Lab 12: Objective:

Configuring Static Route

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Static routing

Static routing, the alternative to dynamic routing, is the process in which the system network administrator would manually configure network routers with all the information necessary for successful packet forwarding. The administrator constructs the routing table in every router by putting in the entries for every network that could be a destination. Static routes to network destinations are unchangeable.
Static routing is a type of network routing technique. Static routing is not a routing protocol; instead, it is the manual configuration and selection of a network route, usually managed by the network administrator. It is employed in scenarios where the network parameters and environment are expected to remain constant.

Static routing is only optimal in a few situations. Network degradation, latency and congestion are inevitable consequences of the non-flexible nature of static routing because there is no adjustment when the primary route is unavailable.

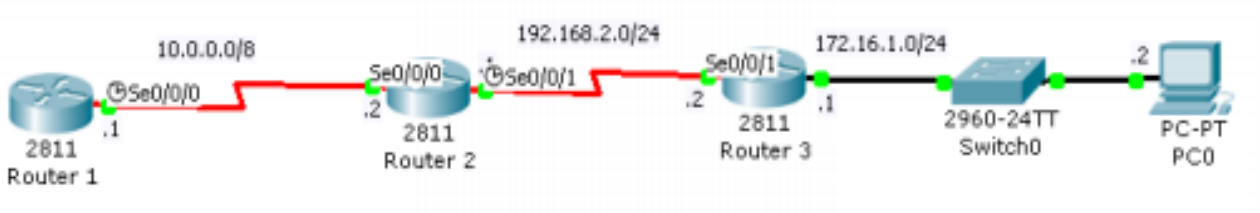

Figure 1

Refer to figure 1,

Task-1, Configure IP

Configure ip address on the three routers

Router1>enable
Router1#configure Terminal
Router1(Config)# interface se0/0/0
Router1(Config-if)# ip address 10.0.0.1 255.0.0.0
Router1(Config-if)# clock rate 64000
Router1(Config-if)# no shutdown

```
Router2>enable
Router2#configure Terminal
Router2(Config)# interface se0/0/0
Router2(Config-if)# ip address 10.0.0.2 255.0.0.0
Router2(Config-if)# no shutdown
Router2(Config-if)#end
Router2>enable
Router2#configure Terminal
Router2(Config)# interface se0/0/1
Router2(Config-if)# ip address 192.168.2.1 255.255.255.0
Router2(Config-if)# clockrate 64000
Router2(Config-if)# no shutdown

Router3>enable
Router3#configure terminal
Router3(Config)#interface se0/0/1
Router3(Config-if)#ip address 192.168.2.2 255.255.255.0
Router3(Config-if)#no shutdown
Router3(Config-if)#end
Router3>enable
Router3#configure terminal
Router3(Config)#interface fa0/0
Router3(Config-if)#Ip address 172.16.1.1 255.255.255.0
Router3(Config-if)#no shutdown
Router3(Config-if)#end
```

Task 2, Configuring Static Route

```
Router1>enable

Router1# Configure terminal

Router1(Config)# ip route 172.16.1.0 255.255.255.0 10.0.0.2
```

(Where 172.16.1.0= Destination Address 255.255.255.0= Subnet mask, 10.0.0.2= Next Hop Address)

```
Router1(Config)# ip route 192.168.2.0 255.255.255.0 10.0.0.2

Router2>enable

Router2#configure Terminal

Router2(Config)# ip route 172.16.1.0 255.255.255.0 192.168.2.2
```

Router3#configure terminal

Router3(Config)# ip route 10.0.0.0 255.0.0.0 192.168.2.1

```
Router#ping 172.16.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 96/113/125 ms

Router#
```

Lab-12 Exercise:

Design a bus network which consists of 4 routers. Configure Static Routing on this network so that all the devices can communicate to each other.