



Release Notes for Cisco 3600 Series for Cisco IOS Release 12.2 XG

June 12, 2002

Cisco IOS Release 12.2(2) XG1

78-13327-01 Rev. C0



Note

The last release of Cisco IOS Release 12.2 XG is Cisco IOS Release 12.2(2) XG1. The migration path for customers who need bug fixes for Cisco IOS Release 12.2(2) XG1 features is Cisco IOS Release 12.2(8) T. Cisco IOS Release 12.2(8) T release has the complete feature content of Cisco IOS Release 12.2(2) XG1 and will eventually reach general deployment (GD).

These release notes for the Cisco 3600 series support Cisco IOS Release 12.2(2) XG1. These release notes are updated as needed.

For a list of the software caveats that apply to Release 12.2(2) XG1, see the [“Caveats for Cisco IOS Release 12.2\(2\) XG” section on page 12](#) and *Caveats for Cisco IOS Release 12.2 T*. This caveats document is updated for every maintenance release and is also located on Cisco.com and the Documentation CD-ROM.

Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.2 T* located on Cisco.com 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 dialup 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 dialup connectivity, LAN-to-LAN routing, data and access security, WAN optimization, and multimedia features.

For information on new features and Cisco IOS commands supported by Cisco IOS Release 12.2(2) XG1, see the [“New and Changed Information” section on page 10](#) and the [“Related Documentation” section on page 14](#).

System Requirements

This section describes the system requirements for Cisco IOS Release 12.2(2) XG1 and includes the following sections:

- [Memory Recommendations, page 2](#)
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- [Determining the Software Version, page 8](#)
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Memory Recommendations

Table 1 *Memory Recommendations for the Cisco 3600 Series Routers*

Platform	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 3640	IP	c3640-i-mz	8 MB	32 MB	RAM
	IP Plus	c3640-is-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3640-js-mz	32 MB	96 MB	RAM
	Telco Feature Set	c3640-telco-mz	16 MB	64 MB	RAM
Cisco 3660 ¹	IP	c3660-i-mz	8 MB	32 MB	RAM
	IP Plus	c3660-is-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3660-js-mz	32 MB	96 MB	RAM

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

Platform	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 3660¹ Continued	Telco ²	c3660-telco-mz	16 MB	64 MB	RAM
	Telco Plus ²	c3660-telcoent-mz	32 MB	96 MB	RAM
	Telco Plus ² IPSec 3DES	c3660-telcoentk9-mz	32 MB	96 MB	RAM

1. The Cisco 3660 uses SDRAM.

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

Supported Hardware

Cisco IOS Release 12.2(2) XG1 supports the Cisco 3600 series:

- Cisco 3640
- Cisco 3660 (3661 and 3662)

For detailed descriptions of the new hardware features, see the [“New and Changed Information” section on page 10](#).

[Table 2](#) lists the supported interfaces for the Cisco 3600 series routers for Cisco IOS Release 12.2(2) XG1.

Table 2 Supported Interfaces for the Cisco 3600 Series Routers

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
Dial Access Network Modules	16- and 32-port asynchronous (NM-16A and NM-32A)	All Cisco 3600 series platforms
	4- and 8-port synchronous/asynchronous (NM-4A/S and NM-8A/S)	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)	All Cisco 3600 series platforms
	6 digital modem upgrade (MICA-6MOD)	All Cisco 3600 series platforms
	8- or 16-port integrated analog network modules (NM-8AM and NM16AM)	All Cisco 3600 series platforms
LAN Interfaces	1- and 4-port Ethernet (AUI and 10BASE-T, NM-1E, and NM-4E)	All Cisco 3600 series platforms
	1-port Fast Ethernet (100BASE-TX and 100BASE-FX, NM-1FE-TX and NM-1FE-FX)	All Cisco 3600 series platforms

