

LINUX COMMANDS TASK 1

(07-02-2025)

1. System information:

```
narendar@ubuntu:~$ uname
Linux
narendar@ubuntu:~$ uname -a
Linux ubuntu 6.8.0-52-generic #53-Ubuntu SMP PREEMPT_DYNAMIC Sat Jan 11 00:06:25 UTC 2025 x86_64 x86_64 x86_64 GNU/Linux
```

2. Manage users:

- To create user:

```
root@ubuntu:~# useradd nani
root@ubuntu:~# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
```

```
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
techie:x:1001:1001:~/home/techie:/bin/sh
nani:x:1002:1002:~/home/nani:/bin/sh
```

- To modify user:

```
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
techie:x:1001:1001:~/home/techie:/bin/sh
root@ubuntu:~# usermod -l abc techie
root@ubuntu:~# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
```

```
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
abc:x:1001:1001:~/home/techie:/bin/sh
root@ubuntu:~#
```

- To delete user:

```
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
abc:x:1001:1001:~/home/techie:/bin/sh
root@ubuntu:~# userdel abc
root@ubuntu:~# cat /etc/passwd
```

```
gdm:x:120:121:Gnome Display Manager:/var/lib/gdm3:/bin/false
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
narendar:x:1000:1000:narendar:/home/narendar:/bin/bash
root@ubuntu:~#
```

3. Manage groups:

- To create group:

```
root@ubuntu:~# groupadd group1
root@ubuntu:~# cat /etc/group
```

```
group1:x:1004:
root@ubuntu:~#
```

- To modify group:

```
root@ubuntu:~# groupmod -n group2 group1
root@ubuntu:~# cat /etc/group
```

```
group2:x:1004:
```

- To delete group

```
root@ubuntu:~# groupdel group2
root@ubuntu:~# cat /etc/group
```

```
techie:x:1001:
root@ubuntu:~#
```

4. Change user password:

```
root@ubuntu:~# passwd narendar
New password:
BAD PASSWORD: The password fails the dictionary check
Retype new password:
Sorry, passwords do not match.
New password:
Retype new password:
passwd: password updated successfully
root@ubuntu:~#
```

5. Files:

- To create a file:

```
root@ubuntu:~# touch file1
root@ubuntu:~# ls
file1  snap  vboxpostinstall.sh
```

- To rename a file

```
root@ubuntu:~# mv file1 file2
root@ubuntu:~# ls
file2  snap  vboxpostinstall.sh
root@ubuntu:~#
```

- To move a file

```
root@ubuntu:~# mv file2 fold1
root@ubuntu:~# ls
fold1  snap  vboxpostinstall.sh
root@ubuntu:~# cd fold1
root@ubuntu:~/fold1# ls
file2
root@ubuntu:~/fold1#
```

- To delete a file

```
root@ubuntu:~# cd fold1
root@ubuntu:~/fold1# ls
file2
root@ubuntu:~/fold1# rm file2
root@ubuntu:~/fold1# ls
root@ubuntu:~/fold1#
```

6. Directories:

- To Create a Directory:

```
root@ubuntu:~# mkdir folder1
root@ubuntu:~# ls
folder1  snap  vboxpostinstall.sh
root@ubuntu:~#
```

- To Rename a Directory:

```
root@ubuntu:~# ls
folder1  snap  vboxpostinstall.sh
root@ubuntu:~# mv folder1 folder2
root@ubuntu:~# ls
folder2  snap  vboxpostinstall.sh
root@ubuntu:~#
```

- To Move a Directory:

```
root@ubuntu:~# mkdir folder3
root@ubuntu:~# ls
folder2 folder3 snap vboxpostinstall.sh
root@ubuntu:~# mv folder2 folder3
root@ubuntu:~# ls
folder3 snap vboxpostinstall.sh
root@ubuntu:~# cd folder3/
root@ubuntu:~/folder3# ls
folder2
root@ubuntu:~/folder3#
```

- To Delete a Directory:

```
root@ubuntu:~/folder3# ls
folder2
root@ubuntu:~/folder3# rm -rf folder2
root@ubuntu:~/folder3# ls
root@ubuntu:~/folder3#
```

