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Release Notes for Cisco 3640 for Cisco IOS Release 12.0(2)XC

January 7, 1999

These release notes describe new features for the Cisco 3640 router that supports Cisco IOS Release 12.0(2)XC. Cisco IOS Release 12.0(2)XC is based on Cisco IOS Release 12.0(2)T. The Cisco 3620 is not supported by this Cisco IOS release.

Use these release notes in conjunction with the cross-platform *Release Notes for Cisco IOS Release 12.0 T* located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

For a list of software caveats that apply to Release 12.0(2)XC, refer to the “Caveats” section on page 11.

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Introduction

As a modular solution, the Cisco 3640 enables corporations to increase dial-up intensity and take advantage of current and emerging WAN technologies and networking capabilities. The Cisco 3640 is fully supported by Cisco IOS software, which includes dial-up connectivity, LAN-to-LAN routing, data and access security, WAN optimization, and multimedia features.

Early Deployment Releases

This release notes document is based on *Release Notes for Cisco 3600 Series for Cisco IOS Release 12.0(2)T*. Release 12.0 XC is an Early Deployment (ED) release, delivering both fixes to software caveats and support for new Cisco hardware. Table 1 briefly describes some of the ED releases that will be available for the Cisco 3600 series.

Table 1 Early Deployment Releases for the Cisco 3600 Series

ED Release	Maintenance Release	Additional Software Features	Additional Hardware Features	Availability
Release 12.0 XC	2	Modem over BRI	–	Now
Release 12.0 XD	2	ISDN BRI Voice over IP	–	Now
Release 12.0 T	2	–	–	Now
Release 11.3 T	7	–	–	Now

System Requirements

This section describes the system requirements for Release 12.0(2)XC and includes the following sections:

- Memory Requirements, page 3
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Memory Requirements

Table 2 describes the memory requirements of the Cisco IOS feature sets for the Cisco 3640 for Release 12.0(2)XC.

Table 2 Memory Requirements for the Cisco 3640

Feature Set by Platform	Image Name	Required Flash Memory	Required DRAM Memory	Runs from
IP	c3640-i-mz	4 MB	24 ¹ MB	RAM
IP Plus	c3640-is-mz	8 MB	32 MB	RAM
IP Plus 40	c3640-is40-mz	8 MB	32 MB	RAM
IP Plus IPsec 56	c3640-is56i-mz	8 MB	32 MB	RAM
IP/FW	c3640-io-mz	8 MB	32 MB	RAM
IP/FW Plus IPsec 56	c3640-ios56i-mz	8 MB	32 MB	RAM
IP Plus IPsec 3DES	c3640-ik2s-mz	8 MB	32 MB	RAM
IP/FW Plus IPsec 3DES	c3640-ik2os-mz	8 MB	32 MB	RAM
IP/System Controller	c3640-c2is-mz	16 MB	32 MB	RAM
IP/IPX/AT/DEC	c3640-d-mz	8 MB	24 MB	RAM
IP/IPX/AT/DEC Plus	c3640-ds-mz	8 MB	32 MB	RAM
IP/IPX/AT/DEC/FW Plus	c3640-dos-mz	8 MB	32 MB	RAM
Enterprise Plus	c3640-js-mz	8 MB	48 MB	RAM
Enterprise Plus 40	c3640-js40-mz	8 MB	48 MB	RAM
Enterprise Plus IPsec 56	c3640-js56i-mz	8 MB	48 MB	RAM
Enterprise/FW IPsec 56	c3640-jos56i-mz	8 MB	48 MB	RAM
Enterprise Plus IPsec 3DES	c3640-jk2s-mz	8 MB	48 MB	RAM
Enterprise/FW Plus IPsec 3DES	c3640-jk2os-mz	8 MB	48 MB	RAM
Enterprise/APPN Plus	c3640-ajs-mz	16 MB	48 MB	RAM
Enterprise/APPN Plus 40	c3640-ajs40-mz	16 MB	48 MB	RAM
Enterprise/APPN Plus IPsec 56	c3640-ajs56i-mz	16 MB	48 MB	RAM
Enterprise/APPN Plus IPsec 3DES	c3640-ajk2s-mz	16 MB	48 MB	RAM

¹ 16 MB in Cisco IOS Release 12.0(1)T.

