

Lab - Configure Router-on-a-Stick Inter-VLAN Routing

Part 1: Build the Network and Configure Basic Device Settings

1. Cable the network as shown in the topology diagram.
2. Configure basic settings for the router (R1):
 - Enable privileged EXEC mode
 - Configure hostname, disable DNS lookup
 - Set encrypted password 'class', console & vty passwords 'cisco'
 - Encrypt all plaintext passwords
 - Create a warning banner
 - Save config and set clock
3. Configure basic settings for switches (S1, S2):
 - Same steps as router for hostname, passwords, banner, clock
4. Configure IP on PCs using the Addressing Table

Part 2: Create VLANs and Assign Switch Ports

1. Create VLANs 3, 4, 7 on S1 and S2, assign names
2. Configure VLAN 3 on switches with IPs and default gateways
3. Assign all unused ports to VLAN 7 (ParkingLot) and shut down
4. Assign access ports (F0/6 to VLAN 3 on S1, F0/18 to VLAN 4 on S2)

Part 3: Configure 802.1Q Trunk Links

1. On S1 and S2 configure F0/1 as trunk:
 - switchport mode trunk
 - switchport trunk native vlan 8
 - switchport trunk allowed vlan 3,4,8
2. Configure F0/5 on S1 as trunk with same settings (to router)

Part 4: Configure Inter-VLAN Routing on Router

1. Activate G0/0/1 on R1
2. Configure subinterfaces:
 - G0/0/1.3 -> VLAN 3, IP 192.168.3.1
 - G0/0/1.4 -> VLAN 4, IP 192.168.4.1
 - G0/0/1.8 -> VLAN 8 (native), no IP
3. Use 'show ip interface brief' to verify status

Part 5: Verify Inter-VLAN Routing

1. From PC-A: ping default gateway, PC-B and S2
2. From PC-B: use 'tracert' to PC-A and note IP hops

End of Lab