

study of Various Network command used in Linux and Windows

AIM:-

To study of various Network commands used in Linux and windows.

Basic Networking commands:

arp -a:

ARP is address resolution protocol, It show IP address of your computer along IP address and MAC address your router.

hostname:

This simplest of all TCP/IP commands. It simply display name of your computer.

nbtstat -a:

helps problem solving problem with netBIOS name resolution

Pathping:

combination of Ping and tracert commands pathping tracing the route to destination address after launch 125 second . gather stats of data loss.

Ping:

testing connectivity between two nodes. Ping ICMP to communicate to other devices

1. # ping hostname
2. # ping ip address.

Route :-

route command is used to show IP routing table.
It primarily used setup routes specific host.

Some important Linux networking commands.

1. ip

IP Command basic every admin will need in daily work, from setting up new system and assign IPs to troubleshooting existing systems. The ip command shows address info, plus display network, interface, and tunnels.

ip <options> <object> <command>

a. to show IP address assign your servers.

a. # ip address show

b. to assign IP interface

a. # ip address add 192.168.1.254 dev eth0

c. To delete an IP on an interface by bring interface eth0 online.

a. # ip link set eth0 up.

d. After status interface bring enabling mode eth0

a. # ip link set eth0 promisc up.

e. Display route taken 192.168.1.4

a. # ip route get 192.168.1.4

5. add a route to 192.168.1.0 can be reached via device eth0

ip route add 192.168.1.0.24 dev eth0

2. ifconfig

staple many sysadmin tool belt for config
trouble shoot network - replaces ip command.

3. mtr

(Matt's traceroute) is cli that serves as network
diagnose & trouble shoot tool. command contains ping
and traceroute command. mtr has statistics about
each hop, such as response time and percentage.
sudden increase in packet loss is bad link.

Syntax :-

mtr <options> hostnames/IP

a. mtr to show statistics, including each hop with
time and loss %.

mtr google.com

b. show IP address numbers

✓ # mtr -g google.com

c. set no. of ping that you want to send

mtr -c 10 google.com

4. tcpdump

The tcpdump command is design for capturing & displaying packets -

You can install tcpdump with command below:

```
# apt install -y tcpdump
```

if you want to capture traffic on eth0, can initiate that tcpdump -i eth0 sample

Output:

```
# tcpdump -i eth0
```

```
# tcpdump -i eth0 -c 10
```

Captures traffic to and from one host

for traffic coming from 8.8.8.8, use:

```
# tcpdump -i eth0 src host 8.8.8.8
```

for out bound traffic going to 8.8.8.8 use:

```
# tcpdump -i eth0 dst host 8.8.8.8
```

for specific host,

```
# tcpdump -i eth0 port 53
```

~~To capture only https traffic~~

```
# tcpdump -i eth0 -c 10 host www.google.com  
and port 443.
```

Ping

A tool verifies IP-level connectivity to another TCP/IP computer by sending ICMP Echo request message. echo displayed along round trip times. ping is TCP/IP command used to troubleshoot connectivity, reachability & name.

ping google.com

PING google.com (216.58.206.174) 36(84) bytes
64 bytes from 8a02527-1nf 14.16100.net [216.58.206]
icmp - seq = 1 ttl = 56 time = 10.7ms
64 bytes from 14.16100.net [216.58.206.174]
icmp - seq = 2 ttl = 56 time = 10.2ms

(Ethernet)

Configuring network connection by using nmcli

1. # nmcli connection show

Name	UUID	Type	device
wired connection 1.	a56790-1120-336	ethernet	enp13s0

2. Config IPv4 setting

nmcli connection modify "wired connection 1" ipv4.method auto

3. Config IPv4 setting

nmcli connection modify "wired connection 1" ipv6.method auto

6 Activate the profile

mstc connection up Internet-LAN
verification:

1. #ip address show enp150

(display IP setting of NIC)

2. #ip route show default

(Display IPv4 default gateway)

3. #ip -6 route show default

(Display IPv6 default gateway)

4. # cat /etc/hosts.conf

(Display DNS setting)

5. # ping <host-name - or - ip-address>

(to verify that host can send
packet to other host).

Result:

Hence all basic commands are executed