



# Cisco IP Phone 7971G-GE Release Notes for Firmware Release 6.0(2) SR2 for Cisco CallManager 3.3 or Later

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**May 20, 2005**

These release notes are for use with the Cisco IP Phone 7971G-GE with firmware version 6.0(2) SR2 running on Cisco CallManager 3.3 or later.

These release notes include the following sections:

- [Installing Required Firmware for the Cisco IP Phone, page 2](#)
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## Installing Required Firmware for the Cisco IP Phone



### Note

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Before you load the firmware image for the Cisco IP Phone 7971G-GE, read the complete installation instructions in the Readme file.

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To use the Cisco IP Phone 7971G-GE with Cisco CallManager release 3.3 or later, you must install the latest firmware on all Cisco CallManager servers in the cluster. The firmware image name is TERM70.6-0-2SR2-0S.

However, if you are using Cisco CallManager Release 3.0, 3.1, or 3.2, do **not** install this firmware. You must first upgrade your Call Manager to release 3.3(4)SR2, 4.0(2a)SR1a, or 4.1.2 and execute the appropriate device package, if applicable. The TERM70.6-0-2SR2-0S firmware image will not work on Cisco IP Phones that connect to Cisco CallManager running a release prior to 3.3(4)SR2.

To find out whether you need to execute a device package before installing firmware, and for complete firmware installation instructions, refer to the Readme file.

## Important Note

This release does not support Cisco CallManager Express SRST environments.

# Important Documentation Notes

This section provides important information regarding documentation for the Cisco IP Phone 7971G-GE.

## Phone Figure in Phone User Guide

The figure of the back of a phone that appears in the “Connecting Your Phone” chapter in *Cisco IP Phone 7970 Phone Guide* is incomplete. The figure shows the network port and the access port as they are labeled on the Cisco IP Phone 7970G, not on the Cisco IP Phone 7971G-GE. On the Cisco IP Phone 7971G-GE, these ports are labeled as follows:

- Network port—10/100/1000 SW
- Access port—10/100/1000 PC

## Cisco IP Phone 7971G-GE Power and Feature Information in the Phone Administration Guide

If you are using a version of Cisco CallManager earlier than 4.x:

- For information about phone features and related topics, refer to *Cisco IP Phone 7970 Administration Guide for Cisco CallManager Release 3.3(3) and Later*.
- For information related to power for the Cisco IP Phone 7971G-GE, refer to the following sections in *Cisco IP Phone 7970 Series Administration Guide for Cisco CallManager 4.0*:
  - “Providing Power to the Cisco IP Phone 7970 Series” in the “Preparing to Install the Cisco IP Phone on Your Network” chapter
  - “Network and Access Ports” in the “Setting Up the Cisco IP Phone” chapter

## Related Documentation

For more information about Cisco IP Phones, refer to the publications that are available at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_ipphon/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm)

For more information about Cisco CallManager, refer to the following publications, which are available at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_callmg/4\\_0/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/4_0/index.htm)

- *Cisco CallManager Administration Guide*
- *Cisco CallManager Features and Services Guide*
- *Cisco CallManager System Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco CallManager Serviceability System Guide*
- *Cisco IP Telephony Troubleshooting Guide for Cisco CallManager*
- *Bulk Administration Tool User Guide*

## Correcting Cisco IP Phone 7970G and 7971G-GE Upgrade Problems

This section provides information that you should read if you are having difficulty upgrading from a 5.0(x) firmware image to a later image—up to, and including, image 6.0(3)—on the Cisco IP Phone 7970G or the Cisco IP Phone 7971G-GE.

Normally, the firmware upgrade process goes smoothly, but on rare occasions, some phones might experience problems. This section includes the following topics, which can help you solve upgrade problems quickly:

- [Identifying the Upgrade Problem, page 5](#)
- [Power Cycling the Phone, page 6](#)
- [Verifying the Phone Load, page 6](#)
- [Gathering Information About the Phone Upgrade, page 7](#)
- [Correcting Phone Registration Problems, page 10](#)

## Identifying the Upgrade Problem

A firmware upgrade problem can cause a phone to get “stuck” without completing the upgrade process. In this case, a phone begins to upgrade but does not finish the process, and the phone screen remains unchanged for at least 10 minutes. Often the phone gets stuck at the “Verifying Load” phase. See [Table 1](#) to identify the situation and determine corrective action.

