

13/7/24

DOMS

Page No. 1

Date

Basic Networking commands

Aim:

Study of various network commands used in Linux and windows.

- 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.

o/p:

gateway (172.16.8.1) at 7c:5a:1c:c4:be:45 [ether] on enp250

- 2) host name: This is the simplest of all TCP/IP commands. It simply displays the name of your computer.

o/p: local host. local domain

- 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.

- 4) ~~ifconfig~~ ip netstat -a ~~o/p:~~ ifconfig: It is a staple in many sysadmin's tool belt for configuring and troubleshooting networking. It has since been replaced by ip commands.

o/p: enp250: flags = 4419<UP, BROADCAST, RUNNING, PROMISC, MULTICAST> mtu 1500

inet 172.16.8.116 netmask 255.255.252.0

broadcast 172.16.11.255

inet 6 fe80::250b:88a1:c79e:cb c8 prefixlen
64 scopeid 0x20 <link>

ether 5d:9a:4c:35:0f:51 txqueuelen
1000 (Ethernet)

Rx packets 643358 bytes 293591049
(279.9 MIB)

Rx errors 0 dropped 394 overruns 0 frame 0

Tx packets 131261 bytes 74472091 (71.0 MIB)

Tx errors 0 dropped 0 overruns 0
carrier 0 collision 0

- 5) ip: It is one of the basic commands every administrator will need in daily work, from setting up new systems and assigning IPs to troubleshooting existing systems. The ip command can show address information, manipulate routing, plus display network various devices, interfaces and tunnels.

O/p: usage: ip [options] object {command|
help}

ip [-force] - batch filename

ip address show:

lo: <loop Back, up, lower-up> mtu 65536

qldisc noqueue state unknown

group default qlen 1000

~~enp2s0~~ enp2s0: <Broadcast, multicast, promisc,

up, lower-up> mtu 1500 qldisc fq-codel

State up group default qlen 1000

wlp3s0: <NO-carrier, Broadcast,

multicast, up> mtu 1500 qldisc noqueue

State down group default qlen 1000

b) mtr: (Mett's traceroute) program with a command line interface that serves as a network diagnostic and troubleshooting tool.

O/p: ntr google.com

localhost • local domain (0.0.0.0)

Keys: Help Display mode Restart statistics
order of fields Quit

most

$$1 \cdot 172 \cdot 16 \cdot 8 \cdot 1$$

2. static - 41.229.249.49 - karaidk.co.in

3. 142, 250, 172, 162

4. 142, 251, 227, 215

5. 142 . 250 . 228 . 81

b. mac 05212 - in - 14. 4 100. net

Sat Jul 20 11:32:45 2024.

	Packets			Ping		
Loss %	Snt	Last	Avg	Best	Worst	StDev
0.0%	314	0.2	0.2	0.1	2.6	0.1
0.0%	314	2.6	2.9	2.4	20.9	1.2
0.0%	314	10.9	2.1	1.6	28.9	1.8
0.3%	314	2.6	2.9	2.3	16.0	1.4
0.0%	314	2.9	3.3	2.5	27.1	1.9
0.0%	314	2.5	2.8	2.2	17.0	1.3

4) topdump: designed for capturing and displaying packets.

5) Ping: It is a tool that verifies IP-level connectivity to another TCP/IP computer by sending Internet control message protocol (ICMP)

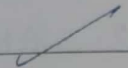
Q/P: ping google.com

Dig google.com (142.250.67.46) 56(84) bytes of data.

64 bytes from maa05s12 - in 14.610000 net

(142.250.67.46): 1 comp - seq = 1

ttl = 120 time = 2.85ms



Windows

- 1) `arp -a`: It shows ip address of your computer.

O/p Interface : 172.16.75.74 ... 0212

Internet Address	Physical address	Type
172.16.72.1	TC-50-1C-d-be-41	dynamic
172.16.75.77	4C-82-99-78-8C-85	dynamic
172.16.79.255	ff-ff-ff-ff-ff-ff	Static
239.255.255.251	01-00-5E-7F-FF-F6	Static

- 2) `host-name`: This is the simplest of all TCP/IP commands. Displays name of computer.

DESKTOP-GS42T86

- 3) `ipconfig/all`: Display detailed configuration about TCP/IP.

Windows IP configuration:

Host name : DESKTOP-GS42T86

Primary DNS Suffix :

Node Type : mixed

IP routing Enabled : No

WinS proxy enabled : No

- 4) `nbtstat -a`: helps to solve problems with Net Bios name resolution.

`NBTstat [-a Remote name] [-A Ipaddress] [-c] [-n] [-x] [-R] [-RR] [-s] [-S] [interval]`

-a (adapter status) lists the remote machines name table for its name

5) netstat : (network statistic) netstat displays a variety of statistics about a computer's active TCP/IP connections.

Active connections

proto	local address	foreign address	state
Tcp	172.16.8.105:7680	172.16.10.62:57432	EST
Tcp	172.16.8.105:7680	TCP:12-HDR022069:58240	EST
Tcp	172.16.0.105:7680	172.16.10.216:58180	EST
Tcp	172.16.0.105:50169	172.16.10.30:ms-dc	EST

6) nslookup : To display DNS.
Default server : unknown.
address : 172.16.8.1.

7) path ping : Traces the route to destination.

usage : pathping [-g host-list] [-h maximum
hops] [-i address] [-n] [-p period]
[-q num-queries] [-w timeout]
[-4] [-6] target-name.

8) ping : Best way to test connectivity.

usage : ping [-t] [-a] [-n count] [-l size]
[-f] [-i TTL] [-v Tos] [-count]
[-s count] [-j host-list] [-k host-
list] [-w timeout] [-R] [-s srcaddr]
[-c compartment] [-p] [-4] [-6]
target-name.

9) Route : used to show/manipulate the IP
manipulate network routing tables.
Route [-f] [-p] [-4|-6] command
[destination]
[mask netmask] [gate way] [metric]
[if interface].

RESULT:

thus the program for linux and window command is executed & o/p is verified successfully.

24/10/24

1) Which command is used to find the reachability of a host machine from your device.
ping <host name>

2) Which command will give the details of hops taken by a packet to reach its destination
tracert <host name>

3) Which commands display the Ip configuration of your machine.
ip config, ifconfig

4) Which commands displays ~~the~~ The Tcp port status in your machine.

netstat

5) Write the modify the Ip configuration in linux machine.

→ log in as a root user and start a terminal session

→ input the "ifconfig" command prompt.

→ input "ifconfig" followed by the network interface and your new Ip address.

→ Press "Enter".