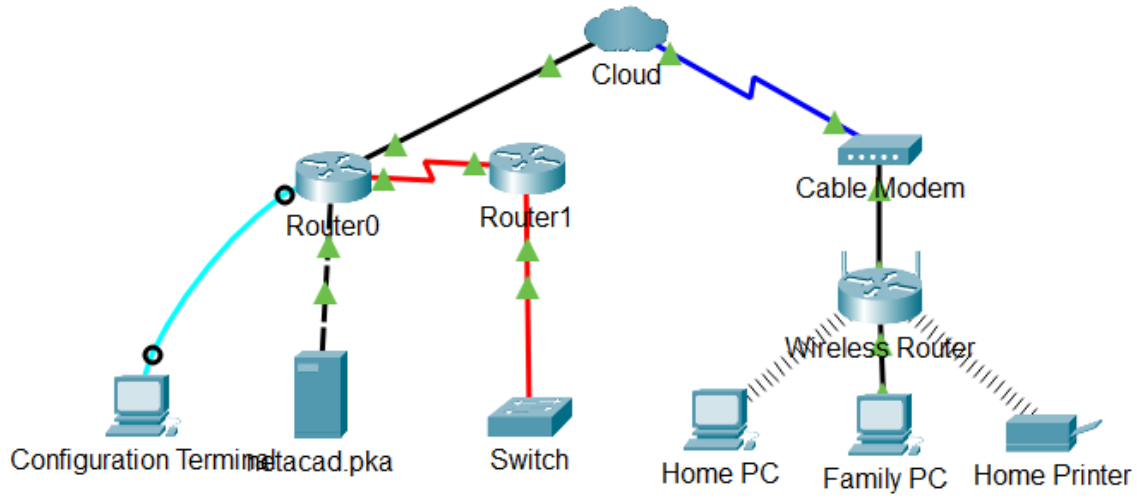
Experiment 5

Aim: To connect a wired and wireless LAN activity.

Software Used:

Cisco Packet Tracer

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

Procedure:

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 **Cable 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.

```
C:\>ping 172.16.0.2

Pinging 172.16.0.2 with 32 bytes of data:

Reply from 172.16.0.2: bytes=32 time=30ms TTL=252
Reply from 172.16.0.2: bytes=32 time=36ms TTL=252
Reply from 172.16.0.2: bytes=32 time=42ms TTL=252
Reply from 172.16.0.2: bytes=32 time=32ms TTL=252

Ping statistics for 172.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 30ms, Maximum = 42ms, Average = 35ms
```

Figure: Ping command for Switch IP.

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.

```
Router0>en
Router0#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.2.1     YES manual up                    up
FastEthernet0/1        10.0.0.1        YES manual up                    up
Serial0/0/0            172.31.0.1      YES manual up                    up
Serial0/0/1            unassigned      YES unset  administratively down down
Vlan1                  unassigned      YES unset  administratively down down
Router0#
```

Figure: Ip interface brief.

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?

Ans: 2 wires are connected.

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?

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?

One is fiber and other is fast ethernet.

b. Click **Back** to return to **Home City**.

Step 4: Examine the Home Network.

a. Click the **Home Network** icon.

b. Click the **Logical Workspace** tab to return to the logical topology.

