



Release Notes for Cisco 7200 Series for Cisco IOS Release 12.1 XM

February 13, 2002

Cisco IOS Release 12.1(5)XM7

78-12402-02 D0

These release notes for the Cisco 7200 series describe the enhancements provided in Cisco IOS Release 12.1(5)XM7. These release notes are updated as needed.

For a list of the software caveats that apply to Cisco IOS Release 12.1(5)XM7, see the [“Caveats” section on page 8](#) and *Caveats for Cisco IOS Release 12.1 T*. The caveats document is updated for every maintenance release and is located on Cisco.com and the Documentation CD-ROM.

Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.1* located on Cisco.com and the Documentation CD-ROM.

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System Requirements

This section describes the system requirements for Cisco IOS Release 12.1(5)XM7 and includes the following sections:

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Memory Recommendations

[Table 1](#) describes the memory requirements for the feature sets for the Cisco 7200 series routers supported by Cisco IOS Release 12.1 XM.

Table 1 *Image and Memory Recommendations for the Cisco IOS Release 12.1 XM*

Platforms	Feature Sets	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 7200 Series	IP Standard Feature Set	IP	c7200-is-mz	16 MB Flash	128 MB DRAM	RAM
	Enterprise Standard Feature Set	Enterprise	c7200-js-mz	16 MB Flash	128 MB DRAM	RAM
	Enterprise MCM Feature Set	Enterprise MCM	c7200-jx2-mz	16 MB Flash	128 MB DRAM	RAM

Supported Hardware

Cisco IOS Release 12.1(5)XM7 supports the Cisco 7200 series routers (including the Cisco 7202, Cisco 7204, and Cisco 7206).

For detailed descriptions of the new hardware features, see [“New and Changed Information” section on page 4](#).

