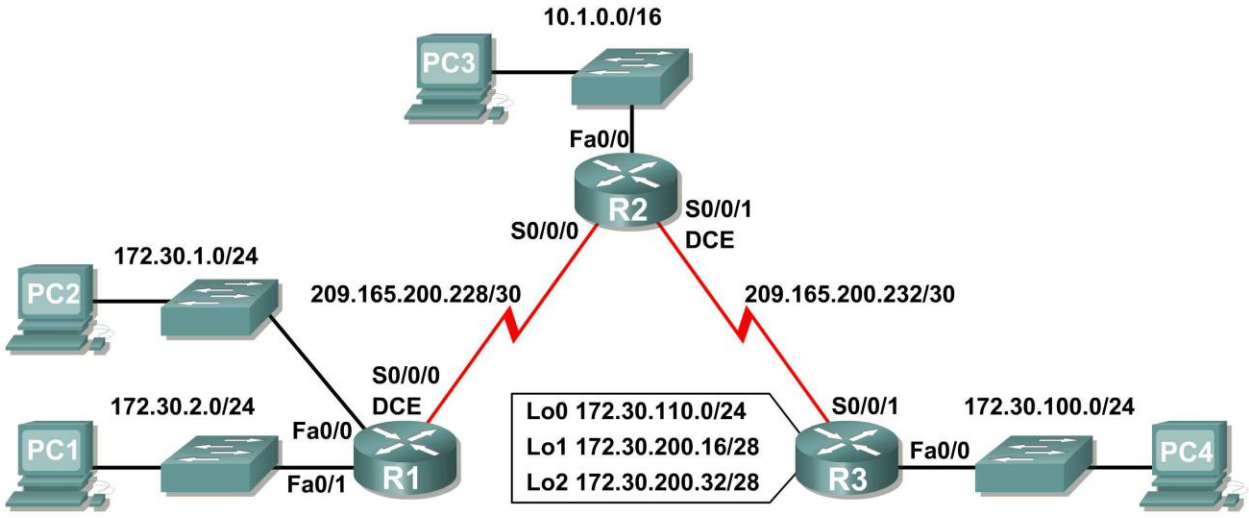
CEL 51, DCCN, Monsoon 2020
Lab 7: RIPv2 Router Configuration

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Fa0/0	172.30.1.1	255.255.255.0	N/A
	Fa0/1	172.30.2.1	255.255.255.0	N/A
	S0/0/0	209.165.200.230	255.255.255.252	N/A
R2	Fa0/0	10.1.0.1	255.255.0.0	N/A
	S0/0/0	209.165.200.229	255.255.255.252	N/A
	S0/0/1	209.165.200.233	255.255.255.252	N/A
R3	Fa0/0	172.30.100.1	255.255.255.0	N/A
	S0/0/1	209.165.200.234	255.255.255.252	N/A
	Lo0	172.30.110.1	255.255.255.0	N/A
	Lo1	172.30.200.17	255.255.255.240	N/A
	Lo2	172.30.200.33	255.255.255.240	N/A
PC1	NIC	172.30.2.10	255.255.255.0	172.30.2.1
PC2	NIC	172.30.1.10	255.255.255.0	172.30.1.1
PC3	NIC	10.1.0.10	255.255.0.0	10.1.0.1
PC4	NIC	172.30.100.10	255.255.255.0	172.30.100.1

Learning Objectives

Upon completion of this lab, you will be able to:

- Cable a network according to the Topology Diagram.
- Load provided scripts onto the routers.
- Examine the current status of the network.
- Configure RIPv2 on all routers.
- Examine the automatic summarization of routes.
- Examine routing updates with **`debug ip rip`**.
- Disable automatic summarization.
- Examine the routing tables.
- Verify network connectivity.
- Document the RIPv2 configuration.

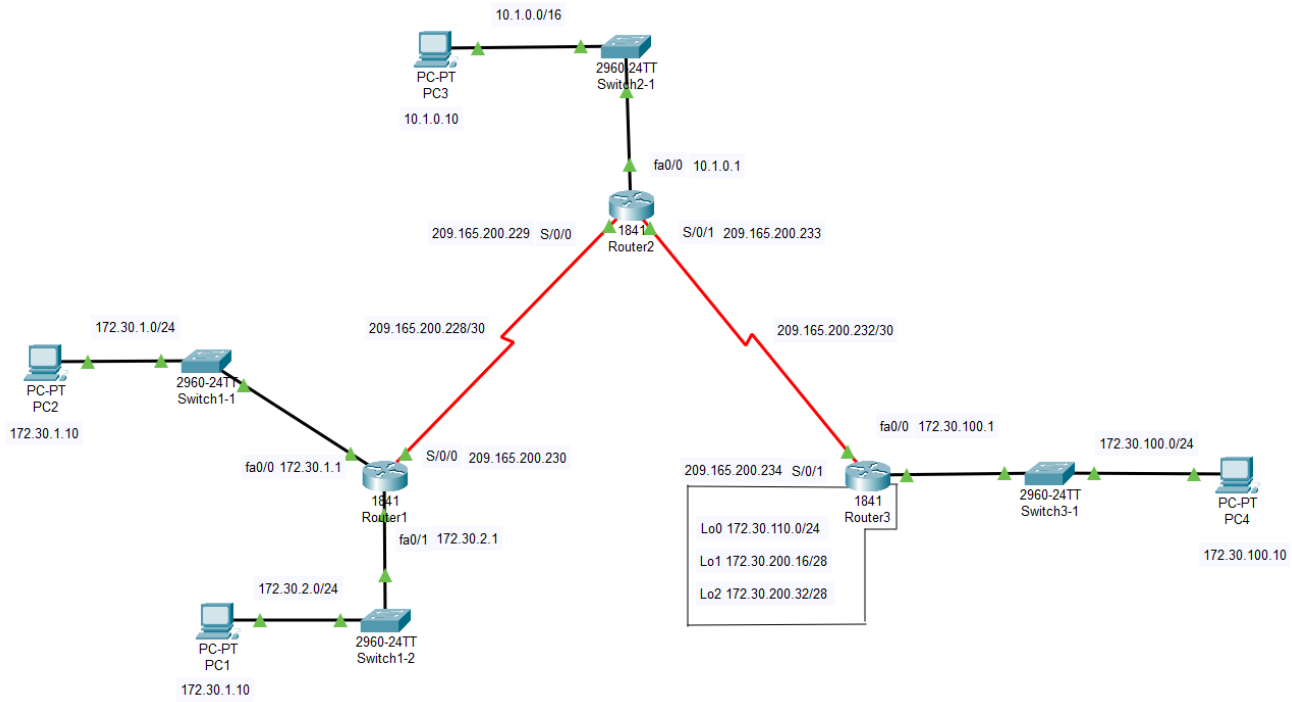
Scenario

The network shown in the Topology Diagram contains a discontiguous network, 172.30.0.0. This network has been subnetted using VLSM. The 172.30.0.0 subnets are physically and logically divided by at least one other classful or major network, in this case the two serial networks 209.165.200.228/30 and 209.165.200.232/30. This can be an issue when the routing protocol used does not include enough information to distinguish the individual subnets. RIPv2 is a classless routing protocol that can be used to provide subnet mask information in the routing updates. This will allow VLSM subnet information to be propagated throughout the network.

Task 1: Cable, Erase, and Reload the Routers.

Step 1: Cable a network.

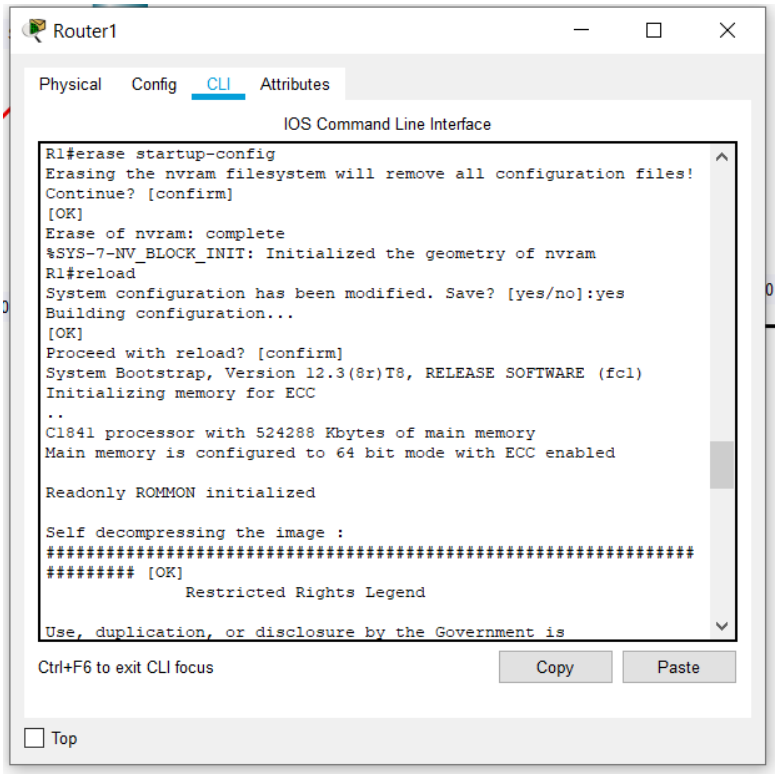
Cable a network that is similar to the one in the Topology Diagram.



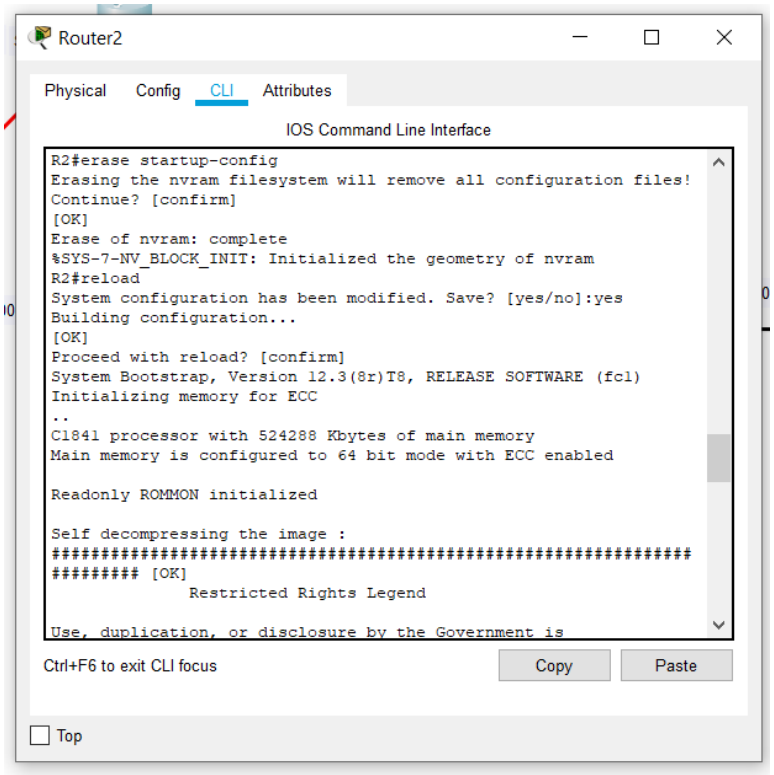
Step 2: Clear the configuration on each router.

Clear the configuration on each of routers using the **`erase startup-config`** command and then **`reload`** the routers. Answer **no** if asked to save changes.

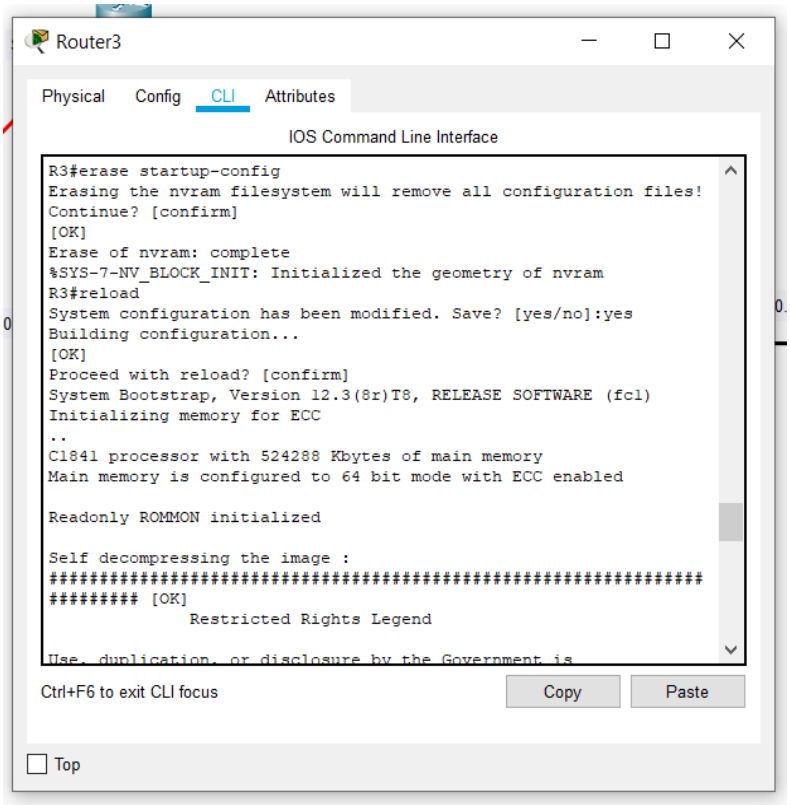
R1 ➔



R2 ➔



R3 ➔



Task 2: Load Routers with the Supplied Scripts.

Step 1: Load the following script onto R1.

```
!
hostname R1
!
!
!
interface FastEthernet0/0
 ip address 172.30.1.1 255.255.255.0
 duplex auto
 speed auto
 no shutdown
!
interface FastEthernet0/1
 ip address 172.30.2.1 255.255.255.0
 duplex auto
 speed auto
 no shutdown
!
interface Serial0/0/0
 ip address 209.165.200.230 255.255.255.252
 clock rate 64000
 no shutdown
!
router rip
 passive-interface FastEthernet0/0
 passive-interface FastEthernet0/1
```

```
 network 172.30.0.0
 network 209.165.200.0
!
line con 0
line vty 0 4
 login
!
End
```

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 172.30.1.1 255.255.0.0
Router(config-if)#ip address 172.30.1.1 255.255.0.0
Router(config-if)#ip address 172.30.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 172.30.2.1 255.255.255.0
Router(config-if)#ip address 172.30.2.1 255.255.255.0
Router(config-if)#ip address 172.30.2.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#ip address 209.165.200.230 255.255.255.0
Router(config-if)#ip address 209.165.200.230 255.255.255.0
Router(config-if)#ip address 209.165.200.230 255.255.255.252
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#erase startup-config
Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm]c
Router#onoreload
System configuration has been modified. Save? [yes/no]:no
Proceed with reload? [confirm]c
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#hostname R1
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#
R1#
R1#
R1#
R1#interface FastEthernet0/0
          ^
% Invalid input detected at '^' marker.

