

Lab #5 : Physical Layer (Continued)

Communication Networks
Prof. SAYAD Lamri

Academic Year : 2025/2026
Duration : 1 sessions

Objectives :

- Understand the role of a modem in a network.
- Configure a modem to connect a local network to the internet.
- Simulate and test internet connectivity in Cisco Packet Tracer.

Step 1: Open Packet Tracer

1. Open Packet Tracer in your computer.

Step 2: Add the following equipment (devices):

2. 2 PC (PC0, PC1) - 1 Switch - 1 Cable Modem - 1 Cloud - 1 Server

Step 3: Set the IP addresses

3. Determine the devices that require an IP address.

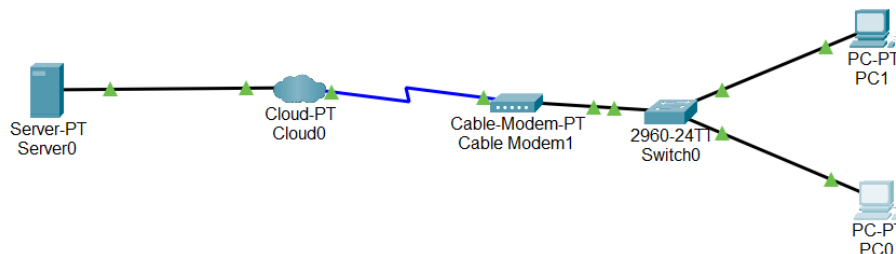
Your Answer :

4. Set their IP addresses. Available IP addresses are :

- a. IP : 10.10.10.1, Subnet Mask: 255.0.0.0
- b. IP : 10.10.10.2, Subnet Mask: 255.0.0.0
- c. IP : 10.10.10.3, Subnet Mask: 255.0.0.0
- d. IP : 10.10.10.4, Subnet Mask: 255.0.0.0

Step 4: Connect between devices

5. Use Ethernet cables to connect the 2 PCs to the Switch.
6. Use Ethernet cables to connect the switch to the modem.
7. Use Ethernet cable to connect the Server to the Cloud.
8. Use Coaxial cable to connect the modem to the Cloud



9. Show the IP addresses of the corresponding devices (using command prompt).

Device 1 :

Device 2 :

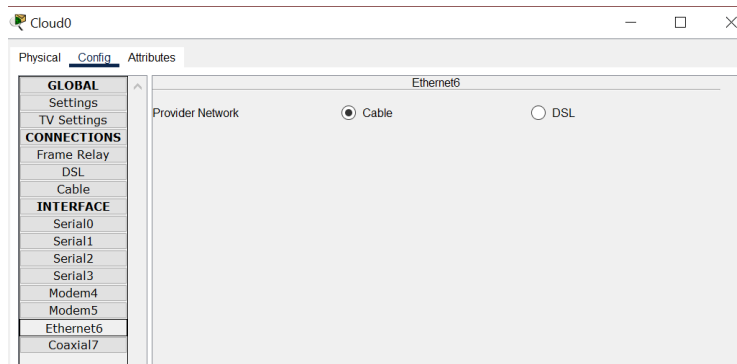
Device 3 :

Device 3 :

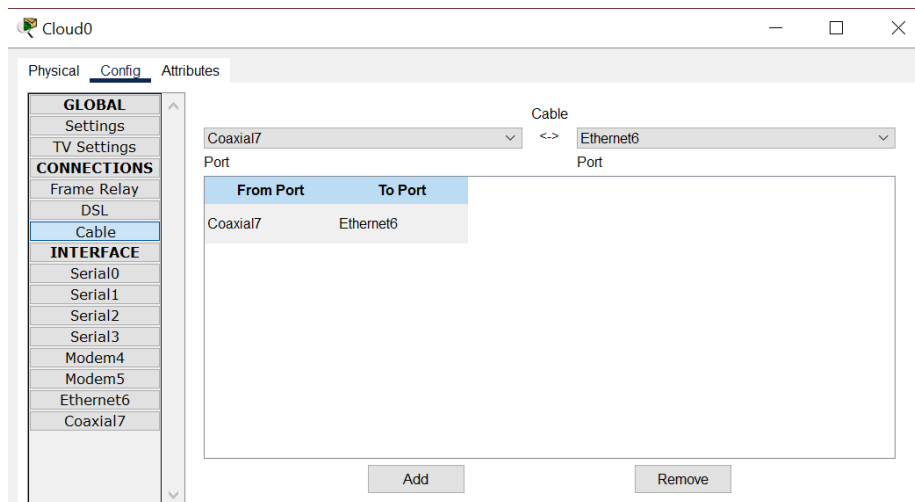
Step 5: Configure the Cloud

10. Under the Config tab, set the “Provider Network” of the Ethernet interface to “Cable”.

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11. Then, under “Connections” option, add the following connection : Coaxial – Ethernet



Step 6: Test the connection between PC0 and the server.

12. Test the connection from PC0 to Server0 using a command prompt.

Report the result :

13. Switch to simulation mode.

14. Add Simple PDU (from PC0 to Server0).

15. Start simulation (Capture).

16. Now, change the IP address of Server0 to the following :

IP : 20.20.20.1 Subnet Mask: 255.0.0.0

17. Try to test the connectivity between PC0 and Server0 again.

Report the result :

18. Explain why.

Lab Questions:

1. What is the role of the modem in this network?
2. What is the role of the cloud device in this Lab ?