Ex: no: 1

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Practical - 1

AIM: study of various Network commands used in linux and Windows:

BASIC NETWORKING COMMANDS:

1) arp -a : Address resolution protocol. Shows IP address & MAC address of your computer & router.

OUTPUT:
```
Interface: 192.168.211.1 --- 0x6
  Internet address      Physical address      Type
  192.168.211.255       ff-ff-ff-ff-ff-ff     static
Interface : 172.16.8.95 --- 0x9
  Internet address      Physical address      Type
  172.16.8.1            7c-5a-1c-cf-be-45     dynamic
```

2) hostname : Displays name of your computer

OUTPUT : DESKTOP-G5BI4RB

3) ipconfig /all : Displays detailed configuration information about your TCP/IP connection.

OUTPUT : Windows IP configuration

```
Host Name . . . . . : DESKTOP-G5BI4RB
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled . . . . : No
WINS Proxy Enabled . . . . : No
```

4) nbtstat -a : Solve problem with NetBIOS name resolution.

OUTPUT : NBTSTAT [[-a RemoteName] [-A IP address] [-c] [-n] [-r] [-R] [-RR] [-s] [-S] [interval]]

5) netstat : Displays variety of statistics about a computers active TCP/IP connections.

OUTPUT : Active connections

Proto	Local Address	Foreign Address	State
TCP	172.16.8.95:7680	172.16.11.222:59813	TIME_WAIT
TCP	172.16.8.95:60922	server-108-159-15-100: https	CLOSE_WAIT
TCP	172.16.8.95:60979	sb-in-f188:5228	ESTABLISHED

6) nsLookup : Name server Lookup is a tool to perform & display DNS details.

OUTPUT : Default server : Unknown
Address : 172.16.8.1

7) pathping : Combination of ping & Tracert commands. Traces route to destination address.

OUTPUT : Usage : pathping [-g hostlist] [-h maximum hops] [-i address] [-n] [-p period] [-q num-queries] [-w timeout] [-4] [-6] target_name

8) Ping : Packet INternet Groper command used to test connectivity between two nodes.

OUTPUT : Usage : ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS] [-r count] [-s count] [-j host-list] [-k host-list] [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p] [-4] [-6] target_name.

9) route : Used to manipulate network routing table.

OUTPUT : ROUTE [-f] [-p] [-4|-6] command [destination] [MASK netmask] [gateway] [METRIC metric] [IF interface]

LINUX NETWORKING COMMANDS:

1) IP commands:

O/P:- 1) ip address show

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 50:9a:4c:34: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 promisc on

7) ip route add default via 192.168.1.254 dev enp2s0

8) ip route get 192.168.1.254.124

O/P:- local 192.168.1.254 dev lo src 192.168.1.254 uid 0
cache <local>

2) ip config

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 -4 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

Result:

Hence the study of various network command used in Linux & windows is executed successfully.

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