

**ding the Modem Firmware/Portware in Cisco Routers with Intern**

# Table of Contents

<b><u>Upgrading the Modem Firmware/Portware in Cisco Routers with Internal Digital Modems</u></b> .....	<b>1</b>
<u>Introduction</u> .....	1
<u>Modem Firmware/Portware Upgrade Procedure</u> .....	1
<u>Cisco AS5xxx</u> .....	2
<u>Cisco 3600</u> .....	3
<u>Related Information</u> .....	4

# Upgrading the Modem Firmware/Portware in Cisco Routers with Internal Digital Modems

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## Introduction

### Modem Firmware/Portware Upgrade Procedure

Cisco AS5xxx

Cisco 3600

### Related Information

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## Introduction

This is a step-by-step guide to help in the firmware/portware upgrade process for routers with digital modems. The document assumes you already have a Trivial File Transfer Protocol (TFTP) server with the new modem firmware/portware images you want to load onto your router. Alternatively, the newer File Transfer Protocol (FTP) copy can be used.

If you need more detailed information on the upgrading process, see the Software Installation section of the hardware you are using.

**Note:** This document does not cover the procedure to upgrade the portware for analog modems in the NM-8AM and NM-16AM modules. Refer to Cisco 2600 Series and 3600 Series Analog Modem Firmware Upgrade Configuration Note for more information on upgrading the code on analog modem modules.

## Modem Firmware/Portware Upgrade Procedure

Complete the following steps to upgrade the firmware/portware in your modems:

1. Copy the firmware/portware file into flash from a TFTP server. (**Do not erase the flash**)

Uploading the software from a TFTP server is done in much the same way as loading new Cisco IOS<sup>®</sup> software.

```
router# copy tftp flash
```

For more information, refer to the Software Installation section of the hardware you are using.

In Cisco IOS Software Release 11.3T, a new command has been introduced to use FTP instead of TFTP. For example:

```
router# copy ftp://CCOUSERNAME:CCOPASSWORD@ftp.cisco.com/cisco/access/modems/mica/mica-mod
```

Whichever method is used, a **show flash** command lists the files currently stored locally.

Look for the new firmware/portware image to verify its presence. If the new file is not seen, go back and make sure nothing went wrong during the transfer.

2. Load the new firmware/portware into the modems/universal digital signal processors (DSPs).

It is possible to have multiple versions of portware loaded in Flash memory. The firmware version that will be used is the bundled firmware that comes with the Cisco IOS software that is loaded (unless otherwise explicitly configured by the administrator).

Different firmware/portware upgrade scenarios are shown below:

## Cisco AS5xxx

- For Cisco IOS Software releases 12.0(5) T and earlier on the AS5200/AS5300:

- a. Enter the **copy flash modem** command. The router prompts you to enter which modems you want to upgrade. Most of the time you want to upgrade all of them, but this feature is useful if the Access Server is running more than one type of modem. In this example, modems 12 through 23 on the second modem carrier card are being upgraded:

```
Modem Numbers ([-/] | group | all)? 2/12-2/23
```

- b. The router prompts you to enter the file you want to copy to the modems. Depending on the version of Cisco IOS Software, you may need to tell the system which directory or memory area the file is in. If you are not sure where the file is located, use the **show flash** command to find the file. In this example, the file is in Flash located in the images directory.

```
Name of file to copy? images/c5300_portware1-1
```

- c. The router prompts you to enter the type of service you want or the method you want to use to upgrade the modems. Bear in mind that MICA modems have to be upgraded in groups of six (that's how many modems are built onto each modem card). Choosing the reboot service delays the upgrade until the next reboot of the system. The busyout service tells the router to busyout modems on a given modem card until all six of the modems become free (it does not disconnect users that are connected). Be careful using the busyout service on the entire system (for example, choosing Modem Numbers: **all**) if there are a large number of users on the system. If even one user is on each of the modem cards, all the modems will be marked busy until those few users disconnect. The only way to clear that situation is to start disconnecting users with the **clear** command.

```
Type of service [busyout/reboot] busyout
```

- For Cisco IOS Software releases later than 12.0(5) T on the AS5xxx:

Beginning in some versions of Cisco IOS Software Release 12.0(5) T, the **copy flash modem** command is no longer available. All Cisco AS5xxx Access Servers support the new **spe** command for downloading firmware to internal modems. For example:

```
router# configure terminal
router(config)# spe 1/0 2/7
!-- This is used to access the SPE configuration mode and specify
!-- a range of modems to download firmware into.
router(config-spe)# firmware location flash:mica-modem-pw.2.7.3.0.bin
```

Syntax Description

**firmware location** {**system** | **flash**}: *filename*

<b>system</b>	The router loads the firmware from a built-in file within the Cisco IOS image.
<b>flash</b>	The router loads the firmware from the Flash NVRAM located within the router.
<i>filename</i>	The name of the desired firmware file (for example mica-modem-pw.2.7.3.0.bin, ). If system is specified, enter the path to the filename you want to download.

Beware, however, that as soon as a firmware is specified, the downloading begins. As mentioned earlier with the "Type of service" for the AS5xxx servers, specifying all the modems and then going into an upgrade process is not a good idea on a busy access server. The modems that are not busy will all be marked busy and the server will wait until all the modems on each of the given cards are free before upgrading the multiple-port cards. The only way to clear this situation is to start disconnecting users with the **clear** command.

Normally groups of modems are specified with the **spe slot/spe\_begin slot/spe\_end** statements and upgrades are done in a rolling fashion.

Use the **show modem version** and **show spe version** commands to verify that the modems are running the portware version you specified.

For more information about the Cisco IOS filesystem, see Using the Cisco IOS File System. More details on modem operations can be found in the online reference.

## Cisco 3600

- **For Cisco IOS Software releases 12.0(5) and earlier on the 3600:**

- Enter the **reload** command.
- Copy the modem firmware that comes bundled with the Cisco IOS Software by using these commands:

```
router# show modem bundled-firmware !--- shows the bundled firmware version
router# copy ios-bundled modem
```

- **For Cisco IOS Software releases later than 12.0(5) on the Cisco 3600:**

For the Cisco 3600 Series routers, the router must be reloaded for the modem portware to be loaded.

The process for upgrading the modem code is as follows:

- Load the desired portware into flash as described in the section Copy the file into Flash or boot Flash from a TFTP server.
- Reload the router. When the router reloads, it will load the latest portware available in flash. Hence, if there are multiple versions of portware in flash (including the portware bundled with the IOS), the router will load the only the latest.

**Note:** If the modem portware version bundled with IOS is newer version than the portware file in flash, then the router will load the modem portware bundled with IOS (since it is a

higher version) and not the portware file that was saved in flash.

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## Related Information

- [General Cisco IOS Software Technical Tips](#)
  - [How to Download Portware](#)
  - [Managing Modems](#)
  - [Cisco 2600 Series and 3600 Series Analog Modem Firmware Upgrade Configuration Note](#)
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