Get update


```
complab304pc14@complab304pc14:~$ sudo su root
[sudo] password for complab304pc14:
Sorry, try again.
[sudo] password for complab304pc14:
root@complab304pc14:/home/complab304pc14# apt-getupdate
apt-getupdate: command not found
root@complab304pc14:/home/complab304pc14# apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://lenovo.archive.canonical.com focal InRelease [515 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [485 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2,077 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [714 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [369 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [278 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu focal-updates/main DEP-11 48x48 Icons [60.8 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu focal-updates/main DEP-11 64x64 Icons [98.3 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [15.8 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted i386 Packages [26.6 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1,256 kB]
Get:16 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [178 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [584 B]
Get:18 http://in.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [691 kB]
Get:19 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [949 kB]
Get:20 http://in.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [216 kB]
Get:21 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [391 kB]
Get:22 http://in.archive.ubuntu.com/ubuntu focal-updates/universe DEP-11 48x48 Icons [257 kB]
Get:23 http://in.archive.ubuntu.com/ubuntu focal-updates/universe DEP-11 64x64 Icons [458 kB]
Get:24 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [21.4 kB]
Get:25 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [24.4 kB]
Get:26 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse i386 Packages [8,444 B]
Get:27 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [944 B]
Get:28 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [508 B]
Get:29 http://in.archive.ubuntu.com/ubuntu focal-backports/main i386 Packages [36.0 kB]
Get:30 http://in.archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [45.6 kB]
Get:31 http://in.archive.ubuntu.com/ubuntu focal-backports/main Translation-en [16.3 kB]
Get:32 http://in.archive.ubuntu.com/ubuntu focal-backports/main amd64 DEP-11 Metadata [8,004 B]
Get:33 http://in.archive.ubuntu.com/ubuntu focal-backports/main DEP-11 48x48 Icons [6,976 B]
Get:34 http://in.archive.ubuntu.com/ubuntu focal-backports/main DEP-11 64x64 Icons [10.5 kB]
Get:35 http://in.archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [1,420 B]
Get:36 http://in.archive.ubuntu.com/ubuntu focal-backports/universe i386 Packages [13.4 kB]
Get:37 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [23.9 kB]
Get:38 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1,705 kB]
Get:39 http://in.archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [16.0 kB]
```

Net-tools


```
root@complab304pc14:/home/complab304pc14# ipconfig

Command 'ipconfig' not found, did you mean:

  command 'ifconfig' from deb net-tools (1.60+git20180626.aebd88e-1ubuntu1)
  command 'iwconfig' from deb wireless-tools (30-pre9-13ubuntu1)
  command 'iconfig' from deb ipmiutil (3.1.5-1)

Try: apt install <deb name>

root@complab304pc14:/home/complab304pc14# ifconfig

Command 'ifconfig' not found, but can be installed with:

apt install net-tools

root@complab304pc14:/home/complab304pc14# net-tools
net-tools: command not found
root@complab304pc14:/home/complab304pc14# apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 86 not upgraded.
Need to get 196 kB of archives.
After this operation, 864 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-1ubuntu1 [196 kB]
Fetched 196 kB in 2s (89.7 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 223569 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-1ubuntu1_amd64.deb ..
.
Unpacking net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Setting up net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
root@complab304pc14:/home/complab304pc14# ifconfig
eno1: flags=163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.34.55  netmask 255.255.255.0  broadcast 192.168.34.255
        inet6 fe80::1ee7:e811:44c0:12d9  prefixlen 64  scopeid 0x20<link>
        ether d8:bb:c1:c2:9d:c8  txqueuelen 1000  (Ethernet)
        RX packets 13327  bytes 16330419 (16.3 MB)
        RX errors 0  dropped 1  overruns 0  frame 0
        TX packets 5862  bytes 479313 (479.3 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 16  memory 0xb1200000-b1220000
```

