

EXP. 2

Demonstrate connectivity of wired & wireless devices in Local Area Network using Hub, Switch and Router.

Aim:

Components and Tools:

Description:

Procedure:

Program (if any):

Results and Observations:

Viva-Voce Questions (At least 5 questions):

Aim:

Demonstrate connectivity of wired & wireless devices in Local Area Network using Hub, Switch and Router in packet tracer.

Components and Tools:

Modem

Hub

Switch

Router

Cloud

Home PC

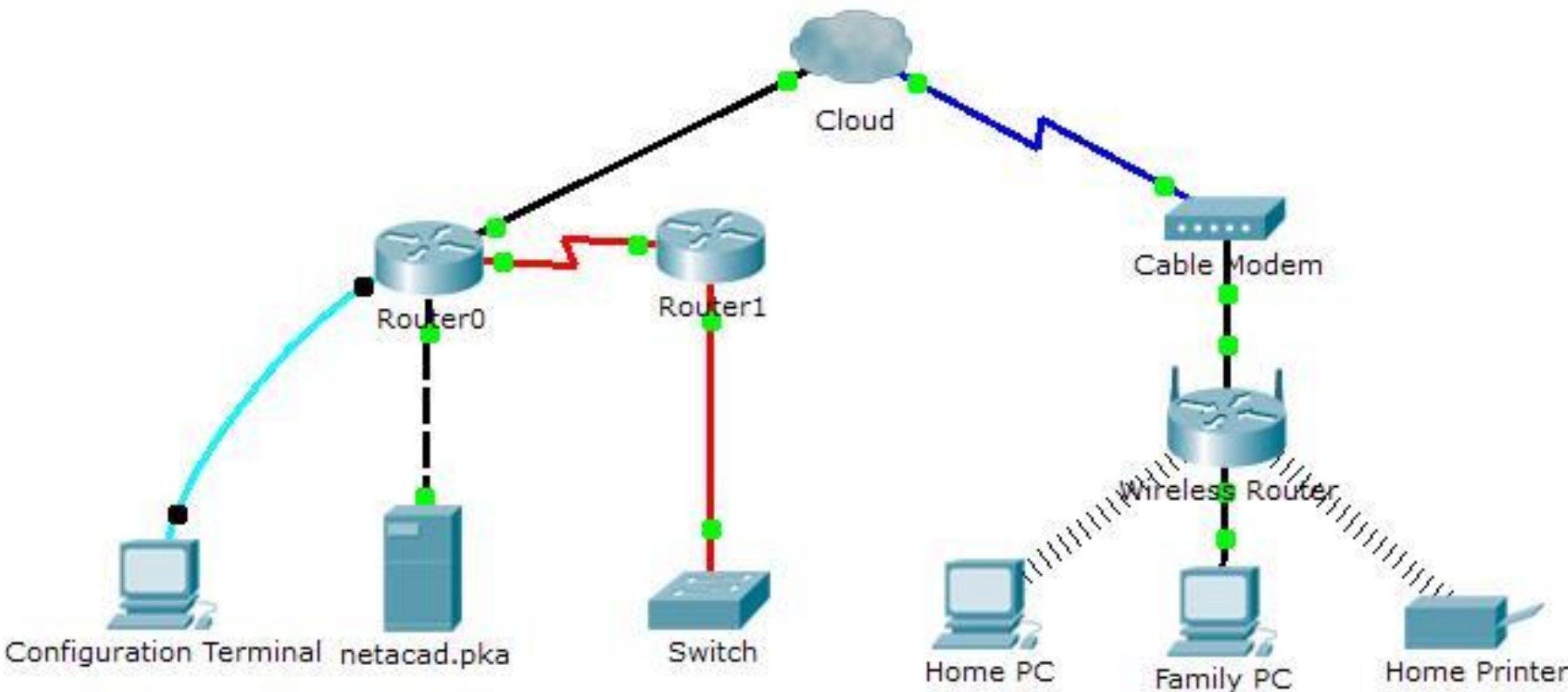
Family PC

Home Printer

Server

CISCO Packet Tracer

Description: Network Diagram



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: Packet Tracer installation

<https://www.netacad.com/courses/packet-tracer>

Sign up

Login

Download Packet tracer

Lear all options

Part 2: Connect to the Cloud

Part 3: Connect Router0

Part 4: Connect Remaining Devices

Part 5: Verify Connections

Part 6: Examine the Physical Topology

Part 2: 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 Fa0/0 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 3: 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 Fa0/1 to netacad.pka Fa0. 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 4: Connect Remaining Devices

Step 1: Connect Router1 to Switch.

Choose the correct cable to connect Router1 Fa1/0 to Switch Fa0/1.

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 5: 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 6: 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.

Viva-Voce Questions

Assignment -1

Case Study-1: Investigation of Computer Network architecture of PVPSIT

Questions