

# Cisco IOS Software Release 12.3(2)XC

This product bulletin describes the content and delivery information for Cisco IOS<sup>®</sup> Software Release 12.3(2)XC. It should be used in conjunction with the Cisco IOS Software Release 12.3T product bulletin. Cisco IOS Software Release 12.3(2)XC is a short-lived, early deployment release that will be supported in the fourth release of Cisco IOS Software Release 12.3T. It supports the Cisco 1700 Series routers (Cisco 1701, Cisco 1710, Cisco 1711, Cisco 1712, Cisco 1720, Cisco 1721, Cisco 1751, Cisco 1751-V, and Cisco 1760) and Cisco SOHO 90 Series (SOHO 91, SOHO 96, SOHO 97), Cisco 827-4V, Cisco 828 and 830 Series Routers (Cisco 831, Cisco 836, and Cisco 837).

The platform and features delivered with this early deployment release will be immediately incorporated into the fourth release of Cisco IOS Software Release 12.3T. The timeframe for the availability of the fourth release of the Cisco IOS Software Release 12.3T train is the second quarter of 2004 (target Cisco.com date is April/May 2004). Please note that this timeframe is subject to change.

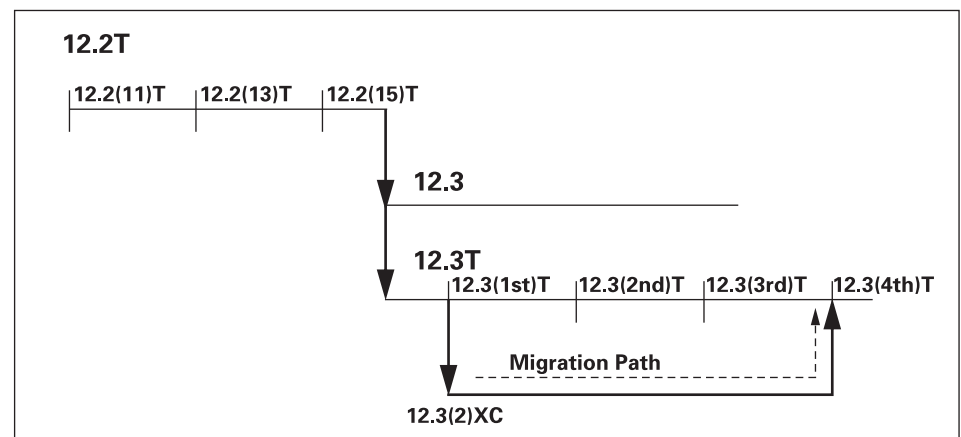
Future early deployment releases will be provided for maintenance support until Cisco IOS Software Release 12.3(2)XC becomes available in the fourth release of Cisco IOS Software Release 12.3T.

In addition to the supported features described in this product bulletin, more information is available in the release notes for Cisco IOS Software Release 12.3(2)XC.

Customers should prepare to upgrade using the migration path shown in Figure 1.

Please note: This 12.3(2)XC release only lists features which are new to the respective platforms.

Figure 1:  
 Cisco IOS Software Release 12.3(2)XC Release Train and Migration Guide





## New Features in Cisco IOS Software Release 12.3(2)XC

Table 1 Cisco IOS Software Release 12.3(2)XC New Features

New Features	SOHO91	SOHO96	SOHO97	Cisco 827-4V	Cisco 828	Cisco 831	Cisco 836	Cisco 837	Cisco 1701	Cisco 1710	Cisco 1711	Cisco 1712	Cisco 1720	Cisco 1721	Cisco 1751/1751-V	Cisco 1760	
<b>New Hardware</b>																	
4-port Ethernet WIC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
<b>New Software Features</b>																	
Managed LAN Switch	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-
Policy based routing for 827-4V	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
TACACS+	-	X	X	-	-	-	X	X	-	-	-	-	-	-	-	-	-
Confman MIB	X	X	X	-	-	X	X	X	-	-	-	-	-	-	-	-	-
BGP Routing Protocol	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-
Aux capability on 836 console port	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
X.25 over ISDN support for the ISDN line on 836	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
OSPF Routing Protocol	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-
URPF (Unicast Reverse Path Forwarding check)	X	X	X	-	X	X	X	X	-	-	-	-	-	-	-	-	-
Class Based Traffic Policing with CLP tagging	-	-	-	X	X	-	X	X	-	-	-	-	-	-	-	-	-
Client initiated L2TP support (LAC functionality)	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-



## Detailed Information

### New Hardware

#### 4-Port Ethernet WIC

- Supported platforms: Cisco 1721, 1751, 1751-V, 1760; supported in all Cisco 1700 legacy and cross-platform images (all 'y' images)

This new four-port 10/100BASE-TX/Layer 2 Fast Ethernet Switch in a WAN Interface Card (WIC) form factor (part number WIC-4ESW) allows businesses to support and manage LAN and WAN configurations on a single device. The switch interfaces support Spanning Tree Protocol 802.1D and can be used to connect up to four physical LANs, or up to 16 IEEE 802.1Q virtual LANs (VLANs).

