Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.2(8)YN

July 30, 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(8)YN2. 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(8)YN2, 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.

Contents

These release notes discuss the following topics:

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

System Requirements

This section describes the system requirements for Release 12.2(8)YN2 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(8)YN2 on the Cisco 1700 series routers.

Table 1 Recommended Memory for the Cisco 1700 Series Routers

Platforms	Image Name	Feature Set	Image	Flash Memory	DRAM Memory
Cisco 1710	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
	Cisco 1710 IOS IP/FW/IDS PLUS IPSEC 3DES	IP/FW/IDS PLUS IPSEC 3DES	c1710-k9o3sy-mz	8 MB	48 MB
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 IPSEC 56	c1700-bk8no3r2sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/VOX/FW/IDS PLUS IPSEC 3DES	IP ADSL/IPX/AT/IBM/VOX/FW/IDS IPSEC 3DES	c1700-bk9no3r2sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS PLUS IPSEC 56	IP/ADSL/VOX/FW/IDS PLUS IPSEC 56	c1700-k8o3sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/VOX PLUS IPSEC 56	IP/ADSL/VOX PLUS IPSEC 56	c1700-k8sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS PLUS IPSEC 3DES	IP/ADSL/VOX/FW/IDS PLUS IPSEC 3DES	c1700-k9o3sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/VOX PLUS IPSEC 3DES	IP/ADSL/VOX PLUS IPSEC 3DES	c1700-k9sv8y7-mz	16 MB	96 MB
	Cisco 1700 IOS IP/ADSL/IPX/VOX/FW/IDS PLUS	IP/ADSL/IPX/VOX/FW/IDS PLUS	c1700-no3sv8y7-mz	16 MB	64 MB

Table 1 Recommended Memory for the Cisco 1700 Series Routers

Platforms	Image Name	Feature Set	Image	Flash Memory	DRAM Memory
Cisco 1751 and Cisco 1760	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS PLUS	IP/ADSL/VOX/ FW/IDS PLUS	c1700-o3sv8y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/VOX PLUS	IP/ADSL/VOX PLUS	c1700-sv8y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP ADSL/IPX/ AT/IBM/VOICE/FW/IDS PLUS IPSEC 56	IP ADSL/IPX/ AT/IBM/VOICE/F W/ IDS IPSEC 56	c1700-bk8no3r2sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/VOICE/FW /IDS PLUSIPSEC 3DES	IP ADSL/IPX/ AT/IBM/VOICE/F W/IDS IPSEC 3DES	c1700-bk9no3r2sv3y7-mz	16 MB	64 MB
Cisco 1750/ Cisco 1751 and Cisco 1760	Cisco 1700 IOS IP/ADSL/VOICE/FW/IDS PLUS IPSEC 56	IP/ADSL/ VOICE/FW/IDS PLUS IPSEC 56	c1700-k8o3sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/VOICE PLUS IPSEC 56	IP/ADSL/ VOICE PLUS IPSEC 56	c1700-k8sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/VOICE/FW/IDS PLUS IPSEC 3DES	IP/ADSL/ VOICE/FW/IDS PLUS IPSEC 3DES	c1700-k9o3sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/VOICE PLUS IPSEC 3DES	IP/ADSL/VOICE PLUS IPSEC 3DES	c1700-k9sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/IPX/VOICE/FW/IDS PLUS	IP/ADSL/IPX/ VOICE/FW/IDS PLUS	c1700-no3sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/VOICE/FW/IDS PLUS	IP/ADSL/ VOICE/FW/IDS PLUS	c1700-o3sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/VOICE PLUS	IP/VOICE PLUS	c1700-sv3y-mz	16 MB	48 MB
	Cisco 1700 IOS IP/ADSL/VOICE PLUS	IP/ADSL/VOICE PLUS	c1700-sv3y7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/VOX PLUS	IP/VOX PLUS	c1700-sv8y-mz	16 MB	64 MB

