LAB WEEK 9

To create a virtual LAN on top of the physical LAN and enable communication between physical LAN and virtual LAN

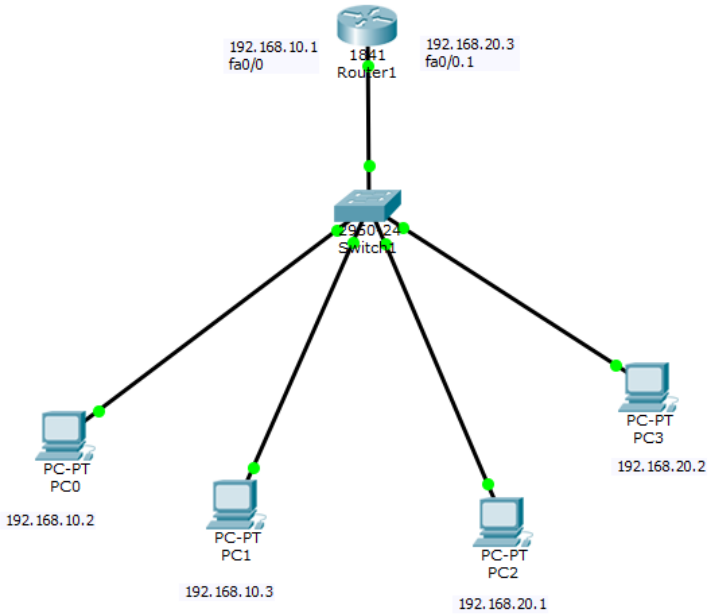


Figure 1: Topology

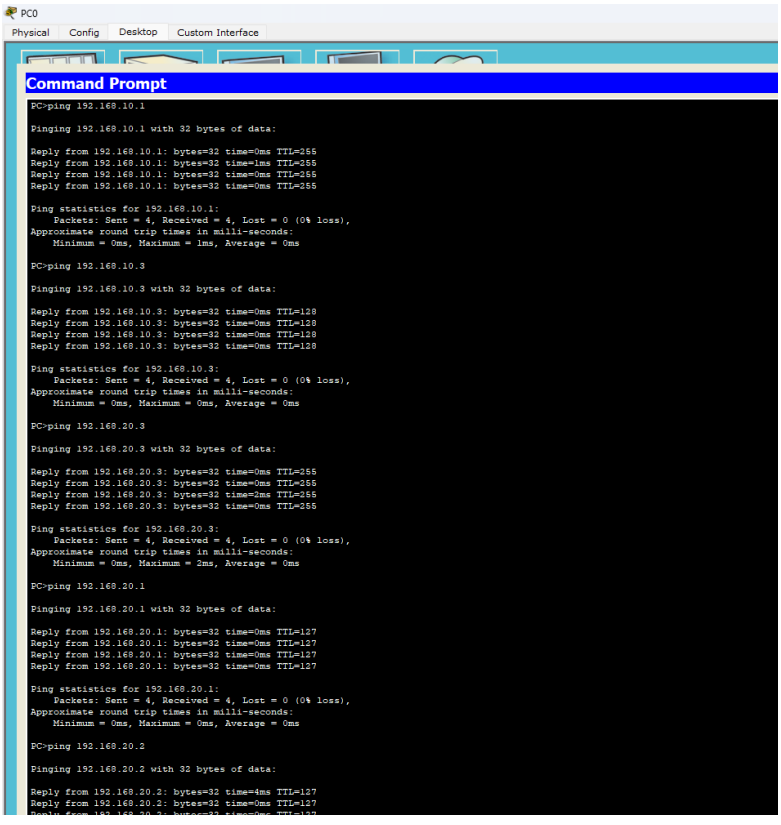


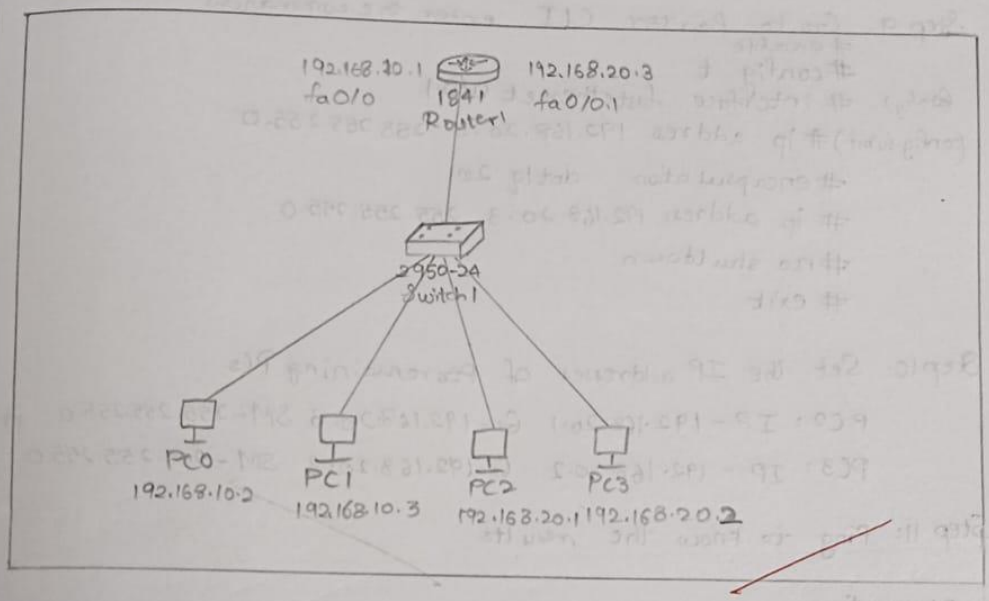
Figure 2: PC Command Prompt

3/12/24

23

To create a virtual LAN on top of the physical LAN and enable communication between Physical LAN and virtual LAN.

* Topology:



*Configuration Steps:

Step 1: Select 4 PC-PTs from the end devices, a "2950-24" switch from switches and a "1841" Router from routers

Step 2: Connect all of them and assign IP addresses to the PCs of the Physical LAN.

PC0: IP - 192.168.10.2 SM - 255.255.255.0 G - 192.168.10.1

PC1: IP - 192.168.10.3 SM - 255.255.255.0 G - 192.168.10.1

Step 3: Go to Router. Select Fast ethernet 0/0, Turn the port status On and assign IP address for the Physical LAN

Router1: IP - 192.168.10.1 SM - 255.255.255.0

Step 4: Go to Switch. Select the interface which is connected to Virtual LAN.

Step 5: Change the Access Mode to Trunk Mode in Fastethernet0, where router is connected.

Step 6: Go to VLAN database, enter the following

Number - 20 Name - VLAN1

and click on Add.

Figure 3: Observation Book 1

Step 7: Select VLAN as 20 for FastEthernet 0/3 and 0/4 where the VLAN PCs are connected.

Step 8: Go to Router and in VLAN database VLAN No - 20 and Name - VLAN1 click on add.

Step 9: Go to Router CLI, enter the commands

```
#enable
#config t
(config) # interface fastethernet 0/0.1
(config-subif) # ip address 192.168.20.3 255.255.255.0
#encapsulation dot1q 20
# ip address 192.168.20.3 255.255.255.0
#no shutdown
# exit
```

Step 10: Set the IP addresses of ~~PC~~ remaining PCs

PC2: IP - 192.168.20.1 G - 192.168.20.3 SM - 255.255.255.0

PC3: IP - 192.168.20.2 G - 192.168.20.3 SM - 255.255.255.0

Step 11: Ping to know the results

* Observation:

The cmd prompt of PC0 [from Physical LAN to VLAN]

```
PC> ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time=4ms TTL=127
"  "  "  "  "  "  "  "  "
"  "  "  "  "  "  "  "  "
"  "  "  "  "  "  "  "  "

Ping statistics for 192.168.20.2:
    Packets: Sent=4, Received=4, Lost=0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum=0ms, Maximum=12ms, Average=4ms
```

Leela 3/12/24 Recd

Figure 4: Observation Book 2