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Release Notes for Cisco IOS Release 11.3(5) Feature Packs for Cisco 1000 Series Routers

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These release notes describe the Cisco IOS Release 11.3(5) feature packs for Cisco 1000 series routers.

Contents

These release notes contain the following topics:

Introduction

This section explains how to use this document, describes feature pack components, and has tables that define the aspects of a feature pack.

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How to Use These Release Notes

The tables in these release notes contain details about the Cisco feature packs. Use these tables to perform the following tasks before loading a software image onto a router:

1   Use Table 1, "Feature Pack Product Numbers Quick-Reference List," to identify the software image you want to load.

2   Use Table 2, "Cisco 1000 Series Feature Packs," to identify your feature pack and the memory required for your feature set, based on the image you load.

3   Use Table 6, "Cisco 1000 Series Default and Memory Upgrade Options," to check the memory required for your feature set, and determine the factory-default memory on the router and the available memory upgrades.

4   Use the "Feature Set Tables" to identify which features are supported in a feature set image.

What Is a Feature Pack?

This section describes:

- Feature Pack Components
- Product Numbers Quick-Reference List
- Feature Pack Overview Table
- Feature Set Tables

Feature Pack Components

A feature pack is a small box that contains the following items:

- CD-ROM with the following software:

    — Cisco IOS feature set software images that can include bundled modem firmware

    — Router Software Loader (RSL) program (a Windows 95 application)

    — Trivial File Transfer Protocol (TFTP) server application (for Windows 95 only)

- *Getting Started with the Router Software Loader* CD booklet.

- Release notes that include alternatives to using the RSL for loading software images onto a router

- Software license for using Cisco software in-object code form on a single access server or router

- Cisco Documentation CD-ROM that contains all Cisco documentation

The heart of a feature pack is the CD-ROM that contains software images and the Router Software Loader (RSL), which is a Windows 95 application that loads an image onto an access router or server. Each feature pack CD-ROM contains at least one Cisco IOS feature set. The CD booklet, *Getting Started with the Router Software Loader*, explains how to use the RSL to install the router image. If you cannot use the RSL to load images, you can follow the instructions in the "Alternatives to the RSL" section on page 18.

Before running the RSL, read the "Installing Software Images Using the RSL" section on page 16. If you are loading software on a preconfigured router, you should save the router configuration file on your PC before beginning the image download process, as described in *Getting Started with the Router Software Loader*.

Product Numbers Quick-Reference List

Table 1 lists the Cisco product numbers of the feature packs supported in this release.

Table 1   Feature Pack Product Numbers Quick-Reference List

Product Number	Feature Pack Description
CD10C-11.3=	Cisco 1000 IP Feature Pack
CD10A/B/E-11.3=	Cisco 1000 IP/IPX/Appletalk Feature Pack
CD10AP-11.3=	Cisco 1000 IP/IPX/Appletalk Plus Feature Pack
CD10AW-11.3=	Cisco 1000 IP/IPX/Appletalk Plus 40 Feature Pack[1]
CD10AY-11.3=	Cisco 1000 IP/IPX/Appletalk Plus 56 Feature Pack[1]

1   This feature pack contains encryption images.

Feature Pack Overview Table

Table 2 identifies each feature pack as specified on the router software CD-ROM label, describes the feature sets in each feature pack, and lists the following: UNIX and DOS filenames of the images, memory requirements, and RSL installer description.

Table 2   Cisco 1000 Series Feature Packs

Product Number	CD-ROM Title	Image Name (UNIX)	Image Name (DOS)	Flash Memory Required	Main Memory Required	RSL Installer Description
CD10C-11.3=	Cisco 1000 IP Feature Pack Release 11.3(5)	c1000-y-mz.113-5	80243605	4MB	8MB	Cisco 1003/1004 IOS IP Feature Set 11.3(5)
		c1000-y-mz.112-16		2MB	8MB	Cisco 1003/1004 IOS IP Feature Set 11.2(16)
		c1000-y-mz.111-18		2MB	4MB	Cisco 1003/1004 IOS IP Feature Set 11.1(18)
		c1005-y-mz.113-5	80242705	4MB	8MB	Cisco 1005 IOS IP Feature Set 11.3(5)
		c1005-y-mz.112-16		2MB	8MB	Cisco 1005 IOS IP Feature Set 11.2(16)
		c1005-xy-mz.111-18		2MB	4MB	Cisco 1005 IOS IP Feature Set 11.1(18)
CD10A/B/E-11.3=	Cisco 1000 IP/IPX/Appletalk Feature Pack Release 11.3(5)	c1005-y2-mz.113-5	80242605	4MB	8MB	Cisco 1005 IOS IP/OSPF/PIM Internet Service Provider Feature Set 11.3(5)
		c1005-y2-mz.112-16		2MB	8MB	Cisco 1005 IOS IP/OSPF/PIM Internet Service Provider Feature Set 11.2(16)

Table 2   Cisco 1000 Series Feature Packs (continued)

