



Release Notes for Cisco 3600 Series for Cisco IOS Release 12.1

January 2, 2001

These release notes for the Cisco 3600 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.

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Introduction

The Cisco 3600 series includes the Cisco 3620, Cisco 3640, and Cisco 3660 routers. As modular solutions, the Cisco 3600 series routers enable corporations to increase dial-up density and take advantage of current and emerging WAN 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

This section describes the system requirements for Release 12.1(6):

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Memory Recommendations



Note

Some configurations or protocols can require additional DRAM memory.

Table 1 lists the minimum recommended memory for the Cisco 3600 series routers.

Table 1 Minimum Memory Recommendations for the Cisco 3600 Series

Feature Set by Platform	Image Name	Recommended Flash Memory	Recommended DRAM Memory	Runs from	
Cisco 3620	IP	c3620-i-mz	8 MB	32 MB	RAM
	IP Plus	c3620-is-mz	8 MB	48 MB	RAM
	IP Plus IPSec 56	c3620-is56i-mz	16 MB	48 MB	RAM
	IP/FW/IDS	c3620-io3-mz	8 MB	32 MB	RAM
	IP/FW/IDS Plus IPSec 56	c3620-io3s56i-mz	16 MB	48 MB	RAM
	IP Plus IPSec 3DES	c3620-ik2s-mz	16 MB	48 MB	RAM
	IP/FW/IDS Plus IPSec 3DES	c3620-ik2o3s-mz	16 MB	48 MB	RAM
	IP/IPX/AT/DEC	c3620-d-mz	8 MB	32 MB	RAM
	IP/IPX/AT/DEC Plus	c3620-ds-mz	16 MB	48 MB	RAM
	IP/IPX/AT/DEC/FW/IDS Plus	c3620-do3s-mz	16 MB	48 MB	RAM
	IP/H.323 GtKpr Prxy	c3620-ix-mz	8 MB	32 MB	RAM

Table 1 Minimum Memory Recommendations for the Cisco 3600 Series (continued)

Feature Set by Platform	Image Name	Recommended Flash Memory	Recommended DRAM Memory	Runs from	
Cisco 3620 (continued)	Enterprise Plus	c3620-js-mz	16 MB	48 MB	RAM
	Enterprise Plus IPSec 56	c3620-js56i-mz	16 MB	48 MB	RAM
	Enterprise/FW/IDS Plus IPSec 56	c3620-jo3s56i-mz	16 MB	48 MB	RAM
	Enterprise Plus IPSec 3DES	c3620-jk2s-mz	16 MB	48 MB	RAM
	Enterprise/FW/IDS Plus IPSec 3DES	c3620-jk2o3s-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus	c3620-a3js-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus IPSec 56	c3620-a3js56i-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus IPSec 3DES	c3620-a3jk2s-mz	16 MB	48 MB	RAM
Cisco 3640	IP	c3640-i-mz	8 MB	32 MB	RAM
	IP Plus	c3640-is-mz	8 MB	48 MB	RAM
	IP Plus IPSec 56	c3640-is56i-mz	16 MB	48 MB	RAM
	IP/FW/IDS	c3640-io3-mz	8 MB	32 MB	RAM
	IP/FW/IDS Plus IPSec 56	c3640-io3s56i-mz	16 MB	48 MB	RAM
	IP Plus IPSec 3DES	c3640-ik2s-mz	16 MB	48 MB	RAM
	IP/FW/IDS Plus IPSec 3DES	c3640-ik2o3s-mz	16 MB	48 MB	RAM
	IP/IPX/AT/DEC	c3640-d-mz	8 MB	32 MB	RAM
	IP/IPX/AT/DEC Plus	c3640-ds-mz	16 MB	48 MB	RAM
	IP/IPX/AT/DEC/FW/IDS Plus	c3640-do3s-mz	16 MB	48 MB	RAM
	IP/H.323 Gtpr Prxy	c3640-ix-mz	8 MB	32 MB	RAM
	Enterprise Plus	c3640-js-mz	16 MB	48 MB	RAM
	Enterprise Plus IPSec 56	c3640-js56i-mz	16 MB	48 MB	RAM
	Enterprise/FW/IDS Plus IPSec 56	c3640-jo3s56i-mz	16 MB	48 MB	RAM
	Enterprise Plus IPSec 3DES	c3640-jk2s-mz	16 MB	48 MB	RAM
	Enterprise/FW/IDS Plus IPSec 3DES	c3640-jk2o3s-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus	c3640-a3js-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus IPSec 56	c3640-a3js56i-mz	16 MB	48 MB	RAM
	Enterprise/SNASw Plus IPSec 3DES	c3640-a3jk2s-mz	16 MB	48 MB	RAM

