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# Release Notes for the Cisco 3600 Series for Cisco IOS Release 12.0(3)XG

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**March 29, 1999**

These release notes describe new features and significant software components that support Cisco IOS Release 12.0(3)XG for the Cisco 3600 series routers. Cisco IOS Release 12.0(3)XG is based on Cisco IOS Release 12.0(3)T.

Use these release notes with the cross-platform *Release Notes for Cisco IOS Release 12.0* located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

For a list of software caveats that apply to Release 12.0(3)XG, refer to the “Caveats” section on page 9.

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## Introduction

Cisco 3600 series includes the Cisco 3620 and Cisco 3640 routers. As modular solutions, the Cisco 3620 and Cisco 3640 enable corporations to increase dial-up intensity and take advantage of current and emerging WAN (wide-area network) technologies and networking capabilities. The Cisco 3600 series routers are fully supported by Cisco IOS software, which includes dial-up connectivity, LAN-to-LAN routing, data and access security, WAN optimization, and multimedia features.

## System Requirements

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## Memory Requirements

**Table 1 Memory Requirements for the Cisco 3600 Series**

Feature Set by Platform		Image Name	Required Flash Memory	Required DRAM Memory	Runs from
<b>Cisco 3620</b>	IP	c3620-i-mz	8 MB Flash	24 MB DRAM	RAM
	IP Plus	c3620-is-mz	8 MB Flash	32 MB DRAM	RAM
	IP/FW	c3620-io-mz	8 MB Flash	24 MB DRAM	RAM
	IP/IPX/AT/DEC	c3620-d-mz	8 MB Flash	24 MB DRAM	RAM
	IP/IPX/AT/DEC Plus	c3620-ds-mz	16 MB Flash	32 MB DRAM	RAM
	IP/IPX/AT/DEC/ FW Plus	c3620-dos-mz	16 MB Flash	32 MB DRAM	RAM
	Enterprise Plus	c3620-js-mz	16 MB Flash	48 MB DRAM	RAM
<b>Cisco 3640</b>	IP	c3640-i-mz	8 MB Flash	32 MB DRAM	RAM
	IP Plus	c3640-is-mz	8 MB Flash	32 MB DRAM	RAM
	IP/FW	c3640-io-mz	8 MB Flash	24 MB DRAM	RAM
	IP/IPX/AT/DEC	c3640-d-mz	8 MB Flash	24 MB DRAM	RAM
	IP/IPX/AT/DEC Plus	c3640-ds-mz	16 MB Flash	32 MB DRAM	RAM
	IP/IPX/AT/DEC/ FW Plus	c3640-dos-mz	16 MB Flash	32 MB DRAM	RAM
	Enterprise Plus	c3640-js-mz	16 MB Flash	48 MB DRAM	RAM

## Hardware Supported

Cisco IOS Release 12.0(3)XG supports the Cisco 3600 series routers:

- Cisco 3620
- Cisco 3640

**Table 2 Supported Interfaces on the Cisco 3600 Series**

Interface, Network Module, or Data Rate	Platforms Supported		
<b>Dial Access Network Modules</b>	16- and 32-port Asynchronous network module	All Cisco 3600 series platforms	
	6- to 30-port Integrated Digital Modems network module	All Cisco 3600 series platforms	
	8- or 16-port Integrated Analog network module	All Cisco 3600 series platforms	
<b>LAN Interfaces</b>	1- and 4-port Ethernet (AUI and 10BaseT)	All Cisco 3600 series platforms	
	4/16 Mbps Token Ring	All Cisco 3600 series platforms	
	Fast Ethernet (100BaseTX and 100BaseFX)	All Cisco 3600 series platforms	
<b>Mixed Media Network Modules</b>	Single port 10/100BaseTX with 1-port Channelized/PRI E1 balanced mode	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 1-port Channelized/PRI E1 unbalanced mode	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 1-port Channelized/PRI T1	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 1-port Channelized/PRI T1 with CSU	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 2-port Channelized/PRI E1 balanced mode	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 2-port Channelized/PRI E1 unbalanced mode	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 2-port Channelized/PRI T1	All Cisco 3600 series platforms	
	Single port 10/100BaseTX with 2-port Channelized/PRI T1 with CSU	All Cisco 3600 series platforms	
	1 Ethernet and 2 WAN Card Slot	All Cisco 3600 series platforms	
	1 Ethernet, 1 Token Ring, and 2 WAN Card Slot	All Cisco 3600 series platforms	
	2 Ethernet and 2 WAN Card Slot	All Cisco 3600 series platforms	
	<b>Voice/Fax Interfaces and Network Modules<sup>1</sup></b>	2-port ISDN BRI S/T TE Voice interface card	All Cisco 3600 series platforms
		1- and 2-port Voice/Fax network module	All Cisco 3600 series platforms with Voice/Fax network module
2-port E&M Voice interface card		All Cisco 3600 series platforms	
2-port FXO Voice interface card		All Cisco 3600 series platforms with Voice/Fax network module	
2-port FXS Voice interface card		All Cisco 3600 series platforms with Voice/Fax network module	

