Student Name	Arun Adhikari
SRN No	202100406
Roll No	38
Program	Computer Engg.
Year	Third Year
Division	G
Subject	Computer Network Laboratory (BTECCE21506)
Assignment No	2

Assignment Number - 02

Title : Study of Linux and Windows Network commands

Problem Statement Studying Linux and Windows network commands. [ping, pathping, ipconfig/ifconfig, arp, netstat, nbtstat, nslookup, route, traceroute/tracert, nmap, etc]

Try to execute following commands on linux terminal or Windows command prompt.

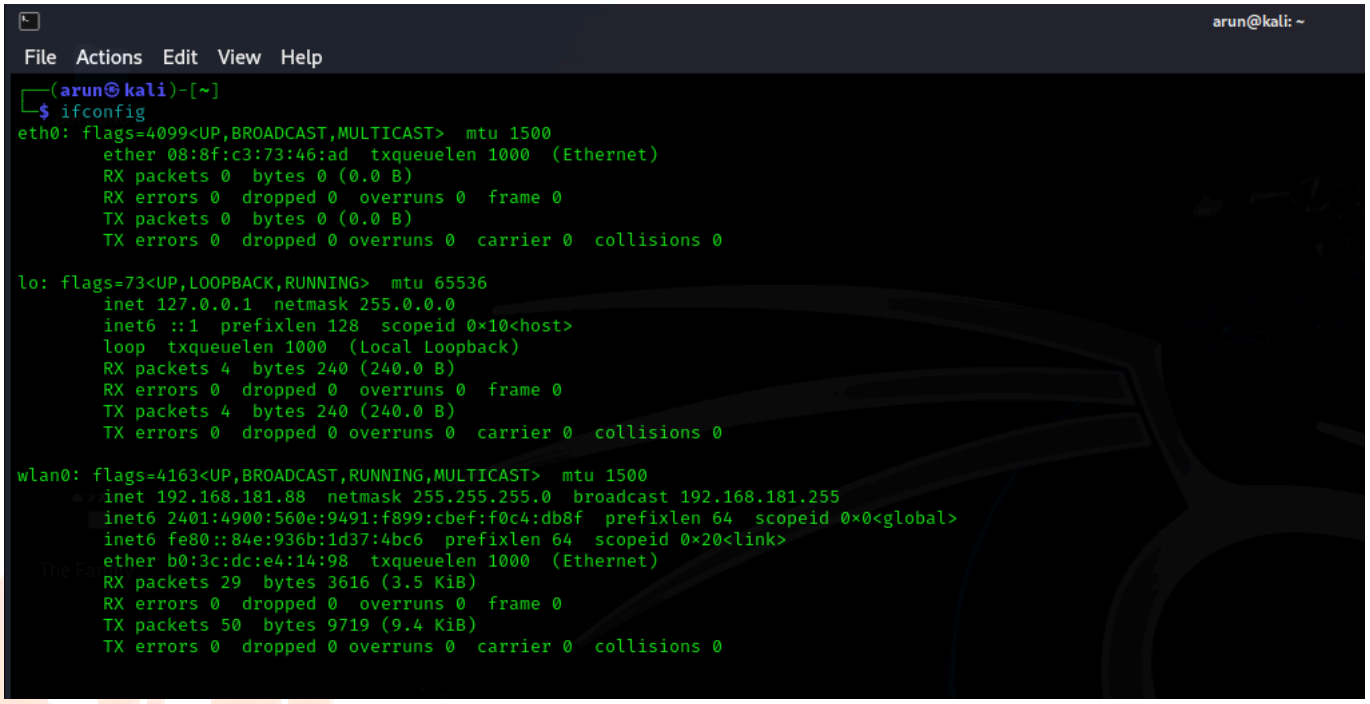
- **ipconfig / ifconfig**
- **ping**
- **Tracert/Traceroute/Tracepath**
- **NSlookup**
- **Netstat**
- **Hostname**
- **Port Scan / nmap**
- **Arp Route**
- **Whois**

