

# ADVANCED COMPUTER NETWORK ASSIGNMENT

**Topic:** - Take screenshots of basic Linux commands II

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# BASIC LINUX COMMANDS

## 1. echo

- echo command is used to move some data into a file.
- If you want to add the text, “Hello, my name is John” into a file called name.txt, you would type **echo Hello, my name is John>>name.txt**

```
kaj@kaj-VirtualBox:~/Documents$ echo My name is Anilect>>name.txt
kaj@kaj-VirtualBox:~/Documents$ ls
abcc.sh  abc.sh  files  name.txt
kaj@kaj-VirtualBox:~/Documents$
```

## 2. Head

The head command is used to view the first lines of any text file.

- By default, it will show the first ten lines, but you can change this number to your liking.
- If you only want to show the first five lines, type
  - **head -n 5 filename.txt**

```
kaj@kaj-VirtualBox:~/Documents$ head -n 5 name.txt
1. Pather Panchali (1955)      8.5
2. Nayakan (1987)             8.5
3. Pariyerum Perumal (2018)   8.5
4. Anbe Sivam (2003)          8.5
5. Hanky Panky (1979)        8.5
kaj@kaj-VirtualBox:~/Documents$ head -n 10 name.txt
1. Pather Panchali (1955)      8.5
2. Nayakan (1987)             8.5
3. Pariyerum Perumal (2018)   8.5
4. Anbe Sivam (2003)          8.5
5. Hanky Panky (1979)        8.5
6. C/o Kancharapalem (2018)   8.5
7. The World of Apu (1959)     8.5
8. Kireedam (1989)            8.4
9. Manichitrathazhu (1993)     8.4
10. Natsamrat (2016)          8.4
```

## 3. Tail

This one has a similar function to the head command, but instead of showing the first lines, the tail command will display the last ten lines of a text file.

- **tail-n 5 filename.txt**

```
kaj@kaj-VirtualBox:~/Documents$ tail -n 5 name.txt
16. Visaaranai (2015)         8.4
17. 3 Idiots (2009)           8.3
18. Like Stars on Earth (2007) 8.3
19. Jersey (2019)             8.3
20. Soorara! Pottru (2020)     8.3
kaj@kaj-VirtualBox:~/Documents$
```

## 4. Read

Read the contents of a line into a variable.

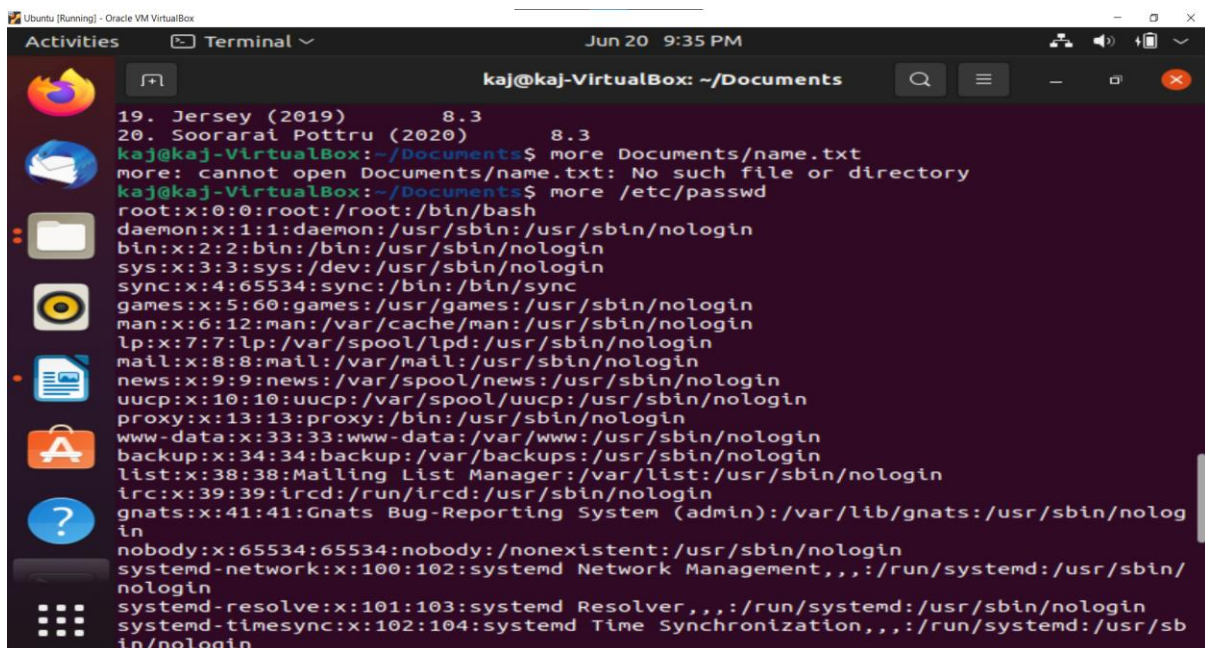
- The **read** command can be used with and without arguments.
- **Read** command is used to read [options] [name...]
  - \$read
  - \$read var1 var2 var3
  - \$echo"\$var1" [\$var2] [\$var3] “

```
kaj@kaj-VirtualBox:~/Documents$ read name;
Anilect
kaj@kaj-VirtualBox:~/Documents$ read name2;
Jose
kaj@kaj-VirtualBox:~/Documents$ echo $name $name2;
Anilect Jose
kaj@kaj-VirtualBox:~/Documents$
```

