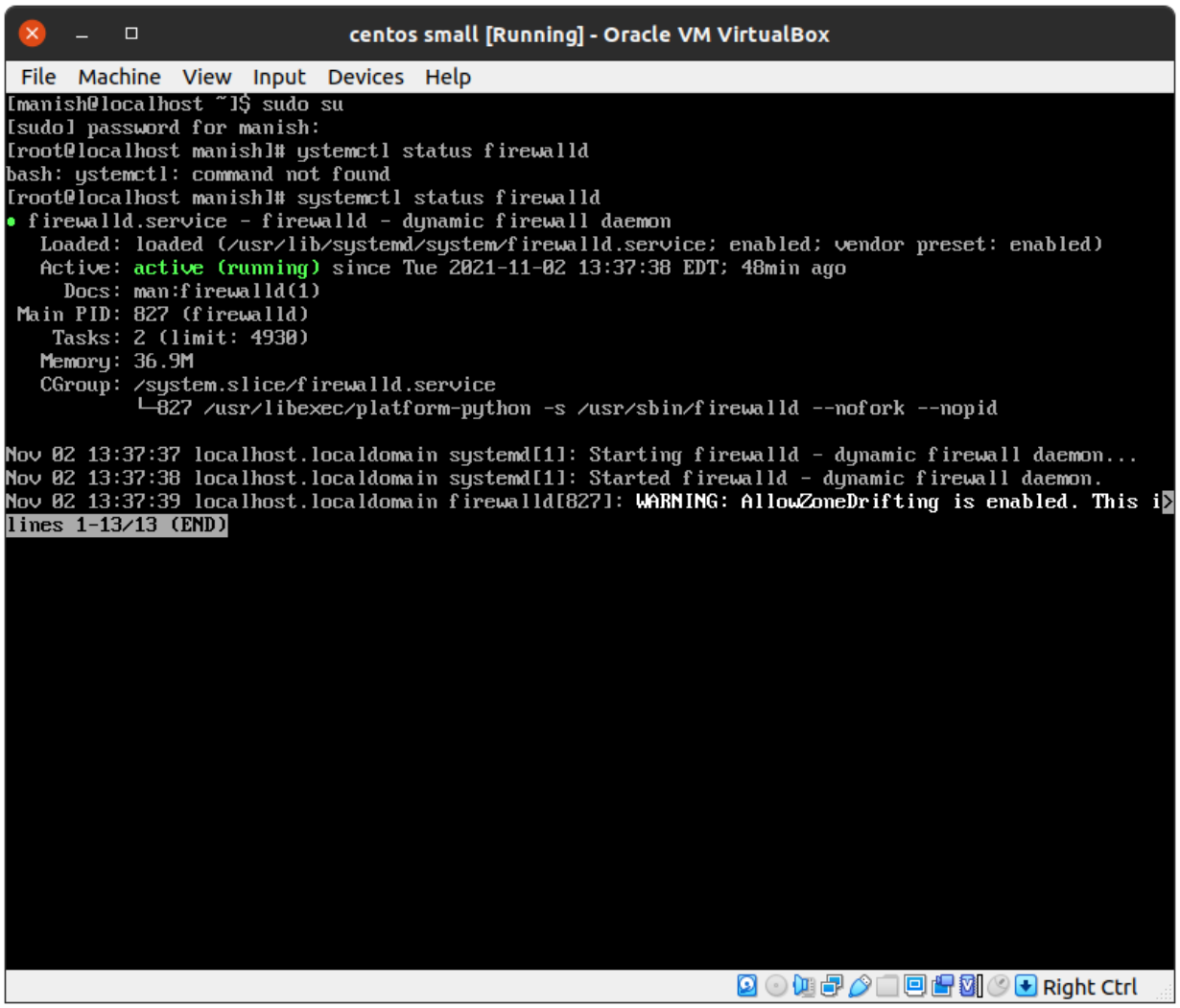
Firewall in CentOs

Firewalld is already installed by default and active in cent os so it is not required to install again.

I. The status of the firewall is checked with the command:

sudo systemctl status firewalld



Ii. Blocking an ip permanently in centos:

Example : ip address of reddit.com is **192.232.45.148**

The complete command to block the above ip address is:

