NPS -LAB EXPERIMENT-8

Configuring RIP and OSPF on Cisco Network Switches & Verifying Connectivity

Requirements:

- Access to Cisco Device CLI.
- An IP addressing plan for all interfaces.

1. Configure RIP (Routing Information Protocol)

Step 1: Access Global Configuration Mode

- Enter privileged EXEC mode using the enable command.
- Enter global configuration mode with the configure terminal command.

Step 2: Enable RIP and Use Version 2

- Start the RIP process by typing router rip.
- Set RIP to version 2 using the version 2 command.

Step 3: Define Networks to Advertise

- Use the network command to specify the networks directly connected to the router that you want RIP to advertise.

Example:

  - network 192.168.1.0
  - network 10.0.0.0

Step 4: Exit Configuration Mode

- To save your configuration and exit, use the exit command twice.

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2. Configure OSPF (Open Shortest Path First)

Step 1: Enter OSPF Configuration Mode

- Enter OSPF configuration mode using the command router ospf [process_id], where [process_id] is a number that identifies the OSPF process (commonly 1).

Step 2: Define Networks and Assign Areas

- Specify the networks you want to include in OSPF, using the format network [network_address] [wildcard_mask] area [area_id].

Example:

- network 192.168.2.0 0.0.0.255 area 0
- network 10.0.1.0 0.0.0.255 area 0

Step 3: Exit Configuration Mode

- Use the exit command twice to save and exit OSPF configuration mode.

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3. Verifying Connectivity

a. Check the Routing Table

- To view the routing table and check if RIP and OSPF routes are present, use the command show ip route.

b. Check RIP Status

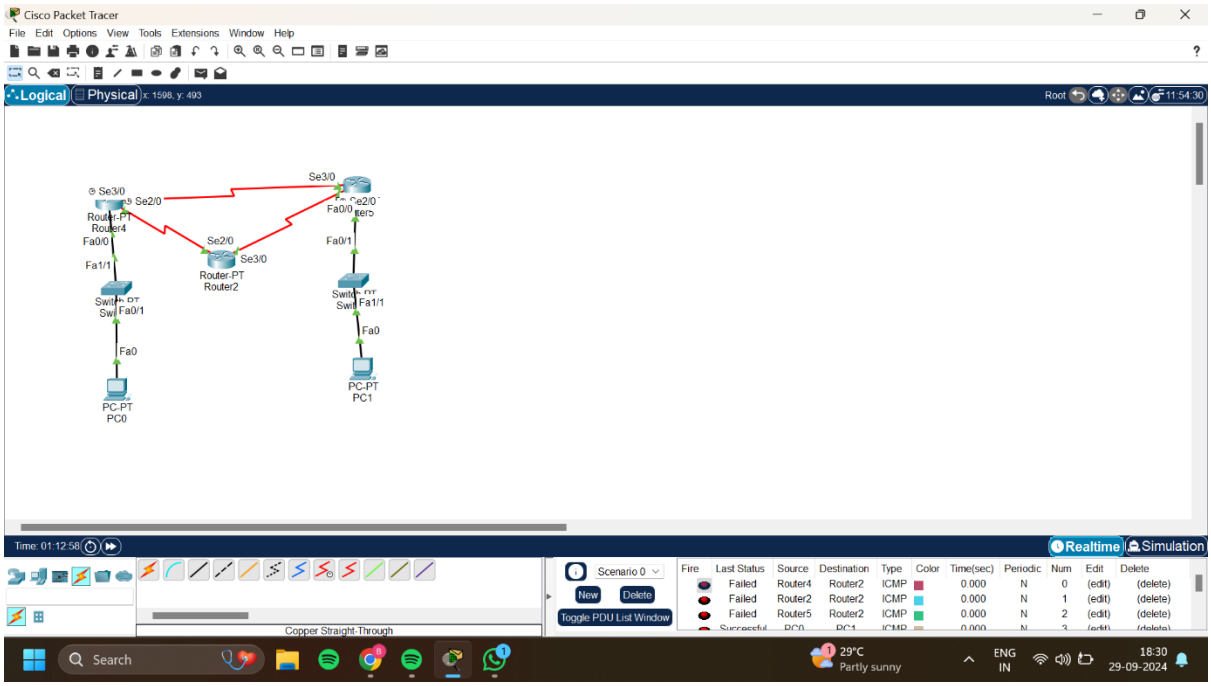
- To verify the status of RIP and the networks it's advertising, use the command show ip rip database.

