Karthick VM

Batch – CIS 1.3

Milestone Practical Assessment Networking

Scenario:

LTIM Solutions is an IT services company with departments like HR, Finance, Sales, and IT Support located in different buildings. The company's infrastructure includes routers, switches, and end devices such as PCs and servers. The management has decided to implement segmentation and dynamic routing using EIGRP for ease of communication and access control to improve security. As the Network Administrator, your task is to implement the network infrastructure and configure routing and access control measures. The company has two core routers, and the routers will be connected to departmental switches and end devices. You need to use the EIGRP routing protocol to share routing information dynamically across departments.

Use the following assumptions:

• Router names: -Core1, -Core2

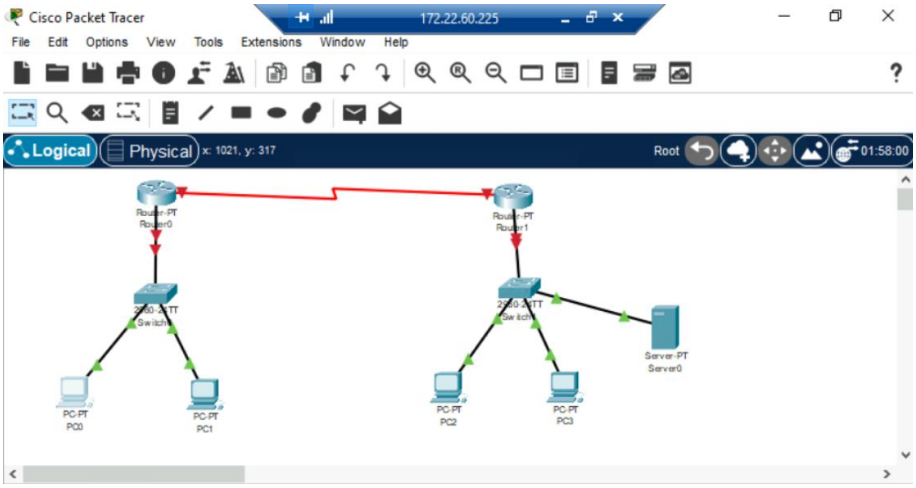
• No authentication is required for EIGRP

