Group Number: 10, 41

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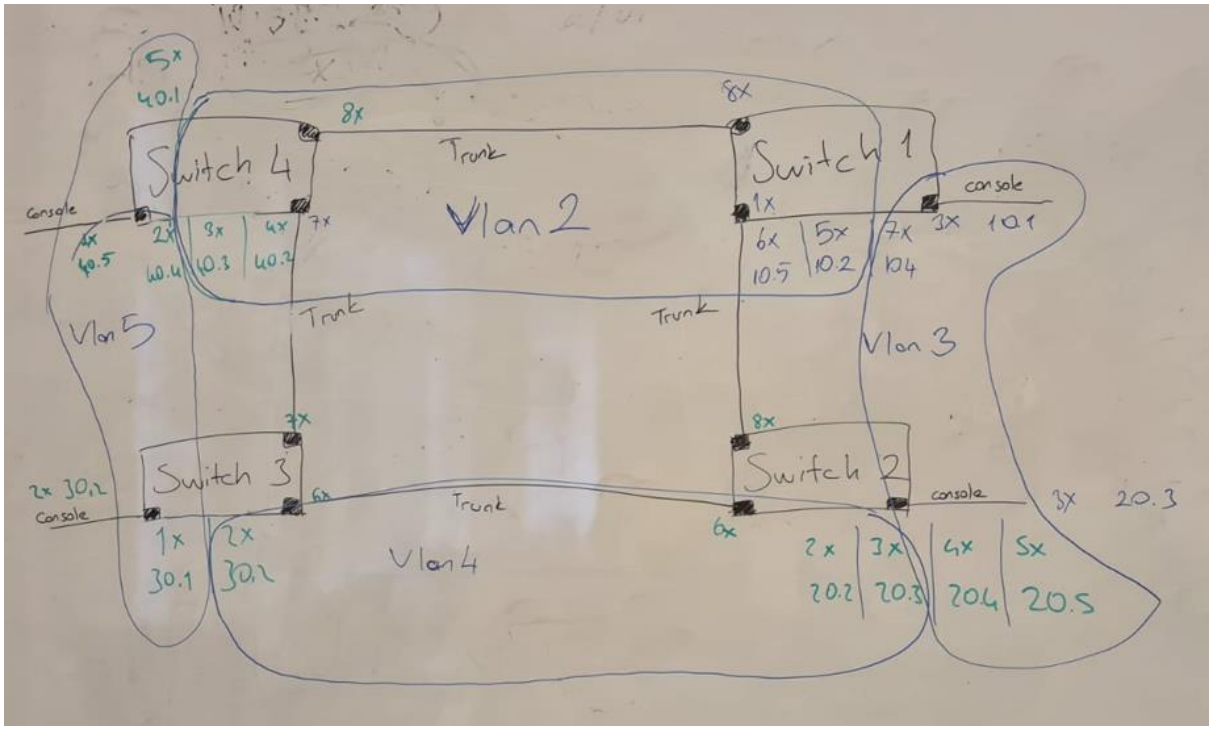
VLAN

1. **In this experiment you're going to create a network similar to one in previous lab. You should virtually group computers as shown in Figure-1 using VLAN configuration on Cisco Switches**

