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Release Notes for Cisco IOS Release 11.3(1)MA4 Software Feature Packs—Cisco MC3810 Multiservice Access Concentrator

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These release notes discuss the Cisco IOS Release 11.3(1)MA4 feature packs for the Cisco MC3810 multiservice access concentrator. These are the product numbers for the supported feature packs:

- CD381-M-11.3= (Cisco MC3810 IP/IPX/IBM Feature Pack)

- CD381-MV-11.3= (Cisco MC3810 IP/IPX/AT/IBM/Voice Feature Pack)

Note   The feature packs discussed in this document contain Cisco IOS Release 11.3(1)MA4 software images and a selection of previously release images. The feature packs contain Router Software Loader (RSL) Version 7.2.

Note   Before running RSL, read the section "Installing Software Images Using RSL," page 9.

Contents

These release notes discuss the following topics:

1

Introduction

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

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, "Cisco Feature Pack Image Filenames and Memory Requirements," to identify your feature pack and the memory required for your feature set, based on the image you load.

2   Use Table 2, "Cisco MC3810 Default Memory and 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.

3   Use Table 3, "Cisco IOS Feature Set for the Cisco MC3810," to identify the software image you want to load.

Cisco Feature Packs and Memory Requirements

This section explains the following:

- What Is a Feature Pack?

- Cisco IOS Release 11.3(1)MA4 Feature Pack Descriptions and Memory Requirements

What Is a Feature Pack?

The heart of a Cisco IOS software feature pack is a CD-ROM that contains a software image and Router Software Loader (RSL), a Windows 95 application that loads the image onto the access server/router. Each Cisco IOS Release 11.3 feature pack CD-ROM contains one feature set. For users without Windows 95, images can also be loaded with a Trivial File Transfer Protocol (TFTP) server application, as explained in these release notes.

Each Cisco IOS Release 11.3 software feature pack box contains the following:

- CD-ROM with the following software:

    — Feature set software image that includes bundled modem firmware

    — RSL program (Windows 95 application)

    — TFTP server application (Windows 95 application)

- Instruction booklet for using RSL

- Release notes (this document), which includes instructions for using a TFTP server application on a system not running Windows 95 to use Cisco software in object code form on a single access server or router

- Cisco Documentation CD-ROM, which contains all Cisco IOS software documentation

Cisco IOS Release 11.3(1)MA4 Feature Pack Descriptions and Memory Requirements

This section includes two tables:

- Table 1—Describes each feature pack image, including a brief description of each feature set, the images' UNIX and DOS filenames, and memory requirements.

- Table 2—Describes the factory default available memory and the possible memory upgrades for the Cisco MC3810 multiservice access concentrator.

You can use Table 1 to identify the memory required for your configuration based on the image you run. You can then check this against Table 2 to determine how much memory is available on the router as the factory default and the upgrades that you can obtain to satisfy your requirements.

Table 1   Cisco Feature Pack Image Filenames and Memory Requirements

Model Number	CD-ROM Title	UNIX Image Name	DOS Image Name	Flash Memory Req'd	Main Memory Req'd	RSL Installer Description
CD381-M-11.3=	Cisco MC3810 IP/IPX/IBM Feature Pack Release 11.3(1)MA4 RSL Version 7.2	mc3810-inr3-mz.113-1.MA4	57239804	4 MB	16 MB	Cisco MC3810 IOS IP/IPX/IBM Feature Set, Release 11.3(1)MA4
CD381-MV-11.3=	Cisco MC3810 IP/IPX/AT/IBM/Voice Feature Pack Release 11.3(1)MA4 RSL Version 7.2	mc3810-binr3v2-mz.113-1.MA4	80302804	4 MB	32 MB	Cisco MC3810 IOS IP/IPX/AT/IBM/Voice Feature Set, Release 11.3(1)MA4

Table 2   Cisco MC3810 Default Memory and Upgrade Options

Memory Type	Default	Upgrade Options
Flash	4	8MB Flash, MEM-381-1X8F=
DRAM	32	32MB DRAM, MEM-381-1X32D=

Cisco IOS Feature Sets for the Cisco MC3810 Multiservice Access Concentrator

The Cisco IOS software is packaged into feature sets (also called software images). There are many different feature sets available, and each feature set contains a specific subset of Cisco IOS features. The feature set matrix is used to see the overall feature set organization.

