محمد الأمين معتصم علي عبابنه

Task 1: Cabling.

Step 1: Cable a network that is similar to the one in the Topology Diagram.

Task 2: Configuring Routers Interfaces.

Step 1: Configure R1 Interfaces (Fast interface and serial interface).

Step 2: Configure R2 Interfaces (Two serial interfaces and the fast interface).

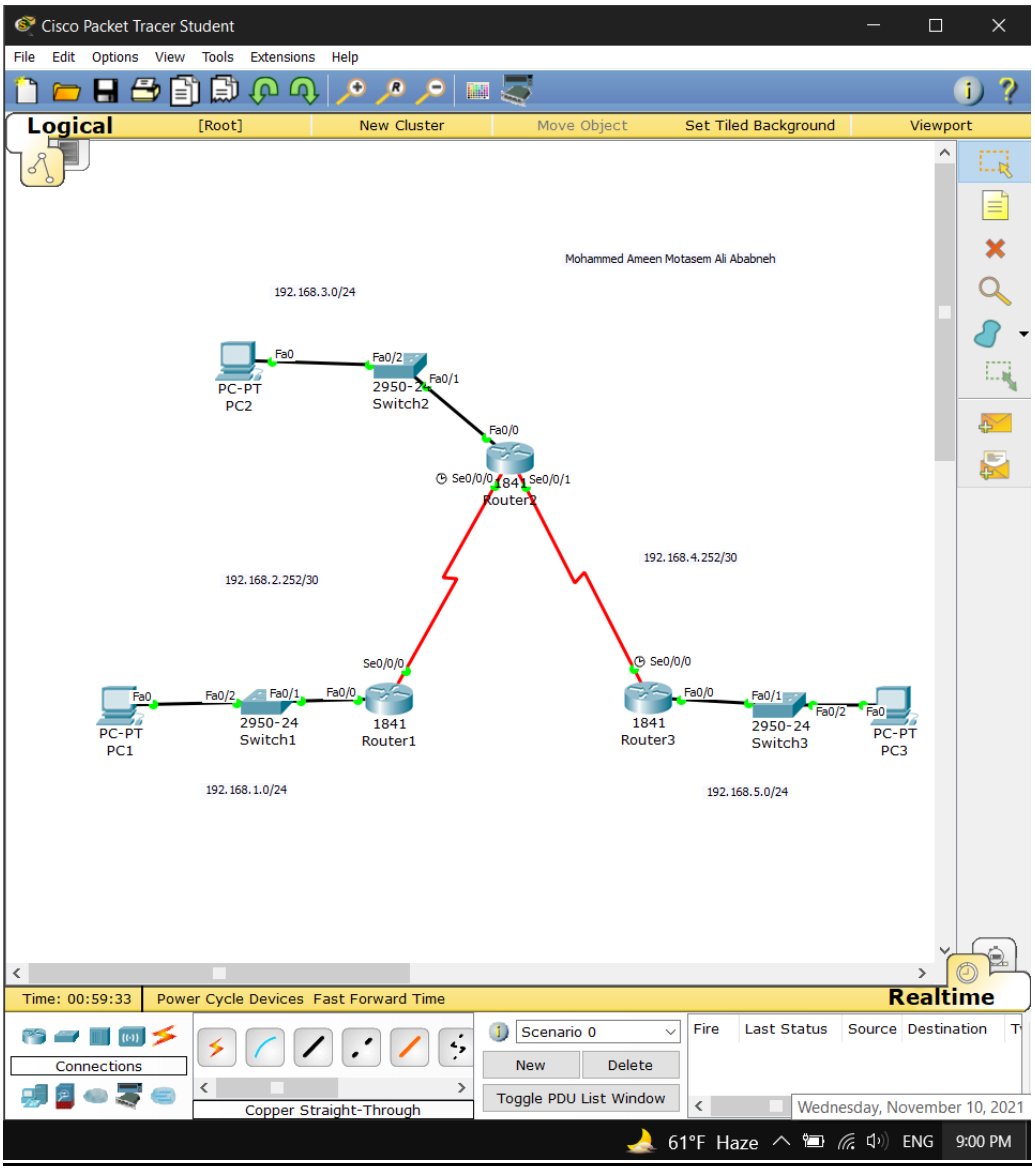
Step 3: Configure R3 Interfaces (Fast interface and serial interface).

Task 3: Configure IP Addressing on the Host PCs.

Step 1: Configure the host PC1.

Step 2: Configure the host PC2.

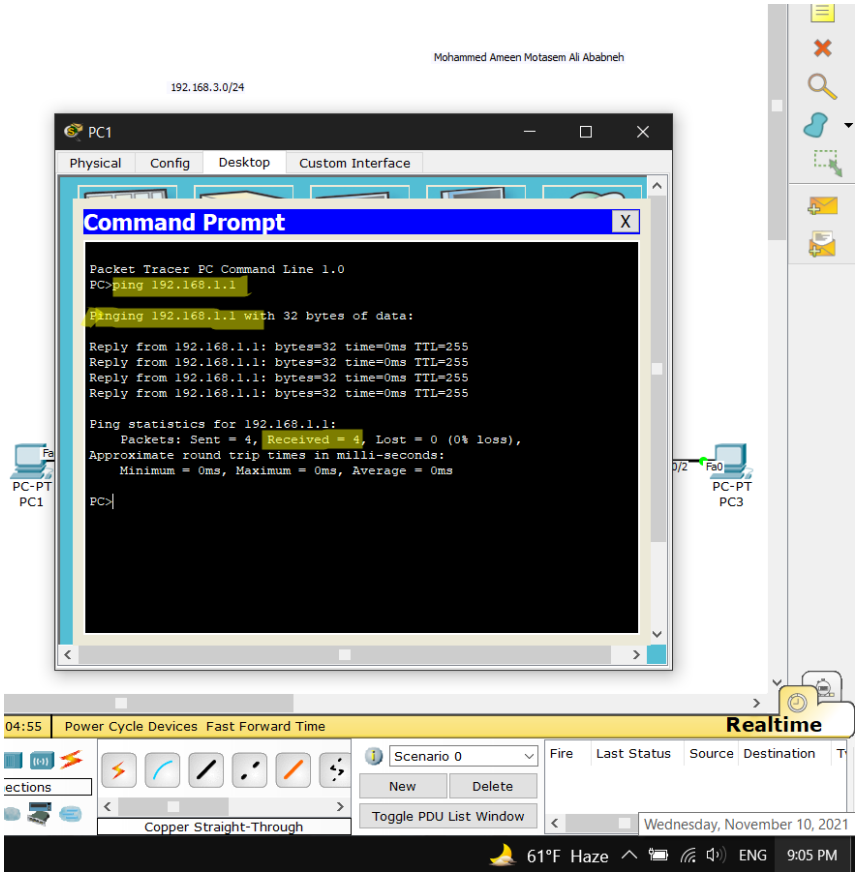
Step 3: Configure the host PC3.



