BỘ GIÁO DỤC VÀ ĐẠO TẠO

TRƯỜNG ĐẠI HỌC CÔNG NGHỆ

KHOA CÔNG NGHỆ THÔNG TIN

BÁO CÁO

Pinging and Tracing to Test the Path & Subnetting Scenario

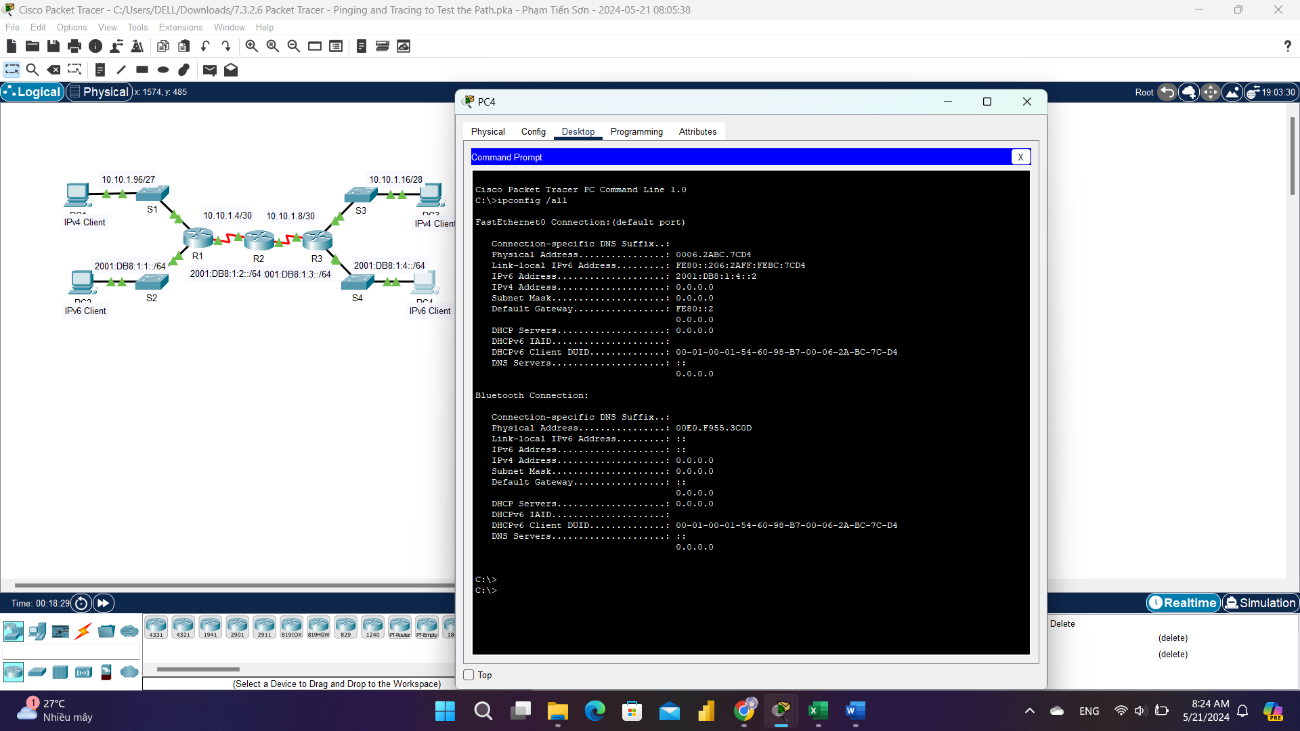
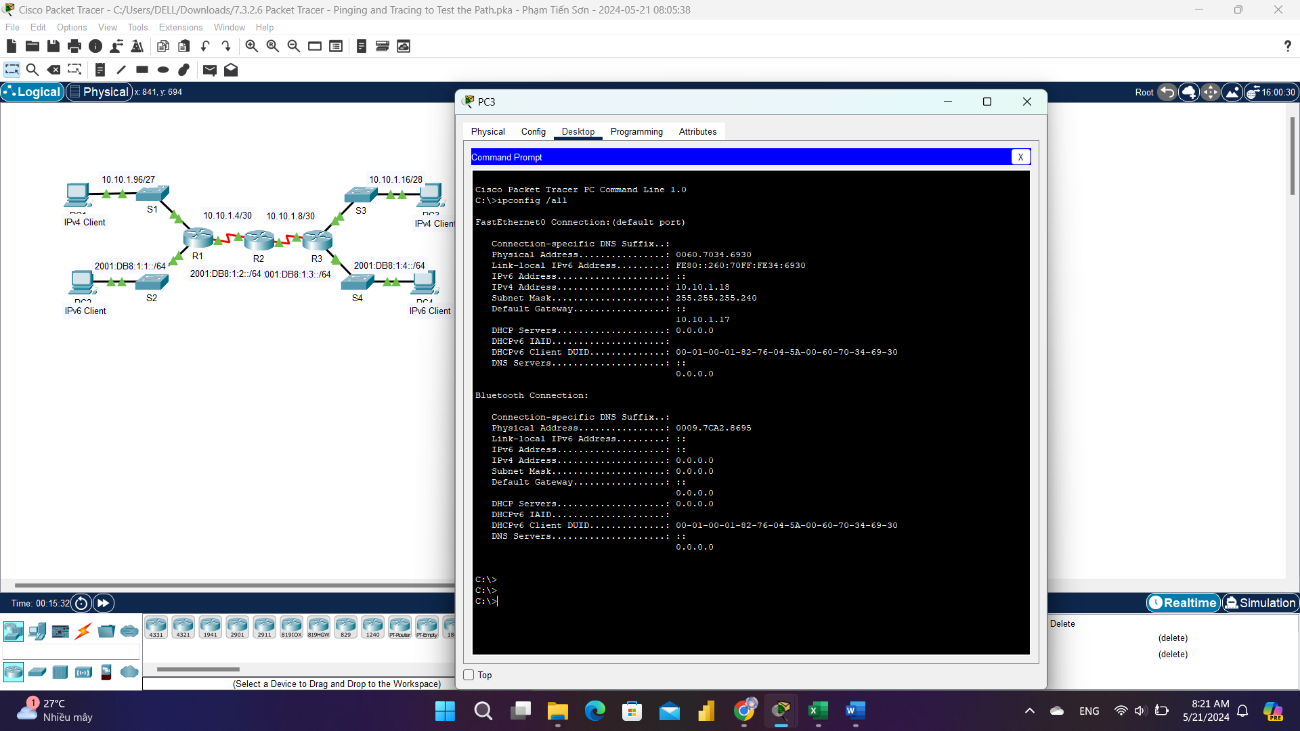
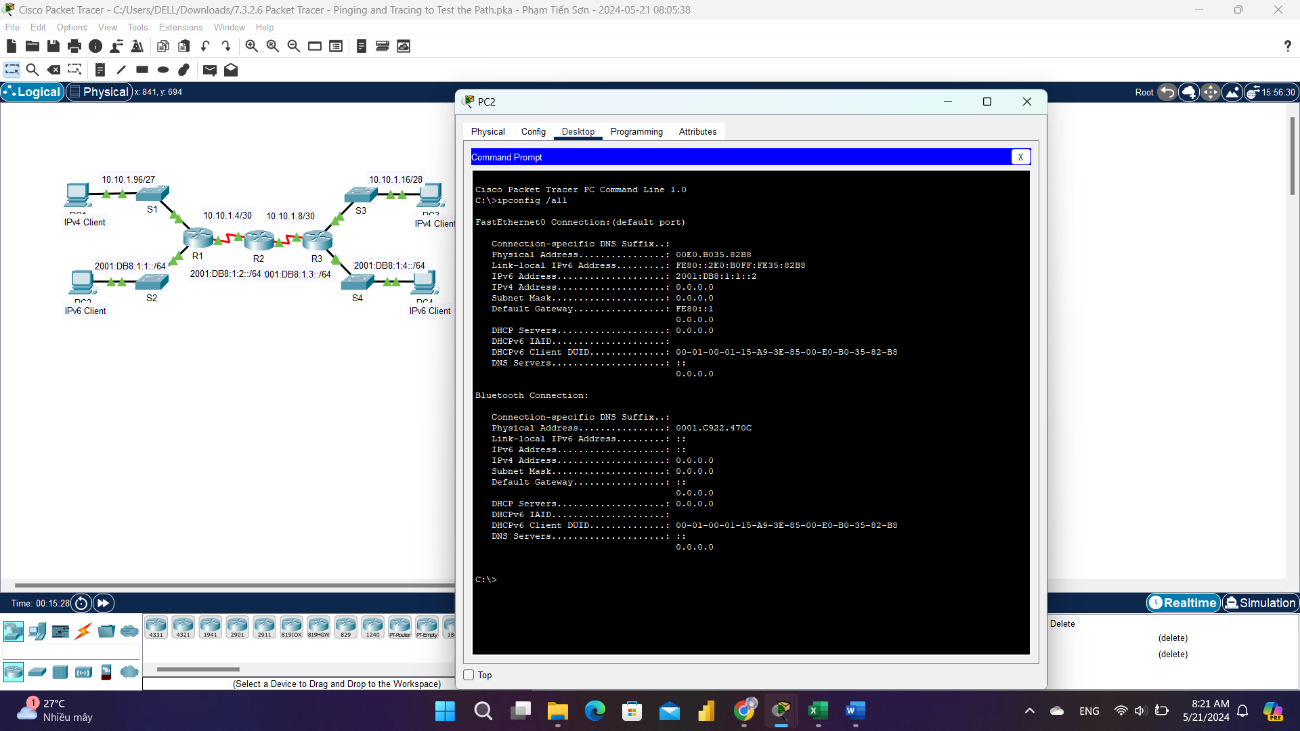
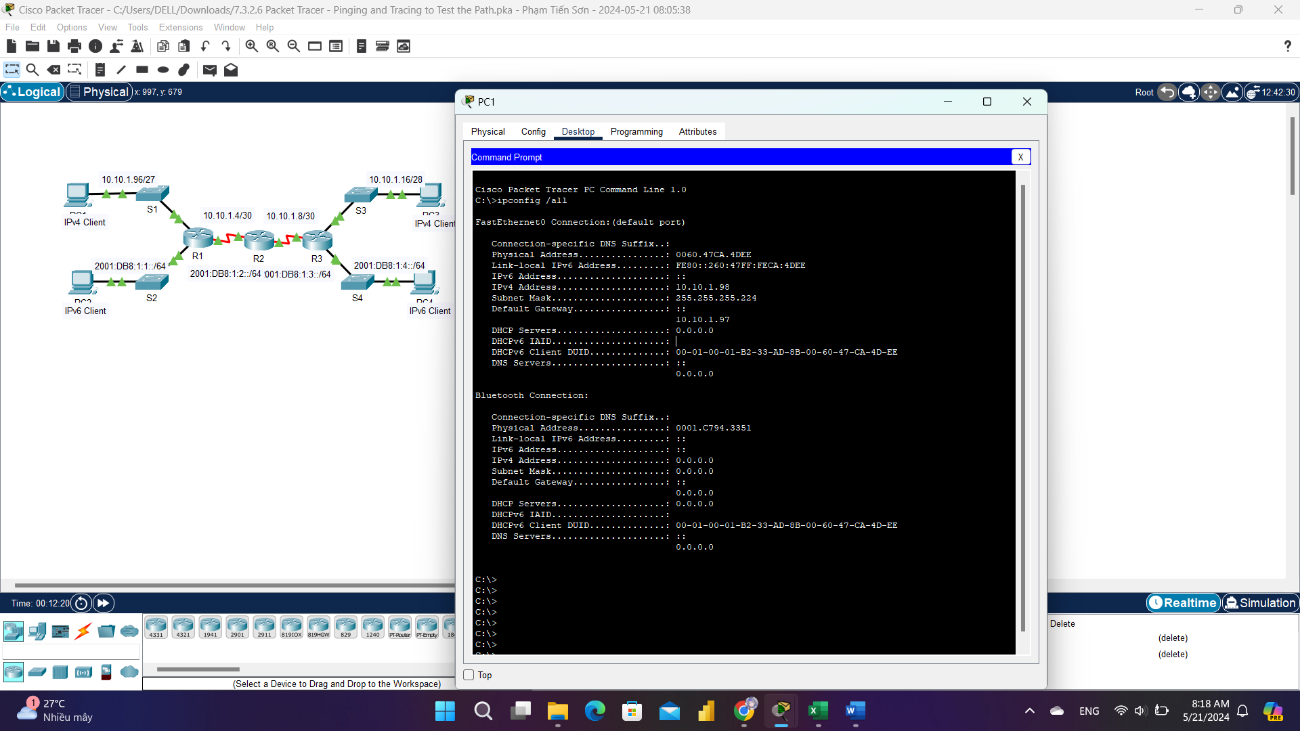


