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Exercise No: 1

classmate

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Basic Networking Commands

Aim: Study of various network commands used in Linux and Windows.

1) arp - a

Interface : 192.168.136.1 --- 0x12

Internet Address	Physical Addresses	Type
192.168.136.254	00-50-56-e7-3e-76	dynamic
192.168.136.255	ff-ff-ff-ff-ff-ff	static
224.0.0.22	01-00-5e-00-00-16	static
224.0.0.251	01-00-5e-00-00-fb	static
224.0.0.252	01-00-5e-40-98-8f	static
239.192.152.143	01-00-5e-7f-ff-fa	static
239.255.255.250	01-00-5e-00-00-00-fc	static
255.255.255.255	ff-ff-ff-ff-ff-ff	static

2) hostname

DESKTOP-825INVK

3) ipconfig /all

Windows IP Configuration

Host Name : DESKTOP-825INVK

Primary DNS suffix :

Node Type : Mixed

IP Routing Enabled : No

WINS Proxy Enabled : No

Ethernet adapter Ethernet:

Media state : Media disconnected

Connection-specific DNS suffix :

Description : Realtek PCIe GbE family Controller

Physical Address : 50-9A-4C-34-D8-9D

DHCP Enabled : No

Autoconfiguration Enabled : Yes

4) nbtstat -a

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

RemoteName Remote host machine name

IP address Dotted decimal representation of
the IP address.

interval Redisplays selected statistics,
pausing interval seconds
between each display. Press
Ctrl+C to stop redisplaying
statistics.

5) netstat

Active Connections,

Proto	Local Address	Foreign Address	State
TCP	192.168.146.241:4624	20.198.118.190:https	Established
TCP	192.168.146.241:4798	13.74.138.55:https	Established
TCP	192.168.146.241:4799	172.16.75.76:ms-do	Syn-Sent
TCP	192.168.146.241:4800	172.16.9.208:ms-do	Syn-Sent

6) nslookup

Default Server : Unknown

Address : 192.168.146.130

7) pathping

Usage : pathping [-g host-list] [-h maximum-hops]
 [-i address] [-n] [-p period]
 [-q num-queries] [-w timeout]
 [-4] [-6] target-name

8) ping

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

9) Route

Manipulates network routing tables.

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

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Linux commands:1) ip ~~route~~ show

o/p:-

usage : ip [options] object { command } { help }
ip [-force] - batch filenamewhere object := flink | address | addr | label |
rule | route | height | table | tunnel | tuntap | maddress |
mroute | mrule | monitor | xfrm | ncfrs | 12tp |
foul | macsec | tcp-metrics | token | netconf |
label vrf }

→ ip route get 127-0-0-1 118

o/p:-

local 127.0.0.1 dev lo src 127.0.0.1
uid 1000
Cache <local>

2) arp -a

o/p :- gateway [172.16.8.1] at 7c:5a:1c:a:b:e:45
[ether] on enp250

3) hostname

o/p: localhost.localdomain,

4) ifconfig

o/p:

enp250 : flags = 4163 ~~UP~~, Broadcast, Running,
Multicast > mtu 1500inet 172.16.8.118 netmask 255.255.252.0
broadcast 172.16.11.255

inet 6 fe 80 :: f47:5699:d900 prefixlen
64 scopeid 0x20 <link>

RX errors 0 dropped 37 overruns 0
frame 0,

5) mtr www.google.com

O/P:- mytrace route [v0.87]

local host, local domain (0.0.0.0)

Host	Packets	Bytes
1.172.16.81	sent Loss% 11	snt last Avg Best Worst
0.0.0.0	52	0.3 0.4 0.2 5.3

2. static -41, 229

249.49-tataidc.co.in. 0.0.1 78 3.4 4.3 2.5 21.6

6) tcpdump -D

O/P:-

1. enp250 [up, Running]

2. any (Pseudo-device that captures on all interface)

3. wlp350 [up]

4. bluetooth 0 (Bluetooth adapter number 0)

5. lo [Loopback]

6. usbmon1 (USB bus number 1)

7) ping www.google.com.

Output:

PING google.com (142.250.67.46) 88 (100) bytes
of data

64 bytes from mac05s - in - xoe.1el00.net
(2404:6800:4007:820:200e): icmp_seq=1
ttl = 58 time = 38.7 ms.

64 bytes from mac05s25 - h-xoe.1el00.net
(2404:6800:4007:820:200e): icmp_seq=2
ttl = 58 time = 45.1 ms.

↑ C

-- google.com ping statistics --

43 packets transmitted, 43 received,
0% packet loss, time 42018ms.

rtt min / avg / max / mdev = 36.349 / 61.648)
106.337 / 14.993 ms.

Result:

Thus the study of various network commands used in ~~the~~ linux and windows was done successfully.

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