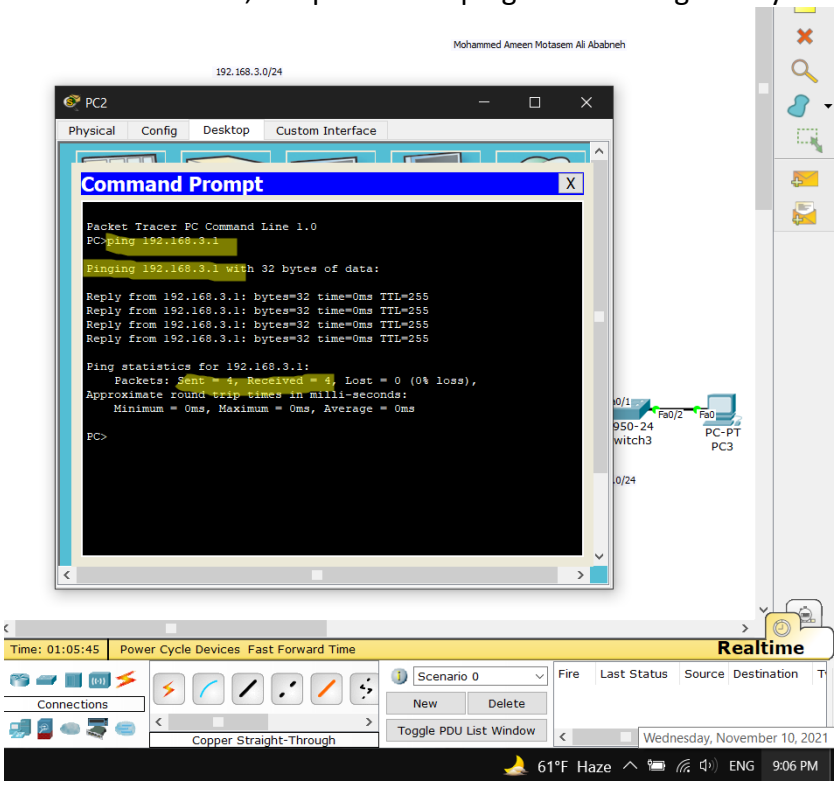
Task 4: Test and Verify the Configurations.

Step 1: Test connectivity.

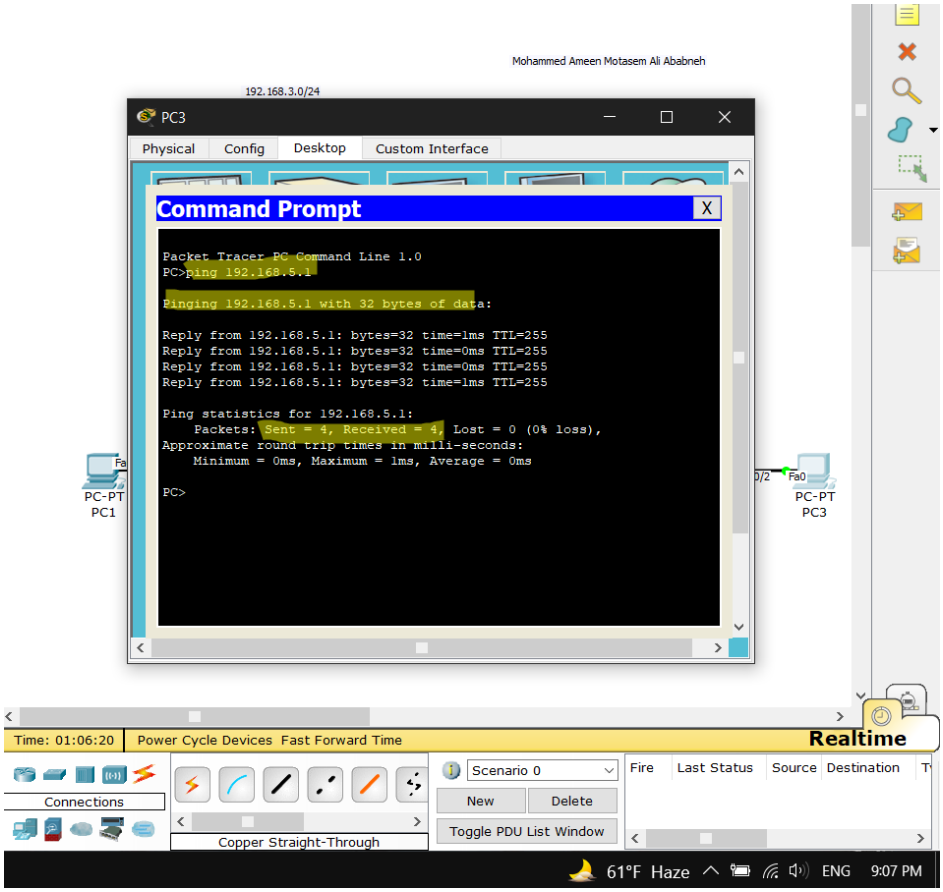
- ✓ From the host PC1, is it possible to ping the default gateway? Yes