- **Write description of each command and take snapshot of execution of command through terminal / command prompt and add after command description.**

Theory :

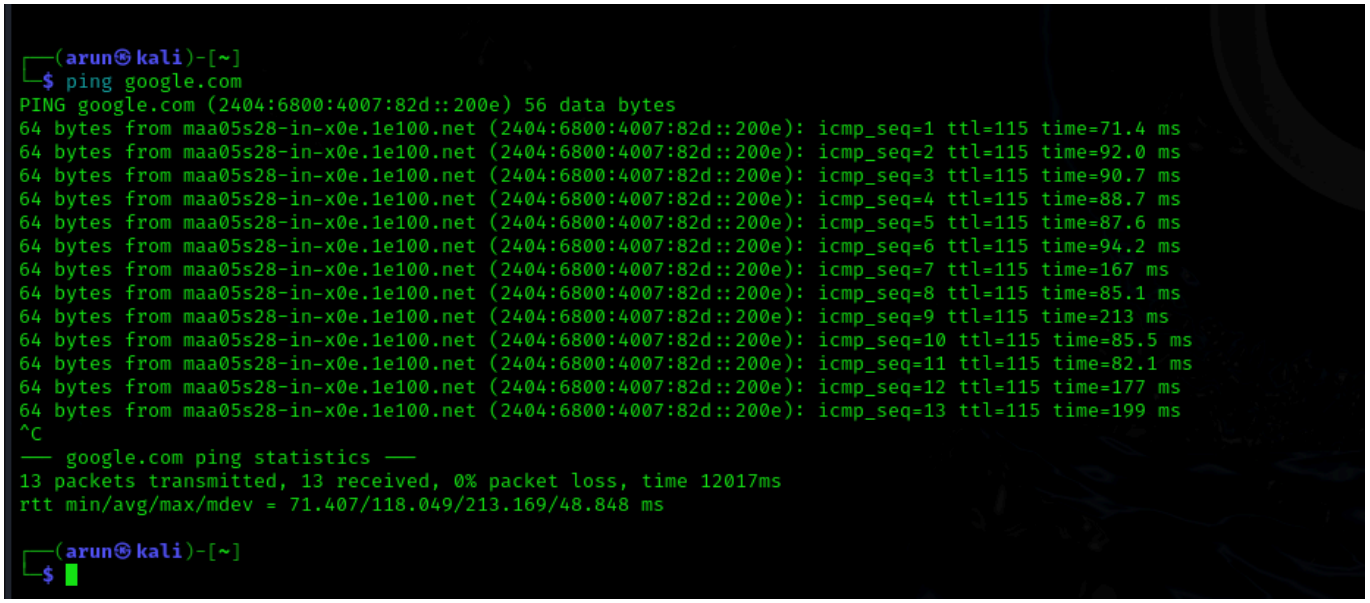
1) ipconfig / ifconfig

Displays information about network interfaces, IP addresses, subnet masks, and default gateways.



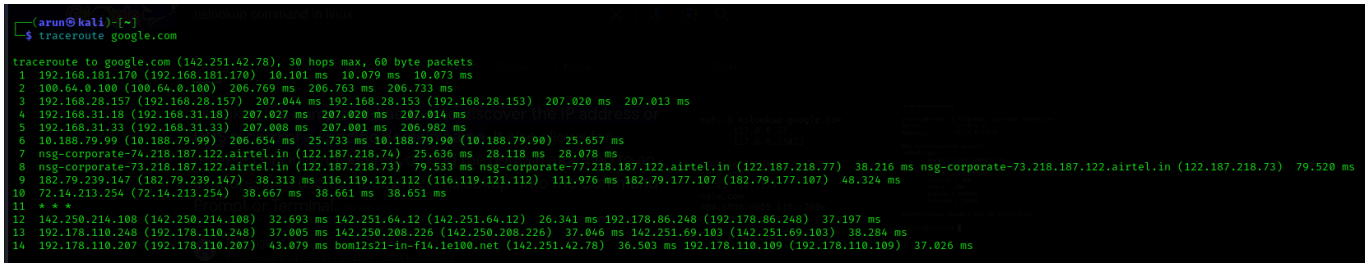
2) ping

Checks network connectivity to a remote host by sending ICMP echo requests.