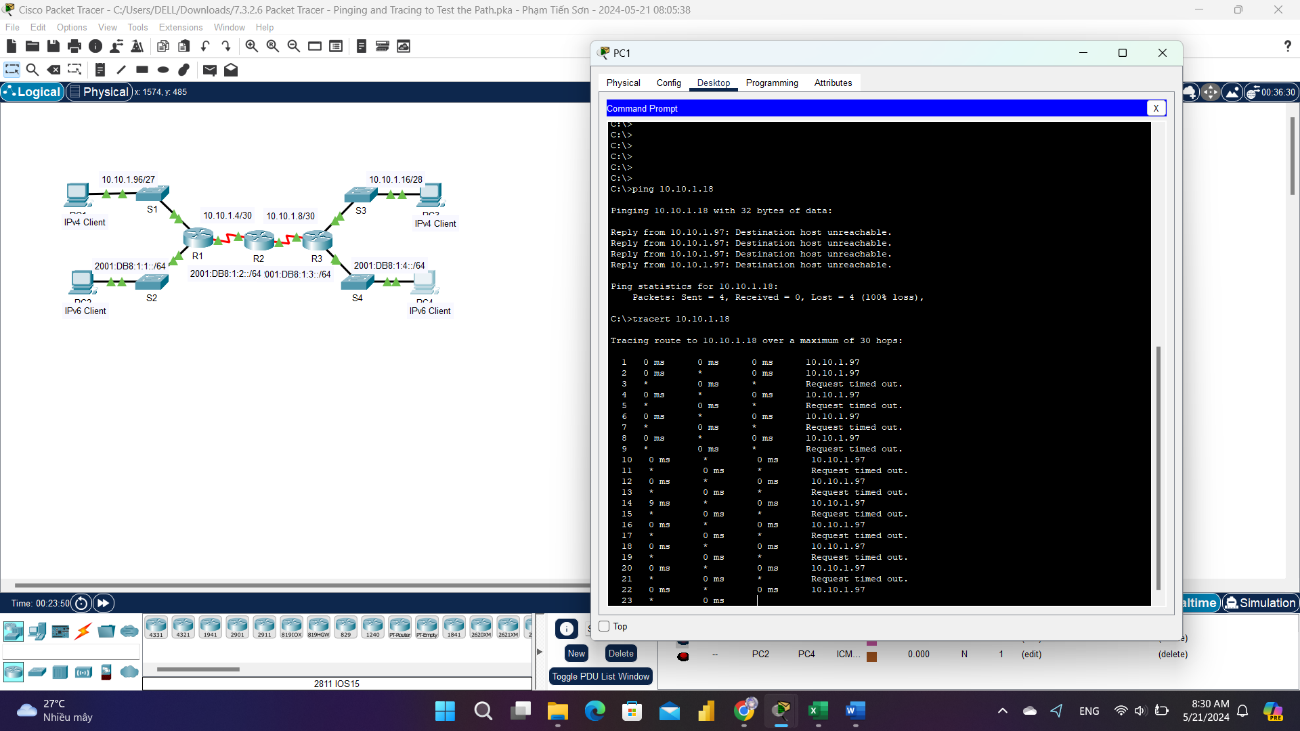
Sinh viên thực hiện: Phạm Tiến Sơn

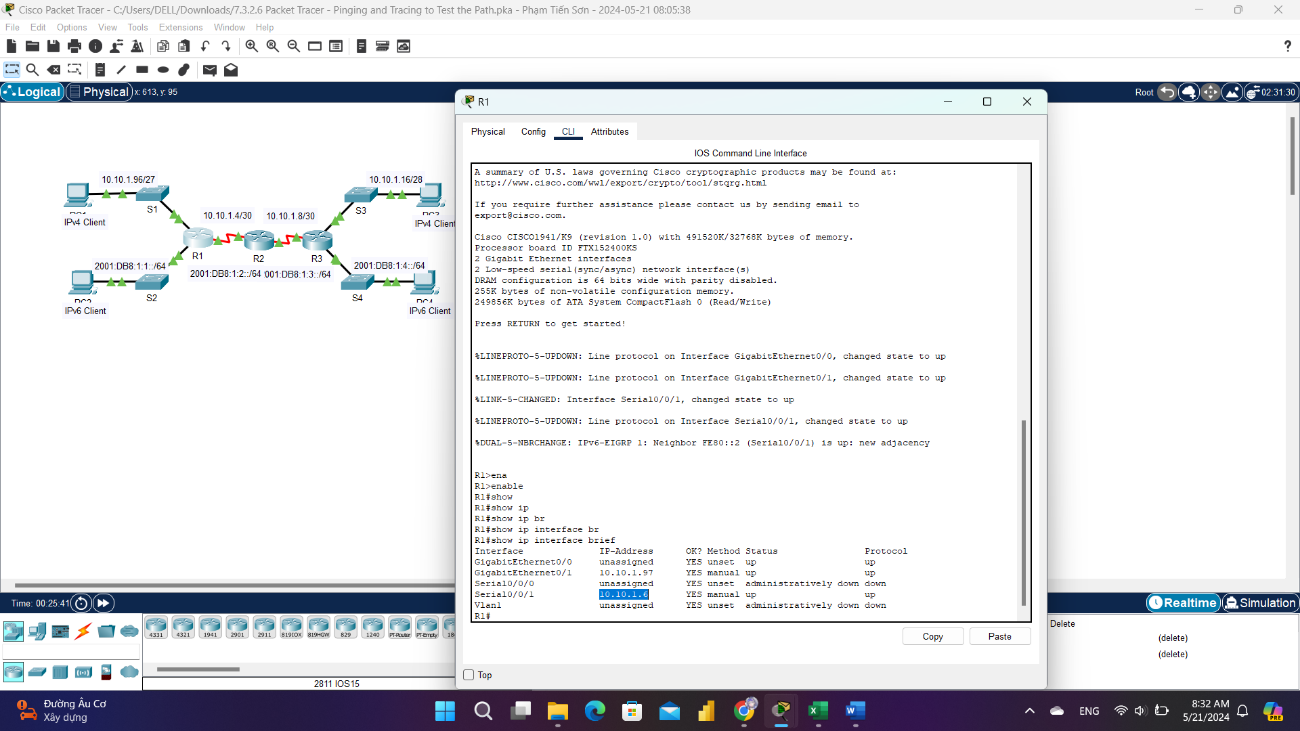
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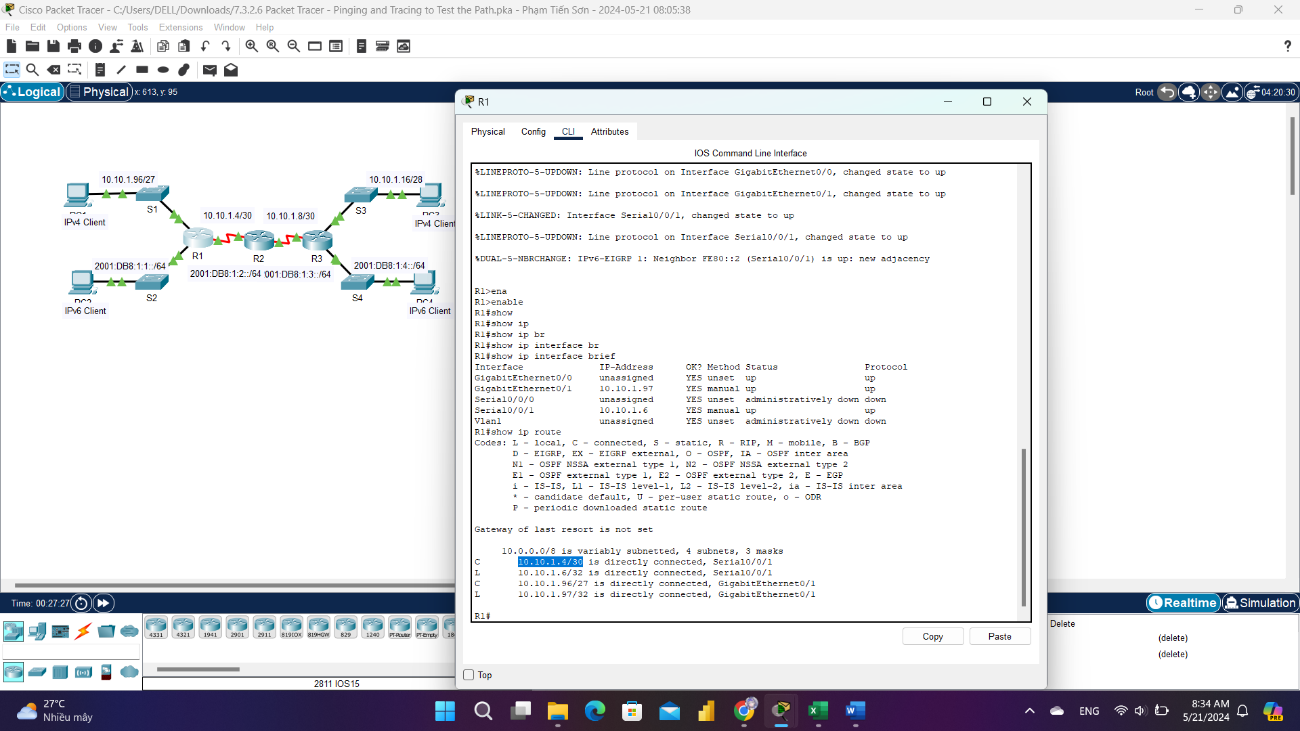
I. Pinging and Tracing to Test the Path

