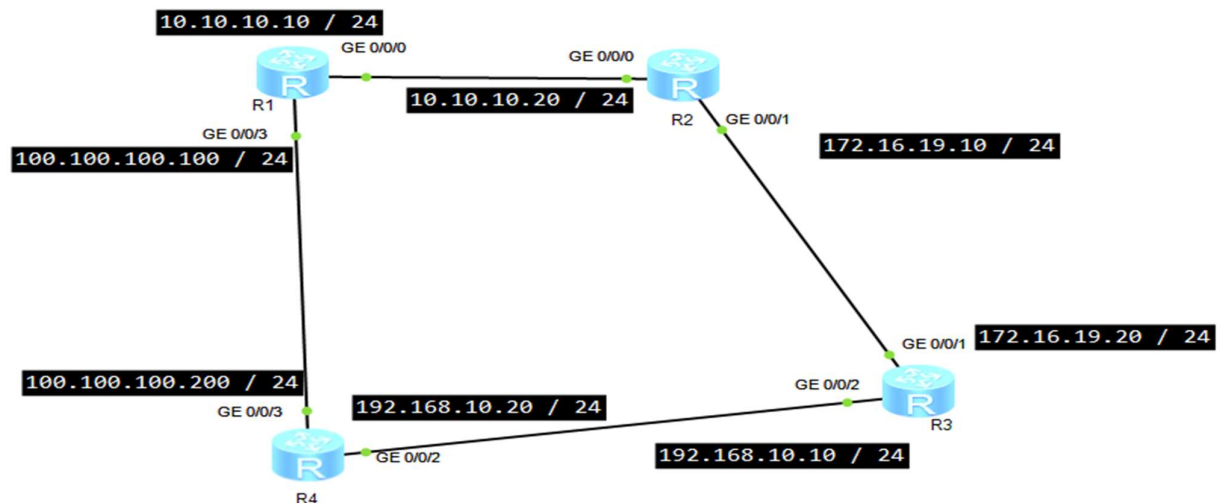


LAB-08

Configure the following scenario by applying static routes in eNSP.

Note: All routers should be able to ping all interfaces.

eNSP simulation:



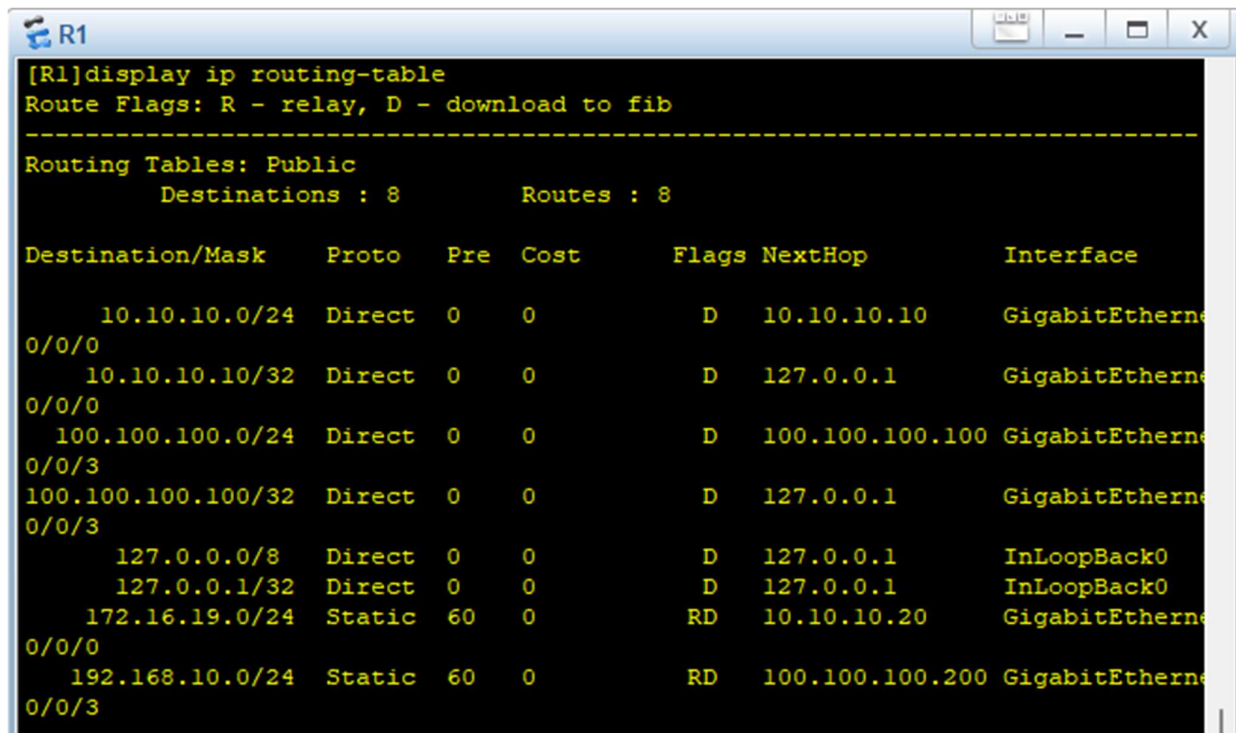
First, we have to assign the Ip address to each interfaces then we have to configure these commands on routers.

