



Doc. No. 78-5197-01

# Release Notes for Cisco IOS Release 11.3(2)T Software Feature Packs—Cisco AS5300 Access Servers

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**April 20, 1998**

These release notes discuss the Cisco IOS Release 11.3(2)T feature packs for Cisco AS5300 access servers. These are the product numbers for the supported features packs:

- CD53-C-11.3= (Cisco AS5300 IP Feature Pack)
- CD53-CP-11.3= (Cisco AS5300 IP Plus Feature Pack)
- CD53-B-11.3= (Cisco AS5300 Desktop Feature Pack)
- CD53-BP-11.3= (Cisco AS5300 Desktop Plus Feature Pack)
- CD53-A-11.3= (Cisco AS5300 Enterprise Feature Pack)
- CD53-AP-11.3= (Cisco AS5300 Enterprise Plus Feature Pack)

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**Note** The feature packs discussed in this document contain Cisco IOS Release 11.3(2)T software images and Router Software Loader (RSL) Version 7.0.

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**Note** Before running RSL, read the sections Installing Software Images Using RSL, page 10.

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## Cisco Feature Packs and Memory Requirements

This section explains the following:

- What Is a Feature Pack?
- Cisco IOS Release 11.3(2)T 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 Software license, for using 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(2)T 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 AS5300 access server.

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 access server 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 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	RSL Installer Description
CD53-C-11.3=	Cisco AS5300 IP Feature Pack Release 11.3(2)T	IP c5300-i-mz.113-2.T	80256702	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 IP feature set 11.3(2)T
CD53-CP-11.3=	Cisco AS5300 IP Plus Feature Pack Release 11.3(2)T	IP Plus c5300-is-mz.113-2.T	80256402	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 IP Plus feature set 11.3(2)T
CD53-B-11.3=	Cisco AS5300 Desktop Feature Pack Release 11.3(2)T	Desktop c5300-d-mz.113-2.T	80256802	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Desktop feature set 11.3(2)T
CD53-BP-11.3=	Cisco AS5300 Desktop Plus Feature Pack Release 11.3(2)T	Desktop Plus c5300-ds-mz.113-2.T	80256502	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Desktop Plus feature set 11.3(2)T
CD53-A-11.3=	Cisco AS5300 Enterprise Feature Pack Release 11.3(2)T	Enterprise c5300-j-mz.113-2.T	80256602	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Enterprise feature set 11.3(2)T
CD53-AP-11.3=	Cisco AS5300 Enterprise Plus Feature Pack Release 11.3(2)T	Enterprise Plus c5300-js-mz.113-2.T	80256302	8 MB	32 MB	4 MB	16 MB	Cisco AS5300 Enterprise Plus feature set 11.3(2)T

**Table 2 Cisco AS5300 Memory and Upgrade Options**

Type of Memory	Default	Upgrade Options
Boot Flash Upgrade	4 MB	
Flash Memory	16 MB	
DRAM	32 MB	32-MB to 64-MB upgrade: MEM-64M-AS53
Shared DRAM	16 MB	

## Cisco IOS Feature Sets for the Cisco AS5300 Access Server

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 Matrix

The feature set matrix (see Table 3) shows the new feature set organization and lists which feature sets are available on the Cisco AS5300 for Cisco IOS Release 11.3(2)T. The matrix uses the following symbols:

<b>Feature Set Matrix Symbol</b>	<b>Description</b>
Basic	This feature is offered in the basic feature set.
Plus	This feature is offered in the Plus feature set
Encrypt	This feature is offered in the encryption feature sets, which consist of 40-bit (Plus 40) or 56-bit (Plus 56) data encryption feature sets.

**Table 3 Feature Set Matrix for the Cisco 4000 Series**

<b>Standard Feature Sets</b>	<b>Cisco AS5300 Access Servers</b>
IP	Basic, Plus
Desktop (IP/IPX/AppleTalk/DEC)	Basic, Plus
Enterprise	Basic, Plus

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](mailto:export@cisco.com).

### Feature Set Table

To determine what features are available with each feature set, see Table 4. The table summarizes what features you can use when running a specific feature set on the Cisco AS5300 access server for Cisco IOS Release 11.3(2)T. The feature set table uses the following symbols:

<b>Feature Set Table Symbol</b>	<b>Description</b>
Basic	This feature is offered in the feature set.
—	This feature is not offered in the feature set.
Plus	This feature is offered in the Plus feature set

Feature Set Table Symbol	Description
Encrypt	This feature is offered in the Encryption feature sets, which consist of 40-bit (Plus 40) or 56-bit (Plus 56) data encryption feature sets.