• Telnet access should be secured with a password

• Certain access restrictions must be implemented using ACLs

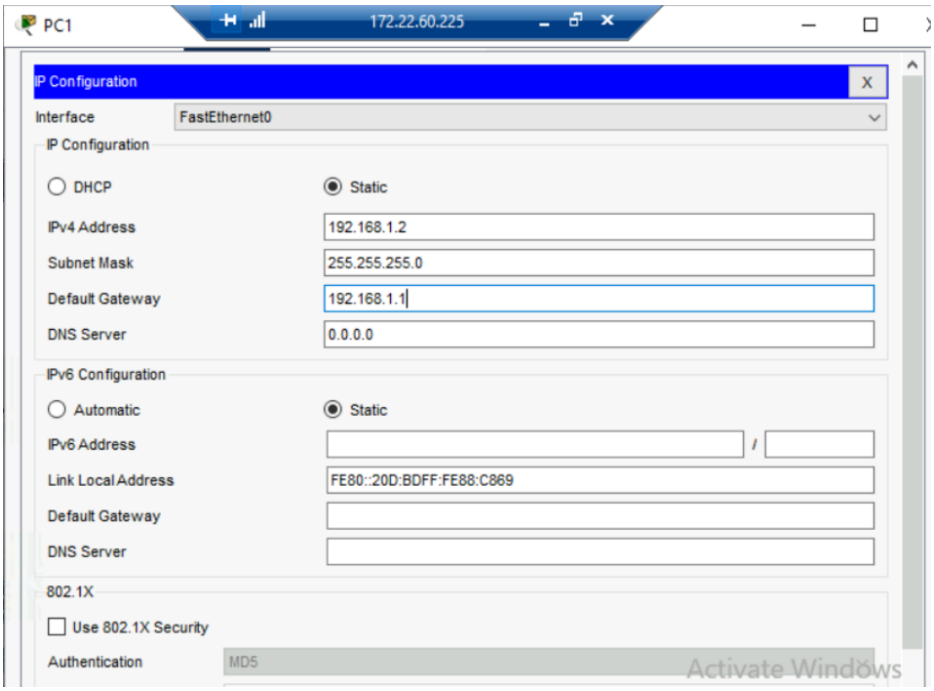
Task 1: Network Setup and Security

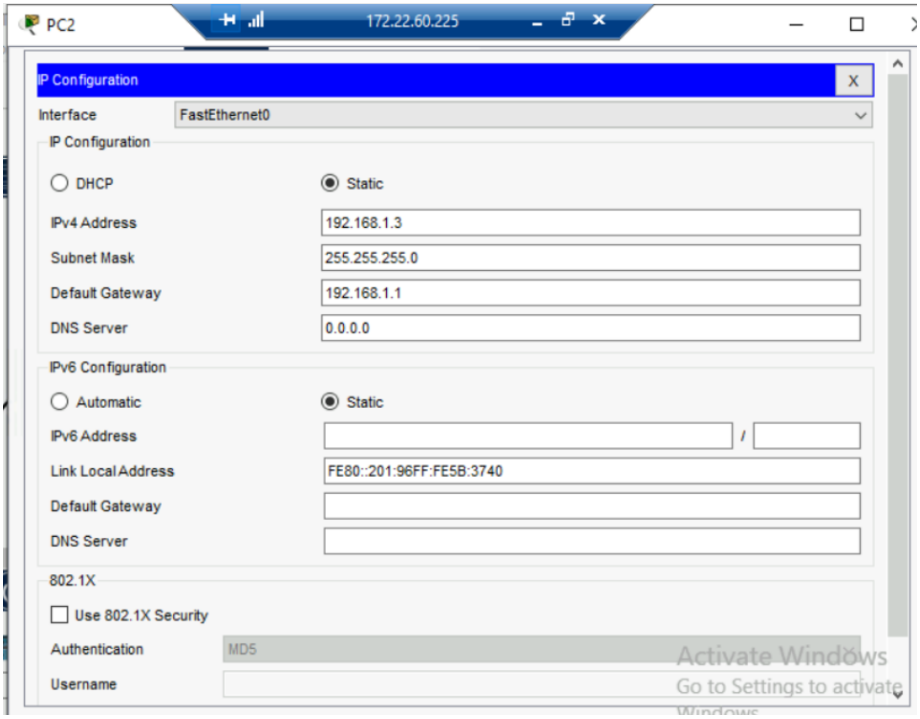
• Design a topology with at least 2 routers, 2 switches, 4 PCs (PC1 to PC4), and 1 Server.



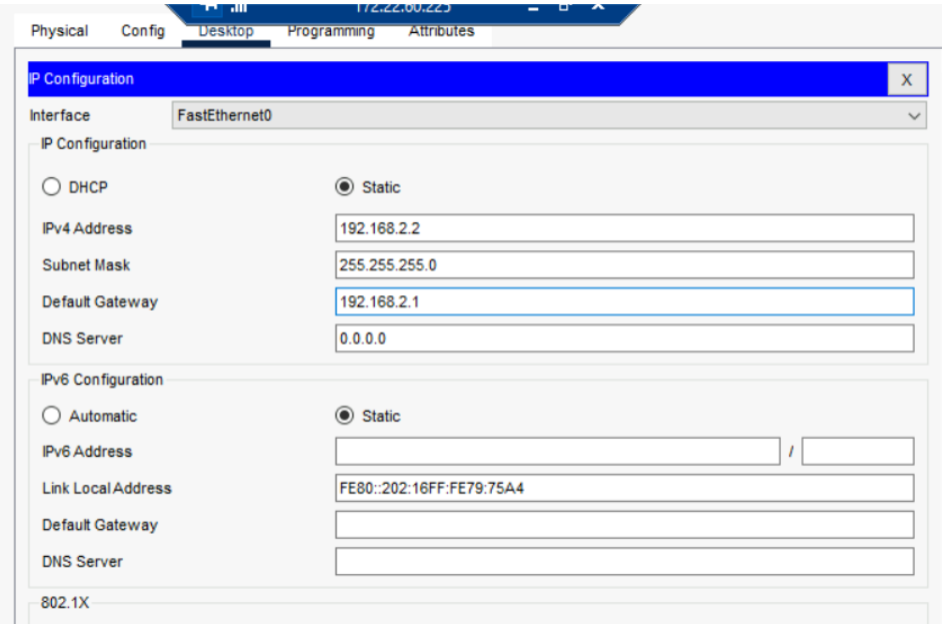
• Assign IP addresses to all interfaces including hosts and routers (use private IP addressing, e.g., 192.168.X.0/24).

