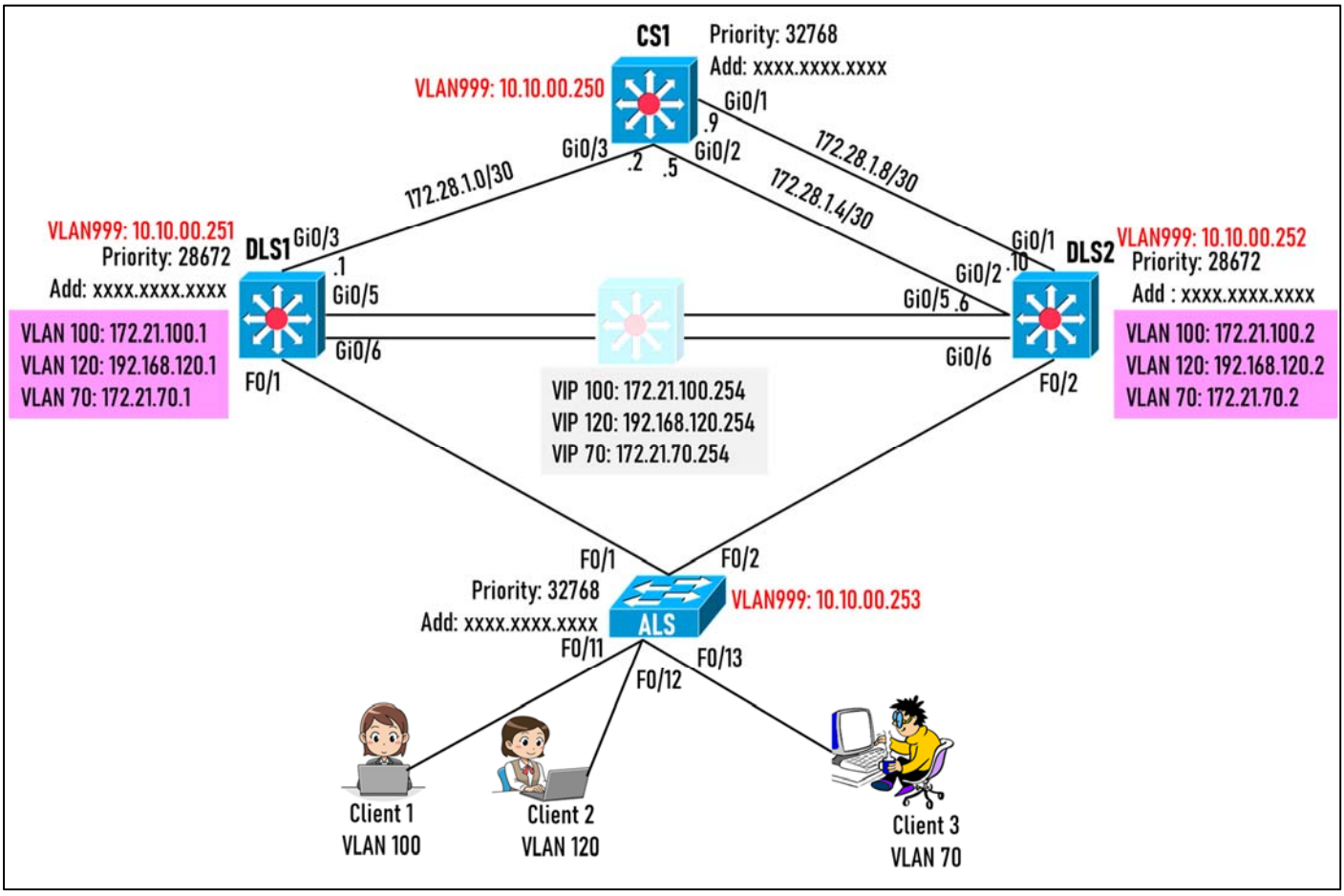
ITT652: IP SWITCHING

Skills-Based Assessment (Version A)

Topology



Objectives

Part 1: Build the logical network topology in the simulation GNS3.

Part 2: Configure the switches in the topology according to the diagram and the specifications provided.

Part 3: Test the network for connectivity and the configured options.

Exam Overview

This skills-based assessment (SBA) is the final practical exam for Academy training for the course CCNPv7.1 SWITCH. In Part 1, you build the physical network. In part 2, you configure various features such as trunking, EtherChannel, VTP, VLANs, SVIs, routed links, and HSRP. In Part 3, you need to test IP connectivity and use show commands to verify configured options. This exam combines device configuration and troubleshooting.

Note (This is applicable for real device but if simulator not available just skip it some of that): This lab uses Cisco Catalyst 3560 and 2960 switches running Cisco IOS 15.0(2)SE6 IP Services and LAN Base images, respectively. The 3560 and 2960 switches are configured with the SDM templates "dual-ipv4-and-ipv6 routing" and "lanbase-routing", respectively. Depending on the switch model and Cisco IOS Software version, the commands available and output produced might vary from what is shown in this lab. Catalyst 3650 switches (running any Cisco IOS XE release) and Catalyst 2960-Plus switches (running any comparable Cisco IOS image) can be used in place of the Catalyst 3560 switches and the Catalyst 2960 switches.

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Required Resources

- Connect all devices as shown in the topology. You must use the interfaces specified in diagram, if possible.
- Use IOS image version 15.0 or later

Part 1: Setup the logical network in GNS3 or PT as shown in the topology

a. Build the Logical Network in GNS3 Simulation for fully functioning but Packet Tracer still can be used with some commands are not supported. It will affect your marks.

b. Use any available interface based on your simulation.