**Table 2 Supported Interfaces on the Cisco 3600 Series (continued)**

Interface, Network Module, or Data Rate		Platforms Supported
<b>WAN Data Rates</b>	48/56/64 kbps	All Cisco 3600 series platforms
	1.544/2.048 Mbps	All Cisco 3600 series platforms
	Up to 8 Mbps on 4-port Serial network module	All Cisco 3600 series platforms
	52 Mbps max using High Speed Serial Interface (HSSI) network module	All Cisco 3600 series platforms
<b>WAN Interfaces and Network Modules<sup>2</sup></b>	1- and 2-port Channelized T1 and E1 network module	All Cisco 3600 series platforms
	1-port ATM-25 network modules for the Cisco 3600 series	All Cisco 3600 series platforms
	1-port BRI with NT or S/T WAN interface card	All Cisco 3600 series platforms
	1-Port High Speed Serial Interface network module (HSSI)	All Cisco 3600 series platforms
	4- and 8-port BRI network module with NT1	All Cisco 3600 series platforms
	4- and 8-port BRI network module with S/T interface	All Cisco 3600 series platforms
	4- and 8-port Synchronous/Asynchronous	All Cisco 3600 series platforms
	4-port Serial	All Cisco 3600 series platforms
	56/64 kbps DSU/CSU	All Cisco 3600 series platforms
	T1 WAN interface card for Cisco 3600, Cisco 2600, and Cisco 1600 series	All Cisco 3600 series platforms
	T1 with Integrated DSU/CSU for the Cisco 3600, Cisco 2600, and Cisco 1600 series	All Cisco 3600 series platforms

1 The Voice/Fax network modules require Cisco IOS Plus feature sets.

2 The ATM-25 network modules require Cisco IOS Plus feature sets.

## Determining Your Cisco IOS Software Release

To determine the version of Cisco IOS software currently running on a Cisco 3600 series router, log in to the router and use the **show version EXEC** command. See the following sample output from the **show version** command. The version number is indicated on the second line as shown below:

```
Cisco Internetwork Operating System Software
IOS (tm) 3620 Software (C3620-JS-MZ), Version 12.0(3)XG, RELEASE SOFTWARE
```

## Upgrading to a New Software Release

For general information about upgrading to a new software release, refer to the *Cisco IOS Software Release 11.3 Upgrade Paths and Packaging Simplification (#703: 12/97)* product bulletin located on CCO.

From the CCO home page, click on this path:

**Service & Support: Product Bulletins: Software**

Under **Cisco IOS 11.3**, click on **Cisco IOS Software Release 11.3 Upgrade Paths (#703: 12/97)**.

This product bulletin does not contain information specific to Cisco IOS Release 12.0(3)XG but provides general upgrade information that may apply to Cisco IOS Release 12.0(3)XG.

## Feature Set Tables

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.

**Table 3 Feature Sets Supported by the Cisco 3600 Series for Release 12.0(3)XG**

Feature Set		Feature Set Matrix Term	Software Image	Platforms
<b>IP Standard Feature Sets</b>	IP	Basic <sup>1</sup>	c3620-i-mz, c3640-i-mz	Cisco 3620, Cisco 3640
	IP Plus	Plus <sup>2</sup>	c3620-is-mz, c3640-is-mz	Cisco 3620, Cisco 3640
	IP/FW	Basic	c3620-io-mz, c3640-io-mz	Cisco 3620, Cisco 3640
<b>Desktop IBM Standard Feature Sets</b>	IP/IPX/AppleTalk/DEC	Basic	c3620-d-mz, c3640-d-mz	Cisco 3620, Cisco 3640
	IP/IPX/AppleTalk/DEC Plus	Plus	c3620-ds-mz, c3640-ds-mz	Cisco 3620, Cisco 3640
	IP/IPX/AppleTalk/DEC/FW Plus	Plus	c3620-dos-mz, c3640-dos-mz	Cisco 3620, Cisco 3640
<b>Enterprise Standard Feature Sets</b>	Enterprise Plus	Plus	c3620-js-mz, c3640-js-mz	Cisco 3620, Cisco 3640

<sup>1</sup> This feature set is offered in the basic feature set.

