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# Release Notes for the Cisco 2600 Series for Cisco IOS Release 12.0(3)XG

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**May 17, 1999**

These release notes describe new features and significant software components that support Cisco IOS Release 12.0(3)XG for the Cisco 2600 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 10.

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## Introduction

Cisco Systems extends enterprise-class versatility, integration, and power to branch offices with the Cisco 2600 series modular access router family. The Cisco 2600 series routers help customers to easily adopt future technologies and scale to accommodate network expansion. The Cisco 2600 series shares modular interfaces with the Cisco 1600, Cisco 1700, and Cisco 3600 series, providing a solution to meet today's branch office needs for applications such as:

- Secure Internet/intranet access
- Multiservice voice/data integration
- Analog and digital dial access services
- Virtual Private Network (VPN) access
- Inter-VLAN routing

The Cisco 2600 series modular architecture provides the versatility needed to adapt to changes in network technology as new services and applications become available. Driven by a powerful RISC (Reduced Instruction Set Computing) processor, the Cisco 2600 series supports the advanced Quality of Service (QoS), security, and network integration features required in today's evolving enterprise networks.

## System Requirements

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## Memory Requirements

**Table 1** Memory Requirements for the Cisco 2600 Series

Feature Sets	Image Name	Required Flash Memory	Required DRAM Memory	Runs From
IP	c2600-i-mz	4 MB	20 MB	RAM
IP Plus	c2600-is-mz	8 MB	32 MB	RAM
IP/FW	c2600-io-mz	4 MB	20 MB	RAM
IP/IPX/AT/DEC	c2600-d-mz	8 MB	24 MB	RAM
IP/IPX/AT/DEC Plus	c2600-ds-mz	8 MB	32 MB	RAM
IP/IPX/AT/DEC/FW Plus	c2600-dos-mz	8 MB	32 MB	RAM
Enterprise Plus	c2600-js-mz	8 MB	32 MB	RAM
Enterprise/APPN Plus	c2600-ajs-mz	8 MB	48 MB	RAM
Remote Access Server	c2600-c-mz	4 MB	20 MB	RAM

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**Note** Encryption images are offered in Cisco IOS release 12.0(4)T and incorporate the new features introduced in Release 12.03XG.

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## Hardware Supported

Cisco IOS Release 12.0(3)XG supports the Cisco 2600 series routers:

- Cisco 2610
- Cisco 2611
- Cisco 2612
- Cisco 2613
- Cisco 2620
- Cisco 2621

For detailed descriptions of the new hardware features for Cisco IOS Release 12.0, refer to the cross-platform *Release Notes for Cisco IOS Release 12.0*. Table 2 lists the interfaces supported on the Cisco 2600 series.

**Table 2 Supported Interfaces on the Cisco 2600 Series**

Interface, Network Module, or Data Rate <sup>1</sup>		Platforms Supported
<b>LAN Interfaces</b>	1- or 2-port Ethernet (10BaseT)	Cisco 2610, Cisco 2611, Cisco 2612
	1-port Token Ring (RJ-45)	Cisco 2612, Cisco 2613
	10/100 Ethernet, 1 or 2 ports	Cisco 2620 and Cisco 2621
<b>LAN Network Modules</b>	1-port Ethernet	All Cisco 2600 series platforms
	4-port Ethernet	All Cisco 2600 series platforms
	1-port ATM-25 RJ-45 interface	All Cisco 2600 series platforms
<b>Serial Network Modules</b>	16- or 32-port Asynchronous	All Cisco 2600 series platforms
	4- or 8-port Asynchronous/ Synchronous Serial low speed (128 kbps max)	All Cisco 2600 series platforms
<b>Dial, ISDN and Channelized Serial Network Modules</b>	1- or 2-port Channelized T1/ISDN PRI	All Cisco 2600 series platforms
	1- or 2-port Channelized T1/ISDN PRI with CSU	All Cisco 2600 series platforms
	1- or 2-port Channelized E1/ISDN PRI balanced	All Cisco 2600 series platforms
	1- or 2-port Channelized E1/ISDN PRI unbalanced	All Cisco 2600 series platforms
	4-or 8-port ISDN BRI S/T interface	All Cisco 2600 series platforms
	4- or 8-port ISDN BRI U (NT1) interface	All Cisco 2600 series platforms
<b>Voice/Fax Network Module</b>	8- or 16-port Analog modems	All Cisco 2600 series platforms
	1- or 2-port Voice interface card slots	All Cisco 2600 series platforms