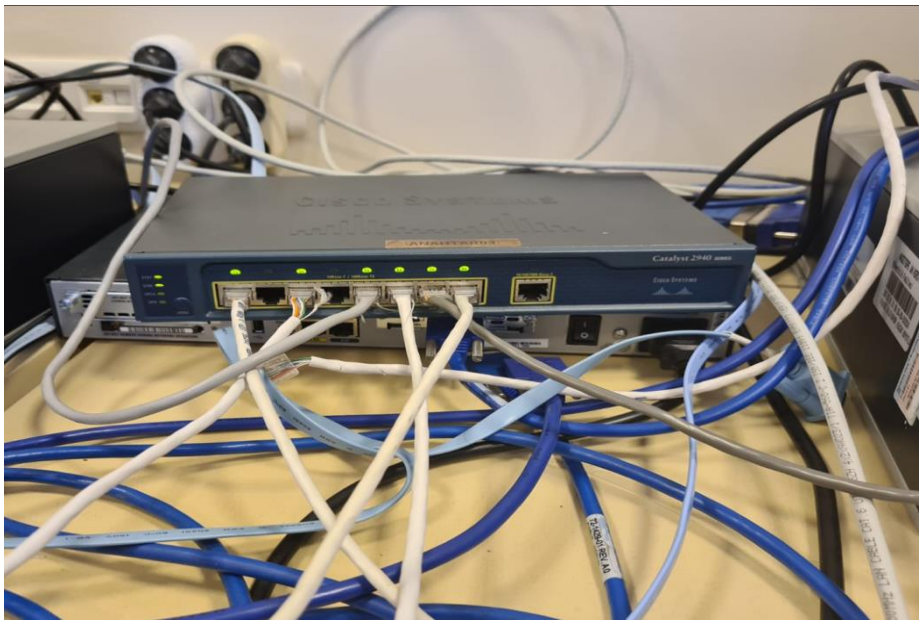


As depicted figure above, our objective is to establish computer networks within distinct VLANs, linked to the switches.

2. Assign IP addresses to your computers' eth0 adapter as described in the Table-1 simila to previous Lab. Make sure that all computers are connected to the network and all can be pinged.

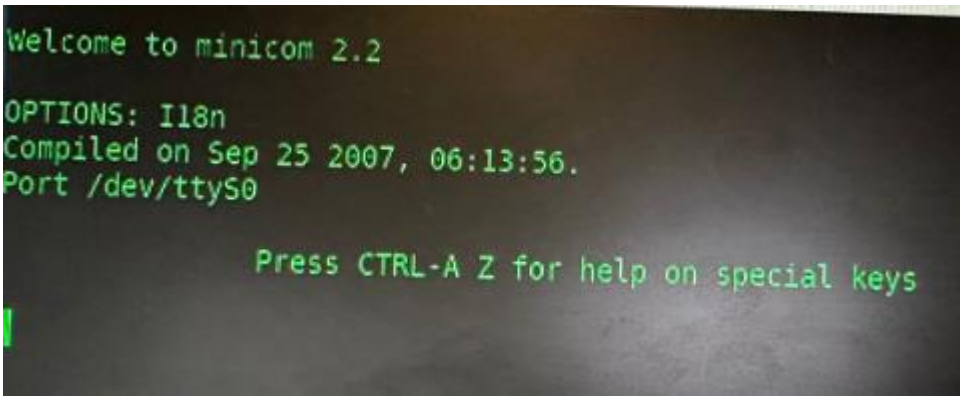
Group name	IP address	Subnet mask
Group1	10.100.10.1 - 10.100.10.6	255.255.255.0
Group2	10.100.20.1 - 10.100.20.6	255.255.255.0
Group3	10.200.30.1 - 10.200.30.6	255.255.255.0
Group4	10.200.40.1 - 10.200.40.6	255.255.255.0

3. Switches can be configured via telnet or console connection. We are going to use console connection using console (blue) cable. You should select one computer from your group which has a console cable attached to its onboard serial port. Then just plug the RJ-45 end of the cable to Switch's console port on the back side.