Part 2: Configure the network according to specifications (if some of the configuration not supported you may skip it but mention the reason in the answer sheet.

a. Shutdown all interfaces on each switch.

b. Configure trunks as shown in the diagram. Issue the **no shut** command as you go.

   1) All trunks will use VLAN 800 as the native VLAN.

c. Configure DLS1, DLS2, and ALS to use VTP version 3 (if command support but if not just configure version 2).

   1) Use the domain name **SWITCHSBA** with the password **sbajan21 .**

   2) Configure DLS1 as the primary server for VLANs.

   3) Configure DLS2 as server and ALS as VTP clients.

d. On the primary VLAN server create and name the following VLANs:

VLAN Number	VLAN Name	VLAN Number	VLAN Name
800	NATIVE	70	GUEST
100	EXECUTIVES	434	PARKING
120	IT	500	ACCOUNTING
999	MANAGEMENT		

e. On DLS1, suspend VLAN 434.

f. Configure CS1 to be a VTP Transparent mode switch using VTP version 2, then locally configure the same VLANs and VLAN names. Suspend VLAN 434.

g. On DLS2, create **VLAN 500** and name it **ACCOUNTING**. The Accounting VLAN will not be configured or available on any other switch in the network.

h. Ensure all switches using per VLAN spanning tree (PVST). Choose VLAN 100 and examine the port role for all ports on all switches. Redraw the topology with stated the port role of all ports on each switch.

i. Configure DLS1 as the spanning tree primary root for VLANs 100, 434, 800 and 999, and as a secondary root for VLANs 70 and 120.

j. Configure DLS2 as the spanning tree root for VLANs 120 and 70 and as a secondary root for VLANs 100, 434 and 800.

k. Configure all trunks so that, with the exception of VLANs 1, 434 and 500, only the VLANs that have been created are allowed to cross the trunk.

l. Assign interfaces as access ports to VLANs on the interfaces connected to hosts.

m. All unused interfaces will be assigned to the parking lot VLAN and shut down.

n. Configure SVIs on DLS1 and DLS2 in support of all of the VLANs as shown in the topology.

o. Enable Inter-VLAN routing using SVI and routed port as shown in the topology.

p. Configure interface VLAN 999 on all switches and use the default gateway 10.10.99.254.

q. Configure HSRP with interface tracking for VLANs 100, 120, 70 and 999.

   1) Use HSRP version 2.

   2) Create two HSRP groups, aligning VLAN 100 and 999 to the first group and 120 and 70 to the second group.

   3) DLS1 will be the primary switch for VLANs 100 and 99; DLS2 will be the primary switch for VLANs 120 and 70.

   4) Configure both groups with preemption. Further configure priority to ensure that the primary switch takes over upon recovery.

   5) Use the address .254 for the virtual gateway for each HSRP group.

   6) Configure interface tracking so that each group tracks the uplink between DLS1 and CS1.

r. Set the correct UTC time, configure CS1 as an NTP server and then set the correct time zone.

s. Configure DLS1, DLS2, and ALS to use the Management network to synchronize time with the NTP server.

t. Configure all four switches to use AAA to authenticate VTY lines 0 through 4. The RADIUS server is on HOST C (10.34.56.50) and uses WinRadius with a shared secret key of **WinRadius**. Ensure **aaa new-model** is configured. Further ensure that there is a fallback account configured should the RADIUS server not be available.

   1) AAA Account: **studentaaa** password **cisco123 .**

   2) Local Fallback Account: **lastditch** password **321ocsic .** Assign this account privilege level 15.

u. Configure DLS1 to be a DHCP server for VLANs 100, 120, and 70.

   1) Exclude the addresses .250-.254 in each subnet.

   2) Set the default router to the HSRP virtual address for each VLAN.

v. Obtain IPv4 addresses on Client 1, 2 and 3 via DHCP.

Part 3: Test network connectivity and configured options.

a. Test connectivity from each distribution layer switch to the addresses you assigned in the topology (optional).

b. Verify that NTP is working. DLS1, DLS2 and ALS should have NTP sync with CS1.

c. Verify that AAA is working. From HOST C, telnet to each switch and login using the **studentaaa** account.

d. Verify that HSRP is working. Go to DLS1 and shutdown interface Fa0/1. Verify on DLS2 whether this switch take over the role as active switch for other VLANs.

e. Verify interface tracking on DLS1 by shutting down the uplink to CS1. When this occurs, DLS1's interface tracking should fail, causing it to demote itself from being the virtual gateway for VLAN 100. DLS2 will take over, and the still-running ping should show only minor packet loss.

GUIDELINE TO ANSWER

1. You can use simulation tool whether Packet Tracer (PT) or GNS3 but PT has unsupported configuration commands so that you might not able to complete some of the tasks. But if you have unsolved problems with the simulation tool to configure you can write the configuration commands and expected output should be in the answer sheet.
2. You can use any available interfaces depend on your simulation tool. You must not follow exactly follow the interface stated in the topology
3. This skill-based assessment is **individual** task.
4. You have to submit this task **in MS Word or GoogleDoc file (Answer sheet) and the configured GNS3/PT file.** Combine and zip these two files and name it properly with your name.
5. In your answer sheet, you must include **the configuration commands and outputs** for **each configuration requirements** by verifying it using appropriate commands. You need to explain for each output and configuration. You also can **test the connection by using the traceroute** command to show all nodes that pass through from source to destination.
6. If your answers are copied and pasted from other resources without rephrase it, your marks will be deducted.
7. Make sure you submit your works before due date and time to gain bonus mark. Late submission after 2 hours your marks will be deducted.