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Study of various network commands used in Linux and windows

Aim:

To study various networking commands used in linux and windows

Basic networking commands:

1 arp -a:

ARP is short form of address resolution protocol. It will show the IP address of your computer along with IP address and MAC address of your router.

output:

Interface: 192.168.29.99 --- 0x9

Internet address	Physical address	Type
192.168.29.1	0a-cb-05-2a-b3-01	dynamic
192.168.29.255	ff-ff-ff-ff-ff-ff	static

2. hostname:

This is the simplest of all TCP/IP commands. It simply displays the name of the computer.

output:

DESKTOP-09

3. ipconfig /all:

This command displays detailed configuration information about your TCP/IP connection including router, gateway, DNS, DHCP and type of ethernet adapter in your system.

output:

windows IP configuration

Host name . . . . . :

Primary DNS suffix . . . . . :

Node type . . . . . : Mixed

IP routing enabled . . . . . : No

WINS proxy enabled . . . . . : No

unknown adapter

4. Nbtstat -a

Display protocol statistics and current TCP/IP connection using NBT (NetBIOS over TCP/IP)

5. net stat

Active connections

Proto	Local address	Foreign address	State
TCP	127.0.0.1:49672	DESKTOP-HSADBVG	ESTABLISHED

6. nslookup

Default Server : unknown

Address : 172.16.72.1

7) Path Ping

Usage : path ping [-g host-list] [-n maximum-hops] [-i address] [-n] [-p period] [-q num-queries] [-w timeout]

8) Route

Command is used to show manipulate the IP routing table. It is primarily used to set up static route to specific host or networks used an interface

Linux :

1. ip :

command is one of the basic commands every administration will need in daily work

ip <OPTIONS> <OBJECT> <COMMANDS>

a) [root @ server] # ip address show

b) [root @ Server] # ip address add 192.168

c) [root @ Server] # ip address add 192.168.1.258

d) [root @ Serva] # ip link set ens90s eth0

e) [root @ Server] # ip link eth0 up

f) [root@server]# ip link eth0 Promisc on

g) [root@server]# ip route add default via 192.168.1.254 dev

h) [root@server]# ip route add 192.168.1.0/24 via 192.168.1.254

i) [root@server]# ip route [delete 192.168.1.10] via 192.168.1.1.254

j) [root@server]# ip route get 10.10.1.4

2. if config

command was is a staple in many Sysadmin's tool best for configuring and trouble shooting network. It has since been

3. mtr:

It a program with command. line interface that source vs a network diagnostic and trouble shooting tool.

syntax of command:

mtr <options> hostname/IP

a. [root@server n]# mtr.google.com

b. [root@server n]# mtr.google.com

c. [root @server] # google.com

d. [root @ server] # -c 10 google.com

4. tcp dump

The tcpdump command is designed for capturing and displaying packets!

a) [root@server ~] # install -y tcpdump

b) [root@server ~] # tcpdump -D

c) [root @ server ~] # tcpdump -i eth0

d) [root@server ~] # tcpdump -i eth0 src host 8.8.8.8

e] [root@server ~] # tcpdump -i eth0 net 10.1.0.0

f] [root@server ~] # tcpdump -i eth0 net 10.1.0.124

g) [root@server ~] # tcpdump -i eth0 net 10.1.0.0.24

post 83

h) [root@server ~] # tcpdump host 8.8.8.8 and ports 83

i] [root@server ~] # tcpdump -i eth0 port not 83

5. Ping

Tools that write IP level connectivity to another TCP/IP computer by sending Internet control message protocol echo request message.

a) [root@server ~] # ping google.com

b) [root@server ~] # ping -c 10 google.com

while Pinging a host, you'll find different o/p from the form the Ping results.

i) Destination host unreachable.

output:

1) ip link set enp3[illegible] up

ip link set enp31ft down

ip link set enp31 promise on

ip route add default via 192.168.1.215 dev

ip route add 192.168.1.01.24 via 192.168.1.125

ip route delete 192.168.1.0/24 via 192.168.1.219

ip route get 10.20.1.4

2) enp31ft : flag = 1099 / up, Broadcast, MULTICAST,

ether 20:88:10:86:64 txq ethernet

0 x passed 0 bytes 0 (0.08)

Tx error 0 dropped 0 overrun 0 from

lo : flag = 73 <up. update. RUNNING> mt

inet 127.0.0.1 netmask 288.0.0.0

print packets or stopped x.t (A507)

3) my traceroute [v0.9.5]

fedora (192.16.75 [illegible]) ⇒ google.com (142.281.221.20)

2025-07-14 09:04:22 +0820

Keys : Help display mode Restart Statistics Order field

Host	Packet Loss%	Snt	Last	Pings Avg	Best	Wrst
1. gateway	0.6%	219	2	5.6	1.8	825
2. 142.250.172.1	0.0%	201	7.2	13.0	4.6	2532
3. 142.251.227	17.0%	201	175.5	185.0	184	3442

b) mtr -g . google . com

c) mtr -b . google . com

d) mtr . c lo google.com

4) o/p

a) dropped Paior to tcpdump

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

for full protocol decode

b] dropped Paivo to tcpdump

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

: Snapshot length 262144 bytes

0 Packets captured

0 Packets received by filter

0 Packets dropped by kernel

e) dropped Privs to tcpdump

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

0 Packets captured

0 Packets received by filter

5). o/p

PING google.com (142.253.221.238) 56(84)
bytes of data

From fedora (192.168.8.294) icmp_seq =1
Destination host unreachable.

Result:

Various network commands used in linux and windows has been executed successfully.

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