### New Software Features

#### Managed LAN Switch

- Supported platforms: Cisco 831, 836 and 837; supported in all images (all k9o3y6 images)

Cisco 831, 836 and 837 routers support managed LAN Switch ports. The LAN ports on the routers support the following features to provide them with limited management capabilities as stated below:

- Issue a command to detect if a device is connected to a port
- Enable/disable LAN port
- Issue a command to display the state of the interface: enabled or disabled, speed, mode (duplex, full etc.)
- Ability to set a port speed to either “10Mbps”, “100Mbps” or “auto-sense” and a command to display the speed setting that should be available. Default setting will be “auto-sense”.
- Ability to set port mode to “half-duplex”, “full-duplex”, or “auto-negotiate”. This is to allow for customers to remotely troubleshoot problems that may arise from connecting to other switches at the premises where the switches connected to the Cisco 83x platforms is not able to “train” up. Default is “auto-negotiate”.
- Ability to set the port cable type to cross-over or straight. Default is automatic selection of the cable type.
- To Note: No MIB support for this feature at this time.

With the availability of the above features, customers will be able to remotely troubleshoot problems with the connecting devices to the switch ports—either eliminate the Cisco CPE (Customer Premises Equipment) as causing the problem or ascertain that the Cisco CPE is at fault.

#### Policy-Based Routing for 827-4V

- Supported platforms: Cisco 827-4V; supported in all images (all k9o3y6 images)

RTP packets are policy-routed to different PVCs based on configured route maps (reference to CSCdx82627 bug fix).

#### TACACS+

- Supported platforms: Cisco 836 and 837 and SOHO 96 and 97; supported in all images (all k9o3y6 images).

TACACS+ is a Cisco developed protocol for AAA—Authentication, Authorization and Accounting.

Note: Cisco 831 and SOHO 91 already support TACACS+.



### Confman MIB

- Supported platforms: Cisco 831, 836, and 837 and SOHO 91, 96, and 97; supported in all images.

Service Providers can use this feature to automatically backup router configuration to a central server.

### BGP Routing Protocol and BGP MIB

- Supported platforms: Cisco 831, 836, and 837; supported in all PLUS images (all k9o3sy6 images).

BGP provides loop-free interdomain routing between autonomous systems. It exchanges network information with other BGP systems by creating a TCP connection to its peers and exchanging routing updates over this connection, including information about the list of autonomous systems paths.

BGP on the Cisco 83x platforms only supports specific policy and security requirements for certain networks. BGP will not carry/or support the Internet BGP routing tables. This is due to memory constraints on the 83x platforms.

BGP support on the Cisco 83x Series provides support for up to 500 ACLs (Access Lists) (per platform).

### Auxiliary Capability on Cisco 836 Console Port

- Supported platforms: Cisco 836; supported in all images (all k9o3y6 images).

Supporting dial backup via aux port brings Cisco 836 on par with 837 for base and PLUS feature sets.

The following scenarios are supported for dial backup:

- ADSL as primary and ISDN as dial backup (PLUS dial backup feature set) (functionality exists today)
- ADSL as primary and aux port as backup (same functionality as 837)
- ISDN as primary and aux port as backup

### X.25 over ISDN support for the ISDN line on Cisco 836

- Supported platforms: Cisco 836; supported in PLUS images (all k9o3sy6 images).

In ISDN there are three channels—2 B channels (bearer channels—each with 64 Kbytes) and 1 D channel (with 16 Kbytes) where signaling info is sent and received. On the D channel, X.25 data can be sent with up to 9.6 Kbps. X.25 over ISDN D-channel support for PPP traffic is required. This is the same functionality that has existed on the Cisco 803 ISDN models. This is used to transmit low bandwidth/low volume data as it is tarified to work well for that.

### OSPF Routing Protocol

- Supported platforms: Cisco 831, 836, and 837; supported in all PLUS images (all k9o3sy6 images).

OSPF is standard routing protocol and is widely used in banks and financial institutions. Customers use OSPF to trigger dial backup function and OSPF provides fast convergence using a standardized protocol. OSPF MIB is supported.

### URPF (Unicast Reverse Path Forwarding check)

- Supported platforms: Cisco 828, 831, 836, and 837 and SOHO 91, 96 and 97; supported in all images.

Unicast reverse path forward check is a feature that automatically when applied will prevent certain DOS—denial of service—attacks like LAND.C and others. The feature verifies that packets coming from an unreachable source are dropped.