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IPv4 Address | Subnet Mask | Default Gateway |
| IPv6 Address/Prefix | |
| R1 | G0/0 | 2001:DB8:1:1::1/64 | | N/A |
| G0/1 | 10.10.1.97 | 255.255.255.224 | N/A |
| S0/0/1 | 10.10.1.6 | 255.255.255.252 | N/A |
| 2001:DB8:1:2::2/64 | | N/A |
| Link-local | FE80::1 | | N/A |
| R2 | S0/0/0 | 10.10.1.5 | 255.255.255.252 | N/A |
| 2001:DB8:1:2::1/64 | | N/A |
| S0/0/1 | 10.10.1.9 | 255.255.255.252 | N/A |
| 2001:DB8:1:3::1/64 | | N/A |
| Link-local | FE80::2 | | N/A |
| R3 | G0/0 | 2001:DB8:1:4::1/64 | | N/A |
| G0/1 | 10.10.1.17 | 255.255.255.240 | N/A |
| S0/0/1 | 10.10.1.10 | 255.255.255.252 | N/A |
| 2001:DB8:1:3::2/64 | | N/A |
| Link-local | FE80::3 | | N/A |
| PC1 | NIC | 10.10.1.98 | 255.255.255.224 | 10.10.1.97 |
| PC2 | NIC | 2001:DB8:1:1::2/64 | | FE80::1 |
| PC3 | NIC | 10.10.1.18 | 255.255.255.240 | 10.10.1.17 |
| PC4 | NIC | 2001:DB8:1:4::2/64 | | FE80::3 |

