



## TASK - 2

Aim:- To Work with the commands ping, Tracert, IP config, path ping, telenet, Ftp, getrnac, Arp, Host name, Nbtstat, Net diag and NS look.

### Procedure:-

#### Tracert :-

This Command is used to diagnose path-related problems. on an Ip network, routers, exchange IP packets between the source and the destination. Then take IP packets from the source host and forward them in a sequence until they reach the destination host. The sequence of routers between the source and destination is known as the path.

The tracert command prints the path. If all routers on the path are functional, this command prints the full path. If a router is down on the path, this command prints the path up to the last operational router

#### Syntax:

tracert Destination Name or IP Address

tracert www.google.co.in

#### Output:

on Command Prompt

Microsoft Windows [Version 6.1.7601]  
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C:\Users\LxsoftWin>tracert www.google.in

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

| Hop | MS   | MS   | MS   | MS   | IP Address   |
|-----|------|------|------|------|--|
| 1   | 1    | <1   | <1   | <1   | 2405:205:1506:8af7::2a84:b8a0                        |
| 2   | *    | *    | *    | *    | Request timed out.                                   |
| 3   | 472  | ms   | 1839 | ms   | 2405:200:319:168::2                                  |
| 4   | 1085 | ms   | 829  | ms   | 2405:200:801:1600::91                                |
| 5   | 391  | ms   | 1084 | ms   | 2405:200:801:300::75                                 |
| 6   | 2239 | ms   | 1030 | ms   | 2001:4860:1::1b6                                     |
| 7   | *    | 1022 | ms   | 1179 | ms   |
| 8   | 1009 | ms   | 1253 | ms   | 2001:4860:0:1de::1                                   |
| 9   | 1170 | ms   | 885  | ms   | 2001:4860:0:1::3d                                    |
| 10  | 0031 | ms   | 1437 | ms   | del03s09-in-x03.1e100.net [2404:6800:4002:804::2003] |

Trace complete.

C:\Users\LxsoftWin>

Tracert



| option | Description  |
|--------|--|
| d      | Do not resolve the IP addresses of intermediate routers to their names.            |
| h      | specifies the maximum number of hops to search on the path. The default is 30 hops |
| w      | specifies the amount of time in ms to wait for a reply message from the router.    |

ping :-

The ping command is used to test connectivity between two hosts. It sends ICMP echo request messages to the destination. The destination host replies with ICMP reply message. If the ping command gets a reply from the destination host, it displays the reply along with round-trip times

Syntax:-

=x=

ping google.com.

Output:-

Ip config:-

This command displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration protocol (DHCP) and Domain Name System (DNS) settings. This command is mainly used to view the IP addresses on the computers that are configured to obtain their IP address.

Output:-

IP



| option | Description  |
|--------|--|
| d      | Do not resolve the IP addresses of intermediate routers to their names.            |
| h      | specifies the maximum number of hops to search on the path. The default is 30 hops |
| w      | specifies the amount of time in ms to wait for a reply message from the router.    |

### Ping :-

The Ping command is used to test connectivity between two hosts. It sends ICMP echo request messages to the destination. The destination host replies with ICMP reply message. If the ping command gets a reply from the destination host, it displays the reply along with round-trip times

### Syntax:-

=x=

Ping google.com ,

### Output:-

### IP config :-

This command displays all current TCP/IP network configuration values and refreshes Dynamic Host Configuration protocol (DHCP) and Domain Name System (DNS) settings. This command is mainly used to view the IP addresses on the computers that are configured to obtain their IP address .

### Output:-

ping

```
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=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
C:\Users\LxsoftWin>
```

```
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 . . . . . : 2402:3a80:108b:b9db:8df6:9573:8
        IPv6 Address . . . . . : 2402:3a80:108b:b9db:c06f:d38a:5
        Temporary IPv6 Address . . . . . : fe80::8df6:9573:8fac:d852:22
        Link-local IPv6 Address . . . . . : fe80::8df6:9573:8fac:d852:22
        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 . . . . . : fe80::59c3:a290:592:e3e2:12
    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 . . . . . : fe80::486a:9015:8b5a:2193:13
    Link-local IPv6 Address . . . . . : fe80::486a:9015:8b5a:2193:13
    IPv4 Address . . . . . : 192.168.16.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

C:\Users\LaxSoft>
```



| Used without parameters | Displays the IP address, Subnet mask, and default gateway.   |
|-------------------------|--|
| /all                    | Displays the full TCP/IP configuration for all adapters.   |
| /renew                  | Renews DHCP configuration for all adapters or for a specific adapter if the Adapter parameter is included.   |
| /release                | sends a DHCPRELEASE message to the DHCP server to release the current DHCP configuration and discard the IP address configuration for either all adapters. |
| /flushdns               | flushes and resets the contents of the DNS client resolver cache.  |

### Arp:-

To send IP packets, a computer needs two addresses. These addresses are the MAC address and the IP address. A MAC address is the physical or hardware address of the NIC. An IP address is the logical or software address of the NIC. If a computer knows the IP address of the destination computer but it does not know the MAC address of the destination computer, it uses the ARP protocol to know the MAC address of the destination computer.

The ARP protocol broadcasts a given IP address over a local network. The corresponding host responds to the broadcast with its MAC address. To avoid repetition ARP stores the answer.

Command Prompt

```
C:\Users\Lxsoft\Win>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

C:\Users\Lxsoft\Win>
```

Aryp



## arp:-

By default, this command displays the ARP table of the active NIC. If multiple NICs are installed on the computer, you can use the -a option with this command. If the -a option is used,

To display the ARP cache entry for a specific IP address, specify the IP address with the -n option for example, the following command displays the ARP cache table for the interface that is assigned the IP address 192.168.42.171.

## getmac      command :-

Another very simple command that shows the MAC address of your network interfaces.

## Nbstat:-

The nbstat command removes and corrects preloaded entries using a number of case-sensitive switches. The nbstat -a <names> \*\* command performs a NetBIOS adapter status command on the computer name specified by <names>. The adapter status command returns the local NetBIOS name table for that computer as well as the MAC address of the adapter card.

C:\ Command Prompt

C:\Users\LxsoftWin>arp -a -N 192.168.42.171

| Interface: 192.168.42.171 --- 0xd | Physical Address  | Type    |
|-----------------------------------|-------------------|---------|
| Internet Address 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  |

C:\Users\LxsoftWin>

C:\>getmac

| Physical Address  | Transport Name                     |
|-------------------|------------------------------------|
| Disabled          | Disconnected                       |
| Disabled          | Disconnected                       |
| 00-1F-1F-B7-C8-D2 | \Device\Tcpip_{339DA12A-F1B4-4A88- |

C:\>

get mac command



registered nbstat -n displays the names that have been locally on the system by Net BIOS applications such as the server and redirector.

The nbstat -r command displays the count of all Net BIOS names resolved by the broadcast and by querying a WINS server. The nbstat -R command purges the name cache and reloads all # pre entries from the LM HOSTS file.

Output :-  
=x=

C:\>nbstat -s

local area connection:

Node IP address: [172.16.0.142] scope id: □

NS lookup

Using NSlookup

To illustrate the use of nslookup we are going to use it do :

- find the IP address of a host
- find the domain name of an IP address
- find mail servers for a domain.

Finding the IP address of an Host -

To find the IP address of a host eg:-

www. steves - internet - guide . com

type :

nslookup www. steves - internet - guide . com



at a command prompt.

For an interactive look up:

Reverse lookup IP address to domain name

Type nslookup IP address.

Hostname command :-

A very simple command that displays the Host name of your machine. This is much quicker than going to the control panel > system route.

NET DIAG :-

This command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. These test and the key network status information they expose give network administrators and support personnel a more direct means of identifying and isolating network problems. Network administrators can focus on analyzing the output, rather than on training users how to use the tool.

- 1) Installing Exchange and you wish to check that you can connect to other servers.
- 2) Checking upv network tunnels on the WAN.



- 3) DNS problems computers cannot 'see' their domain controller on the LAN.
- 4) A quick check on hot fixes.
- 5) check the network card bindings from the command prompt
- 6) you are having problems with IPSEC.
- 7) winsock corruption, wrong version incompatibilities.
- 8) net diag checks that Domain controllers are all able to 'speak' LDAP.

Syntax:-

```
net diag [ /q ] [ /v ] [ /l ] [ /debug ] [ /d ] : Domain Name  
[ /fix ] [ /dc Account Enum ] [ /test: Test name ] [ /skip:  
Test name ] [ /? ]
```

| parameter | Description.  |
|-----------|---|
| /q        | specifies quiet output  |
| /v        | specifies verbose output  |
| /l        | sends output to net diag.log. This log files is created in the same directory where net diag.exe was run. |



## path ping :-

The pathping tool is a route tracing tool that combines features of ping and tracert with additional information that neither of those tools provide. pathping sends packets to each router on the way to a final destination over a period of time, and then computes results based on the packets returned from each hop.

**Input :-**

=x=

C:\Users\vardhan > pathping www.google.com.

**Output:-**

=x=

Tracing route to www.google.com [2404:6800:  
4007:828::2004]

Over a maximum of 30 hops:

0 Desktop - 2REB81Q [2409:4070:4d9a:ec33:1cfc:  
90ee:79b5:d4bf]

1 2409:4070:4d9a:ec33::82

2 \* \* \*

computing statistics for 25 seconds...

source to Here This Node/ Link

Hop RTT Lost/ sent = pct Lost/ sent = pct Address

0 DESKTOP - 2REB81Q [2409:4070:4d9a:ec33:1cfc:90ee:  
79b5:d4bf] 0/100 =0% /



I 13 ms  $0/100 = 0\%$ .  $0/100 = 0\%$ . 2409: 4076; 4d 9a:  
CC33: : 82

Trace complete.

Telnet:  
=x=

To use Telnet, follow the steps below:

1. first, find out the ip address of the server/main computer. For this you need to access the server and use the ipconfig command in ms-dos.
2. select the windows key and the R key
3. In the Run box type cmd.
4. select ok.

5. Type Telnet < Ip Address > 13531.

• Note: Do not include the < > entering the IP address.

6. If you see a blank cursor then the connection is fine. You can close the Command prompt window.

- To enable Telnet, follow these steps:

- Select Start > Control Panel > Then Programs and Features.

- Select Turn Windows Features On or Off.

- Check the box for both Telnet Client and Telnet Server

- Select OK

- Verify that you can now Telnet the port.



Example:-

If the server's ip address is 192.168.0.100, then:

- 1) open command prompt on the work station computer.
- 2) Type: telnet 192.168.0.100 13531.

FTP:-

=x=

To connect to and use FTP from a command line interface like ms-DOS or the Linux shell, click a link below.

Connect using FTP:-

To connect to another computer using FTP at the MS-DOS prompt, command line, or Linux shell, type FTP, and press Enter. Once in FTP, use the open command to connect to the FTP server.

Ex:-

An Example would be open 192.168.1.12 once connected, a username and password prompt appears. Some servers may also allow anonymous logins using guest or an e-mail address.

Send and receive a file in FTP:-

To get files from the server onto your computer, use the get command.

get myfile.htm.