7.Change File Permissions:

```
root@ubuntu:~# ll
total 44
drwx----- 6 root root 4096 Feb  9 11:14 ./
drwxr-xr-x 23 root root 4096 Feb  4 05:09 ../
-rw----- 1 root root  237 Feb  7 11:54 .bash_history
-rw-r--r-- 1 root root 3106 Apr 22  2024 .bashrc
drwx----- 2 root root 4096 Aug 27 15:39 .cache/
-rw-r--r-- 1 root root    0 Feb  9 11:14 file1
drwxr-xr-x  2 root root 4096 Feb  9 11:13 folder3/
-rw-r--r-- 1 root root  161 Apr 22  2024 .profile
drwx----- 6 root root 4096 Feb  4 06:21 snap/
drwx----- 2 root root 4096 Feb  4 06:21 .ssh/
-r-xr-xr-x  1 root root 7049 Feb  4 06:20 vboxpostinstall.sh
root@ubuntu:~# chmod 754 file1
root@ubuntu:~# ll
total 44
drwx----- 6 root root 4096 Feb  9 11:14 ./
drwxr-xr-x 23 root root 4096 Feb  4 05:09 ../
-rw----- 1 root root  237 Feb  7 11:54 .bash_history
-rw-r--r-- 1 root root 3106 Apr 22  2024 .bashrc
drwx----- 2 root root 4096 Aug 27 15:39 .cache/
-rwxr-xr-- 1 root root    0 Feb  9 11:14 file1*
drwxr-xr-x  2 root root 4096 Feb  9 11:13 folder3/
```

8.Change Ownership:

```
root@ubuntu:~# touch file2
root@ubuntu:~# ll
total 40
drwx----- 5 root      root 4096 Feb  9 11:22 ./
drwxr-xr-x 23 root      root 4096 Feb  4 05:09 ../
-rw----- 1 root      root  237 Feb  7 11:54 .bash_history
-rw-r--r-- 1 root      root 3106 Apr 22  2024 .bashrc
drwx----- 2 root      root 4096 Aug 27 15:39 .cache/
-rw-r--r-- 1 narendar  root    0 Feb  9 11:21 file1
-rw-r--r-- 1 root      root    0 Feb  9 11:22 file2
-rw-r--r-- 1 root      root  161 Apr 22  2024 .profile
drwx----- 6 root      root 4096 Feb  4 06:21 snap/
drwx----- 2 root      root 4096 Feb  4 06:21 .ssh/
-r-xr-xr-x 1 root      root 7049 Feb  4 06:20 vboxpostinstall.sh*
root@ubuntu:~# chown narendar file2
root@ubuntu:~# ll
total 40
drwx----- 5 root      root 4096 Feb  9 11:22 ./
drwxr-xr-x 23 root      root 4096 Feb  4 05:09 ../
-rw----- 1 root      root  237 Feb  7 11:54 .bash_history
-rw-r--r-- 1 root      root 3106 Apr 22  2024 .bashrc
drwx----- 2 root      root 4096 Aug 27 15:39 .cache/
-rw-r--r-- 1 narendar  root    0 Feb  9 11:21 file1
-rw-r--r-- 1 narendar  root    0 Feb  9 11:22 file2
```

9.Running Process:

```
root@ubuntu:~# ps
  PID TTY          TIME CMD
 24268 pts/2        00:00:00 sudo
 24269 pts/2        00:00:00 bash
 24448 pts/2        00:00:00 ps
root@ubuntu:~# ps -a
  PID TTY          TIME CMD
 22804 tty2        00:00:00 gnome-session-b
 23747 pts/0        00:00:00 sudo
 23749 pts/1        00:00:00 bash
 24256 pts/1        00:00:00 su
 24257 pts/1        00:00:00 bash
 24267 pts/1        00:00:00 sudo
 24269 pts/2        00:00:00 bash
 24449 pts/2        00:00:00 ps
root@ubuntu:~#
```

10.Kill a Process (PID or Name):

```
narendar@ubuntu:~/Desktop$ sudo systemctl start nginx
narendar@ubuntu:~/Desktop$ ps -ef | grep nginx
root      30353      1  0 06:36 ?        00:00:00 nginx: master process /usr/sbin/nginx -g daemon on;
n;
www-data  30354    30353  0 06:36 ?        00:00:00 nginx: worker process
narendar  30366    28877  0 06:37 pts/0    00:00:00 grep --color=auto nginx
narendar@ubuntu:~/Desktop$ kill -9 30353
bash: kill: (30353) - Operation not permitted
narendar@ubuntu:~/Desktop$ sudo kill -9 30353
narendar@ubuntu:~/Desktop$ ps -ef | grep nginx
narendar  30382    28877  0 06:38 pts/0    00:00:00 grep --color=auto nginx
narendar@ubuntu:~/Desktop$ sudo systemctl status nginx
* nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: en>
   Active: failed (Result: signal) since Mon 2025-02-10 06:38:08 UTC; 1min 36>
   Duration: 1min 30.905s
   Docs: man:nginx(8)
   Process: 30349 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_pro>
   Process: 30350 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (>
   Main PID: 30353 (code=killed, signal=KILL)
   CPU: 17ms

Feb 10 06:36:37 ubuntu systemd[1]: Starting nginx.service - A high performance >
Feb 10 06:36:37 ubuntu systemd[1]: Started nginx.service - A high performance w>
Feb 10 06:38:08 ubuntu systemd[1]: nginx.service: Main process exited, code=kil>
Feb 10 06:38:08 ubuntu systemd[1]: nginx.service: Killing process 30354 (nginx)>
```