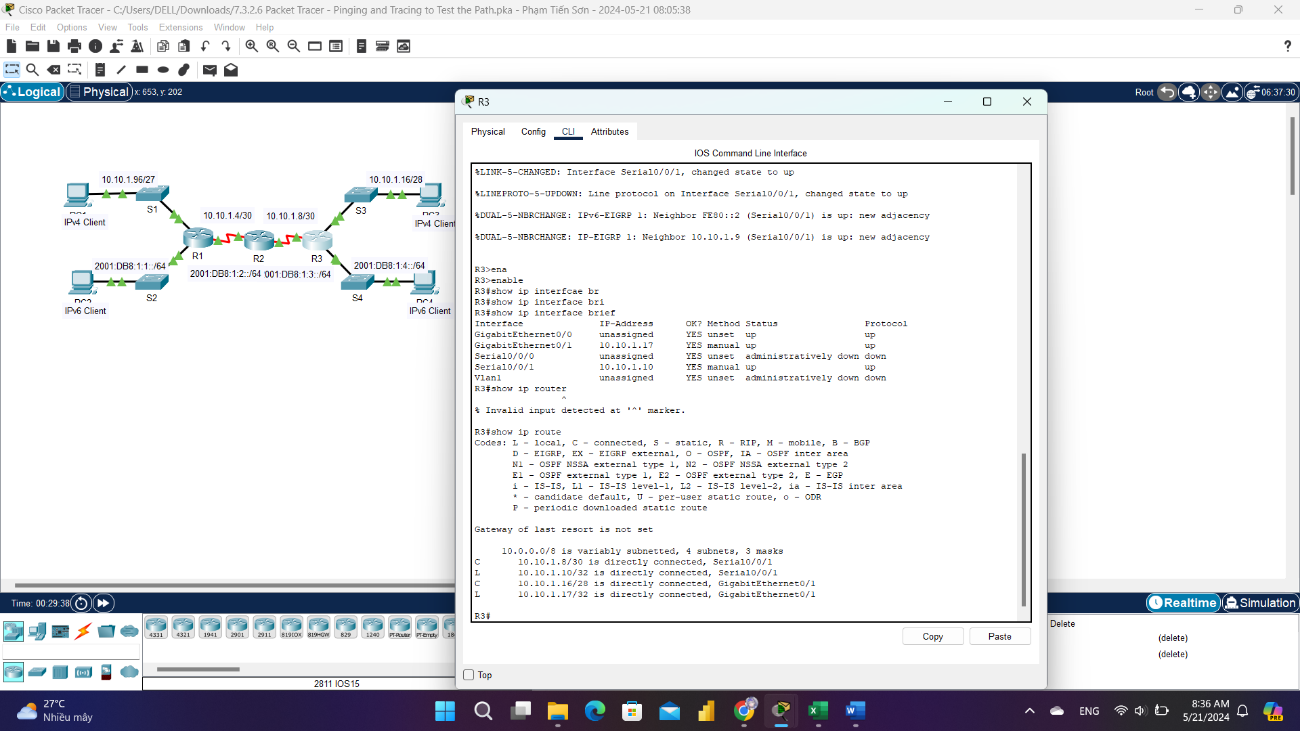


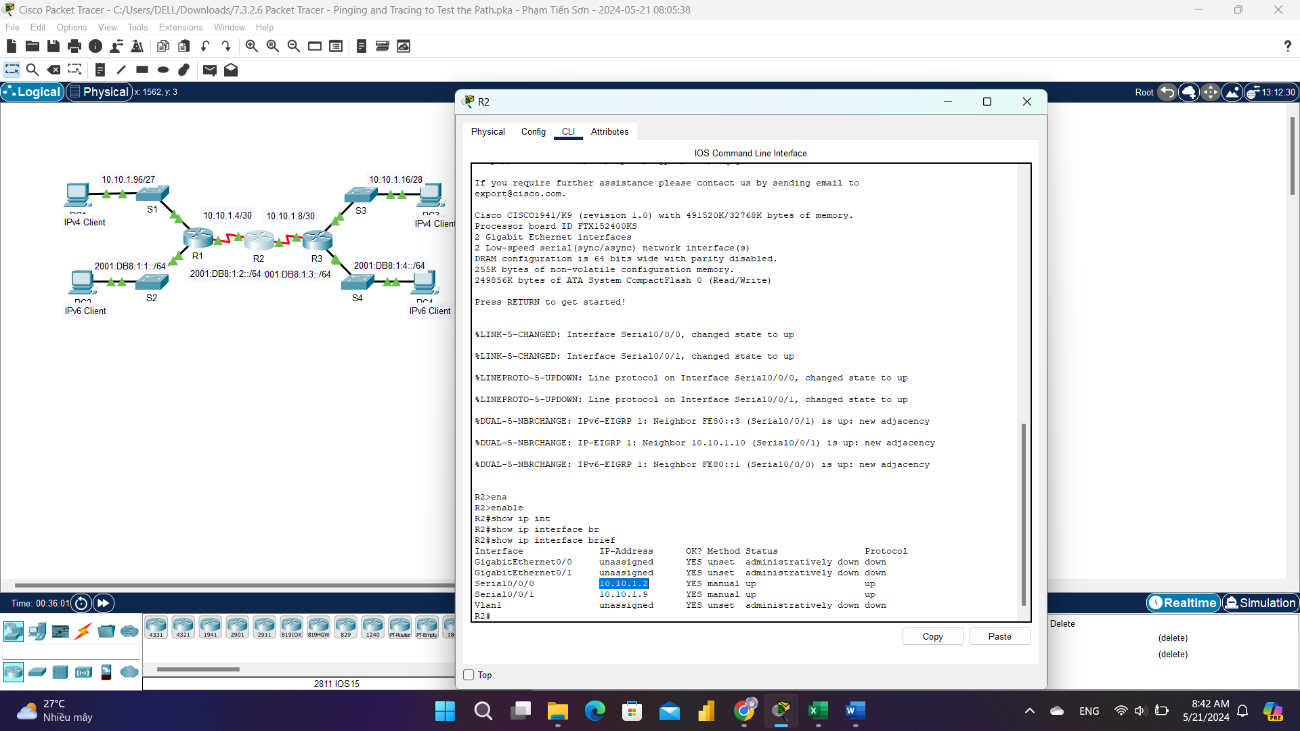
1) From PC1, enter the necessary command to trace the route to PC3. What is the last successful IPv4 address that was reached? 10.10.1.97  


2) Enter the show ip interface brief command to list the interfaces and their status. There are two IPv4 addresses on the router. One should have been recorded in Step 2a. What is the other?   
10.10.1.6  


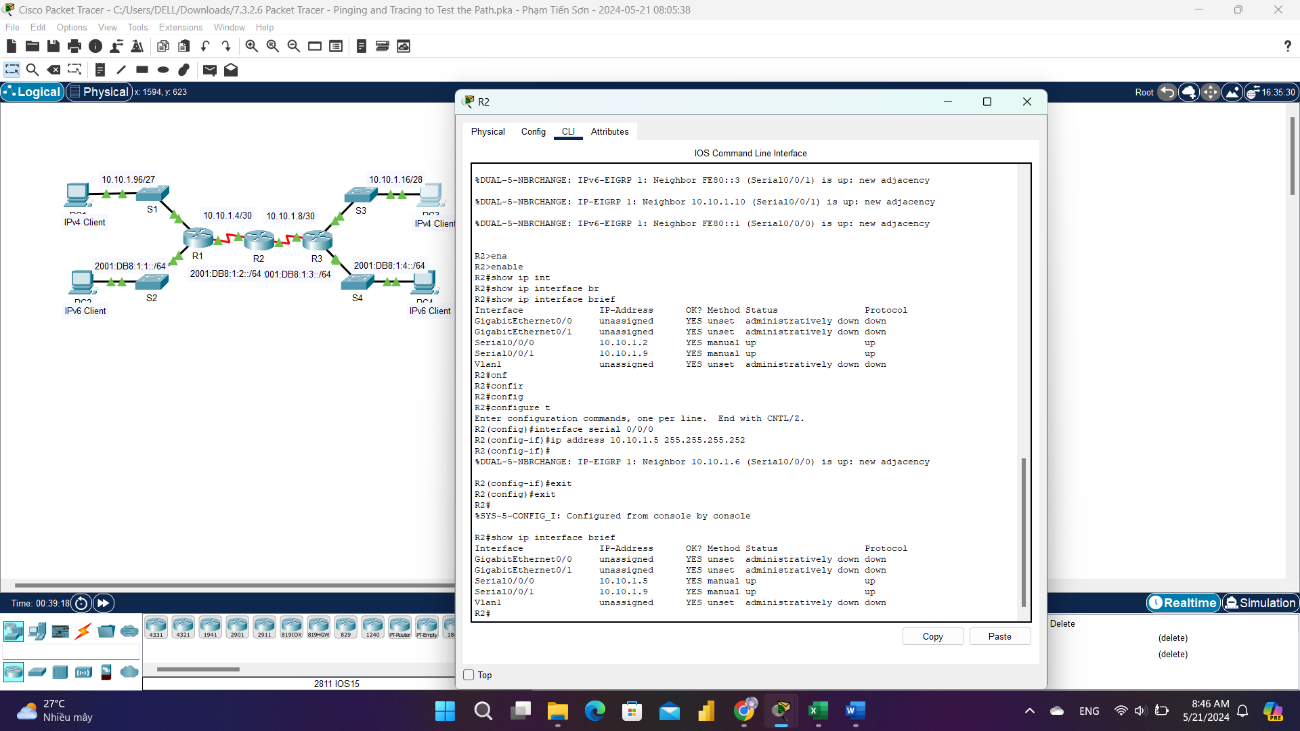
3) Enter the show ip route command to list the networks to which the router is connected. Note that there are two networks connected to the Serial0/0/1 interface. What are they?  
10.10.1.6/32, 10.10.1.4/30  


