Experiment No. 9

Aim: TCP/IP network administration**: ifconfig, ping, netstat, inetd, pppd, etc.**

1. ifconfig command:

```
manish28@ubuntu:~$ ifconfig -a
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.219.128  netmask 255.255.255.0  broadcast 192.168.219.255
        inet6 fe80::c56:8735:3790:75fe  prefixlen 64  scopeid 0x20<link>
        ether 00:0c:29:df:4f:31  txqueuelen 1000  (Ethernet)
        RX packets 4767  bytes 481165 (481.1 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 2269  bytes 189692 (189.6 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 1608  bytes 128295 (128.2 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1608  bytes 128295 (128.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

manish28@ubuntu:~$
```

2. ping command:

```
manish28@ubuntu: ~
manish28@ubuntu:~$ ping -c 5 www.instagram.com
PING z-p42-instagram.c10r.instagram.com (157.240.16.174) 56(84) bytes of data.
64 bytes from instagram-p42-shv-01-bom1.fbcdn.net (157.240.16.174): icmp_seq=1 ttl=128 time=88.1 ms
64 bytes from instagram-p42-shv-01-bom1.fbcdn.net (157.240.16.174): icmp_seq=2 ttl=128 time=88.6 ms
64 bytes from instagram-p42-shv-01-bom1.fbcdn.net (157.240.16.174): icmp_seq=3 ttl=128 time=76.3 ms
64 bytes from instagram-p42-shv-01-bom1.fbcdn.net (157.240.16.174): icmp_seq=4 ttl=128 time=72.5 ms
64 bytes from instagram-p42-shv-01-bom1.fbcdn.net (157.240.16.174): icmp_seq=5 ttl=128 time=89.6 ms

--- z-p42-instagram.c10r.instagram.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4086ms
rtt min/avg/max/mdev = 72.504/83.039/89.649/7.163 ms
manish28@ubuntu:~$
```

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3. netstat command (-au shows all udp connections):

```
manish28@ubuntu:~$ netstat -au
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 localhost:domain        0.0.0.0:*
udp        0      0 ubuntu:bootpc           192.168.219.254:bootps  ESTABLISHED
udp        0      0 0.0.0.0:631             0.0.0.0:*
udp        0      0 0.0.0.0:58339           0.0.0.0:*
udp        0      0 0.0.0.0:mdns            0.0.0.0:*
udp6       0      0 [::]:39581              [::]:*
udp6       0      0 [::]:mdns               [::]:*
manish28@ubuntu:~$
```

4. inetd command:

```
sejalpawar@ubuntu:~$ sudo systemctl start inetd
[sudo] password for sejalpawar:
sejalpawar@ubuntu:~$ sudo systemctl status inetd
● inetd.service - Internet superserver
     Loaded: loaded (/lib/systemd/system/inetd.service; enabled; vendor preset: enabled)
     Active: active (running) since Sat 2023-05-13 05:54:21 PDT; 9s ago
       Docs: man:inetd(8)
   Main PID: 6665 (inetd)
      Tasks: 1 (limit: 4918)
     Memory: 372.0K
     CGroup: /system.slice/inetd.service
             └─6665 /usr/sbin/inetd

May 13 05:54:21 ubuntu systemd[1]: Starting Internet superserver...
May 13 05:54:21 ubuntu systemd[1]: Started Internet superserver.
sejalpawar@ubuntu:~$
```

```
sejalpawar@ubuntu:~$ sudo systemctl stop inetd
sejalpawar@ubuntu:~$ sudo systemctl status inetd
● inetd.service - Internet superserver
     Loaded: loaded (/lib/systemd/system/inetd.service; enabled; vendor preset: enabled)
     Active: inactive (dead) since Sat 2023-05-13 05:55:11 PDT; 10s ago
       Docs: man:inetd(8)
    Process: 6665 ExecStart=/usr/sbin/inetd (code=exited, status=0/SUCCESS)
   Main PID: 6665 (code=exited, status=0/SUCCESS)

May 13 05:54:21 ubuntu systemd[1]: Starting Internet superserver...
May 13 05:54:21 ubuntu systemd[1]: Started Internet superserver.
May 13 05:55:11 ubuntu systemd[1]: Stopping Internet superserver...
May 13 05:55:11 ubuntu systemd[1]: inetd.service: Succeeded.
May 13 05:55:11 ubuntu systemd[1]: Stopped Internet superserver.
sejalpawar@ubuntu:~$
```

5. pppd command:

```
manish28@ubuntu:~$ sudo apt install pppd
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package pppd
manish28@ubuntu:~$ pppd
pppd: The remote system is required to authenticate itself
pppd: but I couldn't find any suitable secret (password) for it to use to do so.
manish28@ubuntu:~$
```

Practical Performance (4)	Writeup & Oral (4)	Attendance (2)	Total (10)