[2CEIT503 COMPUTER NETWORKS]

Practical: 3

AIM- Studying Windows network commands.
ping, pathping, ipconfig/ifconfig, arp, netstat, nbtstat, nslookup, route, traceroute/tracert, nmap

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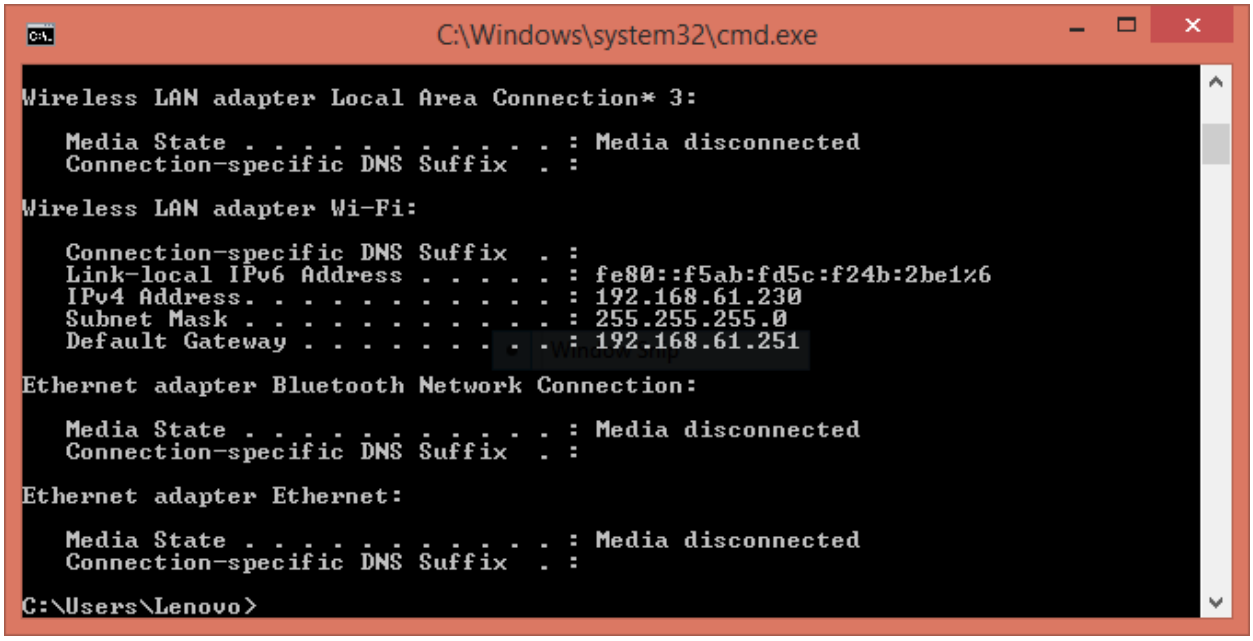
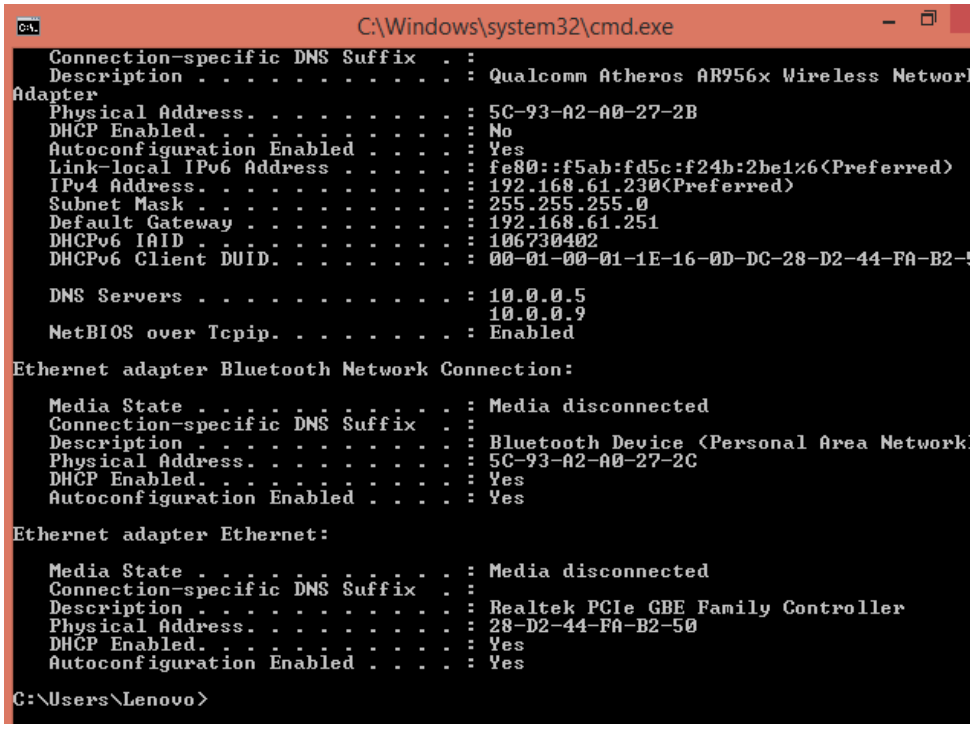
Ipconfig :