Hardware Supported

In the Cisco 3600 series, Cisco IOS Release 12.0(2)XC supports only the Cisco 3640. Supported Cisco 3600 series interfaces are in Table 5.

Table 3 Supported Interfaces on the Cisco 3600 Series

Interface, Network Module, or Data Rate	Platforms Supported	
Dial Access Network Modules	16- and 32-port asynchronous network module	All Cisco 3600 series platforms
	6- to 30-port integrated digital modems network module	All Cisco 3600 series platforms
	8- or 16-port Integrated analog network module	All Cisco 3600 series platforms
LAN Interfaces	1- and 4-port Ethernet (AUI and 10BaseT)	All Cisco 3600 series platforms
	4/16 Mbps Token Ring	All Cisco 3600 series platforms
	Fast Ethernet (100BaseTX and 100BaseFX)	All Cisco 3600 series platforms
Mixed Media Network Modules	Single port 10/100BaseTX with 1-port channelized/PRI E1 balanced mode	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 1-port channelized/PRI E1 unbalanced mode	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 1-port channelized/PRI T1	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 1-port channelized/PRI T1 with CSU	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 2-port channelized/PRI E1 balanced mode	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 2-port channelized/PRI E1 unbalanced mode	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 2-port channelized/PRI T1	All Cisco 3600 series platforms
	Single port 10/100BaseTX with 2-port channelized/PRI T1 with CSU	All Cisco 3600 series platforms
	1 Ethernet and 2 WAN card slot	All Cisco 3600 series platforms
	1 Ethernet, 1 Token Ring, and 2 WAN card slot	All Cisco 3600 series platforms
	2 Ethernet and 2 WAN card slot	All Cisco 3600 series platforms
	Voice/Fax Interfaces and Network Modules¹	2-port ISDN BRI S/T TE voice interface card
1- and 2-port voice/fax network module		All Cisco 3600 series platforms with voice/fax network module
2-port E&M voice interface card		All Cisco 3600 series platforms
2-port FXO voice interface card		All Cisco 3600 series platforms with voice/fax network module
2-port FXS voice interface card		All Cisco 3600 series platforms with voice/fax network module

Table 3 Supported Interfaces on the Cisco 3600 Series (continued)

Interface, Network Module, or Data Rate	Platforms Supported
WAN Data Rates	
48/56/64 kbps	All Cisco 3600 series platforms
1.544/2.048 Mbps	All Cisco 3600 series platforms
Up to 8 Mbps on 4-port serial network module	All Cisco 3600 series platforms
52 Mbps max using high speed serial interface (HSSI) network module	All Cisco 3600 series platforms
WAN Interfaces and Network Modules²	
1- and 2-port channelized T1 and E1 network module	All Cisco 3600 series platforms
1-port ATM-25 network modules for the Cisco 3600 series	All Cisco 3600 series platforms
1-port BRI with NT or S/T WAN interface card	All Cisco 3600 series platforms
1-Port High Speed Serial Interface network module (HSSI)	All Cisco 3600 series platforms
4- and 8-port BRI network module with NT1	All Cisco 3600 series platforms
4- and 8-port BRI network module with S/T interface	All Cisco 3600 series platforms
4- and 8-port synchronous/asynchronous	All Cisco 3600 series platforms
4-port serial	All Cisco 3600 series platforms
56/64 kbps DSU/CSU	All Cisco 3600 series platforms
T1 WAN interface card for Cisco 3600, Cisco 2600, and Cisco 1600 series	All Cisco 3600 series platforms
T1 with Integrated DSU/CSU for the Cisco 3600, Cisco 2600, and Cisco 1600 series	All Cisco 3600 series platforms

¹ The voice/fax network modules require Cisco IOS Plus feature sets.

² The ATM-25 network modules require Cisco IOS Plus feature sets.

Determining Your Cisco IOS Software Release

To determine the version of Cisco IOS software currently running on a Cisco 3600 series router, log into the router and use the **show version EXEC** command. The following is sample output from the **show version** command. The version number is indicated on the second line as shown below:

```
Cisco Internetwork Operating System Software
IOS (tm) 3600 Software (C3640-JS-M), Version 12.0(2)XC, EARLY DEPLOYMENT RELEASE
SOFTWARE (fc1)
```

Additional command output lines include more information, such as processor revision numbers, memory amounts, hardware IDs, and partition information.