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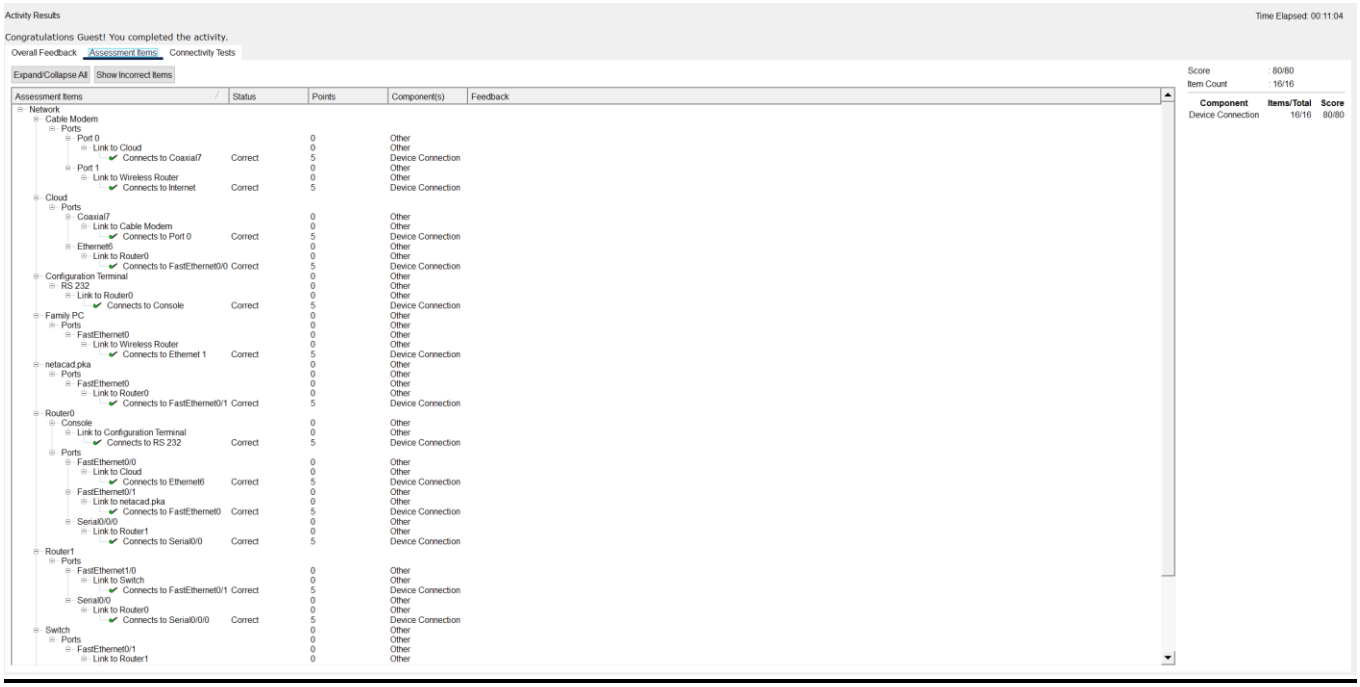
Packet Tracer Activity:



Activity Results

Time Elapsed: 00:11:04

Congratulations Guest! You completed the activity.

Overall Feedback | Assessment Items | Connectivity Tests

Expand/Collapse All | Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
Cable Modem				
Ports				
Port 0		0	Other	
Link to Cloud		0	Other	
Connects to Coaxial7	Correct	5	Device Connection	
Port 1		0	Other	
Link to Wireless Router		0	Other	
Connects to Internet	Correct	5	Device Connection	
Cloud				
Ports				
Coaxial7		0	Other	
Link to Cable Modem		0	Other	
Connects to Port 0	Correct	5	Device Connection	
Ethernet6		0	Other	
Link to Router0		0	Other	
Connects to FastEthernet0/0	Correct	5	Device Connection	
Configuration Terminal		0	Other	
RS 232		0	Other	
Link to Router0		0	Other	
Connects to Console	Correct	5	Device Connection	
Family PC		0	Other	
Ports		0	Other	
FastEthernet0		0	Other	
Link to Wireless Router		0	Other	
Connects to Ethernet 1	Correct	5	Device Connection	
netacad.pka		0	Other	
Ports		0	Other	
FastEthernet0		0	Other	
Link to Router0		0	Other	
Connects to FastEthernet0/1	Correct	5	Device Connection	
Router0		0	Other	
Console		0	Other	
Link to Configuration Terminal		0	Other	
Connects to RS 232	Correct	5	Device Connection	
Ports		0	Other	
FastEthernet0/0		0	Other	
Link to Cloud		0	Other	
Connects to Ethernet6	Correct	5	Device Connection	
FastEthernet0/1		0	Other	
Link to netacad.pka		0	Other	
Connects to FastEthernet0	Correct	5	Device Connection	
Serial0/0/0		0	Other	
Link to Router1		0	Other	
Connects to Serial0/0	Correct	5	Device Connection	
Router1		0	Other	
Ports		0	Other	
FastEthernet1/0		0	Other	
Link to Switch		0	Other	
Connects to FastEthernet0/1	Correct	5	Device Connection	
Serial0/0		0	Other	
Link to Router0		0	Other	
Connects to Serial0/0/0	Correct	5	Device Connection	
Switch		0	Other	
Ports		0	Other	
FastEthernet0/1		0	Other	
Link to Router1		0	Other	

Score	: 80/80
Item Count	: 16/16

Component	Items/Total	Score
Device Connection	16/16	80/80

Conclusion:

The network topology was connected and verified.