Determining the Software Version

To determine the version of Cisco IOS software running on your Cisco 7200 series, log in to the Cisco 7200 series and enter the **show version EXEC** command:

```
Router> show version
Cisco Internetwork Operating System Software
IOS (tm) 12.1 T Software (C7200-is-mz), Version 12.1(5)XM7, RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, see *Upgrading the Cisco IOS Software Release in Cisco Routers and Modems* located at:

<http://www.cisco.com/warp/public/620/6.html>

Feature Set Tables

The Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features.

Cisco IOS Release 12.1(5)XM7 supports the same feature sets as Cisco IOS Release 12.1 T, but Cisco IOS Release 12.1(5)XM7 can include new features supported by the Cisco 7200 series.



Caution

Cisco IOS images with strong encryption (including, but not limited to, 168-bit Triple Data Encryption Standard (3DES) data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders may be denied or subject to delay because of United States government regulations. When applicable, purchaser and user must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Table 2 lists the features and feature sets supported by the Cisco 7200 series in Cisco IOS Release 12.1(5)XM7 and uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.



Note

This table might not be cumulative or list all the features in each image. You can find the most current Cisco IOS documentation on Cisco.com. These electronic documents may contain updates and modifications made after the hard-copy documents were printed. If you have a Cisco.com login account, you can find image and release information regarding features prior to Cisco IOS Release 12.1(5)XM7 by using the Feature Navigator tool at: <http://www.cisco.com/go/fn>.

Table 2 Feature List by Feature Set for the Cisco 7200 series

Features	In	Software Images by Feature Sets		
		IP	Enterprise	Enterprise MCM
Multiservice Applications—Voice				
High Performance Gatekeeper	(5)	No	Yes	No

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 7200 series for Cisco IOS Release 12.1 XM.

New Hardware Features in Cisco IOS Release 12.1(5)XM7

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM7.

New Software Features in Cisco IOS Release 12.1(5)XM7

There are no new software features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM7.

New Hardware Features in Cisco IOS Release 12.1(5)XM4

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM4.

New Software Features in Cisco IOS Release 12.1(5)XM4

There are no new software features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM4.

New Hardware Features in Cisco IOS Release 12.1(5)XM3

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM3.

New Software Features in Cisco IOS Release 12.1(5)XM3

There are no new software features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM3.

New Hardware Features in Cisco IOS Release 12.1(5)XM2

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM2.

New Software Features in Cisco IOS Release 12.1(5)XM2

There are no new software features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM2.

New Hardware Features in Cisco IOS Release 12.1(5)XM1

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM1.

New Software Features in Cisco IOS Release 12.1(5)XM1

There are no new software features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM1.

New Hardware Features in Cisco IOS Release 12.1(5)XM

There are no new hardware features for Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM.

New Software Features in Cisco IOS Release 12.1(5)XM

The following new software feature is supported by the Cisco 7200 series routers in Cisco IOS Release 12.1(5)XM:

High Performance Gatekeeper

Platforms: Cisco 7200 series routers

This feature addresses the scalability, redundancy, and performance aspects of the gatekeeper (Cisco Multimedia Conference Manager) to present a complete Cisco solution.

The new gatekeeper is characterized by the following:

- Increased support for back end applications
- Increased performance on a single gatekeeper
- Allows multiple gatekeepers to manage a single zone

MIBs

Current MIBs

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB web site on Cisco.com at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

Deprecated and Replacement MIBs

Old Cisco MIBs will be replaced in a future release. Currently, OLD-CISCO-* MIBs are being converted into more scalable MIBs without affecting existing Cisco IOS products or network management system (NMS) applications. You can update from deprecated MIBs to the replacement MIBs as shown in [Table 3](#).

Table 3 *Deprecated and Replacement MIBs*

Deprecated MIB	Replacement
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	To be determined
OLD-CISCO-DECNET-MIB	To be determined
OLD-CISCO-ENV-MIB	CISCO-ENVMON-MIB
OLD-CISCO-FLASH-MIB	CISCO-FLASH-MIB
OLD-CISCO-INTERFACES-MIB	IF-MIB CISCO-QUEUE-MIB
OLD-CISCO-IP-MIB	To be determined
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB
OLD-CISCO-NOVELL-MIB	NOVELL-IPX-MIB
OLD-CISCO-SYS-MIB	(Compilation of other OLD* MIBs)
OLD-CISCO-SYSTEM-MIB	CISCO-CONFIG-COPY-MIB
OLD-CISCO-TCP-MIB	CISCO-TCP-MIB
