



Release Notes for the Cisco 4000 Series for Cisco IOS Release 11.2

April 9, 2001



Note

Cisco IOS Release 11.2(26) is the last scheduled maintenance release for Cisco IOS Release 11.2. TAC support will continue to be available. These Release Notes will be the last Release Notes published for Cisco IOS Release 11.2.



Note

You can find the most current Cisco IOS documentation on Cisco.com. These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

These release notes for the Cisco 4000 series routers support Cisco IOS Release 11.2, up to and including Cisco IOS Release 11.2(26). These release notes are updated as needed to describe new features, memory recommendations, hardware support, software platform deferrals, and changes to the microcode or modem code and related documents.

For a list of software caveats that apply to Cisco IOS Release 11.2(26), see the “Caveats” section on page 12 and the “Caveats” section of *Release Notes for Cisco IOS Release 11.2*. The caveats document is updated for every maintenance release.

Use these release notes with *Release Notes for Cisco IOS Release 11.2* located on Cisco.com and the Documentation CD-ROM.

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System Requirements

This section describes the system requirements for Release 11.2:

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Memory Recommendations

Table 1 Memory Recommendations for the Cisco 4000 Series Routers

Feature Set by Platform		Image Name	Recommended Flash Memory	Recommended DRAM Memory		Runs From ¹
				Cisco 4X00	Cisco 4X00-M	
Cisco 4000 and Cisco 4000-M	IP	c4000-i-mz	4 MB	16 MB	8 MB	RAM
	IP Plus ²	c4000-is-mz	4 MB	16 MB	8 MB	RAM
	IP Plus 40	c4000-is40-mz	4 MB	16 MB	8 MB	RAM
	IP Plus 56	c4000-is56-mz	4 MB	16 MB	8 MB	RAM
	IP/IPX/AT/DEC	c4000-d-mz	4 MB	16 MB	8 MB	RAM
	IP/IPX/AT/DEC Plus	c4000-ds-mz	4 MB	16 MB	16 MB	RAM
	IP/IPX/AT/DEC Plus 40	c4000-ds40-mz	4 MB	16 MB	16 MB	RAM
	IP/IPX/AT/DEC Plus 56	c4000-ds56-mz	4 MB	16 MB	16 MB	RAM
	IP/IPX/IBM/APPN	c4000-ainr-mz	4 MB	32 MB	32 MB	RAM
	Enterprise	c4000-j-mz	4 MB	16 MB	16 MB	RAM
	Enterprise Plus	c4000-js-mz	8 MB	16 MB	16 MB	RAM
	Enterprise Plus 40	c4000-js40-mz	8 MB	16 MB	16 MB	RAM
	Enterprise Plus 56	c4000-js56-mz	8 MB	16 MB	16 MB	RAM
	Enterprise/APPN Plus	c4000-ajs-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 40	c4000-ajs40-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 56	c4000-ajs56-mz	8 MB	32 MB	32 MB	RAM

Table 1 Memory Recommendations for the Cisco 4000 Series Routers (continued)