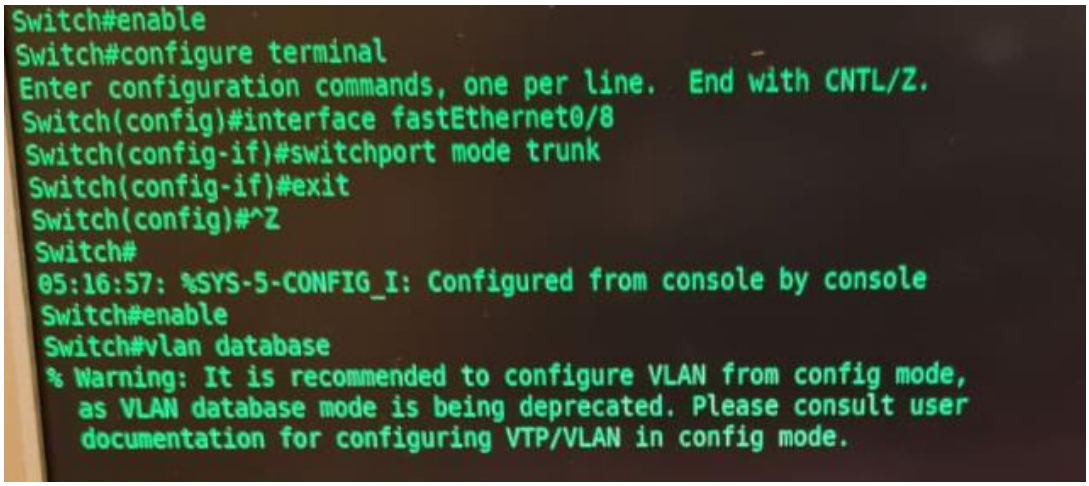


We plugged the RJ-45 end of the console cable from the PC which has IP address of 10.200.10.1 to the port 3 of switch.

4. In Unix systems, there is a tool called minicom which can use serial port of the system and send keystrokes to the terminal attached. So enter minicom from console of the computer (which is connected to the switch) and enter into the Cisco device command line interface.

