



# Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2(4)YA

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**October 20, 2003**

These release notes describe new features and significant software components for the Cisco 1700 series routers that support Cisco IOS Release 12.2 T, up to and including Release 12.2(4)YA7. These release notes are updated as needed to describe new memory requirements, new features, new hardware support, software platform deferrals, microcode or modem code changes, related document changes, and any other important changes. Use these release notes with the [Cross-Platform Release Notes for Cisco IOS Release 12.2 T](#) located on CCO and the Documentation CD.

For a list of the software caveats that apply to Release 12.2(4)YA7, refer to the section “[Caveats](#)” and to the online [Caveats for Cisco IOS Release 12.2 T](#) document. The caveats document is updated for every 12.2 T maintenance release and is located on Cisco Connection Online (CCO) and the Documentation CD.

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# System Requirements

This section describes the system requirements for Release 12.2(4)YA7 and includes the following sections:

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## Memory Requirements

This section describes the memory requirements for the Cisco IOS feature sets supported by Cisco IOS Release 12.2(4)YA7 on the Cisco 1700 series routers.

**Table 1** Recommended Memory for the Cisco 1700 Series Routers

Platform	Image Name	Feature Set	Image	Flash Memory	DRAM Memory	Runs from
Cisco 1710 Routers	Cisco 1710 IOS IP/IPX/AT/IBM/FW/IDS Plus IPsec 3DES	IP/IPX/AT/IBM/FW/IDS Plus IPsec 3DES	c1710-bk9no3r2sy-mz	16 MB	48 MB	RAM
	Cisco 1710 IOS IP/FW/IDS Plus IPsec 3DES	IP/FW/IDS Plus IPsec 3DES	c1710-k9o3sy-mz	8 MB	48 MB	RAM
Cisco 1720, Cisco 1721, Cisco 1750, Cisco 1751, and Cisco 1760	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/FW/IDS Plus IPsec 56	IP/ADSL/IPX/AT/IBM/FW/IDS Plus IPsec 56	c1700-bk8no3r2sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/FW/IDS Plus IPsec 3DES	IP/ADSL/IPX/AT/IBM/FW/IDS Plus IPsec 3DES	c1700-bk9no3r2sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM Plus	IP/ADSL/IPX/AT/IBM Plus	c1700-bnr2sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/IPX/AT/IBM	IP/IPX/AT/IBM	c1700-bnr2y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL/FW/IDS Plus IPsec 56	IP/ADSL/FW/IDS Plus IPsec 56	c1700-k8o3sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus IPsec 56	IP/ADSL Plus IPsec 56	c1700-k8sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/FW/IDS Plus IPsec 3DES	IP/ADSL/FW/IDS Plus IPsec 3DES	c1700-k9o3sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus IPsec 3DES	IP/ADSL Plus IPsec 3DES	c1700-k9sy7-mz	16 MB	48 MB	RAM