The ipconfig command is a fast way of determining your computer's IP address and other information, such as the address of its default gateway — useful if you want to know the IP address of your router's web interface.



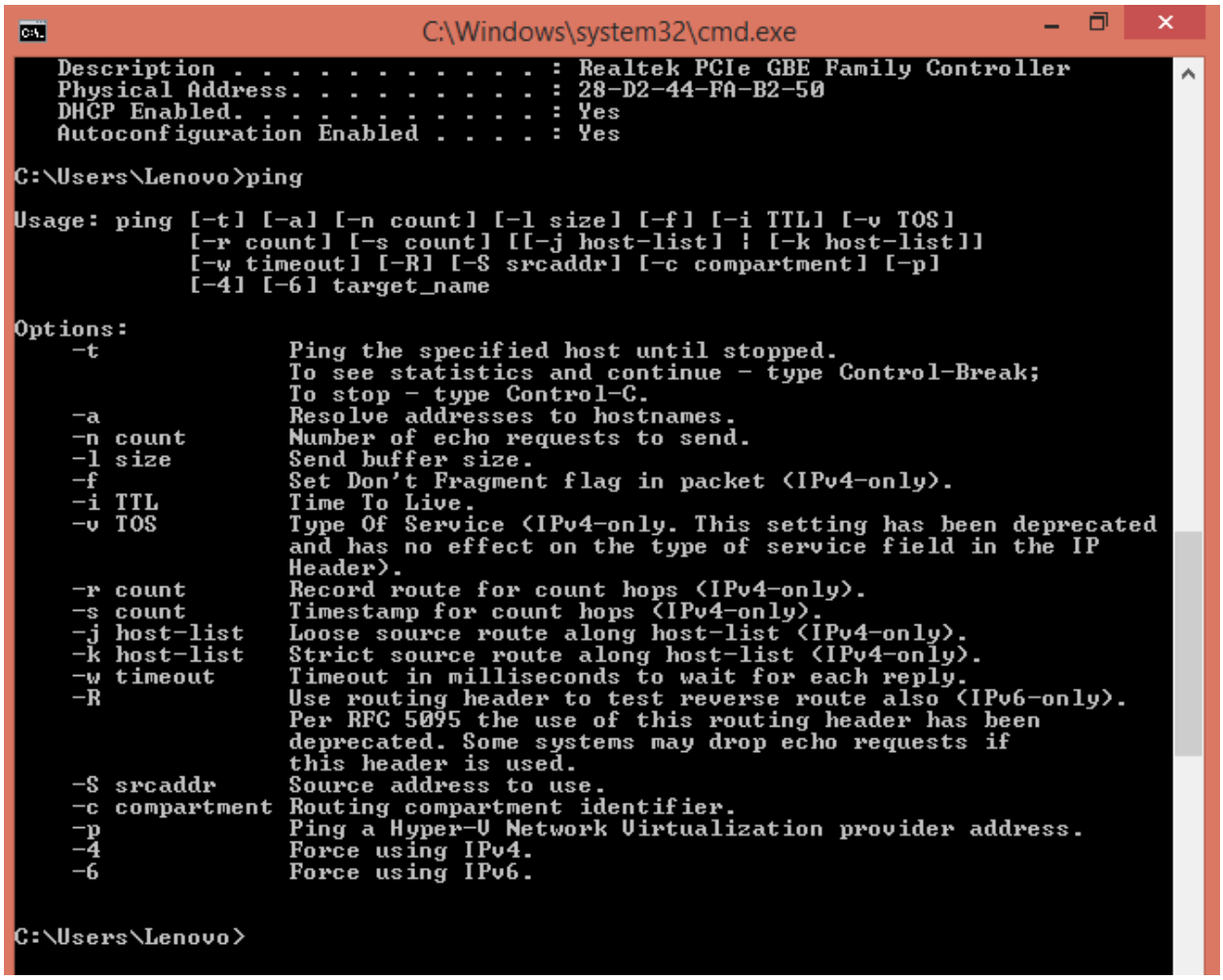
Ipconfig/all :