R1#iniconfig tere
R1#config ter
R1#config terminal
Enter configuration commands, one per line.  Endinterface
FastEthernet0/0interface FastEthernet0/0
```

Ctrl+F6 to exit CLI focus

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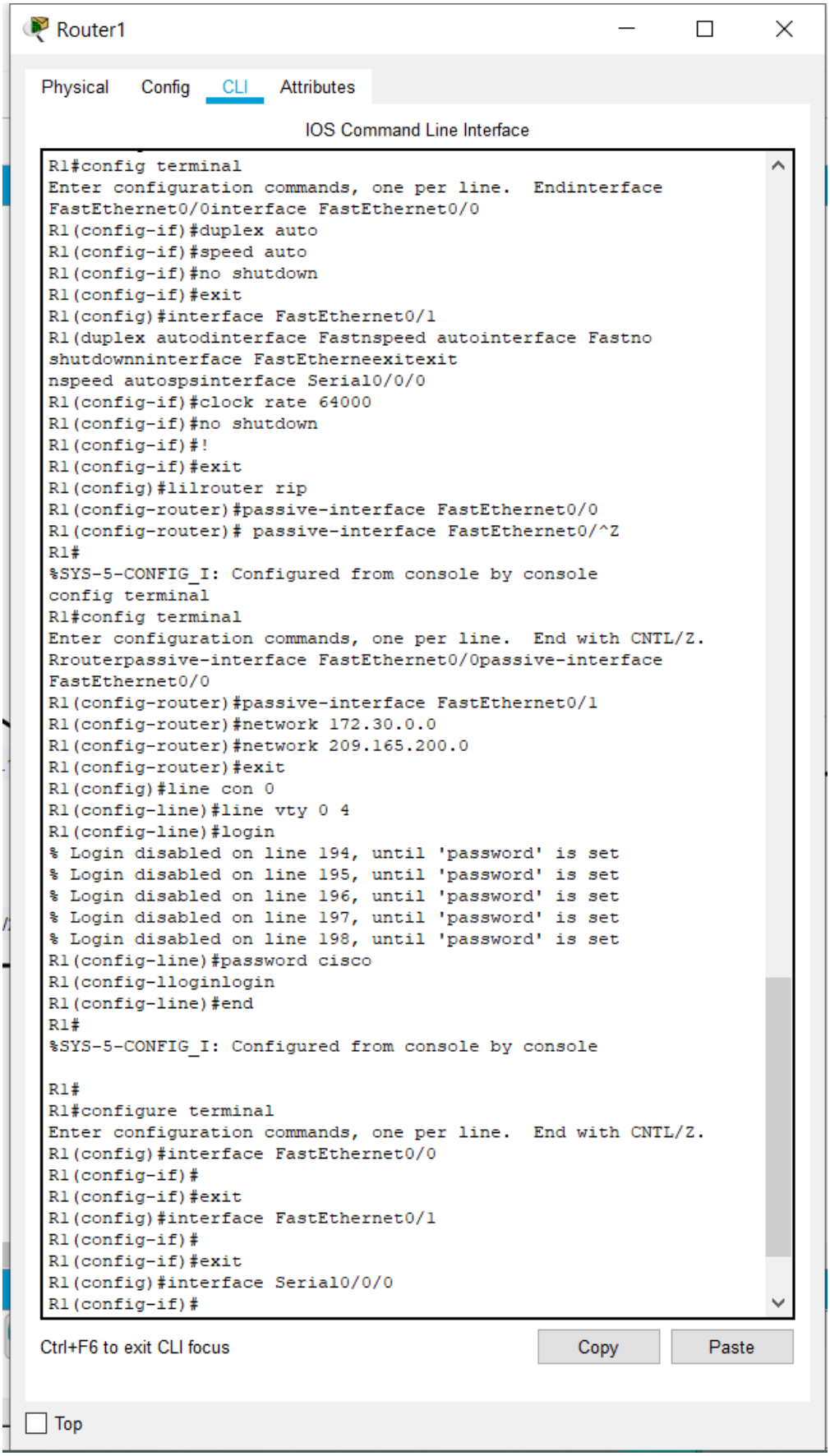
Top


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
R1#config terminal
Enter configuration commands, one per line. Endinterface
FastEthernet0/0interface FastEthernet0/0
R1(config-if)#duplex auto
R1(config-if)#speed auto
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface FastEthernet0/1
R1(duplex autodinterface Fastnspeed autointerface Fastno
shutdownninterface FastEtherneexitexit
nspeed autospsinterface Serial0/0/0
R1(config-if)#clock rate 64000
R1(config-if)#no shutdown
R1(config-if)#!
R1(config-if)#exit
R1(config)#lilrouter rip
R1(config-router)#passive-interface FastEthernet0/0
R1(config-router)# passive-interface FastEthernet0/^Z
R1#
%SYS-5-CONFIG_I: Configured from console by console
config terminal
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Rrouterpassive-interface FastEthernet0/0passive-interface
FastEthernet0/0
R1(config-router)#passive-interface FastEthernet0/1
R1(config-router)#network 172.30.0.0
R1(config-router)#network 209.165.200.0
R1(config-router)#exit
R1(config)#line con 0
R1(config-line)#line vty 0 4
R1(config-line)#login
% Login disabled on line 194, until 'password' is set
% Login disabled on line 195, until 'password' is set
% Login disabled on line 196, until 'password' is set
% Login disabled on line 197, until 'password' is set
% Login disabled on line 198, until 'password' is set
R1(config-line)#password cisco
R1(config-lloginlogin
R1(config-line)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console
R1#
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
R1(config-if)#
R1(config-if)#exit
R1(config)#interface FastEthernet0/1
R1(config-if)#
R1(config-if)#exit
R1(config)#interface Serial0/0/0
R1(config-if)#
Ctrl+F6 to exit CLI focus
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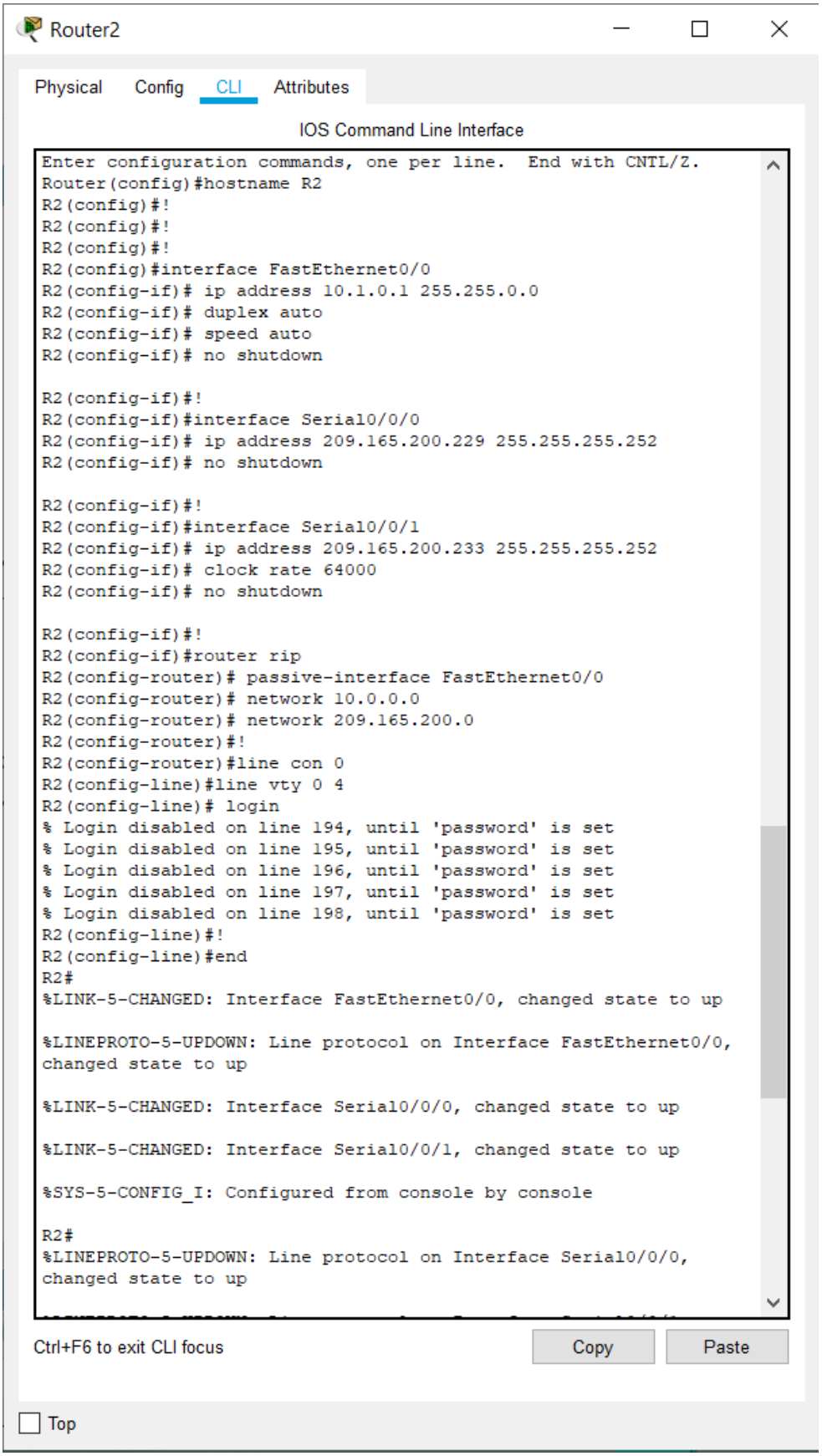
Step 2: Load the following script onto R2.

```
hostname R2
!
!
!
interface FastEthernet0/0
 ip address 10.1.0.1 255.255.0.0
 duplex auto
 speed auto
 no shutdown
!
interface Serial0/0/0
 ip address 209.165.200.229 255.255.255.252
 no shutdown
!
interface Serial0/0/1
 ip address 209.165.200.233 255.255.255.252
 clock rate 64000
 no shutdown
!
router rip
 passive-interface FastEthernet0/0
 network 10.0.0.0
 network 209.165.200.0
!
line con 0
line vty 0 4
 login
!
end
```


Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#!
R2(config)#!
R2(config)#!
R2(config)#interface FastEthernet0/0
R2(config-if)# ip address 10.1.0.1 255.255.0.0
R2(config-if)# duplex auto
R2(config-if)# speed auto
R2(config-if)# no shutdown
R2(config-if)#!
R2(config-if)#interface Serial0/0/0
R2(config-if)# ip address 209.165.200.229 255.255.255.252
R2(config-if)# no shutdown
R2(config-if)#!
R2(config-if)#interface Serial0/0/1
R2(config-if)# ip address 209.165.200.233 255.255.255.252
R2(config-if)# clock rate 64000
R2(config-if)# no shutdown
R2(config-if)#!
R2(config-if)#router rip
R2(config-router)# passive-interface FastEthernet0/0
R2(config-router)# network 10.0.0.0
R2(config-router)# network 209.165.200.0
R2(config-router)#!
R2(config-router)#line con 0
R2(config-line)#line vty 0 4
R2(config-line)# login
% Login disabled on line 194, until 'password' is set
% Login disabled on line 195, until 'password' is set
% Login disabled on line 196, until 'password' is set
% Login disabled on line 197, until 'password' is set
% Login disabled on line 198, until 'password' is set
R2(config-line)#!
R2(config-line)#end
R2#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
%SYS-5-CONFIG_I: Configured from console by console
R2#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0,
changed state to up
Ctrl+F6 to exit CLI focus
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Paste
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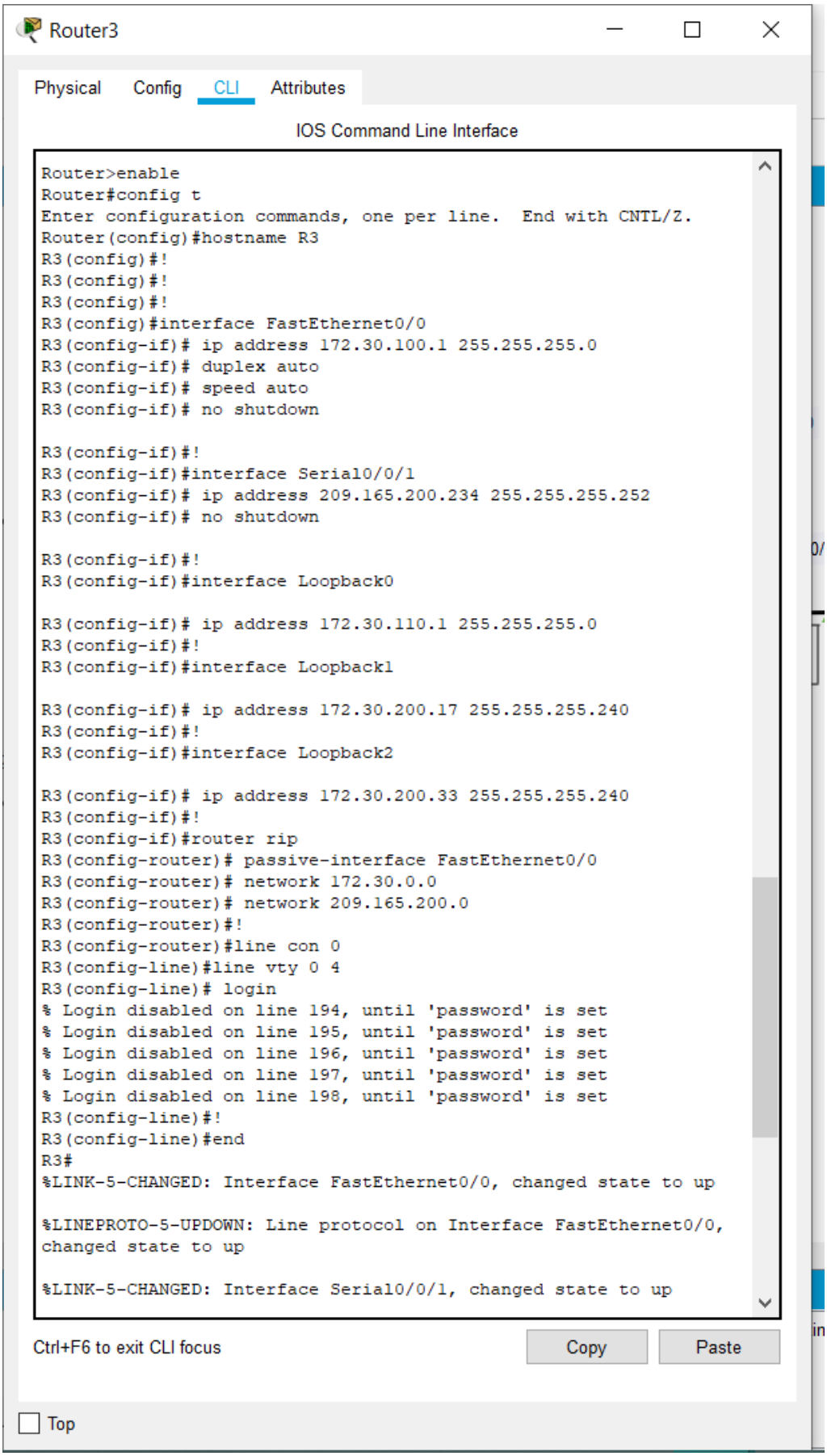
Step 3: Load the following script onto R3.

```
hostname R3
!
!
!
interface FastEthernet0/0
 ip address 172.30.100.1 255.255.255.0
 duplex auto
 speed auto
 no shutdown
!
interface Serial0/0/1
 ip address 209.165.200.234 255.255.255.252
 no shutdown
!
interface Loopback0
 ip address 172.30.110.1 255.255.255.0
!
interface Loopback1
 ip address 172.30.200.17 255.255.255.240
!
interface Loopback2
 ip address 172.30.200.33 255.255.255.240
!
router rip
 passive-interface FastEthernet0/0
 network 172.30.0.0
 network 209.165.200.0
!
line con 0
line vty 0 4
 login
!
end
```


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R3
R3(config)#!
R3(config)#!
R3(config)#!
R3(config)#interface FastEthernet0/0
R3(config-if)# ip address 172.30.100.1 255.255.255.0
R3(config-if)# duplex auto
R3(config-if)# speed auto
R3(config-if)# no shutdown
R3(config-if)#!
R3(config-if)#interface Serial0/0/1
R3(config-if)# ip address 209.165.200.234 255.255.255.252
R3(config-if)# no shutdown
R3(config-if)#!
R3(config-if)#interface Loopback0
R3(config-if)# ip address 172.30.110.1 255.255.255.0
R3(config-if)#!
R3(config-if)#interface Loopback1
R3(config-if)# ip address 172.30.200.17 255.255.255.240
R3(config-if)#!
R3(config-if)#interface Loopback2
R3(config-if)# ip address 172.30.200.33 255.255.255.240
R3(config-if)#!
R3(config-if)#router rip
R3(config-router)# passive-interface FastEthernet0/0
R3(config-router)# network 172.30.0.0
R3(config-router)# network 209.165.200.0
R3(config-router)#!
R3(config-router)#line con 0
R3(config-line)#line vty 0 4
R3(config-line)# login
% Login disabled on line 194, until 'password' is set
% Login disabled on line 195, until 'password' is set
% Login disabled on line 196, until 'password' is set
% Login disabled on line 197, until 'password' is set
% Login disabled on line 198, until 'password' is set
R3(config-line)#!
R3(config-line)#end
R3#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
Ctrl+F6 to exit CLI focus
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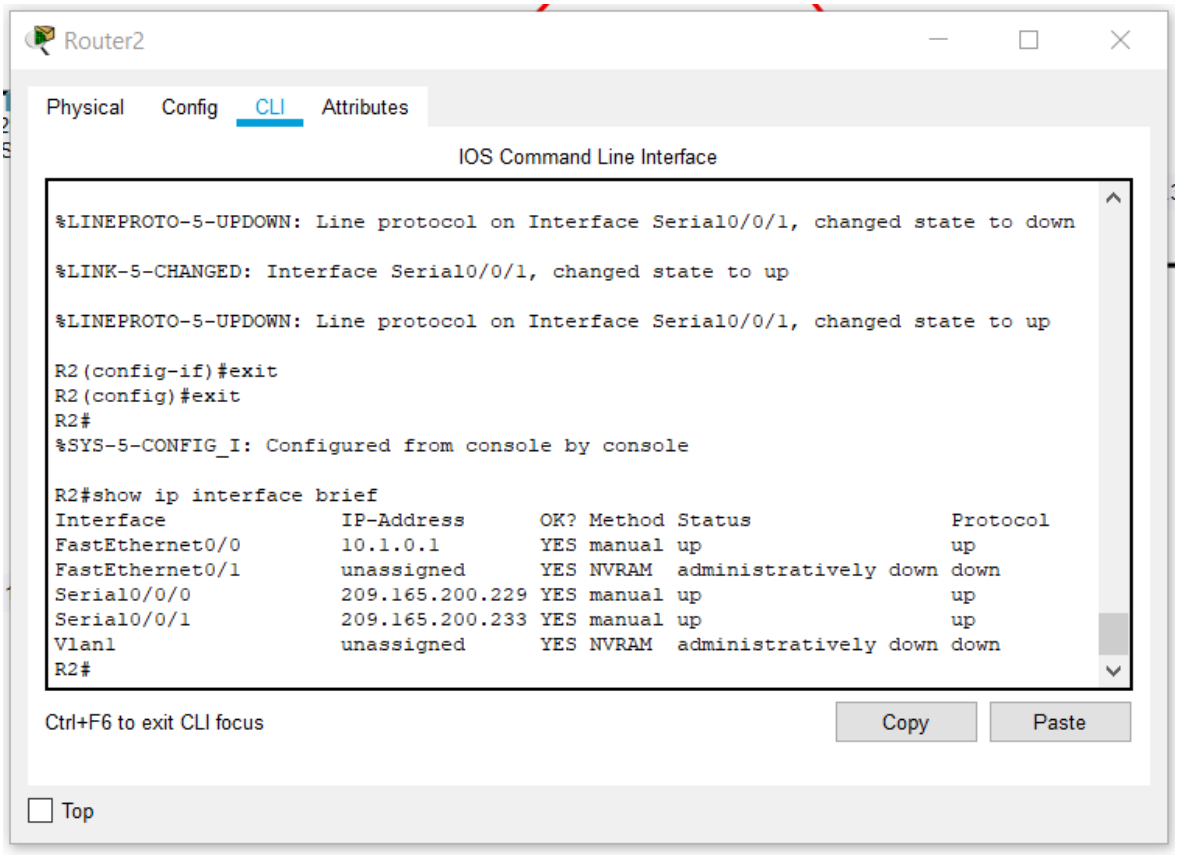
Top

Task 3: Examine the Current Status of the Network.

Step 1: Verify that both serial links are up.

The two serial links can quickly be verified using the **`show ip interface brief`** command on R2.

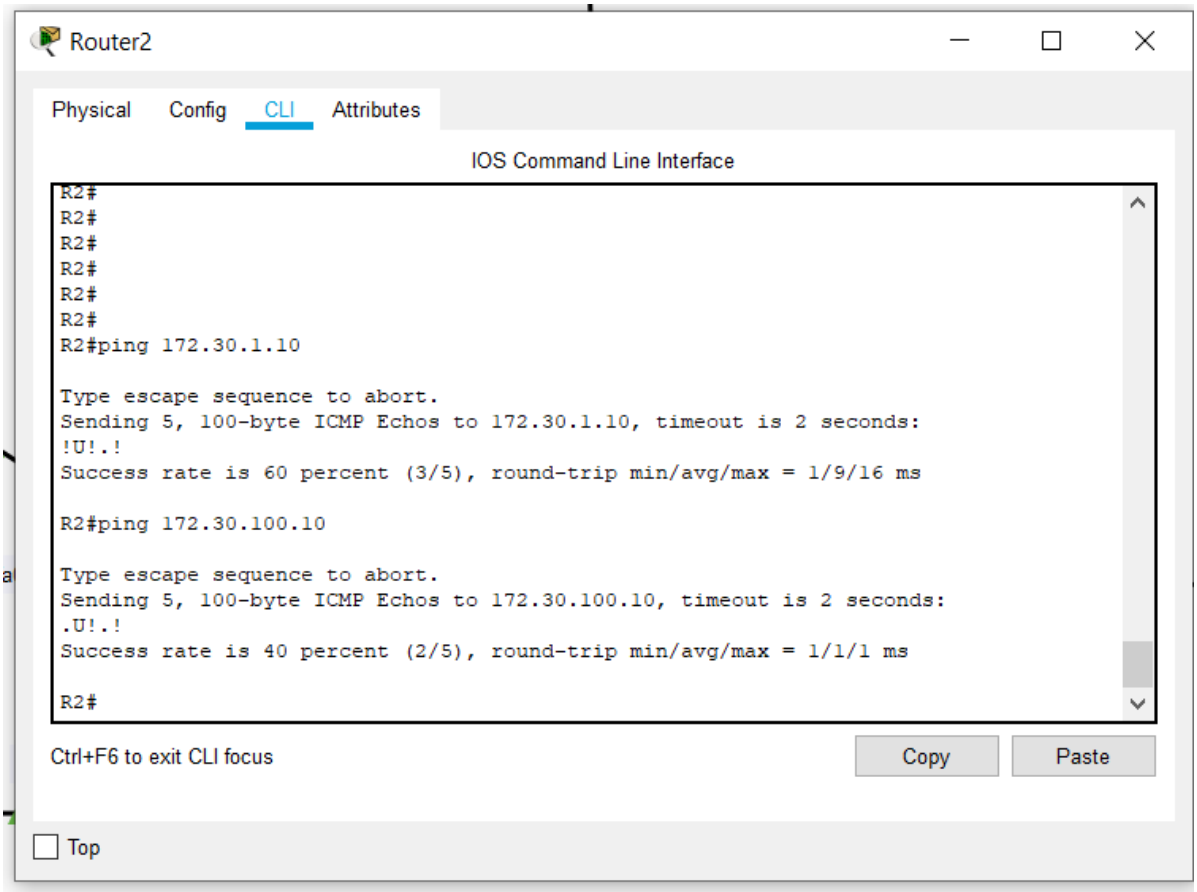
```
R2#show ip interface brief
```



Step 2: Check the connectivity from R2 to the hosts on the R1 and R3 LANs.

Note: For the 1841 router, you will need to disable IP CEF to obtain the correct output from the **`ping`** command. Although a discussion of IP CEF is beyond the scope of this course, you may disable IP CEF by using the following command in global configuration mode:

```
R2(config)#no ip cef
```



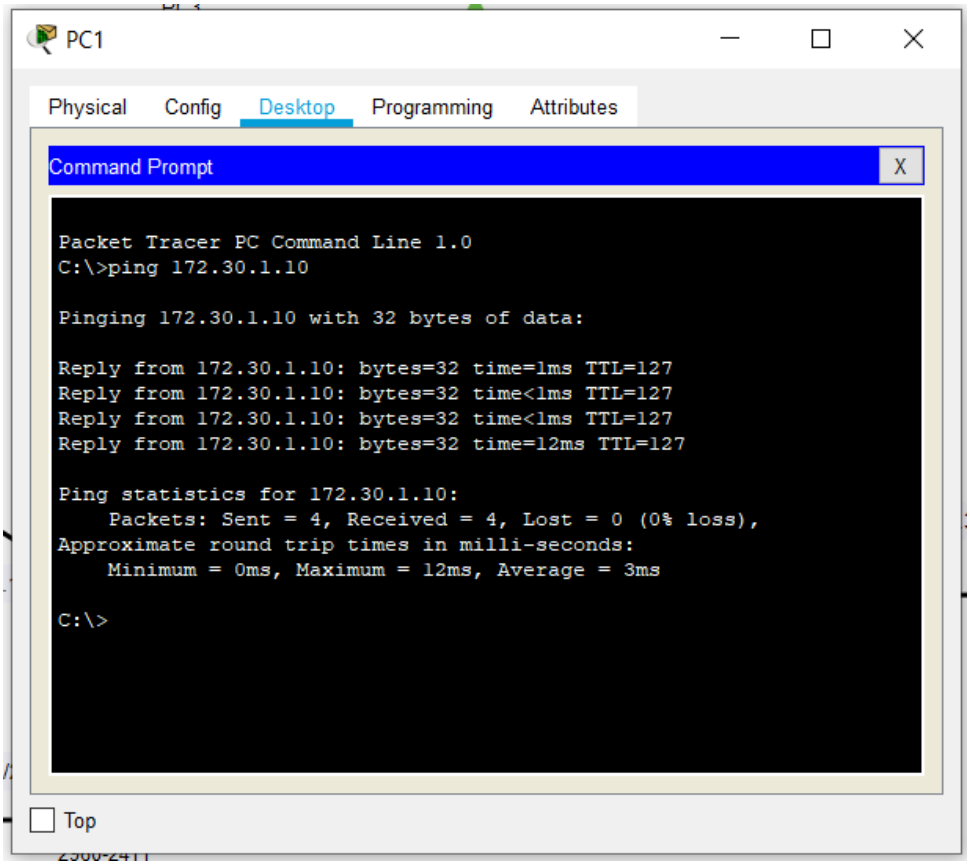
From the R2 router, how many ICMP messages are successful when pinging PC1?

_____**3 out of 5**_____

From the R2 router, how many ICMP messages are successful when pinging PC4?

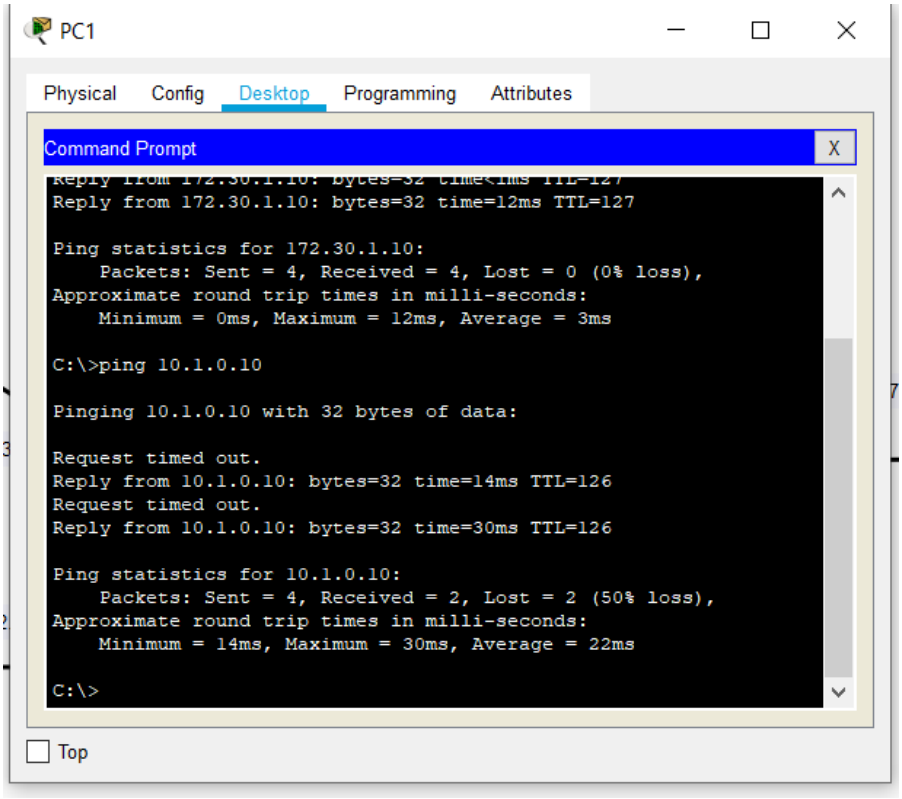
_____**2 out of 5**_____

Step 3: Check the connectivity between the PCs.



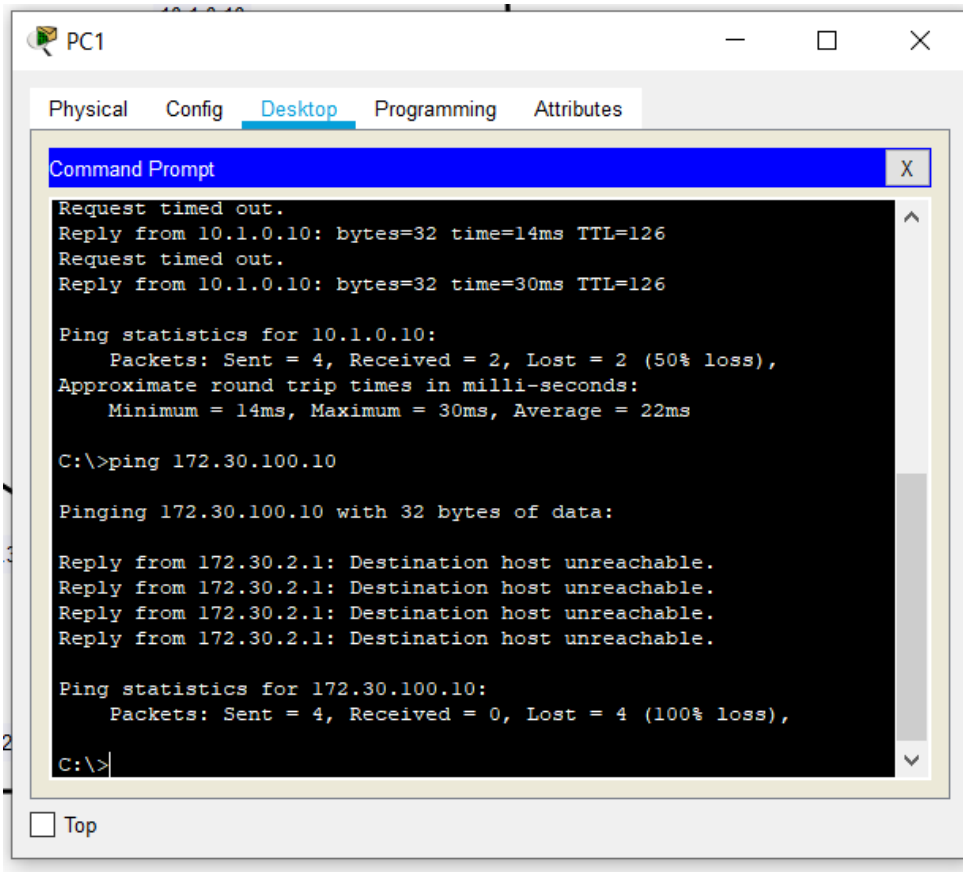
From the PC1, is it possible to ping PC2? ____**YES**_____

What is the success rate? ____**100%**_____



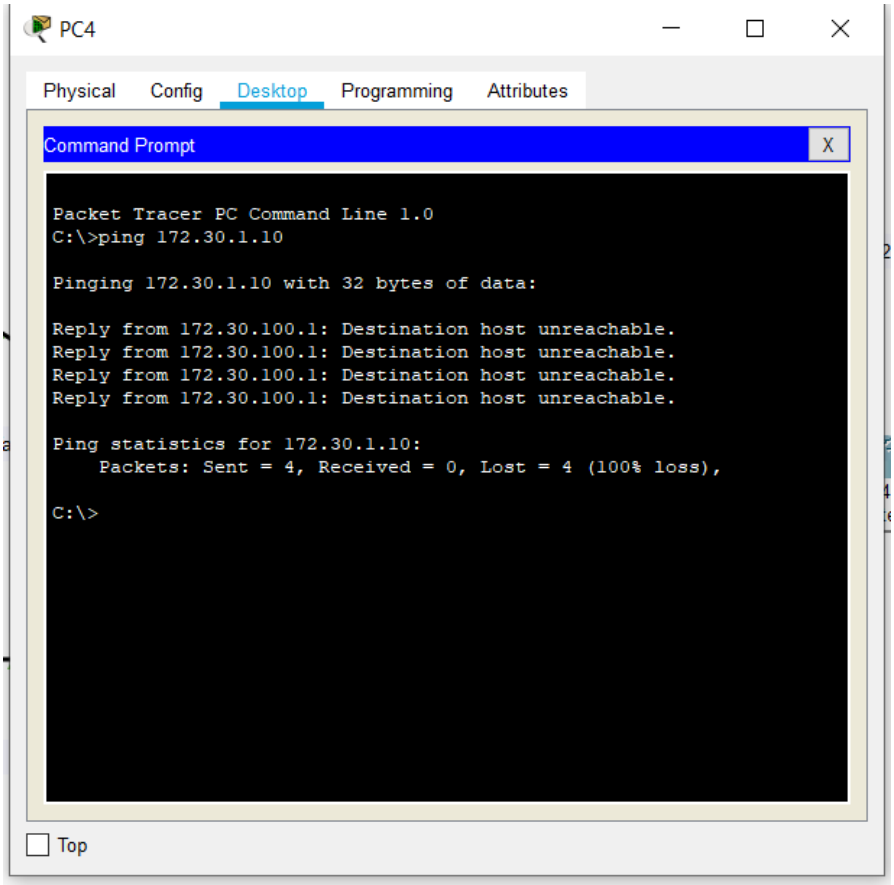
From the PC1, is it possible to ping PC3? ___**YES**_____

What is the success rate? ___**50%**_____



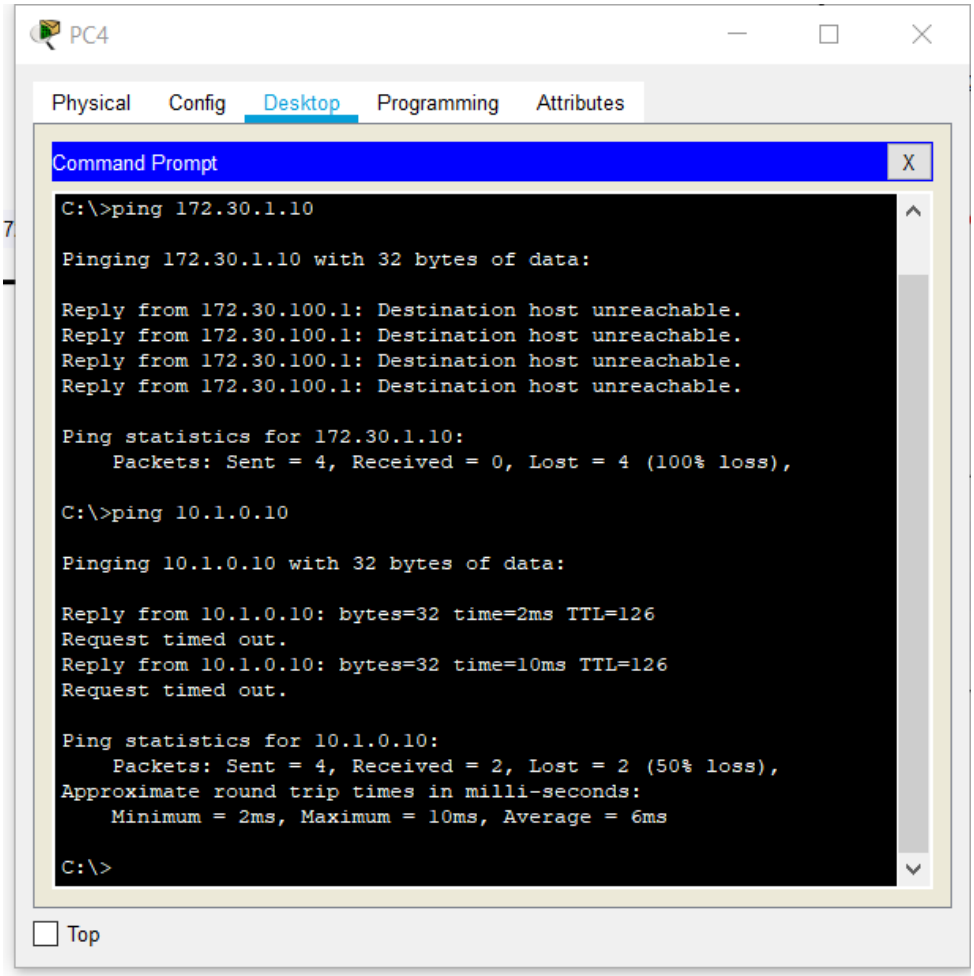
From the PC1, is it possible to ping PC4? __**NO**_____

What is the success rate? ___**0%**_____



From the PC4, is it possible to ping PC2? ____**NO**_____

What is the success rate? ___**0%**____



From the PC4, is it possible to ping PC3? ___**YES**_____

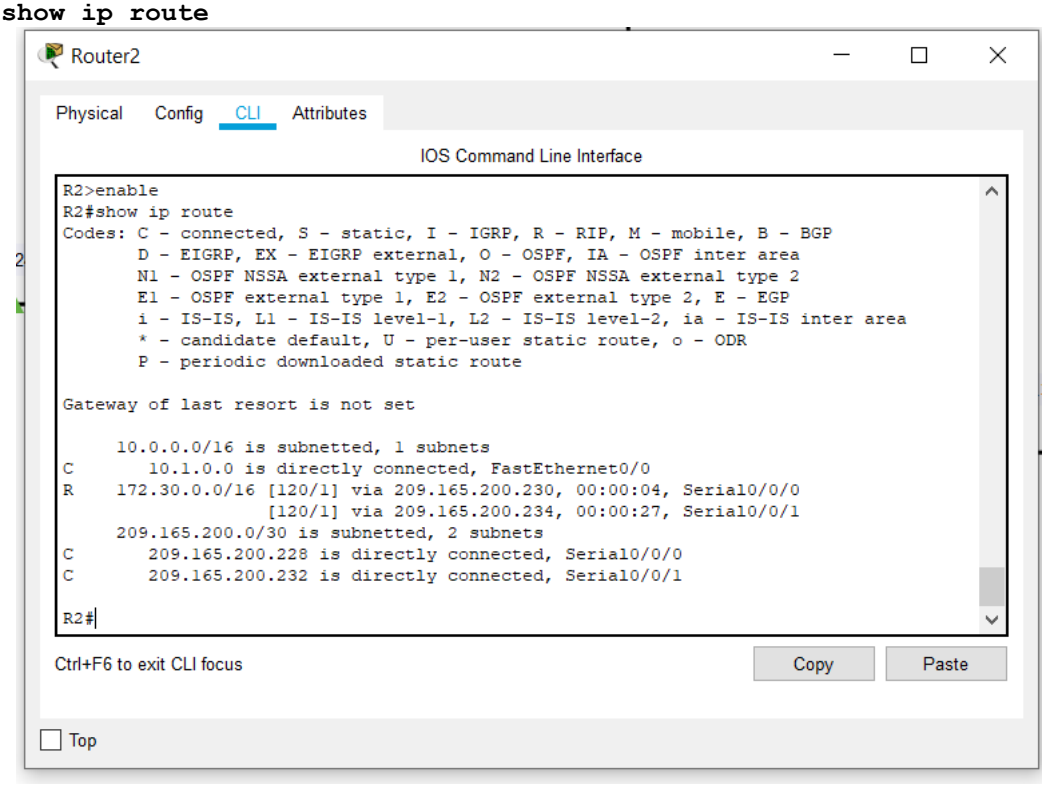
What is the success rate? ____**50%**_____

Step 4: View the routing table on R2.

Both the R1 and R3 are advertising routes to the 172.30.0.0/16 network; therefore, there are two entries for this network in the R2 routing table. The R2 routing table only shows the major classful network address of 172.30.0.0—it does not show any of the subnets for this network that are used on the LANs

attached to R1 and R3. Because the routing metric is the same for both entries, the router alternates the routes that are used when forwarding packets that are destined for the 172.30.0.0/16 network.