**Table 1** Recommended Memory for the Cisco 1700 Series Routers

Platform	Image Name	Feature Set	Image	Flash Memory	DRAM Memory	Runs from
Cisco 1720, Cisco 1721, Cisco 1750, Cisco 1751, and Cisco 1760 routers (continued)	Cisco 1700 IOS IP/ADSL/ IPX/FW/IDS Plus	IP/ADSL/IPX/FW/ IDS Plus	c1700-no3sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/IPX	IP/IPX	c1700-ny-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/FW/IDS	IP/FW/IDS	c1700-o3y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus	IP/ADSL Plus	c1700-sy7-mz	8 MB	48 MB	RAM
	Cisco 1700 IOS IP	IP	c1700-y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL	IP/ADSL	c1700-y7-mz	8 MB	32 MB	RAM
Cisco 1750, Cisco 1751, and Cisco 1760	Cisco 1700 IOS IP/ADSL/ IPX/AT/IBM/Voice/FW/ IDS Plus IPsec 56	IP/ADSL/IPX/AT/ IBM/Voice/FW/IDS Plus IPsec 56	c1700-bk8no3r2sv3y7-mz	32 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/ IPX/AT/IBM/Voice/FW/ IDS Plus IPsec 3DES	IP/ADSL/IPX/AT/ IBM/Voice/FW/IDS Plus IPsec 3DES	c1700-bk9no3r2sv3y7-mz	32 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice/FW/IDS Plus IPsec 56	IP/ADSL/Voice/FW/ IDS Plus IPsec 56	c1700-k8o3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice Plus IPsec 56	IP/ADSL/Voice Plus IPsec 56	c1700-k8sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice/FW/IDS Plus IPsec 3DES	IP/ADSL/Voice/FW/ IDS Plus IPsec 3DES	c1700-k9o3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice Plus IPsec 3DES	IP/ADSL/Voice Plus IPsec 3DES	c1700-k9sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ IPX/Voice/FW/IDS Plus	IP/ADSL/IPX/Voice/ FW/IDS Plus	c1700-no3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice/FW/IDS Plus	IP/ADSL/Voice/FW/ IDS Plus	c1700-o3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ Voice Plus	IP/Voice Plus	c1700-sv3y-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/ Voice Plus	IP/ADSL/Voice Plus	c1700-sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ VOX Plus	IP/VOX Plus	c1700-sv8y-mz	16 MB	48 MB	RAM
	Cisco 1751 and Cisco 1760	Cisco 1700 IOS IP/ADSL/ IPX/AT/IBM/VOX/FW/ IDS Plus IPsec 56	IP/ADSL/IPX/AT/ IBM/VOX/FW/IDS Plus IPsec 56	c1700-bk8no3r2sv8y7-mz	32 MB	64 MB
Cisco 1700 IOS IP/ADSL/ IPX/AT/IBM/VOX/FW/ IDS Plus IPsec 3DES		IP/ADSL/IPX/AT/ IBM/VOX/FW/IDS Plus IPsec 3DES	c1700-bk9no3r2sv8y7-mz	32 MB	64 MB	RAM

Table 1 Recommended Memory for the Cisco 1700 Series Routers

Platform	Image Name	Feature Set	Image	Flash Memory	DRAM Memory	Runs from
Cisco 1751 and Cisco 1760 (continued)	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS Plus IPsec 56	IP/ADSL/VOX/FW/IDS Plus IPsec 56	c1700-k8o3sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/VOX Plus IPsec 56	IP/ADSL/VOX Plus IPsec 56	c1700-k8sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS Plus IPsec 3DES	IP/ADSL/VOX/FW/IDS Plus IPsec 3DES	c1700-k9o3sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/VOX Plus IPsec 3DES	IP/ADSL/VOX Plus IPsec 3DES	c1700-k9sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/VOX/FW/IDS Plus	IP/ADSL/IPX/VOX/FW/IDS Plus	c1700-no3sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS Plus	IP/ADSL/VOX/FW/IDS Plus	c1700-o3sv8y7-mz	16 MB	64 MB	RAM
	Cisco 1700 IOS IP/ADSL/VOX Plus	IP/ADSL/VOX Plus	c1700-sv8y7-mz	16 MB	64 MB	RAM

## Hardware Supported

Cisco IOS Release 12.2(4)YA7 supports the following Cisco 1700 series routers:

- Cisco 1710 Routers
- Cisco 1720 Routers
- Cisco 1721 Router
- Cisco 1750, 1750-2V, and 1750-4V Routers
- Cisco 1751 and 1751-V Routers
- Cisco 1760 and 1760-V Routers

The Cisco 1710, 1720, and 1721 routers run data images only. The Cisco 1750, 1750-2V, and 1750-4V routers run data or data-and-voice images, providing analog voice support. Cisco 1751, 1751-V, 1760, and 1760-V routers run data or data-and-voice images, providing digital and analog voice support.

For detailed descriptions of new hardware features and which features are supported on each router, see the “[New and Changed Information](#)” section on page 8. For descriptions of existing hardware features and supported modules, see the hardware installation guides, configuration and command reference guides, and additional documents specific to Cisco 1700 series routers, which are available on Cisco.com and the Documentation CD at the following location:

[http://www.cisco.com/univercd/cc/td/doc/product/access/acs\\_mod/1700/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/1700/index.htm)

This URL is subject to change without notice. If it changes, point your web browser to CCO, and click the following path:

**Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1700 Series Routers: <platform\_name>**

## Determining Your Software Release

To determine the version of Cisco IOS software currently running on your Cisco 1700 series router, log in to the router and enter the **show version EXEC** command. The following sample output from the **show version** command indicates the version number on the second output line:

```
router> show version
Cisco Internetwork Operating System Software
IOS (tm) C1700 Software (C1700-Y-MZ), Version 12.2(4)YA6, EARLY DEPLOYMENT RELEASE SOFTWARE
(fc1)
Synched to technology version 12.2(5.4)T
```

## Upgrading to a New Software Release

For general information about upgrading to a new software release, see *Software Installation and Upgrade Procedures* located at: [http://www.cisco.com/warp/public/130/upgrade\\_index.shtml](http://www.cisco.com/warp/public/130/upgrade_index.shtml).

## Feature Sets

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. Release 12.2(4)YA7 supports the same feature sets as Releases 12.2 and 12.2 T, but Release 12.2(4)YA7 include new features supported by the Cisco 1700 series routers.



### Caution

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Cisco IOS images with strong encryption (including, but not limited to 168-bit (3DES) data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders can be denied or subject to delay due to United States 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](mailto:export@cisco.com).

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Table 2 through Table 5 list the features and feature sets supported in Cisco IOS Release 12.2(4)YA7:

- Table 2—Cisco 1710 routers
- Table 3—Cisco 1720, 1721, 1750, 1751, and 1760 routers
- Table 4—Cisco 1750, 1751, and 1760 routers
- Table 5—Cisco 1751 and 1760 routers

The tables 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, “12.2(4)YA” means the feature was introduced in 12.2(4)YA. If a cell in this column is empty, the feature was included in a previous release or the initial base release.

**Note**

These feature set tables only contain a selected list of features, which are cumulative for Release 12.2(4)*nn* early deployment releases only (*nn* identifies each early deployment release). The tables do not list all features in each image—additional features are listed in the [Cross-Platform Release Notes for Cisco IOS Release 12.2 T](#) and Release 12.2 T Cisco IOS documentation.

**Table 2** Feature List by Feature Set for Cisco 1710 Routers

Feature	In	Feature Set	
		IP IPX/AT/IBM/ FW/IDS Plus IPSec 3DES	IP FW/IDS Plus IPSec 3DES
Security			
Easy VPN	12.2(4)YA	Yes	Yes

**Table 3** Feature List by Feature Set for Cisco 1720, 1721, 1750, 1751, and 1760 Routers, Part 1 of 2

Feature	In	Feature Set					
		IP ADSL/ IPX/ AT/IBM/FW/ IDS Plus IPSec 56	IP ADSL/ IPX/AT/ IBM/FW/IDS Plus IPSec 3DES	IP ADSL/ IPX/AT/ IBM Plus	IP/IPX/ AT/IBM	IP ADSL/FW/ IDS Plus IPSec 56	IP ADSL Plus IPSec 56
Security							
Easy VPN	12.2(4)YA	No	Yes	No	No	No	No

**Table 3** Feature List by Feature Set for Cisco 1720, 1721, 1750, 1751, and 1760 Routers, Part 2 of 2

Feature	In	Feature Set							
		IP ADSL/FW/ IDS Plus IPSec 3DES	IP ADSL Plus IPSec 3DES	IP ADSL/IPX/ FW/IDS Plus	IP/IPX	IP/FW/ IDS	IP ADSL Plus	IP	IP/ ADSL
Security									
Easy VPN	12.2(4)YA	Yes	No	No	No	No	No	No	No

**Table 4** Feature List by Feature Set for Cisco 1750, 1751, and 1760 Routers, Part 1 of 2

Feature	In	Feature Set					
		IP ADSL/ IPX/AT/IBM/ Voice/FW/IDS Plus IPSec 56	IP ADSL/ IPX/ AT/IBM/Voice/ FW/IDS Plus IPSec 3DES	IP ADSL/ Voice/FW/ IDS Plus IPSec 56	IP ADSL/ Voice Plus IPSec 56	IP ADSL/ Voice/FW/ IDS Plus IPSec 3DES	IP ADSL/ Voice Plus IPSec 3DES
Security							
Easy VPN	12.2(4)YA	No	Yes	No	No	Yes	No

