Independent University, Bangladesh (IUB)
Department of Computer Science & Engineering
Data Communication & Networking (CSE 316)

EXPERIMENT#5: Inter-VLAN Routing (PART II)

Objective:

Your task is to configure the network such that PC-A in VLAN 2 can ping PC-B in VLAN 3 across the switches. In the topology shown in Figure 1, you can always swap the PCs for routers and use the fast Ethernet interfaces to connect to the switches.

1. Configure the network in Figure 1.
2. Place one interface on the Switch A in VLAN 2 and connect PC-A is to that interface and place one interface of Switch B in VLAN 3 and connect PC-B is to that interface.
3. Configure the PC interfaces with the IP addresses show in Figure 1 and also configure Router1 in a way that PCA and PCB can communicate with each other (Inter-VLAN Routing)
4. Show Ping between Router A and Router B are successful.

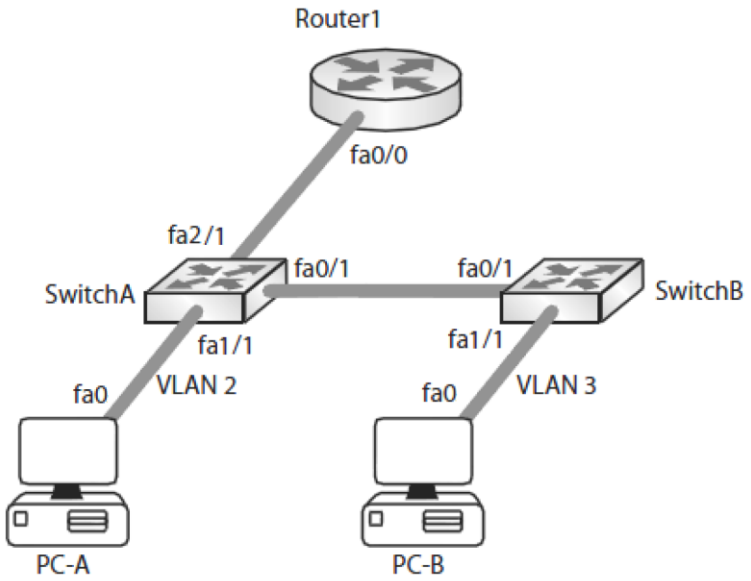

Figure 1

Vlan 2 – 192.168.2.0/24, PC-A 192.168.2.2/24

Vlan 3 – 192.168.3.0/24, PC-B 192.168.3.2/24

Tools and Materials:

In a real life Scenario:
Two Workstations with terminal Program (such as putty), two Cisco switches, One Cisco Router, four Straight-through RJ45 cables

For Lab Purpose:
Cisco Packet Tracer Software

Instructions:

SwitchA

```
Switch>enable
Switch#configure terminal
Switch#(config)#hostname SwitchA
SwitchA(config)#vlan 2
SwitchA(config-vlan)#exit
SwitchA(config)#vlan 3
SwitchA(config-vlan)#exit
SwitchA(config)#interface fa0/1
SwitchA(config-if-range)#switchport mode trunk
SwitchA(config-if-range)#exit
SwitchA(config)#interface fa2/1
SwitchA(config-if-range)#switchport mode trunk
SwitchA(config-if-range)#exit
SwitchA(config)#interface fa1/1
SwitchA(config-if)#switchport mode access
SwitchA(config-if)#switchport access vlan 2
```

SwitchB

```
Switch>enable
Switch#config t
Switch#(config)#hostname SwitchB
SwitchB(config)#vlan 3
SwitchB(config-vlan)#exit
SwitchB(config)#int fa0/1
SwitchB(config-if)#switchport mode trunk
SwitchB(config)#interface fa1/1
SwitchB(config-if)#switchport mode access
SwitchB(config-if)#switchport access vlan 3
```

Router1

```
Router>enable
Router#config t
Router(config)#hostname Router1
Router1(config)#interface fa0/0
Router1(config-if)#no shut
Router1(config-if)#interface fa0/0.2
```

```
Router1(config-subif)#encapsulation dot1q 2
Router1(config-subif)#ip address 192.168.2.1 255.255.255.0
Router1(config-subif)#interface fa0/0.3
Router1(config-subif)#encapsulation dot1q 3
Router1(config-subif)#ip address 192.168.3.1 255.255.255.0
```