



VIT-AP UNIVERSITY

Name: P. Nithiyasri

Reg No.: 20BCE7035

ASSIGNMENT 1

LINUX COMMAND LIST ASSESSMENT

ls: List files and directories

```
ubuntu@ubuntu:~$ ls
Desktop  Downloads  Pictures  Templates  snap
Documents  Music      Public    Videos
```

cd: Change directory

```
ubuntu@ubuntu:~$ cd Desktop
```

pwd: Print working directory

```
ubuntu@ubuntu:~/Desktop$ pwd
/home/ubuntu/Desktop
```

mkdir: Make directory

```
ubuntu@ubuntu:~/Desktop$ mkdir myDirectory
```

touch: Create an empty file

```
ubuntu@ubuntu:~/Desktop$ touch file.txt
```

cp: Copy files and directories

```
ubuntu@ubuntu:~/Desktop$ cp file.txt
ubuntu@ubuntu:~/Desktop$ cp -r file.txt /home/ubuntu/Desktop
```

mv: Move or rename files and directories

```
ubuntu@ubuntu:~/Desktop$ mv file.txt /home/ubuntu/Documents
ubuntu@ubuntu:~/Desktop$ mv myDirectory /home/ubuntu/Documents
```

rm: Remove files and directories

```
ubuntu@ubuntu:~/Documents$ rm file.txt
ubuntu@ubuntu:~/Documents$ rm -r myDirectory
```

find: Search for files and directories

```
ubuntu@ubuntu:~/Desktop$ find /home -name file.txt
/home/ubuntu/Desktop/file.txt
```

FILE VIEWING AND EDITING

cat: Concatenate and display file content

```
ubuntu@ubuntu:~/Desktop$ cat file.txt
Linux is a family of open-source Unix-like OS systems on the Linux Kernel.
ubuntu@ubuntu:~/Desktop$
```

less: View file content with pagination

```
ubuntu@ubuntu:~/Desktop$ less file.txt
```

```
Linux is a family of open-source Unix-like OS systems on the Linux Kernel.
file.txt (END)
```

head: Display the beginning of a file

```
ubuntu@ubuntu:~/Desktop$ head file.txt
Linux is a family of open-source Unix-like OS systems on the Linux Kernel.
ubuntu@ubuntu:~/Desktop$
```

tail: Display the end of a file

```
ubuntu@ubuntu:~/Desktop$ tail file.txt
Linux is a family of open-source Unix-like OS systems on the Linux Kernel.
ubuntu@ubuntu:~/Desktop$
```

nano: Text editor for creating and editing files

```
ubuntu@ubuntu:~/Desktop$ nano file.txt
```

```
GNU nano 7.2 file.txt
Linux is a family of open-source Unix-like OS systems on the Linux Ker>

[ Read 1 line ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify
```

vi/vim: Powerful text editor for experienced users

```
ubuntu@ubuntu:~/Desktop$ vi file.txt
```

E325: ATTENTION

Found a swap file by the name ".file.txt.swp"

owned by: ubuntu dated: Tue Jun 06 13:29:53 2023

file name: file.txt

modified: YES

user name: ubuntu host name: ubuntu

process ID: 3935 (STILL RUNNING)

[not usable on this computer]

While opening file "file.txt"

dated: Tue Jun 06 13:25:25 2023

(1) Another program may be editing the same file. If this is the case,

be careful not to end up with two different instances of the same file when making changes. Quit, or continue with caution.

(2) An edit session for this file crashed.

If this is the case, use ":recover" or "vim -r file.txt" to recover the changes (see ":help recovery").

FILE PERMISSIONS

chmod: Change file permissions

```
ubuntu@ubuntu:~/Desktop$ chmod 755 file.txt
ubuntu@ubuntu:~/Desktop$
```

chown: Change file owner

```
ubuntu@ubuntu:~/Desktop$ chown ubuntu file.txt
```

chgrp: Change file group

```
ubuntu@ubuntu:~/Desktop$ chgrp ubuntu file.txt
```

FILE COMPRESSION AND ARCHIVING

tar: Archive files

```
ubuntu@ubuntu:~/Desktop$ tar -cvf archive.tar file.txt
file.txt
```

gzip: Compress files

```
ubuntu@ubuntu:~/Desktop$ gzip file.txt
```

unzip: Extract files from a ZIP archive

```
ubuntu@ubuntu:~/Desktop$ unzip folder
Archive:  folder.zip
replace folder/file.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename:
```

