



Release Notes for Cisco 7200 Series for Cisco IOS Release 12.0 XK

February 12, 2002



Note

You can find the most current Cisco IOS documentation on Cisco Connection Online (CCO). These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

These release notes for the Cisco 7000 family of routers support Cisco IOS Release 12.0(7)XK3. These release notes describe new features, memory requirements, hardware support, and changes to the microcode or modem code and related documents.

For a list of the software caveats that apply to Release 12.0(7)XK3, see the “Caveats” section on page 8, the *Caveats for Cisco IOS Release 12.0 T* document, and the *Caveats for Cisco IOS Release 12.0* document that accompany these release notes. All caveats in Release 12.0 and Release 12.0 T are also in Release 12.0 XK. The caveats documents are updated for every maintenance release and are located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

Use these release notes with the *Cross-Platform Release Notes for Cisco IOS Release 12.0* and the *Release Notes for Cisco 7000 Family for Cisco IOS Release 12.0 T* located on CCO and the Documentation CD-ROM.

Contents

These release notes describe the following topics:

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Early Deployment Releases

These release notes describe the Cisco 7200 series routers for Cisco IOS Release 12.0(7)XK3, which is an early deployment (ED) release based on Cisco IOS Release 12.0 T. Early deployment releases contain fixes for software caveats and support for new Cisco hardware and software features. Table 1 shows recent early deployment releases of the Cisco 7200 series routers.

Table 1 *Early Deployment Releases for the Cisco 7200 Series Routers*

ED Release	Maintenance Release	Additional Software Features	Additional Hardware Features	Availability
Release 12.0 XK3	(7)XK3	Cisco IOS Release 12.0(7)XK3 contains no additional software or hardware features. Cisco IOS Release 12.0(7)XK3 includes caveat fixes only. For more information, see the “Caveats” section on page 8.		02/08/2002
Release 12.0 XK	(7)	QSIG for Cisco 7200 Series Routers	Cisco IOS Release 12.0(7)XK contains no additional hardware features.	01/24/2000

System Requirements

This section describes the system requirements for Cisco IOS Release 12.0(7)XK3:

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- Hardware Supported, page 3
- Determining the Software Version, page 3
- Upgrading to a New Software Release, page 3
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Image Support and Memory Requirements

Table 2 describes the memory recommendations and the images supported by Cisco IOS Release 12.1 E for the Cisco 7000 family of routers.

Table 2 Images and Memory Requirements for the Cisco 7200 Series

Platforms	Feature Sets	Image Name	Software Image	Flash Memory Required	DRAM Memory Required	Runs from
Cisco 7200 Series	IP Standard Feature Set	IP	c7200-is-mz	16 MB	64 MB	RAM
	Enterprise Feature Set	Enterprise	c7200-js-mz	16 MB	64 MB	RAM

Hardware Supported

Cisco IOS Release 12.0(7)XK3 supports the Cisco 7200 series routers:

- Cisco 7200 series routers (including the Cisco 7202, Cisco 7204, and Cisco 7206)
- Cisco 7200 VXR (including the Cisco 7204 VXR and Cisco 7206 VXR)

A hardware-software compatibility matrix is available on CCO for users with CCO login accounts. Using this matrix, you can search for supported hardware components by entering a Cisco platform and an IOS release number. The hardware-software compatibility matrix tool is available at the following URL:

<http://www.cisco.com/cgi-bin/front.x/Support/HWSWmatrix/hwswwmatrix.cgi>

Determining the Software Version

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

```
router>show version
Cisco Internetwork Operating System Software
IOS (tm) 7200 series Software c7200-js-mz, Version 12.0(7)XK3, RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, see *UCisco IOS Upgrade Ordering Instructions* located at:

http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/957_pp.htm

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.



Caution

Cisco IOS images with strong encryption (including, but not limited to 168-bit [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 may require an export license. Customer orders may be denied or subject to delay due to United States government regulations. When applicable, the purchaser or the user must obtain local import and use authorizations for all encryption strengths. Contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Table 4 lists the features and feature sets supported by the Cisco 7200 series routers in Cisco IOS Release 12.0(7)XK3 and uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.
- In—The number in the In column indicates the Cisco IOS release in which the feature was introduced. For example, (1) means a feature was introduced in Cisco IOS Release 12.1(1)E. If a cell in this column is empty, the feature was included in the initial base release.



Note

These tables might not be cumulative or list all the features in each image. You can find the most current Cisco IOS documentation on CCO. These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

Table 3 Feature Sets Supported by the Cisco 7200 Series

Feature Sets	Image Names	Software Image	Platforms
IP Standard Feature Set	IP	c7200-is-mz	Cisco 7200 series
Enterprise Standard Feature Set	Enterprise	c7200-js-mz	Cisco 7200 series

Table 4 Feature List by Feature Set for the Cisco 7200 Series

Features	Software Images by Feature Sets	
	IP	Enterprise
QSIG for Cisco 7200 series routers	Yes	Yes

New and Changed Information

The following section list the new hardware and software features supported by the Cisco 7200 series routers for Release 12.0(7)XK3:

New Features in Cisco IOS Release 12.0(7)XK3

There are no new features supported in Cisco IOS Release 12.0(7)XK3.

New Features in Cisco IOS Release 12.0(7)XK2

There are no new features supported in Cisco IOS Release 12.0(7)XK2.

New Features in Cisco IOS Release 12.0(7)XK1

There are no new features supported in Cisco IOS Release 12.0(7)XK1.

New Hardware Features in Cisco IOS Release 12.0(7)XK

There are no new hardware features supported in Cisco IOS Release 12.0(7)XK.

New Software Features in Cisco IOS Release 12.0(7)XK

The following new software feature is supported by the Cisco 7200 for Release 12.0(7)XK:

QSIG for Cisco 7200 Series Routers

QSIG protocol support allows Cisco voice switching services to connect private branch exchanges (PBXs), key systems (KTs), and central office switches that communicate by using the QSIG protocol, which is becoming the standard for PBX interoperability in Europe and North America. With QSIG, Cisco networks emulate the functionality of the PSTN, and QSIG signaling messages allow the dynamic establishment of voice and data connections across a Cisco wide-area network (WAN) to a peer router, which can then transport the signaling and voice packets to a second PINX.

The Cisco voice packet network appears to the traditional QSIG PBXs as a distributed transit PBX that can establish calls to any PBX, non-QSIG PBX, or other telephony endpoint served by a Cisco gateway, including non-QSIG endpoints. When originating and terminating on QSIG endpoints, the QSIG messages are passed transparently across the network; the PBXs are responsible for processing and provisioning the supplementary services. When linking QSIG and non-QSIG endpoints served by a Cisco packet voice gateway, only basic calls are supported. In addition, all switched voice connections must be established and torn down in response to QSIG control messages.

QSIG support includes the following capabilities:

- Enables digit forwarding on POTS dial peers in conjunction.
- Enables QSIG-switched calls over Voice over Frame Relay (VoFR), Voice over IP (VoIP), and Voice over ATM (VoATM) for Cisco 2600 and 3600 series routers' T1/E1 and BRI voice interface cards.

- Enables T1 or E1 PRI and Basic Rate Interface (BRI) QSIG-switched calls over VoFR, VoATM, and VoIP for Cisco MC3810 digital voice modules (DVMs) and BRI voice module (BVM). QSIG support on the Cisco MC3810 was introduced in Cisco IOS Release 12.0(2)T.
- Enables T1 or E1 PRI and Basic Rate Interface (BRI) QSIG-switched calls over VoFR, VoATM, and VoIP for Cisco 2600 and 3600 digital packet voice trunk network modules and BRI voice network modules and voice interface cards.

MIBs

Current MIBs

If you have an account with CCO, you can find the current list of MIBs supported by Cisco. To reach the *Cisco Network Management Toolkit*, log in to CCO and click **Software Center: Network Mgmt Products: Cisco Network Management Toolkit: Cisco MIBs**.

