

Batch: B3

Experiment Number:1

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Aim of the Experiment: To Study the various networking commands.

Output/Result:

Q.1) Ping : The ping command tests connectivity between the host computer and the site's server.

The ping command uses the following syntax : **ping destination host IP or name.**

```
C:\Users\EXAM.16DITB213-13>ping gmail.com

Pinging gmail.com [216.58.196.69] with 32 bytes of data:
Reply from 216.58.196.69: bytes=32 time=4ms TTL=117
Reply from 216.58.196.69: bytes=32 time=8ms TTL=117
Reply from 216.58.196.69: bytes=32 time=6ms TTL=117
Reply from 216.58.196.69: bytes=32 time=5ms TTL=117

Ping statistics for 216.58.196.69:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 8ms, Average = 5ms
```

Ipconfig : It is mainly used to view the IP addresses on the computers that are configured to obtain their IP address automatically.

```
C:\Users\EXAM.16DITB213-13>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::7fca:d5e2:3c7a:32f0%13
    IPv4 Address. . . . . : 172.17.16.133
    Subnet Mask . . . . . : 255.255.254.0
    Default Gateway . . . . . : 172.17.17.254
```

Tracert : It used to diagnose path-related problems.

The tracert command uses the following syntax : **tracert Destination Name or IP address**

```

C:\Users\EXAM.16DITB213-13>tracert www.google.co.in

Tracing route to www.google.co.in [142.250.199.163]
over a maximum of 30 hops:

  1      1 ms      1 ms      1 ms  172.17.17.254
  2     24 ms      1 ms      1 ms  172.17.52.240
  3      1 ms      2 ms      1 ms  172.30.250.250
  4      5 ms      3 ms      2 ms  182.73.90.241
  5     17 ms     10 ms      3 ms  116.119.73.96
  6      3 ms      4 ms      6 ms  72.14.212.48
  7      4 ms      4 ms      5 ms  216.239.47.175
  8     12 ms     12 ms     13 ms  108.170.234.157
  9      8 ms      9 ms      9 ms  bom07s37-in-f3.1e100.net [142.250.199.163]

Trace complete.

```

Arp : The arp command is used to know the MAC address of a destination computer.

```

C:\Users\EXAM.16DITB213-13>Arp

Displays and modifies the IP-to-Physical address translation tables used by
address resolution protocol (ARP).

ARP -s inet_addr eth_addr [if_addr]
ARP -d inet_addr [if_addr]
ARP -a [inet_addr] [-N if_addr] [-v]

-a          Displays current ARP entries by interrogating the current
            protocol data.  If inet_addr is specified, the IP and Physical
            addresses for only the specified computer are displayed.  If
            more than one network interface uses ARP, entries for each ARP
            table are displayed.
-g          Same as -a.
-v          Displays current ARP entries in verbose mode.  All invalid
            entries and entries on the loop-back interface will be shown.
inet_addr   Specifies an internet address.
-N if_addr  Displays the ARP entries for the network interface specified
            by if_addr.
-d          Deletes the host specified by inet_addr.  inet_addr may be
            wildcarded with * to delete all hosts.
-s          Adds the host and associates the Internet address inet_addr
            with the Physical address eth_addr.  The Physical address is
            given as 6 hexadecimal bytes separated by hyphens.  The entry
            is permanent.
eth_addr    Specifies a physical address.
if_addr     If present, this specifies the Internet address of the
            interface whose address translation table should be modified.
            If not present, the first applicable interface will be used.

Example:
> arp -s 157.55.85.212 00-aa-00-62-c6-09 .... Adds a static entry.
> arp -a          .... Displays the arp table.

```

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

```
C:\Users\EXAM.16DITB213-13>netstat
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:11300	kubernetes:51334	ESTABLISHED
TCP	127.0.0.1:51334	kubernetes:11300	ESTABLISHED
TCP	127.0.0.1:51456	kubernetes:51460	ESTABLISHED
TCP	127.0.0.1:51460	kubernetes:51456	ESTABLISHED
TCP	127.0.0.1:52629	kubernetes:51455	TIME_WAIT
TCP	127.0.0.1:52633	kubernetes:51455	TIME_WAIT
TCP	127.0.0.1:52639	kubernetes:51455	TIME_WAIT
TCP	127.0.0.1:52645	kubernetes:51455	TIME_WAIT
TCP	172.17.16.133:7680	172.17.14.98:52089	TIME_WAIT
TCP	172.17.16.133:7680	172.17.15.176:59201	TIME_WAIT
TCP	172.17.16.133:7680	DESKTOP-BPVR165:51001	TIME_WAIT
TCP	172.17.16.133:7680	172.17.21.114:64703	TIME_WAIT
TCP	172.17.16.133:7680	172.17.23.62:53358	TIME_WAIT
TCP	172.17.16.133:51323	win-sccm:10123	ESTABLISHED
TCP	172.17.16.133:51642	20.198.119.143:https	ESTABLISHED
TCP	172.17.16.133:51747	kul01s09-in-f67:https	ESTABLISHED
TCP	172.17.16.133:51757	bom12s19-in-f14:https	ESTABLISHED
TCP	172.17.16.133:51822	bom12s21-in-f3:https	ESTABLISHED
TCP	172.17.16.133:51876	si-in-f188:5228	ESTABLISHED
TCP	172.17.16.133:51881	maa05s14-in-f14:https	ESTABLISHED
TCP	172.17.16.133:51885	bom12s03-in-f3:https	ESTABLISHED
TCP	172.17.16.133:51895	bom12s19-in-f10:https	ESTABLISHED
TCP	172.17.16.133:51896	bom12s19-in-f10:https	ESTABLISHED
TCP	172.17.16.133:51981	bom12s11-in-f14:https	ESTABLISHED
TCP	172.17.16.133:52393	bom12s08-in-f10:https	ESTABLISHED

Q2)

Tasklist : It shows all the current tasks running in the pc