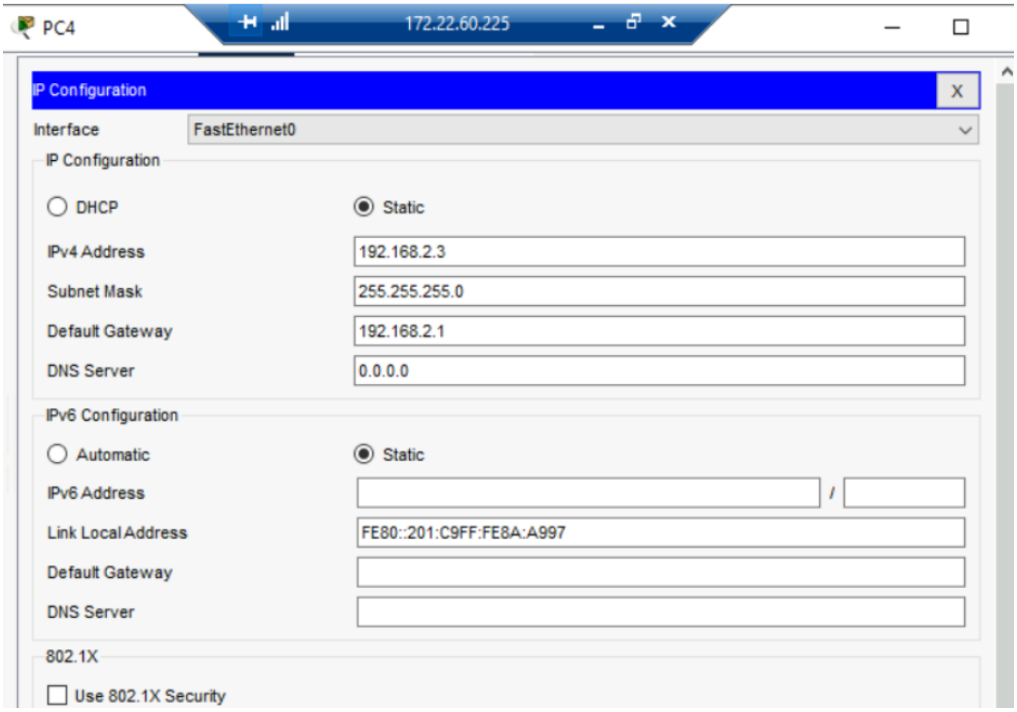
- Assigning ip address to PC 1 and 2 In Router – Karthick_Core1