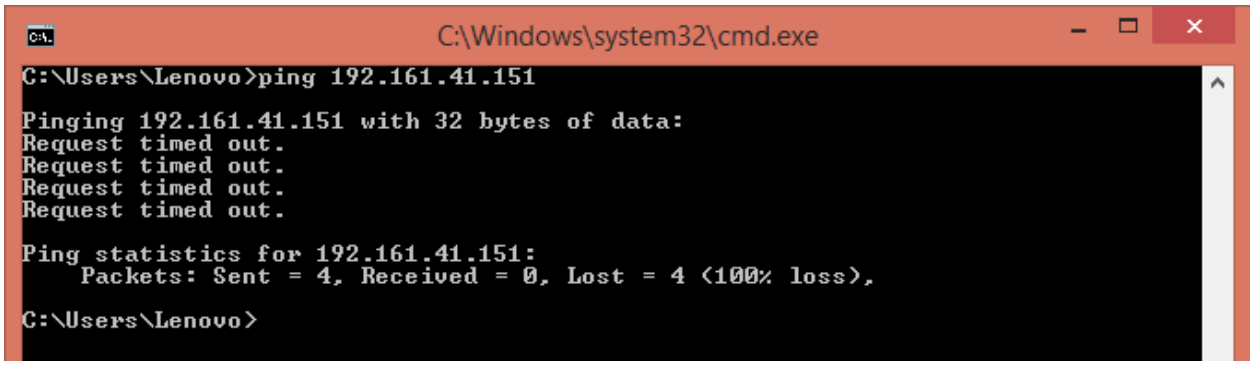
all information about system.



