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Release Notes for Cisco IOS Release 11.3(6)T Software Feature Packs—Cisco AS5300 Access Servers

December 7, 1998

These release notes describe the Cisco IOS Release 11.3(6)T feature packs for Cisco AS5300 access servers.

These release notes discuss the following topics:

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- System Requirements, page 10
- Modem Code Alert, page 11
- Modem Code Information, page 11
- Installation Notes, page 11
- Documentation Updates, page 15
- Related Documentation, page 15
- Service and Support, page 17
- Cisco Connection Online, page 18
- Documentation CD-ROM, page 19

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 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.
- 3 Use Table 4, “Feature List by Feature Sets,” to identify which features are supported in a feature set image.
- 4 Use Table 5, “Cisco AS5300 Memory and Upgrade Options,” to check the memory required for your feature set, determine the factory-default memory on the router, and view the available memory upgrades.

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 (this document)
- 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, see the “Installing Software Images Using a TFTP Server Application” section on page 13.

Before running the RSL, read the “Installing Software Images Using RSL” section on page 11. 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
CD53-C-11.3=	Cisco 5300 IP Feature Pack
CD53-CP-11.3=	Cisco 5300 IP Plus Feature Pack
CD53-B-11.3=	Cisco 5300 Desktop Feature Pack
CD53-BP-11.3=	Cisco 5300 Desktop Plus Feature Pack
CD53-A-11.3=	Cisco 5300 Enterprise Feature Pack
CD53-AP-11.3=	Cisco 5300 Enterprise Plus Feature Pack

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 UNIX and DOS filenames of the images, memory requirements, and RSL installer description.

Table 2 Cisco Feature Pack Image Filenames and Memory Requirements

Model No.	CD-ROM Title	Image Included and Image Name (UNIX)	Image Name (DOS)	Flash Memory Req'd	Main Memory Req'd	Boot Flash Memory Req'd	Shared Memory Req'd	Software Description
CD53-C-11.3=	Cisco AS5300 IP Feature Pack Release 11.3(6)T RSL Version 7.2	IP c5300-i-mz.113-6.T1	80256706	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 IP feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0
CD53-CP-11.3=	Cisco AS5300 IP Plus Feature Pack Release 11.3(6)T RSL Version 7.2	IP Plus c5300-is-mz.113-6.T1	80256406	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 IP Plus feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0
CD53-B-11.3=	Cisco AS5300 Desktop Feature Pack Release 11.3(6)T RSL Version 7.2	Desktop c5300-d-mz.113-6.T1	80256806	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Desktop feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0

Introduction

Model No.	CD-ROM Title	Image Included and Image Name (UNIX)	Image Name (DOS)	Flash Memory Req'd	Main Memory Req'd	Boot Flash Memory Req'd	Shared Memory Req'd	Software Description
CD53-BP-11.3=	Cisco AS5300 Desktop Plus Feature Pack Release 11.3(6)T RSL Version 7.2	Desktop Plus c5300-ds-mz.113-6.T1	80256506	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Desktop Plus feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0
CD53-A-11.3=	Cisco AS5300 Enterprise Feature Pack Release 11.3(6)T RSL Version 7.2	Enterprise c5300-j-mz.113-6.T1	80256606	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Enterprise feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0
CD53-AP-11.3=	Cisco AS5300 Enterprise Plus Feature Pack Release 11.3(6)T	Enterprise Plus c5300-js-mz.113-6.T1	80256306	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Enterprise Plus feature set Release 11.3(6)T
	MICA Modem Portware	mica-modem-portware.2.5.1.0.bin	80310301					MICA Modem Portware Version 2.5.1.0

Feature Set Tables

The Cisco IOS software is packaged in feature sets (also called software images) depending on the platform. Each feature set contains a specific set of Cisco IOS features. This section shows the feature set matrix and the features supported by each feature set.

The following list shows which feature sets are supported on the Cisco AS5300 series access servers. These feature sets only apply to Cisco IOS Release 11.3 T:

- IP
- IP Plus
- Desktop
- Desktop Plus
- Enterprise
- Enterprise Plus

The feature set matrices (see Table 3 and Table 4) show the new feature set organization and list which feature sets are available on the Cisco AS5300 access servers for Cisco IOS Release 11.3 T. The tables use the following terms:

Table 3 Feature Set Matrix for AS5300

Standard Feature Sets	Cisco AS5300
IP	Basic, Plus
Desktop	Basic, Plus
Enterprise	Basic, Plus

To determine what features are available with each feature set (software image), see Table 4. The table summarizes the features you can use when running a specific feature set on the Cisco AS5300 access server for Cisco IOS Release 11.3 T. Table 4 uses these terms:

Feature Set Matrix Term	Description
Yes	This feature is offered.
No	This feature is not offered.
In	The “In” column lists the Cisco IOS release that first introduces a feature. For example, (2) means a feature is introduced in 11.3(2)T. If a cell is empty in this column, the feature was included in the initial, base release.