**Table 4** Feature List by Feature Set for Cisco 1750, 1751, and 1760 Routers, Part 2 of 2

Feature	In	Feature Set				
		IP ADSL/ IPX/ Voice/FW/IDS Plus	IP ADSL/Voice/ FW IDS Plus	IP Voice Plus	IP ADSL/ Voice Plus	IP VOX Plus
Security						
Easy VPN	12.2(4)YA	No	No	No	No	No

**Table 5** Feature List by Feature Set for Cisco 1751 and 1760 Routers, Part 1 of 2

Feature	In	Feature Set			
		IP ADSL/ IPX/AT/ IBM/ VOX/ FW/ IDS Plus IPSec 56	IP ADSL/ IPX/AT/ IBM/VOX/FW/ IDS Plus IPSec 3DES	IP ADSL/VOX/ FW/IDS Plus IPSec 56	IP ADSL/VOX Plus IPSec 56
Security					
Easy VPN	12.2(4)YA	No	Yes	No	No

**Table 5** Feature List by Feature Set for Cisco 1751 and 1760 Routers, Part 2 of 2

Feature	In	Feature Set				
		IP ADSL/VOX/ FW/IDS Plus IPSec 3DES	IP ADSL/ VOX Plus IPSec 3DES	IP ADSL/ IPX/ VOX/FW/IDS Plus	IP ADSL/ VOX/FW/IDS Plus	IP ADSL/ VOX Plus
Security						
Easy VPN	12.2(4)YA	Yes	No	No	No	No

# New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 1700 series routers for Release 12.2(4)YA7.

## New Hardware Features in Release 12.2(4)YA

The following sections describe the new hardware features supported by the Cisco 1700 series routers for Release 12.2(4)YA.

### Cisco 1721 Router

The Cisco 1721 data-only modular access router is an enhanced Cisco 1720 router that provides higher performance, additional functionality, and increased memory capacity. The router supports WAN access, VPN, and firewall technology for secure Internet, intranet, and extranet access. Cisco 1721 routers also support standards-based Institute of Electrical and Electronic Engineers (IEEE) 802.1Q VLAN routing, which enables enterprises to set up and route between multiple VLANs for additional security in an internal corporate network.

The Cisco 1721 router includes the following key hardware features:

- Support for virtual private networking.
- One internal expansion slot—Supports hardware-assisted services such as encryption (up to T1/E1 speeds)
- Modular architecture.
- Network device integration.

The Cisco 1721 router has the following hardware components:

- One integrated, autosensing 10/100 Fast Ethernet port, which operates in full- or half-duplex mode (with manual override available), and supports IEEE 802.1Q VLAN features.
- Two WAN interface card (WIC) slots.
- One auxiliary (AUX) port (up to 115.2 kbps asynchronous serial).
- One console port.
- Flash memory: 16 MB default.
- DRAM: 32 MB default, expandable to 96 MB.
- RISC Processor—Motorola MPC860P PowerQUICC at 50 MHz.
- Desktop form factor.
- Locking power connectors.
- One security slot that supports Kensington or similar lockdown equipment.

Cisco 1721 routers support any combination of one or two of the following WICs:

- WIC-1T—One-port high speed serial (sync/async)(T1/E1).
- WIC-2T—Two-port high speed serial (sync/async) (T1/E1).
- WIC-2A/S—Two-port low speed serial (sync/async) (up to 128 kbps).
- WIC-1B-S/T—One-port ISDN BRI S/T.



- WIC-1B-U—One-port ISDN BRI U with integrated NT1.
- WIC-1DSU-56K4—One-port integrated 56/64 kbps 4-wire DSU/CSU.
- WIC-1DSU-T1—One-port integrated T1 / Fractional T1 DSU/CSU.
- WIC-1ADSL—One-port asymmetric digital subscriber line.
- WIC-1ENET—One-port 10Base-T Ethernet interface.
- WIC-1G.SHDSL—One-port G-Standard High bit-rate Digital Subscriber Loop.

## New Software Features in Release 12.2(4)YA

The following sections describe the new software features supported by the Cisco 1700 series routers for Release 12.2(4)YA.

