```
abhi@abhi-ubuntu:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
        inet6 fe80::2ecb:f91:e478:9814  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:a6:63:0a  txqueuelen 1000  (Ethernet)
        RX packets 7278  bytes 10593355 (10.5 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1994  bytes 146534 (146.5 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 186  bytes 18777 (18.7 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 186  bytes 18777 (18.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
abhi@abhi-ubuntu:~$ ifconfig lo
lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 186  bytes 18777 (18.7 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 186  bytes 18777 (18.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

abhi@abhi-ubuntu:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    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
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP gro
    link/ether 08:00:27:a6:63:0a brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
       valid_lft 86280sec preferred_lft 86280sec
    inet6 fe80::2ecb:f91:e478:9814/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
abhi@abhi-ubuntu:~$ ip a show enp0s3
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP gro
    link/ether 08:00:27:a6:63:0a brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
       valid_lft 86218sec preferred_lft 86218sec
    inet6 fe80::2ecb:f91:e478:9814/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```

```
abhi@abhi-ubuntu:~$ traceroute google.com
traceroute to google.com (142.250.77.142), 64 hops max
  1   10.0.2.2  0.226ms  0.427ms  0.164ms
  2   *  *  *
  3   *  *  *
  4   *  *  *
  5   *  *  *
  6   *  *  *
  7   *  *  *
  8   *  *  *
^C
abhi@abhi-ubuntu:~$ traceroute -I google.com
traceroute to google.com (142.250.77.142), 64 hops max
  1   10.0.2.2  0.475ms  0.317ms  0.313ms
  2   172.17.255.250  14.736ms  12.566ms  4.361ms
  3   115.244.99.161  4.536ms  4.531ms  5.749ms
  4   115.244.223.85  19.799ms  36.285ms  33.786ms
  5   *  *  *
  6   172.16.5.87  36.826ms  27.846ms  20.579ms
  7   172.16.5.87  14.852ms  14.313ms  78.291ms
  8   74.125.50.202  12.414ms  15.338ms  13.982ms
  9   142.251.227.211  13.693ms  15.178ms  9.006ms
 10   142.251.55.207  33.007ms  47.180ms  *
 11   142.250.77.142  10.461ms  7.892ms  10.094ms
abhi@abhi-ubuntu:~$
abhi@abhi-ubuntu:~$ sudo traceroute -I google.com
[sudo] password for abhi:
traceroute to google.com (142.250.77.142), 64 hops max
  1   10.0.2.2  0.555ms  0.240ms  0.150ms
  2   172.17.255.250  17.319ms  16.172ms  15.479ms
  3   115.244.99.161  15.479ms  12.177ms  14.895ms
  4   115.244.223.85  22.391ms  6.297ms  8.168ms
  5   *  *  *
  6   172.16.5.87  15.696ms  11.477ms  9.133ms
  7   172.16.5.87  7.611ms  8.505ms  10.870ms
  8   74.125.50.202  8.546ms  7.152ms  8.017ms
  9   142.251.227.211  9.818ms  8.944ms  10.963ms
 10   142.251.55.207  17.942ms  6.500ms  6.807ms
 11   142.250.77.142  10.801ms  9.349ms  8.183ms
```

```
abhi@abhi-ubuntu:~$ tracepath google.com
 1?: [LOCALHOST]                          pmtu 1500
 1:  ???                                                    0.463ms
 1:  ???                                                    0.684ms
 2:  no reply
 3:  no reply
 4:  no reply
 5:  no reply
 6:  no reply
 7:  no reply
 8:  no reply
 9:  no reply
10:  no reply
11:  no reply
12:  no reply
13:  no reply
14:  no reply
15:  no reply
16:  no reply
17:  no reply
18:  no reply
19:  no reply
20:  no reply
21:  no reply
22:  no reply
23:  no reply
24:  no reply
25:  no reply
26:  no reply
27:  no reply
28:  no reply
29:  no reply
30:  no reply
     Too many hops: pmtu 1500
     Resume: pmtu 1500
```

