



Release Notes for Cisco 2600 Series for Cisco IOS Release 12.1

January 2, 2001

These release notes for the Cisco 2600 series support Cisco IOS Release 12.1(6). These release notes are updated as needed to describe new features, memory recommendations, hardware support, software platform deferrals, and changes to the microcode or modem code and related documents.

For a list of the software caveats that apply to Release 12.1(6), see *Caveats for Cisco IOS Release 12.1* that accompanies these release notes. This caveats document is updated for every maintenance release and is also located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

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

Contents

These release notes describe the following topics:

- Introduction, page 2
- System Requirements, page 2
- New and Changed Information, page 16
- Important Notes, page 17
- Caveats, page 18
- Related Documentation, page 18
- Software Configuration Tips on Cisco's Technical Assistance Center Home Page, page 24
- Obtaining Documentation, page 24
- Obtaining Technical Assistance, page 25

Introduction

The Cisco 2600 series modular access routers are designed to 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:

- Multiservice voice/data integration
- Analog and digital dial access services
- Virtual Private Network (VPN) access
- Inter-VLAN routing
- Routing with bandwidth management

The Cisco 2600 series modular architecture adapts to changes in network technology as new services and applications become available. Driven by a powerful RISC processor, the Cisco 2600 series supports the advanced quality of service (QoS), security, and network integration features required in evolving enterprise networks.

System Requirements

This section describes the system requirements for Release 12.1:

- Memory Recommendations, page 2
- Hardware Supported, page 3
- Determining the Software Version, page 6
- Upgrading to a New Software Release, page 6
- Other Firmware Code, page 6
- Feature Set Tables, page 7

Memory Recommendations



Note

Some network configurations or protocols can require additional DRAM memory.

Table 1 lists the minimum recommended memory for the Cisco 2600 series routers.

Table 1 Minimum Memory Recommendations for the Cisco 2600 Series

Feature Set by Platform	Image Name	Recommended Flash Memory	Recommended DRAM Memory	Runs From
IP	c2600-i-mz	8 MB	24 MB	RAM
IP Plus	c2600-is-mz	8 MB	40 MB	RAM
IP Plus IPsec 3DES	c2600-ik2s-mz	8 MB	40 MB	RAM
IP/FW/IDS Plus IPsec 3DES	c2600-ik2o3s-mz	16 MB	40 MB	RAM
IP Plus IPsec 56	c2600-is56i-mz	8 MB	40 MB	RAM

Table 1 Minimum Memory Recommendations for the Cisco 2600 Series (continued)

Feature Set by Platform	Image Name	Recommended Flash Memory	Recommended DRAM Memory	Runs From
IP/FW/IDS	c2600-io3-mz	8 MB	24 MB	RAM
IP/FW/IDS Plus IPSec 56	c2600-io3s56i-mz	16 MB	40 MB	RAM
IP/H323	c2600-ix-mz	8 MB	32 MB	RAM
IP/IPX/AT/DEC	c2600-d-mz	8 MB	24 MB	RAM
IP/IPX/AT/DEC Plus	c2600-ds-mz	8 MB	40 MB	RAM
IP/IPX/AT/DEC/FW/IDS Plus	c2600-do3s-mz	16 MB	40 MB	RAM
Enterprise Plus	c2600-js-mz	16 MB	48 MB	RAM
Enterprise Plus IPSec 3DES	c2600-jk2s-mz	16 MB	48 MB	RAM
Enterprise Plus IPSec 56	c2600-js56i-mz	16 MB	48 MB	RAM
Enterprise/SNASw Plus	c2600-a3js-mz	16 MB	48 MB	RAM
Enterprise/SNASw Plus IPSec 3DES	c2600-a3jk2s-mz	16 MB	48 MB	RAM
Enterprise/SNASw Plus IPsec 56	c2600-a3js56i-mz	16 MB	48 MB	RAM
Enterprise/FW/IDS Plus IPSec 3DES	c2600-jk2o3s-mz	16 MB	48 MB	RAM
Enterprise/FW/IDS Plus IPSec 56	c2600-jo3s56i-mz	16 MB	48 MB	RAM
Remote Access Server	c2600-c-mz	8 MB	24 MB	RAM

Hardware Supported

Cisco IOS Release 12.1 supports the Cisco 2600 series routers:

- Cisco 2610
- Cisco 2611
- Cisco 2612
- Cisco 2613
- Cisco 2620 (supported with version 12.0(3)T or later releases)
- Cisco 2621 (supported with version 12.0(3)T or later releases)

For detailed descriptions of the new hardware features for Cisco IOS Release 12.1, see the *Cross-Platform Release Notes for Cisco IOS Release 12.1*.

