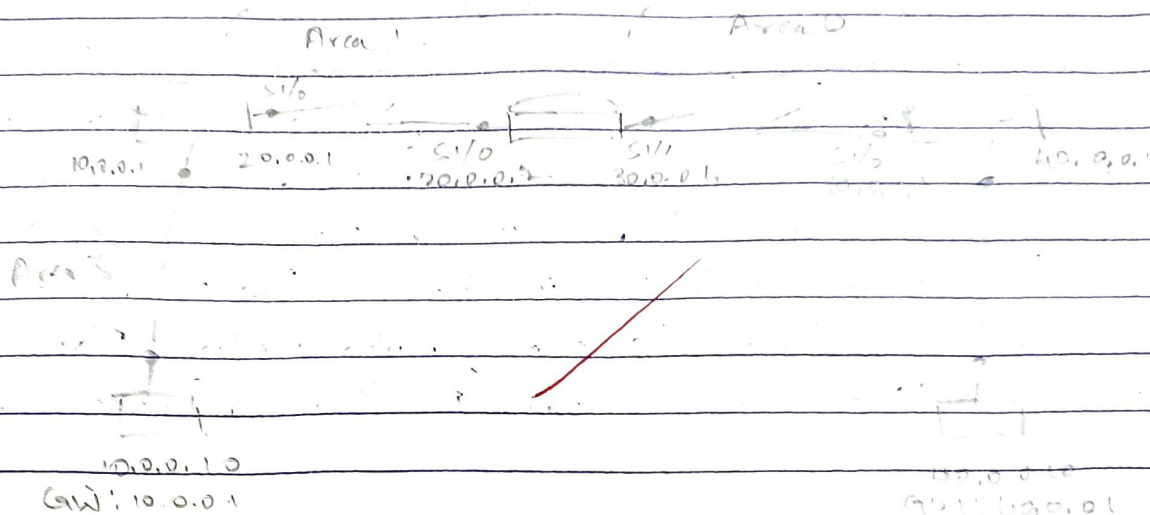


27/11/2024

Experiment - 7

How to configure OSPF Routing & connect Areas

Topology



Procedure

In Router R1,

```
R1(config)# interface fastethernet 2/0
R1(config-if)# ip address 10.0.0.1 255.0.0.0
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface serial 1/0
R1(config-if)# ip address 20.0.0.1 255.0.0.0
R1(config-if)# encapsulation PPP
R1(config-if)# no shutdown
R1(config-if)# exit
```

In Router R2

R2 (config) # interface serial 1/0

R2 (config-if) # ip address 20.0.0.2 255.0.0.0

R2 (config-if) # encapsulation PPP

R2 (config-if) # clock-rate 64000

R2 (config-if) # no shutdown

R2 (config-if) # exit

R2 (config) # interface serial 1/1

R2 (config-if) # ip address 30.0.0.1 255.0.0.0

R2 (config-if) # encapsulation PPP

R2 (config-if) # clock-rate 64000

R2 (config-if) # no shutdown

R2 (config-if) # exit

In Router R3

R3 (config) # interface serial 1/0

R3 (config-if) # ip address 30.0.0.2 255.0.0.0

R3 (config-if) # encapsulation PPP

R3 (config-if) # no shutdown

R3 (config-if) # exit

R3 (config) # interface loopback 2/0

R3 (config-if) # ip address 40.0.0.1 255.255.255.255

R3 (config-if) # no shutdown

R3 (config-if) # exit

In Router R1,

R1 (config) # router ospf 1

R1 (config-router) # router-id 1.1.1.1

R1 (config-router) # network 10.0.0.0 0.255.255.255 area 3

R1 (config-router) # network 20.0.0.0 0.255.255.255 area 1

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

R3 (config-router) # exit

Router # show ip route

R1 (config-if) # interface loopback 0

R1 (config-if) # ip add 172.16.1.252 255.255.0.0

R1 (config-if) # 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

R3 # show IP route

In Router R1

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

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

R3 # show IP route

Observation

Ping 60.0.0.10 : 56 bytes

64 bytes from 60.0.0.10: seq 1 ttl=61 time=173.753 ms

64 bytes from 60.0.0.10: seq 2 ttl=61 time=64.79 ms

64 bytes from 60.0.0.10: seq 3 ttl=61 time=66.708 ms

64 bytes from 60.0.0.10: seq 4 ttl=61 time=60.820 ms

64 bytes from 60.0.0.10: seq 5 ttl=61 time=96.007 ms

--- 40.0.0.10 Ping statistics ---

6 packets transmitted, 5 packets received, 16.7% packet loss
round-trip min/avg/max = 60.829/92.938/173.753 ms