Computer networks laboratory week 8
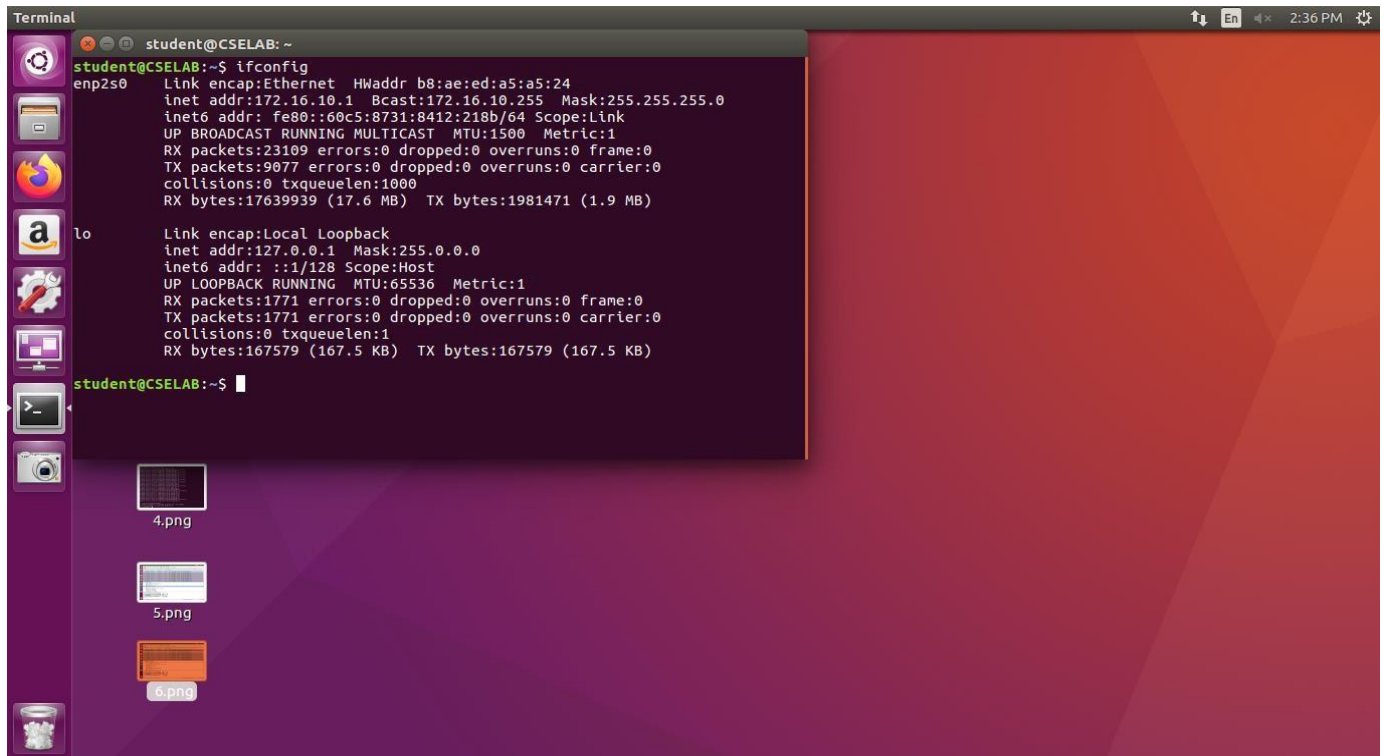
Name: Pranav R. Hegde   SRN: PES1UG19CS343   Section: F1