### Cisco Easy VPN Client

Applications for routers (and other forms of broadband access devices) that provide high-performance connections to the Internet often require the security of virtual private network (VPN) connections with a high level of access authentication and the capability to encrypt data between two endpoints. However, establishing a VPN connection between two routers can be complex, and typically requires detailed coordination between network administrators to configure the router VPN parameters.

The Cisco Easy VPN client feature eliminates much of this work by implementing the Cisco Unity Client protocol, which allows most VPN parameters to be defined at a VPN 3000 concentrator, acting as an IPSec server. After network administrators configure the IPSec server, they can create a VPN connection with minimal configuration on an IPSec client (such as a Cisco 1700 series router). When the IPSec client initiates the VPN tunnel connection, the IPSec server transmits the IPSec policies to the IPSec client and creates the corresponding VPN tunnel connection.

## New Software Features in Release 12.2(4)T

For information regarding the features supported in Cisco IOS Release 12.2 T, refer to the Cross-Platform Release Notes and New Feature Documentation links at the following location on CCO:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/xprn122t/index.htm>

This URL is subject to change without notice. If it changes, point your web browser to CCO, and click the following path:

**Service & Support: Technical Documents: Cisco IOS Software: Release 12.2: Release Notes: Cross-Platform Release Notes (Cisco IOS Release 12.2T)**

## Limitations

Release 12.2(4)YA7 does not support Global system for mobile communication over frame relay (GSM-FR) on Cisco 1700 series routers on the Cisco 1700 series routers. (Also, see the “[Caveats](#)” section on page 11.)

## Important Notes

The following sections contain important notes about Cisco IOS Release 12.2(4)YA7 that can apply to the Cisco 1700 series routers. (Also, see the “[Caveats](#)” section on page 11.)

### NT Firmware Upgrade to ASW3\_8\_129 for the ADSL Physical-Layer System

Cisco IOS Release 12.2(4)YA and above requires an upgrade to Alcatel Microelectronics ASW3\_8\_129 firmware, which is an upgraded release of the NT firmware for the ADSL physical-layer system. The firmware implements a multi-mode modem that operates according to the ANSI T1.413, ITU G.992.1 and ITU G.992.2 ADSL standards. The firmware upgrade is a maintenance release of the ADSL-ASW\_R3\_x\_x family, to incorporate support for single-line Utopia platforms.

The operation of the ASW3\_8\_129 runtime software is described in detail in the *CTRL Interface Specification 3.10* available on Cisco.com and the Documentation CD at the following location:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/1700/1700ya/alcatlfw.pdf>

This URL is subject to change without notice. If it changes, point your web browser to CCO, and click the following path:

[Service and Support: Technical Documents: Cisco IOS Software: Release 12.2: Release Notes: Cisco 1700 Series Routers: Cisco 1700 Series - Release 12.2\(4\)YA: Alcatel Modem Firmware ASW\\_3\\_8\\_129 Release Notes](#)

### Fan Operation in Cisco 1700 Series Routers

Cisco 1760 and 1760-V router fans are always on and Cisco 1710 routers do not contain a fan. However, the fans in Cisco 1720, 1721, 1750, and 1751 routers stay off until thermally activated.

### Flash defaults to Flash:1 on Multipartition Flash

When using a multipartition flash card, the various flash partitions are referred to as “flash:1:”, “flash:2:”, etc. If you specify only “flash” in a multipartition flash, the parser assumes “flash:1:.” For example, if you enter **show flash all** the parser defaults to “show flash:1: all” and only the flash information for the first partition displays. To see information for all flash partitions, enter **show flash ?**. This will list all of the valid partitions. Then enter **show flash:xx: all** on each valid partition.

## Peak Cell Rate and Sustainable Cell Rate Values

On Cisco 1700 routers, specify the Peak Cell Rate (PCR) and Sustainable Cell Rate (SCR) as multiples of 32 Kbps. Other rates are treated as the next lower value of a multiple of 32. For example, an entered PCR value of 150 is considered 128.

## Using the boot flash Command

Booting a Cisco 1700 series router with the commands **boot flash** or **boot system flash** results in unpredictable behavior. To work around this problem, be sure to enter a colon (:) following both commands (for example, **boot flash:** or **boot system flash:.**)

## Caveats

Caveats describe unexpected behavior or defects in Cisco IOS software releases. Severity 1 caveats are the most serious caveats, severity 2 caveats are less serious, and severity 3 caveats are the least serious of these three severity levels.

