VIT-AP UNIVERSITY, ANDHRA PRADESH

Lab Sheet 9 :Creating and configuring 2 VLANS

Academic year: 2020-2021   Branch/ Class: B.Tech/M.Tech

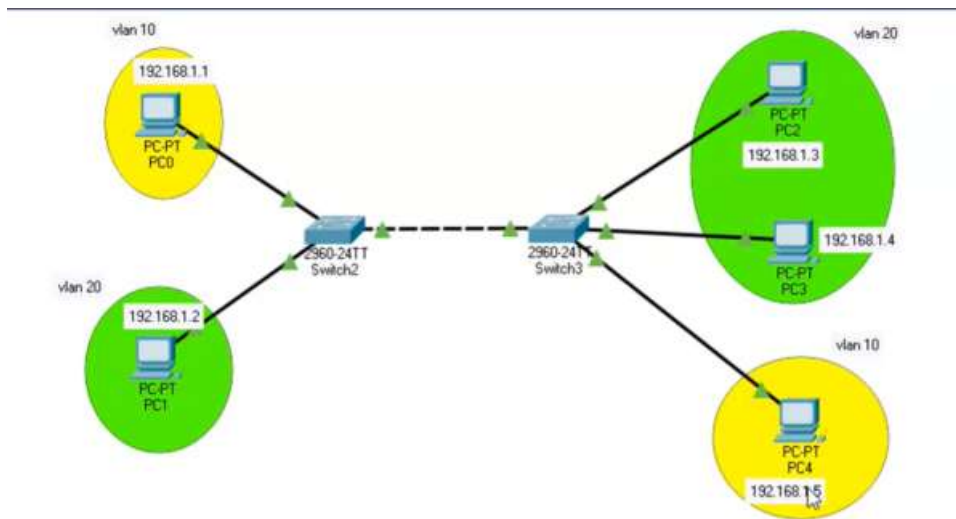**Semester:** Winter   Date: 27/4/2021

Faculty Name: Dr.HUSSAIN SYED   School: SCOPE

Student name: Hariprasad K K   Reg. no.: 19BCE7079

Creating and configuring 2 VLANs

Addressing Table:

Device	Interface	IP Address	Subnet Mask	VLAN
PC1	NIC	172.17.10.21	255.255.255.0	10
PC2	NIC	172.17.10.22	255.255.255.0	10
PC3	NIC	172.17.20.23	255.255.255.0	20
PC4	NIC	172.17.20.24	255.255.255.0	20
PC5	NIC	172.17.10.25	255.255.255.0	10

Objectives:

1. Verify the default VLAN configuration
2. Configure the VLANs
3. Assign VLANs to ports.

Background / Scenario

 Modern switches use virtual local-area networks (VLANs) to improve network performance by separating large Layer 2 broadcast domains into smaller ones. VLANs can also be used as a security measure by controlling which hosts can communicate. In general, VLANs make it easier to design a network to support the goals of an organization.

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VLAN trunks are used to span VLANs across multiple devices. Trunks allow the traffic from multiple VLANS to travel over a single link, while keeping the VLAN identification and segmentation intact. In this lab, you will create VLANs on both switches in the topology, assign VLANs to switch access ports, verify that VLANs are working as expected, and then create a VLAN trunk between the two switches to allow hosts in the same VLAN to communicate through the trunk, regardless of which switch the host is actually attached to.

1. **Verify the default VLAN configuration**

Switch>en
Switch>enable
Switch#sh
Switch#show vlan

VLAN Name Status Ports
---- -------------------------------- --------- ------------------------------
1 default active Fa0/1, Fa0/2, Fa0/3, Fa0/4
Fa0/5, Fa0/6, Fa0/7, Fa0/8
Gig0/1, Gig0/2
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
1005 trnet-default active

VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1 enet 100001 1500 - - - - - 0 0
1002 fddi 101002 1500 - - - - - 0 0
1003 tr 101003 1500 - - - - - 0 0
1004 fdnet 101004 1500 - - - ieee - 0 0
   1005et 101005 1500 - - - ibm - 0 0

2. **Configure the VLANs**
Step 1: Cable the network as shown in the topology.

Attach the devices as shown in the topology diagram, and cable as necessary.

Step 2: Initialize and reload the switches as necessary.

Step 3: Configure basic settings for each switch.

- Console into the switch and enter global configuration mode.

