Connecting Two devices With Switch Using Cisco Packet Tracer

1. Objective

The objective of the lab is to configure a simple network using Cisco Packet Tracer, enabling two devices to communicate by sending and receiving packets between each other.

2. Theory

A switch is a networking device that connects devices on a local area network (LAN) and uses the MAC addresses of devices to forward data to the correct destination. It operates at the data link layer (Layer 2) of the OSI model.

3. Connections

In this lab, we will use Cisco Packet Tracer to connect two devices (PC 1 and Laptop 1) using a switch. We will use Fast Ethernet interfaces on both devices and a copper straight-through cable to connect them to the switch.

4. Device Configuration

i.   To set up the network, we first selected the switch from the bottom left corner of the workspace in Cisco Packet Tracer.
ii.   The switch is placed onto the workspace.
iii. Next, we added the PC and Laptop icons by dragging them onto the workspace.
iv.   Using the copper straight-through cable icon from the toolbar, we connected one end to the FastEthernet port of PC0 and the other end to an available port on the switch.
v.   Similarly, we connected one end of another copper straight-through cable to the Fast Ethernet port of Laptop0 and the other end to another available port on the switch.
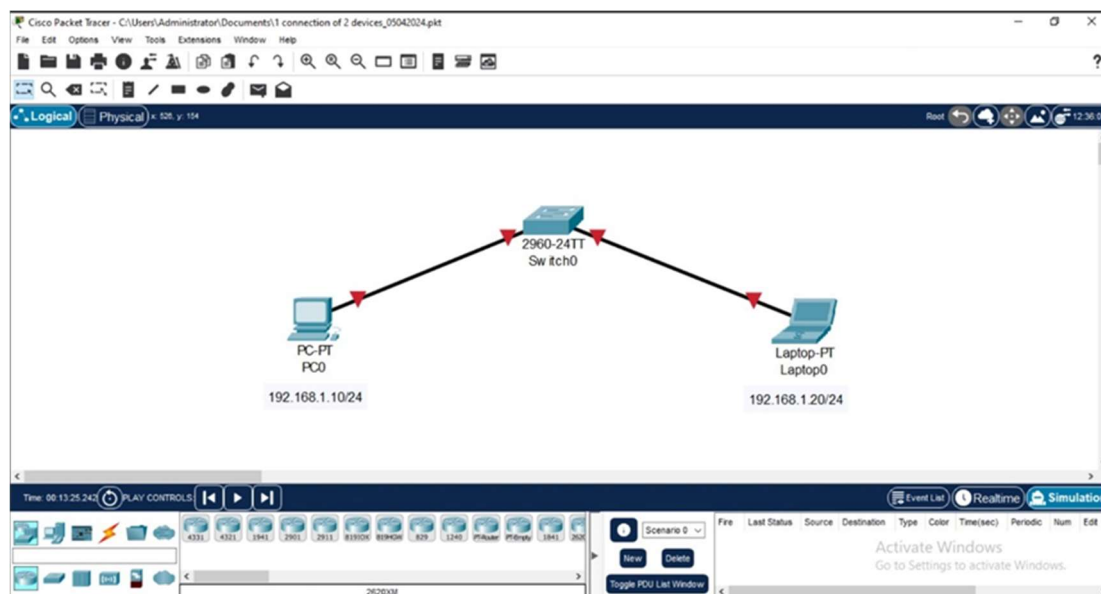

5. Configuring Switch Settings

i.   Double-click on the switch to open its configuration window.
ii.   Check that the ports connecting to PC0 and Laptop0 are in the 'up' state. If not, click on each port to enable them.
iii. Ensure that the switch is powered on and functioning properly.

