Linux Networking Commands / Storage Management

1. ifconfig

Linux ifconfig stands for interface configurator. It is one of the most basic commands used in network inspection.

ifconfig is used to initialize an interface, configure it with an IP address, and enable or disable it. It is also used to display the route and the network interface.

2. ip

This is the latest and updated version of ifconfig command.

3. traceroute

Linux traceroute is one of the most useful commands in networking. It is used to troubleshoot the network. It detects the delay and determines the pathway to your target. It basically helps in the following ways:

1. It provides the names and identifies every device on the path.
2. It follows the route to the destination
3. It determines where the network latency comes from and reports it.

5. ping

Linux ping is one of the most used network troubleshooting commands. It basically checks for the network connectivity between two nodes.

ping stands for Packet INternet Groper.

The ping command sends the ICMP echo request to check the network connectivity.

It keeps executing until it is interrupted

6. netstat

Linux netstat command refers to the network statistics.

It provides statistical figures about different interfaces which include open sockets, routing tables, and connection information.

7.ss

Linux ss command is the replacement for netstat command. It is regarded as a much faster and more informative command than netstat.

The faster response of ss is possible as it fetches all the information from within the kernel userspace.

8.host

Linux host command displays the domain name for a given IP address and IP address for a given hostname. It is also used to fetch DNS lookup for DNS related query.

9.iwconfig

Linux iwconfig is used to configure the wireless network interface. It is used to set and view the basic WI-FI details like SSID and encryption. To know more about this command, refer to the man page.

10.curl & wget

Linux curl and wget commands are used in downloading files from the internet through CLI. The curl command has to be used with the option "O" to fetch the file, while the wget command is used directly.

11.mtr

Linux mtr command is a combination of ping and the traceroute command. It continuously displays information regarding the packets sent with the ping time of each hop. It is also used to view the network issues.

