



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

June 13, 2002

Cisco IOS Release 12.2(2) XA5

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These release notes for the Cisco 3600 series support Cisco IOS Release 12.2(2) XA5. These release notes are updated online as needed.

For a list of the software caveats that apply to Release 12.2(2) XA5, see the [“Caveats for Cisco IOS Release 12.2 XA” section on page 20](#) and *Caveats for Cisco IOS Release 12.2T*. 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 the *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) XA, see the [“New and Changed Information” section on page 16](#) and the [“Related Documentation” section on page 24](#).

System Requirements

This section describes the system requirements for Release 12.2(2) XA5:

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Memory Recommendations

Table 1 Cisco IOS Release 12.2(2) XA Memory Recommendations for the Cisco 3600 Series Routers

Platform	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 3620	IP Plus	c3620-is-mz	16 MB	64 MB	RAM
	IP Plus IPsec 3DES	c3620-ik9s-mz	16 MB	64 MB	RAM
	IP Plus IPsec 56	c3620-ik8s-mz	16 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 3DES	c3620-ik9o3s-mz	16 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 56	c3620-ik803s-mz	16 MB	64 MB	RAM
	IP/H.323	c3620-ix-mz	8 MB	48 MB	RAM
	IP/IPX/AT/DEC Plus	c3620-ds-mz	16 MB	64 MB	RAM
	IP/IPX/AT/DEC/FW/IDS Plus	c3620-do3s-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3620-js-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 3DES	c3620-jk9s-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 56	c3620-jk8s-mz	32 MB	96 MB	RAM
	Enterprise Plus/H.323 MCM	c3620-jsx-mz	32 MB	96 MB	RAM
	Enterprise/FW/IDS Plus IPsec 3DES	c3620-jk9o3s-mz	32 MB	96 MB	RAM

Table 1 Cisco IOS Release 12.2(2) XA Memory Recommendations for the Cisco 3600 Series Routers (continued)

Platform	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 3620 (cont'd)	Enterprise/FW/IDS Plus IPsec 56	c3620-jk8o3s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus	c3620-a3js-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 3DES	c3620-a3jk9s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 56	c3620-a3jk8s-mz	32 MB	96 MB	RAM
Cisco 3640	IP Plus	c3640-is-mz	16 MB	64 MB	RAM
	IP Plus IPsec 3DES	c3640-ik9s-mz	16 MB	64 MB	RAM
	IP Plus IPsec 56	c3640-ik8s-mz	16 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 3DES	c3640-ik9o3s-mz	16 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 56	c3640-ik8o3s-mz	16 MB	64 MB	RAM
	IP/H.323	c3640-ix-mz	8 MB	48 MB	RAM
	IP/IPX/AT/DEC Plus	c3640-ds-mz	16 MB	64 MB	RAM
	IP/IPX/AT/DEC/FW/IDS Plus	c3640-do3s-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3640-js-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 3DES	c3640-jk9s-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 56	c3640-jk8s-mz	32 MB	96 MB	RAM
	Enterprise Plus/H.323 MCM	c3640-jsx-mz	32 MB	96 MB	RAM
	Enterprise/FW/IDS Plus IPsec 3DES	c3640-jk9o3s-mz	32 MB	96 MB	RAM
	Enterprise/FW/IDS Plus IPsec 56	c3640-jk8o3s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus	c3640-a3js-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 3DES	c3640-a3jk9s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 56	c3640-a3jk8s-mz	32 MB	96 MB	RAM

Table 1 Cisco IOS Release 12.2(2) XA Memory Recommendations for the Cisco 3600 Series Routers (continued)

