

Process Management in Linux

```
pandit@ip-172-31-41-74:~$ hostnamectl
  Static hostname: ip-172-31-41-74
    Icon name: computer-vm
    Chassis: vm
  Machine ID: ec21c213bac9c9db90ec4472c7d40bdd
    Boot ID: 3c5c81812eba4c40bc5a9ab58e79c2d3
Virtualization: amazon
Operating System: Ubuntu 24.04.3 LTS
          Kernel: Linux 6.14.0-1018-aws
      Architecture: x86-64
Hardware Vendor: Amazon EC2
  Hardware Model: t3.micro
Firmware Version: 1.0
  Firmware Date: Mon 2017-10-16
  Firmware Age: 8y 3month 1w
pandit@ip-172-31-41-74:~$ ps
  PID TTY          TIME CMD
 1539 pts/0    00:00:00 bash
 1585 pts/0    00:00:00 ps
pandit@ip-172-31-41-74:~$ █
```

i-0e0734f25287e5574 (Ubuntu Server)

Public IPs: 13.234.239.118 Private IPs: 172.31.41.74

top - 14:24:25 up 14 min, 1 user, load average: 0.00, 0.00, 0.00										
Tasks: 112 total, 1 running, 111 sleeping, 0 stopped, 0 zombie										
%Cpu(s): 0.0 us, 0.2 sy, 0.0 ni, 99.8 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st										
MiB Mem : 914.2 total, 327.1 free, 362.6 used, 382.7 buff/cache										
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 551.6 avail Mem										
PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+ COMMAND
9	root	20	0	0	0	0	I	0.3	0.0	0:00.12 kworker/0:0-events
1	root	20	0	22508	13804	9628	S	0.0	1.5	0:01.65 systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00 kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00 pool_workqueue_release
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-rcu_gp
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-sync_wq
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-kvfree_rcu_reclaim
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-slub_flushwq
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-netns
10	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/0:0H-events_highpri
11	root	20	0	0	0	0	I	0.0	0.0	0:00.00 kworker/0:1-cgroup_destroy
12	root	20	0	0	0	0	I	0.0	0.0	0:00.09 kworker/u8:0-flush-259:0
13	root	0	-20	0	0	0	I	0.0	0.0	0:00.00 kworker/R-mm_percpu_wq
14	root	20	0	0	0	0	I	0.0	0.0	0:00.00 rcu_tasks_rude_kthread
15	root	20	0	0	0	0	I	0.0	0.0	0:00.00 rcu_tasks_trace_kthread

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```
pandit@ip-172-31-41-74:~$ ps -ef
UID      PID  PPID  C STIME TTY      TIME CMD
root      1      0  0 14:10 ?        00:00:01 /sbin/init
root      2      0  0 14:10 ?        00:00:00 [kthreadd]
root      3      2  0 14:10 ?        00:00:00 [pool_workqueue_release]
root      4      2  0 14:10 ?        00:00:00 [kworker/R-rCU_gp]
root      5      2  0 14:10 ?        00:00:00 [kworker/R-sync_wq]
root      6      2  0 14:10 ?        00:00:00 [kworker/R-kvfree_rCU_reclaim]
root      7      2  0 14:10 ?        00:00:00 [kworker/R-slub_flushwq]
root      8      2  0 14:10 ?        00:00:00 [kworker/R-netns]
root      9      2  0 14:10 ?        00:00:00 [kworker/0:0-events]
root     10      2  0 14:10 ?        00:00:00 [kworker/0:0H-events_highpri]
root     12      2  0 14:10 ?        00:00:00 [kworker/u8:0-flush-259:0]
root     13      2  0 14:10 ?        00:00:00 [kworker/R-mm_percpu_wq]
root     14      2  0 14:10 ?        00:00:00 [rcu_tasks_rude_kthread]
root     15      2  0 14:10 ?        00:00:00 [rcu_tasks_trace_kthread]
root     16      2  0 14:10 ?        00:00:00 [ksoftirqd/0]
root     17      2  0 14:10 ?        00:00:00 [rcu_sched]
root     18      2  0 14:10 ?        00:00:00 [rcu_exp_par_gp_kthread_worker/0]
root     19      2  0 14:10 ?        00:00:00 [rcu_exp_gp_kthread_worker]
root     20      2  0 14:10 ?        00:00:00 [migration/0]
root     21      2  0 14:10 ?        00:00:00 [idle_inject/0]
```

i-0e0734f25287e5574 (Ubuntu Server)

Public IPs: 13.234.239.118 Private IPs: 172.31.41.74