Table 4 Feature List by Feature Sets

Feature	Feature Set						
	In ¹	IP	IP Plus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
IBM Support							
APPN High-Performance Routing	No	No	No	No	No	No	No
APPN MIB Enhancements	No	No	No	No	No	No	No
APPN over Ethernet LAN Emulation	No	No	No	No	No	No	No
APPN Scalability Enhancements	No	No	No	No	No	No	No
Bisync Enhancements:	No	Yes	No	Yes	Yes	Yes	Yes
— Bisync 3780 Support							
— BSC Extended Addressing							
— Block Serial Tunneling (BSTUN) over Frame Relay							
Cisco MultiPath Channel (CMPC)	No	No	No	No	No	No	No

Table 4 Feature List by Feature Sets (continued)

Feature	Feature Set						
	In ¹	IP	IP Plus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
DLSw+ Enhancements:		No	Yes	No	Yes	Yes	Yes
— 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							
FRAS Enhancements:		No	Yes	No	Yes	Yes	Yes
— FRAS Boundary Network Node Enhancement							
— FRAS Dial Backup over DLSw+							
— FRAS DLCI Backup							
— FRAS Host							
— FRAS MIB							
— SRB over Frame Relay							
RIF Passthru in DLSw+	(3)	No	Yes	No	Yes	Yes	Yes
SRB over FDDI on Cisco 4000-M, 4500-M, and 4700-M Routers		No	No	No	No	No	No
TN3270 LU Nailing		No	No	No	No	No	No
TN3270 Server Enhancements		No	No	No	No	No	No
Token Ring LANE		No	No	No	No	No	No
Tunneling of Asynchronous Security Protocols		No	Yes	No	Yes	Yes	Yes
Internet							
DRP Server Agent		Yes	Yes	Yes	Yes	Yes	Yes
DRP Server Agent Enhancements	(2)	Yes	Yes	Yes	Yes	Yes	Yes
IP Routing							
Easy IP (Phase 1)		Yes	Yes	Yes	Yes	Yes	Yes
Hot Standby Router Protocol (HSRP) over ISL in Virtual LAN Configurations		No	No	Yes	Yes	Yes	Yes
IP Enhanced IGRP Route Authentication		Yes	Yes	Yes	Yes	Yes	Yes
IP Type of Service and Precedence for GRE Tunnels	(4)	Yes	Yes	Yes	Yes	Yes	Yes
PIM Version 2		Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Sets (continued)

Feature	Feature Set						
	In ¹	IP	IP Plus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
TCP Enhancements:		Yes	Yes	Yes	Yes	Yes	Yes
— TCP Selective Acknowledgment							
— TCP Timestamp							
LAN Support							
AppleTalk Access List Enhancements		No	No	Yes	Yes	Yes	Yes
DECnet Accounting		No	No	Yes	Yes	Yes	Yes
IPX Named Access Lists		No	No	Yes	Yes	Yes	Yes
IPX SAP-after-RIP		No	No	Yes	Yes	Yes	Yes
NLSP Enhancements		No	No	No	No	Yes	Yes
NLSP Multicast Support		No	No	Yes	Yes	Yes	Yes
Management							
Cisco Call History MIB Command Line Interface		Yes	Yes	Yes	Yes	Yes	Yes
Cisco IOS Internationalization		Yes	Yes	Yes	Yes	Yes	Yes
Entity MIB, Phase 1		Yes	Yes	Yes	Yes	Yes	Yes
SNMPv2C		Yes	Yes	Yes	Yes	Yes	Yes
SNMP Inform Requests	(1)	No	No	No	No	Yes	Yes
Virtual Profiles		Yes	Yes	Yes	Yes	Yes	Yes
VPDN MIB	(2)	No	Yes	No	Yes	Yes	Yes
VPDN MIB and Syslog Facility	(3)	No	Yes	No	Yes	Yes	Yes
Multimedia							
IP Multicast Load Splitting across Equal-Cost Paths		Yes	Yes	Yes	Yes	Yes	Yes
IP Multicast over ATM Point-to-Multipoint Virtual Circuits		No	No	No	No	No	No
PIM Version 2	(2)	Yes	Yes	Yes	Yes	Yes	Yes
IP Multicast over Token Ring LANs		Yes	Yes	Yes	Yes	Yes	Yes
Stub IP Multicast Routing		Yes	Yes	Yes	Yes	Yes	Yes
Quality of Service							
RTP Header Compression		Yes	Yes	Yes	Yes	Yes	Yes
Security							
Automated Double Authentication	(3)	Yes	Yes	Yes	Yes	Yes	Yes
Certificate Authority Interoperability	(3)	No	No	No	No	No	No
Double Authentication		Yes	Yes	Yes	Yes	Yes	Yes
Encrypted Kerberized Telnet		No	No	No	No	No	No
HTTP Security		Yes	Yes	Yes	Yes	Yes	Yes
Internet Key Exchange Security Protocol	(3)	No	No	No	No	No	No