Updating to a New Release

At the time of this printing, no product bulletins are available for upgrading to Cisco IOS Release 12.0 XC. For generic information on updating to a new software release, refer to the *Cisco IOS Software Release Upgrade Paths and Packaging Simplification product bulletin* located on CCO. On CCO, follow this path:

Products and Ordering: More Information: Product Bulletins

Scroll to **Software**. Under **Cisco IOS 11.3**, click *Cisco IOS Software Release 11.3 Upgrade Paths (#703: 12/97)*. The *Cisco IOS Software Release Upgrade Paths and Packaging Simplification product bulletin* does not contain information specific to Cisco IOS Release 12.0 XC, but provides generic upgrade information that might apply to Cisco IOS Release 12.0 XC.

Feature Set Tables

Cisco IOS software is packaged in feature sets (also called software images) depending on the platform. Each feature set contains a specific set of Cisco IOS features. The following section lists the feature set matrix and the features supported by each feature set.

The feature set matrix (see Table 4) shows the feature set organization and lists which feature sets are available on the Cisco 3640 series for Release 12.0(2)XC, including the feature set name, the feature set matrix term, the software image name, and platforms supported.

Table 4 Feature Sets Supported by the Cisco 3600 Series

Feature Set		Feature Set Matrix Term	Software Image	Platforms
IP Standard Feature Sets	IP	Basic ¹	c3640-i-mz	Cisco 3640
	IP Plus	Plus ²	c3640-is-mz	Cisco 3640
	IP Plus 40	Plus, Plus 40 ³	c3640-is40-mz	Cisco 3640
	IP Plus IPsec 56	Plus, IPsec 56 ⁴	c3640-is56i-mz	Cisco 3640
	IP Plus IPsec 3DES	Plus, IPsec, 3DES ⁵	c3640-ik2s-mz	Cisco 3640
	IP/FW Plus IPsec 3DES	Plus, IPsec, 3DES	c3640-ik2os-mz	Cisco 3640
	IP/System Controller	Basic	c3640-c2is-mz	Cisco 3640
	IP/FW	Basic	c3640-io-mz	Cisco 3640
	IP/FW Plus IPsec 56	Plus, IPsec 56	c3640-ios56i-mz	Cisco 3640
Desktop IBM Standard Feature Sets	IP/IPX/AppleTalk/DEC	Basic	c3640-d-mz	Cisco 3640
	IP/IPX/AppleTalk/DEC Plus	Plus	c3640-ds-mz	Cisco 3640
	IP/IPX/AppleTalk/DEC/FW Plus	Plus	c3640-dos-mz	Cisco 3640

Table 4 Feature Sets Supported by the Cisco 3600 Series (continued)

Feature Set		Feature Set Matrix Term	Software Image	Platforms
Enterprise Standard Feature Sets	Enterprise Plus	Plus	c3640-js-mz	Cisco 3640
	Enterprise Plus 40	Plus, Plus 40	c3640-js40-mz	Cisco 3640
	Enterprise Plus IPsec 56	Plus, IPsec 56	c3640-js56i-mz	Cisco 3640
	Enterprise/FW IPsec 56	IPsec 56	c3640-jos56i-mz	Cisco 3640
	Enterprise Plus IPsec 3DES	Plus, IPsec, 3DES	c3640-jk2s-mz	Cisco 3640
	Enterprise/FW Plus IPsec 3DES	Plus, IPsec, 3DES	c3640-jk2os-mz	Cisco 3640
Enterprise/APPN Standard Feature Set	Enterprise/APPN Plus	Plus	c3640-ajs-mz	Cisco 3640
	Enterprise/APPN Plus 40	Plus, Plus 40	c3640-ajs40-mz	Cisco 3640
	Enterprise/APPN Plus IPsec 56	Plus, IPsec 56	c3640-ajs56i-mz	Cisco 3640
	Enterprise/APPN Plus IPsec 3DES	Plus, IPsec, 3DES	c3640-ajk2s-mz	Cisco 3640

- 1 This feature set is offered in the basic feature set.
- 2 This feature set is offered in the Plus feature set.
- 3 This feature set is offered in the encryption feature sets which consist of 40-bit (Plus 40) data encryption feature sets.
- 4 This feature set is offered in the encryption feature sets which consist of IPsec 56-bit (Plus IPsec 56) data encryption feature sets.
- 5 This feature set is offered in the encryption feature sets which consist of Triple DES (3DES) Encryption data encryption feature sets.