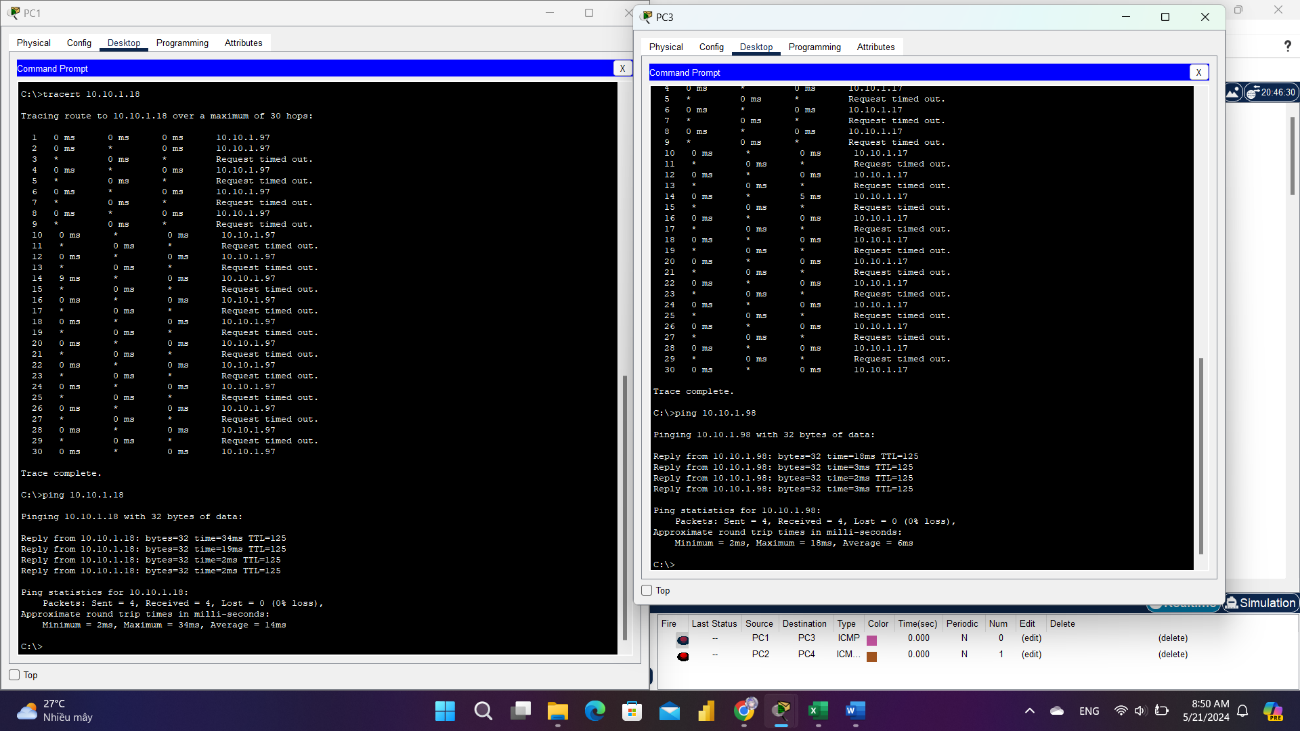
4) Repeat step 2e to 2g with R3 and the answers here.  
10.10.1.10; 10.10.1.8/30, 10.10.1.10/32

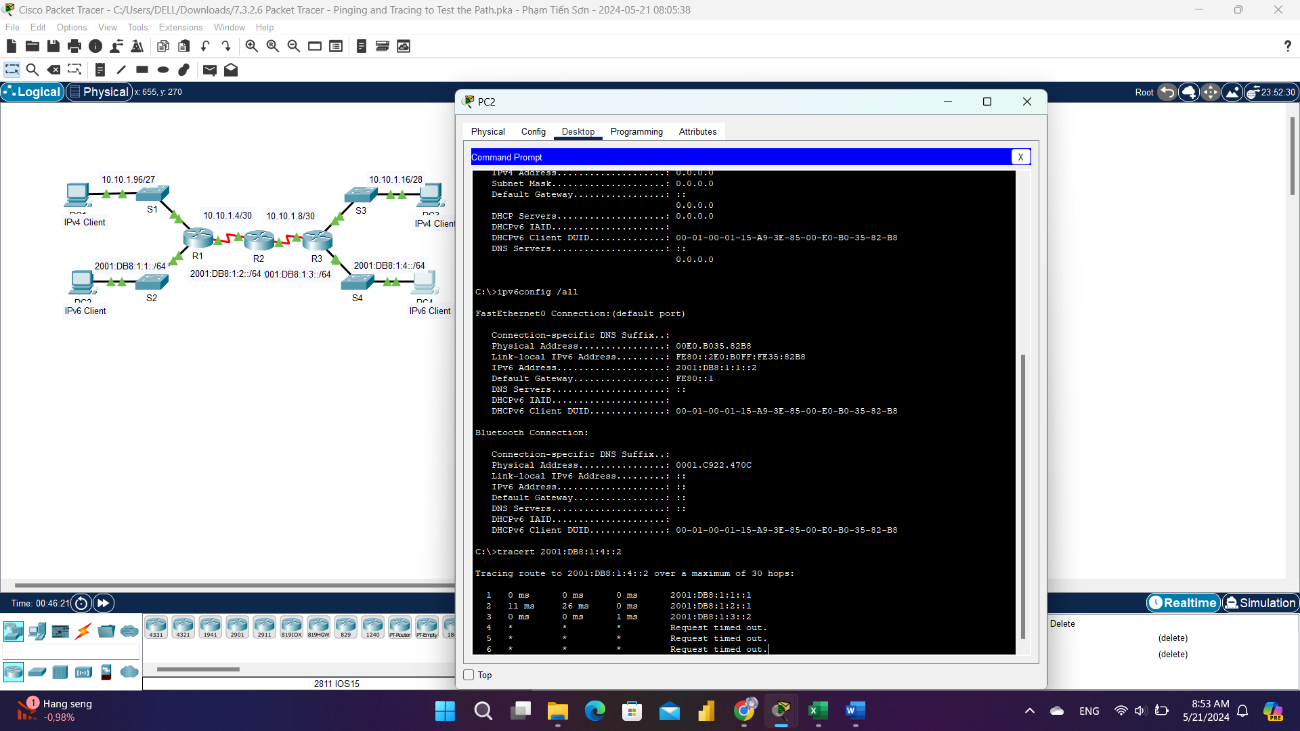


5) Compare your answers in Step 2 to the documentation you have available for the network. What is the error?  
Giao diện Serial 0/0/0 của R2 được cấu hình sai địa chỉ IP.  