IF Config and Ping


```
Processing triggers for man-db (2.9.1-1) ...
root@complab304pc14:/home/complab304pc14# ifconfig
eno1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.34.55  netmask 255.255.255.0  broadcast 192.168.34.255
        inet6 fe80::1ee7:e811:44c0:12d9  prefixlen 64  scopeid 0x20<link>
        ether d8:bb:c1:c2:9d:c8  txqueuelen 1000  (Ethernet)
        RX packets 13327  bytes 16330419 (16.3 MB)
        RX errors 0  dropped 1  overruns 0  frame 0
        TX packets 5862  bytes 479313 (479.3 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 16  memory 0xb1200000-b1220000

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 746  bytes 57818 (57.8 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 746  bytes 57818 (57.8 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

root@complab304pc14:/home/complab304pc14# ^C
root@complab304pc14:/home/complab304pc14# ping 192.168.34.34
PING 192.168.34.34 (192.168.34.34) 56(84) bytes of data.
64 bytes from 192.168.34.34: icmp_seq=1 ttl=64 time=0.570 ms
64 bytes from 192.168.34.34: icmp_seq=2 ttl=64 time=0.707 ms
64 bytes from 192.168.34.34: icmp_seq=3 ttl=64 time=0.716 ms
64 bytes from 192.168.34.34: icmp_seq=4 ttl=64 time=0.703 ms
64 bytes from 192.168.34.34: icmp_seq=5 ttl=64 time=0.563 ms
64 bytes from 192.168.34.34: icmp_seq=6 ttl=64 time=0.671 ms
64 bytes from 192.168.34.34: icmp_seq=7 ttl=64 time=0.371 ms
64 bytes from 192.168.34.34: icmp_seq=8 ttl=64 time=0.380 ms
64 bytes from 192.168.34.34: icmp_seq=9 ttl=64 time=0.788 ms
64 bytes from 192.168.34.34: icmp_seq=10 ttl=64 time=0.574 ms
64 bytes from 192.168.34.34: icmp_seq=11 ttl=64 time=0.707 ms
64 bytes from 192.168.34.34: icmp_seq=12 ttl=64 time=0.681 ms
64 bytes from 192.168.34.34: icmp_seq=13 ttl=64 time=0.703 ms
64 bytes from 192.168.34.34: icmp_seq=14 ttl=64 time=0.678 ms
64 bytes from 192.168.34.34: icmp_seq=15 ttl=64 time=0.629 ms
64 bytes from 192.168.34.34: icmp_seq=16 ttl=64 time=0.720 ms
64 bytes from 192.168.34.34: icmp_seq=17 ttl=64 time=0.709 ms
64 bytes from 192.168.34.34: icmp_seq=18 ttl=64 time=0.692 ms
64 bytes from 192.168.34.34: icmp_seq=19 ttl=64 time=0.622 ms
64 bytes from 192.168.34.34: icmp_seq=20 ttl=64 time=0.715 ms
64 bytes from 192.168.34.34: icmp_seq=21 ttl=64 time=0.617 ms
64 bytes from 192.168.34.34: icmp_seq=22 ttl=64 time=0.479 ms
```