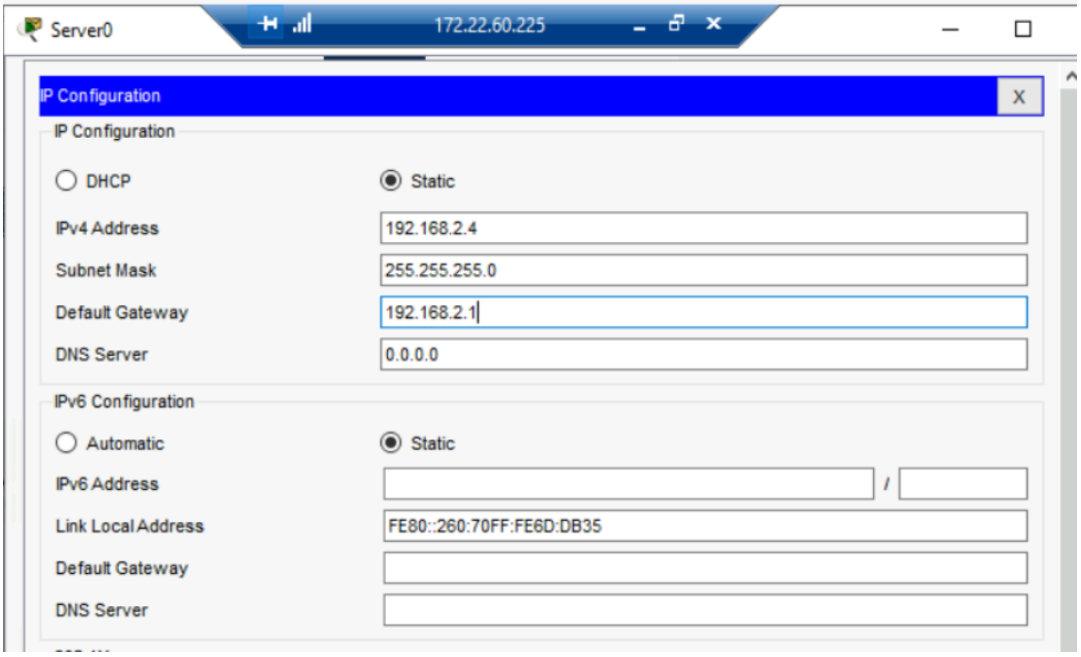




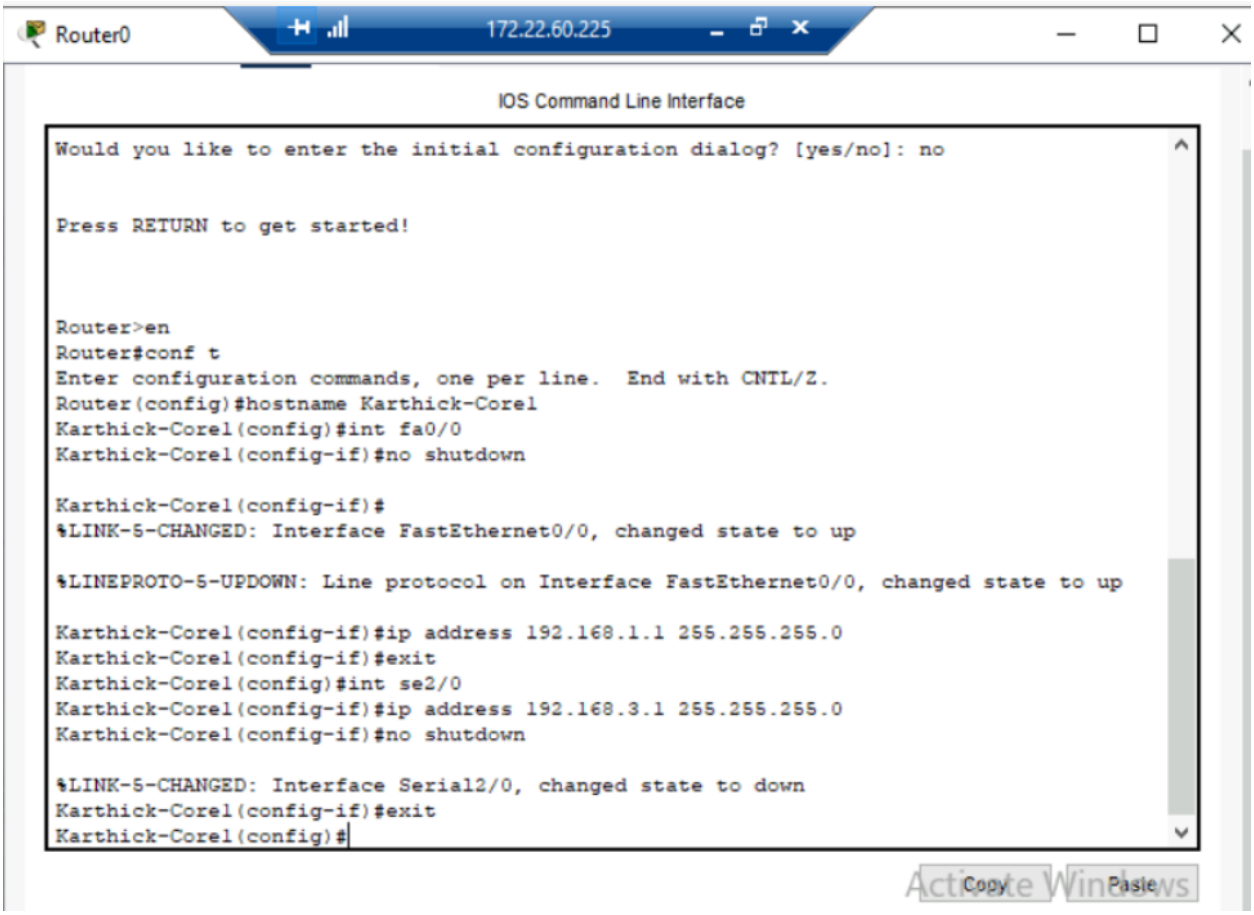
- Assigning ip address to PC 3 and 4, Server In Router – Karthick_Core2