Caution Cisco IOS images with strong encryption (including, but not limited to, 56-bit data encryption feature sets) are subject to U.S. government export controls, and have a limited distribution. Images to be installed outside the U.S. require an export license. Customer orders might be denied or subject to delay due to U.S. government regulations. Contact your sales representative or distributor for more information, or send e-mail to export@cisco.com.

Table 5 and Table 6 list the features and feature sets supported by the Cisco IOS Release 12.0 T for the Cisco 3600 series.

Both tables use the following conventions to identify features:

- Yes—The feature is supported in the feature set.
- No—The feature is not supported in the feature set.

Note Because Release 12.0(2)XC is based on Release 12.0(2)T, you should also refer to the *12.0(2)T Release Notes for the Cisco 3600 Series for Cisco IOS Release 12.0 T*, located on CCO and the Documentation CD-ROM.

Note These feature set tables contain only a selected list of features. This table is not a cumulative or complete list of all the features in each image.

System Requirements

Table 5 Feature Lists by Feature Sets for the Cisco 3600 Series, Part 1 of 2

Features	Feature Set										
	IP	IP Plus	IP Plus 40	IP Plus IPsec 56	IP/FW	IP/FW Plus IPsec 56	IP Plus IPsec 3DES ¹	IP/FW Plus IPsec 3DES ¹	IP/IPX/ AT/ DEC	IP/IPX/ AT/ DEC Plus	IP/IPX /AT/ DEC/ FW Plus
Connectivity											
Layer 2 Tunnel Protocol (L2TP)	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
RIP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP Routing											
Easy IP Phase 2-DHCP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management											
ISDN MIB RFC 2127	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Smart-init (Mars FE2P)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service											
CLI String Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security											
Cisco IOS Firewall Feature Set Platform Support	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes
Switching											
Cisco IOS STP Enhancements	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
WAN Services											
Cisco IOS IEEE 802.1Q	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
PPP Over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2 Signaling	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Based Access Lists	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

¹ This image was introduced in Cisco IOS Release 12.0(2)T.

Table 6 Feature Lists by Feature Sets for the Cisco 3600 Series, Part 2 of 2

Features	IP/ Sys- tem Con- troller	Enter- prise Plus	Enter- prise Plus 40	Enter- prise Plus IPSec 56	Enter- prise/ FW IPSec 56	Enter- prise Plus IPSec 3DES ¹	Enter- prise/ FW Plus IPSec 3DES ¹	Enter- prise/ APPN Plus	Enter- prise/ APPN Plus 40	Enter- prise/ APPN Plus IPSec 56	Enter- prise/ APPN Plus IPSec 3DES ¹
Connectivity											
Layer 2 Tunnel Protocol (L2TP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RIP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IP Routing											
Easy IP Phase 2-DHCP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OSPF Packet Pacing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management											
ISDN MIB RFC 2127	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Smart-init (Mars FE2P)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service											
CLI String Search	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security											
Cisco IOS Firewall Feature Set Platform Support	No	No	No	No	Yes	Yes	Yes	No	No	No	Yes
Switching											
Cisco IOS STP Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services											
Cisco IOS IEEE 802.1Q	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile IP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PPP Over Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2 Signaling	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-Based Access Lists	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

¹ This image was introduced in Cisco IOS Release 12.0(2)T.

New and Changed Information

This section lists new features introduced for the Cisco 3640 in Cisco IOS Release 12.0(2)XC and Cisco IOS Release 12.0(1)T. For more information about these features, refer to the cross-platform *Release Notes for Cisco IOS Release 12.0 T* located on Cisco Connection Online (CCO) and the Documentation CD-ROM, and the “Feature Modules” section on page 15.

New Features in Release 12.0(2)XC

The following new features are supported by the Cisco 3640 in Cisco IOS Release 12.0(2)XC.

Modem Over BRI Support

This new feature allows the Cisco 3640 to be used as a low-density RAS device, simultaneously supporting ISDN BRI users and modem users. The modem users can take advantage of any V.90 compliant modems and active connection speeds with the Cisco 3600 at up to 56 Kbps.

