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Practical - 1

Aim:-

Study of Network Commands used in Linux and windows

Basic Networking Commands:-

(i) arp -a

Interface: 192.168.12.1... 0x3

Internet Address	Physical Address	Type
192.168.12.1524	00-50-56-e4-31-a3	dynamic
192.168.12.255	ff-ff-ff-ff-ff-ff	static
224.0.0.2	01-00-5e-00-00-02	static
224.0.0.22	01-00-5e-00-00-16	static
224.0.0.251	01-00-5e-00-00-fb	static
224.0.0.252	01-00-5e-00-00-fc	static
229.255.255-256	01-00-5e-ff-ff-fa	static
255.255.255.255	ff-ff-ff-ff-ff-ff	static

(ii) host name: It displays name of computer

DESKTOP - MATHIT

(3) IPconfig /all

Windows IP Configuration

Host Name : DESKTOP-MATHITT

Primary Dns Suffix :

Node Type : Mixed

IP Routing Enabled : NO

WINS Proxy Enabled : NO

Ethernet adapter Ethernet:

Connection-Specific Dns Suffix :

Description : Realtek PCIe GbE

Family Controller

Physical Address : 7D-9A-4C-35-0F-4F

DHCP Enabled : NO

Auto Configuration Enabled : Yes

Link-Local IPv6 Address : fe80::bc8c:9910:d3d1

(4) nbtstat -a

Displays protocol statistics and current TCP/IP
Connections using NBT

NBTSTAT [[-a Remote Name] [-A IP address] [-C] [-n]
[-r] [-P] [-RR] [-s] [-S] [interval]]

(f) netstat

Activate Connections

Proto	Local Address	Foreign Address	State
TCP	172.16.8.112:50186	SC-17-118:5228	ESTABLISHED
TCP	172.16.8.112:50201	SC-17-118:5228	ESTABLISHED
TCP	172.16.8.112:50203	192.168.1.1:80	LAST-ACK

(b) nslookup

Default Server: Unknown

Address: 172.16.8.1

> www.google.com

Server: Unknown

Address: 172.16.8.1

Non-authoritative answer:

Name: www.google.com

Addresses: 2404:b800:4007:812::2004

142.250.183.228

(7) pathping

Usage: pathping [-g host-list] [-h maximum-hops]
[i address] [-n] [-p period] [-q non-querier]
[-w timeout] [-4] [-b] target-name

(7) Ping 172.16.8.112

~~usage~~ Pinging 172.16.8.112 with 32 bytes of data:

Reply from 172.16.8.112: bytes=32 time=1ms TTL=128

Reply from 172.16.8.112: bytes=32 time=1ms TTL=128

Reply from 172.16.8.112: bytes=32 time=1ms TTL=128

Reply from 172.16.8.112: bytes=32 time=1ms TTL=128

Ping statistics for 172.16.8.112:

Packets: Sent=4, Received=4, Lost=0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms.

(8) route

Manipulates network routing Tables

Route [-f] [-P] [-4] [-6] Command [destination]
[mask netmask] [gateway] [metric metric]
[IF interface]

Some Basic Commands for Linux:-

(1) IP

ip address show

```
1: lo : < LoopBack, UP, Lower_UP > mtu 65536 qdisc
noqueue state unknown group default qlen 1000
link /loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
inet 127.0.0.1/8 scope host lo
    valid_lft forever preferred_lft forever
inet 6::1/128 scope host
    valid_lft forever preferred_lft forever
```

2) ifconfig

```
enp2s0 : flags = 4163 < UP, BROADCAST,
RUNNING, MULTICAST > mtu 1500
inet 172.16.8.94 netmask 255.255.255.0
    broadcast 172.16.11.255
lo : flags = 73 < UP, LOOPBACK, RUNNING
    > mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
    inet6 6::1 prefixlen 128 scopeid 0x
    < host >
wlp3s0 : flags = 4099 < UP, BROADCAST,
MULTICAST > mtu 1500
ether 2a:cd:c4:2f:48:cb
```


3) mtr google.com

localhost.local domain (0.0.0.0)

Ping Pabit Patten : 0

Patten Range : 0(0x00) - 255(0xFF) < 0
random

Host

1) 172.16.8.1

2) static - 41.229.249 - tataidco.in

3) 142.250.171.162

4) 142.251.127.215

5) 142.250.288.1

6) maa.onsio - m-f14.1e100.net

5) Ping:

Ping google.com (216.58.200.142) 56 (84) bytes of
data
64 bytes from maa.onsio - m-f14.1e100.net
(216.58.200.142)

icmp - seq = 1 ttl = 120 time : 3.31 ms

64 bytes from maa.onsio - m-f14.1e100.net
(216.58.200.142)

icmp - seq = 2 ttl = 120 time : 3.51 ms

1) Which command is used to find the reachability of a host machine from your device
`Ping <hostname>`

2) Which command will be give the details of hops taken by a packet to reach its destination
`traceroute <hostname>`

3) Which command display the IP configuration of your machine
`IP config, ifconfig`

4) Which commands displays 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 terminal
- Input "ifconfig" command prompt
- Input "ifconfig" followed by the network interface and your new IP address
- Press "Enter",

Result:-

Thus the Network Basic commands of

Windows & linux are studied.
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