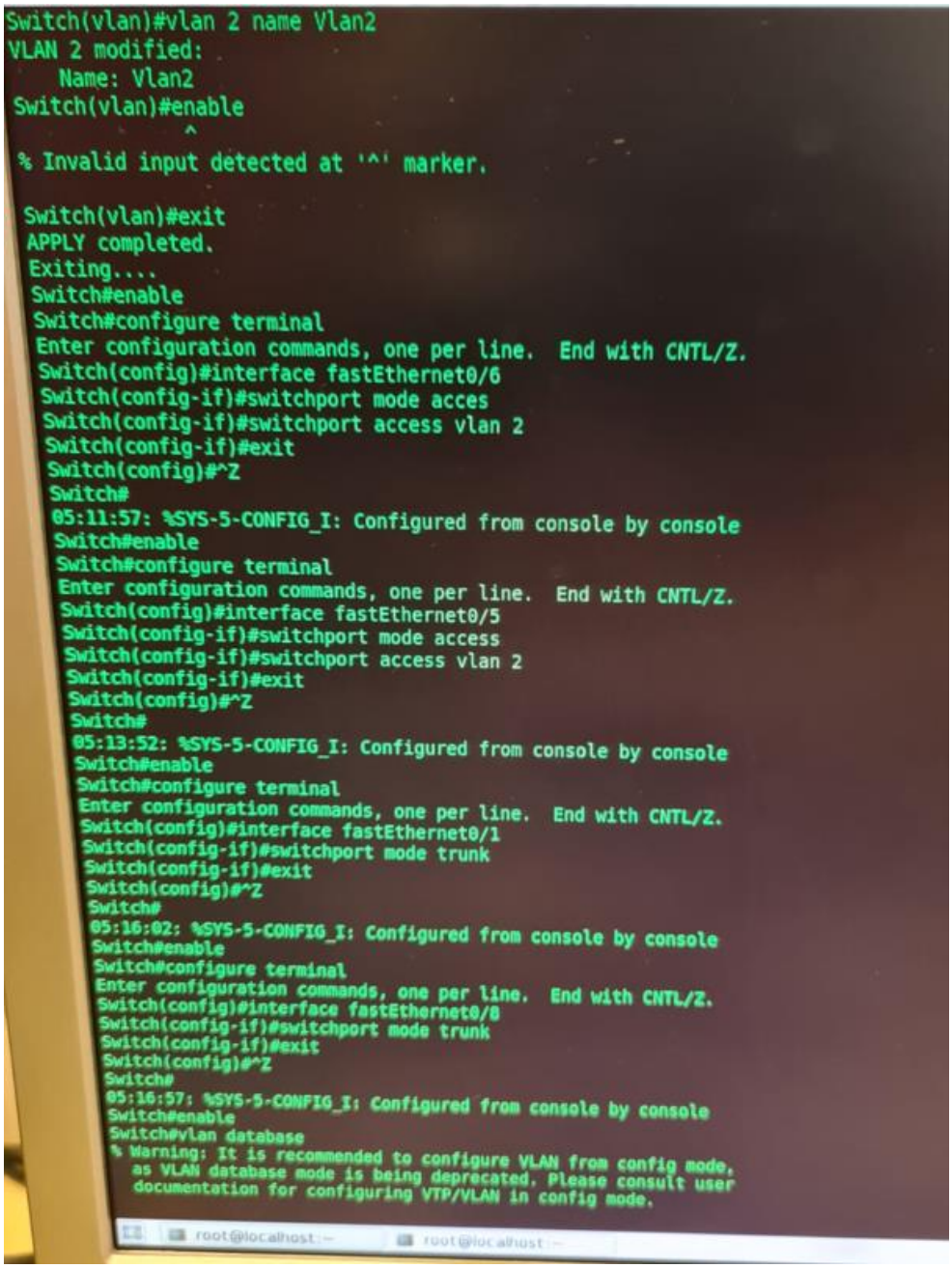


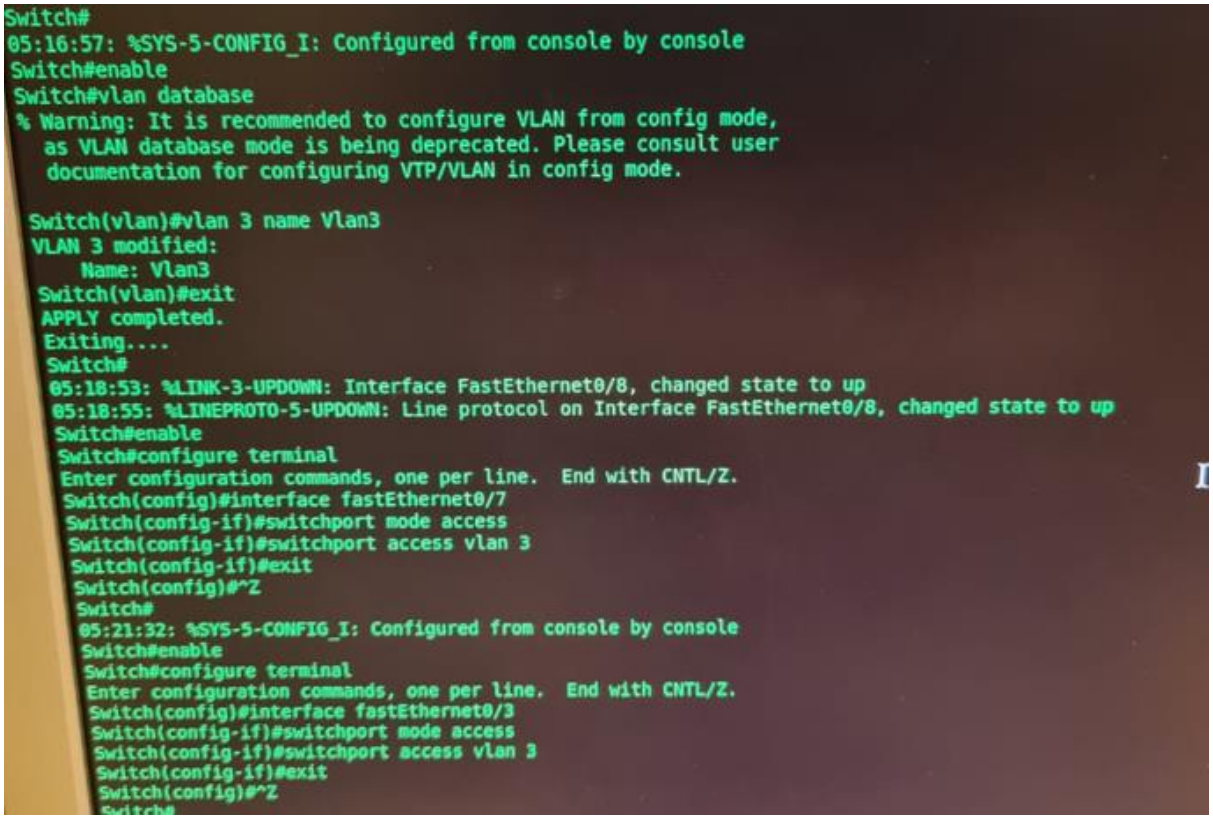
5. You should see something like: Switch> after pressing Enter for a couple of times.