## 5. more

Like cat command, more command displays the content of a file. Only difference is that, in case of larger files, 'cat' command output will scroll off your screen while 'more' command displays output one screenful at a time.

- Enter key: To scroll down page line by line.
- Space bar: To go to next page
- b key: To go to the backward page
- / key: Lets you search the string
- Syntax: more <file name>
- **more /etc/passwd**



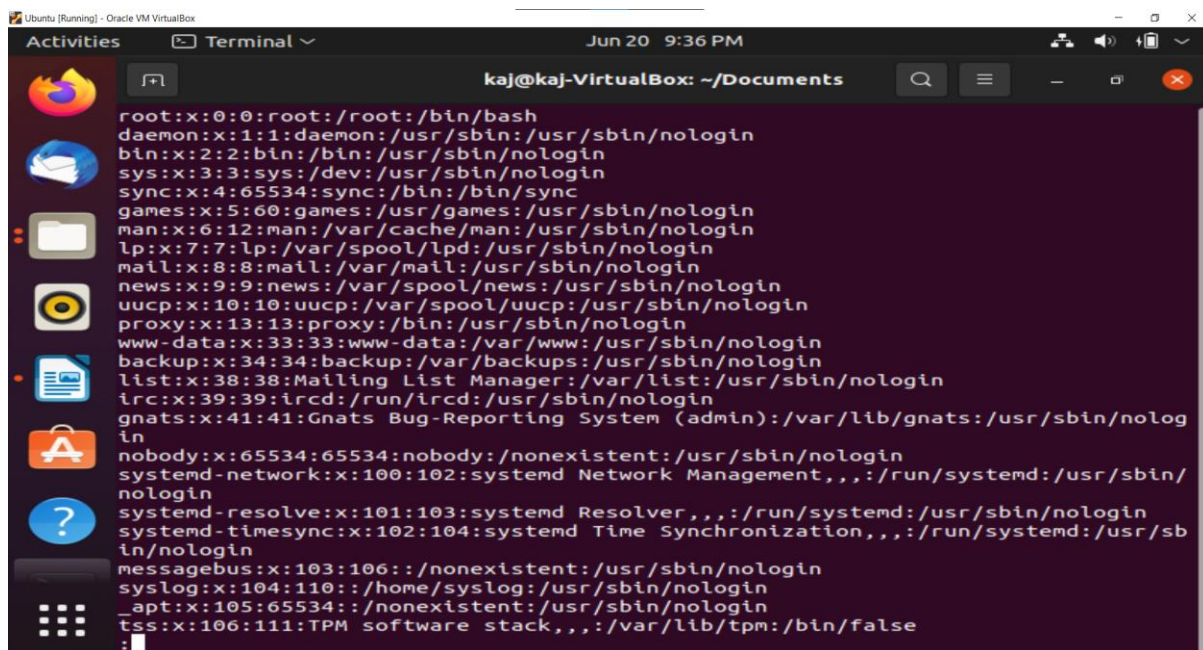
```
19. Jersey (2019) 8.3
20. Soorara! Potturu (2020) 8.3
kaj@kaj-VirtualBox:~/Documents$ more Documents/name.txt
more: cannot open Documents/name.txt: No such file or directory
kaj@kaj-VirtualBox:~/Documents$ more /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
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
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
```