<sup>2</sup> This feature set is offered in the Plus feature set.



**Caution** Cisco IOS images with strong encryption (including, but not limited to, 56-bit data encryption feature sets) are subject to United States government export controls, and have a limited distribution. Images to be installed outside the United States require an export license. Customer orders may be denied or subject to delay due to United States government regulations. Contact your sales representative or distributor for more information, or send e-mail to [export@cisco.com](mailto:export@cisco.com).

## System Requirements

Table 4 lists the features and feature sets supported by the Cisco 3600 series in Cisco IOS Release 12.0(3)XG 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 ED release when the feature was first introduced. For example, (3) means a feature was introduced in 12.0(3)T. If a cell in this column is empty, the feature was included in the initial base release.

**Note** This feature set table only contains a selected list of features. This table is not cumulative—nor does it list all the features in each image.

**Table 4 Feature Lists by Feature Sets for the Cisco 3600 Series**

Features		Feature Sets						
		IP	IP Plus	IP FW	IP/IPX/ AT/ DEC	IP/IPX/ AT/DEC Plus	IP/IPX/ AT/DEC/ FW Plus	Enterprise Plus
<b>Connectivity</b>								
Layer 2 Tunnel Protocol (L2TP)	(1)	No	Yes	No	No	Yes	Yes	Yes
RIP Enhancements	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP version 3	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>IBM Support</b>								
DLSw+ RSVP	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Enhanced Load Balancing	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Peer Clusters	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>IP Routing</b>								
Easy IP Phase 2-DHCP Server	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow Random Early Detection	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NetFlow Policy Routing	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Response Time Reporter Enhancements	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Service Provider 1	(3)	No	No	No	No	No	No	No
WCCPv2	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Management</b>								
ISDN MIB RFC 2127	(1)	Yes	Yes	Yes	No	Yes	Yes	Yes
IFE2P Network Module	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature Lists by Feature Sets for the Cisco 3600 Series (continued)

Features		Feature Sets						
		IP	IP Plus	IP FW	IP/IPX/ AT/ DEC	IP/IPX/ AT/DEC Plus	IP/IPX/ AT/DEC/ FW Plus	Enterprise Plus
Process MIB	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Quality of Service</b>								
CLI String Search		Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Security</b>								
Cisco IOS Firewall Feature Set Platform Support		No	No	Yes	No	No	Yes	No
3DES Support	(2)	No	No	Yes	No	No	No	No
<b>Switching</b>								
Cisco IOS STP Enhancements		No	Yes	No	No	Yes	Yes	Yes
<b>Voice and Multimedia</b>								
Voice Over Frame Relay, FRF.11 and FRF.12 <sup>1</sup>		No	Yes	No	No	Yes	Yes	Yes
BRI Voice over IP	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>WAN Services</b>								
Annex-G (X.25 over Frame Relay)	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATM OC3 NM	(3)	No	Yes	No	No	Yes	Yes	Yes
Cisco IOS IEEE 802.1Q	(1)	No	Yes	No	Yes	Yes	Yes	Yes
Mobile IP	(1)	No	Yes	No	Yes	Yes	Yes	Yes
Modem over ISDN BRI <sup>2</sup>	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2 Signaling		Yes	Yes	Yes	Yes	Yes	Yes	Yes
PPP Over Frame Relay		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Based Access Lists	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VIC-2BRI-S/T-TE	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Load Balancing	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 over ISDN D Channel	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1 Added in Cisco IOS Release 12.0(3)XG.

2 Cisco 3640 routers only

## New and Changed Information

This section describes a new feature introduced for the Cisco 3600 series in Cisco IOS Release 12.0(3)XG.

### Voice over Frame Relay Using FRF.11 and FRF.12

The Voice over Frame Relay (VoFR) capabilities that were introduced on the Cisco MC3810 multiservice access concentrator beginning with IOS Release 11.3 are now extended to the Cisco 3600 series router platforms.