Table 1 Recommended Memory for the Cisco 1700 Series Routers

Platforms	Image Name	Feature Set	Image	Flash Memory	DRAM Memory
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	64 MB
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 3DES	IP ADSL/IPX/ AT/IBM/FW/IDS IPSEC 3DES	c1700-bk9no3r2sy7-mz	16 MB	64 MB
	Cisco 1700 IOS IP/ADSL/IPX/AT/IBM PLUS	IP /ADSL/IPX/ AT/IBM PLUS	c1700-bnr2sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/IPX/AT/IBM	IP/IPX/AT/IBM	c1700-bnr2y-mz	8 MB	32 MB
	Cisco 1700 IOS IP/ADSL/FW/IDS PLUS IPSEC 56	IP/ADSL/FW/ IDS PLUS IPSEC 56	c1700-k8o3sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/ADSL PLUS IPSEC 56	IP/ADSL PLUS IPSEC 56	c1700-k8sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/ADSL/FW/IDS PLUS IPSEC 3DES	IP/ADSL/FW/IDS PLUS IPSEC 3DES	c1700-k9o3sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/ADSL PLUS IPSEC 3DES	IP/ADSL PLUS IPSEC 3DES	c1700-k9sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/ADSL/IPX/FW/IDS PLUS	IP/ADSL/IPX/ FW/IDS PLUS	c1700-no3sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP/IPX	IP/IPX	c1700-ny-mz	8 MB	32 MB
	Cisco 1700 IOS IP/FW/IDS	IP/FW/IDS	c1700-o3y-mz	8 MB	32 MB
	Cisco 1700 IOS IP PLUS	IP PLUS	c1700-sy-mz	8 MB	48 MB
	Cisco 1700 IOS IP/ADSL PLUS	IP/ADSL PLUS	c1700-sy7-mz	16 MB	48 MB
	Cisco 1700 IOS IP	IP	c1700-y-mz	8 MB	32 MB
	Cisco 1700 IOS IP/ADSL	IP/ADSL	c1700-y7-mz	8 MB	32 MB

Hardware Supported

Cisco IOS Release 12.2(8)YN2 supports the following Cisco 1700 series routers:

- Cisco 1710 Routers
- Cisco 1720 Routers
- Cisco 1721 Routers
- 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 1721routers 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 14. 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

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 the Software Version

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(8)YN2, 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.

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(8)YN2 supports the same feature sets as Releases 12.2 and 12.2(8)T, but Release 12.2(8)YN2 includes 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 lists the features and feature sets supported in Cisco IOS Release 12.2(8)YN2.

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 indicates the Cisco IOS release in which the feature was introduced. For example, "12.2(8)YN" means the feature was introduced in 12.2(8)YN. 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(8)*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
SmartInit	12.2(8)YN	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	No	No
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	No	No
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	No	No
Call Status Tracking Optimization	12.2(8)YN	No	No
cRTP-DSL Interfaces	12.2(8)YN	No	No
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	No	No

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
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	No	No
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	No	No
MLPPP Bundling-DSL Interfaces	12.2(8)YN	No	No
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes
Mobile IP	12.2(8)YN	Yes	Yes
Loss of Margin	12.2(8)YN	No	No
4-Port FXS/DID WIC	12.2(8)YN	No	No
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	No	No

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323

SIP INFO Method for DTMF Tone Generation

SIP T.37 and Cisco Fax

SIP Multiple 18x Responses

SIP Session Timer Support

Enhanced Codec support for SIP using Dynamic Payloads

SIP Carrier Identification Code

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

DTMF Events Through SIP Signaling

Table 3, Part 1 Feature List by Feature Set for Cisco 1751 and 1760 Routers

Feature	In	Feature Set					
		IP ADSL/IPX/AT/IBM/VOX/FW/IDS IPSEC 56	IP ADSL/IPX/AT/IBM/VOX/FW/IDS IPSEC 3DES	IP/ADSL/VOX/FW/IDS PLUS IPSEC 56	IP/ADSL/VOX PLUS IPSEC 56	IP/ADSL/VOX/FW/IDS PLUS IPSEC 3DES	IP/ADSL/VOX PLUS IPSEC 3DES
SmartInit	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes

Table 3, Part 1 Feature List by Feature Set for Cisco 1751 and 1760 Routers

Feature	In	Feature Set					
		IP ADSL/IPX/ AT/IBM/VO X/FW/IDS IPSEC 56	IP ADSL/IPX/ AT/IBM/VO X/FW/IDS IPSEC 3DES	IP/ADSL/ VOX/FW/ID S PLUS IPSEC 56	IP/ADSL/VO X PLUS IPSEC 56	IP/ADSL/ VOX/FW/ID S PLUS IPSEC 3DES	IP/ADSL/VO X PLUS IPSEC 3DES
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Call Status Tracking Optimization	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
cRTP-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
MLPPP Bundling-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	12.2(8)YN	No	No	Yes	Yes	Yes	Yes
Loss of Margin	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
4-Port FXS/DID WIC	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323

SIP INFO Method for DTMF Tone Generation

SIP T.37 and Cisco Fax

SIP Multiple 18x Responses

SIP Session Timer Support

Enhanced Codec support for SIP using Dynamic Payloads

SIP Carrier Identification Code

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

DTMF Events Through SIP Signaling

Table 3, Part 2 Feature List by Feature Set for Cisco 1751 and 1760 Routers

Feature	In	Feature Set				
		IP/ADSL/IPX/VOX/FW/IDS PLUS	IP/ADSL/VOX/FW/IDS PLUS	IP/ADSL/VOX PLUS	IP ADSL/IPX/AT/IBM/VOICE/FW/IDS IPSEC 56	IP ADSL/IPX/AT/IBM/VOICE/FW/IDS IPSEC 3DES
SmartInit	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	Yes	Yes	Yes	No	No
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	Yes	Yes	Yes	No	No
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	Yes	Yes	Yes	No	No
Call Status Tracking Optimization	12.2(8)YN	Yes	Yes	Yes	No	No
cRTP-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
MLPPP Bundling-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
Mobile IP	12.2(8)YN	Yes	Yes	Yes	No	No
Loss of Margin	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
4-Port FXS/DID WIC	12.2(8)YN	Yes	Yes	Yes	Yes	Yes
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	Yes	Yes	Yes	Yes	Yes