**Table 1** *Correcting Cisco IP Phone 7970G and 7971G-GE Upgrade Problems*

| Situation  | Explanation   | Corrective Action   |
|--|---|---|
| Network issue  | The TFTP server is connected through a WAN link or the network is slow for some other reason. This situation can cause the upgrade to take longer than usual.   | Improve the network response time. (For example, consider adding a TFTP server or moving the existing TFTP server.) |
|  | Data packets are being dropped or reordered, which interferes with the TFTP protocol that requires the data packets to be received in order. If enough data packets are dropped or reordered, the phone will stop transferring the file and try again. If this situation persists, the phone may not be able to upgrade from that location. |   |
| Slow TFTP server   | When a large number of phones attempt to upgrade their phone loads simultaneously, demand on the TFTP server increases. This situation slows the packet delivery rate for all phones. If all but a few phones upgrade successfully, this situation is probably not occurring.   | Wait until demand on the TFTP server decreases before you upgrade phones.   |
| Phone does not complete upgrade or re-register after upgrade | The phone began the upgrade process but seems to have stopped. The display has not changed for 10 minutes and there does not appear to be a network issue that would explain this behavior.   | See the <a href="#">“Power Cycling the Phone”</a> section on <a href="#">page 6</a> .                               |

## Power Cycling the Phone

If you determine that the phone does not go beyond displaying the Verifying Load screen and that the cause is not a network issue, obtain the information described in the [“Gathering Information About the Phone Upgrade”](#) section on page 7, then power cycle the phone.



### Note

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If it the phone is not stuck on the Verifying Load screen and instead has not completed downloading the firmware, power cycling the phone will restart the download process.

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After power cycling, the phone should complete the upgrade process and register to the Cisco CallManager

If the phone *does* register with Cisco CallManager after power cycling, go to [“Verifying the Phone Load”](#) section on page 6.

If the phone does *not* register with Cisco CallManager after power cycling, go to the [“Correcting Phone Registration Problems”](#) section on page 10.

## Verifying the Phone Load

If the phone registers with Cisco CallManager after you power cycle the phone, verify that the phone has the correct phone load file.

To do so, choose **Settings > Model Information** from the phone and look at the Load File setting.



### Note

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If the phone resets while you are trying to check the phone load, allow the reset procedure to complete. If possible, note the number of times that the phone resets and then comes back up and registers.

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If the phone load is *correct*, inform the Cisco TAC about the issue that you experienced and include a note stating that power cycling allowed the phone to complete the upgrade process.

If the phone load is *incorrect*, go to the Cisco CallManager Administration page for this phone and look at the Phone Load Name field. (This field appears under the Firmware Load Information heading.) Then take one of the following actions:

- If the Phone Load Name field specifies the correct load, follow the instructions in the [“Gathering Information About the Phone Upgrade” section on page 7](#) and contact the Cisco TAC.
- If the Phone Load Name field specifies an incorrect load, correct the entry in the Phone Load Name field, or delete the contents of the field to use the load specified on the Device Defaults page. Click **Update** and then reset the phone from the Cisco CallManager Administration.

**Note**

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It is unusual that you will need to manually specify a phone load.

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- If the Phone Load Name field is blank, look at the Device Defaults page Load Information entry for the phone model that has the incorrect load. If the entry has the correct phone load, follow the instructions in the [“Gathering Information About the Phone Upgrade” section on page 7](#) and contact the Cisco TAC. If the Device Defaults page does not have the correct phone load, update the load information in this page and reset all of the phones with this model type.

## Gathering Information About the Phone Upgrade

If a phone does not upgrade its firmware successfully, gather as much of the following information as possible and provide it to the Cisco TAC. Details about the condition of the phone when the upgrade started can help the TAC determine and resolve the issue.

Consider gathering the following information:

- What was the phone state when the upgrade started?
  - Was the phone idle or was there a call in progress? (An upgrade will not start until a call completes.)
  - Did a call finish just before the upgrade started?
  - Does the phone have a shared line that might have had active calls?