```
R2#show ip route
```

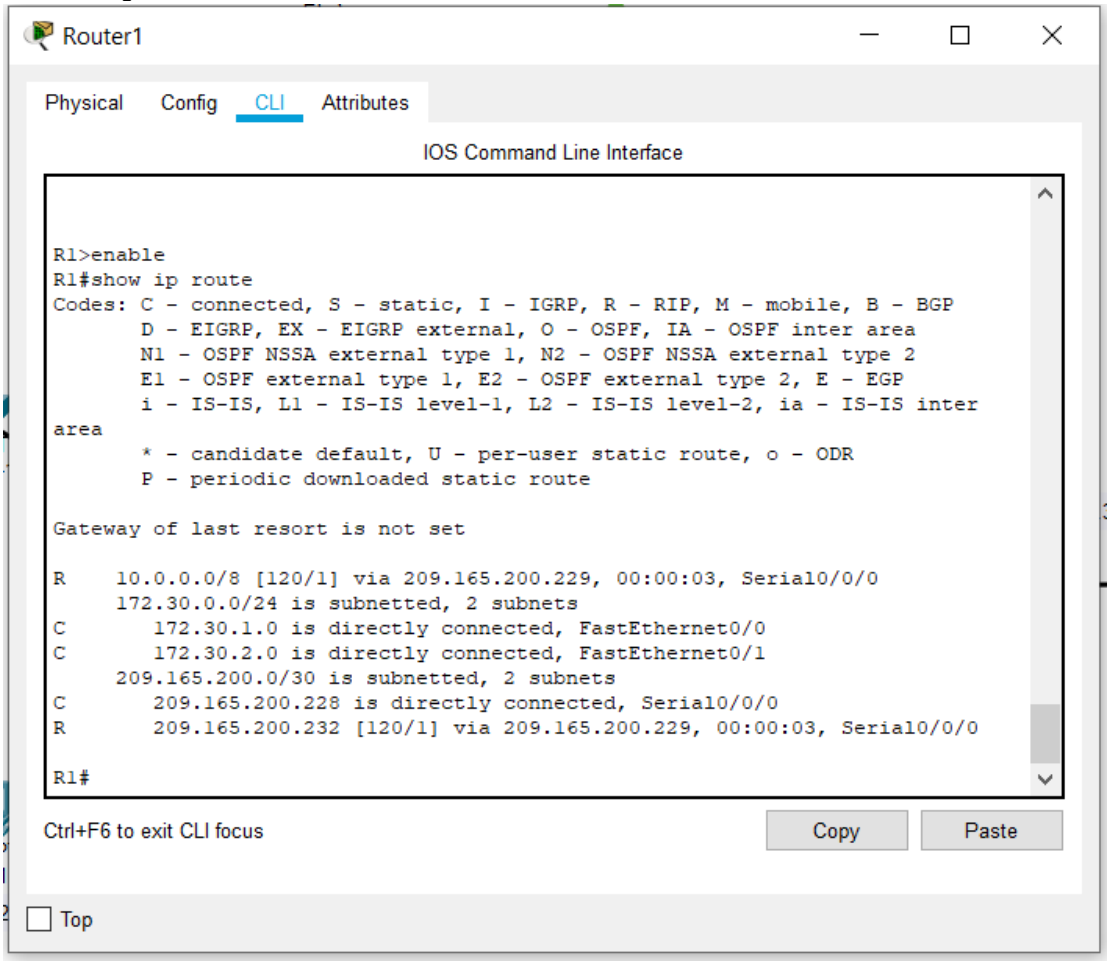


Step 5: Examine the routing table on the R1 router.

Both R1 and R3 are configured with interfaces on a discontiguous network, 172.30.0.0. The 172.30.0.0 subnets are physically and logically divided by at least one other classful or major network—in this case, the two serial networks 209.165.200.228/30 and 209.165.200.232/30. Classful routing protocols like

RIPv1 summarize networks at major network boundaries. Both R1 and R3 will be summarizing 172.30.0.0/24 subnets to 172.30.0.0/16. Because the route to 172.30.0.0/16 is directly connected, and because R1 does not have any specific routes for the 172.30.0.0 subnets on R3, packets destined for the R3 LANs will not be forwarded properly.

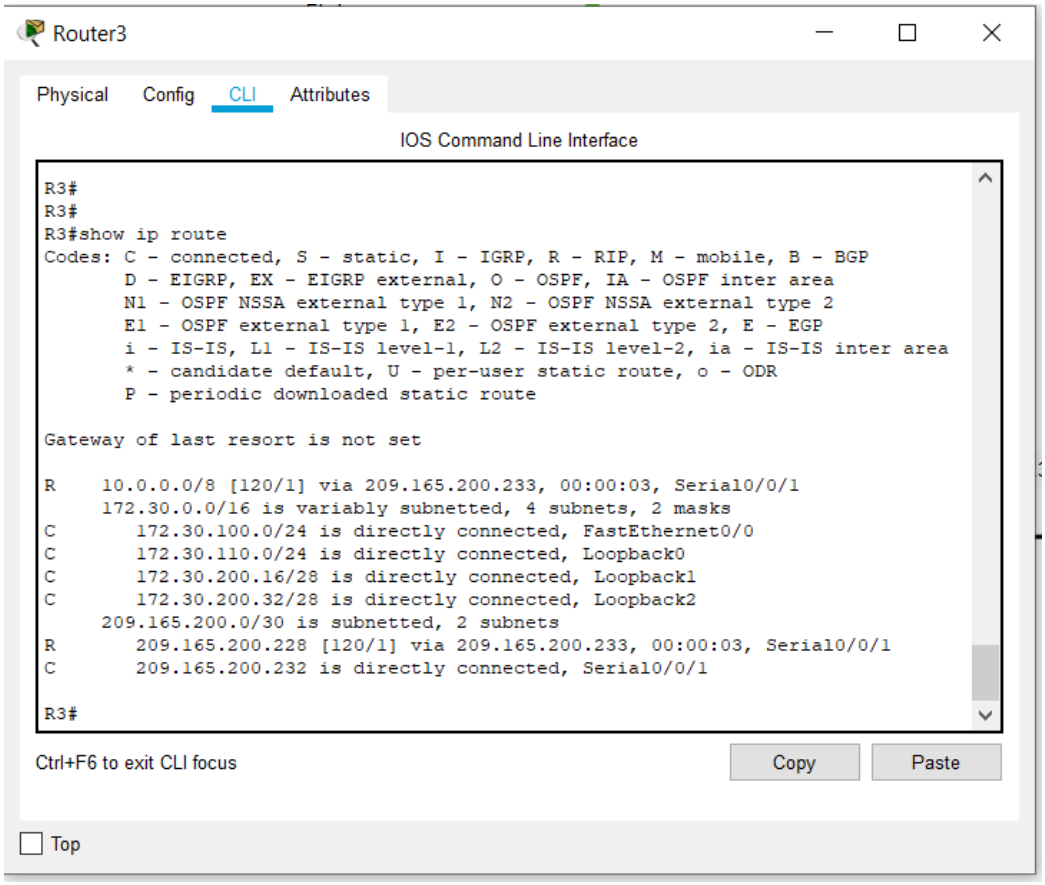
```
R1#show ip route
```



Step 6: Examine the routing table on the R3 router.

R3 only shows its own subnets for 172.30.0.0 network: 172.30.100/24, 172.30.110/24, 172.30.200.16/28, and 172.30.200.32/28. R3 does not have any routes for the 172.30.0.0 subnets on R1.

```
R3#show ip route
```



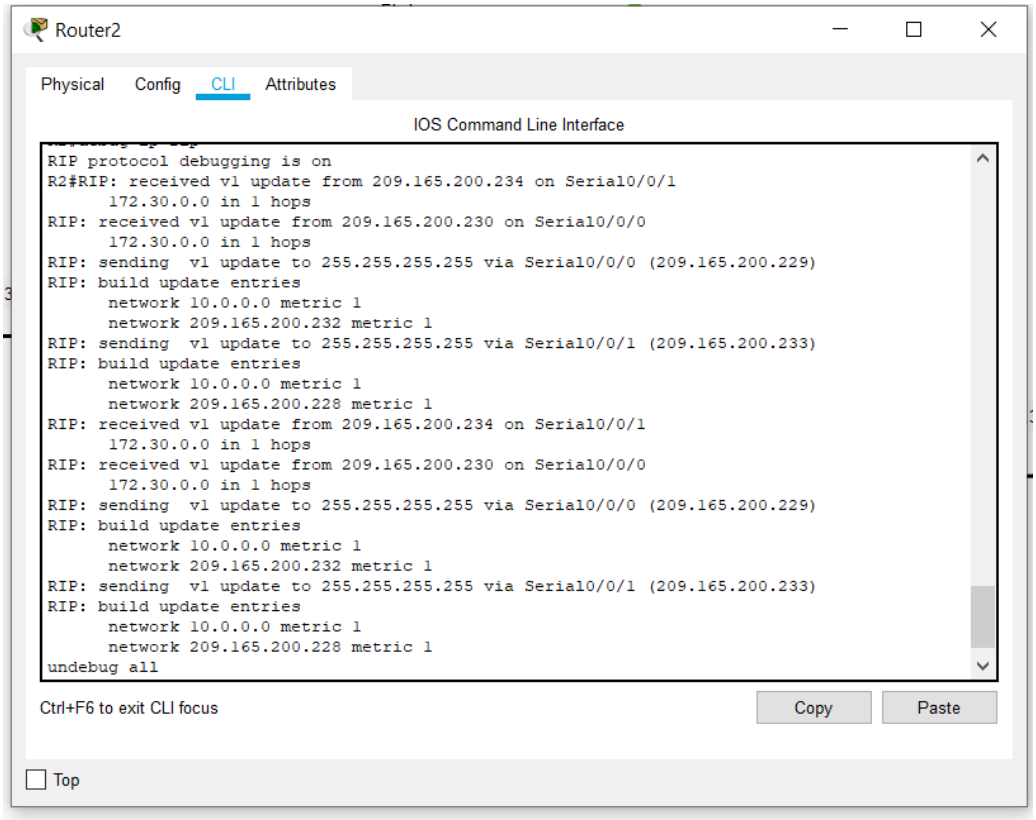
Step 7: Examine the RIPv1 packets that are being received by R2.

Use the **debug ip rip** command to display RIP routing updates.

R2 is receiving the route 172.30.0.0, with 1 hop, from both R1 and R3. Because these are equal cost metrics, both routes are added to the R2 routing table. Because RIPv1 is a classful routing protocol, no subnet mask information is sent in the update.

```
R2#debug ip rip
```

R2 is sending only the routes for the 10.0.0.0 LAN and the two serial connections to R1 and R3. R1 and R3 are not receiving any information about the 172.30.0.0 subnet routes.



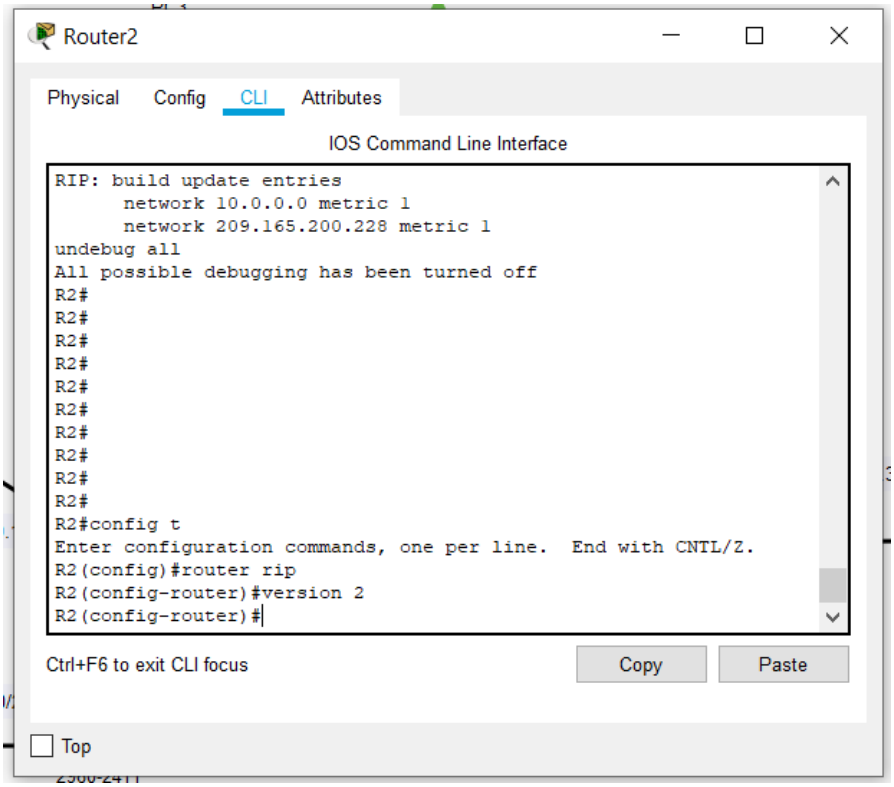
When you are finished, turn off the debugging.

```
R2#undebug all
```

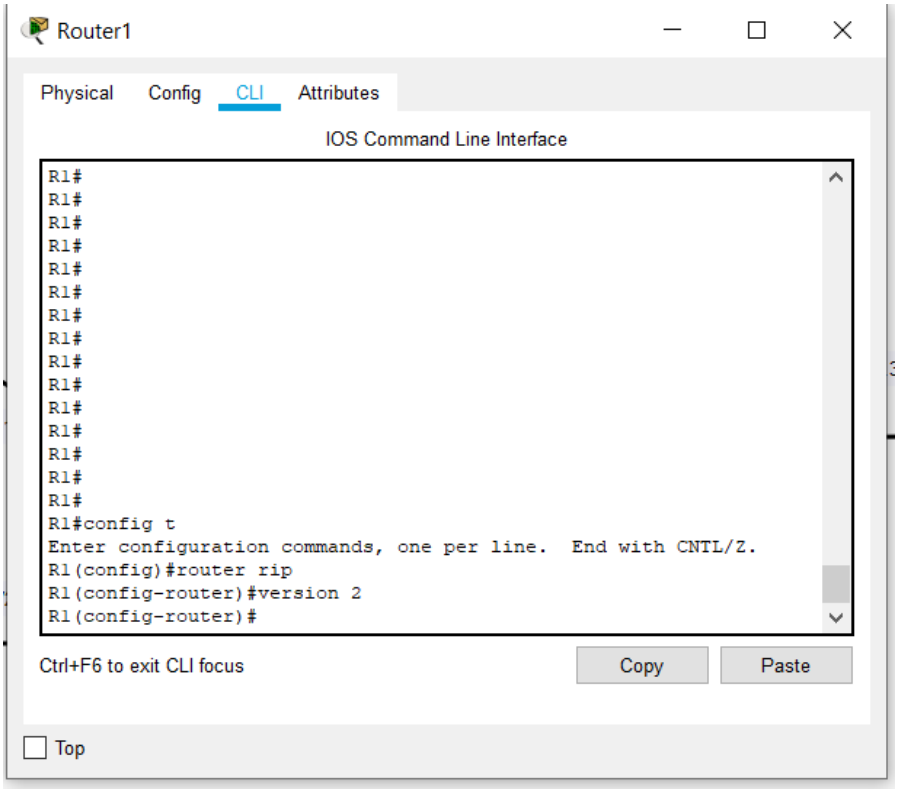
Task 4: Configure RIP Version 2.

Step 1: Use the `version 2` command to enable RIP version 2 on each of the routers.

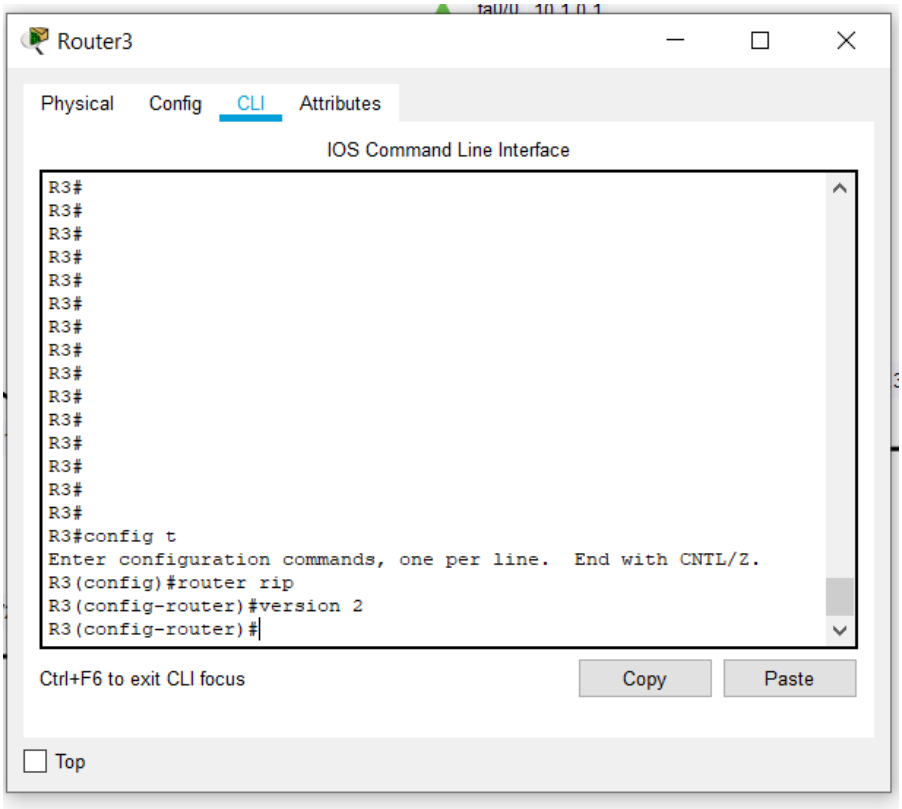
```
R2(config)#router rip
R2(config-router)#version 2
```