Deprecated and Replacement MIBs

Old Cisco Management Information Bases (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 NMS applications. You can update from deprecated MIBs to the replacement MIBs as shown in Table 5.

Table 5 *Deprecated and Replacement MIBs*

Deprecated MIBs	Replacement
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	To be decided
OLD-CISCO-DECNET-MIB	To be decided
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 decided
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 decided
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	To be decided

Important Notes

The following sections contain important notes about Cisco IOS Release 12.0(7)XK3 that can apply to the Cisco 7200 series routers.

Image Obsolescence

All Cisco 7200 series images in Cisco IOS Release 12.0(7)XK1 have been obsoleted from manufacturing.

These images are now available in Cisco IOS Release 12.0(7)XK2 and Cisco IOS Release 12.0(7)XK3.



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.

Caveat CSCdr91706 and IOS HTTP Vulnerability

A defect in multiple releases of Cisco IOS software will cause a Cisco router or switch to halt and reload if the IOS HTTP service is enabled, browsing to `http://router-ip/anytext?/` is attempted, and the enable password is supplied when requested. This defect can be exploited to produce a denial of service (DoS) attack.

The vulnerability, identified as Cisco bug ID CSCdr91706, affects virtually all mainstream Cisco routers and switches running Cisco IOS software releases 12.0 through 12.1, inclusive. This is not the same defect as CSCdr36952.

The vulnerability has been corrected and Cisco is making fixed releases available for free to replace all affected IOS releases. Customers are urged to upgrade to Cisco IOS Release 12.1(3a)E4 or later releases of Cisco IOS Release 12.1 E.

This vulnerability can only be exploited if the enable password is known or not set.

You are strongly encouraged to read the complete advisory, which is available at <http://www.cisco.com/warp/public/707/ioshttpserverquery-pub.shtml>.

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

All caveats in Cisco IOS Release 12.0 and Release 12.0 T are also in Release 12.0 XK3.

For information on caveats in Cisco IOS Release 12.0, see *Caveats for Cisco IOS Release 12.0* document on CCO and the Documentation CD-ROM.

For information on caveats in Cisco IOS Release 12.0 T, see the *Caveats for Cisco IOS Release 12.0 T*, which lists severity 1 and 2 caveats and select severity 3 caveats and is located on CCO and the Documentation CD-ROM.

**Note**

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

Open for Caveats for Release 12.0(7)XK3

There are no open caveats specific to Cisco IOS Release 12.0(7) XK3 that require documentation in the release notes.

Resolved Caveats for Release 12.0(7)XK3

All the caveats listed in this section are resolved in Cisco IOS Release 12.0(7) XK3. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

SNMP

- 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>

Related Documentation

The following sections describe the documentation available for the Cisco 7200 series routers. These documents consist of hardware and software installation guides, Cisco IOS configuration 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 CCO and the Documentation CD-ROM.

Use these release notes with these documents:

- Release-Specific Documents, page 9
- Platform-Specific Documents, page 10
- Feature Modules, page 10
- Cisco IOS Software Documentation Set, page 10

Release-Specific Documents

The following documents are specific to Cisco IOS Release 12.0 and are located on CCO and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 12.0*

On CCO at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Cross-Platform Release Notes

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Release Notes: Cross-Platform Release Notes

- Product bulletins, field notices, and other release-specific documents on CCO at:

Technical Documents

As a supplement to the caveats listed in “Caveats” in these release notes, see *Caveats for Cisco IOS Release 12.0* and *Caveats for Cisco IOS Release 12.0 T*, which contain caveats applicable to all platforms for all maintenance releases of Cisco IOS Release 12.0 and Cisco IOS Release 12.0 T.

On CCO at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Caveats

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Caveats



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

Platform-Specific Documents

These documents are available for the Cisco 7200 series on CCO and the Documentation CD-ROM:

- *Cisco 7206 Installation and Configuration Guide*
- *Cisco 7204 Installation and Configuration Guide*
- *Cisco 7202 Installation and Configuration Guide*
- *Cisco 7200 Series Port Adapter Hardware Configuration Guidelines*
- *Cisco 7200 Series Configuration Notes*

On CCO at:

Technical Documents: Documentation Home Page: 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 12.0 XK 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 CCO at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: New Feature Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: New Feature Documentation