Table 1 Minimum Memory Recommendations for the Cisco 3600 Series (continued)

Feature Set by Platform		Image Name	Recommended Flash Memory	Recommended DRAM Memory	Runs from
Cisco 3660 ¹	IP	c3660-i-mz	8 MB	32 MB	RAM
	IP Plus	c3660-is-mz	8 MB	64 MB	RAM
	IP Plus/IPSec 56	c3660-is56i-mz	16 MB	64 MB	RAM
	IP/FW/IDS	c3660-io3-mz	8 MB	32 MB	RAM
	IP/FW/IDS Plus IPSec 56	c3660-io3s56i-mz	16 MB	64 MB	RAM
	IP/H.323 Gtkpr Prxy	c3660-ix-mz	8 MB	32 MB	RAM
	IP Plus/IPSec 3DES	c3660-ik2s-mz	16 MB	64 MB	RAM
	IP/FW/IDS Plus IPSec 3DES	c3660-ik2o3s-mz	16 MB	64 MB	RAM
Cisco 3660 ¹ (continued)	IP/IPX/AT/DEC	c3660-d-mz	8 MB	32 MB	RAM
	IP/IPX/AT/DEC Plus	c3660-ds-mz	16 MB	64 MB	RAM
	IP/IPX/AT/DEC FW IDS Plus	c3660-do3s-mz	16 MB	64 MB	RAM
	Enterprise/SNASw Plus	c3660-a3js-mz	16 MB	64 MB	RAM
	Enterprise/SNASw Plus/IPSec 56	c3660-a3js56i-mz	16 MB	64 MB	RAM
	Enterprise/SNASw Plus IPSec 3DES	c3660-a3jk2s-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3660-js-mz	16 MB	64 MB	RAM
	Enterprise Plus IPSec 56	c3660-js56i-mz	16 MB	64 MB	RAM
	Enterprise Plus/IPSec 3DES	c3660-jk2s-mz	16 MB	64 MB	RAM
	Enterprise/FW/IDS Plus IPSec 56	c3660-jo3s56i-mz	16 MB	64 MB	RAM
	Enterprise/FW/IDS Plus IPSec 3DES	c3660-jk2o3s-mz	16 MB	64 MB	RAM
	Telco ²	c3660-telco-mz	16 MB	64 MB	RAM
	Telco Plus ²	c3660-telcoent-mz	16 MB	64 MB	RAM

1. The 3660 uses SDRAM

2. The Telco images only run on the 3660-AC-CO and 3660-DC-CO.

Hardware Supported

Cisco IOS Release 12.1(6) supports the Cisco 3600 series routers:

- Cisco 3620
- Cisco 3640
- Cisco 3660 (3661 and 3662)

**Note**

For important information about the ATM OC-3 network modules and compatibility with the Cisco 3620 router, please review the field notice on CCO, at <http://www.cisco.com/warp/customer/770/51.shtml>

Table 2 lists the supported interfaces for the Cisco 3600 series routers.

Table 2 Supported Interfaces for the Cisco 3600 Series

Interface, Network Module, or Data Rate		Platforms Supported
Dial Access Network Modules	16- and 32-port asynchronous (NM-16A and NM-32A)	All Cisco 3600 series platforms
	6- to 30-port integrated digital modems network modules (NM-6DM, NM-12-DM, NM-18DM, NM-24DM, NM-40DM)	Cisco 3620 and 3640
	6 digital modem upgrade (MICA-6MOD)	Cisco 3620 and 3640
	8- or 16-port integrated analog network modules (NM-8AM and NM16AM)	Cisco 3620 and 3640
LAN Interfaces	1- and 4-port Ethernet (AUI and 10BaseT, NM-4E and NM-8E)	All Cisco 3600 series platforms
	1-port Fast Ethernet (100BaseTX and 100BaseFX, NM-1FE-TX and NM-1FE-FX)	All Cisco 3600 series platforms
Mixed Media Network Modules	1-port 10/100BaseTX with 1-port channelized/PRI /E1 balanced mode (NM-1FE1CE1B)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 1-port channelized/PRI/E1 unbalanced mode (NM-1FE1CE1U)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 1-port channelized/PRI/T1(NM-1FE1CT1)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 1-port channelized/PRI /T1 with CSU (NM-1FE1CT1-CSU)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 2-port channelized/PRI/ E1 balanced mode (NM-1FE2CE1B)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 2-port Channelized/PRI /E1 unbalanced mode (NM-1FE2CE1U)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 2-port channelized/PRI /T1 (NM-1FE2CT1)	Cisco 3620 and 3640
	1-port 10/100BaseTX with 2-port channelized/PRI/ T1 with CSU (NM-1FE2CT1-CSU)	Cisco 3620 and 3640
	1 Ethernet and 2 WAN card slots (NM-1E2W)	All Cisco 3600 series platforms
	1 Ethernet, 1 Token Ring, and 2 WAN card slots (NM-1E1R2W)	All Cisco 3600 series platforms
	2 Ethernet and 2 WAN card slots (NM-2E2W)	All Cisco 3600 series platforms
Multiport T1/E1 ATM Network Modules with Inverse Multiplexing over ATM (IMA)¹	4-port T1 ATM network module with IMA (NM-4T1-IMA)	All Cisco 3600 series platforms
	4-port E1 ATM network module with IMA (NM-4E1-IMA)	All Cisco 3600 series platforms
	8-port T1 ATM network module with IMA (NM-8T1-IMA)	All Cisco 3600 series platforms
	8-port E1 ATM network module with IMA (NM-8E1-IMA)	All Cisco 3600 series platforms

