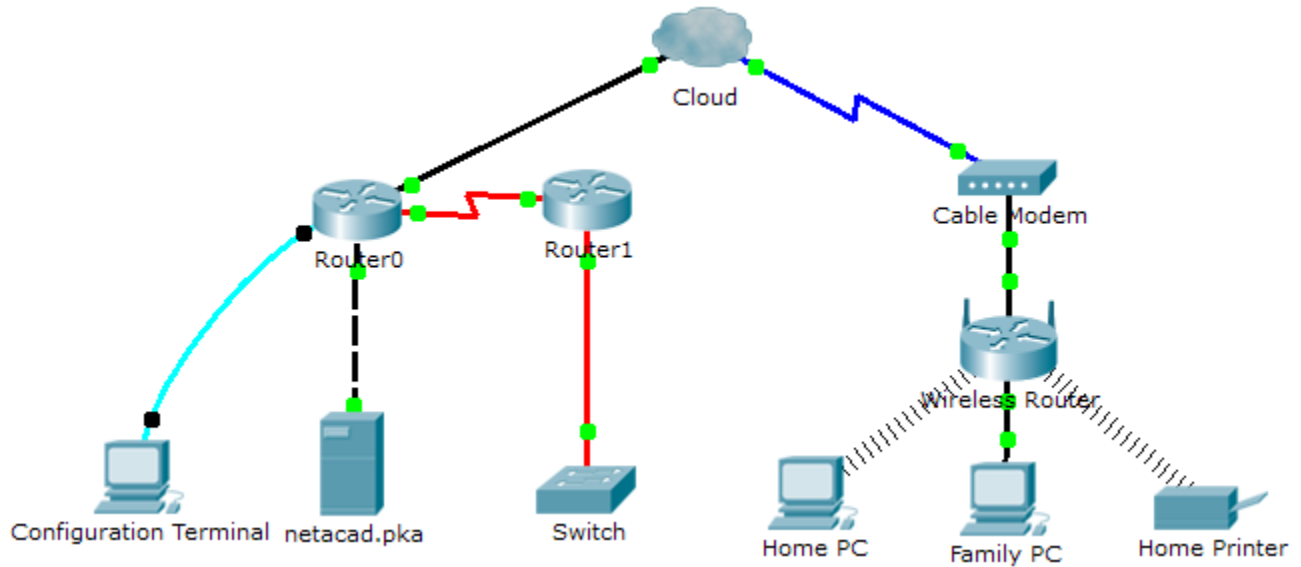


4.2.4.4 Packet Tracer - Connecting a Wired and Wireless LAN (Instructor Version)

Instructor Note: Red font color or gray highlights indicate text that appears in the instructor copy only.

Topology



Addressing Table

Device	Interface	IP Address	Connects To
Cloud	Eth6	N/A	F0/0
	Coax7	N/A	Port0
Cable Modem	Port0	N/A	Coax7
	Port1	N/A	Internet
Router0	Console	N/A	RS232
	F0/0	192.168.2.1/24	Eth6
	F0/1	10.0.0.1/24	F0
	Ser0/0/0	172.31.0.1/24	Ser0/0
Router1	Ser0/0	172.31.0.2/24	Ser0/0/0
	F1/0	172.16.0.1/24	F0/1
WirelessRouter	Internet	192.168.2.2/24	Port 1
	Eth1	192.168.1.1	F0
Family PC	F0	192.168.1.102	Eth1
Switch	F0/1	172.16.0.2	F1/0
Netacad.pka	F0	10.0.0.254	F0/1
Configuration Terminal	RS232	N/A	Console

Objectives

Part 1: Connect to the Cloud

Part 2: Connect Router0

Part 3: Connect Remaining Devices

Part 4: Verify Connections

Part 5: Examine the Physical Topology

Background

When working in Packet Tracer (a lab environment or a corporate setting), you should know how to select the appropriate cable and how to properly connect devices. This activity will examine device configurations in Packet Tracer, selecting the proper cable based on the configuration, and connecting the devices. This activity will also explore the physical view of the network in Packet Tracer.

Part 1: Connect to the Cloud

Step 1: Connect the cloud to Router0.

- a. At the bottom left, click the orange lightning icon to open the available **Connections**.