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323
SIP INFO Method for DTMF Tone Generation
SIP T.37 and Cisco Fax
SIP Multiple 18x Responses
SIP Session Timer Support
Enhanced Codec support for SIP using Dynamic Payloads
SIP Carrier Identification Code
Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI
DTMF Events Through SIP Signaling

Table 4 Feature List by Feature Set for Cisco 1750, 1751, and 1760 Routers

Feature	In	Feature Set								
		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	IP/ADSL/IPX/VOICE/FW/IDS PLUS	IP/ADSL/VOICE/FW/IDS PLUS	IP/VOICE PLUS	IP/ADSL/VOICE PLUS	IP/VOX PLUS
SmartInit	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	No	No	No	Yes	No	No	No	No	Yes
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	No	No	No	Yes	No	No	No	No	Yes
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	No	No	No	Yes	No	No	No	No	Yes
Call Status Tracking Optimization	12.2(8)YN	No	No	No	Yes	No	No	No	No	Yes
cRTP-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
MLPPP Bundling-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP[2]	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for Cisco 1750, 1751, and 1760 Routers

Feature	In	Feature Set								
		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	IP/ADSL/IPX/VOICE/FW/IDS PLUS	IP/ADSL/VOICE/FW/IDS PLUS	IP/VOICE PLUS	IP/ADSL/VOICE PLUS	IP/VOX PLUS
Loss of Margin	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
4-Port FXS/DID WIC	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	No	No	No	No	No	No	No	No	No

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323

SIP INFO Method for DTMF Tone Generation

SIP T.37 and Cisco Fax

SIP Multiple 18x Responses

SIP Session Timer Support

Enhanced Codec support for SIP using Dynamic Payloads

SIP Carrier Identification Code

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

DTMF Events Through SIP Signaling

2. Mobile IP feature is not supported in Cisco 1750 routers for these images.

Table 5, Part 1 Feature List by Feature Set for Cisco 1720, 1721, 1750, 1751, and 1760 Routers

Feature	In	Feature Set						
		IP ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 56	IP ADSL/IPX/AT/IBM/FW/IDS IPSEC 3DES	IP/ADSL/IPX/AT/IBM PLUS	IP/IPX/AT/IBM	IP/ADSL/FW/IDS PLUS IPSEC 56	IP/ADSL PLUS IPSEC 56	IP/ADSL/FW/IDS PLUS IPSEC 3DES
SmartInit	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	No	No	No	No	No	No	No
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	No	No	No	No	No	No	No
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	No	No	No	No	No	No	No

Table 5, Part 1 Feature List by Feature Set for Cisco 1720, 1721, 1750, 1751, and 1760 Routers

Feature	In	Feature Set						
		IP ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 56	IP ADSL/IPX/AT/IBM/FW/IDS IPSEC 3DES	IP/ADSL/IPX/AT/IBM PLUS	IP/IPX/AT/IBM	IP/ADSL/FW/IDS PLUS IPSEC 56	IP/ADSL PLUS IPSEC 56	IP/ADSL/FW/IDS PLUS IPSEC 3DES
Call Status Tracking Optimization	12.2(8)YN	No	No	No	No	No	No	No
cRTP-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
MLPPP Bundling-DSL Interfaces	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP[2]	12.2(8)YN	Yes	No	Yes	No	Yes	Yes	Yes
Loss of Margin	12.2(8)YN	Yes	Yes	Yes	No	Yes	Yes	Yes
4-Port FXS/DID WIC	12.2(8)YN	No	No	No	No	No	No	No
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	No	No	No	No	No	No	No

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323

SIP INFO Method for DTMF Tone Generation

SIP T.37 and Cisco Fax

SIP Multiple 18x Responses

SIP Session Timer Support

Enhanced Codec support for SIP using Dynamic Payloads

SIP Carrier Identification Code

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

DTMF Events Through SIP Signaling

2. Mobile IP feature is not supported in Cisco 1720 and 1750 routers for these images.

Table 5, Part 2 Feature List by Feature Set for Cisco 1720, 1721, 1750, 1751 and, 1760 Routers