OLD-CISCO-TS-MIB	To be determined
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	To be determined

Important Notes

The following section contains important notes about Cisco IOS Release 12.1(5)XM4 that can apply to the Cisco 7200 series.

Image Obsolescence, Cisco IOS Release 12.1(5)XM4

All Cisco 7200 series images in Cisco IOS Releases 12.1(5)XM3 have been obsoleted from manufacturing. These images are now available in Cisco IOS Release 12.1(5)XM4.



Note

Disclaimer: In order to increase network availability, Cisco recommends that you upgrade affected IOS images with the suggested replacement software images. Cisco will discontinue manufacturing shipment of affected IOS images. Any pending order will be substituted by the replacement software images. **PLEASE BE AWARE THAT FAILURE TO UPGRADE THE AFFECTED IOS IMAGES MAY RESULT IN NETWORK DOWNTIME.** The terms and conditions that governed your rights and obligations and those of Cisco, with respect to the deferred images, will apply to the replacement images.

Image Obsolescence, Cisco IOS Release 12.1(5)XM3

All Cisco 7200 series images in Cisco IOS Releases 12.1(5)XM2 have been obsoleted from manufacturing. These images are now available in Cisco IOS Release 12.1(5)XM3.

**Note**

Disclaimer: In order to increase network availability, Cisco recommends that you upgrade affected IOS images with the suggested replacement software images. Cisco will discontinue manufacturing shipment of affected IOS images. Any pending order will be substituted by the replacement software images. **PLEASE BE AWARE THAT FAILURE TO UPGRADE THE AFFECTED IOS IMAGES MAY RESULT IN NETWORK DOWNTIME.** The terms and conditions that governed your rights and obligations and those of Cisco, with respect to the deferred images, will apply to the replacement images.

Image Obsolescence, Cisco IOS Release 12.1(5)XM2

All Cisco 7200 series images in Cisco IOS Releases 12.1(5)XM1 have been obsoleted from manufacturing due to the following caveat:

- CSCds04747

These images are now available in Cisco IOS Release 12.1(5)XM2.

**Note**

Disclaimer: In order to increase network availability, Cisco recommends that you upgrade affected IOS images with the suggested replacement software images. Cisco will discontinue manufacturing shipment of affected IOS images. Any pending order will be substituted by the replacement software images. **PLEASE BE AWARE THAT FAILURE TO UPGRADE THE AFFECTED IOS IMAGES MAY RESULT IN NETWORK DOWNTIME.** The terms and conditions that governed your rights and obligations and those of Cisco, with respect to the deferred images, will apply to the replacement images.

Image Obsolescence, Cisco IOS Release 12.1(5)XM1

All Cisco 7200 series images in Cisco IOS Release 12.1(5)XM have been obsoleted from manufacturing.

These images are now available in Cisco IOS Release 12.1(5)XM1.

**Note**

Disclaimer: In order to increase network availability, Cisco recommends that you upgrade affected IOS images with the suggested replacement software images. Cisco will discontinue manufacturing shipment of affected IOS images. Any pending order will be substituted by the replacement software images. **PLEASE BE AWARE THAT FAILURE TO UPGRADE THE AFFECTED IOS IMAGES MAY RESULT IN NETWORK DOWNTIME.** The terms and conditions that governed your rights and obligations and those of Cisco, with respect to the deferred images will apply to the replacement images.

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats, and only select severity 3 caveats are included in the caveats document.

This section contains only open and resolved caveats for the current Cisco IOS maintenance release.

All caveats in Cisco IOS Release 12.1 and Cisco IOS Release 12.1 T are also in Cisco IOS Release 12.1(5)XM7.

For information on caveats in Cisco IOS Release 12.1, see *Caveats for Cisco IOS Release 12.1*.

For information on caveats in Cisco IOS Release 12.1 T, see *Caveats for Cisco IOS Release 12.1 T*, which lists severity 1 and 2 caveats and select severity 3 caveats and is located on Cisco.com and the Documentation CD-ROM.

**Note**

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, log in to Cisco.com and click **Software Center: Cisco IOS Software: Bug Toolkit: Bug Navigator II**. Another option is to go to <http://www.cisco.com/support/bugtools/bugtool.shtml>.

Because Cisco IOS Release 12.1(5)XM is the initial base release, there are no resolved caveats. For a list of the resolved caveats, see the next set of release notes for this release version.

Open Caveats—Cisco IOS Release 12.1(5)XM7

This section documents possible unexpected behavior by Cisco IOS Release 12.1(5)XM7 and describes only severity 1 and 2 caveats and select severity 3 caveats.

There are no known open caveats for Cisco IOS Release 12.1(5)XM7.

Resolved Caveats—Cisco IOS Release 12.1(5)XM7

All the caveats listed in this section are resolved in Cisco IOS Release 12.1(5)XM7. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCdw65903

An error can occur with management protocol processing. Please use the following URL for further information:

<http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903>

Open Caveats—Cisco IOS Release 12.1(5)XM4