Traceroute


```
traceroute to ietetsec.in (162.55.100.32), 30 hops max, 60 byte packets
 1  _gateway (192.168.34.1)  0.485 ms  0.518 ms  0.567 ms
 2  203.212.25.1 (203.212.25.1)  5.312 ms  5.289 ms  5.701 ms
 3  203.212.24.53 (203.212.24.53)  5.685 ms  5.662 ms *
 4  * * *
 5  38-97-87-183.mysipl.com (183.87.97.38)  7.664 ms  7.643 ms  7.625 ms
 6  172.23.78.237 (172.23.78.237)  7.916 ms *  6.851 ms
 7  180.87.38.5 (180.87.38.5)  6.796 ms  6.772 ms  6.739 ms
 8  * * *
 9  * if-ae-7-2.tcore1.pye-paris.as6453.net (195.219.174.9)  130.352 ms *
10  * * if-ae-55-4.tcore1.pvu-paris.as6453.net (80.231.153.168)  133.010 ms
11  if-ae-49-2.tcore2.pvu-paris.as6453.net (80.231.153.21)  133.388 ms * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
root@complab304pc14:/home/complab304pc14# traceroute --help
Usage:
  traceroute [ -46dFITnreAUDV ] [ -f first_ttl ] [ -g gate,... ] [ -i device ] [ -m max_ttl ] [ -N squeries ] [ -p port ] [ -t tos ] [ -l flow_label ]
  [ -w MAX,HERE,NEAR ] [ -q nqueries ] [ -s src_addr ] [ -z sendwait ] [ --fwmark=num ] host [ packetlen ]
Options:
  -4                         Use IPv4
  -6                         Use IPv6
  -d  --debug                Enable socket level debugging
  -F  --dont-fragment        Do not fragment packets
  -f first_ttl  --first=first_ttl
                             Start from the first_ttl hop (instead from 1)
  -g gate,...  --gateway=gate,...
                             Route packets through the specified gateway
                             (maximum 8 for IPv4 and 127 for IPv6)
  -I  --icmp                 Use ICMP ECHO for tracerouting
```



```
10  * * if-ae-55-4.tcore1.pvu-paris.as6453.net (80.231.153.168)  133.010 ms
11  if-ae-49-2.tcore2.pvu-paris.as6453.net (80.231.153.21)  133.388 ms * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
root@complab304pc14:/home/complab304pc14# traceroute --help
Usage:
  traceroute [ -46dFITnreAUDV ] [ -f first_ttl ] [ -g gate,... ] [ -i device ] [ -m max_ttl ] [ -N squeries ] [ -p port ] [ -t tos ] [ -l flow_label ]
  [ -w MAX,HERE,NEAR ] [ -q nqueries ] [ -s src_addr ] [ -z sendwait ] [ --fwmark=num ] host [ packetlen ]
Options:
  -4                         Use IPv4
  -6                         Use IPv6
  -d  --debug                Enable socket level debugging
  -F  --dont-fragment        Do not fragment packets
  -f first_ttl  --first=first_ttl
                             Start from the first_ttl hop (instead from 1)
  -g gate,...  --gateway=gate,...
                             Route packets through the specified gateway
                             (maximum 8 for IPv4 and 127 for IPv6)
  -I  --icmp                 Use ICMP ECHO for tracerouting
  -T  --tcp                  Use TCP SYN for tracerouting (default port is 80)
  -i device  --interface=device
                             Specify a network interface to operate with
  -m max_ttl  --max-hops=max_ttl
                             Set the max number of hops (max TTL to be
                             reached). Default is 30
  -N squeries  --sim-queries=squeries
                             Set the number of probes to be tried
                             simultaneously (default is 16)
                             Do not resolve IP addresses to their domain names
```



```
  -e  --extensions           Show ICMP extensions (if present), including MPLS
  -A  --as-path-lookups      Perform AS path lookups in routing registries and
                             print results directly after the corresponding
                             addresses
  -M name  --module=name     Use specified module (either builtin or external)
                             for traceroute operations. Most methods have
                             their shortcuts (`-I' means `-M icmp' etc.)
  -O OPTS,...  --options=OPTS,...
                             Use module-specific option OPTS for the
                             traceroute module. Several OPTS allowed,
                             separated by comma. If OPTS is "help", print info
                             about available options
  --sport=num                Use source port num for outgoing packets. Implies
                             `-N 1'
  --fwmark=num               Set firewall mark for outgoing packets
  -U  --udp                  Use UDP to particular port for tracerouting
                             (instead of increasing the port per each probe),
                             default port is 53
  -UL                        Use UDPLITE for tracerouting (default dest port
                             is 53)
  -D  --dccp                 Use DCCP Request for tracerouting (default port
                             is 33434)
  -P prot  --protocol=prot   Use raw packet of protocol prot for tracerouting
  --mtu                      Discover MTU along the path being traced. Implies
                             `-F -N 1'
  --back                     Guess the number of hops in the backward path and
                             print if it differs
  -V  --version              Print version info and exit
  --help                     Read this help and exit
Arguments:
+     host                   The host to traceroute to
      packetlen              The full packet length (default is the length of an IP
                             header plus 40). Can be ignored or increased to a minimal
                             allowed value
root@complab304pc14:/home/complab304pc14# traceroute -n
Specify "host" missing argument.
root@complab304pc14:/home/complab304pc14# traceroute -n ietetsec.in
traceroute to ietetsec.in (162.55.100.32), 30 hops max, 60 byte packets
 1  192.168.34.1  0.436 ms  0.354 ms  0.397 ms
 2  203.212.25.1  4.554 ms  4.535 ms  4.518 ms
 3  203.212.24.53  5.357 ms  5.340 ms  5.323 ms
 4  * * *
 5  183.87.97.38  7.363 ms  7.347 ms  183.87.97.42  7.330 ms
 6  172.23.78.237  7.314 ms  7.029 ms  7.834 ms
 7  180.87.38.5  7.885 ms  7.206 ms  6.673 ms
```