Product Number	CD-ROM Title	Image Name (UNIX)	Image Name (DOS)	Flash Memory Required	Main Memory Required	RSL Installer Description
		c1000-ny-mz.113-5	80243705	4MB	8MB	Cisco 1003/1004 IOS IP/IPX Feature Set 11.3(5)
		c1000-ny-mz.112-16		2MB	8MB	Cisco 1003/1004 IOS IP/IPX Feature Set 11.2(16)
		c1000-ny-mz.111-18		2MB	4MB	Cisco 1003/1004 IOS IP/IPX Feature Set 11.1(18)
		c1005-ny-mz.113-5	80242905	4MB	8MB	Cisco 1005 IOS IP/IPX Feature Set 11.3(5)
		c1005-ny-mz.112-16		2MB	8MB	Cisco 1005 IOS IP/IPX Feature Set 11.2(16)
		c1005-ny-mz.111-18		2MB	4MB	Cisco 1005 IOS IP/IPX Feature Set 11.1(18)
		c1005-nqy-mz.113-5	80243005	4MB	8MB	Cisco 1005 IOS Async IP/IPX Feature Set 11.3(5)
		c1005-nqy-mz.112-16		2MB	8MB	Cisco 1005 IOS Async IP/IPX Feature Set 11.2(16)
		c1005-nqy-mz.111-18		2MB	4MB	Cisco 1005 IOS Async IP/IPX Feature Set 11.1(18)
		c1000-bny-mz.113-5	80243805	4MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Feature Set 11.3(5)
		c1000-bny-mz.112-16		2MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Feature Set 11.2(16)
		c1000-bny-mz.111-18		2MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Feature Set 11.1(18)
		c1005-bny-mz.113-5	80243105	4MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Feature Set 11.3(5)
		c1005-bny-mz.112-16		2MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Feature Set 11.2(16)
		c1005-bny-mz.111-18		2MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Feature Set 11.1(18)

Table 2   Cisco 1000 Series Feature Packs (continued)

Product Number	CD-ROM Title	Image Name (UNIX)	Image Name (DOS)	Flash Memory Required	Main Memory Required	RSL Installer Description
CD10AP-11.3=	Cisco 1000 IP/IPX/Appletalk Plus Feature Pack Release 11.3(5)	c1000-bnsy-mz.113-5	80244105	4MB	16MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus Feature Set 11.3(5)
		c1000-bnsy-mz.112-16		4MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus Feature Set 11.2(16)
		c1005-bnsy-mz.113-5	80243405	4MB	16MB	Cisco 1005 IOS IP/IPX/Appletalk Plus Feature Set 11.3(5)
		c1005-bnsy-mz.112-16		4MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Plus Feature Set 11.2(16)
CD10AW-11.3=	Cisco 1000 IP/IPX/Appletalk Plus 40 Feature Pack Release 11.3(5)	c1000-bnsy40-mz.113-5	80244005	4MB	16MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus 40 Feature Set 11.3(5)
		c1000-bnsy40-mz.112-16		4MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus 40 Feature Set 11.2(16)
		c1005-bnsy40-mz.113-5		4MB	16MB	Cisco 1005 IOS IP/IPX/Appletalk Plus 40 Feature Set 11.3(5)
		c1005-bnsy40-mz.112-16		4MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Plus 40 Feature Set 11.2(16)
CD10AY-11.3=	Cisco 1000 IP/IPX/Appletalk Plus 56 Feature Pack Release 11.3(5)	c1000-bnsy56-mz.113-5	80243905	4MB	16MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus 56 Feature Set 11.3(5)
		c1000-bnsy56-mz.112-16		4MB	8MB	Cisco 1003/1004 IOS IP/IPX/Appletalk Plus 56 Feature Set 11.2(16)

Table 2   **Cisco 1000 Series Feature Packs (continued)**

Product Number	CD-ROM Title	Image Name (UNIX)	Image Name (DOS)	Flash Memory Required	Main Memory Required	RSL Installer Description
		c1005-bnsy56-mz.113-5	80243205	4MB	16MB	Cisco 1005 IOS IP/IPX/Appletalk Plus 56 feature set 11.3(5)
		c1005-bnsy56-mz.112-16		4MB	8MB	Cisco 1005 IOS IP/IPX/Appletalk Plus 56 feature set 11.2(16)

Feature Set Tables

The Cisco IOS software is packaged into "feature sets" (also called "images"). Many different feature sets are available, and each feature set contains a specific subset of Cisco IOS features. The following conventions are used to identify feature sets:

- Plus—Value-added feature set with additional features.

- Plus 40—Value-added feature set with additional features, including 40-bit data encryption.

- Plus 56—Value-added feature set with additional features, including 56-bit data encryption.

Cisco IOS images with strong encryption (including, but not limited to, 56-bit DES) 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 3 shows which feature sets are supported on the Cisco 1000 series routers and access servers. These feature sets only apply to Cisco IOS Release 11.3:

Table 3   **Cisco IOS Release 11.3 Supported Feature Sets**

Feature Set	Cisco1003/1004	Cisco 1005
IP	Yes	Yes
IP Plus	Yes	Yes
IP Plus 40	Yes	Yes
IP Plus 56	Yes	Yes
IP/IPX	Yes	Yes
IP/IPX/AT	Yes	Yes
IP/IPX/AT Plus	Yes	Yes
IP/IPX/AT Plus 40	Yes	Yes
IP/IPX/AT Plus 56	Yes	Yes
IP/ASYNC	No	Yes
IP/IPX/ASYNC	No	Yes
IP/OSPF/PIM	No	Yes

To determine what features are available with each feature set (software image), see Table 4 and Table 5. These tables summarize the features you can use when running a specific feature set on the Cisco 1000 series routers for Cisco IOS Release 11.3. Table 4 and Table 5 use these terms:

Feature Set Matrix Term	Description
Yes	This feature is offered.
No	This feature is not offered.

