



Preface

This preface describes the objectives, organization, and audience of this command reference, as well as conventions and related documentation.

Document Objectives

This document lists the Cisco IOS commands that were specifically created or modified for the Cisco 6400 carrier-class broadband aggregator. Additional commands used to configure the node route processor (NRP) are described in the Cisco IOS Command Reference publications; additional commands used to configure the node switch processor (NSP) are described in the *ATM and Layer 3 Switch Router Command Reference*. All documents are available on Cisco.com or on the Cisco Documentation CD-ROM.

Related Documentation

To complement the software information provided in this command reference, refer to the following documents:

Cisco 6400 Software Setup Guide—perform basic configurations and set up connectivity among the Cisco 6400 components.

Cisco 6400 Feature Guide—Lists the many features supported by the Cisco 6400, provides references to cross-platform feature documentation, and describes deployment of features that are unique to the Cisco 6400.

ATM Switch Router Software Configuration Guide—Describes additional ATM features and functionality that are supported by the Cisco 6400 node switch processor (NSP).

ATM and Layer 3 Switch Router Command Reference—Describes additional commands supported by the Cisco 6400 NSP.

Cisco IOS Configuration Guides and Command References—Describes extensive Cisco IOS features and commands that apply to most Cisco products, including the Cisco 6400.

Audience

This command reference is designed for system administrators who are responsible for setting up the Cisco IOS software on the Cisco 6400 and are familiar with the installation of high-end networking equipment.

This command reference 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.

Documentation Conventions

For more information on the layout of this Command Reference, see the “Using Cisco IOS Software” chapter of the *Cisco IOS Configuration Fundamentals Command Reference*:

This section describes the following conventions used by this command reference:

- [Command Syntax](#)
- [Examples](#)
- [Keyboard](#)
- [Notes, Timesavers, Tips, and Cautions](#)

Command Syntax

Convention	Description
boldface	Indicates commands and keywords that are entered literally as shown.
<i>italics</i>	Indicates arguments for which you supply values; in contexts that do not allow italics, arguments are enclosed in angle brackets (< >).
[x]	Keywords or arguments that appear within square brackets are optional.
{x y z}	A choice of required keywords (represented by x , y , and z) appears in braces separated by vertical bars. You must select one.
[x {y z}]	Braces and vertical bars within square brackets indicate a required choice within an optional element. You do not need to enter the optional element. If you do, you have some required choices.

Examples

Convention	Description
screen	Shows an example of information displayed on the screen.
boldface screen	Shows an example of information that you must enter.
< >	Nonprinting characters, such as passwords, appear in angled brackets.
!	Exclamation points at the beginning of a line indicate a comment line. Exclamation points are also displayed by the Cisco IOS software for certain processes.
[]	Default responses to system prompts appear in square brackets.
prompt> prompt#	Examples that contain system prompts denote interactive sessions, indicating the commands that you should enter at the prompt. The system prompt indicates the current level of the EXEC command interpreter. For example, the prompt <code>router></code> indicates that you should be at the user level, and the prompt <code>router#</code> indicates that you should be at the privileged level. Access to the privileged level usually requires a password.

Keyboard

Convention	Description
Z	Keys are indicated in capital letters but are not case sensitive.
^ or Ctrl	Represents the Control key. For example, when you read <i>^D or Ctrl-D</i> , you should hold down the Control key while you press the D key.

Notes, Timesavers, Tips, and Cautions

The following conventions are used to attract the reader's attention:



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.



Tip

Means *the following information might help you solve a problem*.



Caution

Means *reader be careful*. You are capable of doing something that might result in equipment damage or loss of data.

Obtaining Documentation

The following 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 the following URL:

<http://www.cisco.com>

Translated documentation is available at the following 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

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, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Leave Feedback** at the bottom of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

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

To submit your comments by mail, use the response card behind the front cover of your document, or write 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 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 to

- 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

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following 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 types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC 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.

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

Cisco TAC Web Site

The Cisco TAC Web Site allows you 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 the following URL:

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

All customers, partners, and resellers who have a valid Cisco services 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 the following URL to register:

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

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

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

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; 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 will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following 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). In addition, please have available your service agreement number and your product serial number.