resolved SCCP and SIP Caveats

Table 4 lists Severity 1, 2 and 3 defects that are resolved for Cisco Unified IP Phone 7970G and 7971G-GE using the SCCP and SIP versions of firmware release 8.2(1).

For more information about an individual defect, you can access the online record for the defect by clicking the Identifier or going to the URL shown. You must be a registered Cisco.com user to access this online information.

Because defect status continually changes, be aware that Table 4 reflects a snapshot of the defects that were open at the time this report was compiled. For an updated view of open defects, access Bug Toolkit as described in the [Using Bug Toolkit, page 7](#).

Table 4 Resolved SCCP and SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE

Identifier	Headline and Bug Toolkit Link
CSCsd13950	Phone can not boot up after reset or power cycle http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd13950
CSCsd26849	Phone login attempt results in Host not found message when initial IP address is not found in a multiple IP address setup http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd26849
CSCsd52709	Phone DHCP configuration file my_name gets corrupted http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd52709
CSCsd59892	Phone show inventory CLI output does not adhere to the specification http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd59892
CSCsd65889	Phone TFTP client never returns from getdynamicftp() http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd65889
CSCsd66998	Network Time Protocol (NTP) fails to sync to time server http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd66998
CSCsd67229	Phone handset volume is too high and the headset volume is too low http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd67229
CSCsd85188	Default router entry is removed when duplicate IP address is present http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd85188
CSCsd85217	Phone does not retry the IP address after a duplicate IP address http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd85217
CSCsd85364	Transmission Control Protocol (TCP) does not send all posted data after the socket closes http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd85364
CSCsd89584	Phone sends corrupted RFC2833 (RTP Payload for DTMF digits, Telephone Tones and Telephone Signals) packets when Secure Real-Time Transport Protocol (SRTP) is enabled for a call http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsd89584
CSCse03186	PC Port Voice VLAN Access is disabled after Cisco Unified IP Phone 7970/7971 is deleted from Cisco Unified CallManager http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse03186
CSCse14839	Cisco Unified IP Phone 7970/7971 rejects DHCP request with option 15 from Cisco Network Registrar (CNR) http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse14839
CSCse22141	Phone does not have an End Option field in the DHCP Release message http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse22141
CSCse51724	Cisco Unified IP Phone 7970/7971 does not cache TFTP address if DHCP option 66 is set to TFTP server name http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse51724
CSCse76279	Phone display is not initialized at boot time when downgrading from an 8.0 load to a 7.0 load http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse76279

Table 4 Resolved SCCP and SIP Caveats for Cisco Unified IP Phone 7970G and 7971G-GE (continued)

Identifier	Headline and Bug Toolkit Link
CSCse80623	The show inventory command returns no data http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse80623
CSCse87178	Phone resets after auto-registration due to missing default load information http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCse87178
CSCsf12118	Phone does not send an un-register message to Cisco Unified Survivable Remote Site Telephony (SRST) on fallback to Cisco Unified CallManager http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf12118
CSCsf33010	Cisco Unified IP Phone 7970/7971 draws more power than necessary when line powered at bootup http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsf33010
CSCsg00560	After reformat of the flash, the phone returns Flash Programming failure errors http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCsg00560

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. This section explains the product documentation resources that Cisco offers.

Cisco.com

You can access the most current Cisco documentation at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

The Product Documentation DVD is a library of technical product documentation on a portable medium. The DVD enables you to access installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the HTML documentation and some of the PDF files found on the Cisco website at this URL:

<http://www.cisco.com/univercd/home/home.htm>

The Product Documentation DVD is created and released regularly. DVDs are available singly or by subscription. Registered Cisco.com users can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at the Product Documentation Store at this URL:

<http://www.cisco.com/go/marketplace/docstore>

Ordering Documentation

You must be a registered Cisco.com user to access Cisco Marketplace. Registered users may order Cisco documentation at the Product Documentation Store at this URL:

<http://www.cisco.com/go/marketplace/docstore>

If you do not have a user ID or password, you can register at this URL:

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

Documentation Feedback

You can provide feedback about Cisco technical documentation on the Cisco Support site area by entering your comments in the feedback form available in every online document.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you will find information about how to do the following:

- Report security vulnerabilities in Cisco products
- Obtain assistance with security incidents that involve Cisco products
- Register to receive security information from Cisco

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

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

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For emergencies only—security-alert@cisco.com

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302

- 1 408 525-6532

**Tip**

We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.x.

Never use a revoked encryption key or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT to find other means of encrypting the data before sending any sensitive material.

Product Alerts and Field Notices

Modifications to or updates about Cisco products are announced in Cisco Product Alerts and Cisco Field Notices. You can receive these announcements by using the Product Alert Tool on Cisco.com. This tool enables you to create a profile and choose those products for which you want to receive information.

To access the Product Alert Tool, you must be a registered Cisco.com user. Registered users can access the tool at this URL:

<http://tools.cisco.com/Support/PAT/do/ViewMyProfiles.do?local=en>

To register as a Cisco.com user, go to this URL:

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

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Support website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Support Website

The Cisco Support website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day at this URL:

<http://www.cisco.com/en/US/support/index.html>

Access to all tools on the Cisco Support website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

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

**Note**

Before you submit a request for service online or by phone, use the **Cisco Product Identification Tool** to locate your product serial number. You can access this tool from the Cisco Support website by clicking the **Get Tools & Resources** link, clicking the **All Tools (A-Z)** tab, and then choosing **Cisco Product Identification Tool** from the alphabetical list. This tool offers three search options: by product ID or model name; by tree view; or, for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

**Tip****Displaying and Searching on Cisco.com**

If you suspect that the browser is not refreshing a web page, force the browser to update the web page by holding down the Ctrl key while pressing **F5**.

To find technical information, narrow your search to look in technical documentation, not the entire Cisco.com website. After using the Search box on the Cisco.com home page, click the **Advanced Search** link next to the Search box on the resulting page and then click the **Technical Support & Documentation** radio button.

To provide feedback about the Cisco.com website or a particular technical document, click **Contacts & Feedback** at the top of any Cisco.com web page.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411

Australia: 1 800 805 227

EMEA: +32 2 704 55 55

USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Online Subscription Center is the website where you can sign up for a variety of Cisco e-mail newsletters and other communications. Create a profile and then select the subscriptions that you would like to receive. To visit the Cisco Online Subscription Center, go to this URL:

<http://www.cisco.com/offer/subscribe>

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco channel product offerings. To order and find out more about the *Cisco Product Quick Reference Guide*, go to this URL:

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

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

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

- Cisco Press publishes a wide range of general networking, training, and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

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

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

- Networking products offered by Cisco, as well as customer support services, can be obtained at this URL:

<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website where networking professionals share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:
<http://www.cisco.com/discuss/networking>
- “What’s New in Cisco Documentation” is an online publication that provides information about the latest documentation releases for Cisco products. Updated monthly, this online publication is organized by product category to direct you quickly to the documentation for your products. You can view the latest release of “What’s New in Cisco Documentation” at this URL:
<http://www.cisco.com/univercd/cc/td/doc/abtunicd/136957.htm>
- World-class networking training is available from Cisco. You can view current offerings at this URL:
<http://www.cisco.com/en/US/learning/index.html>

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