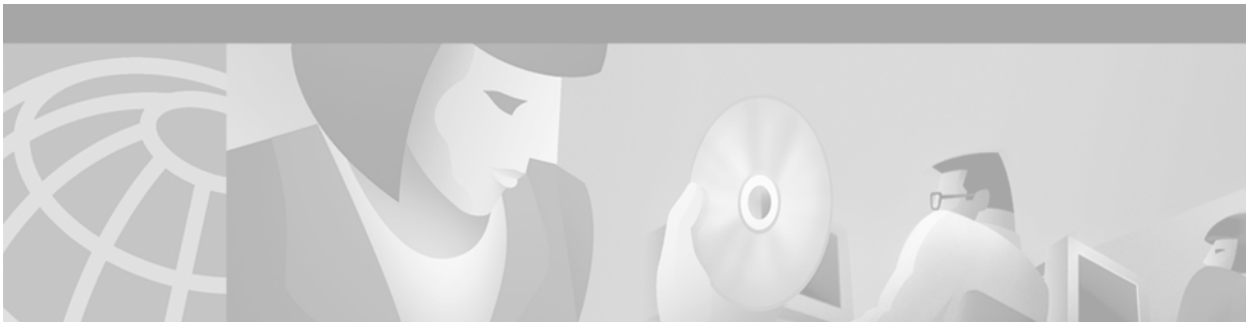

Configuration Fundamentals Overview

This chapter provides an overview of the *Cisco IOS Configuration Fundamentals Configuration Guide* for Cisco IOS Release 12.2. It includes descriptions of the parts and chapters of this document, and suggestions on which parts of the documentation to read to perform common tasks.

Organization of This Guide

The *Cisco IOS Configuration Fundamentals Configuration Guide* is divided into three main parts:

- Cisco IOS User Interfaces
- File Management
- System Management

This section provides a description of the chapters within each part.

Cisco IOS User Interfaces

The user interface chapters describe the different methods of entering commands into a router and altering the user environment:

- "Using the Command-Line Interface"

  The command-line interface (CLI) is the primary means of configuring Cisco IOS software-based devices. This chapter provides an overview of the CLI, and discusses its editing features, context-sensitvie help, and other features.

- "Using AutoInstall and Setup"

  The Cisco IOS software includes two features that simplify or automate the configuration of Cisco devices: AutoInstall and Setup. AutoInstall allows a network manager to load configuration files onto new Cisco devices automatically. Setup guides a user throught the initial configuration of a Cisco device. This chapter describes how to set up your network for AutoInstall, and how to use Setup.

- "Configuring Operating Characteristics for Terminals"

  A basic method of accessing the CLI is to connect a terminal to the router through the console port or one of the tty lines. This terminal connection uses default settings, which should work for most terminal sessions. However, you may want to alter the terminal settings. This chapter provides details on how to perform these alterations.

- "Managing Connections, Menus, and System Banners"

  This chapter provides details on managing connections you make to other hosts, displaying messages to users connecting to your router, and setting up user menus.

- "Using the Cisco Web Browser User Interface"

  This chapter provides detailed information on using the Cisco IOS web browser user interface (UI) to configure and monitor your router, as an alternative to using the CLI. It also explains how to configure the Web Browser interface for other users.

File Management

The file management chapters describe the tasks associated with copying, saving, moving, and loading different types of files, such as configuration files, images, and microcode:

- "Using the Cisco IOS File System"
  This chapter descibes how to manage files using the Cisco IOS File System (IFS), which provides a common syntax for managing all file systems on Cisco devices, including Flash memory file systems and network file systems, as well as for any other endpoints used for reading or writing data.
- "Managing Configuration Files"
  This chapter describes how to modify configuration files, as well as how to upload, store, and download configuration files. This chapter also explains how to specify which configuration file the system should use at startup.
- "Loading and Maintaining System Images"
  This chapter describes how to download images from servers, store images on servers, and specify which image is loaded at system startup. If you are not upgrading your system image and you do not want to change image booting procedures, you do not need to read this chapter.
- "Maintaining System Memory"
  This chapter describes the different types of memory your router may have and how to use this memory to manage files.
- "Rebooting"
  This chapter focuses on tasks related to the rebooting procedure. Read this chapter if you want to change which image or configuration file is loaded at system startup. This chapter also discusses ROM Monitor mode, which allows you to boot the router manually.
- "Configuring Basic File Transfer Services"
  This chapter describes how to configure your router to function as a server, or use the remote shell (rsh) and remote copy (rcp) functions. As a TFTP server, your router can provide other routers with images and configuration files over the network. The rsh and rcp functions allow users to remotely execute commands or copy files to or from another host. This chapter also addresses optional configuration of Maintenance Operation Protocol (MOP) and Boot Operation Protocol (BOOTP) services.

