Lab 28 - Packet Tracer - Use a TFTP Server to Upgrade a Cisco IOS Image

# Addressing Table

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| --- | --- | --- | --- | --- |
| R1 | G0/0/0 | 192.168.2.1 | 255.255.255.0 | N/A |
| R2 | G0/0 | 192.168.2.2 | 255.255.255.0 | N/A |
| S1 | VLAN 1 | 192.168.2.3 | 255.255.255.0 | 192.168.2.1 |
| TFTP Server | NIC | 192.168.2.254 | 255.255.255.0 | 192.168.2.1 |

# Objectives

Part 1: Upgrade an IOS Image on a Cisco Device

Part 2: Backup an IOS Image on a TFTP Server

# Scenario

A TFTP server can help manage the storage of IOS images and revisions to IOS images. For any network, it is good practice to keep a backup copy of the Cisco IOS Software image in case the system image in the router becomes corrupted or accidentally erased. A TFTP server can also be used to store new upgrades to the IOS and then deployed throughout the network where it is needed. In this activity, you will upgrade the IOS images on Cisco devices by using a TFTP server. You will also backup an IOS image with the use of a TFTP server.

# Instructions

## Upgrade an IOS Image on a Cisco Device

### Upgrade an IOS image on a router.

* + - 1. Access the TFTP server and enable the TFTP service.
      2. Note the IOS image files that are available on the TFTP server.

#### Question:

Which IOS images stored on the server are compatible with a 1941 router?

c1900-universalk9-mz.SPA.151-4.M4.bin AND c1900-universalk9-mz.SPA.155-3.M4a.bin

Open configuration window

* + - 1. From **R2**, issue the **show flash:** command and record the available flash memory.

221896413K available

* + - 1. Copy the CISCO1941/K9 IOS version 15.5 image for the 1941 router from the TFTP Server to R2.

**Note:** In an actual network, if there is more than one interface active on the router, you may need to enter the **ip tftp source interface** command to specify which interface should be used to contact the TFTP server. This command is not supported in PT 7.2 and older versions and is not necessary to complete this activity.

R2# **copy tftp: flash:**

Address or name of remote host []? **192.168.2.254**

Source filename []? **c1900-universalk9-mz.SPA.155-3.M4a.bin**

Destination filename [c1900-universalk9-mz.SPA.155-3.M4a.bin]?

Accessing tftp://192.168.2.254/c1900-universalk9-mz.SPA.155-3.M4a.bin....

Loading c1900-universalk9-mz.SPA.155-3.M4a.bin from 192.168.2.254: !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

[OK - 33591768 bytes]

33591768 bytes copied in 4.099 secs (860453 bytes/sec)

* + - 1. Verify that the IOS image has been copied to flash.

#### Question:

How many IOS images are located in flash?

2

* + - 1. Use the **boot system** command to load the version 15.5 IPBase image on the next reload.

R2(config)# **boot system flash c1900-universalk9-mz.SPA.155-3.M4a.bin**

* + - 1. Save the configuration and reload **R2**.
      2. Use the **show version** command to verify the upgraded IOS image is loaded after **R2** reboots.

R2# **show version**

Cisco IOS Software, C1900 Software (C1900-UNIVERSALK9-M), Version 15.5(3)M4a, RELEASE SOFTWARE (fc1)

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ROM: System Bootstrap, Version 15.0(1r)M9, RELEASE SOFTWARE (fc1)

R2 uptime is 21 seconds

System returned to ROM by power-on

System image file is "flash0:c1900-universalk9-mz.SPA.155-3.M4a.bin"

---- output omitted -----

Close configuration window

### Upgrade an IOS image on a switch.

Open configuration window

* + - 1. Access the TFTP server and copy the **c2960-lanbasek9-mz.150-2.SE4.bin** image to S1.

S1# **copy tftp: flash:**

* + - 1. Use the **boot system** command to configure the switch to load the new IOS image on boot.
      2. Reload S1 and verify the new image has been loaded into memory.
      3. Close the TFTP configuration window if it is still open.

Close configuration window

## Backup an IOS Image to a TFTP Server

Open configuration window

* + - 1. On **R1**, display the contents of flash and record the IOS image.

isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin

* + - 1. Use the **copy** command to back up the IOS image in flash memory on **R1** to a TFTP server. **Note**: The isr4300 image is considerably larger than the c1900 image. It will take longer to transmit it to the TFTP server.

R1# **copy flash: tftp:**Source filename []? **isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin**

Address or name of remote host []? **192.168.2.254**

Destination filename [isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin]?

Writing isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin....!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! --- output omitted ----

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

[OK - 486899872 bytes]

486899872 bytes copied in 18.815 secs (83367 bytes/sec)

* + - 1. Access the TFTP server and verify that the IOS image has been copied to the TFTP server.

**Note**: You may have to start and stop the TFTP service on the server so the file appears in the file listing.

Close configuration window

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