STEP 1: Assigning IP Addresses to each computer At H_a:
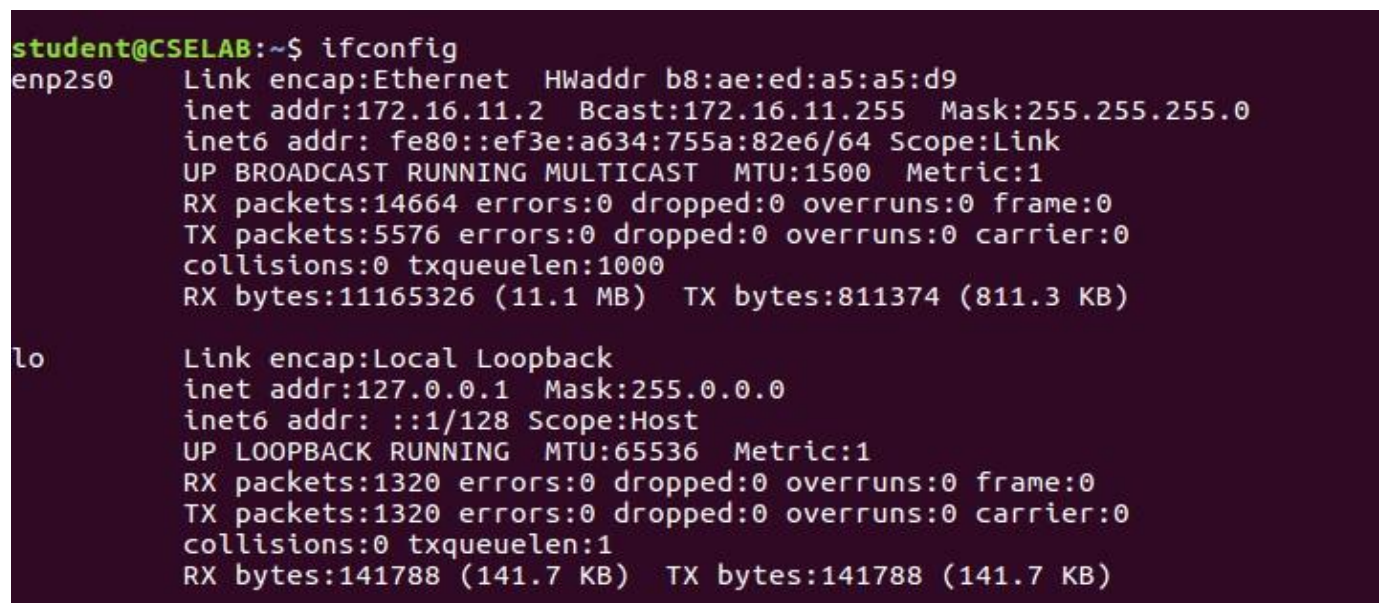

At H_b:

At R$_1$:

```
student@CSELAB:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
group default qlen 1000
    link/ether b8:ae:ed:a5:a5:ff brd ff:ff:ff:ff:ff:ff
    inet 172.16.10.2/24 brd 172.16.10.255 scope global enp2s0
       valid_lft forever preferred_lft forever
    inet6 fe80::35bb:8c3:281:5c15/64 scope link
       valid_lft forever preferred_lft forever
```

At R$_2$:

```
student@CSELAB:~$ ifconfig
enp2s0    Link encap:Ethernet  HWaddr b8:ae:ed:a5:a6:6a
          inet addr:172.16.10.3  Bcast:172.16.10.255  Mask:255.255.255.0
          inet6 addr: fe80::e884:d003:928b:2815/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:20806 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7772 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:18323273 (18.3 MB)  TX bytes:1015130 (1.0 MB)

enx00594d6ea7c2 Link encap:Ethernet  HWaddr 00:59:4d:6e:a7:c2
          inet addr:172.16.11.1  Bcast:172.16.11.255  Mask:255.255.255.0
          inet6 addr: fe80::f0c8:1a5c:7cc1:9aa/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:9 errors:0 dropped:0 overruns:0 frame:0
          TX packets:42 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2388 (2.3 KB)  TX bytes:6024 (6.0 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:4824 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4824 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:369371 (369.3 KB)  TX bytes:369371 (369.3 KB)
```
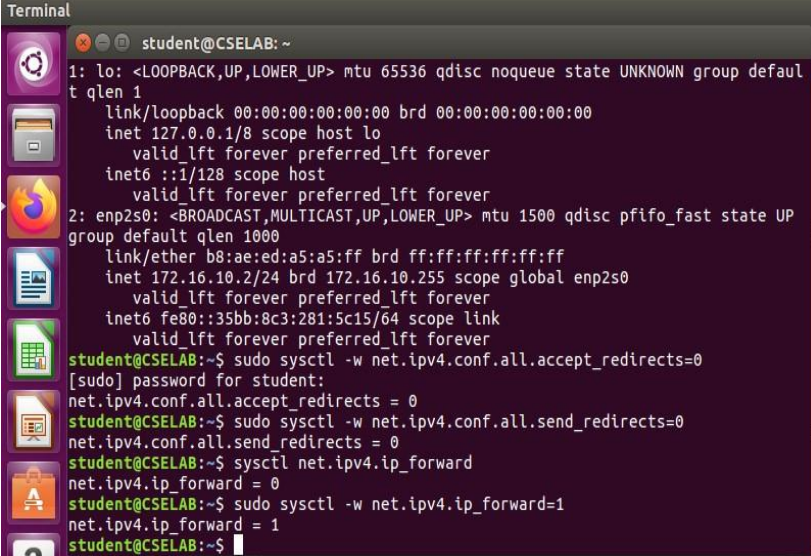
Disabling accepting the ICMP redirect packets