PROCESS MANAGEMENT

ps: List running processes

```
ubuntu@ubuntu:~/Desktop$ ps aux
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMM
root	1	0.0	0.5	104172	10704	?	Ss	12:59	0:01	/sbin
root	2	0.0	0.0	0	0	?	S	12:59	0:00	[kth
root	3	0.0	0.0	0	0	?	I<	12:59	0:00	[rcu
root	4	0.0	0.0	0	0	?	I<	12:59	0:00	[rcu
root	5	0.0	0.0	0	0	?	I<	12:59	0:00	[slu
root	6	0.0	0.0	0	0	?	I<	12:59	0:00	[net

top: Display real-time system information and processes

```
ubuntu@ubuntu:~/Desktop$ top

top - 13:45:28 up 45 min,  2 users,  load average: 0.03, 0.07, 0.11
Tasks: 194 total,   1 running, 190 sleeping,   3 stopped,   0 zombie
%Cpu(s):  2.0 us,  0.7 sy,  0.0 ni, 97.3 id,  0.0 wa,  0.0 hi,  0.0 si,
MiB Mem : 1952.0 total,  218.3 free, 1047.8 used,  905.8 buff/c
MiB Swap:   0.0 total,   0.0 free,   0.0 used.  904.2 avail

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+
1514 root        20   0  337932  52344 16368 S   1.7   2.6   0:24.37
1777 ubuntu      20   0 3363756 263976 79396 S   1.3  13.2   1:22.02
3795 ubuntu      20   0  778096  53240 41856 S   0.7   2.7   0:03.66
  40 root         0 -20       0       0       0 I   0.3   0.0   0:03.94
4164 ubuntu     20   0   23448   5248   3072 R   0.3   0.3   0:00.02
   1 root        20   0  104172  10704  5200 S   0.0   0.5   0:01.97
   2 root        20   0       0       0       0 S   0.0   0.0   0:00.00
   3 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
   4 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
   5 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
   6 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
   8 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
  10 root         0 -20       0       0       0 I   0.0   0.0   0:00.00
  11 root        20   0       0       0       0 I   0.0   0.0   0:00.00
  12 root        20   0       0       0       0 I   0.0   0.0   0:00.00
```

kill: Terminate processes

```
ubuntu@ubuntu:~$ kill 965
```

bg: Run processes in the background

```
ubuntu@ubuntu:~$ bg
```

fg: Bring background processes to the foreground

```
ubuntu@ubuntu:~$ fg
bash: fg: current: no such job
ubuntu@ubuntu:~$
```

SYSTEM INFORMATION

uname: Print system information

```
ubuntu@ubuntu:~$ uname -a
Linux ubuntu 6.2.0-20-generic #20-Ubuntu SMP PREEMPT_DYNAMIC Thu Apr 6
07:48:48 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux
ubuntu@ubuntu:~$
```

df: Display disk space usage

```
ubuntu@ubuntu:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           196M  1.6M  194M   1% /run
/dev/sr0        4.6G  4.6G    0 100% /cdrom
/cow            976M   49M  928M   5% /
tmpfs           976M    0  976M   0% /dev/shm
tmpfs           5.0M   8.0K  5.0M   1% /run/lock
tmpfs           976M    0  976M   0% /tmp
tmpfs           196M  152K  196M   1% /run/user/1000
ubuntu@ubuntu:~$
```

free: Display memory usage

```
ubuntu@ubuntu:~$ free -m
               total        used        free       shared  buff/cache
available
Mem:           1951         1027          254           56          924
Swap:            0            0            0
ubuntu@ubuntu:~$
```

uptime: Show system uptime

```
ubuntu@ubuntu:~$ uptime
13:49:58 up 50 min,  2 users,  load average: 0.01, 0.05, 0.08
ubuntu@ubuntu:~$
```

who: Display logged-in users

```
ubuntu@ubuntu:~$ who
ubuntu  seat0      2023-06-06 13:00 (login screen)
ubuntu  :0          2023-06-06 13:00 (:0)
ubuntu@ubuntu:~$
```

w: Display logged-in users and their activities

```
ubuntu@ubuntu:~$ w
13:50:33 up 50 min,  2 users,  load average: 0.01, 0.04, 0.08
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
ubuntu    seat0    login-        13:00    0.00s  0.00s  ?      /usr/li
ubuntu    :0       :0            13:00    ?xdm?  2:10   ?      /usr/li
ubuntu@ubuntu:~$
```

NETWORKING

ifconfig: Configure network interfaces