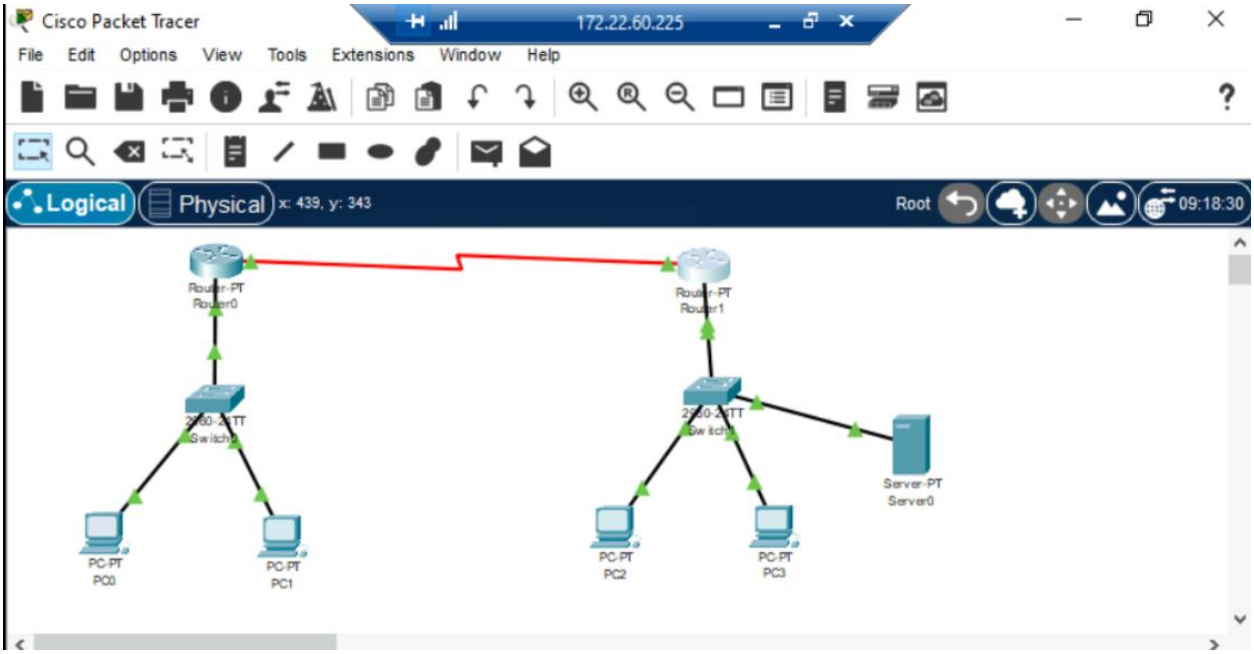


- Assigning ip Address to Router – Karthick_Core1



- Assigning ip Address to Router – Karthick_Core2

- Connection after Assigning ip and do configuration on ports.



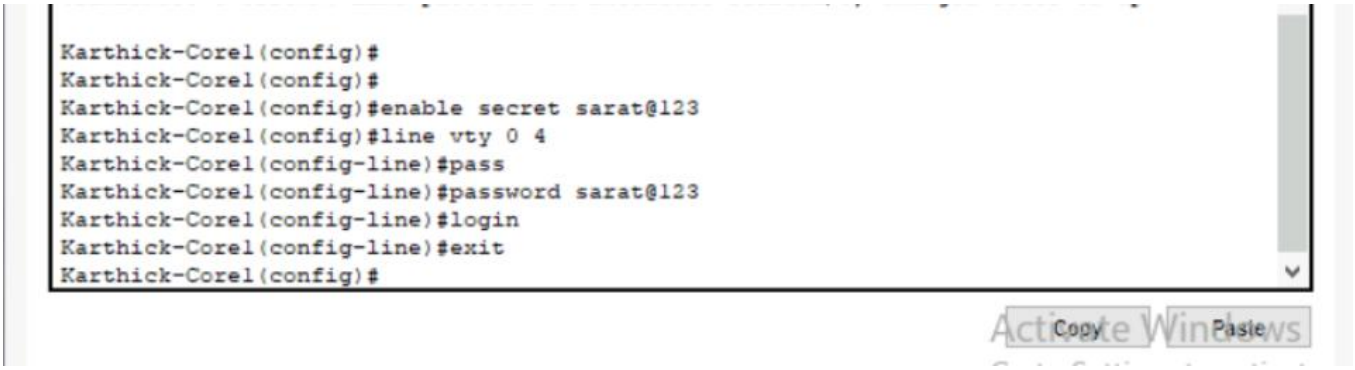
• Configure Telnet access on both routers with the following:

o Set a hostname as per router name.

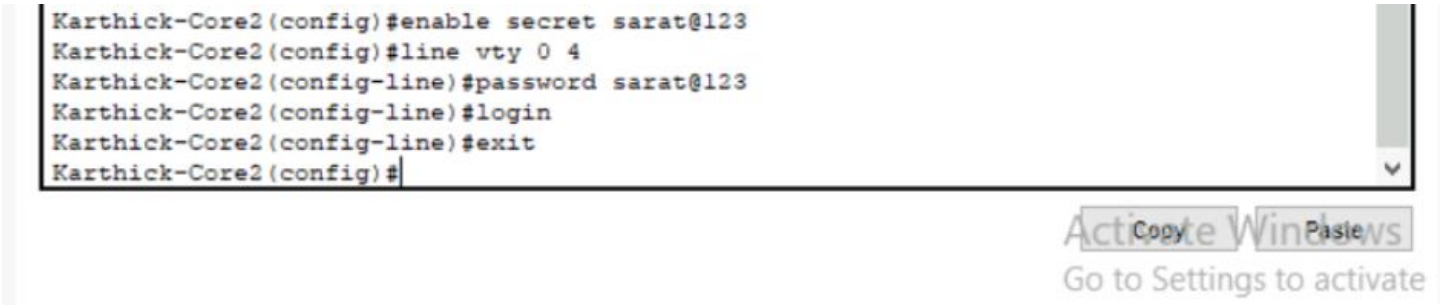
o Set enable secret as Sarat@123.

o Set line vty password as Sarat@123.