```
abhi@abhi-ubuntu:~$ ping google.com
PING google.com (142.250.193.142) 56(84) bytes of data.
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=1 ttl=118 time=29.8 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=2 ttl=118 time=19.8 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=3 ttl=118 time=9.05 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=4 ttl=118 time=9.87 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=5 ttl=118 time=9.60 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=6 ttl=118 time=9.40 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=7 ttl=118 time=8.49 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=8 ttl=118 time=19.1 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=9 ttl=118 time=64.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=10 ttl=118 time=7.64 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=11 ttl=118 time=8.55 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=12 ttl=118 time=8.74 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=13 ttl=118 time=8.60 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=14 ttl=118 time=8.67 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=15 ttl=118 time=10.7 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=16 ttl=118 time=10.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=17 ttl=118 time=8.16 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=18 ttl=118 time=10.1 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=19 ttl=118 time=18.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=20 ttl=118 time=15.9 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=21 ttl=118 time=15.3 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=22 ttl=118 time=12.1 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=23 ttl=118 time=8.08 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=24 ttl=118 time=10.0 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=25 ttl=118 time=10.1 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=26 ttl=118 time=9.52 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=27 ttl=118 time=27.4 ms
c64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=28 ttl=118 time=46.5 ms
64 bytes from maa05s25-in-f14.1e100.net (142.250.193.142): icmp_seq=29 ttl=118 time=49.6 ms
^C
--- google.com ping statistics ---
29 packets transmitted, 29 received, 0% packet loss, time 28175ms
rtt min/avg/max/mdev = 7.641/16.670/64.332/13.886 ms
```

```
abhi@abhi-ubuntu:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 10.0.2.15:43952         maa05s16-in-f10.1:https TIME_WAIT
tcp        0      0 10.0.2.15:59192         server-18-67-161-:https ESTABLISHED
tcp        0      0 10.0.2.15:54354         146.75.116.193:https    ESTABLISHED
tcp        0      0 10.0.2.15:43416         snapstore-content:https ESTABLISHED
tcp        0      0 10.0.2.15:40262         stackoverflow.com:https ESTABLISHED
tcp        0      0 10.0.2.15:45208         199.232.254.137:https   ESTABLISHED
tcp        0      0 10.0.2.15:47242         ec2-54-174-14-83.:https CLOSE_WAIT
tcp        0      0 10.0.2.15:34656         151.101.129.69:https    ESTABLISHED
tcp        0      0 10.0.2.15:48008         151.101.2.137:https     ESTABLISHED
udp        0      0 10.0.2.15:52705         dns.google:domain       ESTABLISHED
udp        0      0 10.0.2.15:40632         dns.google:domain       ESTABLISHED
udp        0      0 10.0.2.15:bootpc        10.0.2.2:bootps         ESTABLISHED
udp        0      0 10.0.2.15:46279         dns.google:domain       ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  3      [ ]         SEQPACKET  CONNECTED     45772    @dd2e1
unix  2      [ ]         DGRAM      CONNECTED     22666    /run/user/1000/systemd/notify
unix  3      [ ]         SEQPACKET  CONNECTED     45779    @526d6
unix  3      [ ]         DGRAM      CONNECTED     2946     /run/systemd/notify
unix  2      [ ]         DGRAM                    2962     /run/systemd/journal/syslog
unix  18     [ ]         DGRAM      CONNECTED     2971     /run/systemd/journal/dev-log
unix  9      [ ]         DGRAM      CONNECTED     2973     /run/systemd/journal/socket
unix  3      [ ]         SEQPACKET  CONNECTED     45756    @0d2d5
unix  3      [ ]         SEQPACKET  CONNECTED     45771    @5ed0d
unix  3      [ ]         SEQPACKET  CONNECTED     45755    @14c69
unix  3      [ ]         SEQPACKET  CONNECTED     45777    @a0193
unix  3      [ ]         STREAM     CONNECTED     40941    /run/dbus/system_bus_socket
unix  3      [ ]         STREAM     CONNECTED     29800
unix  3      [ ]         STREAM     CONNECTED     24730
unix  3      [ ]         STREAM     CONNECTED     23526    /run/dbus/system_bus_socket
unix  3      [ ]         STREAM     CONNECTED     23796    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     47137
unix  3      [ ]         STREAM     CONNECTED     26956    /run/user/1000/pipewire-0
unix  3      [ ]         STREAM     CONNECTED     22396
unix  2      [ ]         DGRAM      CONNECTED     23639
unix  3      [ ]         STREAM     CONNECTED     17197
unix  3      [ ]         STREAM     CONNECTED     22774    /run/user/1000/bus
unix  3      [ ]         DGRAM      CONNECTED     22668
unix  3      [ ]         STREAM     CONNECTED     19638
unix  3      [ ]         STREAM     CONNECTED     24510    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     24433    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     22908
unix  3      [ ]         STREAM     CONNECTED     46755    /run/user/1000/bus
unix  3      [ ]         STREAM     CONNECTED     24776
unix  3      [ ]         STREAM     CONNECTED     23133    /run/user/1000/at-spi/bus
unix  3      [ ]         STREAM     CONNECTED     22764    /run/systemd/journal/stdout
unix  2      [ ]         DGRAM      CONNECTED     23746
unix  3      [ ]         STREAM     CONNECTED     21007
```