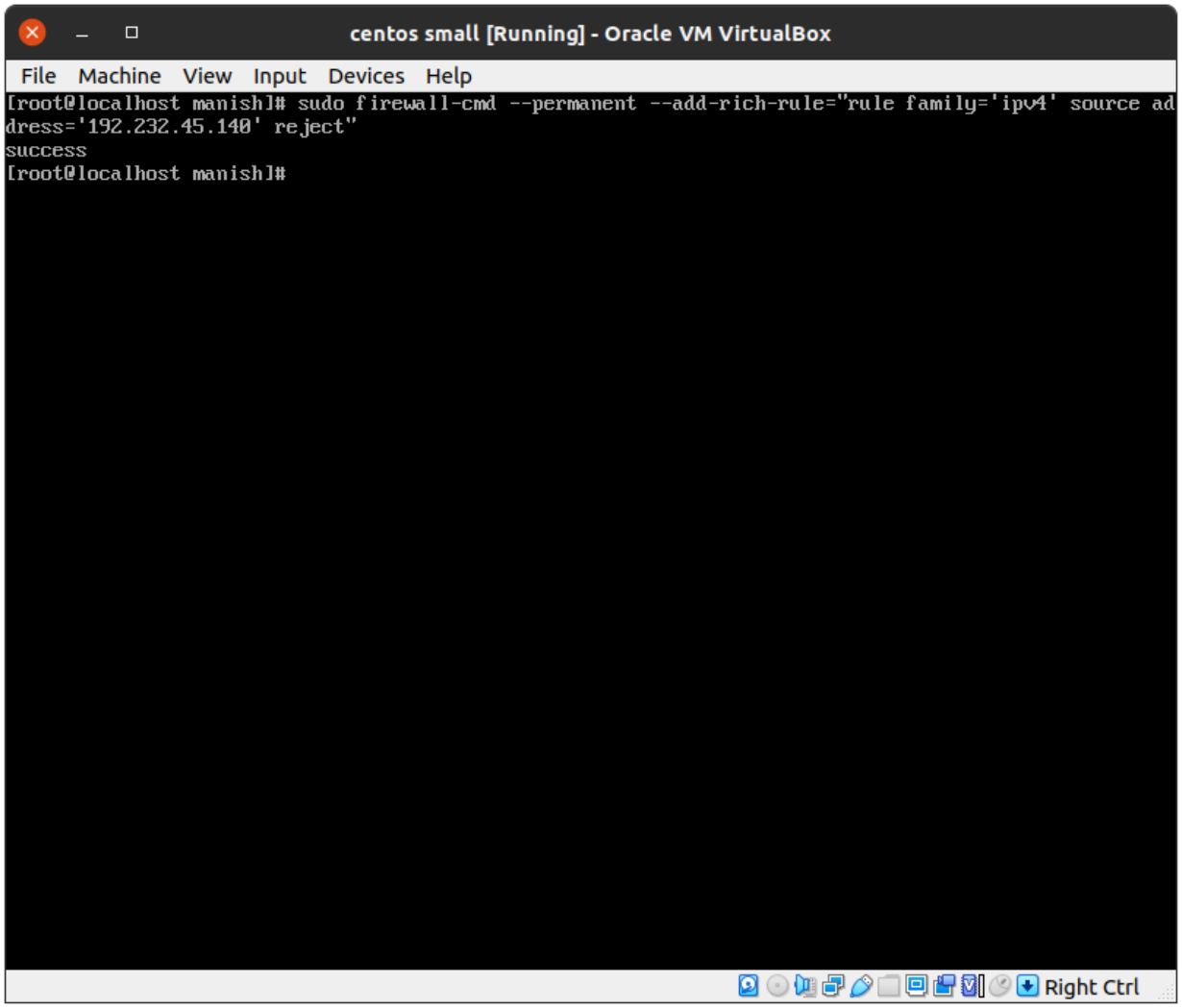
```
sudo firewalld-cmd  \
--permanent  \
--add-rich=”rule family=’ipv4’ \
-- source address=’192.232.45.148’  \
reject “
```

Then the firewall is reloaded with the command:

```
sudo firewalld-cmd --reload
```

The firewall rules can be listed as:

```
sudo  firewall-cmd --list-all
```



Iii. Allow ssh, http and https connections in the firewall:

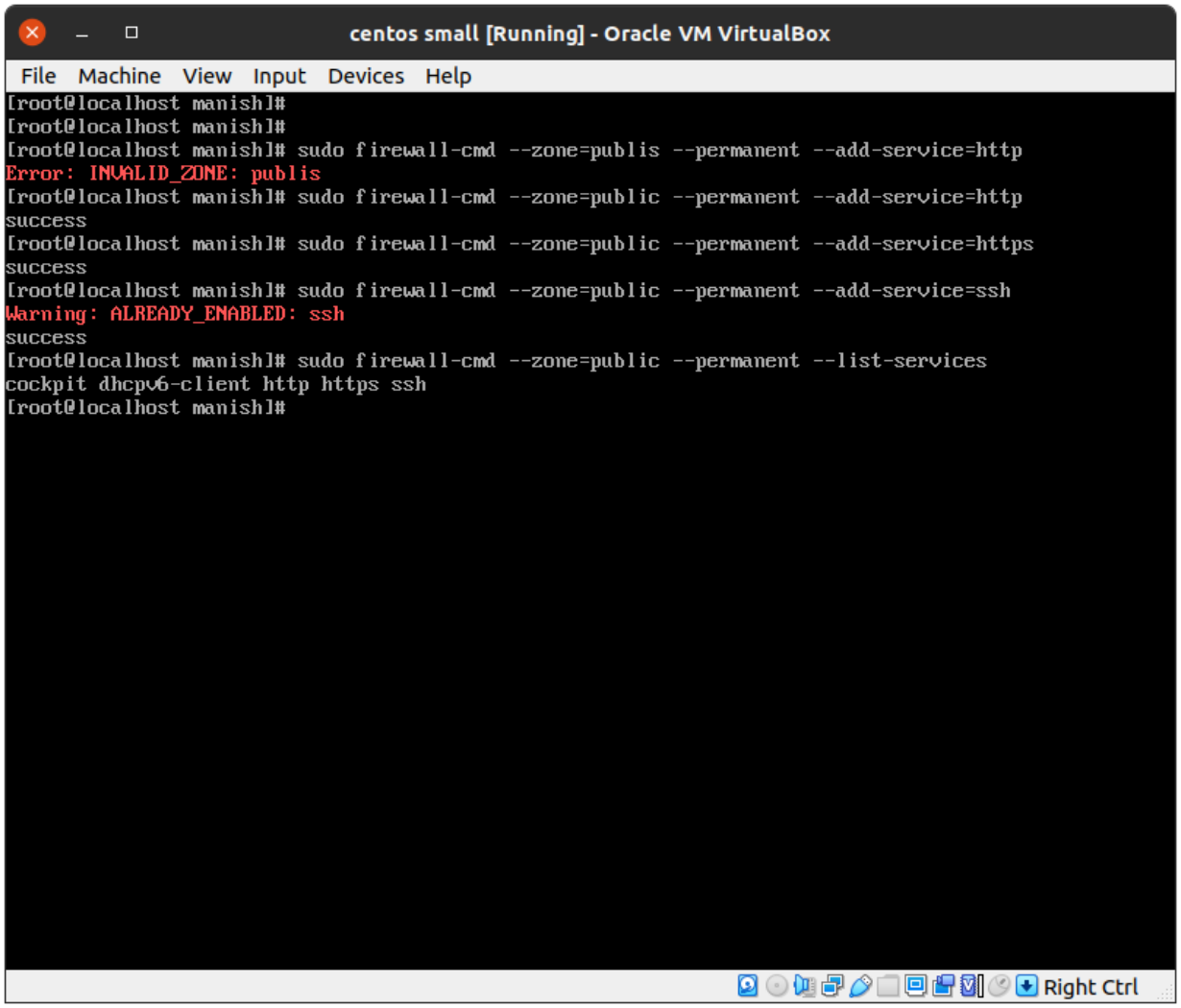
In cent os/rhel a service can be allowed using the command:

