

Cisco IOS Software Upgrade Procedure for Cisco uBR9xx Cable Modems Using Console or Telnet Access

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Introduction

This document takes you through a step-by-step procedure for upgrading your Cisco uBR9xx Series, and explains how to install Cisco IOS® software onto "Run from RAM" Cisco routers using a Trivial File Transfer Protocol (TFTP) server or Remote Copy Protocol (RCP) server application.

Prerequisites

Requirements

1. Install a TFTP Server.

A TFTP server or a RCP server application must be installed on a TCP/IP-ready workstation or PC. Once the application is installed, a minimal level of configuration must be performed.

First, the TFTP application must be configured to operate as a TFTP *server* as opposed to a TFTP *client*.

Second, the outbound file directory must be specified. This is the directory in which the Cisco IOS Software images are stored (see step 2 below). Most TFTP applications provide a setup routine to assist in these configuration tasks.

Note: A number of TFTP or RCP applications are available from independent software vendors or as shareware from public sources on the World Wide Web.

Third, download a TFTP Server. There are many TFTP servers available, and they can be easily found by searching for "tftp server" on your favorite Internet search engine. Cisco does not specifically recommend any particular TFTP implementation.

2. Download the IOS image onto your workstation

You also need to have a valid Cisco IOS Software image for your router. Make sure the image supports your hardware and software features, and that your router has enough memory to run it. If you do not yet have a Cisco IOS Software image, or if you are not sure the image you have meets all the necessary requirements, see [How to Choose a Cisco IOS Software Release](#).

You should now have a TFTP server installed, and a valid Cisco IOS Software image.

Components Used

The information in this document is based on the software version below.

- Cisco IOS Software Release 12.2 or later.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Software Installation or Upgrade Procedure

Note: For RCP applications, substitute RCP for every occurrence of TFTP. For example, use the **copy rcp flash** command instead of the **copy tftp flash** command.

Follow the instructions provided below:

1. Establish a console session to the router.

This can be done with a direct console connection or a virtual Telnet connection. A direct console connection is preferred over a Telnet connection because a Telnet connection gets lost during the reboot phase of the software installation. The console connection is made with a rolled cable (usually a flat black cable), and connects the console port of the router to the COM port of the PC. Open Hyperterminal on the PC, and use the following settings:

```
Speed 9600 bits per second
8 databits
0 parity bits
1 stop bit
No Flow Control
```

2. Verify that the TFTP server has IP connectivity to the router.

Check the IP addresses of the TFTP server and the router/access server targeted for the TFTP software upgrade to be sure the addresses are within the same range. Ping the router/access server to verify that a network connection exists between them.

3. Copy the new software image from the TFTP server to the router/access server using the procedure below:

```
uBR924> enable
Password: password
uBR924#
uBR924# copy tftp flash
```

Note: If, once connected to the router through the console port, you get a ">" or "rommon >" prompt, your router is in ROM monitor (ROMmon) mode.

If necessary, you can copy an image from one device to another.

Note: We recommend that you keep a copy of the router/access server configuration before upgrading the router/access server software. The upgrade itself does not affect the configuration (which is stored in nonvolatile RAM (NVRAM)).

4. Specify the IP address of the TFTP server.

When prompted, enter the IP address of the TFTP server as in the following example:

```
Address or name of remote host [255.255.255.255]? 172.16.30.40
```

5. Specify the filename of the new Cisco IOS software image.

When prompted, enter the filename of the Cisco IOS software image to be installed, as in the following example:

```
Source file name? ubr920-k8v6y5-mz.122-3.bin
```

Note: The image name varies depending on the filename of the image on the TFTP server.

6. Specify the destination filename.

This is the name the new software image will have when it is loaded onto the router. The image can be named anything, but common practice is to enter the UNIX image filename.

```
Destination file name? ubr920-k8v6y5-mz.122-3.bin
```

7. Erase Flash device before confirming.

When prompted:

- ◆ Enter **yes** to erase the existing software image resident in the router's Flash memory before copying the new one.
- ◆ Enter **no** to keep the existing software image. Be sure you have enough Flash memory to keep both.

Erase flash device before writing? [confirm] **yes/no**

The copying process takes several minutes; the time differs from network to network. During the copy process, messages are displayed to indicate which files have been accessed.

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.

8. Before reloading, verify the correct installation and commands.

Verify that the image is properly installed and that the **boot system** commands point to the proper file to load.

To reload, type:

```
Router#reload
*Mar 1 00:30:49.972: %SYS-5-CONFIG_I: Configured from console by console
System configuration has been modified. Save? [yes/no]: no
!-- lower case

Proceed with reload? [confirm] yes
!-- lower case
```

9. Verify that the router is running with the proper image.

cisco uBR920 CM (MPC850) processor (revision 3.d) with 15872K/1024K bytes of memory.
Processor board ID FAA0344Q0GK
Bridging software.
1 Ethernet/IEEE 802.3 interface(s)
1 Cable Modem network interface(s)
3968K bytes of processor board System flash (Read/Write)
1536K bytes of processor board Boot flash (Read/Write)
Configuration register is 0x2102

Related Information

- **How to Choose a Cisco IOS Software Release**
 - **Field Notice: Cisco IOS TFTP Client Cannot Transfer Files Larger than 16MB in Size**
 - **Technical Support – Cisco Systems**
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