Platform	Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 3660 ¹	IP Plus	c3660-is-mz	16 MB	64 MB	RAM
	IP Plus IPsec 3DES	c3660-ik9s-mz	32 MB	64 MB	RAM
	IP Plus IPsec 56	c3660-ik8s-mz	32 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 3DES	c3660-ik9o3s-mz	32 MB	64 MB	RAM
	IP/FW/IDS Plus IPsec 56	c3660-ik8o3s-mz	32 MB	64 MB	RAM
	IP/H.323	c3660-ix-mz	8 MB	64 MB	RAM
	IP/IPX/AT/DEC FW IDS Plus	c3660-do3s-mz	16 MB	64 MB	RAM
	IP/IPX/AT/DEC Plus	c3660-ds-mz	16 MB	64 MB	RAM
	Enterprise Plus	c3660-js-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 3DES	c3660-jk9s-mz	32 MB	96 MB	RAM
	Enterprise Plus IPsec 56	c3660-jk8s-mz	32 MB	96 MB	RAM
	Enterprise Plus/H.323 MCM	c3660-jsx-mz	32 MB	96 MB	RAM
	Enterprise/FW/IDS Plus IPsec 3DES	c3660-jk9o3s-mz	32 MB	96 MB	RAM
	Enterprise/FW/IDS Plus IPsec 56	c3660-jk8o3s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus	c3660-a3js-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 3DES	c3660-a3jk9s-mz	32 MB	96 MB	RAM
	Enterprise/SNASw Plus IPsec 56	c3660-a3jk8s-mz	32 MB	96 MB	RAM

1. The Cisco 3660 uses SDRAM.

Hardware Supported

Cisco IOS Release 12.2 XA supports the Cisco 3600 series routers:

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

For detailed descriptions of the new hardware features, see the [“New and Changed Information” section on page 16](#).

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

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
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
	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
Multiport 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 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
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 3620 and 3640 series platforms
	4 E1 data compression Advanced Integration Module (AIM-COMPR4)	Cisco 3660 series platforms
	Hardware encryption network module	All Cisco 3620 and 3640 series platforms
	Hardware encryption Advanced Integration Module (AIM)	All 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. 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 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) 3600 Software (c3600-is-mz), Version 12.2(2) XA5, 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) XA supports the same feature sets as Cisco IOS Release 12.2(2) T, but Cisco IOS Release 12.2(2) XA can include new features supported by the Cisco AS3600 series.



Note

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>.



Caution

Cisco IOS images with strong encryption (including, but not limited to, 168-bit Triple Data Encryption Standard [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 because of United States government regulations. When applicable, purchaser and 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, Table 4, and Table 5 list the features and feature sets supported by the Cisco 3620 router in Cisco IOS Release 12.2(2) XA5. Table 6, Table 7, and Table 8 list the features and feature sets supported by the Cisco 3640 router in Cisco IOS Release 12.2(2) XA5. Table 9, Table 10, and Table 11 list the features and feature sets supported by the Cisco 3660 routers in Cisco IOS Release 12.2(2) XA5. These tables all use 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)XA2 means a feature was introduced in 12.2(2) XA2.

Table 3 Feature List by Feature Set for the Cisco 3620 Router, Part 1 of 3

Features	In	Software Images by Feature Sets				
		IP Plus	IP Plus IPsec 56	IP/FW/IDS Plus IPsec 56	IP Plus IPsec 3DES	IP/FW/IDS Plus IPsec 3DES
Quality of Service						
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes
Voice Services						
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	Yes	No	No	No	No

Table 3 Feature List by Feature Set for the Cisco 3620 Router, Part 1 of 3 (continued)

Features	In	Software Images by Feature Sets				
		IP Plus	IP Plus IPsec 56	IP/FW/IDS Plus IPsec 56	IP Plus IPsec 3DES	IP/FW/IDS Plus IPsec 3DES
Inter-Domain Gatekeeper Security Enhancement	(2)XA	Yes	No	No	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	No	No	No

Table 4 Feature List by Feature Set for the Cisco 3620 Router, Part 2 of 3

Features	In	Software Images by Feature Sets					
		IP/IPX/ AT/DEC Plus	IP/IPX/AT/ DEC/FW/IDS Plus	IP/H.323	Enterprise Plus	Enterprise Plus IPsec 56	Enterprise/ FW/IDS Plus IPsec 56
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	No	Yes	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	No	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	No	No	Yes	Yes	No	No
Inter-Domain Gatekeeper Security Enhancement	(2)XA	No	No	Yes	Yes	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	Yes	No	No	No

Table 5 Feature List by Feature Set for the Cisco 3620 Router, Part 3 of 3

Features	In	Software Images by Feature Sets					
		Enterprise Plus IPsec 3DES	Enterprise/ FW/IDS Plus IPsec 3DES	Enterprise Plus/H.323 MCM	Enterprise/ SNASw Plus	Enterprise/ SNASw Plus IPsec 56	Enterprise/ SNASw Plus IPsec c 3DES
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes

Table 5 Feature List by Feature Set for the Cisco 3620 Router, Part 3 of 3 (continued)

Features	In	Software Images by Feature Sets					
		Enterprise Plus IPsec 3DES	Enterprise/FW/IDS Plus IPsec 3DES	Enterprise Plus/H.323 MCM	Enterprise/SNASw Plus	Enterprise/SNASw Plus IPsec 56	Enterprise/SNASw Plus IPsec c 3DES
H.323 Scalability and Interoperability Enhancements	(2)XA	No	No	Yes	No	No	Yes
Inter-Domain Gatekeeper Security Enhancement	(2)XA	No	No	Yes	No	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	Yes	No	Yes	Yes

Table 6 Feature List by Feature Set for the Cisco 3640 Router, Part 1 of 3

Features	In	Software Images by Feature Sets					
		IP Plus	IP Plus IPsec 56	IP/FW /IDS Plus IPsec 56	IP Plus IPsec 3DES	IP/FW/ IDS Plus IPsec 3DES	IP/IPX/ AT DEC Plus
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	Yes	No	No	No	No	No
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	Yes	No	No	No	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes

Table 7 Feature List by Feature Set for the Cisco 3640 Router, Part 2 of 3

Features	In	Software Images by Feature Sets					
		IP/IPX/AT/ DEC/FW /IDS Plus	IP/H.323	Enterprise Plus	Enterprise Plus IPsec 56	Enterprise/ FW/IDS Plus IPsec 56	Enterprise Plus IPsec 3DES
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	No	Yes	Yes	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	No	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	No	Yes	Yes	No	No	No
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	No	Yes	Yes	No	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	Yes	No	No	No	No

Table 8 Feature List by Feature Set for the Cisco 3640 Router, Part 3 of 3

Features	In	Software Images by Feature Sets				
		Enterprise/ FW/IDS/ Plus IPsec 3DES	Enterprise Plus/H.323 MCM	Enterprise/ SNASw Plus	Enterprise/ SNASw Plus IPsec 56	Enterprise/ SNASw Plus IPsec 3DES
Quality of Service						
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes
Voice Services						
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	No	Yes	No	No	No
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	No	Yes	No	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	Yes	No	No	No

Table 9 Feature List by Feature Set for the Cisco 3660 Router, Part 1 of 3

Features	In	Software Images by Feature Sets					
		IP Plus	IP Plus IPsec 56	IP/FW/IDS IPsec 56	IP/H323	IP Plus IPsec 3DES	IP/FW/IDS Plus IPsec 3 DES
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	No	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	No	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	Yes	No	No	Yes	No	No
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	No	No	No	Yes	No	No
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	No	Yes	No	No

Table 10 Feature List by Feature Set for the Cisco 3660 Router, Part 2 of 3

Features	In	Software Images by Feature Sets					
		IP/IPX/AT/ DEC Plus	IP/IPX/AT/ DEC/FW/ IDS Plus	Enterprise/ SNASW Plus	Enterprise/ SNASW Plus IPsec 56	Enterprise/ SNASW Plus IPsec 3DES	Enterprise Plus
Quality of Service							
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes
Voice Services							
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	No	No	No	No	No	Yes
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	No	No	No	No	No	Yes
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	No	No	No	No

Table 11 Feature List by Feature Set for the Cisco 3660 Router, Part 3 of 3

Features	In	Software Images by Feature Sets				
		Enterprise Plus IPsec 56	Enterprise Plus IPsec 3DES	Enterprise/ FW/IDS Plus IPsec 56	Enterprise FW/IDS/ Plus IPsec 3DES	Enterprise Plus/H323 MCM
Quality of Service						
Call Admission Control for H.323 VoIP Gateways	(2)XA	Yes	Yes	Yes	Yes	Yes
Voice Services						
Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager	(2)XA	Yes	Yes	Yes	Yes	Yes
H.323 Scalability and Interoperability Enhancements	(2)XA	No	No	No	No	Yes
Inter-Domain Gatekeeper Security Enhancement (CSCds35228)	(2)XA	No	No	No	No	Yes
Location Confirmation Enhancements for Alternate Endpoints	(2)XA	No	No	No	No	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) XA5.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XA5

There are no new hardware and software features supported in Cisco IOS Release 12.2(2) XA5.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XA4

There are no new hardware and software features supported in Cisco IOS Release 12.2(2) XA4.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XA3

Cisco IOS Release 12.2(2) XA3 does not support the Cisco 3600 series.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XA2

Cisco IOS Release 12.2(2) XA2 does not support the Cisco 3600 series.