3) Tracert/Traceroute/Tracepath

Traces the route packets take to reach a destination, showing hops along the way.



4) NSlookup

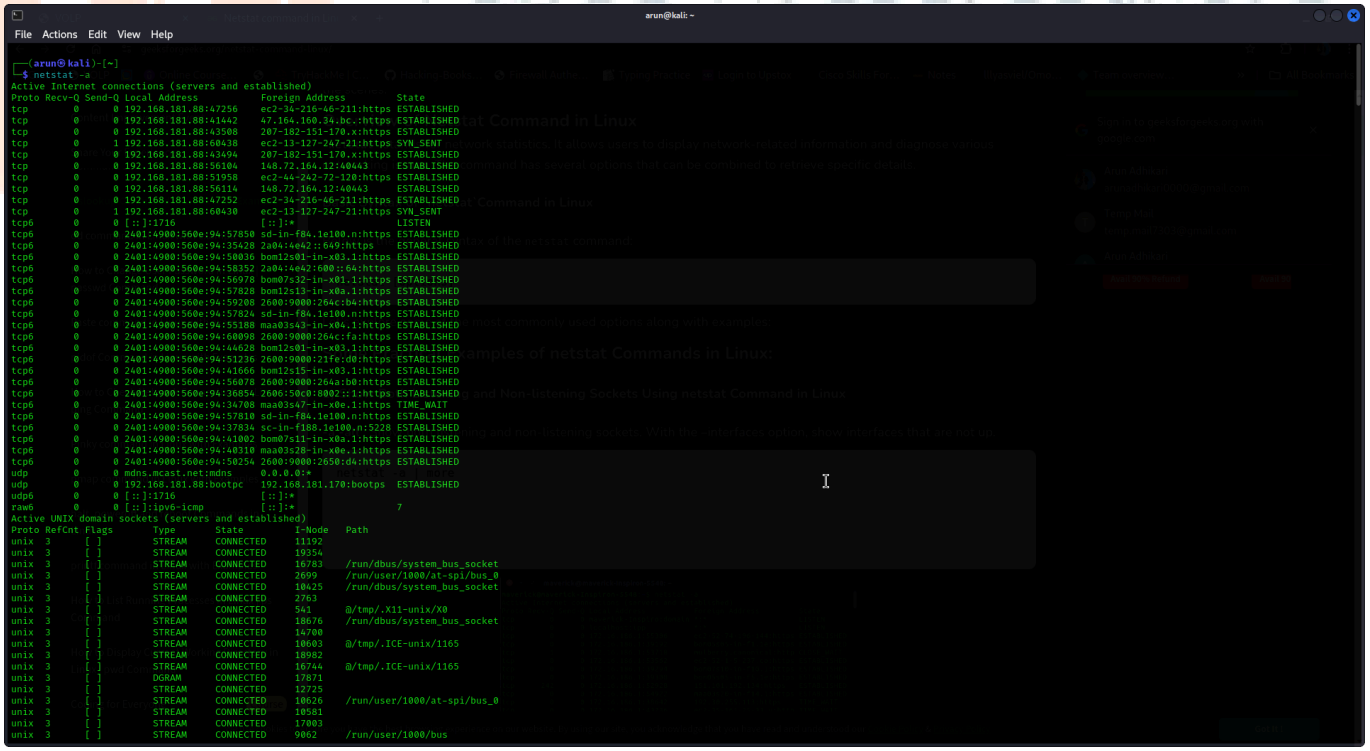
Queries DNS servers to find information about domain names or IP addresses.

```
┌──(arun㉿kali)-[~]
└─$ nslookup google.com
Server:         192.168.181.170
Address:        192.168.181.170#53

Non-authoritative answer:
Name:   google.com
Address: 142.251.42.78
Name:   google.com
Address: 2404:6800:4007:82d::200e
```

5) Netstat

Displays network connections, listening ports, routing tables, interface statistics, and more.