## 6. less

The 'less' command is same as 'more' command but include some more features. It automatically adjusts with the width and height of the terminal window, while 'more' command cuts the content as the width of the terminal window get shorter

- less <file name>
- less etc/passwd

```
kaj@kaj-VirtualBox:~/Documents$ less /etc/passwd
kaj@kaj-VirtualBox:~/Documents$
```

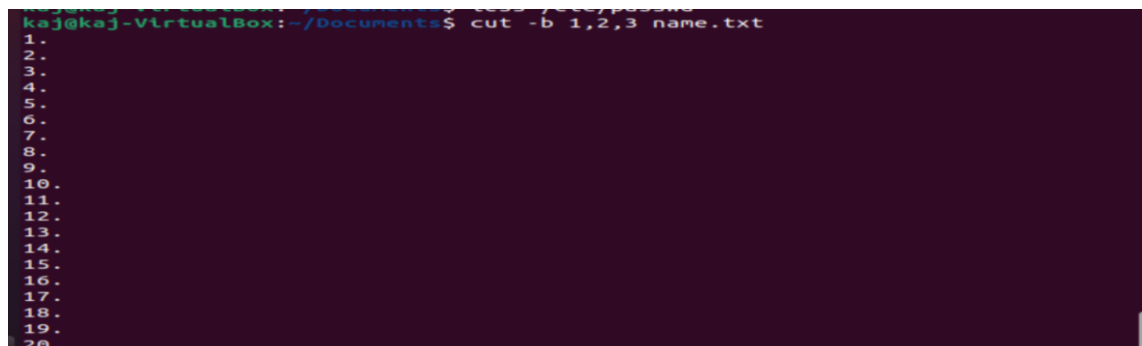


```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106:,:/nonexistent:/usr/sbin/nologin
syslog:x:104:110:,:/home/syslog:/usr/sbin/nologin
_apt:x:105:65534:,:/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
```

## 7. cut

The cut command is used for cutting out the sections from each line of files and writing the result to standard output. It can be used to cut parts of a line by **byte position, character and field**

- cut OPTION ... [FILE]...
- \$cut -b 1,2,3 state.txt



```
kaj@kaj-VirtualBox:~/Documents$ cut -b 1,2,3 name.txt
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
```



## 8. paste

It is used to join files horizontally (parallel merging) by outputting lines consisting of lines from each file specified, separated by tab as delimiter, to the standard output.

- `paste [ OPTION] ... [FILES] ...`
- `$paste state.txt capital.txt`

```
kaj@kaj-VirtualBox:~/Documents/files$ cat >newfile.txt
kaj@kaj-VirtualBox:~/Documents/files$ ls
file1.txt  file2.txt  file3.txt  newfile.txt
kaj@kaj-VirtualBox:~/Documents/files$ paste file2.txt newfile.txt
Also I'm from AJCE
```

## 9. uname

The `uname` command, short for Unix Name, will print detailed information about your Linux system like the machine name, operating system, kernel, and so on.

- `$uname`
- `$uname -r`

```
kaj@kaj-VirtualBox:~/Documents/files$ uname
Linux
kaj@kaj-VirtualBox:~/Documents/files$ uname -r
5.11.0-18-generic
kaj@kaj-VirtualBox:~/Documents/files$
```

## 10. cp

`cp` command is used to copy files from the current directory to a different directory. For instance, the command `cp scenery.jpg`

`/home/username/Pictures` would create a copy of scenery.jpg (from your current directory) into the Pictures directory.