At H_a:

At H_b:

STEP 2: Converting two systems into routers R_1 and R_2

At R_1:


```
Terminal                                                        ↑↓ En ◄× 1:46 PM

    student@CSELAB: ~                                              138.93% ∨    ▯   ≡
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
group default qlen 1000                                         g is enabled or not through the value in the /proc
    link/ether b8:ae:ed:a5:a5:ff brd ff:ff:ff:ff:ff:ff
    inet 172.16.10.2/24 brd 172.16.10.255 scope global enp2s0
       valid_lft forever preferred_lft forever
    inet6 fe80::35bb:8c3:281:5c15/64 scope link
       valid_lft forever preferred_lft forever
student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.accept_redirects=0
[sudo] password for student:
net.ipv4.conf.all.accept_redirects = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.send_redirects=0    orwarding is not enabled. So, we need to set
net.ipv4.conf.all.send_redirects = 0
student@CSELAB:~$ sysctl net.ipv4.ip_forward
net.ipv4.ip_forward = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1                                         ard is as given below:
student@CSELAB:~$
```

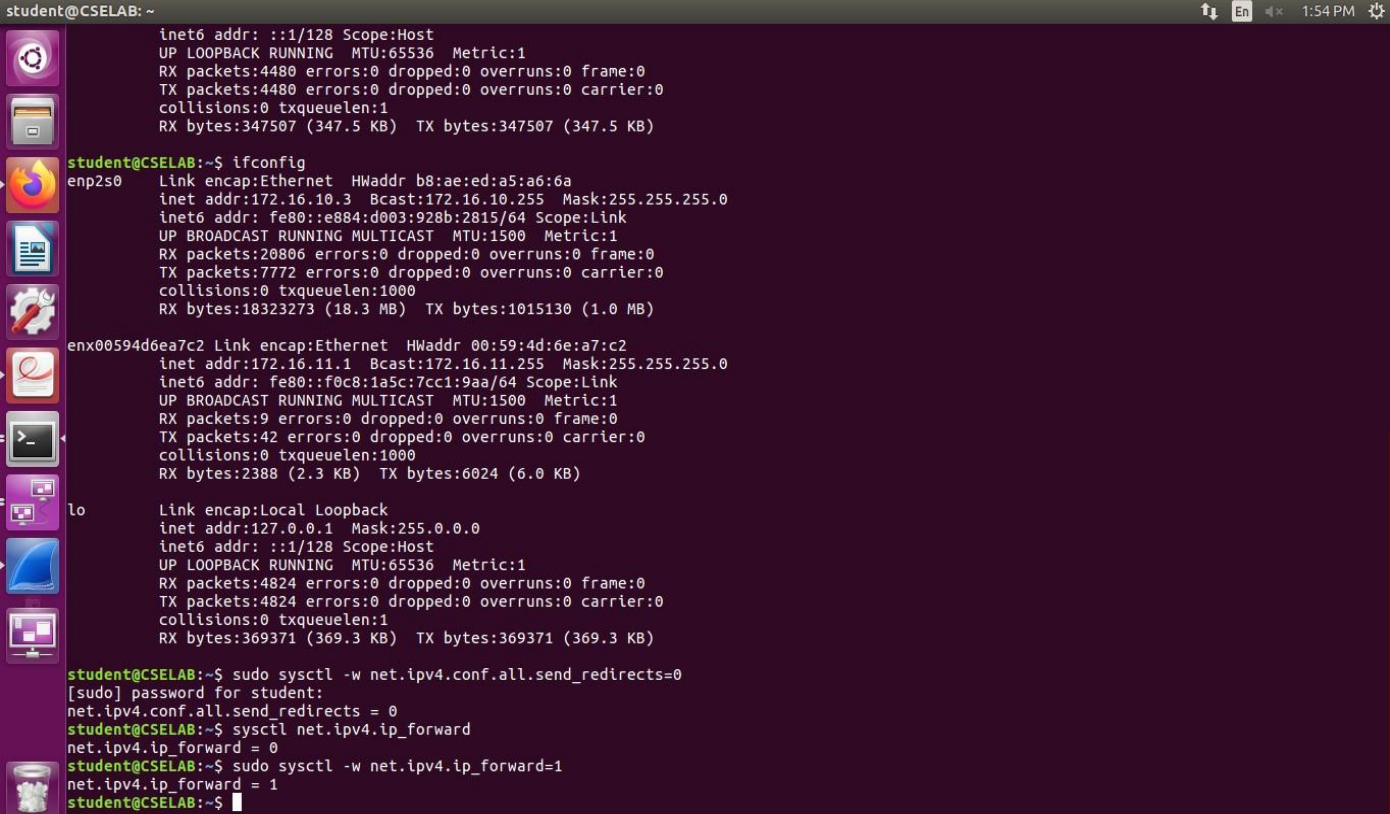**At R1:**

　　$ sudo sysctl –w net.ipv4.ip_forward=1

At R2:

　　$ sudo sysctl –w net.ipv4.ip_forward=1

```
student@student-H81H3-I:~$ sudo sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1
```

Step 3: Verify the Local Network connection using ping command.

Initially test the connection of systems within the same network

At R_2:


```
student@CSELAB: ~                                              ↑↓ En ◄× 1:54 PM

                inet6 addr: ::1/128 Scope:Host
                UP LOOPBACK RUNNING  MTU:65536  Metric:1
                RX packets:4480 errors:0 dropped:0 overruns:0 frame:0
                TX packets:4480 errors:0 dropped:0 overruns:0 carrier:0