Table 4 Feature List by Feature Sets (continued)

Feature	Feature Set						
	In ¹	IP	IP Plus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
IPSec Network Security	(3)	No	No	No	No	No	No
Message Banners for AAA Authentication	(4)	Yes	Yes	Yes	Yes	Yes	Yes
MS-CHAP Support	(3)	No	No	No	No	Yes	Yes
Named Method Lists for AAA Authentication and Accounting	(3)	Yes	Yes	Yes	Yes	Yes	Yes
Per-User Configuration		Yes	Yes	Yes	Yes	Yes	Yes
Reflexive Access Lists		Yes	Yes	Yes	Yes	Yes	Yes
TCP Intercept		No	No	No	No	Yes	Yes
Vendor-Proprietary RADIUS Attributes		Yes	Yes	Yes	Yes	Yes	Yes
Vendor-Proprietary RADIUS -Additional Attributes	(3)	Yes	Yes	Yes	Yes	Yes	Yes
Switching							
AppleTalk Routing over ISL and IEEE 802.10 in Virtual LANs		No	No	Yes	Yes	Yes	Yes
CLNS and DECnet Fast Switching over PPP		No	No	No	No	Yes	Yes
DECnet/VINES/XNS over ISL:		No	No	No	No	Yes	Yes
— Banyan VINES Routing over ISL Virtual LANs							
— DECnet Routing over ISL Virtual LANs							
— XNS Routing over ISL Virtual LANs							
Fast-Switched Policy Routing		Yes	Yes	Yes	Yes	Yes	Yes
IPX Routing over ISL Virtual LANs		No	No	Yes	Yes	Yes	Yes
VIP Distributed Switching Support for IP Encapsulated in ISL		No	No	No	No	No	No
Terminal Services							
Telnet Extensions for Dialout		Yes	Yes	Yes	Yes	Yes	Yes
Virtual Templates for Protocol Translation		No	No	No	No	Yes	Yes
WAN Optimization							
ATM MIB Enhancements		No	No	No	No	No	No
PAD Enhancements		No	No	No	No	Yes	Yes
PAD Subaddressing		Yes	Yes	Yes	Yes	Yes	Yes
WAN Services							
Always On/Dynamic ISDN (AO/DI)	(3)	No	No	No	No	Yes	Yes
Bandwidth Allocation Control Protocol		Yes	Yes	Yes	Yes	Yes	Yes
Dialer Watch	(2)	Yes	Yes	Yes	Yes	Yes	Yes
E1 R2 Country Support	(2)	Yes	Yes	Yes	Yes	Yes	Yes

Table 4 Feature List by Feature Sets (continued)

Feature	Feature Set						
	In ¹	IP	IP Plus	Desktop	Desktop Plus	Enterprise	Enterprise Plus
E1 R1 Support for only Taiwan ²	(3)	Yes	Yes	Yes	Yes	Yes	Yes
Enhanced Local Management Interface (ELMI)		Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Enhancements		Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay MIB Extensions		Yes	Yes	Yes	Yes	Yes	Yes
Frame Relay Router ForeSight		Yes	Yes	Yes	Yes	Yes	Yes
ISDN Advice of Charge		Yes	Yes	Yes	Yes	Yes	Yes
ISDN Caller ID Callback		Yes	Yes	Yes	Yes	Yes	Yes
ISDN NFAS		Yes	Yes	Yes	Yes	Yes	Yes
Layer 2 Forwarding—Fast Switching		No	Yes	No	Yes	Yes	Yes
Leased-Line ISDN at 128 kbps		No	No	No	No	No	No
Microsoft Point-to-Point Compression (MPPC)	(3)	Yes	Yes	Yes	Yes	Yes	Yes
MS Callback	(2)	Yes	Yes	Yes	Yes	Yes	Yes
Modem Management Enhancements	(2)	Yes	Yes	Yes	Yes	Yes	Yes
Multiple ISDN Switch Types	(3)	Yes	Yes	Yes	Yes	Yes	Yes
National ISDN Switch Types for BRI and PRI Interfaces (NI2)	(3)	Yes	Yes	Yes	Yes	Yes	Yes
PPP over ATM		No	No	No	No	No	No
Stackable Home Gateway	(3)	No	Yes	No	Yes	Yes	Yes
Switched 56K Digital Connections	(2)	Yes	Yes	Yes	Yes	Yes	Yes
Telnet Extensions for Dialout	(2)	No	Yes	No	Yes	Yes	Yes
X.25 Enhancements		Yes	Yes	Yes	Yes	Yes	Yes
X.25 on ISDN		Yes	Yes	Yes	Yes	Yes	Yes
X.25 Switching between PVCs and SVCs		Yes	Yes	Yes	Yes	Yes	Yes
X.28 Emulation		Yes	Yes	Yes	Yes	Yes	Yes