Feature	In	Feature Set							
		IP/ADSL PLUS IPSEC 3DES	IP/ADSL/IPX/ FW/IDS PLUS	IP/IPX	IP/FW/IDS	IP PLUS	IP/ADSL PLUS	IP	IP/ADSL
SmartInit	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIP Enhancements[1]	12.2(8)YN	No	No	No	No	No	No	No	No
MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)	12.2(8)YN	No	No	No	No	No	No	No	No
H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events	12.2(8)YN	No	No	No	No	No	No	No	No
Call Status Tracking Optimization	12.2(8)YN	No	No	No	No	No	No	No	No
cRTP-DSL Interfaces	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
Frame Relay - FRF.5 & FRF.8	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
Tunable Tx-Ring Buffer-DSL Interfaces	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
ATM Cell Loss Priority (CLP) Bit Marking	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
MLPPP Bundling-DSL Interfaces	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
Frame Relay - Multilink (MLFR-FRF.16)	12.2(8)YN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP[2]	12.2(8)YN	Yes	Yes	No	No	Yes	Yes	No	No
Loss of Margin	12.2(8)YN	Yes	Yes	No	No	No	Yes	No	Yes
4-Port FXS/DID WIC	12.2(8)YN	No	No	No	No	No	No	No	No
Enhanced ITU-T G.168 Echo Cancellation	12.2(8)YN	No	No	No	No	No	No	No	No

1. SIP Enhancements inlcude the following features:

Internal Cause Code Consistency Between SIP and H.323

SIP INFO Method for DTMF Tone Generation

SIP T.37 and Cisco Fax

SIP Multiple 18x Responses

SIP Session Timer Support

Enhanced Codec support for SIP using Dynamic Payloads

SIP Carrier Identification Code

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

DTMF Events Through SIP Signaling

2. Mobile IP feature is not supported in Cisco 1720 and 1750 routers for these images.

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(8)YN2.

New Hardware Features in Release 12.2(8)YN

Cisco 4-Port FXS/DID VIC

Cisco 4-Port FXS/DID VIC (VIC-4FXS/DID) can support up to four foreign-exchange-station (FXS) ports for directly connecting phones or fax machines, or it can be used to connect up to four direct-inward-dial (DID) analog trunks, providing customers the flexibility they need for their unique business environment. Each port on the Cisco 4-Port FXS/DID VIC is selectable for use in either FXS or DID mode. Cisco VIC-4FXS/DID can be plugged into VIC/WIC or VIC slots in the Cisco 1751 and the Cisco 1760 routers. The Cisco 1751 can support three VIC-4FXS/DID cards with a maximum of 4 ports in DID mode. The Cisco 1760 can support four VIC-4FXS/DID cards with a maximum of 8 ports in DID mode.

New Software Features in Release 12.2(8)YN

The following sections describe the new software features supported by the Cisco 1700 series routers for Release 12.2(8)YN2.

SmartInit

SmartInit on Cisco 1700 router identifies the I/O memory requirements of the 1700 routers, based on the modules (VIC/WIC/DSP/VPN) present in the router during bootup. It calculates the minimum I/O and processor memory requirements. If these requirements can be met with the available DRAM, the router is allowed to boot; otherwise, the router is forced to return to ROMMON. SmartInit is enabled by default; the user can override the default behavior using memory-size iomem CLI.

Internal Cause Code Consistency Between SIP and H.323

This feature establishes a standard set of categories for internal causes of voice call failures. From these categories, the gateway will determine consistently the release cause codes recorded in accounting records and sent in ISDN and H.323 signaling, and responses sent in SIP signaling. Internal cause code consistency between SIP and H.323 will enable more efficient and effective operation of hybrid SIP/H.323 networks, reducing operational expense and improving service availability.

MGCP Line Package Enhancements for Loop Current Feed Open (LCFO)

A new event, Open Switch Interval (OSI), is added to the MGCP line package. OSI signals to the gateway indicates that Loop Current Feed Open (LCFO) signal should be generated on the FXS port. This signal indicates the calling subscriber has gone on-hook due to which automated devices like answering machine will stop playing and recording.

SIP INFO Method for DTMF Tone Generation

This feature adds DTMF relay (out of band) on the SIP signaling path (not the media path) using the SIP INFO method with content-type application or DTMF relay. The INFO message is received along the signaling path as opposed to the media path. Upon receiving a SIP INFO message with DTMF relay content, the gateway will generate the DTMF tone on the telephony end of the call. DTMF relay can be configured in the CLI by adding a new type of DTMF-relay option.

SIP T.37 and Cisco Fax

This feature enables T.38-based fax relay to T.37-based store-and-forward fax relay fallback, using SIP signaling in the event of a T.38-based call failure. Prior releases supported this function on the Cisco 1751 and 1760 gateways only when using the H.323v2 signaling.

H.323 Dual Tone Multifrequency (DTMF) Relay Using Named Telephone Events

This feature enhances the interoperability of the Cisco IOS gateways with equipment from other vendors by implementing H245v7 extensions to support RFC2833 in-band audio telephone events and in-band audio tones as well as support for asymmetrical RTP dynamic payload types.

