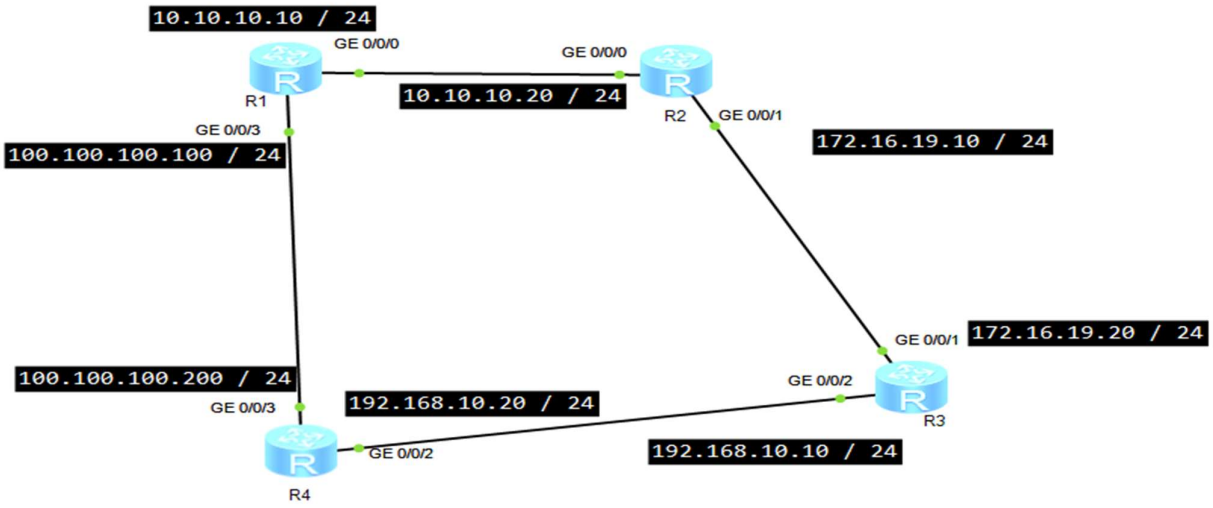
# LAB-08

**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:

R1

```
[R1]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   10.10.10.10     GigabitEtherne
0/0/0
    10.10.10.10/32  Direct  0    0           D   127.0.0.1       GigabitEtherne
0/0/0
  100.100.100.0/24  Direct  0    0           D   100.100.100.100 GigabitEtherne
0/0/3
100.100.100.100/32  Direct  0    0           D   127.0.0.1       GigabitEtherne
0/0/3
      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     GigabitEtherne
0/0/0
   192.168.10.0/24  Static  60   0          RD   100.100.100.200 GigabitEtherne
0/0/3
```

## Configuration on R2:

R2

```
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

```
<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     GigabitEtherne
0/0/0
    10.10.10.20/32  Direct  0    0           D   127.0.0.1       GigabitEtherne
0/0/0
  100.100.100.0/24  Static  60   0          RD   10.10.10.10     GigabitEtherne
0/0/0
      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    GigabitEtherne
0/0/1
   172.16.19.10/32  Direct  0    0           D   127.0.0.1       GigabitEtherne
0/0/1
   192.168.10.0/24  Static  60   0          RD   172.16.19.20    GigabitEtherne
0/0/1
```

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:

R3

```
[R3]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   172.16.19.10    GigabitEtherne
0/0/1
  100.100.100.0/24  Static  60   0           RD   192.168.10.20   GigabitEtherne
0/0/2
      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    GigabitEtherne
0/0/1
   172.16.19.20/32  Direct  0    0           D    127.0.0.1       GigabitEtherne
0/0/1
   192.168.10.0/24  Direct  0    0           D    192.168.10.10   GigabitEtherne
0/0/2
  192.168.10.10/32  Direct  0    0           D    127.0.0.1       GigabitEtherne
0/0/2
```

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