Caveats in Release 12.2 T are also in Release 12.2(4)YA7. For information on caveats in Cisco IOS Release 12.2 T, refer to the *Caveats for Cisco IOS Release 12.2 T* document. For information on caveats in Cisco IOS Release 12.2, refer to the *Caveats for Cisco IOS Release 12.2* document. These documents list severity 1 and 2 caveats, and are located on CCO and the Documentation CD.



### Note

If you have an account with Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Tool Index: Bug Toolkit**. Another option is to go to [http://www.cisco.com/cgi-bin/Support/Bugtool/launch\\_bugtool.pl](http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl).

## Resolved Caveats - Release 12.2(4)YA6

Cisco IOS Release 12.2(4)YA6 is a rebuild release for Cisco IOS Release 12.2(4)YA. This section describes unexpected behavior that is fixed in Release 12.2(4)YA6.

## Miscellaneous

### CSCdz71127

Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

Cisco has made software available, free of charge, to correct the problem.

This advisory is available at

<http://www.cisco.com/warp/public/707/cisco-sa-20030717-blocked.shtml>

## CSCea02355

Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

Cisco has made software available, free of charge, to correct the problem.

This advisory is available at

<http://www.cisco.com/warp/public/707/cisco-sa-20030717-blocked.shtml>

## Resolved Caveats - Releases 12.2(4)YA1 and 12.2(4)YA2

This section describes unexpected behavior that is fixed in Releases 12.2(4)YA1 and 12.2(4)YA2.

### Management

#### 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>

## Related Documentation

The following sections describe the documentation available for the Cisco 1700 series routers. Typically, these documents consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, feature modules, and other documents. Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on Cisco.com and the Documentation CD.

Use these release notes with the documents listed in the following sections:

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

## Release-Specific Documents

The following documents are specific to Release 12.2 and apply to Release 12.2(4)YA7. They are located on Cisco.com and the Documentation CD (under the heading **Service & Support**):

- To reach the [Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2\(4\)YA](#), click this path:

**Technical Documents: Cisco IOS Software: Release 12.2: Release Notes: Cisco 1700 Series Routers: Cisco 1700 Series - Release Notes for Release 12.2(4)YA**

- To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.2 T*, click this path:  
**Technical Documents: Cisco IOS Software: Release 12.2: Release Notes: Cisco IOS Release 12.2 T**
- To reach product bulletins, field notices, and other release-specific documents, click this path:  
**Technical Documents: Product Bulletins**
- To reach the *Caveats for Cisco IOS Release 12.2* and *Caveats for Cisco IOS Release 12.2 T* documents, which contain caveats applicable to all platforms for all maintenance releases of Release 12.2, click this path:

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



Note

If you have an account with Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Tool Index: Bug Toolkit**. Another option is to go to [http://www.cisco.com/cgi-bin/Support/Bugtool/launch\\_bugtool.pl](http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl).

## Platform-Specific Documents

Hardware installation guides, configuration and command reference guides, and additional documents specific to Cisco 1700 series routers are available on Cisco.com and the Documentation CD at the following location:

[http://www.cisco.com/univercd/cc/td/doc/product/access/acs\\_mod/1700/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/1700/index.htm)

This URL is subject to change without notice. If it changes, point your web browser to CCO, and click the following path:

**Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1700 Series Routers: <platform\_name>**

## Feature Modules

Feature modules describe new features supported by Release 12.2 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. To reach the Release 12.2 feature modules, click this path (under the heading **Service & Support**): **Technical Documents: Cisco IOS Software: Release 12.2: New Feature Documentation: New Features in 12.2-Based Limited Lifetime Releases: New Features in 12.2X Releases**

## 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](mailto: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 set up 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—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 (under the heading **Service & Support**) at:

**Technical Documents:** [Cisco IOS Software: Release 12.2: Configuration Guides and Command References](#)

### Release 12.2 Documentation Set

[Table 6](#) lists the contents of the Cisco IOS Release 12.2 software documentation set, which is available in both electronic and printed form (under the heading **Service & Support**) on [Cisco.com](http://Cisco.com) and on the Documentation CD:

**Technical Documents:** [Cisco IOS Software: Release 12.2](#)



#### Note

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

**Table 6 Cisco IOS Release 12.2 Documentation Set**

Books	Major Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Configuration Fundamentals Configuration Guide</i></li> <li>• <i>Cisco IOS Configuration Fundamentals Command Reference</i></li> </ul>	Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i></li> <li>• <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 1 of 2</i></li> <li>• <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 2 of 2</i></li> </ul>	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"> <li>• <i>Cisco IOS Dial Technologies Configuration Guide</i></li> <li>• <i>Cisco IOS Dial Technologies Command Reference</i></li> </ul>	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
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Interface Configuration Guide</i></li> <li>• <i>Cisco IOS Interface Command Reference</i></li> </ul>	LAN Interfaces Serial Interfaces Logical Interfaces
<ul style="list-style-type: none"> <li>• <i>Cisco IOS IP Configuration Guide</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 1 of 3: Addressing and Services</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 2 of 3: Routing Protocols</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 3 of 3: Multicast</i></li> </ul>	IP Addressing and Services IP Routing Protocols IP Multicast
<ul style="list-style-type: none"> <li>• <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i></li> <li>• <i>Cisco IOS AppleTalk and Novell IPX Command Reference</i></li> </ul>	AppleTalk Novell IPX

**Table 6 Cisco IOS Release 12.2 Documentation Set**

Books	Major Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i></li> <li>• <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i></li> </ul>	Apollo Domain Banyan VINES DECnet ISO CLNS XNS
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Voice, Video, and Fax Configuration Guide</i></li> <li>• <i>Cisco IOS Voice, Video, and Fax Command Reference</i></li> </ul>	Voice over IP Call Control Signaling Voice over Frame Relay Voice over ATM Telephony Applications Trunk Management Fax, Video, and Modem Support
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Quality of Service Solutions Configuration Guide</i></li> <li>• <i>Cisco IOS Quality of Service Solutions Command Reference</i></li> </ul>	Packet Classification Congestion Management Congestion Avoidance Policing and Shaping Signaling Link Efficiency Mechanisms
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Security Configuration Guide</i></li> <li>• <i>Cisco IOS Security Command Reference</i></li> </ul>	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options Supported AV Pairs
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Switching Services Configuration Guide</i></li> <li>• <i>Cisco IOS Switching Services Command Reference</i></li> </ul>	Cisco IOS Switching Paths NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Wide-Area Networking Configuration Guide</i></li> <li>• <i>Cisco IOS Wide-Area Networking Command Reference</i></li> </ul>	ATM Broadband Access Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Mobile Wireless Configuration Guide</i></li> <li>• <i>Cisco IOS Mobile Wireless Command Reference</i></li> </ul>	General Packet Radio Service



**Table 6** Cisco IOS Release 12.2 Documentation Set

Books	Major Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Terminal Services Configuration Guide</i></li> <li>• <i>Cisco IOS Terminal Services Command Reference</i></li> </ul>	ARA LAT NASI Telnet TN3270 XRemote X.28 PAD Protocol Translation
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Configuration Guide Master Index</i></li> <li>• <i>Cisco IOS Command Reference Master Index</i></li> <li>• <i>Cisco IOS Debug Command Reference</i></li> <li>• <i>Cisco IOS Software System Error Messages</i></li> <li>• New Features in 12.2-Based Limited Lifetime Releases</li> <li>• New Features in Release 12.2 T</li> <li>• Release Notes (Release note and caveat documentation for 12.2-based releases and various platforms)</li> </ul>	

## Obtaining Documentation

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

### World Wide Web

The most current Cisco documentation is available on the World Wide Web at <http://www.cisco.com>. Translated documentation can be accessed at [http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml).

### Documentation CD

Cisco documentation and additional literature are available in a CD package, which ships with your product. The Documentation CD is updated monthly and may be more current than printed documentation. The CD 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](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD 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 products 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](mailto:bug-doc@cisco.com).

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

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

We appreciate your comments.

## Obtaining Technical Assistance

The following sections provide sources for obtaining technical assistance from Cisco Systems.

### 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/>

Cisco.com registered users who cannot resolve a technical issue by using the TAC online resource 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.

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This document is to be used in conjunction with the documents listed in the [“Related Documentation”](#) section.

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