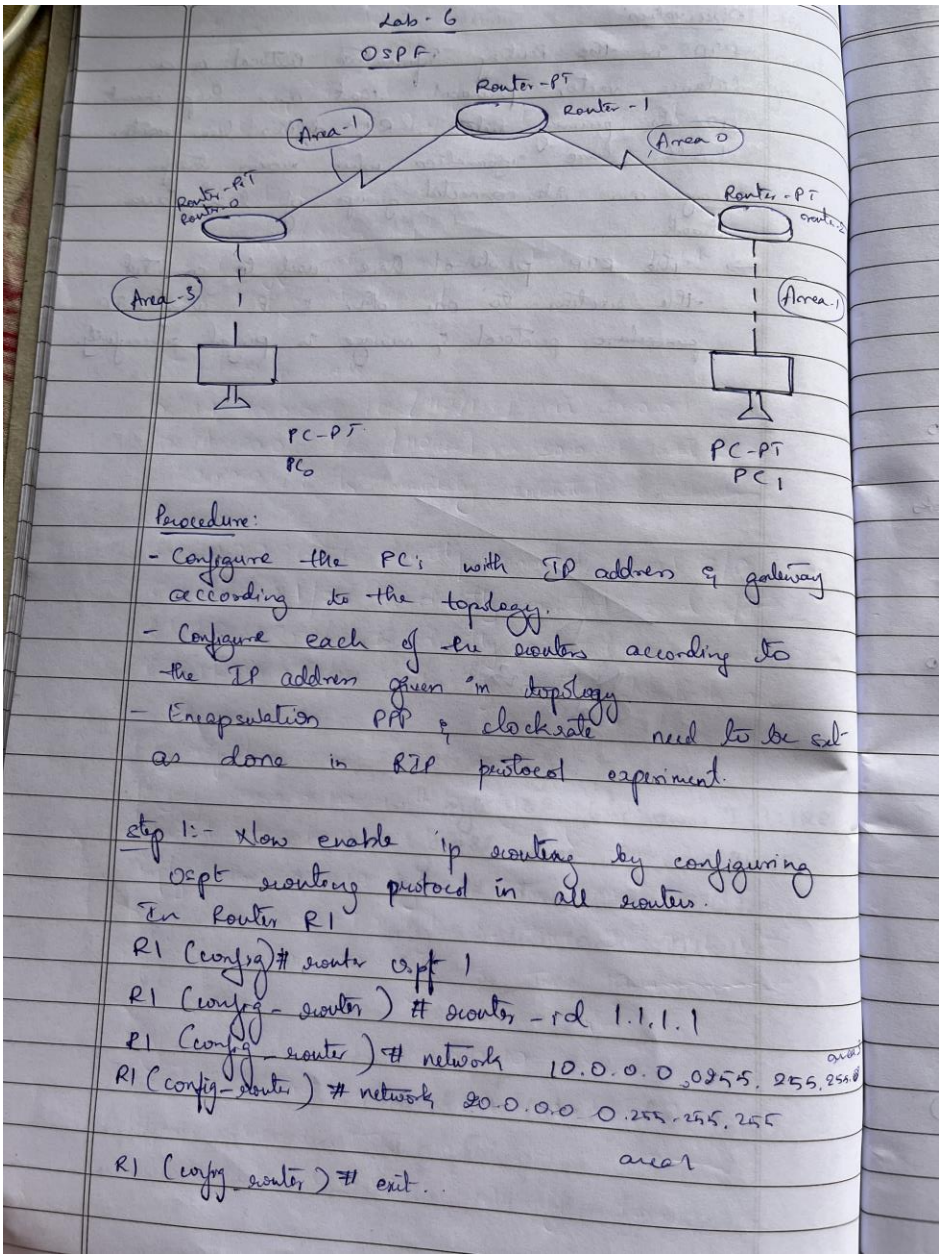
LAB 7

Configure OSPF routing protocol.

OBSERVATION:



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

step 4: loopback in serial interface

In router R1

R1 (config-if)# interface loopback 0.1

R1 (config-if)# ip address 172.16.1.252 255.255.0.0

R1 (config-if)# no shut

In router R2 in serial interface

R2 (config-if)# interface loopback 0

R2 (config-if)# ip address 172.16.1.253 255.255.0.0

R2 (config-if)# no shut

In router R3

R3 (config-if)# interface loopback 0

R3 (config-if)# ip address 172.16.1.254 255.255.0.0

R3 (config-if)# no shut

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Step 3: virtual link

In router R1

R1 (config)# router ospf 1

R1 (config-router)# area 1 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

→ show ip route

O IA 10.0.0.0 18 [110/129] 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 variably subnetted, 2 subnets, 2 masks

