

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

Part 1: Upgrade an IOS Image on a Cisco Device

Step 1: Upgrade an IOS image on a router.

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

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

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

- 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:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 33591768 bytes]
```

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

- e. Verify that the IOS image has been copied to flash.

How many IOS images are located in flash?

- f. 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
```

- g. Save the configuration and reload R2.

- h. 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)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Thu 06-Oct-16 13:56 by mnguyen

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 ----
```

Step 2: Upgrade an IOS image on a switch.

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

```
S1# copy tftp: flash:
```

- b. Use the **boot system** command to configure the switch to load the new IOS image on boot.

- c. Reload S1 and verify the new image has been loaded into memory.

- d. Close the TFTP configuration window if it is still open.

Part 2: Backup an IOS Image to a TFTP Server

- a. On **R1**, display the contents of flash and record the IOS image.
- b. 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)
```

- c. 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.