



About This Guide

This preface describes the objectives, audience, organization, and conventions of the *Cisco 1600 Series Software Configuration Guide*.

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more up to date than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco technical documentation on the World Wide Web URL <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.com>.

Document Objectives

This software configuration guide explains how to configure Cisco 1600 routers and any installed WAN interface cards for the most common network scenarios. It does not cover every feature, but does describe, in detail, those tasks most commonly required to configure the router. This guide also references detailed features described in the Cisco IOS configuration guides and command references. Refer to these other books for additional information.

Audience

This guide is intended primarily for the following audiences:

- Customers who know one networking protocol (such as IP) and one LAN protocol (such as Ethernet), but have no additional networking background or experience
- Customers who support dial-in users, but who have little experience with router-based networks
- System administrators who are familiar with the fundamentals of router-based internetworking and who are responsible for installing and configuring internetworking equipment, but who might not be familiar with the specifics of Cisco products or the routing protocols supported by Cisco products

Document Organization

This document contains the following chapters and appendix:

- [Chapter 1, “Introduction to Configuring Cisco 1600 Series Routers,”](#) describes the methods that you can use to configure Cisco 1600 series routers
- [Chapter 2, “Cisco IOS Basic Skills,”](#) describes what you need to know about the Cisco IOS software (the software that runs the router) before you begin to configure the router
- [Chapter 3, “Configuring ISDN,”](#) describes how to configure the router for ISDN, how to configure dialer profiles, and how to configure ISDN as a leased line
- [Chapter 4, “Configuring Asynchronous Mode,”](#) describes how to configure the router for asynchronous connections
- [Chapter 5, “Configuring Frame Relay,”](#) describes how to configure the router for Frame Relay, how to configure ISDN as a backup connection for Frame Relay, and how to configure floating static routes

- [Chapter 6, “Configuring X.25,”](#) describes how to configure X.25 for IP and IPX and how to configure X.25 encapsulation over the ISDN-B channel
- [Appendix A, “ROM Monitor,”](#) describes the functions and commands of the router ROM monitor (also called the bootstrap program), the firmware that runs when the router is powered up or reset

Document Conventions

This document uses the following conventions:

- The caret character (^) represents the Control key.

For example, the key combinations ^D and Ctrl-D are equivalent: Both mean hold down the Control key while you press the D key. Keys are indicated in capitals, but are not case sensitive.

Command descriptions use these conventions:

- Commands and keywords in **boldface** font.
- Variables for which you supply values are in *italic* font.

Examples use these conventions:

- Examples that contain system prompts denote interactive sessions, indicating that you enter commands at the prompt. The system prompt indicates the current command mode. For example, the following prompt indicates global configuration mode:

```
Router(config)#
```

- Terminal sessions and information the system displays are in `screen` font.
- Information you enter is in **boldface screen** font.
- Nonprinting characters, such as passwords, are in angle brackets (<>).



Note

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

**Timesaver**

Means the *described action saves time*. You can save time by performing the action described in the paragraph.

**Caution**

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

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships 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 as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered 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 corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

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

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
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 documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