- b. Choose the correct cable to connect **Router0 F0/0** to **Cloud Eth6**. **Cloud** is a type of switch, so use a **Copper Straight-Through** connection. If you attached the correct cable, the link lights on the cable turn green.

Step 2: Connect the cloud to Cable Modem.

Choose the correct cable to connect **Cloud Coax7** to **Modem Port0**.

If you attached the correct cable, the link lights on the cable turn green.

Part 2: Connect Router0

Step 1: Connect Router0 to Router1.

Choose the correct cable to connect **Router0 Ser0/0/0** to **Router1 Ser0/0**. Use one of the available **Serial** cables.

If you attached the correct cable, the link lights on the cable turn green.

Step 2: Connect Router0 to netacad.pka.

Choose the correct cable to connect **Router0 F0/1** to **netacad.pka F0**. Routers and computers traditionally use the same wires to transmit (1 and 2) and receive (3 and 6). The correct cable to choose consists of these crossed wires. Although many NICs can now autosense which pair is used to transmit and receive, **Router0** and **netacad.pka** do not have autosensing NICs.

If you attached the correct cable, the link lights on the cable turn green.

Step 3: Connect Router0 to the Configuration Terminal.

Choose the correct cable to connect **Router0 Console** to **Configuration Terminal RS232**. This cable does not provide network access to **Configuration Terminal**, but allows you to configure **Router0** through its terminal.

If you attached the correct cable, the link lights on the cable turn black.

Part 3: Connect Remaining Devices

Step 1: Connect Router1 to Switch.

Choose the correct cable to connect **Router1 F1/0** to **Switch F0/1**.

If you attached the correct cable, the link lights on the cable turn green. Allow a few seconds for the light to transition from amber to green.

Step 2: Connect Cable Modem to Wireless Router.

Choose the correct cable to connect **Modem Port1** to **Wireless Router Internet** port.

If you attached the correct cable, the link lights on the cable will turn green.

Step 3: Connect Wireless Router to Family PC.

Choose the correct cable to connect **Wireless Router Ethernet 1** to **Family PC**.

If you attached the correct cable, the link lights on the cable turn green.

Part 4: Verify Connections

Step 1: Test the connection from Family PC to netacad.pka.

- a. Open the **Family PC** command prompt and ping **netacad.pka**.
- b. Open the **Web Browser** and the web address **http://netacad.pka**.

Step 2: Ping the Switch from Home PC.

Open the **Home PC** command prompt and ping the **Switch** IP address of to verify the connection.

Step 3: Open Router0 from Configuration Terminal.

- a. Open the **Terminal** of **Configuration Terminal** and accept the default settings.
- b. Press **Enter** to view the **Router0** command prompt.
- c. Type **show ip interface brief** to view interface statuses.

Part 5: Examine the Physical Topology

Step 1: Examine the Cloud.

- a. Click the **Physical Workspace** tab or press **Shift+P** and **Shift+L** to toggle between the logical and physical workspaces.
- b. Click the **Home City** icon.
- c. Click the **Cloud** icon. How many wires are connected to the switch in the blue rack? **2**
- d. Click **Back** to return to **Home City**.

Step 2: Examine the Primary Network.

- a. Click the **Primary Network** icon. Hold the mouse pointer over the various cables. What is located on the table to the right of the blue rack? **Configuration Terminal**
- b. Click **Back** to return to **Home City**.

Step 3: Examine the Secondary Network.

- a. Click the **Secondary Network** icon. Hold the mouse pointer over the various cables. Why are there two orange cables connected to each device? **Fiber cables come in pairs, one for transmit, the other for receive.**
- b. Click **Back** to return to **Home City**.

Step 4: Examine the Home Network.

- a. Why is there an oval mesh covering the home network? **It represents the range of the wireless network.**
- b. Click the **Home Network** icon. Why is there no rack to hold the equipment? **Home networks typically do not have racks.**
- c. Click the **Logical Workspace** tab to return to the logical topology.

Suggested Scoring Rubric

Activity Section	Question Location	Possible Points	Earned Points
Part 5: Examine the Physical Topology	Step 1c	4	
	Step 2a	4	
	Step 3a	4	
	Step 4a	4	
	Step 4b	4	
Part 5 Total		20	
Packet Tracer Score		80	
Total Score		100	