20/1/2024

PRACTICAL - 1

AIM

Study of various network commands used in Linux and windows.

BASIC NETWORKING COMMANDS (WINDOWS)

1) arp -a : ARP is short form for address resolution protocol, it will show the IP address of your computer along with IP address of your router.

OUTPUT:

Interface : 172.16.8.104 --- 0x8

INTERNET ADDRESS	PHYSICAL ADDRESS	TYPE
172.16.8.1	7C-5a-1C-cf-be-45	dynamic
172.16.11.46	50-9a-4C-34-d8-bc	dynamic
172.16.11.255	ff-ff-ff-ff-ff-ff	static
224.0.0.2	01-00-5e-00-00-02	static

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

OUTPUT: DESKTOP-DCALBCE

3) ipconfig /all : This command displays detailed configuration information about your TCP/IP connection including router, Gateway, DNS..

O/P : Windows IP configuration

Ethernet adapter:

Connection-specific DNS Suffix:

Link local IPV6 Address ..... : fe80::8d7:ee20:ddbc

IPV4 Address ..... : 172.16.8.104

Subnet Mask ..... : 255.255.252.0

4) nbstat - a

O/P : Displays protocol statistics and current TCP/IP connections
NBTSTAT [[- a RemoteName]] [- A - IP address] [- C] [- n]
[- r] [- R] [- RR] [- s] [- S] [interval]]

- a (adaptor status) Lists the remote machine's name table given
- A (Adaptor status) Lists the remote machine's name table given its IP address
- C (cache) Lists NBT's cache of remote [machine] names and their IP addresses
- n (names) Lists NetBIOS names.
- r (resolved) Lists names resolved by broadcast and via WINS
- R (Reload) purges and reloads the remote cache name table
- S (sessions) Lists sessions table with destination IP address

5) netstat

O/P : Active connections

Proto	LOCAL ADDRESS	FOREIGN ADDRESS	STATE
TCP	172.16.8.104:55478	20.198.119.84:https	ESTABLISHED
TCP	172.16.8.104:55488	13.107.246.254:https	CLOSE-WAIT
TCP	172.16.8.104:55503	sd-in-f188:5228	ESTABLISHED
TCP	172.16.8.104:55547	sd-in-f188:5228	ESTABLISHED

6) nslookup

O/P : Default Server : unknown
Address : 172.16.8.1

7) Pathping [-g hos

O/P : pathping [-g host-list] [-h maximum_hops] [-i address] [-n] [-p period] [-q num-queries] [-w timeout] [-4] [-6] target_name.

8) Ping

O/P : Ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS] [-r count] [-s count] [[-j host-list] | [-k host-list]] [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p] [-4] [-6] target_name.

9) Route

O/P : Manipulates network routing tables
Route [-f] [-p] [-4|-6] command [destination] [mask netmask] [gateway] [metric metric]

-f clears the routing tables of all gateway entries
-p when used with ADD command makes route persistent across boots
-4 Force using IPV4
-6 Force using IPV6.

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LINUX COMMANDS

AIM :

Study of various network commands used in Linux and windows.

IMPORTANT LINUX COMMANDS

1) **IP** : The IP command is one of the basic command every administrator will need in daily work, from setting up new systems and assigning ip's to trouble shooting existing systems.

O/P : usage : IP [options] object { command / helps }
IP [-for] - batch filename

IP address show :
: < Loop Back , up, Lower-up > mtu 65536
qdisc noqueue state unknown group
default qlen 1000.
enp2s0 : < Broadcast, multicast, promisc, up, Lower-up > mtu 1500 qdisc fq-code
state up group default qlen 1000
wlp3s0 : < NO - carrier , Broadcast, multicast, up>
mtu 1500 qdisc noqueue state down group
default qlen 1000

2) **ifconfig** : It is a staple in many sysadmin's tool belt for configuring and troubleshooting networks.

O/P : enp2s0 : flags = 4419 < up, Broadcast, Running, Promisc, Multicast > mtu 1500
init 172.16.8.116 netmask 255.255.252 broadcast 172.16.11.255
init 6 fe80 :: 2560 : 8891 : cf9e : cbc8 prefixlen

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~~b~~ scopeid 0x20 <link>

ether 50:99:4C:35:0f:51 txqueuelen 1000 (Ethernet)

RX errors 0 dropped 394 overruns 0 frame 0

TX packets 131261 bytes 7447091 (71.0 MiB)

TX errors 0 dropped 0 overruns 0

carrier 0 collision 0.

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

O/P : mtr ~~goole~~ google.com

Localhost. Localdomain (0.0.0.0)

keys : Help Displaymode Restart statistics order of fields quit.

Host :

1) 172.16.8.1

2) static-41.229.249.49-tataidc.co.in

3) 142.250.172.162

4) 142.251.227.215

5) 142.250.228.81

6) maa05s12-in-f14.1e100.net.

Sat jul 2011:32:45 2024

Packets

Loss%	Snt	Last	Avg	Best	Wrst	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	1.9	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	3.5	2.5	27.1	1.9
0.0%	314	2.5	2.8	2.2	17.0	1.3

4) tcpdump : The tcpdump command is designed for capturing and displaying packets.

O/P : permission required.

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

O/P : ping google.com

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

64 bytes from maa05s12-in-f14.1e100.net (142.250.67.46): icmp_seq = 1 ttl = 120 time = 2.85 ms

RESULT :

Thus the program for Linux and windows commands is executed and output is verified successfully.

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