

8. Introduction to command line tools for networking IPv4 networking, network commands: ping route traceroute, nslookup, ip. Setting up static and dynamic IP addresses. Concept of Subnets, CIDR address schemes, Subnet masks, iptables, setting up a firewall for LAN, Application layer (L7) proxies.

Set up repository

1.Ping IP address

Eg: ping 8.8.8.8

2.nslookup

nslookup facebook.com

or

nslookup 157.240.23.35

3.To install traceroute

sudo apt install traceroute

4. To find how many hops

traceroute 172.16.13.163

or

traceroute 8.8.8 -m 30

5.To identify ip version

ip -v



```
ner@ner-VirtualBox:~$ ip -V
ip utility, iproute2-ss200127
```

6. To get ip address

ip addr

IPv4 networking for Setting up static and dynamic IP addresses.

❖ **For setting up ip address as static:**

Step 1: Update the terminal

sudo apt-get update

Step 2: To show ip address

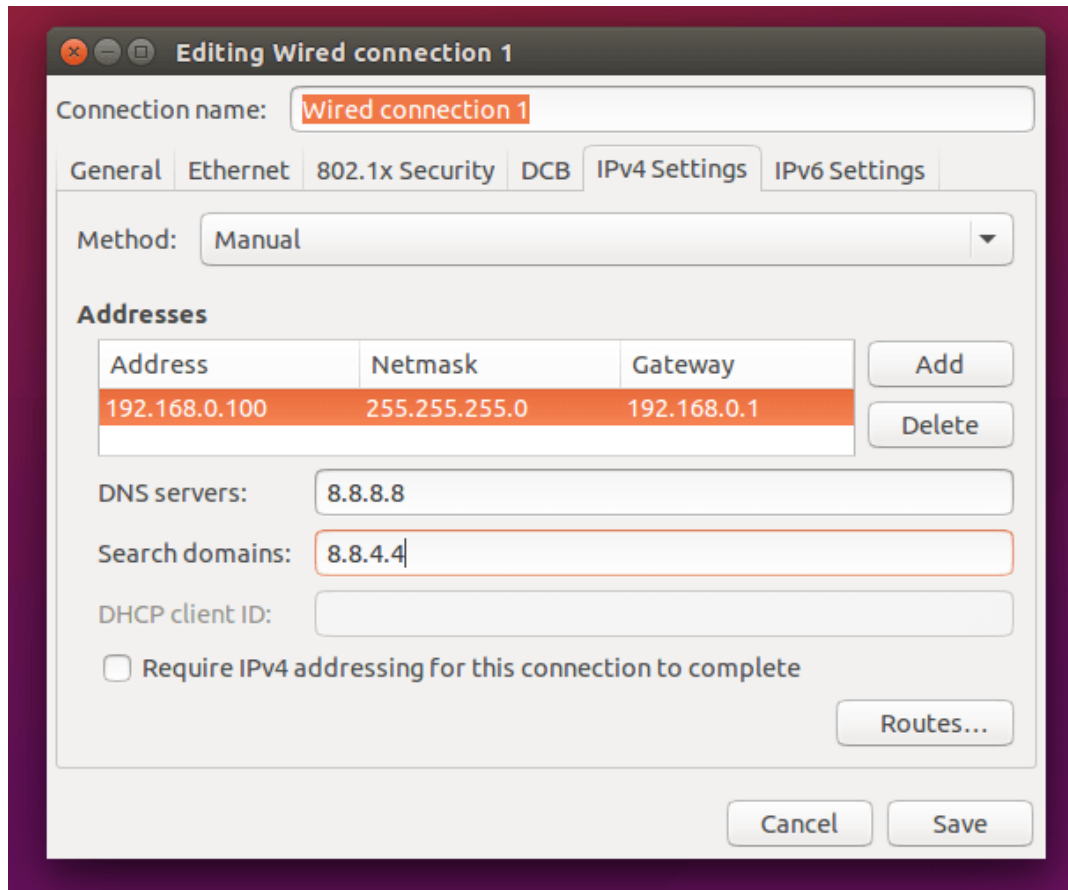
ip address

Step 3: To add new ip address

Go to settings-> network->add ip address manually->save

Open terminal and type,

ifconfig



Step 4: To see new ip address, refresh network connection and again give command:

ip address

❖ For setting up ip address as dynamic:

