

Lab 7 - 27/11/24

Experiment 6

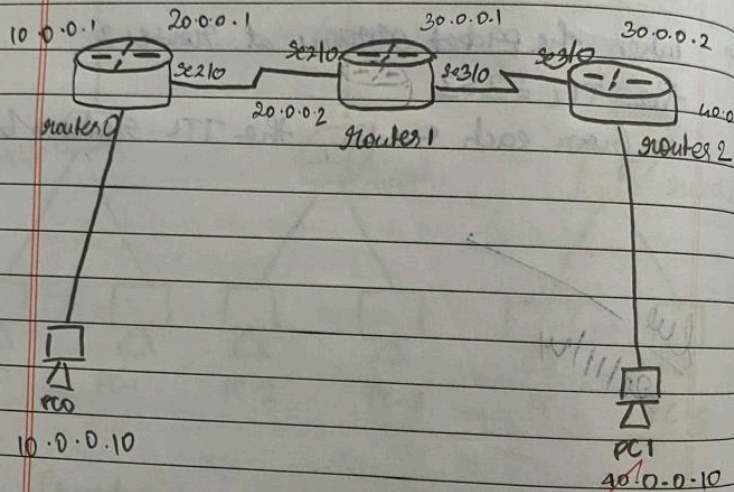
LAB-7

Exp 6

Aim:

Configure OSPF routing protocol.

Topology:



Procedure:

Configure the above shown topology.
Configure gateway & IP address

Step 1:

configure router to PC

router > enable

Router # config terminal

Router(config) # interface fastethernet 0/0

Router(config-if) # ip address 10.0.0.1 255.0.0.0

Router(config) # no shut

Similarly configure Router 2 to PC1
and configure router to router connections

Step 2:

for Router 1

Router 2 also

```
R(config) # interface serial 2/0
R(config-if) # ip address 20.0.0.2 255.0.0.0
R(config-if) # encapsulation ppp
R(config-if) # no shut
exit
```

Router 0 also

```
R(config) # interface serial 3/0
R(config-if) # ip address 30.0.0.1 255.0.0.0
" # encapsulation ppp
" # clock rate 64000
" # no shut
exit
```

do similarly for Router 0 & Router 2

Step 3:

In Router 0

```
R(config) # router ospf 1
R(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
```


In Router 1

```
R(config) # router ospf 1
# router-id 2.2.2.2
# network 20.0.0.0 0.255.255.255 area 1
# network 30.0.0.0 0.255.255.255 area 0
# exit
```

In Router 2

```
R(config) # router ospf 1
# router-id 3.3.3.3
# network 30.0.0.0 0.255.255.255 area 0
# network 40.0.0.0 0.255.255.255 area 2
# exit
```

Step 4:

```
R0(config-if) # interface loopback 0
R0(config-if) # ip add 172.16.1.252 255.255.0.0
# no shut
```

Similarly,

```
R1(config-if) # ip add 172.16.1.253 255.255.0.0
```

```
R2(config-if) # ip add 172.16.1.254 255.255.0.0
```

Step 5:

create virtual link. between R0 & R2

In R0

R0(config) # router ospf 1

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

In R1

R1(config-router) # area 1 virtual-link 1.1.1.1
exit

Observation

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 = 9ms TTL = 125

"

time = 6ms

"

"

time = 7ms

"

"

time = 8ms

"

Ping statistics for 40.0.0.10:

Packets: sent = 4, received = 4, lost = 0 (0% loss),

approx. round trip times in ms:

Min = 6ms, Max = 9ms, Avg = 7ms

Done
27/11/24

Cisco Packet Tracer

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport

Router-PT Router0/0 S2/0 S2/30 Router-PT Router1 S2/0 S2/30 Router-PT Router2 S2/0 S2/30

PC-PT PC0 PC-PT PC1

Command Prompt

```
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=6ms TTL=125

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milliseconds:
        Minimum = 6ms, Maximum = 7ms, Average = 6ms

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=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
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 milliseconds:
        Minimum = 6ms, Maximum = 7ms, Average = 7ms

PC>
```

Time: 01:37:47 Power Cycle Devices Fast Forward Time

Connections

Copper Cross-Over

Scenario 0

Fire	Last Status	Source	Destination	Type	Color	Time (sec)	Periodic	Num	Edit	Delete
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New Delete

Toggle PDU List Window

BSE midcap +0.23%

ENG IN 10:12:16 27-11-2024

Cisco Packet Tracer

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport

Router-PT Router0/0 S2/0 S2/30 Router-PT Router1 S2/0 S2/30 Router-PT Router2 S2/0 S2/30

PC-PT PC0 PC-PT PC1

Time: 01:37:08 Power Cycle Devices Fast Forward Time

Connections

Copper Cross-Over

Scenario 0

Fire	Last Status	Source	Destination	Type	Color	Time (sec)	Periodic	Num	Edit	Delete
------	-------------	--------	-------------	------	-------	------------	----------	-----	------	--------

New Delete

Toggle PDU List Window

BSE midcap +0.23%

ENG IN 10:11:56 27-11-2024