

EXP No: 2 | study of Linux Networking  
DATE: 14/7/2021 | commands

Aim:

The study of Linux Networking  
commands

1. Show IP address

\$ ip address show

wlp2s0

inet 172.16.75.11/21

inet6 fe80::2726:b845 abab af25/4

2. Add on IP address

\$ sudo ip address add 192.168.1.254/24

dev wlp2s0 & TNET DNK Answer: File

Exists

3. Delete on IP :

\$ sudo ip address del 192.168.1.254/24

dev wlp2s0

4. Bring interface up

\$ sudo ip link set wlp2s0 up

5. Bring interface down

\$ sudo ip link set wlp2s0 down

6. Enable Promiscuous mode

\$ sudo ip link set wlp2s0 promisc on

7. Add default route

\$ sudo ip address add 192.168.1.254/24  
dev wlp2s0.

\$ sudo ip route add default via 192.168.1.254  
dev wlp2s0.

8. Add a route to 192.168.1.0/24 via  
gateway 192.168.1.259

\$ sudo ip route add 192.168.1.0/24 via  
192.168.1.259

9. Add a route to 192.168.1.0/24 reachable  
on device wlp2s0

\$ sudo ip route add 192.168.1.0/24  
dev wlp2s0.

10. Delete route for 192.168.1.0/24 via gateway  
192.168.1.254.

\$ sudo ip route delete 192.168.1.0/24  
via 192.168.1.254.

11. Display route taken to IP 10.10.1.4

\$ ip route get 10.10.1.4  
10.10.1.4 via 172.16.72.1 dev wlp2s0  
src 172.16.75.17 uid 1000 cache.

## 12) Ifconfig

\$ if config

wlp250 : flags : 4163 < up, broadcast,  
running, multicast > mba 150

inet 172.16.75.17 netmask 255.255.248.0  
broadcast 172.16.19.255

ether AC:82:09:77:ff:19 txqueuelen  
1000 (ethernet)

RX packets 126870 bytes 70.4 MiB

dropped 422

TX packets 24436 bytes 11.3 MiB

## 13) mtr google.com

Mask

Packets

1. IN 115.245.95.249

0.0.1 3.8 12.3 2.6 50

2. VS 72.14.217.252

0.0.1 6.5 15.5 5.9 25

## 14) mtr -b google.com

a)

172.16.12.122 (172.16.12.22)

Packets snt last avg best

172.16.12.122 (172.16.2.122)

0.0.1 83 6.2 14.2 58

0.0.1 84 6.4 82.0 5.8

15) b) show numeric IP address

mtr-g google.com

c) show the numeric IP address and hostnames, too:

mtr-b google.com

d) set the number of pings

mtr-c 10 google.com

16) tcpdump : It is designed for capturing and displaying packets.

a) tcpdump -i enps31f6

This command captures the traffic on enps31f6

output: dropped priors to tcpdump

tcpdump: verbose output suppressed,  
use -v[v]..... for full protocol decode.  
listening on enps31f6, link-type EN10MB[  
ethernet], snapshot length 26144 bytes,  
23:15:48.819999, request who has

[lmas-ay-nft6]

b) tcpdump -i enps31f6 -c 10 host 8.8.8.8 :

output:

dropped priors to tcpdump.

tcpdump: verbose output suppressed, use -v[v]

for full protocol decode.

listening on enps31f6, link-type EN10MIS  
(Ethernet), snapshot length: 26214 bytes.

- 0 packets captured
- 0 packets received by filter
- 0 packets dropped by kernel.

c) tcpdump i enps31f6 net 10.1.0.0  
mask 255.255.255.0 +

output: dropped privs to tcpdump  
tcpdump: Verbose output suppressed, use -v  
for full protocol decode.  
listening on enps31f6, link-type EN10MB  
(Ethernet).

0 packets captured.

0 packets received by filter.

d) tcpdump -i enps31f6 port 53:

output: dropped privs to tcpdump

tcpdump: verbose output suppressed,  
use -v[V].... for full protocol decode

6 packets captured.

0 received by filter.

(F) Ping: It is used to troubleshoot connectivity, reachability and name resolution.

ping google.com.

Output: PING google.com (142.253.221.28) 56(34) bytes of data.

from fedora (192.168.8.294) icmp- seq=1  
Destination host unreachable.

from fedora (192.168.1.294) icmp- seq=2  
Destination host unreachable.

Student observation:

1. Which command is used to find the reachability of a host machine from your device?

Ping <hostname or IP address>

Ex: ping google.com.

2. Which command will give the details of hops taken by a packet to reach its destination?

mtr <hostname>

Ex mtr google.com.

3. Which command displays the IP configuration display of your machine?

On Linux : ipconfig or ipaddr

On windows : ipconfig

Ex : ipconfig  
ipaddress show.

4. Which command displays the TCP port status on your machine?

On linux: netstat

Ex netstat -an

5. Write how to modify the IP configuration in a Linux Machine.

to add : sudo ip address add 192.168.1.100/24  
dev ens031f6.

to delete : ip address del 192.168.1.100/24  
dev ens031f6

Result :-

Networking and Linux commands  
are executed successfully.

On 27/7/20