✓ From the host PC2, is it possible to ping the default gateway? Yes

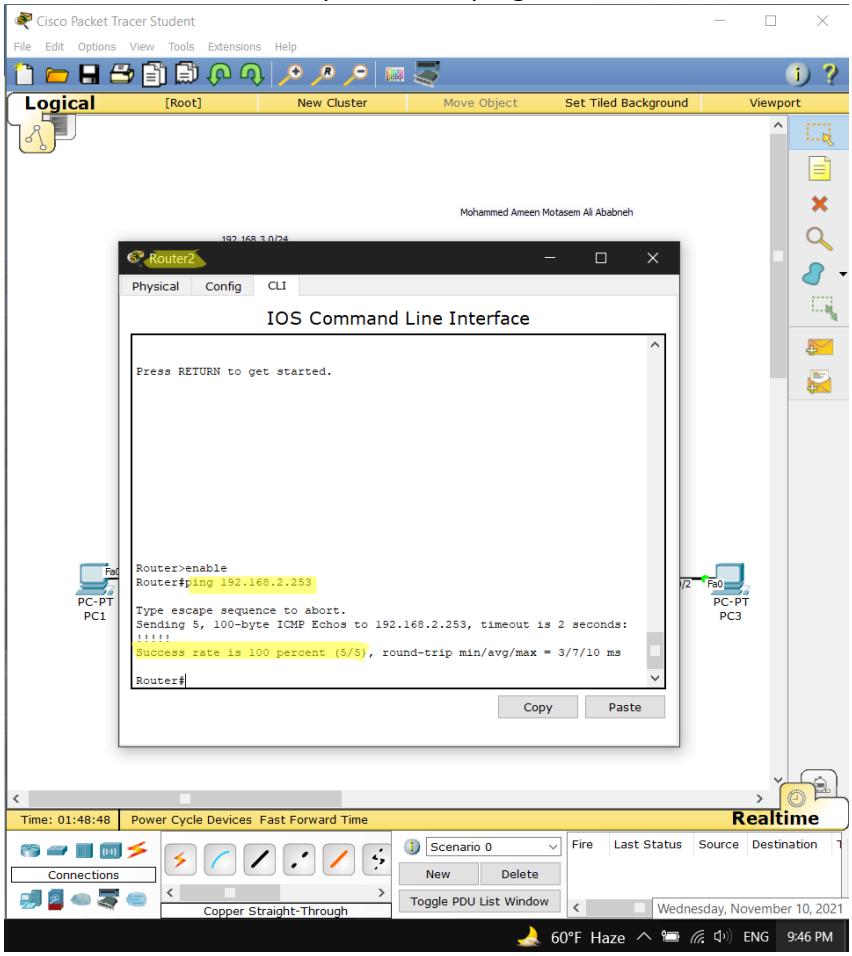


✓ From the host PC3, is it possible to ping the default gateway? Yes

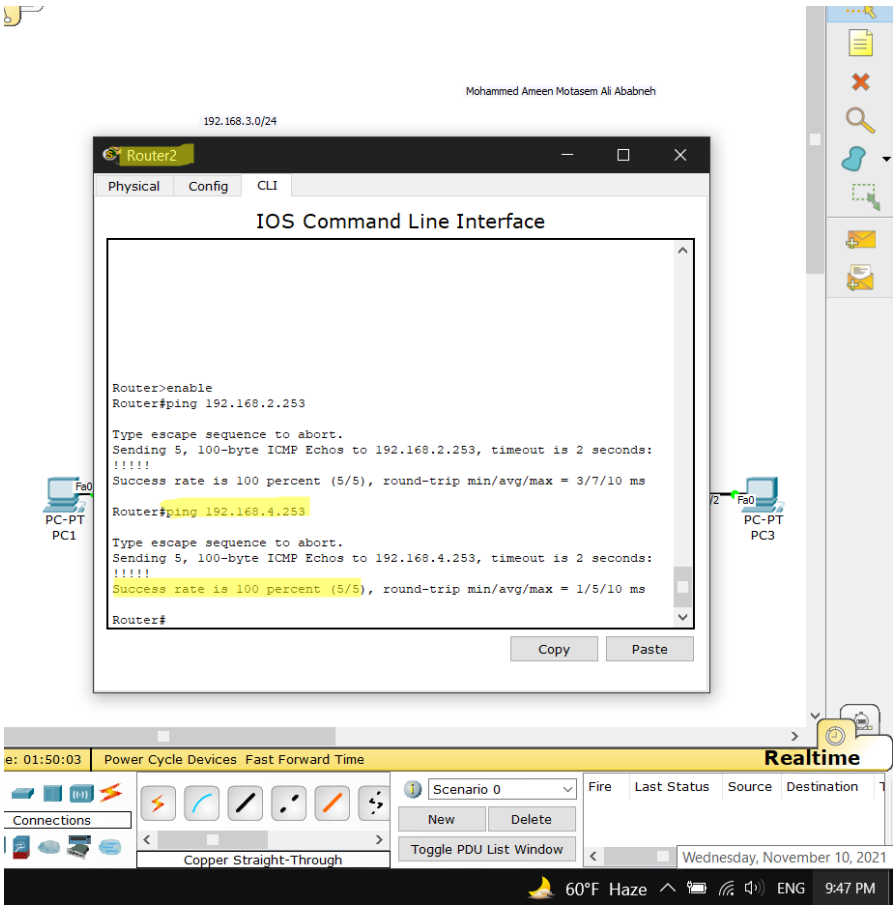


Step 2: Use the ping command to test connectivity between directly connected routers.

✓ From the router R2, is it possible to ping R1? Yes

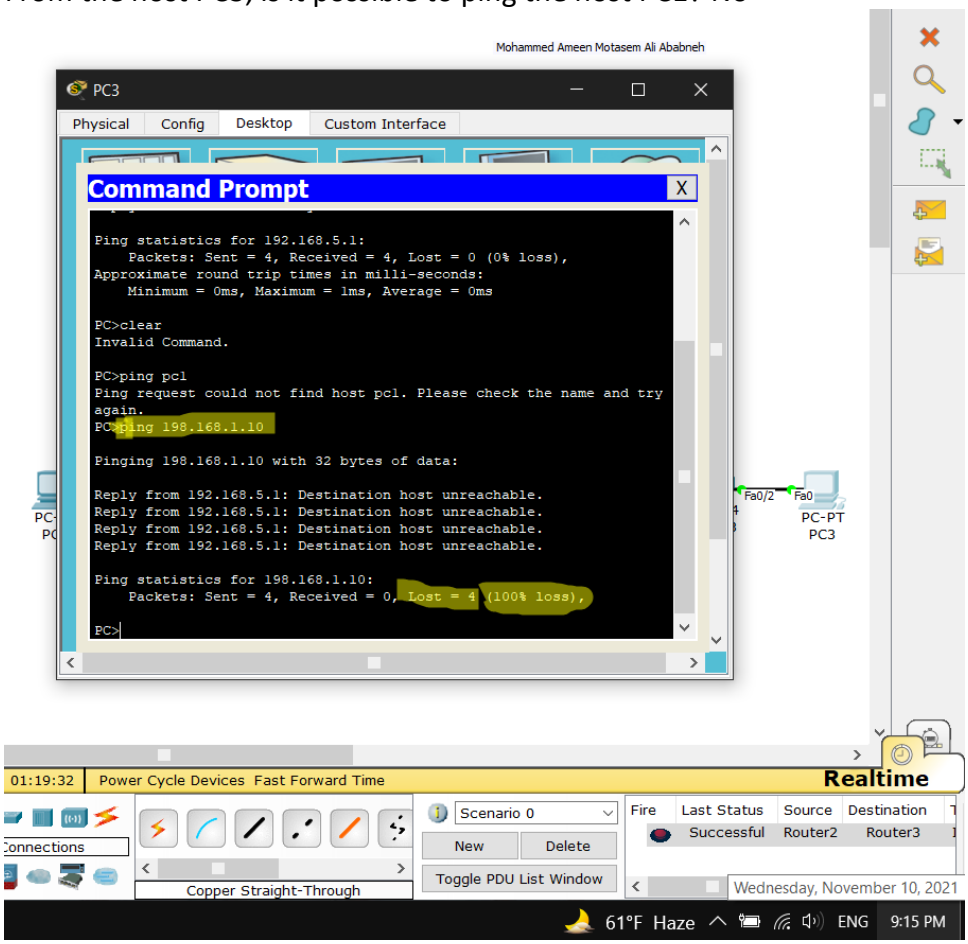


✓ From the router R2, is it possible to ping R3? Yes

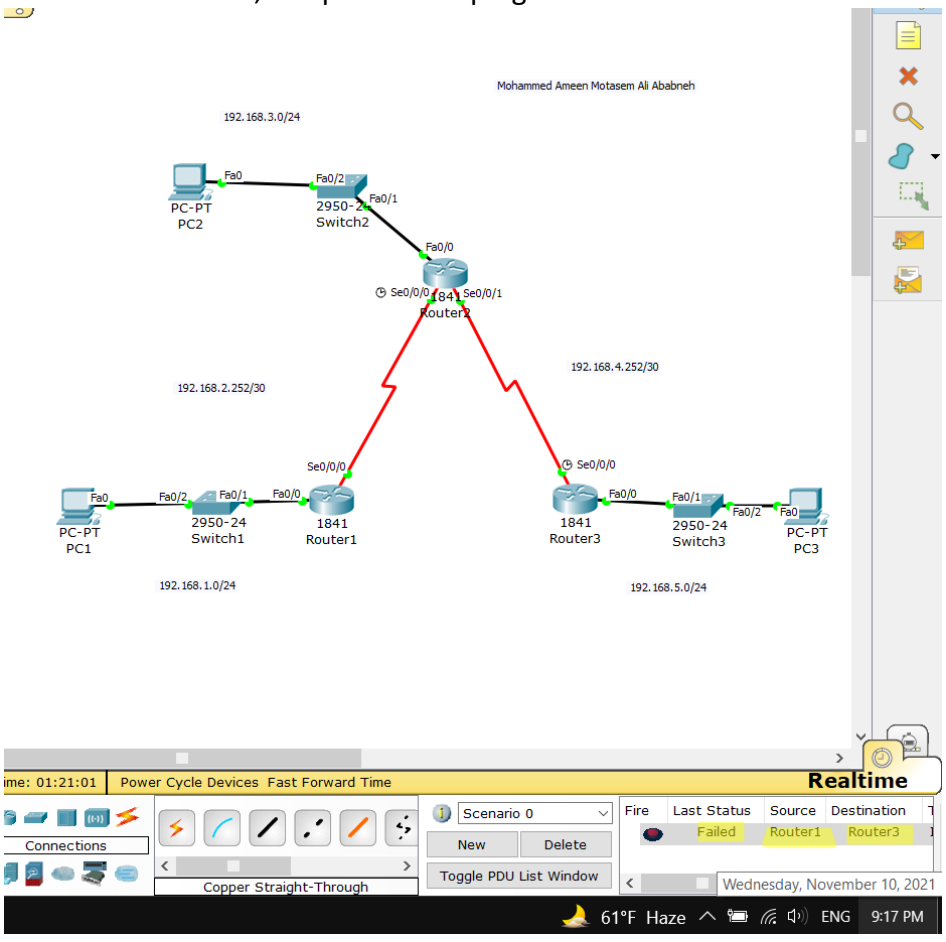


Step 3: Use ping to check connectivity between devices that are not directly connected.

