

CS19541 - COMPUTER NETWORKS (LAB MANUAL)

AIM:

Study of various network commands used in
linux and windows.

Some Important Linux Networking Commands

1) ifconfig

& Basic Networking Commands:

ifconfig -a

Output: Interface:

Internet Address

192.168.186.40

192.168.186.255

192.168.186.231 - 0x10

Physical address dynamic/
22-5a-46-c9-4f-64 State

ff-ff-ff-ff-ff-ff state

2) hostname

DESKTOP-65BI4RR

3) ipconfig /all

HostName

Primary DNS Suffix

, DESKTOP-65BI4RR

Mixed

Node Type

IP Routing Enabled

? No

WINS Proxy Enabled

: No

4) nbtstat -a

Displays protocol statistics and current TCP/IP
connections using NBT.

NBTSTAT [[-a RemoteName] [-T IP address]
[-c] [-n]

[-r] [-R] [-RR] [-S] [-s] [-I] [Internal]

5) netstat

Active connections		Foreign Address	State
Proto	Local Address		
TCP	172.16.8.95:49680	20.198.119.143:https	Established
TCP	172.16.8.95:49688	223-11-215-26:https	closed_WAIT
TCP	172.16.8.95:49691	223-11-215-26:https	closed_WAIT

6) nslookup www.google.com

Server: Unknown

Address: 172.16.8.1

Non-authoritative answer:

Name: www.google.com

Address: 2404:6800:4007:81e::200f

(42.250.183.228)

7) pathping

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

8) ping www.facebook.com

Pinging star-mini.c10r.facebook.com

Pinging [157.240.192.35] with 32 bytes of data:

Reply from [157.240.192.35] bytes=32 time=3ms TTL=59

Reply from [157.240.192.35] bytes=32 time=3ms TTL=59

Reply from [157.240.192.35] bytes=32 time=3ms TTL=59

9) route

Manipulates network routing tables

ROUTE [-f] [-p] [-h | -6] command
[Mask netmask], [gateway], [METRIC metric]
[destination]
[RF interface]

LINUX NETWORKING COMMANDS

1) ip:

Usage: ip [options] OBJECT {COMMAND | HELP}

ip [-force] -batch filename

Ip address show

O/p:

1: lo: <loopback, No queueing discipline> mtu 65535

qdisc noqueue notake UNKNOWN group

inet 127.0.0.1/8 scope host brd

2: enp2s0: <Broadcast, Multicast> mtu 1500

inet 172.16.8.91/2 brd 172.16.11.255

Valid until forever, preferred if forever

2) ipconfig:

enp2s0: flags=4163 <UP,BROADCAST,RUNNING>

MULTICAST MTU 1500

inet 172.16.11.183 netmask 255.255.255.0

broadcast 172.16.11.255 intel igb-feno-dkde

rx 539, tx 336: 4b 6e qmtrixles 6tp

gropred 8820

<link>

			Time
3)	mito google.com	packets	0.2 - 01.09.00
	host	0.0% - 0.0%	
1	142.6.8.1	0.0% - 18.0.9	3.7. 01 69 - 6.3
2	142.250.171.62	0.0% - 18.2.5	2.4 1.999 1.0
3	142.251.227.215	0.0% - 78.3.7	3.8 2.8.21.2.9
4	142.250.228.81	0.0% - 1.7.1	

4) tcpdump -D

- 1. enp2s0 [Up, running]
- 2. any (pseudo-device that captures on all interfaces) [Up, running]
- 3. lo [Up, running, loopback]
- 4. wlp3s0
- 5. bluetooth or Bluetooth adapter number 0)

5) ping ⇒ ping google.com

64 bytes from maa0s512-in-flx.6.loo.net
Tcnp Seq = 1 tle = 120
Time = 8.26 ms

64 bytes from maa0s512-in-flx.6.loo.net
Tcnp Seq = 5 ms
Time = 42.8 ms

64 bytes from aa.c0s512-in-flx.6.loo.net
(142.250.62.46): Tcnp Seq = 1 tle = 120
Time = 2.38 ms

6) 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 (enp2s0), 80:9f:4c:24:d4:9e, no_mtu

inet4 172.16.8.118/22

↳ wlp520 : connected to RECA4

② nmcli connection show

Output :

Name	UUID	Type
New 802-3-ethernet	25ff-109f-370e	802-3-ethernet
cnn	4ed5-904e-	
RECA4	-947acecf154	802-11 wireless

Device
enp2s0
wlp520

③ nmcli connection show

Output:

Name	UUID	Type	Device
RECAF	bd76219c-99e6-4021-902f-fdca7aef705e	802-11	WSP380
		Wired	

④ >nmcli connection add con-name <connect.name>
If <id name <device name>

OUTPUT:

=> successfully added
=> to see output: nmcli connection show

⑤ nmcli connection delete enya

OUTPUT:

successfully deleted

To see the device: > nmcli connection show

Questions & Ans:

1) 'ping' command is used to find reachability

2) 'mtr <ip address>' command is used to give details of hops taken by packet

3) 'ifconfig' command shows the IP config.

4) 'net stat'

5) 'ipconfig'.

RESULT:

After the various network commands in
Linux and windows is studied.

Ques 9
27/8/24

TUT 00

Take following

various address items host as of

apply which address item ②

TUT 03

Host ip address

Windows host ip address

Windows host of few of known ip's

ip of few known hosts - windows host (c)

Linux ip host equal to windows

Windows known hosts of (s
ipno)