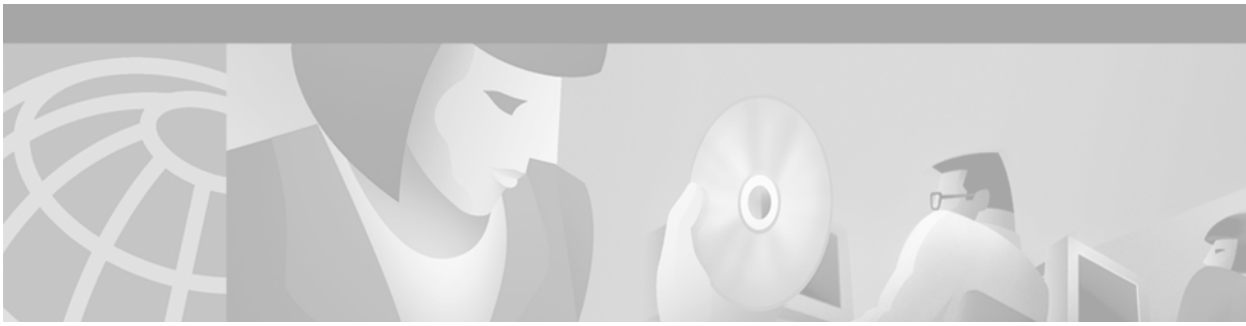

Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2(2)XJ

September 17, 2001

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(2)XJ. 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-ROM.

For a list of the software caveats that apply to Release 12.2(2)XJ, 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-ROM.

Contents

These release notes discuss the following topics:

CISCO SYSTEMS

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System Requirements

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

Memory Requirements

This section describes the memory requirements for the Cisco IOS feature sets supported by Cisco IOS Release 12.2(2)XJ on the Cisco 1700 series routers.

Table 1 Memory Requirements for the Cisco 1700 Series

Platform	Software Product Description	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs from
Cisco 1720, Cisco 1750 and Cisco 1751	Cisco 1700 IOS IP	c1700-y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL	c1700-y7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS 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	c1700-bk9no3r2sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM Plus	c1700-bnr2sy7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/IPX/AT/IBM	c1700-bnr2y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL/FW/IDS Plus IPSec 56	c1700-k8o3sy7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus IPSec 56	c1700-k8sy7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL/FW/IDS Plus IPSec 3DES	c1700-k9o3sy7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus IPSec 3DES	c1700-k9sy7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/FW/IDS Plus	c1700-no3sy7-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/IPX	c1700-ny-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/FW/IDS	c1700-o3y-mz	8 MB	32 MB	RAM
	Cisco 1700 IOS IP/ADSL Plus	c1700-sy7-mz	8 MB	32 MB	RAM

Table 1 Memory Requirements for the Cisco 1700 Series

Cisco 1750 and Cisco 1751	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/ Voice/FW/IDS Plus IPSec 56	c1700-bk8no3r2sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/ Voice/FW/IDS Plus IPSec 3DES	c1700-bk9no3r2sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS 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	c1700-k8sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS 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	c1700-k9sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/IPX/Voice/ FW/IDS Plus	c1700-no3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/Voice/FW/IDS Plus	c1700-o3sv3y7-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/Voice Plus	c1700-sv3y-mz	16 MB	48 MB	RAM
	Cisco 1700 IOS IP/ADSL/Voice Plus	c1700-sv3y7-mz	16 MB	48 MB	RAM

Hardware Supported

Cisco IOS Release 12.2(2)XJ supports the following Cisco 1700 series routers:

- Cisco 1720—Runs data images only.
- Cisco 1750—Runs data and data-plus-voice images
- Cisco 1751—Runs data and data-plus-voice images, providing digital and analog voice support
- Cisco 1751-V—Includes all the features needed for immediate integration of data and voice services with support for up to twelve digital voice channels

For detailed descriptions of the new hardware features, see the documents listed in the "Platform-Specific Documents" section on page 16.