Configuration on Router (R1):

```

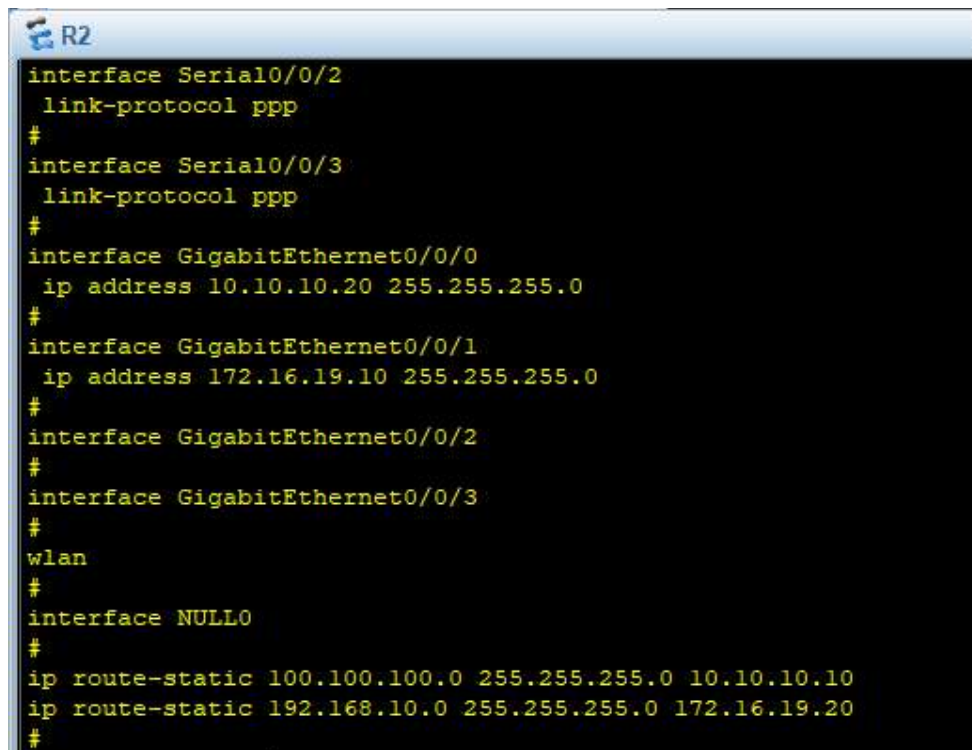
R1
interface Serial0/0/3
 link-protocol ppp
#
interface GigabitEthernet0/0/0
 ip address 10.10.10.10 255.255.255.0
#
interface GigabitEthernet0/0/1
#
interface GigabitEthernet0/0/2
#
interface GigabitEthernet0/0/3
 ip address 100.100.100.100 255.255.255.0
#
wlan
#
interface NULL0
#
ip route-static 172.16.19.0 255.255.255.0 10.10.10.20
ip route-static 192.168.10.0 255.255.255.0 100.100.100.200
#

```

IP Routing Table:


The screenshot shows the IP routing table for router R1. The command '[R1]display ip routing-table' has been executed. The output indicates 8 destinations and 8 routes. The table lists various network ranges and their corresponding interfaces and next hops.

Destination/Mask	Proto	Pre	Cost	Flags	NextHop	Interface
10.10.10.0/24	Direct	0	0	D	10.10.10.10	GigabitEthernet0/0/0
10.10.10.10/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/0
100.100.100.0/24	Direct	0	0	D	100.100.100.100	GigabitEthernet0/0/3
100.100.100.100/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/3
127.0.0.0/8	Direct	0	0	D	127.0.0.1	InLoopBack0
127.0.0.1/32	Direct	0	0	D	127.0.0.1	InLoopBack0
172.16.19.0/24	Static	60	0	RD	10.10.10.20	GigabitEthernet0/0/0
192.168.10.0/24	Static	60	0	RD	100.100.100.200	GigabitEthernet0/0/3

Configuration on R2:


The screenshot shows the configuration for router R2. The configuration includes setting up serial and gigabit ethernet interfaces with PPP links, static routes, and a NULL0 interface.

```

interface Serial0/0/2
  link-protocol ppp
#
interface Serial0/0/3
  link-protocol ppp
#
interface GigabitEthernet0/0/0
  ip address 10.10.10.20 255.255.255.0
#
interface GigabitEthernet0/0/1
  ip address 172.16.19.10 255.255.255.0
#
interface GigabitEthernet0/0/2
#
interface GigabitEthernet0/0/3
#
wlan
#
interface NULL0
#
ip route-static 100.100.100.0 255.255.255.0 10.10.10.10
ip route-static 192.168.10.0 255.255.255.0 172.16.19.20
#

```

IP Routing Table:

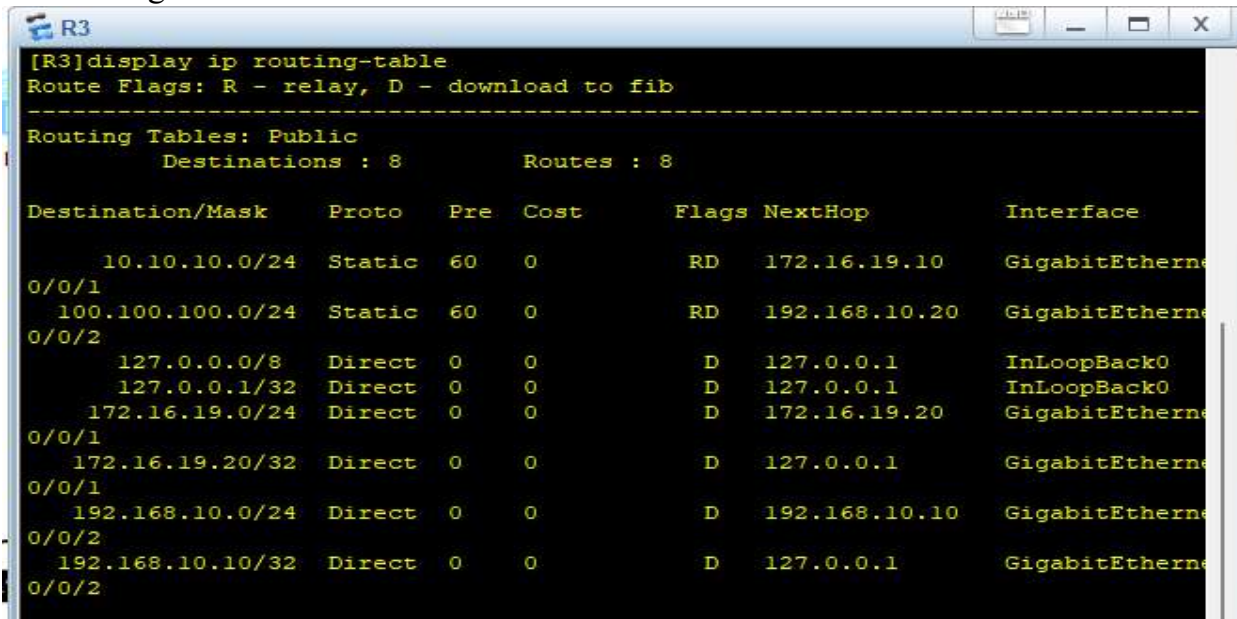
```
<R2>display ip routing-table
Route Flags: R - relay, D - download to fib
-----
Routing Tables: Public
      Destinations : 8           Routes : 8

Destination/Mask    Proto   Pre  Cost   Flags NextHop         Interface
-----
 10.10.10.0/24      Direct   0    0       D  10.10.10.20      GigabitEthernet0/0/0
 10.10.10.20/32     Direct   0    0       D  127.0.0.1        GigabitEthernet0/0/0
100.100.100.0/24    Static  60    0      RD  10.10.10.10      GigabitEthernet0/0/0
 127.0.0.0/8        Direct   0    0       D  127.0.0.1        InLoopBack0
 127.0.0.1/32       Direct   0    0       D  127.0.0.1        InLoopBack0
172.16.19.0/24     Direct   0    0       D  172.16.19.10     GigabitEthernet0/0/1
172.16.19.10/32    Direct   0    0       D  127.0.0.1        GigabitEthernet0/0/1
192.168.10.0/24    Static  60    0      RD  172.16.19.20     GigabitEthernet0/0/1
```

