

STUDY OF VARIOUS NETWORK COMMANDS USED IN

LINUX AND WINDOWS

AIM:-

Study of various Network commands used in Linux and windows.

BASIC NETWORK COMMANDS

1) arp -a :-

Arp is short form of address resolution protocol. Shows IP address of your computer along with IP addresses of your router.

OUTPUT:-

Interface: 172.16.8.87 --- OX10

Internet Address	Physical Address	Type
172.16.8.1	7C-5A-1C-CF-BE-A5	Dynamic
172.16.8.88	5D-99-4C-35-12-26	Dynamic
172.16.11.255	ff-ff-ff-ff-ff-ff	Static

2) hostname - name of your computer.

OUTPUT:-

DESKTOP - LDMVTDN

3) ipconfig / all - detailed configuration information about your TCP/IP connection.

OUTPUT:-

Windows IP Configuration

Host Name : DESKTOP - LDMVTDN.

Primary DNS Suffix :

Node Type : Hybrid.

IP Routing Enabled : No.

WINS Proxy Enabled : No.

- A). nbtstat -a -- displays protocol statistics and current TCP/IP connections using NBT.

OUTPUT:-

NBTSTAT [[-a Remote Name] [-A IP address] [-c]
[-n] [-r] [-R] [-RR] [-S] [-s]
[interval]]

-a [adapter status] lists the remote machines name table given its name.

- 5) netstat -rn: Used to run network statistics

OUTPUT:-

Interface List

1b ... 50 : 99 AC 3f : d6 : 63 Realtek PCIe GbE
: family controller.

IPv4 Route Table

Active Router

Persistent Router

IPv6 Route Table

- 6). nslookup domain name - to perform DNS lookup

OUTPUT:-

C:\Users\REC> nslookup www.google.com

Server: Unknown

Address: 172.16.8.1

Non-authoritative answer:

Name: www.google.com

Address: 2A0A:6800:4007:812::2004

1A2.250.183.228

7) Ping :- [Packet Internet Prototype] - test connectivity b/w 2 nodes.

OUTPUT :-

C:\Users\REC > Ping 172.16.8.87
pinging 172.16.8.87 with 32 bytes of data:
Reply from 172.16.8.87: bytes = 32 time < 1ms TTL = 128
:
Ping statistics for 172.16.8.87:

Packets: sent = 4, Received = 4, lost = 0 (0% loss)

Approximate round trip times in milli-seconds:

min = 0 ms, max = 0 ms, Average = 0 ms.

8) Path Ping :- unique to windows - combinations of Ping and Tracert.

OUTPUT :-

C:\Users\REC > Pathping 172.16.8.87.

Tracing route to Desktop-Ldmvtdn [172.16.8.87]

over a maximum of 30 hops:

0 DESKTOP = LDMVTDN [172.16.8.87]

1 DESKTOP = LDMVTDN [172.16.8.87]

Computing statistics for 25 seconds.....

9) route :- used to modify / display routing info.

OUTPUT :-

C:\Users\REC > route PRINT

Interface List....

IPV4 Route Table

Active Routes

Network Destination Network Gateway Interface Metric.

Persistent Routes:

EXR NO:- 02 LINUX NETWORKING COMMANDS.

IP Command:

IP address show.

It shows the IP address assigned to an interface on your server.

OUTPUT:-

1. Co <LOOPBACK - , UP, LOWER_UP>

Phet 127.0.0.1/0 scope host to.

2. Cm250: <BROADCAST, MULTICAST, 1500 q disc>

Net 172.16.8.118/22 brd 172.16.11.255

3. Wrn 380 : <BROADCAST MULTICAST, LOWER_UP>

Phet 172.16.11.53/22 brd 172.16.11.255 scope

ip address add 192.168.1.254/24 dev em0 280:

to delete IP to an interface.

ip link set eth0 up

Alter the Interface status by bringing eth0 online

ip link set eth0 down

Alter the Interface status by bringing eth0 down

ip route add 192.168.1.0/24 via 192.168.1.254

to add a route via the gateway at

192.168.1.254 ip route add 192.168.1.0/24 that can be reached on device eth0.

ip route get 10.10.1.4

Output: 10.10.1.4 via 172.16.8.1 dev em0 280.

