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SEC 7

NPS LAB EXPERIMENT 3

Objective: Construction of different VLANs and trunking using Cisco Packet Tracer.

STEPS:

1. Add Devices in Cisco Packet Tracer:

- Open Cisco Packet Tracer.
- From the "Switches" section, drag two Cisco 2960 switches onto the workspace.
- From the "End Devices" section, drag four PCs onto the workspace.

2. Connect Devices:

- Use a Copper Straight-Through Cable to connect:
    - PC1 to Switch 1 FastEthernet0/1.
    - PC2 to Switch 1 FastEthernet0/2.
    - PC3 to Switch 2 FastEthernet0/1.
    - PC4 to Switch 2 FastEthernet0/2.
- Use the Copper Straight-Through Cable to connect Switch 1 FastEthernet0/24 to Switch 2 FastEthernet0/24 (for trunking).

3. Configure VLANs on Switch 1:

a. Access the Switch:

- Click on Switch 1.
- Go to the CLI tab and press Enter to access the command-line interface.

b. Create VLANs:

- Assign VLAN 10 for Sales and VLAN 20 for HR.

c. Assign Ports to VLANs:

- Assign FastEthernet 0/1 and FastEthernet 0/2 to VLAN 10 (Sales).
- Assign FastEthernet 0/3 and FastEthernet 0/4 to VLAN 20 (HR).

4. Configure VLANs on Switch 2:

a. Access the Switch:

- Click on Switch 2.
- Go to the CLI tab and press Enter.

b. Create VLANs:

- Create VLAN 10 (Sales) and VLAN 20 (HR) on Switch 2.

c. Assign Ports to VLANs:

- Assign FastEthernet 0/1 and FastEthernet 0/2 to VLAN 10 (Sales).
- Assign FastEthernet 0/3 and FastEthernet 0/4 to VLAN 20 (HR).

5. Configure Trunking Between Switches:

a. Switch 1 Trunk Port Configuration:

- On Switch 1, configure FastEthernet 0/24 as a trunk port.

b. Switch 2 Trunk Port Configuration:

- On Switch 2, configure FastEthernet 0/24 as a trunk port.

6. Assign IP Addresses to PCs:

a. PC1 and PC2 (Sales, VLAN 10):

- Click on PC1 and PC2.
- Go to the Desktop > IP Configuration and assign:
  - PC1: IP 192.168.10.2, Subnet Mask 255.255.255.0.
  - PC2: IP 192.168.10.3, Subnet Mask 255.255.255.0.

b. PC3 and PC4 (HR, VLAN 20):

- Click on PC3 and PC4.
- Go to the Desktop > IP Configuration and assign:
  - PC3: IP 192.168.20.2, Subnet Mask 255.255.255.0.
  - PC4: IP 192.168.20.3, Subnet Mask 255.255.255.0.

7. Verify VLAN and Trunking Configuration:

- Use the ping command in the Command Prompt on the PCs to verify communication:
  - PC1 and PC2 should ping each other (within VLAN 10).
  - PC3 and PC4 should ping each other (within VLAN 20).
- Trunking ensures traffic for different VLANs can pass between Switch 1 and Switch 2.