Table 2 Supported Interfaces for the Cisco 3600 Series (continued)

Interface, Network Module, or Data Rate	Platforms Supported	
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 ² . Part number: NM-HDV-1T1-24	All Cisco 3600 series platforms

Table 2 Supported Interfaces for the Cisco 3600 Series (continued)

Interface, Network Module, or Data Rate		Platforms Supported
T1/E1 Multiflex Voice/WAN Interface Cards	1-port T1 multiflex trunk interface (VWIC-1MFT-T1)	All Cisco 3600 series platforms in a 1- or 2-port network module (NM-1E2W, NM-2E2W, NM-1E1R2W)
	1-port E1 multiflex trunk interface (VWIC-1MFT-E1)	Cisco 3620 and 3640 platforms in a 1- or 2-port network module (NM-1E2W, NM-2E2W, NM-1E1R2W)
	2-port T1 multiflex trunk interface (VWIC-2MFT-T1)	All Cisco 3600 series platforms ³
T1/E1 Multiflex Voice/WAN Interface Cards (CONTINUED)	2-port T1 multiflex trunk interface with drop and insert (VWIC-2MFT-T1-DI) ⁴	
	2-port E1 multiflex trunk interface with drop and insert (VWIC-2MFT-E1-DI)	Cisco 3620 and 3640 platforms in a 1- or 2-port network module (NM-1E2W, NM-2E2W, NM-1E1R2W).
Voice/Fax Interfaces and Network Modules ¹	1- and 2-port voice/fax network module (NM-1V and NM-2V)	All Cisco 3600 series platforms
	2-port E&M voice interface card (VIC-2E/M)	All Cisco 3600 series platforms with Voice/Fax network module
	2-port FXO voice interface card (VIC-2FXO, VIC-2FXO-M3, and VIC-2FXO-EU)	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
	2-port BRI voice interface card (VIC-2BRI-S/T-TE)	Cisco 3620 and 3640 platforms with Voice/Fax network module
WAN Data Rates	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 HSSI network module	All Cisco 3600 series platforms
	Up to 100 Mbps on ATM OC3 network modules	All Cisco 3600 series platforms
Network Modules	1- and 2-port channelized T1 modules without CSUs (NM-1CT1 and NM-2CT1)	Cisco 3620 and 3640
	1- and 2-port channelized T1 network modules with CSUs (NM-1CT1-CSU and NM-2CT1-CSU)	Cisco 3620 and 3640
	1- and 2-port E1 network modules unbalanced mode (NM-1CE1U and NM-2CE1U)	Cisco 3620 and 3640
	1- and 2-port E1 network modules balanced mode (NM-1CE1B and NM-2CE1B)	Cisco 3620 and 3640
	1-port ATM-25 network modules (NM-1ATM-25) ¹	Cisco 3620 and 3640
	1-port high-speed serial Interface (HSSI) network module	All Cisco 3600 series platforms
	4- and 8-port BRI network module with NT1 (NM-4B-U and NM-8B-U)	Cisco 3620 and 3640

Table 2 Supported Interfaces for the Cisco 3600 Series (continued)