                collisions:0 txqueuelen:1
                RX bytes:347507 (347.5 KB)  TX bytes:347507 (347.5 KB)

student@CSELAB:~$ ifconfig
enp2s0    Link encap:Ethernet  HWaddr b8:ae:ed:a5:a6:6a
                inet addr:172.16.10.3  Bcast:172.16.10.255  Mask:255.255.255.0
                inet6 addr: fe80::e884:d003:928b:2815/64 Scope:Link
                UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
                RX packets:20806 errors:0 dropped:0 overruns:0 frame:0
                TX packets:7772 errors:0 dropped:0 overruns:0 carrier:0
                collisions:0 txqueuelen:1000
                RX bytes:18323273 (18.3 MB)  TX bytes:1015130 (1.0 MB)

enx00594d6ea7c2 Link encap:Ethernet  HWaddr 00:59:4d:6e:a7:c2
                inet addr:172.16.11.1  Bcast:172.16.11.255  Mask:255.255.255.0
                inet6 addr: fe80::f0c8:1a5c:7cc1:9aa/64 Scope:Link
                UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
                RX packets:9 errors:0 dropped:0 overruns:0 frame:0
                TX packets:42 errors:0 dropped:0 overruns:0 carrier:0
                collisions:0 txqueuelen:1000
                RX bytes:2388 (2.3 KB)  TX bytes:6024 (6.0 KB)

lo              Link encap:Local Loopback
                inet addr:127.0.0.1  Mask:255.0.0.0
                inet6 addr: ::1/128 Scope:Host
                UP LOOPBACK RUNNING  MTU:65536  Metric:1
                RX packets:4824 errors:0 dropped:0 overruns:0 frame:0
                TX packets:4824 errors:0 dropped:0 overruns:0 carrier:0
                collisions:0 txqueuelen:1
                RX bytes:369371 (369.3 KB)  TX bytes:369371 (369.3 KB)

student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.send_redirects=0
[sudo] password for student:
net.ipv4.conf.all.send_redirects = 0
student@CSELAB:~$ sysctl net.ipv4.ip_forward
net.ipv4.ip_forward = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1
student@CSELAB:~$
```