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. 40.0.0.0/8 is directly connected fast-ethernet 0/0

C. 172.16.0.0/16 is directly connected, loopback 0.

Ping output:

pinging 40.0.0.10 with 32 bytes of data

Request timed out

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

Reply from 40.0.0.10 bytes=32 time=9ms TTL=125

Reply from 40.0.0.10 bytes=32 time=10ms TTL=125

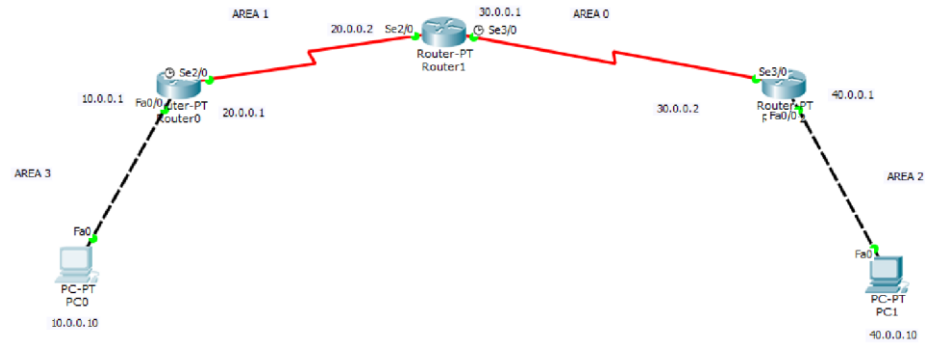
pinging statistics for 40.0.0.10

packets: sent=4, received=3, lost=1 (25% loss)

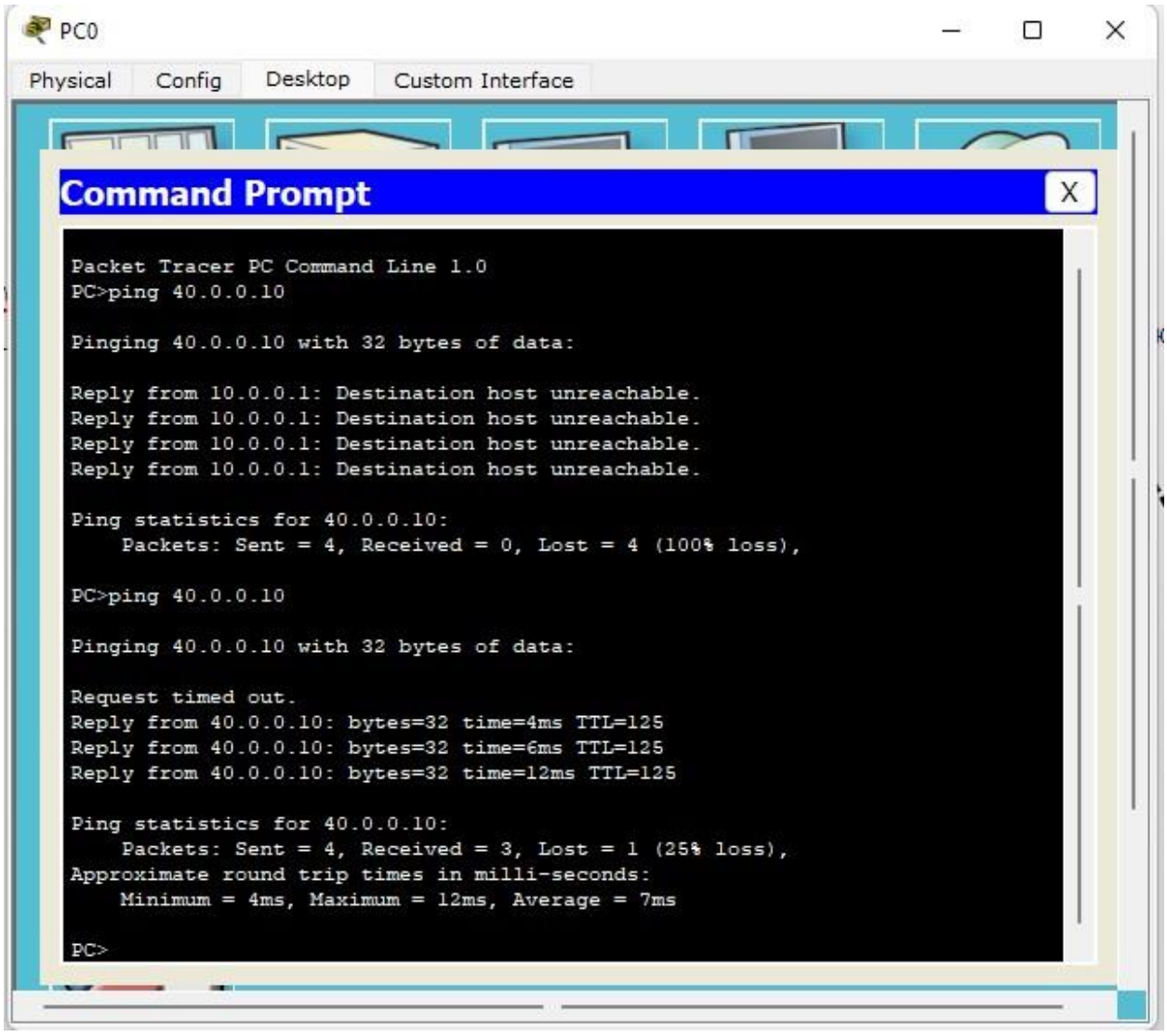
Approx round trip in ms:

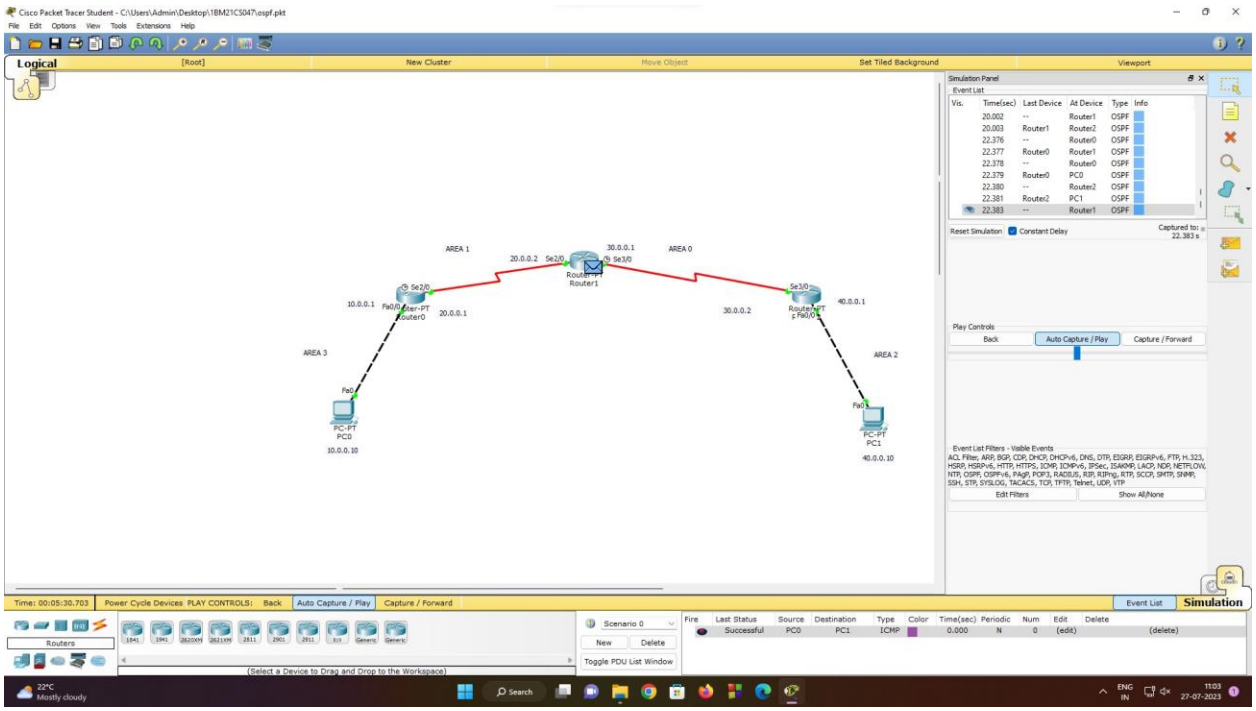
min=2ms, Max=10ms, Average=7ms

TOPOLOGY:



OUTPUT:




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
AREA 1
AREA 0
AREA 3
AREA 2
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Router-PT
Router1
Se2/0
10.0.0.1
Fa0/0
Router-PT
Router0
20.0.0.1
30.0.0.2
Se3/0
Router-PT
Fa0/0
40.0.0.1
Fa0
PC-PT
PC0
10.0.0.10
Fa0
PC-PT
PC1
40.0.0.10
Simulation Panel
Event List
Vis. 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
Edit Filters
Show All/None
Time: 00:05:30.703
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Routers
(Select a Device to Drag and Drop to the Workspace)
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful PC0 PC1 ICMP 0.000 N 0 (edit) (delete)
22°C
Mostly cloudy
Search
ENG
IN
11:03
27-07-2023