This V.90 support was only available through the Cisco 3600 PRI interface until this Cisco IOS release.

Five New Feature Sets

Five new feature sets have been created for the Cisco 3640 in Release 12.0(2)XC that support IPSec Triple DES encryption. These feature sets include the following:

- IP Plus IPSec 3DES—c3640-ik2s-mz
- IP/FW Plus IPSec 3DES—c3640-ik2os-mz
- Enterprise Plus IPSec 3DES—c3640-jk2s-mz
- Enterprise/APPN Plus IPSec 3DES—c3640-ajk2s-mz
- Enterprise/FW Plus IPSec 3DES—c3640-jk2os-mz

Triple DES (3DES) is a strong form of encryption that allows sensitive information to be transmitted over untrusted networks. It enables customers, particularly in the finance industry, to utilize network layer encryption. IPSec supports the Triple DES encryption algorithm (168-bit) in addition to 56-bit encryption.

Important Notes

This section contains important information about use of your Cisco IOS Release 12.0(2)XC software.

Deprecated MIBs

Older Cisco Management Information Bases (MIBs) will be replaced in a future release. OLD-CISCO-* MIBs are currently being migrated into more scalable MIBs, without affecting existing Cisco IOS products or NMS applications. Application developers should update from deprecated MIBs to the replacement MIBs as shown in the table below.

Table 7 **Deprecated MIBs**

Deprecated MIB	Replacement
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	In Development
OLD-CISCO-DECNET-MIB	
OLD-CISCO-ENV-MIB	CISCO-ENVMON-MIB

Table 7 **Deprecated MIBs (continued)**

Deprecated MIB	Replacement
OLD-CISCO-FLASH-MIB	CISCO-FLASH-MIB
OLD-CISCO-INTERFACES-MIB	IF-MIB CISCO-QUEUE-MIB
OLD-CISCO-IP-MIB	
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB
OLD-CISCO-NOVELL-MIB	NOVELL-IPX-MIB
OLD-CISCO-SYS-MIB	(Compilation of other OLD* MIBS)
OLD-CISCO-SYSTEM-MIB	CISCO-CONFIG-COPY-MIB
OLD-CISCO-TCP-MIB	CISCO-TCP-MIB
OLD-CISCO-TS-MIB	
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	

Caveats

This section contains the open caveats for the current Cisco IOS maintenance release only. The software caveats are also located in the *Caveats for Cisco IOS Release 12.0 T* document that accompanies these release notes. The caveats document is 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. Bug Navigator II is at <http://www.cisco.com/support/bugtools>, or from CCO, select **Software & Support: Technical Support: Software Bug Toolkit II**.

Open Caveats—Release 12.0(2)XC

This section describes possibly unexpected behavior by Release 12.0(2)XC. Unless otherwise noted, these caveats apply to all 12.0 releases up to and including 12.0(2)XC.

Miscellaneous

- CSCdk77426

Description: If a User Datagram Protocol (UDP) packet with an invalid length is sent to port 514 (the "syslog" port) on an IOS device, the device is likely to reload. In this situation, a stack trace might not be saved. Such packets are sent by the popular nmap port scanning program.

Workaround: You can work around this vulnerability by preventing any affected Cisco IOS device from receiving or processing UDP datagrams addressed to its port 514. This can be done either using packet filtering on surrounding devices, or by using input access list filtering on the affected IOS device itself.

If you use an input access list, that list should be applied to all interfaces to which attackers may be able to send datagrams. This includes not only physical LAN and WAN interfaces, but virtual subinterfaces of those physical interfaces, as well as virtual interfaces and/or interface templates corresponding to GRE, L2TP, L2F, and other tunnelling protocols.

The input access list must block traffic destined for any of the CiscoIOS device's own IP addresses, as well as for any broadcast or multicast addresses on which the Cisco IOS device may be listening. It's important to remember to block old-style "all-zeroes" broadcasts as well as new-style "all-ones" broadcasts.

There is no single input access list that will work in all configurations. It is very important that you understand the effect of your access list in your specific configuration before you activate the list.

