show lldp neighbors detail

Packet Tracer - Use LLDP to Map a Network

Nombres: Brayan Ortiz Cundar, Luis Pérez Señalin y Jossué Rivadeneira Ordóñez

Addressing Table

Device	Interface	IP Address	Subnet Mask	Local Interface and Connected Neighbor
Edge	G0/0	192.168.1.1	255.255.255.0	
	S0/0/0	209.165.200.5	255.255.255.252	S0/0/0 - ISP
S1	SVI	192.168.1.2	255.255.255.0	
RBO-Edge	G0/0	209.165.200.10	255.255.255.252	G0/0 - ISP
RBO-Edge	G0/1	192.168.3.249	255.255.255.252	G0/0 — RBO-Firewall
RBO-Firewall	G0/0	192.168.3.250	255.255.255.252	G0/0 — RBO-Edge
RBO-Firewall	G0/1	192.168.4.129	255.255.255.128	G0/1 — sw-rbo1
Sw-rbo1	SVI	192.168.4.131	255.255.255.128	
Sw-rbo1	G0/1	No corresponde	No corresponde	G0/1 – RBO-Firewall
Sw-rbo1	G0/2	No corresponde	No corresponde	G0/2 – sw-rbo2
Sw-rbo1	F0/24	No corresponde	No corresponde	F0/24 — sw-rbo3
Sw-rbo2	SVI	192.168.4.132	255.255.255.128	
Sw-rbo2	G0/1	No corresponde	No corresponde	G0/1 — sw-rbo3
Sw-rbo2	G0/2	No corresponde	No corresponde	G0/2 — sw-rbo1
Sw-rbo3	SVI		255.255.255.128	LLDP no está activo
Sw-rbo3	F0/24	No corresponde	No corresponde	F0/24 — sw-rbo1
Sw-rbo3	G0/1	No corresponde	No corresponde	G0/1 — sw-rbo2

Objectives

Map a network using LLDP and SSH remote access.

Background / Scenario

A senior network administrator requires you to map the Remote Branch Office network and discover information about all of the devices in the network. You must record all of the network device names, IP addresses and subnet masks, and physical interfaces interconnecting the network devices.

To map the network, you will use SSH for remote access and the Link Layer Discovery Protocol (LLDP) to discover information about neighboring network devices. Because LLDP is a Layer 2 protocol, it can be used to discover information about devices that do not have Layer 3 connectivity. You will record the information that you gather to complete the Addressing Table and provide a topology diagram of the Remote Branch

Office network.

You will need the IP address for the remote branch office, which is 209.165.200.10. The local and remote administrative usernames and passwords are:

Local Network

Username: **admin01**

Password: **S3cre7P@55**

Remote Branch Office Network

Username: **RBOadmin**

Password: **S3cre7P@55**

Instructions

Part 1: Use SSH to Remotely Access Network Devices

In Part 1, you will use the Admin-PC to remotely access the Edge gateway router. Next, from the Edge router you will SSH into the Remote RBO Office.

a. On the Admin-PC, open a command prompt.

b. SSH into the gateway router at 192.168.1.1 using the username **admin01** and the password **S3cre7P@55**.

```
PC> ssh –l admin01 192.168.1.1
Open
Password:


Edge#
```

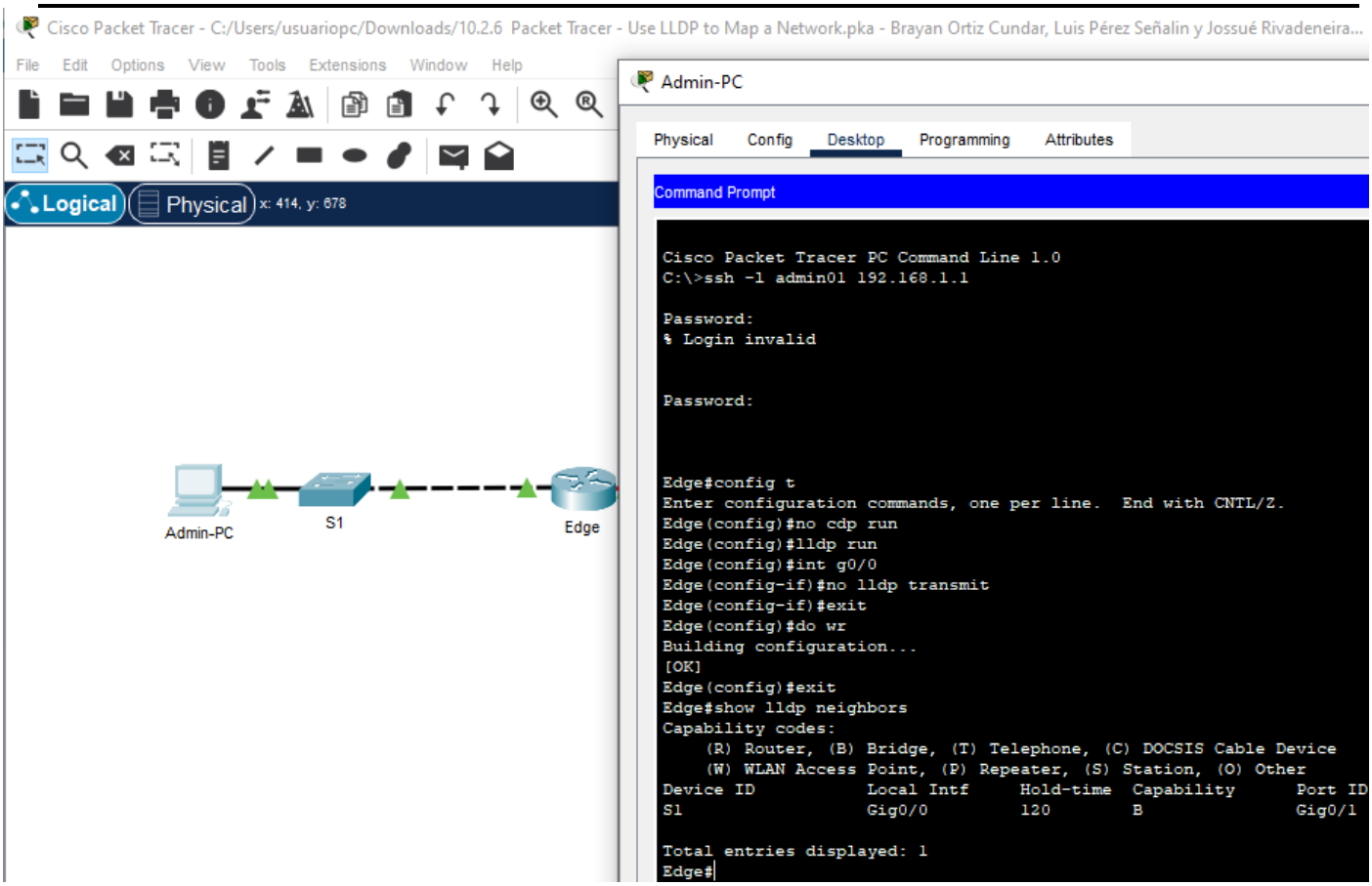
Note: Notice that you are placed directly into privileged EXEC mode. This is because the admin01 user account is set to privilege level 15.