sudo firewall-cmd --zone=public --permanent -add-service= *service_name*

Therefore http, https and ssh were allowed using the commands as below:

sudo firewall-cmd --zone=public --permanent -add-service =ssh
sudo firewall-cmd --zone=public --permanent -add-service =https

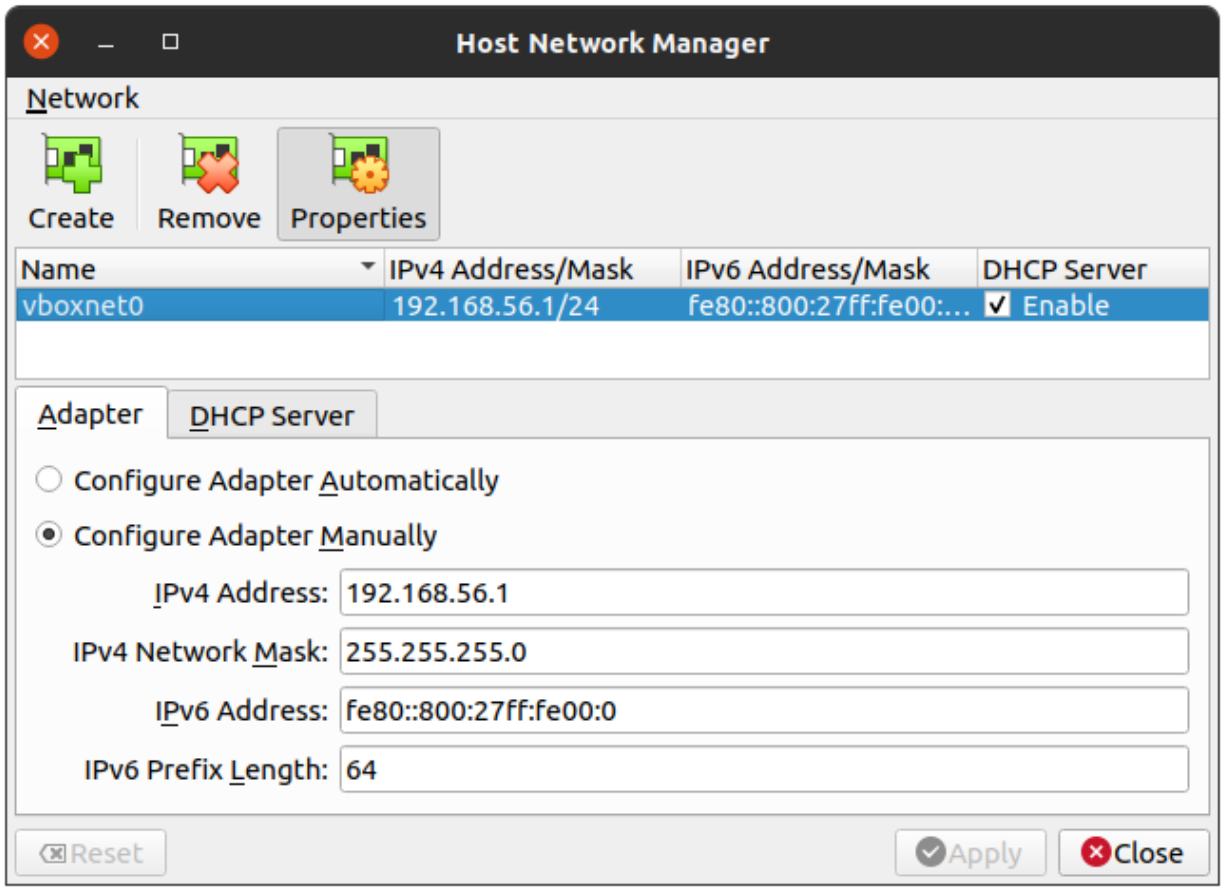
sudo firewall-cmd --zone=public --permanent -add-service =http