Feature Set by Platform		Image Name	Recommended Flash Memory	Recommended DRAM Memory		Runs From ¹
				Cisco 4X00	Cisco 4X00-M	
Cisco 4500 Cisco 4500-M	IP	c4500-i-mz	4 MB	32 MB	16 MB ³	RAM
	IP Plus ⁴	c4500-is-mz	4 MB	32 MB	16 MB	RAM
	IP Plus 40	c4500-is40-mz	4 MB	32 MB	16 MB	RAM
	IP Plus 56	c4500-is56-mz	4 MB	32 MB	32 MB	RAM
	IP/IPX/AT/DEC	c4500-d-mz	4 MB	32 MB	16 MB	RAM
	IP/IPX/AT/DEC Plus	c4500-ds-mz	4 MB	32 MB	16 MB	RAM
	IP/IPX/AT/DEC Plus 40	c4500-ds40-mz	4 MB	32 MB	16 MB	RAM
	IP/IPX/AT/DEC Plus 56	c4500-ds56-mz	4 MB	32 MB	16 MB	RAM
	IP/IPX/IBM/APPN	c4500-ainr-mz	8 MB	32 MB	32 MB	RAM
	Enterprise	c4500-j-mz	8 MB	32 MB	16 MB	RAM
	Enterprise Plus	c4500-js-mz	8 MB	32 MB	16 MB	RAM
	Enterprise Plus 40	c4500-js40-mz	8 MB	32 MB	16 MB	RAM
	Enterprise Plus 56	c4500-js56-mz	8 MB	32 MB	16 MB	RAM
	Enterprise/APPN Plus	c4500-ajs-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 40	c4500-ajs40-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 56	c4500-ajs56-mz	8 MB	32 MB	32 MB	RAM
Cisco 4700 Cisco 4700-M	IP	c4500-i-mz	4 MB	16 MB	16 MB	RAM
	IP Plus ⁴	c4500-is-mz	4 MB	16 MB	16 MB	RAM
	IP Plus 40	c4500-is40-mz	4 MB	16 MB	16 MB	RAM
	IP Plus 56	c4500-is56-mz	4 MB	32 MB	32 MB	RAM
	IP//IPX/AT/DEC	c4500-d-mz	4 MB	16 MB	16 MB	RAM
	IP//IPX/AT/DEC Plus	c4500-ds-mz	4 MB	16 MB	16 MB	RAM
	IP//IPX/AT/DEC Plus 40	c4500-ds40-mz	4 MB	16 MB	16 MB	RAM
	IP//IPX/AT/DEC Plus 56	c4500-ds56-mz	4 MB	16 MB	16 MB	RAM
	IP/IPX/IBM/APPN	c4500-ainr-mz	8 MB	32 MB	32 MB	RAM
	Enterprise	c4500-j-mz	8 MB	16 MB	16 MB	RAM
	Enterprise Plus	c4500-js-mz	8 MB	16 MB	16 MB	RAM
	Enterprise Plus 40	c4500-js40-mz	8 MB	16 MB	16 MB	RAM
	Enterprise Plus 56	c4500-js56-mz	8 MB	16 MB	16 MB	RAM
	Enterprise/APPN Plus	c4500-ajs-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 40	c4500-ajs40-mz	8 MB	32 MB	32 MB	RAM
	Enterprise/APPN Plus 56	c4500-ajs56-mz	8 MB	32 MB	32 MB	RAM

1. When a system is running from Flash memory, you cannot update the system while it is running. You must use the Flash memory load helper.
2. Plus for the Cisco 4000 and Cisco 4000-M includes NAT and IBM (if IBM is not already included).
3. The Cisco 4500 requires 16 MB DRAM when two NP-CT1 or two NP-CE1 Network Processor Modules are installed in the chassis.
4. Plus for the Cisco 4500, Cisco 4500-M, Cisco 4700, and Cisco 4700-M includes NAT, ISL, LANE, and IBM (if IBM is not already included).

Hardware Supported

Cisco IOS Release 11.2(26) supports the Cisco 4000 series:

- Cisco 4000, Cisco 4000-M
- Cisco 4500, Cisco 4500-M
- Cisco 4700, Cisco 4700-M

The following LAN interfaces are supported on Cisco 4000 series routers:

- Ethernet (AUI)
- Ethernet (10BaseT)
- 4-Mbps Token Ring
- 16-Mbps Token Ring
- FDDI DAS
- FDDI SAS
- FDDI multimode (DAS/SAS)
- FDDI single-mode
- ATM
- Multichannel interface (channelized E1/T1)
- Packet-over-SONET OC-3 Interface2
- Synchronous serial

The following WAN data rates are supported on Cisco 4000 series routers:

- 48/56/64 kbps
- 1.544/2.048 Mbps

The following WAN interfaces are supported on Cisco 4000 series routers:

- EIA/TIA-232
- X.21
- V.35
- EIA/TIA-449
- EIA-530
- ISDN BRI
- ISDN PRI
- E1-G.703/G.704

Determining the Software Version

To determine the version of Cisco IOS software running on your Cisco 4000 series router, log in to the router and enter the **show version EXEC** command:

```
router> show version
Cisco Internetwork Operating System Software
  IOS (tm) 4000 Software (C4000-JS-M), Version 11.2(26), RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, see *Cisco IOS Upgrade Ordering Instructions* located at:

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

Feature Set Tables

Cisco IOS software is packaged into feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features, as shown in Table 2.

Table 2 Feature Set Matrix for the Cisco 4000 Series

Standard Feature Sets	Cisco 4000 Series
IP	Basic, Plus, Encrypt
IP/IPX/AppleTalk/DEC	Basic, Plus, Encrypt
Enterprise	Basic, Plus, Encrypt
Enterprise and APPN	Plus, Encrypt
IP/IPX/IBM and IBM	Basic



Caution

Cisco IOS images with strong encryption (including, but not limited to, 168-bit [3DES] data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders can be denied or subject to delay due to United States government regulations. When applicable, obtain local import and use authorizations for all encryption strengths. Contact your sales representative or distributor for more information, or send e-mail to export@cisco.com.

Table 3 lists the features and feature sets supported by the Cisco 4000 series in Cisco IOS Release 11.2(26) and uses the following conventions:

- Yes—This feature is offered in the feature set.
- No—This feature is not offered in the feature set.
- Basic—This feature is offered in the basic feature set.
- Plus—This feature is offered in the Plus feature set.
- Encrypt—This feature is offered in the encryption feature sets, which consist of 40-bit (Plus 40) or 56-bit (Plus 56) data encryption feature sets.



Note

This table might not be cumulative or list all the features in each image. You can find the most current Cisco IOS documentation on Cisco.com. These electronic documents can contain updates and modifications made after the hardcopy documents were printed. If you have a Cisco.com login account, you can find image and release information regarding features prior to Cisco IOS Release 11.2(26) by using the Feature Navigator tool at: <http://www.cisco.com/go/fn>.

Table 3 Feature List by Feature Set for the Cisco 4000 Series Routers

Feature	Feature Set			
	IP Routing	IP/IPX/ IBM/APPN ¹	IP/IPX/ AppleTalk/ DEC	Enterprise ²
LAN Support				
Apollo Domain	No	No	No	Yes
AppleTalk 1 and 2 ³	No	No	Yes	Yes
Banyan VINES	No	No	No	Yes
Concurrent routing and bridging (CRB)	Yes	Yes	Yes	Yes
DECnet IV	No	No	Yes	Yes
DECnet V	No	No	No	Yes
GRE	Yes	Yes	Yes	Yes
Integrated routing and bridging (IRB) ⁴	Yes	Yes	Yes	Yes
IP	Yes	Yes	Yes	Yes
LAN extension host	Yes	Yes	Yes	Yes
Multiring	Yes	Yes	Yes	Yes
Novell IPX ⁵	No	Yes	Yes	Yes
OSI	No	No	No	Yes
Source-route bridging ⁶	No	No	No	No
Transparent and translational bridging	Yes	Yes	Yes	Yes
VLANs (ISL ⁷ and IEEE 802.10) (Cisco 4500 only)	Plus	No	Plus	Plus
XNS	No	No	No	Yes
WAN Services				
ATM LAN emulation: DECnet routing, XNS routing, and Banyan VINES support (Cisco 4500 and Cisco 4700 only) ⁸	No	No	Plus	Plus
ATM LAN emulation: Hot Standby Router Protocol (HSRP) and Simple Server Redundancy Protocol (SSRP) (Cisco 4500 and Cisco 4700 only)	Plus	No	Plus	Plus
ATM: Rate queues for SVC per subinterface (Cisco 4000, Cisco 4500, and Cisco 4700 only)	Plus	No	Plus	Plus
ATM: UNI 3.1 signaling for ATM (Cisco 4500 and Cisco 4700 only)	Plus	No	Plus	Plus
Combinet Packet Protocol (CPP)	Yes	Yes	Yes	Yes
Dialer profiles	Yes	Yes	Yes	Yes
Frame Relay	Yes	Yes	Yes	Yes
Frame Relay SVC Support (DTE)	No	No	No	Yes

Table 3 Feature List by Feature Set for the Cisco 4000 Series Routers (continued)

Feature	Feature Set			
	IP Routing	IP/IPX/ IBM/APPN ¹	IP/IPX/ AppleTalk/ DEC	Enterprise ²
