UCS1511- NETWORKS LAB

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Exercise 1: Network Commands

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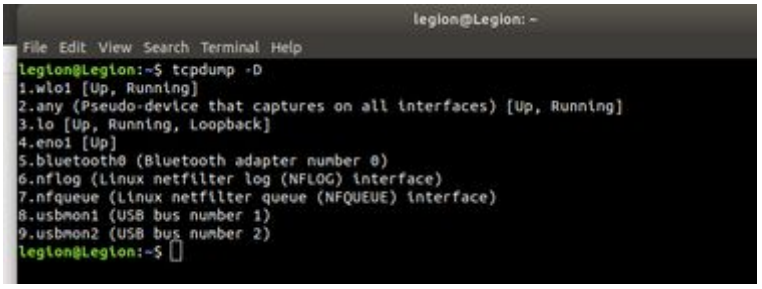
1) tcpdump

Syntax: tcpdump [-options] [-B buffer_size]

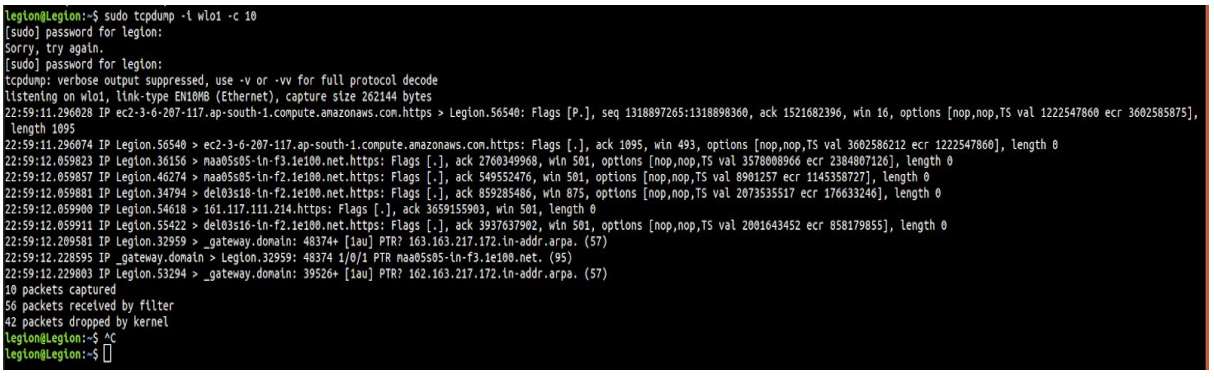
Description: Tcpdump is a command line utility that allows the user to capture and analyze network traffic going through the system. It is often used to help troubleshoot network issues, as well as a security tool.

Output:

tcpdump -d



sudo tcpdump -i[interface]



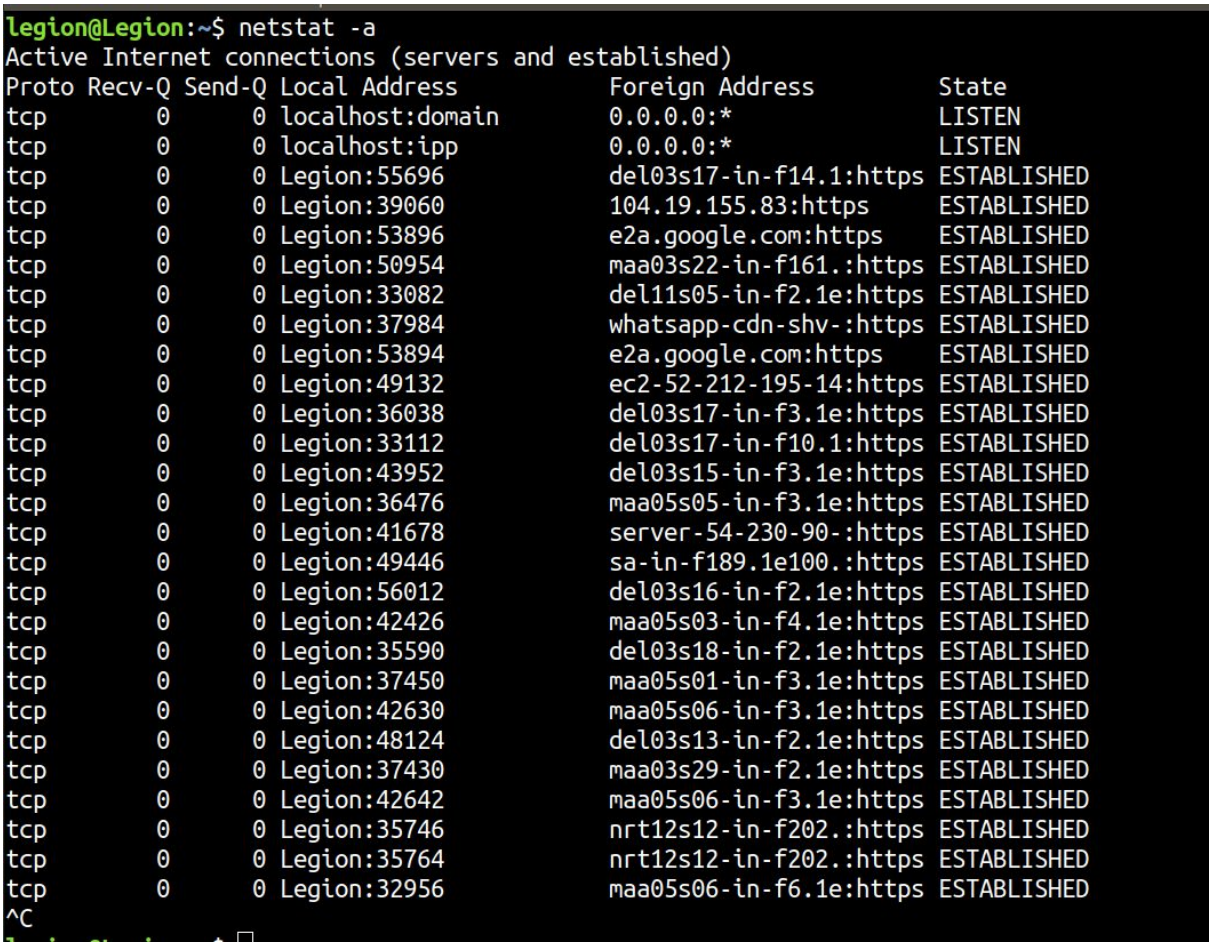
2) netstat:

Syntax: netsat [-option]

Description: netstat is one of a number of command- line tools available to check the functioning of a network. It provides a way to check if various aspects of TCP/IP are working and what connections are present.

Output:

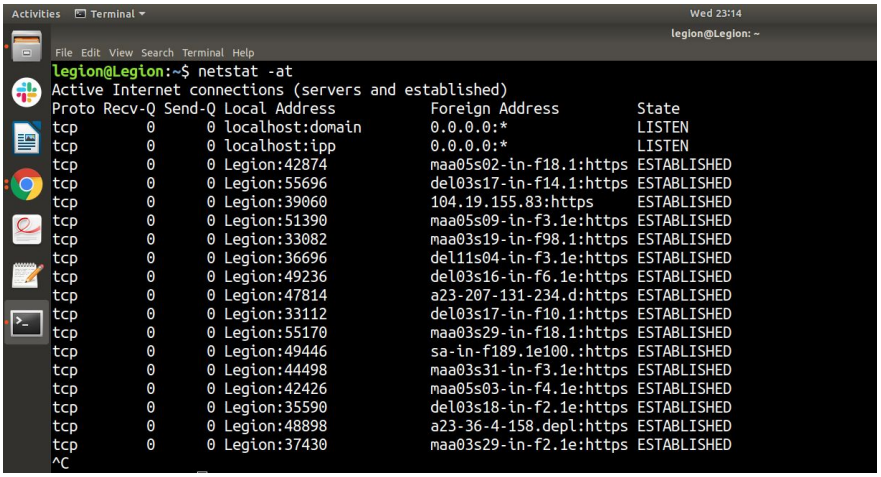
nestat -a



netstat -s

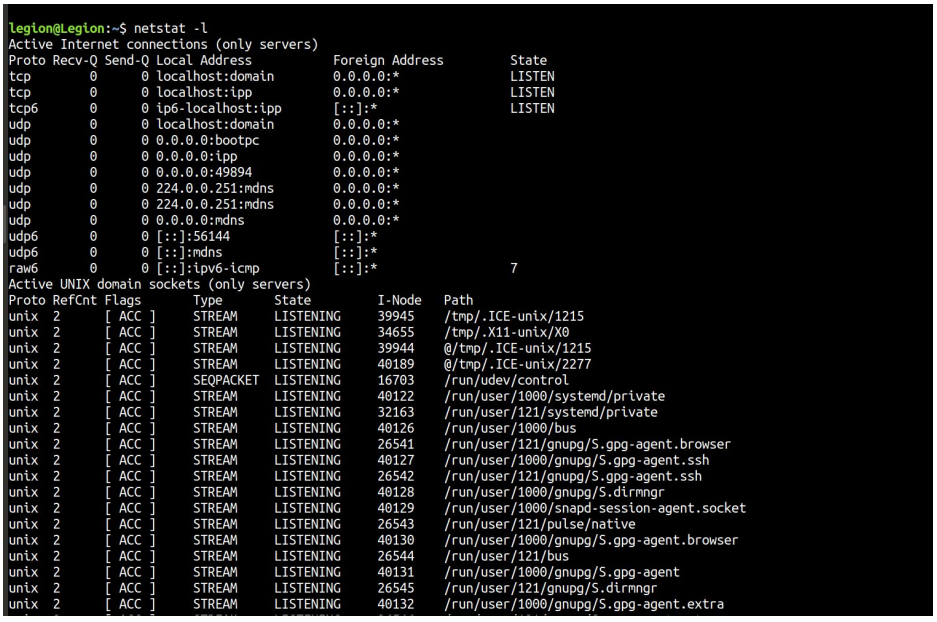
```
legion@Legion:~$ netstat -s
Ip:
    Forwarding: 2
    81592 total packets received
    2 with invalid addresses
    0 forwarded
    0 incoming packets discarded
    81359 incoming packets delivered
    70334 requests sent out
Icmp:
    1 ICMP messages received
    0 input ICMP message failed
    ICMP input histogram:
        destination unreachable: 1
    1 ICMP messages sent
    0 ICMP messages failed
    ICMP output histogram:
        destination unreachable: 1
IcmpMsg:
        InType3: 1
        OutType3: 1
Tcp:
    1090 active connection openings
    0 passive connection openings
    12 failed connection attempts
    277 connection resets received
    43 connections established
    78582 segments received
    75754 segments sent out
    85 segments retransmitted
    3 bad segments received
    732 resets sent
Udp:
    2829 packets received
    1 packets to unknown port received
    0 packet receive errors
    2841 packets sent
```

netstat -at

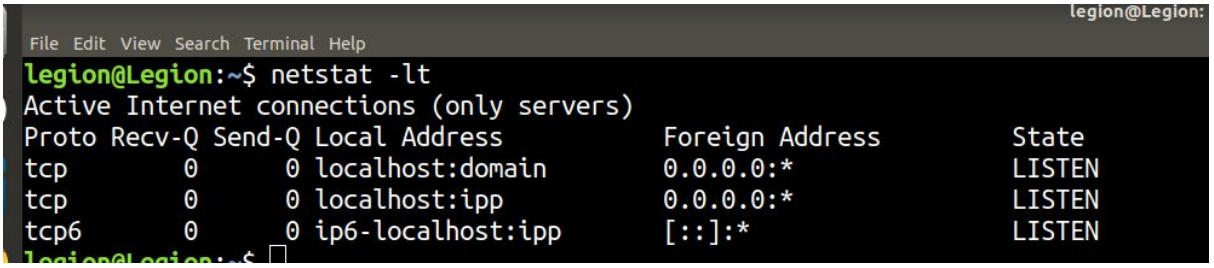


netstat -au

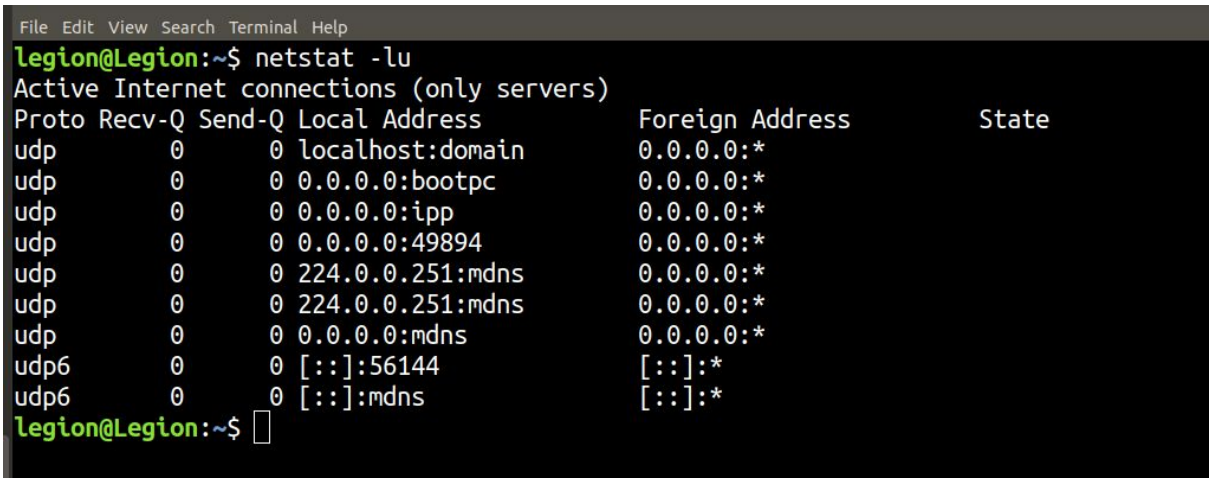
netstat - l



netstat -lt



netstat -lu

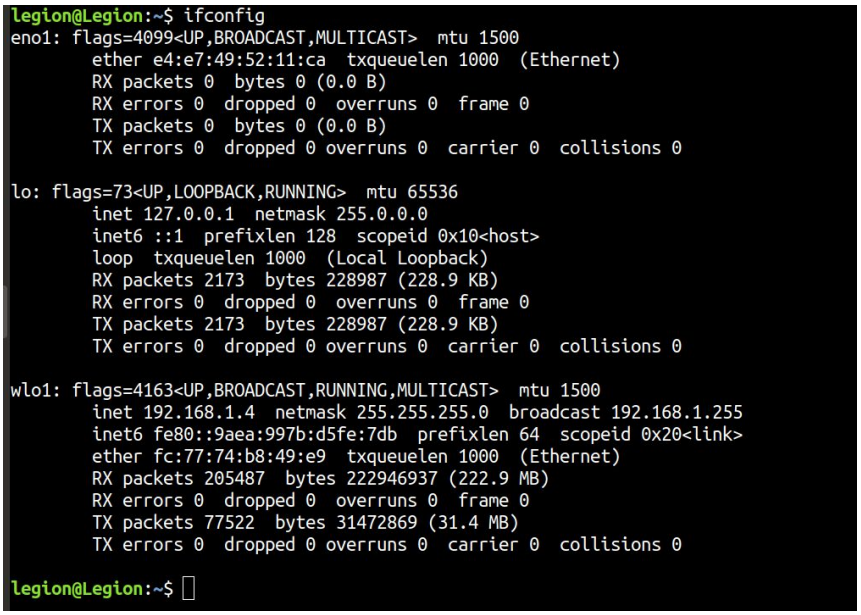


3) ifconfig

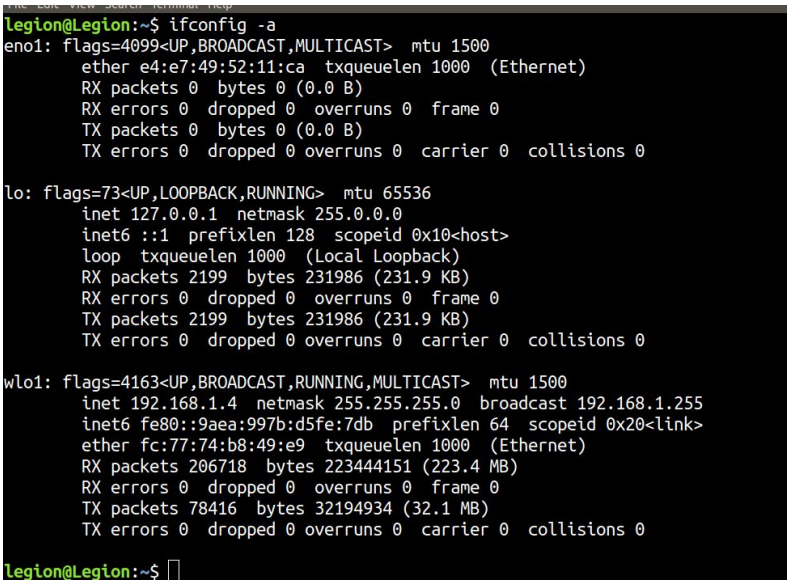
Syntax : ifconfi [....OPTIONS][INTERFACE]

Description: ifconfig stand for “interface configuration”. It is used to view and change the configurations of the network interfaces on your system.

Output:
ifconfig



ifconfig -a



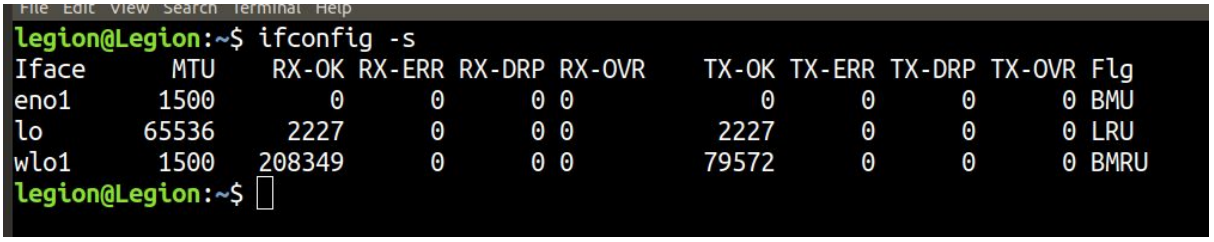
```
legion@Legion:~$ ifconfig -a
eno1: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether e4:e7:49:52:11:ca  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 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 2199  bytes 231986 (231.9 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 2199  bytes 231986 (231.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

wlo1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.1.4  netmask 255.255.255.0  broadcast 192.168.1.255
        inet6 fe80::9aea:997b:d5fe:7db  prefixlen 64  scopeid 0x20<link>
        ether fc:77:74:b8:49:e9  txqueuelen 1000  (Ethernet)
        RX packets 206718  bytes 223444151 (223.4 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 78416  bytes 32194934 (32.1 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

legion@Legion:~$
```

ifconfig -s

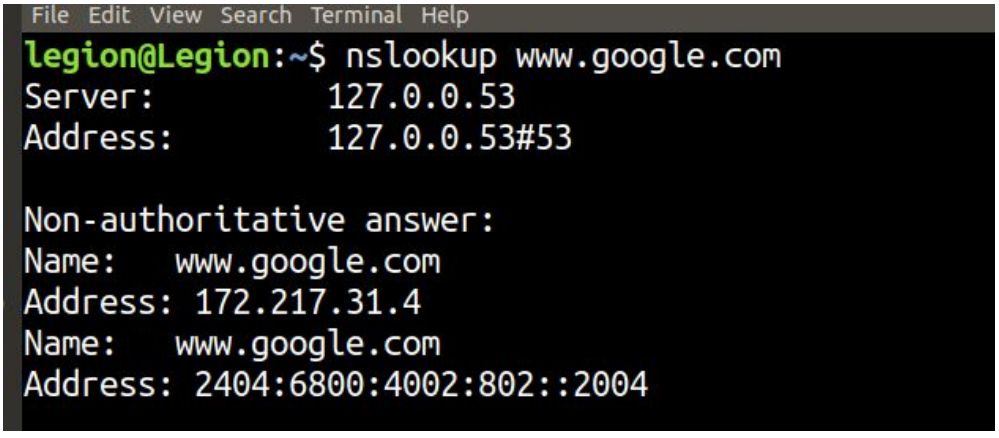


```
File  Edit  View  Search  Terminal  Help
legion@Legion:~$ ifconfig -s
Iface      MTU    RX-OK RX-ERR RX-DRP RX-OVR    TX-OK TX-ERR TX-DRP TX-OVR Flg
eno1      1500        0      0      0 0             0      0      0      0 BMU
lo       65536     2227      0      0 0          2227      0      0      0 LRU
wlo1      1500   208349      0      0 0         79572      0      0      0 BMRU
legion@Legion:~$
```

4) nslookup

Syntax: nslookup (Name server Lookup) is a useful command for getting information from DNS server. It is a network administration tool for querying the DOmain Name Sysyem (DNS) to obtain domain name or IP address mapping or any other specific DNS record.

Output:
nslookup[domain_name]



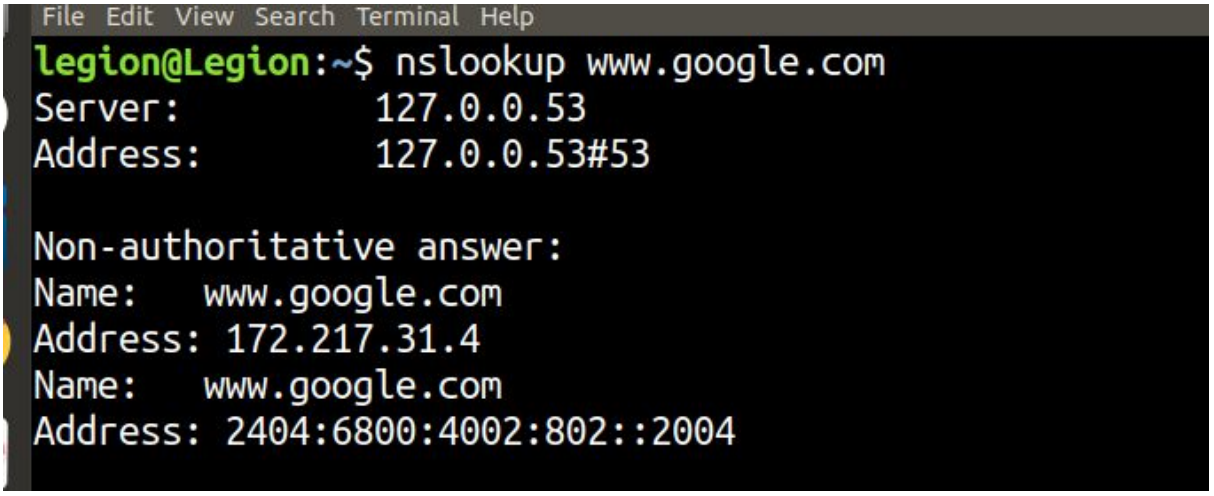
```
File  Edit  View  Search  Terminal  Help
legion@Legion:~$ nslookup www.google.com
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   www.google.com
Address: 172.217.31.4
Name:   www.google.com
Address: 2404:6800:4002:802::2004
```

5) traceroute

Syntax: traceroute [options] host_Address [pathlength]
Description : traceroute command in Linux prints the route that a packet takes to reach the host. THis command is useful when you want to know about the route and about all the hops that a packet takes.