2. Configuring a VM as a router and a second VM as a node/client and NATing from a VM

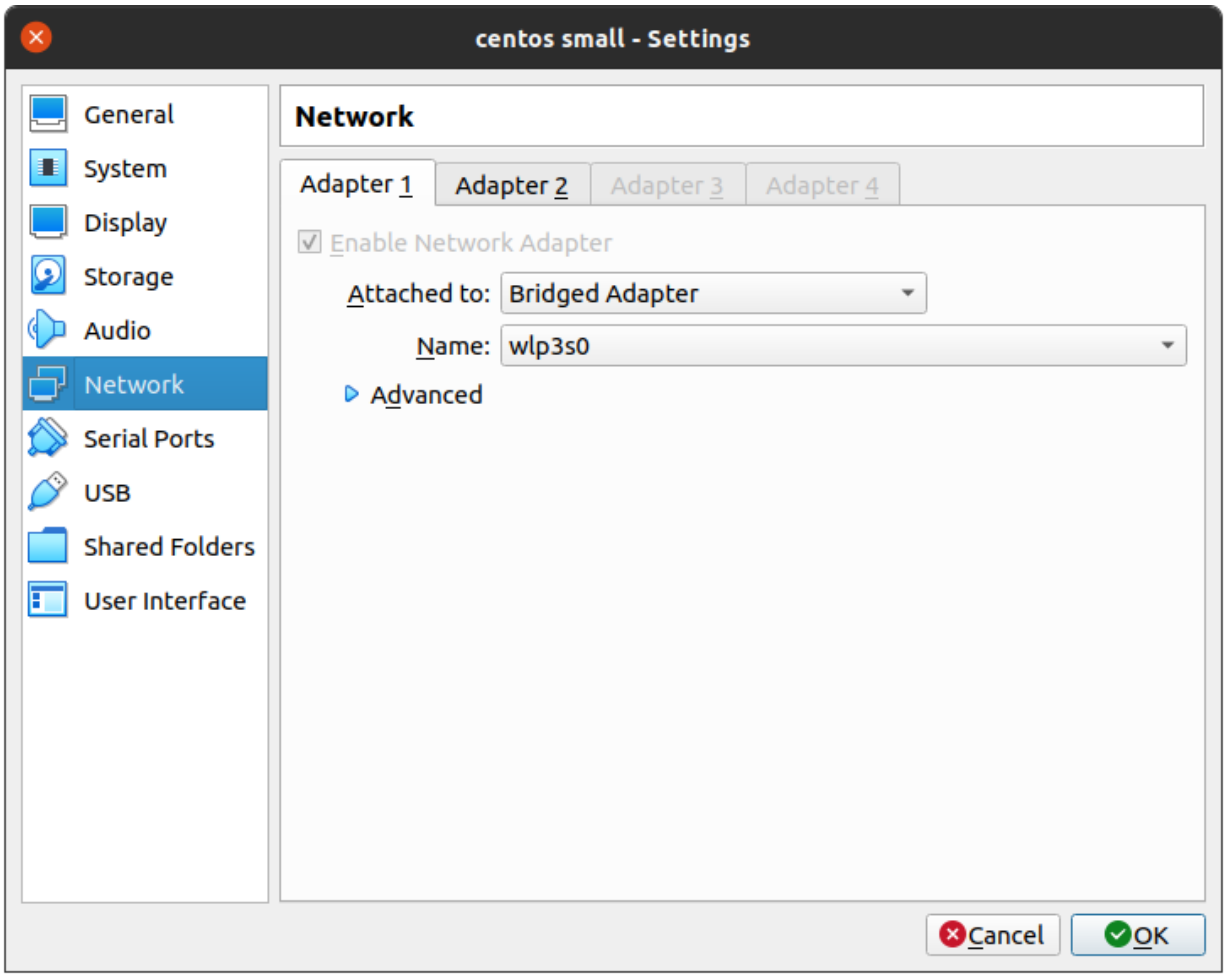
VM1= Vm which is configured as router
VM2= Vm which acts as client/node

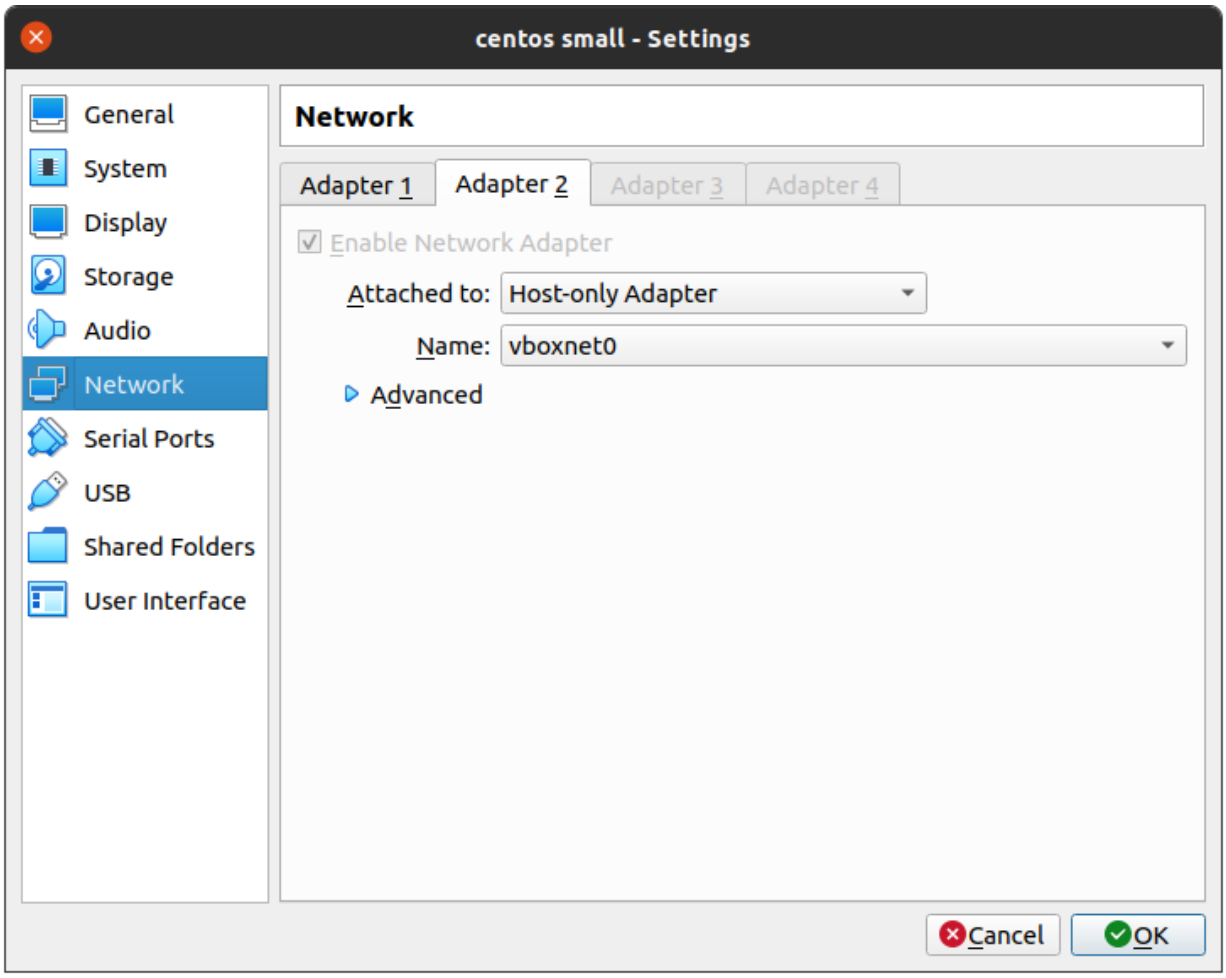
Steps:
I. In the virtual box's host network manager, a network(**vboxnet0**) was created.



