EXPERIMENT#3: LAN SWITCHING (PART II)

Objective:

Your task is to configure the network in Figure 1.

1. Place two interfaces on the switch A in VLAN 2 and VLAN 3 and two interfaces in VLAN 2 and VLAN 3 on the other switch B.
2. Configure the routers' interfaces with the IP addresses as in Figure 3
3. Ping across the LAN on VLAN 2.
4. Ping across the LAN on VLAN 3.

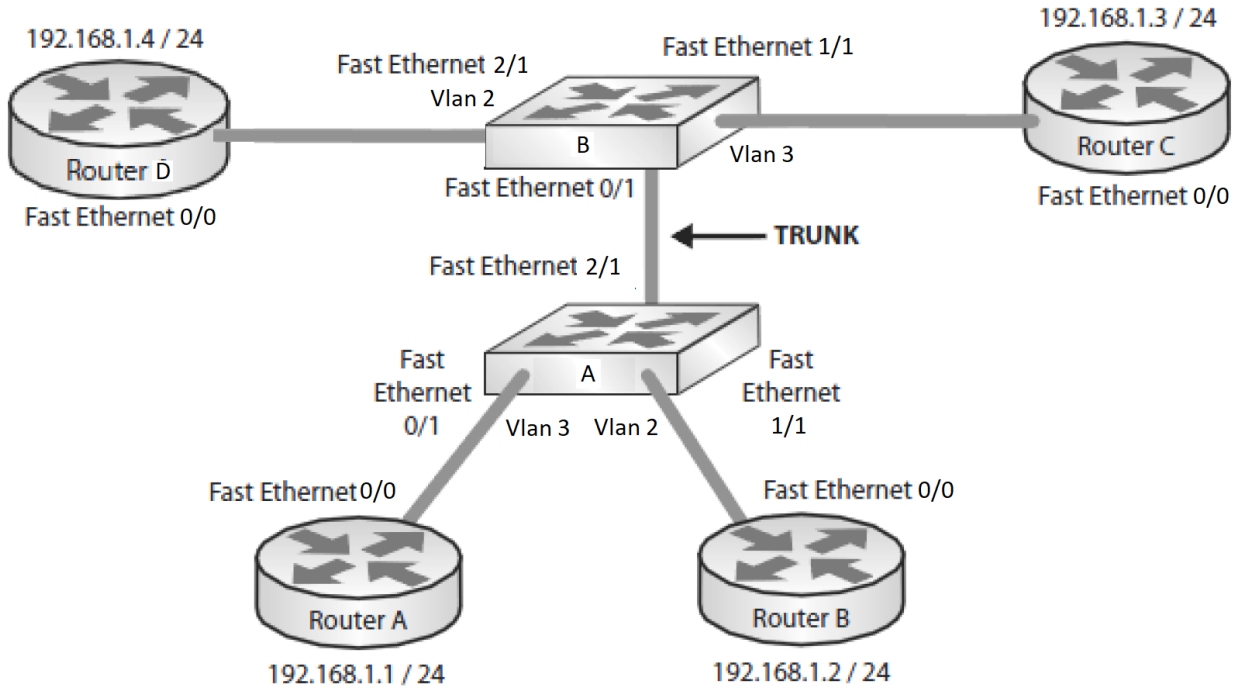

Figure 1

Instructions:

1. To configure the IP address on the routers, do the following:

Router A:

```
Router>enable
Router#
Router#configure terminal
Router(config)#hostname RouterA
RouterA(config)#interface fastethernet 0/0
RouterA(config-if)#ip address 192.168.1.1 255.255.255.0
RouterA(config-if)#no shut
RouterA(config-if)#^Z
RouterA#
```

Router B:

```
Router>enable
Router#config t
Router(config)#hostname RouterB
RouterB(config)#interface fastethernet 0/0
RouterB(config-if)#ip address 192.168.1.2 255.255.255.0
RouterB(config-if)#no shut
RouterB(config-if)#^Z
RouterB#
```

Router C:

```
Router>enable
Router#config t
Router(config)#hostname RouterC
RouterC(config)#interface fastethernet 0/0
RouterC(config-if)#ip address 192.168.1.3 255.255.255.0
RouterC(config-if)#no shut
RouterC(config-if)#^Z
RouterC#
```

Router D:

```
Router>enable
Router#config t
Router(config)#hostname RouterD
RouterD(config)#interface fastethernet 0/0
RouterD(config-if)#ip address 192.168.1.4 255.255.255.0
RouterD(config-if)#no shut
RouterD(config-if)#^Z
RouterD#
```

If you have plugged directly into the switch, you will be able to ping from router A to router B, router C and router D. This is because they are all in VLAN 1, by default. If you have just booted up the switch, it may take a few moments for the database to be built.

```
RouterB#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5) RouterB#ping 192.168.1.1
```

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
..!!!
Success rate is 60 percent (3/5), round-trip min/avg/max = 4/4/4 ms

RouterB#ping 192.168.1.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms
RouterB#

2. Configure VLAN 2 on the IOS switches.

SwitchB:

Switch>
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname SwitchB
SwitchB(config)#^Z
SwitchB(config)#vlan 2
SwitchB(config-vlan)#name Cisco
SwitchB(config-vlan)#^z

SwitchA:

Switch>
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname SwitchA
SwitchA(config)#vlan 2
SwitchA(config-vlan)#name Cisco
SwitchA(config-vlan)#^z

3. Configure VLAN 3 on the IOS switches.

SwitchB:

Switch>
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
SwitchB(config)#vlan 3
SwitchB(config-vlan)#name Cisco1
SwitchB(config-vlan)#^z

SwitchA:

Switch>
Switch>enable
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.

```
SwitchA(config)#vlan 3
SwitchA(config-vlan)#name Cisco1
SwitchA(config-vlan)#^z
```

4. Put the relevant ports in VLAN 2 on each switch.

```
SwitchB#config t
SwitchB(config)#interface fast 2/1
SwitchB(config-if)#switchport access vlan 2
SwitchB(config-vlan)#^z
SwitchB#
===
SwitchA#config t
SwitchA(config-vlan)#int fast 1/1
SwitchA(config-if)#switchport access vlan 2
SwitchA(config-if)#^z
SwitchA#
```

5. Put the relevant ports in VLAN 3 on each switch.

```
SwitchB#config t
SwitchB(config)#interface fast 1/1
SwitchB(config-if)#switchport access vlan 3
SwitchB(config-vlan)#^z
SwitchB#
===
SwitchA#config t
SwitchA(config-vlan)#int fast 0/1
SwitchA(config-if)#switchport access vlan 3
SwitchA(config-if)#^z
SwitchA#
```

6. Turn trunking on-on the interfaces between the switches.

```
SwitchA(config-if)#interface fastethernet 2/1
SwitchA(config-if)#switchport mode trunk
SwitchA(config)#exit
SwitchA #
---
SwitchB(config-if)#interface fastethernet 0/1
SwitchB(config-if)#switchport mode trunk
SwitchB(config)#exit
SwitchB#
```

7. Ping from router C to router A.

```
RouterC#ping 192.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
.!!!! « one ping fails due to the ARP lookup
Success rate is 80 percent (4/5), round-trip min/avg/max = 4/4/4 ms
RouterC#ping 192.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
```

!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/6/8 ms
RouterC#

7. Ping from router D to router B.

RouterD#ping 192.168.1.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.2, timeout is 2 seconds:
.!!!! **« one ping fails due to the ARP lookup**
Success rate is 80 percent (4/5), round-trip min/avg/max = 4/4/4 ms
RouterD#ping 192.168.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/6/8 ms
RouterD#