Text Part Number: 78-6056-04

Cisco 2600 Series and 3600 Series Analog Modem Firmware Upgrade Configuration Note

Product Numbers: **NM-8AM, NM-8AM=**
NM-8AM-J, NM-8AM-J=
NM-16AM, NM-16AM=
NM-16AM-J, NM-16AM-J=

This document describes how to upgrade modem firmware for Cisco 2600 series and Cisco 3600 series analog modem network modules.

Modem firmware is downloaded to the modems at startup. A version of firmware is always bundled with the Cisco IOS image. A separate file can be stored in Flash memory to override this firmware with one that contains newer features. If the router finds more than one version of modem firmware at startup, it automatically loads the latest version. Table 1 shows the minimum firmware version and minimum Cisco IOS release needed to support operation in the specified countries.

Table 1 Minimum Firmware Version and Cisco IOS Release by Country

Country	Firmware Version	Cisco IOS Release
Argentina	1.0.0	11.3(4)T
Australia	1.0.1	11.3(5)T
Austria	1.0.1	11.3(5)T
Belgium	1.0.1	11.3(5)T
Canada	1.0.0	11.3(4)T
Denmark	1.0.1	11.3(5)T
Finland	1.0.1	11.3(5)T
France	1.0.1	11.3(5)T
Germany	1.0.1	11.3(5)T
Great Britain	1.0.1	11.3(5)T
Greece	1.0.1	11.3(5)T
Iceland	1.0.1	11.3(5)T

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

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Table 1 Minimum Firmware Version and Cisco IOS Release by Country

Country	Firmware Version	Cisco IOS Release
India	1.0.0	11.3(4)T
Indonesia	1.0.0	11.3(4)T
Ireland	1.0.1	11.3(5)T
Italy	1.0.1	11.3(5)T
Japan	1.0.1	11.3(5)T
Latin America	1.0.0	11.3(4)T
Luxembourg	1.0.1	11.3(5)T
Netherlands	1.0.1	11.3(5)T
Malaysia	1.0.0	11.3(4)T
New Zealand	1.0.1	11.3(5)T
Philippines	1.0.0	11.3(4)T
Portugal	1.0.1	11.3(5)T
Singapore	1.0.1	11.3(5)T
South America	1.0.0	11.3(4)T
Spain	1.0.1	11.3(5)T
Sweden	1.0.1	11.3(5)T
Thailand	1.0.0	11.3(4)T
United States	1.0.0	11.3(4)T

The Cisco Dialout Utility, Release 2.0, requires a minimum modem firmware revision of 1.2.0 and one of the following Cisco IOS releases:

- Cisco IOS Release 11.3(10)T or later releases in the 11.3T series
- Cisco IOS Release 12.0(4)T or later releases in the 12.0T series
- Cisco IOS Release 12.0(5) or later releases in the 12.0 series

Use this document in conjunction with your router installation and configuration guide, the *Network Module Hardware Installation Guide*, the *Software Configuration Guide*, the *Regulatory Compliance and Safety Information* document for your router, analog modem firmware release notes, and the Cisco IOS configuration guides and command references.

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.

If you have questions or need help, refer to the "Cisco Connection Online" section on page 6 for further information.

This document contains the following sections:

Determining Your Firmware Version

To find out what modem firmware version you have now, enter the **show modem version** command at the EXEC prompt, `Router>` or `Router#`:

```
Router> show modem version
Slot1: MCOM Analog Integrated Modem Firmware
Source: slot1:1:c3600-2600-analog-fw.1.2.0.bin
Boot firmware: 1.1.5
MIMIC firmware: 1.3.3
Modem firmware: 2.3.8
DSP firmware: 0.0.2
```

Table 2 shows how the "modem firmware" line of the command output corresponds to the overall modem firmware version.

Table 2 Modem Firmware Versions

Command Output	Modem Firmware Version
2.2.44	1.0.0
2.2.46	1.0.1
2.2.47	1.0.2
2.2.48	1.0.3
2.3.8	1.2.0

If you need to upgrade your modem firmware version, you can do it in either of the following ways:

- Download the new file from Cisco Connection Online (CCO), and copy it to your router's internal (system) Flash memory.
- Download the new file from CCO, and copy it to a Flash memory PC Card (Cisco 3600 series only).

Downloading the New Modem Firmware Version

New modem firmware versions are available without charge at the following URL:

`http://www.cisco.com/public/sw-center/access/x600-analog.shtml`

Filenames begin with "c3600-2600-analog-fw."

After downloading the file, transfer it to a TFTP, rcp, or MOP server on your network. If you do not have access to a network server, copy the file to a local or remote computer.

Copying Modem Firmware to Flash Memory

You can copy your downloaded firmware from a network server into the same router Flash memory partition that holds the Cisco IOS image, or into a different partition.

If you use the same partition:

- You might not have enough Flash memory storage for the file.
- You might inadvertently erase the Cisco IOS image. We strongly recommend that you back up the image before upgrading the firmware.
- If you later upgrade to a new Cisco IOS release, you might overwrite your preferred firmware version and have to copy it again.

If you use a different partition, you avoid these problems, but:

- You have to use an entire partition for the modem firmware. System Flash memory can have either 4- or 8-MB partitions. A Flash memory card can have 1-MB partitions. Modem firmware occupies much less than 1 MB.