c. The **Edge** router was previously configured to use CDP. Switch **S1** has already been configured to use LLDP. Issue the **show cdp** command to verify CDP is currently active. Disable CDP by issuing the following command:

```
Edge(config)# no cdp run
```

d. **LLDP** can be configured to both transmit and receive on a specific interface. Configure **Edge** so that it receives LLDP messages from **S1** but does not send messages to **S1** for security purposes Enable **LLDP**.

```
Edge(config)# lldp run
Edge(config)# int g0/0
Edge(config-if)# no lldp transmit
Edge(config-if)# exit
```



e. Use the **show lldp neighbors** command to verify that **Edge** is receiving messages from **S1**.

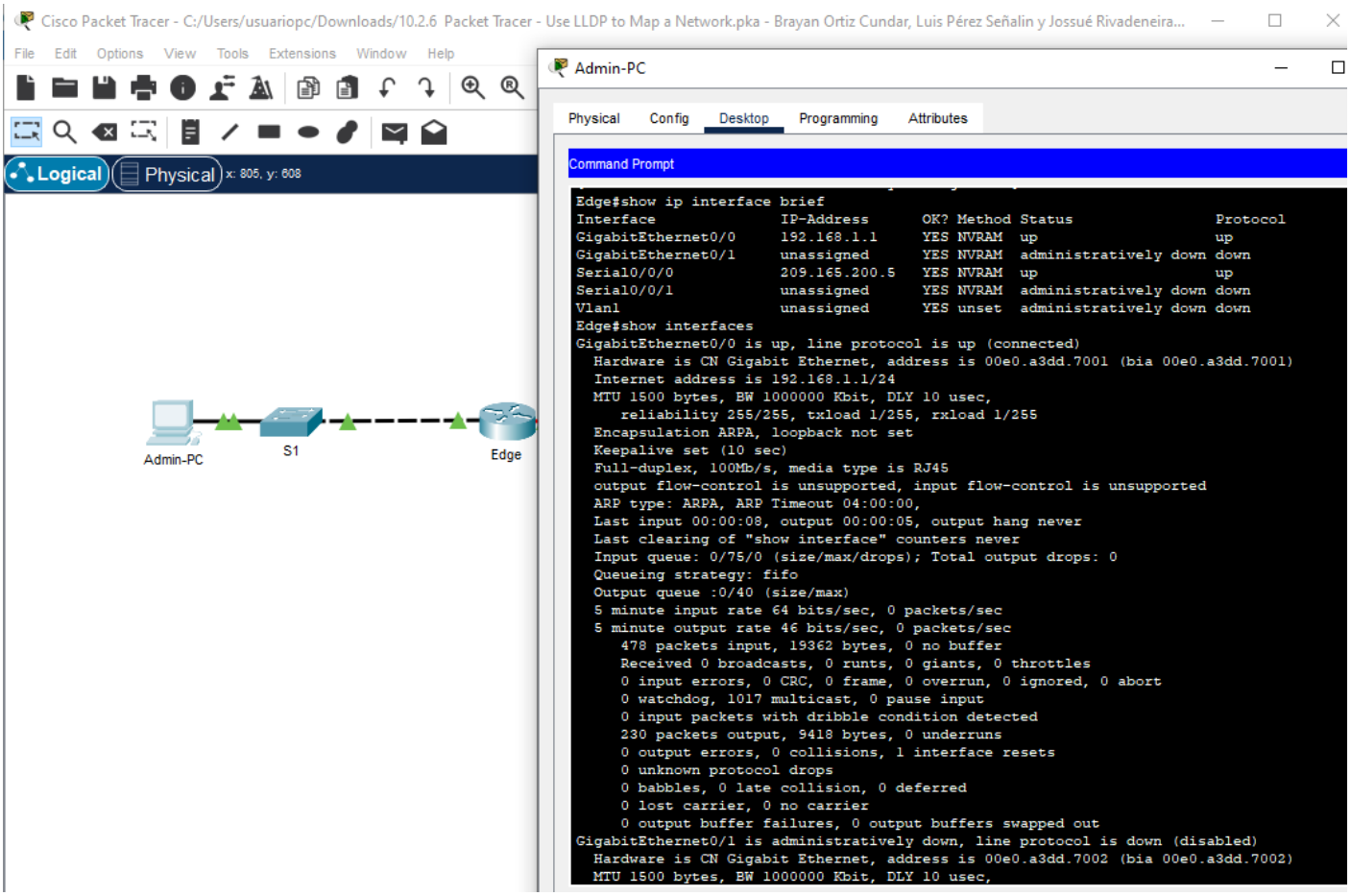
f. Connect to **S1** with SSH from **Edge** router using the **admin01** credentials. Issue the **show lldp neighbors** command. Notice that **S1** did not receive information from **Edge**.

```
Edge# ssh -l admin01 192.168.1.2
Password:

S1> show lldp neighbors
S1> exit
```

```
Edge#show lldp neighbors
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other
Device ID           Local Intf     Hold-time  Capability      Port ID
S1                  Gig0/0         120        B               Gig0/1

Total entries displayed: 1
Edge#ssh -l admin01 192.168.1.2

Password:



S1>show lldp neighbors
Capability codes:
    (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Cable Device
    (W) WLAN Access Point, (P) Repeater, (S) Station, (O) Other
Device ID           Local Intf     Hold-time  Capability      Port ID

Total entries displayed: 0
S1>exit

[Connection to 192.168.1.2 closed by foreign host]
```