- `cp -i` will ask for user's consent in case of a potential file overwrite
- `cp -p` will preserve source files' mode, ownership and timestamp
- `cp -r` will copy directories recursively
- `cp -u` copies files only if the destination file is not existing or the source file is newer than the destination file

```
cp: cannot create regular file '/files': Permission denied
kaj@kaj-VirtualBox:~/Documents$ cp name.txt files
kaj@kaj-VirtualBox:~/Documents$ ls
abcc.sh  abc.sh  files  name.txt
kaj@kaj-VirtualBox:~/Documents$ cd files
kaj@kaj-VirtualBox:~/Documents/files$ ls
file1.txt  file2.txt  file3.txt  name.txt  newfile.txt
kaj@kaj-VirtualBox:~/Documents/files$
```

## 11. mv

The primary use of the mv command is to move files, it can also be used to rename files. The arguments in mv are similar to the cp command. You need to type mv, the file's name, and the destination's directory.

- **mv file.txt /home/username/Documents**
- To rename files, the Linux is mv oldname.ext newname.ext

```
kaj@kaj-VirtualBox: ~/Documents$ cd ..
kaj@kaj-VirtualBox: ~/Documents$ ls
abcc.sh  abc.sh  files  name.txt
kaj@kaj-VirtualBox: ~/Documents$ mv abc.sh files
kaj@kaj-VirtualBox: ~/Documents$ cd files/
kaj@kaj-VirtualBox: ~/Documents/files$ ls
abc.sh  file1.txt  file2.txt  file3.txt  name.txt  newfile.txt
kaj@kaj-VirtualBox: ~/Documents/files$
```

## 12. locate

To locate a file, just like the search command in Windows.

What's more, using the -i argument along with this command will make it case-insensitive, so you can search for a file even if you don't remember its exact name.

To search for a file that contains two or more words, use an asterisk (\*).

For example, **locate -i school\*note** command will search for any file that contains the word "school" and "note" whether it is uppercase or lowercase.

```
kaj@kaj-VirtualBox: ~$ locate name.txt
/home/kaj/Documents/name.txt
/home/kaj/Documents/files/name.txt
kaj@kaj-VirtualBox: ~$
```

## 13. find

Similar to the locate command, using find also searches for files and directories.

The difference is, you use the find command to locate files within a given directory.

As an example, **find / name notes.txt** command will search for a file called

notes.txt within the home directory and its subdirectories. Other variations when using the find are:

- To find files in the current directory use, find name notes.txt
- To look for directories use, type d name notes.txt

```
kaj@kaj-VirtualBox: ~/Documents$ ls
abcc.sh  files  name.txt
kaj@kaj-VirtualBox: ~/Documents$ find name.txt
name.txt
kaj@kaj-VirtualBox: ~/Documents$
```

## 14. grep

Another basic Linux command that is undoubtedly helpful for everyday use is `grep`. It lets you search through all the text in a given file.

To illustrate, `grep blue notepad.txt` will search for the word `blue` in the `notepad` file. Lines that contain the searched word will be displayed fully. Usually, output of a previous command is piped into the `grep` command. For example `ls-l | grep "kernel"`.

```
kaj@kaj-VirtualBox:~/Documents$ cd files
kaj@kaj-VirtualBox:~/Documents/files$ grep Anilect file3.txt
I'm Anilect Jose
kaj@kaj-VirtualBox:~/Documents/files$
```

## 15. df

Use `df` command to get a report on the system's disk space usage, shown in percentage and KBs. If you want to see the report in megabytes, type `df -m`.

```
kaj@kaj-VirtualBox:~/Documents/files$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
tmpfs            99556      1412     98144    2% /run
/dev/sda3       9735476  7798920   1422304   85% /
tmpfs           497772        0     497772    0% /dev/shm
tmpfs           5120         4        5116    1% /run/lock
tmpfs           4096        0        4096    0% /sys/fs/cgroup
/dev/sda2       524252     5340     518912    2% /boot/efi
tmpfs           99552      136     99416    1% /run/user/1000
kaj@kaj-VirtualBox:~/Documents/files$
```

## 16. du

If you want to check how much space a file or a directory takes, the `du` (Disk Usage) command is the answer. However, the disk usage summary will show disk block numbers instead of the usual size format.