Interface, Network Module, or Data Rate	Platforms Supported
Network Modules (continued)	
4- and 8-port BRI network module with S/T interface (NM-4B-S/T and NM-8B-S/T)	Cisco 3620 and 3640
4- and 8-port synchronous/asynchronous (NM-4A/S and NM-8A/S)	All Cisco 3600 series platforms
16- and 32-port asynchronous (NM-16A and NM-32A)	All Cisco 3600 series platforms
4-port serial (NM-4T)	All Cisco 3600 series platforms
1-port ATM OC3 network module with multimode fiber (NM-1A-OC3MM)	All Cisco 3600 series platforms
1-port ATM OC3 network module with single-mode intermediate reach fiber (NM-1A-OC3SMI)	All Cisco 3600 series platforms
1-port ATM OC3 network module with single-mode long reach fiber (NM-1A-OC3SML)	All Cisco 3600 series platforms
Other Network Modules	
Compression network module (NM-COMPR)	Cisco 3620 and 3640
4 E1 data compression Advanced Integration Module (AIM-COMPR4)	Cisco 3660 series platforms
WAN Interface Cards	
1-port T1/Fractional T1/DSU/CSU WAN interface card (WIC-1DSU-T1)	All Cisco 3600 series platforms
1-port T1/Fractional T1 56/64 kbps DSU/CSU WAN interface card (WIC-1DSU-56K4)	All Cisco 3600 series platforms
1-port ISDN with NT1 WAN interface card (WIC-1B-U)	All Cisco 3600 series platforms
1-port ISDN WAN interface card (WIC-1B-S/T)	All Cisco 3600 series platforms
1-port serial WAN interface card (WIC-1T)	All Cisco 3600 series platforms

1. Requires the Cisco IOS Plus feature sets.
2. See T1/E1 Multiflex Voice/WAN Interface Cards in this table.
3. Only supported in T1 Digital Packet Voice Trunk Network Modules.
4. For Cisco 3620 and 3640, supported in T1/E1 digital packet voice trunk network modules or in 1- or 2-port Ethernet and Fast Ethernet network module (NM-1E2W, NM-2E2W, NM-1E1R2W)