```
abhi@abhi-ubuntu:~$ netstat -s
Ip:
    Forwarding: 2
    13451 total packets received
    1 with invalid addresses
    0 forwarded
    0 incoming packets discarded
    13448 incoming packets delivered
    13080 requests sent out
    20 outgoing packets dropped
Icmp:
    155 ICMP messages received
    0 input ICMP message failed
    ICMP input histogram:
        destination unreachable: 62
        timeout in transit: 58
        echo replies: 35
    186 ICMP messages sent
    0 ICMP messages failed
    ICMP output histogram:
        destination unreachable: 62
        echo requests: 124
IcmpMsg:
        InType0: 35
        InType3: 62
        InType11: 58
        OutType3: 62
        OutType8: 124
Tcp:
    106 active connection openings
    0 passive connection openings
    2 failed connection attempts
    0 connection resets received
    8 connections established
    12682 segments received
    12076 segments sent out
    15 segments retransmitted
    0 bad segments received
    19 resets sent
Udp:
    549 packets received
    62 packets to unknown port received
    0 packet receive errors
    854 packets sent
    0 receive buffer errors
    0 send buffer errors
UdpLite:
TcpExt:
    50 TCP sockets finished time wait in fast timer
    53 delayed acks sent
    9901 packet headers predicted
    189 acknowledgments not containing data payload received
    595 predicted acknowledgments
```

```
abhi@abhi-ubuntu:~$ netstat -r
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
default         10.0.2.2        0.0.0.0         UG        0 0          0 enp0s3
10.0.2.0        0.0.0.0         255.255.255.0   U         0 0          0 enp0s3
link-local      0.0.0.0         255.255.0.0     U         0 0          0 enp0s3
abhi@abhi-ubuntu:~$ ss
Netid   State    Recv-Q    Send-Q                  Local Address:Port             Peer Address:Port      Process
u_seq   ESTAB    0         0                              @dd2e1 45772                     * 45771
u_dgr   ESTAB    0         0         /run/user/1000/systemd/notify 22666                   * 0
u_seq   ESTAB    0         0                              @526d6 45779                     * 45780
u_dgr   ESTAB    0         0                 /run/systemd/notify 2946                       * 0
u_dgr   ESTAB    0         0          /run/systemd/journal/dev-log 2971                     * 0
u_dgr   ESTAB    0         0          /run/systemd/journal/socket 2973                      * 0
u_seq   ESTAB    0         0                              @0d2d5 45756                     * 45755
u_seq   ESTAB    0         0                              @5ed0d 45771                     * 45772
u_seq   ESTAB    0         0                              @14c69 45755                     * 45756
u_seq   ESTAB    0         0                              @a0193 45777                     * 45778
u_str   ESTAB    0         0         /run/dbus/system_bus_socket 40941                      * 46631
u_str   ESTAB    0         0                                   * 29800                     * 28910
u_str   ESTAB    0         0                                   * 24730                     * 24732
u_str   ESTAB    0         0         /run/dbus/system_bus_socket 23526                      * 23525
u_str   ESTAB    0         0                  /run/user/1000/bus 23796                      * 22114
u_str   ESTAB    0         0                                   * 47137                     * 47138
u_str   ESTAB    0         0         /run/user/1000/pipewire-0 26956                        * 25850
u_str   ESTAB    0         0                                   * 22396                     * 23309
u_dgr   ESTAB    0         0                                   * 23639                     * 2971
u_str   ESTAB    0         0                                   * 17197                     * 19618
u_str   ESTAB    0         0                  /run/user/1000/bus 22774                      * 23811
u_dgr   ESTAB    0         0                                   * 22668                     * 22667
u_str   ESTAB    0         0                                   * 19638                     * 19711
u_str   ESTAB    0         0                  /run/user/1000/bus 24510                      * 23493
u_str   ESTAB    0         0                  /run/user/1000/bus 24433                      * 24420
u_str   ESTAB    0         0                                   * 22908                     * 22909
u_str   ESTAB    0         0                  /run/user/1000/bus 46755                      * 47120
u_str   ESTAB    0         0                                   * 24776                     * 26706
u_str   ESTAB    0         0          /run/user/1000/at-spi/bus 23133                       * 24267
u_str   ESTAB    0         0         /run/systemd/journal/stdout 22764                      * 22130
u_dgr   ESTAB    0         0                                   * 23746                     * 2971
u_str   ESTAB    0         0                                   * 21007                     * 21012
u_str   ESTAB    0         0         /run/systemd/journal/stdout 17272                      * 17266
u_str   ESTAB    0         0                                   * 48380                     * 48379
u_str   ESTAB    0         0                                   * 26648                     * 24652
u_str   ESTAB    0         0                                   * 22050                     * 22063
u_dgr   ESTAB    0         0                                   * 19629                     * 2971
u_str   ESTAB    0         0                                   * 47150                     * 47151
u_str   ESTAB    0         0                                   * 45834                     * 45833
u_str   ESTAB    0         0                                   * 24412                     * 23443
u_str   ESTAB    0         0                                   * 22949                     * 22950
u_str   ESTAB    0         0                                   * 46803                     * 46802
u_str   ESTAB    0         0                                   * 24773                     * 24774
u_str   ESTAB    0         0         /run/systemd/journal/stdout 22185                      * 23932
```

