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Practical - 1

AIM:- Study of various networks 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	static
239.192.152.143	01-00-5C-40-9B-BF	static

2) hostname - Displays name of your system

O/P: K503-78

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

O/P: Windows IP config

Hostname : K503-78

Node type : hybrid

ethernet adapter

Media state : disconnected

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

Output

NETBIOS Remote machine Name table

Name	Type	Status
KALI3	<00>	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	*:*	LISTEN

6) nslookup - Resolves domain names to IP addresses

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

7) Pathping ~~Combines ping and tracert~~

~~Combines ping and tracert~~

Pathping is unique to windows OS and it is basically a combination of ping & tracert commands.

Pathping [-g host-list] [-h maximum_hops]
[-i address] [-a] [-p period] [-q num_queries]
[-w timeout] [-4] [-6] target_name

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

Pinging google.com [142.250.77.46] with 32 bytes of data

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

route Print

Active Routes

Network Destination	Network mask	Gateway	Interface	Metric
192.168.1.0	255.255.255.0	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

172.16.0.1.254

b) ip address add 192.168.1.254/24 dev enp503

c) ip address del 192.168.1.254/24 dev enp503

d) ip link set eth0 up

2) ifconfig: It is a stable and many sysadmin tool built for configuring and troubleshooting networks. It has been

eth0 : flags = 4163 <UP, BROADCAST, RUNNING, MULTICAST mtu 1500

inet 192.168.1.5 netmask 255.255.255.0

broadcast 19.2.168.1.255

3) mtr : It is a program with a cc
interface that serves as a netwo
and troubleshooting tool.

a) mtr google.com

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

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

) mtr -g google.com

Host Loss % Snt Last Avg Best Wrst stdev

gateway.home 0.0%. 10 0.7 0.8 0.6 1.2 0.2

) tcpdump

12:17:03.123456 IP 192.168.1.10.55432 > 142.5

Flags [S] seq 123456789

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

Ping google.com

64 bytes from seq 02 ttl 27 - in (216.58.204.774)

icmp - seq=1 ttl = 52 time = 10.7 ms

Li... connection show

NAME UUID TYPE DEVICE

Wired connection 1 a5bb490-d20 ethernet ens160
-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"
ipb.method auto

7) nmcli connection up method "LAN"

[redacted]

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 details of hops taken by a packet to reach it destination

=> mtr <hostname>
mtr google.com

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

on linux : ip address show

on windows : ipconfig / all

4) which command displays the TCP port status?

netstat
netstat -

5) write the command to modify the the IP configuration in a Linux machine

do add : ip address add 192.168.1.254/24 dev enp0s3/16

do del : ip address del 192.168.1.254/24 dev enp0s3/16

Result

Therefore the above Linux and Windows commands are executed successfully.

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