



# Preface

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This guide describes how to create the initial configuration for a router using the Cisco IOS XR software. This guide also describes how to complete additional administration, maintenance, and troubleshooting tasks that may be required after initial configuration.

This preface contains the following sections:

- [About This Document, page xiv](#)
- [Obtaining Documentation, page xvi](#)
- [Documentation Feedback, page xvii](#)
- [Cisco Product Security Overview, page xvii](#)
- [Obtaining Technical Assistance, page xviii](#)
- [Obtaining Additional Publications and Information, page xx](#)

# Document Revision History

The Document Revision History table records technical changes to this document. [Table 1](#) shows the document revision number for the change, the date of the change, and a brief summary of the change. Note that not all Cisco documents use a Document Revision History Table.

**Table 1** Document Revision History

Revision	Date	Change Summary
OL-6142-06	May 2007	<ul style="list-style-type: none"> <li>Corrected ROM Monitor upgrade procedure in the <a href="#">Upgrading or Downgrading ROM Monitor</a> section in <a href="#">Appendix B “Upgrading and Downgrading ROM Monitor Software on Cisco CRS-1 Routers.”</a></li> </ul>
OL-6142-04	August 2005	<ul style="list-style-type: none"> <li>Added support for the Cisco XR 12000 Series Routers, including overview, installation and configuration instructions.</li> <li>Added instructions to remove and replace CSC and SFC cards in the the Cisco XR 12000 Series Routers.</li> <li>Added support for multiple logical routers on Cisco XR 12000 Series Routers.</li> <li>Added information regarding the commands supported in Admin command modes.</li> <li>Revised overview information and procedures for router recovery and management with ROM Monitor (Appendix A).</li> <li>Revised overview information and procedures for recovering the root password. Added instructions to recover the root password on single-RP routers.</li> <li>Added instructions for “Upgrading and Downgrading Boothelper and ROM Monitor on Cisco XR 12000 Series Routers” (Appendix C).</li> </ul>

## About This Document

The following sections provide information about the *Cisco IOS XR Getting Started Guide* and related documents:

- [Intended Audience](#), page xiv
- [Organization of the Document](#), page xv
- [Related Documents](#), page xv
- [Conventions](#), page xvi

## Intended Audience

This document is intended for the following people:

- Experienced service provider administrators
- Cisco telecommunications management engineers

- Third-party field service technicians who have completed the Cisco IOS XR software training sessions
- Customers who daily use and manage routers running Cisco IOS XR software

## Organization of the Document

This document contains the following chapters:

- Chapter 1, “Getting Started with Cisco IOS XR Software”
- Chapter 2, “Configuring General Router Features”
- Chapter 3, “Configuring Additional Router Features”
- Chapter 4, “CLI Tips, Techniques, and Shortcuts”
- Chapter 5, “Managing Cisco IOS XR Software Packages”
- Chapter 6, “Managing the Router Hardware”
- Chapter 7, “Troubleshooting the Cisco IOS XR Software”
- Appendix A, “Router Recovery and Management with ROM Monitor”
- Appendix B, “Upgrading and Downgrading ROM Monitor Software on Cisco CRS-1 Routers”
- Appendix C, “Upgrading and Downgrading Boothelper and ROM Monitor on Cisco XR 12000 Series Routers”
- Appendix D, “Understanding Regular Expressions, Special Characters, and Patterns”

## Related Documents

For a complete listing of available documentation for the Cisco IOS XR software and the routers on which it operates, see to the following Web pages:

- Cisco IOS XR Software Documentation  
<http://www.cisco.com/univercd/cc/td/doc/product/ioxsoft/index.htm>
- Cisco CRS-1 Carrier Routing System Documentation  
<http://www.cisco.com/univercd/cc/td/doc/product/core/crs/>
- Cisco 12000 Series Router Documentation  
<http://www.cisco.com/univercd/cc/td/doc/product/core/cis12000/index.htm>

**Note**

Cisco IOS XR software runs only on the Cisco XR 12000 Series Routers listed in the “Supported System Configurations” section on page 1 in Chapter 1, “Getting Started with Cisco IOS XR Software.”

## Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	<b>boldface</b> font
Variable for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Commands and keywords you enter in an interactive environment	<b>boldface screen</b> font
Variables you enter in an interactive environment	<i>italic screen</i> font
Menu items and button names	<b>boldface</b> font
Menu navigation	<b>Option &gt; Network Preferences</b>



### Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.



### Tip

Means *the following information will help you solve a problem*. The information in tips might not be troubleshooting or an action, but contains useful information.



### Caution

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

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain 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 at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from Cisco Marketplace at this URL:

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

## Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

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

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at [tech-doc-store-mkpl@external.cisco.com](mailto:tech-doc-store-mkpl@external.cisco.com) or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

## Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments by using the response card (if present) 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.

## Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

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

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

[http://www.cisco.com/en/US/products/products\\_psirt\\_rss\\_feed.html](http://www.cisco.com/en/US/products/products_psirt_rss_feed.html)

## Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—[security-alert@cisco.com](mailto:security-alert@cisco.com)

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—[psirt@cisco.com](mailto:psirt@cisco.com)

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



**Tip**

We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

The link on this page has the current PGP key ID in use.

## Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

## Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

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

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

**Note**

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

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

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

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

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

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

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

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

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

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

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

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

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

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

