Preface

This administrator guide describes the Cisco IP Phone 7960G/7940G in a Session Initiation Protocol (SIP) network. This preface describes the objectives and organization of the document and explains how to find additional information on related products and services. It contains the following sections:

Overview

Cisco SIP IP Phone Administrator Guide provides information about how to set up, cable, and configure a Cisco IP Phone 7960G/7940G in a SIP network. It also provides information on how to configure the network and SIP parameters and change the settings and options of the Cisco IP phone. The appendixes include reference information such as RFC compliance and Cisco IP phone call flows.

Who Should Use This Guide

Network engineers, system administrators, Cisco partners, and telecommunications engineers should use this guide to learn the tasks required to set up the Cisco IP phone in an SIP network. The described tasks are administration-level tasks and are not intended for the end users of the phones. Many of the tasks involve configuring network settings that could affect the ability of the phone to function in the network and require an understanding of IP networking and telephony concepts.

Objectives

This guide provides necessary information to get the Cisco IP phone operational in a SIP network. It is not intended to provide information on how to implement a SIP or a VoIP network. For information on implementing SIP and VoIP networks, refer to the documents listed in the "Related Documentation" section on page ix.

Document Organization

This document is organized into the following chapters and appendixes:

- Chapter 1, "Product Overview"—Describes the SIP protocol and the Cisco IP Phone 7960G/7940G.

- Chapter 2, "Installing Cisco IP Phone 7960G/7940G Hardware on the Desktop or Wall"—Describes how to install phone hardware.

- Chapter 3, "Initializing Cisco SIP IP Phones"—Describes how to install firmware, customize configuration files, and connect the phone.

- Chapter 4, "Managing Cisco SIP IP Phones"—Describes how to upgrade firmware and perform other management tasks.

- Chapter 5, "Monitoring Cisco SIP IP Phones"—Describes how to debug and troubleshoot.

- Appendix A, "Compliance with RFC 3261"—Provides reference information about Cisco SIP IP phone compliance to RFC 3261.

- Appendix B, "SIP Call Flows"—Provides reference information about Cisco SIP IP phone call flows.

- Appendix C, "Technical Specifications of the Cisco Phone IP 7960G/7940G"—Provides physical and operating environment specifications, cable specifications, and connection specifications.

- Appendix D, "Configurable Parameters for the SIP IP Phone"—Lists and describes configurable parameters.

Document Conventions

This document uses the following conventions:

- Commands and keywords are in **boldface** font.

- Arguments for which you supply values are in *italic* font.

- Elements in square brackets ([ ]) are optional.

- Required alternative keywords are grouped in braces and are separated by vertical bars (for example, {**x** | **y** | **z**}).

- Optional alternative keywords are grouped in brackets and are separated by vertical bars (for example, [**x** | **y** | **z**]).

- Terminal sessions and information that the system displays are in `screen` font.

- Information that you must enter is in `boldface screen` font.

- Buttons and menus that are called out in text in an imperative context are in **boldface** font.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.**

Related Documentation

Cisco IP Phone 7960 and Cisco IP Phone 7940

- User and administrator documentation
  http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/index.htm

Session Initiation Protocol

- *Session Initiation Protocol Gateway Call Flows*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/rel_docs/sip-flo/

Implementing a VoIP Network

- *Cisco IOS Voice Configuration Library*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/vcl.htm

- *Cisco IOS Voice Command Reference*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123tcr/123tvr/

- *Cisco IOS IP Configuration Guide*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/ip_vcg.htm

- *Cisco IOS IP Command Reference, Volume 1 of 4: Addressing and Services*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123tcr/123tip1r/

- *Cisco IOS IP Command Reference, Volume 2 of 4: Routing Protocols*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123tcr/123tip2r/

- *Cisco IOS IP Command Reference, Volume 3 of 4: Multicast*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123tcr/123tip3r/

- *Cisco IOS IP Command Reference, Volume 4 of 4: IP Mobility*
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123tcr/123tip4r/

Tones

- Telcordia document GR-506-CORE, *Signaling for Analog Interfaces*
  http://telecom-info.telcordia.com

- *Cisco BTS 10200 Softswitch System Description*
  http://www.cisco.com/univercd/cc/td/doc/pcat/bts10200.htm

Note   Access to the Cisco BTS 10200 Softswitch System technical documentation set is restricted. Contact your Cisco representative for access information.

Upgrading Firmware

- *Cisco 7940 and 7960 IP Phones Firmware Upgrade Matrix*

  http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/addprot/mgcp/frmwrup.htm

- *Cisco IP Phone 7960/40 Release Notes for SIP*

  http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/addprot/sip/relnote/

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 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

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/

Cisco Marketplace:

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

Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

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

Cisco will continue to support documentation orders using the Ordering tool:

- Registered Cisco.com users (Cisco direct customers) can order documentation from the Ordering tool:

    http://www.cisco.com/en/US/partner/ordering/

- Instructions for ordering documentation using the Ordering tool are at this URL:

    http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

- 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 1 800 553-NETS (6387).

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to 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.

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 can perform these tasks:

- 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 and notices for Cisco products is available at this URL:

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

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from 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 might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—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.

- 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 to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.
>
> Never use a revoked 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.htm
>
> The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation 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 Technical Support & Documentation Website

The Cisco Technical Support & Documentation 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/techsupport

Access to all tools on the Cisco Technical Support & Documentation 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 Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI 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.

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)—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.

Severity 2 (S2)—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.

Severity 3 (S3)—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.

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.

- 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

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

   http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

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

   or view the digital edition at this URL:

   http://ciscoiq.texterity.com/ciscoiq/sample/

- *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

- Networking products offered by Cisco Systems, 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 for networking professionals to 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

- 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