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, which are 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 two books: a configuration guide and a corresponding command reference. Chapters in a configuration guide describe protocols, configuration tasks, 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 CCO and the Documentation CD-ROM, two master hot-linked documents provide information for the Cisco IOS software documentation set.

On CCO at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Configuration Guides and Command References

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Configuration Guides and Command References

Release 12.0 Documentation Set

Table 6 describes the contents of the Cisco IOS Release 12.0 software documentation set, which is available in electronic form and in printed form upon request.



Note

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

On CCO at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0

Table 6 *Cisco IOS Software Release 12.0 Documentation Set*

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Configuration Fundamentals Configuration Guide</i> • <i>Configuration Fundamentals Command Reference</i> 	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none"> • <i>Bridging and IBM Networking Configuration Guide</i> • <i>Bridging and IBM Networking Command Reference</i> 	Bridging and IBM Networking Overview Bridging IBM Networking

Table 6 Cisco IOS Software Release 12.0 Documentation Set (continued)

<ul style="list-style-type: none"> • <i>Dial Solutions Configuration Guide</i> 	<ul style="list-style-type: none"> Overview of Interfaces, Controllers, and Lines Used for Dial Access Configuring Modem Support and Other Asynchronous Devices Managing Modems Configuring Terminal Operating Characteristics for Dial-In Sessions Setting Up ISDN Basic Rate Service Configuring Synchronous Serial Ports Configuring Channelized E1 and T1 Configuring ISDN Special Signaling Configuring X.25 on ISDN Using A0/D1 Configuring AppleTalk Remote Access Preparing for Asynchronous DDR Configuring Asynchronous PP and SLIP Configuring the Bandwidth Allocation Control Protocol Configuring PPP Callback for DDR Configuring ISDN Caller ID Callback Configuring Dial Backup for Dialer Profiles Configuring Dial Backup Using Dialer Watch Configuring Dial Backup for Serial Lines Configuring Peer-to-Peer DDR with Dialer Profiles Configuring DialOut Enterprise Dial Scenarios and Configurations Configuring Easy IP Deciding and Preparing to Configure DDR Configuring Legacy DDR Hubs Configuring Multichassis Multilink PPP Configure Support For NAS1 Clients to Access Network Resources Dial Networking Business Applications Configuring the Cisco PAD Per-User Configuration Configuring Media-Independent PPP and Multilink PPP Configuring Protocol Translation and Virtual Asynchronous Devices Establishing a Reverse Telenet Session to a Modem Configuring Snapshot Routing Telco and ISP Dial Scenarios and Configurations Configuring Legacy DDR Spokes Configuring Dial-In Terminal Services Configuring V.120 Access Configuring Virtual Private Dialup Networks Configuring Virtual Profiles Configuring Virtual Template Interfaces Configuring X.25 on ISDN
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Table 6 Cisco IOS Software Release 12.0 Documentation Set (continued)

<ul style="list-style-type: none"> • <i>Dial Solutions Command Reference</i> 	<ul style="list-style-type: none"> Dial-In Port Setup Dial-In Terminal Service and Remote Node Config Dial-on-Demand Routing Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Dialup Networks Other Network Traffic on ISDN Channels Dial-Related Addressing Services
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i> 	<ul style="list-style-type: none"> Interface Configuration Overview LAN Interfaces Serial Interfaces Logical Interfaces
<ul style="list-style-type: none"> • <i>Network Protocols Configuration Guide, Part 1</i> • <i>Network Protocols Command Reference, Part 1</i> 	<ul style="list-style-type: none"> IP Overview IP Addressing and Services IP Routing Protocols
<ul style="list-style-type: none"> • <i>Network Protocols Configuration Guide, Part 2</i> • <i>Network Protocols Command Reference, Part 2</i> 	<ul style="list-style-type: none"> AppleTalk and Novell IPX Overview AppleTalk Novell IPX
<ul style="list-style-type: none"> • <i>Network Protocols Configuration Guide, Part 3</i> • <i>Network Protocols Command Reference, Part 3</i> 	<ul style="list-style-type: none"> Network Protocols Overview Apollo Domain Banyan VINES DECnet ISO CLNS XNS
<ul style="list-style-type: none"> • <i>Security Configuration Guide</i> • <i>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 NewFlow Switching Tag Switching Multilayer Switching Multicast Distributed Switching Virtual LANs MPOA Commands
<ul style="list-style-type: none"> • <i>Wide-Area Networking Configuration Guide</i> • <i>Wide-Area Networking Command Reference</i> 	<ul style="list-style-type: none"> Wide-Area Network Overview ATM Frame Relay SMDS X.25 and LAPB