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

Table 4   Cisco IOS Software Feature Sets for the Cisco 1003 and Cisco 1004 ISDN Routers

	Feature Set								
Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/IPX	IP/IPX/ AT	IP/IPX/ AT/Plus	IP/IPX/ AT/ Plus 40	IP/IPX/ AT/ Plus 56
IBM Support									
APPN High Performance Routing	No	No	No	No	No	No	No	No	No
APPN MIB Enhancements	No	No	No	No	No	No	No	No	No
APPN over Ethernet LAN Emulation	No	No	No	No	No	No	No	No	No
APPN Scalability Enhancements	No	No	No	No	No	No	No	No	No
Bisync Enhancements, includes: — Bisync 3780 Support	No	No	No	No	No	No	No	No	No
— BSC Extended Addressing									
— Block Serial Tunneling (BSTUN) over Frame Relay									
Cisco MultiPath Channel (CMPC)	No	No	No	No	No	No	No	No	No
DLSw+ Enhancements, includes: — Backup Peer Extensions for Encapsulation Types	No	No	No	No	No	No	No	No	No
— DLSw+ Border Peer Caching									
— DLSw+ MIB Enhancements									
— DLSw+ SNA Type of Service									
— LLC2-to-SDLC Conversion between PU4 Devices									
— NetBIOS Dial-on-Demand Routing									
— UDP Unicast Enhancement									

Table 4 **Cisco IOS Software Feature Sets for the Cisco 1003 and Cisco 1004 ISDN Routers (continued)**

Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/IPX	IP/IPX/ AT	IP/IPX/ AT/Plus	IP/IPX/ AT/ Plus 40	IP/IPX/ AT/ Plus 56
FRAS Enhancements, includes: — FRAS Boundary Network Node Enhancement — FRAS Dial Backup over DLSw+ — FRAS DLCI Backup — FRAS Host — FRAS MIB — SRB over Frame Relay	No	No	No	No	No	No	No	No	No
SRB over FDDI on Cisco 4000, 4500, and 4700 Series Routers	No	No	No	No	No	No	No	No	No
TN3270 LU Nailing	No	No	No	No	No	No	No	No	No
TN3270 Server Enhancements	No	No	No	No	No	No	No	No	No
Token Ring LANE	No	No	No	No	No	No	No	No	No
Tunneling of Asynchronous Security Protocols	No	No	No	No	No	No	No	No	No
Internet									
DRP Server Agent	No	No	No	No	No	No	No	No	No
IP Routing									
Easy IP (Phase 1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hot Standby Router Protocol (HSRP) over ISL in Virtual LAN Configurations	No	No	No	No	No	No	No	No	No
IP Enhanced IGRP Route Authentication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TCP Enhancements, includes: — TCP Selective Acknowledgment — TCP Timestamp	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAN Support									
AppleTalk Access List Enhancements	No	No	No	No	No	No	Yes	Yes	Yes
DECnet Accounting	No	No	No	No	No	No	No	No	No
IPX Named Access Lists	No	No	No	No	Yes	Yes	Yes	Yes	Yes
IPX SAP-after-RIP	No	No	No	No	Yes	Yes	Yes	Yes	Yes
NLSP Enhancements	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
NLSP Multicast Support	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Management									
Cisco Call History MIB Command Line Interface	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4   Cisco IOS Software Feature Sets for the Cisco 1003 and Cisco 1004 ISDN Routers (continued)

Feature	Feature Set								
	IP	IP Plus	IP Plus 40	IP Plus 56	IP/IPX	IP/IPX/ AT	IP/IPX/ AT/Plus	IP/IPX/ AT/ Plus 40	IP/IPX/ AT/ Plus 56
Cisco IOS Internationalization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entity MIB, Phase 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMPv2C	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual Profiles	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multimedia									
IP Multicast Load Splitting across Equal-Cost Paths	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
IP Multicast over ATM Point-to-Multipoint Virtual Circuits	No	No	No	No	No	No	No	No	No
IP Multicast over Token Ring LANs	No	No	No	No	No	No	No	No	No
Stub IP Multicast Routing	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Quality of Service									
RTP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security									
Double Authentication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Encrypted Kerberized Telnet	No	No	No	No	No	No	No	No	No
HTTP Security	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Per-User Configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexive Access Lists	No	No	No	No	No	No	No	No	No
TCP Intercept	No	No	No	No	No	No	No	No	No
Vendor-Proprietary RADIUS Attributes	No	No	No	No	No	No	No	No	No
Switching									
AppleTalk Routing over ISL and IEEE 802.10 in Virtual LANs	No	No	No	No	No	No	No	No	No
CLNS and DECnet Fast Switching over PPP	No	No	No	No	No	No	No	No	No
DECnet/VINES/XNS over ISL, includes: — Banyan VINES Routing over ISL Virtual LANs — DECnet Routing over ISL Virtual LANs — XNS Routing over ISL Virtual LANs	No	No	No	No	No	No	No	No	No
Fast-Switched Policy Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4   Cisco IOS Software Feature Sets for the Cisco 1003 and Cisco 1004 ISDN Routers (continued)

	Feature Set								
Feature	**IP**	**IP Plus**	**IP Plus 40**	**IP Plus 56**	**IP/IPX**	**IP/IPX/ AT**	**IP/IPX/ AT/Plus**	**IP/IPX/ AT/ Plus 40**	**IP/IPX/ AT/ Plus 56**
IPX Routing over ISL Virtual LANs	No	No	No	No	No	No	No	No	No
VIP Distributed Switching Support for IP Encapsulated in ISL	No	No	No	No	No	No	No	No	No
Terminal Services									
Virtual Templates for Protocol Translation	No	No	No	No	No	No	No	No	No
WAN Optimization									
ATM MIB Enhancements	No	No	No	No	No	No	No	No	No
PAD Enhancements	No	No	No	No	No	No	No	No	No
PAD Subaddressing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WAN Services									
Bandwidth Allocation Control Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced Local Management Interface (ELMI)	No	No	No	No	No	No	No	No	No
Frame Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay MIB Extensions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Router ForeSight	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Advice of Charge	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Caller ID Callback	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN NFAS	No	No	No	No	No	No	No	No	No
Layer 2 Forwarding—Fast Switching	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Leased Line ISDN at 128 kbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PPP over ATM	No	No	No	No	No	No	No	No	No
Telnet Extensions for Dialout	No	No	No	No	No	No	No	No	No
X.25 Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 on ISDN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.25 Switching between PVCs and SVCs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
X.28 Emulation	No	No	No	No	No	No	No	No	No

Table 5   Cisco IOS Software Feature Sets for the Cisco 1005 Router

Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/ IPX	IP/ IPX/ AT	IP/ IPX/ AT/ Plus	IP/ IPX/ AT/ Plus 40	IP/ IPX/ AT/ Plus 56	IP/ Async	IP/IPX/ Async	IP/ OSPF/ PIM
IBM Support												
APPN High Performance Routing	No	No	No	No	No	No	No	No	No	No	No	No
APPN MIB Enhancements	No	No	No	No	No	No	No	No	No	No	No	No
APPN over Ethernet LAN Emulation	No	No	No	No	No	No	No	No	No	No	No	No
APPN Scalability Enhancements	No	No	No	No	No	No	No	No	No	No	No	No
Bisync Enhancements, includes: — Bisync 3780 Support — BSC Extended Addressing — Block Serial Tunneling (BSTUN) over Frame Relay	No	No	No	No	No	No	No	No	No	No	No	No
Cisco MultiPath Channel (CMPC)	No	No	No	No	No	No	No	No	No	No	No	No
DLSw+ Enhancements, includes: — Backup Peer Extensions for Encapsulation Types — DLSw+ Border Peer Caching — DLSw+ MIB Enhancements — DLSw+ SNA Type of Service — LLC2-to-SDLC Conversion between PU4 Devices — NetBIOS Dial-on-Demand Routing — UDP Unicast Enhancement	No	No	No	No	No	No	No	No	No	No	No	No
FRAS Enhancements, includes: — FRAS Boundary Network Node Enhancement — FRAS Dial Backup over DLSw+ — FRAS DLCI Backup — FRAS Host — FRAS MIB — SRB over Frame Relay	No	No	No	No	No	No	No	No	No	No	No	No
SRB over FDDI on Cisco 4000, 4500, and 4700 Series Routers	No	No	No	No	No	No	No	No	No	No	No	No
TN3270 LU Nailing	No	No	No	No	No	No	No	No	No	No	No	No
TN3270 Server Enhancements	No	No	No	No	No	No	No	No	No	No	No	No
Token Ring LANE	No	No	No	No	No	No	No	No	No	No	No	No
Tunneling of Asynchronous Security Protocols	No	No	No	No	No	No	No	No	No	No	No	No

Table 5   Cisco IOS Software Feature Sets for the Cisco 1005 Router (continued)

Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/ IPX	IP/ IPX/ AT	IP/ IPX/ AT/ Plus	IP/ IPX/ AT/ Plus 40	IP/ IPX/ AT/ Plus 56	IP/ Async	IP/IPX/ Async	IP/ OSPF/ PIM
Internet												
DRP Server Agent	No	No	No	No	No	No	No	No	No	No	No	No
IP Routing												
Easy IP (Phase 1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hot Standby Router Protocol (HSRP) over ISL in Virtual LAN Configurations	No	No	No	No	No	No	No	No	No	No	No	No
IP Enhanced IGRP Route Authentication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TCP Enhancements, includes: — TCP Selective Acknowledgment — TCP Timestamp	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAN Support												
AppleTalk Access List Enhancements	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No
DECnet Accounting	No	No	No	No	No	No	No	No	No	No	No	No
IPX Named Access Lists	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No
IPX SAP-after-RIP	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No
NLSP Enhancements	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No
NLSP Multicast Support	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No
Management												
Cisco Call History MIB Command Line Interface	No	No	No	No	No	No	No	No	No	No	No	No
Cisco IOS Internationalization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entity MIB, Phase 1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNMPv2C	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtual Profiles	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multimedia												
IP Multicast Load Splitting across Equal-Cost Paths	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes
IP Multicast over ATM Point-to-Multipoint Virtual Circuits	No	No	No	No	No	No	No	No	No	No	No	No
IP Multicast over Token Ring LANs	No	No	No	No	No	No	No	No	No	No	No	No
Stub IP Multicast Routing	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes

Table 5   Cisco IOS Software Feature Sets for the Cisco 1005 Router (continued)

Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/ IPX	IP/ AT	IP/ IPX/ AT/ Plus	IP/ IPX/ AT/ Plus 40	IP/ IPX/ AT/ Plus 56	IP/ Async	IP/IPX/ Async	IP/ OSPF/ PIM
Quality of Service												
RTP Header Compression	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Security												
Double Authentication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Encrypted Kerberized Telnet	No	No	No	No	No	No	No	No	No	No	No	No
HTTP Security	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Per-User Configuration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexive Access Lists	No	No	No	No	No	No	No	No	No	No	No	No
TCP Intercept	No	No	No	No	No	No	No	No	No	No	No	No
Vendor-Proprietary RADIUS Attributes	No	No	No	No	No	No	No	No	No	No	No	No
Switching												
AppleTalk Routing over ISL and IEEE 802.10 in Virtual LANs	No	No	No	No	No	No	No	No	No	No	No	No
CLNS and DECnet Fast Switching over PPP	No	No	No	No	No	No	No	No	No	No	No	No
DECnet/VINES/XNS over ISL, includes: — Banyan VINES Routing over ISL Virtual LANs — DECnet Routing over ISL Virtual LANs — XNS Routing over ISL Virtual LANs	No	No	No	No	No	No	No	No	No	No	No	No
Fast-Switched Policy Routing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPX Routing over ISL Virtual LANs	No	No	No	No	No	No	No	No	No	No	No	No
VIP Distributed Switching Support for IP Encapsulated in ISL	No	No	No	No	No	No	No	No	No	No	No	No
Terminal Services												
Virtual Templates for Protocol Translation	No	No	No	No	No	No	No	No	No	No	No	No
WAN Optimization												
ATM MIB Enhancements	No	No	No	No	No	No	No	No	No	No	No	No
PAD Enhancements	No	No	No	No	No	No	No	No	No	No	No	No
PAD Subaddressing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes

Table 5　　　　Cisco IOS Software Feature Sets for the Cisco 1005 Router (continued)

