

EXP NO 1 Study of various network commands used ①
10/07/25 In Linux and Windows

1 arp -a

O/P:

Interface : 172.16.10.46 -- 0x4

Internet Address

172.16.8.1

Physical Address

7c-5a-1c-cf-be-45

Type

dynamic

2 Hostname

O/P:

-iop

3 ipconfig all

O/P:

Windows IP configuration

Hostname --- iop

Ethernet adapter ethernet :

Description --- : intel (R)

I219-V

Physical Address : P8-BB-C1-C5-CC-20

4 nbtstat -2

Displays protocol statistics and current

TCP / IP connections using NBT

5 netstat

Active

Connections

Proto

Local Address

Foreign Address

FCP

172.16.10.46: 4913

4.213.25.240: https

TCP

172.16.10.46: 49694

428.202-229-22: https

State

ESTABLISHED

CLOSED

6 netstat -r

Interface list

4... d8

b8c1c59c20 .. Intel (R) Ethernet controller

14... 0a

002700000c - virtual box host only

7 Pathping

usage : pathping [-ghost -ixt]

[-h max-hops] [-? address]

[-b period] [-qnum - querier]

[-w timeout] target_name.

8 ping

usage : ping [-t] [-a] [-n count]

[-l size] [-f]

9 route

manipulate network routing tables

Route [-f] [-P] [-4] [-6] command

P destination

10 nslookup

Default Server : unknown

Address : 172.16.3.1

1. `ip`

one of the basic commands every administrator will need in daily work. The `ip` command can show address information, manipulate routing plus display network various devices, interfaces and tunnels.

`ip <options> <command> <object>`

- a) To Show IP address assigned to an interface of your Server:

a. [root @ server] # `ip address show`

- b) To delete an IP on an interface:

a. [root @ server] # `ip address del`

192.168.1.254 dev ens3

- c) To display routes taken for IP 10.10.1.4

[root @ server] # `ip route get 10.10.1.4`

2. `ifconfig`

The `ifconfig` command is a staple in many

Sysadmin's tool belt for configuring and

trouble shooting networks, replaced by `ip` command

discussed above.

3. mtr

MTR [Matt's trace route] is a program with a command line interface that serves as a network diagnostic and troubleshooting tool. If you see a sudden increase in response time or packet loss, then obviously there is a bad link somewhere.

Syntax

mtr <options> hostname / IP

- a) Show the numeric IP addresses and hostnames, too.

[root @ Server no] # mtr - b google.com

- b) Set the no. of flags that you want to send:

[root @ Server no] # mtr - C 10 google.com

4. tcpdump

designed for capturing and displaying packages.

You can install tcpdump with the command below:

[root @ Server no] # dnf install -y tcpdump

- Capture traffic to and from one host:

for traffic to and from 8.8.8.8, we:

[root @ Server no] # tcpdump -i eth0 src host 8.8.8.8

- Capture traffic to or from port numbers:

Capture only DNS port 53 traffic:

[root @ server no] # tcpdump -i eth0 . net

10.1.0.0 mask 255.255.255.0.

- Capture traffic to or from port numbers:

Capture only DNS port 53 traffic:

[root @ server no] # tcp -i eth0 port 53

for specific host,

[root @ server no] # tcpdump -i eth0 host

8.8.8.8 and port 53.

5 Ping

Ping is a tool that verifies IP-level connectivity used to troubleshoot connectivity, reachability and name resolution.

[root @ server no] # ping google.com

64 bytes from 8.8.8.8 2.827.1000.net 1216.53.206.
174

$$\text{PCH-SG} = 1 \quad \text{ttl} = 56 = 10.7 \text{ ms}$$

You may need to stop the ping commands by pressing CTRL + C.

RESULT:

The commands are executed successfully.