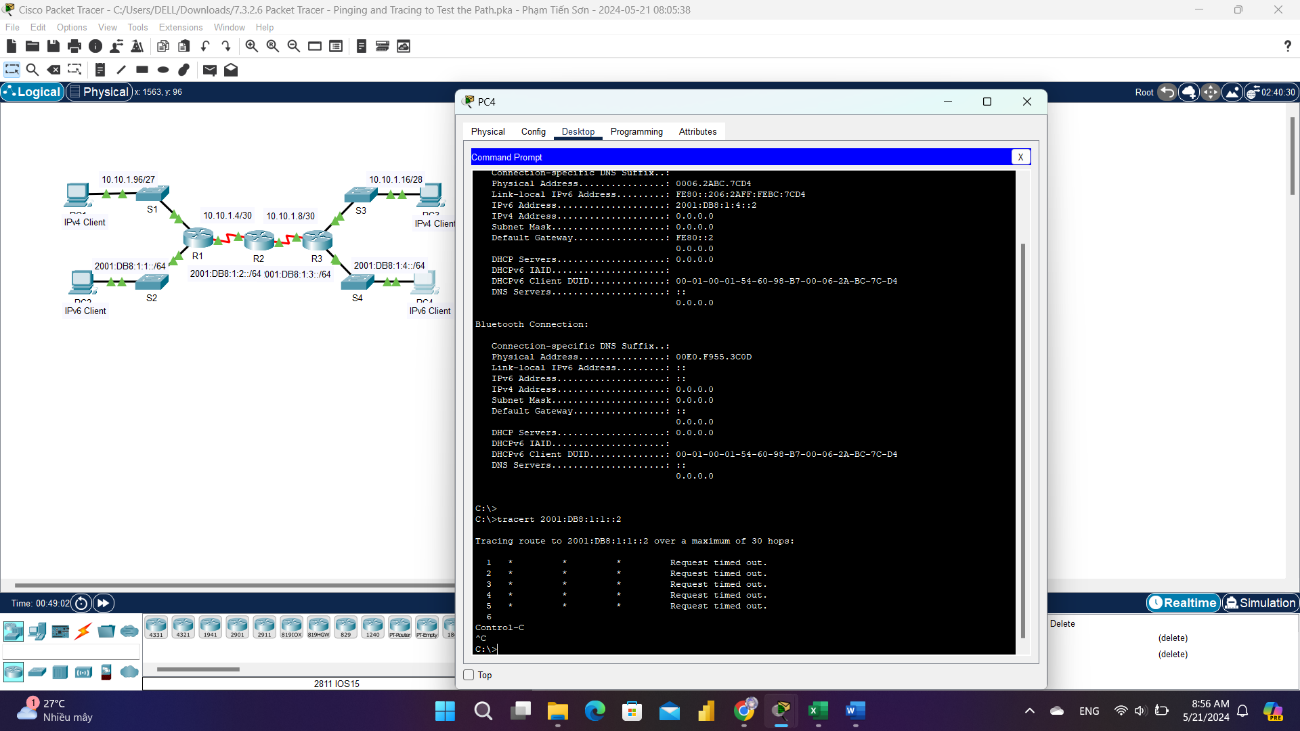
6) What solution would you propose to correct the problem?  
Cấu hình địa chỉ IP chính xác trên giao diện Serial 0/0/0 của R2 (10.10.1.5)

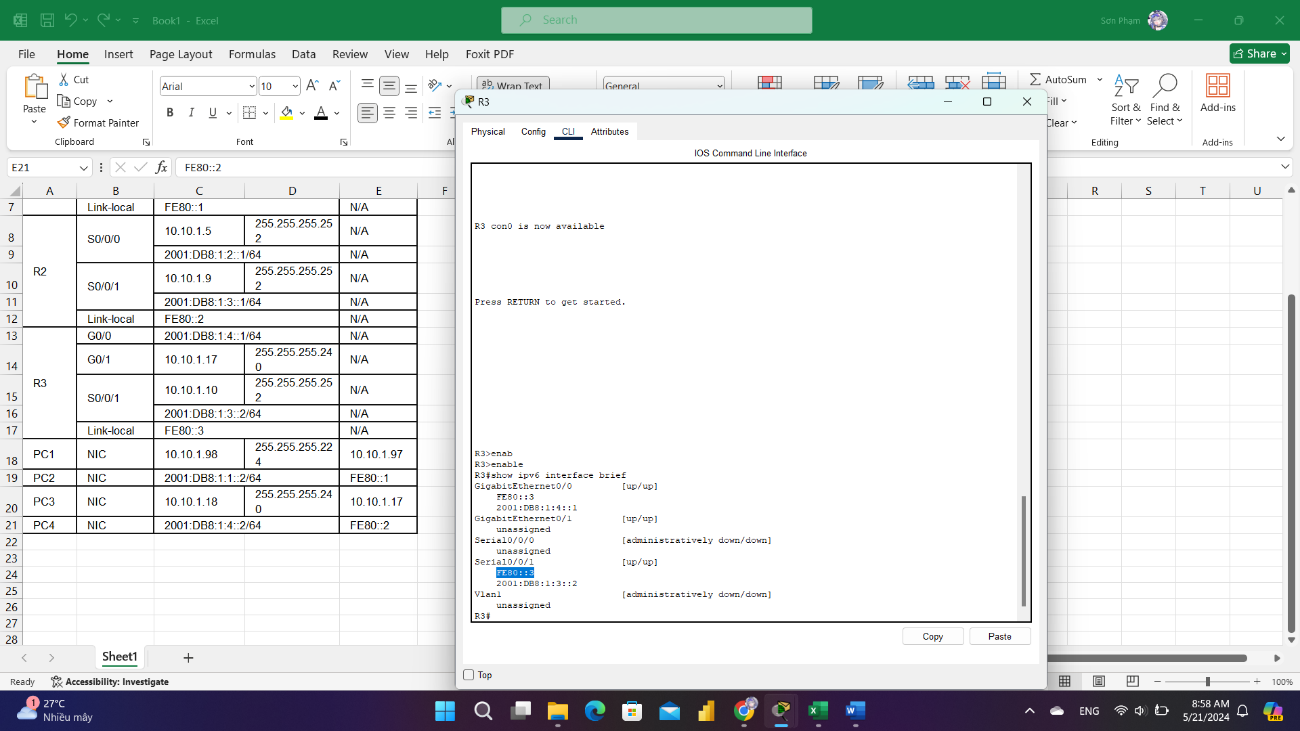
7) Implement the solution you proposed in Step 3b.  


