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Upgrading Cisco IOS Software for the Cisco 806, 826, 827, 828, 831, 836, and SOHO70 Routers

Introduction

This document contains a step−by−step procedure for upgrading your Cisco 806, 826, 827, 828, 831, 836, and SOHO70 routers. This procedure erases the existing Cisco IOS® Software image in Flash and replaces it with the new Cisco IOS software image from a Trivial File Transfer Protocol (TFTP) server.

A TFTP server or a remote copy protocol (RCP) server application must be installed on a TCP/IP ready workstation. After 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, not as a TFTP client. Second, the outbound file directory must be specified. This is the directory in which the Cisco IOS software images are stored. Most TFTP applications provide a setup routine to assist in these configuration tasks.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

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

Upgrading the Cisco IOS Software Image

Important: You must have a valid Cisco IOS software image on your router. Make sure the image supports your hardware and software features, and that your router has enough memory to run the image. If you do not yet have a Cisco IOS software image, or if you are not sure the image you have meets all the requirements, see How to Choose a Cisco IOS Software Release.

1. Download the Cisco IOS software image to your workstation or PC.

   You can download the image from the Software Center (registered customers only) .
2. Install the new Cisco IOS software image in the outbound directory of the TFTP server.

   The TFTP server looks for the router's Cisco IOS software image in this directory. Make sure that the image you want to copy to your Flash is in this directory.

   Check the memory requirements needed for the Software image being upgraded, which is mentioned in the Software center download page. Using the **show version** command, verify that you have enough memory.

```
Router# show version
Cisco Internetwork Operating System Software
IOS (tm) C827-4V Software (C827V-Y6-M), Version 12.1(1)XB, EARLY DEPLOYMENT RELE
ASE SOFTWARE (fc1)
Copyright (c) 1986-2000 by cisco Systems, Inc.
Compiled Mon 10-Apr-00 13:45 by phanguye
Image text-base: 0x80013170, data-base: 0x8067D780

ROM: System Bootstrap, Version 12.1(1r)XB1, RELEASE SOFTWARE (fc1)

Router uptime is 0 minutes
System returned to ROM by reload
System image file is "flash:c827v-y6-mz.121-1.XB"

CISCO C827-4V (MPC855T) processor (revision 0x502) with 15360K/1024K bytes of memory
Processor board ID JAD043100FS (1979977378), with hardware revision 1987
CPU rev number 5
Bridging software.
4 POTS Ports
1 Ethernet/IEEE 802.3 interface(s)
1 ATM network interface(s)
128K bytes of non-volatile configuration memory.
8192K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102
```

3. 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 because a Telnet connection is lost during the reboot phase of the software installation (see step 8). The console connection is made with a rolled cable (flat black or blue cable), and connects the console port of the router to the COM−port of the PC.

   Launch HyperTerminal on the PC, and use the following settings:

   - ◆ 9600 bits per second
   - ◆ 8 data bits
   - ◆ 0 parity bits
   - ◆ 1 stop bit
   - ◆ No Flow Control

   The required console cable specifications are described in Cabling Guide for RJ−45 Console and AUX Ports (Cisco's 1000 series, 2500 series, and AS5100).
4. Verify that the TFTP server has IP connectivity to the router.

The TFTP server must have a network connection to the router and must be able to ping the IP address of the router targeted for a TFTP software upgrade. To achieve this, the router interface and the TFTP server must have:

♦ An IP address in the same range, or
♦ A default gateway configured.

To verify, check the IP address of the TFTP server. See Determining IP Addresses for more details.

Note: After you verify network connectivity with your TFTP server, write all the changes to memory by issuing a **write memory** command on the router.

```
Router# write memory
Building configuration...
[OK]
Router#
```

5. Issue the **show flash** command to check the available space in the Flash memory.

```
Router# show flash
System flash directory:
File  Length   Name/status
  1   3802992  c827v-y6-mz.121-1.XB
[3803056 bytes used, 4585552 available, 8388608 total]
8192K bytes of processor board System flash (Read/Write)
```

You should have enough Flash memory to install the new Cisco IOS software image.

6. *Optional but Recommended*: Back up the existing Cisco IOS software image stored in Flash.

```
Router# copy flash tftp
Source filename []? c827v-y6-mz.121-1.XB
Address or name of remote host []? 10.1.1.1
Destination filename [c827v-y6-mz.121-1.XB]?
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!!!!!!!!!!!!!!!!!!!!!!!!!
3802992 bytes copied in 27.276 secs (140851 bytes/sec)
```

7. *Optional but Recommended*: Back up your configuration.

```
Router# copy startup-config tftp
Address or name of remote host []? 10.1.1.1
Destination filename [startup-config]?
!!
676 bytes copied in 0.100 secs
```

8. Enter the **show version** command to verify that the configuration register setting is set to 0x2102. This setting is required so that the router boots from Flash.

If the router's configuration register is not set to 0x2102, use the following commands to set it:

```
Router# configure terminal
Router(config)# config-reg 0x2102
```

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```
                    Router(config)# exit
                    router#reload
```

9. Copy the Cisco IOS software image from the TFTP Server to Flash in the router.

```
Router# copy tftp flash
Address or name of remote host []? 10.1.1.1
Source filename []? c827v-y6-mz.121-1.XB
Destination filename [c827v-y6-mz.121-1.XB]?
%Warning:There is a file already existing with this name
Do you want to over write? [confirm]
Accessing tftp://10.1.1.1/c827v-y6-mz.121-1.XB...
Erase flash: before copying? [confirm]
Erasing the flash filesystem will remove all files! Continue? [confirm]
Erasing device... eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee
ee ...erased
Erase of flash: complete
Loading c827v-y6-mz.121-1.XB from 10.1.1.1 (via Ethernet0): !!!!!!!!!!!!!!!!!!!!
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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!
[OK - 3802992/7605248 bytes]

Verifying checksum...  OK (0x1ABC)
3802992 bytes copied in 58.236 secs (65568 bytes/sec)
Router#
```

10. Confirm the router upgrade by issuing the following command:

```
Router>show flash
```

Make sure the Cisco IOS software image name in the **show flash** command output is the name of the upgrade image.

11. Reload the router to make it boot from the new Cisco IOS software image.

```
Router#reload
```

12. Confirm that the router booted from the new Cisco IOS software image by issuing a **show version** command.

```
Router#show version
```

The output from the **show version** command should show the name of the upgraded Cisco IOS software image.

Related Information

- **Disaster Recovery with TFTP Download**
- **800 Series Routers Product Support Page**
- **DSL and LRE Technical Support**
- **Technical Support − Cisco Systems**