Frame Relay traffic shaping	Yes	Yes	Yes	Yes
Half bridge/half router for CPP and PPP	Yes	Yes	Yes	Yes
HDLC	Yes	Yes	Yes	Yes
IPXWAN 2.0	No	Yes	Yes	Yes
ISDN ⁹	Yes	Yes	Yes	Yes
Multichassis Multilink PPP (MMP)	No	No	No	Yes
NetBEUI over PPP	No	No	No	Yes
PPP ¹⁰	Yes	Yes	Yes	Yes
SMDS	Yes	Yes	Yes	Yes
Switched 56	Yes	Yes	Yes	Yes
Virtual Private Dial-Up Network (VPDN)	Plus	No	Plus	Yes
X.25 ¹¹	Yes	Yes	Yes	Yes
WAN Optimization				
Bandwidth-on-demand	Yes	Yes	Yes	Yes
Custom and priority queuing	Yes	Yes	Yes	Yes
Dial backup	Yes	Yes	Yes	Yes
Dial-on-demand	Yes	Yes	Yes	Yes
Header ¹² , link and payload compression	Yes	Yes	Yes	Yes
Snapshot routing	Yes	Yes	Yes	Yes
Weighted fair queuing	Yes	Yes	Yes	Yes
IP Routing				
BGP	Yes	Yes	Yes	Yes
BGP4 ¹³	Yes	Yes	Yes	Yes
EGP	Yes	Yes	Yes	Yes
Enhanced IGRP	Yes	Yes	Yes	Yes
Enhanced IGRP Optimizations	Yes	Yes	Yes	Yes
ES-IS	No	No	No	Yes
IGRP	Yes	Yes	Yes	Yes
IS-IS	No	No	No	Yes
Named IP Access Control List	Yes	Yes	Yes	Yes
Network Address Translation (NAT)	Plus	No	Plus	Plus
NHRP	Yes	Yes	Yes	Yes
On Demand Routing (ODR)	Yes	Yes	Yes	Yes
OSPF	Yes	Yes	Yes	Yes

Table 3 Feature List by Feature Set for the Cisco 4000 Series Routers (continued)

Feature	Feature Set			
	IP Routing	IP/IPX/ IBM/APPN ¹	IP/IPX/ AppleTalk/ DEC	Enterprise ²
OSPF Not-So-Stubby-Areas (NSSA)	Yes	Yes	Yes	Yes
OSPF On Demand Circuit (RFC 1793)	Yes	Yes	Yes	Yes
PIM	Yes	Yes	Yes	Yes
Policy-based routing	Yes	Yes	Yes	Yes
RIP	Yes	Yes	Yes	Yes
RIP Version 2	Yes	Yes	Yes	Yes
Other Routing				
AURP	No	No	Yes	Yes
IPX RIP	No	Yes	Yes	Yes
NLSP	No	Yes	Yes	Yes
RTMP	No	No	Yes	Yes
SMRP	No	No	Yes	Yes
S RTP	No	No	No	Yes
Multimedia and Quality of Service				
Generic traffic shaping	Yes	Yes	Yes	Yes
Random Early Detection (RED) ¹⁴	Yes	Yes	Yes	Yes
Resource Reservation Protocol (RSVP) ¹⁴	Yes	Yes	Yes	Yes
Management				
AutoInstall	Yes	Yes	Yes	Yes
Automatic modem configuration	Yes	Yes	Yes	Yes
HTTP Server	Yes	Yes	Yes	Yes
RMON events and alarms ¹⁵	Yes	Yes	Yes	Yes
SNMP	Yes	Yes	Yes	Yes
Telnet	Yes	Yes	Yes	Yes
Security				
Access lists	Yes	Yes	Yes	Yes
Access security	Yes	Yes	Yes	Yes
Extended access lists	Yes	Yes	Yes	Yes
Kerberized login	No	No	No	Yes
Kerberos V client support	No	No	No	Yes
Lock and key	Yes	Yes	Yes	Yes
MAC security for hubs	Yes	Yes	Yes	Yes
MD5 routing authentication	Yes	Yes	Yes	Yes

Table 3 Feature List by Feature Set for the Cisco 4000 Series Routers (continued)

Feature	Feature Set			
	IP Routing	IP/IPX/ IBM/APPN ¹	IP/IPX/ AppleTalk/ DEC	Enterprise ²
Router authentication and network layer encryption (40-bit or export controlled 56-bit DES) ¹⁶	Encrypt	No	Encrypt	Encrypt
RADIUS	Yes	Yes	Yes	Yes
TACACS+ ¹⁷	Yes	Yes	Yes	Yes
IBM Support (Optional)				
APPN (optional) ²	No	Yes	No	Yes
BAN for SNA Frame Relay support	Plus	Yes	Plus	Yes
Bisync	Plus	Yes	Plus	Yes
Caching and filtering	Plus	Yes	Plus	Yes
DLSw+ ¹⁸	Plus	Yes	Plus	Yes
Downstream PU concentration (DSPU)	Plus	Yes	Plus	Yes
Frame Relay SNA support (RFC 1490)	Plus	Yes	Plus	Yes
Native Client Interface Architecture (NCIA) Server	Plus	Yes	Plus	Yes
NetView Native Service Point	Plus	Yes	Plus	Yes
QLLC	Plus	Yes	Plus	Yes
Response Time Reporter (RTR)	Plus	Yes	Plus	Yes
SDLC integration	Plus	Yes	Plus	Yes
SDLC transport (STUN)	Plus	Yes	Plus	Yes
SDLC-to-LAN conversion (SDLLC)	Plus	Yes	Plus	Yes
SNA and NetBIOS WAN optimization via local acknowledgment	Plus	Yes	Plus	Yes
SRB/RSRB ¹⁹	Plus	Yes	Plus	Yes
SRT	Plus	Yes	Plus	Yes
TG/COS	No	No	No	Yes
TN3270	No	No	No	Yes
Protocol Translation				
LAT	No	No	No	Yes
Rlogin	No	No	No	Yes
Remote Node²⁰				
ARAP 1.0/2.0 ²¹	No	No	Yes	Yes
Asynchronous master interfaces	Yes	Yes	Yes	Yes
ATCP	No	No	Yes	Yes

Table 3 Feature List by Feature Set for the Cisco 4000 Series Routers (continued)

Feature	Feature Set			
	IP Routing	IP/IPX/ IBM/APPN ¹	IP/IPX/ AppleTalk/ DEC	Enterprise ²
CPPP	Yes	Yes	Yes	Yes
CSLIP	Yes	Yes	Yes	Yes
DHCP	Yes	Yes	Yes	Yes
IP pooling	Yes	Yes	Yes	Yes
IPX and ARAP on virtual async interfaces	No	No	No	Yes
IPXCP ¹²	No	Yes	Yes	Yes
MacIP	No	No	Yes	Yes
NASI	No	Yes	Yes	Yes
PPP	Yes	Yes	Yes	Yes