This section documents possible unexpected behavior by Cisco IOS Release 12.1(5)XM4 and describes only severity 1 and 2 caveats and select severity 3 caveats.

There are no known open caveats for Cisco IOS Release 12.1(5)XM4.

Resolved Caveats—Cisco IOS Release 12.1(5)XM3

All the caveats listed in this section are resolved in Cisco IOS Release 12.1(5)XM3. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCdt33487

A Cisco 7200 series router using trunk connection may experience timing issues when a new fax call comes into the originating gateway, and the terminating gateway has not finished a clear down from fax.

This problem does not occur when switched connection is used.

There are no known workarounds.

Resolved Caveats—Cisco IOS Release 12.1(5)XM2

All the caveats listed in this section are resolved in Cisco IOS Release 12.1(5)XM2. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

There are no known caveats for Cisco IOS Release 12.1(5)XM2.

Resolved Caveats—Cisco IOS Release 12.1(5)XM1

All the caveats listed in this section are resolved in Cisco IOS Release 12.1(5)XM1. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

There are currently no known caveats for Cisco IOS Release 12.1(5)XM1.

Resolved Caveats—Cisco IOS Release 12.1(5)XM

All the caveats listed in this section are resolved in Cisco IOS Release 12.1(5)XM. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

There are currently no known caveats for Cisco IOS Release 12.1(5)XM.

Related Documentation

The following sections describe the documentation available for the Cisco 7200 series. These documents consist of hardware and software installation guides, Cisco IOS configuration guides and command references, system error messages, feature modules, and other documents.

Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on Cisco.com and the Documentation CD-ROM.

Use these release notes with these documents:

- [Release-Specific Documents](#), page 10
- [Platform-Specific Documents](#), page 10
- [Feature Modules](#), page 11
- [Cisco IOS Software Documentation Set](#), page 11

Release-Specific Documents

The following documents are specific to Cisco IOS Release 12.1 and are located on Cisco.com and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 12.1*

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes

- Product bulletins, field notices, and other release-specific documents on Cisco.com at:

Technical Documents

- *Caveats for Cisco IOS Release 12.1 T*

As a supplement to the caveats listed in “**Caveats**” in these release notes, see *Caveats for Cisco IOS Release 12.1 T* which contains caveats applicable to all platforms for all maintenance releases of Cisco IOS Release 12.1 T.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Caveats

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Caveats



Note If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, log in to Cisco.com and click **Software Center: Cisco IOS Software: Bug Toolkit: Bug Navigator II**. Another option is to go to <http://www.cisco.com/support/bugtools/bugtool.shtml>.

Platform-Specific Documents

These documents are available for the Cisco 7000 series on Cisco.com and the Documentation CD-ROM:

- *Cisco 7200 VXR Installation and Configuration Guide*
- *Cisco 7206 Installation and Configuration Guide*
- *Cisco 7204 Installation and Configuration Guide*
- *Quick Reference for Cisco 7204 Installation*
- *Cisco 7202 Installation and Configuration Guide*
- *Quick Start Guide Cisco 7100 Series VPN Router*
- *Cisco 7010 User Guide*

- *Cisco 7000 User Guide*
- *Cisco 7000 Hardware Installation and Maintenance*

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco Product Documentation: Core/High-End Routers

On the Documentation CD-ROM at:

Cisco Product Documentation: Core/High-End Routers

Feature Modules

Feature modules describe new features supported by Cisco IOS Release 12.1 T and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation

Feature Navigator

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a particular set of features and which features are supported in a particular Cisco IOS image.

Feature Navigator is available 24 hours a day, 7 days a week. To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, e-mail the Contact Database Administration group at cdbadmin@cisco.com. If you do not have an account on Cisco.com, go to <http://www.cisco.com/register> and follow the directions to establish an account.

To use Feature Navigator, you must have a JavaScript-enabled web browser such as Netscape 3.0 or later, or Internet Explorer 4.0 or later. Internet Explorer 4.0 always has JavaScript enabled. To enable JavaScript for Netscape 3.x or Netscape 4.x, follow the instructions provided with the web browser. For Java Script support and enabling instructions for other browsers, check with the browser vendor.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. You can access Feature Navigator at the following URL:

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

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents. The Cisco IOS software documentation set is shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered the printed versions.

