

**NETWORKING & SYSTEM ADMINISTRATION LAB****Experiment No.: 25****Aim**

Familiarization of basic network commands in windows

**Procedure****1. ipconfig**

This commands in windows allows you to see a summarized information of your network such as ip address, subnet mask , server address etc.

**Syntax :-** \$ ipconfig

**Output :-**

```
C:\Users\ajcemce>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::954a:8b07:c933:fe03%2
    IPv4 Address. . . . . : 192.168.6.55
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.6.100

Ethernet adapter VirtualBox Host-Only Network:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::dc18:f7f7:b8e:b87f%16
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

C:\Users\ajcemce>ipconfig/all
```

**2. ipconfig/all**

To see the the network information in detail. It is an extension of ipconfig command.

**Name: vismaya Mohan****Roll No: 54****Batch: B****Date: 02-06-2022**

**Syntax :-** \$ ipconfig/all

**Output :-**

```
C:\Users\ajcemca>ipconfig/all

Windows IP Configuration

    Host Name . . . . . : S55
    Primary Dns Suffix . . . . . : mca.com
    Mode Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No
    DNS Suffix Search List. . . . . : mca.com

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix . : 
    Description . . . . . : Realtek PCIe GBE Family Controller #2
    Physical Address. . . . . : 78-24-AF-BA-C6-AD
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::954a:8b07:c933:fe03%2(Preferred)
    IPv4 Address. . . . . : 192.168.6.55(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.6.100
    DHCPv6 IAID . . . . . : 259531951
    DHCPv6 Client DUID. . . . . : 00-01-00-01-24-CA-BE-D7-78-24-AF-BA-C6-AD
    DNS Servers . . . . . : 192.168.6.254
                          8.8.8.8
    NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter VirtualBox Host-Only Network:

    Connection-specific DNS Suffix . : 
    Description . . . . . : VirtualBox Host-Only Ethernet Adapter
    Physical Address. . . . . : 0A-00-27-00-00-10
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::dc18:f7f7:b8e:b87f%16(Preferred)
    IPv4 Address. . . . . : 192.168.56.1(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 
    DHCPv6 IAID . . . . . : 84541479
    DHCPv6 Client DUID. . . . . : 00-01-00-01-24-CA-BE-D7-78-24-AF-BA-C6-AD
    DNS Servers . . . . . : fec0:0:0:ffff::1%1
                          fec0:0:0:ffff::2%1
                          fec0:0:0:ffff::3%1
    NetBIOS over Tcpip. . . . . : Enabled
```

### 3. nslookup

To show the server to which the system is connected by default. If we want to find the ip address of a particular domain name, we can also use nslookup

**Syntax :-** \$ nslookup

**Output :-**

```
C:\Users\ajcemca>
C:\Users\ajcemca>nslookup
Default Server: UnKnown
Address: 192.168.6.254

> www.google.com
Server: UnKnown
Address: 192.168.6.254

Non-authoritative answer:
Name: www.google.com
Addresses: 2404:6800:4007:826::2004
          142.250.195.164

> www.amazon.com
Server: UnKnown
Address: 192.168.6.254

Non-authoritative answer:
Name: d3ag4hukkh62yn.cloudfront.net
Address: 52.84.12.185
Aliases: www.amazon.com
         tp.47cf2c8c9-frontier.amazon.com

> ping 142.250.195.164
Server: [142.250.195.164]
Address: 142.250.195.164

DNS request timed out.
  timeout was 2 seconds.
DNS request timed out.
  timeout was 2 seconds.
*** Request to 142.250.195.164 timed-out
```

#### 4. ping

The command used to check the availability of a host. The response shows the URL you are pinging, the ip address associated with the URL and the size of packets being sent on the first line . The next four lines shows the replies from each individual packets including the time(in milliseconds) for the response and the time to live(TTL) of the packet, that is the amount of time that must pass before the packet discarded.

**Syntax :-** \$ ping <IP\_address>

**Output :-**

```

C:\Users\ajcemca>ping 142.250.195.164

Pinging 142.250.195.164 with 32 bytes of data:
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59

Ping statistics for 142.250.195.164:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 20ms, Average = 20ms

C:\Users\ajcemca>192.168.6.254
'192.168.6.254' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\ajcemca>ping 142.250.195.164

Pinging 142.250.195.164 with 32 bytes of data:
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59
Reply from 142.250.195.164: bytes=32 time=20ms TTL=59

Ping statistics for 142.250.195.164:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 20ms, Average = 20ms

```

## 5. tracert

The command used to show the packets that are passed through the router to which our system is connected to.

**Syntax :-** \$ tracert <ip\_address\_of\_system>

**Output :-**

```

C:\Users\ajcemca>tracert

Usage: tracert [-d] [-h maximum_hops] [-j host-list] [-w timeout]
              [-R] [-S srcaddr] [-4] [-6] target_name

Options:
    -d          Do not resolve addresses to hostnames.
    -h maximum_hops  Maximum number of hops to search for target.
    -j host-list  Loose source route along host-list (IPv4-only).
    -w timeout    Wait timeout milliseconds for each reply.
    -R          Trace round-trip path (IPv6-only).
    -S srcaddr    Source address to use (IPv6-only).

C:\Users\ajcemca>tracert 142.250.195.164

Tracing route to maa03s41-in-f4.1e100.net [142.250.195.164]
over a maximum of 30 hops:
  0  <1 ms    <1 ms    <1 ms    192.168.6.100
  1  2 ms     3 ms     1 ms     172.24.9.34
  2  *        *        *        Request timed out.
  3  *        *        *        Request timed out.
  4  17 ms    17 ms    17 ms    72.14.218.250
  5  17 ms    17 ms    17 ms    216.239.43.133
  6  15 ms    15 ms    15 ms    142.251.55.91
  7  20 ms    20 ms    20 ms    maa03s41-in-f4.1e100.net [142.250.195.164]

Trace complete.

```

## 6. route print

The command used to display and updates network routing table

**Syntax :-** \$ route prin

**Output :-**

```
C:\Users\ajcemca>route print
=====
Interface List
 2...78 24 af ba c6 ad .....Realtek PCIe GBE Family Controller #2
 16...0a 00 27 00 00 10 .....VirtualBox Host-Only Ethernet Adapter
 1.....Software Loopback Interface 1
=====
```

```
IPv6 Route Table
=====
Active Routes:
If Metric Network Destination      Gateway
1       331 ::1/128                  On-link
16      281 fe80::/64                  On-link
2       281 fe80::/64                  On-link
2       281 fe80::954a:8b07:c933:fe03/128
                                           On-link
16      281 fe80::dc18:f7f7:b8e:b87f/128
                                           On-link
1       331 ffe0::/8                    On-link
16      281 ffe0::/8                    On-link
2       281 ffe0::/8                    On-link
=====
Persistent Routes:
None
```

## 7. netstat

The network statistics or netstat command is a networking tool used for troubleshooting and configuration that can also serve a monitoring tool for the connections over the network.

**Syntax :-** netstat

**Output :-**

```
C:\Users\ajcemca>netstat
Active Connections

```

Proto	Local Address	Foreign Address	State
TCP	192.168.6.55:5428	20.198.162.78:https	ESTABLISHED
TCP	192.168.6.55:5516	117.18.232.200:https	CLOSE_WAIT
TCP	192.168.6.55:5522	117.18.232.200:https	CLOSE_WAIT
TCP	192.168.6.55:5523	117.18.232.200:https	CLOSE_WAIT

```
C:\Users\ajcemca>
```