Determining the Software Version

To determine the version of Cisco IOS software running on a Cisco 3600 series router, log in to the router and enter the **show version EXEC** command:

```
router>show version
Cisco Internetwork Operating System Software
IOS (tm) 3620 Software (c3620-js-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*.

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 3600 series platforms.

Table 3 Feature Sets Supported by the Cisco 3600 Series

Feature Set	Feature Set Matrix Term	Software Image	Platforms	
IP Standard Feature Sets	IP	Basic ¹	c3620-i-mz, c3640-i-m, c3660-i-mz	All Cisco 3600 platforms
	IP Plus	Plus ²	c3620-is-mz, c3640-is-mz, c3660-is-mz	All Cisco 3600 platforms
	IP Plus IPsec 56	Plus, IPsec 56 ³	c3620-is56i-mz, c3640-is56i-mz, c3660-is56i-mz	All Cisco 3600 platforms
	IP Plus IPsec 3DES	Plus, IPsec 3DES ⁴	c3620-ik2s-mz, c3640-ik2s-mz, c3660-ik2s-mz	All Cisco 3600 platforms
	IP/FW/IDS Plus IPsec 3DES	Plus, IPsec 3DES	c3620-ik2o3s-mz, c3640-ik2o3s-mz, c3660-ik2o3s-mz	All Cisco 3600 platforms
	IP/FW/IDS	Basic	c3620-io3-mz, c3640-io3-mz, c3660-io3-mz	All Cisco 3600 platforms
	IP/FW/IDS Plus IPsec 56	Plus, IPsec 56	c3620-io3s56i-mz, c3640-io3s56i-mz, c3660-io3s56i-mz	All Cisco 3600 platforms
	IP/H.323 Gtpr Prxy	Basic, H323	c3620-ix-mz, c3640-ix-mz, c3660-ix-mz	All Cisco 3600 platforms

Table 3 Feature Sets Supported by the Cisco 3600 Series (continued)

Feature Set	Feature Set Matrix Term	Software Image	Platforms	
Desktop IBM Standard Feature Sets	IP/IPX/AppleTalk/DEC	Basic	c3620-d-mz, c3640-d-mz, c3660-d-mz	All Cisco 3600 platforms
	IP/IPX/AppleTalk/DEC Plus	Plus	c3620-ds-mz, c3640-ds-mz, c3660-ds-mz	All Cisco 3600 platforms
	IP/IPX/AppleTalk/DEC/FW/IDS Plus	Plus	c3620-do3s-mz, c3640-do3s-mz, c3660-do3s-mz	All Cisco 3600 platforms
Enterprise Standard Feature Sets	Enterprise Plus	Plus	c3620-js-mz, c3640-js-mz, c3660-js-mz	All Cisco 3600 platforms
	Enterprise Plus IPsec 56	Plus, IPsec 56	c3620-js56i-mz, c3640-js56i-mz, c3660-js56i-mz	All Cisco 3600 platforms
	Enterprise/FW/IDS Plus IPsec 56	IPsec 56	c3620-jo3s56i-mz, c3640-jo3s56i-mz, c3660-jo3s56i-mz	All Cisco 3600 platforms
	Enterprise Plus IPsec 3DES	Plus, IPsec 3DES	c3620-jk2s-mz, c3640-jk2s-mz, c3660-jk2s-mz	All Cisco 3600 platforms
	Enterprise/FW/IDS Plus IPsec 3DES	Plus, IPsec 3DES	c3620-jk2o3s-mz c3640-jk2o3s-mz, c3660-jk2o3s-mz	All Cisco 3600 platforms
Enterprise/SNASw Standard Feature Sets	Enterprise/SNASw Plus	Plus	c3620-a3js-mz, c3640-a3js-mz, c3660-a3js-mz	All Cisco 3600 platforms
	Enterprise/SNASw Plus IPsec 56	Plus, IPsec 56	c3620-a3js56i-mz, c3640-a3js56i-mz, c3660-ajs56i-mz	All Cisco 3600 platforms
	Enterprise/SNASw Plus IPsec 3DES	Plus, IPsec 3DES	c3620-a3jk2s-mz, c3640-a3jk2s-mz, c3660-a3jk2s-mz	All Cisco 3600 platforms
Telco Feature Sets ⁵	IOS Telco Feature Set	Telco	c3660-telco-mz	Cisco 3660 platform
	IOS Telco Plus Feature Set	Plus, Telco	c3660-telcoent-mz	Cisco 3660 platform

1. This feature set is offered in the basic feature set.
2. This feature set is offered in the Plus feature set.
3. This feature set is offered in the encryption feature sets which consist of IPsec 56-bit (Plus IPsec 56) data encryption feature sets.
4. This feature set is offered in the encryption feature sets which consist of Triple DES (3DES) Encryption data encryption feature sets.
5. For 3662-xC-CO chassis only.

**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, purchaser/user must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Tables 4, 5, 6, and 7 list the features and feature sets supported by the Cisco 3600 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 Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets										
	IP	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/ FW/ IDS	IP/ FW/IDS Plus IPSec 56	IP Plus IPSec 3DES ¹	IP/FW/ IDS Plus IPSec 3DES	IP/IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/IPX/ AT/ DEC/ FW/ IDS Plus
Connectivity											
Layer 2 Tunnel Protocol (L2TP)	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
L2TP Dial Out	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
RIP Enhancements	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP version 3	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM Support											
DLSw+ Enhanced Load Balancing	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
DLSw+ Ethernet Redundancy	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
DLSw+ Peer Clusters	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
DLSw+ RSVP Bandwidth Reservation	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
SNA Switching Services	No	No	No	No	No	No	No	No	No	No	No
Token Ring Interswitch Link	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No

Table 4 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets											
	IP	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/ FW/ IDS	IP/ FW/IDS Plus IPSec 56	IP Plus IPSec 3DES ¹	IP/FW/ IDS Plus IPSec 3DES	IP/IPX/ AT/ DEC Plus	IP/ IPX/ AT/ DEC Plus	IP/IPX/ AT/ DEC/ FW/ IDS Plus	
IP/IPX Routing												
Airline Product Set Enhancements	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Asynchronous Serial Traffic over UDP	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy IP Phase 2- DHCP Server	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow-based WRED	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP RTP Priority	Yes	No	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	No
Multilayer Switching for IP Multicast	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilayer Switching for IPX	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PGM Router Assist	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Service Assurance Agent (formerly Response Time Reporter)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web Cache Communications Protocol V2 (WCCPv2)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management												
CNS Client for Cisco IOS (IPSec Policy Agent II)	No	No	No	No	No	No	No	No	No	No	No	No
ISDN MIB RFC 2127	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Routing Monitor	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network Director Forwarding Agent	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Process MIB	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service												
Class-Based Weighted Fair Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets										
	IP	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/ FW/ IDS	IP/ FW/IDS Plus IPSec 56	IP Plus IPSec 3DES ¹	IP/FW/ IDS Plus IPSec 3DES	IP/IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/IPX/ AT/ DEC/ FW/ IDS Plus
