I N D E X

NAME : Gopinath . R   STD : III – CSE   SEC. : 'B'   ROLL NO. : 220701076

S.No.	Date	Title	Page No.	Teacher's Sign/ Remarks
1)	13.7.24	Study of various networking commands used in windows, linux		
2)	24.7.24	Study of different types of Network cables.		
3)	31.7.24	Study the packet tracer tool installation and user Interface – overview		

Practical - 1

Aim: study of various Network commands used in linux
and windows.

Basic Networking Commands:

① arp -a

output:

Interface : 172.16.75.28 0X13		Type
Internet address	physical address	
172.16.72.1	7C-5a-16-cf-be-A1	dynamic
172.16.72.133	4c-ae-a3-65-97-f3	dynamic
172.16.72.195	4c-ae-a3-64-fc-50	dynamic
224.0.0.2	01-00-5e-00-00-02	static
224.0.0.22	01-00-5e-00-00-16	static
239.0.0.8	01-00-5e-00-00-08	static

② hostname

O|P: DESKTOP - C01BH7D

③ ipconfig / all :

O|P:
    Windows IP configuration
        Host Name . . . . . : DESKTOP - C01BH7D

    primary Dns suffix ... :

    Ip Routing Enabled . . . . ✓ NO

    Node Type . . . . . . Hybrid

    WINS Proxy Enabled . . . . . NO

Ethernet adapter Ethernet 3:

    media state . . . . : media disconnected
    Connection - specific Dns Suffix :
    Description . . . . : Intel (R) Ethernet
                                   Connection (17) I219-4
    physical Address . . . . : 20-08-10- 86- C5-61

DHCP Enabled ....: Yes

Autoconfiguration Enabled ....: Yes

④ nbtstat -a :

o|p:

nbtstat -a DESKTOP-C01BH7D

Ethernet 3:

Node IPAddress:[0.0.0.0] Scope Id:[ ]

Host Not Found.

Bluetooth Network Connection 2:

Node IPAddress: [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-C01BH7D:49679	Establishe
TCP	127.0.0.1:49679	DESKTOP-C01BH7D:49678	Establish
TCP	142.16.75.28:62144	20.42.73.26:HHpS	Close_w
TCP	142.16.75.28:62150	a23-11-215-25:HHpS	close_w

⑥ nslookup www.google.com

o|p:

Server: Unknown

Address: 172.16.72.1

Non-authoritative answer:

Name: www.google.com

Addresses: 2404:6800:4067:81e::2004

142.250.183.228

④ PathPing -q DESKTOP-CO1BH7D

O|P:

Tracing route to 172.16.75.28 over maximum of
0   172.16.75.28   30 hops:
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
0				Desktop-CO1BH7D [172.16.75.28]
			0/100 = 0%	
1	0ms	0/100 = 0%	0/100 = 0%	Desktop-CO1BH7D [172.16.75.28]

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=243ms
                                              TTL=55

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

Reply from 162.255.199.253: bytes=32 time=254ms
                                              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 = 243ms, Maximum = 317 ms, Average = 269 ms.

⑦ Pathping -g DESKTOP-COIBHTD

O|P:
Tracing route to 172.16.75.28 over 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
0	--			Desktop-COIBHTD [172.16.75.28]
			0/ 100 = 0%	
1	0ms	0/100 = 0%	0/100 = 0%	Desktop-COIBHTD [172.16.75.28]

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=243ms TTL=55
Reply from 162.255.119.253: bytes=32 time=317ms TTL=55
Reply from 162.255.199.253: bytes=32 time=254ms 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 ms.

⑨ Route - print 157*

O/P:

Interface List

18...20 88 10 86 c5 61 .... Intel (R) Ethernet Connection ㄷ
                                          I 219- LM

18 ... Ae 82 a9 7a 1f a5 ..... Microsoft wi-fi Direct
                                    Virtual Adapter #5

IPv4 Route table
_ _ _ _ _ _ _ _ _ _ _

Active Routes :
    None
Persistent Routes:
    None

IPv6 Route Table

Active Routes:
    None
Persistent Routes:
    None

20/7/24   For linux :

① arp -a
   O/P: gateway (172.16.8.1) at 7c:5a:1c:cf:be:45
   [ether] on enp2s0.

② hostname
   O/P: localhost. localdomain

③ Ifconfig
   O/P:
   enp2s0:   flags = 4163 <UP, BROADCAST, RUNNING, MULTICAST>
             mtu 1500
   inet 172.16.8.109 netmask 255.255.252.0
   broadcast 172.16.11.255 inet6 fo80::a666:9d44:7c9c:

For <linux>:

(3) prefixlen 64 scopeid 0x20 <link>
ether b0 : 9a : 4c : 34 : d4 : 99 txqueuelen 1000 (ethernet)
RX packets 244436 bytes 111606492 (106.4 MiB)
RX errors 0 dropped 31 overruns 0 frame 0.

(4) ip
o/p:
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 }

→ ip route get 127.0.0.1/8
o/p:
    local 127.0.0.1 dev lo src 127.0.0.1 uid 1000
    cache <local>

(5) mtr www.google.com
o/p:

My trace route [v0.87]

local host. localdomain (0.0.0.0)   pings

Keys Host		Loss %	Packets Snt	Last	Avg	Best	worst	Std Dev
1. 172.16.8.1		0.0%	52	0.3	0.4	0.2 5.3		0.6
2. static - 41.229. 249.49-tataidc.co.in		0.0%	48	3.4	7.3	2.5 21.6		3.3

(6) tcpdump - D

o/p:
1. enp2s0 [UP, RUNNING]
2. any (pseudo - device that captures on all interfaces)
3. wlp3s0 [UP]
4. bluetooth 0 (Bluetooth adapter number 0)
5. lo [loopback].

HR

④ Ping google.com

o|p:

PING google.com (142.250.67.46) 56(84) bytes of data

64 bytes from maa05s12-in-f14-le100.net (142.250.67.46)
icmp-seq=1 ttl=120 time=2.39 ms

64 bytes from maa05s12-in-f14-le100.net (142.250.67.46):
icmp-seq=2 ttl=120 time=3.09 ms

^c

- google.com ping statistics -

18 packets transmitted, 17 received, 5% packet loss,
time 17076 ms.

rtt min/avg/max/mdev = 2.245/5.724/18.860/5.159 ms

Configuring an <u>Ethernet Connection</u> by using nmcli:

① nmcli connection show

NAME	VUID	TYPE	DEVICE
New 802-3-ethernet Connection	d94979 03-3a15-4730-8cca-37ed21928c59	802-3-ethernet	enp2s0

② ip route show default

o|p:

default via 142.16.8.1 dev enp2s0 proto static metric 100

172.16.8.0/22 dev enp2s0 proto kernel scope link

Src 142.16.8.109 metric 100

③ cat /etc/resolv.conf

o|p:

Generated by Network Manager

nameserver 142.16.8.1

RESULT:

thus the basic commands are executed and observed in windows and linux.