```
R1(config)#router rip
R1(config-router)#version 2
```




```
R3(config)#router rip
R3(config-router)#version 2
```

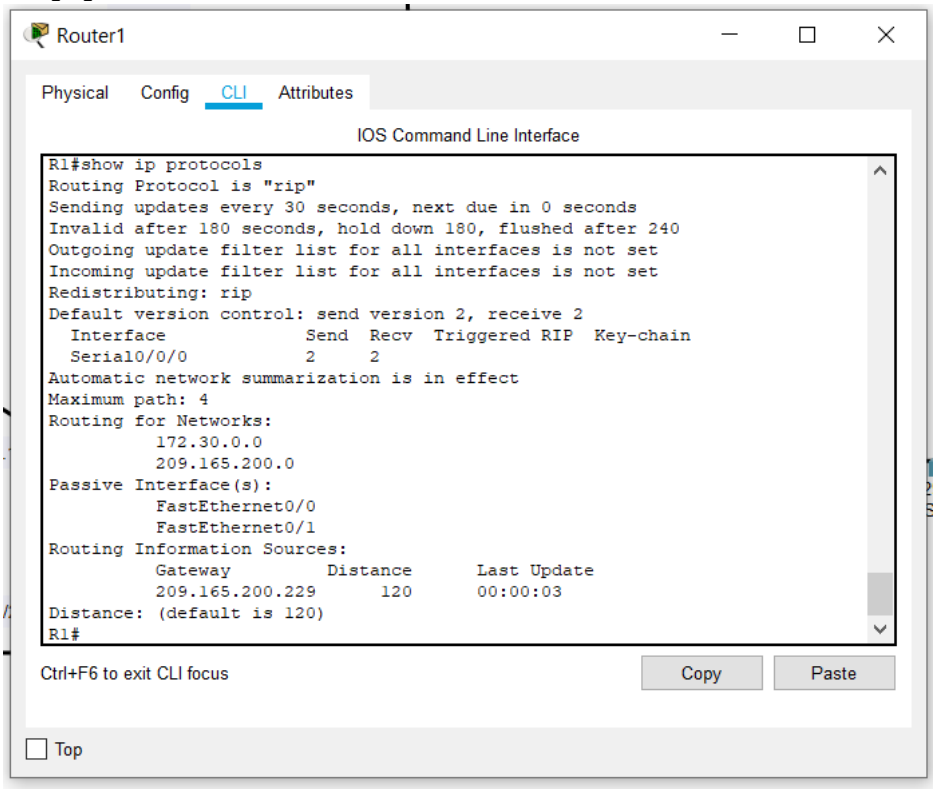


RIPv2 messages include the subnet mask in a field in the routing updates. This allows subnets and their masks to be included in the routing updates. However, by default RIPv2 summarizes networks at major network boundaries, just like RIPv1, except that the subnet mask is included in the update.

Step 2: Verify that RIPv2 is running on the routers.

The **`debug ip rip`**, **`show ip protocols`**, and **`show run`** commands can all be used to confirm that RIPv2 is running. The output of the **`show ip protocols`** command for R1 is shown below.

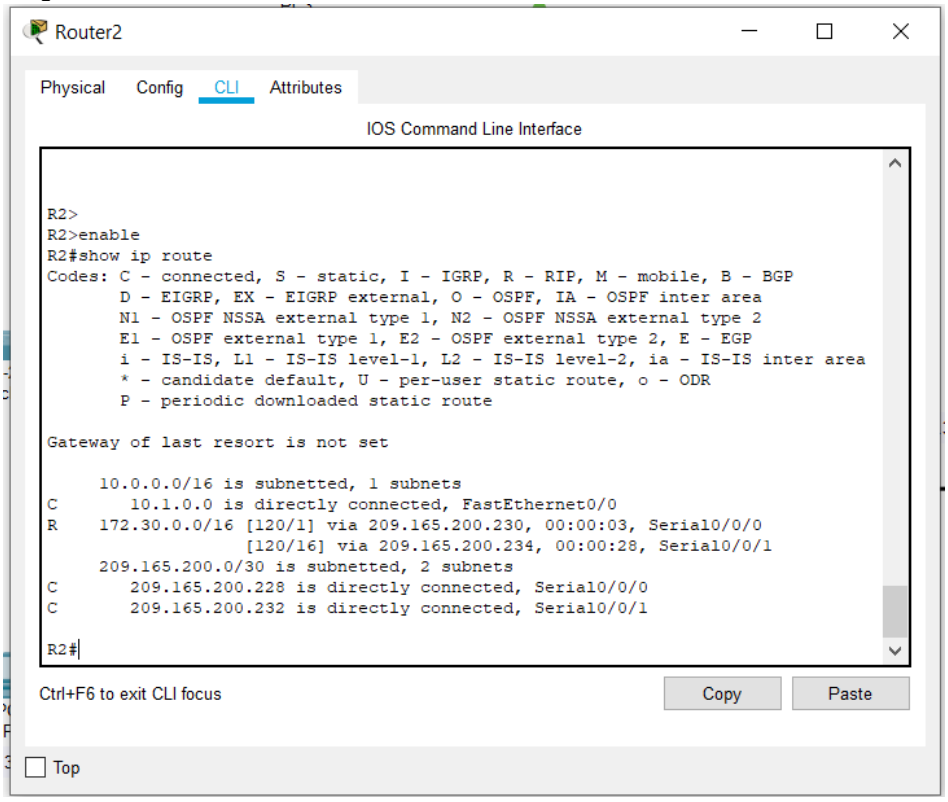
```
R1# show ip protocols
```



Task 5: Examine the Automatic Summarization of Routes.

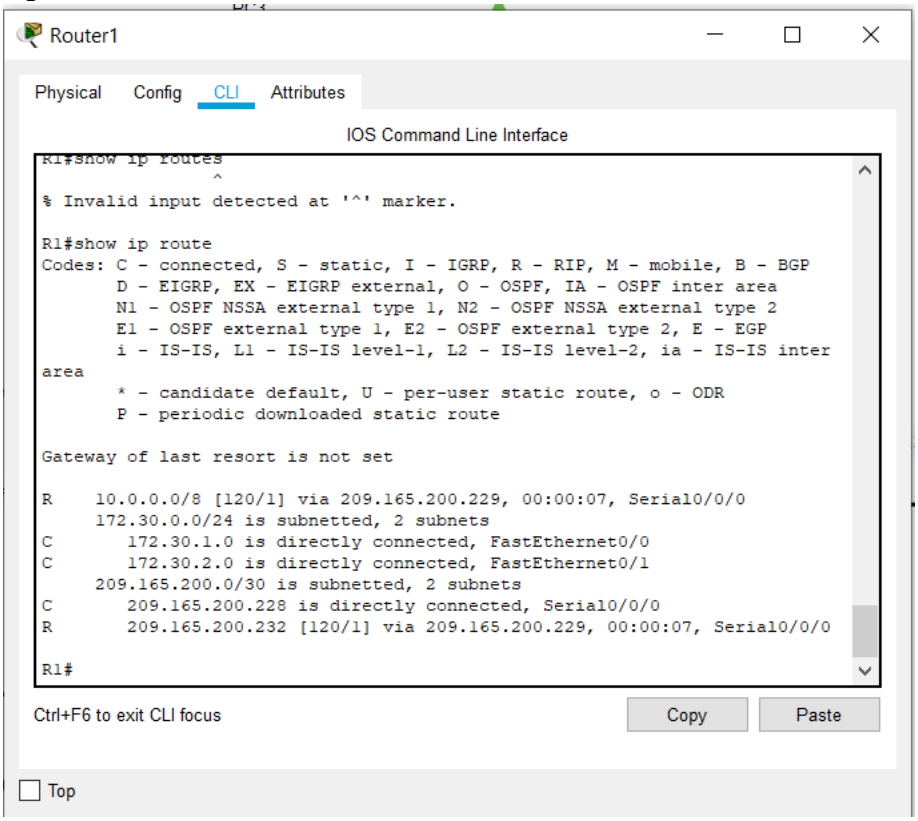
The LANs connected to R1 and R3 are still composed of discontiguous networks. R2 still shows two equal cost paths to the 172.30.0.0/16 network in the routing table. R2 still shows only the major classful network address of 172.30.0.0 and does not show any of the subnets for this network.

R2#**show ip route**



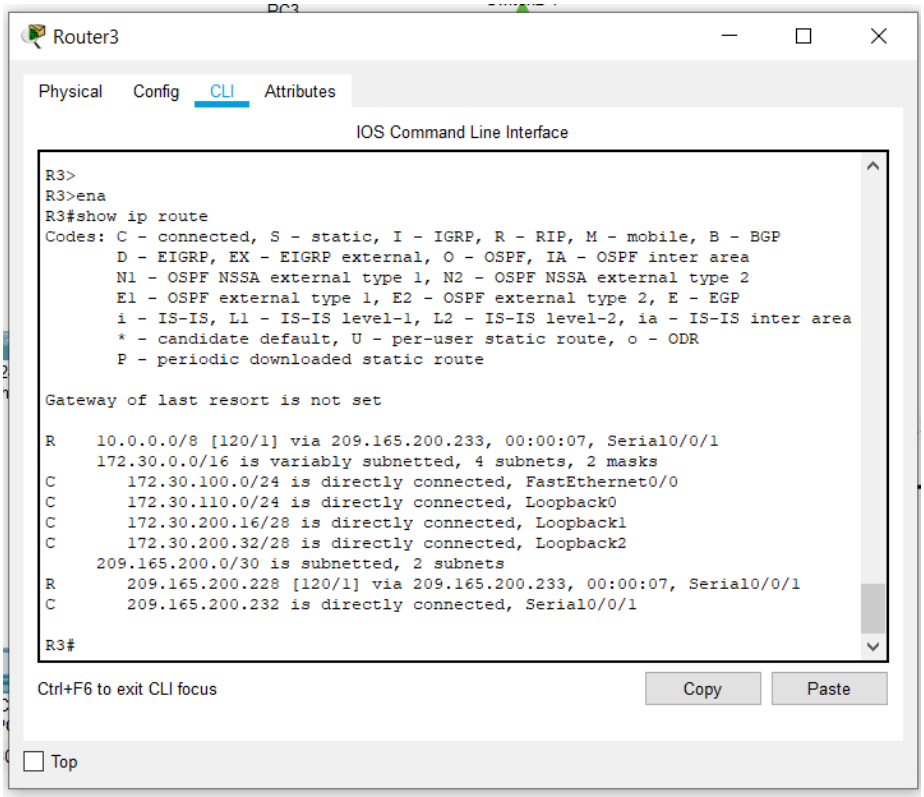
R1 still shows only its own subnets for the 172.30.0.0 network. R1 still does not have any routes for the 172.30.0.0 subnets on R3.

R1#**show ip route**



R3 still only shows its own subnets for the 172.30.0.0 network. R3 still does not have any routes for the 172.30.0.0 subnets on R1.

```
R3#show ip route
```



Use the output of the **debug ip rip** command to answer the following questions:

RIP: sending v2 update to 224.0.0.9 via Loopback0 (172.30.110.1)

RIP: build update entries

10.0.0.0/8 via 0.0.0.0, metric 2, tag 0

172.30.100.0/24 via 0.0.0.0, metric 1, tag 0

172.30.200.16/28 via 0.0.0.0, metric 1, tag 0

172.30.200.32/28 via 0.0.0.0, metric 1, tag 0

209.165.200.0/24 via 0.0.0.0, metric 1, tag 0

What entries are included in the RIP updates sent out from R3?

10.0.0.0/8
172.30.100.0/24
172.30.110.0/24
172.30.200.16/28
209.165.200.0/24

On R2, what routes are in the RIP updates that are received from R3?

RIP: received v2 update from 209.165.200.234 on Serial0/0/1

172.30.0.0/16 via 0.0.0.0 in 1 hops

RIP: received v2 update from 209.165.200.230 on Serial0/0/0

172.30.0.0/16 via 0.0.0.0 in 1 hops

RIP: sending v2 update to 224.0.0.9 via Serial0/0/0 (209.165.200.229)

RIP: build update entries

10.0.0.0/8 via 0.0.0.0, metric 1, tag 0

209.165.200.232/30 via 0.0.0.0, metric 1, tag 0

RIP: sending v2 update to 224.0.0.9 via Serial0/0/1 (209.165.200.233)

RIP: build update entries

10.0.0.0/8 via 0.0.0.0, metric 1, tag 0

209.165.200.228/30 via 0.0.0.0, metric 1, tag 0

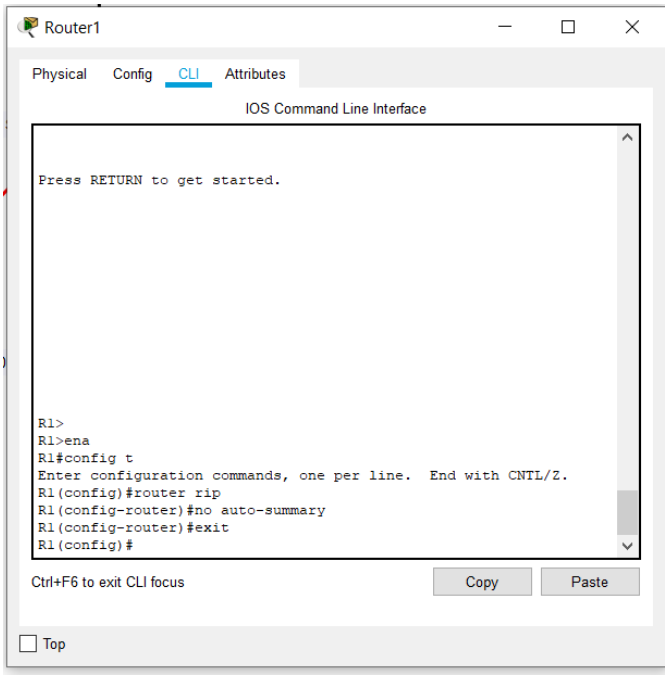
172.30.0.0/16

R3 is not sending any of the 172.30.0.0 subnets—only the summarized route of 172.30.0.0/16, including the subnet mask. This is why R2 and R1 are not seeing the 172.30.0.0 subnets on R3.

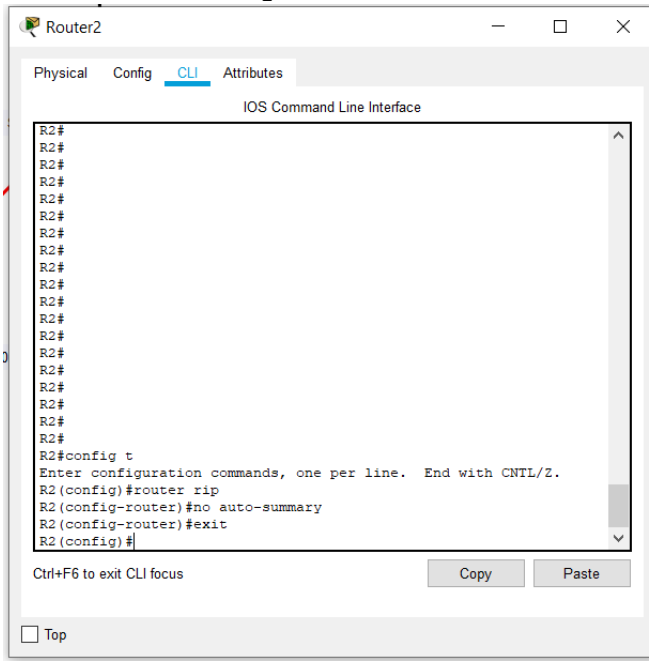
Task 6: Disable Automatic Summarization.

The **no auto-summary** command is used to turn off automatic summarization in RIPv2. Disable auto summarization on all routers. The routers will no longer summarize routes at major network boundaries.

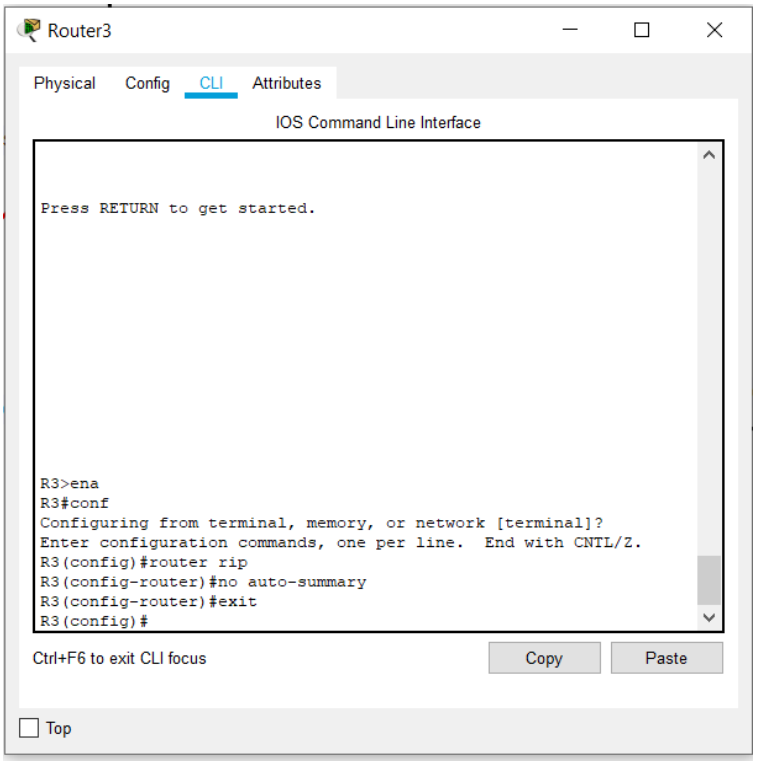
```
R2(config)#router rip
R2(config-router)#no auto-summary
```




