



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment 2

Student Name:

Branch: BE-CSE

Semester: 5th

Subject Name: Computer Networks

UID:

Section/Group:

Date of Performance:

Subject Code:22CSH-312

Aim: Study of basic network command and Network configuration commands.

Objective: -

Students will be able to troubleshoot networks.

Requirements (Hardware/Software):

- **Processor** – Any suitable Processor e.g. Celeron
- **Main Memory** - 128 MB RAM
- **Hard Disk** – minimum 20 GB IDE Hard Disk
- **Removable Drives**–1.44 MB Floppy Disk Drive –52X IDE CD-ROM Drive
- **PS/2 HCL Keyboard and Mouse**

Procedure:

In this EXPERIMENT- students have to understand basic networking commands e.g ping, tracert etc.

Go to command prompt and type the commands

i. Ping

ii. Ipconfig

iii. Tracert

iv. Nslookup

v. Netstat

vi. Arp

vii. Rarp

viii. Hostname

ix. pathping



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Step-1: Open command Prompt.

Step-2: Run ping command in command prompt.

Step-3: Take the screenshot and paste it in the output.

Step-4: Run others command one by one and take the screenshot.

Output:

```
C:\WINDOWS\system32\cmd. X + v

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
          [-r count] [-s count] [[-j host-list] | [-k host-list]]
          [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p]
          [-4] [-6] target_name

Options:
  -t          Ping the specified host until stopped.
              To see statistics and continue - type Control-Break;
              To stop - type Control-C.
  -a          Resolve addresses to hostnames.
  -n count    Number of echo requests to send.
  -l size     Send buffer size.
  -f          Set Don't Fragment flag in packet (IPv4-only).
  -i TTL      Time To Live.
  -v TOS      Type Of Service (IPv4-only. This setting has been deprecated
              and has no effect on the type of service field in the IP
              Header).
  -r count    Record route for count hops (IPv4-only).
  -s count    Timestamp for count hops (IPv4-only).
  -j host-list Loose source route along host-list (IPv4-only).
  -k host-list Strict source route along host-list (IPv4-only).
  -w timeout  Timeout in milliseconds to wait for each reply.
  -R          Use routing header to test reverse route also (IPv6-only).
              Per RFC 5095 the use of this routing header has been
              deprecated. Some systems may drop echo requests if
              this header is used.
  -S srcaddr  Source address to use.
  -c compartment Routing compartment identifier.
  -p          Ping a Hyper-V Network Virtualization provider address.
  -4          Force using IPv4.
  -6          Force using IPv6.
```



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```
C:\Users\HP>Ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

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

Wireless LAN adapter Local Area Connection* 1:

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

Wireless LAN adapter Local Area Connection* 10:

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

Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . : cuchdit.in
    Link-local IPv6 Address . . . . . : fe80::64f0:d930:630e:ac5c%15
    IPv4 Address. . . . . : 172.25.42.114
    Subnet Mask . . . . . : 255.255.240.0
    Default Gateway . . . . . : 172.25.32.1

Ethernet adapter Bluetooth Network Connection:

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

```
C:\Users\HP>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).
    -4                Force using IPv4.
    -6                Force using IPv6.

C:\Users\HP>
```



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```
C:\Users\HP>Nslookup
Default Server:  DC2K16.cuchdit.in
Address:  172.19.2.101
```