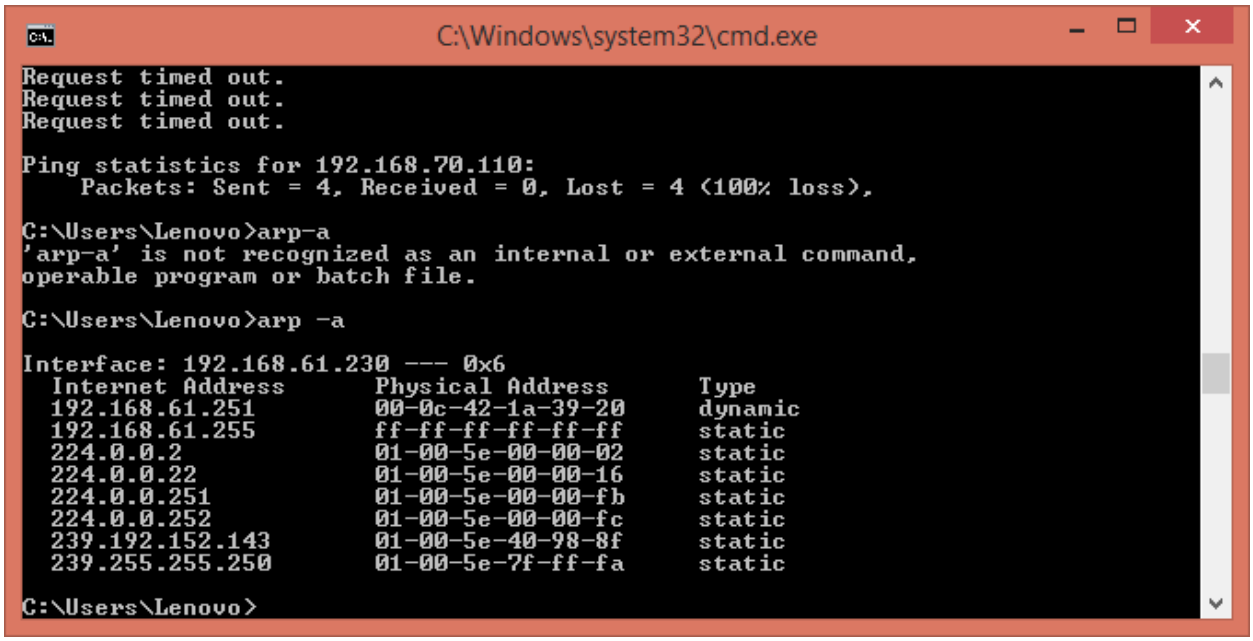
Ping :

Ping is an old Unix tool that has been around for a long time but many PC users are unfamiliar with the Windows version. Ping sends out a packet to a designated internet host or network computer and measures its response time. Use ping whenever you need to verify that a host computer can connect to the TCP/IP network and network resources.



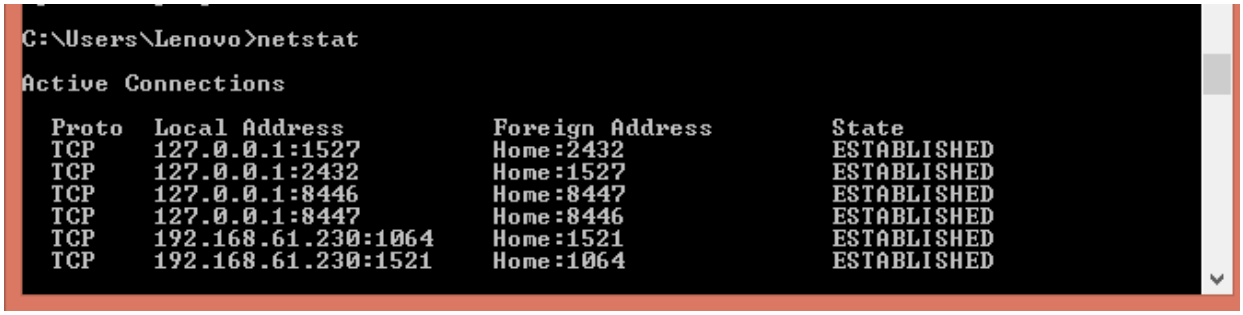


Arp –a: Displays and modifies the IP-to-Physical address translation tables used by address resolution protocol (ARP).



Netstat :

netstat stands for network statistics. This command displays incoming and outgoing network connections as well as other network information. The netstat utility can show you the open connections on your computer, which programs are making which connections, how much data is being transmitted, and other information.The netstatcommand is a used to display *very* detailed information about how your computer is communicating with other computers or network devices.