- ✓ From the host PC3, is it possible to ping the host PC1? No



- ✓ From the router R1, is it possible to ping router R3? No



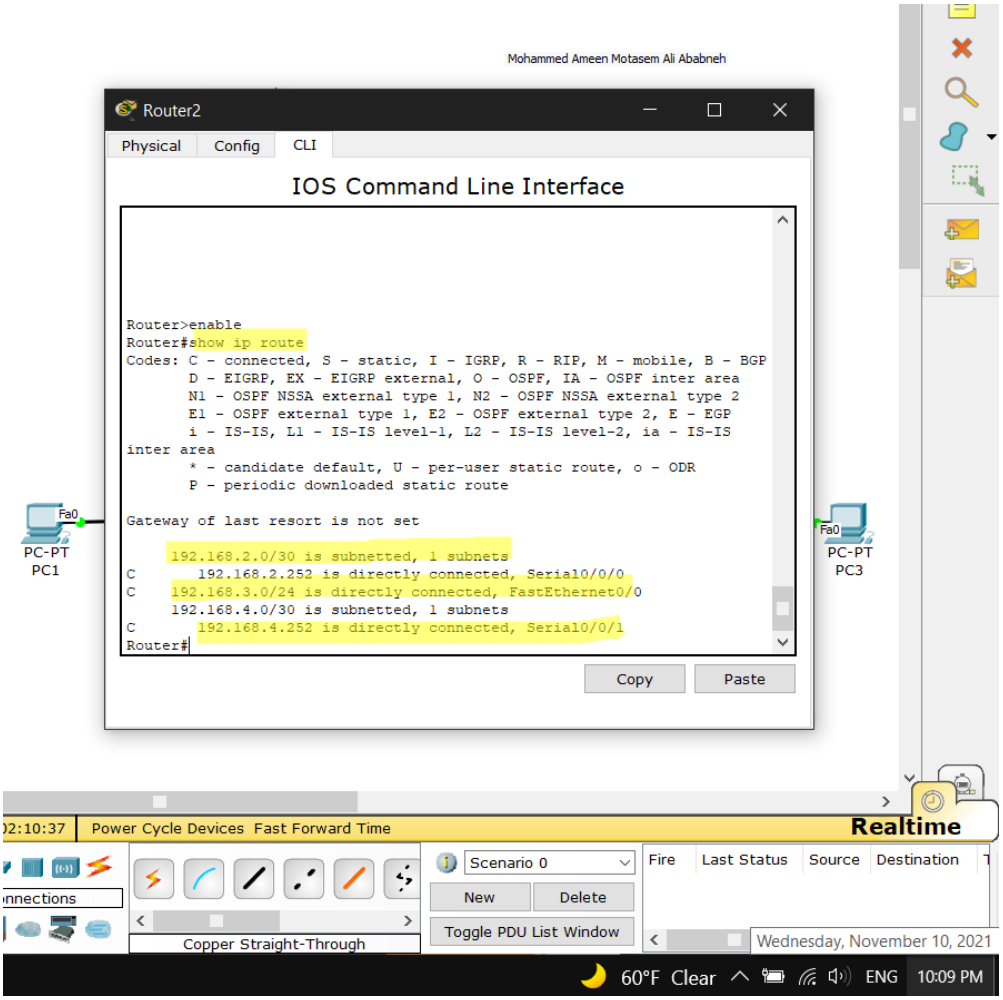
1- These pings should all fail. Why?

Because the routers are not connected with the other networks , so it did not know that it was there.

Task 5: Gather Information.

Step 1: Check status of interfaces using the show command.

R2# show ip interface brief.

