



## Preface

---

This section discusses the following:

- [Objective, page vii](#)
- [Audience, page vii](#)
- [Organization, page viii](#)
- [Conventions, page ix](#)
- [Related Documentation, page xi](#)
- [Obtaining Documentation, page xii](#)
- [Obtaining Technical Assistance, page xiii](#)
- [Obtaining Additional Publications and Information, page xiv](#)

## Objective

This document serves as a software installation and configuration guide describing detailed advanced configuration management alternatives for the Cisco AS5850 universal gateway. The guide provides a conceptual framework for Cisco AS5850 network connectivity, and covers four primary levels of network management: operations, administration, maintenance, and provisioning. Administrators can quickly commission the system to take a call using the *Cisco AS5850 Universal Gateway Commissioning Guidelines*, and then use this document as a reference and procedures manual to subsequently deploy diverse task-oriented protocol settings and engage all networking capabilities. This guide references features described in the Cisco IOS configuration guides and command references. Refer to those documents for additional information.

## Audience

This publication includes basic software configuration to enable users to get their systems running as quickly as possible. However, this document does not include extensive software configuration instructions enabling users to customize their Cisco AS5850 gateways. For more inclusive software configuration, refer to the Cisco IOS configuration guides and command references, and in this guide to the documents listed in the [“Related Documentation” section on page xi](#).

This guide is intended primarily for the following audiences:

- Customers with technical networking background and experience
- Customers who support dial-in users
- System administrators who are familiar with the fundamentals of router-based internetworking, but who may not be familiar with Cisco IOS software
- System administrators who are responsible for installing and configuring internetworking equipment, and who are familiar with Cisco IOS software

## Organization

This software configuration guide is organized into the following chapters and appendixes:

**Table 1** Document Organization

Chapter	Title	Description
Chapter 1	<a href="#">Overview</a>	Provides a functional profile of Cisco AS5850; a hardware and network topology review; Cisco IOS software fundamentals; basic startup, boot, and setup script previews; and deployment and operation strategies.
Chapter 2	<a href="#">Operations</a>	Provides routine operations to configure universal port services on the universal port cards.
Chapter 3	<a href="#">Administration</a>	Describes management protocols and network-gateway security and control functionality with AAA and RADIUS servers.
Chapter 4	<a href="#">Maintenance</a>	Provides component replacement, debugging, and troubleshooting procedures.
Chapter 5	<a href="#">Provisioning</a>	Describes basic hardware and service provision considerations such as system environment requirements, physical infrastructure checklists, IP service considerations, and system upgrade procedures.
Appendix A	<a href="#">Advanced Quick Reference</a>	Provides command-line configurations for the advanced user and system administrator who need to rapidly modify system functionality or enhance system performance.
	Glossary	Provides useful definitions for terminology related to the Cisco AS5850.

# Conventions

This publication uses the following conventions to convey instructions and information.

**Table 2 Document Conventions**

Convention	Description
<b>boldface font</b>	Commands and keywords.
<i>italic font</i>	Variables for which you supply values.
[ ]	Keywords or arguments that appear within square brackets are optional.
{x   y   z}	A choice of required keywords appears in braces separated by vertical bars. You must select one.
screen font	Examples of information displayed on the screen.
<b>boldface screen font</b>	Examples of information you must enter.
< >	Nonprinting characters, for example passwords, appear in angle brackets in contexts where italic font is not available.
[ ]	Default responses to system prompts appear in square brackets.



## Note

This symbol means *reader take note*. Notes contain helpful suggestions or references to additional information and material.



## Timesaver

This symbol means *the described action saves time*. You can save time by performing the action described in the paragraph.



## Caution

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



## Tips

This symbol means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

**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* -kirjasta (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.

# Where to Get the Latest Version of This Guide

This guide is available online and is updated continuously to integrate the latest enhancements to the product. You can access the current online copy of this guide on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>. See also the “Obtaining Documentation” section on page xii.

## Related Documentation

The Cisco AS5850 consists of a route switch controller and feature cards (an 8 channelized E1 trunk + 216 universal port card, channelized T3 trunk +216 universal port card, and 324 universal port card). Additional field-replaceable units include the cooling module and power entry module.



### Note

A Cisco AS5850 using only 8 channelized E1 trunk + 216 universal port cards or channelized T3 trunk +216 universal port card can be used as a remote server without an async port-handling card such as the 324 universal port card. If you require full modem coverage, one or more dedicated port-handling cards need to be installed to handle DS0 overflow from the hybrid trunk/port-handling cards.



### Timesaver

Verify that you have access to the documents listed in [Table 3](#). These documents are available in print, on CD-ROM, and online.

**Table 3 Cisco AS5850 Universal Gateway—Related Documents**

Cisco Product	Document Title
Cisco AS5850	<ul style="list-style-type: none"> <li>• <i>CiscoAS5850 Universal Gateway Operations, Administration, Maintenance, and Provisioning Guide</i> (this book), available online only</li> <li>• <i>Cisco AS5850 Universal Gateway Card Guide</i></li> <li>• <i>Cisco AS5850 Universal Gateway Hardware Installation Guide</i></li> <li>• <i>Cisco AS5850 Universal Gateway Regulatory Compliance and Safety Information</i></li> <li>• <i>Cisco AS5850 Universal Gateway Commissioning Guidelines</i></li> <li>• Configuration notes, updates, and release notes</li> </ul>
Network management system	<ul style="list-style-type: none"> <li>• Configuration notes, updates, and release notes</li> </ul>
Cisco IOS software	Refer to the following URL for modular reference publications that correspond to the Cisco IOS software release installed on your gateway: <a href="http://www.cisco.com/univercd/cc/td/doc/product/software/index.htm">http://www.cisco.com/univercd/cc/td/doc/product/software/index.htm</a>
Cisco marketing tools	<ul style="list-style-type: none"> <li>• <i>Cisco Information Packet</i></li> <li>• <i>Cisco Product Catalog</i></li> </ul>

# Obtaining Documentation

Cisco provides several ways to obtain documentation, 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/cisco/web/support/index.html>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco web sites can be accessed from this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](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 may have 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.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

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

## 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 Networking Products MarketPlace:  
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) 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. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments to [bug-doc@cisco.com](mailto: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: Customer Document Ordering  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

## Obtaining Technical Assistance

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

### Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com 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

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco 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 website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- 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.

## Cisco TAC Website

You can use the Cisco TAC website 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 website, 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 website. Some services on the Cisco TAC website require 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://tools.cisco.com/RPF/register/register.do>

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

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

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

## 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.

# Obtaining Additional Publications and Information

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

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

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. 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 monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:  
[http://www.cisco.com/en/US/about/ac123/ac114/about\\_cisco\\_packet\\_magazine.html](http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html)
- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:  
[http://www.ilmc.com/iq\\_magazine](http://www.ilmc.com/iq_magazine)
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:  
[http://www.cisco.com/en/US/about/ac123/about\\_cisco\\_publications\\_home.html](http://www.cisco.com/en/US/about/ac123/about_cisco_publications_home.html)
- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:  
<http://www.cisco.com/en/US/learning/index.html>