New Hardware and Software Features in Cisco IOS Release 12.2(2) XA1

There are no new hardware and software features supported in Cisco IOS Release 12.2(2) XA1.

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

There are no new hardware features supported in Cisco IOS Release 12.2(2) XA.

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

The following new software features are supported by the Cisco 3600 series for Cisco IOS Release 12.2(2) XA:

Call Admission Control for H.323 VoIP Gateways

Before the call admission control feature, gateways did not have a mechanism to gracefully prevent calls from entering when certain resources were not available to process the call. This causes the new call to fail with unreported behavior, and could potentially cause the calls that are in progress to have quality related problems.

This feature set provides the ability to support resource-based call admission control processes. These resources include system resources such as CPU, memory, and call volume, and interface resources such as call volume.

If system resources are not available to admit the call, two kinds of actions are provided: system denial (which busyouts all of T1 or E1) or per call denial (which disconnects, hairpins, or plays a message or tone). If the interface-based resource is not available to admit the call, the call is dropped from the session protocol (such as H.323).

User Selected Threshold

This feature allows a user to configure call admission thresholds for local resources as well as memory and CPU resources. The list of local resources that are configured for call admission are described in the command description of “call threshold poll-interval.”

With the call admission command, a user is allowed to configure two thresholds, high and low, for each resource. Call treatment is triggered when the current value of a resource goes beyond the configured high. The call treatment remains in effect until current resource value falls below the configured low. Having high and low thresholds prevents call admission flapping and provides hysteresis in call admission decision making.

With the **call spike** command, a user is allowed to configure the limit for incoming calls during a specified time period. A call spike is the term for when a large number of incoming calls arrive from the PSTN in a very short period of time (for example: 100 incoming calls in 10 milliseconds).

Configurable Call Treatment

With the call treatment command, users are allowed to select how the call should be treated when local resources are not available to handle the call. For example, when the current resource value for any one of the configured triggers for call admission has reached beyond the configured threshold, the call treatment choices are as follows:

- TDM hairpinning — Hairpins the calls through the POTS dial peer.
- Reject — Disconnects the call.
- Play message or tone — Plays a configured message or tone to the user.

Resource Unavailable Signaling

This feature set supports the autobusyout feature where channels are busied out when local resources are not available to handle the call.

Autobusyout is supported on both channel associated signaling (CAS) and Primary Rate Interface (PRI) channels.

- CAS — Uses busyout to signal “local resources are unavailable.”
- PRI — Uses either service messages or disconnect with correct cause-code to signal “resources are unavailable.”

PSTN Fallback

The goal of PSTN fallback is to monitor congestion in the IP network and either redirect calls to the PSTN or reject calls based on the network congestion. Calls can be re-routed to an alternate IP destination or to the PSTN if the IP network is found unsuitable for voice traffic at that time. The user defines the congestion thresholds based on the configured network. This functionality enables the service provider to give a reasonable guarantee about the quality of the conversation to their VoIP users at the time of call admission.

**Note**

PSTN fallback does not provide assurances that a VoIP call that proceeds over the IP network is protected from the effects of congestion. This is the function of the other Quality of Service (QoS) mechanisms such as IP Real-Time Transport Protocol (RTP) priority or low latency queuing (LLQ).

PSTN fallback includes the following features:

- Offers flexibility to define the congestion thresholds based on the network.
 - Defines a threshold based on Calculated Planning Impairment Factor (ICPIF), which is derived as part of International Telecommunication Union (ITU) G.113.
 - Defines a threshold based solely on packet delay and loss measurements.
- Uses Response Time Reporter (RTR) probes to provide packet delay, jitter, and loss information for the relevant IP addresses. Based on the packet loss, delay, and jitter encountered by these probes, an ICPIF or delay and loss values are calculated.
- Is supported by calls of any codec. Only G.729 and G.711 have accurately simulated probes. Calls of all other codecs are emulated by a G.711 probe.