The following additional functionality is supported in Release 12.0(3)XG:

- FRF.11-compliant Voice over Frame Relay trunking
- FRF.12-compliant end-to-end fragmentation
- Dynamic call switching and termination
- Permanent trunks over dynamic switched calls

When VoFR is implemented on a Cisco router, the router can carry voice traffic, such as telephone calls and faxes over a Frame Relay network.

## Important Note

This section contains important information about use of your Cisco IOS Release 12.0(3)XG software.

## Deprecated MIBs

Older Cisco Management Information Bases (MIBs) will be replaced in a future release. OLD-CISCO-\* MIBs are currently being migrated into more scalable MIBs, without affecting existing Cisco IOS products or NMS applications. Application developers should update from deprecated MIBs to the replacement MIBs as shown in the table below.

**Table 5**      **Deprecated MIBs**

<b>Deprecated MIB</b>	<b>Replacement</b>
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	In Development
OLD-CISCO-DECNET-MIB	
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	
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB

**Table 5**      **Deprecated MIBs**

Deprecated MIB	Replacement
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	
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	

## Caveats

This section contains open caveats for the current Cisco IOS maintenance release only. Caveats describe unexpected behavior or defects in Cisco IOS software releases. The caveats listed below are severity 3, moderately serious, with the exception of CSCdm17845, as noted in the description.

For information on caveats in Cisco IOS Release 12.0, refer to the document *Caveats for Cisco IOS Release 12.0* that describes caveats affecting all maintenance releases. Because Release 12.0(3)XG is based on Release 12.0, all caveats in Release 12.0 are also in Release 12.0(3)XG.

For information on other caveats that also apply to this release, refer to the *Caveats for Cisco IOS Release 12.0 T* document. This caveats document lists severity 1 and 2 caveats for Release 12.0 T. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious.

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**Note** If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. From CCO, log in and click on this path: **Service & Support: Online Technical Support: Software Bug Toolkit**. You can also find Bug Navigator II at <http://www.cisco.com/support/bugtools>.

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- CSCdk85047

When making a fax call through a permanent connection using either a frf11-trunk or cisco-trunk, some brands of fax machine may report an error at the end of the fax call, even though the fax was transmitted correctly.

The problem is caused by a slightly premature on-hook signal going to the fax machine at the end of the call. This causes the final fax T.30 DCN (disconnect message) to the receiving fax machine to be chopped off.

At this point the transmission of the fax image is complete, but some fax machines may report an error as a result of the missing DCN message. The fax machine continues to operate correctly after this and can receive and send additional fax messages.

- CSCdm13948

VoIP and VoFR trunking on the analog FXS and FXO voice ports of the Cisco 2600 and Cisco 3600 routers are not supported with ground-start signaling.

In order to use the trunking feature on these ports, loop-start signaling (the default) must be used.

Ground-start signaling works with normal switched VoIP and VoFR calls and with PLAR connections.

- CSCdm17845

(Severity 2) When fax relay is used on an E&M interface of a Cisco 2600 or 3600 series router, a crash may occur after a fax transmission. (The fax relay feature is enabled by default.)

Workaround: Avoid the crash by configuring **fax-rate disable** on the network dial-peers (VoIP or VoFR). Note that you must configure this command at both ends of the connection. Doing so disables the fax relay feature. Configuring **fax-rate disable** may prevent successful fax transmission through the network.

## Related Documentation

The following sections describe the documentation available for the Cisco 3600 series. Typically, these documents consist of hardware installation guides, 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 only available online.

You can find the most up-to-date documentation on CCO and the Documentation CD-ROM. These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

Use these release notes in conjunction with the documents listed in the following sections:

- Release-Specific Documents, page 10
- Platform-Specific Documents, page 11
- Feature Modules, page 12
- Cisco IOS Software Document Set, page 12

## Release-Specific Documents

The following documents are specific to Cisco IOS Releases 12.0 T and 12.0, on which Release 12.0(3)XG is based. They are located on CCO and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.0*

To reach the cross-platform *Release Notes for Cisco IOS Release 12.0* on CCO, follow this path:

**Service & Support: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Release Notes: Cross-Platform Release Notes**

To reach the cross-platform *Release Notes for Cisco IOS Release 12.0* on the Documentation CD-ROM, follow this path:

**Cisco IOS Software Configuration: Cisco IOS Release 12.0: Release Notes: Cross-Platform Release Notes**

- Product bulletins, field notices, and other release-specific documents

To access these documents on CCO, select **Technical Documents** under the Service & Support heading.