- Router – Karthick_Core1 →Set Password



- Router – Karthick_Core2



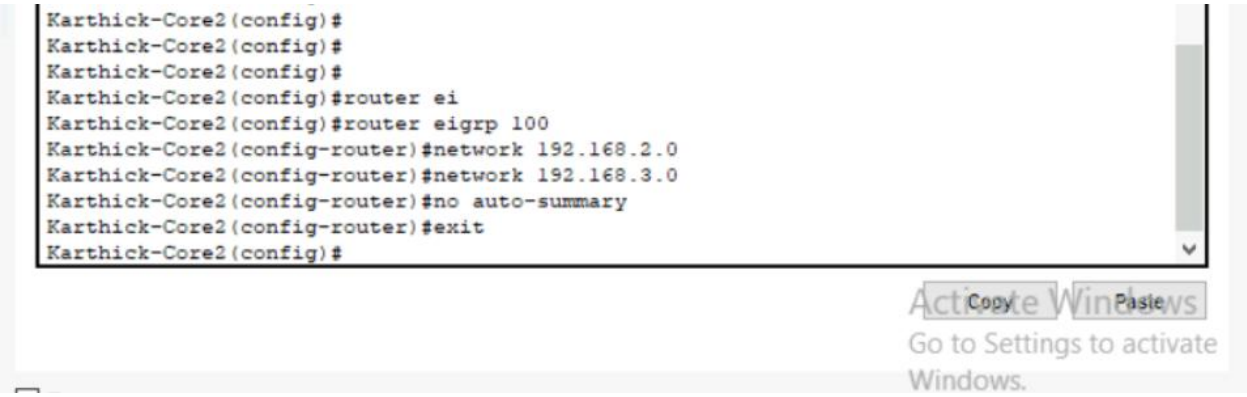
Task 2: EIGRP Configuration and Connectivity Test

• Configure EIGRP on both routers.

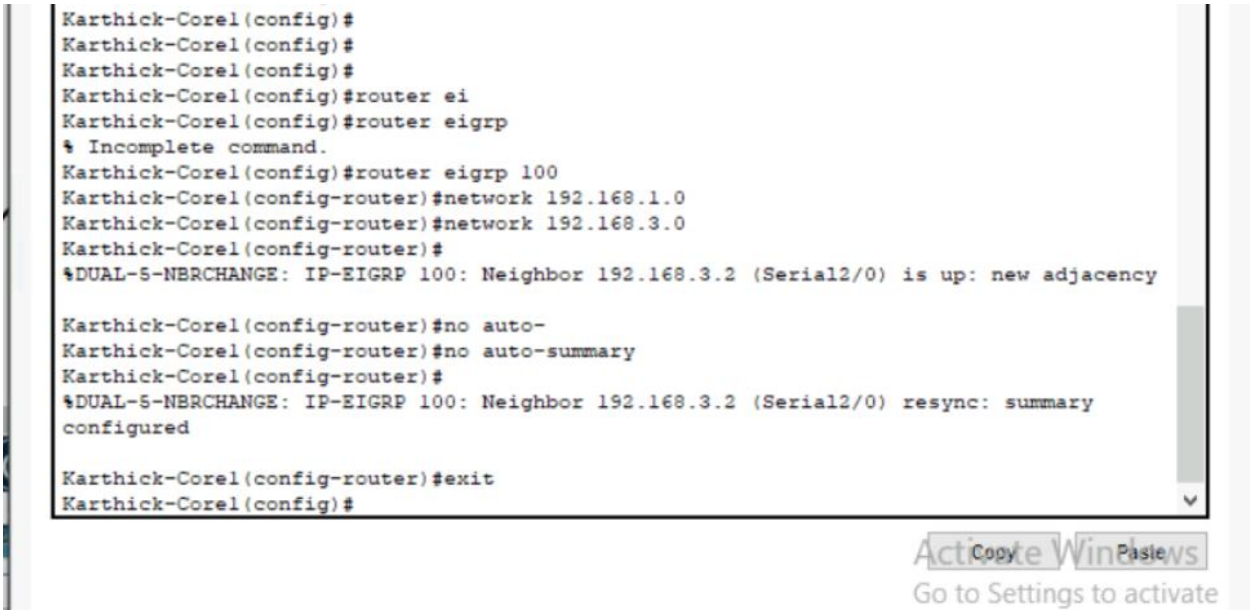
o Advertise all connected networks.

o Disable auto-summary.

- Router – Karthick_Core2 → Set eigrp protocol , advertise and disabled auto summary.



- Router – Karthick_Core1→ Set eigrp protocol , advertise and disabled auto summary.



• After configuring, verify the routing table using show ip route.