Cisco 1720

The 1720 router provides Internet and intranet access and includes the following:

- Support for virtual private networking
- Modular architecture
- Network device integration

The Cisco 1720 router has the following hardware components:

- One autosensing 10/100 Fast Ethernet port, which operates in full- or half-duplex mode (with manual override available)
- Two WAN interface card slots

- One auxiliary (AUX) port (up to 115.2 kbps asynchronous serial)
- One console port
- RISC Processor for high performance encryption
- One internal expansion slot for support of hardware-assisted services such as encryption (up to T1/E1) and compression
- DRAM memory: 32 MB default, expandable to 48 MB
- Flash memory: 8 MB default, expandable to 16 MB
- Desktop form factor

The Cisco 1720 router supports any combination of one or two of the following WAN interface cards, which are shared with the Cisco 1600, 2600, and 3600 routers:

- WIC-1T—One port high speed serial (sync/async)
- WIC-2T—Two port high speed serial (sync/async)
- 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
- 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-1ENET—One-port 10Base-T Ethernet interface
- WIC-ADSL--One-port asymmetrical digital subscriber line (supported on the 1700, 2600, and 3600 routers only)

Cisco 1750

The voice-and-data capable Cisco 1750 router provides global Internet and company intranet access and includes the following:

- Voice-over-IP (VoIP) voice-and-data functionality; the router can carry voice traffic (for example, telephone calls and faxes) over an IP network
- Support for virtual private networking
- Modular architecture
- Network device integration

The Cisco 1750 router has the following hardware components:

- One autosensing 10/100 Fast Ethernet port, which operates in full- or half-duplex mode (with manual override available)
- One voice interface card (VIC) slot—Supports a single voice interface card with two ports per card
- Two WAN interface card (WIC) slots for either WICs or VICs
- Synchronous serial interfaces on serial WICs
- Asynchronous serial interfaces on serial WICs
- ISDN WICs—ISDN dialup and ISDN leased line (IDSL) at 144 kbps; encapsulation over ISDN leased line: Frame Relay and PPP
- One auxiliary (AUX) port (up to 115.2 kbps asynchronous serial)

- One console port
- One internal expansion slot—Supports hardware-assisted services such as encryption (up to T1/E1 speeds)
- RISC Processor—Motorola MPC860T PowerQUICC at 48 MHz
- One security slot that supports Kensington or similar lockdown equipment
- DRAM: 16 MB default, expandable to 48 MB
- Flash memory: 4 MB default, expandable to 16 MB
- Desktop form factor

The Cisco 1750 router supports any combination of one or two of the following WICs, which are shared with the Cisco 1600, 1720, 2600, and 3600 routers:

- 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 (supported on the Cisco 1700, 2600, and 3600 series routers only)
- WIC-1ENET—One-port 10Base-T Ethernet interface

The Cisco 1750 router supports any combination of one or two of the following voice interface cards, which are shared with the Cisco 2600 and 3600 routers:

- VIC-2FXS—Two-port Foreign Exchange Station (FXS) voice/fax interface card for voice/fax network module
- VIC-2FXO—Two-port Foreign Exchange Office (FXO) voice/fax interface card for voice/fax network module
- VIC-2FXO-EU—Two-port FXO voice/fax interface card for Europe
- VIC-2FXO-M3—Two-port Ear & Mouth (E&M) voice/fax interface for Australia
- VIC-2E/M—Two-port E&M voice/fax interface card for voice/fax network module
- VIC-2FXO-M1—Two-port FXO for the United States with battery reversal
- VIC-2FXO-M2—Two-port FXO for Europe with battery reversal

Cisco 1751 and 1751-V

The voice-and-data capable Cisco 1751 and 1751-V routers provide global Internet and company intranet access and includes the following:

- Voice-over-IP (VoIP) voice-and-data functionality; the router can provide support for digital and analog voice traffic (for example, telephone calls and faxes) over an IP network.
- Support for virtual private networking
- Modular architecture
- Network device integration