Feature	IP	IP Plus	IP Plus 40	IP Plus 56	IP/ IPX	IP/ IPX/ AT	IP/ IPX/ AT/ Plus	IP/ IPX/ AT/ Plus 40	IP/ IPX/ AT/ Plus 56	IP/ Async	IP/IPX/ Async	IP/ OSPF/ PIM
WAN Services												
Bandwidth Allocation Control Protocol	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhanced Local Management Interface (ELMI)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay MIB Extensions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Router ForeSight	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISDN Advice of Charge	No	No	No	No	No	No	No	No	No	No	No	No
ISDN Caller ID Callback	No	No	No	No	No	No	No	No	No	No	No	No
ISDN NFAS	No	No	No	No	No	No	No	No	No	No	No	No
Layer 2 Forwarding—Fast Switching	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No
Leased Line ISDN at 128 kbps	No	No	No	No	No	No	No	No	No	No	No	No
PPP over ATM	No	No	No	No	No	No	No	No	No	No	No	No
Telnet Extensions for Dialout	No	No	No	No	No	No	No	No	No	No	No	No
X.25 Enhancements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
X.25 on ISDN	No	No	No	No	No	No	No	No	No	No	No	No
X.25 Switching between PVCs and SVCs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
X.28 Emulation	No	No	No	No	No	No	No	No	No	No	No	No

System Requirements

This section describes the following:

- Memory Requirements, page 15

- Hardware Supported, page 15

- Software Compatibility, page 15

- Determining Your Software Release, page 15

Memory Requirements

Table 6 lists the memory delivered by default and the available memory upgrades.

Table 6   Cisco 1000 Series Default and Memory Upgrade Options

Default	Upgrade Options	Description
8 MB (DRAM)	MEM-1003-8MD	4 MB to 8 MB DRAM Upgrade for Cisco 1003
8 MB (DRAM)	MEM-1004-8MD	4 MB to 8 MB DRAM Upgrade for Cisco 1004
8 MB (DRAM)	MEM-1005-8MD	4 MB to 8 MB DRAM Upgrade for Cisco 1005
8 MB (DRAM)	MEM-1000-8MD=	8 MB DRAM SIMM for Cisco 1003, 1004, 1005
2 MB (Flash)	MEM-1000-2MF=	2 MB Flash Card for Cisco 1003, 1004, 1005
2 MB (Flash)	MEM-1000-4MF=	4 MB Flash Card for Cisco 1003, 1004, 1005

Hardware Supported

Router Software Loader (RSL) Version 7.2 supports many Cisco routers. Specific to the Cisco 1000 series routers, RSL 7.2 supports:

- CiscoPro CPA1003, CPA1004, and CPA1005

- Cisco 1003, 1004, and 1005

Software Compatibility

The feature packs described in these release notes contain Cisco IOS Release 11.3(5) software images, some earlier images, and Router Software Loader (RSL) Version 7.2. Before running RSL, read the "Installing Software Images Using the RSL" section on page 16.

Determining Your Software Release

To view the version of Cisco IOS software that is running on your Cisco 1000 series router, log in to the router, and enter the **show version** user EXEC command:

```
router> show version
```

An output begins similar to the following. The Cisco IOS version appears in the second line.

```
Cisco Internetwork Operating System Software
IOS (tm) 1000 Software (C1000-BNSY-M), Version 11.3(5), RELEASE SOFTWARE
```

The output includes more information including processor revision numbers, memory amounts, hardware IDs, and partition information.

Installation

This section provides solutions to problems you might encounter when using the RSL to load Cisco IOS software on a router. It also describes special cases that might require you to load Cisco IOS software on a CiscoPro router or to use an alternative to the RSL.

Installing Software Images Using the RSL

This section describes some solutions to problems you might encounter when using the RSL. These solutions are additions to RSL online help.

Recovering From a Connection Error

This installation tip provides a possible recovery solution if you are unable to connect to your access server or router. You can skip this section unless you are experiencing a connection error.

In some cases, you might receive the following error message while connecting to the target access server:

```
"Failed to configure the router to enable the Cisco IOS software image and
configuration file upload and download operations. You may want to check the router to
make sure that the selected interface exists."
```

If you encounter this message, try increasing the Short Timeout value, which is set to 25 seconds, in the Options dialog box, especially if one of the following situations applies:

Note   Increasing the Short Timeout value might increase the time it takes for RSL to connect to the target access server.

- You are connecting to an access server that has a large configuration file.

- You are connecting to a Cisco AS5200 access server. A Cisco AS5200 requires up to 45 seconds to write a configuration to nonvolatile random-access memory (NVRAM), due to the amount of interfaces that must be checked during this process. Increase the Short Timeout value to 60 seconds.

Restoring the Startup Configuration

In some cases, the RSL is unable to restore the startup configuration. If this happens, take the following steps:

Step 1   Ensure that all cables are properly attached to both the router and the PC.

Step 2   Restart the RSL, and connect by using the **Preconfigured router** option.

Step 3   When asked if you want to overwrite the existing startup configuration file, choose **no**.

Step 4   When asked if you want to continue, choose **yes**.

Step 5   When the router is connected, select **Download Router Configuration** in the Router Software Loader dialog box.

Step 6   Select the appropriate file, and click the radio button beside **Copy configuration to the router nonvolatile memory**.

The router should now contain the startup configuration it had before the initial RSL connection. You can now exit the RSL.

Note In the previous situation, the router configuration register (**config-register 0x***nnnn*) is not restored.

Note If you press **Ctrl-Alt-Delete** to terminate the RSL, the router configuration and configuration register are not restored. However, in this case the configuration file is not deleted from the PC, so you can restore it using the previous steps, beginning with Step 2.

Helpful Hints

The following information about RSL operations can help you with the installation process:

- If you have added any static entries to the PC Address Resolution Protocol (ARP) table, one or more of them might be deleted by the RSL. You need to manually re-enter any deleted entries in the PC ARP table.

