



Release Notes for the Cisco 811 and 813 Routers for Cisco IOS Release 12.1(2)XF

February 20, 2002

These release notes describe new features and significant software components for the Cisco 811 and 813 Routers that support Cisco IOS Release 12.1(2)XF5. 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 12.1* located on Cisco.com and the Documentation CD-ROM.

For a list of the software caveats that apply to Release 12.1(2)XF5, refer to the section “Caveats” and to the online *Caveats for Cisco IOS Release 12.1 T* document. The caveats document is updated for every 12.1 T maintenance release and is located on Cisco.com and the Documentation CD-ROM.

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78-11070-02, Rev. H0

System Requirements

This section describes the system requirements for Release 12.1(2)XF5 and includes the following sections:

- Memory Requirements
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- Determining Your Software Release, page 3
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Memory Requirements

This section describes the memory requirements for the Cisco IOS feature sets supported by Cisco IOS Release 12.1(2)XF5 on the Cisco 811 and 813 Routers.

Table 1 *Memory Requirements for the Cisco 811 and 813 Routers*

Platforms	Image Name	Image	Required Flash Memory	Required DRAM Memory	Runs From
Cisco 811 and 813	IP	c800-y6-mw	4 MB	8 MB	RAM
	IP Plus	c800-sy6-mw	4 MB	8 MB	RAM
	IP/IPX Plus	c800-nsy6-mw	4 MB	8 MB	RAM
	IP/FW	c800-oy6-mw	4 MB	8 MB	RAM
	IP/FW Plus IPsec 56	c800-osy656i-mw	8 MB	8 MB	RAM
	IP/IPX/FW Plus IPsec 56	c800-nosy656i-mw	8 MB	8 MB	RAM

Hardware Supported

Cisco IOS Release 12.1(2)XF5 supports the following Cisco 800 series routers:

- Cisco 811
- Cisco 813

For detailed descriptions of new hardware features, see New and Changed Information, page 6.

Table 2 *Supported Interfaces for the Cisco 800 Series*

Router	Ethernet LAN Ports	Ethernet WAN Ports	Analog Phone Ports	Console Ports
Cisco 811	One 10BaseT (RJ-45)	<ul style="list-style-type: none"> • One ISDN BRI U, integrated DSU (RJ-11), • One ISDN BRI S/T (R-J45) 	–	RJ-45
Cisco 813	One 10BaseT (RJ-45) 4-port hub	<ul style="list-style-type: none"> • One ISDN BRI U, integrated DSU (RJ-11), • One ISDN BRI S/T (R-J45) 	Two (RJ-11)	RJ-45

Cisco 811 and 813 Routers

The Cisco 811 and 813 Routers provide the following key hardware features:

- Flash memory: Default is 4 MB and is expandable to 12 MB. Additional Flash memory is installed using Intel “Mini-Card” technology.
- Dynamic RAM: Default is 8 MB and is expandable to 16 MB, which must be obtained from Cisco Systems.
- The central processing unit is a 33 MHz MPC 850 processor.
- Routers mounted on a wall.