- Caveat documents

As a supplement to the caveats listed in the “Caveats” section in these release notes, see the *Caveats for Cisco IOS Release 12.0 T* document that contains caveats applicable to all platforms for all maintenance releases of Release 12.0 T. Caveats for Release 12.0(3)T apply to Release 12.0(3)XG.

To reach the caveats document on CCO, follow this path:

**Service & Support: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Caveats: Caveats for Cisco IOS Release 12.0 T**

To reach the caveats document on the Documentation CD-ROM, follow this path:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS 12.0: Caveats: Caveats for Cisco IOS Release 12.0 T**

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**Note** If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. From CCO, log in and click on this path: **Service & Support: Online Technical Support: Software Bug Toolkit**. You can also find Bug Navigator II at <http://www.cisco.com/support/bugtools>.

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## Platform-Specific Documents

The documents listed below are available for the Cisco 3600 series routers. These documents are also available online at Cisco Connection Online (CCO) and on the Documentation CD-ROM.

- *Cisco 3600 Series Hardware Installation Guide*
- *Software Configuration Guide*
- *Network Module Hardware Installation Guide*
- *Update to Network Module Hardware and Software Guides*
- *WAN Interface Cards Hardware Installation Guide*
- *Update to WAN Interface Cards Hardware Installation Guide*
- *Cisco Modular Access Router Cable Specifications*
- Redundant Power Systems
- *Regulatory Compliance and Safety Info for the Cisco 3600 Series*
- Cisco 3600 Series Configuration Notes
- Digital Modem Portware documents
- Analog Modem Firmware documents
- Release notes

To access Cisco 3600 series documentation on CCO, follow this path:

**Service & Support: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 3600 Series Routers**

To access Cisco 3600 series documentation on the Documentation CD-ROM, follow this path:

**Access Servers and Access Routers: Modular Access Routers: Cisco 3600 Series Routers**

## Feature Modules

Feature modules describe new features supported by Cisco IOS Release 12.0 T, 12.0(3)XG, and other ED releases and are updates to the Cisco IOS documentation set. They consist of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the features modules are available online only. The feature module information is included in the next printing of the Cisco IOS documentation set.

To reach the feature modules on CCO, follow this path:

**Service & Support: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: New Feature Documentation**

To reach the feature modules on the Documentation CD-ROM, follow this path:

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

## Cisco IOS Software Document Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents. These documents 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 comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Each configuration guide can be used in conjunction with its corresponding command reference.

To reach these documents on CCO, follow this path:

**Service & Support: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Configuration Guides and Command References**

To reach these documents on the Documentation CD-ROM, follow this path:

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

### Cisco IOS Release 12.0 Documentation Set

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

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**Note** You can find the most current Cisco IOS documentation on the latest Documentation CD-ROM and on the Web. These electronic documents may contain updates and modifications made after the paper documents were printed.

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To reach the Cisco IOS documentation set on CCO, follow this path:

**Service & Support: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.0**

To reach the Cisco IOS documentation set on the Documentation CD-ROM, follow this path:

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

**Table 6 Cisco IOS Software Release 12.0 Documentation Set**

<b>Books</b>	<b>Chapter Topics</b>
<ul style="list-style-type: none"> <li>• <i>Configuration Fundamentals Configuration Guide</i></li> <li>• <i>Configuration Fundamentals Command Reference</i></li> </ul>	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none"> <li>• <i>Bridging and IBM Networking Configuration Guide</i></li> <li>• <i>Bridging and IBM Networking Command Reference</i></li> </ul>	Transparent Bridging Source-Route Bridging Token Ring Inter-Switch Link Remote Source-Route Bridging DLSw+ STUN and BSTUN LLC2 and SDLC IBM Network Media Translation DSPU and SNA Service Point SNA Frame Relay Access Support APPN Cisco Database Connection NCI/Client/Server Topologies Cisco Mainframe Channel Connection Airline Product Set
<ul style="list-style-type: none"> <li>• <i>Dial Solutions Configuration Guide</i></li> <li>• <i>Dial Solutions Command Reference</i></li> </ul>	Dial-In Port Setup Dial-In Terminal Services Dial-on-Demand Routing (DDR) Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions ISDN X.25 over ISDN VPDN Dial Business Solutions and Examples
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Interface Configuration Guide</i></li> <li>• <i>Cisco IOS Interface Command Reference</i></li> </ul>	Interface Configuration Overview
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 1</i></li> <li>• <i>Network Protocols Command Reference, Part 1</i></li> </ul>	IP Addressing IP Services IP Routing Protocols
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 2</i></li> <li>• <i>Network Protocols Command Reference, Part 2</i></li> </ul>	AppleTalk Novell IPX
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 3</i></li> <li>• <i>Network Protocols Command Reference, Part 3</i></li> </ul>	Apollo Domain Banyan VINES DECnet ISO CLNS XNS