Now 172.16.8.118 will cache.

Enter Command:

Enter Google.com

It shows the statistics, including such loop with carry and loss%.

OUTPUT:-

1. Host, 1. 172.16.8.1
2. Statistic 41. 229.99
3. 142.251.227.127.

ntr-b google.com

It shows the numeric to address instead of hostnames.

OUTPUT:-

IP localhost, localdomain (0.0.0.0)

Host ip address:

1. 172.16.8.1
2. 142.250.171.162
3. 142.251.227.217

ntr-c 10 google.com

It sets the number of pings that you want to send.

tcpdump -S:

Before starting any capture, you need to know which interfaces tcpdump can use, you will need "sudo" or have root access.

OUTPUT:-

1. enp 280 [up, Running]
2. wlp 380 [up, Running]
3. any (pseudo device that optimizes on all interfaces..)

tcpdump -i enp280 8970 host 8.8.8.8...

OUTPUT:-

tcpdump: use -n or -v for full protocol decode listening on enp280, link type EN105, capture size at 262144 Bytes
tcpdump -i enp280 port 53.

OUTPUT:-

Listening on enp280; Link-type EN10B (ethernet); capture size at 2144 Bytes
ping -c 10 google.com.

It is a tool that verifies IP-level connectivity to another TCP/IP computer by sending interest control message protocol.

OUTPUT 8:-

64 bytes from maa05 s10 in - 114 -
[216. 58. 200. 142]; pcmp-req = 1 + 11 = 120,
fore = 82.3m packets transmitted, a received, 10% packet loss.

ping - google.com

OUTPUT 8:-

64 bytes from maa905 s10 - in - f14 - 12100.1st
(216. 58. 200. 142).

2 Cmp - req = 2, $t_{12} = 120$, time = 78.9 ms

5 packets transmitted, 4 received, 20% packet loss.

tc dump -e eth 0 port not 53 and not 25

It capture all port except port 53 & 25

IP local host - local domain 58119 > gateway.

domain . 4b77 - A? what
google.com .

7 packets captured

8 packets received by filter

1 packet dropped by kernel if config command

if config command :-

It is a tool for configuring and trouble shooting networks. It has since been replaced by the ip command.

ifconfig -a → Shows the ip address

ip config eth 0 up → shows the link set to eth 0 up

ip config eth 0 down → shows the link set to eth 0 down

1) # nmcli connection show

OUTPUT -

New 802-3- ethernet connection 7d45 b/ce

- 1899 - 4248 - 864a - 0scwbac 7eba 862-3 - eth0
LPP 280.

nmcli connection show "New 802-3- ethernet connection"

ipv4 method auto

connection.id : New 802-3- ethernet connection

connection.readonly : user - student

connection.gateway.ping.timeout : 0

connection.method : unknown

nmcli connection show "New 802-3- ethernet Connection"

connection.id : New 802-3- ethernet Connection

connection.autosconnect : yes

connection.slaves : ---

connection - autosconnect - slaves : 1

nmcli connection show "New 802-3- ethernet Connection"

connection.interface-name : enp280

connection.id : New 802-3- ethernet connection

connection. id: 25ff109f - 370e - 42d5 - 904e

connection. interface-name: enp280

connection. readonly: no

n-mcl connection add con-name "New

802-3-> ethernet connection"

ifname enp280 type ethernet.

connection "New 802-3-ethernet-connection"

successfully added.

✓ ✓ ✓ ✓ ✓ ✓

IP address assigned

IPV4 address assigned

IPV6 address assigned