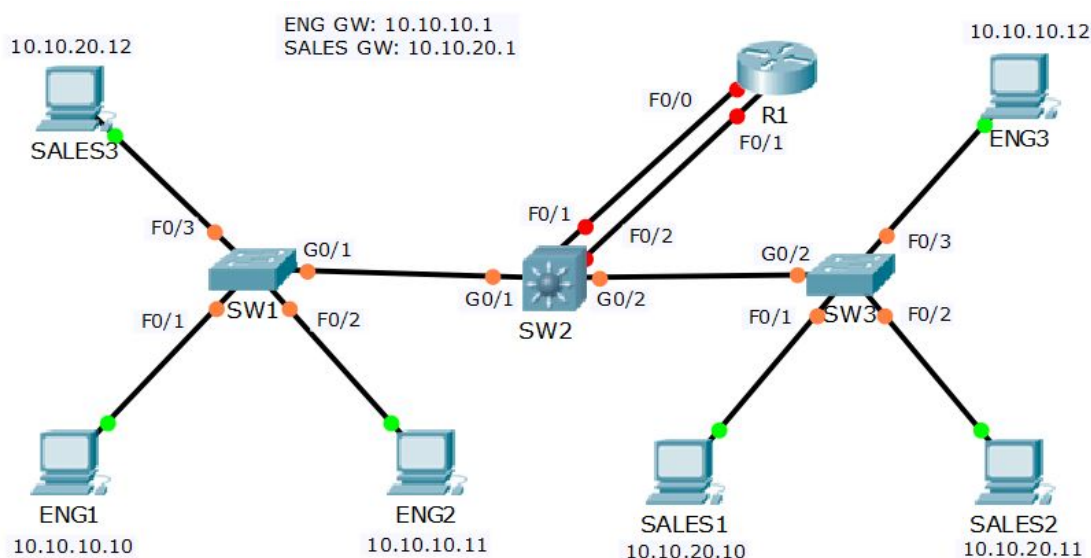


23-1 VLAN and Inter-VLAN Routing Configuration – Lab Exercise

In this lab you will perform a VLAN configuration for a campus network, including Virtual Trunking Protocol, Access and Trunk ports, and inter-VLAN routing.

Lab Topology



Load the Startup Configurations

Open the '23-1 VLAN and Inter-VLAN Routing Configuration.pkt' file in Packet Tracer to load the lab.

VTP, Access and Trunk Ports

- 1) All routers and switches are in a factory default state. View the VLAN database on SW1 to verify no VLANs have been added.
- 2) View the default switchport status on the link from SW1 to SW2.
- 3) Configure the links between switches as trunks.
- 4) Add the Eng, Sales and Native VLANs on all switches.
- 5) Verify the VLANs are in the database on each switch.
- 6) Configure the trunk links to use VLAN 199 as the native VLAN for better security.
- 7) Configure the switchports connected to the PCs with the correct VLAN configuration.
- 8) Verify the Eng1 PC has connectivity to Eng3.
- 9) Verify Sales1 has connectivity to Sales3.

Inter-VLAN Routing – Option 1 **Separate Interfaces on Router**

- 10) Configure interface FastEthernet0/0 on R1 as the default gateway for the Eng PCs.
- 11) Configure interface FastEthernet0/1 on R1 as the default gateway for the Sales PCs.
- 12) Configure SW2 to support inter-VLAN routing using R1 as the default gateway.
- 13) Verify the Eng1 PC has connectivity to the VLAN 20 interface on R1.
- 14) Verify the Eng1 PC has connectivity to Sales1.
- 15) Clean-up: Shut down interface FastEthernet0/1 on R1.

Inter-VLAN Routing – Option 2

Router on a Stick

- 16) Configure sub-interfaces on FastEthernet0/0 on R1 as the default gateway for the Eng and Sales PCs.
- 17) Configure SW2 to support inter-VLAN routing using R1 as the default gateway.
- 18) Verify the Eng1 PC has connectivity to the VLAN 20 interface on R1.
- 19) Verify the Eng1 PC has connectivity to Sales1.
- 20) Clean-up: Shut down interface FastEthernet0/0 on R1.

Inter-VLAN Routing – Option 3

Layer 3 Switch

- 21) Enable layer 3 routing on SW2.
- 22) Configure SVIs on SW2 to support inter-VLAN routing between the Eng and Sales VLANs.
- 23) Verify the Eng1 PC has connectivity to the VLAN 20 interface on SW2.
- 24) Verify the Eng1 PC has connectivity to Sales1.