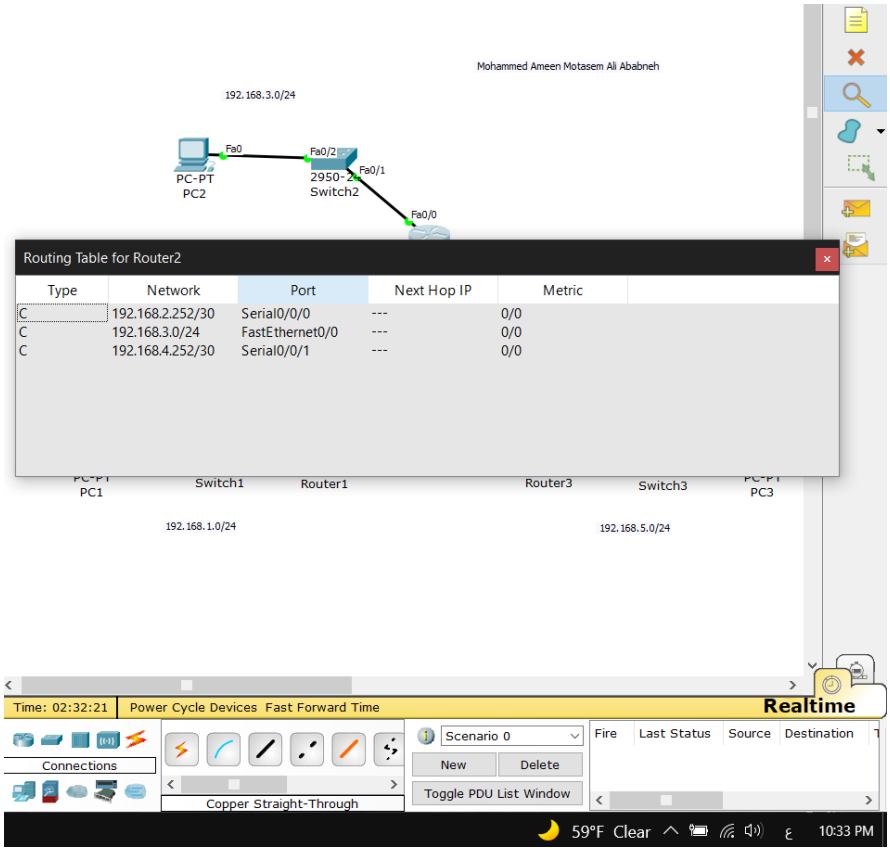


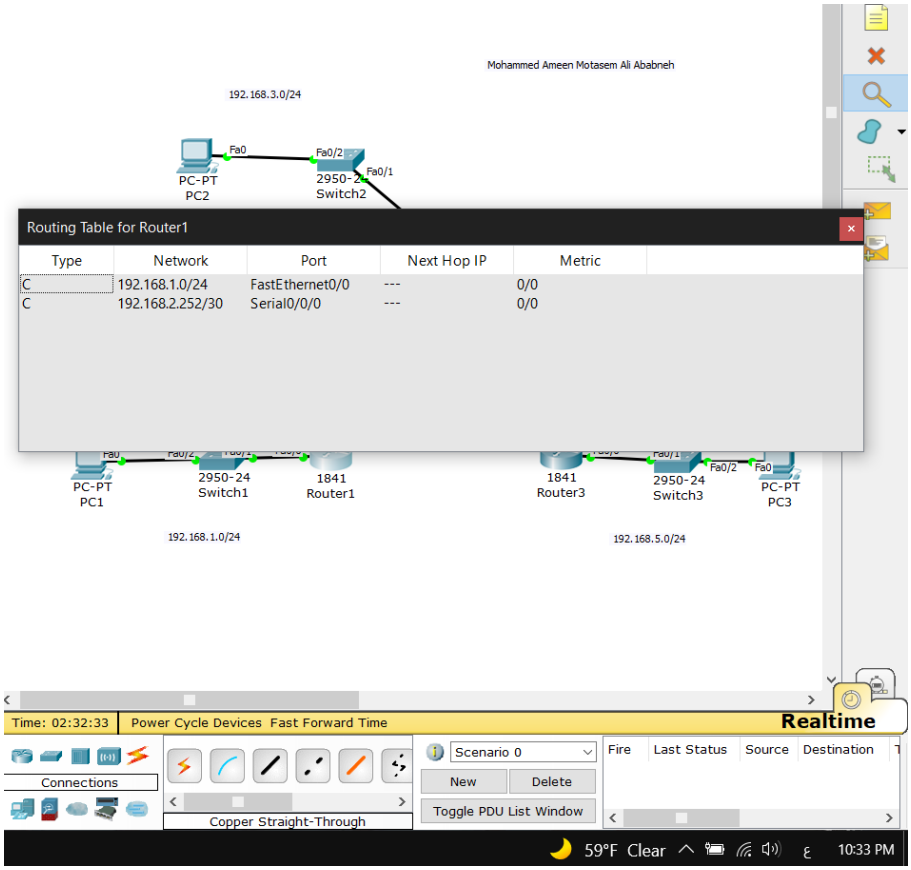
- ✓ Are all the relevant interfaces on each router activated (that is, in the up state)? yes
- ✓ How many interfaces are activated on R1 and R3? 2

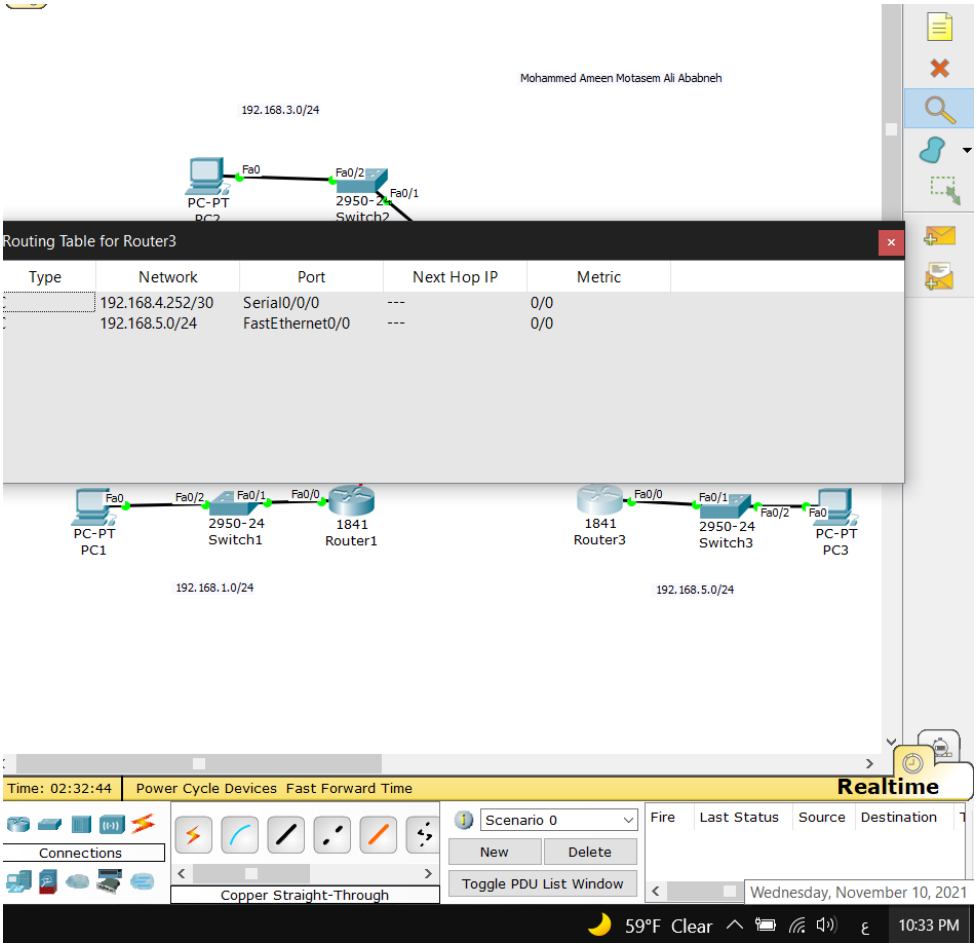
2- Why are there three activated interfaces on R2? 2 Wan links and a Lan link

Step 2: View the routing table information for all three routers.

3- Show the routing table for each router.


Mohammed Ameen Motasem Ali Ababneh
192.168.3.0/24
PC-PT PC2
Fa0
Fa0/2
2950-24 Switch2
Fa0/1
Fa0/0
Routing Table for Router2
Type Network Port Next Hop IP Metric
C 192.168.2.252/30 Serial0/0/0 --- 0/0
C 192.168.3.0/24 FastEthernet0/0 --- 0/0
C 192.168.4.252/30 Serial0/0/1 --- 0/0
PC-PT PC1
2950-24 Switch1
1841 Router1
1841 Router3
2950-24 Switch3
PC-PT PC3
192.168.1.0/24
192.168.5.0/24
Time: 02:32:21
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
59°F Clear
10:33 PM