CLI String Search	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP to ATM Class of Service	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Security											
Cisco Secure Integrated Software	No	No	No	No	Yes	Yes	No	Yes	No	No	Yes
IOS Firewall Feature Set	No	No	No	No	Yes	Yes	No	Yes	No	No	Yes
IOS Firewall Feature Set Enhancements	No	No	No	No	Yes	Yes	No	Yes	No	No	Yes
Switching											
Cisco IOS STP Enhancements	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Voice and Multimedia											
1- and 2-port T1/E1 Multiflex VWICs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BRI Voice over IP: VIC-2BRI-S/T-TE	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Busyout Monitor	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Digital T1 Packet Voice Trunk Network Modules	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Gateway Support for Alternate Gatekeeper	No	Yes	No	No	No	No	No	No	No	No	No
H.235 Accounting and Security Enhancements for Cisco Gateways	No	Yes	No	No	No	No	No	No	No	No	No
H.323 Version 2	No	Yes	No	No	No	No	No	No	No	No	No
H.323 Multizone Enhancements	No	Yes	No	No	No	No	No	No	No	No	No
Interactive Voice Response for Cisco Access	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Voice over Frame Relay Enhancements (FRF.11 and FRF.12)	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes

Table 4 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets											
	IP	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/ FW/ IDS	IP/ FW/IDS Plus IPSec 56	IP Plus IPSec 3DES ¹	IP/FW/ IDS Plus IPSec 3DES	IP/IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/IPX/ AT/ DEC/ FW/ IDS Plus	
WAN Services												
Annex-G (X.25 over Frame Relay)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATM OC3 NM	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
ATM LANE FSSR Protocol	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Debit Card for Packet Telephony	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
DNS-Based X.25 Routing	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interface MIB for ATM Subinterfaces	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
IOS IEEE 802.1Q Support	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic Multiple Encaps for Dial-in over ISDN	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Dynamic Multiple Encaps for Dial-in with Frame Relay Support	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN LAPB-TA	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Modem over ISDN BRI ²	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPLS Traffic Engineering	No	No	No	No	No	No	No	No	No	No	No	No
Multicast Source Discovery Protocol (MSDP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multipoint T1/E1 ATM Network Module with Inverse Multiplexing over ATM	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Packet Telephony Settlement	No	No	No	No	No	No	No	No	No	No	No	No
PPP Over Frame Relay	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Time-based Access Lists	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
X.25 Closed User Groups	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets										
	IP	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/ FW/ IDS	IP/ FW/IDS Plus IPSec 56	IP Plus IPSec 3DES ¹	IP/FW/ IDS Plus IPSec 3DES	IP/IPX/ AT/ DEC	IP/ IPX/ AT/ DEC Plus	IP/IPX/ AT/ DEC/ FW/ IDS Plus
X.25 Load Balancing	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Switch Local Acknowledgment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. This image was introduced in Release 12.0(2)T.
2. Cisco 3640 and 3660 routers only.

Table 5 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers

Features	Feature Sets								
	Enter- prise Plus	Enter- prise Plus IPSec 56	Enter- prise/ FW/IDS Plus IPSec 56	Enter- prise Plus IPSec 3DES ¹	Enter- prise/ FW/IDS Plus IPSec 3DES	Enter- prise/ SNASw Plus	Enter- prise/ SNASw Plus IPSec 56	Enter- prise /SNAS w Plus IPSec 3DES	
Connectivity									
Layer 2 Tunnel Protocol (L2TP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RIP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMP version 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM Support									
DLSw+ Enhanced Load Balancing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Ethernet Redundancy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ Peer Group Clusters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DLSw+ RSVP Bandwidth Reservation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNA Switching Services	No	No	No	No	No	Yes	Yes	Yes	Yes
Token Ring Interswitch Link	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP/IPX Routing									
Airline Product Set Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Asynchronous Serial Traffic over UDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Easy IP Phase 2-DHCP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers (continued)

Features	Feature Sets							
	Enter- prise Plus	Enter- prise Plus IPSec 56	Enter- prise/ FW/IDS Plus IPSec 56	Enter- prise Plus IPSec 3DES ¹	Enter- prise/ FW/IDS Plus IPSec 3DES	Enter- prise/ SNASw Plus	Enter- prise/ SNASw Plus IPSec 56	Enter- prise /SNAS w Plus IPSec 3DES
IP RTP Priority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flow-based WRED	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IS-IS Multiarea Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilayer Switching for IP Multicast	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilayer Switching for IPX	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PGM Router Assist	Yes	Yes	Yes	Yes	Yes	No	No	No
Service Assurance Agent (formerly Response Time Reporter)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web Cache Communications Protocol V2 (WCCPv2)	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
ISDN MIB RFC 2127	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Routing Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network Director Forwarding Agent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Process MIB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service								
Class-Based Weighted Fair Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CLI String Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP to ATM Class of Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers (continued)

Features	Feature Sets							