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

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
Mixed Media Network Modules	1-port 10/100BASE-TX with 1-port channelized/PRI/E1 balanced mode (NM-1FE1CE1B)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 1-port channelized/PRI/E1 unbalanced mode (NM-1FE1CE1U)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 1-port channelized/PRI/T1 (NM-1FE1CT1)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 1-port channelized/PRI/T1 with CSU (NM-1FE1CT1-CSU)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 2-port channelized/PRI/E1 balanced mode (NM-1FE2CE1B)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 2-port channelized/PRI/E1 unbalanced mode (NM-1FE2CE1U)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 2-port channelized/PRI/T1 (NM-1FE2CT1)	All Cisco 3600 series platforms
	1-port 10/100BASE-TX with 2-port channelized/PRI/T1 with CSU (NM-1FE2CT1-CSU)	All Cisco 3600 series platforms
	1 Ethernet and 2 WAN card slots (NM-1E2W)	All Cisco 3600 series platforms
Mixed Media Network Modules Continued	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
	1-port fast Ethernet, 1-port Token Ring with 2 WAN card slots (NM-1FE1R2W[=])	All Cisco 3600 series platforms
	1-port Fast Ethernet with 2 WAN card slots (NM-1FE2W[=])	All Cisco 3600 series platforms
	2-port Fast Ethernet with 2 WAN card slots (NM-2FE2W[=])	All Cisco 3600 series platforms
	2 WAN card slots (NM-2W[=])	All Cisco 3600 series platforms

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

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
Multipoint T1/E1 ATM Network Modules with Inverse Multiplexing over ATM (IMA)¹	1-port ATM-25 network modules (NM-1ATM-25) ¹	All Cisco 3600 series platforms
	1-port ATM T3 network module (NM-1A-T3) ¹	All Cisco 3600 series platforms
	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
	1-port ATM E3 network module (NM-1A-E3) ¹	All Cisco 3600 series platforms
	1-port ATM OC-3 network module with multimode fiber (NM-1A-OC3MM)	All Cisco 3600 series platforms
	1-port ATM OC-3 network module with single-mode intermediate reach fiber (NM-1A-OC3SMI)	All Cisco 3600 series platforms
	1-port ATM OC-3 network module with single-mode long reach fiber (NM-1A-OC3SML)	All Cisco 3600 series platforms
	1-port ATM OC-3 multimode network module and circuit emulation service (NM-1A-OC3MM-1V) ²	All Cisco 3600 series platforms
	1-port ATM OC-3 single-mode, intermediate reach network module and circuit emulation service (NM-1A-OC3SMI-1V) ²	All Cisco 3600 series platforms
	1-port ATM OC-3 single-mode, long reach network module and circuit emulation service (NM-1A-OC3SML-1V) ²	All Cisco 3600 series platforms

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

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
Digital T1/E1 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. ³ Part number: NM-HDV-1T1-24.	All Cisco 3600 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. ² Part number: NM-HDV-1T1-24E.	All Cisco 3600 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. ² Part number: NM-HDV-2T1-48.	All Cisco 3600 series platforms
	1-port, 30-channel E1 voice/fax module, supports 30 channels of G.729a/b, G.726, G.711 and fax or 18 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711, and fax. Consists of one NM-HDV, three PVDM-12s, and one VWIC-1MFT-E1. ³ Part number: NM-HDV-1E1-30(=)	All Cisco 3600 series platforms
Digital T1/E1 Packet Voice Trunk Network Modules and Spare Components (continued)	1-port, enhanced 30-channel E1 voice/fax module supports 30 channels of G.729a/b, G.726, G.729, G.728, G.723.1, G.711, and fax. Consists of one NM-HDV, five PVDM-12s, and one VWIC-1MFT-E1. ³ (NM-HDV-1E1-30E(=)).	All Cisco 3600 series platforms
	2-port, 60-channel E1 voice/fax module supports add/drop multiplexing (drop and insert); 60 channels of G.729a/b, G.726, G.711, and fax or 30 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711, and fax. Consists of one NM-HDV, five PVDM-12s, and one VWIC-2MFT-E1-D1. ³ Part number NM-HDV-2E1-60(=)	All Cisco 3600 series platforms
	High-density voice/fax network module spare. Part number: NM-HDV.	Digital T1 packet voice trunk network modules spare component
	12-channel packet voice DSP module upgrade spare. Part number: PVDM-12=.	Digital T1 packet voice trunk network modules spare component
	1-port RJ-48 multiflex trunk—T1 (VWIC-1MFT-T1) ²	Digital T1 packet voice trunk network modules spare component
	2-port RJ-48 multiflex trunk—T1 (VWIC-2MFT-T1) ²	Digital T1 packet voice trunk network modules spare component
	2-port RJ-48 multiflex trunk with drop and insert—T1 (VWIC-2MFT-T1-DI(=)) ²	Digital T1 packet voice trunk network modules spare component

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

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
T1/E1 Multiflex Voice/WAN Interface Cards	1-port T1 multiflex trunk interface (VWIC-1MFT-T1)	All Cisco 3600 series platforms
	1-port E1 multiflex trunk interface (VWIC-1MFT-E1)	All Cisco 3600 series platforms
	2-port T1 multiflex trunk interface (VWIC-2MFT-T1)	All Cisco 3600 series platforms
	2-port T1 multiflex trunk interface with drop and insert (VWIC-2MFT-T1-DI) ⁴	All Cisco 3600 series platforms
	2-port E1 multiflex trunk interface with drop and insert (VWIC-2MFT-E1-DI)	All Cisco 3600 series platforms
Voice/Fax Interfaces and Network Modules¹	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 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
ISDN Channelized and Serial Network Modules	1- and 2-port channelized T1 modules without CSUs (NM-1CT1 and NM-1CT1)	All Cisco 3600 series platforms
	1- and 2-port channelized T1 network modules with CSUs (NM-1CT1-CSU and NM-2CT1-CSU)	All Cisco 3600 series platforms
	1- and 2-port E1 network modules unbalanced mode (NM-1CE1U and NM-2CE1U)	All Cisco 3600 series platforms
	1- and 2-port E1 network modules balanced mode (NM-1CE1B and NM-2CE1B)	All Cisco 3600 series platforms
	1-port high-speed serial interface (HSSI) network module	All Cisco 3600 series platforms
	4- and 8-port BRI network module with NT-1 (NM-4B-U and NM-8B-U)	All Cisco 3600 series platforms
	4- and 8-port BRI network module with S/T interface (NM-4B-S/T and NM-8B-S/T)	All Cisco 3600 series platforms
	4-port serial (NM-4T)	All Cisco 3600 series platforms

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

Interface, Network Module, or Data Rate	Product Description	Platforms Supported
Other Network Modules	Compression network module (NM-COMPR)	Cisco 3640 series platforms
	4 E1 data compression Advanced Integration Module (AIM-COMPR4)	Cisco 3660 series platforms
	Hardware encryption network module	All Cisco 3640 series platforms
	Hardware encryption Advanced Integration Module (AIM)	All Cisco 3660 series platforms
	NM-AIC-64, Contact Closure Network Module	Cisco 3640 and 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 NT-1 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
	2-port serial (WIC-2T[=]) ⁵	All Cisco 3600 series platforms
	2-port asynchronous/synchronous (WIC-2A/S[=])	All Cisco 3600 series platforms
	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. Requires the Cisco IOS Plus feature sets.
2. For the Cisco 3660 series only, online insertion and removal (OIR) is now supported in Cisco IOS Release 12.2 T.
3. See T1/E1 multiflex voice/WAN interface cards in this table.
4. For Cisco 3660 series, only supported in T1/E1 digital packet voice trunk network modules and new Fast Ethernet mixed media network modules: NM-1FE2W, NM-2FE2W, NM-1FE1R2W, NM-2W. 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 modules (NM-1E2W, NM-2E2W, NM-1E1R2W, NM-1FE2W, NM-2FE2W, NM-1FE1R2W, NM-2W).
5. Supported in Fast Ethernet mixed media network modules: NM-1FE2W, NM-2FE2W, NM-1FE1R2W, NM-2W.

Determining the Software Version

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

```
Router> show version
Cisco Internetwork Operating System Software
IOS (tm) 12.2(2) XG1 Software c3640-i-mz, Version 12.2(2) XG1, RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, refer to *Upgrading the Cisco IOS Software Release in Cisco Routers and Modems* located at:

http://www.cisco.com/warp/public/130/upgrade_index.shtml

Feature Set Tables

The Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features.

Cisco IOS Release 12.2(2) XG1 supports the same feature sets as Cisco IOS Release 12.2 T, but Cisco IOS Release 12.2(2) XG1 can include new features supported by the Cisco 3600 series.



Caution

Cisco IOS images with strong encryption (including, but not limited to 168-bit (3DES) data encryption feature sets) are subject to U.S. 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 because of U.S. government regulations. When applicable, the 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.

[Table 3](#) lists the features and feature sets supported by the Cisco 3640 router in Cisco IOS Release 12.2(2) XG1. [Table 4](#) lists the features and feature sets supported by the Cisco 3660 routers in Cisco IOS Release 12.2(2) XG1 and uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.
- In—The number in the “In” column indicates the Cisco IOS release in which the feature was introduced. For example, (2)XG means a feature was introduced in 12.2(2) XG.



Note

You can find the most current Cisco IOS documentation on Cisco.com. If you have a Cisco.com login account, you can find image and release information regarding features prior to Cisco IOS Release 12.2(2) T by using the Feature Navigator tool at <http://www.cisco.com/go/fn>.

Table 3 Feature List by Feature Set for the Cisco 3640 Router

Features	In	Software Images by Feature Sets			
		IP	IP Plus	Enterprise Plus	Telco Feature Set
NM-AIC-64, Contact Closure Network Module	(2)XG	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 3660 Router

Features	In	Software Images by Feature Sets					
		IP	IP Plus	Enterprise Plus	TELCO Feature Set	TELCO Plus Feature Set	TELCO Plus Feature Set IPsec 3DES
NM-AIC-64, Contact Closure Network Module	(2)XG	Yes	Yes	Yes	Yes	Yes	Yes

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 3600 series for Release 12.2(2) XG1.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XG1

There are no new hardware and software features supported by the Cisco 3600 series for Cisco IOS Release 12.2(2) XG1.

New Hardware Features in Cisco IOS Release 12.2(2) XG

The following new hardware feature is supported by the Cisco 3600 series for Cisco IOS Release 12.2(2) XG:

NM-AIC-64, Contact Closure Network Module

The AIC NM is an optional card that expands network management capabilities for customer-defined alarms. The AIC has its own CPU that communicates with the router and external media through serial communication channels. The AIC reduces service provider and enterprise operating costs by providing a flexible, low-cost network solution for migrating existing data communications networks (DCNs) to IP-based DCNs. The AIC provides its users with a single “box” solution because it can be configured in the same router along with other Operation, Alarm, Maintenance, and Provisioning (OAM&P) interfaces.

More than one AIC can be installed per router. For example, a Cisco 3662 can have up to five AICs, and its sixth NM slot can be used for router communication. The Cisco 3640 can have up to three AICs, with the fourth NM slot reserved for communication, and so forth.

The AIC provides a total of 64 alarm inputs. Eight of the 64 point are software configurable for measuring either analog inputs or discrete inputs. The remaining 56 points are fixed to measure discrete points only. The AIC also provides 16 control relay outputs.

The discrete alarm input can be activated through ground or negative battery input. The negative battery range is -36V to -72V. The analog alarm is software configurable for either DC voltage or current. It can measure voltage from -60 to 60V or current from 0 to 20mA, but the configurable range is 4 mA to 20mA. The standard 16 control relays can be configured to turn on or turn off an external device.

The AIC's 64 input contact points can control and monitor network elements and other non-intelligent interfaces, permitting the detection and report of alarms such as the following:

- Network element alarm states
- Building security (door and window open and close)
- Fire and smoke indication
- Building environmentals (temperature and humidity)
- Utility power readings

When an event occurs, such as a door alarm or an open gate, the AIC maps the simple discrete and analog alarms to pre programmed intelligent messages and transports the messages to destinations in the IP network, typically to a Network Operations Center (NOC). These messages are generated either in Transaction Language 1 (TL1) or in Simple Network Management Protocol (SNMP), which are used by a NOC's Operations Support System (OSS).

For additional information, refer to the *Cisco Network Modules Hardware Installation Guide* at http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/cis2600/hw_inst/nm_inst/nm-doc/contn.htm.

Also, refer to the *NM-AIC-64, Contact Closure Network Module* feature module document at http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xg/122xg_2/ft_aicnm.htm.

New Software Features in Cisco IOS Release 12.2(2) XG

The following new software feature is supported by the Cisco 3600 series for Cisco IOS Release 12.2(2) XG:

NM-AIC-64, Contact Closure Network Module

This feature consists of software support for the NM-AIC-64. For more information, refer to the “[New Hardware Features in Cisco IOS Release 12.2\(2\) XG](#)” section on page 10 and the feature module documentation at

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xg/122xg_2/ft_aicnm.htm.

MIBs

Current MIBs

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

Deprecated and Replacement MIBs

Old Cisco MIBs will be replaced in a future release. Currently, OLD-CISCO-* MIBs are being converted into more scalable MIBs without affecting existing Cisco IOS products or network management system (NMS) applications. You can update from deprecated MIBs to the replacement MIBs as shown in [Table 5](#).

Table 5 *Deprecated and Replacement MIBs*

Deprecated MIB	Replacement
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB

Table 5 *Deprecated and Replacement MIBs (continued)*

Deprecated MIB	Replacement
OLD-CISCO-CPUK-MIB	To be determined
OLD-CISCO-DECNET-MIB	To be determined
OLD-CISCO-ENV-MIB	CISCO-ENVMON-MIB
OLD-CISCO-FLASH-MIB	CISCO-FLASH-MIB
OLD-CISCO-INTERFACES-MIB	IF-MIB CISCO-QUEUE-MIB
OLD-CISCO-IP-MIB	To be determined
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB
OLD-CISCO-NOVELL-MIB	NOVELL-IPX-MIB
OLD-CISCO-SYS-MIB	(Compilation of other OLD* MIBs)
OLD-CISCO-SYSTEM-MIB	CISCO-CONFIG-COPY-MIB
OLD-CISCO-TCP-MIB	CISCO-TCP-MIB
OLD-CISCO-TS-MIB	To be determined
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	To be determined

Caveats for Cisco IOS Release 12.2(2) XG

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.

All caveats in Cisco IOS Release 12.2 and Cisco IOS Release 12.2 T are also in Cisco IOS Release 12.2(2) XG1.

For information on caveats in Cisco IOS Release 12.2, see *Caveats for Cisco IOS Release 12.2*.

For information on caveats in Cisco IOS Release 12.2 T, see *Caveats for Cisco IOS Release 12.2 T*, which lists severity 1 and 2 caveats and select severity 3 caveats and is located on Cisco.com and the Documentation CD-ROM.

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

Caveat numbers and brief descriptions for Cisco IOS Release 12.2(2) XG1 are listed in [Table 6](#). For details about a particular caveat, go to Bug Toolkit at <http://www.cisco.com/kobayashi/bugs/bugs.html>.

To access this location, you must have an account on Cisco.com. For information about how to obtain an account, go to the [“Feature Navigator” section on page 15](#).



Note

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, **log in** to Cisco.com and click **Service and Support: Technical Assistance Center: Select & Download Software: Jump to a software resource: Software Bug Toolkit/Bug Watcher**. Another option is to go to <http://www.cisco.com/support/bugtools/>.

Open Caveats—Cisco IOS Release 12.2(2) XG1

There are no open caveats specific to Cisco IOS Release 12.2(2) XG1 that require documentation in the release notes.

Resolved Caveats—Cisco IOS Release 12.2(2) XG1

All the caveats listed in [Table 6](#) are resolved in Cisco IOS Release 12.2(2) XG1. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 6 *Resolved Caveats for Release 12.2(2) XG1*

Caveat ID Number	Description
CSCdw65903	An error can occur with management protocol processing. Please use the following URL for further information: http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903

Open Caveats—Cisco IOS Release 12.2(2) XG

There are no open caveats specific to Cisco IOS Release 12.2(2) XG that require documentation in the release notes.

Resolved Caveats—Cisco IOS Release 12.2(2) XG

All the caveats listed in [Table 7](#) are resolved in Cisco IOS Release 12.2(2) XG. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 7 *Resolved Caveats for Release 12.2(2) XG*

Caveat ID Number	Description
CSCdu12354	Integration commit for EIGRP