To show information about system Flash memory partitions, including filenames and available space, enter the **show flash:** command from EXEC mode. To show information about Flash memory card partitions, enter the **show slot0:** or **show slot1:** command. To be sure that you have enough space, check the size of the file before you download it.

Partitioning Flash

If you want to partition Flash memory, enter the following command in global configuration mode:

```
Router(config)# partition device: [number-of-partitions][partition-size]
```

where *device***:** is **flash:** for system Flash memory, and **slot0:** or **slot1:** for the two PC Card slots on a Cisco 3600 series router. This command succeeds only if the system has at least two banks of Flash memory and the partitioning does not cause an existing file to be split across the partitions.

The number of partitions that you can create equals the number of banks in the Flash memory device. Enter the **show** *device***: all** command to view the number of banks.

The number of partition size entries must equal the number of specified partitions. For example, **partition slot0: 2 8 8** configures two partitions, each 8 MB in size. If the partition size is not specified, partitions of equal size are created.

Backing Up the Existing Cisco IOS Image

If you plan to copy the new file to the same partition that holds your Cisco IOS image, we strongly recommend first backing up the image to a TFTP or rcp network server.

Note The rcp transport mechanism provides faster performance and more reliable delivery of data than TFTP. In some implementations of TFTP, you must first create a "dummy" file on the TFTP server and give it read, write, and execute permissions before copying a file over it.

To back up the Cisco IOS image, enter the **copy** command:

```
Router# copy device:[partition-number:][filename] tftp | rcp
```

To stop the copy process, press **Ctrl**-**^**.

The following example copies the file “your-ios” from partition 4 of system Flash memory to the TFTP server at 172.23.1.129. Because all required information is specified in the command line, the software does not display Flash memory contents. The file is saved with the name “c3640-j-mz” in the dirt/images directory relative to the directory of the remote username.

```
Router# copy flash:4:your-ios tftp

Address or name of remote host [172.23.1.129]?
Destination file name [your-ios]? dirt/images/c3640-j-mz
Verifying checksum for 'your-ios' (file # 2)...  OK
Copy 'your-ios' from Flash to server
  as 'dirt/images/c3640-j-mz'? [yes/no] yes
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Upload to server done
Flash device copy took 00:00:20 [hh:mm:ss]
```

An exclamation point (!) indicates that the copy process is taking place. Each exclamation point (!) indicates that ten packets have been transferred successfully.

For more information about the **copy** command, see the “Loading and Maintaining System Images and Microcode” chapter in the *Configuration Fundamentals Configuration Guide* for your Cisco IOS release.

Copying Modem Firmware to Flash using TFTP, rcp, or MOP

To copy the new firmware from a TFTP, rcp, or MOP network server to the router, follow this procedure:

Step 1 Enter one of the following EXEC commands to verify that you have room in Flash memory for the firmware file:

```
Router# show flash:
Router# show slot0:
Router# show slot1:
```

Step 2 Copy the firmware file from the server:

```
Router# copy tftp | rcp | mop device:[partition-number:][filename]
```

Caution If you are copying firmware to the partition that contains your Cisco IOS image, be sure to answer **no** when asked “Erase flash device before writing?” Otherwise you will erase the Cisco IOS image.

Step 3 Verify that the file has been successfully copied to Flash memory, and that your Cisco IOS image is still in Flash memory, by entering the appropriate **show** command from Step 1. If the Cisco IOS image is no longer in Flash memory, restore it from backup using the **copy** command before rebooting the router.

Step 4 Reboot the router by entering the **reload** command:

```
Router# reload
```

Step 5 It may take several minutes for the router to reboot. When the `Router>` prompt appears, enter the **show modem version** command to verify that the new firmware version has been downloaded to the modems. Refer to the “Determining Your Firmware Version” section on page 3.

The following example copies the file "c3600-2600-analog-fw.1.2.0.bin" on the TFTP server at 172.23.1.129 to the first partition of internal Flash memory.

```
Router# copy tftp flash:1:c3600-2600-analog-fw.1.2.0.bin

System flash directory, partition 1:
File  Length   Name/status
  1   1711088  current-ios
[1711152 bytes used, 2483152 available, 4194304 total]

Address or name of remote host [172.23.1.129]?
Source file name [c3600-2600-analog-fw.1.2.0.bin]?
Accessing file 'c3600-2600-analog-fw.1.2.0.bin' on 172.23.1.129...
Loading c3600-2600-analog-fw.1.2.0.bin from 172.23.1.129 (via Ethernet1/0): ! [OK]
Erase flash device before writing? [confirm] no
```

Copying Modem Firmware to Flash using Xmodem or Ymodem

If you do not have access to a network server, you can copy the firmware from a local or remote computer using the Xmodem or Ymodem protocol:

```
Router# copy xmodem | ymodem device:[partition-number:][filename]
```

For further information about copying files using Xmodem or Ymodem, see the "Loading and Maintaining System Images and Microcode" chapter in the *Configuration Fundamentals Configuration Guide* for your Cisco IOS release.

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com
- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

Use this document with your router installation guide, the *Network Module Hardware Installation Guide*, the *Software Configuration Guide*, the *Regulatory Compliance and Safety Information* document, analog modem firmware release notes, and the Cisco IOS configuration guides and command references.

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