- What's displayed on the phone screen?
  - Is there text in the status line?
  - Is there a handset, headset, or speaker icon in the status line (to indicate the current audio mode)?
  - Does the phone screen change in any way when you lift or replace the handset, or press the **Speaker** or **Headset** button?
- What does the background of the phone screen look like?
  - Does phone screen display the Cisco logo on a white background? If so, does it include check, X, or circle in the lower left corner?
  - Does the phone screen display the default gray background? If so, was the phone configured to display a different background before the upgrade process began?
- What happens if you press the **Settings** button?
  - Does the Settings menu appear or go away?
  - If you can open the Settings menu, display the Status Messages screen. Are there any status messages that were generated after the upgrade process began?
- What happens when you press the **Volume** button? Does the phone screen change? Does the ringer sound?
- What is the phone's history?
  - Was the phone power cycled recently?
  - Was the phone moved to a new location recently?
  - What was the date and time of the phone's last successful upgrade?
  - Has this phone had an upgrade problem in the past?
- What applications does the phone run?
  - Does the phone typically run XML applications?
  - Is the phone configured with an Idle URL?
  - Was the phone using Cisco CallManager Extension Mobility?
- Does the phone receive inline power, or is it using external power?

- What equipment is connected to the phone?
  - Does the phone have a Cisco IP Phone 7914 Expansion Module connected?
  - Does the phone have a headset or a TTD device connected?
  - Is there a PC or another device plugged to the access port of the phone?
  - If there is a PC connected to the access port, can the PC access the web?
  - If there is a PC connected to the access port, can the PC ping the TFTP server?
- What phone load version was the phone running before you attempted the upgrade?
- What phone load version is the phone trying to upgrade to?
- What is the phone model?
- What is the IP address and MAC address of the phone?
- Can you access the phone web pages? (Go to [http://IP\\_address](http://IP_address), where *IP\_address* is the IP Address of the phone.) Collect information from the following pages, if accessible:
  - Device Information
  - Network Configuration
  - Console Logs
  - Core Dumps
  - Status Messages
  - Debug Display
- If you cannot access the phone web pages, can you access the Settings menu on the phone? Collect the following information from the Network Configuration and Device Configuration menus:
  - DHCP server IP address (if DHCP is enabled for the phone).
  - TFTP server IP address, and whether this address is specified by DHCP or by an Alternate TFTP address that has been entered on the phone (if DHCP is enabled).
  - Configured TFTP server IP address (if DHCP is not enabled for the phone).

- Subnet mask (if DHCP is not enabled for the phone).
- Default router IP address (if DHCP is not enabled for the phone).
- DNS server IP address
- Primary Cisco CallManager IP address and whether Cisco CallManager is configured to run in secure mode.
- What are the relevant network conditions?
  - What is the topology of the network in which the phone and the TFTP server are connected?
  - What recent hardware or software updates or additions have been made to network equipment?
  - Have other nearby phones upgraded successfully? If so, what phone models are they, and are they connected to the same switch as the phone that is having problems?
  - What does the Ethernet cable that is plugged into the access port on the phone connect to?
  - Can you provide a sniffer trace or an ethereal trace of the network traffic that the phone is seeing?

## Correcting Phone Registration Problems

The following sections describe steps that you can take if a phone does not register with Cisco CallManager after the phone upgrades its firmware:

- [Symptom: Headset Button Lights and Line Keys Flash, page 10](#)
- [Symptom: Startup Screen Appears, page 11](#)
- [Symptom: Phone Starts Up but Does Not Register, page 12](#)
- [Checking the Load on the TFTP Server, page 13](#)

### Symptom: Headset Button Lights and Line Keys Flash

If the **Headset** button on the phone illuminates green and line keys flash in sequence in green, the phone has lost its load in its Flash memory and cannot load the termXX.default.loads file. (In this file name, XX is the last two digits of the phone model number.)