Step 1: To show device name

nmcli connection add con -name "dyn"

Step 2: To show ip address

ip address

Step 3: To connect

nmcli connection add con-name "dyn" ifname emp4s0 autoconnect yes type ethernet

Step 4: To show the connection

nmcli connection show

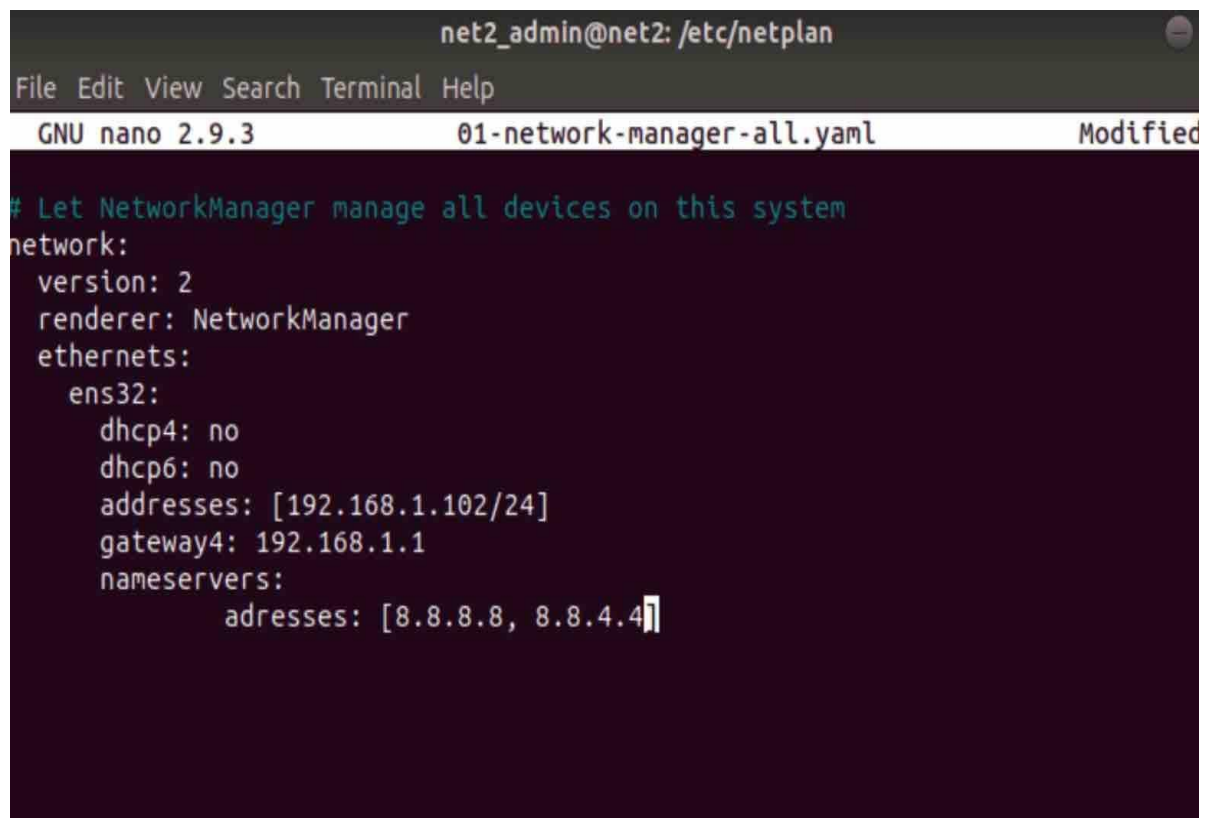
Step 5: To down the connection

nmcli connection down docker 0

Step 6: To establish the connection

nmcli connection up dyn

OUTPUT



```
net2_admin@net2: /etc/netplan
File Edit View Search Terminal Help
GNU nano 2.9.3      01-network-manager-all.yaml      Modified
# Let NetworkManager manage all devices on this system
network:
  version: 2
  renderer: NetworkManager
  ethernets:
    ens32:
      dhcp4: no
      dhcp6: no
      addresses: [192.168.1.102/24]
      gateway4: 192.168.1.1
      nameservers:
        addresses: [8.8.8.8, 8.8.4.4]
```