Nslookup:

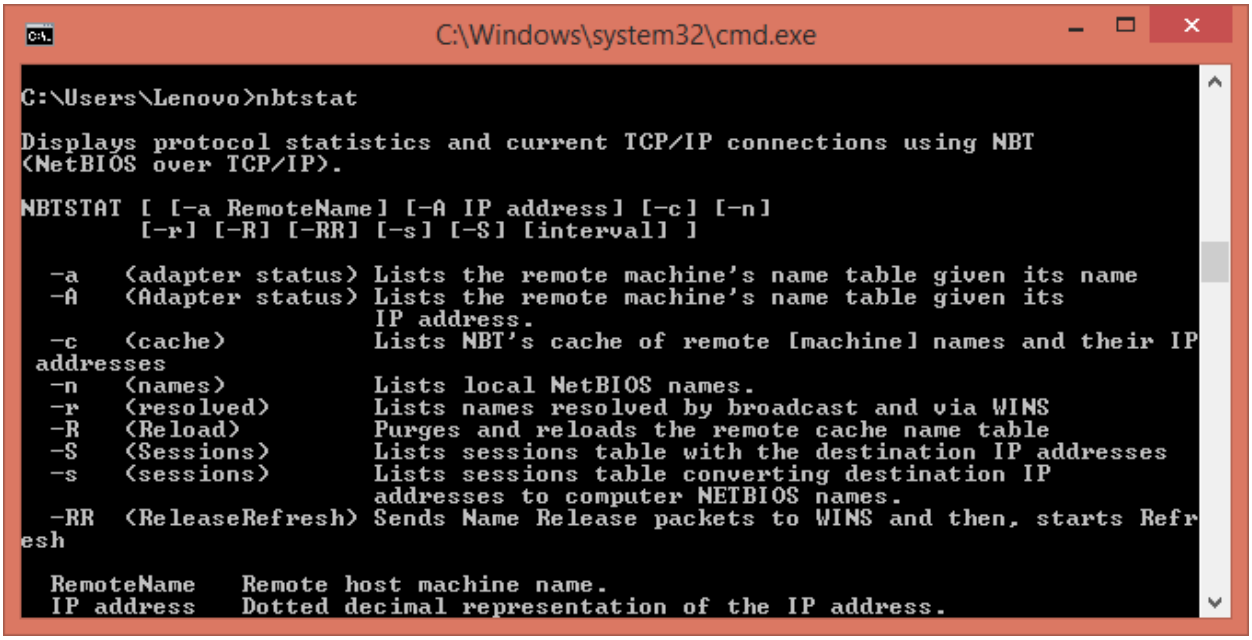
nslookup, which stands for "name server lookup", is a useful tool for finding out information about a domain named . This command helps diagnose the Domain Name System (DNS) infrastructure and comes with a number of sub-commands. These are mainly for systems administrators. The primary interest for average PC users is its use to find the computer name corresponding to a numeric IP.

```
C:\Users\Lenovo>nslookup
DNS request timed out.
    timeout was 2 seconds.
Default Server:  UnKnown
Address:  10.0.0.5

>
```

Nbtstat :

Displays protocol statistics and current TCP/IP connections using NBT(NetBIOS over TCP/IP).Lists the remote machine's name table given its name.



Tracert :

A tracert is a tracking of a packet sent to a server. During its route this packet goes through several network devices (routers, firewall, etc.) and then goes finally at the server. With the tracert you can see the IP as well as the response time between each barrier.

```
C:\Users\Lenovo>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.
```

Route :

