WEEK 7

Configure OSPF routing

protocol. OBSERVATION:

LAB-7
OSPF

AIM: configure OSPF routing protocol.

R1 Area 1   R2   Area 2   R3

S 2/1   S 2/0   S 1/1 30.0.0.1   S 1/0
10.0.0.1   20.0.0.1   20.0.0.2   30.0.0.2   40.0...
2/0   2/0   are

Area 3

10.0.0.10   40.0.0.10
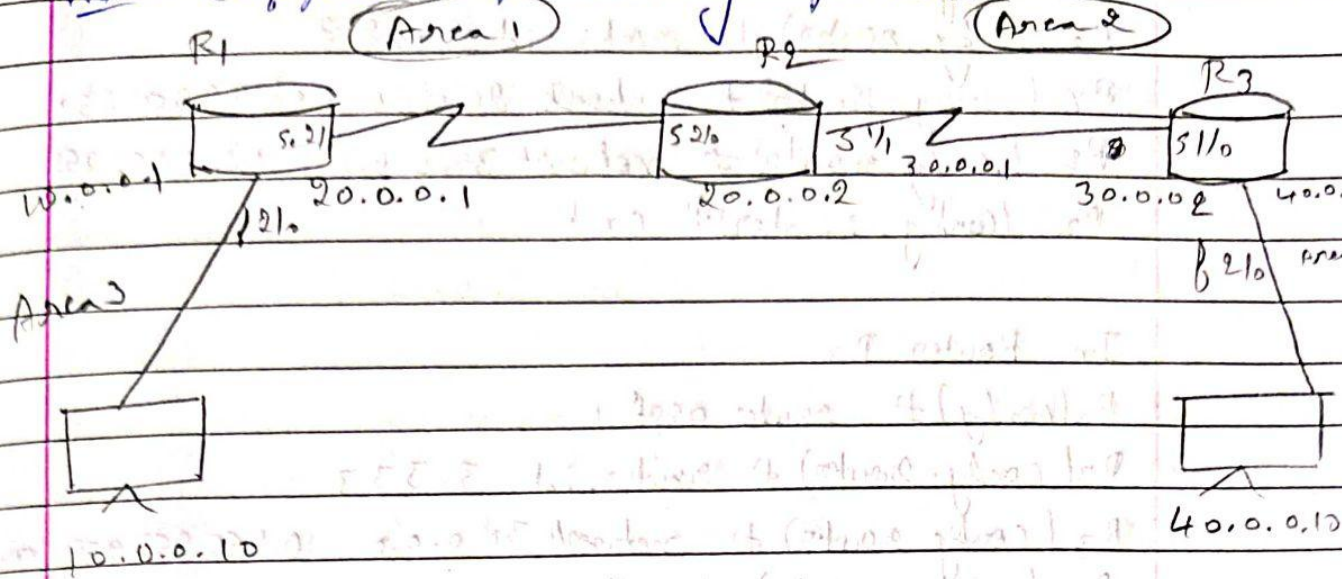
Procedure:

→ Configure the pc's with IP address and gateway according to the topology.

→ Configure each of the routers according to the IP address given in topology.

→ Encapsulation ppp and checkpoint need to be set as done in RIP protocol experiment.

Step 3: now enable ip routing by configuring ospf rating Protocol in all routers

In Router R1

R1 (config) # router ospf
R1 (config.router) # router.id 1.1.1.1
R1 (config.router) # network 10.0.0.00 . 255.256.255
R1 (config.router) # network 20.0.0.0 0255.255.255
area

In Router R₂

R₂ (config) # router Ospf

R₂ (config. router) # riter.id 2.2.2.2

R₂ (config. router) # network 20.0.0.0   0.225.255.250

R₂ (config router) # network 30.0.0.0   0.255.255.255

R₂ (config. router) # exit.

In Router R₃

R₃ (config) # router ospf 1

R₃ (config-router) # router.id 3.3.3.3

R₃ (config. router) # network 30.0.0.0   0.255.255.255 area

R₃ (config-router) # network 40.0.0.0   0.255.255.255 area

R₃ (config. router) # exit.

Step4: Loopback in serial interface

In router R₁

R₁ (config. if) # interface Loopback 0

R₁ (config. if) # ip address 172.16.1.252   255.255.0.1

R₁ (config. if) # no Shut

In router 2 in serial interface

R₂ (config. if) # interface loopback 0

R₂ (config. if) # ip address 172.16.1.253   253.955.0.1

R₂ (config. if) # no Shut

In router 3

R₃ (config. if) # interface loopback

Step 5 : Virtual link.

In router R₁

R₁ (config) # router ospf 1

R₁ (config. router) # area 1 virtual link 2.2.2.2

R₁ (config. router) # exit.

In router R₂

R₂ (config) # router ospf 1

R₂ (config - router) # area 1 virtual link 1.1.1.1

R₂ (config. router) # exit.

→ Show ip router

O IA   10.0.0.0/8 [110/199] via 30.0.0.1 serial 3/0

O IA   20.0.0.0/8 [110/128] via 30.0.0.1 serial 3/0

    30.0.0.0/8 is subnetted, 2 subnets, 2 mask

C   30.0.0.0/8 is directly connected . serial 3/0

C   30.0.0-1/32 is directly connected serial 3/0

C   70.0.0.0/8 is directly connected fastethernet 0/0

C   172.16.0.0/16 is directly connected loopback.

Ping output

Pinging 40.0.0.10 with 39 bytes of data.

Request timed out.

Reply from 40.0.0.10 bytes = 39 time = 2 ms TTL = 125

Reply from 40.0.0.10 bytes = 39 time = 9 ms TTL = 125

Reply from 40.0.0.10 bytes = 39 time = 10 ms TTL = 125

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Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.10

Pinging 40.0.0.10 with 32 bytes of data:

Reply from 10.0.0.1: Destination host unreachable.
Reply from 10.0.0.1: Destination host unreachable.
Reply from 10.0.0.1: Destination host unreachable.
Reply from 10.0.0.1: Destination host unreachable.

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

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=4ms TTL=125
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125
Reply from 40.0.0.10: bytes=32 time=12ms 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 = 12ms, Average = 7ms

PC>
```