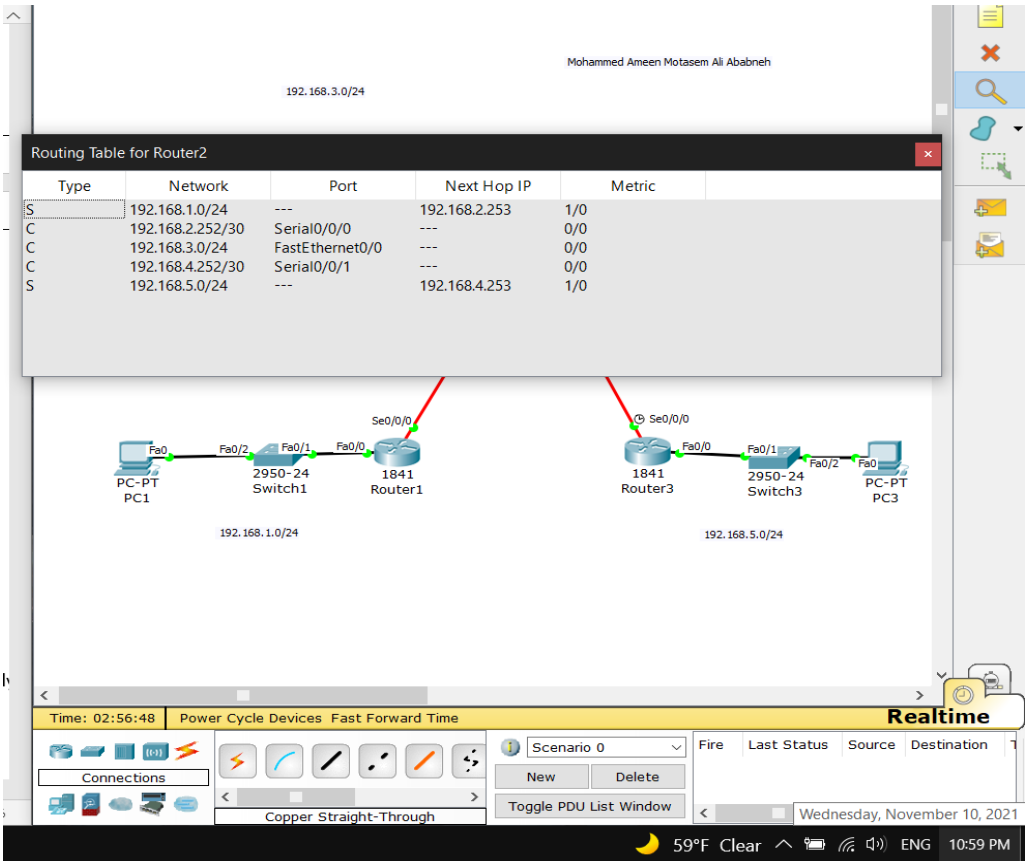

Mohammed Ameen Motasem Ali Ababneh
192.168.3.0/24
PC-PT PC2
Fa0
Fa0/2
2950-24 Switch2
Fa0/1
Routing Table for Router1
Type Network Port Next Hop IP Metric
C 192.168.1.0/24 FastEthernet0/0 --- 0/0
C 192.168.2.252/30 Serial0/0/0 --- 0/0
PC-PT PC1
2950-24 Switch1
1841 Router1
1841 Router3
2950-24 Switch3
PC-PT PC3
192.168.1.0/24
192.168.5.0/24
Time: 02:32:33
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
59°F Clear
10:33 PM

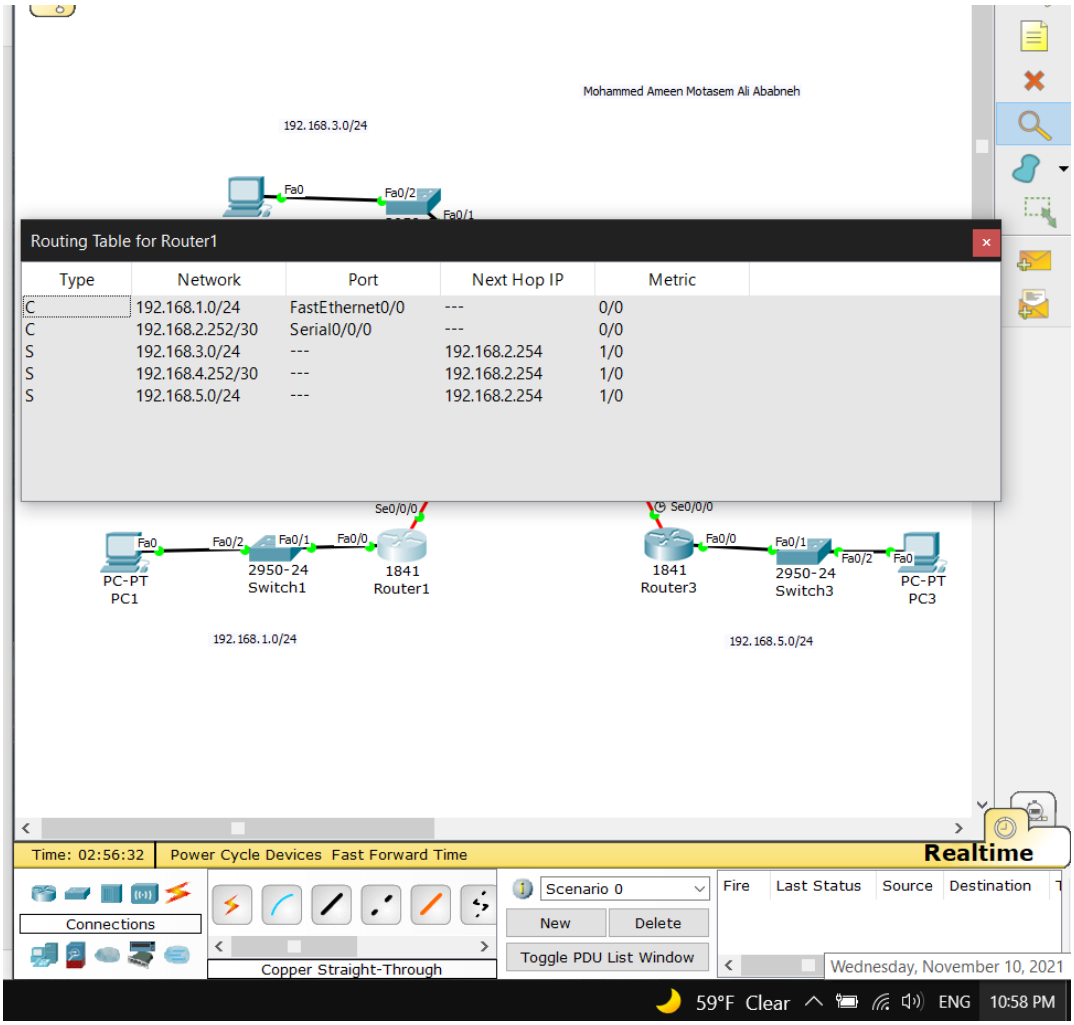


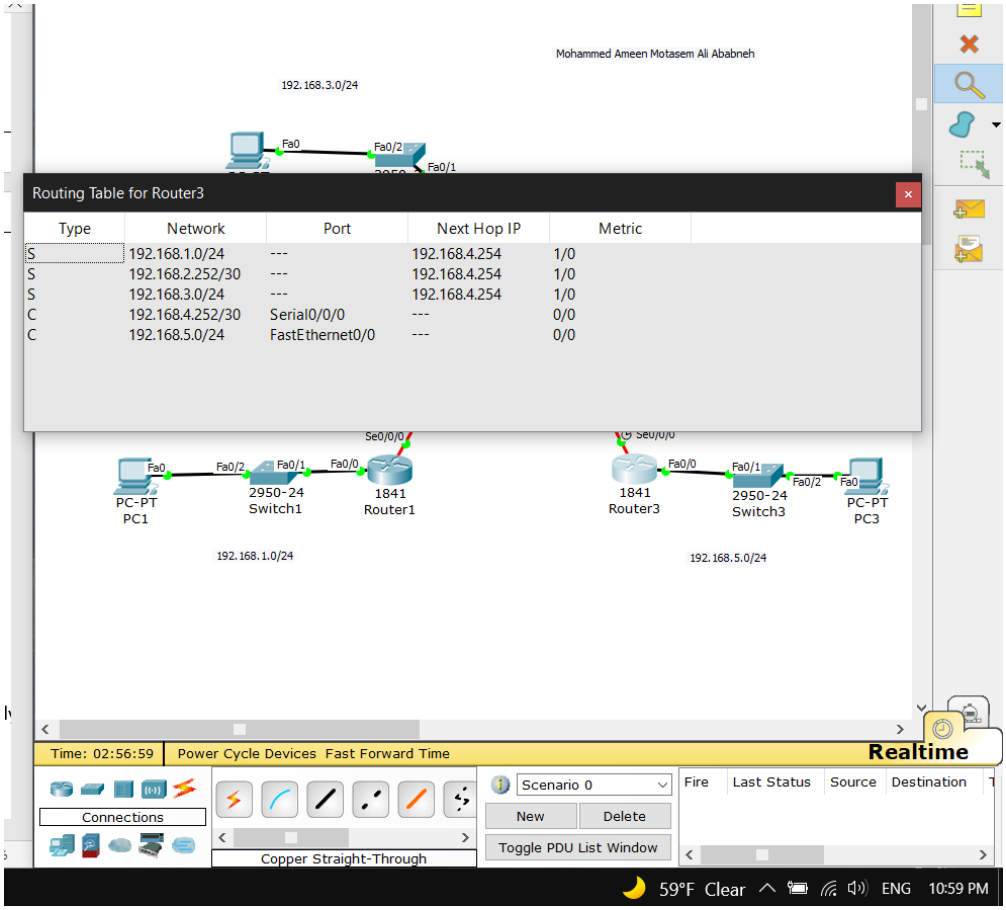
4- **Configure static route to R1, R2, and R3.**

```
Router1(config)#ip route 192.168.3.0 255.255.255.0 192.168.2.254
Router1(config)#ip route 192.168.4.252 255.255.255.252 192.168.2.254
Router1(config)#ip route 192.168.5.0 255.255.255.0 192.168.2.254

Router2(config)#ip route 192.168.5.0 255.255.255.0 192.168.4.253
Router2(config)#ip route 192.168.1.0 255.255.255.0 192.168.2.253

Router3(config)#ip route 192.168.3.0 255.255.255.0 192.168.4.254
Router3(config)#ip route 192.168.2.252 255.255.255.252 192.168.4.254
Router3(config)#ip route 192.168.1.0 255.255.255.0 192.168.4.254
```