Ii. We created 2 cent os VMs, the first one with two network adapters, **bridged and host-only** network adapters. The second VM only had **a host-only** network adapter.

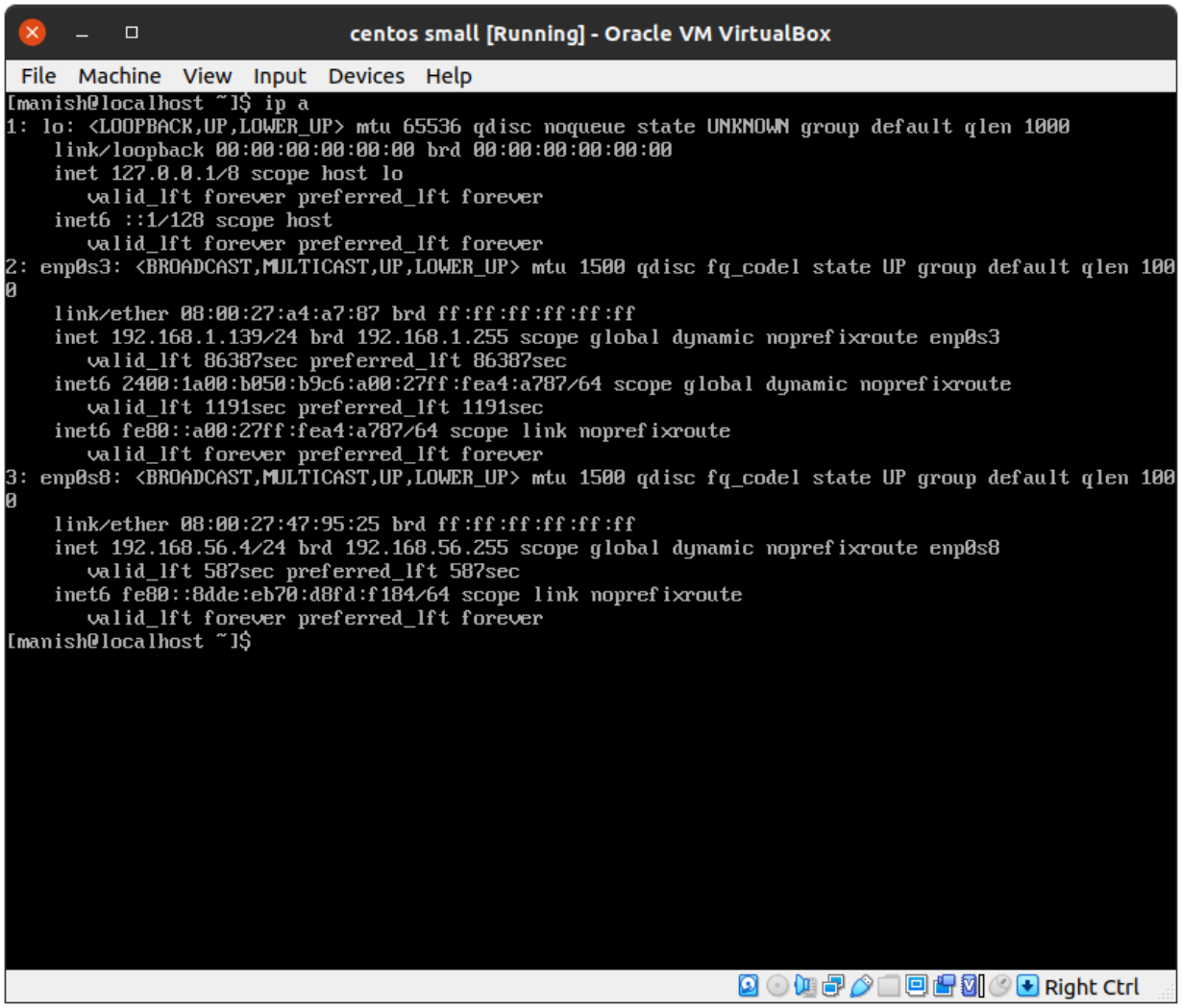
In VM 1 :
Bridged Adapter= **enp0s3**
Host only adapter= **enp0s8**


centos small - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Bridged Adapter
Name:
wlp3s0
Advanced
Cancel
OK



- The bridged adapter**(enp0s3)** acts as a WAN as it shares the network with the host machine.