This feature is mentioned as having some caveats in the release notes for Cisco 820 and SOHO 70 series for 12.2(1)XD—details can be found at

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/800/rn800xd.htm>

and

[http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/soho\\_70/rn70xd.htm](http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/soho_70/rn70xd.htm)



### Class Based Traffic Policing with CLP tagging

- Supported platforms: Cisco 827-4V, 828, 836, and 837; supported in all PLUS images (all k9o3sy6 images).

Class Based Traffic Policing with CLP tagging is a feature that allows for policing of traffic based on classification and actions on traffic that exceeds the contract between the Service Provider and their customer.

The purpose of this feature is to mark traffic that does not meet the contract so that the packets that exceed the contract can be dropped by the network if the network is congested.

### Client initiated L2TP support (LAC functionality)

- Supported platforms: Cisco 831, 836, and 837; supported in all images (all k9o3y6 images).

The CPE device will be able to initiate an L2TP session to a LNS situated on the network. The PPP session will be terminated on the LNS. This also allows for easier management since the existing PPP infrastructure concepts can be used.

### Product Numbers

Table 2 and Table 3 provide the feature sets, images, and memory recommendations for Cisco IOS Software Release 12.3(2)XC.

Please note:

- Cisco 1710 is limited to 16 MB Flash memory.
- All Cisco 1700 Platforms with the exception of Cisco 1710 that are listed in Table 3 support Security Device Manager (SDM). Please note that SMD requires an additional 2.3 MB of Flash memory.

Table 2 Cisco IOS Software Release 12.3(2)XC Cisco SOHO and 800 Feature Sets, Images, and Memory Recommendations

Platform <sup>1</sup>	Feature Set	Image Name	Image File Name	Recommended Memory	
				Flash	DRAM
Cisco 827-4V	IP/VOICE	Cisco 827-4V IOS IP/VOICE	c820-v6y6-mz	12 MB	48 MB
	IP/VOICE PLUS	Cisco 827-4V IOS IP/VOICE PLUS	c820-sv6y6-mz	12 MB	48 MB
	IP/FW/VOICE	Cisco 827-4V IOS IP/FW/VOICE	c820-ov6y6-mz	12 MB	48 MB
	IP/FW/VOICE PLUS 3DES	Cisco 827-4V IOS IP/FW/VOICE PLUS 3DES	c820-k9osv6y6-mz	12 MB	48 MB



Table 2 Cisco IOS Software Release 12.3(2)XC Cisco SOHO and 800 Feature Sets, Images, and Memory Recommendations (Continued)

Platform <sup>1</sup>	Feature Set	Image Name	Image File Name	Recommended Memory	
				Flash	DRAM
<b>Cisco 828</b>	IP	Cisco 828 Series IOS IP	c828-y6-mz	8 MB	20 MB
	IP/FW	Cisco 828 Series IOS IP/FW	c828-oy6-mz	8 MB	20 MB
	IP PLUS	Cisco 828 Series IOS IP PLUS	c828-sy6-mz	8 MB	24 MB
	IP/FW/PLUS 3DES	Cisco 828 Series IOS IP/FW/PLUS 3DES	c828-k9osy6-mz	8 MB	32 MB
<b>Cisco 831</b>	IOS IP/FW 3DES	Cisco 831 IOS IP/FW 3DES	c831-k9o3y6-mz	12 MB	32 MB
	IOS IP/FW/PLUS 3DES	Cisco 831 IOS IP/FW PLUS 3DES	c831-k9o3sy6-mz	12 MB	48 MB
<b>Cisco 836</b>	IOS IP/FW 3DES	Cisco 836 IOS IP/FW 3DES	c836-k9o3y6-mz	12 MB	32 MB
	IOS IP/FW/PLUS 3DES	Cisco 836 IOS IP/FW PLUS 3DES	c836-k9o3sy6-mz	12 MB	48 MB
	IOS IP/FW/PLUS DIAL BACKUP 3DES	Cisco 836 IOS IP/FW PLUS DIAL BACKUP 3DES	c836-k9o3s8y6-mz	12 MB	48 MB
<b>Cisco 837</b>	IOS IP/FW 3DES	Cisco 837 IOS IP/FW 3DES	c837-k9o3y6-mz	12 MB	32 MB
	IOS IP/FW/PLUS 3DES	Cisco 837 IOS IP/FW PLUS 3DES	c837-k9o3sy6-mz	12 MB	48 MB
<b>SOHO91</b>	IP/FW 3DES	Cisco SOHO91 Series IP/FW 3DES	soho91-k9oy6-mz	8 MB	32 MB
<b>SOHO96</b>	IP/FW 3DES	Cisco SOHO96 Series IP/FW 3DES	soho96-k9oy1-mz	8 MB	32 MB
<b>SOHO97</b>	IP/FW 3DES	Cisco SOHO97 Series IP/FW 3DES	soho91-k9oy1-mz	8 MB	32 MB

(1) Security Device Manager (SDM) is supported on Cisco 830 Series. Please note that SDM requires an additional 2.3 MB of Flash memory.