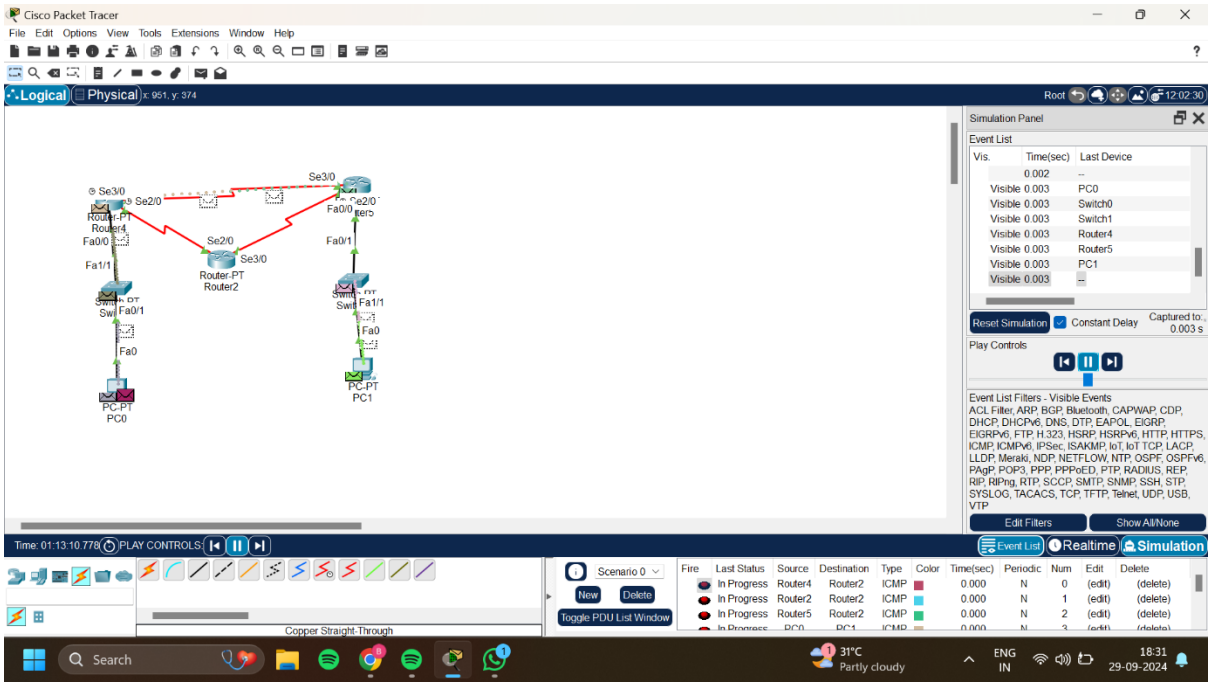
c. Check OSPF Neighbors

- To check OSPF neighbor relationships and confirm adjacency, use the command show ip ospf neighbor.

d. Test Connectivity with Ping

- Verify connectivity between devices by using the ping command followed by the destination IP address (e.g., ping [destination_ip]).




Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical Physical
Root
Simulation Panel
Event List
Vis. Time(sec) Last Device
Visible 0.003 PC0
Visible 0.003 Switch0
Visible 0.003 Switch1
Visible 0.003 Router4
Visible 0.003 Router5
Visible 0.003 PC1
Reset Simulation Constant Delay
Play Controls
Event List Filters - Visible Events
Edit Filters Show All/None
Time: 01:13:10.778 PLAY CONTROLS:
Event List Realtime Simulation
Scenario 0 New Delete Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
In Progress Router4 Router2 ICMP 0.000 N 0 (edit) (delete)
In Progress Router2 ICMP 0.000 N 1 (edit) (delete)
In Progress Router5 Router2 ICMP 0.000 N 2 (edit) (delete)
Copper Straight-Through
Router-PT Router4
Router-PT Router2
PC-PT PC0
PC-PT PC1
Search
31°C Partly cloudy
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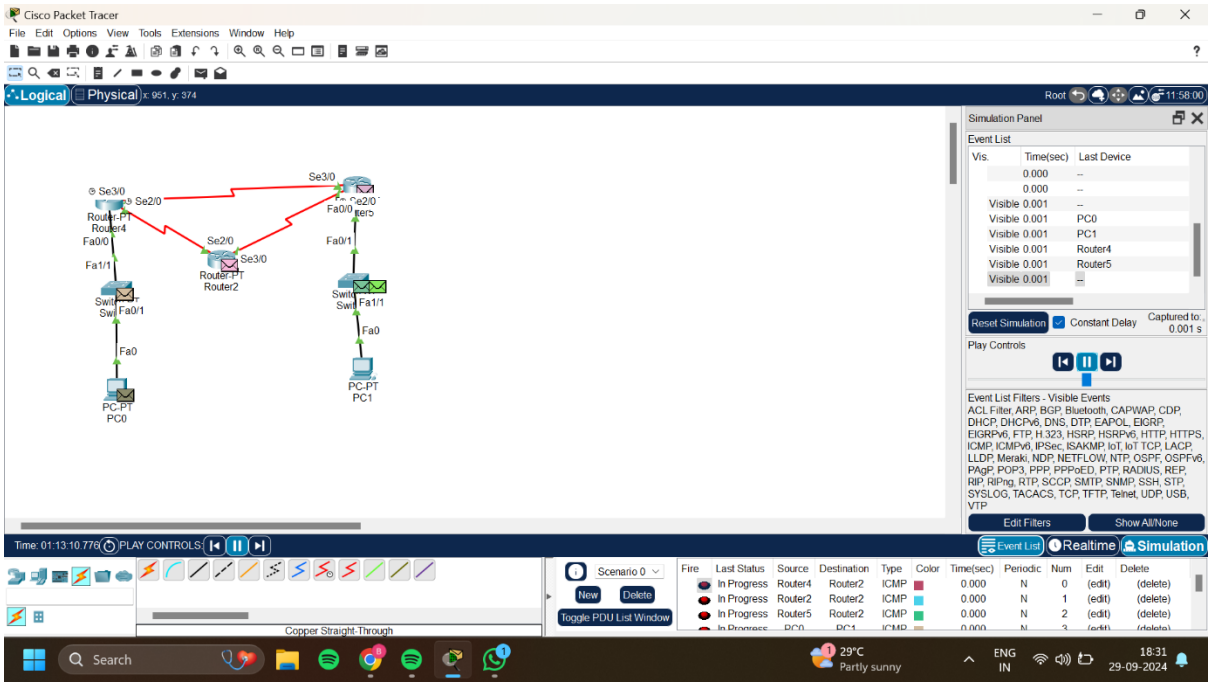
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