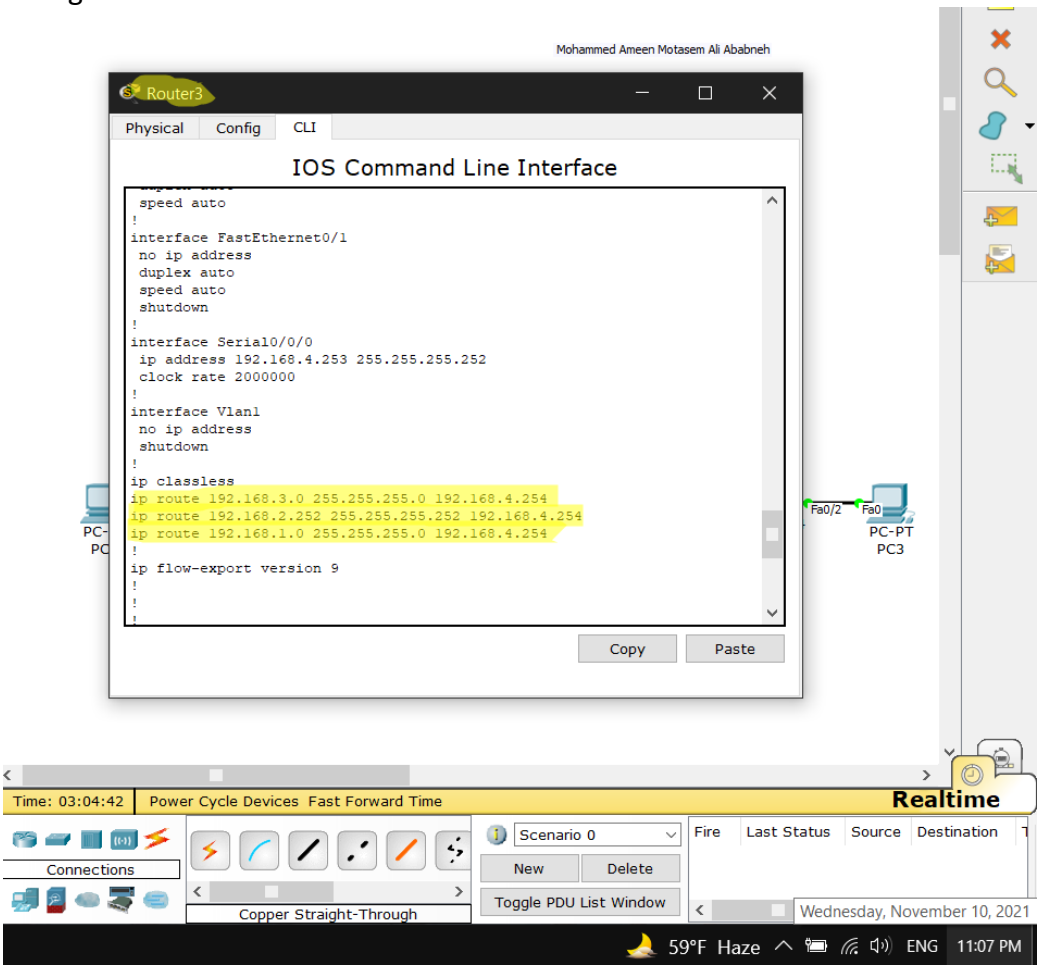
5- View the routing table to verify the new static route entry.


Mohammed Ameen Motasem Ali Ababneh
192.168.3.0/24
Routing Table for Router2
Type Network Port Next Hop IP Metric
S 192.168.1.0/24 --- 192.168.2.253 1/0
C 192.168.2.252/30 Serial0/0/0 --- 0/0
C 192.168.3.0/24 FastEthernet0/0 --- 0/0
C 192.168.4.252/30 Serial0/0/1 --- 0/0
S 192.168.5.0/24 --- 192.168.4.253 1/0
PC-PT PC1
2950-24 Switch1
1841 Router1
1841 Router3
2950-24 Switch3
PC-PT PC3
192.168.1.0/24
192.168.5.0/24
Time: 02:56:48
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Wednesday, November 10, 2021
59°F Clear
ENG
10:59 PM


Mohammed Ameen Motasem Ali Ababneh
192.168.3.0/24
Routing Table for Router1
Type Network Port Next Hop IP Metric
C 192.168.1.0/24 FastEthernet0/0 --- 0/0
C 192.168.2.252/30 Serial0/0/0 --- 0/0
S 192.168.3.0/24 --- 192.168.2.254 1/0
S 192.168.4.252/30 --- 192.168.2.254 1/0
S 192.168.5.0/24 --- 192.168.2.254 1/0
PC-PT PC1
2950-24 Switch1
1841 Router1
1841 Router3
2950-24 Switch3
PC-PT PC3
192.168.1.0/24
192.168.5.0/24
Time: 02:56:32
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Wednesday, November 10, 2021
59°F Clear
ENG
10:58 PM


Mohammed Ameen Motasem Ali Ababneh
192.168.3.0/24
Fa0
Fa0/2
Fa0/1
Routing Table for Router3
Type Network Port Next Hop IP Metric
S 192.168.1.0/24 --- 192.168.4.254 1/0
S 192.168.2.252/30 --- 192.168.4.254 1/0
S 192.168.3.0/24 --- 192.168.4.254 1/0
C 192.168.4.252/30 Serial0/0/0 --- 0/0
C 192.168.5.0/24 FastEthernet0/0 --- 0/0
Se0/0/0
Fa0
Fa0/2
Fa0/1
Fa0/0
PC-PT
PC1
2950-24
Switch1
1841
Router1
192.168.1.0/24
1841
Router3
2950-24
Switch3
PC-PT
PC3
192.168.5.0/24
Time: 02:56:59
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
59°F Clear
ENG
10:59 PM