Documentation Modules

Each module in the Cisco IOS documentation set consists of one or more configuration guides and one or more corresponding command references. Chapters in a configuration guide describe protocols, configuration tasks, and Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References

Cisco IOS Release 12.1 Documentation Set Contents

Table 4 lists the contents of the Cisco IOS Release 12.1 software documentation set, which is available in electronic form and in printed form if ordered.



Note

You can find the most current Cisco IOS documentation on Cisco.com and the Documentation CD-ROM. These electronic documents may contain updates and modifications made after the hard-copy documents were printed.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1

Table 4 Cisco IOS Release 12.1 Documentation Set

Books	Major Topics
<ul style="list-style-type: none"> <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> <i>Cisco IOS Configuration Fundamentals Command Reference</i> 	Configuration Fundamentals Overview Cisco IOS User Interfaces Cisco IOS File Management Cisco IOS System Management Cisco IOS User Interfaces Commands Cisco IOS File Management Commands Cisco IOS System Management Commands
<ul style="list-style-type: none"> <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume I</i> <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume II</i> 	Using Cisco IOS Software Overview of SNA Internetworking Bridging IBM Networking

Table 4 Cisco IOS Release 12.1 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Dial Services Configuration Guide: Terminal Services</i> • <i>Cisco IOS Dial Services Configuration Guide: Network Services</i> • <i>Cisco IOS Dial Services Command Reference</i> 	Preparing for Dial Access Modem Configuration and Management ISDN and Signaling Configuration PPP Configuration Dial-on-Demand Routing Configuration Dial-Backup Configuration Terminal Service Configuration Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Networks X.25 on ISDN Solutions Telco Solutions Dial-Related Addressing Services Interworking Dial Access Scenarios
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i> 	Interface Configuration Overview Configuring LAN Interfaces Configuring Serial Interfaces Configuring Logical Interfaces
<ul style="list-style-type: none"> • <i>Cisco IOS IP and IP Routing Configuration Guide</i> • <i>Cisco IOS IP and IP Routing Command Reference</i> 	IP Addressing and Services IP Routing Protocols IP Multicast
<ul style="list-style-type: none"> • <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i> • <i>Cisco IOS AppleTalk and Novell IPX Command Reference</i> 	AppleTalk and Novell IPX Overview Configuring AppleTalk Configuring Novell IPX
<ul style="list-style-type: none"> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i> 	Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Overview Configuring Apollo Domain Configuring Banyan VINES Configuring DECnet Configuring ISO CLNS Configuring XNS
<ul style="list-style-type: none"> • <i>Cisco IOS Multiservice Applications Configuration Guide</i> • <i>Cisco IOS Multiservice Applications Command Reference</i> 	Multiservice Applications Overview Voice Video Broadband
<ul style="list-style-type: none"> • <i>Cisco IOS Quality of Service Solutions Configuration Guide</i> • <i>Cisco IOS Quality of Service Solutions Command Reference</i> 	Quality of Service Overview Classification Congestion Management Congestion Avoidance Policing and Shaping Signalling Link Efficiency Mechanisms Quality of Service Solutions

Table 4 Cisco IOS Release 12.1 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Security Configuration Guide</i> • <i>Cisco IOS Security Command Reference</i> 	<ul style="list-style-type: none"> Security Overview Authentication, Authorization, and Accounting (AAA) Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Other Security Features
<ul style="list-style-type: none"> • <i>Cisco IOS Switching Services Configuration Guide</i> • <i>Cisco IOS Switching Services Command Reference</i> 	<ul style="list-style-type: none"> Cisco IOS Switching Services Overview Cisco IOS Switching Paths Cisco Express Forwarding NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
<ul style="list-style-type: none"> • <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i> 	<ul style="list-style-type: none"> Wide-Area Networking Overview Configuring ATM Configuring Frame Relay Configuring Frame Relay-ATM Interworking Configuring SMDS Configuring X.25 and LAPB
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Guide Master Index</i> • <i>Cisco IOS Command Reference Master Index</i> • <i>Cisco IOS Debug Command Reference</i> • <i>Cisco IOS Dial Services Quick Configuration Guide</i> • <i>Cisco IOS Software System Error Messages</i> • <i>New Features in 12.1-Based Limited Lifetime Releases</i> • <i>New Features in Release 12.1 T</i> • Release Notes (Release note and caveat documentation for 12.1-based releases and various platforms) 	

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.

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section on page 9.

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