SIP Multiple 18x Responses

This feature aims to enhance the forking support on the UAC to support sequential forking and allow changes in media between the initial 18x response and 200 response to the INVITE request. Supporting parallel forking allows the UAC to process multiple 18x responses and keep track of them until the final response for the initial INVITE is received. Supporting sequential forking will be slightly different. The UAC will treat the latest 18x received but still keep track of the previous responses. This allows the proxy to initiate a new INVITE if the called party does not pick up. This will trigger additional 18x responses each time the proxy initiates a new INVITE to an endpoint. In parallel forking, the proxy will send out multiple INVITEs at once and all parties could be ringing and the UAC must be able to complete the call with any one of the endpoints.

SIP Session Timer Support

This feature enables the Cisco SIP gateways to support the SIP Session Timer. This feature proposes an extension to the existing SIP protocol to allow periodic refresh of SIP sessions using re-INVITEs. The refresh allows both UAs to determine if the SIP session is alive. The SIP Session Timer Support introduces two new headers - Session Expires and Min-SE. Also the supported header must have the timer option to enable this feature. The Cisco SIP gateways do not ask for refreshes but indicate that they are capable of handling them. A Cisco SIP UAS sends an INVITE with supported timer and Min-SE value which can be configured through CLI.

Enhanced Codec support for SIP using Dynamic Payloads

This feature enhances the codec type negotiation and selection between the UAS and the UAC and adds support for dynamic payload types to be used in SIP calls. The present implementation of the SIP stack allows only the following static codecs to be used - G711alaw, G711ulaw, G723r63, G726r32, G728, GSMFR, and G729r8. This feature enhances SIP stack capability on IOS gateways to support all codec types that can be configured at the CLI. For codec types with no static payload types defined, dynamic payload values will be used.

SIP Carrier Identification Code

This feature enables the support of mapping a new attribute in the SIP INVITE Request-URI called Carrier Identification Code (CIC) to/from the ISDN Transit Network Selection Information Element (TNSIE) in the outgoing ISDN setup message. The purpose of the TNSIE is to identify the requested transit network. The CIC parameter is part of the Request-URI URL. The CIC parameter is supported in both the SIP URL type and TEL URL type.

Cisco-SIP-UA-MIB Enhancements Providing Functional Parity to SIP related CLI

This feature enhances the Cisco-SIP-UA-MIB by adding objects to provide SNMP parity with the CLI functionality.

DTMF Events Through SIP Signaling

This feature adds support for sending DTMF notifications via SIP NOTIFY messages from a SIP gateway. While the sending of DTMF notifications is required, it is desired to also add the ability to send all telephone-event notifications as defined in RFC2833. This feature implements notifier portion of the SIP SUBSCRIBE/NOTIFY method.

Call Status Tracking Optimization

In an H323 network, the Information Request or IRR message is a mechanism that allows a gatekeeper to obtain information about a given call or all calls from an end-point. A gatekeeper (Cisco gatekeeper in particular) may request an information about a specific call or for all of the calls by sending Information Request or IRQ message to an end-point. The gatekeeper may also instruct an end-point to periodically report IRR during call admission (by setting irrFrequency field in Admission Request or ACF message). In the environment where a large call capacity end-point or a gateway is deployed, the IRQ requests for "all call" and the periodic IRR for each call could produce a large number of IRR messages and causes high CPU utilization in the gateway or in the gatekeeper. Call Status Tracking Optimization feature helps to minimize this problem.

Call Status Tracking Optimization provides the following features:

1. CLI to configure IRR frequency that is included in the ACF.
2. CLI to disable a gatekeeper’s sending of an IRQ with CRV=0 when requesting the status of all calls after its initialization.
3. Increased number of retries (from 2 to 9) for sending DRQ; 4- CLI to disable sending of BRQ to the gatekeeper.

cRTP-DSL Interface

The Real-Time Transport Protocol (RTP) feature, as described in RFC 1889, is used to carry real-time data for voice and video applications. For a typical Voice over IP (VoIP) application, the payload portion of the packet can be smaller than the header. For instance, using the G.729 codec, the payload is 20 bytes, but the IP, User Data Protocol (UDP), and RTP header is 40 bytes. It is inefficient to send the IP, UDP, and RTP header across a slow link without compressing it. The Compressed Real-Time Transport Protocol (cRTP) feature, as defined in RFC 2508, addresses this inefficiency by making the VoIP packet headers smaller. The basic idea behind cRTP is that although several fields in the IP, UDP, and RTP header change from packet to packet, the difference in these fields from packet to packet is constant. The compression scheme in cRTP is to encode the header to reduce the size of information to be transmitted. With cRTP, a 40-byte IP, UDP, and RTP header of a VoIP packet can be compressed to 2 to 4 bytes per packet, yielding approximately 11.2 kbps of bandwidth for a G.729 codec call that uses cRTP. This feature is supported on Cisco 1720, 1721, 1751, 1751V, 1760, and 1760V routers only.

