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🔰 14.1 Create a network Topology Setup in such a way so that System A can ping to two Systems System B and System C but both these systems should not be pinging each other without using any security rule e.g firewall etc .

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🔰 14.1 Create a network Topology Setup in such a way so that System A can ping to two Systems System B and System C but both these systems should not be pinging each other without using any security rule e.g firewall etc .

Prerequisite:

👉 **what is route table?**

✔ it consists of the rules in the routing table to allow the range of particular range of IP.

👉 **command for creating and deleting the routing table?**

✔ route add -net network_name netmask Netmask gw gateway_IP NIC

👉 **command to show change ip address**

✔ifconfig enp0s3 <IPaddress>

👉 **what is enp0s3 here**

✔ it's is the name of the network card.

👉 **what is ping**

✔ sending and receiving of packets between two system.

INTITUITION:

System A: add the range in Routing Table which has the IP of B and C both

System B: add the range in Routing Tab which has the IP of A only.

System C: add the range in Routing Tab which has the IP of A only.

A System:

1st: making this system 192.168.0.3

Ifconfig enp0s3 192.168.0.3

2nd: adding the range in which IP of B and C belongs, so that A can ping both to B not to C

route add -net 192.168.0.0/28 = > it gives the range 192.168.0.0 - 192.168.0.16

3rd: ping to C : it should work

ping 192.168.0.6

4th: ping to B, it should work.

ping 192.168.0.5

```
[root@localhost ~]# ifconfig enp0s3 192.168.0.3
[root@localhost ~]# ping 192.168.0.6
connect: Network is unreachable
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
192.168.122.0   0.0.0.0         255.255.255.0   U     0      0        0 virbr0
[root@localhost ~]# route add -net 192.168.0.0/28 enp0s3
[root@localhost ~]# ping 192.168.0.6
PING 192.168.0.6 (192.168.0.6) 56(84) bytes of data.
From 192.168.0.3 icmp_seq=1 Destination Host Unreachable
From 192.168.0.3 icmp_seq=2 Destination Host Unreachable
From 192.168.0.3 icmp_seq=3 Destination Host Unreachable
From 192.168.0.3 icmp_seq=4 Destination Host Unreachable
From 192.168.0.3 icmp_seq=5 Destination Host Unreachable
From 192.168.0.3 icmp_seq=6 Destination Host Unreachable
^C
--- 192.168.0.6 ping statistics ---
7 packets transmitted, 0 received, +6 errors, 100% packet loss, time 176ms
pipe 4
```

Enterprise Linux

```
[root@localhost ~]# ping 192.168.0.5
PING 192.168.0.5 (192.168.0.5) 56(84) bytes of data.
64 bytes from 192.168.0.5: icmp_seq=1 ttl=64 time=0.847 ms
64 bytes from 192.168.0.5: icmp_seq=2 ttl=64 time=0.462 ms
64 bytes from 192.168.0.5: icmp_seq=3 ttl=64 time=0.455 ms
^C
--- 192.168.0.5 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 79ms
rtt min/avg/max/mdev = 0.455/0.588/0.847/0.183 ms
```

B: 192.168.0.5

1st: making this system 192.168.0.5

Ifconfig enp0s3 192.168.0.5

2nd: adding the range in which IP of A belongs and not of C, so that B can ping only to A not to C

route add -net 192.168.0.2/31

3rd: ping to C : it should not.

ping 192.168.0.6

4th: ping to A, it should work.

ping 192.168.0.3

```
[root@localhost ~]# ifconfig enp0s3 192.168.0.5
[root@localhost ~]# ifconfig enp0s3
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.0.5  netmask 255.255.255.0  broadcast 192.168.0.255
        inet6 fe80::e378:8a4a:94c9:b028  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:93:44:2c  txqueuelen 1000  (Ethernet)
        RX packets 233  bytes 17643 (17.2 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 21  bytes 1954 (1.9 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

[root@localhost ~]# route add -net 192.168.0.2/31
SIOCADDRT: No such device
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# route add -net 192.168.0.2/31 enp0s3
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.0.2     0.0.0.0         255.255.255.254 U     0      0        0 enp0s3
[root@localhost ~]# ping 192.168.0.6
connect: Network is unreachable
```

```
[root@localhost ~]# ping 192.168.0.3
PING 192.168.0.3 (192.168.0.3) 56(84) bytes of data.
64 bytes from 192.168.0.3: icmp_seq=1 ttl=64 time=0.476 ms
64 bytes from 192.168.0.3: icmp_seq=2 ttl=64 time=0.483 ms
64 bytes from 192.168.0.3: icmp_seq=3 ttl=64 time=0.471 ms
^C
--- 192.168.0.3 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 77ms
rtt min/avg/max/mdev = 0.471/0.476/0.483/0.025 ms
[root@localhost ~]# _
```

C system:

1st: making this system 192.168.0.6

Ifconfig enp0s3 192.168.0.6

2nd: adding the range in which IP of A belongs and not of B, so that C can ping only to A not to B.

route add -net 192.168.0.2/31

3rd: ping to B : it should not.

ping 192.168.0.5

4th: ping to A, it should work.

ping 192.168.0.3

```
[root@localhost ~]# ifconfig enp0s3 192.168.0.6
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
[root@localhost ~]# route add -net 192.168.0.2/31 enp0s3
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
192.168.0.2     0.0.0.0         255.255.255.254 U     0      0        0 enp0s3
[root@localhost ~]# ping 192.168.0.5
connect: Network is unreachable
[root@localhost ~]#
```

```
[root@localhost ~]# ping 192.168.0.3
PING 192.168.0.3 (192.168.0.3) 56(84) bytes of data.
64 bytes from 192.168.0.3: icmp_seq=1 ttl=64 time=0.471 ms
64 bytes from 192.168.0.3: icmp_seq=2 ttl=64 time=0.442 ms
64 bytes from 192.168.0.3: icmp_seq=3 ttl=64 time=0.456 ms
^C
--- 192.168.0.3 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 60ms
rtt min/avg/max/mdev = 0.442/0.456/0.471/0.021 ms
[root@localhost ~]#
```