The Cisco 1751 and 1751-V routers have the following hardware components:

- One autosensing 10/100 Fast Ethernet port, which operates in full- or half-duplex mode (with manual override available)
- IEEE 802.1Q VLAN support
- One VIC slot—Supports a single voice interface card with two ports per card
- Two WIC slots for either WICs or VICs
- Synchronous serial interfaces on serial WICs
- Asynchronous serial interfaces on serial WICs
- ISDN WICs—ISDN dialup and ISDN leased line (IDSL) at 144 kbps; encapsulation over ISDN leased line: Frame Relay and PPP
- One auxiliary (AUX) port (up to 115.2 kbps asynchronous serial)
- One console port
- One internal expansion slot—Supports hardware-assisted services such as encryption (up to T1/E1 speeds)
- RISC Processor—Motorola MPC860P PowerQUICC at 48.384 MHz
- One security slot that supports Kensington or similar lockdown equipment
- DRAM:
  - Cisco 1751: 32 MB default, expandable to 96 MB
  - Cisco 1751-V: 64 MB default, expandable to 128 MB
- Flash memory:
  - Cisco 1751: 16 MB
  - Cisco 1751-V: 32 MB
- Desktop form factor

The Cisco 1751 and 1751-V routers support any combination of one or two of the following WICs, which are shared with the Cisco 1600, 1720, 1750, 2600, and 3600 routers:

- 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 (supported on the Cisco 1700, 2600, and 3600 series routers only)
- WIC-1ENET—One-port 10Base-T Ethernet interface

The Cisco 1751 and 1751-V routers support any combination of one, two or three of the following VICs, which are shared with the Cisco 2600 and 3600 routers:

- VIC-2FXS—Two-port Foreign Exchange Station (FXS) voice/fax interface card for voice/fax network module
- VIC-2FXO—Two-port Foreign Exchange Office (FXO) voice/fax interface card for voice/fax network module
- VIC-2FXO-EU—Two-port FXO voice/fax interface card for Europe
- VIC-2E/M—Two-port Ear & Mouth (E&M) voice/fax interface card for voice/fax network module
- VIC-2FXO-M3—Two-port E&M voice/fax interface for Australia
- VIC-2BRI-NT/TE—Two-port ISDN interface (supported only on the Cisco 1751 and 1751-V routers)
- VIC-2FXO-M1—Two-port FXO for the United States with battery reversal
- VIC-2FXO-M2—Two-port FXO for Europe with battery reversal
- VIC-2DID—Two-port direct inward-dialing voice interface card

