**LEARN LINUX IN MINUTES**

Linux is an operating system that was developed by Linus Torvalds, a Computer enthusiast who was seeking a way to break out from the paid license and monopoly UNIX offered. It is simply a command-based operating system which requires extensive understanding and use of the terminal or command interface of a UNIX-based operating system.

WHY LINUX ?

Linux is very useful for system administrators, Server operations, security-based tools and software, DevOps, working with the cloud and cloud instances, containerizations and its procedures – infact, if you are not linux saavy, your IT careery journey is hanging in a balance as you would be limited in areas concerning deployment, administration and so on, hence you cannot be relied upon at enterprise-level work.

DISTROS

A distro is referred to as any linux distribution i.e. a variation of linux which was tweaked from the original linux source code. There are so many distributions or distros of linux. Even the current Android OS which most smartphones use was developed from linux. Its source code can be tweaked to develop a new OS to serve a specific need or business or audience.

GETTING STARTED

To get started with linux, we may use any user-friendly linux distribution or operating system such as Ubuntu, Debian or more. You might also use a Macbook as the terminal is linux-based in its operations.

LINUX COMMAND

|  |  |
| --- | --- |
| COMMAND | SUMMARY FUNCTION |
| reboot | Restarting the machine |
| history | Viewing previous commands |
| systemctl start apache | Starts up the apache server |
| systemctl start postgres | Starts up the postgresql database server |
| systemctl status apache | Confirms apache running status |
| ls | Lists directory’s content |
| exit | Exits the terminal/command interface |
| firefox start | Starts up the firefox browser |
| chrome start | Starts up the chrome browser |
| chsh zsh | Change to z-shell |
| bash | Use bash shell |
| upload {filename} | Upload the named file |
| download {filename} | Download the named file |
| unzip {zipped file} | Unzips the named zip file |
| nano {filename} | Opens the named file using nano editor |
| gedit {filename} | Opens the named file using geditor |
| vim {filename} | Opens the named file using vim editor |
| locate {filename} | File location command - Displays the location/full path to the named file |
| cat {filename} | Displays content of the named file |
| cat {file1} {file2} > {file3} | Copy file 1 and file 2’s contents into file 3 |
| mv {file1} {filename} | Rename file to the new name provided – filename |
| remove {file} | Removes or deletes the file |
| echo “Hi” | Prints “file” as output |
| echo “hi” > {file} | Writes the response “Hi” to the named file |
| sudo –su {username} | Switch user to the named user account |
| sudo –su | Switch from user to root |
| mv {file} {dir} | Move file to the named directory |
| cp {file} {dir} | Copies the named file to the named directory |

EXAMPLES

Let’s see the following examples. We can open our terminal with the following command Ctrl + Alt + T (Windows). Alternatively, right-click on an empty area on your desktop (Ubuntu/Debian/Kali Linux) and select the option which says “Open terminal here”

You should find the terminal opened looking like a command-line interface (usually in black) and having your username and hostname as prompt.

To exit this terminal, just type on the prompt the following command – exit

newuser@ubuntu > exit

**[screenshot]**

The terminal should close at this point.

Reopen the terminal. To create a new file with the name mycontent.txt, we use the touch command like below

touch mycontent.txt

Now let’s display the new file we have just created .

To see the file we just created, in our current directory or location, we just type – ls

This means list

newuser@ubuntu > ls

This reveals the new file called mycontent.txt

DIRECTORIES IN LINUX

Files as we know are stored in certain locations called folders or directories. A folder or directory can contain sub-folders/sub directories and other files.

To create a new directory, we use the **mkdir** command **mkdir {newdir}** e.g. **mkdir hospital**

Navigate into this directory by using the cd command

**cd {newdir}** e.g. **cd hospital** This means “change directory” to hospital. You should now be in the hospital directory in your terminal/prompt

TASK 0

Create a new subdirectory called “patients” in this directory

TASK 1

How would you also create a new file called mikedata.txt

Now, let’s create sarah’s hospital records and move them into the patients directory.

**[screenshot]**

In the hospital directory, use the command - **touch sarahdata.txt**

To move it into patients directory, use the command

**mv sarahdata.txt patients**

Enter into the subdirectory using cd command - **cd patients**

You should find the new file for sarah present.