Frame Relay - FRF.5 & FRF.8

To communicate over WANs, end-user stations and the network cloud typically must use the same type of transmission protocol. This limitation has prevented differing networks such as Frame Relay and ATM from being linked. The Frame Relay-to-ATM service interworking feature allows Frame Relay and ATM networks to exchange data despite differing network protocols. The functional requirements for linking Frame Relay and ATM networks are provided by the Frame Relay/ATM PVC Service Interworking Implementation Agreement specified in Frame Relay Forum (FRF) documents FRF.5 and FRF.8. The FRF.5 and FRF.8 interworking functions involve multiplexing PVCs between Frame Relay and ATM networks and mapping the control bits between Frame Relay frame headers and ATM cell headers. FRF.5 and FRF.8 are necessary for ATM-based features to interwork with Frame-Relay-based IP class of service features. This feature is supported on Cisco 1720, 1721, 1751, 1751V, 1760, and 1760V routers only.

Tunable Tx-Ring Buffer-DSL Interfaces

The transmission (tx) ring is the first-in, first-out (FIFO) buffer used to hold frames before transmission at the DSL driver level. The tx ring defines the maximum number of packets that can wait for transmission at Layer 2. The tx ring complements the ability of LLQ to minimize jitter and latency of voice packets. For maximum voice quality, a low tx ring setting should be used. For maximum data throughput, a high tx ring setting should be used. You can configure the size of the tx ring for each permanent virtual circuit (PVC). The default value is 60. However, the value of the setting can be 2 through 60 on Cisco 1700 series routers and 3 through 60 on Cisco 2600 and Cisco 3600 series routers. A low tx ring setting, such as 2 or 3, is required for latency-critical traffic. For example, when the tx ring limit is configured as 3 and LLQ is configured on the PVC, the worst case delay for a voice packet is the time required to transmit three data packets. When the buffering is reduced by configuring the tx ring limit, the delay experienced by voice packets is reduced by a combination of the tx ring and LLQ mechanism. This feature is supported on Cisco 1720, 1721, 1751, 1751V, 1760, and 1760V routers only.

ATM Cell Loss Priority (CLP) Bit Marking

When congestion occurs in an ATM network, ATM cells are discarded. One way to control which cells are discarded is to use cell loss priority (CLP) bit marking in the header of each cell. The CLP bit may be set to either 1 or 0. Those cells that have CLP bit set to 1 are always discarded before any cells that have the CLP bit set to 0. The ATM CLP Bit Marking feature allows you to control the CLP setting on the Cisco routers. The marking of the CLP bit is implemented on a per-packet basis so that the CLP bit of every ATM cell that belongs to a particular packet is set to either 0 or 1. This feature is supported on Cisco 1720, 1721, 1751, 1751V, 1760, and 1760V routers only.

MLPPP Bundling-DSL Interfaces

The Bundling of ATM Interfaces using Multilink PPP (MLPPP) feature supports other QoS features, such as LLQ and CBWFQ and link fragmentation and interleaving (LFI). The bundling feature supports the other QoS features over a multilink MLPPP bundle for which members of the bundle are defined across physically different DSL interfaces. The bundling occurs at the ATM layer through ATM permanent virtual circuits (PVCs). This feature is supported on Cisco 1720, 1721, 1751, 1751V, 1760, and 1760V routers only.

Frame Relay - Multilink (MLFR-FRF.16)

The Multilink Frame Relay feature introduces functionality based on the Frame Relay Forum Multilink Frame Relay UNI/NNI Implementation Agreement (FRF.16). This feature provides a cost-effective way to increase bandwidth for particular applications by enabling multiple serial links to be aggregated into a single bundle of bandwidth. Multilink Frame Relay is supported on User-to-Network Interfaces (UNI) and Network-to-Network Interfaces (NNI) in Frame Relay networks.

Mobile IP

Mobile IP is an open standard, defined by the Internet Engineering Task Force (IETF) RFC 2002, that allows users to keep the same IP address, stay connected, and maintain ongoing applications while roaming between IP networks. Mobile IP is scalable for the Internet because it is based on IP—any media that can support IP can support Mobile IP.

Cisco IOS® Software and its support for Mobile IP provide the technology that enables an IP node's ability to retain the same IP address and maintain existing communications while traveling from one network to another.

Mobile IP eliminates a stop-and-start approach to IP connectivity that is required with network location changes, thus enabling users to maintain the same IP address regardless of their point of attachment to the network.

Loss of Margin

Loss of Margin (LoM) handling allows the router to handle LoM messages received from the DSL Access Multiplexer (DSLAM). By default, the router does not monitor or act on LoM messages. A new command, **dsl lom** enables the router to monitor LoM message, and to retrain with the DSLAM when it receives them for a specified number of seconds.