SLIP	Yes	Yes	Yes	Yes
Terminal Services²⁰				
LAT ²²	No	No	No	Yes
Rlogin	Yes	Yes	Yes	Yes
Telnet	Yes	Yes	Yes	Yes
TN3270	No	No	No	Yes
X.25 PAD	Yes	Yes	Yes	Yes
Xremote	No	No	No	Yes

1. This feature set has no additional options. It offers a low-end APPN solution for this set of hardware platforms. This feature set is not available for AccessPro PC cards.
2. Enterprise is available with APPN in a separate feature set. APPN includes APPN Central Registration (CRR) and APPN over DLSw+. APPN is not available on the AccessPro PC Card.
3. This feature includes AppleTalk load balancing.
4. IRB supports IP, IPX, and AppleTalk; it is supported for transparent bridging, but not for SRB; it is supported on all media-type interfaces except X.25 and ISDN bridged interfaces; and IRB and concurrent routing and bridging (CRB) cannot operate at the same time.
5. The Novell IPX feature includes displaying SAP by name, IPX Access Control List violation logging, and plain-English IPX access lists.
6. Translational bridging is fast switched by default but can be disabled.
7. Note that the only IPX encapsulation supported in ISL is IEEE 802.3.
8. ATM LAN emulation for Banyan VINES is only supported in Enterprise. The Desktop feature set supports DECnet only.
9. ISDN support includes calling line identification (ANI), X.25 over the B channel, ISDN subaddressing, and applicable WAN optimization features.
10. PPP includes support for LAN protocols supported by the feature set, address negotiation, PAP and CHAP authentication, Multilink PPP, and PPP compression.
11. X.25 includes X.25 switching.
12. IPX header compression (RFC 1553) is available in the feature sets that support IPX.
13. BGP4 includes soft configuration, multipath support, and prefix filtering with inbound route maps.
14. RED and RSVP are supported in IP/IPX/IBM/APPN for the Cisco 4000, Cisco 4500, and Cisco 4700 only.
15. The RMON events and alarms groups are supported on all interfaces. Full RMON support is available with the Plus feature sets.

16. For more details, see the description of the new data encryption options in the section “Cisco IOS Packaging” in the *Release Notes for Cisco IOS Release 11.2*. (See the “Related Documentation” section on page 12 for information on accessing the related release notes.)
17. TACACS+ Single Connection and TACACS+ SENDAUTH enhancements are supported.
18. Cisco IOS Release 11.2 introduces several DLSw+ enhancements available in the Plus, Plus 40, and Plus 56 feature sets.
19. SRB/RSRB is fast switched. This enhancement is on by default, but it can be disabled.
20. These features are supported on access servers (with limited support on router auxiliary ports).
21. The Cisco 4000, Cisco 4500, and Cisco 4700 products do not support ARAP 1.0/2.0.
22. Use of LAT requires terminal license (FR-L8-10.X= for an 8-user license or FR-L16-10.X= for a 16-user license).

New and Changed Information

The following section lists the new hardware and software features supported by the Cisco 4000 series for Cisco IOS Release 11.2.

New Features in Cisco IOS Release 11.2(26)

There are no new features in Cisco IOS Release 11.2(26). Previous releases support features in the following categories:

- IBM Support
- Internet
- LAN Support
- Management
- Multimedia
- Quality of Service
- Security
- Switching
- Terminal Services
- WAN Optimization
- WAN Services

Detailed descriptions of the features can be found on Cisco.com or on the Documentation CD-ROM. See the “Obtaining Documentation” section on page 16 for more details.

Important Notes

The following sections contain important notes about Cisco IOS Release 11.2 and apply to the Cisco 4000 series.

Cisco IOS Release 11.2(15a) and 11.2(15a)P

After the release of Cisco IOS Release 11.2(15) and 11.2(15)P, a serious defect (caveat CSCdk33475) was identified that impacts Enhanced IGRP for Cisco IOS Releases 11.2(14.1) through 11.2(15.2) and Releases 11.2(14.1)P through 11.2(15.2)P. It was determined that this defect was significant enough to merit a software rebuild. The rebuild includes the caveat fix and is renumbered to 11.2(15a) and 11.2(15a) P.

