Date 23/10/24
Page

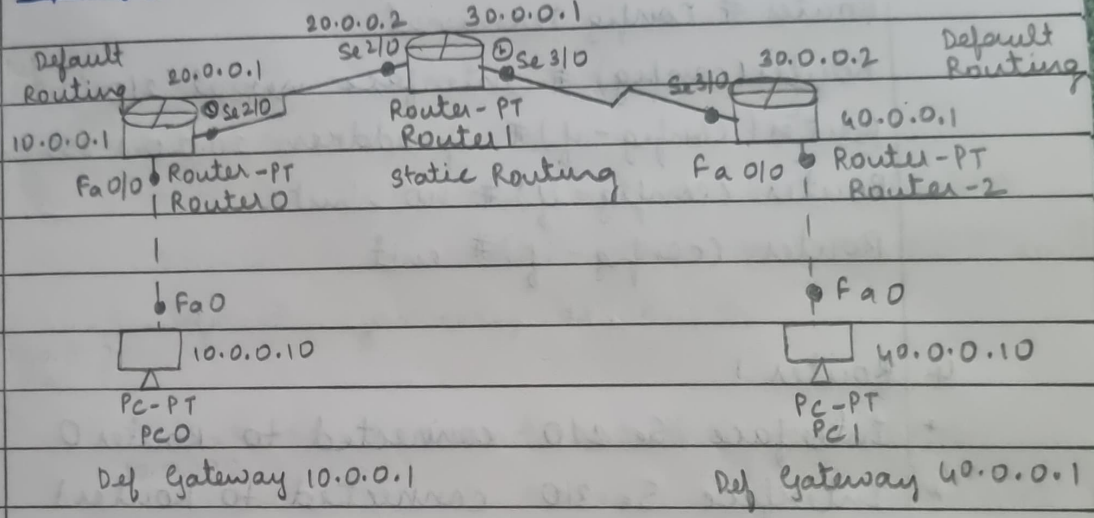
Exp-3:

Q. Configure default route, static route to the router.

Aim: To demonstrate static routing and default routing using 3 routers.

o/p seen

Topology:



1. PC0 is connected to router 0's interface Fa 0/0 using a cross-over cable
   IP address : 10.0.0.10
   Def Gateway : 10.0.0.1

2. PC1 is connected to router 2's interface Fa 0/0 using a cross-over cable
   IP address : 40.0.0.10
   Def gateway : 40.0.0.1

3. Router 0
   * Interface Fa 0/0 connected to PC0
   * Interface Se 2/0 connected to router 1
   * IP address of Fa 0/0 : 10.0.0.1
   * IP address of Se 2/0 : 20.0.0.1

Date __/__/__
Page __

Configure Router 0

Router > enable
Router # config terminal
Router (config) # interface fast ethernet 0/0
Router (config-if)# ip address 10.0.0.1 255.0.0.0
Router (config-if)# no shut
Router (config-if)# exit.

Router # config terminal
Router(config) # interface serial 2/0
Router (config-if)# ip address 20.0.0.1 255.0.0.0
Router (config-if)# no shut
Router (config-if)# exit.

4. Router 1
* Interface Se 2/0 connected to Router 0
* Interface Se 3/0 connected to Router 1
* IP address of Se 2/0: 20.0.0.2
* IP address of Se 3/0: 30.0.0.1

Configure Router 1

Router > enable
Router # config terminal
Router (config)#interface serial 2/0
Router (config-if) # ip address 20.0.0.2 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit.

Router # config terminal
Router (config) # interface serial 3/0
Router (config-if) # ip address 30.0.0.1 255.0.0.0
Router (config-if) # No shut

Router (config-if)# exit

5. Router 2
- Interface Fa 0/0 is connected to PC1
- Interface Se 3/0 is connected to router1
- IP address of Fa 0/0: 40.0.0.1
- IP address of Se 3/0: 30.0.0.2

Config Router 2 like to Router 0.

Configuring the PCs

For PC0:
- click on PC0 and set the IP address to 10.0.0.10, subnet mask to 255.0.0.0 and default gateway to 10.0.0.1

For PC1:
- click on PC1 and set the IP address to 40.0.0.10, subnet mask to 255.0.0.0 and default gateway to 40.0.0.1.

→ Default Routing of Router 0

Router > enable
Router # config terminal
Router (config)# ip route 10.0.0.0 0.0.0.0 0.0.0.0 20.0.0.2
Router (config)# exit
Router # show ip route
Gateway of last resort is 20.0.0.2 to network 0.0.0.0
C 10.0.0.0/8 is directly connected, FastEthernet 0/0
C 20.0.0.0/8 is directly connected, Serial 2/0
S* 0.0.0.0/0 [1/0] via 20.0.0.2

Date __/__/__
Page

→ Static Routing of Router 1

Router (config)# ip route 10.0.0.0 255.0.0.0 20.0.0.1
Router (config)# ip route 40.0.0.0 255.0.0.0 30.0.0.2

Router # show ip route

S 10.0.0.0/8 [1/0] via 20.0.0.1
C 20.0.0.0/8 is directly connected, Serial 2/0
C 30.0.0.0/8 is directly connected, Serial 3/0
S 40.0.0.0/8 [1/0] via 30.0.0.2

→ Default Routing of Router 2

Router (config)# ip route 0.0.0.0 0.0.0.0 30.0.0.1

Router # show ip route

C 30.0.0.0/8 is directly connected, Serial 3/0
C 40.0.0.0/8 is directly connected, FastEthernet 0/0
S* 0.0.0.0/0 [1/0] via 30.0.0.1.

Procedure:

1. Open Cisco Packet Tracer and drag the following components onto workspace:
Router: Place 3 routers in the middle
PC: Place two PCs on the below router 0 & router 2.

2. Use cross over cables to connect PC0 & router 0 and also PC1 & router 2.

Date __/__/__
Page _____

3. connect router 0, router 1, router 2 using serial DCE

4. Configure the PCs & routers and add labels for the IP addresses & default gateway for PC & routers.

5. Configure router 0 & router 2 for default routing and router 1 for static routing

6. Test the connectivity by opening command prompt on PC 0 and use ping command to check connectivity. Ping PC 1.

The ping results are as follows:

```
PC> ping 40.0.0.10
Pinging 40.0.0.10 with 32 bytes of data:
Request timed out
Reply from 40.0.0.10 : bytes=32 time=6ms TTL=125
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125
Ping statistics for 40.0.0.10:
    Packets: sent=4, Received=3, Lost=1 (25% loss)
Approx round trip times in milli-seconds:
    Minimum=6ms, Maximum=8ms, Average=6ms
```

23/10/24

Observation:

If the configuration & cabling are correct, you will receive successful ping replies b/w two PCs