

Assignment 5

SAP: 500124827

Name: Kshitij Chandrakar

Batch: 5

ifconfig: Deprecated, would not run on my machine but displays information about the connected networks. **ip addr:** Displays information about the connected networks.

```
asus@debian-asusrog:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    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 noprefixroute
        valid_lft forever preferred_lft forever
2: eno2: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc fq_codel state DOWN group default
    link/ether 04:d4:c4:eb:74:97 brd ff:ff:ff:ff:ff:ff
    altname enp3s0
3: wlo1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
    link/ether 28:7f:cf:e5:6b:e5 brd ff:ff:ff:ff:ff:ff
    altname wlp0s20f3
    inet 192.168.0.102/24 brd 192.168.0.255 scope global dynamic noprefixroute wlo1
        valid_lft 6538sec preferred_lft 6538sec
    inet6 fe80::4d56:ece7:7abb:abe4/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
4: CloudflareWARP: <POINTOPOINT,MULTICAST,NOARP,UP,LOWER_UP> mtu 1280 qdisc mq state UP group default
    link/none
    inet 172.16.0.2/32 scope global CloudflareWARP
        valid_lft forever preferred_lft forever
    inet6 2606:4700:110:8865:6078:763e:be97:f2f3/128 scope global
        valid_lft forever preferred_lft forever
    inet6 fe80::d28f:8bef:b8ff:28f1/64 scope link stable-privacy
        valid_lft forever preferred_lft forever
```

hostname: displays the hostname of the machine.

```
asus@debian-asusrog:~$ hostname
debian-asusrog
```

ping: pings the given address

```
asus@debian-asusrog:~$ ping google.com
PING google.com(bom12s08-in-x0e.1e100.net (2404:6800:4009:813::200e)) 56 data bytes
64 bytes from bom12s08-in-x0e.1e100.net (2404:6800:4009:813::200e): icmp_seq=1 ttl=59 time=49.60 ms
64 bytes from bom12s08-in-x0e.1e100.net (2404:6800:4009:813::200e): icmp_seq=2 ttl=59 time=107.36 ms
64 bytes from bom12s08-in-x0e.1e100.net (2404:6800:4009:813::200e): icmp_seq=3 ttl=59 time=167.86 ms
64 bytes from bom12s08-in-x0e.1e100.net (2404:6800:4009:813::200e): icmp_seq=4 ttl=59 time=49.30 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 49.602/107.369/167.864/49.303 ms
```

ip route: Shows the route a given packet takes.

```
asus@debian-asusrog:~$ ip route
default via 192.168.0.1 dev wlo1 proto dhcp src 192.168.0.102 metric 600
169.254.0.0/16 dev wlo1 scope link metric 1000
192.168.0.0/24 dev wlo1 proto kernel scope link src 192.168.0.102 metric 600
```

netstat: Print network connections, routing tables, interface statistics, masquerade connections, and multicast memberships

```
asus@debian-asusrog ~ % netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 debian-asusrog:38442    lb-140-82-112-25-:https ESTABLISHED
tcp        0      0 debian-asusrog:51868    ec2-52-89-11-84.u:https ESTABLISHED
tcp        0     25 debian-asusrog:48074    162.159.192.1:https    LAST_ACK
tcp        0      0 debian-asusrog:35158    server-18-67-195-:https ESTABLISHED
tcp        0      0 debian-asusrog:59318    93.243.107.34.bc.:https TIME_WAIT
tcp        0      0 debian-asusrog:54006    140.227.186.35.bc:https ESTABLISHED
tcp        0      0 debian-asusrog:45268    a23-38-59-250.depl:http ESTABLISHED
```

traceroute: Shows the route a given packet takes.

```
asus@debian-asusrog:~$ traceroute google.com
traceroute to google.com (142.250.192.110), 30 hops max, 60 byte packets
```

```
 1  * * *
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
```

nmcli: cli tool to manage the network.

```
wlo1: connected to 1st Floor TPLink
    "Intel Cannon Lake PCH CNVi"
    wifi (iwlwifi), 28:7F:CF:E5:6B:E5, hw, mtu 1500
    ip4 default
    inet4 192.168.0.102/24
    route4 192.168.0.0/24 metric 600
    route4 default via 192.168.0.1 metric 600
    route4 169.254.0.0/16 metric 1000
    inet6 fe80::4d56:ece7:7abb:abe4/64
    route6 fe80::/64 metric 1024

CloudflareWARP: connected (externally) to CloudflareWARP
    "CloudflareWARP"
    tun, sw, mtu 1280
    inet4 172.16.0.2/32
    route4 32.0.0.0/3 metric 0
    route4 64.0.0.0/3 metric 0
    route4 128.0.0.0/3 metric 0
    route4 16.0.0.0/4 metric 0
    route4 112.0.0.0/4 metric 0
    route4 176.0.0.0/4 metric 0
    route4 208.0.0.0/4 metric 0
    route4 0.0.0.0/5 metric 0
    route4 104.0.0.0/5 metric 0
    route4 200.0.0.0/5 metric 0
    route4 232.0.0.0/5 metric 0
    route4 12.0.0.0/6 metric 0
    route4 96.0.0.0/6 metric 0
    route4 164.0.0.0/6 metric 0
    route4 196.0.0.0/6 metric 0
    route4 228.0.0.0/6 metric 0
    route4 8.0.0.0/7 metric 0
    route4 102.0.0.0/7 metric 0
    route4 160.0.0.0/7 metric 0
    route4 170.0.0.0/7 metric 0
    route4 174.0.0.0/7 metric 0
    route4 194.0.0.0/7 metric 0
    route4 226.0.0.0/7 metric 0
    route4 11.0.0.0/8 metric 0
    route4 101.0.0.0/8 metric 0
    route4 163.0.0.0/8 metric 0
    route4 168.0.0.0/8 metric 0
    route4 173.0.0.0/8 metric 0
    route4 193.0.0.0/8 metric 0
    route4 225.0.0.0/8 metric 0
    route4 100.128.0.0/9 metric 0
    route4 162.0.0.0/9 metric 0
    route4 169.0.0.0/9 metric 0
    route4 172.128.0.0/9 metric 0
    route4 224.128.0.0/9 metric 0
    route4 100.0.0.0/10 metric 0
    route4 162.192.0.0/10 metric 0
    route4 169.128.0.0/10 metric 0
    route4 172.64.0.0/10 metric 0
```

lines 1-54

dhclient: a tool to manage network interfaces using DHCP.

```
asus@debian-asusrog:~$ sudo dhclient
RTNETLINK answers: File exists
asus@debian-asusrog:~$
```

ssh: used to ssh into other machines using the ssh protocol

```
asus@debian-asusrog:~$ ssh
usage: ssh [-46AaCfGgKkMnqsTtVvXxYy] [-B bind_interface]
          [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
          [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
          [-i identity_file] [-J [user@]host[:port]] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] destination [command [argument ...]]
asus@debian-asusrog:~$
```

scp: Secure File Copy over SSH in a given network.

```
asus@debian-asusrog:~$ scp
usage: scp [-346ABCOpqRrsTv] [-c cipher] [-D sftp_server_path] [-F ssh_config]
          [-i identity_file] [-J destination] [-l limit] [-o ssh_option]
          [-P port] [-S program] [-X sftp_option] source ... target
```