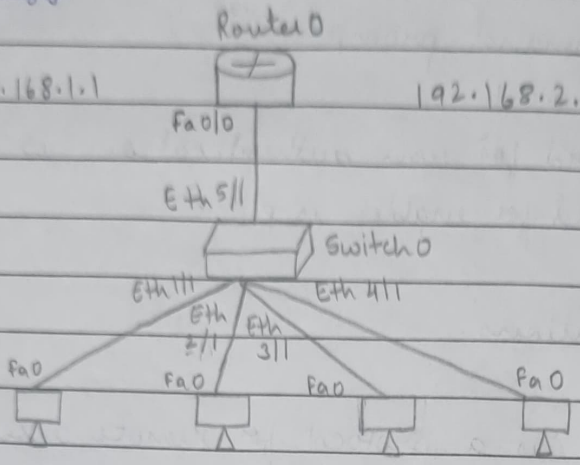
Date 18/12/24
Page

(11)

Experiment 10: To construct VLAN and the PCs communicate along a VLAN.

Aim: Construct a VLAN & enable communication between PCs among a VLAN.

Topology:



Connect 4 PCs to the switch and a router as well to the switch. Assign the IP addresses to the PCs & set def gateway.

Procedure:

1. Choose the 1841 router & connect to a switch & 4 PC's via ethernet interface and fastethernet interface respectively

2. Set the IP addresses of the PCs & configure the router1 with IP address 192.168.1.1

Router> enable
Router # config terminal
Router (config) # interface Fa 0/0
Router (config-if) # ip address 192.168.1.1
255.255.255.0

Date __/__/__
Page _____

Router (config-if) # no shut

3. In the switch, go to config tab & select VLAN Database
4. Set the VLAN number & VLAN name.
Select the interface, i.e., fastethernet 5/1 & make it the trunk. VLAN trunking allows switches to forward frame from different VLAN over a single link called trunk.
5. This is done by adding an additional header information called tag to the ethernet frame.

6. Look into the interfaces of the switches with 2 NEW VLAN systems.

Config tab of router select VLAN DATABASE - enter ~~no~~ number & name of VLAN created

Router (vlan) # exit
Router # config t
Router (config) # interface fastethernet 0/0.1
Router (config-subif) # encapsulation dot1q 2
Router (config-subif) # ip address 192.168.2.1 255.255.255.0
Router (config-subif) # no shut
Router (config-subif) # exit
Router (config) # exit

Observations:

A VLAN segments a network into virtual groups. It enhances security & reduces broadcast traffic. On pinging over the VLAN, the PCs are able to communicate.