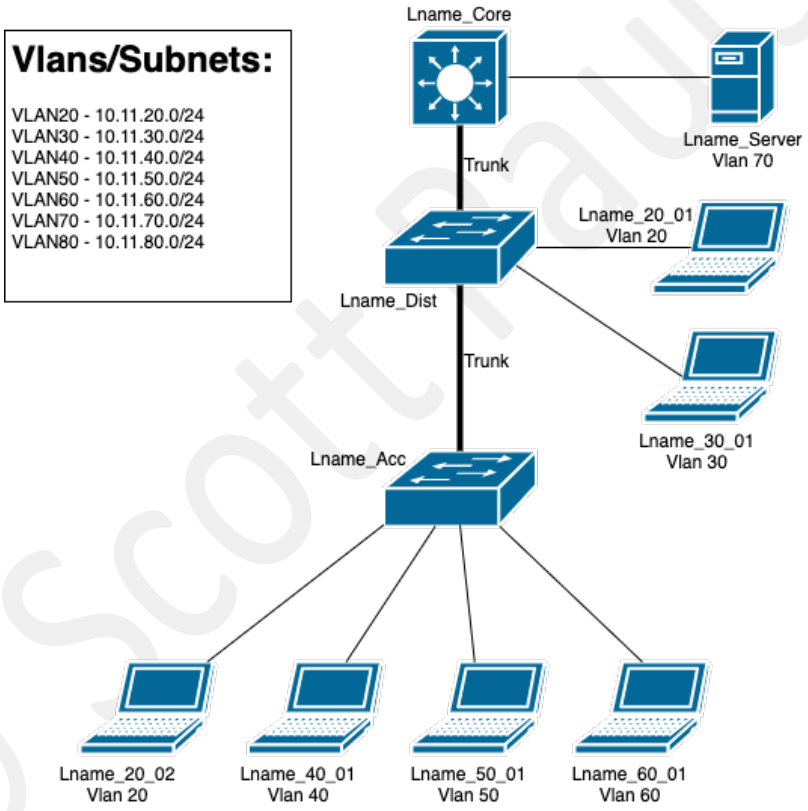
CSC387 Lab 08 – Vlans and IVR

Instructions

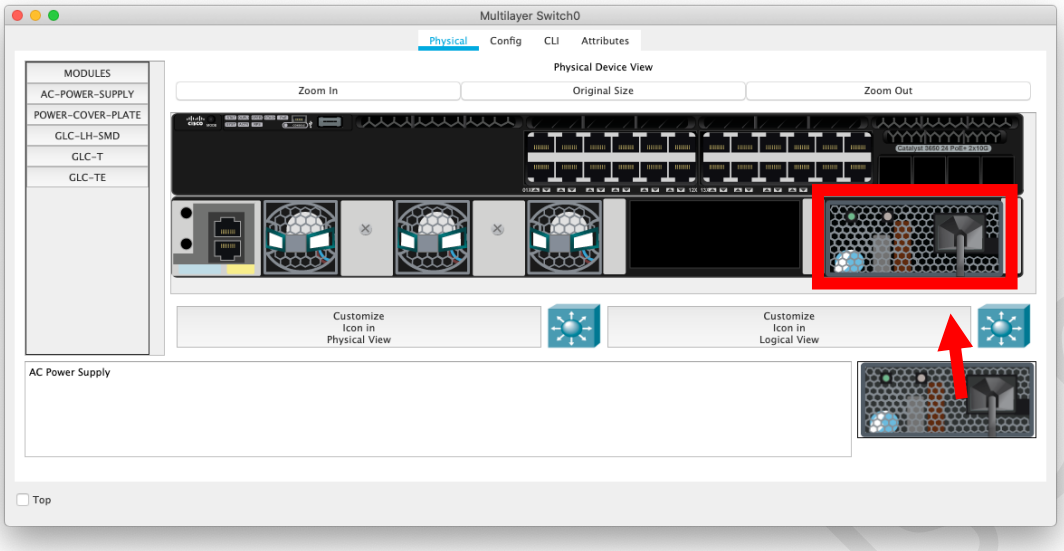
In this lab, you'll be configuring some switches to segment traffic with VLANs, share VLANs with VTP, and perform inter-vlan routing.