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), Release 12.2(2)XJ, RELEASE SOFTWARE
```

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.

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. Release 12.2(2)XJ supports the same feature sets as Releases 12.2 and 12.2 T, but Release 12.2(2)XJ include new features supported by the Cisco 1700 series routers.

Caution Cisco IOS images with strong encryption (including, but not limited to 168-bit (3DES) data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders 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.

Table 2 (Parts 1 through 4) lists the features and feature sets supported by the Cisco 1700 series routers in Cisco IOS Release 12.2(2)XJ. The table uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.
- In—The number in the *In* column shows the Cisco IOS release in which the feature was introduced. For example, (12.2[2]XJ) means a feature was introduced in Release 12.2(2)XJ. If a cell in this column is empty, the feature was included in the initial release.

Note These tables might not be cumulative or list all the features in each image. You can find the most current Cisco IOS documentation on Cisco.com. These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

Table 2 Feature List by Feature Set for Cisco 1700 Series Routers, Part 1 of 4

Feature	Feature Set					
	IP	IP/ADSL	IP/ADSL/IPX/AT/ IBM/ Voice/FW/ IDS Plus IPSec 3DES	IP/ADSL/IPX/ AT/IBM/FW/ IDS Plus IPSec 3DES	IP/ADSL/ IPX/AT/ IBM Plus	IP/IPX/AT/ IBM
LAN						
Support of Two WIC-1ENET adapters	Yes	Yes	Yes	Yes	Yes	Yes
Voice						
Caller ID on FXS, FXO-M1, and FXO-M2 VCI interfaces	No	No	Yes	No	No	No
Support for Two-Port analog DID VIC for Cisco 1751 Routers	No	No	Yes	No	No	No
Support for Two-Port FXO-M1 VIC for Cisco 1750 & 1751 Routers	No	No	Yes	No	No	No
Support for Two-Port FXO-M2 VIC for Cisco 1750 & 1751 Routers	No	No	Yes	No	No	No
WAN						
Operations Administration Maintenance (OAM) Support for F5 Continuity Check (CC) Segment	No	Yes	Yes	Yes	Yes	No

Table 2 Feature List by Feature Set for Cisco 1700 Series Routers, Part 2 of 4

Feature	Feature Set					
	IP/ADSL/FW/ IDS Plus IPSec 56	IP/ADSL Plus IPSec 56	IP/ADSL/FW/ IDS Plus IPSec 3DES	IP/ADSL Plus IPSec 3DES	IP/ADSL/ IPX/FW/ IDS Plus	IP/IPX
LAN						
Support of Two WIC-1ENET adapters	No	No	Yes	No	No	No
Voice						
Caller ID on FXS, FXO-M1, and FXO-M2 VCI interfaces	No	No	No	No	No	No
Support for Two-Port analog DID VIC for Cisco 1751 Routers	No	No	No	No	No	No
Support for Two-Port FXO-M1 VIC for Cisco 1750 & 1751 Routers	No	No	No	No	No	No
Support for Two-Port FXO-M2 VIC for Cisco 1750 & 1751 Routers	No	No	No	No	No	No
WAN						
Operations Administration Maintenance (OAM) Support for F5 Continuity Check (CC) Segment	Yes	Yes	Yes	Yes	Yes	No

Table 2 Feature List by Feature Set for Cisco 1700 Series Routers, Part 3 of 4

Feature	Feature Set					
	IP/FW/ IDS	IP/ADSL Plus	IP/ADSL/IPX/ AT/IBM/Voice/ FW/IDS Plus IPSec 56	IP/ADSL/IPX/ AT/IBM/FW/ IDS Plus IPSec 56	IP/ADSL/ Voice/FW/ IDS Plus IPSec 56	IP/ADSL/ Voice Plus IPSec 56
LAN						
Support of Two WIC-1ENET adapters	Yes	Yes	No	No	No	No
Voice						
Caller ID on FXS, FXO-M1, and FXO-M2 VCI interfaces	No	No	Yes	No	Yes	Yes
Support for Two-Port analog DID VIC for Cisco 1751 Routers	No	No	Yes	No	Yes	Yes
Support for Two-Port FXO-M1 VIC for Cisco 1750 & 1751 Routers	No	No	Yes	No	Yes	Yes
Support for Two-Port FXO-M2 VIC for Cisco 1750 & 1751 Routers	No	No	Yes	No	Yes	Yes
WAN						
Operations Administration Maintenance (OAM) Support for F5 Continuity Check (CC) Segment	No	Yes	Yes	Yes	Yes	Yes

Table 2 Feature List by Feature Set for Cisco 1700 Series Routers, Part 4 of 4

Feature	Feature Set					
	IP/ADSL/ Voice/FW/ IDS Plus IPSec 3DES	IP/ADSL/ Voice Plus IPSec 3DES	IP/ADSL/ IPX/Voice/ FW/IDS Plus	IP/ADSL/ Voice/FW/ IDS Plus	IP/Voice Plus	IP/ADSL/ Voice Plus
LAN						
Support of Two WIC-1ENET adapters	Yes	Yes	Yes	Yes	Yes	Yes
Voice						
Caller ID on FXS, FXO-M1, and FXO-M2 VCI interfaces	Yes	Yes	Yes	Yes	Yes	Yes
Support for Two-Port analog DID VIC for Cisco 1751 Routers	Yes	Yes	Yes	Yes	Yes	Yes
Support for Two-Port FXO-M1 VIC for Cisco 1750 & 1751 Routers	Yes	Yes	Yes	Yes	Yes	Yes