For further details, please see

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xa/122xa_2/ft_pfavb.htm.

H.323 Scalability and Interoperability Enhancements

The Cisco H.323 Scalability and Interoperability Enhancements feature upgrades the Cisco H.323 Gatekeeper (GK) and Cisco H.323 Gateway to comply with H.323 Version 3. The enhancements in this release include:

- Support for mandatory H.323 Version 3 elements in the gateway and GK, including:
 - multipleCalls
 - maintainConnection
 - alternateTransportAddresses
 - useSpecifiedTransport
- Support for H.225 call signalling over UDP.
- Address resolution using border elements (BE).
- Support for bandwidth request (BRQ) messages.
- Support for concurrent calls over a single H.225 call signalling channel.

For further details, please see

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xa/122xa_2/ft323sca.htm.

Inter-Domain Gatekeeper Security Enhancement (CSCds35228)

The Inter-Domain Gatekeeper Security Enhancement provides a means of authenticating and authorizing H.323 calls between the administrative domains of Internet Telephone Service Providers (ITSPs).

For further details, please see

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xa/122xa_2/ft_ctoke.htm.

Location Confirmation Enhancements for Alternate Endpoints

The Location Confirmation (LCF) Enhancements for Alternate Endpoints feature allows the Cisco IOS Gatekeeper (GK) to collect alternate routes to endpoints indicated by multiple LCF responses and convey the routes to the requesting (calling) endpoint. Currently, the GK sends LRQ messages to multiple remote zones. Endpoints in the zones return LCF responses to the GK. The LCF responses indicate an alternate route to that endpoint. The GK determines the best route to an endpoint based on which route has the lowest cost and the highest priority. The GK then forwards that route information to the requesting endpoint. However, the GK does not provide to the requesting endpoint all of the route information it received in LCF messages from the endpoints; it only provides the best routes.

The LCF Enhancements for Alternate Endpoints feature allows the GK to present more route information to the requesting endpoint, therefore providing alternate routes to endpoints that can be used if the best route is busy or does not provide any alternate routes. The LCF Enhancements for Alternate Endpoints feature can be used on GKs that originate LRQs as well as directory GKs that forward LRQ messages.

The LCF Enhancements for Alternate Endpoints feature provides a new timer that you can configure to choose the number of alternate routes you want the GK to collect. Upon the timer expiration, the resolved address and alternate endpoints from all the LCFs received by the GK will be consolidated in a single list and sent as alternate endpoints in the ACF or LCF messages from the GK. If this feature is not enabled, the GK stops collecting routes if the best response is received before the LRQ timer window expires. After you enable the feature, the GK only stops collecting routes after the best response is received and the configured number of alternate routes have been gathered.

For further details, please see

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xa/122xa_2/ftlcfep1.htm.

Cisco 2600 and 3600 Routers MGCP Voice Gateway Interoperability with Cisco CallManager

This feature provides MGCP support to IOS gateway to furnish supplementary services with CallManager.

For further details, please see

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122limit/122x/122xa/122xa_2/ft_mgccm.htm.

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 the following URL:

<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 12](#).

Table 12 *Deprecated and Replacement MIBs*

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



Note

Note Cisco Management Information Base (MIB) User Quick Reference is no longer published. If you have an account with CCO, you can find the current list of MIBs supported by Cisco. To reach the Cisco Network Management Toolkit, go to CCO, press Login, and click to Software Center: Network Mgmt Products: Cisco Network Management Toolkit: Cisco MIB.

Caveats for Cisco IOS Release 12.2 XA

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) XA1.

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) XA1 are listed in [Table 13](#). For details about a particular caveat, go to Bug Toolkit at:

http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

To access this location, 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.



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/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Open Caveats—Cisco IOS Release 12.2(2)XA5

There are no open caveats specific to Cisco IOS Release 12.2(2)XA5 that require documentation in the release notes.