To resolve this problem, take one of these actions:

- Perform the procedure in the [“Checking the Load on the TFTP Server” section on page 13](#) and make sure that the termXX.default.loads file exists on the TFTP server.
  - If the load file does not exist on the TFTP server, obtain a termXX.default.loads file and its components from the phone load version install package that you want to be the default load for the phone. See the [“Checking the Load on the TFTP Server” section on page 13](#).
  - If the load file does exist on the TFTP server, make sure that the phone is plugged into a network with DHCP. Make sure that DHCP option 150 or option 66 is properly configured to point to the TFTP server on which the termXX.default.loads file is stored.
  - If the load file does exist on the TFTP server and DHCP is set up properly, and the phone still goes through a continual rebooting process, the termXX.default.loads file may be corrupted. Obtain a new copy of the file from CCO.

## Symptom: Startup Screen Appears

If the phone displays the Cisco logo startup screen but the headset light is not illuminated green, make sure that the termXX.default.loads file exists on the TFTP Server (see the [“Checking the Load on the TFTP Server” section on page 13](#)), and make sure that the phone is on a DHCP-enabled network.

Then, follow these steps to perform a factory reset of the phone. When you perform a factory reset, the following information is erased or reset to its default value.

- CTL file—Erased.
- User configuration settings—Reset to default values.
- Network configuration settings—Reset to default values.
- Call histories—Erased.
- Locale information—Reset to default values.

### Preparing for a factory reset

Before you perform a factory reset, ensure that the following conditions are met:

- The phone must be on DHCP-enabled network.
- A valid TFTP server must be set in DHCP option 150 or option 66 on the DHCP server.
- The termXX.default.loads file and the files specified in that file should be available on the TFTP server that is specified by the DHCP packet.

### Performing a factory reset

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**Step 1** Power cycle the phone.

The phone begins its power up cycle.

**Step 2** While the phone is powering up, and before the Speaker button flashes on and off, press and hold #.

Continue to hold # until each line button flashes on and off in sequence in yellow.

**Step 3** Release # and press **123456789\*0#**.

You can press a key twice in a row, but if you press the keys out of sequence, the factory reset will not take place.

After you press these keys, the line buttons on the phone flash red and the phone goes through the factory reset process.

Do not power down the phone until it completes the factory reset process and the main screen appears.

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## Symptom: Phone Starts Up but Does Not Register

If a phone makes it past the Cisco Logo Startup screen when it starts up but does not register with Cisco CallManager, display the Status Messages screen on the phone (press **Settings > Status > Status Messages**) and look for the following potential problems. When you identify the problem, refer to the Cisco IP Phone documentation or to the phone web page for additional information.

- CTL update failed
- DNS Unknown Host

- Duplicate IP address
- File Not Found
- Load Auth Failed
- Programming Error
- TFTP Error
- TFTP not authorized
- TFTP Timeout
- Version Error
- Phone not in Cisco CallManager database and Auto-registration turned off, or Cisco CallManager license not available (look for the “Registration Rejected” message)

## Checking the Load on the TFTP Server

To determine if the phone load is on the TFTP server, perform the following steps.



### Note

If any phone has successfully upgraded to the load that you desire, this problem does not apply.

### Procedure

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- Step 1** On the TFTP server, make sure that the .loads file exists in the \Program Files\Cisco\TFTPPath folder.
- If the .loads file does not exist, retrieve the file named cmterm-7970\_7971-sccp-X-X-X.ZIP. You can download this file from Cisco Connection Online (CCO).
- Step 2** Extract the entire contents into the TFTPPath on your Cisco CallManager: c:\Program Files\Cisco\TFTPPath.
- Step 3** If asked to overwrite any files, choose **Yes to All**.
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# Resolved Defects

Table 1 lists the bugs that have been fixed in this release.

**Table 1** Defects Resolved in this Release

| DDTS Number | Summary  |
|-------------|--|
| CSCeg56835  | Phone ignores VVLAN information from switch port |

# Known Defects

Table 2 describes known Severity 1, 2, and 3 defects in this release.

If you have an account with Cisco.com, you can use the Bug Toolkit to find defects of any severity for any release.