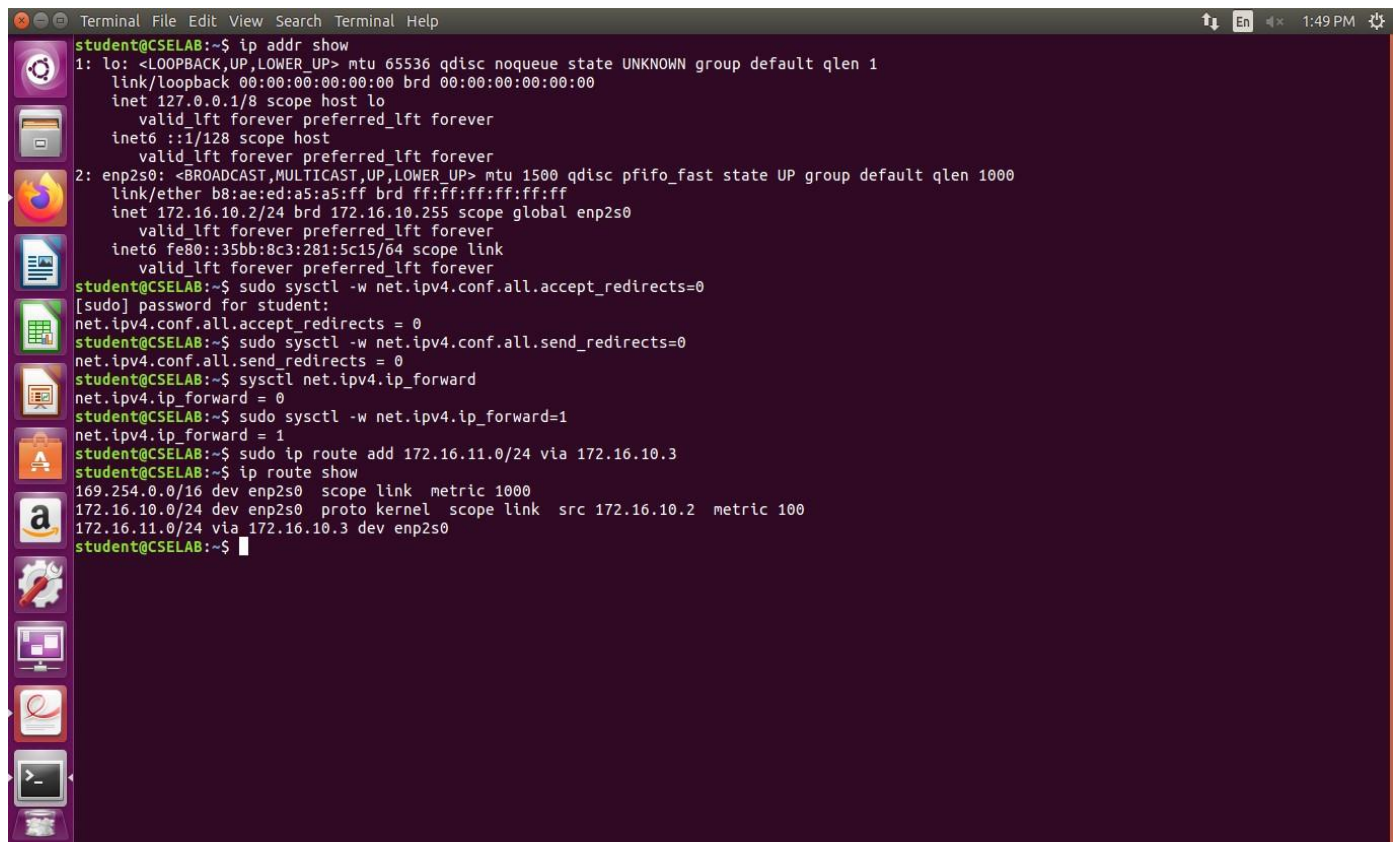**STEP 3:** Verifying the local network using ping command

At H$_a$:

```
student@CSELAB:~$ ping 172.16.10.1
PING 172.16.10.1 (172.16.10.1) 56(84) bytes of data.
64 bytes from 172.16.10.1: icmp_seq=1 ttl=64 time=0.077 ms
64 bytes from 172.16.10.1: icmp_seq=2 ttl=64 time=0.066 ms
64 bytes from 172.16.10.1: icmp_seq=3 ttl=64 time=0.073 ms
64 bytes from 172.16.10.1: icmp_seq=4 ttl=64 time=0.072 ms
64 bytes from 172.16.10.1: icmp_seq=5 ttl=64 time=0.065 ms
^C
--- 172.16.10.1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 3998ms
rtt min/avg/max/mdev = 0.065/0.070/0.077/0.010 ms
student@CSELAB:~$
```