Feature Set Table

To determine what features are available with each feature set, see Table 3. The table summarizes what features you can use when running a specific feature set on the Cisco MC3810 for Cisco IOS Release 11.3(1)MA4. The feature set table uses the following symbols:

Feature Set Table Symbol	Description
Yes	This feature is offered in the feature set.
No	This feature is not offered in the feature set.

'

Table 3   Cisco IOS Feature Set for the Cisco MC3810

Features	Feature Sets	
	IP/IPX/IBM 11.3 1M	IP/IPX/ AT/IBM/ Voice 11.3 1M
ATM Access		
UNI 3.1	No	No
Traffic Shaping	No	No
rtVBR, nrtVBR, CBR, UBR	No	No
Structured CES	No	No
RFC 1483	No	No
IBM Support		
APPN	No	No
APPN High-Performance Routing	No	No
APPN MIB Enhancements	No	No
APPN over Ethernet LAN Emulation	No	No
APPN Scalability Enhancements	No	No
BAN for SNA Frame Relay Support	No	Yes
Bisync	No	No
Caching and Filtering	Yes	Yes
DLSw+	Yes	Yes
DLSw (RFC 1795)	Yes	Yes
DLSw Version 2 (RFC 1266)	Yes	Yes
Downstream PU Concentration (DSPU)	Yes	Yes
Frame Relay SNA Support (RFC 1490)	Yes	Yes
NCIA	No	No
NetView Native Service Point	Yes	Yes
QLLC	No	No
Polled Async (ADT)	No	No
Response Time Reporter	No	No
SDLC Integration	Yes	Yes
SDLC Transport (STUN)	Yes	Yes
SDLC-to-LAN Conversion (SDLLC)	Yes	Yes
SNA and NetBIOS WAN Optimization	No	No
SRB/RSRB	No	No
SRT	No	No
SRTLB	Yes	Yes
TG/COS	No	No
TN3270	No	No

Table 3   Cisco IOS Feature Set for the Cisco MC3810 (continued)

	Feature Sets	
Features	**IP/IPX/IBM 11.3 1M**	**IP/IPX/ AT/IBM/ Voice 11.3 1M**
TN3270 LU Nailing	No	No
TN3270 Server Enhancements	No	No
Integrated Voice		
Analog Signaling	No	Yes
Multiflex Trunk	Yes	Yes
E1 CAS Signaling[1]	No	Yes
T1 CAS Signaling	No	Yes
Voice Activity Detection	No	Yes
Voice over ATM	No	No
Voice over Frame Relay	No	Yes
Voice over HDLC	No	Yes
Local Dialing	No	Yes
Remote Dialing	No	Yes
PLAR	No	Yes
Pass-Through Voice	Yes	Yes
Off-net Dialing	No	Yes
On-net/Off-net Call Rerouting	No	Yes
Multiple Ring Tones	No	Yes
Gain Control	No	Yes
IP Routing		
BGP	Yes	Yes
BGP4	Yes	Yes
EGP	Yes	Yes
Enhanced IGRP	Yes	Yes
Enhanced IGRP Optimizations	Yes	Yes
ES-IS	No	No
IGRP	Yes	Yes
IS-IS	No	No
Named IP Access Control List	Yes	Yes
Network Address Translation (NAT)	No	No
NHRP	Yes	Yes
OSPF	Yes	Yes
OSPF Not-So- Stubby-Areas (NSSA)	Yes	Yes
OSPF On Demand Circuit (RFC 1793)	Yes	Yes

Table 3   Cisco IOS Feature Set for the Cisco MC3810 (continued)

	Feature Sets	
Features	**IP/IPX/IBM 11.3 1M**	**IP/IPX/ AT/IBM/ Voice 11.3 1M**
PIM	Yes	Yes
Policy-Based Routing	Yes	Yes
RIP	Yes	Yes
RIP Version 2	Yes	Yes
LAN Support		
Apollo Domain	No	No
AppleTalk Phase 2	No	Yes
Banyan VINES	No	No
Concurrent Routing and Bridging	Yes	Yes
DECnet IV	No	No
DECnet V	No	No
GRE	Yes	Yes
Integrated Routing and Bridging (IRB)	Yes	Yes
IP	Yes	Yes
LAN Extension Host	No	No
Multiring	No	No
Novell IPX	Yes	Yes
OSI	No	No
Source-Route Bridging	No	No
Transparent and Translational Bridging	Yes	Yes
VLANs (ISL & IEEE 802.10)	No	No
XNS	No	No
Management		
AutoInstall	Yes	Yes
Automatic Modem Configuration	Yes	Yes
HTTP Server	Yes	Yes
Cisco IOS File System[2]	Yes	Yes
RMON Events and Alarms	Yes	Yes
RMON Full	No	No
SNMP	Yes	Yes
Telnet	Yes	Yes
Multimedia and Quality of Service		
Generic Traffic Shaping	Yes	Yes
Random Early Detection (RED)	Yes	Yes
RSVP	Yes	Yes