```
abhi@abhi-ubuntu:~$ dig google.com

; <<>> DiG 9.18.12-0ubuntu0.22.04.1-Ubuntu <<>> google.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 35815
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;google.com.                    IN      A

;; ANSWER SECTION:
google.com.             1       IN      A       142.250.193.142

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53) (UDP)
;; WHEN: Thu Jul 27 21:44:46 IST 2023
;; MSG SIZE  rcvd: 55

abhi@abhi-ubuntu:~$ nslookup google.com
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   google.com
Address: 142.250.77.142
Name:   google.com
Address: 2404:6800:4007:817::200e

abhi@abhi-ubuntu:~$ route
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
default         10.0.2.2        0.0.0.0         UG    100    0        0 enp0s3
10.0.2.0        0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
link-local      0.0.0.0         255.255.0.0     U     1000   0        0 enp0s3
abhi@abhi-ubuntu:~$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         10.0.2.2        0.0.0.0         UG    100    0        0 enp0s3
10.0.2.0        0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
169.254.0.0     0.0.0.0         255.255.0.0     U     1000   0        0 enp0s3
abhi@abhi-ubuntu:~$ host google.com
google.com has address 142.250.77.142
google.com has IPv6 address 2404:6800:4007:817::200e
google.com mail is handled by 10 smtp.google.com.
abhi@abhi-ubuntu:~$ arp
Address                 HWtype  HWaddress           Flags Mask        Iface
10.0.2.2                ether   52:54:00:12:35:02   C                 enp0s3
```

```
abhi@abhi-ubuntu:~$ arp -n
Address                  HWtype  HWaddress           Flags Mask            Iface
10.0.2.2                 ether   52:54:00:12:35:02   C                     enp0s3
abhi@abhi-ubuntu:~$ iwconfig
lo        no wireless extensions.

enp0s3    no wireless extensions.

abhi@abhi-ubuntu:~$ hostname
abhi-ubuntu
abhi@abhi-ubuntu:~$ sudo hostname abhi
abhi@abhi-ubuntu:~$ hostname
abhi
abhi@abhi-ubuntu:~$ corl -O http://web.iiitdm.ac.in/noor/hpcw2021.pdf
Command 'corl' not found, did you mean:
  command 'curl' from snap curl (8.1.2)
  command 'col' from deb bsdextrautils (2.37.2-4ubuntu3)
  command 'curl' from deb curl (7.81.0-1ubuntu1.13)
See 'snap info <snapname>' for additional versions.
abhi@abhi-ubuntu:~$ curl -O http://web.iiitdm.ac.in/noor/hpcw2021.pdf
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  171k  100  171k    0       0  38575       0  0:00:04  0:00:04 --:--:-- 38581
abhi@abhi-ubuntu:~$ wget http://web.iiitdm.ac.in/noor/hpcw2021.pdf
--2023-07-27 21:50:22--  http://web.iiitdm.ac.in/noor/hpcw2021.pdf
Resolving web.iiitdm.ac.in (web.iiitdm.ac.in)... 173.236.205.207
Connecting to web.iiitdm.ac.in (web.iiitdm.ac.in)|173.236.205.207|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 175817 (172K) [application/pdf]
Saving to: 'hpcw2021.pdf.1'

hpcw2021.pdf.1           100%[================================>] 171.70K  --.-KB/s    in 0.1s