Enhanced ITU-T G.168 Echo Cancellation

Cisco IOS Release 12.2(8)YN2 on the Cisco 1700 series router introduces support for a G.168-2000-compliant echo canceller, with up to 64 ms of coverage. The standard Cisco echo canceller, which supports 32 ms of coverage, is used by default. To enable the ITU-T G.168-compliant echo canceller, enter the following command in global configuration mode:

voice echo-canceller extended

For example:

```
Router#conf t

Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#voice echo-canceller extended

Router(config)#voice-port 0/0

Router(config-voiceport)#echo coverage ?

  24  24 milliseconds echo canceller coverage
  32  32 milliseconds echo canceller coverage
  48  48 milliseconds echo canceller coverage
  64  64 milliseconds echo canceller coverage

Router(config-voiceport)#echo coverage 64
```

New Software Features in Release 12.2(8)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

Call Status Tracking Optimization

This feature includes changes in both gatekeeper and gateway functionality of a router. Since Cisco 1700 routers do not have gatekeeper functionality, only the gateway features of Call Status Tracking Optimization are applicable in this platform.

Cisco 4-Port FXS/DID VIC

The Cisco 1751 router supports only four DID ports and the Cisco 1760 supports only eight DID ports. Once this limit is reached, the user cannot configure any more ports in DID mode. The rest of the ports are available for FXS mode.

The following restrictions apply when external devices are connected to the 4-port FXS/DID VIC:

- A maximum of five ringer equivalence number (REN) loads can be supported on each voice port.
- A maximum of eight REN loads can be supported on each 4-port FXS/DID VIC.
- A maximum of 20 REN loads can be supported on each Cisco1751 and Cisco1760 router. If the total REN load on the router exceeds 20, the calling party will hear a ring back but the called party's telephone will not ring until the router has sufficient REN available. In this scenario, caller ID information may be lost.

CSCdx17373

Route-Cache is not getting updated on ATM with gre-tunnel and PPPoE. Fast switching is not supported for IPX over PPPoE.

CSCdx65021

Traceback is seen while configuring 24th PVC. The traceback does not affect the functionality in any way and is not a spurious acess.

CSCdx82429

Over-subscribed data traffic flips virtual-access for PPP. Keepalive packets are not prioritized in any QoS mechanism over a PPP link. This causes the virtual-access interface to go down. The interface will come up when the keepalive packets are received.

CSCdx85932

Throughput drops with multiple PVCs in MLP bundle. When fragmentation is configured on this bundle with multiple PVCs per each interface, the fragment size is determined based on the smallest bandwidth member of the bundle. Hence, with more PVCs configured on the same interface, it causes more MLPP fragments. This increases both MLPP overhead as well as ATM segmentation overhead, there by causing the degradation in the throughput.

CSCdx90619

A service policy attached to an ATM interface with connect command will not be operational as it is carries only L2 traffic (FRF.5/8 traffic). The service policy is not used when the connect is active.

CSCdy34119

IGRP routing protocol has been removed from all IOS images.

CSCdy35031

The virtual-access will only go down only after PPP keepalives fail. But if the keepalive timeout is high, then it will take long time for the virtual-access to go down. If keepalives are not enabled, then the virtual-access will stay connected.

CSCdy37865

BGP does not work in openConfirm when using MLP bundle. This is a due to a restriction of the BGP protocol, that the fragment size cannot be less than 10ms, else the BGP link will not come up.

CSCdy73908

When the PCR/SCR is changed, the traffic will stop flowing for about 10 secs.

CSCdz13358

In MLP bundling, when congesting the ATM links with specific constant data length, such as 256 bytes, end-to-end delay can go up to 200 ms. However, when more realistic traffic pattern (e.g. variable packet sizes) is used, the high end-to-end delay problem is not observed.

CSCin17774

Cisco-CAR-MIB is populating for ATM subinterface eventhough its down. Since CAR is a legacy feature that has largely been replaced by police in modular QoS CLI (class-map/policy-map), CAR MIB is also replaced by CBQOSMIB.

CSCin17775

ccarConfigType&ccarConfigAccIdx return wrong values for qosgroup,dsc. Since CAR is a legacy feature that has largely been replaced by police in modular QoS CLI (class-map/policy-map), CAR MIB is also replaced by CBQOSMIB.

CSCin17874

RateLimitAction needs to incorporate new values. Since CAR is a legacy feature that has largely been replaced by police in modular QoS CLI (class-map/policy-map), CAR MIB is also replaced by CBQOSMIB.

Important Notes

The following sections contain important notes about Cisco IOS Release 12.2(8)YN2 that can apply to the Cisco 1700 series routers. (Also, see the "Caveats" section on page 22.)

SmartInit

The following points have to be noted while using SmartInit.

