



Preface

The Cisco Integrated Communications System (ICS) 7750 (referred to from this point on as the *Cisco ICS 7750* or the *system*) is an integrated communications platform designed to enable easy, rapid deployment and management of key data and converged voice/data applications and services, including IP telephony, content delivery networking, multiservice routing, and more—transforming branch-office and mid market business environments into dynamic and responsive e-businesses. The Cisco ICS 7750 provides a cost-effective platform for quick deployment of powerful New World applications such as unified messaging, integrated Web call centers, data/voice collaboration, and networked video.

The Cisco ICS 7750 has all the elements needed to deliver data, voice, and video in a single chassis—multiservice router/voice gateway cards based on Cisco IOS software, application server cards running core voice applications, call processing software, and integrated web-based system management software, a data switching interface card for connectivity to Catalyst 3524-PWR XL switches, and a card that monitors system health.

This section describes the intended audience and organization of this *Cisco ICS 7750 Troubleshooting Guide* and defines the conventions used to convey instructions and information.

Audience

This guide is intended for personnel including the following:

- Administrators and installers with some technical networking and telephony background and experience
- Administrators who are familiar with the fundamentals of router- and switch-based internetworking, but who might have limited familiarity with Cisco IOS software
- Administrators and installers who are responsible for operating, monitoring, maintaining, and troubleshooting internetworking and telephony equipment

It is assumed that you are familiar with the following concepts and their related terminology:

- Local Ethernet
- Wide-area networking
- Telephony

Organization

This guide is organized as follows:

- [Chapter 1, “Monitoring the System”](#) describes system alarms and log messages, introduces you to the Simple Network Management Protocol (SNMP), and tells how to use various SNMP-based software applications and the Cisco IOS command-line interface (CLI) to monitor the Cisco ICS 7750 and connected uninterruptible power supplies (UPSs).
- [Chapter 2, “System Troubleshooting Guidelines”](#) provides fault-isolation guidelines to help you associate symptoms with problems.
- [Chapter 3, “Solving Hardware Problems”](#) explains how to solve problems with system cards, fans, and power supplies.
- [Chapter 4, “Installing and Upgrading Cisco ICS 7750 System Software”](#) explains how to uninstall, install, and upgrade Cisco ICS 7750 System software on the system processing engine (SPE) cards.
- [Chapter 5, “Troubleshooting Cisco ICS 7750 Software”](#) explains how to solve problems with System Manager and Cisco CallManager software.

- [Chapter 6, “Solving Serial Connection Problems”](#) explains how to solve problems associated with serial connections.
- [Chapter 7, “Solving Ethernet Problems”](#) explains how to solve problems associated with Ethernet connections.
- [Chapter 8, “Solving IP Problems”](#) explains how to solve problems associated with IP.
- [Chapter 9, “Solving Voice Problems”](#) explains how to solve problems associated with trunks and phones.
- [Appendix A, “Error Message Summary,”](#) lists system error messages.
- [Appendix B, “Reimaging Cisco ICS 7750 SPEs,”](#) describes how to install and uninstall peripherals for use with Cisco ICS 7750.
- [Appendix C, “Using Peripherals with Cisco ICS 7750 SPEs,”](#) describes how to reimage the Windows 2000 Server operating system on an SPE.

Safety Precautions and Maintenance Guidelines



Note

The following guidelines are IMPORTANT SAFETY INSTRUCTIONS.

This section provides guidelines that you should follow when working on the Cisco ICS 7750.

General Safety Precautions

Read the warnings in this section before working on the system.



Warning

Read the installation instructions before you connect the system to its power source.



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity.

**Warning**

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 16A international) is used on the phase conductors (all current-carrying conductors).

**Warning**

This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.

**Warning**

Only trained and qualified personnel should be allowed to install or replace this equipment.

**Warning**

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

**Warning**

The device is designed to work with TN power systems.

**Warning**

The system processing engine (SPE) contains a lithium battery. There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ESD Safety Precautions

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD occurs when electronic printed circuit cards are improperly handled. ESD can result in complete or intermittent failures.

Always follow these ESD-prevention procedures when removing and replacing cards and other system components:

- Ensure that the chassis is electrically connected to earth ground.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact.
- Connect the clip to an unpainted surface of the chassis frame to safely channel ESD voltages to ground.
- To properly guard against ESD damage and shocks, the wrist strap must be used correctly. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

**Caution**

For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

**Caution**

Static voltages as low as 30 volts can cause latent damage to circuitry. Be sure to observe all standard antistatic procedures (for example, wear a grounding strap) when handling electronic equipment and components.

**Warning**

Blank faceplates (filler panels) serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards and faceplates are in place.

Safety with Electricity

Follow these guidelines when working on equipment powered by electricity:

- Locate the emergency power-off switch in the room in which you are working. Then, if an electrical accident occurs, you can quickly shut the power off.
- Disconnect all power before installing or removing a Cisco ICS 7750 chassis.
- Do not work alone if potentially hazardous conditions exist.

- Never assume that power is disconnected from a circuit. Always check.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, and missing safety grounds.

If an electrical accident occurs, proceed as follows:

- Use caution; do not become a victim yourself.
- Turn off power to the chassis.
- If possible, send another person to get medical aid. Otherwise, determine the condition of the victim, and then call for help.
- Determine whether the victim needs rescue breathing or external cardiac compressions; then take appropriate action.

**Note**

SAVE THESE INSTRUCTIONS.

Conventions

This guide uses the following conventions for instructions and information.

Notes and Cautions

Notes and cautions use the following conventions and symbols:

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.

