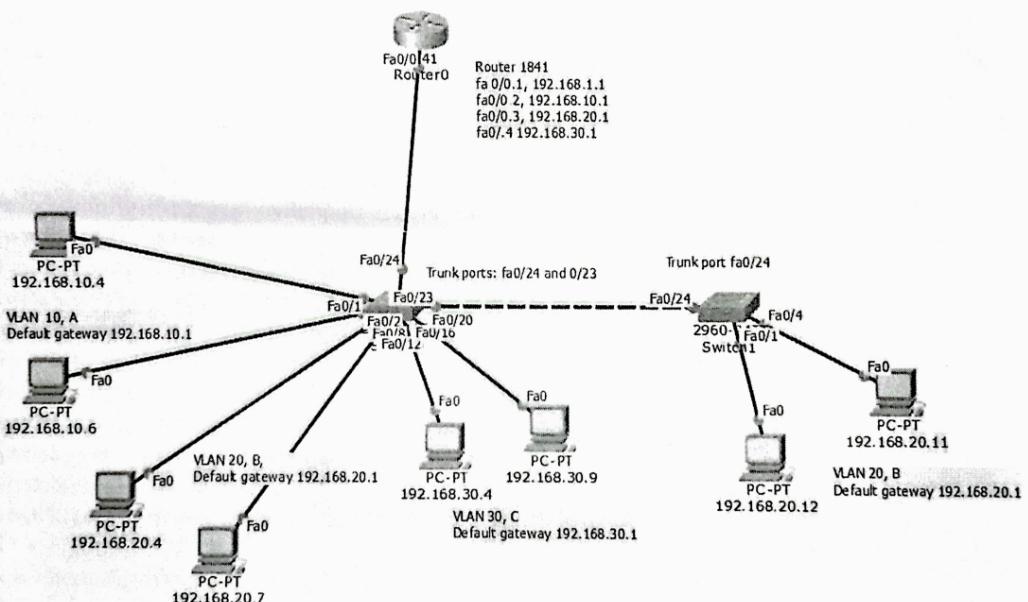
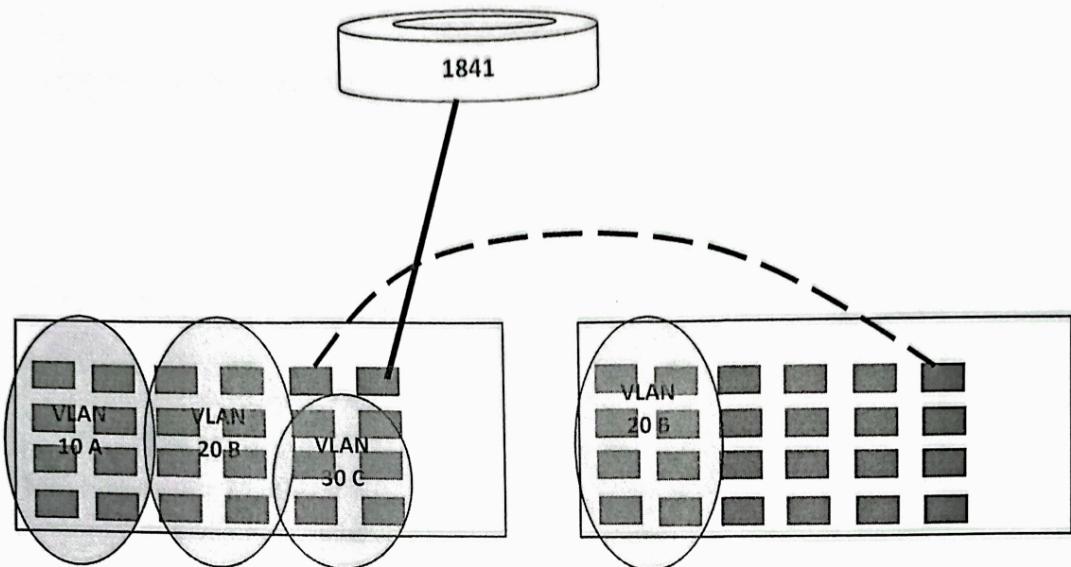


# VLAN Configuration with Switch and Router

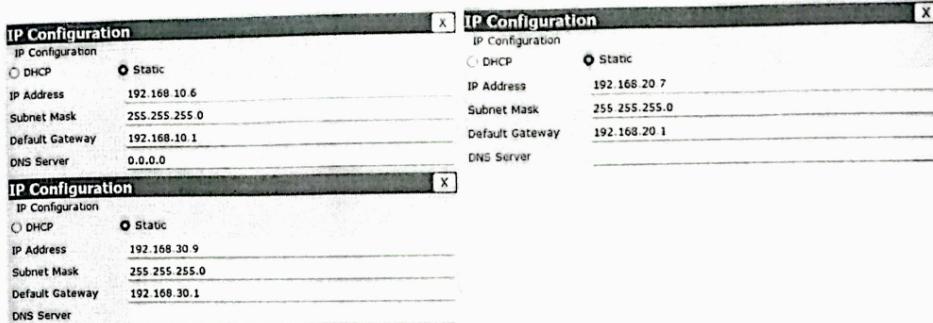


VLAN table under Switch 0

	Name	IP of PCs	Default Gateway	Interface
VLAN 10	A	192.168.10.4 192.168.10.6	192.168.10.1 Sub interface fa0/0.2	Fa0/1 to Fa0/6
VLAN 20	B	192.168.20.2 192.168.20.3	192.168.20.1 Sub interface fa0/0.3	Fa0/7 to Fa0/14
VLAN 30	C	192.168.30.2 192.168.30.3	192.168.30.1 Sub interface fa0/0.4	Fa0/15 to Fa0/22
VLAN 1	Default VLAN Router itself		192.168.1.1 Sub interface fa0/0.1	The interface of the router Fa0/0

VLAN table under Switch 1

	Name	IP of PCs	Default Gateway	Interface
VLAN 20	B	192.168.20.12 192.168.20.11	192.168.20.1 Sub interface fa0/0.3	Fa0/1 to Fa0/6



## Switch-0

Switch>en

Switch#vlan database

Switch(vlan)#vlan 10 name A

VLAN 10 added:

Name: A

Switch(vlan)#vlan 20 name B

VLAN 20 added:

Name: B

Switch(vlan)#vlan 30 name C

VLAN 30 added:

Name: C

Switch(vlan)#exit

Switch#conf t

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

Switch(config)#int range fa0/1-6

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 10

Switch(config-if-range)#int range fa0/7-14

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 20

Switch(config-if-range)#int range fa0/15-22

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 30

Switch(config-if-range)#int fa0/24

Switch(config-if)#switchport mode trunk

Switch(config-if)#int fa0/23

Switch(config-if)#switchport mode trunk

Switch(config-if)#

Switch(config-if)#end

Switch#

%%%%%%%%%%%%%%

## Switch-1

Switch>en

Switch#vlan database

Switch(vlan)#vlan 20 name B

VLAN 20 added:

Name: B

Switch(vlan)#exit

Switch#conf t

Switch(config)#int range fa0/1-6

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport access vlan 20

Switch(config-if-range)#int fa0/24

Switch(config-if)#switchport mode trunk

Switch(config-if)#end

Switch#

# Router

```
Router>en
Router#conf t
Router(config)#int fa0/0
Router(config-if)#no shut
Router(config-if)#int fa0/0.1
Router(config-subif)#encapsulation dot1q 1
Router(config-subif)#ip add 192.168.1.1 255.255.255.0
Router(config-subif)#int fa0/0.2
Router(config-subif)#encapsulation dot1q 10
Router(config-subif)#ip add 192.168.10.1 255.255.255.0
Router(config-subif)#int fa0/0.3
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip add 192.168.20.1 255.255.255.0
Router(config-subif)#int fa0/0.4
Router(config-subif)#encapsulation dot1q 30
Router(config-subif)#ip add 192.168.30.1 255.255.255.0
Router(config-subif)#end
Router#
```

Use the command:  
tracert IP

For the same VLAN only one port will be visited but for different VLAN two ports (one is sub interface) will be visited.

```
PC>tracert 192.168.10.4
Tracing route to 192.168.10.4 over a maximum of 30 hops:
  1  0 ms      0 ms      0 ms      192.168.20.1
  2  0 ms      0 ms      0 ms      192.168.10.4

Trace complete.

PC>tracert 192.168.20.7
Tracing route to 192.168.20.7 over a maximum of 30 hops:
  1  0 ms      0 ms      0 ms      192.168.20.7

Trace complete.

PC>
```

Switch>en  
Switch#sh vlan brief

VLAN Name Status Ports

---

```
1 default active Gig0/1, Gig0/2
10 A active Fa0/1, Fa0/2, Fa0/3, Fa0/4
Fa0/5, Fa0/6
20 B active Fa0/7, Fa0/8, Fa0/9, Fa0/10
Fa0/11, Fa0/12, Fa0/13, Fa0/14
30 C active Fa0/15, Fa0/16, Fa0/17, Fa0/18
Fa0/19, Fa0/20, Fa0/21, Fa0/22
1002 fddi-default active
1003 token-ring-default active
1004 fddinet-default active
```

1005 trnet-default active

Router>en

Router#sh ip route

Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area  
\* - candidate default, U - per-user static route, o - ODR  
P - periodic downloaded static route

Gateway of last resort is not set

C 192.168.1.0/24 is directly connected, FastEthernet0/0.1  
C 192.168.10.0/24 is directly connected, FastEthernet0/0.2  
C 192.168.20.0/24 is directly connected, FastEthernet0/0.3  
C 192.168.30.0/24 is directly connected, FastEthernet0/0.4

Router#