Caveat CSCdk33475 causes a router to fail after the command **show ip eigrp events** is entered. While this **show** command is not required for normal operation, its use might present difficulties for customers who are running images with this defect.

Release 11.2(15a) and Release 11.2(15a)P and all subsequent releases of Cisco IOS software, including Release 11.2(16) and Release 11.2(16)P, include the fix for this caveat.

Cisco IOS Release 11.2 Switches to Long-Cycle Maintenance Releases

Beginning with Cisco IOS Release 11.2(15) and Release 11.2(15)P, all subsequent 11.2 and 11.2 P releases switch to Long-Cycle Maintenance Releases. A new 11.2 and 11.2 P maintenance release is scheduled to be available every thirteen weeks during the Long-Cycle Maintenance Release period. Interim builds will be available approximately every two weeks.

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats, and only select severity 3 caveats are included in the caveats document.

For information on caveats in Cisco IOS Release 11.2, see *Cross-Platform Release Notes for Cisco IOS Release 11.2* located on Cisco.com and the Documentation CD-ROM, that describes caveats affecting all maintenance releases.



Note

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. You can reach Bug Navigator II on Cisco.com at **Software Center: Cisco IOS Software: Cisco Bug Toolkit: Cisco Bugtool Navigator II**, or at <http://www.cisco.com/support/bugtools>.

Related Documentation

The following sections describe the documentation available for the Cisco 4000 series. These documents consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, and other documents.

Documentation is available as printed manuals or electronic documents.

Use these release notes with these documents:

- Release-Specific Documents, page 13

- Platform-Specific Documents, page 13
- Cisco IOS Software Documentation Set, page 14

Release-Specific Documents

The following documents are specific to Release 11.2 and are located on Cisco.com and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 11.2*

On Cisco.com:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 11.2: Product Specific Release Notes for Cisco IOS Release 11.2: Cross-Platform Release Notes for Cisco IOS Release 11.2

On the Documentation CD-ROM:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 11.2: Product Specific Release Notes for Cisco IOS Release 11.2: Cross-Platform Release Notes for Cisco IOS Release 11.2

- Product bulletins, field notices, and other release-specific documents on Cisco.com at:

Technical Documents

Platform-Specific Documents

The following documents are specific to the Cisco 4000 series:

- *Cisco 4000 Hardware Installation and Maintenance* (Cisco 4000, Cisco 4000-M, Cisco 4500)
- *Cisco 4000 Series Installation Guide* (Cisco 4000-M, Cisco 4500-M, Cisco 4700-M)
- *Cisco 4000 Series Configuration Notes* (Cisco 4000, Cisco 4000-M, Cisco 4500, Cisco 4500-M, Cisco 4700, Cisco 4700-M)
- *Cisco 4000 Series Regulatory Compliance and Safety Information* (Cisco 4000, Cisco 4000-M, Cisco 4500, Cisco 4500-M, Cisco 4700, Cisco 4700-M)
- *FDDI Frames-Per-Token Limit for the Cisco 4000 Series* (Cisco 4000, Cisco 4000-M, Cisco 4500, Cisco 4500-M, Cisco 4700, Cisco 4700-M)
- *Redundant Power Systems* (Cisco 4000, Cisco 4000-M, Cisco 4500, Cisco 4500-M, Cisco 4700, Cisco 4700-M)
- *Network Processor Two-Port Ethernet Full-Duplex (NP-2E-FDX)* (Cisco 4500, Cisco 4500-M, Cisco 4700, Cisco 4700-M)
- *Release Notes—Cisco 4000 Series Routers*

On Cisco.com at:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Modular Access Routers: Cisco 4000 series

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Modular Access Routers: Cisco 4000 series