```
ubuntu@ubuntu:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
    inet6 fe80::d35f:2221:6b64:7006  prefixlen 64  scopeid 0x20<link>
    ether 08:00:27:6a:8d:a9  txqueuelen 1000  (Ethernet)
    RX packets 593  bytes 529891 (529.8 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 519  bytes 88070 (88.0 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 185  bytes 16011 (16.0 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 185  bytes 16011 (16.0 KB)
    TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```


ping: Send ICMP echo requests to a network host

```
ubuntu@ubuntu:~$ ping google.com
PING google.com (142.250.195.142) 56(84) bytes of data.
64 bytes from maa03s40-in-f14.1e100.net (142.250.195.142): icmp_seq=1 ttl=57 time=15.3 ms
64 bytes from maa03s40-in-f14.1e100.net (142.250.195.142): icmp_seq=2 ttl=57 time=13.5 ms
64 bytes from maa03s40-in-f14.1e100.net (142.250.195.142): icmp_seq=3 ttl=57 time=13.1 ms
64 bytes from maa03s40-in-f14.1e100.net (142.250.195.142): icmp_seq=4 ttl=57 time=14.4 ms
64 bytes from maa03s40-in-f14.1e100.net (142.250.195.142): icmp_seq=5 ttl=57 time=16.9 ms
```

ssh: Securely connect to a remote system

```
ubuntu@ubuntu:~$ ssh nithiya@192.168.0.7
```

scp: Securely copy files between systems

```
ubuntu@ubuntu:~$ scp file.txt nithiya@192.168.0.7:/C:/Windows/System32/
```

wget: Download files from the web

```
ubuntu@ubuntu:~$ wget http://www.google.com
--2023-06-06 13:58:42-- http://www.google.com/
Resolving www.google.com (www.google.com)... 142.250.193.100, 2404:6800:4007:81f::2004
Connecting to www.google.com (www.google.com)|142.250.193.100|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: 'index.html'

index.html          [ <=>          ] 19.95K  --.-KB/s   in 0s

2023-06-06 13:58:42 (163 MB/s) - 'index.html' saved [20425]

ubuntu@ubuntu:~$
```

SYSTEM ADMINISTRATION

sudo: Execute commands with superuser privileges

```
ubuntu@ubuntu:~$ sudo su
root@ubuntu:/home/ubuntu#
```

apt-get: Package management for Debian-based distributions

```
ubuntu@ubuntu:~$ sudo su
root@ubuntu:/home/ubuntu# apt -get update
E: Command line option 'g' [from -get] is not understood in combination
with the other options.
root@ubuntu:/home/ubuntu# apt-get update
Ign:1 cdrom://Ubuntu 23.04 _Lunar Lobster_ - Release amd64 (20230418) 1
unar InRelease
Hit:2 cdrom://Ubuntu 23.04 _Lunar Lobster_ - Release amd64 (20230418) 1
unar Release
Get:4 http://archive.ubuntu.com/ubuntu lunar InRelease [267 kB]
```

yum: Package management for Red Hat-based distributions

```
root@ubuntu:/home/ubuntu# yum info vsftpd
Command 'yum' not found, did you mean:
  command 'num' from deb quickcal (2.4-1)
  command 'uum' from deb freewnn-jserver (1.1.1~a021+cvcs20130302-7build
1)
  command 'sum' from deb coreutils (9.1-1ubuntu2)
  command 'zum' from deb perforate (1.2-5.3)
Try: apt install <deb name>
root@ubuntu:/home/ubuntu#
```

systemctl: Manage system services

```
root@ubuntu:/home/ubuntu# systemctl list-unit-files --type service -all
UNIT FILE                                     STATE                                     >
accounts-daemon.service                     enabled                                >
alsa-restore.service                         static                                >
alsa-state.service                          static                                >
alsa-utils.service                          masked                                >
anacron.service                             enabled                                >
apparmor.service                            enabled                                >
apport-autoreport.service                   static                                >
apport-forward@.service                     static                                >
apport.service                              enabled                                >
apt-daily-upgrade.service                   static                                >
apt-daily.service                           static                                >
apt-news.service                            static                                >
autovt@.service                             alias                                  >
avahi-daemon.service                       enabled                                >
blk-availability.service                    enabled                                >
bluetooth.service                           enabled                                >
bolt.service                                static                                >
brlty-udev.service                          static                                >
brlty.service                               disabled                              >
casper-md5check.service                     enabled                                >
casper.service                              enabled                                >
cloud-config.service                       enabled                                >
lines 1-23
```

crontab: Schedule recurring tasks

```
ubuntu@ubuntu:~$ sudo su
root@ubuntu:/home/ubuntu# crontab -e
no crontab for root - using an empty one

Select an editor. To change later, run 'select-editor'.
 1. /bin/nano      <---- easiest
 2. /usr/bin/vim.tiny
 3. /bin/ed

Choose 1-3 [1]: 1
No modification made
root@ubuntu:/home/ubuntu#
```

useradd: Add a new user

```
root@ubuntu:/home/ubuntu# useradd new
```

passwd: Change user password

```
root@ubuntu:/home/ubuntu# passwd new
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
root@ubuntu:/home/ubuntu#
```