Configuration on R3:

```
interface GigabitEthernet0/0/1
 ip address 172.16.19.20 255.255.255.0
#
interface GigabitEthernet0/0/2
 ip address 192.168.10.10 255.255.255.0
#
interface GigabitEthernet0/0/3
#
wlan
#
interface NULL0
#
ip route-static 10.10.10.0 255.255.255.0 172.16.19.10
ip route-static 100.100.100.0 255.255.255.0 192.168.10.20
#
```

IP Routing Table:



Route Flags: R - relay, D - download to fib

Routing Tables: Public
Destinations : 8 Routes : 8

Destination/Mask	Proto	Pre	Cost	Flags	NextHop	Interface
10.10.10.0/24	Static	60	0	RD	172.16.19.10	GigabitEthernet0/0/1
100.100.100.0/24	Static	60	0	RD	192.168.10.20	GigabitEthernet0/0/2
127.0.0.0/8	Direct	0	0	D	127.0.0.1	InLoopBack0
127.0.0.1/32	Direct	0	0	D	127.0.0.1	InLoopBack0
172.16.19.0/24	Direct	0	0	D	172.16.19.20	GigabitEthernet0/0/1
172.16.19.20/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/1
192.168.10.0/24	Direct	0	0	D	192.168.10.10	GigabitEthernet0/0/2
192.168.10.10/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/2

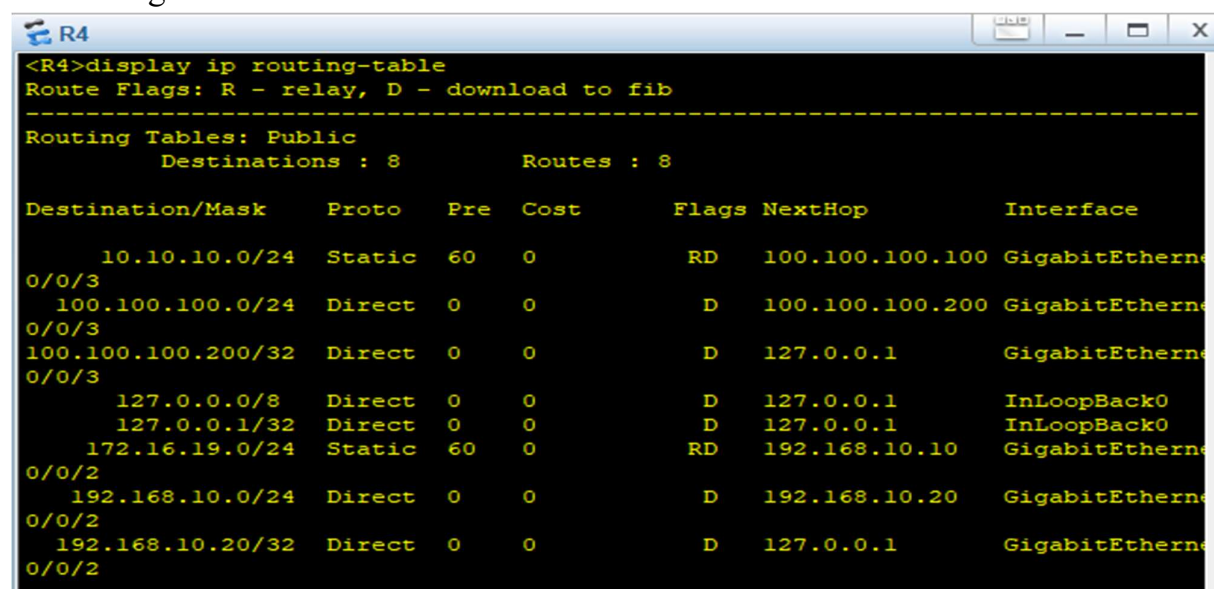
Configuration on R4:

```

interface GigabitEthernet0/0/2
 ip address 192.168.10.20 255.255.255.0
#
interface GigabitEthernet0/0/3
 ip address 100.100.100.200 255.255.255.0
#
wlan
#
interface NULL0
#
ip route-static 10.10.10.0 255.255.255.0 100.100.100.100
ip route-static 172.16.19.0 255.255.255.0 192.168.10.10
#

```

IP Routing Table:

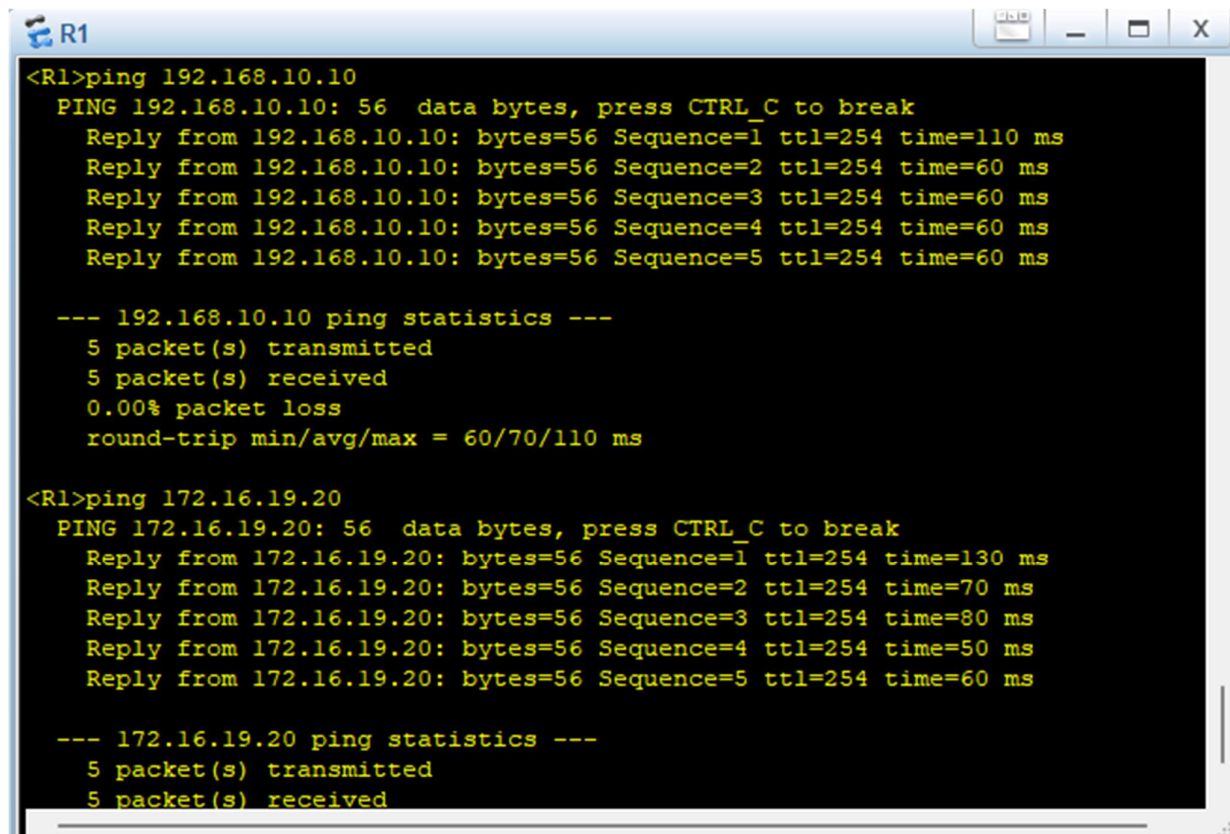


<R4>display ip routing-table

Route Flags: R - relay, D - download to fib

Routing Tables: Public
Destinations : 8 Routes : 8

Destination/Mask	Proto	Pre	Cost	Flags	NextHop	Interface
10.10.10.0/24	Static	60	0	RD	100.100.100.100	GigabitEthernet0/0/3
100.100.100.0/24	Direct	0	0	D	100.100.100.200	GigabitEthernet0/0/3
100.100.100.200/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/3
127.0.0.0/8	Direct	0	0	D	127.0.0.1	InLoopBack0
127.0.0.1/32	Direct	0	0	D	127.0.0.1	InLoopBack0
172.16.19.0/24	Static	60	0	RD	192.168.10.10	GigabitEthernet0/0/2
192.168.10.0/24	Direct	0	0	D	192.168.10.20	GigabitEthernet0/0/2
192.168.10.20/32	Direct	0	0	D	127.0.0.1	GigabitEthernet0/0/2

