

Practical - I

Date : 13/7/2024

EXP. NO : 01

Aim: study of various network commands used in Linux and windows.

windows commands:

command:

1) > arp -a:

output:

Interface :	Internet Address	physical add.	Type
172.16.72.1	7C-5A-1C-CF-6E-41	dynamic	
172.16.72.133	4C-AE-A3-65-97-63	dynamic	
172.16.72.198	4C-AE-A3-64-8C-5D	dynamic	
224.0.0.2	01-00-0E-00-00-02	static	
224.0.0.22	01-00-5E-00-00-16	static	

2) > hostname :

output:

DESKTOP-CO1BH7D

3) > ipconfig /all

OUTPUT:

windows IP configuration:

Host name : desktop-c01bh7d

primary Dns suffix :

Node Type : Hybrid

Ethernet adapter Ethernet 3:

Media state : Media disconnected

connection-specific DNS suffix :

Description : Intel(R) Ethernet connection (17)
I219-LM.

physical address : 20-88-10-86-45-ED

DHCP enabled : yes.

Autoconfiguration enabled . . . : yes.

4) > nbstat -a

↳ nbstat -a hostname
↳ desktop.

OUTPUT :

Ethernet 3:

Node IPAddress : [0.0.0.0] scope Id : []

Host not found.

Wi-Fi 2:

Node IPAddress : [172.16.75.30] scope Id : []

NetBIOS Remote Machine Name table

name	Type	status
Desktop-COIRHED	UNIQUE	Registered.
<00>		

MAC address : 4C-82-A9-78-8B-49

Local Area connection *13:

Node IPAddress : [0.0.0.0] scope Id : []

Host not found.

5) > netstat

OUTPUT:

Active connections:

proto	Local address	Foreign add.	state
TCP	127.0.0.1:49678	Desktop-1018H7D:49679	established
TCP	127.0.0.1:49679	":49678	"
TCP	127.0.0.1:49680	":49681	"

6) > nslookup

command:

Output:

Default server: unknown

Address: 172.16.72.1

> www.google.com

server: unknown

Address: 172.16.72.1

Non-authoritative answer:

Address: 2404:6800:4007:81e3:2004
142.250.183.228

7) > pathping -n 172.16.72.1

OUTPUT:

tracing route to 172.16.72.1 over
a maximum of 30 hops

0 172.16.75.30

1 172.16.72.1

computing statistics for 25 seconds ...

source to here This Node/Link

Hop	RTT	lost/sent = PCT	Loss = PCT	Address
0			0%	172.16.72.1
1	4ms	0/100 = 0%	0%	172.16.72.1

Trace complete

8) > ping (hostname)

DESKTOP-101RHTD

OUTPUT:

Pinging DESKTOP-101RHTD [fe80::6cc9:7dd3:4521::c606]

with 32 byte of data:

packets : sent = 4 , Received 4 ,

lost = 0 (0% loss),

Minimum = 0ms , Maximum = 0ms ,

Avg = 0ms .

9) > route

> route print 157 *

OUTPUT:

Interface List

17 20 88 10 5b c5 ed - Intel (P) Ethernet

12 4e a9 78 00 6d - Microsoft Wi-Fi

10 42 a9 78 00 6d - Microsoft Wi-Fi

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Linux commands:

① ip addr show:

lo : <loopback, up, lower-up> mtu 65536
qdisc noqueue

state unknown group default qlen 1000

inet 127.0.0.1/8 scope host lo

inet6 ::1/128 scope host

② ifconfig

output:

enp2s0: flags = 4163 <UP, BROADCAST, RUNNING, MULTICAST> mtu 1500

inet 172.16.8.118 netmask 255.255.252.0
broadcast 172.16.11.255

inet6 fe80::f47:5b99:d9a0: prefixlen 64 scopeid 0x20
: <link>

Rx errors 0 dropped 37 overruns 0
frame 0.

lo : flags = 73 <UP, LOOPBACK, RUNNING>

mtu 65536
inet 127.0.0.1 netmask 255.0.0.0

inet6 ::1 prefixlen 128 scopeid 0x10 <host>

loop + xgene len ~~128~~ 1000 (local loopback)

③ > mtr google.com

OUTPUT:

localhost.localdomain (0.0.0.0)

keys: Help Display mode

Restart statistics Order of fields. quit

Host

1) 172.16.8.1

2) static - 41.229.249.49 - tataidc.co.in

3) 142.250.171.162

4) 142.251.227.215

5) 142.250.228.81

6) maa05s12-in-f14.1e100.net

④ > ping => ping google.com

OUTPUT:

64 bytes from maa05s12-in-f14.1e100.net:
icmp_seq=1 ttl=120

time = 8.26 ms

64 bytes from maa05s12-in-f14.1e100.net:
icmp_seq=2 ttl=120

time = 42.5 ms

64 bytes from maa05s12-in-f14.1e100.net

(142.250.67.46):

icmp_seq=3 ttl=120
time = 2.38 ms

⑤ tcp dump

> permission required.

i) Configuration of Ethernet connection by using nmcli

=> ① nmcli

OUTPUT:

↳ enp2s0: connected to new 802-3-e-
ethernet conn.

"realtek RTL8111/8168/8411 PCI Express
Gigabit ethernet controller"
ethernet (88169), 5D:9A:4C:34:D4:9E, hw
, mtu 1500

inet 4 172.16.8.118/22

↳ wlp3s0: connected to RECA4

"Qualcomm Atheros QCA9565/AR9565
wireless network Adapter"

wifi (ath9k), D4:6A:6A:83:32:6F

②

> nmcli connection show

OUTPUT:

Name	UUID	Type	Device
new 802-3-ethernet conn.	258f107b-370e- 42d5-904e- -947ac3c6d54	802-3- ethernet	enp2s0
RECA4		802-11- wireless	wlp3s0

② > nmcli connection show

OUTPUT:

Name	UUID	Type	Device
PECA4	bd76219c-9aeb-4ccf-b468- -c0b47c5efdc7	802-11- wireless	wlp3s0

② > nmcli connection add con-name <connect-name>
ifname <device-name>

↓ ↓
enp1s0 eniyan

OUTPUT:

→ successfully added.

⇒ to see output: nmcli connection show.

③ > nmcli connection delete eniyan.

OUTPUT:

successfully deleted

TO see ~~at~~ the devices: > nmcli connection show.

Question & Ans:

- 1) 'ping' command is used to find reachability
- 2) 'mtr < web address >' command is used to give details of hops taken by packet.
- 3) 'ip address show' command ~~is~~ shows the IP config.

4) 'netstat'

5) 'ifconfig'

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Result:

Thus the various network commands in

Linux and windows is studied.