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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

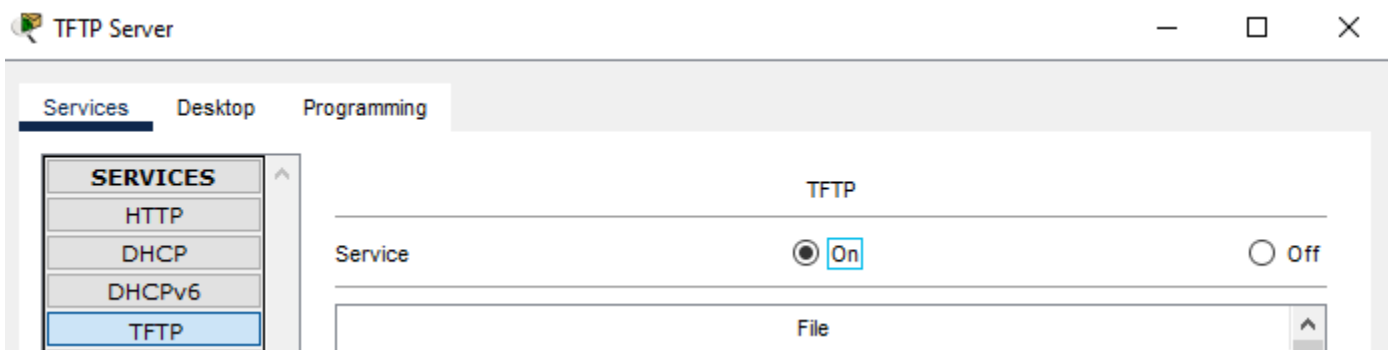
A TFTP server can help manage the storage of IOS images and revisions to IOS images. For any network, it is good practice to keep a backup copy of the Cisco IOS Software image in case the system image in the router becomes corrupted or accidentally erased. A TFTP server can also be used to store new 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.



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- b. Note the IOS image files that are available on the TFTP server.

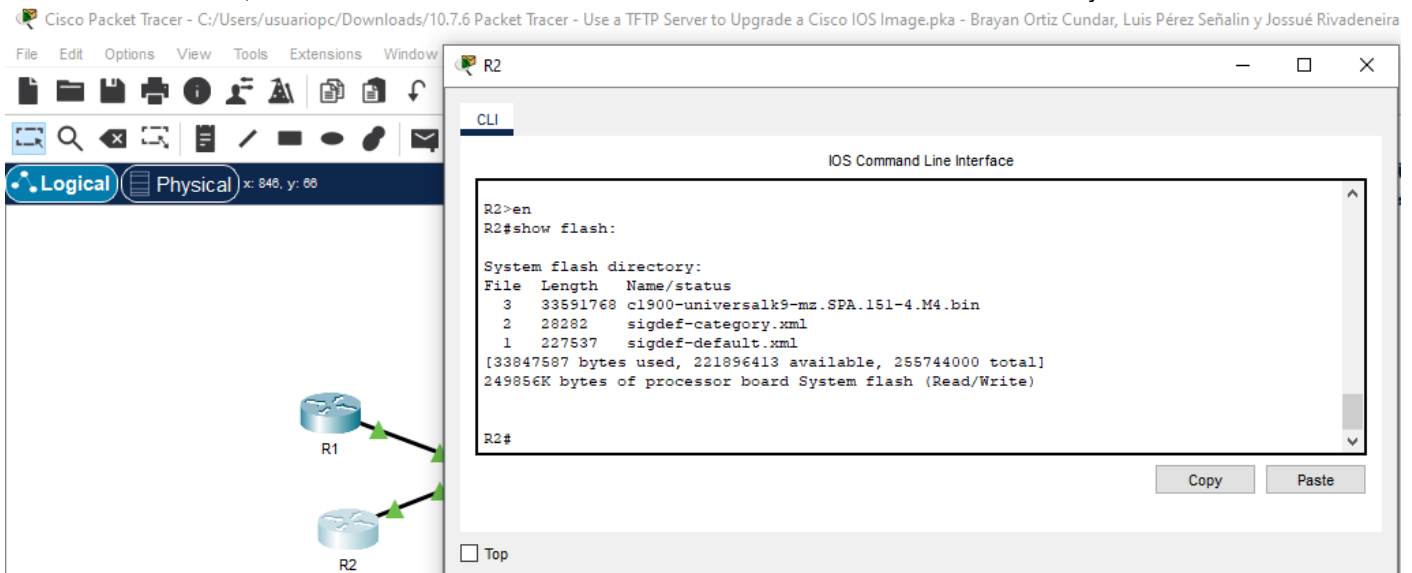
Which IOS images stored on the server are compatible with a 1941 router?