11.Check Disk Usage and Disk space:

```
root@ubuntu:~# free
              total        used        free      shared  buff/cache   available
Mem:           2015440       1140872       240844        37244        850584       874568
Swap:              0              0              0

root@ubuntu:~# free -h
              total        used        free      shared  buff/cache   available
Mem:           1.9Gi       1.1Gi       235Mi       36Mi       830Mi       854Mi
Swap:              0B              0B              0B

root@ubuntu:~#
```

12.CPU and Memory Usage:

```
top - 11:30:45 up 1 day, 7:41, 1 user, load average: 0.02, 0.04, 0.00
Tasks: 185 total, 1 running, 184 sleeping, 0 stopped, 0 zombie
%Cpu(s):  4.3 us,  1.0 sy,  0.0 ni, 94.4 id,  0.0 wa,  0.0 hi,  0.3 si,  0.0 st
MiB Mem : 1968.2 total, 235.2 free, 1113.6 used, 831.2 buff/cache
MiB Swap:  0.0 total,  0.0 free,  0.0 used. 854.6 avail Mem
```

```

root@ubuntu:~# cat /proc/cpuinfo
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 140
model name     : 11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz
stepping       : 1
microcode      : 0xa6
cpu MHz        : 2995.200
cache size     : 6144 KB
physical id    : 0
siblings       : 1
core id        : 0
cpu cores      : 1
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 22
wp             : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht s
yscall nx rdtscp lm constant_tsc rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni pclmulqdq monitor ssse3 fm
a cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch pti fsgsba
e bmi1 avx2 bmi2 invpcid rdseed adx clflushopt sha_ni arat md_clear flush_l1d arch_capabilities
bugs           : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit gds bhi
bogomips       : 5990.40
clflush size   : 64
cache_alignme  : 64

```

13. Install and Remove a Package:

Install package

```

root@ubuntu:~# apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:

```

```

root@ubuntu:~# git -v
git version 2.43.0
root@ubuntu:~#

```


Remove package

```
root@ubuntu:~# git -v
git version 2.43.0
root@ubuntu:~# apt remove git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'apt autoremove' to remove them.
The following packages will be REMOVED:
  git
0 upgraded, 0 newly installed, 1 to remove and 219 not upgraded.
After this operation, 22.2 MB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 149442 files and directories currently installed.)
Removing git (1:2.43.0-1ubuntu7.2) ...
root@ubuntu:~# git -v
-bash: /usr/bin/git: No such file or directory
```

14. Configure and check network settings:

To check configure (IP address)

```
narendar@ubuntu:~/Desktop$ ip a
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 noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:d9:0c:03 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 68401sec preferred_lft 68401sec
    inet6 fd00::f9db:af94:49fd:13cf/64 scope global temporary dynamic
        valid_lft 86173sec preferred_lft 14173sec
    inet6 fd00::72a6:58bc:dfb7:9718/64 scope global temporary deprecated dynamic
        valid_lft 86173sec preferred_lft 0sec
    inet6 fd00::a00:27ff:fed9:c03/64 scope global dynamic mngtmpaddr
        valid_lft 86173sec preferred_lft 14173sec
    inet6 fe80::a00:27ff:fed9:c03/64 scope link
        valid_lft forever preferred_lft forever
```

To check network settings

```
narendar@ubuntu:~/Desktop$ netstat -na
Command 'netstat' not found, but can be installed with:
sudo apt install net-tools
```

15. View and analyze system logs:

```
root@ubuntu:~# journalctl -xe
Subject: A start job for unit packagekit.service has finished successfully
Defined-By: systemd
Support: http://www.ubuntu.com/support

A start job for unit packagekit.service has finished successfully.

The job identifier is 35670.
Feb 09 11:48:09 ubuntu pkexec[24953]: pam_unix(polkit-1:session): session opened for user root(uid=0) by narendar(uid=1>
Feb 09 11:48:09 ubuntu pkexec[24953]: narendar: Executing command [USER=root] [TTY=unknown] [CWD=/home/narendar] [COMMA>
Feb 09 11:50:00 ubuntu systemd[1]: Starting sysstat-collect.service - system activity accounting tool...
Subject: A start job for unit sysstat-collect.service has begun execution
Defined-By: systemd
Support: http://www.ubuntu.com/support

A start job for unit sysstat-collect.service has begun execution.

The job identifier is 35753.
Feb 09 11:50:00 ubuntu systemd[1]: sysstat-collect.service: Deactivated successfully.
Subject: Unit succeeded
Defined-By: systemd
Support: http://www.ubuntu.com/support

The unit sysstat-collect.service has successfully entered the 'dead' state.
Feb 09 11:50:00 ubuntu systemd[1]: Finished sysstat-collect.service - system activity accounting tool.
Subject: A start job for unit sysstat-collect.service has finished successfully
Defined-By: systemd
Support: http://www.ubuntu.com/support
```