Support for Two-Port FXO-M2 VIC for Cisco 1750 & 1751 Routers	Yes	Yes	Yes	Yes	Yes	Yes
WAN						
Operations Administration Maintenance (OAM) Support for F5 Continuity Check (CC) Segment	Yes	Yes	Yes	Yes	No	Yes

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 1700 series for Release 12.2(2)XJ.

New Hardware Features in Release 12.2(2)XJ

The following sections list the new hardware features supported by the Cisco 1700 series for Release 12.2(2)XJ.

Two-Port FXO for The United States With Battery Reversal (VIC-2FXO-M1)

Cisco 1750, Cisco 1751 and Cisco 1751-V routers now support two-port Foreign Exchange Office (FXO) voice interface cards for the United States using the battery reversal VIC-2FXO-M1 card. The Cisco FXO interface is an RJ-11 connector that allows an analog connection to be directed at the PSTN central office or to a station interface on a PBX. The FXO is on the switch end of the connection and plugs directly into the line side of the switch, so the switch perceives the FXO interface as a telephone. FXO-M1 is an enhancement of FXO with battery reversal and Caller ID features.

Two-Port FXO for Europe with Battery Reversal (VIC-2FXO-M2)

Cisco 1750, Cisco 1751 and Cisco 1751-V routers now support a two-port Foreign Exchange Office (FXO) voice interface card, VIC-2FXO-M2, for Europe. VIC-2FXO-M2 is an enhancement of the VIC-2FXO-EU card, with battery reversal and Caller ID features.

Two-Port Direct Inward-Dialing Voice Interface Card (VIC-2DID)

Cisco 1751 and Cisco 1751-V routers now support the two-port, DID voice interface card, VIC-2DID is a service offered by telephone companies that enables callers to dial directly to an extension on a Private Branch Exchange (PBX) or packet voice system (for example, Cisco CallManager and IOS routers or gateways) without the assistance of an operator or automated call attendant. This service uses DID trunks, which forward only the last three to five digits of a phone number to the PBX, router, or gateway. For example, if a company has the phone extensions 555-1000 to 555-1999, and a caller dials 555-1234, the local central office (CO) forwards 234 to the PBX or packet voice system. The PBX or packet voice system then rings extension 234. The entire process is transparent to the caller.

The VIC-2DID card services two analog DID trunks using analog voice or fax. The card provides dual-working modes, DID and FXS, which are mutually exclusive.

New Software Features in Release 12.2(2)XJ

The following sections list the new software features supported by the Cisco 1700 series for Release 12.2(2)XJ.

Caller ID

Cisco 1750, Cisco 1751 and Cisco 1751-V routers support Caller ID functions on analog FXS, FXO-M1 and FXO-M2 voice interfaces. Cisco 1751 and Cisco 1751-V routers also support Caller ID on the FXS mode of the Direct Inward Dialing (DID) voice interface card, VIC-2DID.

Caller ID (sometimes called *CLID for* calling line identification) is an analog service offered by a Central Office (CO), which supplies calling party information to subscribers. Typically, the calling party number and the name appears on a station (also called *extension*) device such as a PC telephony software application screen or the display on a telephone. Type 1 Caller ID provides the calling party information while the call is ringing, and Type 2 Caller ID provides the additional convenience of calling number display while the recipient is on another call. In this release, only Type 1 Caller ID is supported.

Multiple Slot Locations for WIC-1ENET Single Port Ethernet WIC

The WIC-1ENET is a 10Baset-T Ethernet card that can be used in any Cisco 1700 series router WIC or WIC/VIC slot. Using software Release 12.2(2)XJ, you are no longer limited to using only one 10Baset-T Ethernet card in Slot 0; 10Baset-T Ethernet cards now work in either Slot 0 or Slot 1, or both Slot 0 and Slot 1. Release 12.2(2)XJ software is compatible with previously-shipped versions of 10Baset-T Ethernet cards, therefore only a software upgrade is required to provide this added capability.

Operations Administration Maintenance Support for F5 Continuity Check Segment