The following example shows a possible access list for a three-interface router, along with the configuration commands needed to apply that access list. The example assumes no need for input filtering other than as a workaround for this vulnerability.

```
! Deny all multicasts, and all unspecified-net broadcasts, to port 514
access-list 101 deny udp any 224.0.0.0 31.255.255.255 eq 514
! Deny old-style unspecified-net broadcasts
access-list 101 deny udp any host 0.0.0.0 eq 514
! Deny network-specific broadcasts. This example assumes that all of
! the local interfaces are on the class B network 172.16.0.0, subnetted
! everywhere with mask 255.255.255.0. This will differ from network
! to network. Note that we block both new-style and old-style broadcasts.
access-list 101 deny udp any 172.16.0.255 0.0.255.0 eq 514
access-list 101 deny udp any 172.16.0.0 0.0.255.0 eq 514
! Deny packets sent to the addresses of our own network interfaces.
access-list 101 deny udp any host 172.16.1.1 eq 514
access-list 101 deny udp any host 172.16.2.1 eq 514
access-list 101 deny udp any host 172.16.3.3 eq 514
! Permit all other traffic (default would be to deny)
access-list 101 permit ip any any

! Apply the access list to the input side of each interface
interface ethernet 0
ip address 172.16.1.1 255.255.255.0
ip access-group 101 in

interface ethernet 2
ip address 172.16.2.1 255.255.255.0
ip access-group 101 in

interface ethernet 3
ip address 172.16.3.3 255.255.255.0
ip access-group 101 in
```

It can be complicated to list all possible addresses, and especially all possible broadcast addresses, to which attack packets might be sent. If you do not expect to receive any legitimate syslog traffic on an interface, you may wish to simply block all syslog traffic arriving on that interface. Remember that this will affect traffic routed through the Cisco IOS device as well as traffic destined to the device.

Input access lists have an impact on system performance, and should be installed with a degree of caution, especially on systems that are running very near their capacity limits.

- CSCdk29115

Description: When you configure Bisync (**encapsulation bstun**) with the ASCII character set (**bsc char-set ascii**) on the first port of a serial WIC (1T, 2T, or 2A/S) in WIC slot 0 of a Cisco 2600 series router, only the first character of each frame is received, and the BSTUN tunnel is not established. This only affects Bisync mode when it is configured with the ASCII character set. Other encapsulations are not affected, and using the EBCDIC character set with Bisync works correctly.

Details: For the first serial port in WIC slot 0, the parity detection is not configured correctly for Bisync in ASCII mode. The first character of each frame generates a parity error that causes the receiver to discard the frame after the first character received.

Workaround: Use a different serial port: either the second serial port (port 1) on a 2T or 2A/S WIC in WIC slot 0 or any serial port in WIC slot 1. If you have only one serial WIC, moving it from WIC slot 0 to WIC slot 1 fixes this problem.

Resolved Caveats—Release 12.0(2)XC

Because Cisco IOS Release 12.0(2)XC is a limited-time release, only the initial caveats are documented in these release notes.

Related Documentation

The following sections describe the documentation available for the Cisco 3600 series routers. Typically, these documents consist of hardware installation guides, software installation guides, Cisco IOS configuration and command references, system error messages, and feature modules, which are updates to Cisco IOS documentation. Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online only.

The most up-to-date documentation can be found on the Web via Cisco Connection Online (CCO) and the Documentation CD-ROM. These electronic documents might contain updates and modifications made after the hard copy documents were printed.

These release notes should be used in conjunction with the documents listed in the following sections:

- Release-Specific Documents, page 13
- Platform-Specific Documents, page 14
- Feature Modules, page 15
- Cisco IOS Software Document Set, page 15

Release-Specific Documents

The following documents are specific to Release 12.0 T. They are located on CCO and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.0 T*

To access the cross-platform *Release Notes for Cisco IOS Release 12.0 T* on CCO, follow this path:

Software and Support: Cisco Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Release Notes: Cross-Platform Release Notes for Cisco IOS Release 12.0 T

To access the cross-platform *Release Notes for Cisco IOS Release 12.0* on the Documentation CD-ROM, follow this path:

Cisco IOS Software Configuration: Cisco IOS Release 12.0: Release Notes: Cross-Platform Release Notes for Cisco IOS Release 12.0 T

- Product bulletins, field notices, and other release-specific documents

To access these documents, refer to the Software Center at this path on CCO:

Software & Support: Software Center: Cisco IOS Software

- Caveat documents

As a supplement to the caveats listed in the “Caveats” section in these release notes, see the *Caveats for Cisco IOS Release 12.0 T* document, which contains caveats applicable to all platforms for all maintenance releases of Release 12.0 T.