Determining Your Software Release

To determine the version of Cisco IOS software currently running on your Cisco 800 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) 800 Software (c800-y6-mw), Version 12.1(2)XF5, RELEASE SOFTWARE
```

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

Upgrading to a New Software Release

For information about upgrading to a new software release, refer to the *Cisco IOS Upgrade Ordering Instructions* product bulletin located at the following URL:

http://www.cisco.com/warp/public/cc/cisco/mkt/ios/prodlit/957_pp.htm.

Alternatively, the Cisco IOS Software page on Cisco.com has a variety of information, including upgrade information, organized by release. If you have a Cisco.com account and log in, you can go directly to: <http://www.cisco.com/kobayashi/sw-center/sw-ios.shtml>.

If you have a Cisco.com account and log in, you can reach the new software release upgrade page by going to www.cisco.com and following this path: **Service & Support: Software Center: Cisco IOS Software: Product Bulletins: Software: General System Software Bulletins: Cisco IOS Upgrade Ordering Instructions, No. 957**

You can also reach the **IOS Upgrade Planner**, which allows you more flexibility to browse for your preferred software, by going to www.cisco.com and following this path: **Service & Support: Software Center: IOS Upgrade Planner**.

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 12.1(2)XF5 supports the same feature sets as Releases 12.1 and 12.1 T, but Release 12.1(2)XF5 can include new features supported by the Cisco 811 and 813 Routers. Table 3 lists the feature sets supported by the Cisco 811 and 813 Routers.

Table 3 Feature Sets Supported by the Cisco 811 and 813 Routers

Image Name	Feature Set Matrix Terms	Software Image	Platform
Cisco 800 Series IOS IP	IP	c800-y6-mw	Cisco 811 and 813
Cisco 800 Series IOS IP Plus	IP Plus	c800-sy6-mw	Cisco 811 and 813
Cisco 800 Series IOS IP/IPX Plus	IP/IPX Plus	c800-nsy6-mw	Cisco 811 and 813
Cisco 800 Series IOS IP/FW	IP/FW	c800-oy6-mw	Cisco 811 and 813
Cisco 800 Series IOS IP/FW Plus IPsec 56	IP/FW Plus IPsec 56	c800-osy656i-mw	Cisco 811 and 813
Cisco 800 Series IOS IP/IPX/FW Plus IPsec 56	IP/IPX/FW Plus IPsec 56	c800-nosy656i-mw	Cisco 811 and 813

Table 4 lists the features and feature sets supported by the Cisco 811 and 813 Routers in Cisco IOS Release 12.1(2)XF5. 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.



Note

These feature set tables only contain a selected list of features. These tables are not cumulative—nor do they list all the features in each image.

Table 4 Feature List by Feature Set for the Cisco 811 and 813 Routers

Features	Feature Sets					
	IP	IP Plus	IP/IPX Plus	IP/FW	IP/FW Plus IPsec 56	IP/IPX/FW Plus IPsec 56
Address Conservation						
NAT	Yes	Yes	Yes	Yes	Yes	Yes
Ease of Use and Deployment						
Auto SPID/SWITCH Connection	Yes	Yes	Yes	Yes	Yes	Yes
Cisco Fast Step Software, Version 2.5	Yes	Yes	Yes	Yes	Yes	Yes
Configuration Express	Yes	Yes	Yes	Yes	Yes	Yes
Easy IP Phase I and II	Yes	Yes	Yes	Yes	Yes	Yes
TFTP Client Server	Yes	Yes	Yes	Yes	Yes	Yes
INS 64 Telephone Features (813 model only)						
Call Blocking on Caller ID	Yes	Yes	Yes	Yes	Yes	Yes
Caller ID	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 811 and 813 Routers

Features	Feature Sets					
	IP	IP Plus	IP/IPX Plus	IP/FW	IP/FW Plus IPSec 56	IP/IPX/FW Plus IPSec 56
Call Waiting	Yes	Yes	Yes	Yes	Yes	Yes
Distinctive Ringing	Yes	Yes	Yes	Yes	Yes	Yes
E Ya Yo	Yes	Yes	Yes	Yes	Yes	Yes
I Number	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Voice Priority	Yes	Yes	Yes	Yes	Yes	Yes
Nariwake	Yes	Yes	Yes	Yes	Yes	Yes
Troublesome Call Refusing	Yes	Yes	Yes	Yes	Yes	Yes
Voice Warp	Yes	Yes	Yes	Yes	Yes	Yes
Voice Warp Select	Yes	Yes	Yes	Yes	Yes	Yes
LAN						
IP	Yes	Yes	Yes	Yes	Yes	Yes
IPX	No	No	Yes	No	No	Yes
NetBIOS Access Lists, Name Caching	Yes	Yes	Yes	Yes	Yes	Yes
Transparent Bridging	Yes	Yes	Yes	Yes	Yes	Yes
Management						
CiscoView	Yes	Yes	Yes	Yes	Yes	Yes
SNMP, Telnet, Console Port	Yes	Yes	Yes	Yes	Yes	Yes
SNTP	Yes	Yes	Yes	Yes	Yes	Yes
Syslog	Yes	Yes	Yes	Yes	Yes	Yes
TACACS+	No	Yes	Yes	No	Yes	Yes
Routing						
IP Enhanced IGRP	No	Yes	Yes	No	Yes	Yes
IP Multicast (Relay Only)	No	Yes	Yes	No	Yes	Yes
IP-Policy Routing	Yes	Yes	Yes	Yes	Yes	Yes
IPX WAN	No	No	Yes	No	No	Yes
RIP, RIPv2, Triggered RIP	Yes	Yes	Yes	Yes	Yes	Yes
Security (Basic)						
GRE Tunneling	No	Yes	Yes	No	Yes	Yes
NAT	Yes	Yes	Yes	Yes	Yes	Yes
PAP, CHAP, Local Password, MSCHAP	Yes	Yes	Yes	Yes	Yes	Yes
Route and Router Authentication	Yes	Yes	Yes	Yes	Yes	Yes
Token Card Authentication	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Set for the Cisco 811 and 813 Routers

Features	Feature Sets					
	IP	IP Plus	IP/IPX Plus	IP/FW	IP/FW Plus IPsec 56	IP/IPX/FW Plus IPsec 56
Security (Enhanced)						