- If the user had configured **no memory-size iomem** from a pre-SmartInit image (old image) and a SmartInit image is loaded on the router, the router will boot with SmartInit enabled. The running-config will not display any **memory-size iomem** CLI.
- If the user had configured memory-size iomem 10 from a pre-SmartInit image and a SmartInit image is loaded on the router, the router will boot with SmartInit enabled. Because of this, the **iomem** size may not be 10% (as expected on a pre-SmartInit image).
- If the user configures **memory-size iomem** *10* on a SmartInit image, it would be displayed in the running-config and startup-config. This is different from the pre-SmartInit that does not display memory-size iomem 10 because 10% is the default **iomem** size.
- If the user configured **iomem** size is too low or too high, the **iomem** size calculated by the SmartInit image will be different from the configured value, but the running-config will still display the configured value only. The user can get the actual **iomem** size using **show version** or **show memory**.

Cisco 4-Port FXS/DID VIC

To determine the DSP requirements necessary for the VIC-4FXS/DID, please refer to the DSP calculator at the following location:

http://www.cisco.com/cgi-bin/Support/DSP/dsp-calc.pl

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(8)YN2. 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 toCisco.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.

Resolved Caveats - Release 12.2(8)YN2

Cisco IOS Release 12.2(8)YN2 is a rebuild release for Cisco IOS Release 12.2(8)YN. This section describes unexpected behavior that is fixed in Release 12.2(8)YN2.

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

Open Caveats - Release 12.2(8)YN

Miscellaneous

CSCdy83465

T.37 fax protocol may not function as expected for On-ramp and Off-ramp.

CSCdy24480

DSLSAR: Throughput degrades when downstream traffic is more than clock rate.

Resolved Caveats - Release 12.2(8)YN

This section describes unexpected behavior that is fixed in Release 12.2(8)YN.

Miscellaneous

CSCds16482

CISCO-VOICE-ANALOG-IF-MIB reports invalid cvaIfObjects state.

CSCdw17400

Transcoding: One way audio between 711A GW and 729/723 IP Phone.

CSCdw30471

IPSEC packets get dropped for dynamic crypto map.

CSCdx15347

Cisco 1700 router failed to sync with ECI DSLAM and required re-booting.

CSCdx44650

Connection trunk disconnects directly connected ports.

CSCdy26102

Router crashes while reapplying configurations when the EZVPN tunnel is up.

CSCdy28760

NAT:SIP:Inside SIP phones cannot talk to each other (overload).

CSCdy51368

Cisco 827 crashes at dpAssociateIncomingPeer when **shut/noshut** is done under **voice-port**.

CSCdy56505

MLP: Output queue overflows on member links.

CSCdy57047

Cisco 831 router generated -Process and -Traceback after reload **if pppoe enable** is on E1.

CSCdy74249

Configuration of dial-peers through http does not work.

CSCdy75532

IPSEC pass-through does not operate with Timestep VPN Client.

CSCdy80403

CallManager T.38 and Cisco fax relay breaks on OGW.

CSCdy87244

DSP failure with tdm connected.

CSCdy87266

Tx-ring-limit of 3 may degrade output while 4,5,..60 works fine.

CSCdy87930

Spurious memory seen when unconfiguring and configuring E1 controller.

CSCdy87965

FXS/DID port in loopstart after configuring for groundstart.

CSCdy87975

Invalid message when unconfiguring TDM clock.

CSCdy88136

Spurious memory access occurs after ATM interface is up.

CSCdz01018

Assertion failures seen with **no tdm clock**.

CSCdz01020

Static analysis report and the code changes when necessary.

CSCdz03116

Add ICS voice-only images to production images.

CSCdz03484

show command missing in H323 RAI feature.

CSCdz06372

mgcp modem passthrough voip mode nse is not be allowed by Trombone.

CSCdz06470

DSP 4.1(25) with passthrough and HH fix.

CSCdz06518

Disable hardware crypto functions from c837/c836 non-PLUS images.

CSCdz08978

WIC not recognized in flo_t images on Cisco 1700 router.

CSCdz09232

Interface is still up when %DSLSAR-1-NO_SCC_CLK_ERR displayed.

CSCdz10855

Router crashes at ipm_dsprm_test_dsp_count with CLI test dsp device all.

CSCdz13129

To back out CSCdy56505 from the YN throttle branch.

CSCdz13319

Checkin DSP firmware version 4.1.26.

CSCdz13424

Add TACACS to c831 base and soho91 images.

CSCin18329

Voice port goes dead with caller-id is enabled with cptone DK.

CSCin21301

dialer-pool member command is removed if **pppoa** (snap) configured for second time.

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

Release-Specific Documents

The following documents are specific to Release 12.2 and apply to Release 12.2(8)YN2. They are located on Cisco.com and the Documentation CD (under the heading **Service & Support**):

- 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 toCisco.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.

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

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>**

Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com

Translated documentation is available at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

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Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

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Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://www.cisco.com/register/

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

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

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