Logical and Physical Mode Exploration

Objectives

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Background / Scenario

The network model in this Packet Tracer Physical Mode (PTPM) activity incorporates many of the technologies that you can master in fundamentals of networking. It represents a simplified version of how a small to medium-sized business network might look.

Most of the devices in the Seward branch office and Warrenton data center are already deployed and configured. You have just been hired to review the devices and networks deployed. It is not important that you understand everything you see and do in this activity. Feel free to explore the network on your own. If you wish to proceed more systematically, follow the steps below. Answer the questions to the best of your ability.

Note: This activity opens in and focuses on **Physical** mode. Many of the Packet Tracer activities you encounter in fundamentals of networking will use **Logical** mode. You can switch between these modes at any time to compare the differences by clicking the **Logical** (Shift+L) and **Physical** (Shift+P) buttons. However, in other activities in this course you may be locked out of one mode or the other.

Instructions

Part 1: Investigate the Bottom Toolbar

The icon toolbar at the bottom left-hand corner has various categories of networking components. You should see categories that correspond to **Network Devices**, **End Devices**, and **Components**. The fourth category (with the lightning bolt icon) is **Connections** and represents the networking media supported by Packet Tracer. The last two categories are **Miscellaneous** and **Multiuser Connection.**

What are the subcategories for **Network Devices**?

Routers, Switches, Hubs, Wireless Devices, Security, WAN Emulation*.*

Part 2: Investigate Devices in a Wiring Closet

a. If you went exploring, return to **Physical** mode and **Intercity** now. In the top blue bar, click **Physical**, and then use the **Navigation Panel** or **Back level** buttons to navigate to **Intercity**.

b. Click **Seward**, and then click the **Branch Office**.

c. Click the **Branch Office Wiring Closet**. Notice that the wiring closet has a **Rack**, a **Cable Pegboard**, a **Table**, and a **Shelf**.

The **Rack** contains devices that can be racked mounted. If you zoom in on the rack (zoom tool or Ctrl+scroll wheel), you can see that the devices are screwed in (mounted) in the rack. Below the power distribution device, you will find a router. Routers connect different networks.

d. Below the router are two switches. These switches provide wired connections to connect to other devices. Notice that the devices have a name assigned by the network administrator. What devices use a wired connection to connect to switch **ALS2**?

Type your answers here. WebServer, Access_Point, ALS1

e. Below the switches in the **Rack** is a wireless access point named **Access_Point**. Wireless access points use a wireless connection to connect to other devices. Switch to **Logical** Mode. Which device is connected to **Access_Point**?

Type your answers here. Laptop_1

f. Switch to **Physical** mode. You should be back in the **Branch Office Wiring Closet**. Where is the device connected to **Access_Point** physically located?

Type your* answers *here. On the Table.

Part 3: Connect End Devices to Networking Devices

Devices can be connected in a variety of ways. For network connectivity, devices are typically connected using either a copper straight-through cable or wirelessly. For management connectivity, devices are typically connected using either a console cable or USB cable.

Note: Packet Tracer will grade the rest of this activity. At any time, you can click **Check Results** at the bottom of the **Tasks** window. Then click **Assessment Items** to see which items you have not yet completed.

a. Investigate the **Cable Pegboard**. It includes two **Console** cables, ten **Copper Straight-Through** cables, four **Fiber** cables, two **Coaxial** cables, and two **USB** cables. Notice that the cable representations in **Physical** mode are more representative of their real-world counterparts. Switch to **Logical** mode. Notice that the cable representations are different in this mode.

b. Switch to **Physical** mode. Click a **Copper Straight-Through** cable from the **Cable Pegboard**.

c. Float your mouse over the ports on **PC_1** until you see the **FastEthernet0** popup. The other **RS232** port is for connecting **Console** cables.

d. With the **Copper Straight-Through** cable still selected, click the **FastEthernet0** port to connect the cable. The port should now be highlighted in green.

e. Connect the other end of the cable to the **ALS2** switch by clicking an empty Fast Ethernet port. The cable should now be dangling between **PC_1** and the **ALS2** port.

f. PCs and laptops can also be connected to networking devices using a console cable or a USB cable. This connection provides management access. Click a **Console** cable from the **Cable Pegboard**.

g. Click the **RS232** port on **PC_1**. The port should now be highlighted in green.

h. Float your mouse over the **Edge_Router** and find the **Console** port. You can **right-click** > **Inspect Front** to zoom in and make finding the port easier.

i. Click the **Console** port on **Edge_Router** to connect the **Console** cable. The cable should now be dangling between **PC_1** and the **Console** port on the **Edge_Router**.

Part 4: Install a Backup Router

Newer models of networking devices can be accessed through a USB port for management configuration. This is necessary because newer laptops and PCs typically do not include an RS232 port for console cable connections.

a. Investigate the **Shelf**. This includes an inventory of devices in the Seward Branch Office that are not currently installed.

b. Click and drag the **Backup_Router** to an empty spot in the **Rack**.

c. Some devices are not automatically powered on when installed in the **Rack**. Click **Backup_Router** > **Inspect Rear**. Find the power button and turn the router on.

d. On the **Cable Pegboard**, choose a **USB** cable. Return to the rear view of **Backup_Router** and find the **USB Console** port on the far left. Click the port to connect the USB cable. The port should now be highlighted in green.

e. Connect the other end of the USB cable to either of the USB ports on **Laptop_1**. The cable will not dangle like the cables did for the connections to **PC_1**.

Part 5: Configure a Hostname

Network administrators typically assign a name to networking devices. To do this, you will use your console connection to the **Backup_Router**.

a. Click **Laptop_1** > **Desktop** tab > **Terminal**.

b. The **Terminal Configuration** is already set with the necessary port configuration. Click **OK**.

c. You are now at the command line for **Backup_Router** and should see the following.

```
<output omitted>
cisco ISR4331/K9 (1RU) processor with 1795999K/6147K bytes of memory.
Processor board ID FLM232010G0
3 Gigabit Ethernet interfaces
2 Serial interfaces
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
3207167K bytes of flash memory at bootflash:.
0K bytes of WebUI ODM Files at webui:.



         --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no
```

d. Answer **no** to the question and then press ENTER to get the **Router>** command prompt.

```
Press RETURN to get started!

<ENTER>

Router>
```

e. Enter the following commands to name the router **Edge_Router_Backup**.

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)# hostname Edge_Router_Backup
Edge_Router_Backup(config)# end
Edge_Router_Backup#
```

Notice that the hostname changed from **Router** to **Edge_Router_Backup**.

f. Close the **Laptop_1** window and return to the **Branch Office Wiring Closet**.

g. Notice that the display name for Backup_Router did not change. Click **Backup_Router** > **Config tab**. In Global Settings, notice that Packet Tracer maintains two names for the device: a **Display Name** and a **Hostname**.

Part 6: Explore the Rest of the Network

Take some time to explore the rest of the network. Become familiar with the network representations in both **Logical** and **Physical** modes. In **Physical** mode, navigate to other areas such as the **Wellington Data Center** and **Teleworker Home**. The technologies used in these locations are discussed in greater detail in Cisco Networking Academy courses. For now, see what you can discover on your own. Don't worry about breaking anything. You can always close Packet Tracer and open a fresh copy to start exploring again.

Type your answers here.

End of document.