Experiment 1

Date : 16-7-24

AIM

To Study of various network Command used in Linux & Windows

arp -a

Short of address resolution protocol. Show IP address of computer along with IP & MAC of router

O/P

Interface : 172.16.11.159 --- 0x8

Internet address	physical address	Type
172.16.8.1	-70-50-1c-cf-be-45	dynamic
172.16.8.167	7c-57-58-38-db-80	dynamic
17216.10.107	7C-57-58-35-10-dc	static

hostname

display name of computer

O/P

Desktop 3DC04125A

ipconfig /all

display detailed configuration about router gateway, DNS etc.

O/P

Windows IP Configuration

Hostname ..... Desktop 3DC015432

Primary Suffix ....:

Ethernet adapter Ethernet

Connection Specific DNF Suffix

Description ..... Realtek

FGO

DNS Server 172.16.8.1

nbtstat -a

Solve problem with net bios name

O/P

Active Connections

Proto	Local address	Foreign address	State
TCP	0.0.0.0:135	M-A:0	Listening
TCP	0.0.0.0:445	M-A:0	Listening
TCP	0.0.0.0:902	M-A:0	Listening

Netstat -r

Interface List

7...08 bf b8 da of 68 .... Realtek PCIe GBE

28...00 ff b8 e3 12 3a .... TAP WINDOWS adapter

14...ce 47 40 eb 1a ab .... Microsoft Wi-fi Direct

IPv4 Route table

Network destination	netmask	gateway	Interface	metric
0.0.0.0	0.0.0.0	192.168.122.31	192.168.	35
127.0.0.0	255.0.0.0	On-link	127.0.0.1	331

nslookup

Tool to perform DNS Lookups in Linux
it display IP address of a computer

>nslookup www.google.com

O/P

Server : unknown
address : 192.168.232.31
Non authorative answer.
Name : www.google.com
Addresses : 2404:6800:4007:82a::2004
142.250.193.132

Pathpiping

Combination of ping & tracert command
it trace route to destination address to
Launch a 25 second test

O/P

pathpiping [-g host-list] [-h maximum_hops]
[-i address] [n] [-P period]
[-q num-queries] [-w timeout]
[-4] [-6] targent-name

Options:

-g host-list loose source route along host line

-h maximum_hops maximum number of hops to search for target

Ping

is the best way to test Connectivity btw two nodes. Ping use ICMP to communicate to other device

O/p

>ping localhost

Pinging M-A [::1] with 32 byte's of data

reply from ::1: time <1ms

:

:

Ping statistics for ::1:

Packets Sent = 4, received = 4, lost = 0 (0% loss)

Approximate round trip times in milli second

Route

used to show/manipulate the IP routing table. It is primarily used to set up static routes to specific host or network

O/p

manipulates network routing tables

Route [-F] [-P] [-4|-6] command [destination] [mask netmask] [gateway] [metric Metric] [IF interface]

Linux Networking Command

ip

a) ~~ip~~ — to show ip address

$ ip address show

o/p

1: lo: <loopback, up, lower_up> mtu 65536
qdisc fq_codel state up group default
link/loopback 00:00:00:00:00:00 brd
00:00:00:00:00:00
inet 127.0.0.1/8 scope host

2: enp2s0: <broad....

~~b) to assign an ip to interface~~

~~$ ip~~

b) Display route taken for ip 10.10.1.4

$ ip route get 10.10.1.4

o/p

10.10.1.4 via 172.16.8.1 dev enp2s0 src
172.16.9.235 uid 1000

mtr

Mall's traceroute is a trouble shooting tool

o/p

Host	Packets		Pings				
	Loss%	Snt	Last	Avg	Best	Wrst	StDev
1. ::1	0.0%	109	0.1	0.1	0.0	0.2	0.0

mtr -c 10 google.com

O/P

	Packets			Ping			
Host	Loss%	Sn	Last	Avg	Best	Wrst	stdev
172.16.8.1	34.5	28	0.2	0.2	0.2	0.4	0.0
Static-4.Con	35.1	28	0.6	3.1	2.6	4.6	0.3

tcp dump

Capture and display packets

$ tcpdump -D

O/P

1. enp2s0 [UP, Running]
2. any (Pseudo-device that capture)
3. lo [up, running, loop back]
4. wlp3s0 [up]
5. Bluetooth 0

Ping

Verifies IP-level connectivity to another TCP/IP Computer by sending Internet Control message protocol

$ ping google.com

O/P

PING google.com (142.250.182.14) 56(84) bytes of data

64 bytes from maa05s18-in-f14.1e100.net icmp_seq=1 ttl=120 time=3.14 ms

google.com ping statistics

5 packet transmitted, 5 recieved, 0% packet loss

rtt min/avg/max/mdev

google.com ping statistics

10 packet transmited 2 recieved 80% loss

time 9195 ms

- rtt min/avg/max/mdev = 3.108/3.175/3.243/0.087 ms

ping localhost.localdomain

O/P

PING Localhost.Localdomain in (localhost.localdomain)

64 byte from local host (::1): icmp seq=1 ttle=64

time=0.056 ms

64 bytes from Localhost (::1 icmp seq=2 ttl=64

tike=0.045

IP Config

enp2s0 flags: 4163 <UP, Broadcast,

Running multicast > mdu 1500

inet 172.16.8.94 netmask 255.255.251.0

Broadcast 172.16.11.255

lo: flags=73<UP. LoopBack, Running > mtu

65536

inet 127.0.0.1 netmask 255.0.0.0

inet 6::1: prefixlen 128 scopeid 0:0:0

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RESULT

Thus the basic Linux & windows command have been studied & executed