2023-07-27 21:50:24 (1.53 MB/s) - 'hpcw2021.pdf.1' saved [175817/175817]

abhi@abhi-ubuntu:~$ whois google.com
   Domain Name: GOOGLE.COM
   Registry Domain ID: 2138514_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.markmonitor.com
   Registrar URL: http://www.markmonitor.com
   Updated Date: 2019-09-09T15:39:04Z
   Creation Date: 1997-09-15T04:00:00Z
   Registry Expiry Date: 2028-09-14T04:00:00Z
   Registrar: MarkMonitor Inc.
   Registrar IANA ID: 292
   Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
   Registrar Abuse Contact Phone: +1.2086851750
   Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
```

```
abhi@abhi-ubuntu:~$ whois google.com
   Domain Name: GOOGLE.COM
   Registry Domain ID: 2138514_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.markmonitor.com
   Registrar URL: http://www.markmonitor.com
   Updated Date: 2019-09-09T15:39:04Z
   Creation Date: 1997-09-15T04:00:00Z
   Registry Expiry Date: 2028-09-14T04:00:00Z
   Registrar: MarkMonitor Inc.
   Registrar IANA ID: 292
   Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
   Registrar Abuse Contact Phone: +1.2086851750
   Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
   Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
   Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
   Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
   Name Server: NS1.GOOGLE.COM
   Name Server: NS2.GOOGLE.COM
   Name Server: NS3.GOOGLE.COM
   Name Server: NS4.GOOGLE.COM
   DNSSEC: unsigned
   URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2023-07-27T16:20:51Z <<<

For more information on Whois status codes, please visit https://icann.org/epp

NOTICE: The expiration date displayed in this record is the date the
registrar's sponsorship of the domain name registration in the registry is
currently set to expire. This date does not necessarily reflect the expiration
date of the domain name registrant's agreement with the sponsoring
registrar.  Users may consult the sponsoring registrar's Whois database to
view the registrar's reported date of expiration for this registration.

TERMS OF USE: You are not authorized to access or query our Whois
database through the use of electronic processes that are high-volume and
automated except as reasonably necessary to register domain names or
modify existing registrations; the Data in VeriSign Global Registry
Services' ("VeriSign") Whois database is provided by VeriSign for
information purposes only, and to assist persons in obtaining information
about or related to a domain name registration record. VeriSign does not
guarantee its accuracy. By submitting a Whois query, you agree to abide
by the following terms of use: You agree that you may use this Data only
for lawful purposes and that under no circumstances will you use this Data
to: (1) allow, enable, or otherwise support the transmission of mass
unsolicited, commercial advertising or solicitations via e-mail, telephone,
or facsimile; or (2) enable high volume, automated, electronic processes
that apply to VeriSign (or its computer systems). The compilation,
repackaging, dissemination or other use of this Data is expressly
prohibited without the prior written consent of VeriSign. You agree not to
use electronic processes that are automated and high-volume to access or
```

```
abhi@abhi-ubuntu:~$ iftop
Command 'iftop' not found, but can be installed with:
sudo apt install iftop
abhi@abhi-ubuntu:~$ iftop -p
Command 'iftop' not found, but can be installed with:
sudo apt install iftop
abhi@abhi-ubuntu:~$ sudo iftop -b
sudo: iftop: command not found
abhi@abhi-ubuntu:~$ sudo iftop -P
sudo: iftop: command not found
abhi@abhi-ubuntu:~$ sudo install iftop
install: missing destination file operand after 'iftop'
Try 'install --help' for more information.
abhi@abhi-ubuntu:~$ sudo apt install iftop
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libflashrom1 libftdi1-2 libllvm13
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  iftop
0 upgraded, 1 newly installed, 0 to remove and 168 not upgraded.
Need to get 35.6 kB of archives.
After this operation, 95.2 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 iftop amd64 1.0~pre4-7 [35.6 kB]
Fetched 35.6 kB in 2s (21.2 kB/s)
Selecting previously unselected package iftop.
(Reading database ... 242429 files and directories currently installed.)
Preparing to unpack .../iftop_1.0~pre4-7_amd64.deb ...
Unpacking iftop (1.0~pre4-7) ...
Setting up iftop (1.0~pre4-7) ...
Processing triggers for man-db (2.10.2-1) ...
abhi@abhi-ubuntu:~$ iftop
interface: enp0s3
IP address is: 10.0.2.15
MAC address is: 08:00:27:a6:63:0a
pcap_open_live(enp0s3): enp0s3: You don't have permission to capture on that device (socket: Ope
abhi@abhi-ubuntu:~$ iftop -p
interface: enp0s3
IP address is: 10.0.2.15
MAC address is: 08:00:27:a6:63:0a
pcap_open_live(enp0s3): enp0s3: You don't have permission to capture on that device (socket: Ope
abhi@abhi-ubuntu:~$ sudo iftop -b
interface: enp0s3
IP address is: 10.0.2.15
MAC address is: 08:00:27:a6:63:0a
abhi@abhi-ubuntu:~$ sudo iftop -P
interface: enp0s3
IP address is: 10.0.2.15
```

