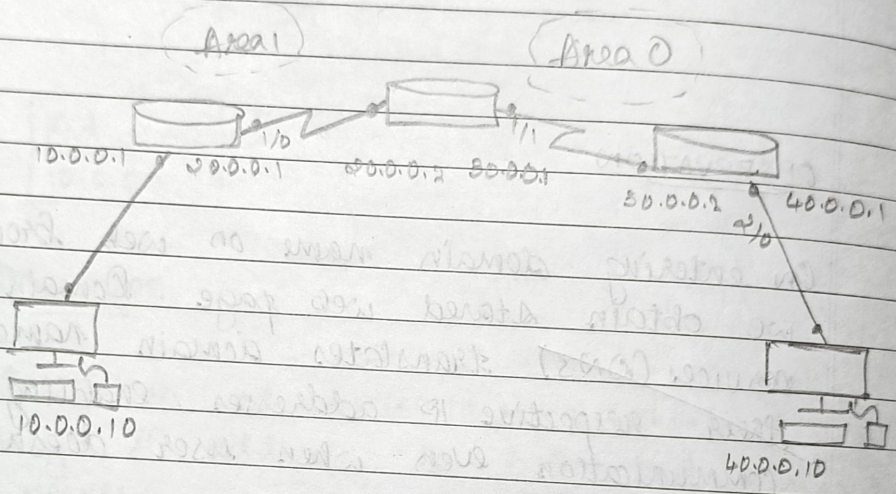
EXP-7

AIM

TOPOLOGY



PROCEDURE

- Configure the PC's with IP address and gateway according to the topology.
- Configure your Routers according to the topology.
- Encapsulation PPP and clock rate need to be set as done in RIP.
- Enable

R1 (config-router) # router-id 1.1.1.1
R1 (config-router) # network 10.0.0.0 0.255.255.255
R1 (config-router) # network 20.0.0.0 0.255.255.255
R1 (config-router) # exit

In Router R2,

R2(config) # router ospf 1
R2(config-router)# router-id 2.2.2.2
R2(config-router)# network 20.0.0.0 0.255.255.255 area 1
R2(config-router)# network 30.0.0.0 0.255.255.255 area 0
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 0
R3(config-router)# network 40.0.0.0. 0.255.255.255 area 2

* Set the interface loopback

R1(config-if)# interface loopback 0
R1(config-if)# ip add 172.16.1.252 255.255.0.0
R1(config-if)# no shutdown.

R2(config-if)# interface loopback 0
R2(config-if)# ip add 172.16.1.253 255.255.0.0
R2(config-if)# no shutdown.

R3(config-if)# interface loopback 0
R3(config-if)# ip add 172.16.1.254 255.255.0.0
R3(config-if)# no shutdown.

* In Router R1,

R1(config)# router ospf 1
R1(config-router)# areas virtual link 2.2.2.2

In Router R2,

R2(config)# router ospf 1

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

R2(config-router)# exit

⇒ After this show IP route, it show all 4.

Router 1:

show ip route

O IA 10.0.0.0/8 [110/65] via 20.0.0.1 00:00:11, serial 2/0

20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks

C 20.0.0.0/8 is directly connected, serial 2/0

C 20.0.0.1/32 is directly connected / serial 2/0

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

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

C 30.0.0.2/32 is directly connected, serial 3/0

O IA 40.0.0.0/8 [110/65] via 30.0.0.2, 00:00:44, serial 3/0

C 172.16.0.0/16 is directly connected, loopback 0

RESULT:

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=10ms TTL=125

Reply from 40.0.0.10 bytes=32 time=2ms TTL=125

Reply from 40.0.0.10 bytes=32 time=9ms 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=2ms, maximum=10ms, average=7ms

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OBSERVATION

OSPF in open shortcut path first. It is a protocol which finds the best routing path between source and destination routers. It uses its own shortcut path algorithm.

Networks are divided into areas. Backbone (area 0) forms core of the OSPF network. Other network are connected to the backbone.