**Caution**

This caution symbol 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 *Regulatory Compliance and Safety Information* document that accompanied this device.

Waarschuwing

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.

Varoitus

Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).

Attention

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.

- Warnung** Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument *Regulatory Compliance and Safety Information* (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde.
- Avvertenza** Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento *Regulatory Compliance and Safety Information* (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.
- Advarsel** Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarslene som finnes i denne publikasjonen, kan du se i dokumentet *Regulatory Compliance and Safety Information* (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.
- Aviso** Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. Para ver as traduções dos avisos que constam desta publicação, consulte o documento *Regulatory Compliance and Safety Information* (Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.

¡Advertencia! Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado *Regulatory Compliance and Safety Information* (Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.

Varning! Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador. Se förklaringar av de varningar som förekommer i denna publikation i dokumentet *Regulatory Compliance and Safety Information* (Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.

Command Conventions

Table 1 describes the command syntax used in this document.

Table 1 *Conventions*

Convention	Description
boldface	Commands and keywords.
<i>italic</i>	Command input that is supplied by you.
[]	Optional keywords and default responses to system prompts appear within square brackets.
{ x x x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. You must select one.
^ or Ctrl	Represent the key labeled <i>Control</i> . For example, when you read <i>^D</i> or <i>Ctrl-D</i> , you should hold down the Control key while you press the D key.

Table 1 Conventions (continued)

Convention	Description
screen font	Examples of information displayed on the screen.
boldface screen font	Examples of information that you must enter.

Related Documentation

This section describes other publications in the Cisco ICS 7750 documentation set as well as related Cisco publications.

Cisco ICS 7750 Documentation

The following publications are companion documents to this guide and are available at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/index.htm>

For a description of the key installation, configuration, operation, and maintenance tasks on the Cisco ICS 7750, refer to the *Cisco ICS 7750 Installation and Configuration Guide*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icsicg26/index.htm>

For a description of the features, modifications, and caveats for the Cisco Integrated Communications System 7750 (Cisco ICS 7750) release 2.6.0, refer to *Release Notes for System Software Release 2.6.0 on the Cisco ICS 7750*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icsrn26.htm>

For a description of how to install memory modules, packet voice digital signal processor (DSP) modules (PVDMs), and virtual private network (VPN) modules in analog station interface (ASI), multiservice route processor (MRP), and system processing engine (SPE) cards, refer to *Installing Memory, PVDM, and VPN Modules in ASI, MRP, and SPE Cards in the Cisco ICS 7750*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icsmem26.htm>

For details about how to install and replace processor cards, voice interface cards (VICs), WAN interface cards (WICs), power supply modules, and the fan tray in the Cisco ICS 7750, refer to *Cisco ICS 7750 FRU Installation and Replacement*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icsfru26.htm>

For technical specifications and other information about processor cards, interface cards, the chassis, and power supply modules, as well as information about software, Cisco IP Phones, and Cisco switches and routers that you can use with the Cisco ICS 7750, refer to the *Cisco ICS 7750 System Description*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icssd26/index.htm>.

For a summary of the documentation that is available for the Cisco ICS 7750, as well as the documentation for the applications that run on the Cisco ICS 7750, refer to the *Cisco ICS 7750 Documentation Locator for Release 2.6.0*:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/ics26/icsloc26.htm>

Cisco CallManager Documentation

For information about Cisco CallManager, refer to the documentation at this URL:

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

Cisco IP Phone Documentation

For information about Cisco IP Phones, refer to the documentation at this URL:

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

Cisco Unity Voice Messaging Documentation

For information about installing and configuring Cisco Unity Voice Messaging on the Cisco ICS 7750, refer to the publications at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/icsapps/icsunity/index.htm>

Cisco Customer Response Applications Documentation

For information about installing and configuring Cisco Customer Response Applications (CRA) on the Cisco ICS 7750, refer to the publications at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/voice/ics/icsapps/icscra/cra22/index.htm>

Backup Power Supply Documentation

For information about the backup power supply options supported by the Cisco ICS 7750, refer to the following publications:

- *Cisco RPS 300 Redundant Power System Hardware Installation Guide* available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/c2900xl/rps300/rps300ig/index.htm>

- *User's Manual APC Smart-UPS*

VIC, WIC, and VWIC Documentation

For information about voice interface card (VIC), WAN interface card (WIC), and voice WAN interface card (VWIC) installation, cabling, and configuration, and connection to a network, refer to the *Cisco Interface Cards Installation Guide*:

http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/cis2600/hw_inst/wic_inst/wic_doc/index.htm

Catalyst 3500 Series XL Documentation

For information about the Catalyst 3500 series XL switches, including the Catalyst 3524-PWR XL switch, refer to the documentation at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/c2900xl/index.htm>

Cisco IOS Documentation

The Cisco IOS software documentation set describes the tasks and commands necessary to configure certain system components and other Cisco products, such as access servers, routers, and switches. Each configuration guide can be used in conjunction with its corresponding command reference.

For information about Cisco IOS software configuration, refer to the documentation at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/index.htm>

Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

World Wide Web

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

<http://www.cisco.com>

Translated documentation is available at this URL:

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

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. In the Cisco Documentation home page, click the **Fax** or **Email** option in the “Leave Feedback” section at the bottom of the page.

You can e-mail your comments to bug-doc@cisco.com.

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

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

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

If you want to obtain customized information and service, you can self-register on Cisco.com. To access Cisco.com, go to this URL:

<http://www.cisco.com>

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

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

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

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

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

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

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

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

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

