

LAB 7

Configure OSPF routing protocol.

OBSERVATION:

lab-6 22/04/23

OSPF

Aim:-

Topology:-

area 1
10.0.0.1 f2/0
20.0.0.1 s1/0
area 0
20.0.0.2 s1/0
30.0.0.1 s1/1
30.0.0.2 s1/0
40.0.0.1 f2/0
area 2
40.0.0.10 f2/0
Def: 10.0.0.1
Def: 40.0.0.1
Def: 40.0.0.1

Step:-1

- configure the routers & PC with IP address & gateway according to the topology seen above.
- configure your routers as seen in topo
- encapsulation PPP & clock rate need to be set as done in RPP protocol.

Step 2:-

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
```

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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 0

R2 (config - router) # network 30.0.0.0 0.255.255.255 area 0

R2 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

Step 3! Interface f0/0

R1 (config - if) # interface loopback 0

R1 (config - if) # ip add 172.16.1.252 255.0.0.0

R1 (config - if) # no shut

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R2(Config-if) # interface loopback 0
R2(Config-if) # ip address 172.16.1.253 255.255.0.0
R2(Config-if) # no shut

R3(Config-if) # interface loopback 0
R3(Config-if) # ip address 172.16.1.254 255.255.0.0
R3(Config-if) # no shut.

Step 4 :- now, check Routing table of R3.

R3# 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.

Ping output :-

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: 0ms
TTL: 128

Reply from 40.0.0.10 : bytes=32 Time: 0ms
TTL: 128

Reply from 40.0.0.10 : bytes=32 Time: 0ms
TTL: 128

Ping Statistics from 40.0.0.10

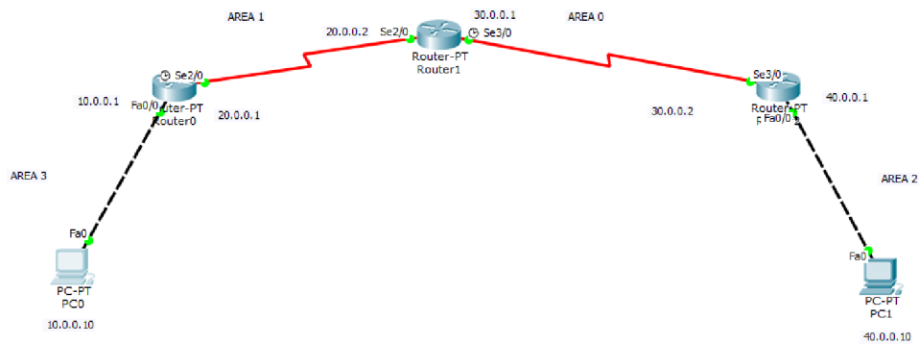
Packets sent=4 Received 4 lost=0 (0% loss)

Approximate round trip times in ms

minimum = 0ms , maximum 0ms Average = 0ms

Lee

TOPOLOGY:



OUTPUT:

```
PC0
Physical Config Desktop Custom Interface
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:

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>
```

Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1BM21CS047\ospf.pkt

File Edit Options View Tools Extensions Help

Logical (root) New Cluster Move Object Set Tiled Background Viewport

Simulation Panel

Event List

Time(sec)	Last Device	At Device	Type	Info
20.002	--	Router1	OSPF	
20.003	Router1	Router2	OSPF	
22.376	--	Router0	OSPF	
22.377	Router0	Router1	OSPF	
22.378	--	Router0	OSPF	
22.379	Router0	PC0	OSPF	
22.380	--	Router2	OSPF	
22.381	Router2	PC1	OSPF	
22.383	--	Router1	OSPF	

Reset Simulation Constant Delay Captured to 22.383 s

Play Controls Back Auto Capture / Play Capture / Forward

Event List Filters - Visible Events

AQ Filter: ARP, BGP, CDP, DHCP, DNS, DTP, EIGRP, OSPF, FTP, H.323, IGMP, ISDP, HTTP, HTTPS, ICMP, ICMPv6, IPsec, SSH, SNMP, LACP, NTP, NETCONF, NTP, OSPF, OSPFv6, PAgg, POP3, RADIUS, RDP, RDPing, RTP, SCCP, SMTP, SNMP, SIP, STP, STPv6, Telnet, TFTP, VNC, VNCv6, VNCv6, VNCv6

Edit Filters Show All/None

Time: 00:05:30.703 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward

Routers

Scenario 0 New Delete

Toggle PDU List Window

22°C Mostly cloudy

ENG IN 11:03 27-07-2023