

## Assignment 1

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1a. root@ubuntu-s-1vcpu-1gb-nyc1-01:~# ifconfig

```
eth0: flags=4419<UP,BROADCAST,RUNNING,PROMISC,MULTICAST> mtu 1500
inet 157.245.240.68 netmask 255.255.240.0 broadcast 157.245.255.255
inet6 fe80::6cb5:9ff:fe98:23a3 prefixlen 64 scopeid 0x20<link>
ether 6e:b5:09:98:23:a3 txqueuelen 1000 (Ethernet)
RX packets 456235 bytes 139315738 (139.3 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 491898 bytes 73484410 (73.4 MB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

The value next to inet is the IPv4 address of the machine,  
i.e. 157.245.240.68

1b. root@ubuntu-s-1vcpu-1gb-nyc1-01:~# ping 8.8.8.8

```
8.8.8.8 ping statistics
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 0.797/0.907/1.432/0.178 ms
```

1c.1 root@ubuntu-s-1vcpu-1gb-nyc1-01:~# dig www.google.com

```
IP address of www.google.com : 172.217.3.100
IP address of local DNS server of IIST (www.iiests.ac.in) : 127.0.0.53
```

1d. root@ubuntu-s-1vcpu-1gb-nyc1-01:~# traceroute www.google.com

```
Number of hops = 8
IP a network gateway of subnet = 157.245.240.254 (1st hop's IPv4 address)
```

1e. root@ubuntu-s-1vcpu-1gb-nyc1-01:~# arp -an(arp -a will print which one is gateway)

```
MAC address of the device that is performing as network gateway : 157.245.240.1
```

1f.1 root@ubuntu-s-1vcpu-1gb-nyc1-01:~# nslookup www.google.com

```
Server:      127.0.0.53
Address:     127.0.0.53#53
Non-authoritative answer:
Name:   www.google.com
Address: 172.217.3.100
Name:   www.google.com
Address: 2607:f8b0:4006:800::2004
```

Thus, IP Address of www.google.com is 172.217.3.100  
Doing reverse domain lookup.

1f.2 root@ubuntu-s-1vcpu-1gb-nyc1-01:~# nslookup 172.217.3.100

```
100.3.217.172.in-addr.arpa      name = lga34s18-in-f4.1e100.net.
```

1g. root@ubuntu-s-1vcpu-1gb-nyc1-01:~# netstat -l

Active Internet connections (only servers):

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	localhost:domain	0.0.0.0:*	LISTEN
tcp	0	0	0.0.0.0:ssh	0.0.0.0:*	LISTEN
tcp6	0	0	:::ssh	:::*	LISTEN
udp	0	0	localhost:domain	0.0.0.0:*	
raw6	0	0	:::ipv6-icmp	:::*	7

Active UNIX domain sockets (only servers):

Proto	RefCnt	Flags	Type	State	I-Node	Path
unix	2	[ ACC ]	SEQPACKET	LISTENING	11620	/run/udev/control
unix	2	[ ACC ]	STREAM	LISTENING	1076464	/run/user/0/systemd/private
...						

The active Internet connections are tcp, tcp6, udp, raw6.