g. Exit from the connection with S1 to return to the Edge router CLI. Use the **show ip interface brief** and **show interfaces** commands to document the Edge router's physical interfaces, IP addresses, and subnet masks in the Addressing Table.

```
Edge# show ip interface brief
Edge# show interfaces
```



h. From your session with Edge router, connect with SSH to the Remote RBO Office at 209.165.200.10 with the username **RBOadmin** and the same password used for admin01.

```
Edge# ssh -l RBOadmin 209.165.200.10
Password:


RBO-Edge#
```

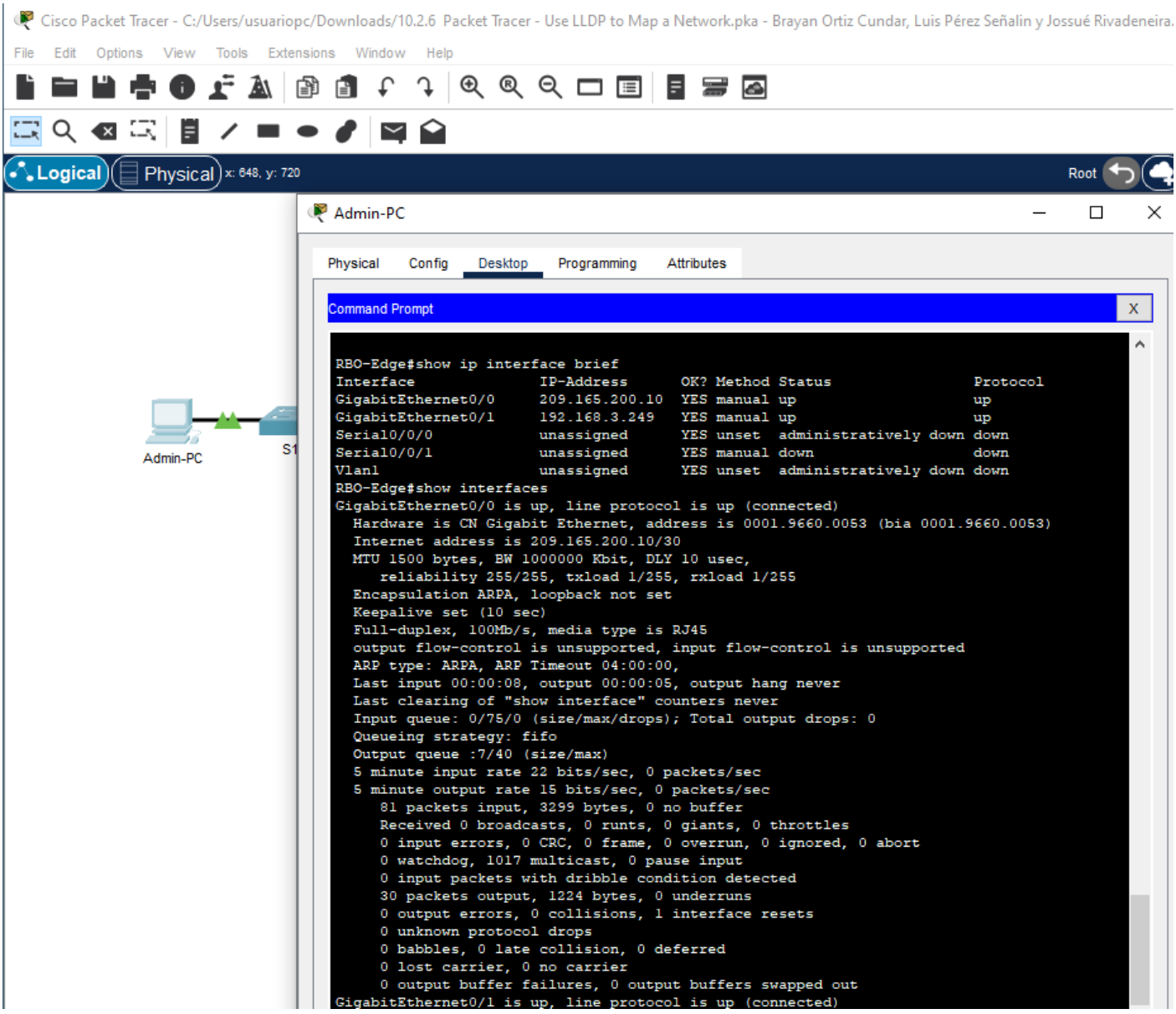
After connecting to the Remote RBO Office at 209.165.200.10 what piece of previously missing information can now be added to the Addressing Table above?