```
ubuntu@ip-172-31-41-74:~$ sudo systemctl enable ModemManager.service
ubuntu@ip-172-31-41-74:~$ sudo systemctl disable ModemManager.service
Removed "/etc/systemd/system/multi-user.target.wants/ModemManager.service".
Removed "/etc/systemd/system/dbus-org.freedesktop.ModemManager1.service".
ubuntu@ip-172-31-41-74:~$ █
```

i-0e0734f25287e5574 (Ubuntu Server)

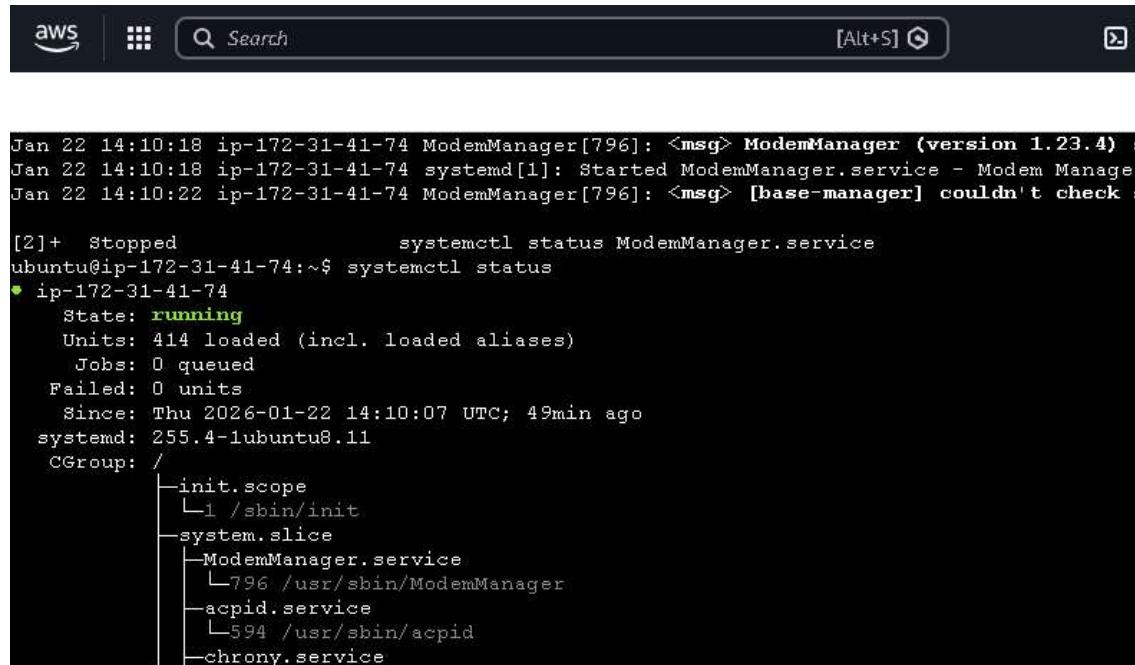
Public IPs: 13.234.239.118 Private IPs: 172.31.41.74

```
Removed "/etc/systemd/system/multi-user.target.wants/ModemManager.service".
Removed "/etc/systemd/system/dbus-org.freedesktop.ModemManager1.service".
ubuntu@ip-172-31-41-74:~$ ^C
ubuntu@ip-172-31-41-74:~$ sudo systemctl enable ModemManager.service
Created symlink /etc/systemd/system/dbus-org.freedesktop.ModemManager1.service → /usr/lib/systemd/system/ModemManager.service.
Created symlink /etc/systemd/system/multi-user.target.wants/ModemManager.service → /usr/lib/systemd/system/ModemManager.service.
ubuntu@ip-172-31-41-74:~$ systemctl status ModemManager.service
● ModemManager.service - Modem Manager
    Loaded: loaded (/usr/lib/systemd/system/ModemManager.service; enabled; preset: enabled)
      Active: active (running) since Thu 2026-01-22 14:10:18 UTC; 48min ago
        Main PID: 796 (ModemManager)
          Tasks: 4 (limit: 1008)
         Memory: 7.7M (peak: 8.0M)
            CPU: 83ms
           CGroup: /system.slice/ModemManager.service
                   └─ 796 /usr/sbin/ModemManager

