# Essential Linux Commands

## Prepared By: Aamir Pinger

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| **Commands** | **What it does** |
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| **ls** | List down all the contents of a directory |
| **cd /bin/** | Changes directory and goes to bin directory |
| **cd ~** | the tilde (~) sign signifies the user’s home dir – change dir to home directory |
| **cd ..** | Means to change directory one level up |
| **mkdir** | A command used to create directories |
| **pwd** | Short for present working directory. This command will display the directory where you are currently in |
| **cat <filename>** | Command to print all the contents of provided filename on the screen |
| **cp /home/ /tmp/** | Copy contents of /home/ to /tmp |
| **mv**  **/directoryName/file1.txt**  **/newDirectoryName/** | Move the file file1.txt to the /newDirectoryName/ directory. You can also use this command to move the entire directory to another  Directory |
| **rm file1.txt** | Delete the file file1.txt. Take extra precaution in using the rm command, especially when you are logged in as root |
| **find / -name “linux\*”** | The find command is a powerful tool that you can use when searching using the command line. The command here will search for any file or directory with a name that starts with linux |
| **uname -a** | This command displays information about the machine, the processor architecture, and the operating system details. |
| **lscpu** | This command returns more information about the system such as the number of CPUs and the CPU speed |
| cat /proc/cpuinfo | This is a file that contains more information than the one displayed using the lscpu command |
| **df -h** | This command displays the disk space usage in all of the mounted devices. The -h option presents the results in a human readable output, using G for gigabytes or M for megabytes sizes |
| **du ~/Downloads** | This command displays all the files inside the specified directory and their corresponding file sizes. You can also specify a filename |
| **du ~/Downloads -sh** | The –s option provides the total file size of the specified directory and -h makes it human readable form |

| **Keys to Use** | **Purpose** | **Example** |
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| **info** | Shows online information about a command | **$** info uname |
| **man** | Shows details (manual) of a command | **$** man uname |
| whatis | Shows a short description of a specific keyword | **$** whatis uname |
| **type** | Shows the location of a command file | **$** type uname |
| alias | Assign a command alias – especially useful for long commands | **$** alias t=type  **$** t uname  **$** alias |
| unalias | Remove command alias | **$** unalias t |
| pwd | Displays the current directory | **$** pwd |
| ln | Create links to files and directories | **$** *ln -s [file] [soft-link-to-file]*  **$** *ln -s abc.txt newAbc.txt* |
| **touch** | To trigger a file stamp update for a file | **$** touch abc.txt |
| **find** | Search for a file based on the name | **$** *find [dir-path] -name [filename]*  **$** *find . -name ap.jpeg* |
| whereis | Search for executable files | **$** *whereis uname* |
| which | Search for files in the directories part of the PATH variable | **$** *which uname* |
| dd | Copy lines of data | **$** dd conv=ucase  Type Hello world **ctrl+d**  **$** echo “hello world > abc.txt  **$** dd if=abc.txt of=newabc.txt conv=ucase  **$** cat newabc.txt |
| diff | Display the results of comparing two files | **$** echo “hello world > abc.txt  **$** echo “hello world > abc1.txt  **$** diff abc.txt abc1.txt -s  **$** echo “hello world123 > newabc.txt  **$** diff abc.txt newabc.txt -s |
| more | Show a text file one page at a time – display can only go forward | **$** ls -R > abc.txt  **$** more abc.txt  **$** ls -R | more |
| less | Show a text file one page at a time – display can only go  forward and backwards | **$** less abc.txt  **$** ls -R | less |
| wc | Display the count of the number of characters, words, and  lines in a file | **$** wc abc.txt |
| cut | Get sections of text in a file | **$** cut -b 1 abc.txt  **$** cut -b 1-3 abc.txt  **$** cut -b 1,3 abc.txt |
| grep | Display results of finding expressions in a file | **$** cat abc.txt | grep Desktop  **$** cat abc.txt | grep -i desktop  **$** grep -i "desktop" abc.txt |
| sed | Perform editing commands, then copy to a standard output | First occurance in every line will be changed  **$** sed 's/Desktop/Dashboard/' abc.txt  2nd occurance in every line will be changed  **$** sed 's/Desktop/Dashboard/2' abc.txt  All occurances will be changed  **$** sed 's/Desktop/Dashboard/g' abc.txt |
| split | Specify a size to break a file into | **$** split abc.txt  **$** ls  **$** rm x\*  -l100 is 100 lines per file  **$** split -l100 abc.txt  **$** ls |
| sort | Arrange the lines in a file | **$** sort abc.txt |
| uniq | Keep unique lines in a file and delete duplicates | **$** echo “Karachi  Karachi  Lahore  Islamabad  Islamabad  Lahore” > abc.txt  **$** cat abc.txt  **$** uniq abc.txt  **$** uniq abc.txt -c  **$** uniq abc.txt -d |
| tar | Archive files with one or more directories | Archive the file  **$** tar -cf archive.tar file1 file2  Extract the files  **$** tar -xf archive.tar |
| **cal** | Show the calendar for the specified month or year | **$** cal  **$** cal -3  **$** cal -m 5  **$** cal -y 2020 |
| **date** | Show/Set the current date and time | **$** date  Sets the system date and time to given date  **$** date -s "11/20/2003 12:48:00" |
| **bg** | Run a program or a process in the background | **$** bg %[PID] |
| **free** | Check for the free memory | **$** free |
| **kill** | Stop a process | **$** kill <PSID> |
| **nice** | Run a program with a low priority, niceness values range from -20 to 19, with the former being most favorable, while latter being least | **$** nice -10 ls -R  **$** nice --10 ls -R |
| **ps** | Show current running processes | **$** ps |
| **top** | Show list of CPU and memory utilization of processes | **$** top |
| reboot | Restart the computer | **$** reboot |
| **shutdown** | Turn off computer | **$** shutdown |
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**Adding user from CLI need few steps/commands at CLI**

First, login as root by using the command su

**aamir@ap-linux:~$ su**

**Password:**

**root@ap-linux:/home/aamir#**

* Add user by using following command syntax

**root@ap-linux:/home/aamir# /usr/sbin/useradd -c "Test User" test**

* Once done with above command type **passwd**

**root@ap-linux:/home/aamir# passwd**

Enter new UNIX password:

Retype new UNIX password:

passwd: password updated successfully

root@ap-linux:/home/aamir#

* To modify an account, use the **usermod** command
* To delete the user account, use the **/usr/sbin/userdel <username>** command
* To add a user group, you need to use the command **groupadd <groupname>**
* For example, let’s create a group named office. To create this group,

**root@ap-linux:/home/aamir# groupadd office**

* To add test user which we create recently to above created office group

**root@ap-linux:/home/aamir# usermod -G office test**

* To delete the group, use the command groupdel office
* A user and group account owns a Linux file or directory. To see the owner of a particular file

**aamir@ap-linux:~$ ls -l <filename>**

* To change the ownership of any file from one user to another user

**aamir@ap-linux:~$ chown <newuser> <filename>**

* To change the group owner of the file

**aamir@ap-linux:~$ chgrp <newgroup> <filename>**