At H$_b$:

```
student@CSELAB:~$ ping 172.16.11.1
PING 172.16.11.1 (172.16.11.1) 56(84) bytes of data.
64 bytes from 172.16.11.1: icmp_seq=1 ttl=64 time=0.439 ms
64 bytes from 172.16.11.1: icmp_seq=2 ttl=64 time=0.331 ms
64 bytes from 172.16.11.1: icmp_seq=3 ttl=64 time=0.351 ms
64 bytes from 172.16.11.1: icmp_seq=4 ttl=64 time=0.330 ms
64 bytes from 172.16.11.1: icmp_seq=5 ttl=64 time=0.347 ms
64 bytes from 172.16.11.1: icmp_seq=6 ttl=64 time=0.357 ms
^C
--- 172.16.11.1 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 4997ms
rtt min/avg/max/mdev = 0.330/0.359/0.439/0.038 ms
student@CSELAB:~$
```

STEP 4: Inserting routing table entries to direct ipv4 packets

At H$_a$:

```
student@CSELAB:~$ sudo ip route add 172.16.11.0/24 via 172.16.10.2
student@CSELAB:~$ ip route show
169.254.0.0/16 dev enp2s0  scope link  metric 1000
172.16.10.0/24 dev enp2s0  proto kernel  scope link  src 172.16.10.1  metric 100
172.16.11.0/24 via 172.16.10.2 dev enp2s0
student@CSELAB:~$
```

At R$_1$:

```
Terminal File Edit View Search Terminal Help                                              En    1:49 PM

student@CSELAB:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether b8:ae:ed:a5:a5:ff brd ff:ff:ff:ff:ff:ff
    inet 172.16.10.2/24 brd 172.16.10.255 scope global enp2s0
       valid_lft forever preferred_lft forever
    inet6 fe80::35bb:8c3:281:5c15/64 scope link
       valid_lft forever preferred_lft forever
student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.accept_redirects=0
[sudo] password for student:
net.ipv4.conf.all.accept_redirects = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.send_redirects=0
net.ipv4.conf.all.send_redirects = 0
student@CSELAB:~$ sysctl net.ipv4.ip_forward
net.ipv4.ip_forward = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1
student@CSELAB:~$ sudo ip route add 172.16.11.0/24 via 172.16.10.3
student@CSELAB:~$ ip route show
169.254.0.0/16 dev enp2s0  scope link  metric 1000
172.16.10.0/24 dev enp2s0  proto kernel  scope link  src 172.16.10.2  metric 100
172.16.11.0/24 via 172.16.10.3 dev enp2s0
student@CSELAB:~$
```

At H$_b$:

```
student@CSELAB:~$ sudo ip route add 172.16.10.0/24 via 172.16.11.1
student@CSELAB:~$ ip route show
169.254.0.0/16 dev enp2s0  scope link  metric 1000
172.16.10.0/24 via 172.16.11.1 dev enp2s0
172.16.11.0/24 dev enp2s0  proto kernel  scope link  src 172.16.11.2  metric 100
```

STEP 5: Capturing packets on Wireshark

Pinging H_b from H_a:

```
student@CSELAB:~$ ping 172.16.11.2
PING 172.16.11.2 (172.16.11.2) 56(84) bytes of data.
From 172.16.10.2: icmp_seq=1 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=1 ttl=63 time=1.32 ms
From 172.16.10.2: icmp_seq=2 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=2 ttl=63 time=0.761 ms
From 172.16.10.2: icmp_seq=3 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=3 ttl=63 time=0.670 ms
From 172.16.10.2: icmp_seq=4 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=4 ttl=63 time=0.774 ms
From 172.16.10.2: icmp_seq=5 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=5 ttl=63 time=0.831 ms
From 172.16.10.2: icmp_seq=6 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=6 ttl=63 time=0.763 ms
64 bytes from 172.16.11.2: icmp_seq=7 ttl=63 time=0.768 ms
From 172.16.10.2: icmp_seq=8 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=8 ttl=63 time=0.678 ms
64 bytes from 172.16.11.2: icmp_seq=9 ttl=63 time=0.615 ms
64 bytes from 172.16.11.2: icmp_seq=10 ttl=63 time=0.688 ms
From 172.16.10.2: icmp_seq=11 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=11 ttl=63 time=0.724 ms
64 bytes from 172.16.11.2: icmp_seq=12 ttl=63 time=0.672 ms
64 bytes from 172.16.11.2: icmp_seq=13 ttl=63 time=0.671 ms
64 bytes from 172.16.11.2: icmp_seq=14 ttl=63 time=0.723 ms
64 bytes from 172.16.11.2: icmp_seq=15 ttl=63 time=0.593 ms
64 bytes from 172.16.11.2: icmp_seq=16 ttl=63 time=0.656 ms
From 172.16.10.2: icmp_seq=17 Redirect Host(New nexthop: 172.16.10.3)
64 bytes from 172.16.11.2: icmp_seq=17 ttl=63 time=0.493 ms
^C
--- 172.16.11.2 ping statistics ---
17 packets transmitted, 17 received, 0% packet loss, time 15999ms
rtt min/avg/max/mdev = 0.493/0.729/1.326/0.171 ms
student@CSELAB:~$
```

