**TODAY’S AGENDA**

**LINUX**

**A) INTRODUCTION**

**1)What is Linux?**

**2)Types??**

**3)Arch. Of linux**

**4)Advantages…!**

**B) BASIC COMMANDS**

**C)Advanced commands**

**Introduction**

**What is linux?**

**Its an Operating system, Open sources-free , manages how computer interacts with the harware and the resources, makes sure evrything is running smooth and efficiently.**

**It was developed in 1991, Linus Torvalds.**

**Open-sourced-free**

**Types:**

**Ubuntu**

**Fedora**

**Debian**

**Redhat**

**Linux mint….etc**

**Architecture of Linux**

A diagram of a variety of applications

Description automatically generated with medium confidence

Kernel : It works closely with the hardware in between the shell and hardware of computer system, prevent conflicts in processes running,

Shell: Basically interacts with the system by means of commands which are then executed , U ser interface of linx, for manageing files, tasks

Hardware layer: RAM, HDD, SSD, CPU,I/O-O/P Machine

Application: To execute any tasks or processes etc.

**Advantages:**

**1)Open-sourced – Free, contribute , modify linux**

**2)Security – very secure**

**3)Freq. Updates**

**4)large community support**

**5)network friendly**

**6)compatible with large file formats**

**7)fast and easy to install**

**B)Linux Basics**

1. clear: To clear the terminal
2. mkdir <dir\_name>: To make directories (folders)
3. ls: To list your directories and files.
4. ls -R: List all the directories and files as well as the subdirectories.
5. ls -a: To list all the directories.(hidden as well)
6. ls -s: To list the block of memory occupied by the directories.
7. ll: To list all the directories with detailed information.
8. ls -al: T o list all the directories including (hidden) with detailed information.
9. mkdir <folder\_name1> <folder\_name2>: To create multiple folders at the same time.
10. mkdir -p <folder\_name>/<sub\_folder\_name>/<sub\_folder\_name>: To create directories and subdirectories at the same time. *[-p stands for parent : it creates the resource if something is not present from before]*
11. cd <directory\_name>: CD stands for change directory and it will open the directory or folder.
12. cd <directory\_name>/<subdirectory>/<multi-subdirectory\_name>: To move to a directory.
13. cd ..: To come out of directory(folder).
14. cd: to move to home directory.
15. cd ../../.. : To come out of multiple directories
16. touch <file\_name>: to create an empty file.
17. nano <file\_name>: To create and add the conent in the file in nano editor.
18. ctrl + s: To save the changes.
19. ctrl + x: to exit the nano editor.
20. nano <file\_name>: To edit a file (if it is alreay present)
21. vi <file\_name>: To create a file using vi editor.

first, you need to press 'i' button to enter into insert mode to make changes to your file. To save the file you first need to come out of the insert mode by pressing 'esc' button.

Then to save your file you need to run the below command:

':w': to save

':q': to exit

':wq': To save and exit

':wq!': to forcefully save and exit from Vi editor.

1. echo “Hello” >> file1.txt: To append new file content in a file.
2. cat <file\_name>: To see the content of the file.
3. cat <file\_name1> <filename\_2> >> <final\_file>: To concatenate the content of two files into a single file.
4. cat <file\_name> > <file\_name2>: To replace the content of the file2 with the content of file1.

>>: will append and save the changes

>: will replace the content and save the changes.

1. pwd: Will show you your present working directory.
2. history: will show you the history of the terminal.
3. rm <file\_name>:  To delete the file.
4. rmdir <foder\_name>: to remove empty directory.
5. rm -r <dir\_name>: To delete non-empty directories.
6. cp <file\_name> <dir\_name>: to copy the file to a target directory
7. cp <file\_name> <dir\_name>/<sub\_dir>: To copy files from one
8. cp -r <dir\_name> <target\_dir>: To copy your directory.
9. cp -r <dir\_name> <target\_dir>/<target\_sub\_dir>: To copy dir to target sub dir.
10. cp -pr <pathofthefile> <targetfolder>: To copy files from one directory to another.
11. mv <file\_name> <dir\_name>: To move your file to any directory.
12. mv <file\_name> <dir/sub\_dir>: To move a file to sub directory.
13. mv <dir\_name> <target\_dir>: to move a dir to target dir.
14. mv <file\_name> <new\_file\_name>: To rename a file.
15. mv <dir\_name> <new\_dir\_name>: To rename a directory.
16. head <file\_name>: To get top 10 lines of files.
17. head -n 5 <file\_name>: To get top 5 lines of file as output.
18. head -5 <file\_name>: To get top 5 lines of file as output.
19. tail <file\_name>: To get last 10 line of file as output.
20. tail -5 <file\_name>: To get last 5 lines of file as output.
21. stat <filename>: To get information about the files.
22. grep <keyword> <file\_name>: To search for a keyword in a file.
23. grep -r <keyword> <directory>: To search for a keyword in a directory.
24. grep -c -w -i <keyword> <file\_name>:

-c : To count the output.