- Here the D in the route table signifies the eigrp protocol connection established between the routers.

```
Karthick-Core2#
Karthick-Core2#
Karthick-Core2#show ip route
Codes: C - connected, S - static, I - IGRP, 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

D    192.168.1.0/24 [90/20514560] via 192.168.3.1, 00:01:27, Serial2/0
C    192.168.2.0/24 is directly connected, FastEthernet0/0
C    192.168.3.0/24 is directly connected, Serial2/0

Karthick-Core2#
```

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```
Karthick-Core1(config)#do show ip route
Codes: C - connected, S - static, I - IGRP, 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

C    192.168.1.0/24 is directly connected, FastEthernet0/0
D    192.168.2.0/24 [90/20514560] via 192.168.3.2, 00:00:44, Serial2/0
C    192.168.3.0/24 is directly connected, Serial2/0

Karthick-Core1(config)#
```

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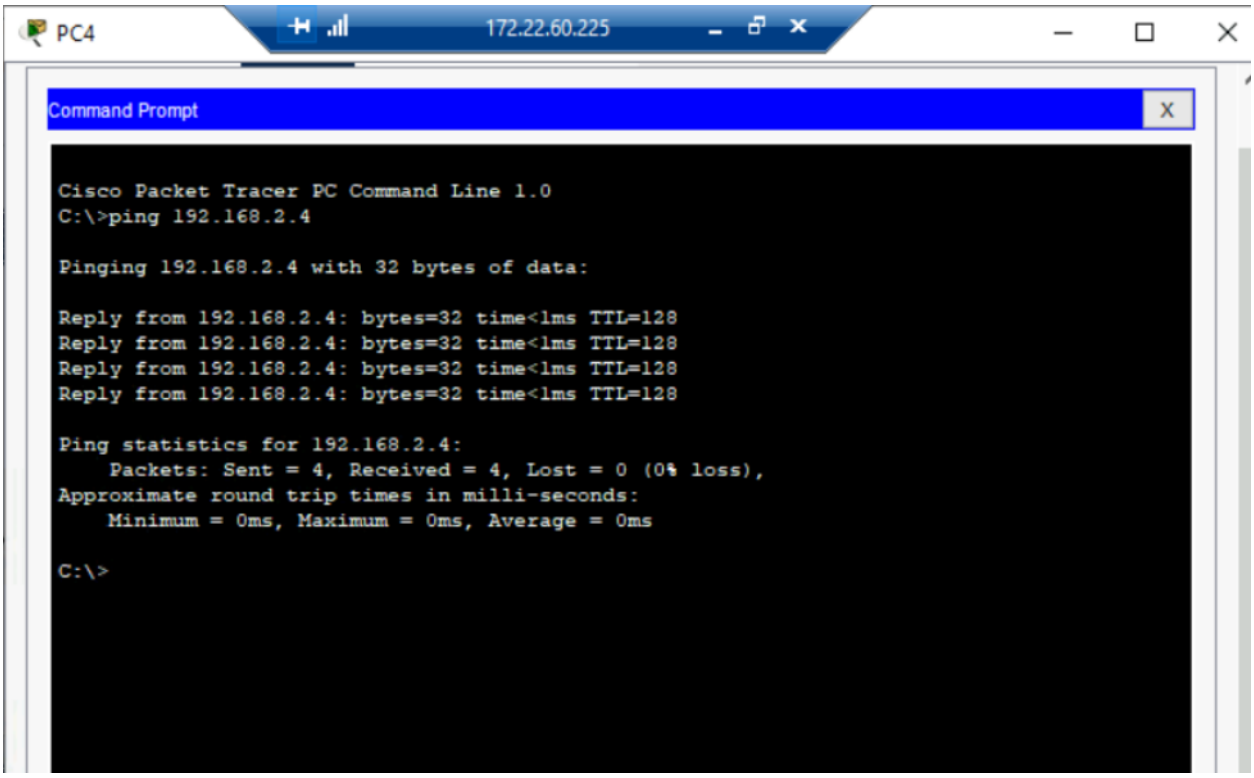
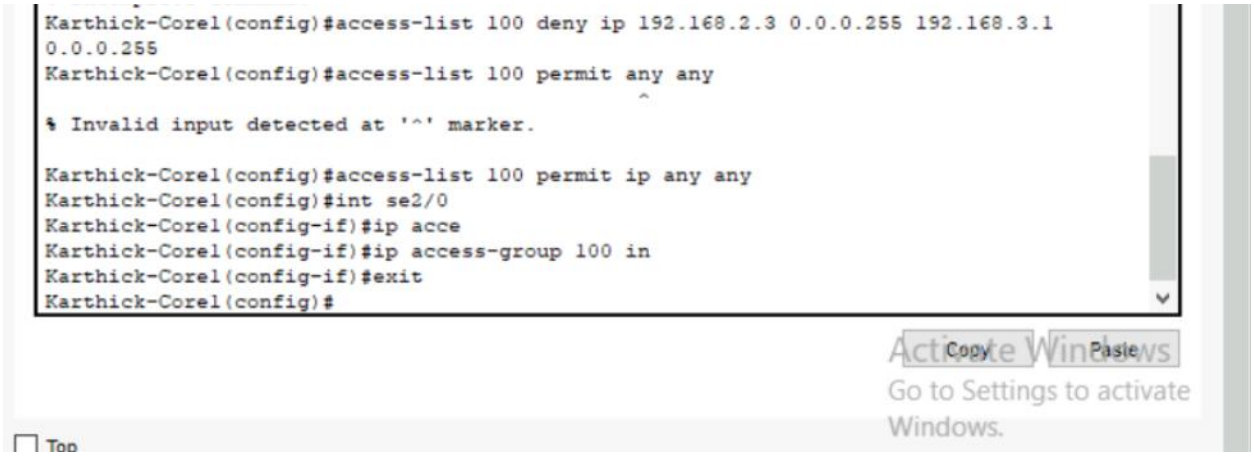
• Ping from PC4 to Server to ensure successful communication.



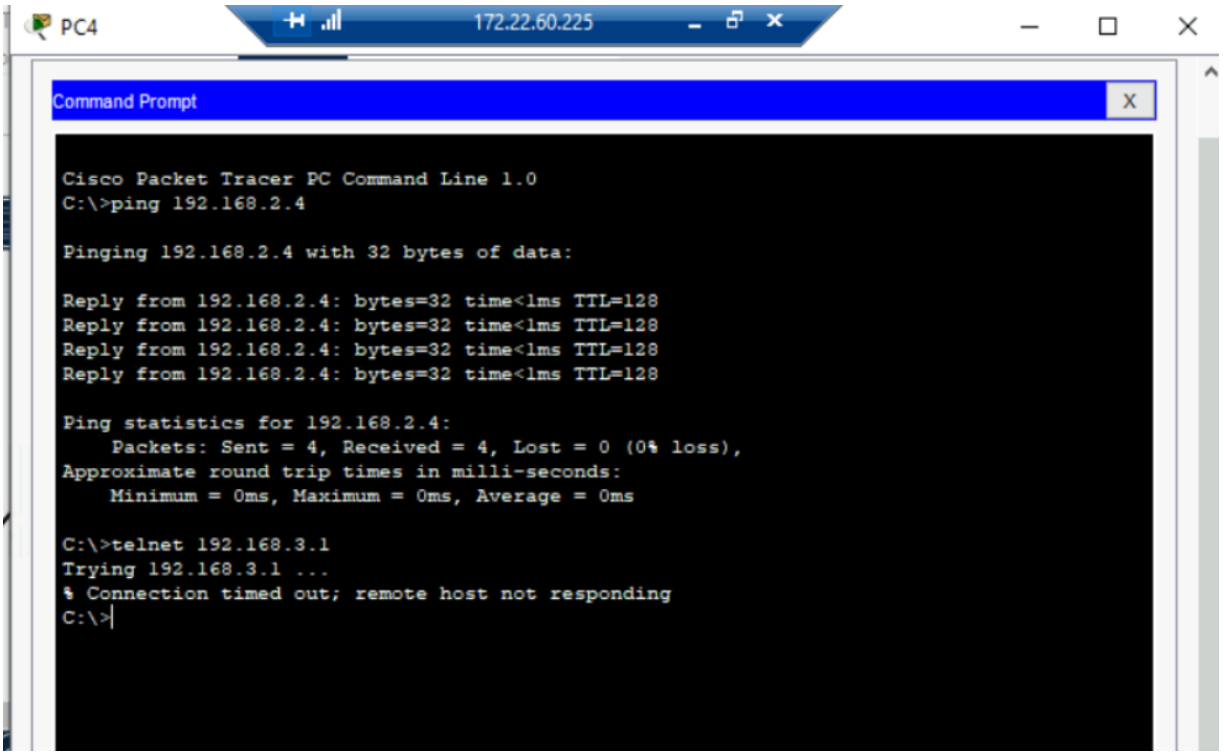
Task 3: Implement ACL for Telnet Restriction

• Create and apply an ACL such that PC4 is denied Telnet access to Core1 Router



• Demonstrate the restriction by: o Showing a failed Telnet attempt from PC4 to Core1.

- After applying acl in router Karthick_Core1,when the PC4 tries to access the Router i.e 192.168.3.1 it shows not responding error. Hence we can say that the implementation of ACL is Successful.



o Showing a successful Telnet attempt from PC2 to Core1.

- When we try the access of router 1 i.e 192.168.3.1 from PC2 , the connection is established Successfully.