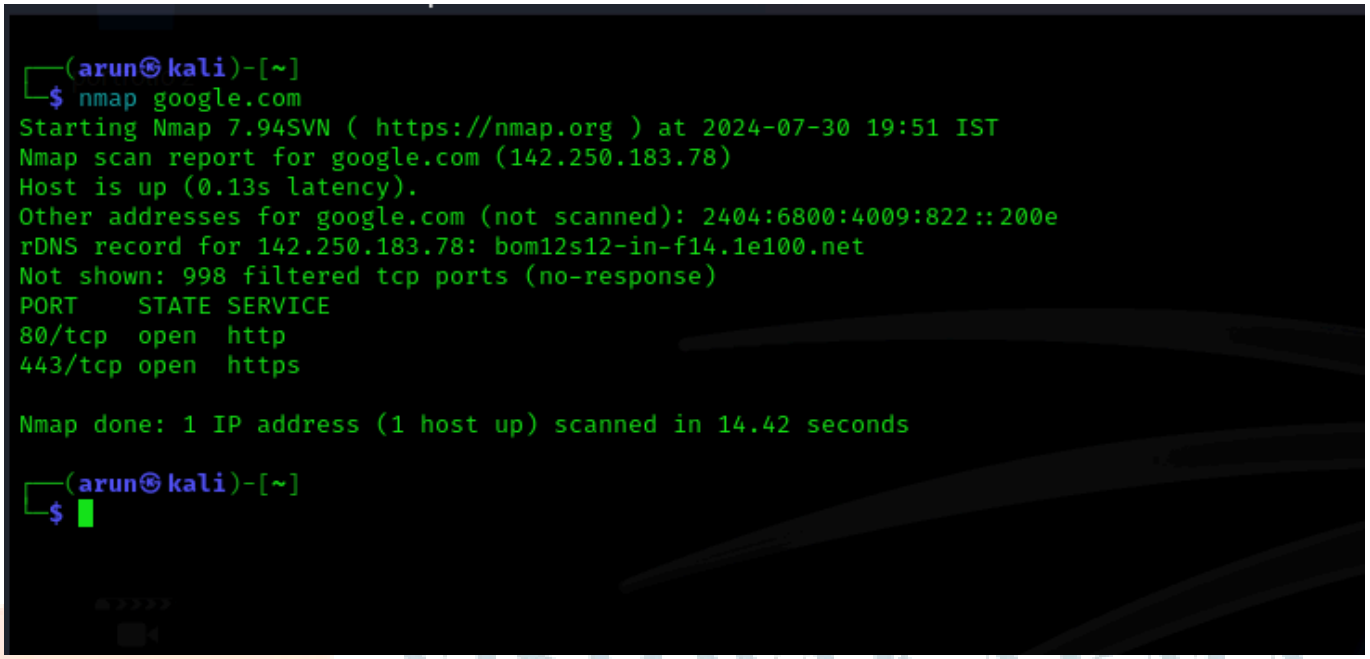


6) Hostname

Displays the current hostname of the system.

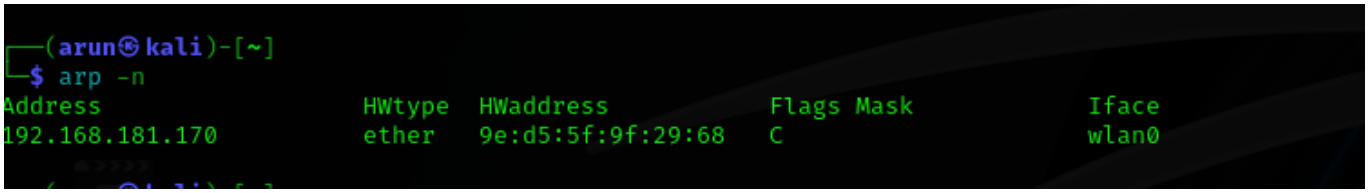
7) Port Scan / nmap

Scans a network or host for open ports.