-w : To get the output of exact matches

-i : case insesitive

-o : to get the matches

-v : To invert the search

Search for files and directories based on various criteria.

1. find /path/to/search -name "\*.txt"
2. Find / -name “\*.txt” : To Search from any of the disk
3. sed -i 's/word/replacewith/' <filename> : To find and replace a word in a file
4. Df -hT path/of/the/file : To get to know the disk on which it is stored
5. sudo su: To become a root user.
6. exit: to come out the root user.
7. curl https://intellipaat.com: This should display the content of the URL on the terminal.
8. sudo apt update: To update the packages.
9. wget image-url: Download files from the web.
10. In recent versions of Linux distributions, the netstat command has been replaced by the ss (Socket Statistics) command, which provides similar functionality with improved performance. The ss command should be available on most modern Linux distributions.

\*Use the ss command to display listening ports:

ss -tuln

-t: Display TCP sockets.

-u: Display UDP sockets.

-l: Display listening sockets.

-n: Show numerical addresses instead of resolving hostnames.

If you specifically need to use the netstat command, you might have to install it

1. sudo apt-get install net-tools
2. ifconfig: View and configure network interfaces.
3. ping example.com: Send ICMP echo requests to a network host
4. sudo apt upgrade: To update and install the packages.
5. sudo apt install <package\_name>: To install any package.
6. which <package\_name>: To get the location of the package.
7. <package\_name> -v: To check the version of it.
8. sudo service <package\_name> status: To check the status of a package.
9. sudo service <package\_name> stop: To stop the service.
10. sudo service <package\_name> start: To start the service.
11. systemctl start service\_name: Control the systemd system and service manager.
12. sudo apt autoremove <package\_name> -y: To uninstall a package.
13. sudo apt purge <package\_name>: Deleting Packages

(sudo dpkg –configure -a)

1. This command stands for "process status" and is used to display information about running processes.

ps: List running processes.

aux: These are options that modify the behavior of the ps command:

-a: Shows processes from all users.

-u: Displays detailed information about the processes.

-x: Includes processes that are not attached to a terminal.

1. top: Monitor system processes and resource usage.
2. kill: Terminate processes.

kill process\_id

1. reboot: Restart the system.
2. shutdown now
3. uname: Display system information.
4. uname -a
5. df -h: Reportfile system disk space usage.
6. du -sh directoryname/: Estimate file and directory space usage.

-s: This option tells du to display only the total size of the specified file or directory, rather than showing the sizes of individual files within the directory.

-h: This option tells du to display the size in a human-readable format, using units like KB, MB, GB, etc., to make it easier to understand.

1. free -h: Display memory usage.
2. whoami: Displays current user
3. adduser new\_user: Create a new user account.
4. sudo userdel username: To delete a user.
5. cut -d: -f1 /etc/passwd | sort | uniq: To list all the users  
   It extracts the usernames from the /etc/passwd file.

It sorts the extracted usernames in alphabetical order.

It filters out any duplicate usernames, leaving only unique usernames.

1. usermod: This is the command itself, used to modify user account properties.

-aG: These are options that modify the behavior of the usermod command:

-a: This option is used to add the user to a group without removing them from other groups.

-G: This option is followed by a list of groups to which the user should be added.

1. group: This is the name of the group to which you want to add the user.
2. user: This is the name of the user whose group membership you want to modify.
3. userdel: Delete a user account.

userdel username

1. addgroup: Create a new group (friendlier interface than groupadd).
2. addgroup new\_groupname
3. delgroup: Delete a group (friendlier interface than groupdel).
4. delgroup groupname\_to\_delete
5. passwd username: Change user password.
6. /etc : Diretory which have all the config file
7. w: to check the current users that are logged in.
8. hostname: will print the host name in the terminal.
9. uname -a: To get the details of the os.
10. ps: list the running process.
11. ps -a: To get all the processes.
12. gzip <filename>: To zip a file.
13. gunzip <filename>: To unzip a file.
14. sudo apt install zip:To install zip