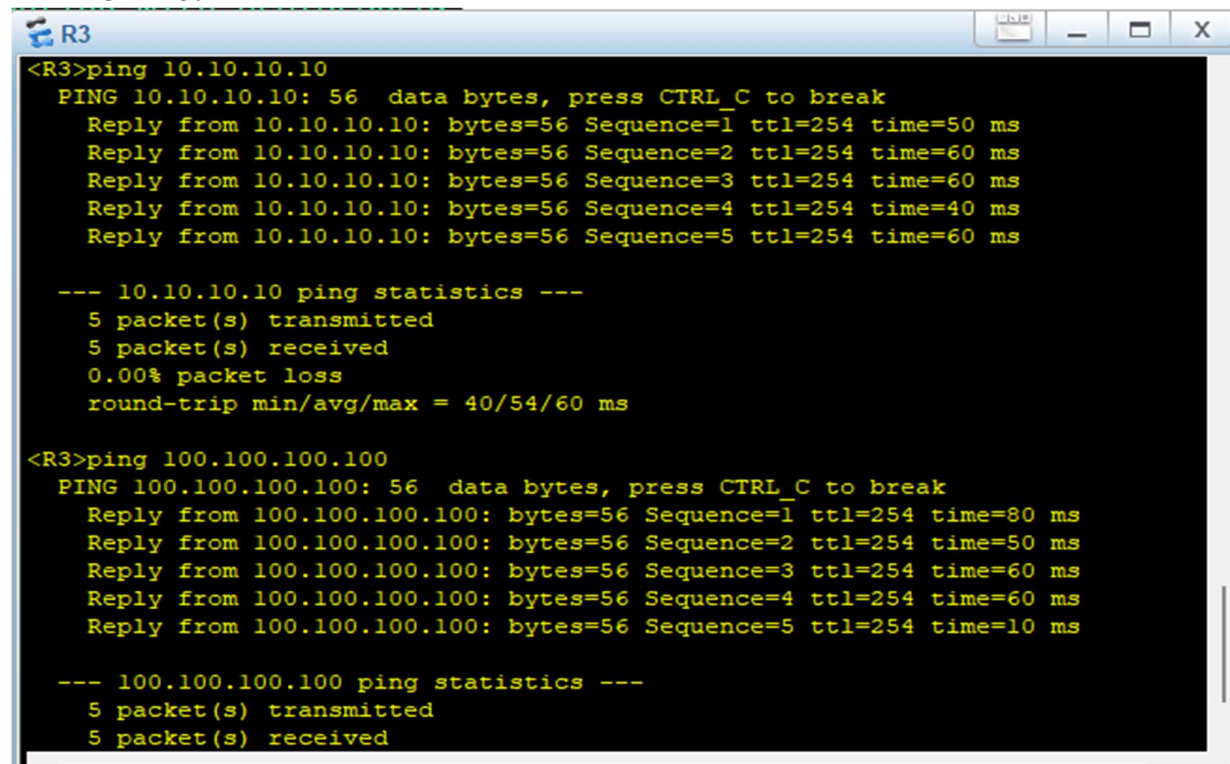
TESTING:**R3 FROM R1:**

```
<R1>ping 192.168.10.10
PING 192.168.10.10: 56 data bytes, press CTRL_C to break
  Reply from 192.168.10.10: bytes=56 Sequence=1 ttl=254 time=110 ms
  Reply from 192.168.10.10: bytes=56 Sequence=2 ttl=254 time=60 ms
  Reply from 192.168.10.10: bytes=56 Sequence=3 ttl=254 time=60 ms
  Reply from 192.168.10.10: bytes=56 Sequence=4 ttl=254 time=60 ms
  Reply from 192.168.10.10: bytes=56 Sequence=5 ttl=254 time=60 ms

--- 192.168.10.10 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 60/70/110 ms

<R1>ping 172.16.19.20
PING 172.16.19.20: 56 data bytes, press CTRL_C to break
  Reply from 172.16.19.20: bytes=56 Sequence=1 ttl=254 time=130 ms
  Reply from 172.16.19.20: bytes=56 Sequence=2 ttl=254 time=70 ms
  Reply from 172.16.19.20: bytes=56 Sequence=3 ttl=254 time=80 ms
  Reply from 172.16.19.20: bytes=56 Sequence=4 ttl=254 time=50 ms
  Reply from 172.16.19.20: bytes=56 Sequence=5 ttl=254 time=60 ms

--- 172.16.19.20 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
```