```
> |
```

```
C:\Users\HP>Netstat
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:1521	DESKTOP-808F0D4:49699	ESTABLISHED
TCP	127.0.0.1:49676	DESKTOP-808F0D4:49677	ESTABLISHED
TCP	127.0.0.1:49677	DESKTOP-808F0D4:49676	ESTABLISHED
TCP	127.0.0.1:49678	DESKTOP-808F0D4:49679	ESTABLISHED
TCP	127.0.0.1:49679	DESKTOP-808F0D4:49678	ESTABLISHED
TCP	127.0.0.1:49699	DESKTOP-808F0D4:1521	ESTABLISHED
TCP	172.25.42.114:49443	20.198.162.78:https	ESTABLISHED
TCP	172.25.42.114:49844	48.218.104.163:https	ESTABLISHED
TCP	172.25.42.114:50055	13.107.213.254:https	CLOSE_WAIT
TCP	172.25.42.114:50456	whatsapp-chatd-edge-shv-01-del1:5222	ESTABLISHED
TCP	172.25.42.114:50458	20.192.44.78:https	ESTABLISHED
TCP	172.25.42.114:50463	sf-in-f188:5228	FIN_WAIT_2
TCP	172.25.42.114:50474	184:https	TIME_WAIT
TCP	172.25.42.114:50487	sf-in-f84:https	TIME_WAIT
TCP	172.25.42.114:50490	55:https	TIME_WAIT
TCP	172.25.42.114:50496	a23-50-232-199:http	TIME_WAIT
TCP	172.25.42.114:50498	a23-50-232-199:http	TIME_WAIT
TCP	172.25.42.114:50500	DC2K16:domain	TIME_WAIT
TCP	172.25.42.114:50501	sd-in-f188:5228	ESTABLISHED
TCP	172.25.42.114:50502	20.212.88.117:https	ESTABLISHED
TCP	172.25.42.114:50503	204.79.197.239:https	ESTABLISHED
TCP	172.25.42.114:50505	40.99.33.178:https	ESTABLISHED
TCP	172.25.42.114:50507	a23-32-29-99:https	ESTABLISHED
TCP	172.25.42.114:50511	13.89.179.8:https	ESTABLISHED
TCP	172.25.42.114:50513	150.171.28.254:https	ESTABLISHED
TCP	172.25.42.114:50514	a23-40-32-112:https	ESTABLISHED
TCP	172.25.42.114:50515	150.171.22.254:https	ESTABLISHED
TCP	172.25.42.114:50516	a23-40-32-112:https	ESTABLISHED
TCP	172.25.42.114:50517	20.70.174.252:https	ESTABLISHED
TCP	172.25.42.114:50518	204.79.197.222:https	ESTABLISHED
TCP	172.25.42.114:50519	DC2K16:domain	TIME_WAIT
TCP	172.25.42.114:50520	DC2K16:domain	TIME_WAIT
TCP	172.25.42.114:50521	del12s09-in-f14:https	ESTABLISHED
TCP	172.25.42.114:50522	DC2K16:domain	TIME_WAIT
TCP	172.25.42.114:50523	DC2K16:domain	TIME_WAIT



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```
TCP 172.25.42.114:50515 150.171.22.254:https ESTABLISHED
TCP 172.25.42.114:50516 a23-40-32-112:https ESTABLISHED
TCP 172.25.42.114:50517 20.70.174.252:https ESTABLISHED
TCP 172.25.42.114:50518 204.79.197.222:https ESTABLISHED
TCP 172.25.42.114:50519 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50520 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50521 del12s09-in-f14:https ESTABLISHED
TCP 172.25.42.114:50522 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50523 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50524 111:https ESTABLISHED
TCP 172.25.42.114:50525 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50526 DC2K16:domain TIME_WAIT
TCP 172.25.42.114:50527 bom12s06-in-f4:https ESTABLISHED
TCP [::1]:1521 DESKTOP-808F0D4:49680 ESTABLISHED
TCP [::1]:49680 DESKTOP-808F0D4:1521 ESTABLISHED
```

C:\Users\HP>

C:\Users\HP>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.

C:\Users\HP>



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```
C:\Users\HP>Hostname  
DESKTOP-808F0D4  
  
C:\Users\HP>|
```

```
C:\Users\HP>pathping  
  
Usage: pathping [-g host-list] [-h maximum_hops] [-i address] [-n]  
               [-p period] [-q num_queries] [-w timeout]  
               [-4] [-6] target_name  
  
Options:  
  -g host-list      Loose source route along host-list.  
  -h maximum_hops   Maximum number of hops to search for target.  
  -i address        Use the specified source address.  
  -n                Do not resolve addresses to hostnames.  
  -p period          Wait period milliseconds between pings.  
  -q num_queries     Number of queries per hop.  
  -w timeout         Wait timeout milliseconds for each reply.  
  -4                Force using IPv4.  
  -6                Force using IPv6.  
  
C:\Users\HP>|
```

Learning Outcome:

1. Understanding the concept behind the command prompt.
2. Understanding the different network command.
3. Running the different network command.
4. Understanding the concept to troubleshoot networks.