Table 2 lists the supported interfaces for the Cisco 2600 series routers.

Table 2 Supported Interfaces on the Cisco 2600 Series

Interface, Network Module, or Data Rate ¹	Platforms Supported	
LAN Interfaces²	1- or 2-port Ethernet (10BaseT)	All Cisco 2600 series platforms
	1-port Token Ring (RJ-45)	Cisco 2612, Cisco 2613
	1- or 2-port 10/100 Mbps Ethernet	Cisco 2620, Cisco 2621
LAN Network Modules	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
Serial Network Modules	16- or 32-port asynchronous/synchronous serial low speed (128 kbps max)	All Cisco 2600 series platforms
	4- or 8-port asynchronous/synchronous serial low speed (128 kbps max)	All Cisco 2600 series platforms
Multipoint E1/T1ATM Network Modules with Inverse Multiplexing over ATM (IMA)³	4-port T1 ATM network module with IMA (NM-4T1-IMA)	All Cisco 2600 series platforms
	4-port E1 ATM network module with IMA (NM-4E1-IMA)	All Cisco 2600 series platforms
	8-port T1 ATM network module with IMA (NM-8T1-IMA)	All Cisco 2600 series platforms
	8-port E1 ATM network module with IMA (NM-8E1-IMA)	All Cisco 2600 series platforms
Digital T1 Packet Voice Trunk Network Modules and Spare Components	1-port, 24-channel T1 voice/fax module, supports 24 channels of medium-complexity codecs: G.729a/b, G.726, G.711 and fax or 12 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711, and fax. Consists of one NM-HDV, two PVDM-12s, and one VWIC-1MFT-T1 ⁴ . Part number: NM-HDV-1T1-24	All Cisco 2600 series platforms
	1-port, enhanced 24-channel T1 voice/fax module, supports 24 channels of high- and medium-complexity codecs: G.729a/b, G.726, G.729, G.728, G.723.1, G.711, and fax. Consists of one NM-HDV, four PVDM-12s, and one VWIC-1MFT-T1 ⁴ . Part number: NM-HDV-1T1-24E	All Cisco 2600 series platforms
	2-port, 48-channel T1 voice/fax module, supports add/drop multiplexing (drop and insert); 48 channels of medium-complexity codecs: G.729a/b, G.726, G.711, and fax; or 24 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711, and fax. Consists of one NM-HDV, four PVDM-12, and one VWIC-2MFT-T1-DI ⁴ . Part number: NM-HDV-2T1-48	All Cisco 2600 series platforms
	High-density voice/fax network module spare (NM-HDV)	Digital E1/T1 Packet Voice Trunk Network Modules spare component

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

Interface, Network Module, or Data Rate ¹	Platforms Supported	
Digital T1 Packet Voice Trunk Network Modules and Spare Components (continued)	12-channel packet voice DSP module upgrade spare (PVDM-12)	Digital E1/T1 Packet Voice Trunk Network Modules spare component
	1-port RJ-48 multiflex trunk - T1 (VWIC-1MFT-T1) ⁴	Digital E1/T1 Packet Voice Trunk Network Modules spare component
	2-port RJ-48 multiflex trunk - T1 (VWIC-2MFT-T1) ⁴	Digital E1/T1 Packet Voice Trunk Network Modules spare component
	2-port RJ-48 multiflex trunk with drop and insert - T1 (VWIC-2MFT-T1-DI) ⁴	Digital E1/T1 Packet Voice Trunk Network Modules spare component
Dial, ISDN and Channelized Serial Network Modules	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
	8- or 16-port analog modems	All Cisco 2600 series platforms
E1/T1 Multiflex Voice/WAN Interface Cards⁵	1-port T1 multiflex trunk interface (VWIC-1MFT-T1)	All Cisco 2600 series platforms
	1-port E1 multiflex trunk interface (VWIC-1MFT-E1)	All Cisco 2600 series platforms
	2-port T1 multiflex trunk interface (VWIC-2MFT-T1)	All Cisco 2600 series platforms
	2-port E1 multiflex trunk interface (VWIC-2MFT-E1)	All Cisco 2600 series platforms
	2-port T1 multiflex trunk interface with drop and insert (VWIC-2MFT-T1-DI)	All Cisco 2600 series platforms
	2-port E1 multiflex trunk interface with drop and insert (VWIC-2MFT-E1-DI)	All Cisco 2600 series platforms
Voice/Fax Interface Cards	1- or 2- voice interface card slots	All Cisco 2600 series platforms
	1-slot high-density T1/E1 voice interface card slots ⁶	All Cisco 2600 series platforms
	2-port FXS voice/fax interface card ⁷	All Cisco 2600 series platforms with Voice/Fax network modules
	2-port E&M voice/fax interface card ³	All Cisco 2600 series platforms with Voice/Fax network modules
	2-port FXO voice/fax interface card ³	All Cisco 2600 series platforms with Voice/Fax network modules