NSLOOKUP

```
complab304pc15@complab304pc15:~$ sudo sd root
[sudo] password for complab304pc15:
sudo: sd: command not found
complab304pc15@complab304pc15:~$ sudo su root
root@complab304pc15:/home/complab304pc15# nslookup letetsec.in
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   letetsec.in
Address: 162.55.100.32

root@complab304pc15:/home/complab304pc15# traceroute -n letetsec.in
traceroute to letetsec.in (162.55.100.32), 30 hops max, 60 byte packets
 1  192.168.34.1  0.420 ms  0.375 ms  0.440 ms
 2  203.212.25.1  4.607 ms  4.589 ms  4.571 ms
 3  203.212.24.53  4.553 ms  4.536 ms  4.592 ms
 4  * * *
 5  183.87.97.42  6.362 ms  6.579 ms 183.87.97.46  6.563 ms
 6  172.23.78.237  0.311 ms  6.165 ms  6.254 ms
 7  180.87.38.5  6.234 ms  5.214 ms  5.168 ms
 8  * 195.219.174.16  134.405 ms *
 9  * * *
10  * * *
11  * * 80.231.153.21  132.501 ms
12  80.231.245.7  176.833 ms  192.953 ms *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
29  * * *
30  * * *
root@complab304pc15:/home/complab304pc15# dig letetsec.in
```

NETSTAT and DIG

```
27  * * *
28  * * *
29  * * *
30  * * *
root@complab304pc15:/home/complab304pc15# dig letetsec.in

; <<>> DIG 9.16.1-Ubuntu <<>> letetsec.in
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 5841
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

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

;; ANSWER SECTION:
letetsec.in.            6858    IN      A       162.55.100.32

;; Query time: 0 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Tue Sep 06 11:04:05 IST 2022
;; MSG SIZE  rcvd: 56

root@complab304pc15:/home/complab304pc15# netstat --inet
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address       Foreign Address     State
udp        0      0 complab304pc15:bootpc _gateway:bootps    ESTABLISHED
root@complab304pc15:/home/complab304pc15# netstat-v
netstat-v: command not found
root@complab304pc15:/home/complab304pc15# netstat -v
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address       Foreign Address     State
netstat: no support for 'AF INET (sctp)' on this system.
netstat: no support for 'AF INET (sctp)' on this system.
udp        0      0 complab304pc15:bootpc _gateway:bootps    ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags      Type      State      I-Node  Path
unix  2      [ ]        DGRAM                43132   /run/user/1000/systemd/notify
unix  4      [ ]        DGRAM      CONNECTED 18189   /run/systemd/notify
unix  2      [ ]        DGRAM                18203   /run/systemd/journal/syslog
unix  20     [ ]        DGRAM      CONNECTED 18213   /run/systemd/journal/dev-log
unix  8      [ ]        DGRAM      CONNECTED 18217   /run/systemd/journal/socket
unix  3      [ ]        STREAM     CONNECTED 47882   /run/systemd/journal/stdout
unix  3      [ ]        STREAM     CONNECTED 33754
```