- If you want to see it in bytes, kilobytes, and megabytes, add the `-h` argument to the command line.

`$du -h`

```
kaj@kaj-VirtualBox:~$ du
4      ./ssh
4      ./Desktop
4      ./Videos
4      ./Downloads
24     ./Documents/files
36     ./Documents
12     ./gnupg
4      ./Public
8      ./config/goa-1.0
32     ./config/evolution/sources
36     ./config/evolution
4      ./config/gnome-session/saved-session
8      ./config/gnome-session
16     ./config/ibus/bus
20     ./config/ibus
8      ./config/gedit
12     ./config/dconf
4      ./config/enchant
84     ./config/pulse
8      ./config/gtk-3.0
4      ./config/nautilus
4      ./config/libreoffice/4/user/autocorr
4      ./config/libreoffice/4/user/extensions/tmp/extensions
4      ./config/libreoffice/4/user/extensions/tmp/registry/com.sun.star.comp.
deployment.executable.PackageRegistryBackend
```

## 17.useradd

This is available only to system admins.

Since Linux is a multi-user system, this means more than one person can interact with the same system at the same time.

useradd is used to create a new user, while passwd is adding a password to that user's account To add a new person named John type, **useradd John** and then to add his password type, **passwd 123456789**

```
kaj@kaj-VirtualBox:~$ useradd kaj
useradd: user 'kaj' already exists
kaj@kaj-VirtualBox:~$ useradd chinnu
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
kaj@kaj-VirtualBox:~$ sudo useradd chinnu
kaj@kaj-VirtualBox:~$ sudo useradd chinnu
useradd: user 'chinnu' already exists
kaj@kaj-VirtualBox:~$
```

## 18. userdel

Remove a user is very similar to adding a new user To delete the user's account type, **userdel UserName**

```
kaj@kaj-VirtualBox:~$ sudo userdel chinnu
kaj@kaj-VirtualBox:~$ sudo userdel chinnu
userdel: user 'chinnu' does not exist
kaj@kaj-VirtualBox:~$
```

## 19. sudo

Short for "SuperUser Do", this command enables you to perform tasks that require administrative or root permissions You must have sufficient permissions to use this command.

**sudo useradd maria**

```
kaj@kaj-VirtualBox:~$ sudo useradd chinnu
kaj@kaj-VirtualBox:~$ sudo useradd chinnu
useradd: user 'chinnu' already exists
kaj@kaj-VirtualBox:~$
```



## 20. passwd

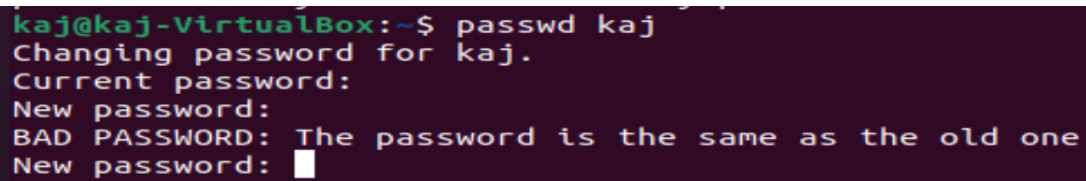
Changes passwords for user accounts

A normal user may only change the password for their own account, while the superuser may change the password for any account.

`passwd[option] [username]`

`passwd`

`passwd user 1`

A terminal window with a dark purple background. The prompt is 'kaj@kaj-VirtualBox:~\$'. The user has entered 'passwd kaj'. The output shows 'Changing password for kaj.', followed by 'Current password:' and 'New password:'. The user has entered a password, but it was rejected with the message 'BAD PASSWORD: The password is the same as the old one'. The prompt 'New password:' is shown again with a cursor.

```
kaj@kaj-VirtualBox:~$ passwd kaj
Changing password for kaj.
Current password:
New password:
BAD PASSWORD: The password is the same as the old one
New password: 
```