**Table 4 Cisco AS5300 Access Server Software Feature Sets**

Features	Feature Set		
	IP Routing	Desktop (IP/IPX/AppleTalk/DEC)	Enterprise
<b>LAN Support</b>			
Apollo Domain	—	—	Yes
AppleTalk 1 and 2 <sup>1</sup>	—	Yes	Yes
Banyan VINES	—	—	Yes
Concurrent routing and bridging (CRB)	Yes	Yes	Yes
DECnet IV	—	Yes	Yes
DECnet V	—	—	Yes
GRE	Yes	Yes	Yes
Integrated routing and bridging (IRB) <sup>2</sup>	Yes	Yes	Yes
IP	Yes	Yes	Yes
LAN extension host	Yes	Yes	Yes
Multiring	Yes	Yes	Yes
Novell IPX <sup>3</sup>	—	Yes	Yes
Open System Interconnect (OSI)	—	—	Yes
Source-route bridging (SRB)	—	—	Yes
Transparent and translational bridging	Yes	Yes	Yes
XNS	—	—	Yes
<b>WAN Services</b>			
Combinet Packet Protocol (CPP)	Yes	Yes	Yes
Dialer profiles	Yes	Yes	Yes
Half bridge/half router for CPP and PPP	Yes	Yes	Yes
HDLC	Yes	Yes	Yes
IPXWAN 2.0	—	Yes	Yes
ISDN <sup>4</sup>	Yes	Yes	Yes
Multichassis Multilink PPP (MMP) <sup>5</sup>	Plus	Plus	Plus
PPP <sup>6</sup>	Yes	Yes	Yes
Virtual Private Dial-up Network (VPDN)	Plus	Plus	Plus
<b>WAN Optimization</b>			
Bandwidth-on-demand	Yes	Yes	Yes
Custom and priority queuing	Yes	Yes	Yes

**Table 4 Cisco AS5300 Access Server Software Feature Sets (Continued)**

Features	Feature Set		
	IP Routing	Desktop (IP/IPX/AppleTalk/DEC)	Enterprise
Dial backup	Yes	Yes	Yes
Dial-on-demand	Yes	Yes	Yes
Header, link and payload compression	Yes	Yes	Yes
Snapshot routing	Yes	Yes	Yes
Weighted fair queuing	Yes	Yes	Yes
<b>IP Routing</b>			
BGP	Yes	Yes	Yes
BGP4 <sup>7</sup>	Yes	Yes	Yes
EGP	Yes	Yes	Yes
Enhanced IGRP	Yes	Yes	Yes
Enhanced IGRP Optimizations	Yes	Yes	Yes
ES-IS	—	—	Yes
IGRP	Yes	Yes	Yes
IS-IS	—	—	Yes
Named IP Access Control List	Yes	Yes	Yes
Network Address Translation (NAT)	Plus	Plus	Plus
NHRP	Yes	Yes	Yes
On Demand Routing (ODR)	Yes	Yes	Yes
OSPF	Yes	Yes	Yes
OSPF Not-So-Stubby-Areas (NSSA)	Yes	Yes	Yes
OSPF On Demand Circuit (RFC 1793)	Yes	Yes	Yes
PIM	Yes	Yes	Yes
Policy-based routing	Yes	Yes	Yes
RIP	Yes	Yes	Yes
RIP Version 2	Yes	Yes	Yes
<b>Other Routing</b>			
AURP	—	Yes	Yes
IPX RIP	—	Yes	Yes
NLSP	—	Yes	Yes
RTMP	—	Yes	Yes
SMRP	—	Yes	Yes
S RTP	—	—	Yes
<b>Multimedia and Quality of Service</b>			
Generic traffic shaping	Yes	Yes	Yes
Resource Reservation Protocol (RSVP)	Yes	Yes	Yes