ARP and ROUTE

```
unix  3      [ ]        STREAM     CONNECTED 30523   /run/systemd/journal/stdout
unix  3      [ ]        STREAM     CONNECTED 48278
unix  3      [ ]        STREAM     CONNECTED 46262
unix  3      [ ]        STREAM     CONNECTED 46256
netstat: no support for 'AF IPX' on this system.
netstat: no support for 'AF AX25' on this system.
netstat: no support for 'AF X25' on this system.
netstat: no support for 'AF NETROM' on this system.
netstat: no support for 'AF ROSE' on this system.
root@complab304pc15:/home/complab304pc15# netstat -rn
Kernel IP routing table
Destination     Gateway         Genmask         Flags MSS Window  irtt Iface
0.0.0.0         192.168.34.1    0.0.0.0         UG      0 0          0 eno1
169.254.0.0     0.0.0.0         255.255.0.0     U       0 0          0 eno1
192.168.34.0    0.0.0.0         255.255.255.0   U       0 0          0 eno1
root@complab304pc15:/home/complab304pc15# route letetsec.in
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)
root@complab304pc15:/home/complab304pc15# ARP --help
ARP: command not found
root@complab304pc15:/home/complab304pc15# arp
Address          HWtype  HWaddress           Flags Mask    Iface
192.168.34.51    ether   d8:bb:c1:c2:9b:e4   C             eno1
192.168.34.55    ether   d8:bb:c1:c2:9d:c8   C             eno1
_gateway         ether   b4:b0:24:3a:39:54   C             eno1
192.168.34.16    ether   d8:bb:c1:c2:9c:d6   C             eno1
root@complab304pc15:/home/complab304pc15# arp --help
Usage:
  arp [-vn]  [<HW>] [-i <if>] [-a] [<hostname>]             <-Display ARP cache
  arp [-v]        [-i <if>] -d  <host> [pub]               <-Delete ARP entry
  arp [-vnD] [<HW>] [-i <if>] -f  [<filename>]             <-Add entry from file
```

```
root@complab304pc15:/home/complab304pc15# arp
Address                  HWtype  HWaddress           Flags Mask            Iface
192.168.34.51            ether   d8:bb:c1:c2:9b:e4   C                     eno1
192.168.34.55            ether   d8:bb:c1:c2:9d:c8   C                     eno1
_gateway                 ether   b4:b0:24:3a:39:54   C                     eno1
192.168.34.16            ether   d8:bb:c1:c2:9c:d6   C                     eno1
root@complab304pc15:/home/complab304pc15# arp --help
Usage:
  arp [-vn]  [<HW>] [-i <if>] [-a] [<hostname>]             <-Display ARP cache
  arp [-v]          [-i <if>] -d  <host> [pub]              <-Delete ARP entry
  arp [-vnD] [<HW>] [-i <if>] -f  [<filename>]              <-Add entry from file
  arp [-v]   [<HW>] [-i <if>] -s  <host> <hwaddr> [temp]    <-Add entry
  arp [-v]   [<HW>] [-i <if>] -Ds <host> <if> [netmask <nm>] pub   <-''-

        -a                       display (all) hosts in alternative (BSD) style
        -e                       display (all) hosts in default (Linux) style
        -s, --set                set a new ARP entry
        -d, --delete             delete a specified entry
        -v, --verbose            be verbose
        -n, --numeric            don't resolve names
        -i, --device             specify network interface (e.g. eth0)
        -D, --use-device         read <hwaddr> from given device
        -A, -p, --protocol       specify protocol family
        -f, --file               read new entries from file or from /etc/ethers

  <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)
root@complab304pc15:/home/complab304pc15# raip --help

Command 'raip' not found, did you mean:

  command 'rzip' from deb rzip (2.1-4.1)
  command 'rarp' from deb net-tools (1.60+git20180626.aebd88e-1ubuntu1)
  command 'rain' from deb bsdgames (2.17-28build1)

Try: apt install <deb name>

root@complab304pc15:/home/complab304pc15# rarp --help
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

```
  command 'rzip' from deb rzip (2.1-4.1)
  command 'rarp' from deb net-tools (1.60+git20180626.aebd88e-1ubuntu1)
  command 'rain' from deb bsdgames (2.17-28build1)

Try: apt install <deb name>

root@complab304pc15:/home/complab304pc15# rarp --help
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)
root@complab304pc15:/home/complab304pc15# ip
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       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 | -I | -D | -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]}
root@complab304pc15:/home/complab304pc15# ip -V
ip utility, iproute2-ss200127
root@complab304pc15:/home/complab304pc15# ip --help
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       OPTIONS := { -V[ersion] | -s[tatistics] | -d[etails] | -r[esolve] |
                    -h[uman-readable] | -iec | -j[son] | -p[retty] |
                    -f[amily] { inet | inet6 | mpls | bridge | link } |
```

IP

```
                    -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]}
root@complab304pc15:/home/complab304pc15# ip -V
ip utility, iproute2-ss200127
root@complab304pc15:/home/complab304pc15# ip --help
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       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 | -I | -D | -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]}
root@complab304pc15:/home/complab304pc15# ip -a
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       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 | -I | -D | -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]}
root@complab304pc15:/home/complab304pc15# ip 103.197.221.123
Object "103.197.221.123" is unknown, try "ip help".
root@complab304pc15:/home/complab304pc15# ip --help
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       OPTIONS := { -V[ersion] | -s[tatistics] | -d[etails] | -r[esolve] |
```

IFCONFIG