6. Now you are in the Cisco IOS operating system, and you can only use Cisco commands for configuration or troubleshooting. You can enter ? command and see which commands you can use in that level.

7. Now you are ready to configure VLAN settings according to Figure-1. You have to associate related ports with described VLANs and define Trunk links between Switch connections.




Switch#
05:16:57: %SYS-5-CONFIG_I: Configured from console by console
Switch#enable
Switch#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.
Switch(vlan)#vlan 3 name Vlan3
VLAN 3 modified:
Name: Vlan3
Switch(vlan)#exit
APPLY completed.
Exiting....
Switch#
05:18:53: %LINK-3-UPDOWN: Interface FastEthernet0/8, changed state to up
05:18:55: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up
Switch#enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fastEthernet0/7
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 3
Switch(config-if)#exit
Switch(config)#^Z
Switch#
05:21:32: %SYS-5-CONFIG_I: Configured from console by console
Switch#enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fastEthernet0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 3
Switch(config-if)#exit
Switch(config)#^Z
Switch#

8. Here is the commands that you are going to use:is a physical connnection established between the hub and the end device.

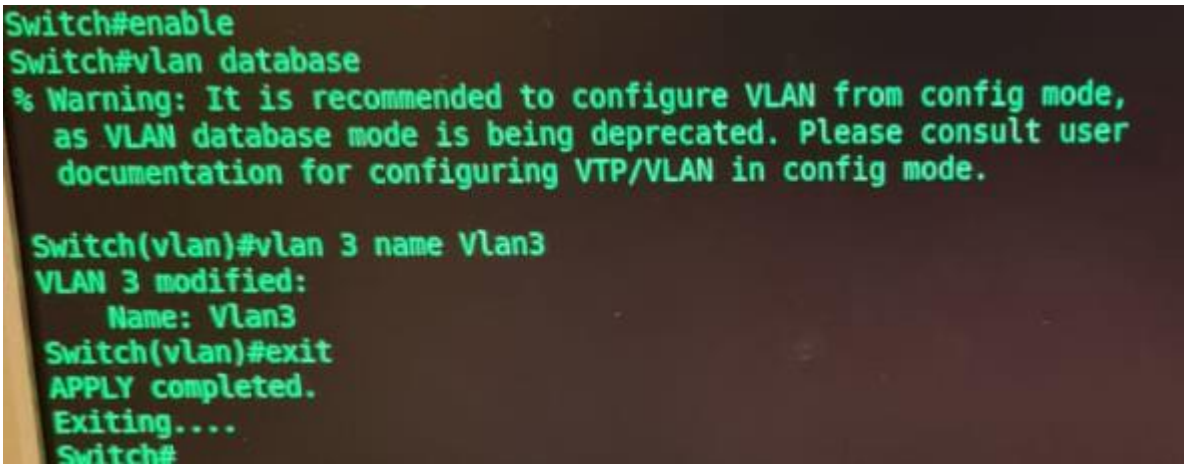
Creating a new VLAN
Switch> enable
Switch# vlan database
Switch(vlan)# vlan <VLAN ID> [name <vlan name>]
Switch(vlan)# exit
Switch#

Assignment of a switch port to a VLAN
Switch> enable
Switch# configure terminal
Switch(config)# interface fastEthernet0/<port no>
Switch(config-if)# switchport mode access
Switch(config-if)# switchport access vlan <vlan numarası>
Switch(config-if)# exit
Switch(config)# Ctrl-Z
Switch#