**Table 4 Cisco AS5300 Access Server Software Feature Sets (Continued)**

Features	Feature Set		
	IP Routing	Desktop (IP/IPX/AppleTalk/DEC)	Enterprise
<b>Management</b>			
HTTP Server	Yes	Yes	Yes
Modem Management	Plus	Plus	Plus
RMON events and alarms <sup>8</sup>	Yes	Yes	Yes
RMON full	Plus	Plus	Plus
SNMP	Yes	Yes	Yes
Telnet	Yes	Yes	Yes
<b>Security</b>			
Access lists	Yes	Yes	Yes
Access security	Yes	Yes	Yes
Extended access lists	Yes	Yes	Yes
Kerberized login	—	—	Yes
Kerberos V client support	—	—	Yes
Lock and key	Yes	Yes	Yes
MAC security for hubs	Yes	Yes	Yes
MD5 routing authentication	Yes	Yes	Yes
RADIUS	Yes	Yes	Yes
TACACS+ <sup>9</sup>	Yes	Yes	Yes
<b>IBM Support</b>			
APPN	—	—	—
BAN for SNA Frame Relay support	Plus	Plus	Yes
Bisync	Plus	Plus	Yes
Caching and filtering	Plus	Plus	Yes
DLSw+ <sup>10</sup>	Plus	Plus	Yes
Downstream PU concentration (DSPU)	Plus	Plus	Yes
Native Client Interface Architecture (NCIA) Server	Plus	Plus	Yes
NetView Native Service Point	Plus	Plus	Yes
QLLC	Plus	Plus	Yes
Response Time Reporter (RTR)	Plus	Plus	Yes
SDLC integration	Plus	Plus	Yes
DLSw (RFC 1795)	Plus	Plus	Yes
SDLC transport (STUN)	Plus	Plus	Yes
SDLC-to-LAN conversion (SDLLC)	Plus	Plus	Yes
SNA and NetBIOS WAN optimization via local acknowledgment	Plus	Plus	Yes
SRB/RSRB <sup>11</sup>	Plus	Plus	Yes

**Table 4 Cisco AS5300 Access Server Software Feature Sets (Continued)**

Features	Feature Set		
	IP Routing	Desktop (IP/IPX/AppleTalk/DEC)	Enterprise
SRT	Plus	Plus	Yes
TG/COS	—	—	Yes
TN3270	—	—	Yes
<b>Protocol Translation</b>			
LAT	—	—	Yes
Rlogin	—	—	Yes
<b>Remote Node<sup>12</sup></b>			
ARAP 1.0/2.0	—	Yes	Yes
Asynchronous master interfaces	Yes	Yes	Yes
ATCP	—	Yes	Yes
CHAP	Yes	Yes	Yes
CSLIP	Yes	Yes	Yes
DHCP	Yes	Yes	Yes
IP pooling	Yes	Yes	Yes
IPX and ARAP on virtual async interfaces	—	—	Yes
IPXCP	—	Yes	Yes
MacIP	—	Yes	Yes
NAS	—	—	Yes
NetBEUI over PPP	Yes	Yes	Yes
SLIP	Yes	Yes	Yes



**Table 4 Cisco AS5300 Access Server Software Feature Sets (Continued)**

Features	Feature Set		
	IP Routing	Desktop (IP/IPX/AppleTalk/DEC)	Enterprise
<b>Terminal Services<sup>12</sup></b>			
LAT <sup>13</sup>	—	—	Yes
Rlogin	Yes	Yes	Yes
Telnet	Yes	Yes	Yes
TN3270	—	—	Yes
Xremote	—	—	Yes

1. Includes AppleTalk load balancing.
2. IRB supports IP, IPX, and AppleTalk; it is supported for transparent bridging, but not for SRB; it is supported on all media-type interfaces except X.25 and ISDN bridged interfaces; and IRB and concurrent routing and bridging (CRB) cannot operate at the same time.
3. The Novell IPX feature includes display SAP by name, IPX Access Control List violation logging, and plain-English IPX access lists.
4. ISDN support includes calling line identification (ANI), X.25 over the B channel, ISDN subaddressing, and applicable WAN optimization features.
5. In Plus images only
6. PPP includes support for LAN protocols supported by the feature set, address negotiation, PAP and CHAP authentication, and PPP compression, and Multilink PPP.
7. BGP4 includes soft configuration, multipath support, and prefix filtering with inbound route maps.
8. The RMON events and alarms groups are supported on all interfaces. Full RMON support is available with the Plus feature sets.
9. TACACS+ Single Connection and TACACS+ SENDAUTH enhancements are supported.
10. Cisco IOS Release 11.2 introduces several DLSw+ enhancements available in the Plus, Plus 40, and Plus 56 feature sets.
11. SRB/RSRB is fast switched. This enhancement is on by default, but can be disabled.
12. Supported on access servers (with limited support on router auxiliary ports).
13. Use of LAT requires a terminal license (FR-L8-10.X= for an 8-user license or FR-L16-10.X= for a 16-user license).

## 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 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.”

See the sections “Cisco Connection Online” and “Documentation CD-ROM” for information on accessing customer documentation.

## 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, which is set to 25 seconds, in the Options dialog box, especially if one of the following situations applies:

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

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- 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, 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.

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

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**Note** If you enter **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.

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## 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.

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**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.

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- 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.

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

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

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- 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? 80256702.bin
```

This example specifies the DOS image name of the IP feature set for a Cisco AS5300 access server, as listed in Table 1.

- 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 1 in the section, “Cisco Feature Packs and Memory Requirements” for the UNIX image filename.

```
Destination file name [80256702.bin]? c5300-i-mz.113-2.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.

