

## LAB MST WORKSHEET

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SUBJECT NAME - COMPUTER NETWORKS LAB  
SUBJECT CODE - 20CSP - 257  
SEMESTER - 04  
BRANCH - CSE  
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### Task to be done:

Implement all the networking commands and show their working as output.

### Result:

#### Traceroute:

Traceroute tracks the route packets taken from an IP network on their way to a given host.

It utilizes the IP protocol's time to live (TTL) field and attempts to elicit an ICMP TIME\_EXCEEDED response from each gateway along the path to the host.

```
(raohifi@localhost)-[~]  
$ traceroute uims.com  
traceroute to uims.com (199.59.243.200), 30 hops max, 60 byte packets  
 1  172.20.52.1 (172.20.52.1)  8.535 ms  8.487 ms  8.464 ms  
 2  192.168.161.1 (192.168.161.1)  3.462 ms  4.682 ms  6.667 ms  
 3  172.16.2.1 (172.16.2.1)  0.127 ms  0.134 ms  0.118 ms  
^C  
  
(raohifi@localhost)-[~]  
$
```

## ifconfig:

Ifconfig is used to configure the kernel-resident network interfaces. It is used at boot time to set up interfaces as necessary. After that, it is usually only needed when debugging or when system tuning is needed.

If no arguments are given, ifconfig displays the status of the currently active interfaces. If a single interface argument is given, it displays the status of the given interface only; if a single -a argument is given, it displays the status of all interfaces, even those that are down. Otherwise, it configures an interface.

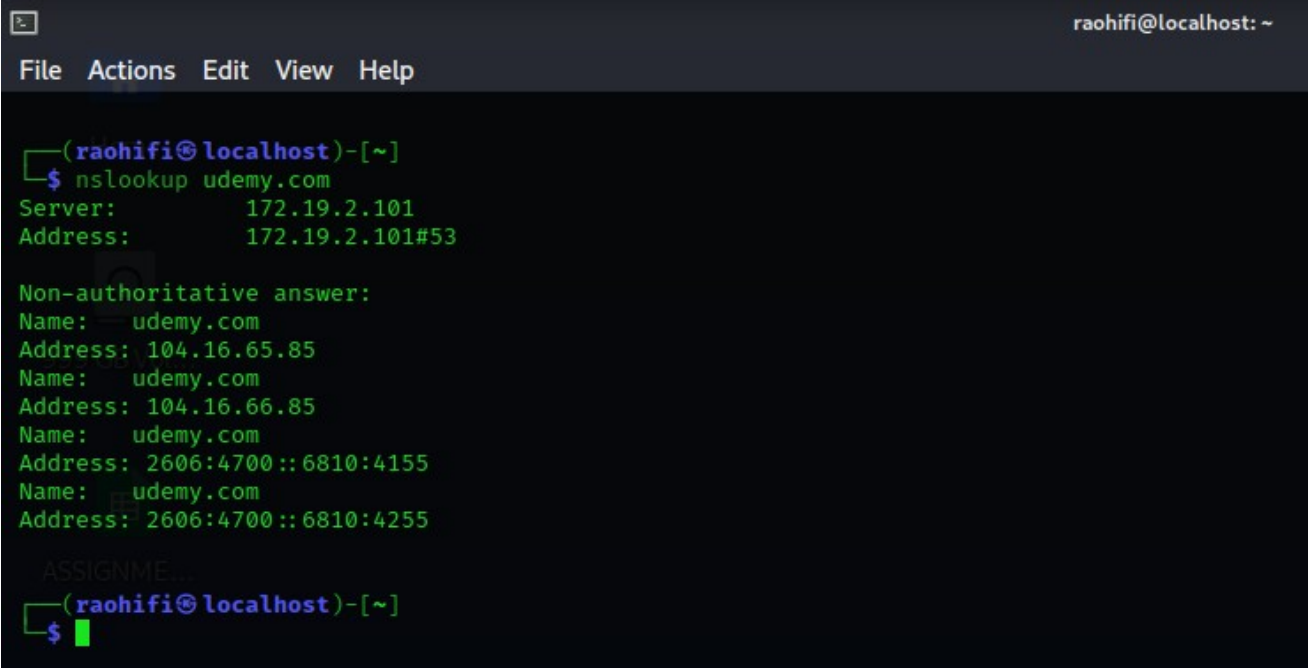
```
raohifi@localhost: ~  
File Actions Edit View Help  
  
(raohifi@localhost)-[~]  
$ ifconfig  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 172.20.52.53 netmask 255.255.252.0 broadcast 172.20.55.255  
    inet6 fe80::36a:5354:b21:19cc prefixlen 64 scopeid 0x20<link>  
    ether 98:e7:43:3a:b4:79 txqueuelen 1000 (Ethernet)  
    RX packets 116153 bytes 139373243 (132.9 MiB)  
    RX errors 0 dropped 190 overruns 0 frame 0  
    TX packets 44880 bytes 7637301 (7.2 MiB)  
    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 12 bytes 720 (720.0 B)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 12 bytes 720 (720.0 B)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 10.42.0.1 netmask 255.255.255.0 broadcast 10.42.0.255  
    inet6 fe80::d8a5:411a:4a8a:28bc prefixlen 64 scopeid 0x20<link>  
    ether e8:6f:38:56:2e:11 txqueuelen 1000 (Ethernet)  
    RX packets 0 bytes 0 (0.0 B)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 175 bytes 37630 (36.7 KiB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
(raohifi@localhost)-[~]  
$
```

## nslookup:

nslookup is a program to query Internet domain name servers. nslookup has two modes: interactive and non-interactive.

Interactive mode allows the user to query name servers for information about various hosts and domains or to print a list of hosts in a domain.

Non-interactive mode prints just the name and requested information for a host or domain.



```
raohifi@localhost: ~  
File Actions Edit View Help  
  
(raohifi@localhost)-[~]  
$ nslookup udemy.com  
Server:      172.19.2.101  
Address:     172.19.2.101#53  
  
Non-authoritative answer:  
Name:   udemy.com  
Address: 104.16.65.85  
Name:   udemy.com  
Address: 104.16.66.85  
Name:   udemy.com  
Address: 2606:4700::6810:4155  
Name:   udemy.com  
Address: 2606:4700::6810:4255  
  
ASSIGNME...  
(raohifi@localhost)-[~]  
$ █
```

## ping:

Ping uses the ICMP protocol's mandatory ECHO\_REQUEST datagram to elicit an ICMP ECHO\_RESPONSE from a host or gateway. ECHO\_REQUEST datagrams ("pings") have an IP and ICMP header, followed by a struct timeval and then an arbitrary number of "pad" bytes used to fill out the packet.

Ping works with both IPv4 and IPv6. Using only one of them explicitly can be enforced by specifying -4 or -6.

Ping can also send IPv6 Node Information Queries (RFC4620). Intermediate hops may not be allowed, because IPv6 source routing was deprecated (RFC5095).

```
(raohifi@localhost)-[~]
$ ping cuchd.in
PING cuchd.in (23.186.192.187) 56(84) bytes of data.
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=1 ttl=109 time=319 ms
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=2 ttl=109 time=318 ms
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=3 ttl=109 time=318 ms
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=4 ttl=109 time=318 ms
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=5 ttl=109 time=319 ms
64 bytes from 187-192-186-23.henico.net (23.186.192.187): icmp_seq=6 ttl=109 time=319 ms
^C
— cuchd.in ping statistics —
6 packets transmitted, 6 received, 0% packet loss, time 5006ms
rtt min/avg/max/mdev = 317.933/318.465/318.950/0.415 ms

(raohifi@localhost)-[~]
$ █
```

## hostname-

Hostname is used to display the system's DNS name, and to display or set its hostname or NIS domain name.

```
(raohifi@localhost)-[~]
$ hostname
localhost

(raohifi@localhost)-[~]
$ █
```

## netstat:

Print network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.

Netstat prints information about the Linux networking subsystem.

```

raohifi@localhost: ~
File Actions Edit View Help

(raohifi@localhost)-[~]
$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 172.20.52.53:56770      104.18.20.159:https     ESTABLISHED
tcp        0      0 172.20.52.53:60832      sm-in-f188.1e100.n:5228 ESTABLISHED
tcp        0      0 172.20.52.53:57982      service.newrelic.:https ESTABLISHED
tcp        0      0 172.20.52.53:44298      whatsapp-cdn-shv-:https ESTABLISHED
tcp        0      0 172.20.52.53:55082      del11s18-in-f3.1e:https ESTABLISHED
udp        0      0 172.20.52.53:bootpc     DHCP-S.cuchdit.i:bootps ESTABLISHED

Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags   Type       State      I-Node  Path
unix   2      [ ]     DGRAM      -          23297   /run/user/1000/systemd/notify
unix   3      [ ]     DGRAM      -          12701   /run/systemd/notify
unix   2      [ ]     DGRAM      -          12721   /run/systemd/journal/syslog
unix  15      [ ]     DGRAM      -          12727   /run/systemd/journal/dev-log
unix   6      [ ]     DGRAM      -          12729   /run/systemd/journal/socket
unix   2      [ ]     DGRAM      -          20078   /run/wpa_supplicant/wlan0
unix   2      [ ]     DGRAM      -          20082   /run/wpa_supplicant/p2p-dev-wl
unix   3      [ ]     SEQPACKET  CONNECTED  26020   @00015
unix   3      [ ]     SEQPACKET  CONNECTED  26018   @00014
unix   3      [ ]     SEQPACKET  CONNECTED  26011   @00013
unix   3      [ ]     SEQPACKET  CONNECTED  25177   @00012
unix   3      [ ]     SEQPACKET  CONNECTED  25176   @00011
unix   3      [ ]     SEQPACKET  CONNECTED  26010   @00010
unix   3      [ ]     STREAM     CONNECTED  24428   /run/user/1000/bus
unix   3      [ ]     STREAM     CONNECTED  19134

```