- If the router's running configuration at connection time is not the same as its startup configuration, the exact configuration is not restored. Any changes that you have made since the last time a **copy running-config startup-config** or **write memory** command was entered are lost.

- The RSL restores the router's startup configuration, but some running configuration commands are not restored. To restore the exact running configuration, reboot the router. The following interface configuration commands are not restored to the running configuration: **no shutdown**, **no ringspeed**, and **media-type aui**.

Loading Cisco IOS Release 11.3 Software on CiscoPro Routers

The RSL has an upgrade utility to permanently modify a CiscoPro router so that it accepts Cisco IOS Release 11.3 software images. The utility changes the router SysObjectID Simple Network Management Protocol (SNMP) MIB value (used for network management) to that of a Cisco router. The software banner also changes and no longer identifies the router as a CiscoPro product.

Note After this upgrade, CiscoVision cannot recognize your router. If you choose the permanent upgrade, CiscoWorks for Windows is a recommended replacement for network management purposes. To upgrade your CiscoVision software to CiscoWorks Windows 2.1, order one of the following: CPW-CVCW-U to Upgrade CiscoVision to CiscoWorks Windows (managing up to 50 nodes) or CPW-CVCW-ENT-U to Upgrade CiscoVision to CiscoWorks Windows (managing up to 500 nodes). For general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

The upgrade utility must be located in the Images directory. If it is not, the upgrade utility informs you that the image is not present.

The Cisco 1000 series upgrade utility filename is cpa1000-upgrade-l.112-3.P. The upgrade utility is a special file, not a Cisco IOS run-time image. RSL only installs valid software releases on Cisco 1000 routers.

Alternatives to the RSL

The RSL is designed to work with a PC running Microsoft Windows 95 and is the recommended method for downloading software to the router. The booklet included with the CD-ROM explains how to perform this simple install process. However, you can also use a TFTP server application as an alternative for installing router software.

Installing the Router Software Using a TFTP Server Application

Use this TFTP server application method as an alternative to using the RSL to install the router software from the CD-ROM. You can perform this procedure using a PC (running Microsoft Windows 95 or Microsoft Windows 3.1), a Macintosh, or a UNIX system. You can use either the **copy tftp flash** or **copy rcp flash** command to download the router software to the router.

First, obtain a TFTP application or a remote copy protocol (rcp) application to set up your computer as a TFTP server or an rcp server. Use the RSL or the TFTP server included on the feature pack CD-ROM to install the router software only if you are using a PC running Windows 95. For other operating systems, a number of TFTP or rcp applications are available from independent software vendors or available as shareware from public sources on the World Wide Web.

Note To use an rcp application, follow the same procedure, and substitute rcp for TFTP in the instructions. Use the **copy rcp flash** command instead of the **copy tftp flash** command.

Step 1 Install any TFTP server application on the PC. (A PC application is included on the feature pack CD-ROM for Microsoft Windows 95 only.)

Step 2 Launch the TFTP server application on the PC, usually by double-clicking the application icon or its .exe filename.

Step 3 Set up the PC as a TFTP server by using the TFTP server application setup or configuration facility.

Most TFTP server applications include a setup facility that allows you to specify the PC as a server. For example, from the TFTP menu of one application, you can select **Settings** to display a panel that includes a check box beside the word Server. To configure the local PC as a server, select this check box.

The TFTP server also allows the selection of a "root" directory. You must select the directory in which the Cisco IOS files reside, for example, d:\cpswinst\images.

Caution Make sure you set up your local PC as a TFTP server. If you overlook this step, you cannot perform the copy procedure. This reminder also applies if you are using rcp instead of TFTP.

Step 4 Establish a console session from your local PC (which is now configured as a TFTP server) to the Cisco router by using one of these methods:

- Connect the PC com port to the router console port.

  This is the recommended method. When you reload the router with the new image in Step 17, you remain connected to the router. (If you use Telnet, you lose connection to the router.)

- Establish a Telnet session from the PC to the router.

Caution Make sure your PC is set up to communicate with the 10BaseT Ethernet port on the router.

Step 5 Connect your PC Ethernet port to the corresponding router LAN port. Use the 10BaseT crossover cable to connect to an Ethernet port. Use straight-through cables if you are connecting via a 10BaseT hub or a 100BaseT hub.

Note We recommend that you back up the router configuration before upgrading the router software.

In the following steps, you will upgrade your CiscoPro router to a Cisco Enterprise router. If you have a model CPA100x, CPA160x, CPA25xx or CPA4500 router and plan to install an 11.3 image on the router, you must perform Step 6 through Step 14. These steps upgrade your router to allow Enterprise images to run on it.

Step 6 From the console, enter the following configuration command:

```
# config terminal
```

Step 7 From the console, enter the following configuration command and then **Ctrl-Z** to exit configuration mode:

```
# config-reg 0x2102
# Ctrl-Z
```

Step 8 At the router prompt, enter the following command to copy the router upgrade utility from the CD-ROM drive of the PC to the router:

```
# copy tftp flash
```

Note   If you are using rcp, enter **copy rcp flash** instead.

Step 9 When prompted, enter the IP address of your local Microsoft Windows 3.1–based PC as in the following example:

```
Address or name of remote host [255.255.255.255]? 131.108.1.1
```

This is the IP address of your local PC, not that of the router.

Step 10 When prompted, enter the filename of the image to be copied to the router as in the following example:

```
Source file name? cpa1000-upgrade-1.112-3.P
```

Note   The upgrade image file on the Feature Pack CD has a long filename; note that it will be displayed in 8.3 format by DOS.

Step 11   In response to the prompt, enter the destination filename and press **Enter** to indicate that you want to copy the image.

This is the name of the image file on the router, not the full pathname of the image on the CD-ROM attached to the PC.

```
Destination file name [cpa1000-upgrade-1.112-3.P]? cpa1000-upgrade-1.112-3.P
```

During the transfer process, the software displays messages indicating that it has accessed the file you have specified and is loading it.