	Enterprise Plus	Enterprise Plus IPsec 56	Enterprise/FW/IDS Plus IPsec 56	Enterprise Plus IPsec 3DES ¹	Enterprise/FW/IDS Plus IPsec 3DES	Enterprise/SNASw Plus	Enterprise/SNASw Plus IPsec 56	Enterprise/SNASw Plus IPsec 3DES
Security								
Cisco Secure Integrated Software	No	No	Yes	No	Yes	No	No	No
IOS Firewall Feature Set	No	No	Yes	No	Yes	No	No	No
IOS Firewall Feature Set Enhancements	No	No	Yes	No	Yes	No	No	No
Switching								
Cisco IOS STP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Voice and Multimedia								
1- and 2-port T1/E1 Multiflex VWICs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BRI Voice over IP: VIC-2BRI-S/T-TE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Busyout Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital T1 Packet Voice Trunk Network Modules	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gateway Support for Alternate Gatekeeper	No	No	No	No	No	No	No	No
H.235 Accounting and Security Enhancements for Cisco Gateways	No	No	No	No	No	No	No	No
H.323 Version 2	No	No	No	No	No	No	No	No
H.323 Multizone Enhancements	No	No	No	No	No	No	No	No
Interactive Voice Response for Cisco Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Voice Over Frame Relay Enhancements (FRF.11 and FRF.12)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services								
Annex-G (X.25 over Frame Relay)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATM OC3 NM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ATM LANE FSSR Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Debit Card for Packet Telephony	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5 Feature Lists by Feature Sets for the Cisco 3620 and 3640 Routers (continued)

Features	Feature Sets							
	Enterprise Plus	Enterprise Plus IPsec 56	Enterprise/FW/IDS Plus IPsec 56	Enterprise Plus IPsec 3DES ¹	Enterprise/FW/IDS Plus IPsec 3DES	Enterprise/SNAsw Plus	Enterprise/SNAsw Plus IPsec 56	Enterprise/SNAsw Plus IPsec 3DES
DNS-Based X.25 Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interface MIB for ATM Subinterfaces	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IOS IEEE 802.1Q Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dynamic Multiple Encaps for Dial-in over ISDN	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
ISDN LAPB-TA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Modem over ISDN BRI ²	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPLS Traffic Engineering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Source Discovery Protocol (MSDP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multipoint T1/E1 ATM Network Module with Inverse Multiplexing over ATM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Packet Telephony Settlement	No	Yes	No	No	No	No	No	No
PPP over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Based Access Lists	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Closed User Groups	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Load Balancing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Switch Local Acknowledgment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1. This image was introduced in Cisco IOS Release 12.0(2)T.

2. Cisco 3640 and 3660 routers only.

Table 6 Feature Lists by Feature Sets for the Cisco 3660 Routers

Features	Feature Sets												
	IP	IP/ FW/ IDS	IP/ FW/ IDS Plus IPSec 56	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/FW /IDS Plus IPSec 3DES	IP Plus IPSec 3DES	IP/ IPX/ AT/ DEC	IP/ IPX/ AT/ DEC FW IDS Plus	IP/ IPX /AT/ DEC Plus	Telco	Telco Plus
Connectivity													
L2TP Dial Out	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
IBM Support													
DLSw+ Ethernet Redundancy	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
SNA Switching Services	No	No	No	No	No	No	No	No	No	No	No	No	No
IP/IPX Routing													
Airline Product Set Enhancements	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Asynchronous Serial Traffic over UDP	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP RTP Priority	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IS-IS Multiarea Support	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes
Multilayer Switching for IP Multicast	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Multilayer Switching for IPX	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
PGM Router Assist	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Service Assurance Agent (formerly Response Time Reporter)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management													
CNS Client for Cisco IOS (IPSec Policy Agent II)	No	No	No	No	No	No	No	No	No	No	No	No	Yes
Multicast Routing Monitor	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service													
Class-Based Weighted Fair Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Table 6 Feature Lists by Feature Sets for the Cisco 3660 Routers (continued)

Features	Feature Sets												
	IP	IP/ FW/ IDS	IP/ FW/ IDS Plus IPSec 56	IP/ H.323	IP Plus	IP Plus IPSec 56	IP/FW /IDS Plus IPSec 3DES	IP Plus IPSec 3DES	IP/ IPX/ AT/ DEC	IP/ IPX/ AT/ DEC FW IDS Plus	IP/ IPX /AT/ DEC Plus	Telco	Telco Plus
IP to ATM Class of Service (CoS)	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Security													
Cisco Secure Integrated Software	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No
Digital T1 Packet Voice Trunk Network Modules	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
H.235 Accounting and Security Enhancements for Cisco Gateways	No	No	No	Yes	No	No	No	No	No	No	No	No	No
Interactive Voice Response for Cisco Access	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
WAN Services													
ATM LANE FSSR Protocol	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Debit Card for Packet Telephony	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
DNS for X.25	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interface MIB for ATM Subinterfaces	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
ISDN Dynamic Multiple Encaps for Dial-in with Frame Relay Support	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPLS Traffic Engineering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Packet Telephony Settlement	No	No	No	No	No	No	No	No	No	No	No	No	No
X.25 Closed User Groups	No	No	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	No	No

Table 7 Feature Lists by Feature Sets for the Cisco 3661 and 3662 Routers

Features	Feature Sets							
	Enterprise Plus	Enterprise/ FW IDS Plus IPsec 56	Enterprise/ FW IDS Plus IPsec 3DES	Enterprise Plus/ IPsec 56	Enterprise Plus IPsec 3DES	Enterprise/ SNASw Plus	Enterprise/ SNASw Plus IPsec 3DES	Enterprise/ SNASw Plus IPsec 56
