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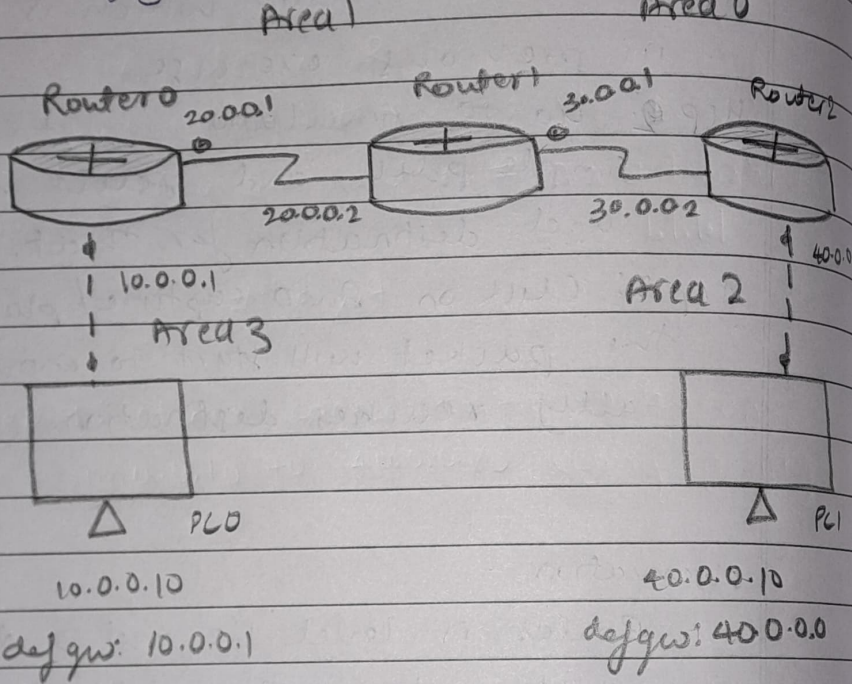
lab-7

objective: Demonstration of open shortest path First (OSPF) ip routing protocal.

topology:



Procedure:

step 1: Place 3 routers and 2 PCs in the environment

Step 2: Make the connections as shown in above diagram using proper connect

Step 3: set ip and default gateways for PC's

step 4: For fast ethernets in routers set ips and subnetmasks.

step 5: There are two cases for serial. If clock symbol is there then execute below commands

For Router 0

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R0(config)# interface serial 1/0
R0(config-if)# ip address 20.0.0.1 255.0.0.0
encapsulation PPP
clock rate 64000
no shut
exit

in Router 1 (for serial 1/0, no clock)
R1(config)# interface serial 1/0
R1(config-ip)# ip address 20.0.0.2 255.0.0.0
encapsulation PPP
no shut
exit.

Similarly exicute for R2 as well.

Step 6: Enabling ip routing by ospf routing.
in Router 0
R0(config)# router ospf 1
R0(config-router)# router-id 1.1.1.1
#network 10.0.0.0 0.255.255.255 area 3
network 20.0.0.0 0.255.255.255 area 1
exit

Similarly do for R1 (id 2.2.22) & R2 (id 3.3.3) (considering area properly)

Step 7: loopback to keep router awake
R0(config)# interface loopback 0
R0(config-if)#ip add 172.161.255.255 255.255.0.0
#no shut
similarly do for R1 and R2

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Step 8: Creating virtual links

exicute in R0

R0(config) # router ospf 1

R0(config-router) # area 1 virtual-li
2.2.2.2

exit

exicute in R1

R1(config) # router ospf 1

R1(config-router) # area 1 virtual-lin
1.1.1.1

exit

Step 9: check connectivity between 10.0.0.10 to 40.0.0.10 using pinging.

Observation:

- After configuration we will be ableto ping ~~from~~ pc1 from pc0
- OSPF functions by determining the shortest path to route data packets between routers.