8) Is the problem resolved?  
Có  


9) From PC2, enter the necessary command to trace the route to PC4. What is the last successful IPv6 address that was reached? The trace will eventually end after 30 attempts. Enter Ctrl+C to stop the trace before 30 attempts.   
2001:DB8:1:3::2  


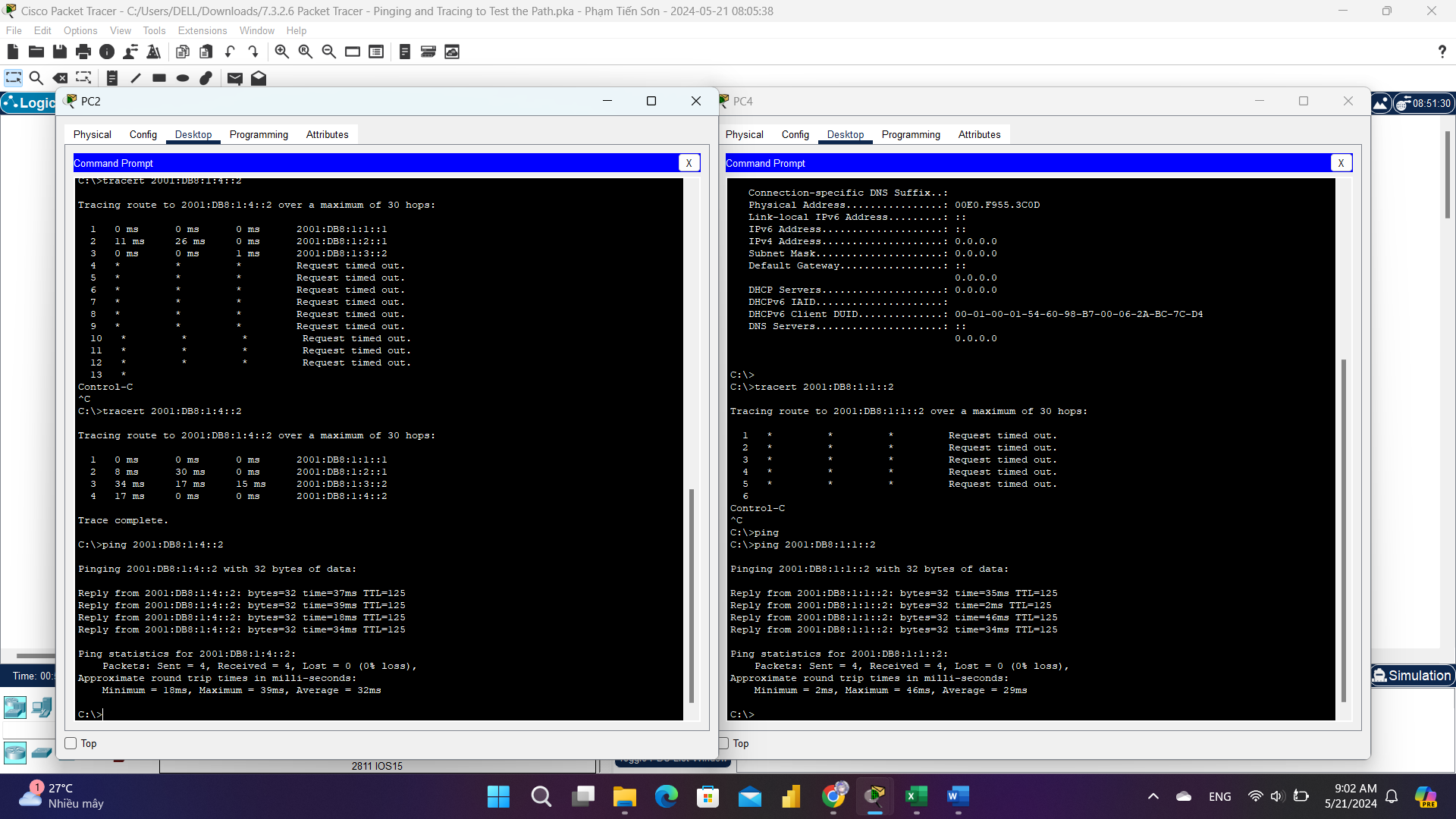
10) From PC4, enter the necessary command to trace the route to PC2. What is the last successful IPv6 address that was reached?  
Không có địa chỉ IPv6 nào.



11) Enter the show ipv6 interface brief command to list the interfaces and their status. There are two IPv6 addresses on the router. One should match the gateway address recorded in Step 1d. Is there a discrepancy?  
Có  


12) Compare your answers in Step 2 to the documentation you have available for the network. What is the error?  
PC4 đang sử dụng sai cấu hình cổng mặc định.

13) What solution would you propose to correct the problem?  
Cấu hình PC4 với địa chỉ cổng mặc định chính xác: FE80::3.

14) Is the problem resolved?   
Có  


II. Subnetting Scenario

Addressing Table  


Subnet Table



1) Based on the topology, how many subnets are needed?  
5

2) How many bits must be borrowed to support the number of subnets in the topology table?  
3 bits

3) How many subnets does this create? 2^3 = 8

4) How many usable hosts does this create per subnet?   
2^5 – 2 = 30 hosts

5)   
a. Assign Subnet 0 to the LAN connected to the GigabitEthernet 0/0 interface of R1: – 192.168.100.0 /27  
b. Assign Subnet 1 to the LAN connected to the GigabitEthernet 0/1 interface of R1: – 192.168.100.32 /27  
c. Assign Subnet 2 to the LAN connected to the GigabitEthernet 0/0 interface of R2: – 192.168.100.64 /27  
d. Assign Subnet 3 to the LAN connected to the GigabitEthernet 0/1 interface of R2: – 192.168.100.96 /27  
e. Assign Subnet 4 to the WAN link between R1 to R2: – 192.168.100.128 /27