Saint Louis University

School of Accountancy, Management. Computing and Information Studies

2nd Semester SY 2024 – 2025

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Objectives

- Create a VLAN for Silang Building.
- View the default VLAN configuration.
- Configure VLANs.
- Assign VLANs to ports
- Configure trunking.

Equipment

- 4 2950-24 Switch
- 9 PC-PTs

Introduction

VLANs are helpful in the administration of logical groups, allowing members of a group to be easily moved, changed, or added.

Task 1: View the Default VLAN Configuration

Step 1. Verify the current running configuration on the switches.
On each switch, issue the show running-config command to verify the current running configuration. The basic configurations are already set, but there are no VLAN assignments.
Step 2. Display the current VLANs. On each switch, issue the show vlan command.

Task 2: Configure VLANs

Step 1. Create VLANs on Switch1.
VLAN 10 for students, VLAN 20 for Faculty and VLAN 30 for ITCenter. Assign a name which makes VLAN ID identifiable such as Students, Faculty, ITCenter.
On Switch1, create three VLANs as shown below:

- Switch(config)# hostname switch3flr
- switch3flr(config)#vlan 10
- switch3flr (config-vlan)#name Students
- switch3flr (config-vlan)#interface range fa0/1-9
- switch3flr (config-if-range)#switchport mode access
- switch3flr (config-if-range)#switchport access vlan 10
- switch3flr (config-if-range)#exit
- switch3flr (config-vlan)#vlan 20
- switch3flr (config-vlan)#name Faculty
- switch3flr (config-vlan)#interface range fa0/10-19
- switch3flr (config-if-range)#switchport mode access
- switch3flr (config-if-range)#switchport access vlan 20
- switch3flr (config-if-range)#exit
- switch3flr (config-vlan)#vlan 30
- switch3flr (config-vlan)#name ITCenter
- switch3flr (config-vlan)#interface range fa0/20-23
- switch3flr (config-if-range)#switchport mode access
- switch3flr (config-if-range)#switchport access vlan 30
- switch3flr (config-if-range)#end
- copy r s

Step 2. Verify the VLAN configuration.
After creating the VLANs, issue the show vlan brief command to verify the creation of the new VLANs.

Step 3. Create the VLANs on Switch2 and Switch3.
On Switch2 and Switch3, use the same commands used on Switch1 to create and name the VLANs. Change the display name and hostname of each switch to correspond to the 2nd and 1st Floor.

Step 4. Verify the VLAN configuration.
Use the show vlan brief command to verify all VLANs are configured and named.
Step 5. Verify connectivity between the different PCs.

Source	Destination	Result			
3rd Floor Student PC	3rd Floor Faculty PC	○	Fail	○	Successful
2ndd Floor Student PC	2nd Floor Faculty PC	○	Fail	○	Successful
1st Floor Student PC	1st Floor Faculty PC	○	Fail	○	Successful
3rd Floor Student PC	2nd Floor Student PC	○	Fail	○	Successful
3rd Floor Student PC	1st Floor Student PC	○	Fail	○	Successful
3rd Floor Student PC	3rd Floor ITCenter PC	○	Fail	○	Successful
2nd Floor Student PC	2nd Floor ITCenter PC	○	Fail	○	Successful
1st Floor Student PC	1st Floor ITCenter PC	○	Fail	○	Successful
1st Floor ITCenter PC	2nd Floor ITCenter PC	○	Fail	○	Successful
1st Floor ITCenter PC	3rd Floor ITCenter PC	○	Fail	○	Successful

Task 3: Configure VLAN trunk port
Step 1. Configure VLAN trunk port on Switch1.
Enable fa0/24 of 3 floor switches to act as truck port in order to receive and forward vlan frames to main switch. To configure port for trunking, interface fa0/24 where fa0/24 is the specific port for trunking.

On Switch1, configure VLAN trunk port as shown below:

- switch3flr(config)#interface fa0/24
- switch3flr (config-if)#switchport mode trunk
- switch3flr (config-if)#switchport trunk allowed vlan all
- switch3flr (config-if)#end
- copy r s

Step 2. Configure VLAN trunk port on Switch2 and Switch3
On Switch2 and Switch3, use the same commands used on Switch1 to configure VLAN trunks.

Task 4: Configure VLAN trunk port in Main Switch
Step 1. Configure VLAN trunk port on Main Switch.
On Switch4, configure VLAN trunk port as shown below:

- switch(config)#hostname switchmain
- switchmain(config)#interface range fa0/1-3
- switchmain (config-if-range)#switchport mode trunk

- switchmain (config-if-range)#switchport trunk allowed vlan all
- switchmain (config-if-range)#end
- copy r s

Step 2. Verify connectivity between the different PCs.

Source	Destination	Result
3rd Floor Student PC	3rd Floor Faculty PC	○ Fail ○ Successful
2ndd Floor Student PC	2ndd Floor Faculty PC	○ Fail ○ Successful
1st Floor Student PC	1st Floor Faculty PC	○ Fail ○ Successful
3rd Floor Student PC	2nd Floor Student PC	○ Fail ○ Successful
3rd Floor Student PC	1st Floor Student PC	○ Fail ○ Successful
3rd Floor Student PC	3rd Floor ITCenter PC	○ Fail ○ Successful
2ndd Floor Student PC	2nd Floor ITCenter PC	○ Fail ○ Successful
1st Floor Student PC	1st Floor ITCenter PC	○ Fail ○ Successful
1st Floor ITCenter PC	2nd Floor ITCenter PC	○ Fail ○ Successful
1st Floor ITCenter PC	3rd Floor ITCenter PC	○ Fail ○ Successful

Task 5: Save the Topology

- Format : <Lastname_Class code>_Laboratory 7
- *Make sure to strictly follow the naming convention*
- *For students with the same Lastname, kindly use the format: <LastnameInitial_Class code>_Laboratory 7*

Task 6: Upload your exercise file.

- Upload your Laboratory Activity to your Google drive.
- Using My Virtual offline version, share the Google drive link.

Criteria	Score

1. Proper use of devices and equipment.	5	
2. Followed prescribed specifications.	5	
3. Provided proper documentation	5	
4. Correct configuration of devices.	10	
5. Devices are functioning per specification and configuration	10	
6. Laboratory activity generated the required output.	10	
7. Finished activity within time-frame.	5	
Total	50	