```
R1(config)#router rip
R1(config-router)#no auto-summary
```




```
R3(config)#router rip
R3(config-router)#no auto-summary
```

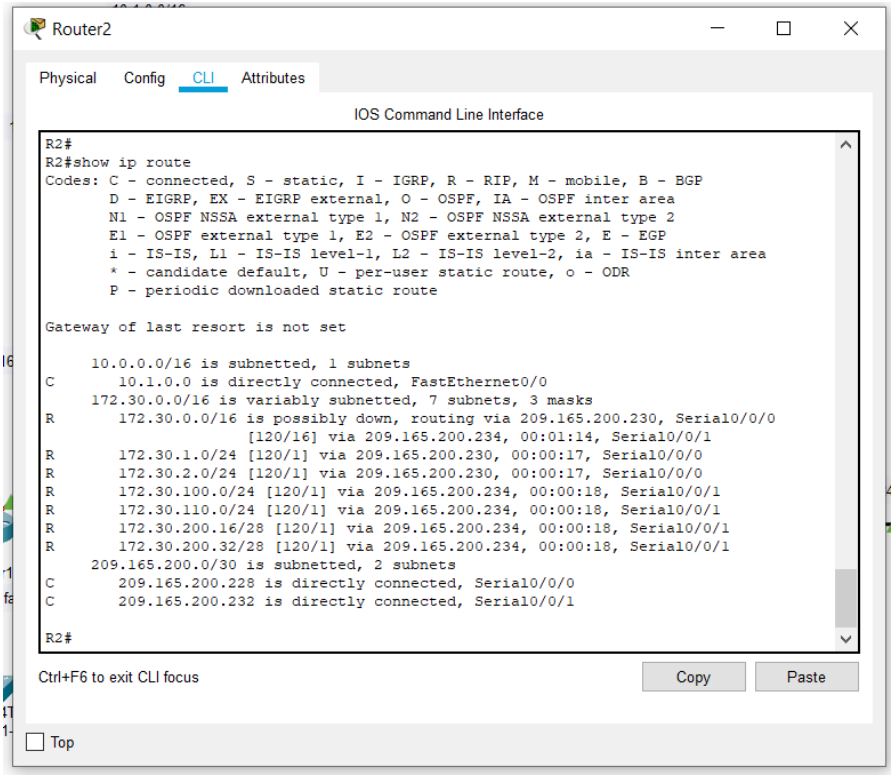


The **`show ip route`** and **`ping`** commands can be used to verify that automatic summarization is off.

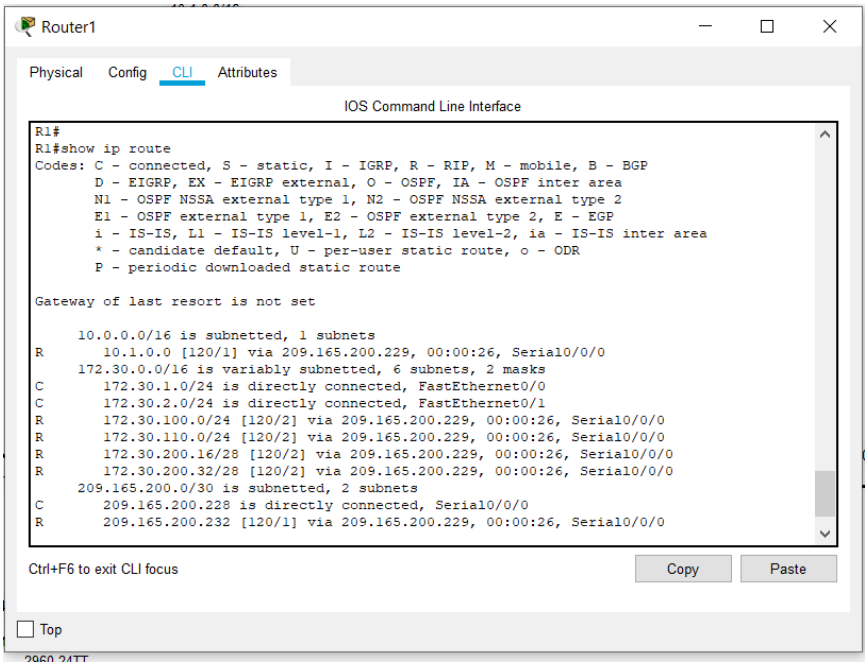
Task 7: Examine the Routing Tables.

The LANs connected to R1 and R3 should now be included in all three routing tables.

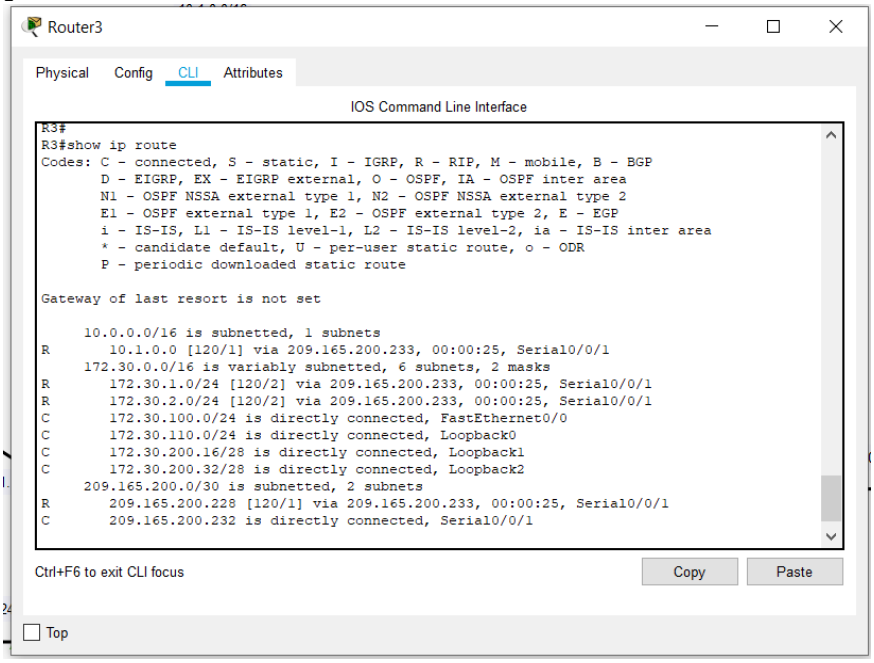
```
R2#show ip route
```



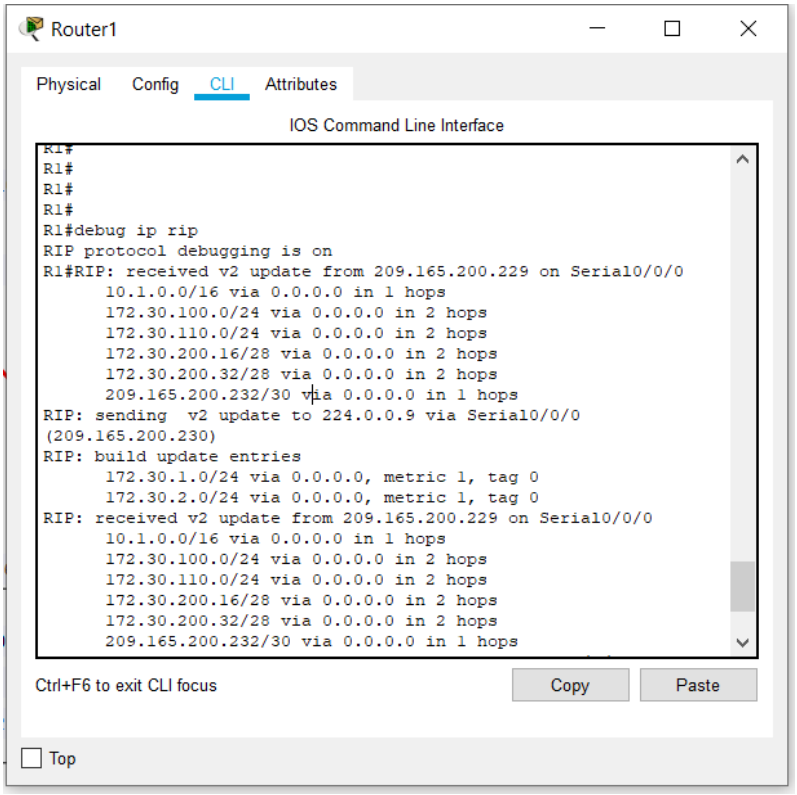
R1#**show ip route**



R3#**show ip route**

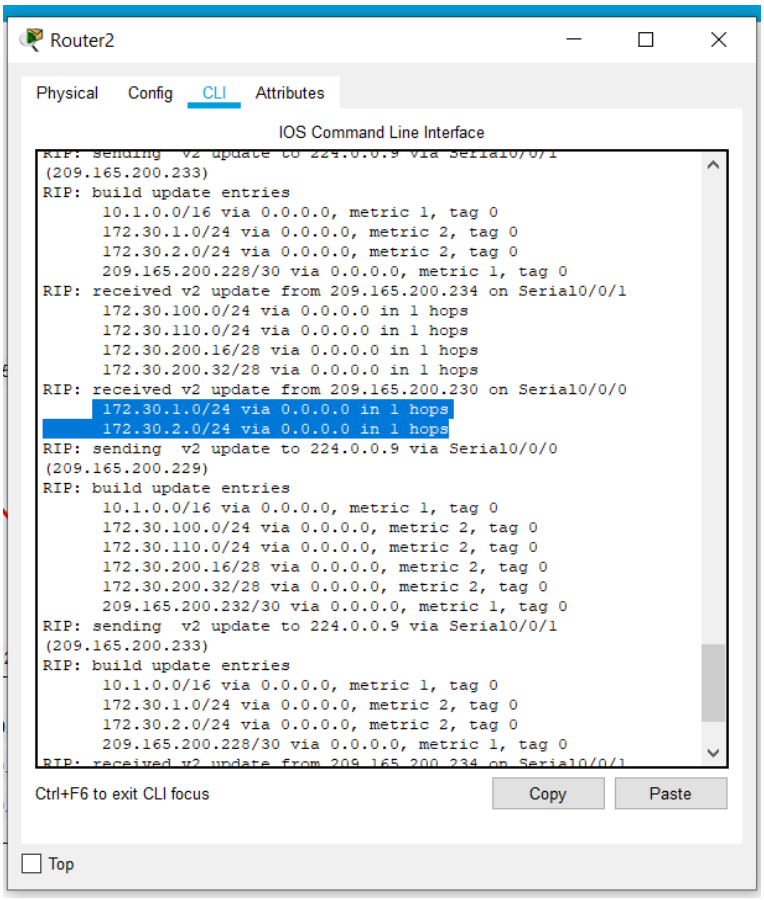


Use the output of the **debug ip rip** command to answer the following questions:



What entries are included in the RIP updates sent out from R1?

172.30.1.0/24
172.30.2.0/24



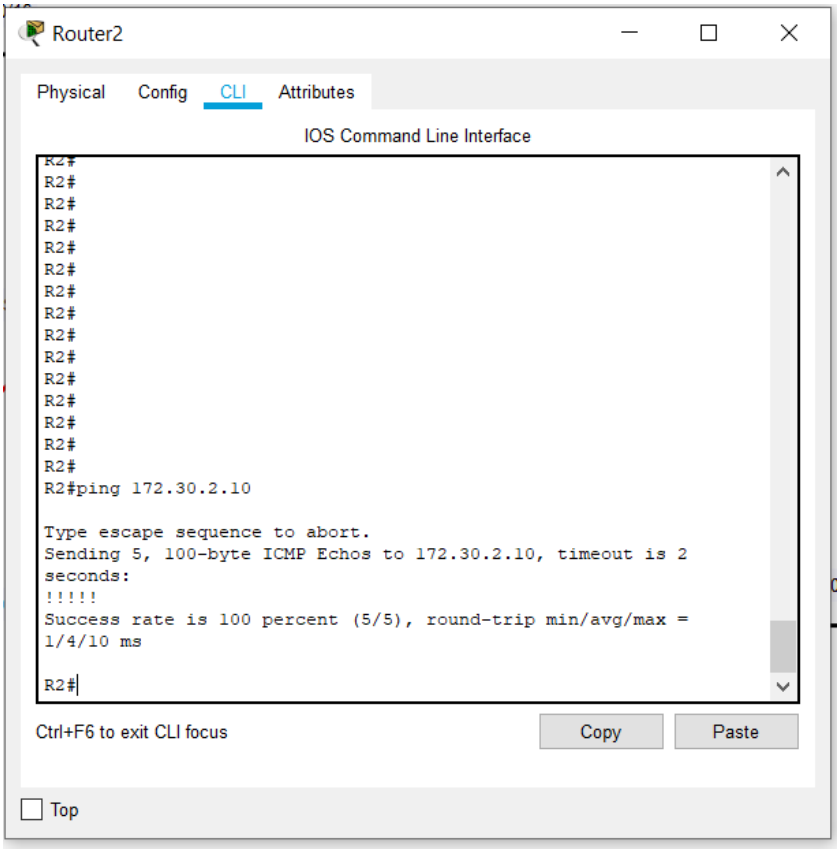
On R2, what routes are in the RIP updates that are received from R1?

172.30.1.0/24
172.30.2.0/24

Are the subnet masks now included in the routing updates? ___**YES**____

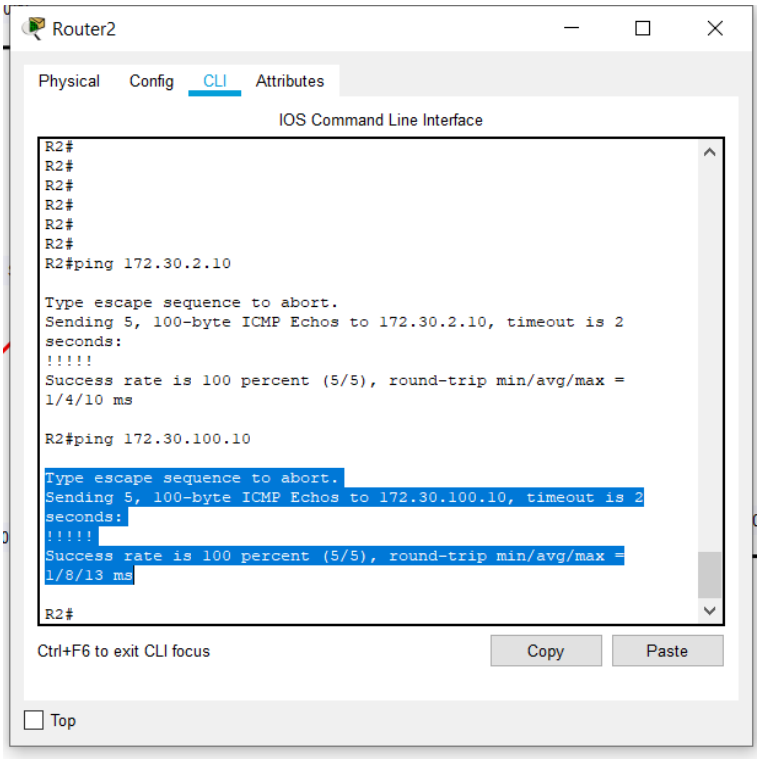
Task 8: Verify Network Connectivity.

Step 1: Check connectivity between R2 router and PCs.



From R2, how many ICMP messages are successful when pinging PC1?

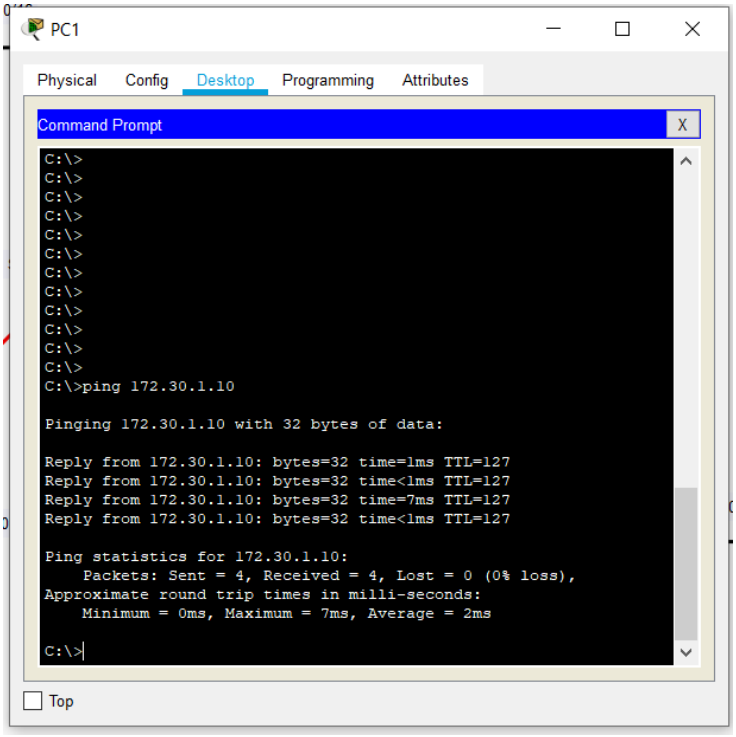
_____**5 out of 5**_____



From R2, how many ICMP messages are successful when pinging PC4?

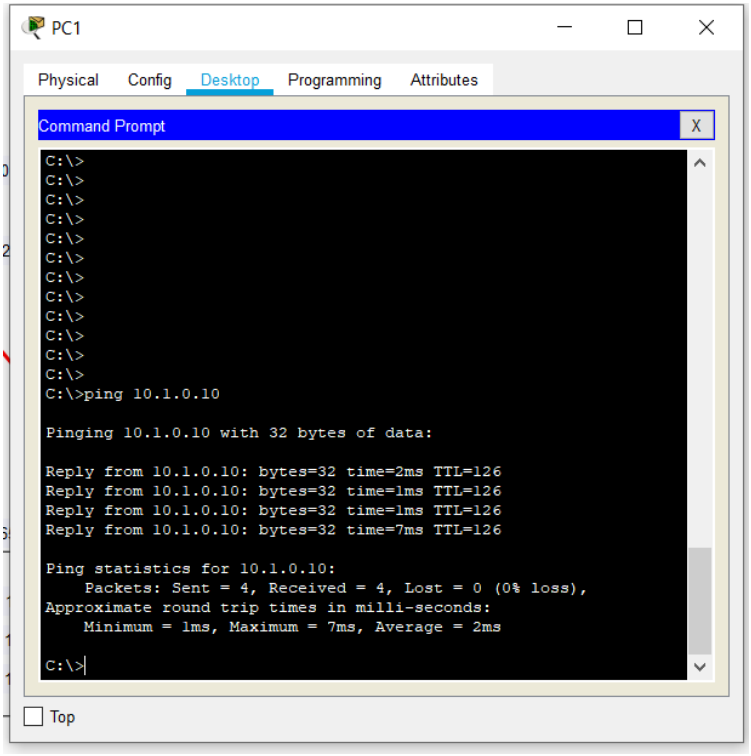
_____**5 out of 5**_____

Step 2: Check the connectivity between the PCs.



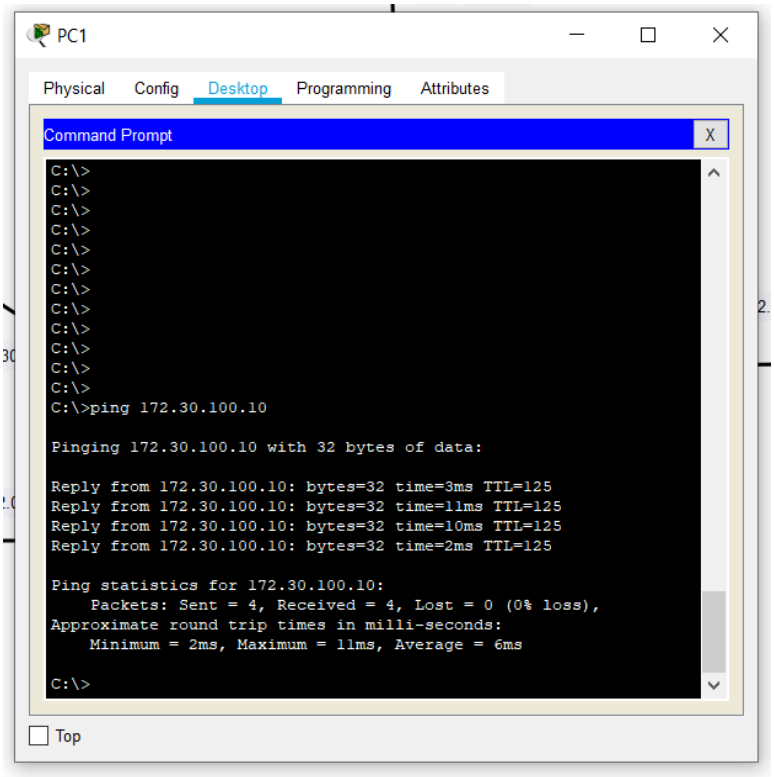
From PC1, is it possible to ping PC2? ___**YES**_____

What is the success rate? ____**100%**____



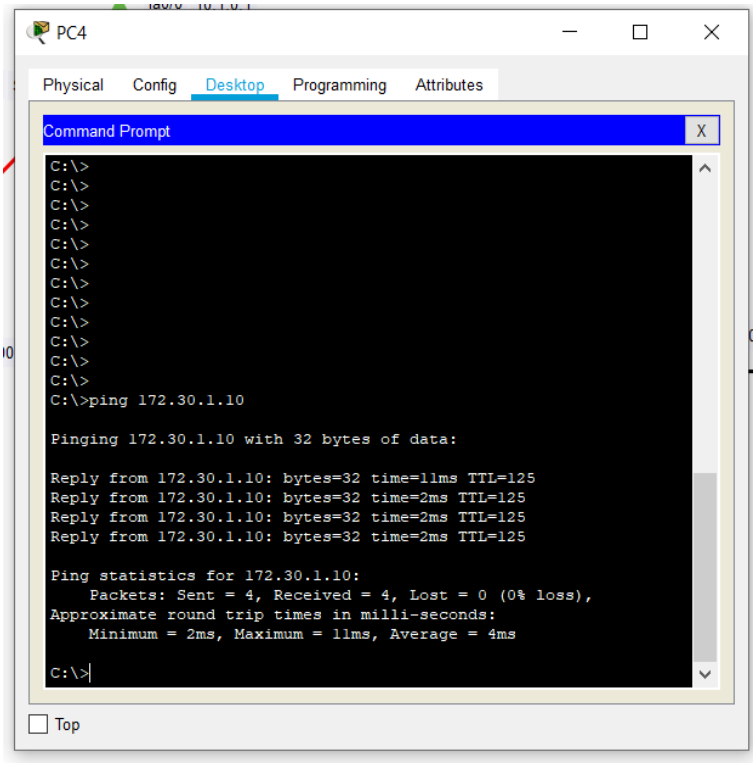
From PC1, is it possible to ping PC3? ___**YES**____

What is the success rate? ____**100%**_____



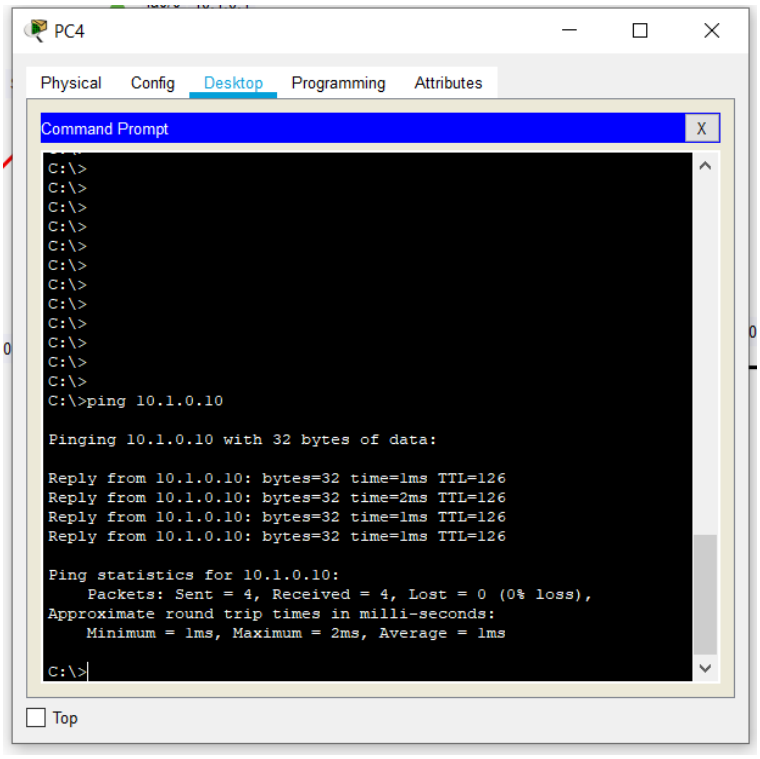
From PC1, is it possible to ping PC4? ____**YES**_____

What is the success rate?___**100%**__



From PC4, is it possible to ping PC2? ____**YES**_____

What is the success rate? ____**100%**_____



From PC4, is it possible to ping PC3? ___**YES**_____

What is the success rate? ____**100%**_____

Task 9: Documentation

On each router, capture the following command output to a text (.txt) file and save for future reference.

`show running-config`

`R1` ➔

```
Building configuration...

Current configuration : 901 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R1
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
ip address 172.30.1.1 255.255.255.0
duplex auto
speed auto
```

```
!
interface FastEthernet0/1
ip address 172.30.2.1 255.255.255.0
duplex auto
speed auto
!
interface Serial0/0/0
ip address 209.165.200.230 255.255.255.252
clock rate 64000
!
interface Serial0/0/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
passive-interface FastEthernet0/0
passive-interface FastEthernet0/1
network 172.30.0.0
network 209.165.200.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
password cisco
login
!
!
```

!
End

R2 ➔

Building configuration...

Current configuration : 847 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R2
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
ip address 10.1.0.1 255.255.0.0
duplex auto
speed auto
!

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
ip address 209.165.200.229 255.255.255.252
!
interface Serial0/0/1
ip address 209.165.200.233 255.255.255.252
clock rate 64000
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
passive-interface FastEthernet0/0
network 10.0.0.0
network 209.165.200.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
password cisco
login
!
!
!
End
```

R3 ➔

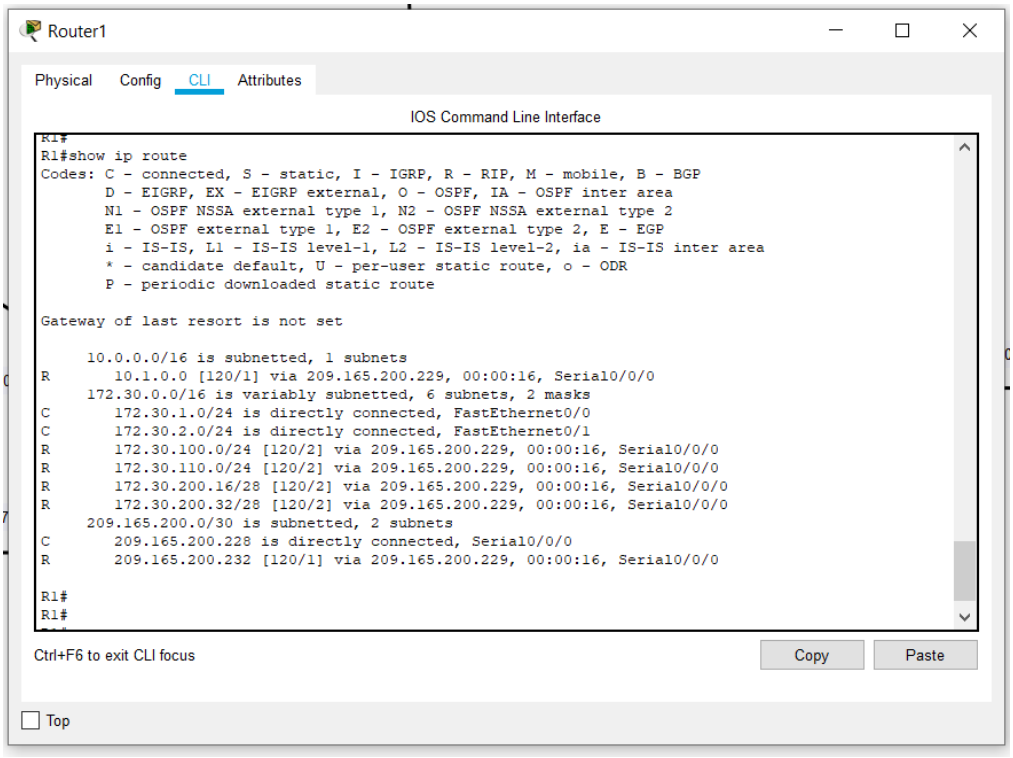
```
Building configuration...

Current configuration : 1027 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R3
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface Loopback0
ip address 172.30.110.1 255.255.255.0
!
interface Loopback1
ip address 172.30.200.17 255.255.255.240
!
interface Loopback2
```

```
ip address 172.30.200.33 255.255.255.240
!
interface FastEthernet0/0
ip address 172.30.100.1 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/0/1
ip address 209.165.200.234 255.255.255.252
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
passive-interface FastEthernet0/0
network 172.30.0.0
network 209.165.200.0
no auto-summary
!
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
```

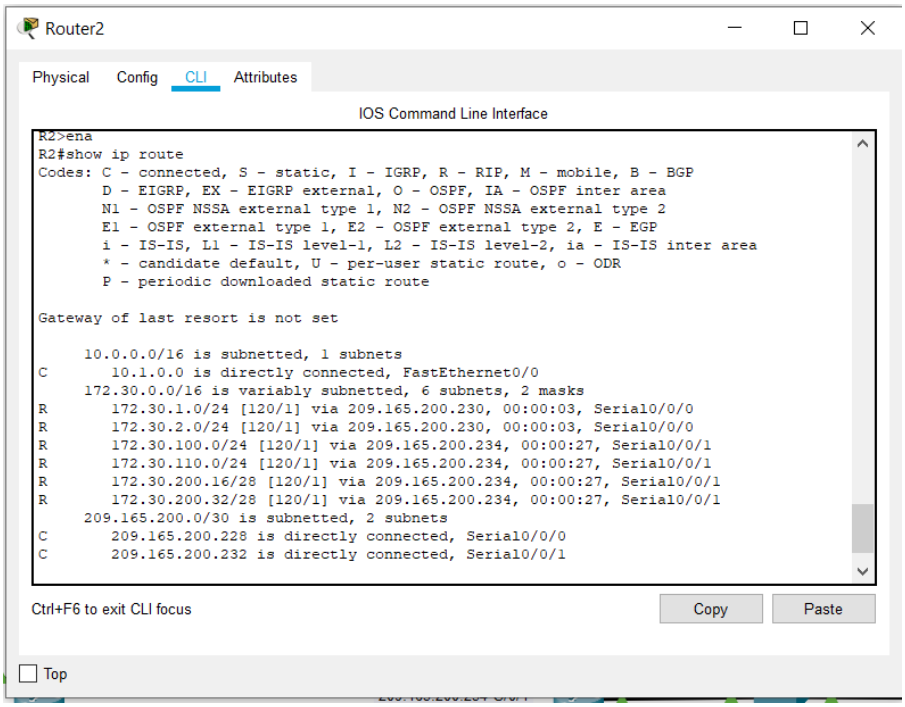
```
line vty 0 4
password cisco
login
!
!
!
end
```

- **`show ip route`**

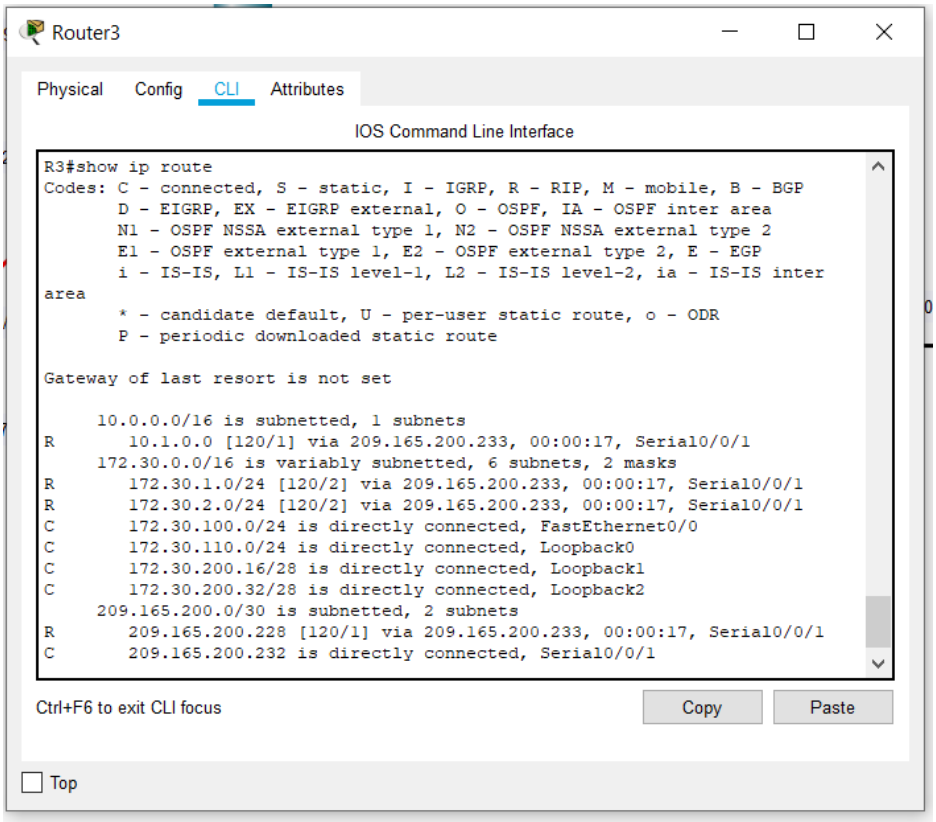
  R1 ➔



R2 ➔

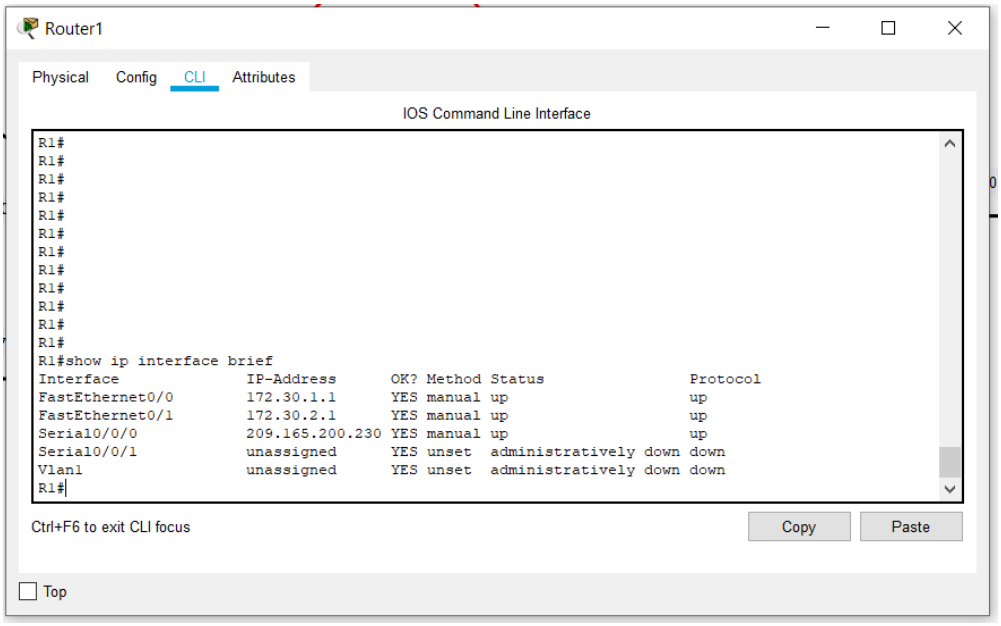


R3 ➔

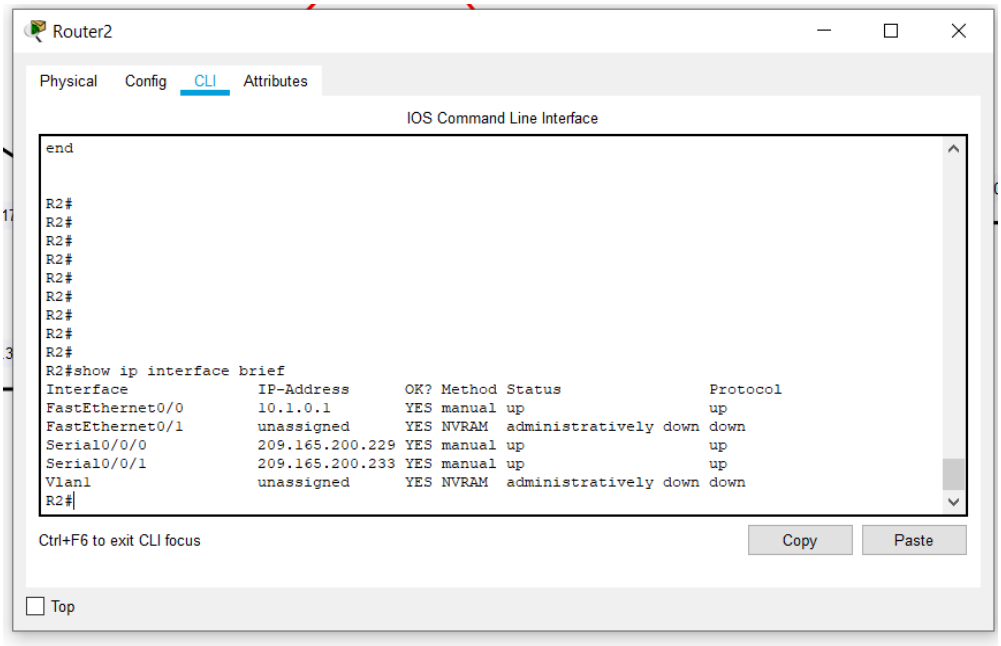


- **show ip interface brief**

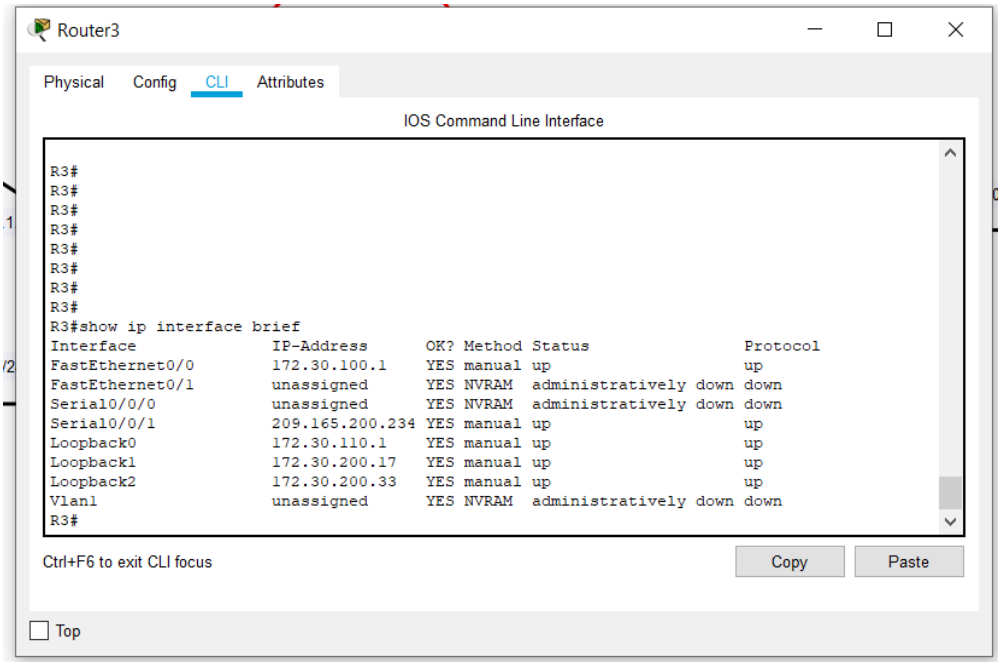
R1 ➔


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#
R1#show ip interface brief
Interface   IP-Address   OK? Method Status   Protocol
FastEthernet0/0   172.30.1.1   YES manual up   up
FastEthernet0/1   172.30.2.1   YES manual up   up
Serial0/0/0   209.165.200.230 YES manual up   up
Serial0/0/1   unassigned   YES unset administratively down down
Vlan1   unassigned   YES unset administratively down down
R1#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

R2 ➔

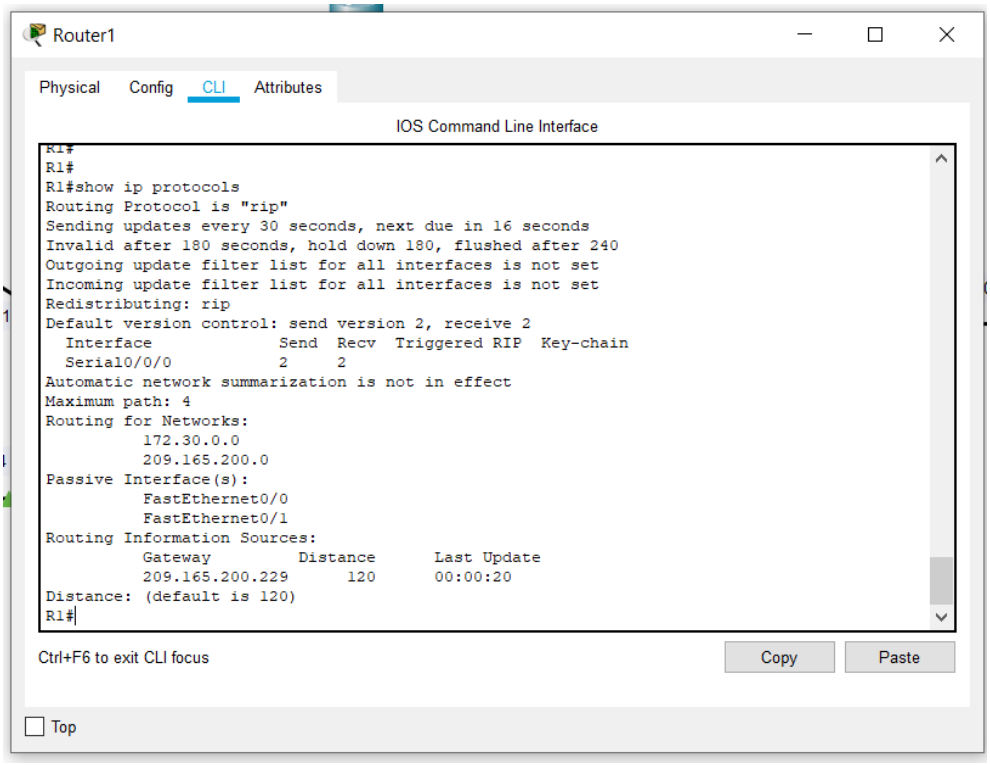

Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
end
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#
R2#show ip interface brief
Interface   IP-Address   OK? Method Status   Protocol
FastEthernet0/0   10.1.0.1   YES manual up   up
FastEthernet0/1   unassigned   YES NVRAM administratively down down
Serial0/0/0   209.165.200.229 YES manual up   up
Serial0/0/1   209.165.200.233 YES manual up   up
Vlan1   unassigned   YES NVRAM administratively down down
R2#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

R3 ➔

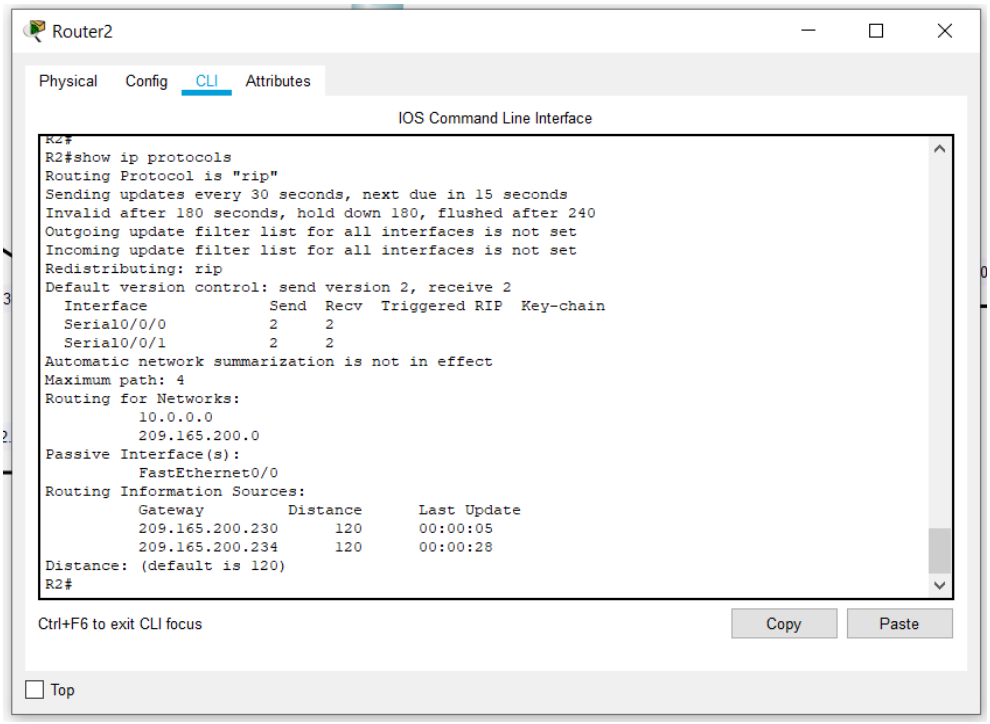


- **show ip protocols**

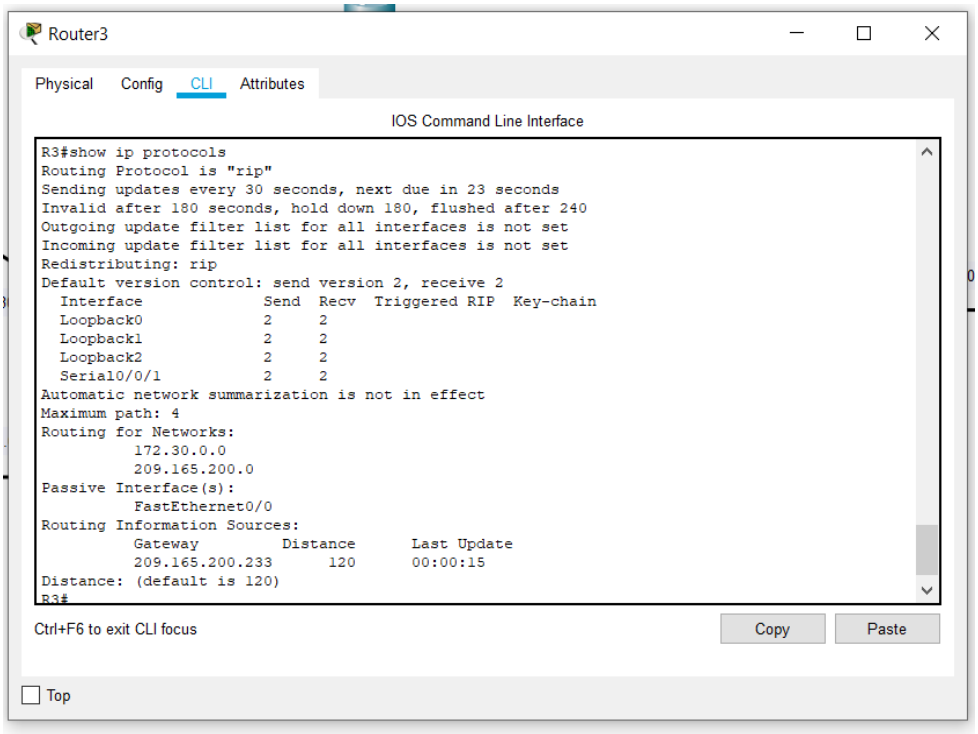
R1 ➔



R2 ➔



R3 ➔

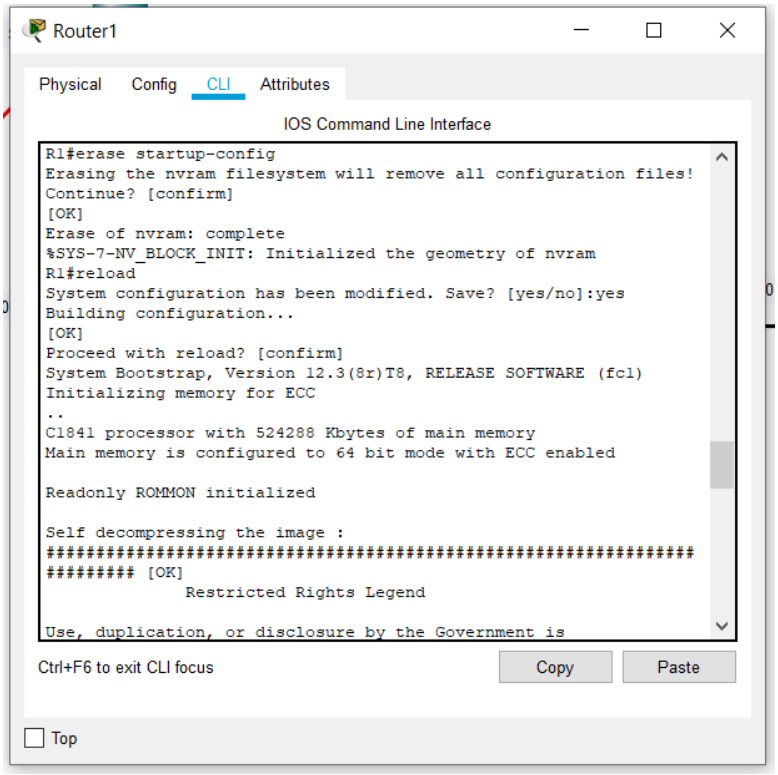


If you need to review the procedures for capturing command output, refer to Lab 1.5.1.

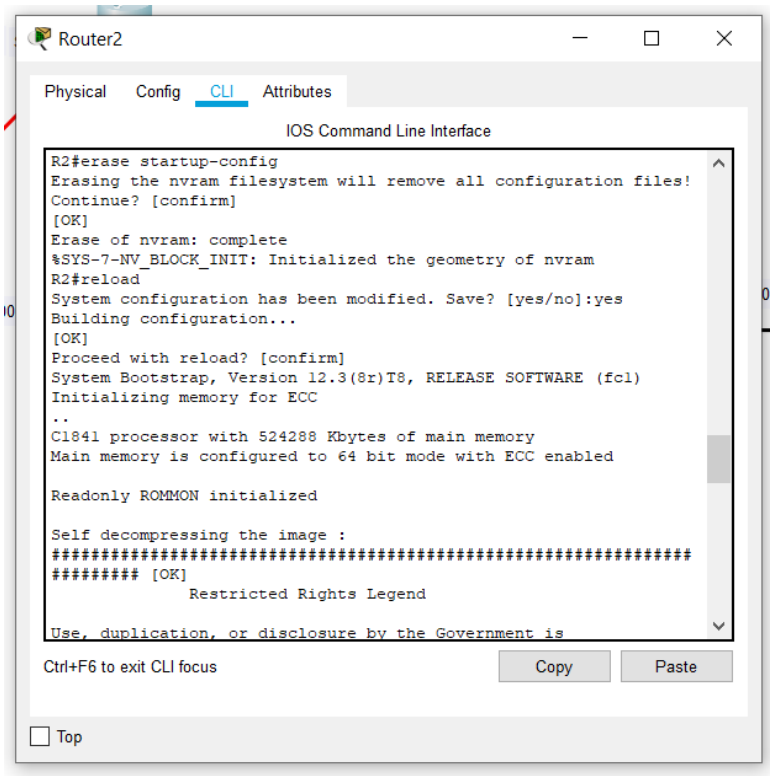
Task 10: Clean Up

Erase the configurations and reload the routers. Disconnect and store the cabling. For PC hosts that are normally connected to other networks (such as the school LAN or to the Internet), reconnect the appropriate cabling and restore the TCP/IP settings.

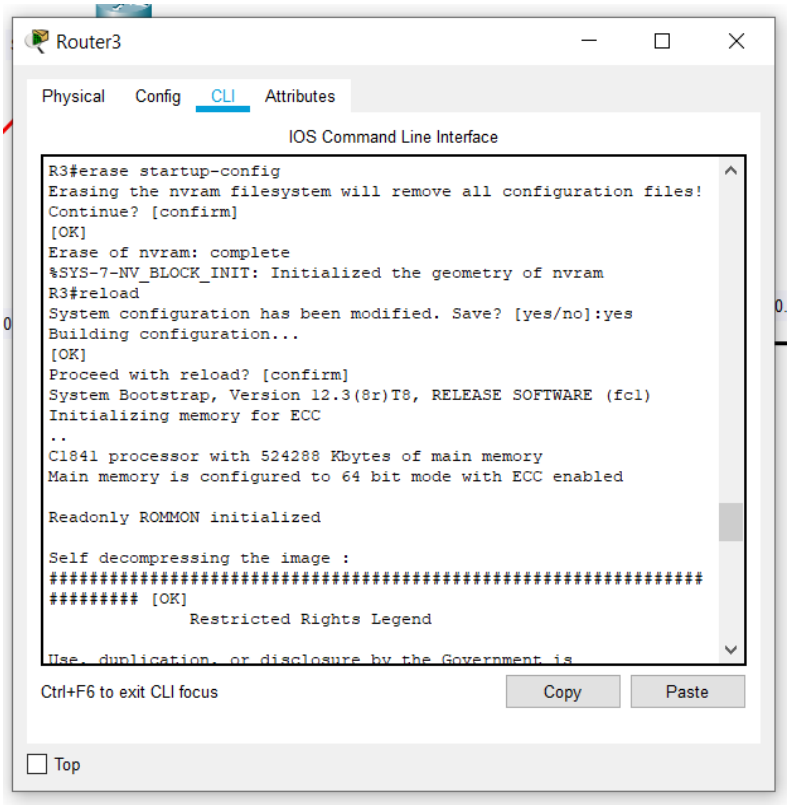
R1 ➔


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
R1#erase startup-config
Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
R1#reload
System configuration has been modified. Save? [yes/no]:yes
Building configuration...
[OK]
Proceed with reload? [confirm]
System Bootstrap, Version 12.3(8r)T8, RELEASE SOFTWARE (fc1)
Initializing memory for ECC
..
C1841 processor with 524288 Kbytes of main memory
Main memory is configured to 64 bit mode with ECC enabled
Readonly ROMMON initialized
Self decompressing the image :
##
######### [OK]
Restricted Rights Legend
Use, duplication, or disclosure by the Government is
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

R2 ➔


Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
R2#erase startup-config
Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
R2#reload
System configuration has been modified. Save? [yes/no]:yes
Building configuration...
[OK]
Proceed with reload? [confirm]
System Bootstrap, Version 12.3(8r)T8, RELEASE SOFTWARE (fc1)
Initializing memory for ECC
..
C1841 processor with 524288 Kbytes of main memory
Main memory is configured to 64 bit mode with ECC enabled
Readonly ROMMON initialized
Self decompressing the image :
##
######### [OK]
Restricted Rights Legend
Use, duplication, or disclosure by the Government is
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

R3 ➔


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
R3#erase startup-config
Erasing the nvram filesystem will remove all configuration files!
Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
R3#reload
System configuration has been modified. Save? [yes/no]:yes
Building configuration...
[OK]
Proceed with reload? [confirm]
System Bootstrap, Version 12.3(8r)T8, RELEASE SOFTWARE (fc1)
Initializing memory for ECC
..
C1841 processor with 524288 Kbytes of main memory
Main memory is configured to 64 bit mode with ECC enabled
Readonly ROMMON initialized
Self decompressing the image :
######### [OK]
Restricted Rights Legend
Use, duplication, or disclosure by the Government is
Ctrl+F6 to exit CLI focus
Copy
Paste
Top