Connectivity								
L2TP Dial Out	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IBM Support								
DLSw+ Ethernet Redundancy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNA Switching Services	No	No	No	No	No	Yes	Yes	Yes
IP/IPX Routing								
Airline Product Set Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Asynchronous Serial Traffic over UDP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP RTP Priority	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IS-IS Multiarea Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilayer Switching for IP Multicast	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multilayer Switching for IPX	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PGM Router Assist	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Service Assurance Agent (formerly Response Time Reporter)	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
Multicast Routing Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subnetwork Bandwidth Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7 Feature Lists by Feature Sets for the Cisco 3661 and 3662 Routers

Features	Feature Sets							
	Enterprise Plus	Enterprise/ FW IDS Plus IPsec 56	Enterprise/ FW IDS Plus IPsec 3DES	Enterprise Plus/ IPsec 56	Enterprise Plus IPsec 3DES	Enterprise/ SNASw Plus	Enterprise/ SNASw Plus IPsec 3DES	Enterprise/ SNASw Plus IPsec 56
Quality of Service								
Class-Based Weighted Fair Queueing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Express RTP and TCP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP to ATM Class of Service (CoS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security								
Cisco Secure Integrated Software	No	Yes	Yes		No	No	No	No
Voice and Multimedia								
Busyout Monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital T1 Packet Voice Trunk Network Modules	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gateway Support for Alternate Gatekeeper	No	No	No	No	No	No	No	No
H.235 Accounting and Security Enhancements for Cisco Gateways	No	No	No	No	No	No	No	No
H.323 Version 2	No	No	No	No	No	No	No	No
H.323 Multizone Enhancements	No	No	No	No	No	No	No	No
Interactive Voice Response for Cisco Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services								
ATM LANE FSSR Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Debit Card for Packet Telephony	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DNS for X.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay End-to-End Keepalive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7 Feature Lists by Feature Sets for the Cisco 3661 and 3662 Routers

Features	Feature Sets							
	Enterprise Plus	Enterprise/FW IDS Plus IPsec 56	Enterprise/FW IDS Plus IPsec 3DES	Enterprise Plus/IPsec 56	Enterprise Plus IPsec 3DES	Enterprise/SNASw Plus	Enterprise/SNASw Plus IPsec 3DES	Enterprise/SNASw Plus IPsec 56
Interface MIB for ATM Subinterfaces	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
ISDN Dynamic Multiple Encaps for Dial-in with Frame Relay Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPLS Traffic Engineering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicast Source Discovery Protocol (MSDP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Packet Telephony Settlement	No	No	No	Yes	No	No	No	No
X.25 Closed User Groups	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Switch Local Acknowledgment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

New and Changed Information

The following is a list of the new hardware and software feature categories supported by the Cisco 3600 series for Release 12.1. These categories are broken down by feature in Tables 4, 5, 6, and 7.

- Connectivity
- IBM Support
- IP/IPX Routing
- Management
- Quality of Service
- Security
- Switching
- Voice and Multimedia
- 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 you use 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

Old 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 8.

Table 8 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 3600 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 26
- Platform-Specific Documents, page 26
- Cisco IOS Software Documentation Set, page 27

Release-Specific Documents

The following documents are specific to or support Cisco IOS Release 12.1(5) 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

On the Documentation CD-ROM:

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 on CCO under the **Service & Support** heading:

Technical Documents

- Caveats for Cisco IOS Release 12.1

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

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

The documents listed below are available for the Cisco 3600 series routers and are also available on CCO and on the Documentation CD-ROM.

- *Cisco 3600 Series Hardware Installation Guide*
- *Software Configuration Guide*

- *Cisco Network Modules Hardware Installation Guide*
- *Update to Cisco Network Modules Hardware Installation Guide*
- *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 Information*
- Cisco 3600 Series Configuration Notes
- Digital Modem Portware documents
- Analog Modem Firmware documents
- Release Notes

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

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 3600 Series Routers

On the Documentation CD-ROM:

Access Servers and Access Routers: Modular Access Routers: Cisco 3600 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. 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, and Cisco IOS software functionality and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Each configuration guide can be used 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: Cisco IOS Release 12.1 Configuration Guides and Command References

On the Documentation CD-ROM:

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

Release 12.1 Documentation Set

Table 9 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.

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

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

On the Documentation CD-ROM:

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

Table 9 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 9 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 9 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> 	

Software Configuration Tips on the Cisco 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 25.

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