**LINUX NOTES**

**Introduction:**

* **LINUX** is an operating system or a kernel distributed under an open-source license. Its functionality list is quite like UNIX. The kernel is a program at the heart of the Linux operating system that takes care of fundamental stuff, like letting hardware communicate with software.
* **Created by Linus Torvalds and released on** September 17, **1991. When he was working on UNIX OS and felt that it needed some changes and when the UNIX designers rejected changes, He decided to come up with his own OS.**

**Linux Text Editors:**

* Linux text editors can be used for **editing text files, writing codes, updating user instruction files,** and more.
* **Command-line text editors** such as Vi, nano
* **GUI text editors** such as gedit
* **<editor name> <filename>**

**Linux Commands:**

**Directory Commands:**

1. **pwd**:

used to display the location of the current working directory.

**Syntax**: pwd

1. **mkdir:**

used to create a new directory.

**Syntax**: mkdir **<directory** name**>**

1. **rmdir:**

used to delete a directory.

**Syntax:** rmdir **<directory** name**>**

1. **ls:**

used to display a list of content of a directory.

**Syntax**: ls

1. **cd:**

used to change the current directory.

**Syntax**: cd **<directory** name**>**

**File Commands:**

1. **touch:**

used to create empty files. We can create multiple empty files by executing it once.

**Syntax**: touch **<file** name**>**

touch **<file1>**  **<file2>** ....

1. **cat:**

used to create a file, display content of the file, copy the content of one file to another file, and more.

**Syntax**: cat [OPTION]... [FILE]..

1. **rm:**

used to remove a file.

**Syntax**: rm <file name>

1. **cp:**

used to copy a file or directory.

**Syntax**: cp **<existing** file name**>** **<new** file name**>**

1. **mv:**

used to move a file or a directory form one location to another location.

**Syntax**: mv **<file** name**>** **<directory** path**>**

1. **head:**

used to display the content of a file. It displays the first 10 lines of a file.

**Syntax**: head **<file** name**>**

1. **tail:**

displays the last ten lines of the file content. It is useful for reading the error message.

**Syntax**: tail **<file** name**>**

1. **tac:**

It is reverse of cat command, as its name specified. It displays the file content in reverse order (from the last line).

**Syntax**: tac **<file** name**>**

1. **more:**

The [more](https://www.javatpoint.com/linux-more) command is quite similar to the cat command, as it is used to display the file content in the same way that the cat command does. The only difference between both commands is that, in case of larger files, the more command displays screenful output at a time.

In more command, the following keys are used to scroll the page:

- **ENTER key:** To scroll down page by line.

**- Space bar:** To move to the next page.

**- b key:** To move to the previous page.

**- / key:** To search the string.

**Syntax:** more <file name>

1. **less:**

[less](https://www.javatpoint.com/linux-less) command is similar to the more command. It also includes some extra

features such as 'adjustment in width and height of the terminal.' Comparatively, the more command cuts the output in the width of the terminal.

**Syntax**: less **<file** name**>**

1. **chmod:**

To modify the file permissions.

**Syntax**: chmod [options] filename

**User Commands:**

1. **su:**

[su](https://www.javatpoint.com/linux-su-commands) command provides administrative access to another user. In other words, it allows access of the Linux shell to another user.

**Syntax**: su **<user** name**>**

1. **id:**

i[d](https://www.javatpoint.com/linux-id-command) command is used to display the user ID (UID) and group ID (GID).

**Syntax**: id

1. **useradd:**

[useradd](https://www.javatpoint.com/linux-create-user) command is used to add or remove a user on a Linux server.

**Syntax**: useradd  username

1. **passwd:**

[passwd](https://www.javatpoint.com/linux-user-password) command is used to create and change the password for a user.

**Syntax**: passwd **<username>**

1. **groupadd:**

[groupadd](https://www.javatpoint.com/linux-add-user-to-group) command is used to create a user group.

**Syntax**: groupadd **<group** name**>**

**Filter Commands:**

1. **cat:**

[cat](https://www.javatpoint.com/linux-cat-filters) command is also used as a filter. To filter a file, it is used inside pipes.

**Syntax**: cat **<fileName>** | cat or tac | cat or tac |. . .

1. **cut:**

[cut](https://www.javatpoint.com/linux-cut) command is used to select a specific column of a file. The '-d' option is used as a delimiter, and it can be a space (' '), a slash (/), a hyphen (-), or anything else. And, the '-f' option is used to specify a column number.

**Syntax**: cut -d(delimiter) -f(columnNumber) **<fileName>**

1. **grep:**

[grep](https://www.javatpoint.com/linux-grep) is the most powerful and used filter in a Linux system. The 'grep' stands for "**global regular expression print**." It is useful for searching the content from a file. Generally, it is used with the pipe.

**Syntax**: command | grep **<searchWord>**

1. **comm:**

['comm'](https://www.javatpoint.com/linux-comm) command is used to compare two files or streams. By default, it displays three columns, first displays non-matching items of the first file, second indicates the non-matching item of the second file, and the third column displays the matching items of both files.

**Syntax**: comm **<file1>** **<file2>**

1. **sed:**

[sed](https://www.javatpoint.com/linux-sed) command is also known as **stream editor**. It is used to edit files using a regular expression. It does not permanently edit files; instead, the edited content remains only on display. It does not affect the actual file.

**Syntax**: command | sed 's/**<oldWord>**/**<newWord>**/'

1. **tee:**

[tee](https://www.javatpoint.com/linux-tee) command is quite similar to the cat command. The only difference between both filters is that it puts standard input on standard output and also write them into a file.

**Syntax**: cat **<fileName>** | tee **<newFile>** |  cat or tac |.....

1. **wc:**

[wc](https://www.javatpoint.com/linux-wc) command is used to count the lines, words, and characters in a file.

**Syntax**: wc **<file** name**>**

1. **sort:**

[sort](https://www.javatpoint.com/linux-sort) command is used to sort files in alphabetical order.

**Syntax**: sort **<file** name**>**

**Networking Commands:**

1. **ip:**

Linux [ip](https://www.javatpoint.com/linux-ip) command is an updated version of the ipconfig command. It is used to assign an IP address, initialize an interface, disable an interface.

**Syntax**: ip a or ip addr

1. **ssh:**

Linux [ssh](https://www.javatpoint.com/ssh-linux) command is used to create a remote connection through the ssh protocol.

**Syntax**: ssh user\_name@host(IP/Domain\_name)

1. **mail:**

[mail](https://www.javatpoint.com/linux-mail-command) command is used to send emails from the command line.

**Syntax**: mail -s "Subject" **<recipient** address**>**

1. **ping:**

[ping](https://www.javatpoint.com/linux-ping) command is used to check the connectivity between two nodes, that is whether the server is connected. It is a short form of "Packet Internet Groper."

**Syntax**: ping **<destination>**

1. **host:**

[host](https://www.javatpoint.com/linux-host) command is used to display the IP address for a given domain name and vice versa. It performs the DNS lookups for the DNS Query.

**Syntax**: host **<domain** name**>** or **<ip** address**>**

**Linux CURL:**

* Linux curl command is used to download or upload data to a server via supported protocols such as HTTP, FTP, IMAP, SFTP, TFTP, IMAP, POP3, SCP, etc. It is a remote utility, so it works without user interaction.
* **Syntax**: curl [options] [URL...]