VIRTUAL LAN

Aim: To create a VLAN using class C type addresses.

Topology:

1841 Router

192.168.1.1   192.168.20.1

19
switch

PC-PT
192.168.1.2

PC-PT   PC-PT   PC-PT
192.168.1.3   192.168.20.2   192.168.20.3
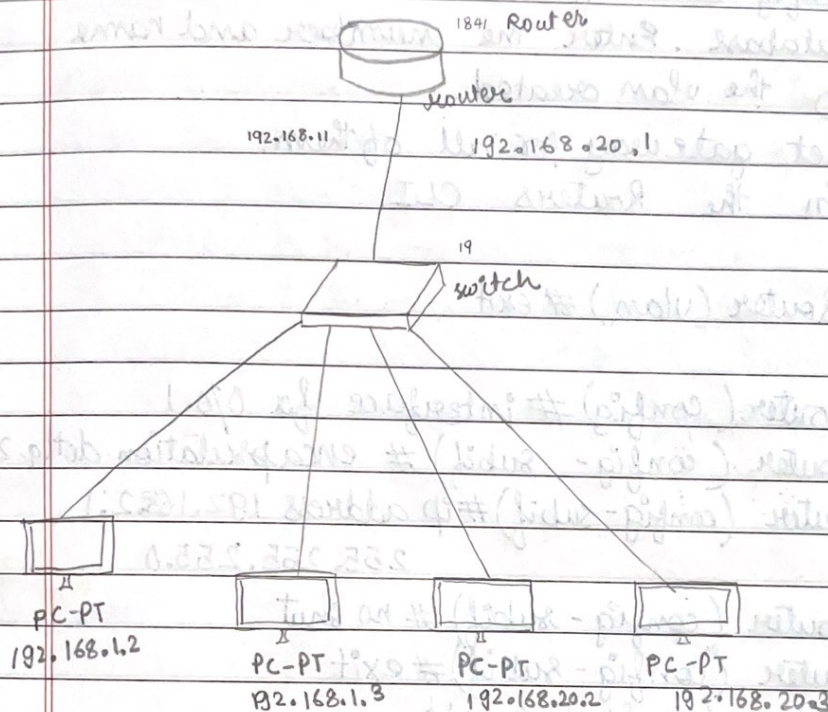
Procedure:

- Create a topology of a 1841 router, a switch, and 4 PT-PC's.
- IP address is assigned to all the devices.
- In switch, go to config tab and select VLAN Database.
- Give any VLAN number say 2 here & include any name.
- Then add.
- Select the interface near the switch from router and make it trunk.

- VLAN trunking allows switchs to forward frames from different VLAN's over a single line called trunk.
- This makes the switch understand NEW VLAN
- Next the router is to understand NEW VLAN
- Config tab of router select VLAN database. Enter the number and name of the vlan created
- Set gateway for all of them.
- In the Routers CLI.

Router (vlan) # exit

Router (config) # interface fa 0/0.1
Router (config- subif) # encapsulation dotlq 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

Ping message from PC to another VLAN PC

Ping Output.

Packet Fracer PC command line 1.0
PC > Ping 192.168.20.3
Pinging 192.168.20.3 with 32 bytes of data
Request timed out.
Reply from 192.168.20.3: bytes=32 time=0ms TTL=
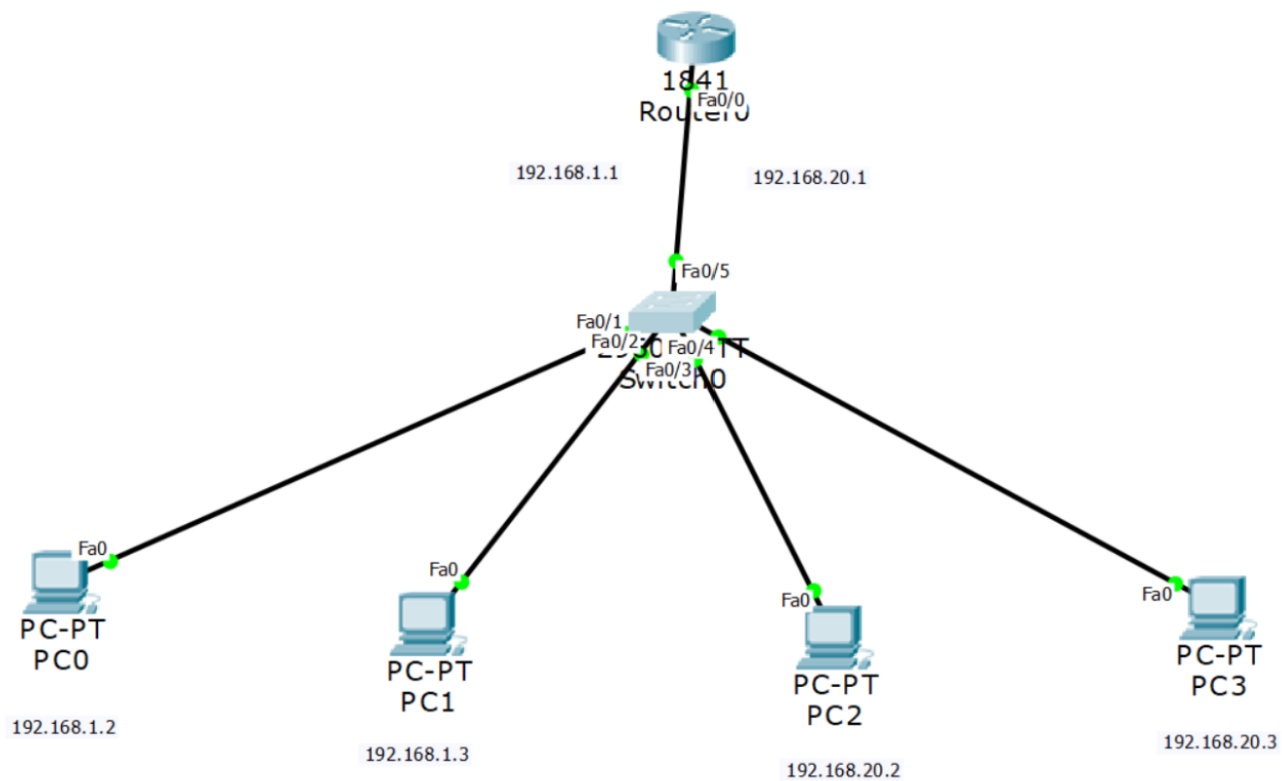Reply from 192.168.20.3: bytes=32 time=5ms TTL=12

Reply from 192.168.20.3: bytes=32 time : 0ms TTL=127
Ping statistics for 192.168.20.3.
    Packets: sent=4, Recieved=3, lost =1 (25% loss)
Approximate round trip times. in milliseconds:
    minimum = 0ms, Maximum =5ms, Average=1ms

<u>Observation:</u>

VLAN is a custom network which is created
from one or more local area networks. It
enables a group of devices availible in multiple
networks to be combined into one logical network.
The result becomes a virtual LAN this is
administered exactly like a physical VLAN
It is a virtual extension of LAN

10/10

17/8/23

1841
Router0

Fa0/0

192.168.1.1

192.168.20.1

Fa0/5

Fa0/1
Fa0/2 Fa0/4 TT
Fa0/3
Switch0

Fa0

PC-PT
PC0

192.168.1.2

Fa0

PC-PT
PC1

192.168.1.3

Fa0

PC-PT
PC2

192.168.20.2

Fa0

PC-PT
PC3

192.168.20.3

```
             --- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: n


Press RETURN to get started!




Router>enable
Router#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.

Router(vlan)#vlan 20 name NEWVLAN
VLAN 20 modified:
    Name: NEWVLAN
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/5
%Invalid interface type and number
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config)#int fa 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#
```

```
PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.20.2: bytes=32 time=0ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127
Reply from 192.168.20.2: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```