Table 3   Cisco IOS Feature Set for the Cisco MC3810 (continued)

	Feature Sets	
Features	**IP/IPX/IBM** **11.3 1M**	**IP/IPX/** **AT/IBM/** **Voice** **11.3 1M**
Other Routing		
AURP	Yes	Yes
IPX RIP	Yes	Yes
NLSP	Yes	Yes
RTMP	Yes	Yes
SMRP	Yes	Yes
SRTP	No	No
Protocol Translation		
LAT	No	No
PPP	No	No
Rlogin	No	No
Telnet	No	No
TN3270	No	No
X.25	No	No
Remote Node		
ARAP 1.0/2.0	Yes	Yes
Asynchronous Master Interfaces	No	No
ATCP	No	No
CPPP	No	No
CSLIP	No	No
DHCP	No	No
IP Pooling	No	No
IPX and ARAP on Virtual Async Interfaces	No	No
IPXCP	No	No
MacIP	No	No
NASI	No	No
NetBEUI over PPP	No	No
PPP	Yes	Yes
SLIP	Yes	Yes
Security		
Access Lists	Yes	Yes
Access Security	Yes	Yes
Extended Access Lists	Yes	Yes
Kerberized Login	No	No
Kerberos V Client Support	No	No

Table 3   Cisco IOS Feature Set for the Cisco MC3810 (continued)

	Feature Sets	
Features	**IP/IPX/IBM 11.3 1M**	**IP/IPX/ AT/IBM/ Voice 11.3 1M**
Lock And Key	No	No
Mac Security For Hubs	Yes	Yes
Md5 Routing Authentication	No	No
Network Layer Encryption (40-bit Or Export Controlled 56-bit Des)	No	No
RADIUS	No	No
Router Authentication	No	No
TACACS+	Yes	Yes
Terminal Services		
LAT	No	No
Rlogin	No	No
Telnet	No	No
TN3270	No	No
X.25 Pad	No	No
Xremote	No	No
Wan Optimization		
Bandwidth-on-demand	No	No
Custom And Priority Queuing	Yes	Yes
Dial Backup	No	No
Dial-on-demand	No	No
Header, Link And Payload Compression	Yes	Yes
Snapshot Routing	Yes	Yes
Weighted Fair Queuing	Yes	Yes
Wan Services		
ATM LAN Emulation: Decnet Routing And Banyan Vines Support	No	No
ATM LAN Emulation: (HSRP And SSRP)	No	No
ATM: Rate Queues For SVC Per Subinterface	No	No
ATM: UNI 3.1 Signaling For ATM	No	No
Combinet Packet Protocol (CPP)	No	No
Dialer Profiles	No	No
Frame Relay Compression (FRF.9)	Yes	Yes
Frame Relay SVCs Support (DTE)	No	No
Frame Relay Traffic Shaping	Yes	Yes
Frame Relay Switching	Yes	Yes
Frame Relay UNI	Yes	Yes

Table 3   Cisco IOS Feature Set for the Cisco MC3810 (continued)

Features	Feature Sets	
	IP/IPX/IBM 11.3 1M	IP/IPX/ AT/IBM/ Voice 11.3 1M
Frame Relay–ATM Interworking	No	No
Half Bridge/Half Router For CPP And PPP	No	No
HDLC	Yes	Yes
IPXwan 2.0	Yes	Yes
ISDN	No	No
ISDN Advice Of Charge	No	No
ISDN Caller ID Callback	No	No
ISDN NFAS	No	No
Leased Line ISDN at 128 kbps	No	No
Multichassis Multilink PPP (MMP)	No	No
PPP	Yes	Yes
SMDS	No	No
Switched 56	No	No
Virtual Private Dialup Network (VPDN)	No	No
X.25	No	No
X.25 Enhancements	No	No
X.25 on ISDN	No	No
X.25 Switching between PVCs and SVCs	No	No

1 Includes T1 CAS protocols, plus UK Standard CAS (Mercury protocol) and CEPT standard E&M.
2 Cisco IOS File System is offered in Release 11.3(1)MA4.