```
<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 GigabitEtherne
0/0/3
  100.100.100.0/24  Direct  0    0           D    100.100.100.200 GigabitEtherne
0/0/3
100.100.100.200/32  Direct  0    0           D    127.0.0.1       GigabitEtherne
0/0/3
      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   GigabitEtherne
0/0/2
   192.168.10.0/24  Direct  0    0           D    192.168.10.20   GigabitEtherne
0/0/2
  192.168.10.20/32  Direct  0    0           D    127.0.0.1       GigabitEtherne
0/0/2
```

**TESTING:**

**R3 FROM R1:**

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

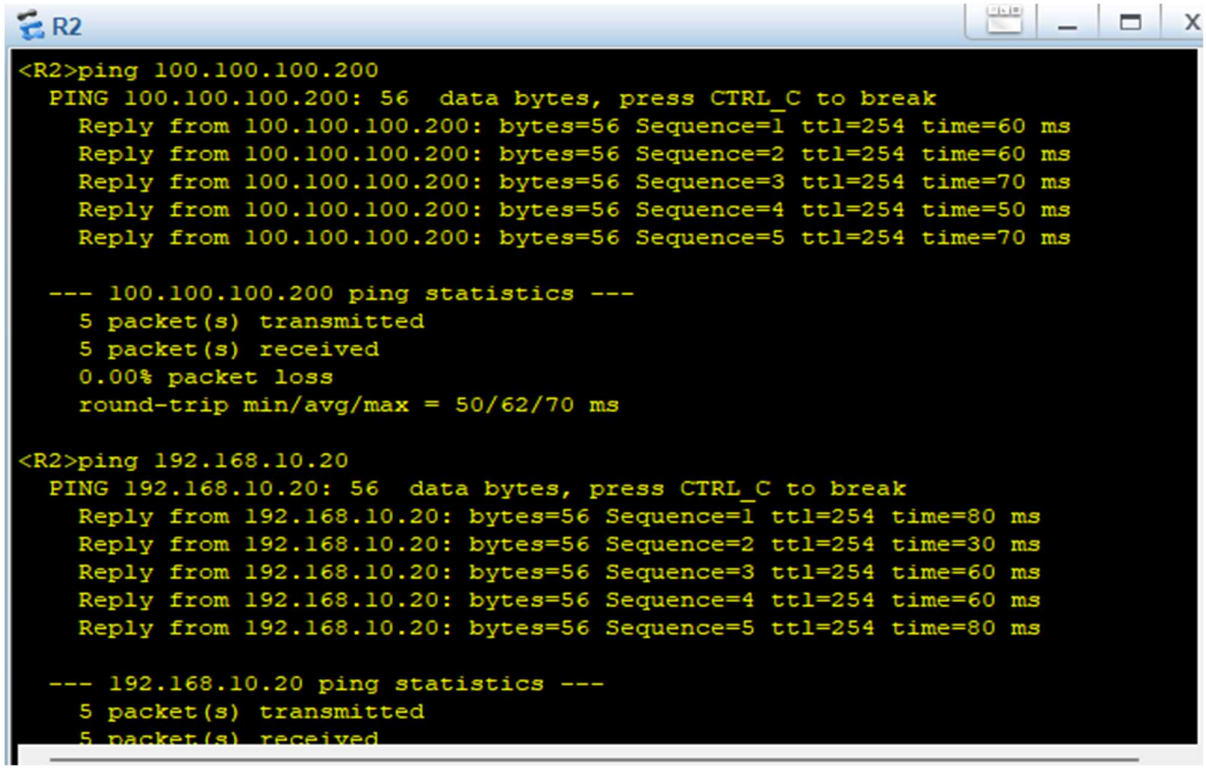
```
<R3>ping 10.10.10.10
  PING 10.10.10.10: 56  data bytes, press CTRL_C to break
    Reply from 10.10.10.10: bytes=56 Sequence=1 ttl=254 time=50 ms
    Reply from 10.10.10.10: bytes=56 Sequence=2 ttl=254 time=60 ms
    Reply from 10.10.10.10: bytes=56 Sequence=3 ttl=254 time=60 ms
    Reply from 10.10.10.10: 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 FROM R4:**