The following should be completed on Packet Tracer. Please ONLY take a screen shot of each of the Verification Steps (below) and submit in a labeled single word document using the screenshot guide in the class content on D2L. Make sure your device names are visible in the screen shot! Don't forget to save your Packet Tracer file.

Network Diagram



Note: The above switches (Core, Dist, and Acc) should be the model **3650-24PS**. To use them, you'll have to install the power supply module as shown here:



Configuration Tasks

Cable the network as shown in the above network diagram.

VLANs

Your switches are going to need some VLANs configured to break up the ports. Configure the switches with the following:

1. Use the highest port numbers for your Trunk ports on all switches. Since its good practice to never use VLAN 1 configure the native vlan on all trunk ports to be VLAN 80.

2. All other ports on the switches can be made into **access** ports.

3. Set up the Core switch with the following access port vlan assignments:

VLAN Number	**VLAN Name**	**Interface Range**
1 (already exists, not used)	default (already exists)	N/A
20	STUDENTS	N/A
30	FACULTY	N/A
40	HOUSING	N/A
50	IT	N/A
60	EGAMING	N/A
70	INFRASTRUCTURE	1-16
80	SWITCHMANAGE	N/A

Verification Step 1

4. Next, we'll set up VTP so that you don't have to recreate the VLANs. In this configuration, Core should be the server and the other switches will be clients:
    a. VTP Domain: **Lname.local**
    b. VTP password: **Password1!**

Verification Step 2

5. Set up the Dist switch with the following access port vlan assignments:

VLAN Number	VLAN Name	Interface Range
1 (already exists, not used)	default (already exists)	N/A
20	STUDENTS	1-12
30	FACULTY	13-20
40	HOUSING	N/A
50	IT	N/A
60	EGAMING	N/A
70	INFRASTRUCTURE	N/A
80	SWITCHMANAGE	N/A

6. Set up the Acc switch with the following access port vlan assignments:

VLAN Number	VLAN Name	Interface Range
1 (already exists, not used)	default (already exists)	N/A
20	STUDENTS	1-4
30	FACULTY	5-8
40	HOUSING	9-12
50	IT	13-16
60	EGAMING	17-20
70	INFRASTRUCTURE	N/A
80	SWITCHMANAGE	N/A

7. Plug laptops in as shown in the diagram. Configure all laptops to have a static IP address within the appropriate subnet range.

Verification Step 3

8. Plug in the Server to Core on a VLAN 70 access port and assign it the static IP 10.11.70.10.

Inter-Vlan Routing

The switches are configured and VLANs assigned. Next up is to set up routing to allow the vlans to communicate with each other.

9. Configure Vlan interfaces (SVI's) for all vlans with .1 addresses. These will act as default Gateways for these vlans.

Verification Step 4

10. Turn on inter-vlan routing on Core. This will allow communication between the vlans.

Verification Step 5

Verification Steps

1. On Core, run **show vlan.** You will see a list of all vlans sorted by vlan-id. It will also show the ports that are assigned to the vlan.
2. On Dist, do a **show vtp counters** and you'll see that some advertisements have been received.
3. On Acc, do a **show mac address-table.** You should see a list of the mac address of all laptops and the vlans they are plugged into. Make sure each laptop is plugged into the correct vlan. Also run a **ping** from 20_01 to 20_02. Pings should be successful.
4. On Core, run a **show ip interface brief.** The screenshot should show all vlans SVI's with their IP assignment.
5. On 20_01 run **ping** to Server. On 60_01 run **ping** to 20_02. The screenshot should show a successful ping.

What to Turn In

When you have finished the lab, you have two options:

1. Please try to show each verification step, and only the verification steps, in a single, clear screenshot to cut down the number of images. Also, paste all screenshots into a single Word/PDF document. Do not upload them to D2L as individual images – I won't grade them.