```
abhi@abhi-ubuntu:~$ sudo iftop -P
interface: enp0s3
IP address is: 10.0.2.15
MAC address is: 08:00:27:a6:63:0a
abhi@abhi-ubuntu:~$ tcpdump
tcpdump: enp0s3: You don't have permission to capture on that device
(socket: Operation not permitted)
abhi@abhi-ubuntu:~$ tcpdump -i enp0s3 tcp
tcpdump: enp0s3: You don't have permission to capture on that device
(socket: Operation not permitted)
abhi@abhi-ubuntu:~$ sudo tcpdump -i enp0s3 tcp
tcpdump: verbose output suppressed, use -v[v]... for full protocol decode
listening on enp0s3, link-type EN10MB (Ethernet), snapshot length 262144 bytes
21:55:11.775556 IP snapstore-content-cache-1.ps5.canonical.com.https > 10.0.2.15.55570: Flags [P.], seq 185270576:185272036, ack 2283003850, win 65535, length 1460
21:55:11.775575 IP 10.0.2.15.55570 > snapstore-content-cache-1.ps5.canonical.com.https: Flags [.], ack 1460, win 65535, length 0
21:55:11.798330 IP snapstore-content-cache-1.ps5.canonical.com.https > 10.0.2.15.55570: Flags [P.], seq 1460:7300, ack 1, win 65535, length 5840
21:55:11.798350 IP 10.0.2.15.55570 > snapstore-content-cache-1.ps5.canonical.com.https: Flags [.], ack 7300, win 65535, length 0
21:55:11.843764 IP snapstore-content-cache-1.ps5.canonical.com.https > 10.0.2.15.55570: Flags [P.], seq 7300:16060, ack 1, win 65535, length 8760
21:55:11.843784 IP 10.0.2.15.55570 > snapstore-content-cache-1.ps5.canonical.com.https: Flags [.], ack 16060, win 65535, length 0
21:55:11.847257 IP snapstore-content-cache-1.ps5.canonical.com.https > 10.0.2.15.55570: Flags [P.], seq 16060:17520, ack 1, win 65535, length 1460
21:55:11.847272 IP 10.0.2.15.55570 > snapstore-content-cache-1.ps5.canonical.com.https: Flags [.], ack 17520, win 65535, length 0
```

```
abhi@abhi-ubuntu:~$ sudo nmap -O google.com
Starting Nmap 7.80 ( https://nmap.org ) at 2023-07-27 21:57 IST
Nmap scan report for google.com (142.250.193.142)
Host is up (0.0088s latency).
Other addresses for google.com (not scanned): 2404:6800:4007:817::200e
rDNS record for 142.250.193.142: maa05s25-in-f14.1e100.net
Not shown: 991 filtered ports
PORT      STATE SERVICE
21/tcp    open  ftp
25/tcp    open  smtp
80/tcp    open  http
110/tcp   open  pop3
119/tcp   open  nntp
143/tcp   open  imap
443/tcp   open  https
8008/tcp  open  http
8010/tcp  open  xmpp
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: bridge|general purpose
Running (JUST GUESSING): Oracle Virtualbox (98%), QEMU (92%)
OS CPE: cpe:/o:oracle:virtualbox cpe:/a:qemu:qemu
Aggressive OS guesses: Oracle Virtualbox (98%), QEMU user mode network gateway (92%)
No exact OS matches for host (test conditions non-ideal).

OS detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 9.73 seconds
```