1 The “In” column lists the Cisco IOS release that first introduces a feature.

2 E1 R1 signaling support for Taiwan requires MICA portware version 2.3.1.0.

System Requirements

This section describes the following:

- Memory Requirements, page 10
- Hardware Supported, page 10
- Software Compatibility, page 10
- Determining Your Cisco IOS Software Release, page 10

Memory Requirements

Table 5 lists the default memory and the available memory upgrades.

Table 5 Cisco AS5300 Memory and Upgrade Options

Type of Memory	Default	Upgrade Options
Boot Flash Upgrade	4 MB	MEM-8BF-AS53 (from 4MB to 8MB)
Flash Memory	8 MB	MEM-16F-AS53 (from 8MB to 16MB)
DRAM	32 MB	MEM-64M-AS53 (from 32MB to 64MB)

Hardware Supported

Cisco IOS Release 11.3(6)T supports the Cisco AS5300 universal access server. Table 6 lists the interface and modem cards supported by the Cisco AS5300.

Table 6 Supported Interface and Modem Cards

Interface Cards	Modem Cards
Ethernet/Fast Ethernet (RJ-45)	MICA modems
ISDN PRI	
E1-G.703/G.704	
Channelized T1	
Channelized E1	

Software Compatibility

The feature packs described in these release notes contain Cisco IOS Release 11.3(6)T software images, some earlier images, and Router Software Loader (RSL) Version 7.2. Before running RSL, read the “Installing Software Images Using RSL” section on page 11.

Determining Your Cisco IOS Software Release

To determine the version of Cisco IOS software currently running on your access server, log on to the AS5300 and enter the **show version 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) 5300 Software (C5300-JS-M), Version 11.3(6)T.....
```

The output includes more information including processor revision numbers, memory amounts, hardware IDs, and partition information. For information on upgrading to a new software release, see the “Cisco Connection Online” section.

Modem Code Alert

By default, the Microcom or MICA modems on the AS5300 carrier cards use the modem firmware/portware that is bundled with the Cisco IOS software image. Unless you are familiar with the Cisco AS5300 modem files, we recommend that you use the default firmware/portware and do not attempt to download another version.

If you do choose to override the firmware and portware selected by Cisco IOS software, the Flash memory of your access server may contain modem code files that should be saved and restored before downloading the new image. Before the image download begins, the Router Software Loader (RSL) will display the Flash Copy Options dialog box that will allow you to select which files to backup and restore. By default, RSL will backup all files in the selected Flash partition, and restore the files you select.

If you want to verify that you are running the latest modem code, use the **show modem version** command to display the current version. Then compare that version to the modem code files available on the feature pack CD and on Cisco Connection Online (CCO).

Modem Code Information

If you are running Microsoft Windows 95 on a PC, we recommend using the RSL to download modem code. For detailed steps, refer to the RSL online help topic “Downloading Modem Files.” If you are running Windows NT, UNIX, or Macintosh, use a TFTP or remote copy protocol (RCP) to download modem code. TFTP server instructions are in the document titled “Another Way to Download Modem Code.”

Both RSL and TFTP instructions for downloading modem code are available at the follow URL:
<http://www.cisco.com/public/sw-center/sw-access.shtml>
Click on the link “Cisco Channel Modem Software Upgrade.”

Installation Notes

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 the RSL online help.

Recovering from a Connection Error

This installation tip provides a possible recovery solution in the event that 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 in the Options dialog box from the default 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 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.
- 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 access server 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 access server should now contain the startup configuration it had before the initial RSL connection. You can now exit RSL.

Note In the previous situation, the access server's configuration register (**config-register 0xnnnn**) is not restored.

Note If you press **Ctrl-Alt-Delete** to terminate RSL, the access server'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 access server's running configuration at connection time is not the same as the access server'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 access server'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 access server. Commands not restored to the running configuration include the following interface configuration commands: **no shutdown**, **no ringspeed**, and **media-type aui**.

Installing Software Images Using a TFTP Server Application

We recommend using the Router Software Loader application to install the software images; however, the CD-ROM is designed to work with a PC running Microsoft Windows 95. For other operating systems, an alternative is available using a TFTP server application to install access server software. 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 software to the access server.

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. You can use the RSL or the TFTP server included on the feature pack CD-ROM to install the 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 as shareware from public sources on the World Wide Web.

Installation Process

This section describes how to use TFTP on a PC to install the access server software.

Note To use an rcp application, follow this same procedure, but substitute RCP for TFTP in the instructions; for example, use the **copy rcp flash** command instead of the **copy tftp flash** command.

- Step 1** Install any TFTP server application on the PC. (The TFTP application included on the feature pack CD-ROM is 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**, 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 access server by using one of these methods:

- Connect the PC com port to the access server console port.

This is the recommended method. When you reload the access server with the new image in Step 11, you remain connected to the access server. (If you use Telnet, you lose connection to the access server.)

- Establish a Telnet session from the PC to the access server.

Step 5 Connect your PC Ethernet port to the corresponding access server Ethernet port. Use a crossover cable to connect to the Ethernet port.

Note Use straight-through cables if you are connecting via a 10BaseT hub or a 100BaseT hub.

Note We recommend that you back up the access server Flash memory before upgrading the access server software.

Step 6 Enter the following command to copy the new software image from the PC (set up as a TFTP server) to the access server Flash memory:

```
as5300# copy tftp flash
```

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

Step 7 When prompted, enter the IP address of your PC, as in the following example:

```
Address or name of remote host [255.255.255.255]? 172.16.1.1
```

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

Step 8 When prompted, enter the filename of the Cisco IOS Release 11.3 image to be copied to the access server, as in the following example:

```
Source file name? 80256706.bin
```

This example specifies the DOS image name of the IP feature set for a Cisco AS5300 access server, as listed in Table 2.

- Step 9** When prompted, enter the destination UNIX image filename, and press **Enter**.

This is the name of the image file on the access server, not the full path name of the image on the CD-ROM attached to the PC. Refer to Table 2 in the section, “Feature Pack Overview Table” for the UNIX image filename.

```
Destination file name [80256706.bin]? c5300-i-mz.113-6.T
```

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

- Step 10** Enter **yes** when asked if you want to erase the existing image copy resident in the access server 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.

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 11** Enter the **reload** command to reload the access server:

```
as5300# reload
```

After the reload is complete, the access server 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

The following sections describe the documentation available for the Cisco 3600 series routers. Typically these documents consist of hardware installation guides, software installation guide guides, Cisco IOS configuration and command references, system error messages, and feature modules, which are updates to the Cisco IOS documentation. Documentation is available as printed manuals or electronic documents, except for feature modules, which 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.

Platform Specific Documents

- *Cisco AS5300 Universal Access Server Hardware Installation Guide*
- *Cisco AS5300 Universal Access Server Software Configuration Guide*
- *New and Changed Cisco IOS Commands for the Cisco AS5300*
- Modem information—firmware/portware release notes, FAQs (frequently asked questions)
- *Regulatory Compliance and Safety Information*
- 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: Access Servers: Cisco AS5300**. For more information, refer to “Documentation CD-ROM,” page 19.
- On the Documentation CD, the path is **Access Servers and Access Routers: Access Servers: Cisco AS5300**. For more information, refer to “Documentation CD-ROM,” page 19.

Software 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(6)T, located on Cisco Connection Online (CCO) and the Documentation CD-ROM.
- Product bulletins; the path from Cisco Connection Online follows:
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.

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

Table 7 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> 	<ul style="list-style-type: none"> 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> 	<ul style="list-style-type: none"> 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> 	<ul style="list-style-type: none"> 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> 	<ul style="list-style-type: none"> Apollo Domain Banyan VINES DECnet ISO CLNS XNS

Books	Chapter Topics
<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 Virtual LAN (VLAN) Switching and Routing
<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> 	

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:

- **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**—such as MultiNet & Cisco Suite 100, Network Management, and Cisco IOS Software Bulletins.
- **Special Collections**—Other Helpful Documents, Frequently Asked Questions, Security Advisories, References & RFCs, and Case Studies.

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](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

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package 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>.

If you are reading Cisco product documentation on the World Wide Web, you can submit comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco. We appreciate your comments.

This document is to be used in conjunction with the *Related Documentation* section.

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