

PIPCONFIG:-

1. it shows details such as the IP address, subnet mask, and default gateway for all network adapters on your computer.

```
Command Prompt
Simplilearn >ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 3:

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

Wireless LAN adapter Local Area Connection* 4:

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

Ethernet adapter Ethernet 2:

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

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::71d0:b52a:6e74:ca3a%9
    IPv4 Address. . . . . : 192.168.1.4
```

NSLOOKUP-

1. It helps resolve domain names to IP addresses and vice versa, making it useful for diagnosing DNS-related issues.

```
Command Prompt - nslookup

Simplilearn >nslookup
Default Server:  local.airtelfiber.com
Address:

> www.amazon.com
Server:  local.airtelfiber.com
Address:

Non-authoritative answer:
Name:     d3ag4hukkh62yn.cloudfront.net
Address:  13.224.16.126
Aliases:  www.amazon.com
          tp.47cf2c8c9-frontier.amazon.com

>
```

HOSTNAME-

1. Shows the hostname of the device.

```
Command Prompt

Simplilearn >hostname
LAPTOP-

Simplilearn >
```

PING-

1. it allows the user to check the connectivity of our system to another host.
2. It sends four experimental packets to the destination host to check whether it receives them successfully, if so, then, we can communicate with the destination host.

```
Command Prompt

Simplilearn >ping www.google.com

Pinging www.google.com [142.250.194.4] with 32 bytes of data:
Reply from 142.250.194.4: bytes=32 time=26ms TTL=118
Reply from 142.250.194.4: bytes=32 time=27ms TTL=118
Reply from 142.250.194.4: bytes=32 time=26ms TTL=118
Reply from 142.250.194.4: bytes=32 time=27ms TTL=118

Ping statistics for 142.250.194.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 26ms, Maximum = 27ms, Average = 26ms

Simplilearn >■
```

TRACET-

1. It used to track the path packets take from your computer to a destination.
2. It helps diagnose network latency, connection issues, and routing problems by displaying each hop along the path.

```
Command Prompt

Simplilearn >tracert www.facebook.com

Tracing route to star-mini.c10r.facebook.com [157.240.16.35]
over a maximum of 30 hops:

  1    1 ms    1 ms    1 ms    local.airtelfiber.com [192.168.1.1]
  2   15 ms   12 ms   22 ms   abts-mh-dynamic-001.33.169.122.airtelbroadband.in [122.169.33.1]
  3    6 ms    7 ms    7 ms   nsg-corporate-45.78.186.122.airtel.in [122.186.78.45]
  4   48 ms   48 ms   48 ms   116.119.104.148
  5   55 ms   55 ms   57 ms   ae18.pr03.bom1.tfbnw.net [157.240.67.48]
  6   46 ms   47 ms   47 ms   po103.psw02.bom1.tfbnw.net [157.240.53.69]
  7   54 ms   54 ms   54 ms   173.252.67.85
  8   42 ms   41 ms   42 ms   edge-star-mini-shv-01-bom1.facebook.com [157.240.16.35]

Trace complete.

Simplilearn >■
```

NETSTAT-

1. used to display active network connections, listening ports, routing tables, and network statistics on a computer.
2. It helps in diagnosing network issues, monitoring traffic, and identifying suspicious connections.

```
Command Prompt - netstat

Simplilearn >netstat

Active Connections

Proto Local Address Foreign Address State
TCP [REDACTED] ESTABLISHED
TCP [REDACTED] ESTABLISHED
TCP [REDACTED] SYN_SENT
TCP [REDACTED] ESTABLISHED
TCP [REDACTED] ESTABLISHED
TCP [REDACTED] ESTABLISHED
TCP [REDACTED] ESTABLISHED
```

ARP(Address Resolution Protocol)-

1. used to view and manage the ARP cache, which maps IP addresses to MAC (Media Access Control) addresses.

```
Command Prompt
Simplilearn >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
```

SYSTEMINFO-

1. detailed information about the system, including the operating system version, hardware details, installed updates, and network configurations.
2. It is useful for troubleshooting, system diagnostics, and inventory management.

Command Prompt

Simplilearn >systeminfo

Host Name:
OS Name: Windows 11 Home, Single Language
OS Version: 22H2 (22H2.0.22000.1913) Build 22000
OS Manufacturer: Microsoft Corporation
OS Configuration: Standalone Workstation
OS Build Type: Multiprocessor Free
Registered Owner: Arnold
Registered Organization: N/A
Product ID: 00327-35057-50000-AA084
Original Install Date: 23-10-2021 11:48:33
System Boot Time: 05-03-2022 00:22:57
System Manufacturer: LENOVO
System Model: 84WE
System Type: x64-based PC
Processor(s): 1 Processor(s) Installed.
[0] Intel(R) Core(TM) i5-10210U CPU @ 1.60GHz (2 Cores) (4
Intel(R) Core(TM) i5-10210U CPU @ 1.60GHz (2 Cores)
BIOS Version: 1A06 (01/06/2021)
Windows Directory: C:\WINDOWS
System Directory: C:\WINDOWS\system32
Boot Device: \Device\HarddiskVolume3
System Locale: en-us;English (United States)