6. Configuring Devices

6.1. config PC0

    i.   Double-click on PC0 to open its configuration window.
   ii.   Go to the Desktop tab and select IP Configuration.
  iii.   Enter the following details:
           a. IP Address: 192.168.1.10
           b. Subnet Mask: 255.255.255.0
 iv.   Click on OK to save the configuration.
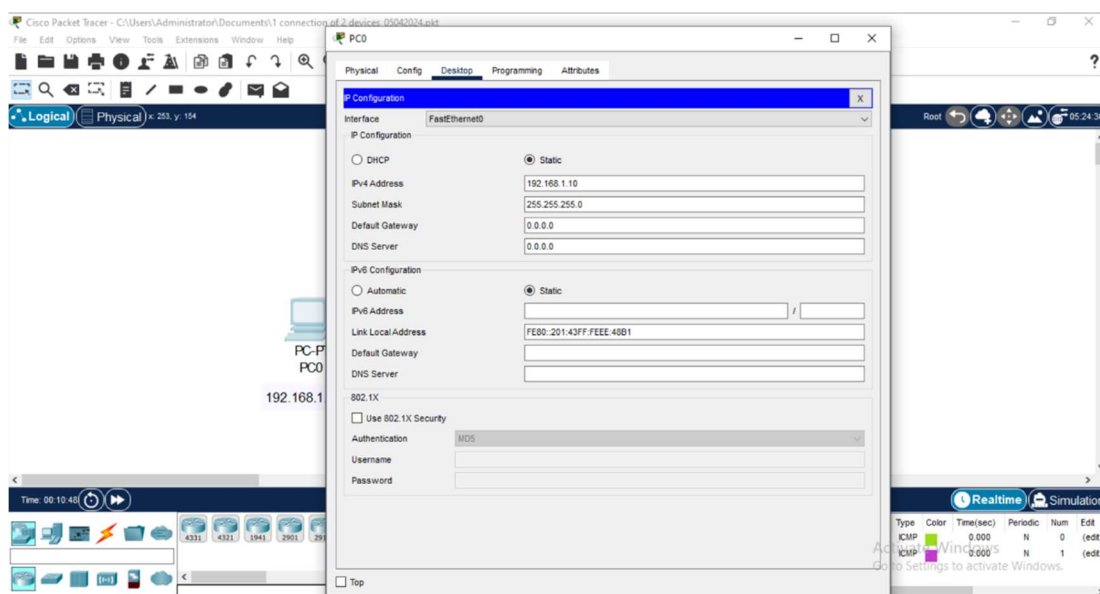
6.2. config Laptop0

    i.   Double-click on laptop0 to open its configuration window.
   ii.   Go to the Desktop tab and select IP Configuration.
  iii.   Enter the following details:
           a. IP Address: 192.168.1.20
           b. Subnet Mask: 255.255.255.0
  iv.   Click on OK to save the configuration.
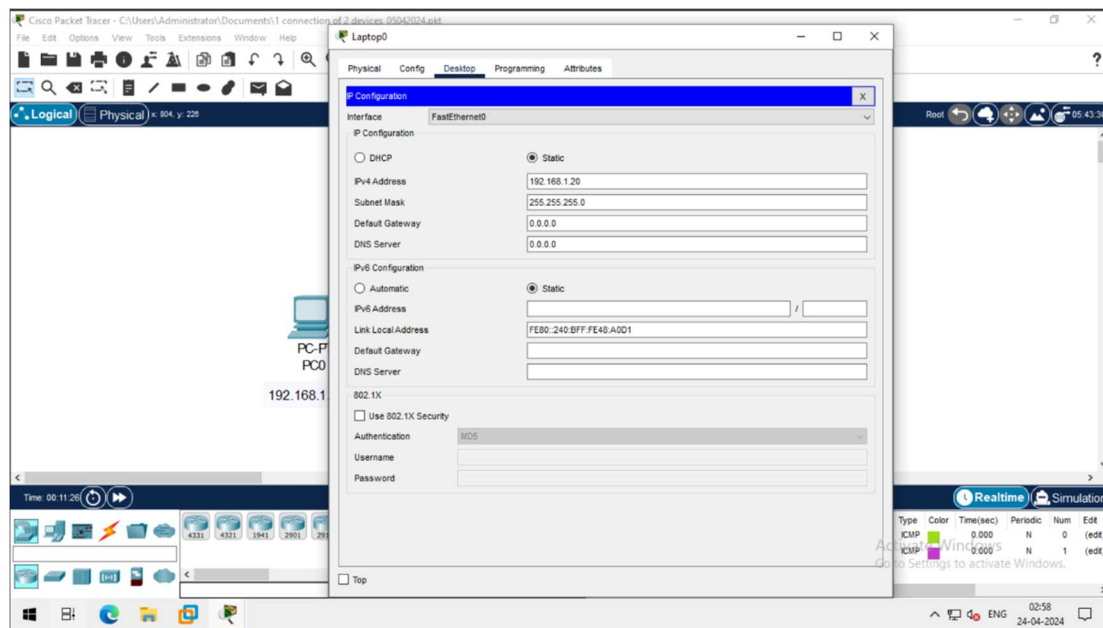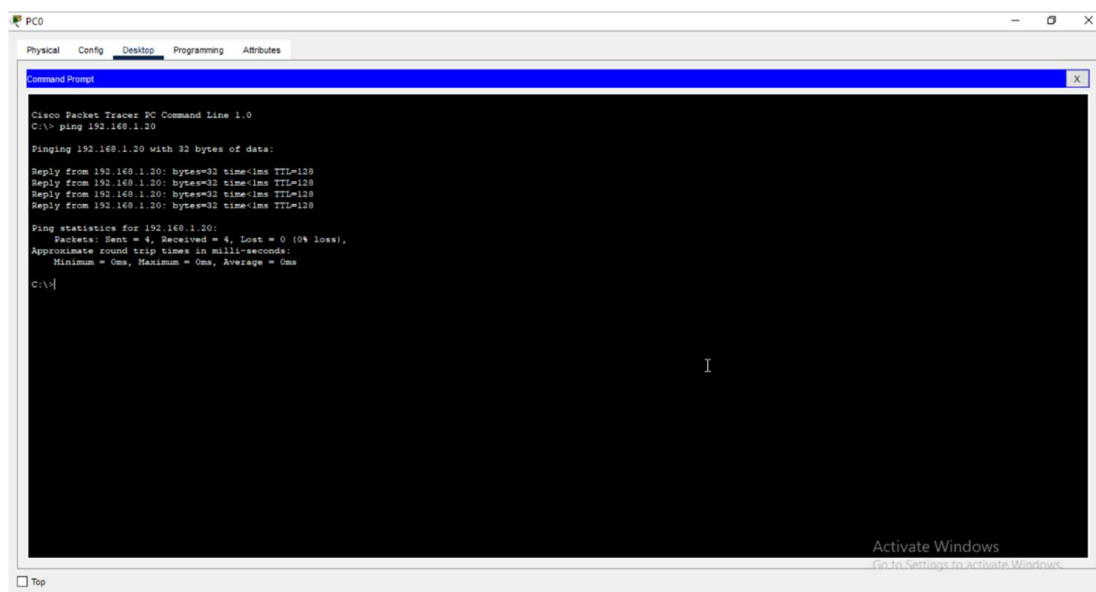
7. Observation