System Management

The system management chapters discuss tasks that allow you to maintain your router after it is configured with the network, routing, and WAN protocols. These chapters discuss ways you can fine-tune the router and maintain it over time. These chapters also discuss router and network monitoring tools used for gathering information about connected devices and network performance.

- "Performing Basic System Management"
  Discusses basic optional tasks. For example, you can change the name of the router, create command aliases, enable minor services, and set time and calendar services.
- "Troubleshooting and Fault Management"
  Provides an introduction to troubleshooting techniques (including use of **show** commands), error message logging, and debugging commands. If you are troubleshooting a particular protocol, read this chapter to learn how to log system error messages and use debugging commands. Then, refer to the chapter in the documentation set that documents your protocol. For detailed troubleshooting information, see the *Internetwork Troubleshooting Guide*.
- "Configuring SNMP Support"
  Describes the steps for configuring Simple Network Management Protocol (SNMP) on your router.
- "Configuring Cisco Discovery Protocol"
  Describes the Cisco Discovery Protocol (CDP), and how to use CDP to discover other local devices.
- "Configuring RMON Support"
  Describes the Remote Monitoring (RMON) features available on Cisco routers to supplement SNMP use.
- "Network Monitoring Using Cisco Service Assurance Agent"
  Describes the Cisco Service Assurance Agent (SA Agent), and how to use SA Agent operations to monitor network performance and ensure levels of service.
- "Configuring Web Cache Services Using WCCP"
  Describes the Web Cache Control Protocol, a Cisco-developed content-routing technology that allows you to utilize cache engines (such as the Cisco Cache Engine 550) and web-caches in your network.

Task-Oriented Documentation Approaches

The above parts and chapters of the *Cisco IOS Configuration Fundamentals Configuration Guide* suggest a framework for learning configuration and maintenance tasks. This section provides some suggestions on alternate paths you can take through the documentation to learn about particular topics or tasks, focusing on common configuration topics that span multiple chapters of this book.

For complete descriptions of the configuration commands introduced in this guide, see the Release 12.2 *Cisco IOS Configuration Fundamentals Command Reference*, which is the second book of this documentation module.

Overview of Router Configuration Tasks

To configure your router or access server, you must perform several tasks. Initially, you must determine the following:

- Which network protocols you are supporting (for example, AppleTalk, IP, Novell IPX, and so on)
- The addressing plan for each network protocol
- Which routing protocol you will use for each network protocol
- Which WAN protocols you will run on each interface (for example, Frame Relay, HDLC, SMDS, X.25, and so on)

Then, refer to the *Cisco Product Catalog* and the platform-specific release notes for a list of Cisco-supported protocols, interfaces, and platforms. Set up the hardware as described in the documentation shipped with your product. Configure any user interface, file management, or interface management tasks as described in this book. Configure protocol-specific features on your router or access server as described in the appropriate chapters of the other Cisco IOS software configuration guides.

Understanding the Cisco IOS Command-Line Interface

If you are not familiar with the Cisco IOS command-line interface, read the following sections to gain a basic understanding of the user interface and basic configuration tasks:

In the "Using the Command-Line Interface" chapter:

- Understanding Cisco IOS Command Modes
- Using the No and Default Forms of Commands
- Getting Context-Sensitive Help Within a Command Mode
- Checking Command Syntax
- Using CLI Command History
- Using Command-Line Editing Features and Shortcuts

In the "Modifying, Downloading, and Maintaining Configuration Files" chapter:

- Displaying Configuration File Information
- Understanding Configuration Files
- Entering Configuration Mode and Selecting a Configuration Source
- Configuring Cisco IOS from the Terminal
- Reexecuting the Configuration Commands in Startup Configuration
- Clearing the Configuration Information

In the "Performing Basic System Management" chapter:

- Setting the Router Name

You may also wish to review the Appendix of this book, "Cisco IOS Command Modes," for a summary description of modes available in the command-line interface.

Storing or Obtaining Configuration Files or Images from a Server

You might want to save a configuration or image on a server or upgrade your image to a different software release. If you will be storing or obtaining configuration files or images from a server, read the following sections:

In the "Managing Configuration Files"chapter:

- Copying Configuration Files from the Router to a Network Server
- Copying Configuration Files from a Network Server to the Router
- Maintaining Configuration Files Larger than NVRAM
- Copying Configuration Files Between Different Locations

In the "Maintaining System Memory" chapter:

- Partitioning Flash Memory
- Using Flash Load Helper to Upgrade Software on Run-from-Flash Systems

Changing the Image or Configuration File Loaded by the Router

If you want to change the image or configuration file used when the system reloads, read the following sections:

In the "Managing Configuration Files" chapter:

- Specifying the Startup Configuration File

In the"Loading and Maintaining System Images" chapter:

- Specifying the Startup System Image in the Configuration File

In the "Rebooting" chapter:

- Displaying Booting Information
- Rebooting Procedures
- Modifying the Configuration Register Boot Field
- Setting Environment Variables