- Hay 2 imágenes, ambas comienzan con c1900-universalk9-mz.SPA

c1900-universalk9-mz.SPA.151-4.M4.bin

c1900-universalk9-mz.SPA.155-3.M4a.bin

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



- d. 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:

[illegible]

```
[OK - 33591768 bytes]
```

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

Cisco Packet Tracer - C:/Users/usuariopc/Downloads/10.7.6 Packet Tracer - Use a TFTP Server to Upgrade a Cisco IOS Image.pka - Brayan Ortiz Cundar, Luis Pérez Señalín y Jossué Rivadeneira



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.



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- 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)

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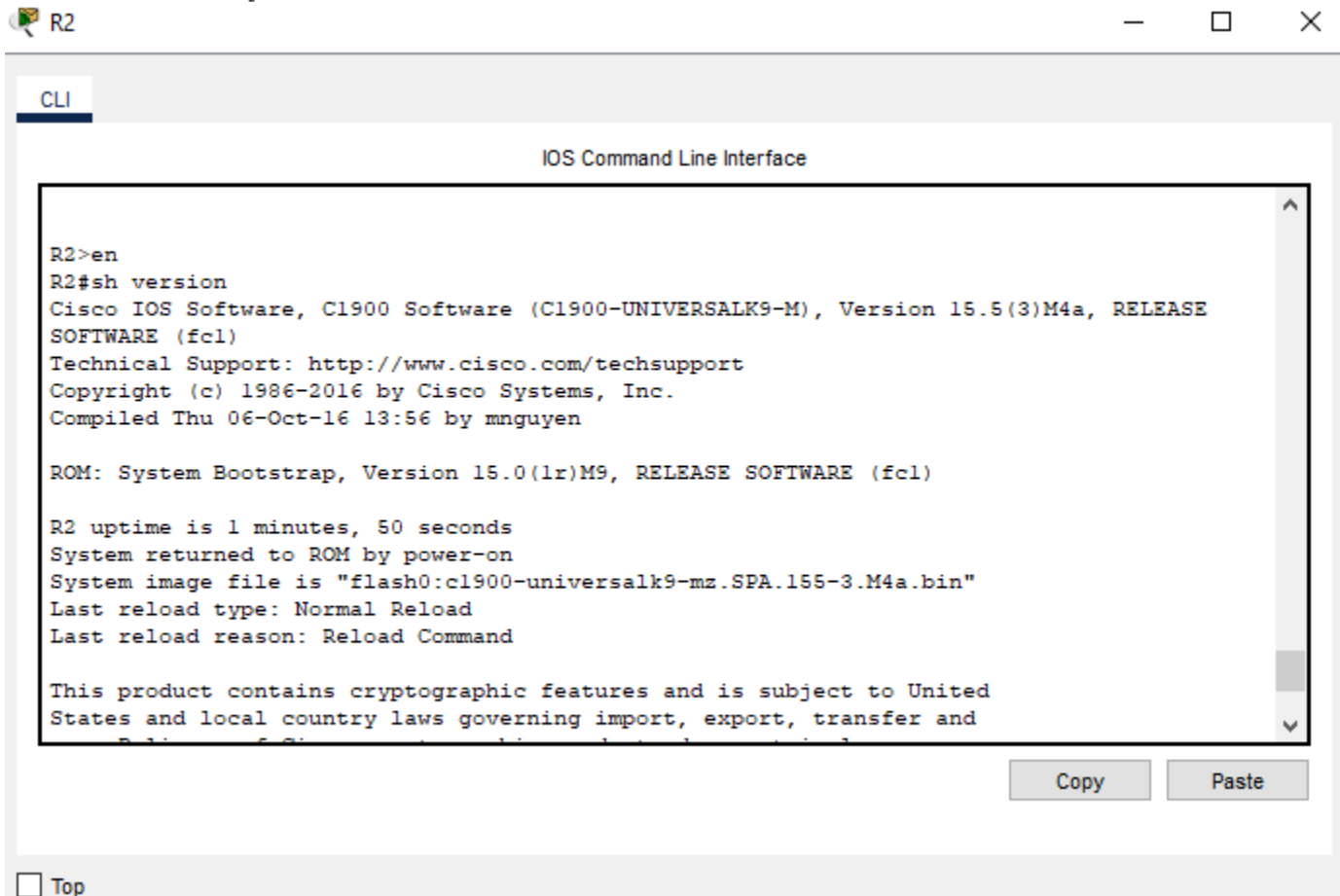
ROM: System Bootstrap, Version 15.0(1r)M9, RELEASE SOFTWARE (fc1)

