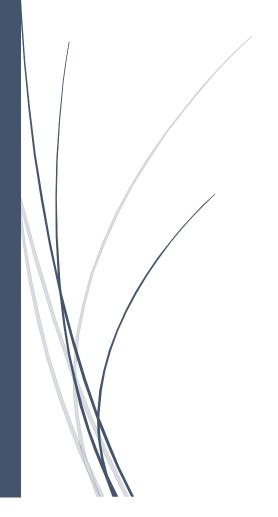


12/26/2020

Create a Setup so that you can ping google but not able to ping Facebook from same system



akshay anil AKSHAYANIL1080.GITHUB.IO/MYWEBSITE/

VirtualMachine should be able to ping to google but not to FB.

Solution: give the range in RT which has google IP in it but not of FB IP.

# Pinging to google.com

## Command: ping google.com

```
[root@localhost ~]# ping www.google.com
PING www.google.com (<mark>172.217.166.68)</mark> 56(84) bytes of data.
54 bytes from bom05s15-in-f4.1e100.net (172.217.166.68): icmp_seq=1 ttl=116 time
=82.3 ms
54 bytes from bom05s15-in-f4.1e100.net (172.217.166.68): icmp_seq=2 ttl=116 time
76.9 ms
-- www.google.com ping statistics ---
packets transmitted, 2 received, 33.333% packet loss, time 6ms
tt min/avg/max/mdev = 76.904/79.592/82.280/2.688 ms
root@localhost ~]# route -n
Kernel IP routing table
Destination
                                 Genmask
                                                  Flags Metric Ref
                                                                       Use Iface
               Gateway
9.0.0.0
                192.168.0.1
                                0.0.0.0
                                                 UG
                                                        100
                                                               0
                                                                        0 enp0s3
172.17.0.0
               0.0.0.0
                                255.255.0.0
                                                U
                                                        0
                                                               0
                                                                        0 docker0
192.168.0.0
               0.0.0.0
                                 255.255.255.0 U
                                                        100
                                                               0
                                                                        0 enp0s3
192.168.122.0
               0.0.0.0
                                 255.255.255.0 U
                                                        0
                                                               0
                                                                         0 virbr0
root@localhost ~]# route del -net 0.0.0.0
root@localhost ~]# route -n
Gernel IP routing table
Destination
                Gateway
                                                  Flags Metric Ref
                                                                       Use Iface
                                 Genmask
172.17.0.0
                0.0.0.0
                                 255.255.0.0
                                                  U
                                                        0
                                                               0
                                                                         0 docker0
92.168.0.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        100
                                                               0
                                                                         0 enp0s3
192.168.122.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        0
                                                               0
                                                                         0 virbr0
                                                                   Enterprise Linux
```

Working fine because 0.0.0.0 is by default added in Routing Table

Lets first delete this rule otherwise the system can ping any IP i.e will create the packets.

## Command: route del -net 0.0.0.0

checking the table now:

#### Command: route -n

```
[root@localhost ~]# route del -net 0.0.0.0
[root@localhost ~]# route -n
Kernel IP routing table
Destination
                                 Genmask
                                                  Flags Metric Ref
                                                                       Use Iface
                Gatewav
                                                                         0 docker0
172.17.0.0
                0.0.0.0
                                 255.255.0.0
                                                        0
                                                U
                                                               0
                                255.255.255.0
192.168.0.0
                0.0.0.0
                                                U
                                                        100
                                                                0
                                                                         0 enp0s3
192.168.122.0 0.0.0.0
                                 255.255.255.0
                                                                         0 virbr0
[root@localhost ~]# ping 172.217.166.68
connect: Network is unreachable
[root@localhost ~]#
                                                                   Enterprise Linux
```

Let's use one of the google IP i.e 172.217.166.0 – one can get all the ip by ns-lookup command eg. nslookup www.google.com

Give the netmask and proving the range

Command: route add -net 172.217.166.0 netmask 255.255.2555.0 gw 192.168.0.1

```
[root@localhost ~]# route add -net 172.217.166.0 netmask 255.255.255.0 gw 192.16
8.0.1 enp0s3
[root@localhost ~]# route -n
Kernel IP routing table
Destination
                              Genmask
                                             Flags Metric Ref
                                                                 Use Iface
               Gateway
172.17.0.0
               0.0.0.0
                              255.255.0.0
                                             U
                                                 0
                                                          0
                                                                  0 docker0
                             255.255.255.0
172.217.166.0 192.168.0.1
                                                   0
                                                          0
                                             UG
                                                                  0 enp0s3
192.168.0.0
               0.0.0.0
                              255.255.255.0
                                                   100
                                                          0
                                             U
                                                                  0 enp0s3
192.168.122.0
                              255.255.255.0
                                                          0
               0.0.0.0
                                             U
                                                   0
                                                                  0 virbr0
[root@localhost ~]#
                                                             Enterprise Linu:
```