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- Copy the following basic configuration and paste it to the running-configuration on the switch.
  no ip domain-lookup
  service password-encryption
  enable secret class
  banner motd #
  Unauthorized access is strictly prohibited. #
  line con 0
  password cisco
  login
  logging synchronous
  line vty 0 15
  password cisco
  logging synchronous
  login exit
- Configure the host name as shown in the topology.
- Configure the IP address listed in the Addressing Table for VLAN 1 on the switch.
- Administratively deactivate all unused ports on the switch.
- Copy the running configuration to the startup configuration.

Step 4: Test connectivity.

Verify that the PC hosts can ping one another. Note: It may be necessary to disable the PCs firewall to ping between PCs.

PC1 can ping PC5

PC2 can Ping PC6

PC3 can ping PC7

PC4 can ping PC8

Pings to PCs with others fail.

Creat VLANs on the Switches

a. Create the VLANs on S1.
b. S1(config)# vlan 10
c. S1(config-vlan)# name Student
d. S1(config-vlan)# vlan 20
e. S1(config-vlan)# name Faculty
f. S1(config-vlan)# vlan 99
g. S1(config-vlan)# name Management
h. S1(config-vlan)# end

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Create the same VLANs on S2 and s3

Add 2-3 screenshots

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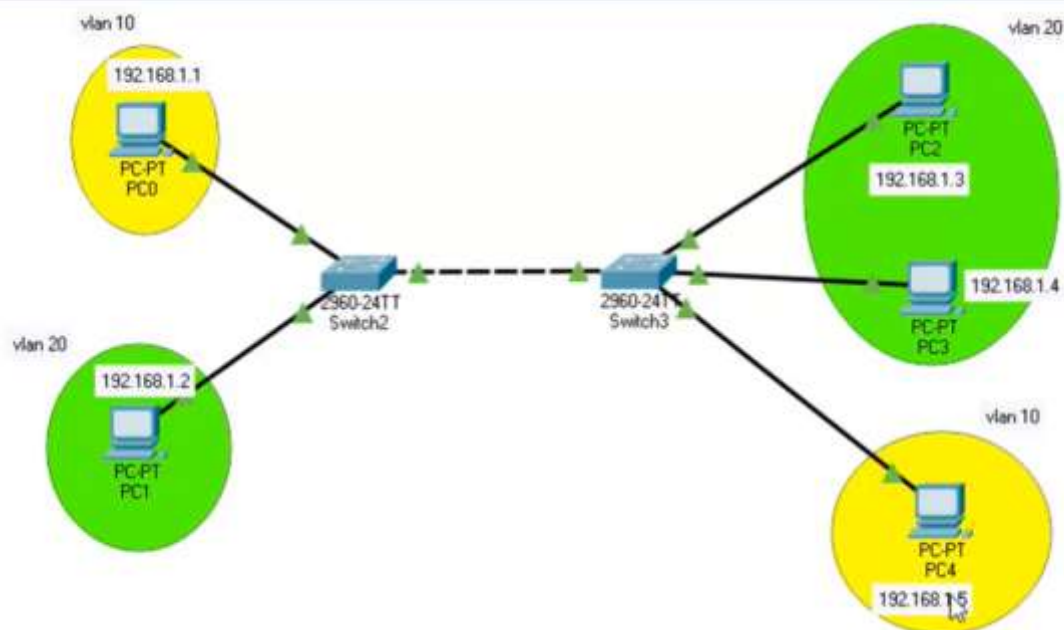**Semester:** Winter   Date: 27/4/2021

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```
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name yellow
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name green
Switch(config-vlan)#exit
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                                Gig0/1, Gig0/2

10   yellow                           active
20   green                            active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
Switch#
```

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```
Switch(config)#interface fa0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#interface fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vlan br

VLAN Name                             Status     Ports
---- -------------------------------- ---------- -------------------------------
1    default                          active     Fa0/3, Fa0/4, Fa0/5, Fa0/6
                                                 Fa0/7, Fa0/8, Fa0/9, Fa0/10
                                                 Fa0/11, Fa0/12, Fa0/13, Fa0/14
                                                 Fa0/15, Fa0/16, Fa0/17, Fa0/18
                                                 Fa0/19, Fa0/20, Fa0/21, Fa0/22
                                                 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10   yellow                           active     Fa0/1
20   green                            active     Fa0/2
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
Switch#
```

Fire	Last Status	Source	Destination
◄	Failed	PC0	PC1
◄	Successful	PC1	PC3
◄	Failed	PC3	PC4