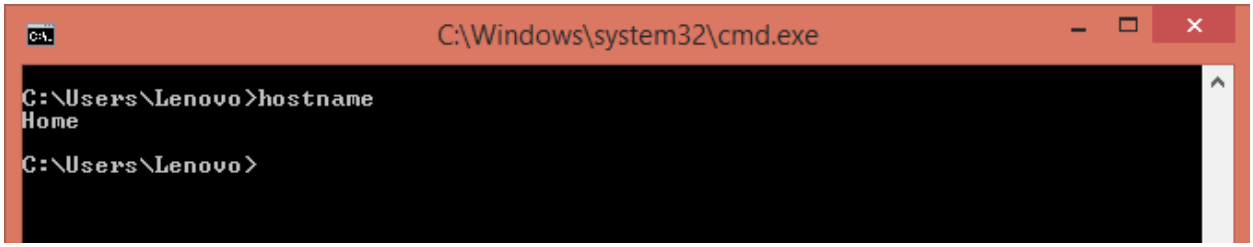
If this is used in conjunction with one of the commands (such as add, change, or delete), the table is cleared prior to running the command. -p : When used with the add command, the specified route is added to the registry and is used to initialize the IP routing table whenever the TCP/IP protocol is started.

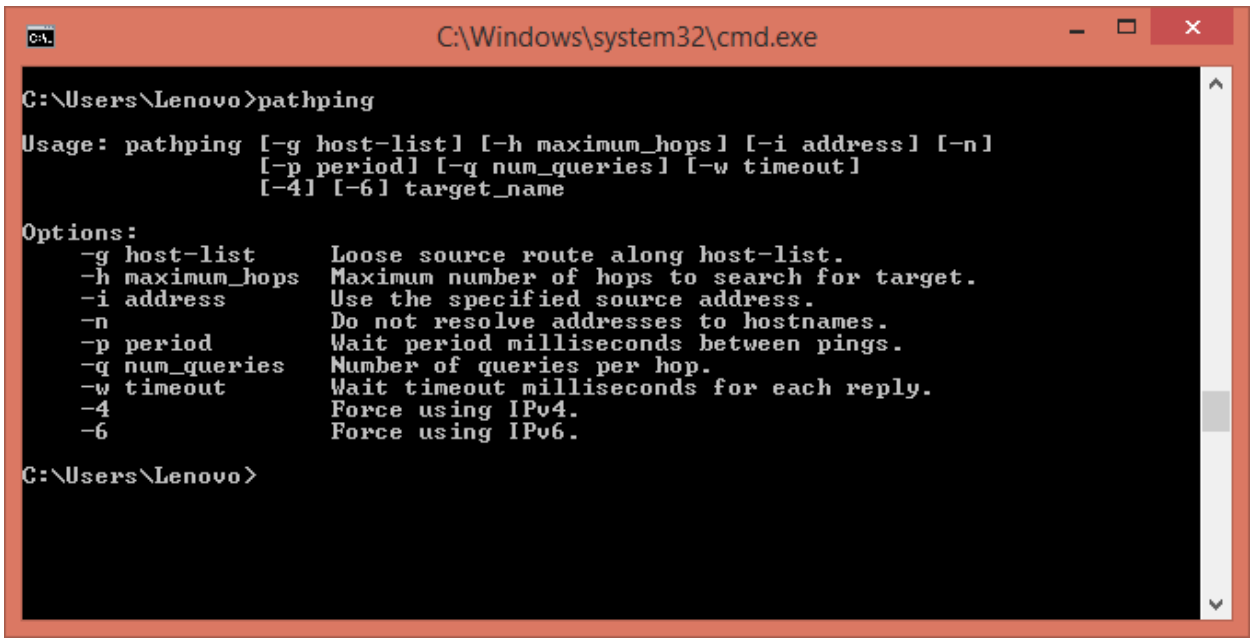
Ipconfig –flusdns :

To ensure Windows is getting addresses from the new DNS servers instead of using old, cached entries, run the ipconfig /flushdns command after changing your DNS server.

Hostname:

Useful to know machine name.



Pathping:

The **pathping** command is a route tracing tool that combines features of the **ping** and **tracert** commands with additional information that neither of those tools provides. The **pathping** command 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. Since the command shows the degree of packet loss at any given router or link, it is easy to determine which routers or links might be causing network problems