Initially, the cable connections between the devices and the switch may appear in red, indicating a disconnected state. However, as the devices initialize and establish connections, the cable connections should transition from red to green, indicating successful connectivity.
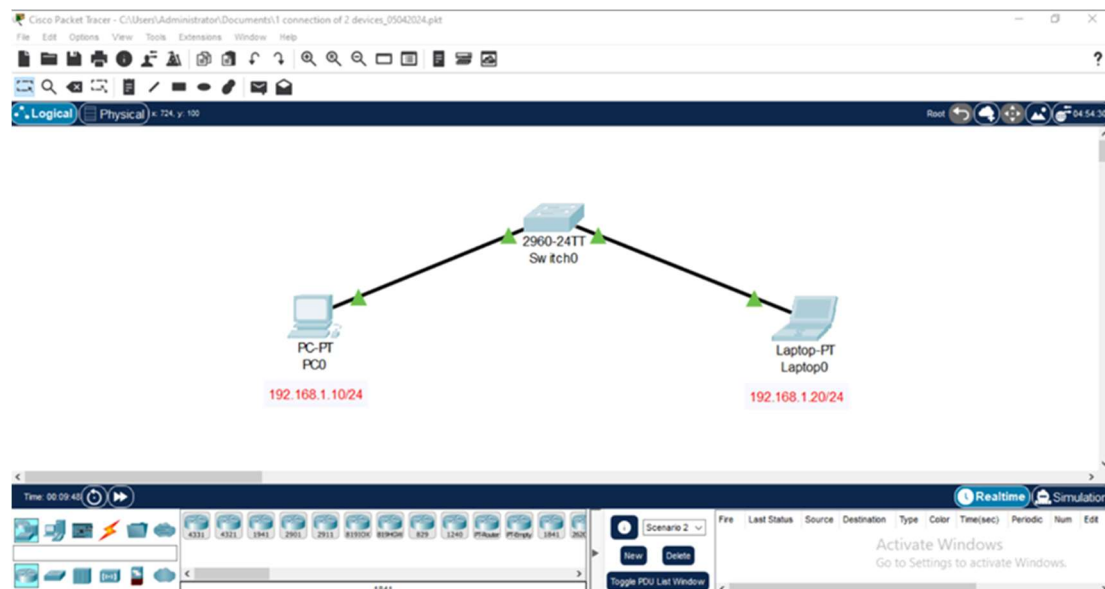
8. Ping The Devices

8.1. PC0 to Laptop0

    i.   Click on PC0 to select it.
    ii.   Open the command prompt or terminal.
    iii.   Type the command: ping 192.168.1.20 and press Enter.
    iv.   If the connection is successful, you will see responses from Laptop0.