Cisco IOS Firewall	No	No	No	Yes	Yes	Yes
Context Based Access Control Lists	No	No	No	Yes	Yes	Yes
Denial of Service Detection	No	No	No	Yes	Yes	Yes
IPSec Encryption w/ 56-bit DES	No	No	No	No	Yes	Yes
Java Blocking	No	No	No	Yes	Yes	Yes
Real-time Alerts	No	No	No	Yes	Yes	Yes
Voice Features (Supplementary)						
Call Conference	Yes	Yes	Yes	Yes	Yes	Yes
Call Hold / Retrieve	Yes	Yes	Yes	Yes	Yes	Yes
Call Transfer	Yes	Yes	Yes	Yes	Yes	Yes
Voice Priority	Yes	Yes	Yes	Yes	Yes	Yes
WAN						
Frame Relay (Leased Line Only)	Yes	Yes	Yes	Yes	Yes	Yes
ISDN	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Lease Line	Yes	Yes	Yes	Yes	Yes	Yes
ML-PPP, PPP Compression	Yes	Yes	Yes	Yes	Yes	Yes
WAN Optimization						
BOD	Yes	Yes	Yes	Yes	Yes	Yes
DDR	Yes	Yes	Yes	Yes	Yes	Yes
IPX and SPX Spoofing	No	Yes	No	No	No	Yes
ISDN Caller ID Callback	Yes	Yes	Yes	Yes	Yes	Yes
Snapshot Routing	Yes	Yes	Yes	Yes	Yes	Yes
STAC Compression	Yes	Yes	Yes	Yes	Yes	Yes
Weighted Fair Queuing Quality of Service	Yes	Yes	Yes	Yes	Yes	Yes
X.25 ID	No	Yes	Yes	No	Yes	Yes

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 800 series for Release 12.1 T:

New Hardware and Software Features in Release 12.1(2)XF3

The following sections list the new hardware and software features supported by the Cisco Cisco 811 and 813 Routers for Release 12.1(2)XF3.

Cisco 811 and 813 Routers

Cisco 800 series routers provide network connectivity for small offices and corporate telecommuters. The Cisco 811 and 813 routers additionally supply value-added services, such as virtual private networks (VPNs), managed network services, point of sale (POS) applications, and secure Internet access.

New Software Features in Release 12.1(1)

For information regarding the features supported in Cisco IOS Release 12.1, refer to the Cross-Platform Release Notes and New Feature Documentation links at the following location on Cisco.com:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/index.htm>

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

Service & Support: Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Cisco IOS Release 12.1

Limitations and Restrictions

Supported MIBs

Table 5 lists the MIBs supported by the Cisco 800 series routers. Each group of MIBs corresponds to a specific group of images.

Table 5 MIBs Supported by the Cisco 800 Series Routers

Image Names	MIBs
c800-sy6-mw	CISCO-IPMROUTE-MIB
c800-osy6-mw	CISCO-SYSLOG-MIB
c800-osy656i-mw	ENTITY-MIB (added)
c800-nsy6-mw	IPMROUTE-MIB
c800-nosy656i-mw	RFC1382-MIB (X25MIB)
c800-osy6-mw	

Table 5 MIBs Supported by the Cisco 800 Series Routers

Image Names	MIBs
c800-nsy6-mw	NOVELL-IPX-MIB
c800-nosy656i-mw	NOVELL-RIPSAP-MIB OLD-CISCO-NOVELL-MIB
c800-osy656i-mw	CISCO-IP-ENCRYPTION-MIB
c800-nosy656i-m	
c800-y6-mw	CISCO-BULK-FILE-MIB
c800-oy6-mw	CISCO-CALL-HISTORY-MIB
c800-sy6-mw	CISCO-CAR-MIB
c800-osy6-mw	CISCO-IMAGE-MIB (added)
c800-osy656i-mw	CISCO-IP-STAT-MIB
c800-nsy6-mw	CISCO-ISDN-MIB
c800-nosy656i-mw	CISCO-ISDNU-IF-MIB CISCO-MEMORY-POOL-MIB CISCO-PING-MIB CISCO-SNAPSHOT-MIB CISCO-TCP-MIB OLD-CISCO-CHASSIS-MIB OLD-CISCO-CPU-MIB OLD-CISCO-FLASH-MIB (added) OLD-CISCO-INTERFACES-MIB OLD-CISCO-IP-MIB OLD-CISCO-MEMORY-MIB OLD-CISCO-SYSTEM-MIB OLD-CISCO-TCP-MIB IF-MIB ISDN-MIB SNMPv2-MIB TCP-MIB UDP-MIB RFC1213-MIB (MIBII) RFC1381-MIB (LAPBMIB) RFC1398-MIB (ETHERMIB)

Important Notes

The following sections contain important notes about Cisco IOS Release 12.1(2)XF5 that can apply to the Cisco 811 and 813 Routers. (Also, see the “Caveats” section on page 11.)

Caveat CSCdr91706 and IOS HTTP Vulnerability

A defect in multiple releases of Cisco IOS software causes a Cisco router or switch to halt and reload if the IOS HTTP service is enabled and you browse to <http://router-ip/anytext?/> and enter the enable password when it is requested. This defect can be exploited to produce a denial of service (DoS) attack. This vulnerability can only be exploited if the enable password is known or not set.

The vulnerability, identified as Cisco bug ID CSCdr91706, affects virtually all mainstream Cisco routers and switches running Cisco IOS software releases 12.0 through 12.1, inclusive. This is not the same defect as CSCdr36952.

The vulnerability has been corrected and Cisco is making fixed releases available for free to replace all affected IOS releases. Cisco urges all customers to upgrade to releases that are not vulnerable to this defect as listed in the complete advisory, which is available at: <http://www.cisco.com/warp/public/707/ioshttpserverquery-pub.shtml>. You are strongly encouraged to read the complete advisory.

B Channel Activation

When a call comes in, a B channel is activated. If the amount of traffic on the B channel exceeds a threshold, the other B channel is activated. If the amount of traffic falls below the threshold, one of the B channels is deactivated. The B channel that is initially activated when the call comes in is not necessarily B1 nor is the B channel that is deactivated when the traffic level lessens necessarily B2.

Cisco 800 Series Router Clock—CSCdp09409

To run IPSec successfully, the Cisco 800 series router clock needs to be set accurately. Cisco 800 series router clocks are set and maintained using Simple Network Time Protocol (SNTP). For best results, set up a Network Time Protocol (NTP) server to periodically send time information messages to Cisco 800 series routers. See the SNTP configuration and command reference documentation for configuration instructions. If you do not have an NTP server, you must reset the Cisco 800 series router clock using the **clock set** command each time you restart the router.

The SNTP configuration documentation is available in the chapter “Monitoring the Router and Network” in the “System Management” volume of the *Configuration Fundamentals Configuration Guide* in the Cisco IOS documentation set. The SNTP command reference documentation is available in the chapter “Router and Network Monitoring Commands” in the “System Management Commands” volume of the *Configuration Fundamentals Command Reference* manual in the Cisco IOS documentation set.

CiscoView Application Support

The CiscoView application supports the Cisco 800 series routers. The CiscoView application provides dynamic status, statistics, and comprehensive configuration information for Cisco switches, routers, concentrators, and adapters. It displays a graphical view of Cisco devices. This network management tool also provides configuring and monitoring functions and offers basic troubleshooting tips.

Dial Peer Limitation

The **isdn answer1** and **isdn answer2** commands determine which called telephone numbers, for example, 555-1111 and 555-2222, a Cisco 800 series router can answer. Using these commands limits a router to using the two dial peers that contain the telephone numbers 555-1111 and 555-2222. (When not using these commands, a router can use up to six dial peers.) A sample scenario in which the **isdn answer1** and **isdn answer2** commands are used is when a Cisco 801 or Cisco 803 router is connected with other ISDN devices to an ISDN S-bus.

Downloading Images

Before attempting to download new images, you must first delete files in the router Flash memory. Be sure to use the **delete** command, not command **erase**, to free up space. Entering **erase** removes all files, including the configuration.

Excessive ISDN Line Activation

The following protocols send updates that can cause an ISDN line to be activated excessively, thereby increasing your monthly ISDN line cost:

- IP
- User Datagram Protocol (UDP)
- IPX
- Cisco Discovery Protocol (CDP)
- Simple Network Time Protocol (SNTP)

See the *Cisco 800 Series Routers Software Configuration Guide* to set up extended access lists to prevent IP, UDP, IPX, and SNTP updates from activating the ISDN line. For CDP, make certain that you enter the **no cdp enable** command to disable CDP.

Hanging During Boot

If an illegal console configuration is issued to the router, the console fails the POST tests during boot and causes the router to halt. The only way to recover from this state is to pull apart the soldered boot Flash and re-burn the Boot ROM. This problem has been resolved in TinyROM version 1.0(3), a downloadable ROM upgrade available from Cisco.com. Contact Cisco to upgrade to this version or later, and prevent this problem from occurring.

Phone Mate Answering Machine Model 9200

A Phone Mate answering machine model 9200 failed to recognize the ringing signal sent by AMD R79 ringing SLIC. This was confirmed by testing against Phone Mate model 3750 and newer model 9300.

PPP over Frame Relay Support (RFC-1973)

Cisco 800 series routers do not support PPP protocol over Frame Relay.

TACACS+ with AAA

Cisco 800 series routers now support the Terminal Access Controller Access Control System Plus (TACACS+) protocol through Telnet. TACACS+ is a Cisco proprietary authentication protocol that provides remote access authentication and related network security services, such as event logging. User passwords are administered in a central database, rather than in individual routers. TACACS+ also supports separate modular authentication, authorization, and accounting (AAA) facilities that are configured at individual routers.

For information on how to configure TACACS+, refer to the “Configuring TACACS+” chapter in the *Security Configuration Guide*. For information on TACACS+ commands, refer to the “TACACS, Extended TACACS, and TACACS+ Commands” chapter in the *Security Command Reference*.

Cisco 800 series routers do not support the following protocols:

- TACACS, an older access protocol now deprecated by Cisco, or Extended TACACS, an extension to the TACACS protocol.
- RADIUS or Kerberos protocols.

ROM Monitor set stop-bits Parameter

This release supports the setting of 1 only, for the ROM monitor **set stop-bits** parameter.

Caveats

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

All caveats in Release 12.1(2)T are also in Release 12.1(2)XF5. For information on caveats in Cisco IOS Release 12.1(2)T, refer to the *Caveats for Cisco IOS Release 12.1 T* document. For information on caveats in Cisco IOS Release 12.1, refer to the *Caveats for Cisco IOS Release 12.1* document. These publications list severity 1 and 2 caveats, and are located on Cisco.com and the Documentation CD-ROM.



Note

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

Resolved Caveats - Release 12.1(2)XF5

This section describes unexpected behavior that is fixed in Release 12.1(2)XF5.

Management

CSCdw65903

An error can occur with management protocol processing. Please use the following URL for further information:

<http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903>

Caveats Resolved in Release 12.1(2)XF4

This section describes possibly unexpected behavior by software Release 12.1(2)XF4.

CSCdt11503

An unexpected router reset might occur when OID fields larger than 256 are received.

CSCdt96253

CRC-32 compensation vulnerability.

CSCdt93862

Access level issue while using the Web interface.

CSCdt57231

SSH SSH_MSG_IGNORE messages for terminal echo tests.

Open Caveats—Release 12.1(2)XF3

This section describes possibly unexpected behavior by Release 12.1(2)XF3.

CSCds04747

Connection setup improvements.

CSCds32217

D-write community string readable with read-only community, Cisco IOS.

Resolved Caveats—Release 12.1(2)XF2

This section describes possibly unexpected behavior by software releases prior to Release 12.1(2)XF2 that have been resolved in Release 12.1(2)XF2 and above.

CSCds05811

If secondary IP addresses are configured on either an Ethernet or FastEthernet interface and the running-config is saved to NVRAM, when the router is reloaded the secondary IP addresses disappear from the configuration. This caveat is identical to the caveats: CSCdr51651, CSCdr72866, CSCdr72868, and CSCdr77724, as well as cases A445655, A519050, and A466616. The problem was originally found in Release 12.1(2)T. This caveat is fixed in Cisco IOS Release 12.1(2)XF2.

Open Caveats—Release 12.1(2)XF1

This section describes possibly unexpected behavior by Release 12.1(2)XF1.

CSCds37736

Cisco 801 through 804 router initialization ignores the CPU type and always loads the micro code for the MPC850.

Open Caveats—Release 12.1(2)XF

This section describes possibly unexpected behavior by Release 12.1(2)XF.

CSCdr49075

On a Cisco 800 series router, the configuration for the second POTS port might not take effect if a called party number for an incoming call on an ISDN line is not provided.

Related Documentation

The following sections describe the documentation available for the Cisco 811 and 813 Routers. Typically, these documents consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, feature modules, and other documents.

Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on Cisco.com and the Documentation CD-ROM.

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

- Release-Specific Documents
- Platform-Specific Documents
- Feature Modules
- Cisco IOS Software Documentation Set

Release-Specific Documents

The following documents are specific to Release 12.1. They are located on Cisco.com and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.1*
 - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.1* from Cisco.com, click on this path (under the heading **Service & Support**):
Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes
 - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.1* on the Documentation CD-ROM, click on this path:
Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes
- Product bulletins, field notices, and other release-specific documents
To reach these documents from Cisco.com, click on this path (under the heading **Service & Support**):
Technical Documents: Product Bulletins
- *Caveats for Cisco IOS Release 12.1 and 12.1 T*
The *Caveats for Cisco IOS Release 12.1* and *Caveats for Cisco IOS Release 12.1 T* documents contain caveats applicable to all platforms for all maintenance releases of Release 12.1.
 - To reach the caveats document from Cisco.com, click on this path (under the heading **Service & Support**):
Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Caveats
 - To reach the caveats document on the Documentation CD-ROM, click on this path:
Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Caveats



Note

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

Platform-Specific Documents

These documents are available for the Cisco 811 and 813 Routers on Cisco.com and the Documentation CD-ROM:

Cisco 811 and 813 Routers

- *Cisco 811 and Cisco 813 Routers Hardware Installation Guide*
- *Quick Start Guide: Setting Up Cisco 811 and Cisco 813 Routers*

- *Cisco 800 Series Routers Software Configuration Guide*
- *Release Notes for Cisco 800 Routers*

On Cisco.com at:

- **Technical Documents: Documentation Home Page: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco 811 and Cisco 813 Routers**
- **Technical Documents: Documentation Home Page: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco 801–804 Routers**

On the Documentation CD-ROM at:

- **Cisco Product Documentation: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco 811 and Cisco 813 Routers**
- **Cisco Product Documentation: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco 801–804 Routers**

Feature Modules

Feature modules describe new features supported by Release 12.1 and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

To reach the Release 12.1 feature modules:

- From Cisco.com, click on this path (under the heading **Service & Support**):
Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in 12.1X Releases: New Features in 12.1(1)X Releases
- From the Documentation CD-ROM, click on this path:
Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in 12.1X Releases: New Features in 12.1(1)X Releases

Feature Navigator

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a particular set of features and which features are supported in a particular Cisco IOS image. Feature Navigator is available 24 hours a day, 7 days a week.

To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, e-mail the Contact Database Administration group at cdbadmin@cisco.com. If you do not have an account on Cisco.com, go to <http://www.cisco.com/register> and follow the directions to set up an account.

To use Feature Navigator, you must have a JavaScript-enabled web browser such as Netscape 3.0 or later, or Internet Explorer 4.0 or later. Internet Explorer 4.0 always has JavaScript enabled. To enable JavaScript for Netscape 3.x or Netscape 4.x, follow the instructions provided with the web browser. For JavaScript support and enabling instructions for other browsers, check with the browser vendor.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. You can access Feature Navigator at the following URL:

<http://www.cisco.com/go/fn>

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents that are shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered printed versions.

Documentation Modules

Each module in the Cisco IOS documentation set consists of two types of books: a configuration guide and a corresponding command reference. Chapters in a configuration guide describe protocols, configuration tasks, Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference. The Cisco IOS software documentation set is available on Cisco.com and on the Documentation CD-ROM.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References

Release 12.1 Documentation Set

Table 6 describes the contents of the Cisco IOS Release 12.1 software documentation set, which is available in both electronic and printed form.



Note

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

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1

Table 6 Cisco IOS Software Release 12.1 Documentation Set

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> • <i>Cisco IOS Configuration Fundamentals Command Reference</i> 	<ul style="list-style-type: none"> Configuration Fundamentals Overview Using the Command-Line Interface (CLI) Using Configuration Tools Configuring Operating Characteristics Managing Connections, Menus, and System Banners Using the Cisco Web Browser Using the Cisco IOS File System Modifying, Downloading, & Maintaining Configuration Files Loading and Maintaining System Images Maintaining Router Memory Rebooting a Router Configuring Additional File Transfer Functions Monitoring the Router and Network Troubleshooting a Router Performing Basic System Management System Management Using System Controllers Web Scaling Using WCCP Managing Dial Shelves
<ul style="list-style-type: none"> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i> 	<ul style="list-style-type: none"> Overview of Apollo Domain, Banyan VINES, DECNET, ISO CLNS, and XNS Configuring Apollo Domain Configuring Banyan VINES Configuring DECnet Configuring IOS CLNS Configuring XNS
<ul style="list-style-type: none"> • <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i> • <i>Cisco AppleTalk and Novell IPX Command Reference</i> 	<ul style="list-style-type: none"> AppleTalk and Novel IPX Overview Configuring AppleTalk Configuring Novell IPX
<ul style="list-style-type: none"> • <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume I</i> • <i>Cisco Bridging and IBM Networking Command Reference, Volume II</i> 	<ul style="list-style-type: none"> Overview of SNA Internetworking Overview of Bridging Configuring Transparent Bridging Configuring Source-Route Bridging Configuring Token Ring Inter-Switch Link Configuring Token Ring Route Switch Module Overview of IBM Networking Configuring Remote Source-Route Bridging Configuring Data-Link Switching Plus+ Configuring Serial Tunnel and Block Serial Tunnel Configuring LLC2 and SDLC Parameters Configuring IBM Network Media Translation Configuring Frame Relay Access Support Configuring NCIA Server Configuring the Airline Product Set Configuring DSPU and SNA Service Point Support Configuring SNA Switching Services Configuring Cisco Transaction Connection Configuring Cisco Mainframe Channel Connection Adapters

Table 6 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
(Continued)	Configuring CLAW and TCP/IP Offload Support Configuring CMPC and CSNA Configuring CMPC+ Configuring the TN3270 Server
<ul style="list-style-type: none"> • <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume I</i> • <i>Cisco Bridging and IBM Networking Command Reference, Volume II</i> 	
<ul style="list-style-type: none"> • <i>Cisco IOS Dial Services Configuration Guide: Terminal Services</i> • <i>Cisco IOS Dial Services Configuration Guide: Network Services</i> • <i>Cisco IOS Dial Services Command Reference</i> 	Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Networks X.25 on ISDN Solutions Telco Solutions Dial-Related Addressing Services Internetworking Dial Access Scenarios Preparing for Dial Access Modem Configuration and Management ISDN and Signalling Configuration PPP Configuration Dial-on-Demand Routing Configuration Dial-Backup Configuration Terminal Service Configuration
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Guide</i> 	Interface Configuration Overview Configuring LAN Interfaces Configuring Serial Interfaces Configuring Logical Interfaces
<ul style="list-style-type: none"> • <i>Cisco IOS IP and IP Routing Configuration Guide</i> • <i>Cisco IOS IP and IP Routing Command Reference</i> 	IP Overview Configuring IP Addressing Configuring DHCP Configuring IP Services Configuring Mobile IP Configuring On-Demand Routing Configuring RIP Configuring IGRP Configuring OSPF Configuring IP Enhanced IGRP Configuring Integrated IS-IS Configuring BGP Configuring Multicast BGP (MBGP) Configuring IP Routing Protocol-Independent Features Configuring IP Multicast Routing Configuring Multicast Source Discovery Protocol Configuring PGM Router Assist Configuring Unidirectional Link Routing Using IP Multicast Tools

Table 6 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Multiservice Applications Configuration Guide</i> • <i>Cisco IOS Multiservice Applications Command Reference</i> 	<ul style="list-style-type: none"> Multiservice Applications Overview Configuring Voice over IP Configuring Gatekeepers (Multimedia Conference Manager) Configuring Voice over Frame Relay Configuring Voice over ATM Configuring Voice over HDLC Configuring Voice-Related Support Features Configuring PBX Signaling Configuring Store and Forward Fax Configuring Video Support Configuring Head-End Broadband Access Router Features Configuring Subscriber-End Broadband Access Router Features Configuring Synchronized Clocking
<ul style="list-style-type: none"> • <i>Cisco Quality of Service Solutions Configuration Guide</i> • <i>Cisco IOS Quality of Service Solutions Command Reference</i> 	<ul style="list-style-type: none"> Quality of Service Overview Classification Overview Configuring Policy-Based Routing Configuring QoS Policy Propagation via Border Gateway Protocol Configuring Committed Access Rate Congestion Management Overview Configured Weighted Fair Queueing Configuring Custom Queueing Configuring Priority Queueing Congestion Avoidance Overview Configuring Weighted Random Early Detection Policing and Shaping Overview Configuring Generic Traffic Shaping Configuring Frame Relay and Frame Relay Traffic Shaping Signalling Overview Configuring RSVP Configuring Subnetwork Bandwidth Manager Configuring RSVP-ATM Quality of Service Internetworking Link Efficiency Mechanisms Overview Configuring Link Fragmentation and Interleaving for Multilink PPP Configuring Compressed Real-Time Protocol IP to ATM CoS Overview Configuring IP to ATM CoS QoS Features for Voice Introduction