Resolved Caveats—Cisco IOS Release 12.2(2)XA5

All the caveats listed in [Table 13](#) are resolved in Cisco IOS Release 12.2(2)XA5. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- SNMP

Table 13 Resolved Caveats for Release 12.2(2) XA5

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) XA4

All the caveats listed in [Table 14](#) are resolved in Cisco IOS Release 12.2(2) XA4. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 14 Open Caveats for Release 12.2(2) XA4

Caveat ID Number	Description
CSCdv52674	isis ITH encapsulation failure on BRI i/f with ppp encapsulation
CSCdu65149	FGD does not work on c3660, info-digits not stripped
CSCdv16371	SIP: ALIGN-1-FATAL and BUS ERROR at m32_mark_ar_in_progress
CSCdu12288	ATM IMA: ATM VC config under vc-class is lost after reload
CSCdu13345	VoATM call with g729 should use 15K of bandwidth, not 13K
CSCdv76445	3660 does not register with Gatekeeper after reload
CSCdv06334	align corrections at tcp_removeackedsendsegments
CSCdv61151	OSPF adj - Dead timer expired : Too many DBD retransmission

Resolved Caveats—Cisco IOS Release 12.2(2) XA4

All the caveats listed in [Table 15](#) are resolved in Cisco IOS Release 12.2(2) XA4. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 15 Resolved Caveats for Release 12.2(2) XA4

Caveat ID Number	Description
CSCdv39711	Outbound modem calls fail with %CSM-1-NO_VDEV: No modems associated:
CSCdu06427	Cleanup fix for CSCdt11503
CSCdv56410	Incorrect DiscwithPI handling causes memory leak and crash
CSCdv65099	OLI-SIP:5400 platform fails to pass valid FG-D oli information
CSCdu81936	Received gratuitous ARP overwrites interface MAC address in ARP tbl
CSCdv42346	all DSLs except primary advertised as OOS in GSM after RLM reinit
CSCdv43578	SIP: Incorrect Timestamps in SIP msgs
CSCdv48261	improvements to dynamic acls for ios fw

Open and Resolved Caveats—Cisco IOS Release 12.2(2) XA3

Cisco IOS Release 12.2(2) XA3 does not support the Cisco 3600 series.

Open and Resolved Caveats—Cisco IOS Release 12.2(2) XA2

Cisco IOS Release 12.2(2) XA2 does not support the Cisco 3600 series.

Open Caveats—Cisco IOS Release 12.2(2) XA1

All the caveats listed in [Table 16](#) are open in Cisco IOS Release 12.2(2) XA1. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 16 Open Caveats for Release 12.2(2) XA1

DDTS Number	Description
CSCdu65149	FGD does not work on c3660, info-digits not stripped
CSCdu88067	Digits duplicated or missed in the H245 DTMF relay testing
CSCdu67112	No more ring descriptor seen with codec g723r63
CSCdu73793	Call gets disconnected after Call Proc when doing overlap sending
CSCdu74918	Second span doesn't restore after serial interface is restored
CSCdv14023	spurious memory access at dsx1_setup_pri for each T1 after reload
CSCdv14228	ISDN service state OOS although all T1 controllers up, no errors
CSCdu44402	ISDN holding CCBs and call confirm err after interface shut/noshut

Resolved Caveats—Cisco IOS Release 12.2(2) XA1

All the caveats listed in [Table 17](#) are resolved in Cisco IOS Release 12.2(2) XA1. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 17 Resolved Caveats for Release 12.2(2) XA1

DDTS Number	Description
CSCdu46942	NU tone is not heard on ivr calls
CSCdt59455	vtty-async virtual-template doesn't work with no peer default ip addr
CSCuk21553	telnet client fails to perform DNS lookup of hostname
CSCdu70661	all channels except 24th channel stay busied out after configuration
CSCdu08214	Calltracker MIB returns NULL for userid when DNIS/ANI is not present
CSCdt93862	Access level issue while using Web interface
CSCdu62721	Candidate fails to bring up B-channels (not du42219)
CSCdu59975	Glare Conditions are not detected in vtsp
CSCdu57066	CONN_LOST event needs to be handled in ACC_FASTSTART_PROGRESS state
CSCdu56186	H323 GW:RSVP and Signal only call cleared by TGW after ACF received
CSCdu82224	V120 calls were mis-identified as PIAFS calls
CSCdu87080	Attach domain name to TGCP
CSCdv01493	NAS Send MLP bundle ID for non-MLP VPDN call.
CSCdu09342	ISDN network-side continuously sends RESTART after user-side reloads
CSCdu30345	DSP stopped collection digits - phone # with 0 length
CSCdu72345	Teststopper: Ping fails on BRI I/F after shut & no shut on I/F

