

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

REQUIREMENTS : COMMAND PROMPT

STEPS:

OPEN CMD AS ADMINISTRATOR AND TYPE THESE COMMAND FOR OUTPUTS:

1. Ping
2. Ipconfig
3. Tracert
4. Nslookup
5. Netstat
6. Arp
7. Hostname

1. **PING:** The ping command is used to test connectivity between two hosts.

COMMAND: ping google.com

OUTPUT:

```
Command Prompt
C:\Users\LxsoftWin>ping google.com

Pinging google.com [172.217.24.238] with 32 bytes of data:
Reply from 172.217.24.238: bytes=32 time=1451ms TTL=53
Reply from 172.217.24.238: bytes=32 time=599ms TTL=53
Reply from 172.217.24.238: bytes=32 time=1438ms TTL=53
Reply from 172.217.24.238: bytes=32 time=1656ms TTL=53

Ping statistics for 172.217.24.238:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 599ms, Maximum = 1656ms, Average = 1286ms
```

2. **IPCONFIG:** This command displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) settings

COMMAND: ipconfig

OUTPUT:

```
Command Prompt
C:\Users\LaxSoft>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :

Ethernet adapter Network Bridge:

    Connection-specific DNS Suffix . :
    IPv6 Address. . . . . : 2402:3a80:108b:b9db:8df6:9573:8
    Temporary IPv6 Address. . . . . : 2402:3a80:108b:b9db:c06f:d38a:5
    Link-local IPv6 Address . . . . . : fe80::8df6:9573:8fac:d85%22
    IPv4 Address. . . . . : 192.168.42.91
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::7858:c8ff:fe72:8044%22
                                192.168.42.129

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::59c3:a290:592:e3e2%12
    IPv4 Address. . . . . : 192.168.52.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::486a:9015:8b5a:2193%13
    IPv4 Address. . . . . : 192.168.16.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :
```

3. **TRACERT:** This command is used to diagnose path-related problems.

COMMAND: `tracert www.google.co.in`

OUTPUT:

```
GA Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\LxsoftWin>tracert www.google.in

Tracing route to www.google.in [2404:6800:4002:804::2003]
over a maximum of 30 hops:

  1      1 ns      <1 ns      <1 ns      2405:205:1506:8af7::2a84:b8a0
  2      *          *          *          Request timed out.
  3     472 ns     1839 ns     *          2405:200:319:168::2
  4    1085 ns     829 ns     790 ns     2405:200:801:1600::91
  5     391 ns     1084 ns     1572 ns    2405:200:801:300::75
  6    2239 ns     1030 ns     1681 ns    2001:4860:1:1::1b6
  7      *          1022 ns     1179 ns    2001:4860:0:11de::1
  8    1009 ns     1253 ns     1623 ns    2001:4860:0:1::3d
  9    1170 ns     885 ns      1437 ns    del03s09-in-x03.1e100.net [2404:6800:4002:804::2003]

Trace complete.
```

4. **NSLOOKUP:** NSLookup is a great utility for diagnosing DNS name resolution problems. Just type the NSLookup command, and Windows will display the name and IP address of the device's default DNS server.

COMMAND: nslookup

OUTPUT:

```
C:\WINDOWS\system32 >NSLOOKUP
Default Server:  dsldevice.lan
Address:  192.168.1
>
```

5. **Netstat** : This command displays active connections, ports on which the computer is listening, Ethernet statistics, the IP routing table, and IP statistics.

COMMAND: netstat

OUTPUT:

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

```

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:49159	LxsoftWin-PC:56051	ESTABLISHED
TCP	127.0.0.1:49159	LxsoftWin-PC:56297	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:49259	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55384	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55392	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55394	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55395	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55401	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55406	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55407	ESTABLISHED
TCP	127.0.0.1:49160	LxsoftWin-PC:55408	ESTABLISHED
TCP	127.0.0.1:49163	LxsoftWin-PC:49164	ESTABLISHED
TCP	127.0.0.1:49164	LxsoftWin-PC:49163	ESTABLISHED
TCP	127.0.0.1:49165	LxsoftWin-PC:49166	ESTABLISHED
TCP	127.0.0.1:49166	LxsoftWin-PC:49165	ESTABLISHED
TCP	127.0.0.1:49167	LxsoftWin-PC:49168	ESTABLISHED
TCP	127.0.0.1:49168	LxsoftWin-PC:49167	ESTABLISHED
TCP	127.0.0.1:49259	LxsoftWin-PC:49160	ESTABLISHED
TCP	127.0.0.1:51259	LxsoftWin-PC:51260	ESTABLISHED
TCP	127.0.0.1:51260	LxsoftWin-PC:51259	ESTABLISHED
TCP	127.0.0.1:55361	LxsoftWin-PC:55362	ESTABLISHED
TCP	127.0.0.1:55362	LxsoftWin-PC:55361	ESTABLISHED
TCP	127.0.0.1:55384	LxsoftWin-PC:49160	ESTABLISHED
TCP	127.0.0.1:55392	LxsoftWin-PC:49160	ESTABLISHED
TCP	127.0.0.1:55394	LxsoftWin-PC:49160	ESTABLISHED
TCP	127.0.0.1:55395	LxsoftWin-PC:49160	ESTABLISHED

6. **Arp** : The ARP command corresponds to the Address Resolution Protocol. Although it is easy to think of network communications in terms of IP addressing, packet delivery is ultimately dependent on the Media Access Control (MAC) address of the device's network adapter.

COMMAND: Arp -a

OUTPUT:

```
Command Prompt
C:\Users\LxsoftWin>arp -a

Interface: 192.168.42.171 --- 0xd
  Internet Address      Physical Address      Type
  192.168.42.129        8e-df-54-4e-ac-fc    dynamic
  192.168.42.255        ff-ff-ff-ff-ff-ff    static
  224.0.0.22            01-00-5e-00-00-16    static
  224.0.0.252           01-00-5e-00-00-fc    static
  239.255.255.250       01-00-5e-7f-ff-fa    static
  255.255.255.255       ff-ff-ff-ff-ff-ff    static

Interface: 192.168.79.1 --- 0x14
  Internet Address      Physical Address      Type
  192.168.79.255        ff-ff-ff-ff-ff-ff    static
  224.0.0.22            01-00-5e-00-00-16    static
  224.0.0.252           01-00-5e-00-00-fc    static
  239.255.255.250       01-00-5e-7f-ff-fa    static

Interface: 192.168.23.1 --- 0x15
  Internet Address      Physical Address      Type
  192.168.23.255        ff-ff-ff-ff-ff-ff    static
  224.0.0.22            01-00-5e-00-00-16    static
  224.0.0.252           01-00-5e-00-00-fc    static
  239.255.255.250       01-00-5e-7f-ff-fa    static
```

7. **Hostname:** Typing Hostname at the command prompt returns the local computer name.

COMMAND: hostname

OUTPUT:

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.18363.836]
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C:\Users\Jon>hostname
Jon-Desktop

C:\Users\Jon>
```