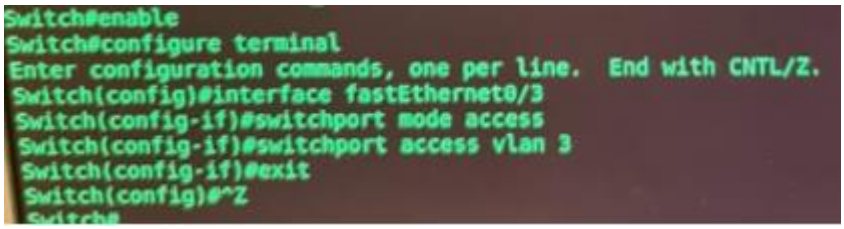
Assignment of a switch port to trunk mode
Switch> enable
Switch# configure terminal
Switch(config)# interface fastEthernet0/<port no>
Switch(config-if)# switchport mode trunk
Switch(config-if)# exit
Switch(config)# Ctrl-Z
Switch#

Displaying vlan-interface table
Switch> enable
Switch# show vlan

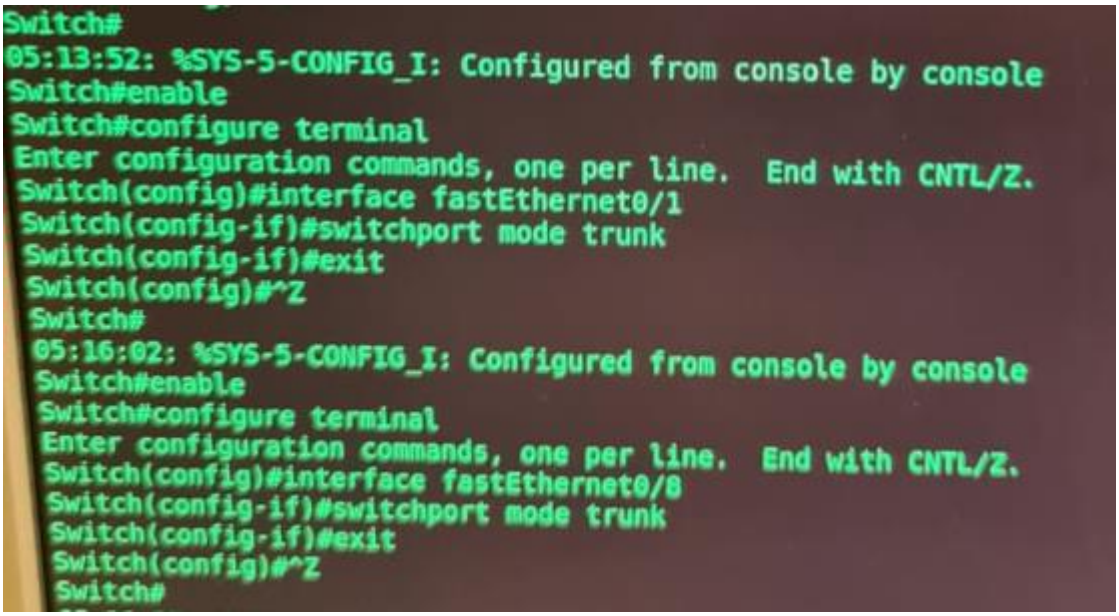
Creating a new VLAN:



