
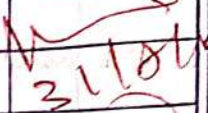
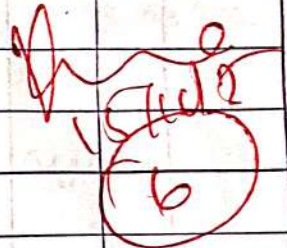


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Class CSE - D

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Practical - 1

AIM:- Study of various network commands used in Linux and Windows.

Basic Networking commands

1) arp - a - shows the IP and MAC addresses of devices on your network

O/P: Interface: 172.16.75.78 -- 0x5

172.16.72.1 7C-5A-1C-CF-BC -41 dynamic

244.0.0.2 ff - ff - ff - ff - ff - ff

239.192.152.143 01-00-5C-40-9B-BF Static

2) hostname - Displays name of your system

O/P: k.s03-78

3) ipconfig /all = Displays detailed TCP/IP configuration

O/P: Windows IP config

Hostname: k.s03-78

Node type: hybrid

ethernet adapter

Media state: disconnected

4) nbstat -d displays NetBIOS name resolution statistics, useful for diagnosing name resolution.
Output

NETBIOS Remote machine Name table

Name	Type	Status
KSL03	COO>	Registered

5) netstat shows network statistics, such as active connections, routing tables and interface info.
Active Internet connections (w/o servers)

Proto	Recv-Q	Send-Q	Local Address
tcp	0	0	localhost:22

6) nslookup - Resolves domain names to IP address

Server: Unknown
Address: 192.168.1.1
Non-authoritative answer.
Name: google.com
Address: 142.250.72.238

7) Pathping ~~command~~ can

~~combine ping and~~

Pathping is unique to Windows and is basically a combination of ping & tracer commands.

Path ping (eg host-list) [-n maximum hops]

[-i address] [-a] [-p period] [-q num-queries]

[-w timeout] [-4] [-b] target name

8) Ping: command is the best way to test connectivity between two nodes.

Pinging google.com [142.250.71.46] with 32 bytes of data

1) Route: Displays or modifies the kernel IP routing table

route print

Active Routes

Network	Destination	Networks gateway	Interface	Metric
192.168.1.0	255.255.0	on-link	192.168.1.5	281

Linux Commands:

1. ip : It is one of the basic commands every administrator will need in daily work.

a) ip address show

172.16.8.1.254

b) ip address add 192.168.1.254/24 dev eth0

c) ip address del 192.168.1.254/24 dev eth0

d) ip link set eth0 up

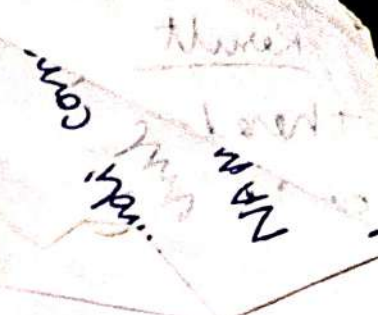
2) ip config : It is a stable in many Sysadmin tool belt for configuring and troubleshooting networks. It has been

~~used~~ eth0 : flags = 4163 < up, BROADCAST, RUNNING, MULTICAST mtu 1500

inet 192.168.1.5 netmask 255.255.255.0

broadcast 192.168.1.255

3) nbt: it is a program with a c interface that serves as a retina and choubeshooting tool.



a) nbt google.com

Host: myhost. local Loss % Snt Last Avg Best Wrt

1. / - - 192.168.1.1 0.0% 10 0.8 0.7 0.5 1.0 0.2

b) nbt -> google.com

Host Loss % Snt Last Avg Best Wrt stdev

gateway.home 0.0% 10 0.7 0.8 0.6 1.2 0.2

c) tcpdump

12:17:03.123456 1 P 192.168.1.10.55432 > 192.168.1.1

Flags [S] seq 123456789

d) Ping: It is a tool that verifies IP-level connectivity to another TCP/IP computer

Ping google.com

64 bytes from sof 02 s 27 - in (216.58.208.774)

icmp - seq = 1 ttl = 54 time = 10.7 ms

Li. connection show

NAME UUID TYPE DEVICE
wired connection) a50b6490-020 ethernet on siso
-3668

2) nmcli connection add con-name if name type
connection ethernet

3) nmcli connection modify "wired connection"
used for rename

4) nmcli connection show
IPv4.method : auto
IPv6.method : auto

5) nmcli connection modify "wired connection"
IPv4.method auto

6) nmcli connection modify "wired connection"
ip6.method auto

7) nmcli connection up eth0 LAN

Student observation

1) which command is used to find the reachability of a host machine from your device.

=> `Ping <hostname or ip> ping google.com`

2) which command will be give the detailed hops taken by a packet to reach its destination

=> `trac <hostname>`
`trac google.com`

3) which command displays the IP configuration of your machine?

on Linux: `ifconfig` show

on windows: `ipconfig /all`

4) which command displays the TCP port status?

`netstat`

`netstat -n`

5) write the command to modify the IPv4 configuration on a Linux machine

to add: `ip address add 192.168.1.255/24 dev`

`on os 3/16`

to del: `ip address del 192.168.1.255/24`

`dev on pos 3/16`

Result

Therefore the above Linux and Windows commands are executed successfully.

~~which was not possible before~~

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