

Ex no: 01
Date : 16/07/24 Practical - 01

AIM :

Study of various Network commands used in Linux and windows.

Basic Networking Commands in Windows :

arp -a

Interface : 192.168.26.1

Internet Address	Physical Address	Type
192.168.26.254	00-50-56-F9-8b-27	dynamic
192.168.26.254	FF-FF-FF-FF-FF-FF	static
224.0.0.2	01-00-5E-00-00-02	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-00-00Fc	static
239.255.255.250	01-00-5E-7F-FF-Fa	static
255.255.255.255	FF-FF-FF-FF-FF-FF	static

2) hostname

Desktop DESKTOP - A71ULD8

3) ipconfig /all

Windows IP configuration

Host Name : DESKTOP - A71ULD8

Primary Dns Suffix :

Node Type : Mixed

IP Routing Enabled : No

WINS Proxy Enabled : No

4) nbtstat -a

O/P :

nbtstat -a DESKTOP - A71ULD8

Ethernet 3 :

Node IP Address : [0.0.0.0] Scope Id : []

Host Not Found.

Bluetooth network connection 2 :

Node IP Address : [0.0.0.0] Scope Id : []

Host Not Found.

5) netstat

O/P :

Active connections

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:49678	DESKTOP-A71ULD8:49679	Established
TCP	127.0.0.1:49679	DESKTOP-A71ULD8:49678	Established
TCP	172.16.75.28:62144	20.42.73.26:Https	close-wai
TCP	172.16.75.28:62150	923-11-215-25:Https	close-wai

6) nslookup www.google.com

O/P:

server: unknown

Address: 172.16.72.1

Non-authoritative answer:

Name: www.google.com

Address: 2404:6800:4007:81e:2004

142.250.163.228

7) pathping -g DESKTOP-A71ULD8

O/P:

Tracing route to 172.16.75.28 over a maximum of

30 hops:

0 172.16.75.28

1 172.16.75.28

computing statistics for 25 seconds...

source to Here This node / Link

HOP	RTT	Lost/sent = Pct	Lost/sent = Pct	Address
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0				Desktop-A71ULD8 0/100=0% [172.16.75.28]
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1	0ms	0/100=0%	0/100=0%	Desktop-A71ULD8 [172.16.75.28]
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Trace complete

8) ping www.rajalakshmi.edu.in

~~pinging~~ www.rajalakshmi.edu.in [162.255.119.253]
with 32 bytes of data:

Reply from 162.255.119.253: bytes = 32 time = 243 ms
TTL = 55

Reply from 162.255.119.253: bytes = 32 time = 317 ms TTL = 55

Reply from 162.255.119.253: bytes = 32 time = 284 ms TTL = 55

ping statistics for 162.255.119.253:

packets : sent = 4 , Received = 4 , lost = 0 (0 % loss),

Approximate round trip times in milli-seconds:

minimum = 243 ms, maximum = 317 ms, Average = 269

9) Route point 157 * O/P: 10.00-265-821.975.011

Interface list

18... 20 88 10 86 C5 61 ... Intel (R) Ethernet connection

I219-LM

12... 4e 82 99 79 1F A5 ... microsoft wifi direct
... 238322 88 10. virtual adapter #5

~~zur~~ | aber ~~zur~~ - - statt - d - ~~zum~~ - - -

IPV4 Route table

Active Routes:

None

Persistent Routes :

None

IPV6 Route Table :

~~Active Routes: ws-instaclient-0000000000000000~~

None

Persistent Routes: static ip ~~super~~ 192.168.1.100

None. I am not a member of any political party.

- - - - - Linux networking commands

ip :

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
inet 127.0.0.1/8 scope host lo
 valid_lft forever preferred_lft forever
inet6 :: 1/128 scope host

2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc Fq-codel state UP group default qlen 1000

3: wlp3s0: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
link/ether d6:ab:54:82:44:79 brd FF:FF:FF:FF:FF:FF

b) ip address add 192.168.1.254/24 dev enp3s0

c) ip address del 192.168.1.254/24 dev eth0

d) ip link set eth0 up.

e) ip link set enp2s0 down.

f) ip link Add default via 192.168.1.254 dev eth0

g) ip route add 192.168.1.0/24 dev enp2s0

h) ip route add enp2s0 promisc on.

i) ip route add 192.168.1.0/24 dev enp2s0

RTNETLINK : Fib exists.

j) ip route delete 192.168.1.0/24 via 192.168.1.254

k) ip route get 10.10.1.4
10.10.1.4 dev enp2s0 src 192.168.1.254

mid 0 cache.