EDITORS

The most popular editor in linux systems are the vim and nano editors. Use **nano sarah.txt** to open the file using the nano editor. With the file opened add

NAME SARAH

DOB 02-21-1995

AILMENT STROKE

ASSIGNED DOCTOR DR. TIM

LAST CHECKUP 3 DAYS AGO

To close this file use Ctrl + X, then Y and hit “ENTER”.

|  |  |
| --- | --- |
| COMMAND | SUMMARY FUNCTION |
| pwd | how present working directory |
| touch {file} | Creates a new file |
| vim {filename} | Open file with vim editor |
| esc : wq | Exit file (in vim editor) |
| shred {filename} | Obsfuscate file contents |
| rm {filename] | Remove file |
| ln -s {file} {hyperlink} | Link to a file using specified hyperlink |
| whoami | Show account name |
| clear | Clear the terminal |
| man {command} | Display a command’s functions and what it does |
| sudo adduser {user} | Create a new user and credentials |
| Wget {download link} | Download an object or resource from the internet |
| Diff {file1} {file2} | Show the lines where file1 and file2 differ – show difference |
| Curl {download link} > {filename} | Download resource from internet into filename |
| Zip {zipfile} {file} | Compress or Zip file into zipfile |

THE CHANGE DIRECTORY COMMAND

The Change Directory command helps with navigation inside of linux and even Windows systems. Its notation is simply **cd**

To go back one directory (from “patients” directory to “hospital”) which is the parent directory, use

**cd..**

Now use the command **ls** to list all contents in hospital directory. You should find patients as a sub-directory in it.

Create a new file called “deleteme.txt” and a sub folder/directory in hospital directory called removeme

How would these 2 items be removed or deleted?

Type **cd removeme** to navigate into the removeme directory. Create a new file in this location called trainwithme.jpg

TASK 2

Delete the deleteme.txt file you earlier created which was located inside of hospital dir.

TASK 3

Delete the removeme directory including all its file contents

Command  
Hints:

**remove, rm, rmdir –r, rmdir, touch, cd**

|  |  |
| --- | --- |
| COMMAND | SUMMARY FUNCTION |
| chmod +x {file} | Add executable permissions to the user for the file to be executed |
| chmod –x {file} | Remove executable permissions from the user for the execution of the file |
| git clone {repo link} | Clone a git repository and its contents |
| python3 {python file} | Run or execute a python file |
| sudo apt-get install {linux metapackage} | Install a metapackage in linux |

A FEW USE CASES

First of all to understand where our present location is i.e. our present working directory – what directory location we are currently, we must use the command **pwd**

If you have deleted the removeme directory and its content file, you should use **pwd** to view your current directory. Type **pwd** in the command terminal and the response shows that you are in the hospital directory.

Navigate to unsplash.com to search any pictures on hospital personel (e.g. doctor) or hospital equipment (e.g. ECG machine). We are going to be downloading one of these images.

Earlier, we saw the commands referred to as **wget**  and **curl** - see the command list. What does **curl** and **wget** do?

You got it right – for downloads. Now click on any of the images in unsplash to open the image on its own separate page. In the page that opens up, go to the address bar in your browser and copy the image’s link.

DOWNLOAD WITH WGET

**wget {paste the image link here}** - do not add these curly braces just

**wget imagelink.** Once pasted, hit the ENTER key.

You should now see a new file inside hospital. Confirm using **ls**

In this hospital directory, we should presently have 2 files there - mikedata.txt and the new image you just downloaded. Linux systems could have an image viewer. Check to see if you can view the image you downloaded with the image viewer on your linux system.

DOWNLOAD WITH CURL

To download the same image but this time in a file of our choice, we can use the **curl** command.

Say we wanted to download an ECG hospital equipment into a new file which we would generate for the image named ECGmachine.jpg. Here’s how the command would look like

**curl {image link} > ECGmachine.jpg**

Now copy the link to an ECG machine at unsplash.com or any other website where an ECG machine can be found and follow the format

**curl {image link} > ECGmachine.jpg** (No braces just the image link)

This generates a file named ECGmachine.jpg and writes that image to the file.

DIFFERENCE

In order to illustrate difference, we would like to work with mikedata file. First let’s create another file called bendata.txt using the touch command. You should know that already.

For the mikedata file add these contents below after opening it using the nano editor i.e.

**nano mikedata.txt**

Now add:

Top salesperson for December 2024. Best performer in previous month – November.

Now nano the Ben file also and add the following:

Top salesperson in December 2024. Best performer.

Having added content to both files now let’s find the “difference” between both. Use the command

**diff mikedata.ext bendata.txt**

Can you spot the difference in content based on the output you have received ?