STUDY OF VARIOUS NETWORK COMMANDS USED IN LINUX AND WINDOWS

Basic Networking Commands :-

1) arp -a : (Address Resolution Protocol) - shows IP address of your computer along with IP addresses of your router.

OUTPUT :-

Interface : 172.16.8.87 _ _ _ _ 0X10

Internet Address	Physical Address	Type
172.16.8.1	7C-5a-1C-Cf-be-45	dynamic
172.16.8.88	50-99-4C-35-12-2e	dynamic
172.16.11.255	ff-ff-ff-ff-ff-ff	static

2) hostname - name of your computer

OUTPUT :-

DESKTOP - LDMVTDN

3) ipconfig /all - detailed configuration information about your TCP/IP connection

OUTPUT : -

Windows IP Configuration

Host Name . . . . : DESKTOP - LDMVTDN
Primary DNS Suffix . . . . . :
Node Type . . . . : Hybrid
IP Routing Enabled . . . . . : No
WINS Proxy Enabled . . . . . : No

Ethernet adapter Ethernet.
:
Wireless LAN adapter WiFi :

4) nbtstat -a :- displays protocol statistics and
nbt :-
(Net Bios over TCP/IP)   current TCP/IP connections using NBT

OUTPUT:-

NBTSTAT [[-a Remote Name] [-A IP address] [-c] [-n]
          [-r] [-R]   [-RR] [-s][-S] [interval]]

   -a (adapter status)   Lists the remote machine's name
                          table given its name
   :

5) netstat -r: used to run network statistics

OUTPUT:-

Interface List

16... so 9a 4c 84 db 63 ...... Realtek PCIe GbE Family
                                           Controller
:

IPv4 Route Table
Active Routes
Persistent Routes
IPv6 Route Table

6) nslookup domain name :- to perform DNS lookups

OUTPUT:-
C:\Users\PEC > nslookup www.google.com

Server: Unknown
Address: 172.16.8.1

Non- authoritative   answer:

Name: www.google.com
Address: 2404:6800: 4007:81e :: 2004
          142.250.183.228

7) Ping :- (Packet INternet Groper) - test connectivity between two nodes.

OUTPUT:

C:\Users\REC > Ping 172.16.8.87

ringing 172.16.8.87 with 32 bytes of data :
Reply from 172.16.8.87 : bytes = 32 time <1ms TTL = 128
:

Ping statistics for 172.16.8.87 :
    Packets : sent = 4, Received = 4, Lost = 0 (0% loss)
Approximate round trip times in milli- seconds :
    Minimum = 0ms, Maximum = 0ms, Average = 0ms.

8) Pathping :- unique to windows - combination of Ping and Tracert.

OUTPUT: -

C:\Users\REC > Pathping 172.16.8.87

Tracing route to DESKTOP-2DMVTDN [172.16.8.87]
Over a maximum of 30 hops:
    0   DESKTOP-2DMVTDN [172.16.8.87]
    1   DESKTOP-2DMVTDN [172.16.8.87]

Computing Statistics for 25 seconds...
:

9) route :- used to modify / display routing info.

OUTPUT:-

C:\Users\REC > route PRINT

Interface List ...
IPV4 Route Table
    Active Routes:

Network Dest	Network	Gateway	Interface	Metric

    Persistent Routes:

IPV6 Route Table :
    Active Routes
    Persistent Routes.

LINUX NETWORKING COMMANDS:-

1) IP commands :-

1) ip address show

o/p :-
```
1: lo: <LOOPBACK,UP,LOWER-UP> mtu 65536 qdisc noqueue
   state UNKNOWN group default qlen 1000
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00

2: enp2s0: <BROADCAST,MULTICAST,UP,LOWER-UP> mtu
   1500 qdisc fq-codel state UP group default qlen
   1000
   link/ether 50:99:AC:24:d6:63 brd ff:ff:ff:ff:ff:ff
```

2) ip address add 192.168.1.254/24 dev enp2s0

3) ip address del 192.168.1.254/24 dev enp2s0

4) ip link set enp2s0 up

5) ip link set enp2s0 down

6) ip link set enp2s0 Promisc on

7) ip route add default via 192.168.1.254 dev enp2s0

8) ip route get 10.10.1.4 192.168.1.254/24

O/P:-
```
   local 192.168.1.254 dev lo src 192.168.1.254 uid0
   cache <local>.
```

2) ifconfig

```
enp2s0: flags = 4163 < UP,BROADCAST, RUNNING, MULTICAST>
                                                      mtu 1500
        inet 172.16.8.87 netmask 255.255.252.0
                            broadcast 172.16.11.255

        inet6 fe80::799a:1b18:5631:bec4
                prefixlen 64 scopeid 0x20<link>
```

3) mtr google.com

4) dnf install -y tcpdump.
Package tcpdump-14:4.9.0_2.fc26.i686 is already
    installed, skipping.
Dependencies resolved
Nothing to do.
complete!

5) tcpdump -D
1. enp2s0 [up, Running]
2. any (Pseudo-device that captures on all interfaces)
                                            [up, Running]
3. lo [up, Running, loopback]

6) tcpdump -i enp2s0
tcpdump: verbose output suppressed, use -v or -vv
              for full protocol decode
listening on enp2s0, link-type EN10MB (Ethernet),
      capture size 262144 bytes.

7) mtr google.com

8) mtr -g google.com
No GTK support. Sorry.

9) mtr -b google.com

10) mtr -c 10 google.com

22/8/24.