- Ahora sabemos el nombre del dipositivo: "`RBO-Edge`"

Part 2: Use LLDP to Discover Neighboring Devices

You are now remotely connected to the RBO-Edge router. Using LLDP, begin looking for connected network devices.

a. Issue the **show ip interface brief** and **show interfaces** commands to document the RBO-Edge router's network interfaces, IP addresses, and subnet masks. Add the missing information to the Addressing Table.

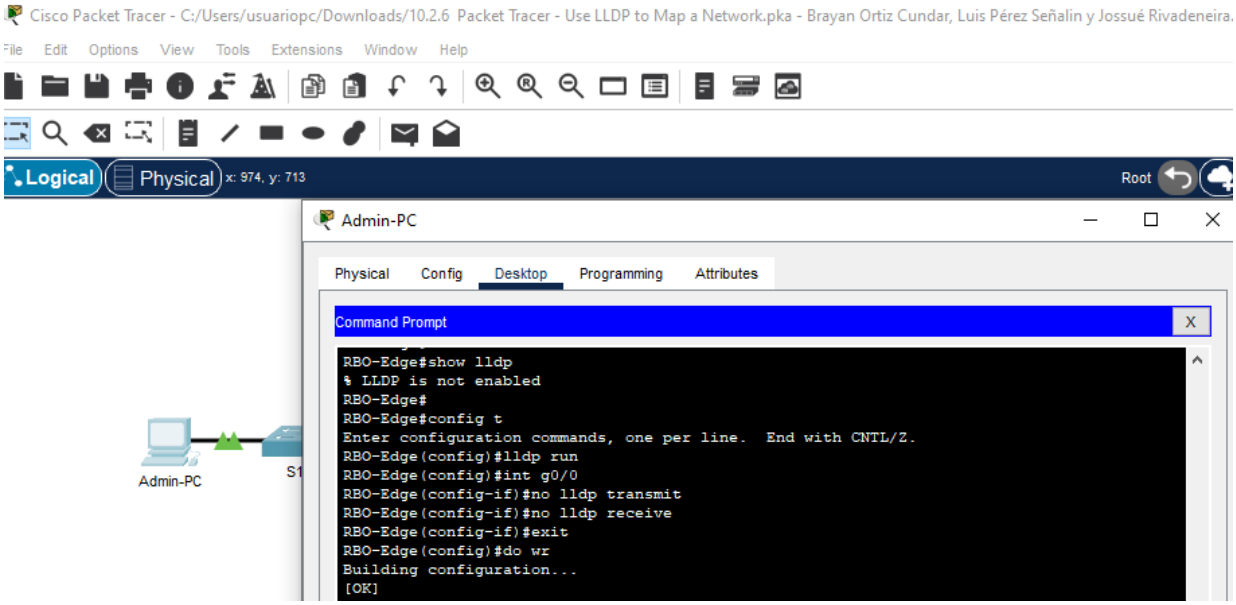


b. Security best practice recommends only running LLDP when needed, so LLDP may need to be turned on. Use a **show lldp** command to test its status.

```
RBO-Edge# show lldp
% LLDP is not enabled
```

c. You need to turn on LLDP, but it is a good idea to only send LLDP information to internal network devices and not to external networks. Discover which interface is connected to the internet by issuing the command **show ip interface brief**. Enable the LLDP protocol and completely disable LLDP on the interface that is connected to the internet.

