13/7/2024 BASIC NETWORKING COMMANDS

AIM:

To study various Networking commands used in linux and windows.

Commands:-

1. arp-a

Output:-

Internet address	Physical Address	Type
192.168.1.1	96-67-17-96-15	Dynamic
192.168.1.2	10-76-36-97-06	Dynamic
192.168.1.5	64-ff-0a-90	Dynamic

2. ~~Host~~.hostname

Output:-

DESKTOP-RG20920

3. ipconfig /all.

Output:-

Windows IP configuration

HostName . . . . : DESKTOP-RG20920

Primary Dns Suffix . . . . :

Node type . . . . . : Hybrid

IP Routing enabled . . . : NO

Wins Proxy Enabled . . . : NO

4. nbstat -a

Output:-

Displays protocol statistics and current TCP/IP connections using NBT (NetBIOS over TCP/IP)

NBTSTAT [[-a RemoteName] [-A IPAddress] [-c] [-n] [-r] [-R] [-RR] [-s] [-S] [interval]]

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

-A (Adapter status) Lists the remote machine's name table given its IPaddress.

-c (cache) Lists NBT's cache of remote [machine] name and their IPaddresses.

5. netstat

Output:-

Active Connections

Proto	Local address	Foreign Address	State
TCP	127.0.0.1:49711	DESKTOP-49701	ESTABLISHED
TCP	192.168.1.7:57602	192.168.1.2:8009	ESTABLISHED
TCP	192.168.1.7:57625	192.168.1.2:8009	ESTABLISHED

6. nslookup

Output :-

Default Server : Unknown
Address : fe80::9267:14ff:fe96:1548

4. pathping

Output :-

Usage : pathping [-g host-list] [-h maximum_hops]
[-i address] [-n] [-p period] [-q num_queries]
[-w timeout] [-4] [-6] target_name.

Options :

-g host-list Loose source route along host-list.
-h maximum_hops Maximum no. of hops to search for target
-i address Use the specified source address.

8. ping

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.

Options :

-t Ping the specified host until stopped.
-a Resolve addresses to hostnames
-n count Number of echo requests to send.

9. route

Output:-

Manipulates networks routing tables.

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

-f clears the routing tables of all gateway cards. If this is used in conjunction with one of the commands, the tables are cleared prior to running the command

-p when used with the ADD command, make a route persistent across boots of the system. By default, routes are not preserved when the system is restarted

-4 Force using IPV4

-6 Force using IPV6

IMPORTANT LINUX NETWORKING COMMANDS.

1) ip

Output :-

```
Usage : ip [OPTIONS] OBJECT {COMMAND | help}
        ip [-force] -batch filename

where OBJECT := {LINK | address | addrlabel |
        route | rule | neigh | ntable | tunnel |
        tuntap | maddress | mroute | mrule |
        monitor | xfrm | netns | l2tp | fou | macsec |
        tcp_metrics | token | netconf | ila | vrf }
```

2) ifconfig

Output :-

```
enp2s0 : flags = 4163 <UP, BROADCAST, RUNNING, MULTICAST>
                    mtu 1500
        inet 142.16.11.36 netmask 255.255.252.0
                    broadcast 142.16.11.255.
        inet6 fe80 : :d4e4 : f387 : 92f5 : d315
                prefixlen 64 scopeid 0x20<link>
        ether 50:99:4C:35 : of : 75 txqueuelen 1000
                (Ethernet)
```

3. mtr

Output.

My traceroute [v0.87]

localhost.localdomain (::)

keys: Help ... quit

Host Sat Jul 20 11:57:39

1. ::1 Pings

	Packets					
Loss%	Snt	Last	Avg	Best	Wrst	StDev
0.0%	129	0.1	0.1	0.0	0.1	0.0

4. tcp dump -D

Output.

1. enp2s0 [up, Running]
2. any (Pseudo-device that captures on all interfaces) [up, Running]
3. lo [up, Running, Loopback]
4. wlp3s0 [up].

5. ping

output

Usage: ping [-aAbBdDfhLnOqrRUV64] [-c count]
[-i interval] [-I interface] [-m mark] [-M pmtudisc option]
[-l preload] [-p pattern] [-Q tos] [-S packet size]
[-s sndbuf] [-t ttl] [-T timestamp_options]
[-w deadline] [hop1 ...] destination.

Question & Answer:-

1) 'ping' to find reachability

2) mtr [web address]

3) ip address show to show IP configuration

4) netstat

5) 'ipconfig'

RESULT:-

Thus the various networking commands used in linux and windows are studied.

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