```
C:\Users\EXAM.16DITB213-13>tasklist
```

Image Name	PID	Session Name	Session#	Mem Usage
System Idle Process	0	Services	0	8 K
System	4	Services	0	7,944 K
Secure System	56	Services	0	22,768 K
Registry	116	Services	0	41,920 K
smss.exe	544	Services	0	1,040 K
csrss.exe	672	Services	0	4,100 K
wininit.exe	760	Services	0	4,368 K
services.exe	832	Services	0	10,424 K
LsaIso.exe	896	Services	0	3,520 K
lsass.exe	932	Services	0	25,492 K
svchost.exe	568	Services	0	24,424 K
fontdrvhost.exe	624	Services	0	2,076 K
svchost.exe	1032	Services	0	16,824 K
svchost.exe	1084	Services	0	7,036 K
svchost.exe	1232	Services	0	3,912 K
svchost.exe	1312	Services	0	7,052 K
IntelCpHDCPSvc.exe	1344	Services	0	4,200 K
svchost.exe	1360	Services	0	4,640 K
svchost.exe	1372	Services	0	6,220 K
svchost.exe	1392	Services	0	5,088 K
svchost.exe	1400	Services	0	5,732 K
svchost.exe	1568	Services	0	5,396 K
svchost.exe	1596	Services	0	6,964 K
svchost.exe	1636	Services	0	8,184 K
igfxCUIService.exe	1724	Services	0	5,960 K
svchost.exe	1732	Services	0	15,560 K
svchost.exe	1752	Services	0	11,756 K
svchost.exe	1780	Services	0	6,600 K
IntelCpHeciSvc.exe	1904	Services	0	4,308 K
svchost.exe	1972	Services	0	9,552 K
svchost.exe	2008	Services	0	1,09,776 K
svchost.exe	2024	Services	0	4,284 K
svchost.exe	2036	Services	0	10,696 K
svchost.exe	1720	Services	0	8,648 K
svchost.exe	1656	Services	0	4,800 K
svchost.exe	2116	Services	0	5,228 K
svchost.exe	2128	Services	0	5,300 K
Memory Compression	2296	Services	0	2,45,864 K
svchost.exe	2356	Services	0	7,864 K
svchost.exe	2368	Services	0	10,848 K

TaskKill: it can end the task by specifying its PID or task name.

```
C:\Users\EXAM.16DITB213-13>taskkill /f /pid 6596
SUCCESS: The process with PID 6596 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 13920
SUCCESS: The process with PID 13920 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 9660
SUCCESS: The process with PID 9660 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 8732
SUCCESS: The process with PID 8732 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 8300
SUCCESS: The process with PID 8300 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 1932
SUCCESS: The process with PID 1932 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 10284
SUCCESS: The process with PID 10284 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 5176
SUCCESS: The process with PID 5176 has been terminated.

C:\Users\EXAM.16DITB213-13>taskkill /f /pid 13880
SUCCESS: The process with PID 13880 has been terminated.
```

Post Lab Question-Answers:

Q.1) a) **Ping**

Q.2) a) **route**

Q.3) c) **Pathping combines the functionality of ping with that of route.**

Outcomes:

CO1: Understand the data communication systems, network topologies and network devices.

Conclusion (based on the Results and outcomes achieved):

We learnt the syntax and usage of various system commands.

References:**Books/ Journals/ Websites:**

- Behrouz A Forouzan, Data Communication and Networking, Tata Mc Graw hill, India, 4th Edition
- A. S. Tanenbaum, "Computer Networks", 4th edition, Prentice Hall • Behrouz A Forouzan, Data Communication and Networking, Tata Mc Graw hill, India, 4th Edition
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