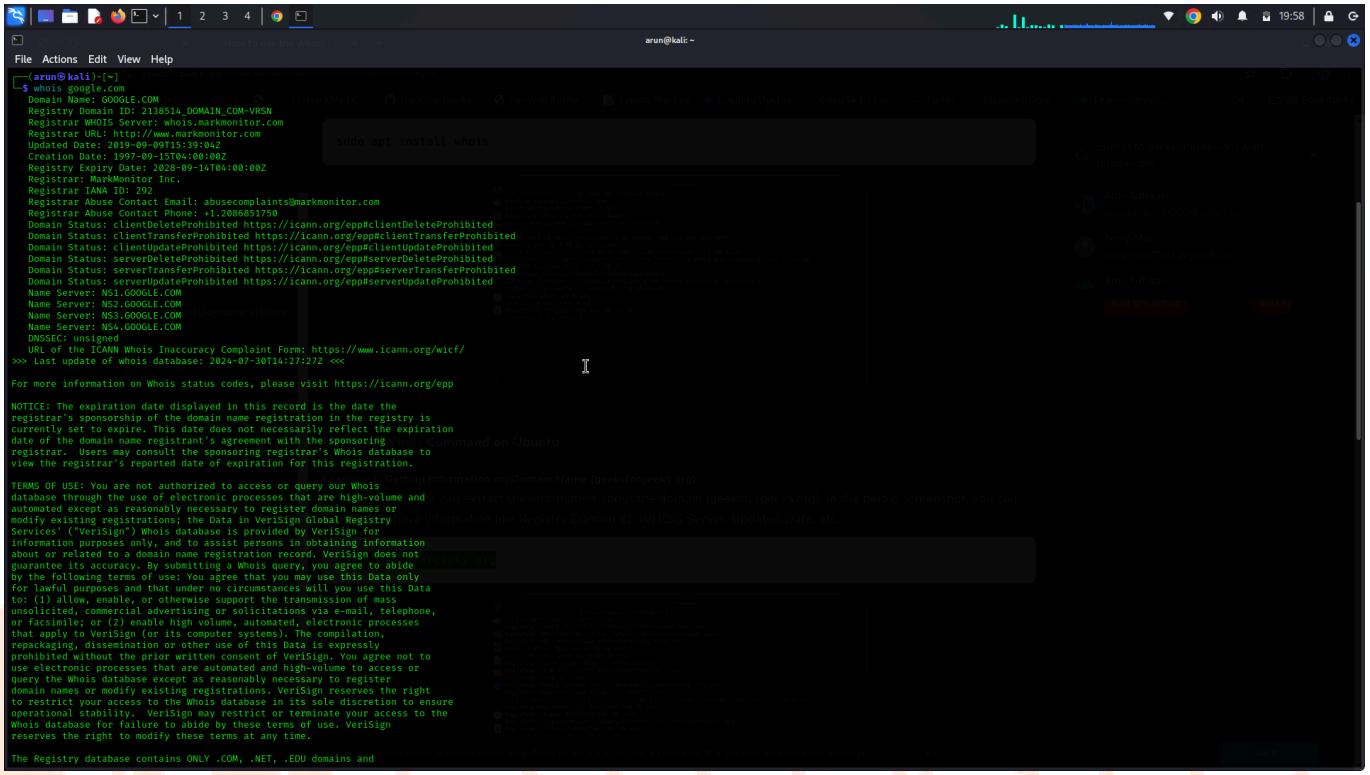
8) Arp Route

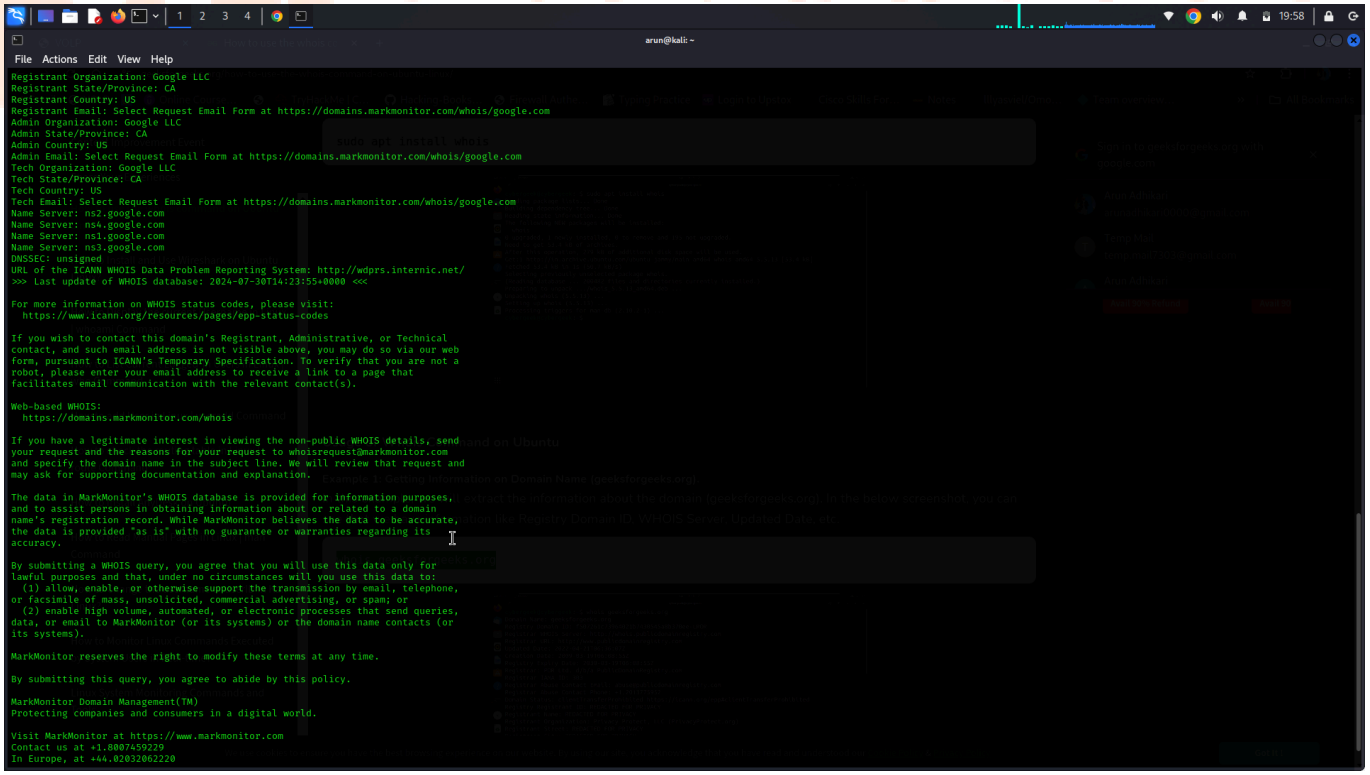
Displays the ARP cache, which maps IP addresses to physical addresses (MAC addresses).



9) Whois

Looks up information about a domain name or IP address.





Conclusion : In this assignment I learned about various critical utility commands over a network that became handy for diagnosis and management of network connections. These commands display information about network configuration (ipconfig/ifconfig), connectivity to a host (ping), path trace to a destination (tracert/traceroute), DNS querying (nslookup), information about the state of the network (netstat), resolution of addresses (arp), routing information (route), scanning over a network (nmap), domain check (whois), and the source name (hostname). All these commands help one diagnose the problems which occur in the network and therefore manage the network settings more effectively.