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

Interface, Network Module, or Data Rate ¹		Platforms Supported
WAN Interface Cards	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 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
Advanced Integration Module	Data compression AIM (up to 8.192 Mbps)	All Cisco 2600 series platforms

1. The voice/fax and ATM-25 network modules require Cisco IOS Plus feature sets.
2. The 1- or 2-port 10/100 Ethernet LAN interface for the Cisco 2621 and Cisco 2621 series routers is only available in Cisco IOS Release 12.0 XC and later.
3. Requires the Cisco IOS Plus feature sets.
4. See T1/E1 multiflex voice/WAN Interface cards in this table.
5. T1 multiflex voice/WAN Interface cards can be used in a chassis slot or installed in a Digital T1 Packet Voice Trunk Module. E1 multiflex voice/WAN interface cards can be installed in a chassis slot.
6. Uses the VWIC-MFT T1/E1 interface cards.
7. Requires the NM-1V or NM-2V network module.

Determining the Software Version

To determine the version of Cisco IOS software running on a Cisco 2600 series router, log in to the router and enter the **show version EXEC** command:

```
router>show version
Cisco Internetwork Operating System Software
IOS (tm) 2600 Software (c2600-i-mz), Version 12.1(6), RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, see the product bulletin *Cisco IOS Upgrade Ordering Instructions* on CCO located at:

Service & Support: Software Center: Cisco IOS Software: Product Bulletins: Software

Under General System Software Bulletins, click *Cisco IOS Upgrade Ordering Instructions, No. 957*

Other Firmware Code

The latest version of analog modem firmware for the Cisco 2600 series supports the internal analog modems (both NM-16AM and NM-8AM) in a wide range of countries, starting with Cisco IOS Release 11.3(5)T and later releases. The latest firmware (version 1.2.0) also supports dial-out and fax-out.

On CCO, beginning under the **Service & Support** heading:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers: Analog Modem Firmware

On the Documentation CD-ROM at:

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. Table 3 lists the Cisco IOS Release 12.1(6) feature set images for the Cisco 2600 series platforms.

Table 3 *Feature Sets Supported by the Cisco 2600 Series*

Feature Sets		Feature Set Matrix Term	Software Image	Platforms
IP Standard Feature Sets	IP	<ul style="list-style-type: none"> Basic 	c2600-i-mz	All Cisco 2600 series platforms
	IP Plus	<ul style="list-style-type: none"> Basic Plus 	c2600-is-mz	All Cisco 2600 series platforms
	IP Plus IPSec 3DES	<ul style="list-style-type: none"> Plus Plus IPSec 3DES 	c2600-ik2s-mz	All Cisco 2600 series platforms
	IP Plus IPSec 56	<ul style="list-style-type: none"> Plus Plus IPSec 56 	c2600-is56i-mz	All Cisco 2600 series platforms
	IP/FW/IDS	<ul style="list-style-type: none"> Basic FW IDS 	c2600-io3-mz	All Cisco 2600 series platforms
	IP/FW/IDS Plus IPSec 3DES	<ul style="list-style-type: none"> Basic FW Plus IDS Plus Plus IPSec 3DES 	c2600-ik2o3s-mz	All Cisco 2600 series platforms
	IP/FW/IDS Plus IPSec 56	<ul style="list-style-type: none"> Basic FW Plus IDS Plus Plus IPSec 56 	c2600-io3s56i-mz	All Cisco 2600 series platforms
	IP H.323	<ul style="list-style-type: none"> Basic H.323 V2 	c2600-ix-mz	All Cisco 2600 series platforms

Table 3 Feature Sets Supported by the Cisco 2600 Series (continued)

Feature Sets		Feature Set Matrix Term	Software Image	Platforms
IP/IPX/AppleTalk/DEC Standard Feature Sets	IP/IPX/AT/DEC	<ul style="list-style-type: none"> Basic 	c2600-d-mz	All Cisco 2600 series platforms
	IP/IPX/AT/DEC Plus	<ul style="list-style-type: none"> Basic Plus 	c2600-ds-mz	All Cisco 2600 series platforms
	IP/IPX/AT/DEC/FW/IDS Plus	<ul style="list-style-type: none"> Basic FW Plus IDS Plus 	c2600-do3s-mz	All Cisco 2600 series platforms
Enterprise Standard Feature Sets	Enterprise Plus	<ul style="list-style-type: none"> Plus 	c2600-js-mz	All Cisco 2600 series platforms
	Enterprise Plus IPsec 3DES	<ul style="list-style-type: none"> Plus Plus IPsec 3DES 	c2600-jk2s-mz	All Cisco 2600 series platforms
	Enterprise Plus IPsec 56	<ul style="list-style-type: none"> Plus Plus IPsec 56 	c2600-js56i-mz	All Cisco 2600 series platforms
	Enterprise/FW/IDS Plus IPsec 56	<ul style="list-style-type: none"> FW Plus IDS Plus Plus IPsec 56 	c2600-jo3s56i-mz	All Cisco 2600 series platforms
	Enterprise/FW/IDS Plus IPsec 3DES	<ul style="list-style-type: none"> FW Plus IDS Plus Plus IPsec 3DES 	c2600-jk2o3s-mz	All Cisco 2600 series platforms
Enterprise/SNASw Standard Feature Sets	Enterprise/SNASw Plus	<ul style="list-style-type: none"> Plus 	c2600-a3js-mz	All Cisco 2600 series platforms
	Enterprise/SNASw Plus IPsec 3DES	<ul style="list-style-type: none"> Plus Plus IPsec 3DES 	c2600-a3jk2s-mz	All Cisco 2600 series platforms
	Enterprise/SNASw Plus IPsec 56	<ul style="list-style-type: none"> Plus Plus IPsec 56 	c2600-a3js56i-mz	All Cisco 2600 series platforms