- The host-only adapter**(enp0s8)** acts as a LAN. It is given a static IP address. Through this adapter, VM 2 can access the other network interface in VM 1.



The enp0s8
The enp0s8 interface was brought up with :

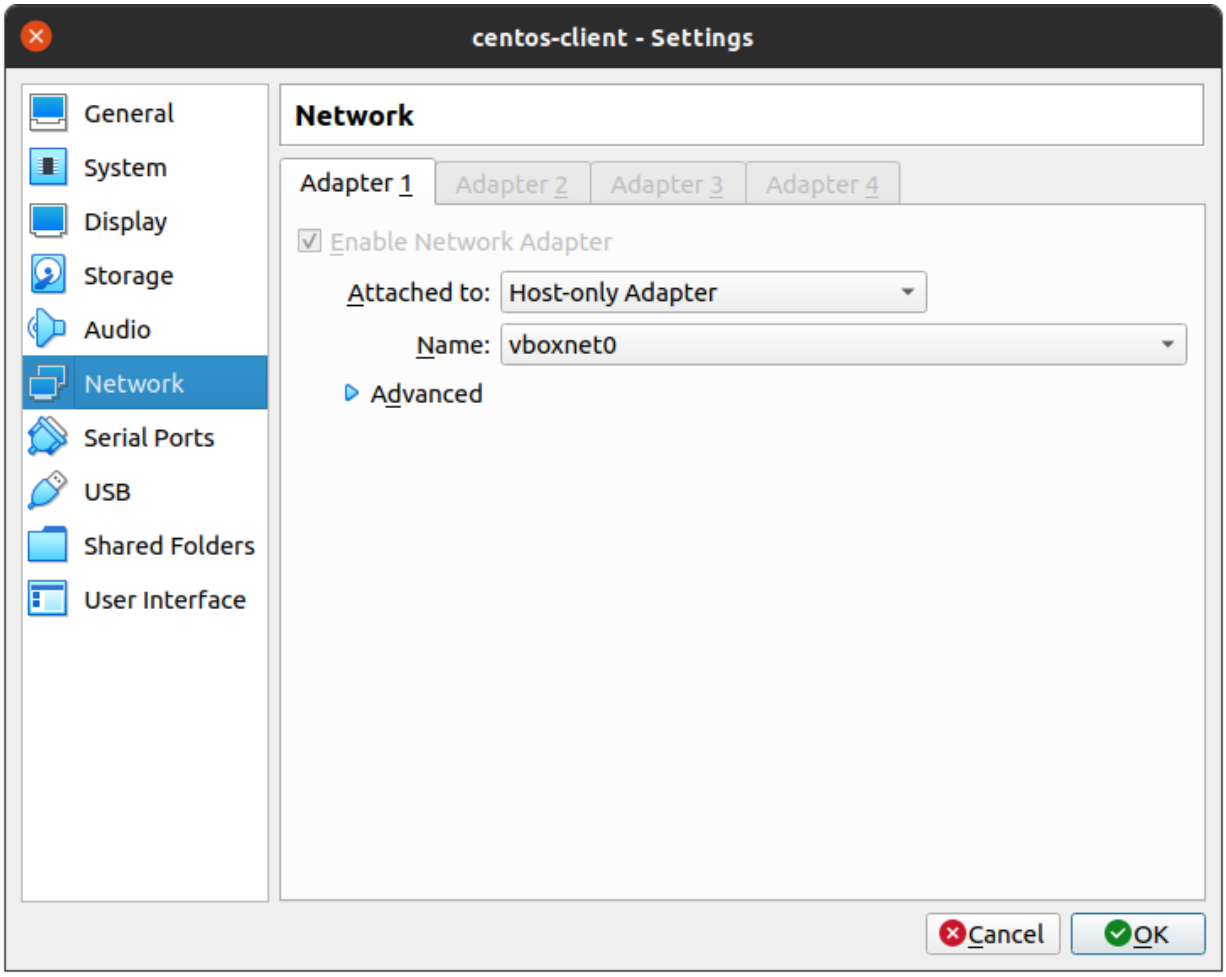
ifup enp0s8

Ip addresses of the interfaces in VM 1 are :