To access the Bug Toolkit, perform either of these actions:

- Go to this URL:  
[http://www.cisco.com/cgi-bin/Support/Bugtool/launch\\_bugtool.pl](http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl)
- Log in to Cisco.com, click **Technical Support**, then click **Tools & Utilities**, then click **Software Bug Toolkit** under Troubleshooting Tools

**Table 2** Known Defects in this Release

| Identifier | Headline and Bug Toolkit Link   |
|------------|---|
| CSCee93542 | Missing status error message for duplicated IP address.<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCee93542">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCee93542</a>  |
| CSCeg12982 | Call plane does not close after ImmDiv (3373)<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg12982">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg12982</a>  |
| CSCeg21668 | Cisco IP Phone 7970G does not populate Missed Call with correct information<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg21668">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg21668</a>                          |
| CSCeg39172 | Cisco IP Phone 7971G-GE does not associate with CVTA PC when Cisco IP Phone 7971G-GE is power-cycled<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg39172">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg39172</a> |

**Table 2** Known Defects in this Release (continued)

| Identifier | Headline and Bug Toolkit Link   |
|------------|---|
| CSCeg45714 | Mid-call video starts when active call is on mute<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg45714">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg45714</a>  |
| CSCeg45808 | Callback to a Cisco IP Phone 7971G-GE fails to activate<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg45808">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg45808</a>  |
| CSCeg47156 | Cisco IP Phone 7971G-GE I (Help) button does not work (3507)<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47156">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47156</a>   |
| CSCeg47260 | Cisco IP Phone 7970G deregisters but never re-registers after Cisco CallManager service is restarted<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47260">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47260</a> |
| CSCeg47854 | Cisco IP Phone 7971G-GE reset after hold/resume duration<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47854">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg47854</a>   |
| CSCeg50192 | Cisco IP Phone 7970G hangs intermittently while attempting Extension Mobility login/logout<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg50192">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg50192</a>           |
| CSCeg54115 | Cisco IP Phone 7970G random counter call time displayed off hook condition<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg54115">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg54115</a>                           |
| CSCeg55617 | Console shows CONSOLE TOO SLOW! Skipping 0 log files!<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg55617">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg55617</a>  |
| CSCeg58032 | Phone stuck after erase operation<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg58032">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg58032</a>  |
| CSCeg58050 | Phone stuck after restart from Cisco CallManager<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg58050">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg58050</a>   |
| CSCeg60175 | PC attached to phone loses network after multiple phone reload<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg60175">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg60175</a>                                       |
| CSCeg60495 | Cisco IP Phone 7971G-GE freezes for Extension Mobility duration test<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg60495">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg60495</a>                                 |

**Table 2** Known Defects in this Release (continued)

| Identifier | Headline and Bug Toolkit Link   |
|------------|---|
| CSCeg63608 | Cisco IP Phone 7971G-GE encounters a java.io.exception when the primary Cisco CallManager is shut down<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg63608">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg63608</a> |
| CSCeg65235 | Cisco IP Phone 7971G-GE crashes under simClient duration test<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65235">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65235</a>  |
| CSCeg65241 | Cisco IP Phone 7971G-GE crashes on call transfer duration test<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65241">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65241</a>   |
| CSCeg65387 | GraphicFileMenu object supports a maximum of 8 softkeys<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65387">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65387</a>  |
| CSCeg65401 | GraphicFileMenu object gives host not found error when using a custom softkey<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65401">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg65401</a>                          |
| CSCeg66252 | Cisco IP Phone 7971G-GE does not go to second TFTP server when switching to new VLAN<br><a href="http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg66252">http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeg66252</a>                   |

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

### Cisco.com

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

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/pdi.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm)

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:  
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

You can submit e-mail comments about technical documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Customer Document Ordering  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

# Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

## Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

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

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

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

## Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

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

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case 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 listing of Cisco TAC contacts, go to this URL:

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

## TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

**Priority 1 (P1)**—Your 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.

**Priority 2 (P2)**—Operation of an existing network is severely degraded, or significant aspects of your business operation 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.

**Priority 3 (P3)**—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

**Priority 4 (P4)**—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.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:

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

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

<http://cisco.com/univercd/cc/td/doc/pcat/>

- *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 online at this URL:

<http://www.ciscopress.com>

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

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

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

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

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

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

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

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

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