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"

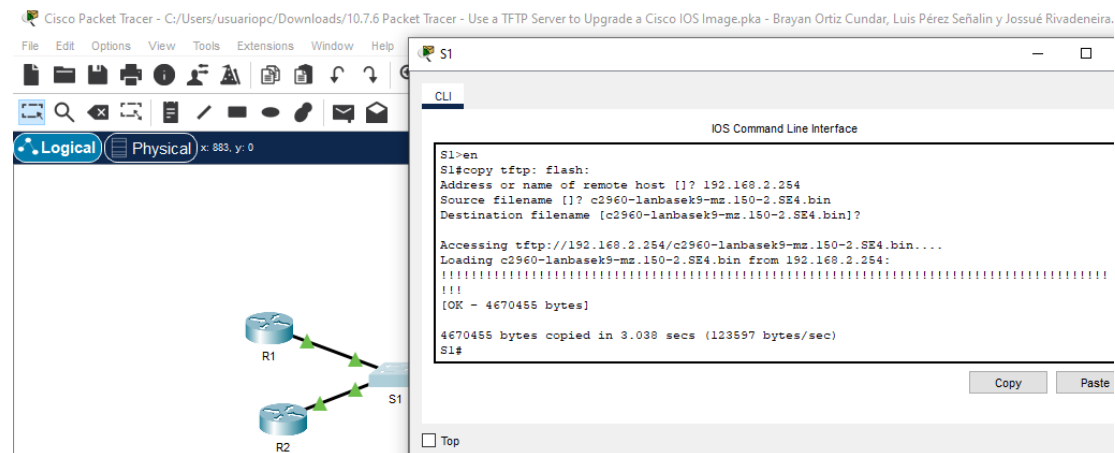
---- output omitted ----



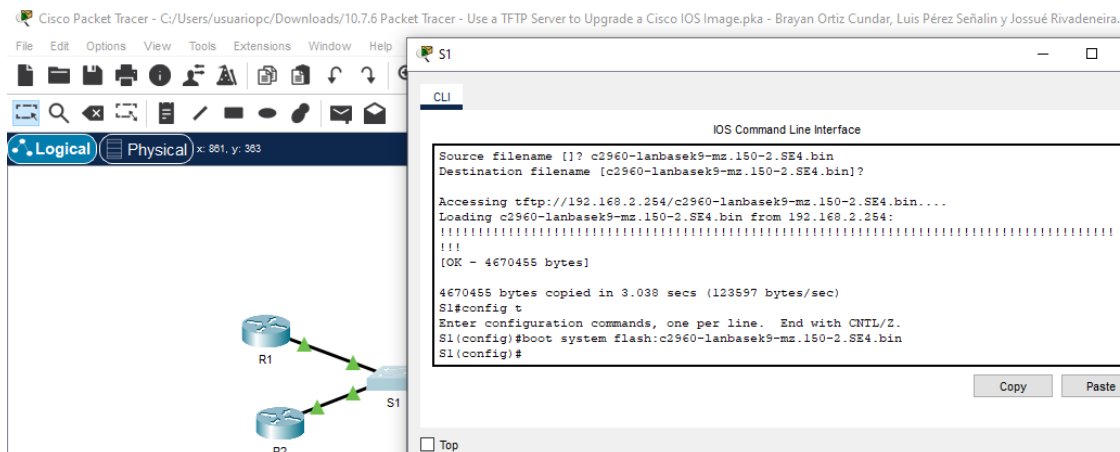
Step 2: Upgrade an IOS image on a switch.

