

I N D E X

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Expt. no : 01

Date : 16/07/24 8:00 AM - ROTTNER - No - 2023-24-3

Practical - 01

Aim : Study of various command used in Linux and windows

Basic networking command in windows

1) arps -a

Interface : 192.168.26.1 - - - 0x0

Internet Address	Physical Address	Type
192.168.26.254	00-50-56-F9-b6-27	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-00-00-fc	static
239.255.255.250	01-00-5e-7b-ff-fa	static
255.255.255.255	FF-FF-FF-FF-FF-FF	static

2) hostname

Desktop DESKTOP-ATIULDS

3) ipconfig /all

windows IP configuration

Host Name : DESKTOP - ATIULDS

Primary Dns Suffix :

Node Type : Mixed

IP Routing Enabled : NO

WINS Proxy Enabled : NO

Kernel 3.2.0 - 64 bit - Windows

Processor Power : Intel i5-4210U

4) nbtstat -a

nbtstat -a DESKTOP-ATIULD8

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

8) Ping

Ping

wi

Rejs

Rejs

Rejs

P

A

mi

9) Ror

Int

18

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1

0

5) netstat

Active communication

proto	Local Address	Foreign Address	state
TCP	127.0.0.1:49678	DESKTOP-ATIULD8:49678	ESTABLISHED
TCP	127.0.0.1:49679	DESKTOP-ATIULD8:49678	ESTABLISHED
TCP	172.16.75.28.62144	20.42.73.26:14343	CLOSE_WAIT
TCP	172.16.75.28.62150	a23-11-215-25:443	CLOSE_WAIT

6) nslookup www.google.com

Server: Unknown

Address: 172.16.72.1

Non-authoritative answer

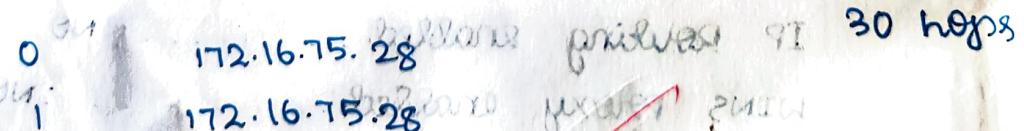
Name: www.google.com

Address: 2404:6800:4807:8f0:2004

142.250.163.228

7) PathPing -g

Tracing route to 172.16.75.28 over maximum of 30 hops



Computing statistics over 25 seconds.

Source to here this/ node / Link

HOP	RTT	Lost/Sent = Pct	Lost/Sent = Pct
0	0/100 = 0%	Desktop - ATIULD8	address [172.16.75.28]

10ms $0/100 = 0\%$. $0/100 = 0\%$.

Desktop - BTU [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=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=254 ms
TTL=55

Ping statistics for 162.255.119.253

Packets: sent=4, received=4, loss=0(0% loss),

Approximate round trip times in milliseconds:

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

9) Route

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 virtual adapter #5

IPv4 Route table

Active routes

none

Persistent routes

none

IPv6 Route Table

Active routes:

none

1. ip

a) ip address show

1: lo : <LOOPBACK, UP, LOWER_UP> mtu 65536

qdisc noqueue state unknown 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

inet ::1/128 scope host

valid_lft forever preferred_lft forever

2. enp2s0: <BROADCAST, MULTICAST, UP, LOWER_UP>

mtu 1500 qdisc fq-codel state UP group

link/ether 50:9a:4c:34:d4:be brd

ff:ff:ff:ff:ff:ff

inet 172.16.8.110/22 brd 172.16.11.255 scope

global enp2s0

inet fe80::2f80:ca60:e4b0:731a/64 scope

valid_lft forever preferred_lft forever

3. wlp3s0: <BROADCAST, MULTICAST> mtu

1500 qdisc noqdisc state DOWN group default

glen

link/ether ea:20:7a:c4:09:29 brd

ff:ff:ff:ff:ff:ff

2. ifconfig

enp2s0: flags = 4163 (UP, BROADCAST, RUNNING, MULTICAST)

mtu 1500

inet 172.16.8.110 netmask 255.255.252.0

broadcast 172.16.11.255

inet6 fe80::2f80:ca60:e4b0:731a

prefixlen 64 scopeid 0x202 link

ether 50:9a:4c:34:d4:be txqueuelen 1000
 (Ethernet)
 RX packets 232050 bytes 31667486 (30.2 MiB)
 Rx errors 0 dropped 179 overruns 0 frame 0
 TX packets 8690 bytes 1196846 (1.1 MiB)
 TX errors 1 dropped 0 overruns 0 carrier 0
 collisions 0