Table 6 Cisco IOS Software Release 12.0 Documentation Set (continued)

<ul style="list-style-type: none"> • <i>Voice, Video, and Home Applications Configuration Guide</i> • <i>Voice, Video, and Home Applications Command Reference</i> 	<p>Using Voice, Video, and Home Applications Voice Video Broadband</p>
<ul style="list-style-type: none"> • <i>Quality of Service Solutions Configuration Guide</i> • <i>Quality of Service Solutions Command Reference</i> 	<p>Quality of Service Overview Classification Congestion Management Congestion Avoidance Policy and Shaping Overview Signalling Link Efficiency Mechanisms</p>
<ul style="list-style-type: none"> • <i>Caveats (Caveat documentation for Cisco IOS Releases 12.0 and 12.0 T— includes open and resolved severity 1 and 2 caveats for all platform)</i> • <i>Cisco IOS Release 12.0 Configuration Guide Master Index</i> • <i>Cisco IOS Release 12.0 Command Reference Master Index</i> • <i>Cisco IOS Release 12.0 Master Indexes</i> • <i>Cisco IOS Software Command Summary</i> • <i>Cisco IOS Software System Error Messages</i> • <i>Debug Command Reference</i> • <i>Dial Solutions Quick Configuration Guide</i> • <i>New Features in 12.0-Based Limited Lifetime Releases</i> • <i>New Features in Early Deployment Release 12.0T</i> • <i>Release Notes (Release note for 12.0-based releases and various platforms)</i> 	



Note

The *Cisco Management Information Base (MIB) User Quick Reference* publication is no longer published. For the latest list of MIBs supported by Cisco, see *Cisco Network Management Toolkit* on Cisco Connection Online. From CCO, click on the following path: **Software Center: Network Mgmt Products: Cisco Network Management Toolkit: Cisco MIB.**

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>. Translated documentation can be accessed at http://www.cisco.com/public/countries_languages.shtml.

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. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Registered CCO users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered CCO users can order documentation through a local account representative by calling Cisco's corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

Obtaining Technical Assistance

Cisco provides Cisco Connection Online (CCO) as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the Web, e-mail, a self-addressed stamped response card included in many printed documents, or by sending mail to Cisco.

Cisco Connection Online

Cisco continues to revolutionize how business is done on the Internet. Cisco Connection Online 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.

CCO's broad range of features and services helps customers and partners to streamline business processes and improve productivity. Through CCO, you will find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online support services, 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 CCO to obtain additional personalized information and services. Registered users may order products, check on the status of an order and view benefits specific to their relationships with Cisco.

You can access CCO in the following ways:

- WWW: www.cisco.com
- Telnet: cco.cisco.com
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

Language	E-mail Address
English	tac@cisco.com
Hanzi (Chinese)	chinese-tac@cisco.com
Kanji (Japanese)	japan-tac@cisco.com
Hangul (Korean)	korea-tac@cisco.com
Spanish	tac@cisco.com
Thai	thai-tac@cisco.com

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

Software Configuration Tips on the Cisco TAC Home Page

If you have a CCO login account, you can access the following URL, which contains links and tips on configuring your Cisco products:

http://www.cisco.com/kobayashi/technotes/serv_tips.shtml

This URL is subject to change without notice. If it changes, point your Web browser to CCO and click on this path: **Service & Support: Technical Assistance Center: Technical Tips**. You must have a CCO account to access this link.

The following sections are provided from the Technical Tips page:

- Configuration Cookbooks—Contains common configurations or recipes to configure various access routes and dial technologies.
- Field Notices—Notifies you of any critical issues regarding Cisco products and includes problem descriptions, safety or security issues, and hardware defects.
- Frequently Asked Questions—Describes the most frequently asked technical questions about Cisco hardware and software.
- Hardware—Provides technical tips related to specific hardware platforms.
- Hot Tips—Describes popular tips and hints gathered from the Cisco Technical Assistance Center (TAC). Most of these documents are available from the TAC Fax-on-demand service. To reach Fax-on-demand and receive documents at your fax machine from the United States, call 888-50-CISCO (888-502-4726). From international areas, call 415-596-4408.
- Internetworking Features—Lists tips on using Cisco IOS software features and services.
- Sample Configurations—Provides actual configuration examples that are complete with topology and annotations.

Documentation Feedback

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