Remote Access Server Feature Set	Remote Access Server	<ul style="list-style-type: none"> Basic 	c2600-c-mz	All Cisco 2600 series platforms

**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 are likely to require an export license. Customer orders may be denied or subject to delay due to United States government regulations. When applicable, you must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Table 4 and Table 5 list the features and feature sets supported by the Cisco 2600 series in Cisco IOS Release 12.1(6) and use the following conventions:

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



Note These feature set tables only contain a selected list of features. The tables are not cumulative—nor do they list all the features in each image.

Table 4 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets										
	IP	IP/ FW IDS	IP/ FW/ IDS Plus IPSec 56	IP H323	IP/ IPX/ AT/ DEC	IP Plus	IP Plus IPSec 3DES	IP Plus IPSec 56	IP/ FW/ IDS Plus IPSec 3DES	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW/IDS Plus
Connectivity											
1FE2P Network Module	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fast Ethernet (10baseT/100baseT Mbps) Network Ports ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Layer 2 Tunneling Protocol (L2TP)	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Layer 2 Tunneling Protocol Dial-out (L2TP)	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
RIP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM Support											
DLSw+ Ethernet Redundancy	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Load Balancing Enhancements	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Peer Group Cluster	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ RSVP Bandwidth Reservation	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
SNA Switching Services	No	No	No	No	No	No	No	No	No	No	No
IP/IPX Routing											
Airline Product Set Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Async over UDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Compression Advanced Interface Module (AIM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy IP Phase 2-DHCP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow-based WRED	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP RTP Priority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IS-IS Multiarea Support	No	No	No	No	No	No	No	No	No	No	No

Table 4 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets										
	IP	IP/ FW IDS	IP/ FW/ IDS Plus IPSec 56	IP H323	IP/ IPX/ AT/ DEC	IP Plus	IP Plus IPSec 3DES	IP Plus IPSec 56	IP/ FW/ IDS Plus IPSec 3DES	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW/IDS Plus
NetFlow Policy Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PGM Router Assist	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Response Time Reporter (RTR) Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Service Assurance Agent Enhancements (formerly RTR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web Cache Communications Protocol V2 (WCCPv2)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management											
CNS Client for Cisco IOS (IPSec Policy Agent II)	No	No	Yes	No	No	No	No	Yes	Yes	No	No
ISDN MIB RFC 2127	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Routing Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Process MIB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP Version 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multimedia and Quality of Service											
CLI String Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gateway Support for Alternate Gatekeeper	No	No	No	Yes	No	No	No	No	No	No	No
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H.235 Accounting and Security Enhancements for Cisco Gateways	No	No	No	Yes	No	No	No	No	No	No	No
H.323 Version 2 Support	No	No	No	Yes	No	No	No	No	No	No	No
Multimedia Conference Manager	No	No	No	Yes	No	No	No	No	No	No	No
H.323 Multizone Enhancements	No	No	No	Yes	No	No	No	No	No	No	No
IP to ATM Class of Service (CoS)	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets										
	IP	IP/ FW IDS	IP/ FW/ IDS Plus IPSec 56	IP H323	IP/ IPX/ AT/ DEC	IP Plus	IP Plus IPSec 3DES	IP Plus IPSec 56	IP/ FW/ IDS Plus IPSec 3DES	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW/IDS Plus
Security											
Triple DES Encryption	No	No	No	No	No	No	Yes	No	Yes	No	No
Cisco Secure Integrated Software	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes
Cisco IOS Firewall Feature Set Platform Support	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes
Firewall Feature Set Enhancements	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes
Switching											
IOS STP Enhancements	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Voice											
1- and 2-port T1/E1 Multiflex VWICs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Busycout Monitor	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