Installing Software Images Using RSL

The Router Software Loader application contained on the feature pack CD-ROM is designed to work with a PC running Microsoft Windows 95. Refer to the booklet included with the CD-ROM for instructions to install the software images.

This section describes several solutions to problems you might encounter when using RSL. These solutions are additions to RSL's online help.

Recovering from a Connection Error

If you are unable to connect to your access server or router, this installation tip provides a possible recovery solution. If you are not experiencing a connection error, you can skip this section.

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

```
"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 in the Options dialog box from 25 seconds, 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 router.

- You are connecting to a router 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.

- You are connecting to a Cisco MC3810 Multiservice Access Concentrator. A Cisco MC3810 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, 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 RSL and connect 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 connected, select **Download Router Configuration** in the Router Software Loader dialog box.

Step 6   Select the appropriate file, and click **Copy configuration to the router's nonvolatile memory**.

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

Step 7   Exit RSL.

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

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

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's Address Resolution Protocol (ARP) table, one of them might be deleted by RSL. This entry will need to be manually reentered into the PC's ARP table.

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

- RSL will restore the router's running configuration, but some configuration commands will not be restored. However, the startup configuration will be correct. You can restore the exact running configuration by rebooting the router. Commands not restored to the running configuration include the following interface configuration commands: **no shutdown**, **no ringspeed**, and **media-type aui**.

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 RSL CD-ROM explains how to perform this simple install process; however, an alternative is available for installing router software, using a TFTP server application.

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 checkbox beside the word Server, which allows you to configure the local PC as a server.

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 13, 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 connected LAN 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, a 100BaseT hub, or a Token Ring MAU.

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

Step 6 At the `router` prompt, enter **enable** and then the password:

```
Router> enable
Password:
```

Step 7 At the `router` prompt, enter the following command to copy the new software image from the PC CD-ROM drive to the router:

```
Router(config)# copy tftp flash
```

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

Step 8 When prompted, enter the IP address of your 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 9 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? 51.bin
```

This example specifies the DOS image name of the IP feature set for Cisco MC3810 (as shown in Table 1 in the section, "Cisco Feature Packs and Memory Requirements").

Step 10 In response to the destination address prompt, enter the destination UNIX image filename, and press **Enter**.

This is the name of the image file on the router, not the full path of the image on the CD-ROM attached to the PC. Refer to Table 1 in the section, "Cisco Feature Packs and Memory Requirements" for the UNIX image filename.

```
Destination file name [57139804.bin]? c3810-inr3-mz.113-1.MA4
```

Step 11 Enter **yes** in response to the prompt asking if you want to erase the existing image copy resident in the router Flash memory before copying the new one:

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

The entire copying process takes several minutes and differs from network to network.

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

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 12 Enter the following commands to reset the configuration register to 0x2102:

```
Router(config)# config terminal
Router(config)# config-reg 0x2102
Router(config)# end
```

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

```
Router# reload
```

After reload is complete, the router should be running the desired Cisco IOS image. Use the **show version** command to verify.

Related Documentation

All documents mentioned in this section are available as printed manuals or electronic documents. (See the section "Online Navigation" for more information on accessing electronic documentation.)

The following documentation is related to these release notes:

- Cisco MC3810-Specific Documentation

- Cisco IOS Documentation Set and Related Supporting Documents

- Software Configuration Tips on the Cisco TAC Home Page

Cisco MC3810-Specific Documentation

The following documents are specific to the Cisco MC3810 Multiservice Access Concentrator:

- *Cisco MC3810 Multiservice Access Concentrator Hardware Installation Guide*

- *Cisco MC3810 Multiservice Access Concentrator Software Configuration Guide*

- *Cisco MC3810 Multiservice Access Concentrator Command Reference*

- *Cisco MC3810 Regulatory Compliance and Safety Information*

- *Cisco MC3810 Configuration Note for Field Replacable Units*

Cisco IOS Documentation Set and Related Supporting Documents

The following documents apply to the Cisco MC3810 Multiservice Access Concentrator:

- *Release Notes for Cisco IOS Release 11.3*
- *Product-Specific Release Notes*
- *Cisco IOS Release 11.3 Configuration Guides/Command References*
- *Cisco IOS Software Command Summary*
- *System Error Messages*
- *Cisco Management Information Base (MIB) User Quick Reference*
- *Debug Command Reference*
- *Access Services Quick Configuration Guide*
- *Cisco IOS Software Release 11.3 and 11.3(1)MA Caveats*

The Cisco IOS configuration guides, command references, and chapter topics are as follows:

Books	Chapter Topics
• *Configuration Fundamentals Configuration Guide* • *Configuration Fundamentals Command Reference*	Access Server and Router Product Overview User Interface System Images and Configuration Files Using ClickStart, AutoInstall, and Setup Interfaces System Management
• *Security Configuration Guide* • *Security Command Reference*	Network Access Security Terminal Access Security Accounting and Billing Traffic Filters Controlling Router Access Network Data Encryption with Router Authentication
• *Access Services Configuration Guide* • *Access Services Command Reference*	Terminal Lines and Modem Support Network Connections AppleTalk Remote Access SLIP and PPP XRemote LAT Telnet TN3270 Protocol Translation Configuring Modem Support and Chat Scripts X.3 PAD Regular Expressions

Books	Chapter Topics
• *Wide-Area Networking Configuration Guide*	ATM
• *Wide-Area Networking Command Reference*	Dial-on-Demand Routing (DDR)
	Frame Relay
	ISDN
	LANE
	PPP for Wide-Area Networking
	SMDS
	X.25 and LAPB
• *Network Protocols Configuration Guide, Part 1*	IP
• *Network Protocols Command Reference, Part 1*	IP Routing
• *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
• *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 Support
	SNA Frame Relay Access Support
	APPN
	NCIA Client/Server Topologies
	IBM Channel Attach
• *Cisco IOS Software Command Summary*	
• *Access Services Quick Configuration Guide*	
• *System Error Messages*	
• *Debug Command Reference*	
• *Cisco Management Information Base (MIB) User Quick 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 (CCO). On CCO, go to **Software and Support**, select **Software Center**, and click on **Network Management Products**. Next, select **Cisco Network Management Toolkit** and click on **Cisco MIBs**.

Software Configuration Tips on the Cisco TAC Home Page

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

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

This URL is subject to change without notice. If it does change, 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 Cisco's Technical Assistance Center (TAC). Most of these documents are also available from the TAC's Fax-on-Demand service. To access Fax-on-Demand and receive documents at your fax machine, call 888-50-CISCO (888-502-4726). From international areas, call 415-596-4408.

The following sections are provided from the Technical Tips page:

- Field Notices—Designed to provide notification of critical issues regarding Cisco products. These include problem descriptions, safety or security issues, and hardware defects.

- Hardware—Technical Tips related to specific hardware platforms.

- Internetworking Features—Tips on using and deploying Cisco IOS software features and services.

- Sample Configurations—Actual configuration examples complete with topology and annotations.

- Software Products—MultiNet & Cisco Suite 100, Network Management, Cisco IOS Software Bulletins, CiscoPro Configurations.

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

Online Navigation

You can access Cisco IOS software documentation, such as printed manuals and configuration notes, either at Cisco Connection Online (CCO) on the World Wide Web or on the Cisco Documentation CD-ROM.

Cisco MC3810—Specific Documentation

- Using a web browser, follow this path on CCO:

  Software & Support, *Cisco Documentation*, *Access Servers and Access Routers*, *Multiservice Access Concentrators*.

- On the Documentation CD-ROM, follow this path:

  Cisco Product Documentation, *Access Servers and Access Routers*, *Multiservice Access Concentrator*s.

Cisco IOS Documentation Set and Related Supporting Documents

- Using a web browser, follow this path on CCO:

  Software & Support, scroll down and select *Cisco Documentation*. Next, click on *Cisco IOS Software Configuration*, and then click on *Cisco IOS Release 11.3.*

- On the Documentation CD-ROM, follow this path:

  Cisco Product Documentation, select *Cisco IOS Software Configuration*, and then select *Cisco IOS Release 11.3.*

Additional information about CCO and the Documentation CD-ROM is in the sections "Cisco Connection Online" and "Documentation CD-ROM" at the end of these release notes.

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 the Cisco Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

Documentation CD-ROM

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