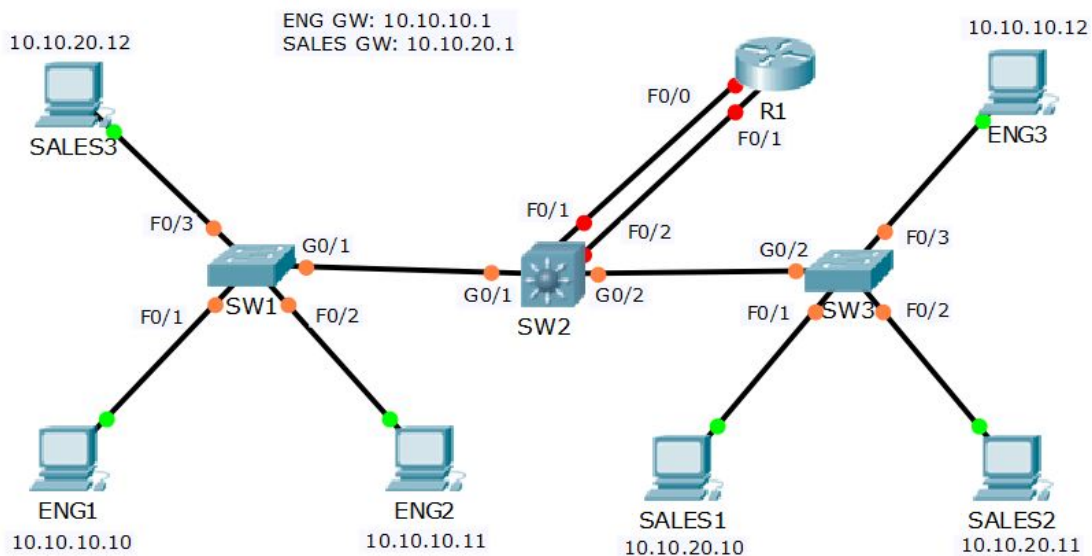


22-1 VLAN and Inter-VLAN Routing Configuration – Lab Exercise

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 '22-1 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) Configure SW1 as a VTP Server in the VTP domain Flackbox.
- 5) SW2 must not synchronise its VLAN database with SW1.
- 6) SW3 must learn VLAN information from SW1. VLANs should not be edited on SW3.
- 7) Add the Eng, Sales and Native VLANs on all switches.
- 8) Verify the VLANs are in the database on each switch.
- 9) Configure the trunk links to use VLAN 199 as the native VLAN for better security.
- 10) Configure the switchports connected to the PCs with the correct VLAN configuration.
- 11) Verify the Eng1 PC has connectivity to Eng3.
- 12) Verify Sales1 has connectivity to Sales3.

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

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

Inter-VLAN Routing – Option 2 **Router on a Stick**

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

Inter-VLAN Routing – Option 3 **Layer 3 Switch**

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