BRI Voice over IP: VIC-2BRI-S/T-TE	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Digital T1 Packet Voice Trunk Network Modules	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Interactive Voice Response for Cisco Access	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Voice over Frame Relay Enhancements (Queueing)	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Voice over Frame Relay Enhancements (FRF.11 and FRF.12)	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
WAN Optimization											
Class-Based Weight Fair Queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Low Latency Queuing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services											
802.1Q Support and ISL VLAN ¹	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Annex G (X.25) over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debit Card for Packet Telephony	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
DNS-Based X.25 Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets										
	IP	IP/ FW IDS	IP/ FW/ IDS Plus IPSec 56	IP H323	IP/ IPX/ AT/ DEC	IP Plus	IP Plus IPSec 3DES	IP Plus IPSec 56	IP/ FW/ IDS Plus IPSec 3DES	IP/ IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC/ FW/IDS Plus
IOS IEEE 802.1Q Support	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Dynamic Multiple Encaps for Dial-in	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Dynamic Multiple Encaps for Dial-in with Frame Relay Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Source Discovery Protocol (MSDP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multiport T1/E1 ATM Network Module with Inverse Multiplexing over ATM	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Packet Telephony Settlement	No	No	No	No	No	No	No	No	No	No	No
PPP over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-based Access Lists	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VPDN Group Reorganization	No	No	No	No	Yes	No	No	No	No	Yes	Yes
VPDN Per-user Configuration	No	No	No	No	Yes	No	No	No	No	Yes	Yes
VPN Tunnel Management	No	No	No	No	Yes	No	No	No	No	Yes	Yes
X.25 Closed User Groups	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
X.25 Load Balancing	No	No	No	No	No	No	No	No	No	No	No
X.25 Switch Local Acknowledgment	No	No	No	No	No	No	No	No	No	No	No
X.25 over ISDN D-Channel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Remote Failure Detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. Cisco 2620 and 2621 only

Table 5 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets								
	Enterprise Plus	Enterprise Plus IPsec 3DES	Enterprise Plus IPsec 56	Enterprise/SNASw Plus	Enterprise/SNASw Plus IPsec 3DES	Enterprise/SNASw Plus IPsec 56	Enterprise/FW/IDS Plus IPsec 3DES	Enterprise/FW/IDS Plus IPsec 56	Remote Access Server
Connectivity									
1FE2P Network Module	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fast Ethernet (10/100 Mbps) Network Ports ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Layer 2 Tunneling Protocol (L2TP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Layer 2 Tunneling Protocol Dial-out (L2TP)	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No
RIP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM Support									
DLSw+ Ethernet Redundancy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
DLSw+ Load Balancing Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
DLSw+ Peer Group Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
DLSw+ RSVP Bandwidth Reservation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
SNA Switching Services	No	No	No	Yes	Yes	Yes	No	No	No
IP/IPX Routing									
Airline Product Set Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Async over UDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Compression Advanced Interface Module (AIM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy IP Phase 2-DHCP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow-based WRED	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP RTP Priority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IS-IS Multiarea Support	No	No	No	No	No	No	No	No	No
NetFlow Policy Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
OSPF Packet Pacing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
PGM Router Assist	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Response Time Reporter Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets								
	Enterprise Plus	Enterprise Plus IPsec 3DES	Enterprise Plus IPsec 56	Enterprise Plus IPsec 56	Enterprise Plus IPsec 3DES	Enterprise Plus IPsec 56	Enterprise Plus IPsec 3DES	Enterprise Plus IPsec 56	Remote Access Server
Service Assistance Agent (formerly RTR) Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web Cache Communications Protocol V2 (WCCPv2)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management									
CNS Client for Cisco IOS (IPsec Policy Agent II)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
ISDN MIB RFC 2127	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Routing Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Process MIB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP Version 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multimedia and Quality of Service									