8.2. Laptop0 to PC0

    i.   Click on Laptop0 to select it.
    ii.   Open the command prompt or terminal.
    iii.   Type the command: ping 192.168.1.10 and press Enter.
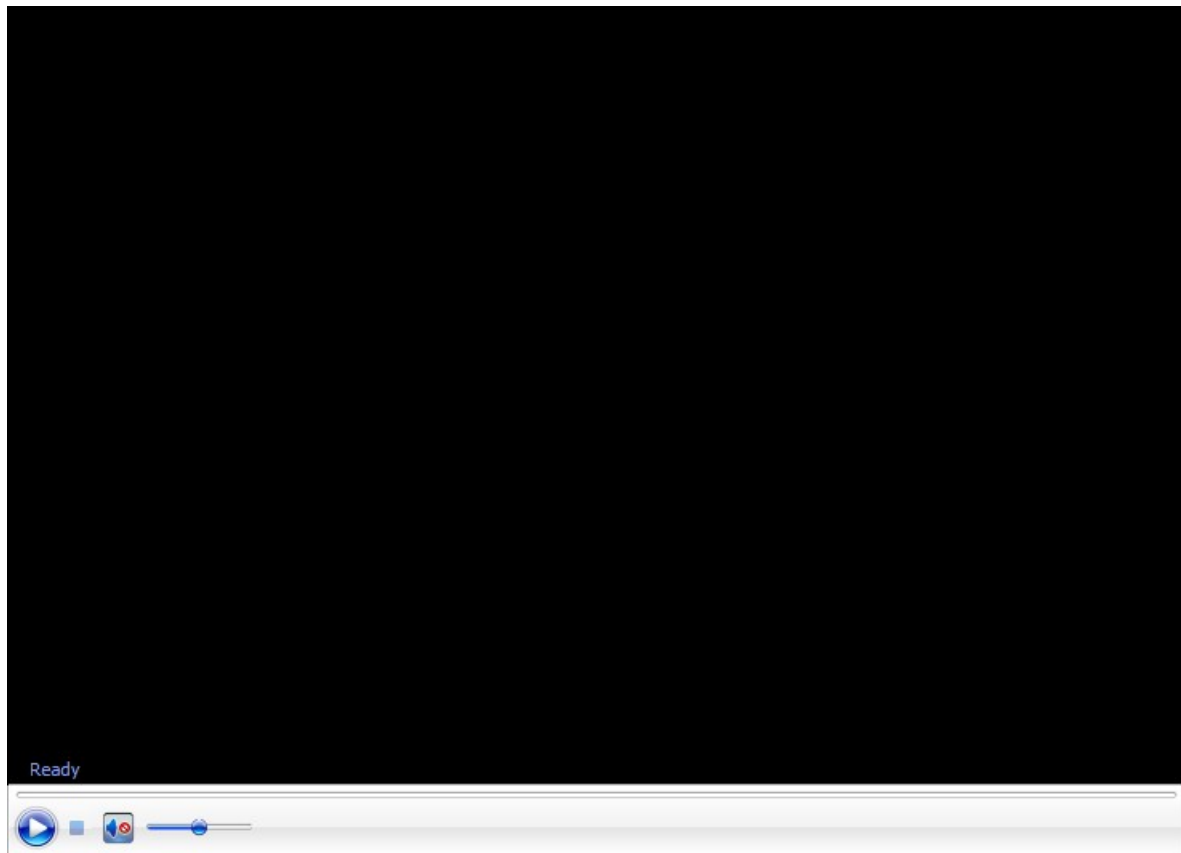   iv.   If the connection is successful, you will see responses from PC0.
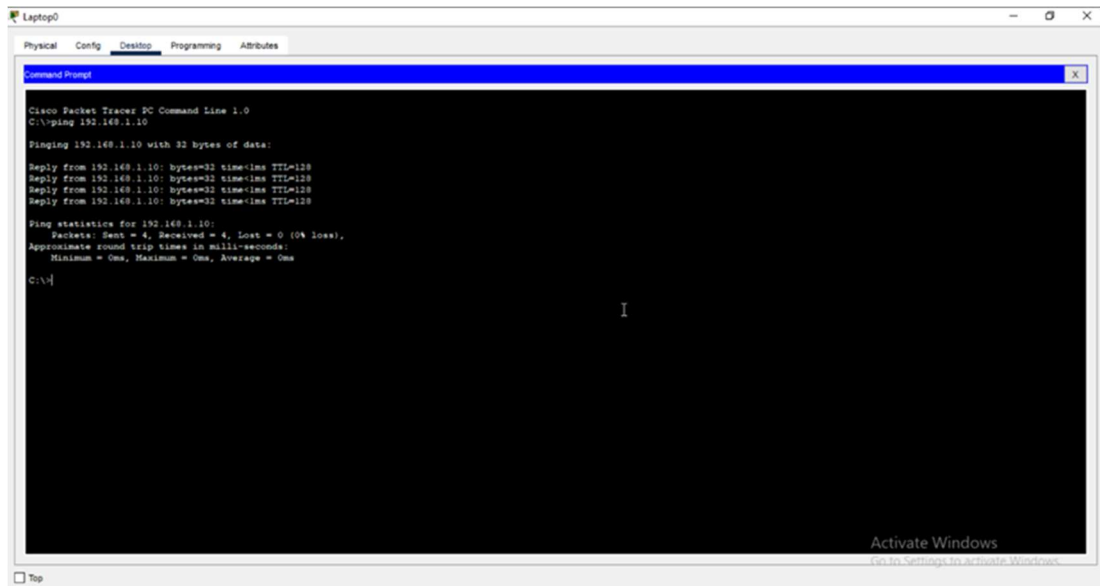
9. Output