During connection set-up, an operator can carry out a limited set of out-of-service tests to verify that connectivity is correct. Release 12.2(2)XJ supports the Operations Administration Maintenance (OAM) F5 Continuity Check (CC) Segment support feature, which assists the operator in detecting connectivity problems in the ATM layer.

Note The Operations Administration Maintenance (OAM) F5 Continuity Check (CC) Segment Support feature functions with Alcatel Digital Subscriber Line Access Multiplexers (DSLAMs), which transparently switch OAM F5 CC Segment cells. Cisco DSLAMs terminate (do not forward) OAM F5 CC Segment cells, and therefore do not provide OAM F5 CC segment support.

New Software Features in Release 12.2(2)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)

Important Notes

The following sections contain important notes about Cisco IOS Release 12.2(2)XJ that can apply to the Cisco 1700 series. (Also, see the "Caveats" section on page 13.)

Cisco Express Forwarding

When installed in a Cisco 1720, 1750, or 1751 router, the Cisco Virtual Private Network (VPN) module does not support Cisco express forwarding (CEF).

Fan Operation in Cisco 1700 Series Routers

The fans in Cisco 1700 series 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.

Operations Administration Maintenance F5 Continuity Check Segment Support

The Operations Administration Maintenance (OAM) F5 Continuity Check (CC) Segment Support feature functions with Alcatel Digital Subscriber Line Access Multiplexers (DSLAMs), which transparently switch OAM F5 CC Segment cells. Cisco DSLAMs terminate (do not forward) OAM F5 CC Segment cells, and therefore do not provide OAM F5 CC segment support.

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.

All caveats in Release 12.2 T are also in Release 12.2(2)XJ. 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-ROM.

Note If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. You can reach Bug Navigator II on CCO at **Software Center**: **Cisco IOS Software**: **BUG TOOLKIT**: **Cisco Bug Navigator II**, or at http://www.cisco.com/support/bugtools/bugtool.shtml.

Caveats for Release 12.2(2)XJ

This section describes possibly unexpected behavior by Release 12.2(2)XJ. Only severity 1 through 3 caveats are included.

CSCdu23953

When using a Cisco 1750 router, a VIC-2DID card in the FXS mode, connected to a VIC-2FXO-M1 or a VIC-2FXO-M2, does not receive Caller ID information. The workaround is to enter **ring number 4** as part of the voice port configuration on the VIC-2FXO-M1 card or the VIC-2FXO-M2 card.

CSCdv05753

When a 10-BaseT WIC is in Slot 1 and voice traffic is passing through two 10-BaseT WIC interfaces, a high call failure rate occurs. To work around this problem, place the 10-Base-T WIC in Slot 0 and place a Serial 2T card in Slot 1.

CSCdv10398

Small packets (smaller than 256 bytes per packet) have low performance when traffic streams go through both the Fast Ethernet port and two 10 BaseT WICs.

CSCdv12950

Sporadic and spurious memory-access messages might appear on a Cisco 1750, Cisco 1751 or Cisco 1751-V router running voice images. However, these messages do not affect router functionality.

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-ROM.

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(2)XJ. They are located on Cisco.com and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.2(2)XJ*
  - To reach the *Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2(2)XJ* from Cisco.com, click this path (under the heading **Service & Support**):

    Technical Documents: **Cisco IOS Software**: **Release 12.2**: **Release Notes**: **Cisco 1700 Series Routers**: **Cisco 1700 Series - Release Notes for Release 12.2(2)XJ**
  - To reach the *Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2(2)XJ* on the Documentation CD-ROM, click this path:

    Cisco Product Documentation: Cisco IOS Software Configuration: **Cisco IOS Release 12.2**: **Release Notes**: **Cisco 1700 Series Routers**: **Cisco 1700 Series - Release Notes for Release 12.2(2)XJ**
- *Release Notes for Cisco IOS Release 12.2*
  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.2* from Cisco.com, click this path (under the heading **Service & Support**):