Now range has been given create the packet. Ok

And go the gateway via nic and ping successful

Command: ping 172.217.166.68

```
192.168.0.0
                0.0.0.0
                                255.255.255.0
                                                                       0 enp0s3
192.168.122.0
                0.0.0.0
                                255.255.255.0
                                                U
                                                      0
                                                                       0 virbr0
[root@localhost ~]# ping 172.217.166.68
PING 172.217.166.68 (172.217.166.68) 56(84) bytes of data.
64 bytes from 172.217.166.68: icmp seq=1 ttl=116 time=77.4 ms
64 bytes from 172.217.166.68: icmp seq=2 ttl=116 time=76.7 ms
64 bytes from 172.217.166.68: icmp_seq=3 ttl=116 time=80.2 ms
64 bytes from 172.217.166.68: icmp_seq=4 ttl=116 time=78.1 ms
 --- 172.217.166.68 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 13ms
rtt min/avg/max/mdev = 76.676/78.093/80.165/1.298 ms
[root@localhost ~]#
                                                                 Enterprise Linux
```

Let's take one the FB ip: 157.240.198.35

Command: ping 157.240.198.35

```
[root@localhost ~]# ping 157.240.198.35

connect: Network is unreachable
[root@localhost ~]# 
Lnterprise Linux
```

Its unreachable: as the rule for this IP range is not added.

Practical completed.....

#### ADDITIONAL KNOWLEDGE

#### HOWEVER,

If we want to provide this range too, lets see how to do it.

Adding the new range

Command: route add -net 157.240.198.0 netmask 255.255.255.0 gw 192.168.0.1 enps3

```
[root@localhost ~]# route add -net 157.240.198.0 netmask 255.255.255.0 gw 192.16
8.0.1 enp0s3
[root@localhost ~]# route -n
Kernel IP routing table
Descination Gateway Genmask Flags Metric Ref
157.240.198.0 192.168.0.1 255.255.255.0 UG 0 0
172.17.0.0 0.0.0.0 255.255.0 0
                                                    Flags Metric Ref
                                                                          Use Iface
                                                                          0 enp0s3
                                                                          ockero
0 enp0s3
0 enp0
                                                                           0 docker0
                                   255.255.255.0 UG 0 0
255.255.255.0 U 100 0
255.255.255.0 U 0 0
172.217.166.0 192.168.0.1
192.168.0.0
                 0.0.0.0
192.168.122.0 0.0.0.0
                                                                            0 virbr0
[root@localhost ~]# ping 157.240.198.35
PING 157.240.198.35 (157.240.198.35) 56(84) bytes of data.
64 bytes from 157.240.198.35: icmp seq=1 ttl=48 time=235 ms
64 bytes from 157.240.198.35: icmp seq=2 ttl=48 time=165 ms
64 bytes from 157.240.198.35: icmp seq=3 ttl=48 time=131 ms
^c
--- 157.240.198.35 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 6ms
rtt min/avg/max/mdev = 131.434/177.272/234.929/43.072 ms
[root@localhost ~]#
[root@localhost ~]#
                                                                       Enterprise Linux
```

Works.....

So, adding always range would we very hectic

Add the gateway 192.168.0.1 for any IP in the world.

And the first IP is 0.0.0.0 and the last IP is 255.255.255 - all possible IP range

And first IP known as network name of the range. So 0.0.0.0 means any IP.  $\Rightarrow$  2^32 hosts possible. So here netmask is what /0.

0.0.0.0/0.0.0.0 => all the IP in the world. And Network name with netmask is called subnet id.

route add -net 0.0.0.0 netmask 0.0.0.0 gw 192.168.0.1

```
[root@localhost ~]# route add -net 0.0.0.0 netmask 0.0.0.0 gw 192.168.0.1 enp0s3
[root@localhost ~]# route -n
Kernel IP routing table
Destination
                                              Flags Metric Ref
                              Genmask
                                                                 Use Iface
             Gateway
0.0.0.0
               192.168.0.1
                              0.0.0.0
                                                 0
                                                                   0 enp0s3
                                              UG
                                                          0
157.240.198.0 192.168.0.1
                              255.255.255.0
                                             UG
                                                   0
                                                          0
                                                                   0 enp0s3
172.17.0.0
              0.0.0.0
                              255.255.0.0
                                             U
                                                   0
                                                          0
                                                                   0 docker0
172.217.166.0
               192.168.0.1
                              255.255.255.0
                                             UG
                                                   0
                                                          0
                                                                   0 enp0s3
192.168.0.0
               0.0.0.0
                              255.255.255.0
                                             U
                                                   100
                                                          0
                                                                   0 enp0s3
192.168.122.0
               0.0.0.0
                              255.255.255.0
                                              U
                                                   0
                                                          0
                                                                   0 virbr0
[root@localhost ~]#
                                                             Enterprise Linux
```

Now the system can ping any ip in the world.

## Let's ping to twitter.com

Yes,, its working.....