Network-Battle Sponsorship GIT-TTIC 2021/2022

Lab: Configuring Inter-VLAN Routing (Router on a Stick)

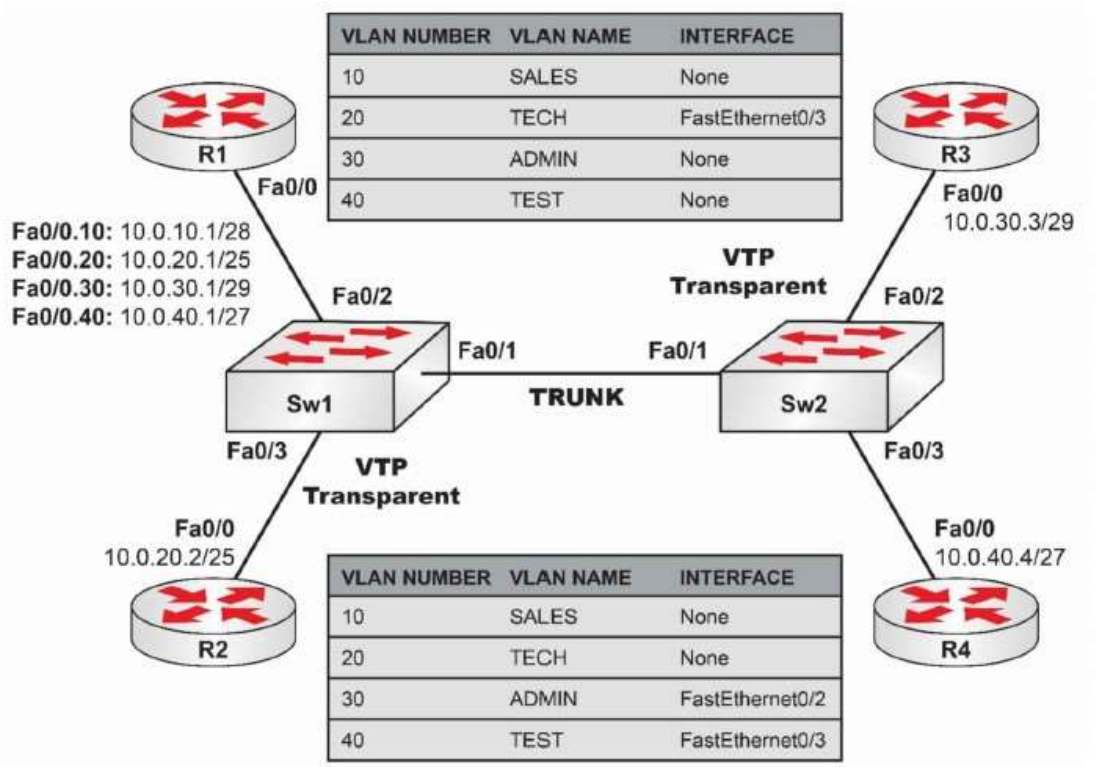
Lab Objective: The objective of this lab exercise is to configure a router to provide inter-VLAN communication. By default, hosts in one VLAN cannot communicate with hosts in another VLAN without a router routing between the two VLANs.

Lab Purpose: Inter-VLAN routing configuration is a fundamental skill. Most networks typically have more than one VLAN, and the hosts in these VLANs are required to communicate with each other if the need arises. As a Network engineer, as well as in a company, you will be expected to know how to configure Inter-VLAN routing. In this example, you don't have a Layer 3 switch so you must use a router to route.

Lab Difficulty: This lab has a difficulty rating of 9/10.

Readiness Assessment: When you are ready for your certification exam, you should complete this lab in no more than 30 minutes.

Lab Topology: Please use the following topology to complete this lab exercise:



Task 1: Configure a hostname on switches 1 and 2 and routers 1 through 4 as illustrated in the topology above.

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Task 2: Configure and verify Sw1 and Sw2 as VTP Transparent switches. Both switches should be in the VTP domain named CISCO. Secure VTP messages with the password CISCO.

Task 3: Configure and verify FastEthernet0/1 between Sw1 and Sw2 as an 802.1q trunk and configure VLANs as depicted in the topology above. Assign ports to depicted VLANs and configure Sw1 FastEthernet0/2 as a trunk. VLAN20 should have untagged Ethernet frames. Remember that on 802.1q trunks, only the native VLAN is untagged.

Task 4: Configure IP addresses on R2, R3, and R4 as illustrated in the diagram.

Task 5: Configure subinterfaces off R1 FastEthernet0/0 in the corresponding VLANs in the diagram. Also, configure interface VLAN10 on Sw2 with the IP address 10.0.10.2/28.

Task 6: Test network connectivity by pinging from R1 to routers R2, R3, and R4.