10: flags = T3 UP, LOOPBACK, RUNNING > mtu 65536
 inet 127.0.0.1 netmask 255.0.0.0
 inet6 ::1 prefixlen 128 scopeid 0x10<host>
 loop txqueuelen 1000 (Local Loopback)
 RX packets 975 bytes 99557 (97.2 KiB)
 RX errors 0 dropped 0 overruns 0 frame 0
 TX packets 975 bytes 99557 (97.2 KiB)
 TX errors 0 dropped 0 overruns 0 carrier 0

3. Mtr

My traceroute [v0.87]

localhost, localdomain (127.0.0.1)

Keys : Help, Display mode, Restart, Statistics

Order of fields quit

Hops

1. ::1

Packets

	Loss%	Snt	Last	Avg	Best	Worst
0.0%	149	0.1	0.1	0.0	0.2	

Pings

MULTICAST>

4) Ping

Ping www.google.com

64 bytes from mca05512-in-b14. le 100.net
: iemp - seq = 1 ; time = 8.26 ms

64 bytes from mca0512-in-b14. le 100.net : iemp
- seq = 2 ttl = 120 time = 42.5 ms

64 bytes from mca05512-in-b14. le 100.net
(142.250.67.46) iemp - seq = 3

5) Acpdump

dnf install -y tcpdump

Package tcpdump-14.4.9-0-2-8226.i826 is already installed, completed

dcp dump -D

1. enp2s0 [up, running]
2. wcp350 [up]

tcpdump -i enp2s0

10:38:21.937811 ARP, request who has 172.16.11.28 tell 172.16.9.18 2, length 46

10:38:21.959532 PP local host. local domain, 39760 > gateway domain : 9299 PTR 228.11.16.172. 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 N * domain & 0/0/0 (42)

#tcpdump -i eth0 -c 10 host 8.8.8.8
listening on enp2s0, link-type EN10MB (Ethernet),
capture size 262144 bytes

#tcpdump -i eth0 src host 8.8.8.8

#tcpdump -i eth0 dst host 8.8.8.8

capture network to and from a network.

#tcpdump -i enp2s0 net 10.1.0.0 mask 255.255.255.0

#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 -G 10 host www.google.com
and port 443

#tcpdump -i enp2s0 port not 53 and not 25

11:03:21.310.111 IP 172.119.18.1.55172 > 239.255.255.258
ssdp:discover, length 175

configuration an ethernet connection by using nmcli procedure.

1) # nmcli connection show

Device	UUID
new 802-3 - 3 - ethernet	TCC864 a4-1c4c-49b2-a0b5 0f4 b0c2d058d

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"

IPv4 method auto

nmcli connection modify "wired connection"

IPv4 method manual IPv4 address

5) Configure IPv6 settings:

nmcli connection modify "wired connection"

IPv4.method auto

Verification:-

1) ip address show enp250

enp250: ~~K~~ BROADCAST, MULTICAST, UP, LOWERUP, mtu 1500 qdisc fq-codel state UP group default
link/ether 50:9a:2c:34:d4:b4 brd ff:ff:ff:ff:ff:ff

qdisc 1000

using
4962-a0bb.
et
tion!"
ction"
connection,"
IPSmru
default
1000

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

Traffic Diags: 0 bytes received
0 bytes sent 0 errors
0 bytes dropped by network
0 bytes to queue port 80
0 bytes clearing buffers
0 bytes retransmits
0 bytes retransmissions
0 bytes discarded
0 bytes errors *
maxdelay (3ms)
latency
no drops reported
0 bytes

0 bytes dropped
0 bytes sent
0 bytes received
0 bytes to queue port 80
0 bytes clearing buffers
0 bytes retransmits
0 bytes retransmissions
0 bytes discarded
0 bytes errors *
maxdelay (3ms)
latency
no drops reported
0 bytes

Result:
16/9/24

Thus the study of various network commands used in linux and windows is successful