```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ ifconfig
docker0   Link encap:Ethernet  HWaddr 02:42:cf:c7:15:71
          inet addr:172.17.0.1  Bcast:0.0.0.0  Mask:255.255.0.0
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

eth0      Link encap:Ethernet  HWaddr 44:37:e6:4d:df:1b
          inet addr:10.1.8.4  Bcast:10.255.255.255  Mask:255.0.0.0
          inet6 addr: fe80::4637:e6ff:fe4d:df1b/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:51944 errors:0 dropped:0 overruns:0 frame:0
          TX packets:18626 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:27621649 (27.6 MB)  TX bytes:2682227 (2.6 MB)
          Interrupt:17

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:2173 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2173 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:193433 (193.4 KB)  TX bytes:193433 (193.4 KB)

student@lenovo804-ThinkCentre-M70e:~$
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student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ nslookup www.atharvacoe.ac.in
Server:         127.0.1.1
Address:        127.0.1.1#53

Non-authoritative answer:
www.atharvacoe.ac.in    canonical name = atharvacoe.ac.in.
Name:   atharvacoe.ac.in
Address: 192.185.180.65

student@lenovo804-ThinkCentre-M70e:~$
```

```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ ping -c 4 10.1.8.3
PING 10.1.8.3 (10.1.8.3) 56(84) bytes of data.
64 bytes from 10.1.8.3: icmp_seq=1 ttl=64 time=0.324 ms
64 bytes from 10.1.8.3: icmp_seq=2 ttl=64 time=0.333 ms
64 bytes from 10.1.8.3: icmp_seq=3 ttl=64 time=0.316 ms
64 bytes from 10.1.8.3: icmp_seq=4 ttl=64 time=0.302 ms

--- 10.1.8.3 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3000ms
rtt min/avg/max/mdev = 0.302/0.318/0.333/0.024 ms
student@lenovo804-ThinkCentre-M70e:~$
```

```
student@lenovo804-ThinkCentre-M70e:~$ traceroute
Usage:
  traceroute [ -46dFITnreAUDV ] [ -f first_ttl ] [ -g gate,... ] [ -i device ] [ -m max_ttl ] [ -N squeries ] [ -p port ] [ -t tos ] [ -l flow_label ] [ -w waittime ] [ -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)
  -n                          Do not resolve IP addresses to their domain names
  -p port  --port=port        Set the destination port to use. It is either
                              initial udp port value for "default" method
                              (incremented by each probe, default is 33434), or
                              initial seq for "icmp" (incremented as well,
                              default from 1), or some constant destination
                              port for other methods (with default of 80 for
                              "tcp", 53 for "udp", etc.)
  -t tos  --tos=tos           Set the TOS (IPv4 type of service) or TC (IPv6
                              traffic class) value for outgoing packets
  -l flow_label  --flowlabel=flow_label
                              Use specified flow_label for IPv6 packets
  -w waittime  --wait=waittime
                              Set the number of seconds to wait for response to
                              a probe (default is 5.0). Non-integer (float
                              point) values allowed too
  -q nqueries  --queries=nqueries
                              Set the number of probes per each hop. Default is
                              3
  -r                          Bypass the normal routing and send directly to a
                              host on an attached network
  -s src_addr  --source=src_addr
                              Use source src_addr for outgoing packets
  -z sendwait  --sendwait=sendwait
                              Minimal time interval between probes (default 0).
                              If the value is more than 10, then it specifies a
                              number in milliseconds, else it is a number of
                              seconds (float point values allowed too)
  -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)
```

```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ netstat -a
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address          Foreign Address         State
tcp        0      0 lenovo804-ThinkC:domain *:*                     LISTEN
tcp        0      0 localhost:ipp           *:*                     LISTEN
tcp        0      0 10.1.8.4:40190          bom05s11-in-f2.1e:https TIME_WAIT
tcp        0      0 10.1.8.4:52797          151.101.2.114:https     TIME_WAIT
tcp        0      0 10.1.8.4:38575          bom05s15-in-f14.1:https ESTABLISHED
tcp        0      0 10.1.8.4:38576          bom05s15-in-f14.1:https ESTABLISHED
tcp        0      0 10.1.8.4:52065          bom05s15-in-f4.1e:https TIME_WAIT
tcp        0      0 10.1.8.4:52796          151.101.2.114:https     TIME_WAIT
tcp        0      0 10.1.8.4:40191          bom05s11-in-f2.1e:https TIME_WAIT
tcp        0      0 10.1.8.4:38634          bom05s15-in-f14.1:https ESTABLISHED
tcp        0      0 10.1.8.4:38637          bom05s15-in-f14.1:https TIME_WAIT
tcp        0      0 10.1.8.4:38573          bom05s15-in-f14.1:https ESTABLISHED
tcp        0      0 10.1.8.4:37409          server-52-222-135:https TIME_WAIT
tcp        0      0 10.1.8.4:41299          a184-30-54-102.de:https TIME_WAIT
```

```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ arp -v
Address                  HWtype  HWaddress           Flags Mask            Iface
10.8.1.3                         (incomplete)                              eth0
10.0.0.3                 ether   08:35:71:f0:35:c0   C                     eth0
10.1.8.3                 ether   44:37:e6:4d:e0:f7   C                     eth0
Entries: 3    Skipped: 0    Found: 3
student@lenovo804-ThinkCentre-M70e:~$
```

```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ ip addr show
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
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 44:37:e6:4d:df:1b brd ff:ff:ff:ff:ff:ff
    inet 10.1.8.4/8 brd 10.255.255.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::4637:e6ff:fe4d:df1b/64 scope link
       valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:cf:c7:15:71 brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 scope global docker0
       valid_lft forever preferred_lft forever
student@lenovo804-ThinkCentre-M70e:~$
```

```
student@lenovo804-ThinkCentre-M70e: ~

student@lenovo804-ThinkCentre-M70e:~$ dig atharvacoe.ac.in

; <<>> DiG 9.9.5-4.3-Ubuntu <<>> atharvacoe.ac.in
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 44951
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;atharvacoe.ac.in.              IN      A

;; ANSWER SECTION:
atharvacoe.ac.in.       14399   IN      A       192.185.180.65

;; Query time: 479 msec
;; SERVER: 127.0.1.1#53(127.0.1.1)
;; WHEN: Thu Aug 30 13:58:05 IST 2018
;; MSG SIZE  rcvd: 50

student@lenovo804-ThinkCentre-M70e:~$
```