To access the caveat document on CCO, follow this path:

Products and Ordering: Cisco Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Caveats: Caveats for Cisco IOS Release 12.0 T

To access the caveat document on the Documentation CD-ROM, follow this path:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS 12.0: Caveats: Caveats for Cisco IOS Release 12.0 T

Note If you have an account with CCO, you can use Bug Navigator II to find caveats of any severity for any release. Bug Navigator II can be found at <http://www.cisco.com/support/bugtools>, or from CCO, select **Software & Support: Tools: Bug Toolkit II**.

Platform-Specific Documents

The documents listed below are available for the Cisco 3600 series routers. These documents are also available online at Cisco Connection Online (CCO) and on the Documentation CD-ROM.

- *Cisco 3600 Series Hardware Installation Guide*
- *Software Configuration Guide*
- *Network Module Hardware Installation Guide*
- *Update to Network Module Hardware and Software Guides*
- *WAN Interface Cards Hardware Installation Guide*
- *Update to WAN Interface Cards Hardware Installation Guide*
- *Cisco Modular Access Router Cable Specifications*
- Redundant Power Systems documents
- *Regulatory Compliance and Safety Info for the Cisco 3600 Series*
- Cisco 3600 Series Configuration Notes
- Digital Modem Portware documents
- Analog Modem Firmware documents
- Release notes

To access Cisco 3600 series documentation on CCO, follow this path:

Products and Ordering: Cisco Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 3600 Series Routers

To access Cisco 3600 series documentation on the Documentation CD-ROM, follow this path:

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

Feature Modules

Feature modules describe new features supported by Release 12.0 T and are an update to the Cisco IOS documentation set. They consist of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the features modules are available online only. The feature module information is included in the next printing of the Cisco IOS documentation set.

To access the feature modules on CCO, follow this path:

Products and Ordering: Cisco Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: New Feature Documentation: New Features in Release 12.0 T

To access the feature modules on the Documentation CD-ROM, follow this path:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: New Feature Documentation: New Features in Release 12.0 T

Cisco IOS Software Document Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents. These documents are 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 two books: a configuration guide and a corresponding command reference. 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. Each configuration guide can be used in conjunction with its corresponding command reference.

To access these documents on CCO, follow this path:

Products and Ordering: Cisco Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0: Cisco IOS Release 12.0 Configuration Guides and Command References

To access these documents on the Documentation CD-ROM, follow this path:

Cisco IOS Software Configuration: Cisco IOS Release 12.0: Cisco IOS Release 12.0 Configuration Guides and Command References

Release 12.0 Documentation Set

Table 8 details the contents of the Cisco IOS Release 12.0 software documentation set. The document set is available in electronic form, and also in printed form upon request.

Note The most current Cisco IOS documentation can be found on the latest Documentation CD-ROM and on the Web. These electronic documents might contain updates and modifications made after the paper documents were printed.

Related Documentation

To access the Cisco IOS documentation set on CCO, follow this path:

Products and Ordering: Cisco Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.0

To access the Cisco IOS documentation set on the Documentation CD-ROM, follow this path:

Cisco IOS Software Configuration: Cisco IOS Release 12.0

Table 8 Cisco IOS Software Documentation Set for Release 12.0

Books	Chapter Topics
<ul style="list-style-type: none">• <i>Configuration Fundamentals Configuration Guide</i>• <i>Configuration Fundamentals Command Reference</i>	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none">• <i>Bridging and IBM Networking Configuration Guide</i>• <i>Bridging and IBM Networking Command Reference</i>	Transparent Bridging Source-Route Bridging Token Ring Inter-Switch Link Remote Source-Route Bridging DLSw+ STUN and BSTUN LLC2 and SDLC IBM Network Media Translation DSPU and SNA Service Point SNA Frame Relay Access Support APPN Cisco Database Connection NCIA Client/Server Topologies Cisco Mainframe Channel Connection Airline Product Set
<ul style="list-style-type: none">• <i>Dial Solutions Configuration Guide</i>• <i>Dial Solutions Command Reference</i>	Dial-In Port Setup Dial-In Terminal Services Dial-on-Demand Routing (DDR) Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions ISDN X.25 over ISDN VPDN Dial Business Solutions and Examples
<ul style="list-style-type: none">• <i>Cisco IOS Interface Configuration Guide</i>• <i>Cisco IOS Interface Command Reference</i>	Interface Configuration Overview
<ul style="list-style-type: none">• <i>Network Protocols Configuration Guide, Part 1</i>• <i>Network Protocols Command Reference, Part 1</i>	IP Addressing IP Services IP Routing Protocols
<ul style="list-style-type: none">• <i>Network Protocols Configuration Guide, Part 2</i>• <i>Network Protocols Command Reference, Part 2</i>	AppleTalk Novell IPX
<ul style="list-style-type: none">• <i>Network Protocols Configuration Guide, Part 3</i>• <i>Network Protocols Command Reference, Part 3</i>	Apollo Domain Banyan VINES DECnet ISO CLNS XNS

