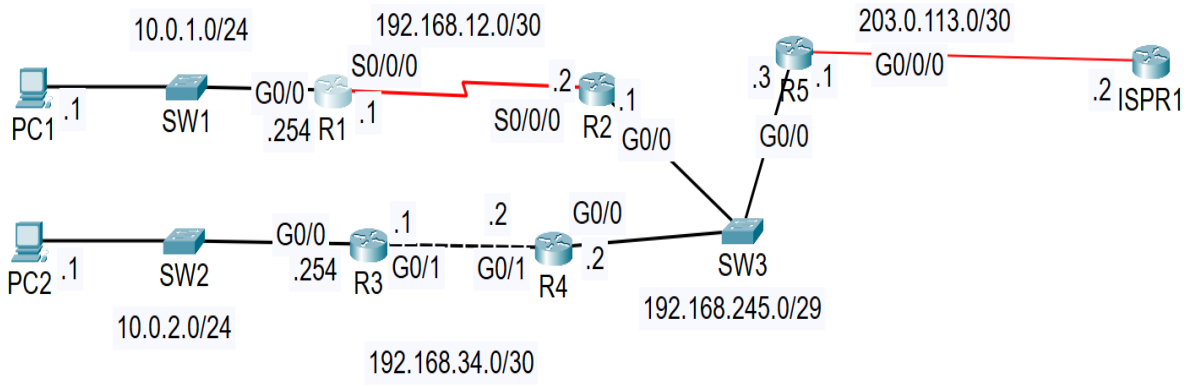
Network Topology:



CLIs:

R1

```
R1>en
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#router ospf 1
R1(config-router)#do sh controllers s0/0/0
Interface Serial0/0/0
Hardware is PowerQUICC MPC860
DCE V.35, clock rate 2000000
idb at 0x81081AC4, driver data structure at 0x81084AC0
SCC Registers:
General [GSMR]=0x2:0x00000000, Protocol-specific [PSMR]=0x8
Events [SCCE]=0x0000, Mask [SCCM]=0x0000, Status [SCCS]=0x00
Transmit on Demand [TODR]=0x0, Data Sync [DSR]=0x7E7E
Interrupt Registers:
Config [CICR]=0x00367F80, Pending [CIPR]=0x0000C000
Mask   [CIMR]=0x00200000, In-srv  [CISR]=0x00000000
Command register [CR]=0x580
Port A [PADIR]=0x1030, [PAPAR]=0xFFFF
       [PAODR]=0x0010, [PADAT]=0xCBFF
Port B [PBDIR]=0x09C0F, [PBPAR]=0x0800E
       [PBODR]=0x00000, [PBDAT]=0x3FFFD
Port C [PCDIR]=0x00C, [PCPAR]=0x200
       [PCSO]=0xC20,  [PCDAT]=0xDF2, [PCINT]=0x00F
Receive Ring
        rmd(68012830): status 9000 length 60C address 3B6DAC4
        rmd(68012838): status B000 length 60C address 3B6D444
Transmit Ring
```

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Top

R2

```
  Suppress hello for 0 neighbor(s)
R2(config-router)#do sh controllers s0?
% Unrecognized command
R2(config-router)#do sh controllers s0/0/0
Interface Serial0/0/0
Hardware is PowerQUICC MPC860
DTE V.35 TX and RX clocks detected
idb at 0x81081AC4, driver data structure at 0x81084AC0
SCC Registers:
General [GSMR]=0x2:0x00000000, Protocol-specific [PSMR]=0x8
Events [SCCE]=0x0000, Mask [SCCM]=0x0000, Status [SCCS]=0x00
Transmit on Demand [TODR]=0x0, Data Sync [DSR]=0x7E7E
Interrupt Registers:
Config [CICR]=0x00367F80, Pending [CIPR]=0x0000C000
Mask   [CIMR]=0x00200000, In-srv  [CISR]=0x00000000
Command register [CR]=0x580
Port A [PADIR]=0x1030, [PAPAR]=0xFFFF
       [PAODR]=0x0010, [PADAT]=0xCBFF
Port B [PBDIR]=0x09C0F, [PBPAR]=0x0800E
       [PBODR]=0x00000, [PBDAT]=0x3FFFD
Port C [PCDIR]=0x00C, [PCPAR]=0x200
       [PCSO]=0xC20,  [PCDAT]=0xDF2, [PCINT]=0x00F
Receive Ring
        rmd(68012830): status 9000 length 60C address 3B6DAC4
        rmd(68012838): status B000 length 60C address 3B6D444
Transmit Ring
 --More--
```