Capturing packets at H_a:

Capturing packets at R₁:

Capturing packets at R₂:

Capturing packets at H_b:

STEP 6: Checking each system neighbours to verify the connection At

H$_a$:

At R$_1$:

At R₂:


```
enp2s0    Link encap:Ethernet  HWaddr b8:ae:ed:a5:a6:6a
          inet addr:172.16.10.3  Bcast:172.16.10.255  Mask:255.255.255.0
          inet6 addr: fe80::e884:d003:928b:2815/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:20806 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7772 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:18323273 (18.3 MB)  TX bytes:1015130 (1.0 MB)

enx00594d6ea7c2 Link encap:Ethernet  HWaddr 00:59:4d:6e:a7:c2
          inet addr:172.16.11.1  Bcast:172.16.11.255  Mask:255.255.255.0
          inet6 addr: fe80::f0c8:1a5c:7cc1:9aa/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:9 errors:0 dropped:0 overruns:0 frame:0
          TX packets:42 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2388 (2.3 KB)  TX bytes:6024 (6.0 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:4824 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4824 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:369371 (369.3 KB)  TX bytes:369371 (369.3 KB)

student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.send_redirects=0
[sudo] password for student:
net.ipv4.conf.all.send_redirects = 0
student@CSELAB:~$ sysctl net.ipv4.ip_forward
net.ipv4.ip_forward = 0
student@CSELAB:~$ sudo sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1
student@CSELAB:~$ ip neigh show
172.16.10.2 dev enp2s0 lladdr b8:ae:ed:a5:a5:ff STALE
172.16.11.2 dev enx00594d6ea7c2 lladdr b8:ae:ed:a5:a5:d9 STALE
172.16.10.1 dev enp2s0 lladdr b8:ae:ed:a5:a5:24 STALE
student@CSELAB:~$ ip neigh show
172.16.10.2 dev enp2s0 lladdr b8:ae:ed:a5:a5:ff STALE
172.16.11.2 dev enx00594d6ea7c2 lladdr b8:ae:ed:a5:a5:d9 REACHABLE
172.16.10.1 dev enp2s0 lladdr b8:ae:ed:a5:a5:24 REACHABLE
student@CSELAB:~$
```

Sending data from H_b to H_a using nc command

At H_b:


```
          RX bytes:141788 (141.7 KB)  TX bytes:141788 (141.7 KB)

student@CSELAB:~$ sudo sysctl -w net.ipv4.conf.all.accept_redirects=0
[sudo] password for student:
net.ipv4.conf.all.accept_redirects = 0
student@CSELAB:~$ ping 172.16.11.1
PING 172.16.11.1 (172.16.11.1) 56(84) bytes of data.
64 bytes from 172.16.11.1: icmp_seq=1 ttl=64 time=0.439 ms
64 bytes from 172.16.11.1: icmp_seq=2 ttl=64 time=0.331 ms
64 bytes from 172.16.11.1: icmp_seq=3 ttl=64 time=0.351 ms
64 bytes from 172.16.11.1: icmp_seq=4 ttl=64 time=0.330 ms
64 bytes from 172.16.11.1: icmp_seq=5 ttl=64 time=0.347 ms
64 bytes from 172.16.11.1: icmp_seq=6 ttl=64 time=0.357 ms
^C
--- 172.16.11.1 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 4997ms
rtt min/avg/max/mdev = 0.330/0.359/0.439/0.038 ms
student@CSELAB:~$ sudo ip route add 172.16.10.0/24 via 172.16.11.1
student@CSELAB:~$ ip route show
169.254.0.0/16 dev enp2s0  scope link  metric 1000
172.16.10.0/24 via 172.16.11.1 dev enp2s0
172.16.11.0/24 dev enp2s0  proto kernel  scope link  src 172.16.11.2  metric 100
student@CSELAB:~$ ip neigh show
172.16.11.1 dev enp2s0 lladdr 00:59:4d:6e:a7:c2 REACHABLE
student@CSELAB:~$ ip route show
169.254.0.0/16 dev enp2s0  scope link  metric 1000
172.16.10.0/24 via 172.16.11.1 dev enp2s0
172.16.11.0/24 dev enp2s0  proto kernel  scope link  src 172.16.11.2  metric 100
student@CSELAB:~$ nc -l 1002
nc: Permission denied
student@CSELAB:~$ sudo nc -l 1002
[sudo] password for student:
abcdef
student@CSELAB:~$ sudo nc -l 1002
PES1UG19CS467
PES1UG19CS468
PES1UG19CS494
PES1UG19CS469
^C
student@CSELAB:~$ sudo nc -l 1002
PES1UG19CS467
student@CSELAB:~$ ^C
student@CSELAB:~$
```