Once the network is set up and configured, PC0 and Laptop0 should be able to communicate with each other by sending and receiving packets.

9.1. Result

9.2. Video

Ready
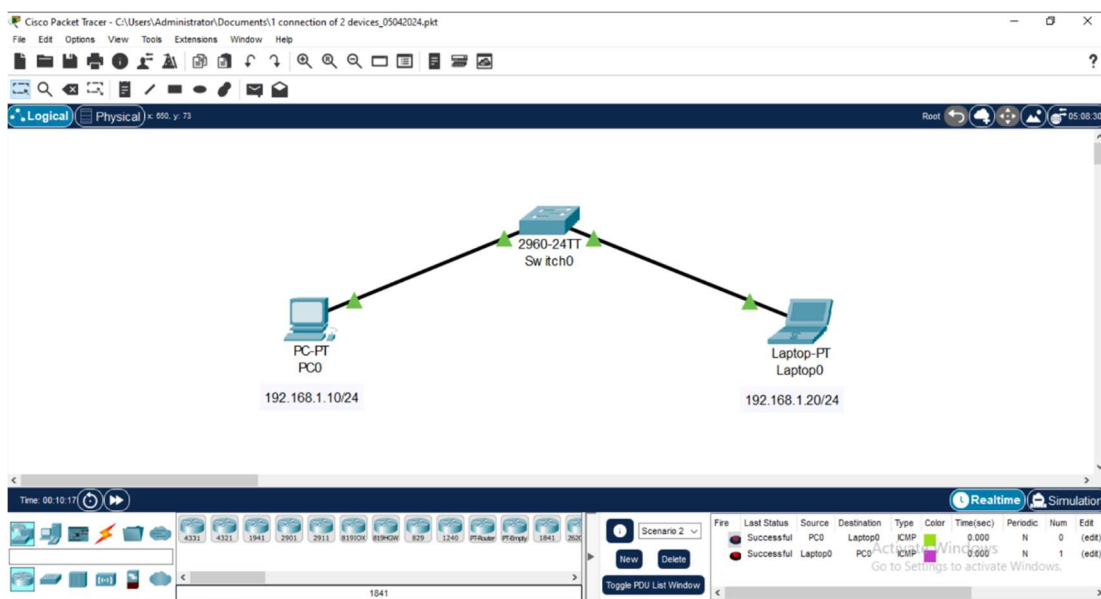
10.Conclusion

Through the configuration of a simple network using Cisco Packet Tracer, we have successfully established communication between two devices, PC0 and Laptop0. This setup illustrates the fundamental principles of network connectivity, showcasing the role of a switch in facilitating communication between devices within a local network. The successful ping test confirms the effective communication between PC0 and Laptop0, validating the setup and demonstrating the functionality of the network configuration.

11. Table Of References

- [Implementing Star Topology using Cisco Packet Tracer - GeeksforGeeks](#)
- RPS Recoding Class and notes