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R2

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     2.0.0.0/32 is subnetted, 1 subnets
C       2.2.2.2/32 is directly connected, Loopback0
     10.0.0.0/24 is subnetted, 1 subnets
O       10.0.2.0/24 [110/3] via 192.168.245.2, 00:06:54, GigabitEthernet0/0
     192.168.34.0/30 is subnetted, 1 subnets
O       192.168.34.0/30 [110/2] via 192.168.245.2, 00:19:48, GigabitEthernet0/0
     192.168.245.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.245.0/29 is directly connected, GigabitEthernet0/0
L       192.168.245.1/32 is directly connected, GigabitEthernet0/0

R2(config)#
22:42:11: %OSPF-5-ADJCHG: Process 1, Nbr 203.0.113.1 on GigabitEthernet0/0 from LOADING
to FULL, Loading Done
```

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R4

```
R4(config-if)#do sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     2.0.0.0/32 is subnetted, 1 subnets
O       2.2.2.2/32 [110/2] via 192.168.245.1, 00:40:56, GigabitEthernet0/0
     10.0.0.0/24 is subnetted, 1 subnets
O       10.0.2.0/24 [110/2] via 192.168.34.1, 00:03:27, GigabitEthernet0/1
     192.168.34.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.34.0/30 is directly connected, GigabitEthernet0/1
L       192.168.34.2/32 is directly connected, GigabitEthernet0/1
     192.168.245.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.245.0/29 is directly connected, GigabitEthernet0/0
L       192.168.245.2/32 is directly connected, GigabitEthernet0/0

R4(config-if)#
22:42:11: %OSPF-5-ADJCHG: Process 1, Nbr 203.0.113.1 on GigabitEthernet0/0 from LOADING
to FULL, Loading Done
```

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R5

```
  Internet address is 192.168.245.3/29, Area 0
  Process ID 1, Router ID 203.0.113.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 203.0.113.1, Interface address 192.168.245.3
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    Hello due in 00:00:06
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
R5(config-if)#
22:42:11: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.245.1 on GigabitEthernet0/0 from LOADING
to FULL, Loading Done

22:42:11: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.245.2 on GigabitEthernet0/0 from LOADING
to FULL, Loading Done