CSCdt05084	bus error at bgp_decay_penalty
CSCdt92814	Redistribution from ISIS to ISO-IGRP
CSCdu45133	FXO-DSP in busy state after overload
CSCdu37772	Hookflash disconnects call immediately in v122_1_xa_throttle
CSCdu44639	Need to limit max lines during fallback to 6
CSCdu31091	ISDN Bri not working...req curcuit/channel not av.
CSCdu11853	Router crash
CSCdu55993	TDM voice channel connection fails

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 guides 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 Cisco.com and the Documentation CD-ROM.

Use these release notes with these documents:

- [Release-Specific Documents, page 14](#)
- [Platform-Specific Documents, page 15](#)
- [Feature Modules, page 15](#)
- [Feature Navigator, page 15](#)
- [Cisco IOS Software Documentation Set, page 16](#)

Release-Specific Documents

The following documents are specific to Cisco IOS Release 12.2 and are located on Cisco.com and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 12.2* and *Cross-Platform Release Notes for Cisco IOS Release 12.2T*

On Cisco.com at:

Technical Documents: Cisco IOS Software: Cisco IOS Release 12.2: Release Notes: Cross-Platform Release Notes

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Release Notes: Cross-Platform Release Notes

- Product bulletins, field notices, and other release-specific documents on Cisco.com at:

Technical Documents

- The “[Caveats for Cisco IOS Release 12.2\(2\) XG](#)” section on [page 12](#)

As a supplement to the caveats listed in [Caveats for Cisco IOS Release 12.2\(2\) XG](#) in these release notes, see *Caveats for Cisco IOS Release 12.2* and *Caveats for Cisco IOS Release 12.2 T*, which contain caveats applicable to all platforms for all maintenance releases of Cisco IOS Release 12.2 and Cisco IOS Release 12.2 T.

On Cisco.com at:

Technical Documents: Cisco IOS Software: Cisco IOS Release 12.2: Release Notes: Caveats

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Caveats

**Note**

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Select & Download Software: Jump to a software resource: Software Bug Toolkit/Bug Watcher**. Another option is to go to <http://www.cisco.com/support/bugtools/bugtool.shtml>.

Platform-Specific Documents

These documents are available for the Cisco 3600 series on Cisco.com and the Documentation CD-ROM:

- *Quick Start Guide Cisco 3600 Series Routers*
- Hardware Installation Documents for Cisco 3600 Series
- Software Configuration Documents for Cisco 3600 Series
- Regulatory Compliance and Safety Documents for Cisco 3600 Series

On Cisco.com at:

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

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 3600 Series Routers

Feature Modules

Feature modules describe new features that are supported in Cisco IOS Release 12.2 T and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated into the next printing of the Cisco IOS documentation set.

On Cisco.com at:

Technical Documents: Cisco IOS Software: Cisco IOS Release 12.2: New Feature Documentation

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2: New Feature Documentation

Feature Navigator

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a particular set of features and which features are supported in a particular Cisco IOS image.

Feature Navigator is available 24 hours a day, 7 days a week. To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, e-mail the Contact Database Administration group at cdbadmin@cisco.com. If you do not have an account on Cisco.com, go to <http://www.cisco.com/register> and follow the directions to establish an account.

To use Feature Navigator, you must have a JavaScript-enabled web browser such as Netscape 3.0 or later, or Internet Explorer 4.0 or later. Internet Explorer 4.0 always has JavaScript enabled. To enable JavaScript for Netscape 3.x or Netscape 4.x, follow the instructions provided with the web browser. For JavaScript support and enabling instructions for other browsers, check with the browser vendor.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. You can access Feature Navigator at the following URL:

<http://www.cisco.com/go/fn>

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. The Cisco IOS software documentation set is 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 one or more configuration guides and one or more corresponding command references. 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. Use each configuration guide with its corresponding command reference.

The Cisco IOS software documentation set is available on Cisco.com and on the Documentation CD-ROM.

On Cisco.com at:

Technical Documents: Cisco IOS Software: Cisco IOS Release 12.2: Configuration Guides and Command References