At H$_a$:

```
student@CSELAB: ~                                              ↑↓ En ◀× 2:15 PM ⚙

 64 bytes from 172.16.11.2: icmp_seq=24 ttl=63 time=0.595 ms
 64 bytes from 172.16.11.2: icmp_seq=25 ttl=63 time=0.714 ms
 64 bytes from 172.16.11.2: icmp_seq=26 ttl=63 time=0.719 ms
 64 bytes from 172.16.11.2: icmp_seq=27 ttl=63 time=0.686 ms
 64 bytes from 172.16.11.2: icmp_seq=28 ttl=63 time=0.688 ms
 64 bytes from 172.16.11.2: icmp_seq=29 ttl=63 time=0.732 ms
 64 bytes from 172.16.11.2: icmp_seq=30 ttl=63 time=0.741 ms
 64 bytes from 172.16.11.2: icmp_seq=31 ttl=63 time=0.718 ms
 64 bytes from 172.16.11.2: icmp_seq=32 ttl=63 time=0.716 ms
 64 bytes from 172.16.11.2: icmp_seq=33 ttl=63 time=0.701 ms
 64 bytes from 172.16.11.2: icmp_seq=34 ttl=63 time=0.730 ms
 64 bytes from 172.16.11.2: icmp_seq=35 ttl=63 time=0.756 ms
 64 bytes from 172.16.11.2: icmp_seq=36 ttl=63 time=0.597 ms
 64 bytes from 172.16.11.2: icmp_seq=37 ttl=63 time=0.596 ms
 64 bytes from 172.16.11.2: icmp_seq=38 ttl=63 time=0.609 ms
 64 bytes from 172.16.11.2: icmp_seq=39 ttl=63 time=0.780 ms
 64 bytes from 172.16.11.2: icmp_seq=40 ttl=63 time=0.675 ms
 64 bytes from 172.16.11.2: icmp_seq=41 ttl=63 time=0.615 ms
 64 bytes from 172.16.11.2: icmp_seq=42 ttl=63 time=0.694 ms
 64 bytes from 172.16.11.2: icmp_seq=43 ttl=63 time=0.612 ms
 64 bytes from 172.16.11.2: icmp_seq=44 ttl=63 time=0.701 ms
 64 bytes from 172.16.11.2: icmp_seq=45 ttl=63 time=0.651 ms
 64 bytes from 172.16.11.2: icmp_seq=46 ttl=63 time=0.735 ms
 64 bytes from 172.16.11.2: icmp_seq=47 ttl=63 time=0.700 ms
^C
--- 172.16.11.2 ping statistics ---
47 packets transmitted, 47 received, 0% packet loss, time 45999ms
rtt min/avg/max/mdev = 0.595/0.708/0.783/0.053 ms
student@CSELAB:~$ cat xyz.txt|nc 172.16.11.2 1002
cat: xyz.txt: No such file or directory
abcdef
student@CSELAB:~$ cat xyz.txt|nc 172.16.11.2 1005
cat: xyz.txt: No such file or directory
student@CSELAB:~$ gedit xyz.txt
student@CSELAB:~$ cat xyz.txt|nc 172.16.11.2 1002
student@CSELAB:~$ gedit xyz.txt
student@CSELAB:~$ cat xyz.txt|nc 172.16.11.2 1002
student@CSELAB:~$ cat xyzw.txt|nc 172.16.11.2 1002
cat: xyzw.txt: No such file or directory
student@CSELAB:~$ cat xyz.txt|nc 172.16.11.2 1002
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student@CSELAB:~$ gedit xyz.txt
student@CSELAB:~$
```