

13/07/2024

BASIC NETWORKING COMMANDS

Aim :-

To study the various network commands used in Linux and windows

i) arp -a

output:-

(172.16.9.63) at 7c:57:58:35:00:31 [ether] on enp2s0
gateway (172.16.8.1) at 7c:5a:1c:cf:be:45 [ether] on enp2s0
(172.16.10.60) at d8:bb:c1:c5:ca:5f [ether] on enp2s0

ii) hostname

output:-

localhost.localdomain

iii) netstat

output:-

Active Internet connections (w/o servers)

| Proto | Recv-Q | Send-Q | Local Address | Foreign Address | State |
|-------|--------|--------|-----------------|-----------------------|-------------|
| tcp | 0 | 0 | 127.0.0.1:60271 | DESKTOP-ATEKDUG:60278 | ESTABLISHED |
| tcp | 0 | 0 | 127.0.0.1:60278 | DESKTOP-ATEKDUG:60277 | ESTABLISHED |

iv) ipconfig /all

output:-

Windows IP Configuration

HOSTNAME : DESKTOP-ATEKDUG

Primary Dns Suffix . . . :

Node Type : Mixed

v) nbtstat -a

output:-

Displays protocol statistics and current TCP/IP connections using NBT

(NetBIOS over TCP/IP)

NBTSTAT [[-a RemoteName] [-A IP address] [-C] [-n] [-r] [-R] [-RR] [-S] [-S] [interval]]

vi) nslookup www.rajalakshmi.org

Output:-

Default Server: Unknown

Address: 172.16.8.1

Non-authoritative answer:

Name: www.rajalakshmi.org

Address: 14.99.10.232

vii) pathping

Output:-

Usage: pathping [-g host-list] [-h maximum-hops]
[-i address] [-n] [-p period]
[-q num-queries] [-w timeout]
[-4] [-6] target-name

viii) ping www.rajalakshmi.org

output:

Pinging www.rajalakshmi.org [14.99.10.232] with 32 bytes of data:

Reply from 14.99.10.232: bytes=32 time<1ms TTL=127

Reply from 14.99.10.232: bytes=32 time=9ms TTL=127

ix) route

output:

Manipulates network routing tables.

ROUTE [-f] [-P] [-4|-6] command [destination]

[MASK netmask] [gateway]

[METRIC metric] [IF interface]

1. ip
output:

Usage: ip [OPTIONS] OBJECT {COMMAND | help}

ip [-force] -batch filename

where OBJECT := { link | address | addresslabel | route | rule |
heightntable | tunnel | tuntap | maddress |
mroute | mrule | monitor | xfrm | netns |
l2tp | fou | macsec | tcp-metrics | token |
netconf | rfa | vrf }

2. ipconfig

output:

enp2s0: flags = 4163<UP, BROADCAST, RUNNING, MULTICAST> mtu 1500

inet 172.16.8.102 netmask 255.255.252.0 broadcast
172.16.11.255

inet6 fe80::27db:a009:8543:535b prefixlen 64
scopeid 0x20<link>

3. mtr google.com

Output:

My traceroute [v0.87]

localhost.localdomain (0.0.0.0)

Sat Jul 20 11:27:36 2024

Keys: Help Display mode Restart statistics Order of fields quit

Packets

Pings

Host

1. 172.16.8.1

| Loss% | Snt | Last | Avg | Best | Worst | StDev |
|-------|-----|------|-----|------|-------|-------|
| 0.0% | 196 | 0.3 | 0.2 | 0.1 | 1.8 | 0.1 |

4. tcpdump -D

output:

1. enp2s0 [Up, running]

2. any (Pseudo-device that captures on all interfaces)
[Up, Running]

3. lo [Up, running, Loopback]

4. wlp3s0

5. ping
output:-

Usage: ping [-aAbBdDfhLnOqrRVUw64] [-c count]
[-i interval] [-I interface] [-m mark]
[-M pmtudisc-option] [-l prebad] [-P pattern]
[-Q tos] [-s packetsize] [-S sndbuf] [-t ttl]
[-T timestamp-option] [-w deadline] [-W timeout]
[hop1-...] destination

Question & Answer

- 1) 'ping' to find reachability
- 2) mtr <web address>
- 3) Ip address ~~show~~ to show IP configuration
- 4) 'netstat'
- 5) 'ifconfig'

Result:

Thus the various networking commands used
in Linux and windows are studied

24/8/24