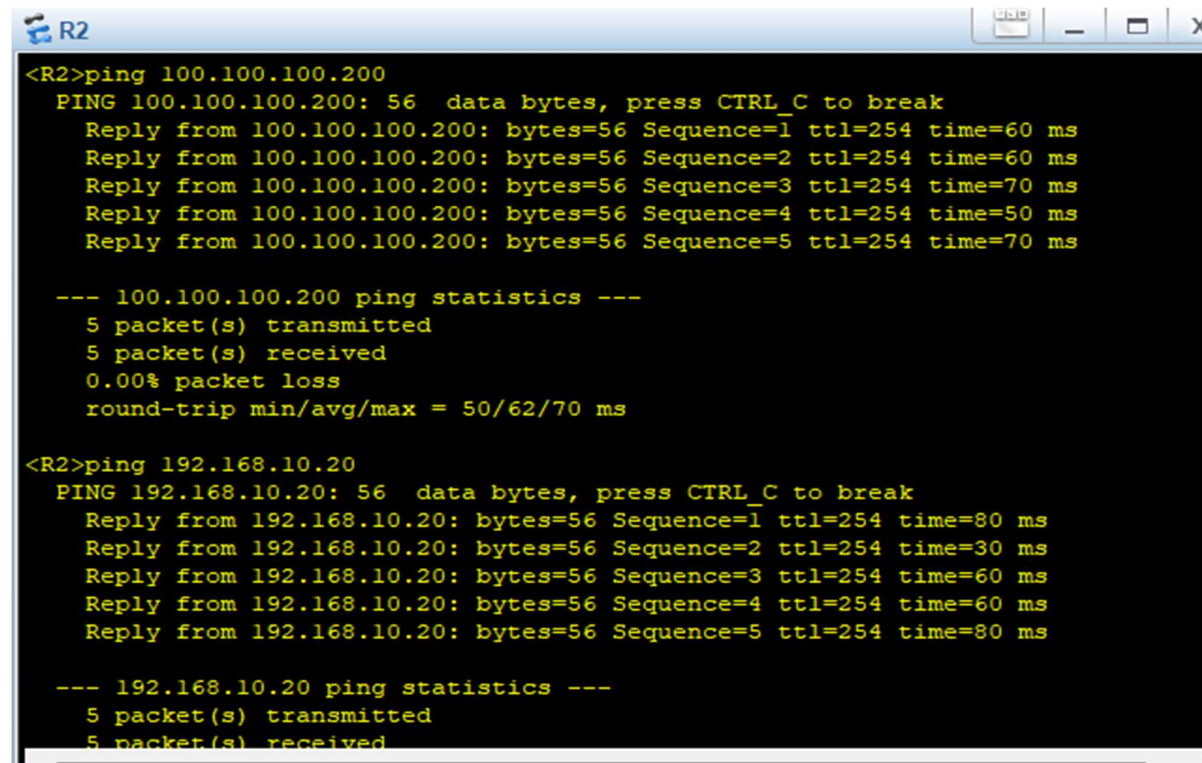
R1 FROM R3:

```
<R3>ping 10.10.10.10
PING 10.10.10.10: 56 data bytes, press CTRL_C to break
  Reply from 10.10.10.10: bytes=56 Sequence=1 ttl=254 time=50 ms
  Reply from 10.10.10.10: bytes=56 Sequence=2 ttl=254 time=60 ms
  Reply from 10.10.10.10: bytes=56 Sequence=3 ttl=254 time=60 ms
  Reply from 10.10.10.10: bytes=56 Sequence=4 ttl=254 time=40 ms
  Reply from 10.10.10.10: bytes=56 Sequence=5 ttl=254 time=60 ms

--- 10.10.10.10 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 40/54/60 ms

<R3>ping 100.100.100.100
PING 100.100.100.100: 56 data bytes, press CTRL_C to break
  Reply from 100.100.100.100: bytes=56 Sequence=1 ttl=254 time=80 ms
  Reply from 100.100.100.100: bytes=56 Sequence=2 ttl=254 time=50 ms
  Reply from 100.100.100.100: bytes=56 Sequence=3 ttl=254 time=60 ms
  Reply from 100.100.100.100: bytes=56 Sequence=4 ttl=254 time=60 ms
  Reply from 100.100.100.100: bytes=56 Sequence=5 ttl=254 time=10 ms

--- 100.100.100.100 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
```