**Table 2 Supported Interfaces on the Cisco 2600 Series (continued)**

Interface, Network Module, or Data Rate <sup>1</sup>	Platforms Supported	
<b>Voice/Fax Interface Cards</b>		All Cisco 2600 series platforms with Voice/Fax network modules
	2-port FXS Voice/Fax interface card	All Cisco 2600 series platforms with Voice/Fax network modules
	2-port E&M Voice/Fax interface card	All Cisco 2600 series platforms with Voice/Fax network modules
	2-port FXO Voice/Fax interface card	All Cisco 2600 series platforms with Voice/Fax network modules
	2-port ISDN BRI S/T-TE Voice/Fax interface card	All Cisco 2600 series platforms with 2-slot Voice/Fax network modules
<b>WAN Interface Cards</b>	1-port ISDN BRI S/T interface (requires external NT1)	All Cisco 2600 series platforms
	1-port ISDN BRI (NT1) U	All Cisco 2600 series platforms
	1-port 56/64-kbps DSU/CSU	All Cisco 2600 series platforms
	1-port T1/Fractional T1 with DSU/CSU	All Cisco 2600 series platforms
	1-port High-Speed Serial (up to 2.048 Mbps)	All Cisco 2600 series platforms
	2-port Dual High-speed Serial (up to 2.048 Mbps; Asynchronous/Synchronous support)	All Cisco 2600 series platforms
	2-port Asynchronous/Synchronous (up to 128 kbps)	All Cisco 2600 series platforms
<b>Advanced Integration Modules</b>	Data Compression AIM (up to 8.192 Mbps)	All Cisco 2600 series platforms

<sup>1</sup> The Voice/Fax and ATM-25 network modules require Cisco IOS Plus feature sets.

## Determining Your Software Release

To determine the version of Cisco IOS software currently running on a Cisco 2600 series router, log in to the router and enter 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) 2600 Software (c2600-i-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.

## Other Firmware Code

The latest version of analog modem firmware for the Cisco 2600 series allows support of the internal analog modems in a wide range of countries. Firmware version 1.0.1 extends support internationally in Cisco IOS Release 11.3(5)T and later releases.

To access Cisco 2600 firmware documentation on CCO, follow this path:

**Service & Support: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers: Analog Modem Firmware**

To access Cisco 2600 firmware documentation on the Documentation CD-ROM, follow this path:

**Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers: Analog Modem Firmware**

## 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. All “Plus” feature sets include voice network support.

**Table 3 Feature Sets Supported by the Cisco 2600 Series for Release 12.0(3)XG**

Feature Sets		Feature Set Matrix Term	Software Image	Platforms
IP Standard Feature Sets	IP	• Basic	c2600-i-mz	All Cisco 2600 series platforms
	IP Plus	• Basic • Plus	c2600-is-mz	All Cisco 2600 series platforms
	IP/FW	• Basic • FW	c2600-io-mz	All Cisco 2600 series platforms
IP/IPX/AppleTalk/DEC Standard Feature Sets	IP/IPX/AppleTalk/DEC	• Basic	c2600-d-mz	All Cisco 2600 series platforms
	IP/IPX/AppleTalk/DEC Plus	• Basic • Plus	c2600-ds-mz	All Cisco 2600 series platforms
	IP/IPX/AT/DEC/FW Plus	• Basic • FW Plus	c2600-dos-mz	All Cisco 2600 series platforms
Enterprise Standard Feature Sets	Enterprise Plus	• Plus	c2600-js-mz	All Cisco 2600 series platforms
Enterprise/APPN Standard Feature Sets	Enterprise/APPN Plus	• Plus	c2600-ajs-mz	All Cisco 2600 series platforms
Remote Access Server Feature Set	Remote Access Server	• Basic	c2600-c-mz	All Cisco 2600 series platforms

## System Requirements

Table 4 lists the features and feature sets supported by the Cisco 2600 series in Cisco IOS Release 12.0(3)XG and uses the following conventions to identify features:

- Yes—The feature is supported in the feature set.
- No—The feature is not supported in the feature set.
- In—The number in the “In” column indicates the Cisco IOS ED release when the feature was first introduced. For example, (2) means a feature was introduced in 12.0(2)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 List by Feature Set for the Cisco 2600 Series**

Features	Feature Sets									
	In	IP	IP Plus	IP/ FW	IP/ IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW Plus	Enterprise Plus	Enterprise APPN Plus	Remote Access Server
<b>IBM Support</b>										
Bridging-Code Rework		No	Yes	Yes	No	No	Yes	Yes	Yes	No
RIF Passthru in DLSw+		No	Yes	Yes	No	No	Yes	Yes	Yes	No
DLSw+ Enhanced Load Balancing	(3)	No	Yes	Yes	No	No	Yes	Yes	Yes	No
DLSw+ Peer Clusters	(3)	No	Yes	Yes	No	No	Yes	Yes	Yes	No
DLSw+ RSVP Bandwidth Reservation	(3)	No	Yes	Yes	No	No	Yes	Yes	Yes	No
<b>IP Routing</b>										
Data Compression AIM	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP Precedence for GRE Tunnels (GRE VPN)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Protocol-Independent Multicast (PIM) Version 2		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NetFlow Policy Accounting	(3)	No	Yes	No	No	Yes	Yes	Yes	Yes	No
<b>LAN Services</b>										
Fast Ethernet (10/100 Mbps) Network Ports (Cisco 2620 and Cisco 2621 only)	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Management</b>										
SNMP Inform Request		No	No	No	No	No	No	Yes	Yes	No
VPDN MIB and Syslog Facility		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 2600 Series (continued)