    Technical Documents: **Cisco IOS Software**: **Release 12.2**: **Release Notes**: **Cross-Platform Release Notes** (Cisco IOS Release 12.2)
  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.2* on the Documentation CD-ROM, click this path:

    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

  To reach these documents from Cisco.com, click this path (under the heading **Service & Support**):

  Technical Documents: **Product Bulletins**
- *Caveats for Cisco IOS Release 12.2 and 12.2 T*

  The *Caveats for Cisco IOS Release 12.2* and *Caveats for Cisco IOS Release 12.2 T* documents contain caveats applicable to all platforms for all maintenance releases of Release 12.2.
  - To reach the caveats document from Cisco.com, click this path (under the heading **Service & Support**):

    Technical Documents: **Cisco IOS Software**: **Release 12.2**: **Caveats**
  - To reach the caveats document on the Documentation CD-ROM, click this path:

    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. You can reach Bug Navigator II on Cisco.com at **Software Center**: **Cisco IOS Software**: **BUG TOOLKIT**: **Cisco Bug Navigator II**, or at http://www.cisco.com/support/bugtools/bugtool.shtml.

Platform-Specific Documents

Cisco 1720 Series Routers

These documents are available for the Cisco 1720 router on CCO and the Documentation CD-ROM:

- *Installing Your Cisco 1700 Router Quick Start Guide*
- *Cisco 1720 Series Router Hardware Installation Guide*
- *Cisco 1700 Series Router Software Configuration Guide*
- *Cisco 1720 Series Router Release Notes*
- *Installing and Upgrading the Boot ROM in Cisco 1720 Routers*
- *Cisco 1700 Series* (Cisco IOS) *Router Release Notes*
- *Configuration Notes for Cisco 1700 Series Routers*
- *WAN Interface Cards Hardware Installation Guide*

On CCO at:

Technical Documents: **Access Servers and Access Routers: Modular Access Routers: Cisco 1720 Series Routers**

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1720 Series Routers

Cisco 1750 Series Routers

These documents are available for the Cisco 1750 router on CCO and the Documentation CD-ROM:

- *Installing Your Cisco 1700 Router Quick Start Guide*
- *Cisco 1750 Series Router Hardware Installation Guide*
- *Cisco 1700 Series Router Software Configuration Guide*
- *Cisco 1750 Series Router Release Notes*
- *Cisco 1750 Router Voice-over-IP quick start guide*
- *Cisco 1750 Voice-over-IP Software Configuration Guide*
- *Cisco 1700 Series* (Cisco IOS) *Router Release Notes*
- *Configuration Notes for Cisco 1700 Series Routers*
- *WAN Interface Cards Hardware Installation Guide*

On CCO at:

Technical Documents: **Access Servers and Access Routers: Modular Access Routers: Cisco 1750 Series Routers**

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1750 Series Routers

Cisco 1751 Series Routers

These documents are available for the Cisco 1750 router on CCO and the Documentation CD-ROM:

- *Installing Your Cisco 1700 Router Quick Start Guide*
- *Cisco 1751 Router Hardware Installation Guide*
- *Cisco 1751 Router Software Configuration Guide*
- *Cisco 1700 Series Router Software Configuration Guide*
- *Cisco 1751 Router Hardware Release Notes*
- *Configuring the Voice Interface Card for the Cisco 1751 Router*
- *Installing and Removing Packet Voice/fax DSP Modules*
- *Cisco 1700 Series* (Cisco IOS) *Router Release Notes*
- *Configuration Notes for Cisco 1700 Series Routers*
- *WAN Interface Cards Hardware Installation Guide*

On CCO at:

Technical Documents: **Access Servers and Access Routers: Modular Access Routers: Cisco 1751 Series Routers**

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 1751 Series Routers

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:

- From Cisco.com, 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**

- From the Documentation CD-ROM, click this path:

  Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS 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. 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-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 (under the heading **Service & Support**) at:

Technical Documents: **Cisco IOS Software**: **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

Release 12.2 Documentation Set

Table 3 lists the contents of the Cisco IOS Release 12.2 software documentation set, which is available in both electronic and printed form.

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

On Cisco.com (under the heading **Service & Support**) at:

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

On the Documentation CD-ROM at:

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

Table 3 Cisco IOS Release 12.2 Documentation Set

Books	Major Topics
• *Cisco IOS Configuration Fundamentals Configuration Guide* • *Cisco IOS Configuration Fundamentals Command Reference*	Cisco IOS User Interfaces File Management System Management
• *Cisco IOS Bridging and IBM Networking Configuration Guide* • *Cisco IOS Bridging and IBM Networking Command Reference, Volume 1 of 2* • *Cisco IOS Bridging and IBM Networking Command Reference, Volume 2 of 2*	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

Table 3 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• *Cisco IOS Dial Technologies Configuration Guide* • *Cisco IOS Dial Technologies Command Reference*	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
• *Cisco IOS Interface Configuration Guide* • *Cisco IOS Interface Command Reference*	LAN Interfaces Serial Interfaces Logical Interfaces
• *Cisco IOS IP Configuration Guide* • *Cisco IOS IP Command Reference, Volume 1 of 3: Addressing and Services* • *Cisco IOS IP Command Reference, Volume 2 of 3: Routing Protocols* • *Cisco IOS IP Command Reference, Volume 3 of 3: Multicast*	IP Addressing and Services IP Routing Protocols IP Multicast
• *Cisco IOS AppleTalk and Novell IPX Configuration Guide* • *Cisco IOS AppleTalk and Novell IPX Command Reference*	AppleTalk Novell IPX
• *Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide* • *Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference*	Apollo Domain Banyan VINES DECnet ISO CLNS XNS
• *Cisco IOS Voice, Video, and Fax Configuration Guide* • *Cisco IOS Voice, Video, and Fax Command Reference*	Voice over IP Call Control Signaling Voice over Frame Relay Voice over ATM Telephony Applications Trunk Management Fax, Video, and Modem Support
• *Cisco IOS Quality of Service Solutions Configuration Guide* • *Cisco IOS Quality of Service Solutions Command Reference*	Packet Classification Congestion Management Congestion Avoidance Policing and Shaping Signaling Link Efficiency Mechanisms

Table 3 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• *Cisco IOS Security Configuration Guide* • *Cisco IOS Security Command Reference*	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
• *Cisco IOS Switching Services Configuration Guide* • *Cisco IOS Switching Services Command Reference*	Cisco IOS Switching Paths NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
• *Cisco IOS Wide-Area Networking Configuration Guide* • *Cisco IOS Wide-Area Networking Command Reference*	ATM Broadband Access Frame Relay SMDS X.25 and LAPB
• *Cisco IOS Mobile Wireless Configuration Guide* • *Cisco IOS Mobile Wireless Command Reference*	General Packet Radio Service
• *Cisco IOS Terminal Services Configuration Guide* • *Cisco IOS Terminal Services Command Reference*	ARA LAT NASI Telnet TN3270 XRemote X.28 PAD Protocol Translation
• *Cisco IOS Configuration Guide Master Index* • *Cisco IOS Command Reference Master Index* • *Cisco IOS Debug Command Reference* • *Cisco IOS Software System Error Messages* • New Features in 12.2-Based Limited Lifetime Releases • New Features in Release 12.2 T • Release Notes (Release note and caveat documentation for 12.2-based releases and various platforms)	

Obtaining Documentation

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

World Wide Web

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.

Documentation CD-ROM

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

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco 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.

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.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.