12.whois

Linux whois command is used to fetch all the information related to a website. You can get all the information about a website including the registration and the owner information.

```
pratik@PRATIK: ~
pratik@PRATIK:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.21.92.138  netmask 255.255.240.0  broadcast 172.21.95.255
        inet6 fe80::215:5dff:fe78:2d45  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:78:2d:45  txqueuelen 1000  (Ethernet)
        RX packets 179  bytes 221913 (221.9 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 128  bytes 8764 (8.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

pratik@PRATIK:~$ ip addr
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
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: bond0: <BROADCAST,MULTICAST,MASTER> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether c6:80:a8:03:60:d1 brd ff:ff:ff:ff:ff:ff
3: dummy0: <BROADCAST,NOARP> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether ba:dd:70:86:50:a3 brd ff:ff:ff:ff:ff:ff
4: tunl0@NONE: <NOARP> mtu 1480 qdisc noop state DOWN group default qlen 1000
    link/ipip 0.0.0.0 brd 0.0.0.0
5: sit0@NONE: <NOARP> mtu 1480 qdisc noop state DOWN group default qlen 1000
    link/sit 0.0.0.0 brd 0.0.0.0
6: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:78:2d:45 brd ff:ff:ff:ff:ff:ff
    inet 172.21.92.138/20 brd 172.21.95.255 scope global eth0
       valid_lft forever preferred_lft forever
```

```
root@PRATIK:/home/pratik# apt install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libnginx-mod-http-geoip2 libnginx-mod-http-image-filter
Suggested packages:
```

```
root@PRATIK: /home/pratik
pratik@PRATIK:~$ sudo su
root@PRATIK:/home/pratik# Pratik@123
Pratik@123: command not found
root@PRATIK:/home/pratik#
root@PRATIK:/home/pratik# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.21.92.138  netmask 255.255.240.0  broadcast 172.21.95.255
        inet6 fe80::215:5dff:fe78:2d45  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:78:2d:45  txqueuelen 1000  (Ethernet)
        RX packets 691  bytes 1183355 (1.1 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 475  bytes 33254 (33.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

root@PRATIK:/home/pratik# ping 172.21.92.138
PING 172.21.92.138 (172.21.92.138) 56(84) bytes of data.
64 bytes from 172.21.92.138: icmp_seq=1 ttl=64 time=0.176 ms
64 bytes from 172.21.92.138: icmp_seq=2 ttl=64 time=0.026 ms
64 bytes from 172.21.92.138: icmp_seq=3 ttl=64 time=0.024 ms
64 bytes from 172.21.92.138: icmp_seq=4 ttl=64 time=0.024 ms
64 bytes from 172.21.92.138: icmp_seq=5 ttl=64 time=0.025 ms
64 bytes from 172.21.92.138: icmp_seq=6 ttl=64 time=0.026 ms
64 bytes from 172.21.92.138: icmp_seq=7 ttl=64 time=0.032 ms
64 bytes from 172.21.92.138: icmp_seq=8 ttl=64 time=0.030 ms
64 bytes from 172.21.92.138: icmp_seq=9 ttl=64 time=0.035 ms
64 bytes from 172.21.92.138: icmp_seq=10 ttl=64 time=0.030 ms
```

```
root@PRATIK:/home/pratik#
root@PRATIK:/home/pratik# ps
  PID TTY          TIME CMD
  228 pts/1    00:00:00 sudo
  229 pts/1    00:00:00 su
  230 pts/1    00:00:00 bash
  553 pts/1    00:00:00 ps
root@PRATIK:/home/pratik# kill -9 229
root@PRATIK:/home/pratik# Killed
```

```
root@PRATIK:/home/pratik# ifconfig eth0
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.21.92.138  netmask 255.255.240.0  broadcast 172.21.95.255
        inet6 fe80::215:5dff:fe78:2d45  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:78:2d:45  txqueuelen 1000  (Ethernet)
        RX packets 723  bytes 1189811 (1.1 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 475  bytes 33254 (33.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

root@PRATIK:/home/pratik# ifconfig lo
lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 178  bytes 14952 (14.9 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 178  bytes 14952 (14.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

root@PRATIK:/home/pratik# netstat -rn
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0         172.21.80.1     0.0.0.0         UG        0 0          0 eth0
172.21.80.0     0.0.0.0         255.255.240.0   U         0 0          0 eth0
root@PRATIK:/home/pratik#
```

```
root@PRATIK:/home/pratik# iwconfig
lo        no wireless extensions.

bond0     no wireless extensions.

dummy0    no wireless extensions.

tunl0     no wireless extensions.

sit0      no wireless extensions.

eth0      no wireless extensions.

root@PRATIK:/home/pratik# hostname -i
127.0.1.1
root@PRATIK:/home/pratik# curl -O https://www.youtube.com/watch?v=Iv8ig0PoDlc
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  628k    0  628k    0     0   916k      0 --:--:-- --:--:-- --:--:--  916k
root@PRATIK:/home/pratik# wget https://www.youtube.com/watch?v=Iv8ig0PoDlc
--2023-04-14 12:27:20--  https://www.youtube.com/watch?v=Iv8ig0PoDlc
Resolving www.youtube.com (www.youtube.com)... 142.250.183.110, 142.250.192.14, 142.250.192.46, ...
Connecting to www.youtube.com (www.youtube.com)|142.250.183.110|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: ‘watch?v=Iv8ig0PoDlc.1’
```

```
root@PRATIK:/home/pratik# sudo apt install telnetd -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
root@PRATIK:/home/pratik# mtr -v 127.0.1.1
mtr 0.95
root@PRATIK:/home/pratik#
root@PRATIK:/home/pratik# mtr -v 127.0.1.1
mtr 0.95
root@PRATIK:/home/pratik# mtr javatpoint.com
root@PRATIK:/home/pratik# mtr --csv javatpoint.com
Mtr_Version,Start_Time,Status,Host,Hop,Ip,Loss%,Snt, ,Last,Avg,Best,Wrst,StDev,
MTR.0.95,1681455675,OK,javatpoint.com,1,PRATIK.mshome.net,0.00,10,0,0.41,0.30,0.24,0.42,0.07
MTR.0.95,1681455675,OK,javatpoint.com,2,RTK_GW,0.00,10,0,1.65,1.85,1.29,2.55,0.39
MTR.0.95,1681455675,OK,javatpoint.com,3,pnq-static-66.97.93.103-gazonindia.com,0.00,10,0,2.96,3.27,2.60,4.19,0.51
MTR.0.95,1681455675,OK,javatpoint.com,4,???,100.00,10,10,0.00,0.00,0.00,0.00,0.00
MTR.0.95,1681455675,OK,javatpoint.com,5,as13335.bom.extreme-ix.net,10.00,10,1,112.41,101.37,77.72,186.61,33.75
MTR.0.95,1681455675,OK,javatpoint.com,6,172.71.200.2,0.00,10,0,87.21,88.50,76.55,107.42,9.03
MTR.0.95,1681455675,OK,javatpoint.com,7,172.67.211.76,0.00,10,0,89.35,88.49,74.39,103.88,8.15
root@PRATIK:/home/pratik#
```

```
root@PRATIK:/home/pratik# whois javatpoint.com
   Domain Name: JAVATPOINT.COM
   Registry Domain ID: 1659091830_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.PublicDomainRegistry.com
   Registrar URL: http://www.publicdomainregistry.com
   Updated Date: 2021-07-23T03:57:43Z
   Creation Date: 2011-05-31T12:19:47Z
   Registry Expiry Date: 2024-05-31T12:19:47Z
   Registrar: PDR Ltd. d/b/a PublicDomainRegistry.com
   Registrar IANA ID: 303
   Registrar Abuse Contact Email: abuse-contact@publicdomainregistry.com
   Registrar Abuse Contact Phone: +1.2013775952
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Name Server: ARELY.NS.CLOUDFLARE.COM
   Name Server: JEFF.NS.CLOUDFLARE.COM
   DNSSEC: unsigned
   URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2023-04-14T07:02:30Z <<<
```