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, which 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 with its corresponding command reference.

On Cisco.com at:

Technical Documents: Documentation Home Page: **Cisco IOS Software Configuration: Cisco IOS Release 11.2: Cisco IOS Release 11.2 Configuration Guides/Command References**

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 11.2: Cisco IOS Release 11.2 Configuration Guides/Command References

Release 11.2 Documentation Set

Table 4 describes the contents of the Cisco IOS Release 11.2 software documentation set, which is available in electronic form and in printed form on request.

**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 paper documents were printed.

On Cisco.com at:

Technical Documents: Documentation Home Page: **Cisco IOS Software Configuration: Cisco IOS Release 11.2**

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 11.2

Table 4 Cisco IOS Software Documentation Set

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 Interface Configuration System Management
<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
<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>Security Configuration Guide</i> • <i>Security Command Reference</i> 	AAA Security Services Security Server Protocols Traffic Filtering Network Data Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options
<ul style="list-style-type: none"> • <i>Dial Solutions Configuration Guide</i> • <i>Dial Solutions Command Reference</i> 	Dial Business Solutions and Examples Dial-In Port Setup DDR and Dial Backup Remote Node and Terminal Service Cost-Control and Large-Scale Dial Solutions VPDN
<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 Fast Switching Autonomous Switching NetFlow Switching Optimum Switching Virtual LAN (VLAN) Switching and Routing Inter-Switch Link Protocol Encapsulation IEEE 802.10 Encapsulation LAN Emulation

Table 4 Cisco IOS Software Documentation Set (continued)

Books	Chapter Topics
<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 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 NCIA Client/Server Topologies IBM Channel Attach
<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> 	



Note

Cisco Management Information Base (MIB) User Quick Reference is no longer published. For the latest list of MIBs supported by Cisco, see *Cisco Network Management Toolkit* on Cisco.com. From Cisco.com, click on the following path: **Software Center: Network Mgmt Products: Cisco Network Management Toolkit: Cisco MIB.**

Obtaining Documentation

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

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You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>. Translated documentation can be accessed at http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

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

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- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

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Document Resource Connection
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San Jose, CA 95134-9883

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<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC Web site is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Web site

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC Web site:

<http://www.cisco.com/tac>

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC Web site to quickly find answers to your questions.

To register for Cisco.com, go to the following Web site:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following Web site:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following Web site:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

This document is to be used in conjunction with the documents listed in the “Related Documentation” section on page 12.

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