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

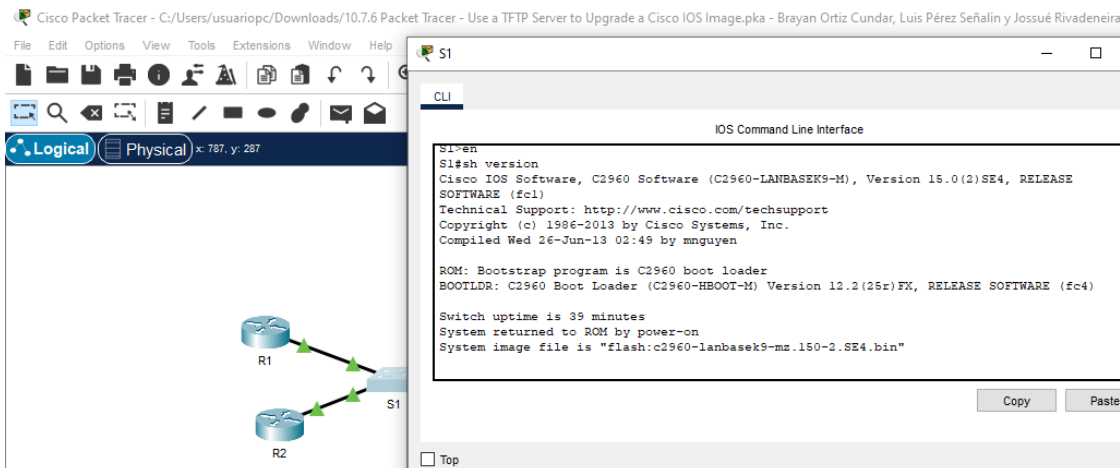
S1# **copy tftp: flash:**



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



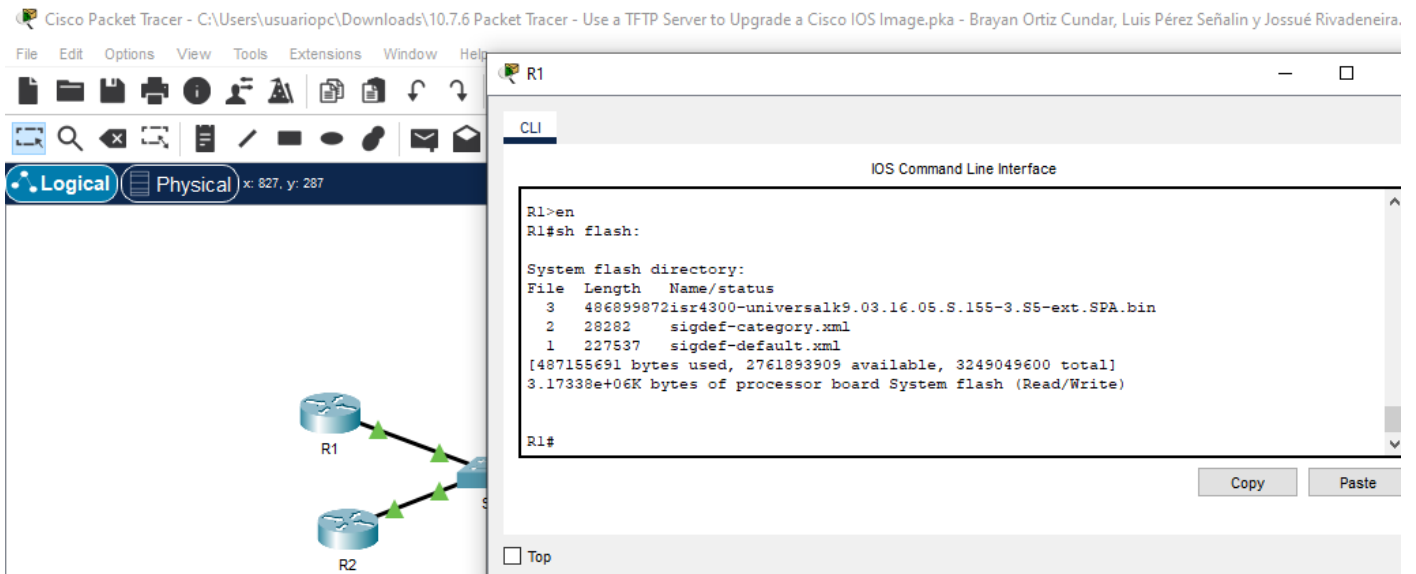
- c. Reload S1 and verify the new image has been loaded into memory.



