

```
kolallen@NIRAWORKPLACE:/$ ping 8.8.4.4
PING 8.8.4.4 (8.8.4.4) 56(84) bytes of data.
64 bytes from 8.8.4.4: icmp_seq=1 ttl=117 time=3.50 ms
64 bytes from 8.8.4.4: icmp_seq=2 ttl=117 time=3.62 ms
64 bytes from 8.8.4.4: icmp_seq=3 ttl=117 time=3.30 ms
64 bytes from 8.8.4.4: icmp_seq=4 ttl=117 time=3.56 ms
64 bytes from 8.8.4.4: icmp_seq=5 ttl=117 time=2.86 ms
64 bytes from 8.8.4.4: icmp_seq=6 ttl=117 time=5.10 ms
64 bytes from 8.8.4.4: icmp_seq=7 ttl=117 time=3.42 ms
64 bytes from 8.8.4.4: icmp_seq=8 ttl=117 time=3.27 ms
64 bytes from 8.8.4.4: icmp_seq=9 ttl=117 time=3.51 ms
64 bytes from 8.8.4.4: icmp_seq=10 ttl=117 time=3.00 ms
^Z
[1]+  Stopped                  ping 8.8.4.4
```

```
ko1allen@NIRAWORKPLACE:/$ traceroute 8.8.4.4
traceroute to 8.8.4.4 (8.8.4.4), 30 hops max, 60 byte packets
 1  NIRAWORKPLACE (172.17.144.1)  0.395 ms  0.335 ms  0.327 ms
 2  172.25.4.1 (172.25.4.1)  1.518 ms  2.329 ms  2.320 ms
 3  172.25.0.240 (172.25.0.240)  1.985 ms  1.965 ms  2.696 ms
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  *^Z
[2]+  Stopped                  traceroute 8.8.4.4
```

```
kolallen@NIRAWORKPLACE:/$ nslookup google.com
```

```
Server:          172.17.144.1  
Address:         172.17.144.1#53
```

```
Non-authoritative answer:
```

```
Name:   google.com  
Address: 142.251.42.46  
Name:   google.com  
Address: 2404:6800:4009:830::200e
```

```
kolallen@NIRAWORKPLACE:/$ netstat
```

```
Active Internet connections (w/o servers)
```

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	172.17.154.51:40534	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:40550	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:40516	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:41172	bom12s20-in-f14.1e:http	ESTABLISHED
tcp	0	0	localhost:60262	localhost:telnet	ESTABLISHED
tcp	0	0	172.17.154.51:59122	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:40560	bom12s20-in-f14.1:https	TIME_WAIT
tcp	15	0	localhost:48078	localhost:ftp	CLOSE_WAIT
tcp	0	0	172.17.154.51:45098	bom12s20-in-f14.1:imap2	TIME_WAIT
tcp	0	0	172.17.154.51:52858	bom12s20-in-f14.1:imap2	TIME_WAIT
tcp	0	0	172.17.154.51:40538	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:45102	bom12s20-in-f14.1:imap2	TIME_WAIT
tcp	0	0	172.17.154.51:52872	bom12s20-in-f14.1:imap2	ESTABLISHED
tcp	0	0	172.17.154.51:47766	bom12s20-in-f14.1:https	ESTABLISHED
tcp	0	0	172.17.154.51:40584	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:43500	bom12s20-in-f14.1e:http	TIME_WAIT
tcp	0	0	172.17.154.51:52876	bom12s20-in-f14.1:imap2	ESTABLISHED
tcp	0	0	172.17.154.51:40576	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	localhost:telnet	localhost:60262	ESTABLISHED
tcp	0	0	172.17.154.51:40532	bom12s20-in-f14.1:https	TIME_WAIT
tcp	0	0	172.17.154.51:337	bom12s20-in-f14.1e:http	TIME_WAIT
udp	0	0	172.17.154.51:42236	dns.google:33507	ESTABLISHED
udp	0	0	172.17.154.51:58638	dns.google:33504	ESTABLISHED
udp	0	0	172.17.154.51:50482	dns.google:33501	ESTABLISHED
udp	0	0	172.17.154.51:36380	dns.google:33506	ESTABLISHED
udp	0	0	172.17.154.51:46625	dns.google:33499	ESTABLISHED
udp	0	0	172.17.154.51:38739	dns.google:33513	ESTABLISHED
udp	0	0	172.17.154.51:36809	dns.google:33503	ESTABLISHED
udp	0	0	172.17.154.51:45028	dns.google:33512	ESTABLISHED
udp	0	0	172.17.154.51:55639	dns.google:33502	ESTABLISHED
udp	0	0	172.17.154.51:43376	dns.google:33510	ESTABLISHED
udp	0	0	172.17.154.51:45469	dns.google:33511	ESTABLISHED
udp	0	0	172.17.154.51:51650	dns.google:33508	ESTABLISHED
udp	0	0	172.17.154.51:58158	dns.google:33509	ESTABLISHED
udp	0	0	172.17.154.51:56187	dns.google:33498	ESTABLISHED
udp	0	0	172.17.154.51:50204	dns.google:33500	ESTABLISHED

```
kolallen@NIRAWORKPLACE:/$ arp
```