2) mtr :

a) mtr www.rajalakshmi.in
 O/P:
 My traceroute [v0.87]

localhost.localdomain (0.0.0.0)
 Keys: Help Quit

Host	Loss %.	Packets	Pings			
		cnt	Last	Avg	Best	Worst
1. 118.185.187.140	0.0%	208	0.3	0.2	0.2	0.3

b) mtr -g twitter.com

No GTK support. Sorry.

c) mtr -b google.com

Same output as a.

3) ping :

ping www.google.com

OUTPUT:

64 bytes from maa05512-in-f141.le.100.net
 : i emp -seq = 1 Aflc = 120 time = 8.26 ms

64 bytes from maa05512-in-f141.le.100.net
 (142.250.67.46) iemp -seq = 3
 Aflc = 120 time = 2.38 ms

4) tcpdump :

dnf install -y tcpdump

package tcpdump-14:4.9.0-2.1.226.5686 is
 already installed, completed

tcpdump -D

1) enp2s0 (up, running)

2) lo (up, running, loopback)

3) wlp3s0 (up)

tcpdump -i enp2s0

10:38:21.937811 ARP, Request who has 172.16.11.28 tell 172.16.9.182, length 46
10:38:21.959532 IP local host > local domain.
39740> gateway domain: 9299+ PTR? 28.11.16.172.
in addr. arpa

tcpdump -i eth0 -c 10.

10:43:22.861515 ARP, Request who has 172.16.11.200
tell 172.16.11.188, length 46
10:43:22.869014 IP gateway.domain > local host.
local domain. 58925:50925 NIX Domain * 01010(44).

#tcpdump -i eth0 -c 10 host 8.8.8.8

listening on enp2s0, link-type EN10MB capture
size 262144 bytes

#tcpdump -i eth0 src host 8.8.8.8

#tcpdump -i eth0 des host 8.8.8.8

capture network to and from a network

#tcpdump -i enp2s0 net 10.1.0.0 mask 255.255.0.0

#tcpdump -i enp2s0 net 10.1.0.0/24

capture traffic to and from port number

#tcpdump -i eth0 port 53

10.58.46.855849 IP localhost.localdomain

49564 > gateway.domain: 18237+A? Chat.

google.com.

#tcpdump -i enp2s0 host 8.8.8.8 and port 53

#tcpdump -i enp2s0 -E 10 host www.google.com and port 443.

#tcpdump -i enp2s0 port not 53 and not 25

default via 1000 link/ether 50: 9a:4c:34:d4:e4
brd ff:ff:ff:ff:ff:ff

2) ip route show default

- default via 172.16.8.1 dev enp2s0 proto static
metric 100.

- 172.16.8.0/22 dev enp2s0 proto kernel scope
link src 172.16.8.86 metric 100.

3) ip -6 route show default.

4) ping www.google.com

5) Display DNS settings.

cat /etc/resolv.conf

generated by a network manager

nameserver 172.16.8.1

Configuring an Ethernet connection by using
nmcli:

① nmcli connection show

NAME	UUID	TYPE	DEVICE
New 802.3-ethernet connection	d9497903-3a15- 4730-8cca-37ed 21928c59	802-3 ethernet	enp2s0

② ip route show default

O/P:

default via 172.16.8.1 dev enp2s0 proto static
metric 100

172.16.8.0/22 dev enp2s0 proto kernel scope link
src 172.16.8.109 metric 100.

configuring an Ethernet connection by using nmcli

Procedure

- 1) # nmcli connection show:

Device	UUID
new 802-3-3-ethernet	7cceb64a4-cf4c-4962-a0bb ofbb0c2d058d

Type
802 - 3 - ethernet .

- 2) # nmcli connection modify "wired connection"
To rename the connection

- 3) # nmcli connection show

- 4) configure IPV4 settings:
#nmcli connection modify "wired connection" ip
method auto.
#nmcli connection modify "wired connection"
1" ipv4.method manual
ipv4.addresses
192.0.2.1124
ipv4.gateway 192.0.0.254
ipv4.dns
192.0.2.1124
ipv4.gateway 192.0.0.254
dns-search
[To set a static IPV4 address, network mask
default gateway, IPNS servers and search doma

- 5) configure IPV6 settings:

#nmcli connection modify "wired connection",
verification:

- i) ip address show enp250

enp250: BROADCAST, MULTICAST, UP, LOWER_UP
mtu 1500 qdisc fq-codel state UP group

③ cat /etc/resolv.conf

O/P:

generated by NetworkManager
nameserver 172.16.8.1

RESULT:

Thus the basic commands are executed and observed in windows and Linux.

Ques
16/7/24