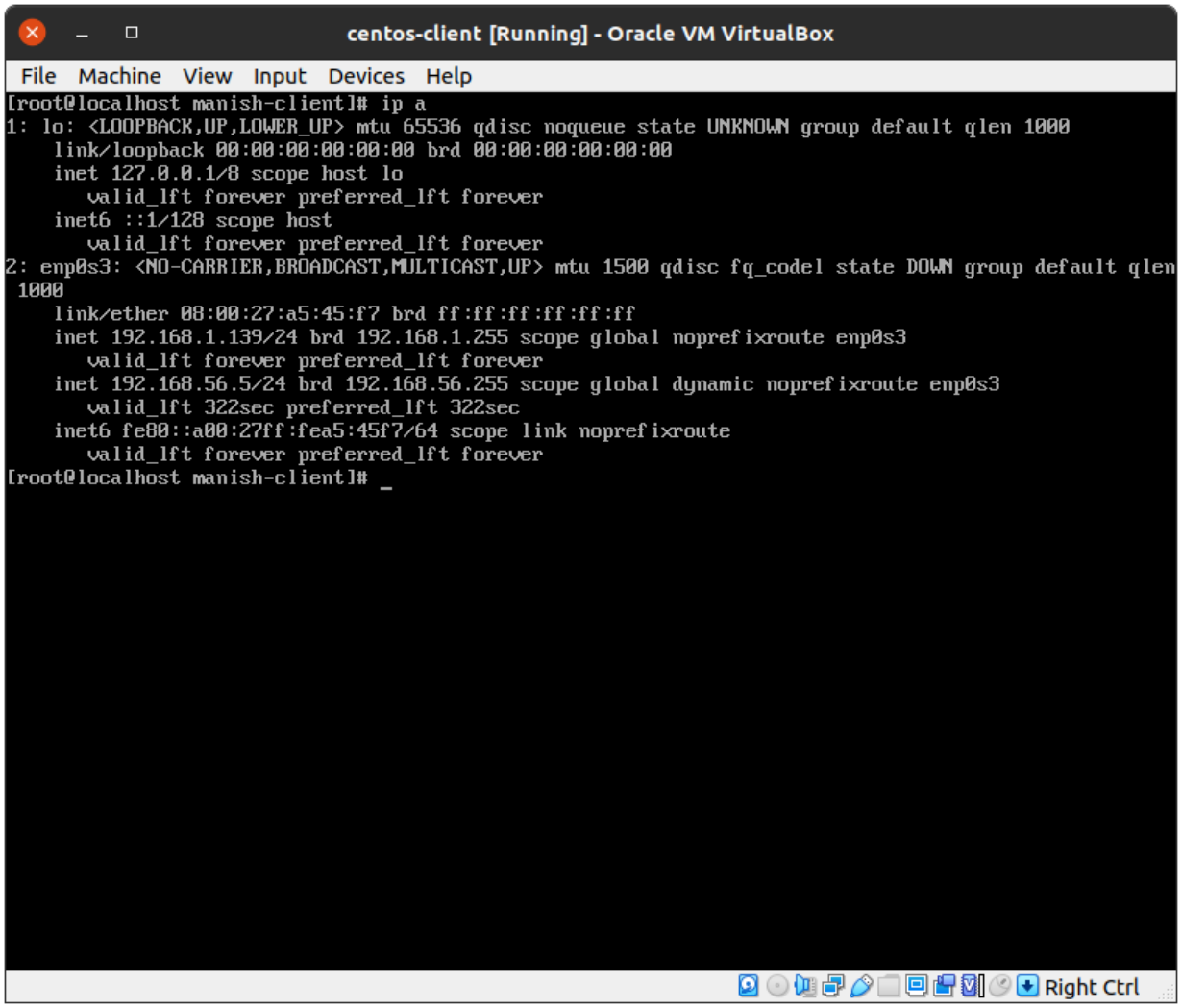
Enp0s3: **192.168.1.129**
Enp0s8: **192.168.56.4**

In VM 2:

There is only one host only network adapter.



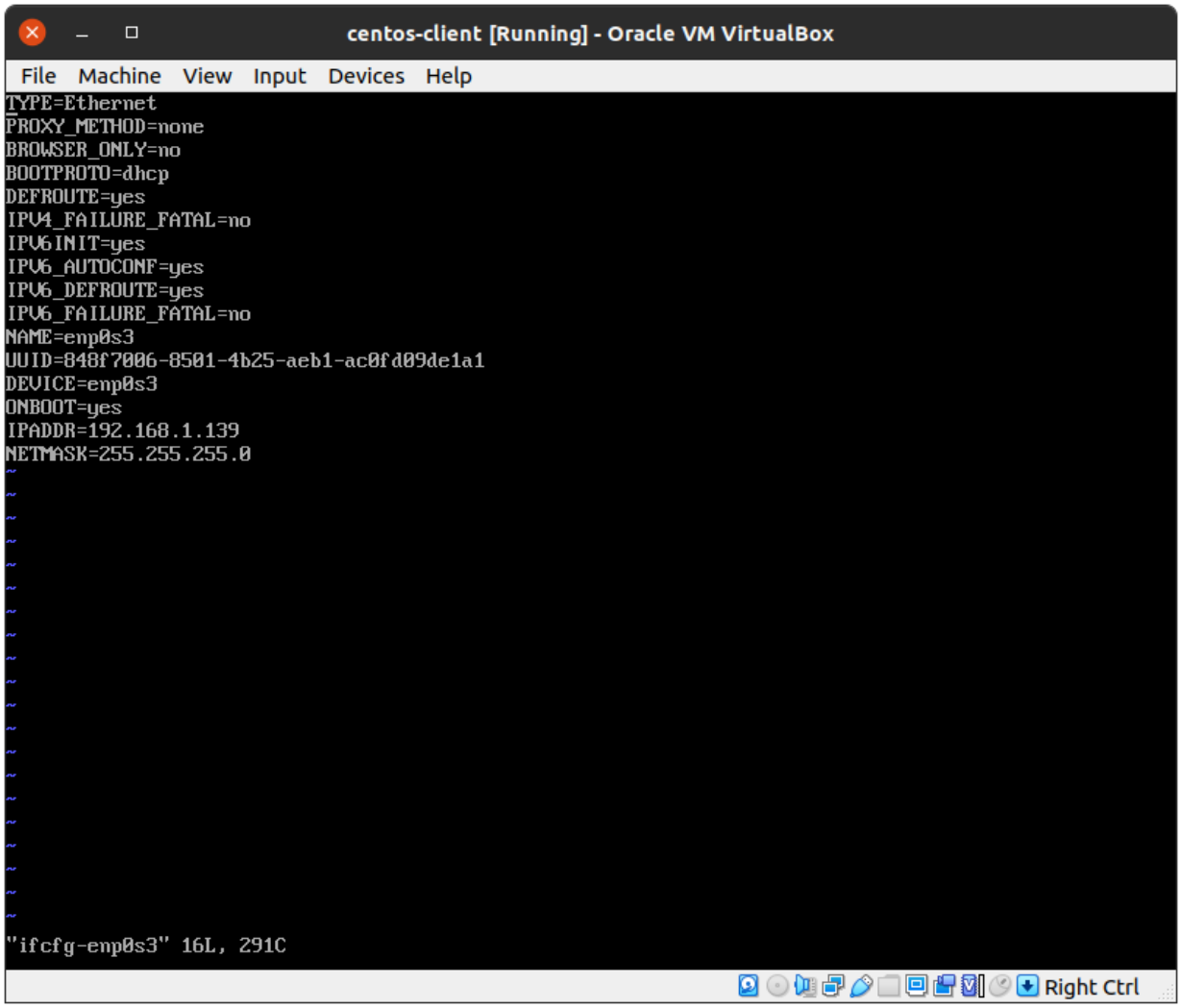
Host only adapter= **enp0s3**



- VM1;s bridged adapter's (**enp0s3**) IP address is added in the routing table with ifconfig.

