

**Name :- Rahul Maurya**  
**Class/section:- 716A**

**UID:- 20BCS7260**  
**subject :- CN lab**

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

**REQUIREMENTS :** COMMAND PROMPT

**STEPS:**

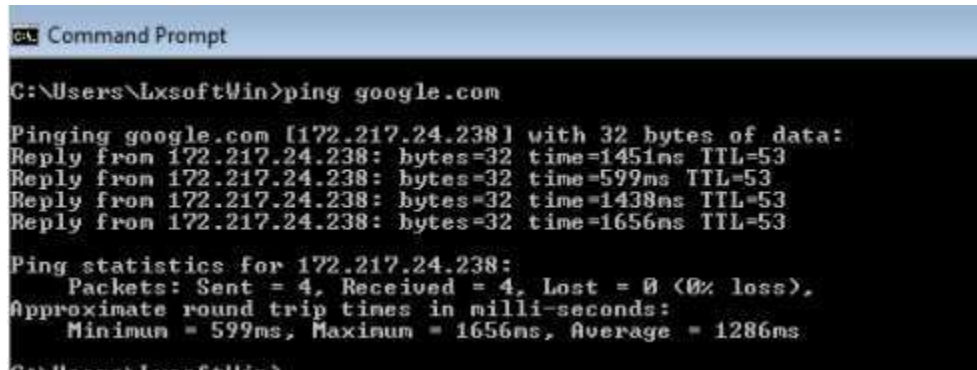
OPEN CMD AS ADMINISTRATOR AND TYPE THESE  
COMMAND FOR OUTPUTS:

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:



```
CA 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](http://www.google.co.in)

OUTPUT:

```
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:
  0  1 ns    <1 ns    <1 ns    2405:205:1506:8af7::2a84:b8a0
  1  *      *      *      Request timed out.
  2  472 ns  1839 ns  *      2405:200:319:168::2
  3  1085 ns  829 ns  790 ns  2405:200:801:1600::91
  4  391 ns  1084 ns  1572 ns  2405:200:801:300::75
  5  2239 ns  1030 ns  1681 ns  2001:4860:1:1::1b6
  6  *      1022 ns  1179 ns  2001:4860:0:11de::1
  7  1009 ns  1253 ns  1623 ns  2001:4860:0:1::3d
  8  1170 ns  885 ns  1437 ns  del03s07-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>
```