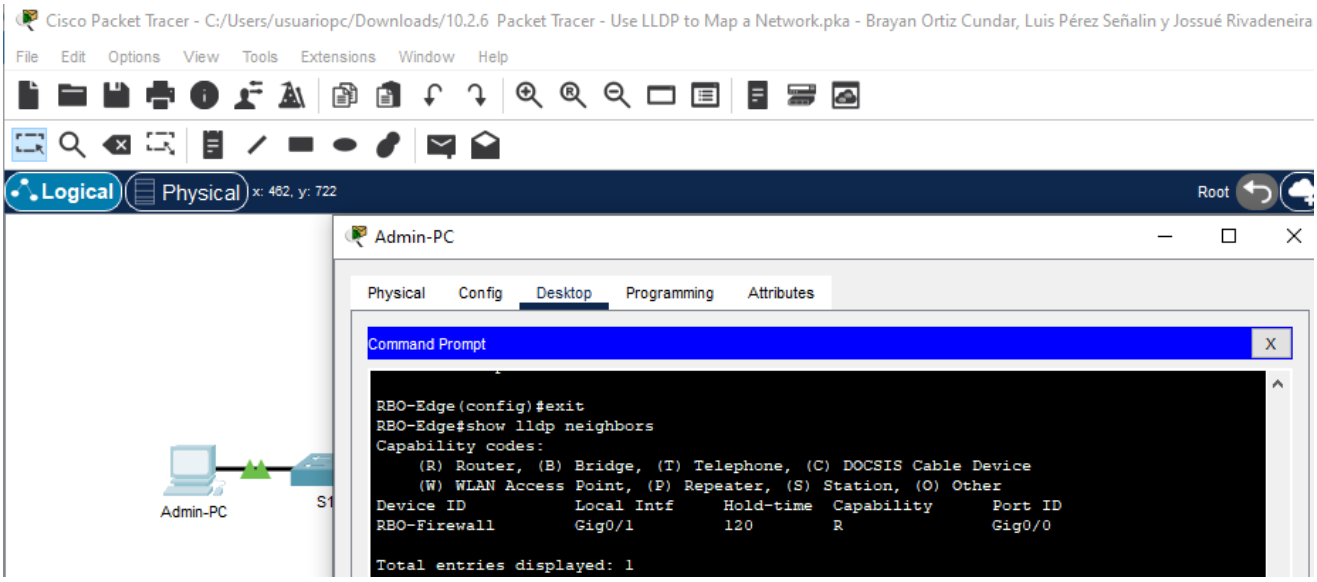
```
RBO-Edge# configure terminal
RBO-Edge(config)# lldp run
RBO-Edge(config)# interface g0/0
RBO-Edge(config-if)# no lldp transmit
RBO-Edge(config-if)# no lldp receive
RBO-Edge(config-if)# exit
```



d. Issue a **show lldp neighbors** command to find any neighboring network devices.

Note: LLDP will only show connected devices that are also running LLDP.

```
RBO-Edge# show lldp neighbors
```



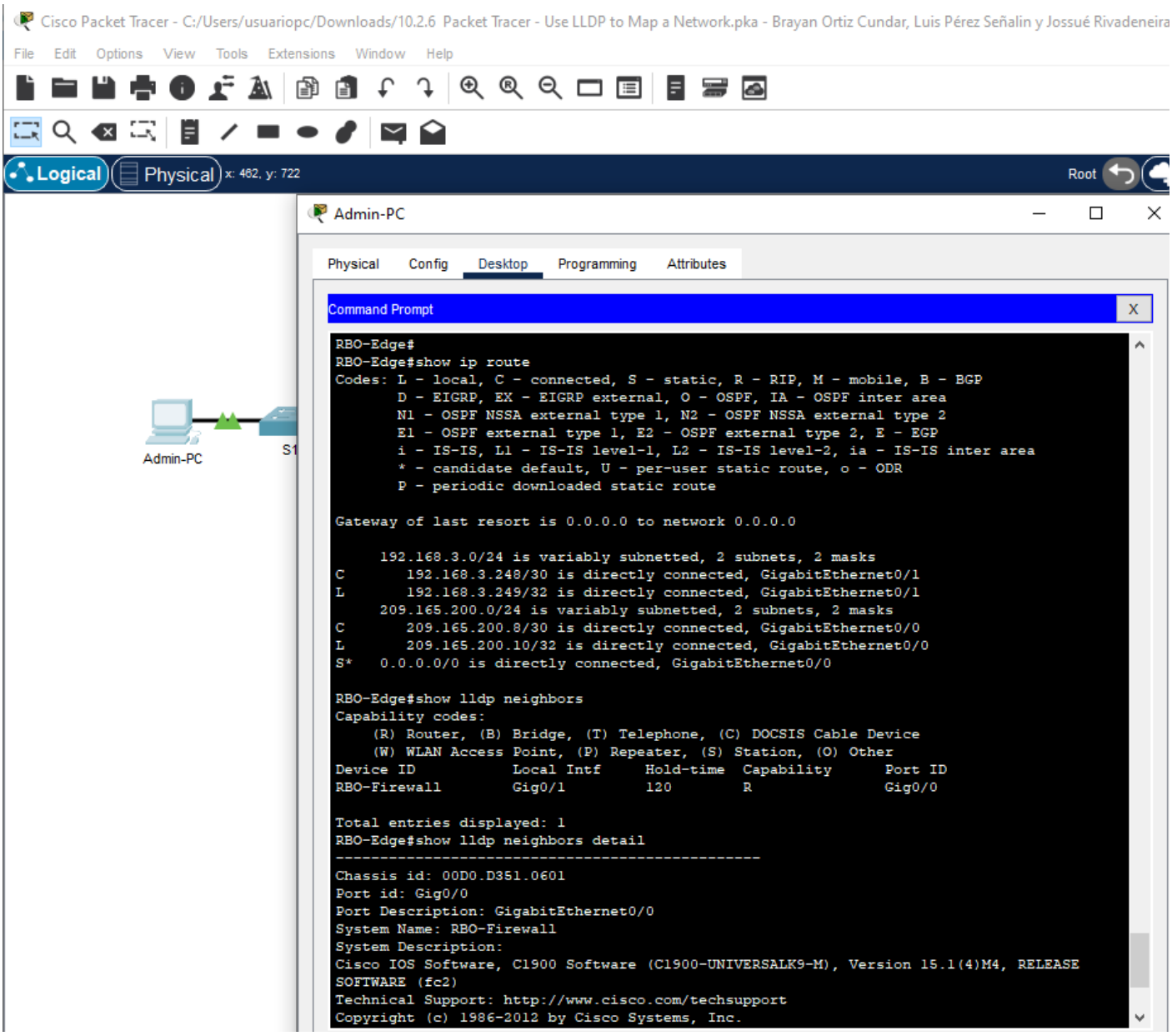
Is there a neighboring network device? What type of device is it? What is its name? On what interface is it connected? Is the device's IP address listed? Record the information in the Addressing Table.

