CNT4703C – LAB 4

Static VLAN Configuration | Trunk Interfaces

Objective:

The objective of this lab exercise is to gain experience with the basic steps for configuring a static Virtual Local Area Network (VLAN) on a Cisco switch using Packet Tracer. In this exercise 2 network switches with 4 computers on each will be configured with 2 VLANs. The 2 VLANs will be connected via a trunk port and all 8 computers will share a single subnet. This lab will utilize the Institute of Electrical and Electronics Engineers (IEEE) standard ethernet frame and the IEEE 802.1Q standard for VLAN tagging. In this document you will find the representative diagrams and IP tables needed to create the VLANs. Before you physically create the VLANs in the lab, you are to model it in CISCO Packet Tracer like you did in Lab 2-3. Ensure you take screen shots of the completed model, answer the questions, as well as, upload the Packet Tracer file.

The TA will be available to assist you with this lab.

Supporting concepts for LAB 4:

*Lab 1 – CISCO Packet Tracer Training
*Lab 2 – Build Cat5e Patch-Cable / T568B Pinout
*Lab 3 – Configuration of CISCO Equipment utilizing Console Interface (Putty/xTerm)

Credit for this assignment will require:

1) CISCO Packet Tracer File: CNT4703C-Lab4-[*full-name-of-student*]

2) Screenshots of Packet Tracer Model
    a. Network Topology (Logical)
    b. Successful Ping from PC to PC
    c. Unsuccessful Ping from PC to PC (between VLANs)

3) Photos of Switch/PC Configuration
    a. Switch Command Results
        i. #show ip interface
        ii. #show vlan
    b. Lab computer IPv4 interface configuration
    c. Lab computer ICMP results

4) Answers to LAB 5 questions 1-5

FIGURE 1.0 – Logical Network Topology / CISCO Packet Tracer Model

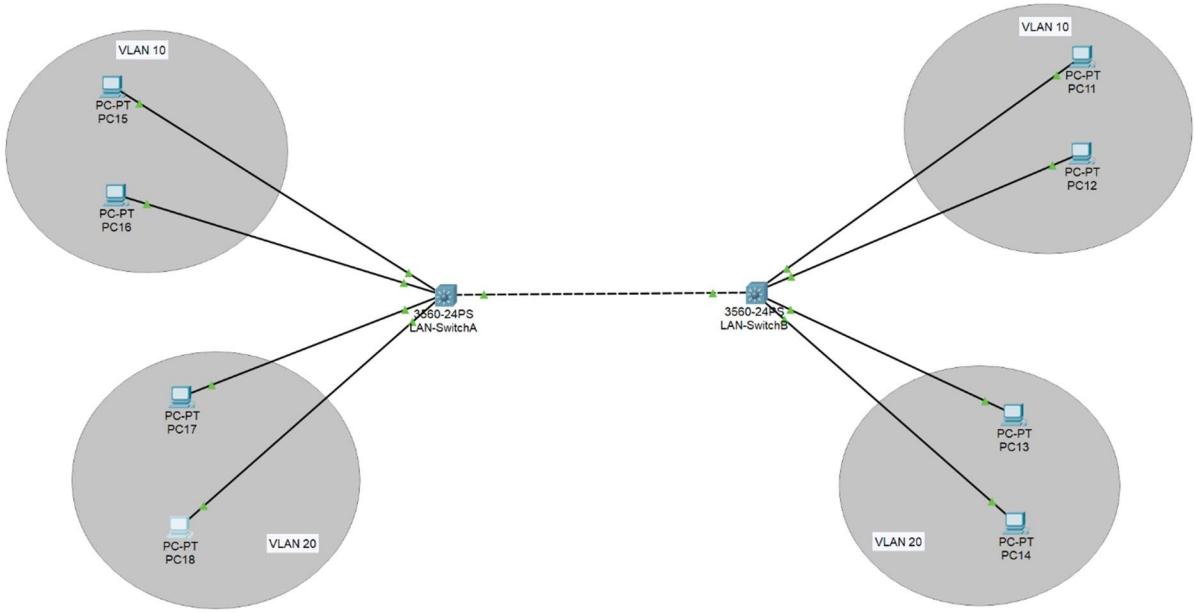

FIGURE 1.1 – PC / SWITCHPORT CONFIGRUATIONS

Equipment	Address	MASK	Switchport	Mode	VLAN	Switch
PC11	192.168.21.11	255.255.255.0	Fa0/1	Access	10	B
PC12	192.168.21.12	255.255.255.0	Fa0/2	Access	10	B
PC13	192.168.21.13	255.255.255.0	Fa0/3	Access	20	B
PC14	192.168.21.14	255.255.255.0	Fa0/4	Access	20	B
PC15	192.168.21.15	255.255.255.0	Fa0/1	Access	10	A
PC16	192.168.21.16	255.255.255.0	Fa0/2	Access	10	A
PC17	192.168.21.17	255.255.255.0	Fa0/3	Access	20	A
PC18	192.168.21.18	255.255.255.0	Fa0/4	Access	20	A

FIGURE 1.2 – LAN-SWITCH CONFIGURATIONS

Display/ Hostname	Trunk Port	Access Ports	Encapsulation Type
LAN-SwitchA	Fa0/24	Fa0/1-4	IEEE 802.1Q
LAN-SwitchB	Fa0/24	Fa0/1-4	IEEE 802.1Q

LAB 4 Questions:

1) What VLAN number value is an assigned to the default VLAN?
2) What is the term used to describe a port that can access multiple VLANs?
    a. Why is this type of port necessary?
3) What does IEEE stand for?
    a. What IEEE standard covers VLANs?
4) What layer of the OSI Model does VLAN tagging take place?
5) How and why would this technology be useful in a networking scenario?

FIGURE 2.0 – Commands / Configuration of LAN-SwitchA

```
Switch>enable
Switch #
Switch#vlan data

% 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 10 name zone10
VLAN 10 modified:
   Name: zone10
Switch(vlan)#vlan 20 name zone20
VLAN 20 modified:
   Name: zone20
Switch(vlan)#exit
APPLY completed.
Exiting....
Switch#config t

Enter configuration commands, one per line.  End with CNTL/Z.

Switch(config)#int range fa0/1-2
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#int range fa0/3-4
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
Switch(config)#int range fa0/5-23
Switch(config-if-range)#shutdown
Switch(config-if-range)#exit
Switch(config)#
Switch(config)#hostname LAN-SwitchA
LAN-SwitchA(config)#
LAN-SwitchA (config)#
LAN-SwitchA (config)#int fa0/24
LAN-SwitchA (config-if)#switchport trunk encapsulation dot1q
LAN-SwitchA (config-if)#switchport mode trunk
LAN-SwitchA (config-if)#no shutdown
LAN-SwitchA (config-if)#exit
LAN-SwitchA (config)#exit

%SYS-5-CONFIG_I: Configured from console by console
LAN-SwitchA #write memory

Building configuration...

[OK]

NetworkA-Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...

[OK]

LAN-SwitchA #exit
```