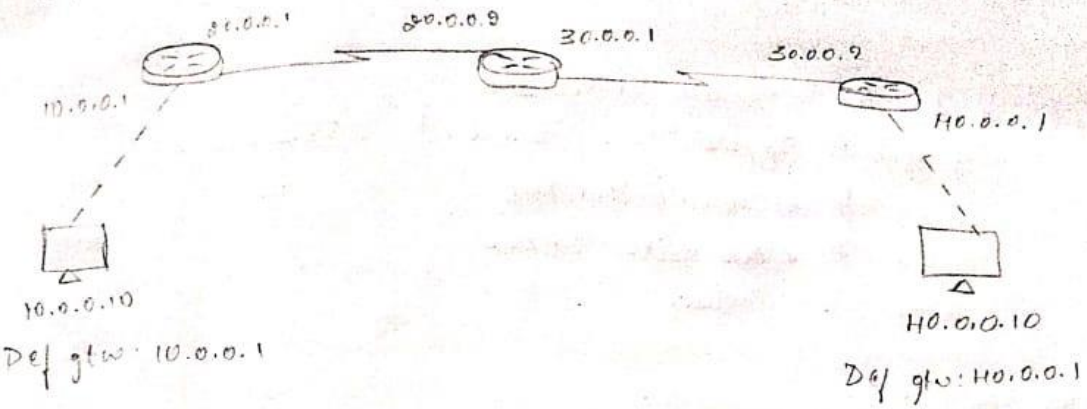
PROGRAM6: Configure OSPF routing protocol
OBSERVATION:

LAB-7

27/11/24

Aim :- Configure OSPF routing protocol.

Topology :



Procedure :-

1. Place 3 routers on the workbench.
2. Connect two general PC to router0 & 2 respectively using copper cross over.
3. Configure IP address and default gateway for both the end devices.
4. Configure router connections.

CLI :-

Router0 :

(Config) # interface fastethernet 0/0.

(config-if) # ip address 10.0.0.0 255.0.0.0

no shut.

interface serial 2/0

ip address 20.0.0.1 255.0.0.0

encapsulation ppp

clock rate 64000

no shut

Router1:

(config)# router ospf 1

(config-router)# network 20.0.0.0 0.255.255.255 area 1

network 30.0.0.0 0.255.255.255 area 0

exit

Router2:

(config)# router ospf 1

(config-router)# network 30.0.0.0 0.255.255.255 area 0

network 40.0.0.0 0.255.255.255 area 2

6. Loopback:

Router 0:

(config)# interface loopback 0

(config-if)# ip add 172.16.1.252 255.255.0.0

no shut

exit

Router1:

(config)# interface loopback 0

(config-if)# ip add 172.16.1.253 255.255.0.0

no shut

exit

Router2:

(config)# interface loopback 0

(config-if)# ip add 172.16.1.254 255.255.0.0

no shut

exit.

7. Virtual link b/w router establishment.

Router 0:

(config)# router ospf 1

(config-router) # area 1 virtual-link 2.2.2.2.

Router1 :

(config) # router ospf 1

(config-router) # area 1 virtual-link 1.1.1.1

exit.

Router2 :

show ip route.

~~IR 0.0.0~~

10.0.0.0/8 via 30.0.0.1 Serial 2/0

20.0.0.0/8 via 30.0.0.1 Serial 2/0

30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks

30.0.0.0/8 is directly connected, Serial 2/0

30.0.0.1/32 is directly connected, Serial 2/0

40.0.0.0/8 is directly connected, FastEthernet 0/0

172.16.0.0/16 is directly connected, Loopback 0

Observation :-

Successfully configured OSPF

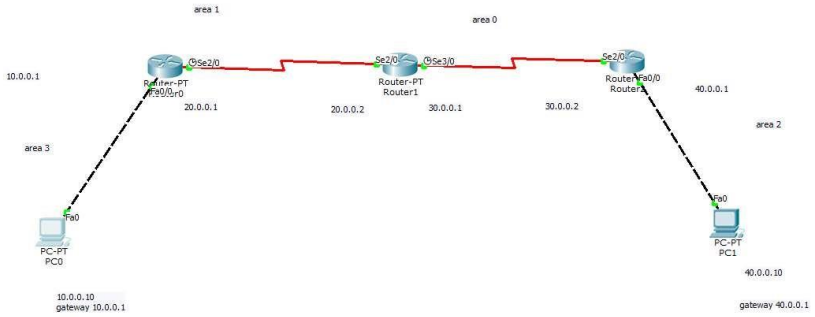
Ping results :

Ping 40.0.0.10

Ping statistics for 40.0.0.10 :

Packets : Sent = 4, Received = 4, Lost = 0 (0% loss),

TOPOLOGY:



OUTPUT:

```
Packet Tracer PC Command Line 1.0
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=4ms TTL=125

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 6ms, Average = 5ms

PC>ping 40.0.0.10

Pinging 40.0.0.10 with 32 bytes of data:

Reply from 40.0.0.10: bytes=32 time=8ms 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
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 8ms, Average = 6ms
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