P.HARINI
2300033404
SEC 7

NPS LAB EXPERIMENT 6

Objectice: Configuration of ARP and Static Routing using Cisco network switch and verify the connectivity.

STEPS:

1. Set Up the Network Devices:

- Add two routers from the Network Devices > Routers section.
- Add two switches from the Network Devices > Switches section.
- Add four PCs from the End Devices section.

2. Connect the Devices:

- Use Copper Straight-Through Cables to connect:
  - Router 1 GigabitEthernet 0/0 to Switch 1.
  - Router 2 GigabitEthernet 0/0 to Switch 2.
  - Switch 1 to PC1 and PC2.
  - Switch 2 to PC3 and PC4.
- Connect the two routers using a Serial Cable (Serial0/0/0 on both routers).

3. Assign IP Addresses:

- PC1 and PC2: Assign IP addresses (e.g., 192.168.1.2 and 192.168.1.3) and subnet mask.
- PC3 and PC4: Assign IP addresses (e.g., 192.168.2.2 and 192.168.2.3) and subnet mask.
- Router 1: Assign an IP address to GigabitEthernet0/0 (e.g., 192.168.1.1) and Serial0/0/0 (e.g., 10.0.0.1).
- Router 2: Assign an IP address to GigabitEthernet0/0 (e.g., 192.168.2.1) and Serial0/0/0 (e.g., 10.0.0.2).

4. Configure Static Routing:

- Router 1: Add a static route to the 192.168.2.0 network (connected to Router 2) via 10.0.0.2.
- Router 2: Add a static route to the 192.168.1.0 network (connected to Router 1) via 10.0.0.1.

5. Verify Connectivity:

- PC1: Ping PC3 to test connectivity between different networks.
- Check the ARP Table on PC1 or Router 1 to verify ARP resolution and ensure the MAC addresses are being mapped to IP addresses correctly.

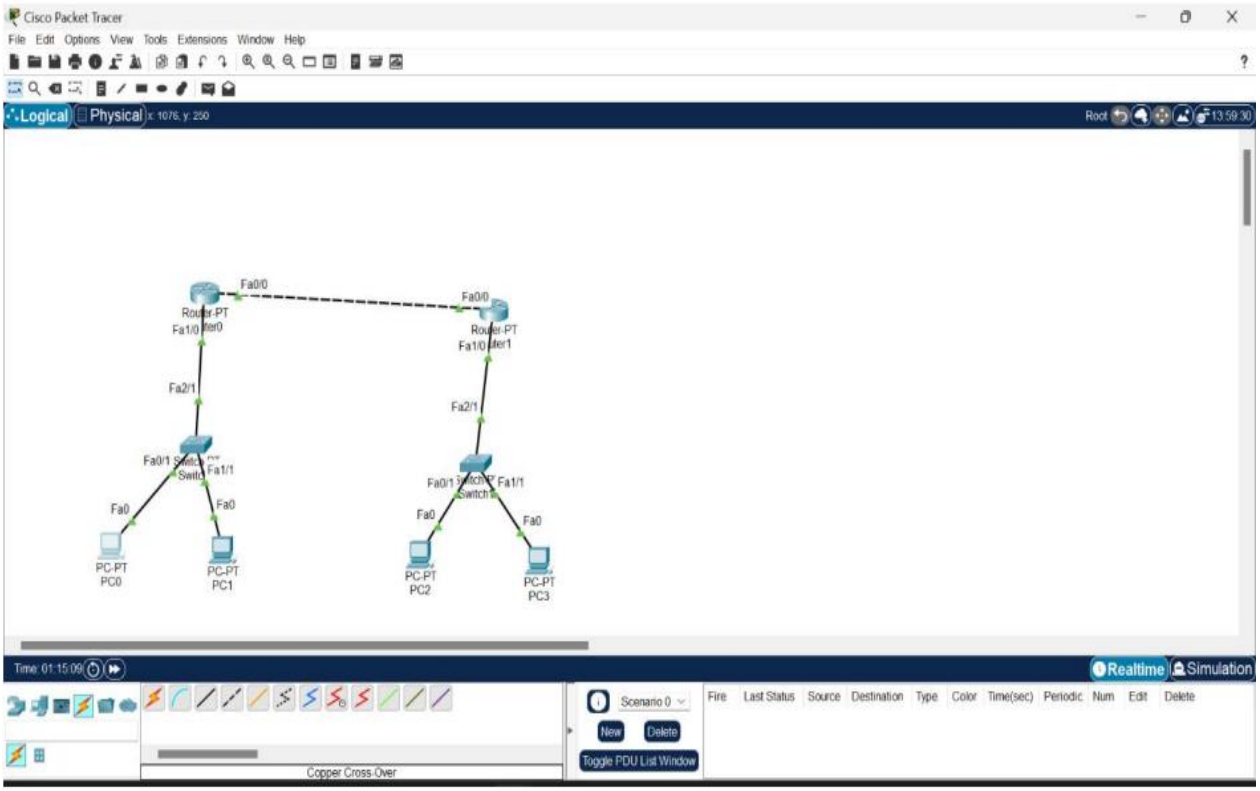
6. Test ARP and Routing:

- Use ping between PCs on different networks to verify static routes are working.

- Check the ARP Table to verify ARP is resolving the IP addresses of remote devices through the routers.

This process configures static routes between two routers, uses ARP for local network communication, and verifies inter-network connectivity in Cisco Packet Tracer.

S.NO	DEVICE	MODEL NAME	QTY
1.	PC	PC	4
2.	SWITCH	PT-SWITCH	2
4.	ROUTER	PT-ROUTER	2



P.HARINI
2300033404
SEC 7