If the file is not found, check the following: filename; TFTP server is enabled; correct root directory is selected; IP connectivity between the router and TFTP server.

Step 12   Enter **yes** or **no** in response to the prompt asking if you want to erase the existing image copy resident in the router's Flash memory before copying the new one.

```
Erase flash device before writing? [confirm] yes
```

When copying to internal Flash memory, the system provides an option to erase existing internal Flash memory before writing onto it. Answer **yes** to the questions. The entire copying process takes several minutes and differs from network to network.

The exclamation point (!) indicates that the copy process is taking place. Each exclamation point (!) indicates that ten packets have been transferred successfully. If you see three periods (...), the transfer failed. Check IP connectivity between the router and TFTP server using the **ping** command.

Step 13   Enter the **reload** command to reload the router:

```
# reload
```

After reload is complete, your CiscoPro router has been upgraded to a Cisco Enterprise router. Because the original Cisco IOS image, which resided in Flash memory, was erased during the upgrade process, the router should now be running in bootstrap mode.

Step 14   Repeat Step 6 and Step 7.

Step 15   At the router prompt, enter the following command to copy the new software image from the CD-ROM drive of the PC to the router:

(In the next series of steps, you download the Cisco IOS Release 11.3 images that you want installed on your router.)

```
(boot)# copy tftp flash
```

Step 16   When prompted, enter the IP address of your local Microsoft Windows 3.1–based PC as in the following example:

```
Address or name of remote host [255.255.255.255]? 131.108.1.1
```

This is the IP address of your local PC, not that of the router.

Step 17   When prompted, enter the filename of the Cisco IOS Release 11.3 image to be copied to the router as in the following example:

```
Source file name? 80243605.bin
```

Step 18   In response to the prompt, enter the destination filename and press **Enter** to indicate that you want to copy the image.

This is the name of the image file on the router, not the full pathname of the image on the CD-ROM attached to the PC.

```
Destination file name [80243605.bin]? c1000-y-mz.113-5
```

During the transfer process, the software displays messages indicating that it has accessed the file you have specified and is loading it.

Step 19   Enter **yes** or **no** in response to the prompt asking if you want to erase the existing image copy resident in the router's Flash memory before copying the new one.

```
Erase flash device before writing? [confirm] yes
```

When copying to internal Flash memory, the system provides an option to erase existing internal Flash memory before writing onto it. Answer **yes** to the questions. The entire copying process takes several minutes and differs from network to network.

The exclamation point (!) indicates that the copy process is taking place. Each exclamation point (!) indicates that ten packets have been transferred successfully. A checksum verification of the image occurs after the image is written to Flash memory.

Step 20   Enter the **reload** command to reload the router:

```
(boot)# reload
```

You do *not* need to save the system configuration when prompted here. After reload is complete, the router should be running the required Cisco IOS image. Use the **show version** command to verify.

Documentation Updates

Due to a production problem, many source-route bridging commands were omitted from the printed version of the *Cisco IOS Software Command Summary* (78-4746-xx, DOC-CIOSCS11.3=). For complete documentation of all source-route bridging commands, refer to the *Bridging and IBM Networking Command Reference* (78-4743-xx). You can also obtain the most current documentation on the Documentation CD-ROM or Cisco Connection Online (CCO).

Related Documentation

This section describes the documentation related to the Cisco 1000 series routers, typically including hardware installation guides, software installation guides, Cisco IOS configuration and command references, system error messages, and feature modules that are updates to the Cisco IOS documentation set. Documentation is available as printed manuals or electronic documents, except for the feature modules that are available online only.

The most up-to-date documentation can be found on the Web via Cisco Connection Online (CCO) and on the latest Documentation CD-ROM. These electronic documents might contain updates and modifications made after the paper documents were printed. For information on CCO, refer to the "Cisco Connection Online" section later in this document. For more information on to the CD-ROM, refer to the "Documentation CD-ROM" section later in this document.

Release-Specific Documents

Use these release notes with:

- *Release Notes for Cisco IOS Release 11.3* that contain some feature and caveat information applicable to Cisco IOS Release 11.3(5), located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

- *Caveats for Cisco IOS Release 11.3* that accompanies these release notes and is also located on Cisco Connection Online (CCO) and the Documentation CD-ROM.

- Product bulletins; the path is as follows from Cisco Connection Online:

    Products and Ordering: More Information: Product Bulletins. Scroll to **Software**. Under **Cisco IOS 11.3**, click the **Upgrade Paths** bulletin. The *Upgrade Paths and Packaging Simplification* bulletin appears.

Feature Modules

Feature modules describe new features introduced in 11.3 releases and are updates to the Cisco IOS documentation set. As updates, the features modules are available online only. The feature module information will be added to the Cisco IOS documentation set before the next printing. Feature modules have a brief overview of the feature, benefits, configuration tasks, and a command reference.

To access all the 11.3 feature modules on CCO, follow this path:

Products and Ordering: **Cisco Documentation**: **Cisco IOS Software Configuration**: **Cisco IOS Release 11.3**: **Cisco IOS 11.3 New Features**.

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

Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 11.3**: **Cisco IOS 11.3 New Features**.

Hardware-Specific Documentation

The following Cisco 1000 series router documents are available:

- *Cisco 1000 Series Hardware Installation Guide*
- *Cisco 1000 Series Configuration Notes*
- *Cisco 1003 and Cisco 1004 User Guide*
- *Cisco 1005 User Guide*
- Documentation for spare parts

This documentation can be found on CCO and on the Documentation CD-ROM:

- On Cisco Connection Online (CCO), the path is **Software & Support**: **Cisco Documentation**: **Access Servers and Access Routers**: **Fixed Configuration Access Routers**: **Cisco 1000**. For more information, refer to "Documentation CD-ROM," page 28.