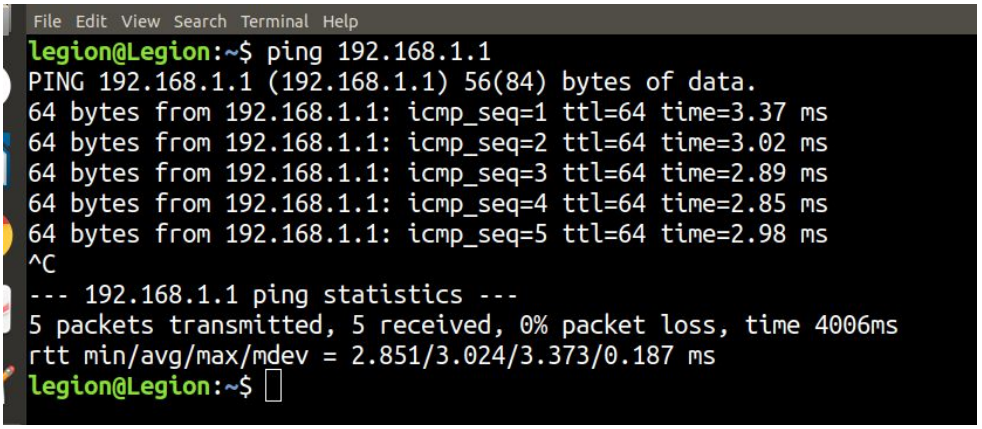
Output:
traceroute [domain_name_or_ip_addr]



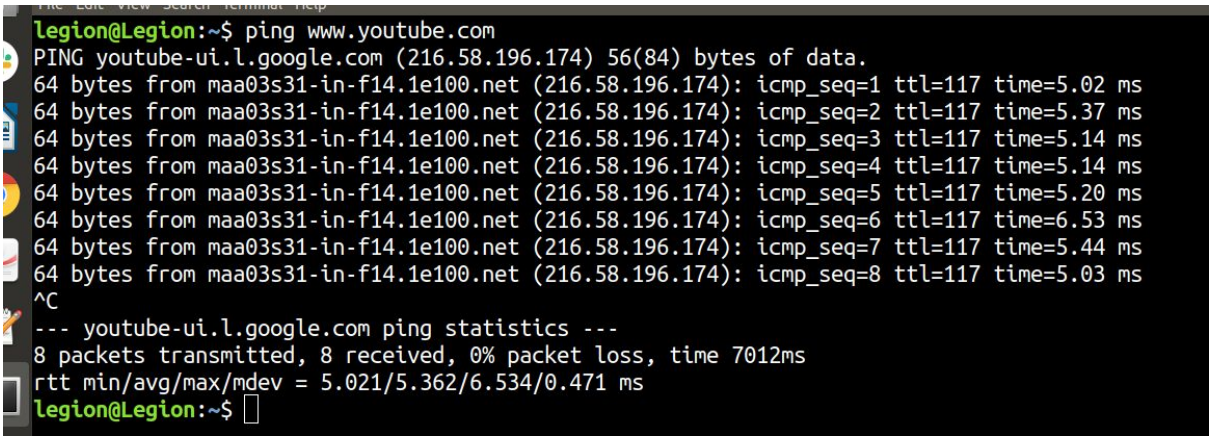
6) ping

Syntax: ping [options] [domain_name or ip_addr]
Description: PING (Packet Internet Groper) command is used to check the network connectivity between host and server/host. This command takes as input the IP address or the URL and send a data packet to the specified address with the message “PING” and get a response form the server/host.

Output:
ping [ip_addr]



ping [domain_name]



7) iwconfig

Syntax: iwconfig [INTERFACE] [OPTIONS]
Description: iwconfig command in Linux is like ifconfig command, in the sense it works with kernel- resident network interface but it is dedicated to wireless networking interfaces only. It is used to set the parameters of the network interface that are particular to the wireless operation like SSID, frequency etc.

Output:
iwconfig