## 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 AS5300-Specific Documentation
- Cisco IOS Documentation Set and Related Supporting Documents
- Software Configuration Tips on the Cisco TAC Home Page

Cisco AS5300-Specific Documentation

The following documents are specific to the Cisco AS5300 access server:

- *Cisco AS5300 Software Configuration Guide*
- *Cisco AS5300 Manager Guide*
- *Regulatory Compliance and Safety Information*

Cisco IOS Documentation Set and Related Supporting Documents

The following documents apply to the Cisco AS5300 access server:

- *Release Notes for Cisco IOS Release 11.3*
- *Product-Specific Release Notes*
- *Feature Guide for Cisco IOS Release 11.3 T*
- *Cisco IOS Release 11.3(2)T New Feature Documentation*
- *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(2)T Caveats*

For details about the features introduced in these release notes, refer to the *Feature Guide for Cisco IOS Release 11.3 T*.

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

Books	Chapter Topics
<ul style="list-style-type: none"><li>• <i>Configuration Fundamentals Configuration Guide</i></li><li>• <i>Configuration Fundamentals Command Reference</i></li></ul>	<ul style="list-style-type: none"><li>Access Server and Router Product Overview</li><li>User Interface</li><li>System Images and Configuration Files</li><li>Using ClickStart, AutoInstall, and Setup</li><li>Interfaces</li><li>System Management</li></ul>

<b>Books</b>	<b>Chapter Topics</b>
<ul style="list-style-type: none"> <li>• <i>Security Configuration Guide</i></li> <li>• <i>Security Command Reference</i></li> </ul>	Network Access Security Terminal Access Security Accounting and Billing Traffic Filters Controlling Router Access Network Data Encryption with Router Authentication
<ul style="list-style-type: none"> <li>• <i>Access Services Configuration Guide</i></li> <li>• <i>Access Services Command Reference</i></li> </ul>	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
<ul style="list-style-type: none"> <li>• <i>Wide-Area Networking Configuration Guide</i></li> <li>• <i>Wide-Area Networking Command Reference</i></li> </ul>	ATM Dial-on-Demand Routing (DDR) Frame Relay ISDN LANE PPP for Wide-Area Networking SMDS X.25 and LAPB
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 1</i></li> <li>• <i>Network Protocols Command Reference, Part 1</i></li> </ul>	IP IP Routing
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 2</i></li> <li>• <i>Network Protocols Command Reference, Part 2</i></li> </ul>	AppleTalk Novell IPX
<ul style="list-style-type: none"> <li>• <i>Network Protocols Configuration Guide, Part 3</i></li> <li>• <i>Network Protocols Command Reference, Part 3</i></li> </ul>	Apollo Domain Banyan VINES DECnet ISO CLNS XNS

Books	Chapter Topics
<ul style="list-style-type: none"> <li>• <i>Bridging and IBM Networking Configuration Guide</i></li> <li>• <i>Bridging and IBM Networking Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>Transparent Bridging</li> <li>Source-Route Bridging</li> <li>Remote Source-Route Bridging</li> <li>DLSw+</li> <li>STUN and BSTUN</li> <li>LLC2 and SDLC</li> <li>IBM Network Media Translation</li> <li>DSPU and SNA Service Point Support</li> <li>SNA Frame Relay Access Support</li> <li>APPN</li> <li>NCIA Client/Server Topologies</li> <li>IBM Channel Attach</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Software Command Summary</i></li> <li>• <i>Access Services Quick Configuration Guide</i></li> <li>• <i>System Error Messages</i></li> <li>• <i>Debug Command Reference</i></li> <li>• <i>Cisco Management Information Base (MIB) User Quick Reference</i></li> </ul>	

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**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**.

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## 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](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 AS5300-Specific Documentation

- Using a web browser, follow this path on CCO:  
*Software & Support, Cisco Documentation, Access Servers and Access Routers, Access Servers, Cisco AS5300, Cisco IOS Software, Release Notes for Cisco AS5300 for Cisco IOS Release 11.3(2)T.*
- On the Documentation CD-ROM, follow this path:  
*Cisco Product Documentation, Access Servers and Access Routers, Access Servers, Cisco AS5300, Cisco IOS Software, Release Notes for Cisco AS5300 for Cisco IOS Release 11.3(2)T..*

### 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 the Cisco 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](http://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](mailto:cco-help@cisco.com). For additional information, contact [cco-team@cisco.com](mailto:cco-team@cisco.com).

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**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](mailto: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](mailto:cs-rep@cisco.com).

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## 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>.

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This document is to be used in conjunction with the *Cisco IOS 11.3 Configuration Guides* and *Command References* publication.

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