- 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.



En este caso no se ve muy bien en la imagen, pero el nombre es: "isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin".

- 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)
```

The screenshot shows the Cisco Packet Tracer interface. On the left, a network diagram displays two routers, R1 and R2, connected by a serial link. The top bar contains the application menu (File, Edit, Options, View, Tools, Extensions, Window, Help) and a toolbar with various icons. Below the toolbar, there are tabs for 'Logical' and 'Physical' views, with the 'Logical' view currently selected. The main window is titled 'R1' and contains a CLI window. The CLI window shows the following commands and output:

```

R1>en
R1#sh flash:

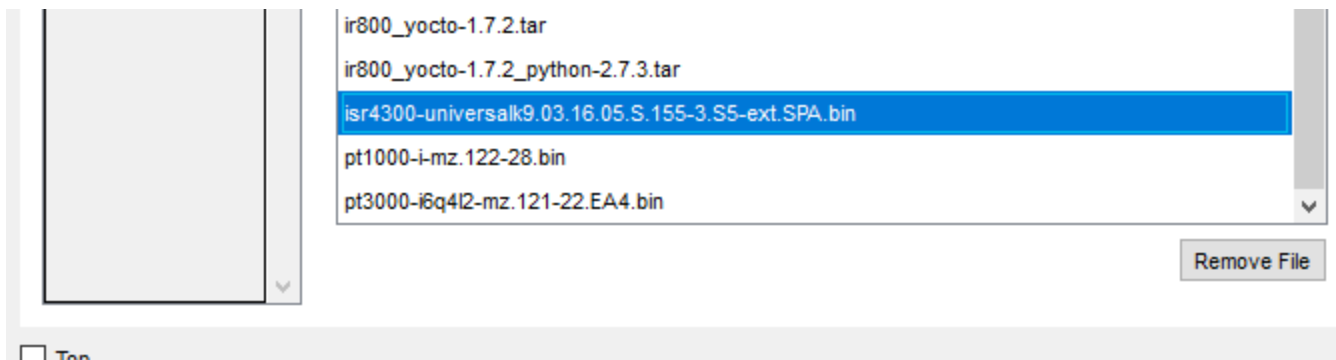
System flash directory:
File      Length  Name/status
  3      486899872 isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin
  2      28282      sigdef-category.xml
  1      227537      sigdef-default.xml
[487155691 bytes used, 2761893909 available, 3249049600 total]
3.17338e+06K bytes of processor board System flash (Read/Write)

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.....
  
```

The CLI window also has 'Copy' and 'Paste' buttons at the bottom right.

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



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Captura de completitud:

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File Edit Options View Tools Extensions Window Help

Activity Results Time Elapsed: 00:33:14

Congratulations Brayan Ortiz Cundar, Luis Pérez Señalín y Jossué Rivadeneira Ordóñez! You completed the activity.

Overall Feedback **Assessment Items** Connectivity Tests

Expand/Collapse All Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
R2				
Boot System Files		0	Other	
✓ flash c1900-universalk9-mz.SPA.155-3.M4a.bin	Correct	5	Boot System	
Flash Files		0	Other	
✓ c1900-universalk9-mz.SPA.155-3.M4a.bin	Correct	20	TFTP File Transfer	
S1				
Flash Files		0	Other	
✓ c2960-lanbasek9-mz.150-2.SE4.bin	Correct	20	Other	
TFTP Server				
TFTP Server				
ServerFiles		0	Ip	
✓ isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin	Correct	20	Ip	
✓ TFTP Enable	Correct	10	IOS Image Mana...	

Score : 75/75

Item Count : 5/5

Component	Items/Total	Score
Boot System	1/1	5/5
IOS Image Management	1/1	10/10
Ip	1/1	20/20
Other	1/1	20/20
TFTP File Transfer	1/1	20/20