



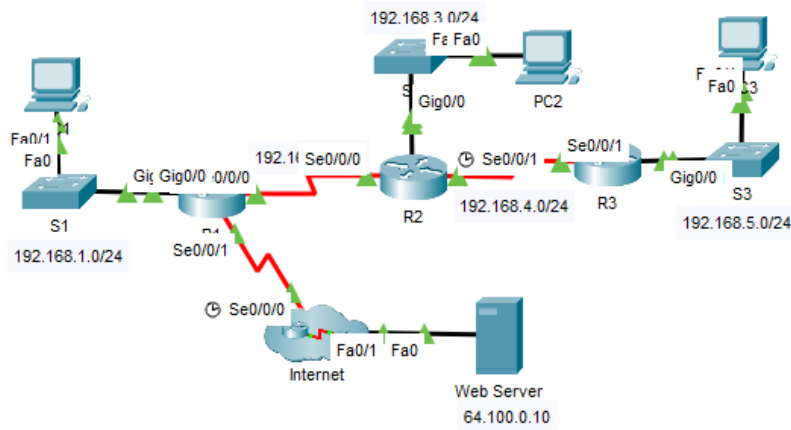
Configure RIPv2 in Packet Tracer.



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Configure RIPv2 in Packet Tracer.



Configure R1

Create a Default Route

- Click on R1
- Go to the **CLI** tab.
- Enter privileged EXEC mode
Command : **en**
- Enter global configuration mode
Command : **config t**
- Create a default route that sends all traffic to the next-hop address (assuming the ISP is connected via Serial0/0/1):

Command : **ip route 0.0.0.0 0.0.0.0 <NEXT-HOP-IP>**

```
R1(config)#ip route 0.0.0.0 0.0.0.0 209.165.200.224
R1(config)#
```

- Now you can see default router is enabled

```
R1
Physical Config CLI Attributes
IOS Command Line Interface
L 192.168.2.1/32 is directly connected, Serial0/0/0
  209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C 209.165.200.224/30 is directly connected, Serial0/0/1
L 209.165.200.225/32 is directly connected, Serial0/0/1
S* 0.0.0.0/0 is directly connected, Serial0/0/0

R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 0.0.0.0 0.0.0.0 209.165.200.224
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#show 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 0.0.0.0 to network 0.0.0.0

    192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.1.0/24 is directly connected, GigabitEthernet0/0
L    192.168.1.1/32 is directly connected, GigabitEthernet0/0
    192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.2.0/24 is directly connected, Serial0/0/0
L    192.168.2.1/32 is directly connected, Serial0/0/0
    209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C    209.165.200.224/30 is directly connected, Serial0/0/1
L    209.165.200.225/32 is directly connected, Serial0/0/1
S*   0.0.0.0/0 is directly connected, Serial0/0/0
      [1/0] via 209.165.200.224

R1#
```

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☐ Top

Enable RIPv2

- Enter RIP configuration mode:

Command : **router rip**

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

- Enable version 2

Command : **version 2**

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

- Disable automatic route summarization:

Command : **no auto-summary**

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

- Configure RIP Networks

Use the **network** command for each network interface.

Command : **network <ip address of directly connected>**

```
R1(config-router)#network 192.168.1.0
R1(config-router)#network 192.168.2.0
R1(config-router)#network 209.165.200.224
R1(config-router)#
```

- Set Passive Interfaces

Prevent RIP updates from being sent on LAN interfaces (assuming GigabitEthernet0/0 is the LAN interface):

```
R1(config-router)#passive-interface GigabitEthernet0/0
R1(config-router)#
```

- Advertise the Default Route

Command : **default-information originate**

so that R1 shares its default route with other routers:

```
R1(config-router)#default-information originate
R1(config-router)#
```

- Basically what we are done in the R1 is following :

R1

Physical
Config
CLI
Attributes

IOS Command Line Interface

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 0.0.0.0 to network 0.0.0.0

192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.1.0/24 is directly connected, GigabitEthernet0/0
L 192.168.1.1/32 is directly connected, GigabitEthernet0/0
192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.2.0/24 is directly connected, Serial0/0/0
L 192.168.2.1/32 is directly connected, Serial0/0/0
209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C 209.165.200.224/30 is directly connected, Serial0/0/1
L 209.165.200.225/32 is directly connected, Serial0/0/1
S* 0.0.0.0/0 is directly connected, Serial0/0/0
[1/0] via 209.165.200.224

R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#no auto-summary
R1(config-router)#network 192.168.1.0
R1(config-router)#network 192.168.2.0
R1(config-router)#network 209.165.200.224
R1(config-router)#passive-interface GigabitEthernet0/0
R1(config-router)#default-information originate
R1(config-router)#exit
R1(config)#write memory
^
% Invalid input detected at '^' marker.

R1(config)#

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Configure RIPv2 on R2

- Check what are the network here
command : **show ip route**

```
R2#show 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

    192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
      C       192.168.2.0/24 is directly connected, Serial0/0/0
      L       192.168.2.2/32 is directly connected, Serial0/0/0
    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
      C       192.168.3.0/24 is directly connected, GigabitEthernet0/0
      L       192.168.3.1/32 is directly connected, GigabitEthernet0/0
    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
      C       192.168.4.0/24 is directly connected, Serial0/0/1
      L       192.168.4.2/32 is directly connected, Serial0/0/1

R2#
```

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- Then configure R2 as previously

The screenshot shows the R2 CLI interface with the following content:

```
Physical Config CLI Attributes
IOS Command Line Interface

%SYS-5-CONFIG_I: Configured from console by console

R2#show 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

    192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, Serial0/0/0
L       192.168.2.2/32 is directly connected, Serial0/0/0
    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0
    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, Serial0/0/1
L       192.168.4.2/32 is directly connected, Serial0/0/1

R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#no auto-summary
R2(config-router)#network 192.168.2.0
R2(config-router)#network 192.168.3.0
R2(config-router)#network 192.168.4.0
R2(config-router)#passive-interface GigabitEthernet0/0
R2(config-router)#
```

At the bottom of the window, there is a "Top" button and a "Copy" button.

Configure RIPv2 on R3

- Check what the networks in there

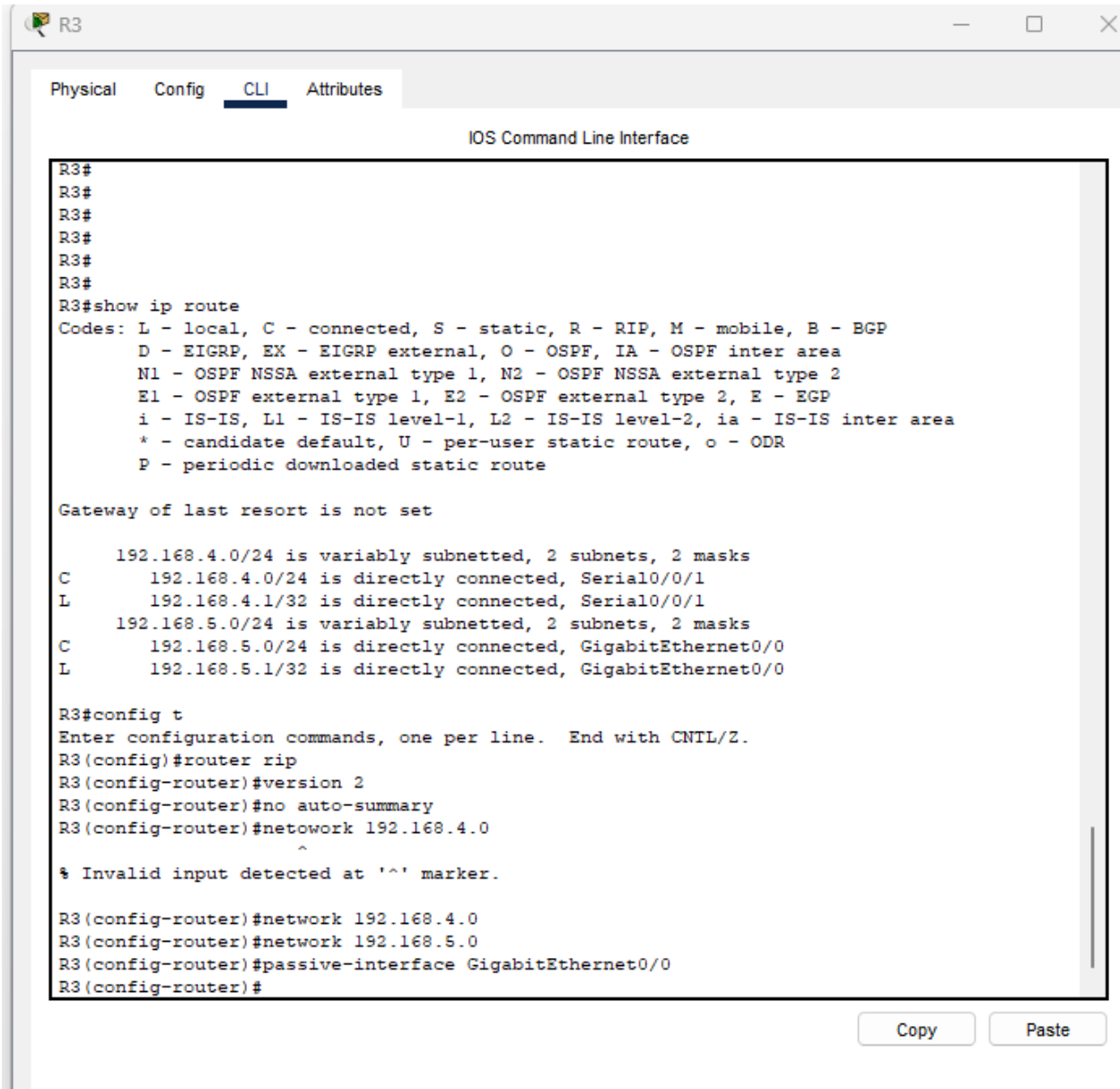
Command : **show ip route**

```
R3#show 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

    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, Serial0/0/1
L       192.168.4.1/32 is directly connected, Serial0/0/1
    192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.5.0/24 is directly connected, GigabitEthernet0/0
L       192.168.5.1/32 is directly connected, GigabitEthernet0/0
```

- Then configure as previous



```
R3#
R3#
R3#
R3#
R3#
R3#
R3#show 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

    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, Serial0/0/1
L       192.168.4.1/32 is directly connected, Serial0/0/1
    192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.5.0/24 is directly connected, GigabitEthernet0/0
L       192.168.5.1/32 is directly connected, GigabitEthernet0/0

R3#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#no auto-summary
R3(config-router)#network 192.168.4.0
      ^
% Invalid input detected at '^' marker.

R3(config-router)#network 192.168.4.0
R3(config-router)#network 192.168.5.0
R3(config-router)#passive-interface GigabitEthernet0/0
R3(config-router)#
```

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Verify Configurations

- Check Routing Tables
Command : show ip route
 - Check all three routers .
 - You should see RIP (R) entries for all networks.
 - A default route (0.0.0.0/0) should be visible.

Router1


```
R1>
R1>
R1>en
R1#show 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 0.0.0.0 to network 0.0.0.0

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, Serial0/0/0
L       192.168.2.1/32 is directly connected, Serial0/0/0
R       192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:17, Serial0/0/0
R       192.168.4.0/24 [120/1] via 192.168.2.2, 00:00:17, Serial0/0/0
R       192.168.5.0/24 [120/2] via 192.168.2.2, 00:00:17, Serial0/0/0
     209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C       209.165.200.224/30 is directly connected, Serial0/0/1
L       209.165.200.225/32 is directly connected, Serial0/0/1
S*     0.0.0.0/0 is directly connected, Serial0/0/0
       [1/0] via 209.165.200.224

R1#
R1#
```

Router2

 R2

Physical

Config

CLI

Attributes

IOS Command Line Interface

```
R2(config-router)#network 192.168.2.0
R2(config-router)#network 192.168.3.0
R2(config-router)#network 192.168.4.0
R2(config-router)#passive-interface GigabitEthernet0/0
R2(config-router)#exir
^
% Invalid input detected at '^' marker.

R2(config-router)#exit
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#show 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 192.168.2.1 to network 0.0.0.0


R    192.168.1.0/24 [120/1] via 192.168.2.1, 00:00:00, Serial0/0/0
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.2.0/24 is directly connected, Serial0/0/0
L    192.168.2.2/32 is directly connected, Serial0/0/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.3.0/24 is directly connected, GigabitEthernet0/0
L    192.168.3.1/32 is directly connected, GigabitEthernet0/0
     192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.4.0/24 is directly connected, Serial0/0/1
L    192.168.4.2/32 is directly connected, Serial0/0/1
R    192.168.5.0/24 [120/1] via 192.168.4.1, 00:00:15, Serial0/0/1
     209.165.200.0/30 is subnetted, 1 subnets
--More--
```

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☐ Top

Router3

 R3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
R3(config-router)#
R3(config-router)#
R3(config-router)#
R3(config-router)#exit
R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#sjow ip route
^
% Invalid input detected at '^' marker.

R3#show 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 192.168.4.2 to network 0.0.0.0

R    192.168.1.0/24 [120/2] via 192.168.4.2, 00:00:25, Serial0/0/1
R    192.168.2.0/24 [120/1] via 192.168.4.2, 00:00:25, Serial0/0/1
R    192.168.3.0/24 [120/1] via 192.168.4.2, 00:00:25, Serial0/0/1
    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C      192.168.4.0/24 is directly connected, Serial0/0/1
L      192.168.4.1/32 is directly connected, Serial0/0/1
    192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C      192.168.5.0/24 is directly connected, GigabitEthernet0/0
L      192.168.5.1/32 is directly connected, GigabitEthernet0/0
    209.165.200.0/30 is subnetted, 1 subnets
R      209.165.200.224/30 [120/2] via 192.168.4.2, 00:00:25, Serial0/0/1
R*    0.0.0.0/0 [120/2] via 192.168.4.2, 00:00:25, Serial0/0/1

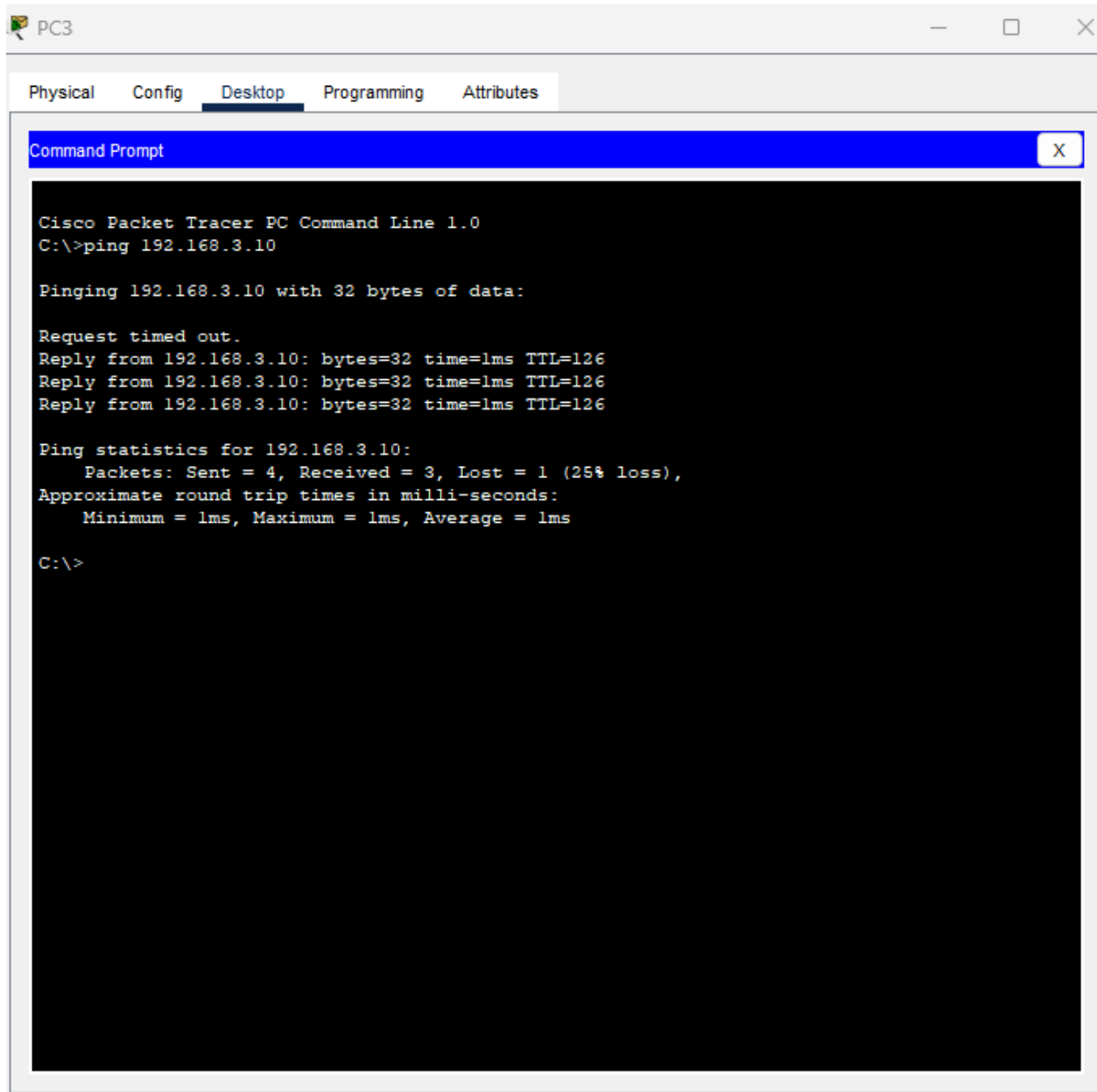
R3#
```

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☐ Top

Test Connectivity

- Open the **PC/End Devices**.
- Go to the **Command Prompt** on each device.
- Test connectivity with **ping**



The screenshot shows a window titled "PC3" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The command prompt shows the following text:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>
```

- You can see its working