Table 17 Resolved Caveats for Release 12.2(2) XA1

DDTS Number	Description
CSCdu27688	Traceback is ssaFacility
CSCdu25491	Bartok fax fails occasionally when making 5 simultaneous calls
CSCdu36732	Hung MGCP connection with 911 calls
CSCdu65008	CDAPI disconnecting call for unknown reason
CSCdt92898	Router crashes if service-policy output applied on intf w/ VoFR
CSCdu00500	H.323 Gatekeeper MIB holds only 10 zones maximum
CSCdv14134	*TS* 2600 crashes on applying map-class to frame-relay interface

Open Caveats—Cisco IOS Release 12.2(2) XA

All the caveats listed in [Table 18](#) are open in Cisco IOS Release 12.2(2) XA. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

Table 18 Open Caveats for Release 12.2(2) XA

DDTS Number	Description
CSCdu29508	Router crashed with dsp 3.6.8 firmware
CSCdu46752	Cisco 3640 router crash
CSCdu38445	ISDN BRI :isdn_is_bchannel_available: no free B channels
CSCdt84774	Crash and alignment error at tcp_removeackedsendsegments on Cisco 3600
CSCdt11921	Ping failed on interfaces when fast switching is configured

Resolved Caveats—Cisco IOS Release 12.2(2) XA

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

Related Documentation

The following sections describe the documentation available for Cisco IOS Release 12.2 T. These documents consist of 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 on Cisco.com and on the Documentation CD-ROM.

Use these release notes with these documents:

- [Release-Specific Documents, page 25](#)
- [Platform-Specific Documents, page 25](#)
- [Feature Modules, page 26](#)
- [Cisco IOS Software Documentation Set, page 26](#)

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 12.2 T*

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 XA](#)” section on page 20

As a supplement to the caveats listed in [Caveats for Cisco IOS Release 12.2 XA](#) 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/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Platform-Specific Documents

These documents are available for the Cisco AS3600 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 supported by Cisco IOS Release 12.2(2) XA 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 in 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

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

[Table 19](#) lists the contents of the Cisco IOS Release 12.2 software documentation set, which is available in electronic form and in printed form if ordered.

**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 19 Cisco IOS Release 12.2 Documentation Set

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> • <i>Cisco IOS Configuration Fundamentals Command Reference</i> 	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 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
<ul style="list-style-type: none"> • <i>Cisco IOS Dial Technologies Configuration Guide</i> • <i>Cisco IOS Dial Technologies Command Reference</i> 	Preparing for Dial Access Modem and Dial Shelf Configuration and Management ISDN Configuration Signaling Configuration Dial-on-Demand Routing Configuration Dial Backup Configuration Dial Related Addressing Service Virtual Templates, Profiles, and Networks PPP Configuration Callback and Bandwidth Allocation Configuration Dial Access Specialized Features Dial Access Scenarios

Table 19 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i> 	LAN Interfaces Serial Interfaces Logical Interfaces
<ul style="list-style-type: none"> • <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 and Services IP Routing Protocols IP Multicast
<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> 	Apollo Domain Banyan VINES DECnet ISO CLNS XNS
<ul style="list-style-type: none"> • <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 Debit Card Applications TCL IVR Applications Configuring Media Gateway Control Protocol and Related Protocols SIP
<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> 	Packet Classification Congestion Management Congestion Avoidance Policing and Shaping Signaling Link Efficiency Mechanisms
<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 Supported AV Pairs

Table 19 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> • <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
<ul style="list-style-type: none"> • <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i> 	ATM Broadband Access Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> • <i>Cisco IOS Mobile Wireless Configuration Guide</i> • <i>Cisco IOS Mobile Wireless Command Reference</i> 	General Packet Radio Service
<ul style="list-style-type: none"> • <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
<ul style="list-style-type: none"> • <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 T-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 T-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>

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<http://www.cisco.com/go/subscription>
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San Jose, CA 95134-9883

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

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- 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.

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<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.

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