- On the Documentation CD, the path is **Access Servers and Access Routers**: **Fixed Configuration Access routers**: **Cisco 1000.** For more information, refer to "Documentation CD-ROM," page 28.

Cisco IOS Software Documents

The Cisco IOS software documentation is divided into nine modules and two master indexes. There are also four supporting documents.

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

You can access the Cisco IOS software electronic documents either on Cisco Connection Online (CCO) on the World Wide Web or on the Cisco Documentation CD-ROM:

- On CCO, click **Software & Support**: **Documentation**: **Cisco IOS Software Configuration**: **Cisco IOS Release 11.3**.

- On the Documentation CD-ROM, click **Cisco Product Documentation**: **Cisco IOS Software Configuration**: **Cisco IOS Release 11.3**.

The following are some of the types of Cisco IOS Release 11.3 documents available:

- Configuration guides and command references

- Feature descriptions

- Product-specific release notes

- Cisco IOS software caveats

New online navigation enhancements for Release 11.3 include the following:

- Online hot-linked master indexes for configuration guide and command reference documentation sets.

  On CCO or on the Documentation CD-ROM, go to Cisco IOS Release 11.3 and click **Cisco IOS Release 11.3 Configuration Guides, Command References**. Then click **Configuration Guide Master Index** or **Command Reference Master Index**. To access documentation related to an index entry, click the page number following the entry.

For additional information about CCO or the Documentation CD-ROM, refer to the sections "Cisco Connection Online" and "Documentation CD-ROM" at the end of these release notes.

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.

Note Due to a production problem, many source-route bridging commands were omitted from the printed version of the Cisco IOS Software Command Summary (part number 78-4746-01). For complete documentation of all source-route bridging commands, refer to the *Bridging and IBM Networking Command Reference* (part number 78-4743-01). You can also obtain the most current documentation on the Documentation CD-ROM or Cisco Connection Online (CCO).

Master Indexes

Two master indexes provide indexing information for the Cisco IOS software documentation set: an index for the configuration guides and an index for the command references. In addition, individual books contain a book-specific index.

Cisco IOS Documentation Set

The Cisco IOS documentation set consists of the following books and chapter topics:

Table 7   Software Documents for Cisco 1000 Series Routers

Books	Chapter Topics
• *Configuration Fundamentals Configuration Guide*	Configuration Fundamentals Overview
• *Configuration Fundamentals Command Reference*	Cisco IOS User Interfaces
	File Management
	Interface Configuration
	System Management
• *Network Protocols Configuration Guide, Part 1*	IP Addressing
• *Network Protocols Command Reference, Part 1*	IP Services
	IP Routing Protocols
• *Network Protocols Configuration Guide, Part 2*	AppleTalk
• *Network Protocols Command Reference, Part 2*	Novell IPX
• *Network Protocols Configuration Guide, Part 3*	Apollo Domain
• *Network Protocols Command Reference, Part 3*	Banyan VINES
	DECnet
	ISO CLNS
	XNS
• *Wide-Area Networking Configuration Guide*	ATM
• *Wide-Area Networking Command Reference*	Frame Relay
	SMDS
	X.25 and LAPB
• *Security Configuration Guide*	AAA Security Services
• *Security Command Reference*	Security Server Protocols
	Traffic Filtering
	Network Data Encryption
	Passwords and Privileges
	Neighbor Router Authentication
	IP Security Options
• *Dial Solutions Configuration Guide*	Dial Business Solutions and Examples
• *Dial Solutions Command Reference*	Dial-In Port Setup
	DDR and Dial Backup
	Remote Node and Terminal Service
	Cost-Control and Large-Scale Dial Solutions
	VPDN

Table 7   Software Documents for Cisco 1000 Series Routers (continued)

Books	Chapter Topics
• *Cisco IOS Switching Services Configuration Guide*	Switching Paths for IP Networks
• *Cisco IOS Switching Services Command Reference*	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
• *Bridging and IBM Networking Configuration Guide*	Transparent Bridging
• *Bridging and IBM Networking Command Reference*	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
• *Cisco IOS Software Command Summary*	
• *Dial Solutions Quick Configuration Guide*	
• *System Error Messages*	
• *Debug Command Reference*	

Note   The *Cisco Management Information Base (MIB) User Quick Reference* publication is no longer being published. For the latest list of MIBs supported by Cisco, see the *Cisco Network Management Toolkit* on Cisco Connection Online. On CCO, go to **Software and Support**: **Software Center**: **Network Management Products**: **Cisco Network Management Toolkit**: **Cisco MIBs**.

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

The following URL contains links to access helpful tips on configuring your Cisco products:

http://www.cisco.com/kobayashi/serv_tips.shtml

This URL is subject to change without notice. If it changes, point your web browser to http://www.cisco.com/, and follow this path: Software & Support, Technical Tips (button on left margin).

"Hot Tips" are 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 access FAX-on-demand and receive documents at your FAX machine from the USA, call 888-50-CISCO (888-502-4726). From other areas, call 415-596-4408.

The following sections are provided from the Technical Tips page:

- Access Dial Cookbook—Offers easy-to-follow "recipes" for sample router configurations. The first cookbook contains network diagrams, sample configurations, and troubleshooting commands for helping you set up and use dial technologies on Cisco access routers.

- Field Notices—Designed to provide notification of any 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, and CiscoPro Configurations.

- Special Collections—Other Helpful Documents, Frequently Asked Questions, Security Advisories, References & RFCs, Case Studies, and the CiscoPro Documentation CD-ROM.

Upgrading to a New Release

For information on upgrading to a new software release, refer to the *Cisco IOS Software Release Upgrade Paths and Packaging Simplification* product bulletin #703 located on CCO. On CCO, follow this path: **Products and Ordering: More Information: Product Bulletins.** Scroll to **Software**. Under **Cisco IOS 11.3**, click the **Upgrade Paths** bulletin.

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

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