CLI String Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gateway Support for Alternate Gatekeeper	No	No	No	No	No	No	No	No	No
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
H.235 Accounting and Security Enhancements for Cisco Gateways	No	No	No	No	No	No	No	No	No
H.323 Version 2 Support	No	No	No	No	No	No	No	No	No
Multimedia Conference Manager	No	No	No	No	No	No	No	No	No
H.323 Multizone Enhancements	No	No	No	No	No	No	No	No	No
IP to ATM Class of Service (CoS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Security									
Triple DES Encryption	No	Yes	No	No	Yes	No	Yes	No	No
Cisco Secure Integrated Software	No	No	No	Yes	Yes	No	No	No	No
Cisco IOS Firewall Feature Set Platform Support	No	No	No	No	No	No	Yes	Yes	No
Firewall Feature Set Enhancements	No	No	No	No	No	No	Yes	Yes	No
Switching									
IOS STP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

Table 5 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets								
	Enterprise Plus	Enterprise Plus IPsec 3DES	Enterprise Plus IPsec 56	Enterprise/ SNASw Plus	Enterprise/ SNASw Plus IPsec 3DES	Enterprise/ SNASw Plus IPsec 56	Enterprise/ FW/IDS Plus IPsec 3DES	Enterprise/ FW/IDS Plus IPsec 56	Remote Access Server
Voice									
1 and 2-port T1/E1 Multiflex VWICs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Busyout Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
BRI Voice over IP: VIC-2BRI-ST-TE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Digital T1 Packet Voice Trunk Network Modules	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Interactive Voice Response for Cisco Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Voice over Frame Relay Enhancements (Queueing)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Voice over Frame Relay Enhancements (FRF.11 and FRF.12)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
WAN Optimization									
Class-Based Weighted Fair Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Low Latency Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services									
802.1Q Support and ISL VLAN ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Annex G (X.25) over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debit Card for Packet Telephony	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
DNS-Based X.25 Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
IOS IEEE 802.1Q Support	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No
ISDN Dynamic Multiple Encaps for Dial-in	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Dynamic Multiple Encaps for Dial-in with Frame Relay Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Multicast Source Discovery Protocol (MSDP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

Table 5 Feature List by Feature Set for the Cisco 2600 Series

Features	Feature Sets								
	Enterprise Plus	Enterprise Plus IPSec 3DES	Enterprise Plus IPSec 56	Enterprise/SNAsw Plus	Enterprise/SNAsw Plus IPSec 3DES	Enterprise/SNAsw Plus IPSec 56	Enterprise/FW/IDS Plus IPSec 3DES	Enterprise/FW/IDS Plus IPSec 56	Remote Access Server
Multiport T1/E1 ATM Network Module with Inverse Multiplexing over ATM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Packet Telephony Settlement	No	No	Yes	No	No	No	No	No	No
PPP over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Based Access List	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
VPDN Group Reorganization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VPDN Per-user Configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VPN Tunnel Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Closed User Groups	No	No	No	No	No	No	No	No	No
X.25 Load Balancing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
X.25 Switch Local Acknowledgment	No	No	No	No	No	No	No	No	No
X.25 on ISDN D-Channel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Remote Failure Detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. Cisco 2620 and 2621 only

New and Changed Information

The following is a list of the new hardware and software feature categories supported by the Cisco 2600 for Release 12.1. These categories are broken down by feature in Tables 4 and 5.

- Connectivity
- IBM Support
- IP/IPX Routing
- Management
- Multimedia and Quality of Service
- Security
- Switching
- Voice
- WAN Optimization
- WAN Services

Important Notes

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 releases that are not vulnerable to this defect as shown in detail below.

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>.

Command Changes in Release 12.1(5)

The **ppp ipcp** command, which supplies Domain Name System (DNS) or Windows Internet Naming Service (WINS) addresses during IP Control Protocol (IPCP) negotiation, has been enhanced with the **reject** and **accept** keywords. These keywords allow enabling or disabling support for the Microsoft IPCP extensions defined by RFC 1877.

Product Number Change

Beginning with Cisco IOS Release 12.0(7)XK, Cisco changed the product numbers used to order a specific Cisco IOS software image. In short, Cisco will remove the periods separating the release train, maintenance release, and build number. The following table provides some examples.