Table 3 Recommended Memory for the Cisco 1700 Series Routers—Legacy Images & Cross-Platform Images

Cisco 1700 Legacy Images					Recommended Memory		Runs from
Platform	Feature Set	Image Name	Image File Name	Flash	DRAM		
Cisco 1710 (1)	IP/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP/FW/IDS PLUS IPSEC 3DES	c1710-k9o3sy-mz	16 MB	64 MB	RAM	
Cisco 1710 (1)	IP/IPX/AT/IBM/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP/IPX/AT/IBM/FW/IDS PLUS IPSEC	c1710-bk9no3r2sy-mz	16 MB	64 MB	RAM	
Cisco 1751/1751-V/1760	IP/ADSL/VOX PLUS	Cisco 1700 IOS IP/ADSL/VOX PLUS	c1700-sv8y7-mz	32 MB	96 MB	RAM	
Cisco 1751/1751-V/1760	IP/ADSL/VOX/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP/ADSL/VOX/FW/IDS PLUS IPSEC 3DES	c1700-k9o3sv8y7-mz	32 MB	96 MB	RAM	
Cisco 1751/1751-V/1760	IP ADSL/IPX/AT/IBM/VOX/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP ADSL/IPX/AT/IBM/VOX/FW/IDS PLUS IPSEC 3DES	c1700-bk9no3r2sv8y7-mz	32 MB	96 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	IP ADSL/PLUS	Cisco 1700 IOS IP ADSL PLUS	c1700-sy7-mz	16 MB	64 MB	RAM	
Cisco 1720/1721/1751/1751-V/1760	IP	Cisco 1700 IOS IP	c1700-y-mz	16 MB	48 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	IP ADSL/IPX/AT/IBM PLUS	Cisco 1700 IOS IP ADSL/IPX/AT/IBM PLUS	c1700-bnr2sy7-mz	16 MB	64 MB	RAM	
Cisco 1701/1711/1712/1721/1751/1751-V/1760	IP ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP ADSL/IPX/AT/IBM/FW/IDS PLUS IPSEC 3DES	c1700-bk9no3r2sy7-mz	32 MB	96 MB	RAM	
Cisco 1701/1720/1721/1751/1751-V/1760	IP/ADSL	Cisco 1700 IOS IP/ADSL	c1700-y7-mz	16 MB	48 MB	RAM	
Cisco 1701/1711/1712/1721/1751/1751-V/1760	IP/ADSL/FW/IDS PLUS IPSEC 3DES	Cisco 1700 IOS IP/ADSL/FW/IDS PLUS IPSEC 3DES	c1700-k9o3sy7-mz	16 MB	64 MB	RAM	
Cisco 1700 Cross-Platform Images					Recommended Memory		Runs from
Platform	Feature Set	Image Name	Image File Name	Flash	DRAM		
Cisco 1751/1751-V/1760	IP VOICE	(2)	c1700-ipvoice-mz	32 MB	96 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	ADVANCED IP SERVICES	(2)	c1700-advipservicesk9-mz	32 MB	96 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	SP SERVICES	(2)	c1700-spservicesk9-mz	32 MB	96 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	ENTERPRISE SERVICES	(2)	c1700-entservicesk9-mz	32 MB	96 MB	RAM	
Cisco 1701/1711/1712/1721/1751/1751-V/1760	ADVANCED ENTERPRISE SERVICES	(2)	c1700-adventerprisek9-mz	32 MB	96 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	IP BASE	(2)	c1700-ipbase-mz	16 MB	64 MB	RAM	
Cisco 1701/1721/1751/1751-V/1760	ENTERPRISE BASE	(2)	c1700-entbase-mz	16 MB	64 MB	RAM	
Cisco 1701/1711/1712/1721/1751/1751-V/1760	ADVANCED SECURITY	(2)	c1700-advsecurityk9-mz	16 MB	64 MB	RAM	

(1) Security Device Manager (SDM) is NOT supported on the Cisco 1710.

(2) Please see product bulletin "Cisco IOS Software Release 12.3 Mainline and 12.3T Feature Sets for Cisco 1700 Series Routers"—[http://www.cisco.com/en/US/products/hw/routers/ps221/prod\\_bulletin09186a008016122f.html](http://www.cisco.com/en/US/products/hw/routers/ps221/prod_bulletin09186a008016122f.html)

## Download Information

Customers can download Cisco IOS Software Release 12.3(2)XC Software from the Cisco.com Software Image Library.



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