Table 8 Cisco IOS Software Documentation Set for Release 12.0 (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Security Configuration Guide</i> • <i>Security Command Reference</i> 	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options
<ul style="list-style-type: none"> • <i>Cisco IOS Switching Services Configuration Guide</i> • <i>Cisco IOS Switching Services Command Reference</i> 	Switching Paths for IP Networks Virtual LAN (VLAN) Switching and Routing
<ul style="list-style-type: none"> • <i>Wide-Area Networking Configuration Guide</i> • <i>Wide-Area Networking Command Reference</i> 	ATM Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> • <i>Voice, Video, and Home Applications Configuration Guide</i> • <i>Voice, Video, and Home Applications Command Reference</i> 	Voice over IP Voice over Frame Relay Voice over ATM Voice over HDLC Video Support Universal Broadband Features
<ul style="list-style-type: none"> • <i>Quality of Service Solutions Configuration Guide</i>¹ • <i>Quality of Service Solutions Command Reference</i>¹ 	Classification Scheduling Packet Drop Traffic Shaping ATM QoS SNA QoS Line Protocols
<ul style="list-style-type: none"> • <i>Cisco IOS Software Command Summary</i> • <i>Dial Solutions Quick Configuration Guide</i> • <i>System Error Messages</i> • <i>Debug Command Reference</i> 	

¹ This book will not be available until January 1999.

Service and Support

For service and support for a product purchased from a reseller, contact the reseller. Resellers offer a wide variety of Cisco service and support programs, which are described in the section “Service and Support” in the information packet that shipped with your product.

Note If you purchased your product from a reseller, you can access CCO as a guest. CCO is Cisco Systems’ primary real-time support channel. Your reseller offers programs that include direct access to CCO services.

For service and support for a product purchased directly from Cisco, use CCO.

Software Configuration Tips on the Cisco TAC Home Page

For helpful tips on configuring Cisco products, follow this path on CCO:

Software & Support: Technical Tips (button on left margin)

“Hot Tips” are popular tips and hints gathered from Cisco's Technical Assistance Center (TAC). Most of these documents are also available from the TAC's Fax-on-Demand service. To access Fax-on-Demand and receive documents at your fax machine, call 888-50-CISCO (888-502-4726). From international areas, call 650-596-4408.

The following sections are provided from the Technical Tips page:

- **Field Notices**—Designed to provide notification of critical issues regarding Cisco products. These include problem descriptions, safety or security issues, and hardware defects.
- **Hardware**—Technical Tips related to specific hardware platforms.
- **Internetworking Features**—Tips on using and deploying Cisco IOS software features and services.
- **Sample Configurations**—Actual configuration examples complete with topology and annotations.
- **Software Products**—MultiNet & Cisco Suite 100, Network Management, Cisco IOS Software Bulletins, CiscoPro Configurations.
- **Special Collections**—Other Helpful Documents: Frequently Asked Questions, Security Advisories, References & RFCs, Case Studies, CiscoPro Documentation CD-ROM.

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- **WWW:** <http://www.cisco.com>
- **WWW:** <http://www-europe.cisco.com>
- **WWW:** <http://www-china.cisco.com>
- **Telnet:** cco.cisco.com
- **Modem:** From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

If you are reading Cisco product documentation on the World Wide Web, you can submit comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco. We appreciate your comments.

This document is to be used in conjunction with documents mentioned in the "Related Documentation" section on page 13.

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