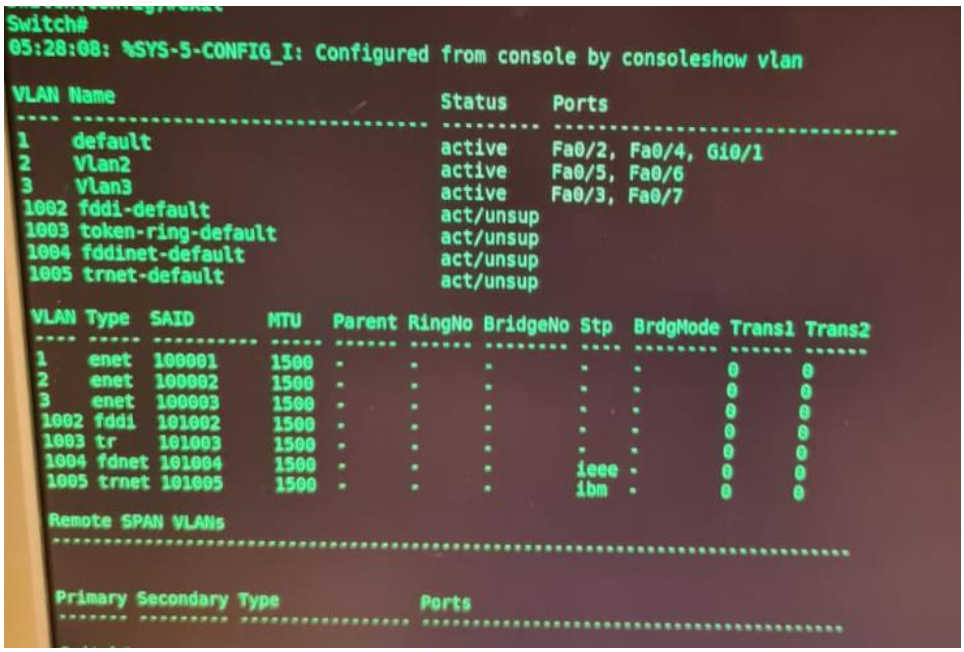
Assignment of a switch port to a VLAN:



Assignment of a switch port to trunk mode:

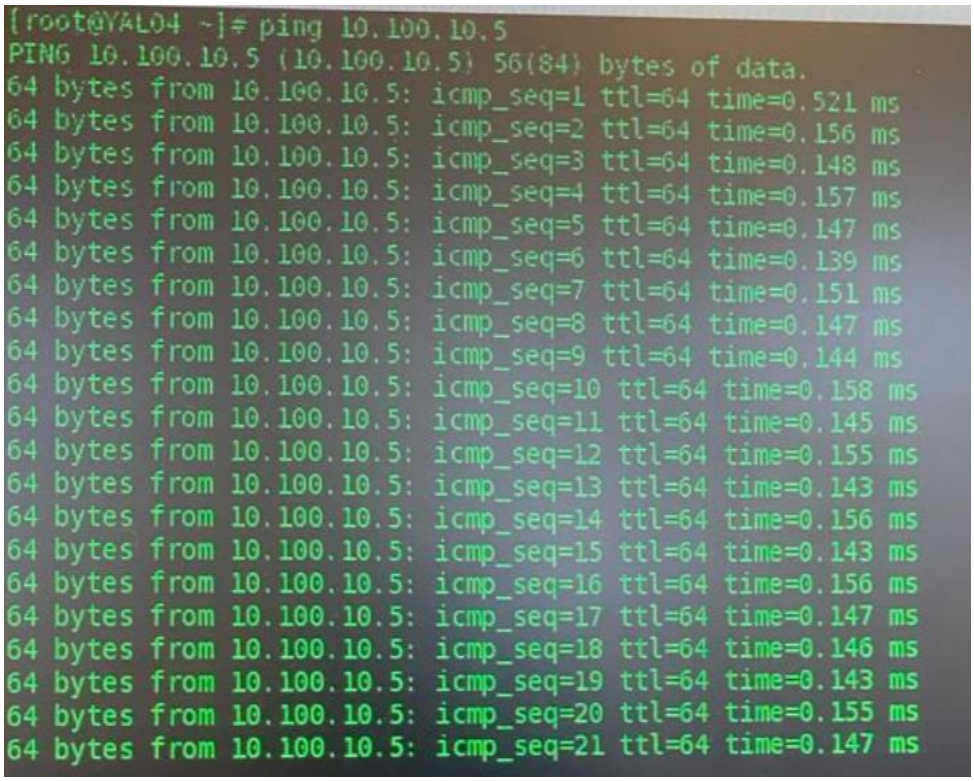


Displaying vlan-interface table:



9. If all four switch configurations were completed, now ping from a computer to one that is in your group but in a different VLAN. And try ping to another group but in the same VLAN.

Pinging a computer that is in our group but is on a different VLAN:



Pinging a computer that is not in our group but is on the same VLAN: