

```

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool LAN1
Router(dhcp-config)#network 192.168.10.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.10.1
Router(dhcp-config)#int g0/0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0

```

```

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool LAN2
Router(dhcp-config)#network 192.268.20.0 255.255.255.0
^
% Invalid input detected at '^' marker.

Router(dhcp-config)#network 192.168.20.0 255.255.255.0
Router(dhcp-config)#default router 192.168.20.1
^
% Invalid input detected at '^' marker.

Router(dhcp-config)#default-router 192.168.20.1
Router(dhcp-config)#int g0/0/1
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

R3(config)#do sh ip int brief
Interface                IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0/0      unassigned      YES unset    administratively down down
GigabitEthernet0/0/1      192.168.20.1    YES manual   up          up
GigabitEthernet0/0/2      unassigned      YES unset    administratively down down
Vlan1                    unassigned      YES unset    administratively down down
R3(config)#int g0/0/0
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

R3(config-if)#

```

This is the configuration for Router 3, this is copied on Router 1. The DHCP pool LAN2 was configured on R3 with the network 192.168.20.0/24 and default gateway 192.168.20.1. Interfaces G0/0/1 and G0/0/0 were assigned IP addresses, enabled using no shutdown, and confirmed to be up via show ip interface brief.

```

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#do sh ip int brief
Interface                IP-Address      OK? Method Status        Protocol
GigabitEthernet0/0/0     unassigned      YES unset  administratively down down
GigabitEthernet0/0/1     unassigned      YES unset  administratively down down
GigabitEthernet0/0/2     unassigned      YES unset  administratively down down
Vlan1                    unassigned      YES unset  administratively down down
Router(config)#int g0/0/0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router(config-if)#int g0/0/1
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

Router(config-if)#
Router(config-if)#do sh ip int brief
Interface                IP-Address      OK? Method Status        Protocol
GigabitEthernet0/0/0     unassigned      YES unset  up            up
GigabitEthernet0/0/1     unassigned      YES unset  up            up
GigabitEthernet0/0/2     unassigned      YES unset  administratively down down
Vlan1                    unassigned      YES unset  administratively down down
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 10.0.0.0
Router(config-router)#network 10.0.1.0
Router(config-router)#

```

Router 2 interfaces G0/0/0 and G0/0/1 were enabled using no shutdown and confirmed to be up through the show ip interface brief command. RIP version 2 was configured with no auto-summary, and networks 10.0.0.0 and 10.0.1.0 were advertised for dynamic routing.

```

Router(config-if)#
Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 10.0.0.0
Router(config-router)#network 10.0.1.0
Router(config-router)#

```

```

R3(config-if)#
R3(config-if)#
R3(config-if)#router rip
R3(config-router)#version 2
R3(config-router)#no auto-summary
R3(config-router)#network 10.0.0.0
R3(config-router)#network 10.0.1.0
R3(config-router)#

```

Afterwards I went back and configured RIP on Router 1 and 3.

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.1

Pinging 192.168.20.1 with 32 bytes of data:

Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.
Reply from 192.168.10.1: Destination host unreachable.

Ping statistics for 192.168.20.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>

```

The first issue occurred when PC1 attempted to ping 192.168.20.1 and received a "Destination host unreachable" message from its local gateway, 192.168.10.1. This indicated that R1 did not have a valid route to reach the remote network or that the path through R2 to R3 was not functioning properly.

```

R3#sh ip int brief
Interface                IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0/0      unassigned      YES unset    up          up
GigabitEthernet0/0/1      192.168.20.1    YES manual    up          up
GigabitEthernet0/0/2      unassigned      YES unset    administratively down down
Vlan1                     unassigned      YES unset    administratively down down
R3#int g0/0/0
      ^
% Invalid input detected at '^' marker.

R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#int g0/0/0
R3(config-if)#ip address 10.0.1.2 255.255.255.0
R3(config-if)#

```

Fixed first issue of the unassigned ip address on Router 3's g0/0/0 interface.

```

Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#do sh ip int brief

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	unassigned	YES	unset	up	up
GigabitEthernet0/0/1	unassigned	YES	unset	up	up
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Vlan1	unassigned	YES	unset	administratively down	down

```

R2(config)#int g0/0/0
R2(config-if)#ip address 10.0.0.2 255.255.255.0
R2(config-if)#no shut
R2(config-if)#int g0/0/1
R2(config-if)#10.0.1.1 255.255.255.0
      ^
% Invalid input detected at '^' marker.

R2(config-if)#ip address 10.0.1.1 255.255.255.0
R2(config-if)#no shut
R2(config-if)#do sh ip int brief

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	10.0.0.2	YES	manual	up	up
GigabitEthernet0/0/1	10.0.1.1	YES	manual	up	up
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Vlan1	unassigned	YES	unset	administratively down	down

```

R2(config-if)#

```

Fixed the second issue of no assigned ip address on Router 2

```

Distance: (default is 120)
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router rip
R1(config-router)#network 192.168.10.0
R1(config-router)#do sh ip int brief

```

Interface	IP-Address	OK?	Method	Status	Protocol
GigabitEthernet0/0/0	192.168.10.1	YES	manual	up	up
GigabitEthernet0/0/1	10.0.0.1	YES	manual	up	up
GigabitEthernet0/0/2	unassigned	YES	unset	administratively down	down
Vlan1	unassigned	YES	unset	administratively down	down

```

R1(config-router)#

```

The issue was resolved by adding the 192.168.10.0 network to R1's RIP configuration, allowing R1 to advertise its local LAN to the rest of the network. After this change, routing updates were properly propagated through R2, enabling full connectivity.

```

C:\>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Reply from 192.168.20.3: bytes=32 time<1ms TTL=125
Reply from 192.168.20.3: bytes=32 time=1ms TTL=125
Reply from 192.168.20.3: bytes=32 time=10ms TTL=125
Reply from 192.168.20.3: bytes=32 time=1ms TTL=125

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 3ms

C:\>|

```

After updating the RIP configuration on R1 to include the LAN network, end-to-end communication was successfully established. The ping test from PC1 to 192.168.20.3 returned all packets, confirming full connectivity across the network.