ifconfig enp0s3 192.168.1.139 netmaask 255.255.255.0

I had an errorwhile adding with ifconfig so , I added static IP address by editing the **/etc/sysconfig/network-scripts/ifcfg-enp0s3** file.



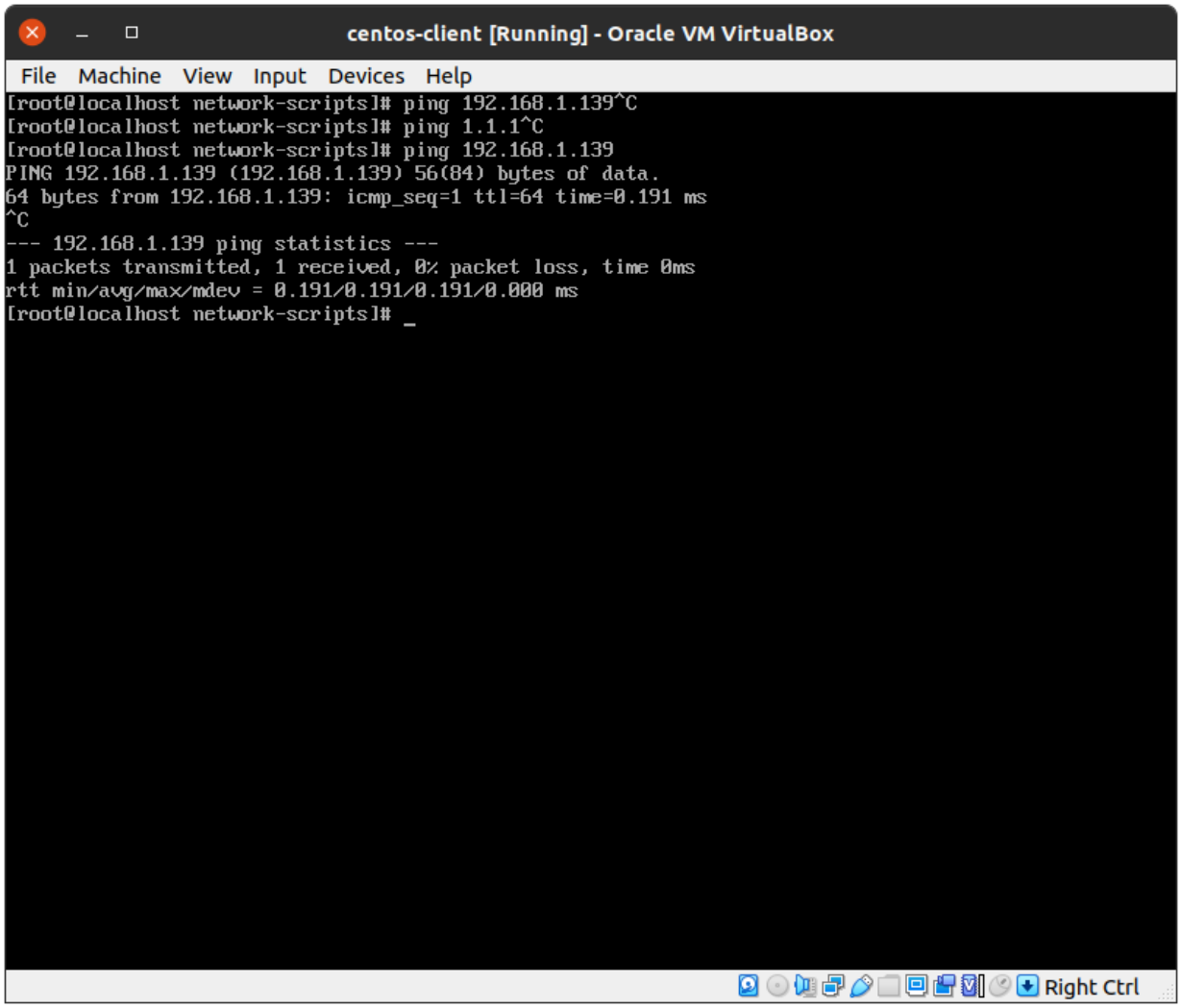
net-tools package was installed in the both VM before staring these processes.

Iii. Now we can ping the second VM from the first and vice versa using their ip addresses.

Pinging the VM1 from VM2 with

ping 192.168.1.139

192.168.1.129 is the ip address of bridged network adapter of VM1



VM1 was successfully pinged from VM2 and vice versa.

Iv. Finally, tables rules are added for forwarding and masquerading the requests from VM2 to the internet.

```
# modprobe iptable_nat
# echo 1> /proc/sys/net/ipv4/ip_forward
# iptables -t nat -A POSTROUTING -o enp0s3 -j MASQUERADE
# iptables -A FORWARD  -i enp0s8 -j ACCEPT
```

V. Testing ping on IP address of Cloudflare (1.1.1.1) from VM2

ping 1.1.1.1