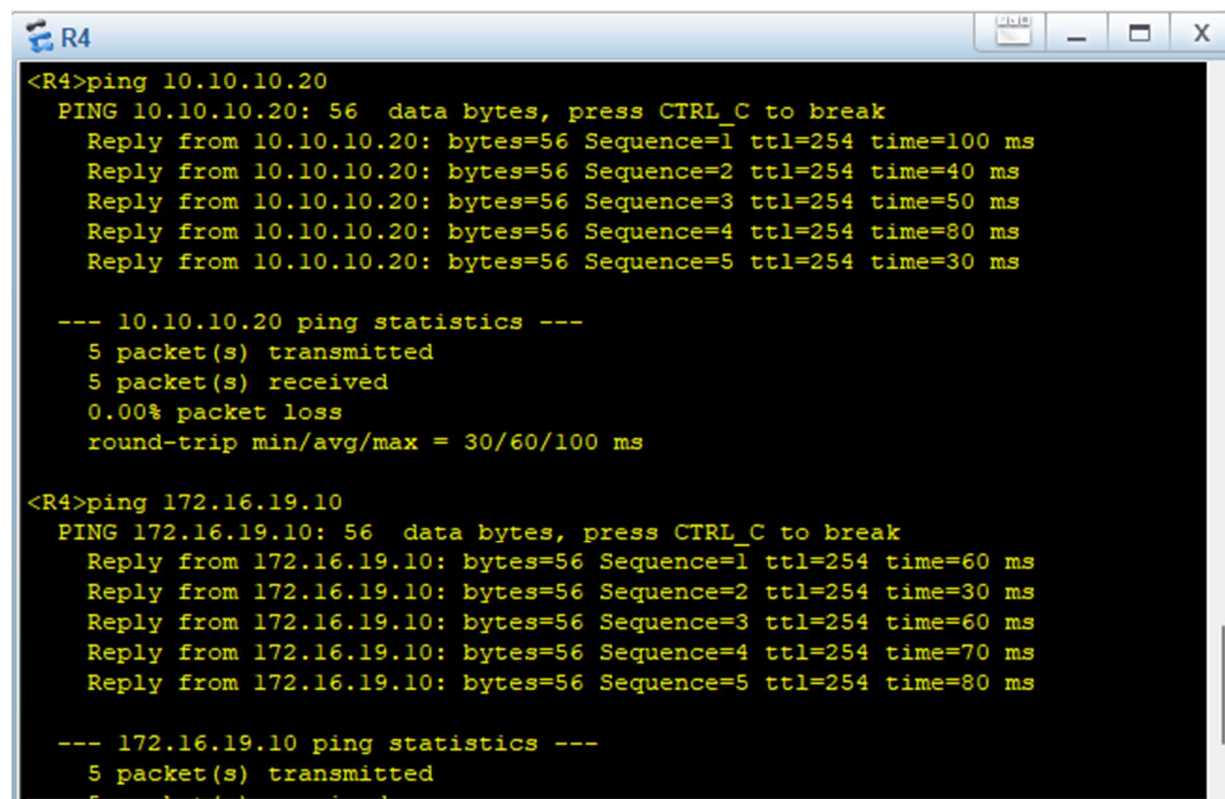
R4 FROM R2:

```
<R2>ping 100.100.100.200
PING 100.100.100.200: 56 data bytes, press CTRL_C to break
  Reply from 100.100.100.200: bytes=56 Sequence=1 ttl=254 time=60 ms
  Reply from 100.100.100.200: bytes=56 Sequence=2 ttl=254 time=60 ms
  Reply from 100.100.100.200: bytes=56 Sequence=3 ttl=254 time=70 ms
  Reply from 100.100.100.200: bytes=56 Sequence=4 ttl=254 time=50 ms
  Reply from 100.100.100.200: bytes=56 Sequence=5 ttl=254 time=70 ms

--- 100.100.100.200 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 50/62/70 ms

<R2>ping 192.168.10.20
PING 192.168.10.20: 56 data bytes, press CTRL_C to break
  Reply from 192.168.10.20: bytes=56 Sequence=1 ttl=254 time=80 ms
  Reply from 192.168.10.20: bytes=56 Sequence=2 ttl=254 time=30 ms
  Reply from 192.168.10.20: bytes=56 Sequence=3 ttl=254 time=60 ms
  Reply from 192.168.10.20: bytes=56 Sequence=4 ttl=254 time=60 ms
  Reply from 192.168.10.20: bytes=56 Sequence=5 ttl=254 time=80 ms

--- 192.168.10.20 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
```

R2 FROM R4:

```
<R4>ping 10.10.10.20
PING 10.10.10.20: 56 data bytes, press CTRL_C to break
  Reply from 10.10.10.20: bytes=56 Sequence=1 ttl=254 time=100 ms
  Reply from 10.10.10.20: bytes=56 Sequence=2 ttl=254 time=40 ms
  Reply from 10.10.10.20: bytes=56 Sequence=3 ttl=254 time=50 ms
  Reply from 10.10.10.20: bytes=56 Sequence=4 ttl=254 time=80 ms
  Reply from 10.10.10.20: bytes=56 Sequence=5 ttl=254 time=30 ms

--- 10.10.10.20 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 30/60/100 ms

<R4>ping 172.16.19.10
PING 172.16.19.10: 56 data bytes, press CTRL_C to break
  Reply from 172.16.19.10: bytes=56 Sequence=1 ttl=254 time=60 ms
  Reply from 172.16.19.10: bytes=56 Sequence=2 ttl=254 time=30 ms
  Reply from 172.16.19.10: bytes=56 Sequence=3 ttl=254 time=60 ms
  Reply from 172.16.19.10: bytes=56 Sequence=4 ttl=254 time=70 ms
  Reply from 172.16.19.10: bytes=56 Sequence=5 ttl=254 time=80 ms

--- 172.16.19.10 ping statistics ---
  5 packet(s) transmitted
```