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

Books	Chapter Topics
<ul style="list-style-type: none"> <li>• <i>Security Configuration Guide</i></li> <li>• <i>Security Command Reference</i></li> </ul>	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Switching Services Configuration Guide</i></li> <li>• <i>Cisco IOS Switching Services Command Reference</i></li> </ul>	Switching Paths for IP Networks Virtual LAN (VLAN) Switching and Routing
<ul style="list-style-type: none"> <li>• <i>Wide-Area Networking Configuration Guide</i></li> <li>• <i>Wide-Area Networking Command Reference</i></li> </ul>	ATM Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> <li>• <i>Voice, Video, and Home Applications Configuration Guide</i></li> <li>• <i>Voice, Video, and Home Applications Command Reference</i></li> </ul>	Voice over IP Voice over Frame Relay Voice over ATM Voice over HDLC Video Support Universal Broadband Features
<ul style="list-style-type: none"> <li>• <i>Quality of Service Solutions Configuration Guide</i></li> <li>• <i>Quality of Service Solutions Command Reference</i></li> </ul>	Classification Scheduling Packet Drop Traffic Shaping ATM QoS SNA QoS Line Protocols
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Software Command Summary</i></li> <li>• <i>Dial Solutions Quick Configuration Guide</i></li> <li>• <i>System Error Messages</i></li> <li>• <i>Debug Command Reference</i></li> </ul>	

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**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: **Service & Support: Software Center: Network Mgmt Products: Cisco Network Management Toolkit: Cisco MIB.**

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## Service and Support

For service and support for a product purchased from a reseller, contact the reseller. Resellers offer a wide variety of Cisco service and support programs that are described in the “Service and Support” section of the information packet shipped with your product. For service and support for a product purchased directly from Cisco, use CCO.

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**Note** If you purchased your product from a reseller, you can access CCO as a guest. CCO is Cisco Systems’ primary real-time support channel. Your reseller offers programs that include direct access to CCO services.

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## Software Configuration Tips on the Cisco Technical Assistance Center Home Page

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

[http://www.cisco.com/kobayashi/serv\\_tips.shtml](http://www.cisco.com/kobayashi/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: **Products & Technologies: Products: Technical Tips**.

The following sections are provided from the Technical Tips page:

- Access Dial Cookbook—Contains common configurations or recipes for configuring various access routes and dial technologies.
- Field Notices—Designed to provide notification of any critical issues regarding Cisco products. These notices include problem descriptions, safety or security issues, and hardware defects
- Hardware—Technical Tips related to specific hardware platforms
- Hot Tips—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 USA, call 888-50-CISCO (888-502-4726). From other areas, call 650-596-4408.
- Internetworking Features—Tips on using and deploying Cisco IOS software features and services
- Sample Configurations—Actual configuration examples—examples complete with topology and annotations
- Software Products—MultiNet & Cisco Suite 100, Network Management, Cisco IOS Software Bulletins, and CiscoPro Configurations
- Special Collections—Other Helpful Documents, including Case Studies, References & RFCs, and Security Advisories.

## Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can reach CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>

- WWW: <http://www-china.cisco.com>
- Telnet: [cco.cisco.com](http://cco.cisco.com)
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact [cco-help@cisco.com](mailto:cco-help@cisco.com). For additional information, contact [cco-team@cisco.com](mailto:cco-team@cisco.com).

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**Note** If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or [tac@cisco.com](mailto:tac@cisco.com). To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or [cs-rep@cisco.com](mailto:cs-rep@cisco.com).

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## Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package that ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

If you read Cisco product documentation on the World Wide Web, you can submit comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco. We appreciate your comments.

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This document is to be used in conjunction with the documents listed in the "Cisco Connection Online" section on page 15.

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