Table 6 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Security Configuration Guide</i> • <i>Cisco IOS Security Command Reference</i> 	TACACS+ Commands Access Control Lists: Overview and Guidelines Cisco Secure Integrated Software Firewall Overview Configuring Lock-and-Key Security (Dynamic Access Lists) Configuring IP Session Filtering (Reflexive Access Lists) Configuring TCP Intercept (Prevent Denial-of-Service Attacks) Configuring Context-Based Access Control Configuring Cisco Secure Integrated Software Intrusion Detection System Configuring Authentication Proxy Configuring Port to Application Mapping IP Security and Encryption Overview Configuring IPsec Network Security Configuring Certification Authority Interoperability Configuring Internet Key Exchange Security Protocol Configuring Passwords and Privileges Neighbor Router Authentication: Overview and Guidelines Configuring 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> 	Configuring MPLS Configuring IP Multilayer Switching Configuring IP Multicast Multilayer Switching Configuring IPX Multilayer Switching Configuring Multicast Distributed Switching Routing Between VLANs Overview Configuring Routing Between VLANs with ISL Encapsulation Configuring Routing Between VLANs with IEEE 802.10 Encapsulation Configuring Routing Between VLANs with IEEE 802.1Q Encapsulation LAN Emulation Overview Configuring LAN Emulation Configuring Token Ring LANE MPOA Overview Configuring the MPOA Client Configuring the MPOA Server Configuring Token Ring LANE for MPOA

Table 6 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Chapter Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i> 	Wide-Area Networking Overview Configuring ATM Frame Relay Frame Relay-ATM Internetworking Configuring SMDS Configuring X.25 and LAPB
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Guide Master Index</i> • <i>Cisco IOS Command Reference Master Index</i> • <i>Cisco IOS Command Summary</i> • <i>Cisco IOS Debug Command Reference</i> • <i>Cisco IOS Dial Services Quick Configuration Guide</i> • <i>Cisco IOS New Features Index</i> (Cisco.com and Documentation CD only) • <i>Cisco IOS System Error Messages</i> 	

**Note**

Cisco Management Information Base (MIB) User Quick Reference is no longer published. If you have an account with Cisco.com, you can find latest list of MIBs supported by Cisco. To reach the *Cisco Network Management Toolkit*, press **Login** at Cisco.com and go to **Software Center: Network Mgmt Products: Cisco Network Management Toolkit**.

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.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 is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Registered Cisco.com users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco's corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed documents, or by sending mail to Cisco.

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- WWW: www.cisco.com
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using Cisco.com to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

Language	E-mail Address
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Spanish	tac@cisco.com
Thai	thai-tac@cisco.com

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

Software Configuration Tips on the Cisco Technical Assistance Center Home Page

If you have a Cisco.com log-in account, you can access the following URL, which contains links and tips on configuring your Cisco products:

http://www.cisco.com/public/technotes/tech_sw.html

This URL is subject to change without notice. If it changes, point your Web browser to Cisco.com, press **Login**, and click on this path: **Technical Assistance Center: Technical Tips**.

The following sections are provided from the Technical Tips page:

- Access Dial Cookbook—Contains common configurations or recipes for configuring various access routes and dial technologies.
- Field Notices—Notifies you of any critical issues regarding Cisco products and includes problem descriptions, safety or security issues, and hardware defects.
- Frequently Asked Questions—Describes the most frequently asked technical questions about Cisco hardware and software.
- Hardware—Provides technical tips related to specific hardware platforms.
- Hot Tips—Describes popular tips and hints gathered from the Cisco Technical Assistance Center (TAC). Most of these documents are available from the TAC Fax-on-demand service. To reach Fax-on-demand and receive documents at your fax machine from the United States, call 888-50-CISCO (888-502-4726). From other areas, call 650-596-4408.
- Internetworking Features—Lists tips on using Cisco IOS software features and services.
- Sample Configurations—Provides actual configuration examples that are complete with topology and annotations.

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We appreciate and value your comments.

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