Address	HWtype	HWaddress	Flags	Mask	Iface
NIRAWORKPLACE	ether	00:15:5d:9b:91:68	C		eth0

```
kolallen@NIRAWORKPLACE:/$ rarp
```

```
Usage: rarp -a                list entries in cache.  
      rarp -d <hostname>     delete entry from cache.  
      rarp [<HW>] -s <hostname> <hwaddr> add entry to cache.  
      rarp -f                add entries from /etc/ethers.  
      rarp -V                display program version.
```

<HW>=Use '-H <hw>' to specify hardware address type. Default: ether

List of possible hardware types (which support ARP):

```
ash (Ash) ether (Ethernet) ax25 (AMPR AX.25)  
netrom (AMPR NET/ROM) rose (AMPR ROSE) arcnet (ARCnet)  
dlci (Frame Relay DLCI) fddi (Fiber Distributed Data Interface) hippi (HIPPI)  
irda (IrLAP) x25 (generic X.25) eui64 (Generic EUI-64)
```

11da (i1EMP) x20 (generic x.20) ead04 (generic E01 04)

kolallen@NIRAWORKPLACE:/\$ ip

Usage: ip [OPTIONS] OBJECT { COMMAND | help }

ip [-force] -batch filename

where OBJECT := { address | addrlabel | fou | help | ila | ioam | l2tp | link |
macsec | maddress | monitor | mptcp | mroute | mrule |
neighbor | neighbour | netconf | netns | nexthop | ntable |
ntbl | route | rule | sr | tap | tcpmetrics |
token | tunnel | tuntap | vrf | xfrm }

OPTIONS := { -V[ersion] | -s[tatistics] | -d[etails] | -r[esolve] |
-h[uman-readable] | -iec | -j[son] | -p[retty] |
-f[amily] { inet | inet6 | mpls | bridge | link } |
-4 | -6 | -M | -B | -0 |
-l[oops] { maximum-addr-flush-attempts } | -br[ief] |
-o[neline] | -t[imestamp] | -ts[hort] | -b[atch] [filename] |
-rc[vbuf] [size] | -n[etns] name | -N[umeric] | -a[ll] |
-c[olor]}

```
kolallen@NIRAWORKPLACE:/$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 172.17.154.51 netmask 255.255.240.0 broadcast 172.17.159.255
    inet6 fe80::215:5dff:feee:bfe2 prefixlen 64 scopeid 0x20<link>
    ether 00:15:5d:ee:bf:e2 txqueuelen 1000 (Ethernet)
    RX packets 149549 bytes 317439488 (317.4 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 115122 bytes 7834210 (7.8 MB)
    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
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 246 bytes 16073 (16.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 246 bytes 16073 (16.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```



```
kolallen@NIRAWORKPLACE:/$ 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: 57164
;; flags: qr rd ad; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
;; WARNING: recursion requested but not available

;; QUESTION SECTION:
;google.com.                IN      A

;; ANSWER SECTION:
google.com.                 0       IN      A      142.251.42.46

;; Query time: 0 msec
;; SERVER: 172.17.144.1#53(172.17.144.1) (UDP)
;; WHEN: Wed Nov 08 02:27:16 IST 2023
;; MSG SIZE rcvd: 54
```

```
kolallen@NIRAWORKPLACE:/$ route google.com
Usage: route [-nNvee] [-FC] [<AF>]          List kernel routing tables
       route [-v] [-FC] {add|del|flush} ...  Modify routing table for AF.

       route {-h|--help} [<AF>]             Detailed usage syntax for specified AF.
       route {-V|--version}                 Display version/author and exit.

       -v, --verbose                        be verbose
       -n, --numeric                        don't resolve names
       -e, --extend                         display other/more information
       -F, --fib                           display Forwarding Information Base (default)
       -C, --cache                         display routing cache instead of FIB

<AF>=Use -4, -6, '-A <af>' or '--<af>'; default: inet
List of possible address families (which support routing):
inet (DARPA Internet) inet6 (IPv6) ax25 (AMPR AX.25)
netrom (AMPR NET/ROM) ipx (Novell IPX) ddp (Appletalk DDP)
x25 (CCITT X.25)
```