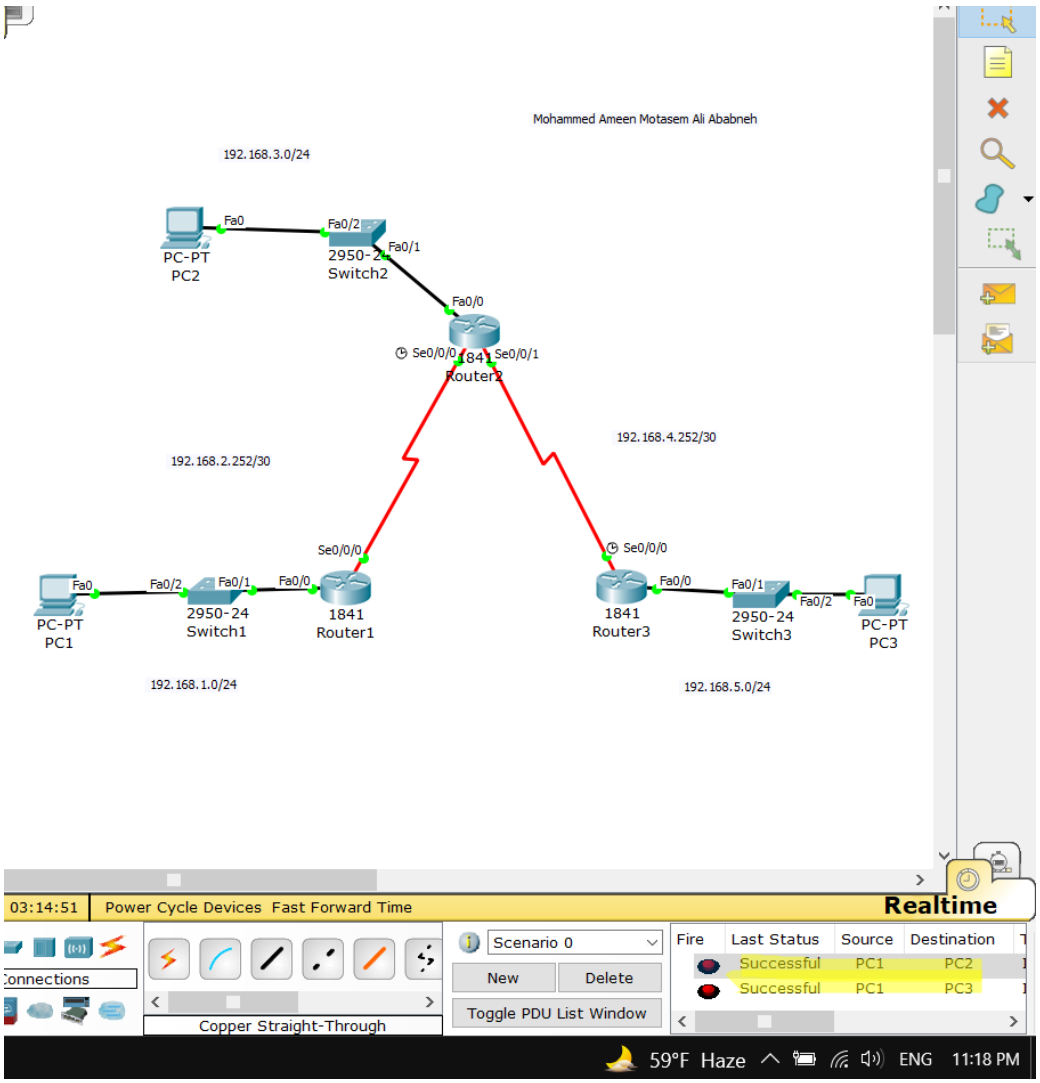
Step 2: Use the **show running-config** command to verify the static routes that are currently configured on R3.



6- How would you remove either of these routes from the configuration?
`By using the no IP route command.`

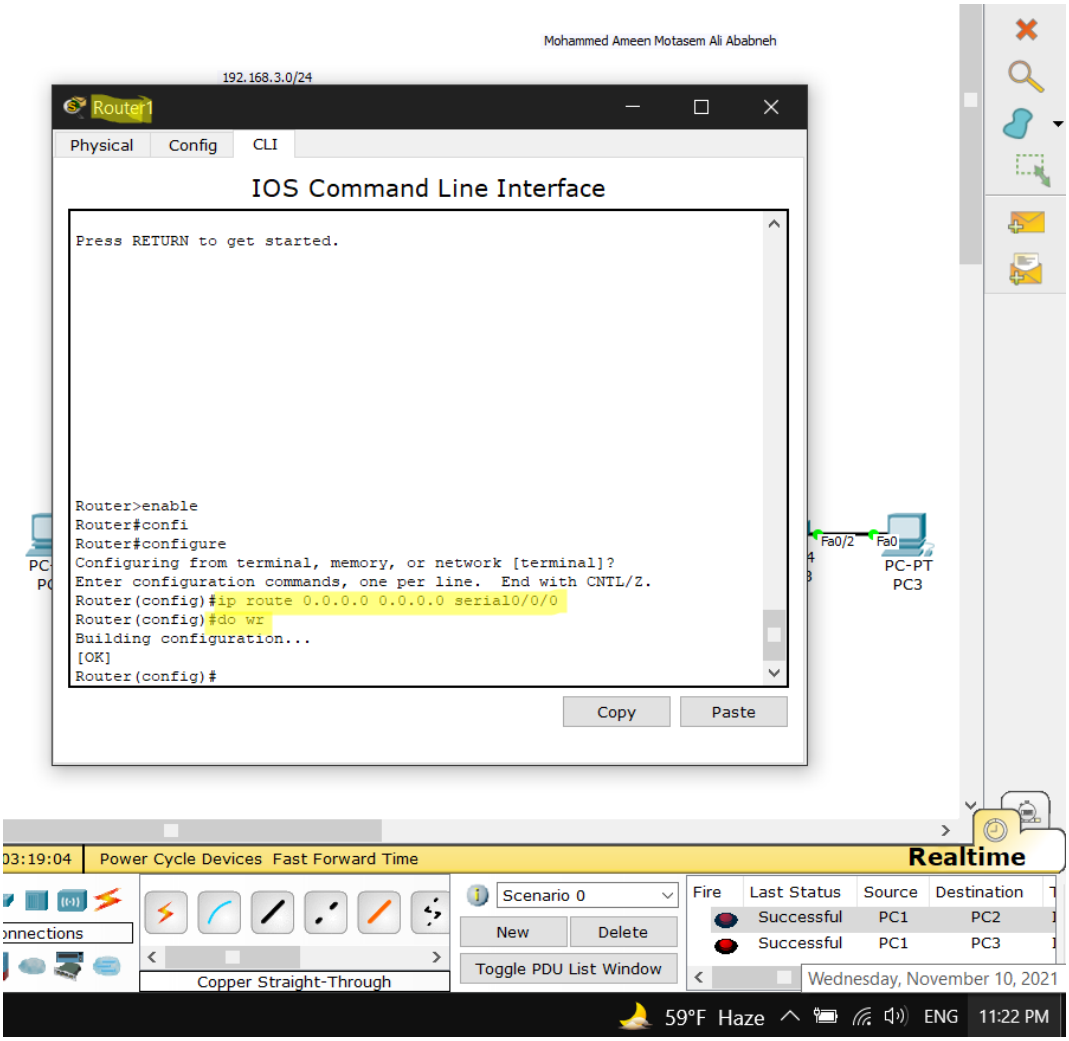
Step 3: Use ping to check connectivity between the hosts.

7- From the host PC1, is it possible to ping the host PC2? yes
8- From the host PC1, is it possible to ping the host PC3? Yes



Task 7: Configure a Default Static Route.

9- Configure the R1 router with a default route.


192.168.3.0/24
Router1
Physical
Config
CLI
IOS Command Line Interface
Press RETURN to get started.
Router>enable
Router#confi
Router#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 serial0/0/0
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
Copy
Paste
Fa0/2
Fa0
PC-PT
PC3
03:19:04
Power Cycle Devices Fast Forward Time
Realtime
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Successful
PC1
PC2
Successful
PC1
PC3
Copper Straight-Through
Wednesday, November 10, 2021
59°F Haze
ENG
11:22 PM

10- View the routing table for R1 to verify the new static route entry.