R5(config-if)#do sh ip ospf neigh


Neighbor ID     Pri   State           Dead Time   Address         Interface
192.168.245.2     1   FULL/DROTHER    00:00:33    192.168.245.2   GigabitEthernet0/0
192.168.245.1     1   FULL/BDR        00:00:33    192.168.245.1   GigabitEthernet0/0
R5(config-if)#
```

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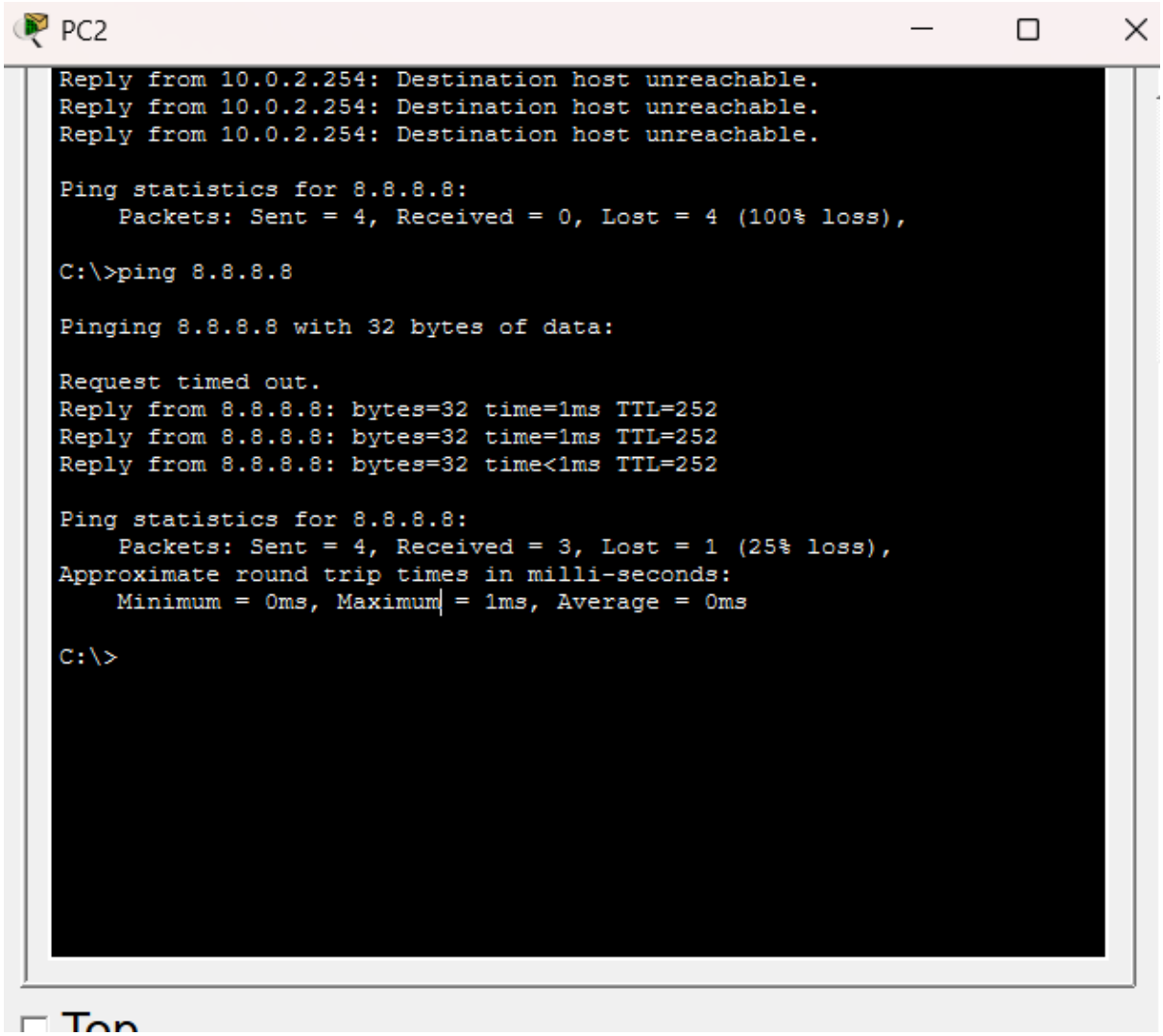
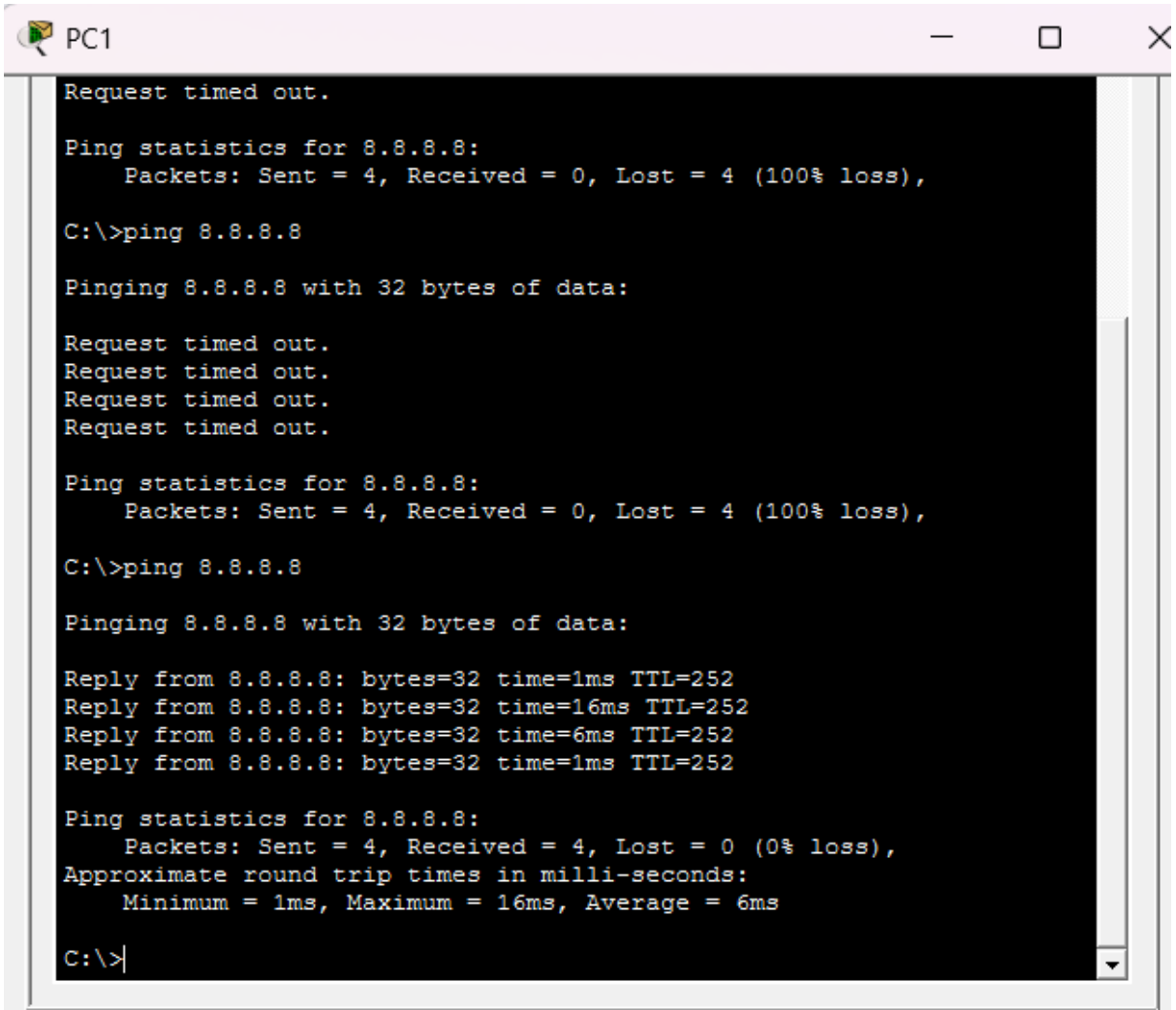
Top

PCs:


PC2
Reply from 10.0.2.254: Destination host unreachable.
Reply from 10.0.2.254: Destination host unreachable.
Reply from 10.0.2.254: Destination host unreachable.
Ping statistics for 8.8.8.8:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 8.8.8.8
Pinging 8.8.8.8 with 32 bytes of data:
Request timed out.
Reply from 8.8.8.8: bytes=32 time=1ms TTL=252
Reply from 8.8.8.8: bytes=32 time=1ms TTL=252
Reply from 8.8.8.8: bytes=32 time<1ms TTL=252
Ping statistics for 8.8.8.8:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>


PC1
Request timed out.
Ping statistics for 8.8.8.8:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 8.8.8.8
Pinging 8.8.8.8 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 8.8.8.8:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 8.8.8.8
Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=1ms TTL=252
Reply from 8.8.8.8: bytes=32 time=16ms TTL=252
Reply from 8.8.8.8: bytes=32 time=6ms TTL=252
Reply from 8.8.8.8: bytes=32 time=1ms TTL=252
Ping statistics for 8.8.8.8:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 16ms, Average = 6ms
C:\>