Jan 22 14:10:17 ip-172-31-41-74 systemd[1]: Starting ModemManager.service - Modem Manager...
Jan 22 14:10:18 ip-172-31-41-74 ModemManager[796]: <msg> ModemManager (version 1.23.4) starting in system bus...
Jan 22 14:10:18 ip-172-31-41-74 systemd[1]: Started ModemManager.service - Modem Manager.
Jan 22 14:10:22 ip-172-31-41-74 ModemManager[796]: <msg> [base-manager] couldn't check support for device '/sys/devices/pci0000:00
lines 1-14/14 (END)
```

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```

ubuntu@ip-172-31-41-74:~$ mpstat
Linux 6.14.0-1018-aws (ip-172-31-41-74)          01/22/26          _x86_64_          (2 CPU)

15:01:54      CPU    %usr    %nice    %sys %iowait    %irq   %soft  %steal  %guest  %gnice  %idle
15:01:54     all    0.25     0.00    0.12    0.07    0.00    0.00    0.01    0.00    0.00    0.00  99.54

ubuntu@ip-172-31-41-74:~$ free -m
              total        used        free       shared  buff/cache   available
Mem:       914         333        351           2       387        580
Swap:        0          0          0

ubuntu@ip-172-31-41-74:~$ iotop
Command 'iotop' not found, but can be installed with:
sudo apt install iotop    # version 0.6-42-ga14256a-0.1build3, or
sudo apt install iotop-c  # version 1.25-1
ubuntu@ip-172-31-41-74:~$ iostat
Linux 6.14.0-1018-aws (ip-172-31-41-74)          01/22/26          _x86_64_          (2 CPU)

avg-cpu:  %user    %nice %system %iowait  %steal  %idle
          0.25     0.00    0.12    0.07    0.01  99.55

Device      tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0      0.05      1.36      0.00      0.00      4259        0        0
loop1      0.02      0.12      0.00      0.00      371        0        0
loop2      0.02      0.35      0.00      0.00      1097        0        0
loop3      0.00      0.00      0.00      0.00       14        0        0
nvme0n1    3.53     97.19     73.48      0.00    304951    230550        0

```

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```

sudo apt install iotop-c # version 1.25-1
ubuntu@ip-172-31-41-74:~$ iostat
Linux 6.14.0-1018-aws (ip-172-31-41-74)          01/22/26          _x86_64_          (2 CPU)

avg-cpu:  %user    %nice %system %iowait  %steal  %idle
          0.25     0.00    0.12    0.07    0.01  99.55

Device      tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd
loop0      0.05      1.36      0.00      0.00      4259        0        0
loop1      0.02      0.12      0.00      0.00      371        0        0
loop2      0.02      0.35      0.00      0.00      1097        0        0
loop3      0.00      0.00      0.00      0.00       14        0        0
nvme0n1    3.53     97.19     73.48      0.00    304951    230550        0

ubuntu@ip-172-31-41-74:~$ uptime
 15:02:34 up 52 min,  2 users,  load average: 0.00, 0.00, 0.00
ubuntu@ip-172-31-41-74:~$ vmstat
procs --memory-- --swap-- --io-- --system-- --cpu--
 r b swpd free  buff cache si so bi bo in cs us sy id wa st gu
 2 0     0 352312 19268 378148  0  0  98  72  67  0  0  0 100  0  0  0
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```
ubuntu@ip-172-31-41-74:~$ script test_script
Script started, output log file is 'test_script'.
ubuntu@ip-172-31-41-74:~$ ls
test_script timingfile.tm typescript.txt
ubuntu@ip-172-31-41-74:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-41-74:~$ whoami
ubuntu
ubuntu@ip-172-31-41-74:~$ exit
exit
Script done.
ubuntu@ip-172-31-41-74:~$ ls
test_script timingfile.tm typescript.txt
ubuntu@ip-172-31-41-74:~$ █
```

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```
ubuntu@ip-172-31-41-74:~$ pstree
systemd—ModemManager—3*[{ModemManager}]
  acpid
  -2*[agetty]
  amazon-ssm-agent—8*[{amazon-ssm-agent}]
  chronyd—chronyd
  cron
  dbus-daemon
  irqbalance—(irqbalance)
  multipathd—6*[{multipathd}]
  networkd-dispat
  polkitd—3*[{polkitd}]
  rsyslogd—3*[{rsyslogd}]
  snapd—10*[{snapd}]
  sshd—sshd—sshd—bash—script—bash—pstree
    sudo—sudo—systemctl—less
    -2*[systemctl—pager]
  su—bash—2*[sudo]
  systemd—(sd-pam)
  systemd-journal
  systemd-logind
  systemd-network
```

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