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Configuration Guides and Command References

Cisco IOS Release 12.2 Documentation Set Contents

[Table 8](#) lists the contents of the Cisco IOS Release 12.2 software documentation set, which is available in both electronic and printed form.



Note

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

On Cisco.com at:

Technical Documents: Cisco IOS Software: Cisco IOS Release 12.2

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2

Table 8 Cisco IOS Release 12.2 Documentation Set

Books	Major Topics
• <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> • <i>Cisco IOS Configuration Fundamentals Command Reference</i>	Cisco IOS User Interfaces File Management System Management
• <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 1 of 2</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 2 of 2</i>	Transparent Bridging SRB Token Ring Inter-Switch Link Token Ring Route Switch Module RSRB DLSW+ Serial Tunnel and Block Serial Tunnel LLC2 and SDLC IBM Network Media Translation SNA Frame Relay Access NCIA Client/Server Airline Product Set DSPU and SNA Service Point SNA Switching Services Cisco Transaction Connection Cisco Mainframe Channel Connection CLAW and TCP/IP Offload CSNA, CMPC, and CMPC+ TN3270 Server
• <i>Cisco IOS Dial Technologies Configuration Guide: Dial Access</i> • <i>Cisco IOS Dial Technologies Configuration Guide: Large-Scale Dial Applications</i> • <i>Cisco IOS Dial Technologies Command Reference, Volume 1 of 2</i> • <i>Cisco IOS Dial Technologies Command Reference, Volume 2 of 2</i>	Dial Access Modem and Dial Shelf Configuration and Management ISDN Configuration Signaling Configuration Point-to-Point Protocols Dial-on-Demand Routing Dial Backup Dial Related Addressing Service Network Access Solutions Large-Scale Dial Solutions Cost-Control Solutions Internetworking Dial Access Scenarios
• <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i>	LAN Interfaces Serial Interfaces Logical Interfaces

Table 8 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• <i>Cisco IOS IP Configuration Guide</i> • <i>Cisco IOS IP Command Reference, Volume 1 of 3: Addressing and Services</i> • <i>Cisco IOS IP Command Reference, Volume 2 of 3: Routing Protocols</i> • <i>Cisco IOS IP Command Reference, Volume 3 of 3: Multicast</i>	IP Addressing IP Services IP Routing Protocols IP Multicast
• <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i> • <i>Cisco IOS AppleTalk and Novell IPX Command Reference</i>	AppleTalk Novell IPX
• <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>	Apollo Domain Banyan VINES DECnet ISO CLNS XNS
• <i>Cisco IOS Voice, Video, and Fax Configuration Guide</i> • <i>Cisco IOS Voice, Video, and Fax Command Reference</i>	Voice over IP Call Control Signaling Voice over Frame Relay Voice over ATM Telephony Applications Trunk Management Fax, Video, and Modem Support
• <i>Cisco IOS Quality of Service Solutions Configuration Guide</i> • <i>Cisco IOS Quality of Service Solutions Command Reference</i>	Packet Classification Congestion Management Congestion Avoidance Policing and Shaping Signaling Link Efficiency Mechanisms
• <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 Supported AV Pairs
• <i>Cisco IOS Switching Services Configuration Guide</i> • <i>Cisco IOS Switching Services Command Reference</i>	Cisco IOS Switching Paths NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
• <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i>	ATM Frame Relay SMDS X.25 and LAPB

Table 8 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• <i>Cisco IOS Mobile Wireless Configuration Guide</i> • <i>Cisco IOS Mobile Wireless Command Reference</i>	General Packet Radio Service
• <i>Cisco IOS Terminal Services Configuration Guide</i> • <i>Cisco IOS Terminal Services Command Reference</i>	ARA LAT NASI Telnet TN3270 XRemote X.28 PAD Protocol Translation
• <i>Cisco IOS Configuration Guide Master Index</i> • <i>Cisco IOS Command Reference Master Index</i> • <i>Cisco IOS Debug Command Reference</i> • <i>Cisco IOS Software System Error Messages</i> • <i>New Features in 12.2-Based Limited Lifetime Releases</i> • <i>New Features in Release 12.2 T</i> • <i>Release Notes</i> (Release note and caveat documentation for 12.2-based releases and various platforms)	

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, use the response card behind the front cover of your document, or write to the following address:

Attn Document Resource Connection
Cisco Systems, Inc.
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 in conjunction with the documents listed in the [“Related Documentation” section on page 14](#).

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