Features	Feature Sets									
	In	IP	IP Plus	IP/ FW	IP/ IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW Plus	Enterprise Plus	Enterprise APPN Plus	Remote Access Server
Response Time Reporter Enhancements	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Process MIB	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Quality of Service</b>										
CLI String Search	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow WRED	(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Scalability</b>										
Airline Product Set (ALPS)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Cisco IOS File System		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entity MIB		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Expression MIB		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Point to Multipoint		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Per Port Debugging (Conditionally Triggered Debugging)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP Manager		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Security</b>										
Additional Vendor-Proprietary RADIUS Attributes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Authenticating ACLs		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Automated Double Authentication		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Certificate Authority Interoperability		No	No	Yes	No	No	No	No	No	No
Internet Key Exchange Security Protocol		No	No	No	No	No	No	No	No	No
IOS Firewall Feature Set	(1)	No	No	Yes	No	No	Yes	No	No	No
3DES Network Security	(2)	No	No	No	No	No	No	No	No	No
IPSec Network Security		No	No	No	No	No	No	No	No	No
MS-CHAP Support		No	No	No	No	No	No	Yes	Yes	No
Named Method Lists for AAA		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subblock Phase 1		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## System Requirements

**Table 4 Feature List by Feature Set for the Cisco 2600 Series (continued)**

Features	Feature Sets									
	In	IP	IP Plus	IP/ FW	IP/ IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW Plus	Enterprise Plus	Enterprise APPN Plus	Remote Access Server
<b>Switching</b>										
Enhanced ATM VC Configuration and Management		No	Yes	No	No	Yes	Yes	Yes	Yes	No
Multiple ISDN Switch Types		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Voice and Multimedia</b>										
Voice over IP		No	Yes	No	No	Yes	Yes	Yes	Yes	No
Voice over Frame Relay Using FRF.11 and FRF.12 <sup>1</sup>		No	Yes	No	No	Yes	Yes	Yes	Yes	No
<b>WAN Optimization</b>										
ATM PVC Management		No	Yes	No	No	Yes	Yes	Yes	Yes	No
DRP Server Agent		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
<b>WAN Services</b>										
802.1Q Support and ISL VLAN (Cisco 2620 and Cisco 2621 only)	(3)	No	Yes	No	No	Yes	Yes	Yes	Yes	No
Always On/ Dynamic ISDN (AO/DI)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dialer Watch		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interface Name Modularity		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Microsoft Point-to-Point Compression (MPPC)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	(1)	No	Yes	No	No	Yes	Yes	Yes	Yes	No
MS Callback		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
National ISDN Switch Types		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New and Changed Show Commands		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Stackable Home Gateway		No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Time-based Access List	(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

<sup>1</sup> Added in Cisco IOS Release 12.0(3)XG.



**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).

## New and Changed Information

The following section describes a new feature supported by the Cisco 2600 series for 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 2600 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 is able to carry voice traffic such as telephone calls and faxes over a Frame Relay network.

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**Note** The voice/fax network modules require a Cisco IOS Plus feature set.

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## Important Notes

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

## Errors in Release Notes Feature Set Tables

Review the tables in the “Feature Set Tables” section on page 5 for corrected features-in-images information. The first printing of this document included errors.

## 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 following table.

**Table 5** MIBs

Deprecated MIB	Replacement
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
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. Release 12.0(3)T caveats apply to Release 12.0(3)XG. 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 2600 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 with the documents listed in the following sections:

- Release-Specific Documents, page 12
- Platform-Specific Documents, page 12
- Feature Modules, page 13
- Cisco IOS Software Document Set, page 13

## 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 2600. These documents are also available online at Cisco Connection Online (CCO) and on the Documentation CD-ROM.

- *Quick Start Guide Cisco 2600 Series Cabling and Setup*
- *Cisco 2600 Series Hardware Installation Guide*
- *Network Modules Hardware Installation Guide*
- *Network Module Hardware Installation Guide*

- *Update to Network Module Hardware and Software Guides*
- *Cisco WAN Interface Cards Hardware Installation Guide*
- *Update to WAN Interface Cards Hardware Installation Guide*
- *Software Configuration Guide For Cisco 3600 and Cisco 2600 Series Routers*
- New and Changed Show Commands for the Cisco 2600 Series Routers
- Cisco 2600 Series Configuration Notes
- Analog Modem Firmware
- Analog modem firmware release notes and AT command set
- Cisco 2600 Series Cabling Specifications
- Cisco Modular Access Router Cable Specifications

To reach Cisco 2600 documentation on CCO, follow this path:

**Service & Support: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers**

To reach Cisco 2600 documentation on the Documentation CD-ROM, follow this path:

**Access Servers and Access Routers: Modular Access Routers: Cisco 2600 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**

Books	Chapter Topics
<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 NCIA Client/Server Topologies Cisco Mainframe Channel Connection Airline Product Set

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

<b>Books</b>	<b>Chapter Topics</b>
<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
<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

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

Books	Chapter Topics
<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.

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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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For service and support for a product purchased directly from Cisco, use CCO.

## 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 access 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](telnet://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 "Related Documentation" section on page 11.

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