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NPS LAB EXPERIMENT 4

Objective: Configure Encapsulation Dot1Q (802.1Q) on a Cisco switch using Cisco Packet Tracer. Dot1Q is a VLAN tagging protocol that allows multiple VLANs to be carried across a single physical network link by encapsulating VLAN information into the Ethernet frame.

STEPS:

1. Set Up Devices in Cisco Packet Tracer:

- Add two Cisco 2960 switches from the Switches section.
- Add PCs from the End Devices section (for testing).
- Connect Switch 1 to Switch 2 using a Copper Straight-Through Cable:
    - Switch 1 FastEthernet 0/24 to Switch 2 FastEthernet 0/24.
- Connect PCs to various switch ports for testing VLANs later.

2. Access Switch 1 CLI:

- Click on Switch 1.
- Go to the CLI tab.

3. Create VLANs on Switch 1:

- Create VLANs (e.g., VLAN 10 Sales and VLAN 20 HR) and assign names to them.
- Assign relevant ports to these VLANs.

4. Configure Trunking with Dot1Q on Switch 1:

- Access FastEthernet 0/24 interface.
- Set the interface as a trunk port.
- Enable 802.1Q encapsulation on this trunk link.

5. Repeat the Process for Switch 2:

- Access Switch 2.
- Create the same VLANs (VLAN 10 and VLAN 20).
- Configure FastEthernet 0/24 as a trunk port and set encapsulation to Dot1Q.

6. Test the Trunk and VLANs:

- Assign IP addresses to the PCs within the corresponding VLAN subnets.
- Use ping to verify that the PCs in the same VLAN can communicate through the trunked link using Dot1Q encapsulation.

This process sets up Dot1Q encapsulation on trunk links between switches to carry VLAN traffic.

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