Old Product Number	New Product Number	Release	Image Description
S364AR1K2-12.1.5=	S364AR1K2-1215=	Cisco IOS Release 12.1(5)	Cisco 3640 Series IOS Enterprise/SNA SW PLUS IPSEC 3DES
S26CP-12.1.5=	S26CP-1215=	Cisco IOS Release 12.1(5)	Cisco 2600 Series IOS IP Plus

Deprecated MIBs

Older Cisco Management Information Bases (MIBs) will be replaced in a future release. OLD-CISCO-* MIBs are currently migrated 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 6.

Table 6 *Deprecated 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	In Development
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	In Development
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	In Development
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	In Development

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.

For information on caveats in Cisco IOS Release 12.1, see *Caveats for Cisco IOS Release 12.1*, which lists severity 1 and 2 caveats and select severity 3 caveats for Cisco IOS Release 12.1 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. Click on this path: **Software Center: Cisco IOS Software: Cisco IOS Bug Toolkit: Cisco Bug Navigator II**. You can also find Bug Navigator II at <http://www.cisco.com/support/bugtools>

Related Documentation

The following sections describe the documentation available for the Cisco 2600 series. 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 19
- Platform-Specific Documents, page 19
- Cisco IOS Software Documentation Set, page 20

Release-Specific Documents

The following documents are specific to or support Cisco IOS Release 12.1(6) and are located on CCO and the Documentation CD-ROM:

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

On CCO, beginning under the **Service & Support** heading:

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

On the Documentation CD-ROM at:

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

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

To reach these documents, refer to the **Service & Support** section at this path on CCO:

Technical Documents

- *Caveats for Cisco IOS Release 12.1*

On CCO, beginning under the **Service & Support** heading:

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

On the Documentation CD-ROM at:

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



Note

If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. Click on this path: **Software Center: Cisco IOS Software: Cisco IOS Bug Toolkit: Cisco Bug Navigator II**. You can also find Bug Navigator II at <http://www.cisco.com/support/bugtools>

Platform-Specific Documents

These documents are available for the Cisco 2600 on CCO and the Documentation CD-ROM:

- *Quick Start Guide Cisco 2600 Series Cabling and Setup*
- *Cisco 2600 Series Hardware Installation Guide*
- *Cisco Network Modules Hardware Installation Guide*
- *Update to the Cisco Network Modules Hardware Installation Guide*
- *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*

On CCO, beginning under the **Service & Support** heading:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 2600 Series Routers

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, beginning under the **Service & Support** heading:

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

On the Documentation CD-ROM at:

Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References: Cisco IOS Interface Configuration Guide or Cisco IOS Interface Command Reference

Release 12.1 Documentation Set

Table 7 describes the contents of the Cisco IOS Release 12.1 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.

You can reach the Cisco IOS documentation set on CCO, beginning under the **Service & Support** heading:

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

You can reach the Cisco IOS documentation set on the Documentation CD-ROM at:

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

Table 7 Cisco IOS Software Release 12.1 Documentation Set

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> • <i>Cisco IOS Configuration Fundamentals Command Reference</i> 	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none"> • <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume I</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume II</i> 	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 7 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Dial Services Configuration Guide: Terminal Services</i> • <i>Cisco IOS Dial Services Configuration Guide: Network Services</i> • <i>Cisco IOS Dial Services Command Reference</i> 	X.25 over ISDN Appletalk Remote Access Asynchronous Callback, DDR, PPP, SLIP Bandwidth Allocation Control Protocol ISDN Basic Rate Service ISDN Caller ID Callback PPP Callback for DDR Channelized E1 & T1 Dial Backup for Dialer Profiles Dial Backup Using Dialer Watch Dial Backup for Serial Lines Peer-to-Peer DDR with Dialer Profiles DialOut Dial-In Terminal Services Dial-on-Demand Routing (DDR) Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Dialup Networks Dial Business Solutions and Examples
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i> 	Interface Configuration Overview LAN Interfaces Logical Interfaces Serial Interfaces
<ul style="list-style-type: none"> • <i>Cisco IOS IP and IP Routing Configuration Guide</i> • <i>Cisco IOS IP and IP Routing Command Reference</i> 	IP Overview IP Addressing and Services IP Routing Protocols
<ul style="list-style-type: none"> • <i>Cisco IOS Appletalk and Novell IPX Configuration Guide</i> • <i>Cisco IOS Appletalk and Novell IPX Command Reference</i> 	AppleTalk Novell IPX
<ul style="list-style-type: none"> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i> 	Network Protocols Overview Apollo Domain Banyan VINES DECnet ISO CLNS XNS
<ul style="list-style-type: none"> • <i>Cisco IOS Security Configuration Guide</i> • <i>Cisco IOS Security Command Reference</i> 	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"> • <i>Cisco IOS Switching Services Configuration Guide</i> • <i>Cisco IOS Switching Services Command Reference</i> 	Switching Services Switching Paths for IP Networks Virtual LAN (VLAN) Switching and Routing

Table 7 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i> 	Wide-Area Network Overview ATM Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> • <i>Cisco IOS Multiservice Applications Configuration Guide</i> • <i>Cisco IOS Multiservice Applications Command Reference</i> 	Voice over IP Voice over Frame Relay Voice over ATM Voice over HDLC Frame Relay-ATM Internetworking Synchronized Clocks Video Support Universal Broadband Features
<ul style="list-style-type: none"> • <i>Cisco IOS Quality of Service Solutions Configuration Guide</i> • <i>Cisco IOS Quality of Service Solutions Command Reference</i> 	Policy-Based Routing QoS Policy Propagation via BGP Committed Access Rate Weighted Fair Queueing Custom Queueing Priority Queueing Weighted Random Early Detection Scheduling Signaling RSVP Packet Drop Frame Relay Traffic Shaping Link Fragmentation RTP Header Compression
<ul style="list-style-type: none"> • <i>Cisco IOS Command Reference Master Index</i> • <i>Cisco IOS Configuration Guide Master Index</i> • <i>Cisco IOS Dial Services Quick Configuration Guide</i> • <i>Cisco IOS New Feature Index</i> • <i>Cisco IOS System Error Messages</i> • <i>Cisco IOS Debug Command Reference</i> 	



Note

Cisco Management Information Base (MIB) User Quick Reference 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.**

Software Configuration Tips on Cisco's Technical Assistance Center 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: **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—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 other areas, call 650-596-4408.
- Internetworking Features—Lists tips on using and deploying Cisco IOS software features and services.
- Sample Configurations—Provides actual configuration examples that are complete with topology and annotations.
- Software Products—Contains Cisco IOS Software Bulletins, Cisco TCP/IP Suite 100, General Cisco IOS, Internet/Intranet Applications and Software, Network Management, Network Protection Software Tips, and WAN Switching Products and Software.
- Special Collections—Lists other helpful documents, including Case Studies, References & Request for Comments (RFCs), and Security Advisories.

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

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

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

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

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

<http://www.cisco.com/tac/caseopen>

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

This document is to be used with documents listed on the "Related Documentation" section on page 18.

AtmDirector, Browse with Me, CCDA, CCDE, CDDP, CCIE, CCNA, CCNP, CCSI, CD-PAC, *CiscoLink*, the Cisco *NetWorks* logo, the Cisco Powered Network logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, Fast Step, Follow Me Browsing, FormShare,FrameShare, GigaStack, IGX, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, the iQ Logo, iQ Net Readiness Scorecard, MGX, the Networkers logo, *Packet*, PIX, RateMUX, ScriptShare, SlideCast, SMARTnet, TransPath, Voice LAN, Wavelength Router, WebViewer are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, Empowering the Internet Generation, are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, Cisco, the Cisco Certified Internetwork Expert Logo, Cisco IOS, the Cisco IOS logo, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, IOS, IP/TV, LightStream, Post-Routing, Pre-Routing, Registrar, StrataView Plus, Stratm, SwitchProbe, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. or its affiliates in the U.S. and certain other countries.

All other brands, names, or trademarks mentioned in this document or Web site are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0011R)

Copyright © 2000 - 2001, Cisco Systems, Inc.
All rights reserved.