- Si existe, es un router por la R en "Capability", tiene de nombre "RBO-Firewall", está conectado a la interfaz G0/0, pero no nos muestra la dirección IP.

e. Use the **show ip route** command to determine the address of the device that you found with the **show lldp neighbors** command. Based on the information provided about the local address in the routing table and the prefix length of the network use that information to determine the neighbor address.

f. To find additional information from the neighboring device, use the **show lldp neighbors detail** command:

```
RBO-Edge# show lldp neighbors detail
```



What other piece of potentially sensitive information is listed?

- Posiblemente, el modelo del dispositivo y la versión del software.

Note: The current version of Packet Tracer does not provide the Management Address of the neighbor device. In this activity several neighbor device addresses have been provided in the Addressing Table.

g. Connect to the neighbor device with SSH to discover other devices that may be its neighbors.

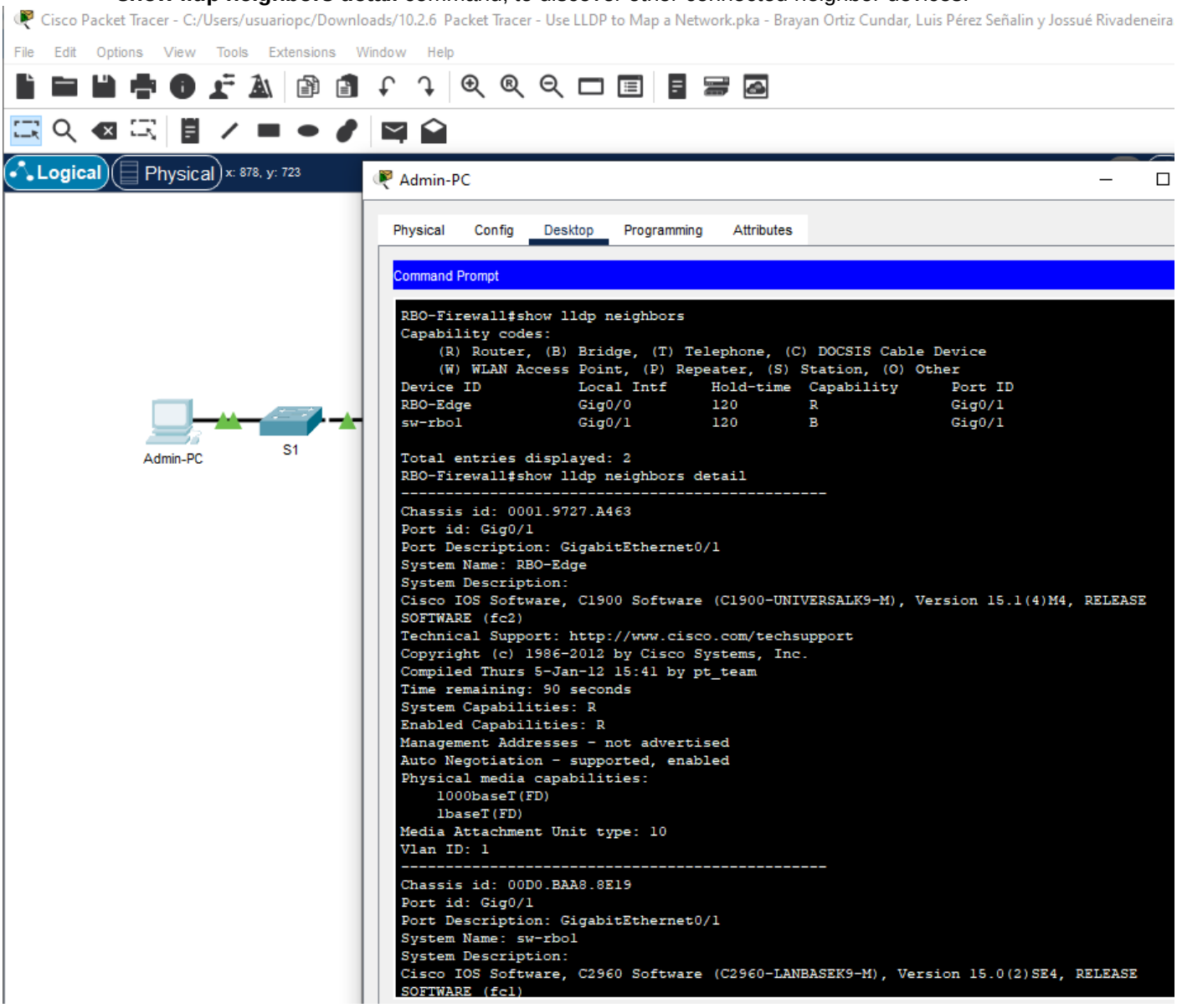
Note: To connect with SSH use the same Remote RBO Office username and password.

`RBO-Edge# ssh -l RBOadmin <the ip address of the neighbor device>`

After successfully connecting with SSH, what does the command prompt show?

- Se muestra el nombre del dispositivo: “RBO-Firewall”

h. You are remotely connected to the next neighbor. Use the **show lldp neighbors** command, and the **show lldp neighbors detail** command, to discover other connected neighbor devices.

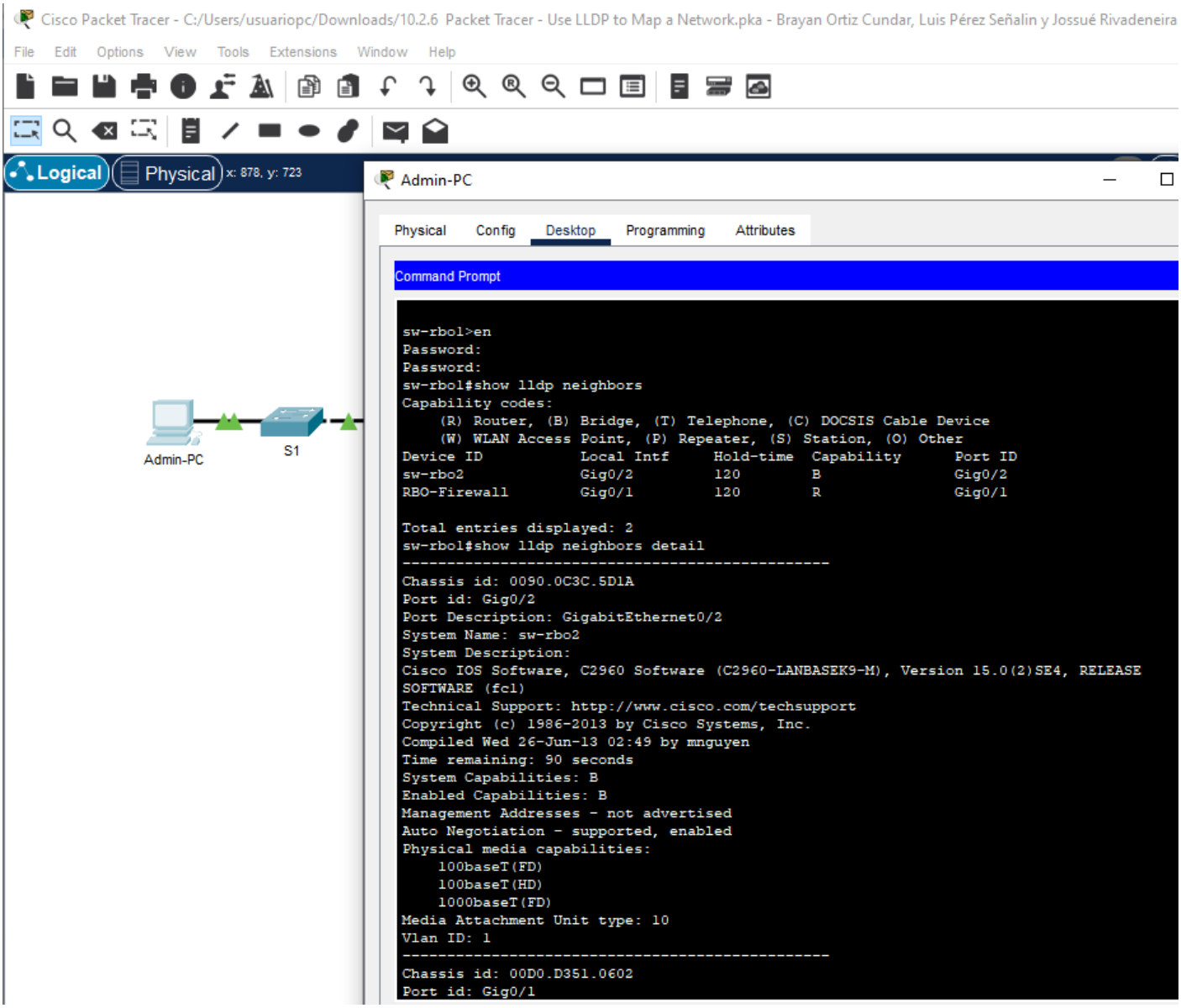


What types of network devices neighbor this device? Record any newly discovered devices in the Addressing Table. Include their hostname, interfaces, and IP addresses.

- Se encuentran 2 dispositivos: el router “RBO-Edge” y un switch “sw-rbo1”.

Add the newly discovered device name next to the SVI entry for address 192.168.4.131.

i. Connect to the SVI for address 192.168.4.131 using SSH and credentials used previously. If prompted for an enable secret password, use the same password as used for **RBOAdmin**. Use the **show lldp neighbors** command, and the **show lldp neighbors detail** command, to discover other connected neighbor devices.



What types of network devices neighbor this device? Record any newly discovered devices in the Addressing Table. Include their hostname, interfaces, and IP addresses.

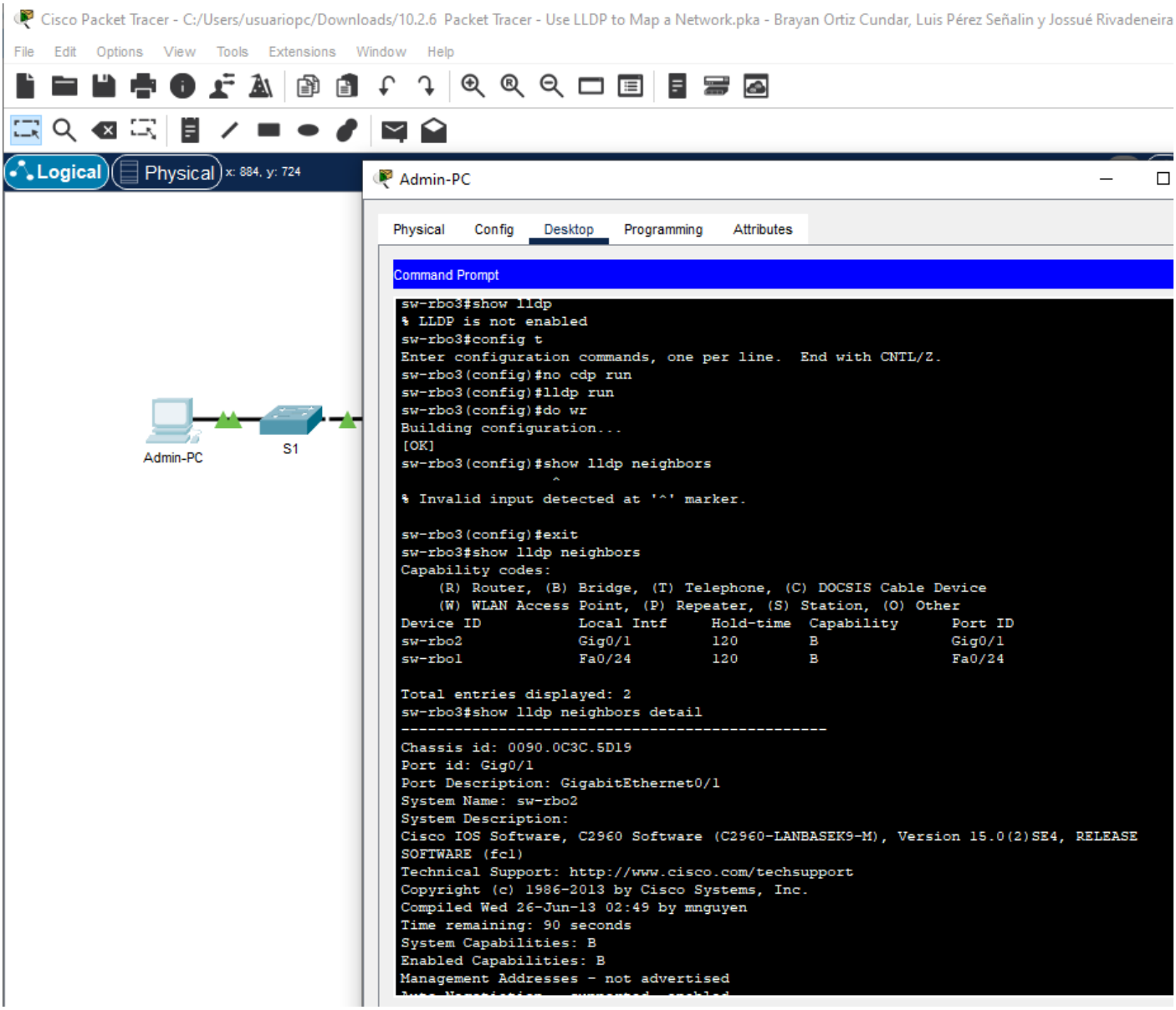
- Se encuentran 2 dispositivos: el router “RBO-Firewall” y un switch “sw-rbo2”.

Place the newly discovered device name next to the SVI entry for address 192.168.4.132.

j. Connect to the SVI for address 192.168.4.133 using SSH and credentials used previously. Issue the command **show lldp**, you should receive a message:

```
% LLDP is not enabled
```

Enable **lldp** globally as in Step C. There is no need to configure **transmit** or **receive** options because they are on by default. Use the **show lldp neighbors** command, and the **show lldp neighbors detail** command, to discover other connected neighbor devices.



What types of network devices neighbor this device? Record any newly discovered devices in the Addressing Table. Include their hostname, interfaces, and IP addresses. It may be beneficial to reconnect to the previously discovered devices to display neighbors one more time to complete the entireaddressing table now that all devices are configured for LLDP.

- Los dispositivos son: el switch “sw-rbo1” y el switch “sw-rbo2”.

k. Draw a topology of the Remote RBO Office network using the information that you have gathered with LLDP.

Captura de verificación de completitud: