



Linux : Get your feet wet

Bridge Course '19

EE Dept IITB

24 July 2019

Outline

- 1 Introduction
 - What is Linux
 - Why Linux
- 2 Linux Basics
 - Linux File System
- 3 Standard out and IO redirection
- 4 Some L^AT_EX Examples
 - Tables and Figures
 - Mathematics

Linux is a family of open source Unix-like operating systems based on the Linux kernel,
Typically packaged in a Linux distribution



Why Linux




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 - 5 Almost all tech giants funds linux development

Why Linux ctd..



Why Linux ctd..


1 Free



Why Linux ctd..

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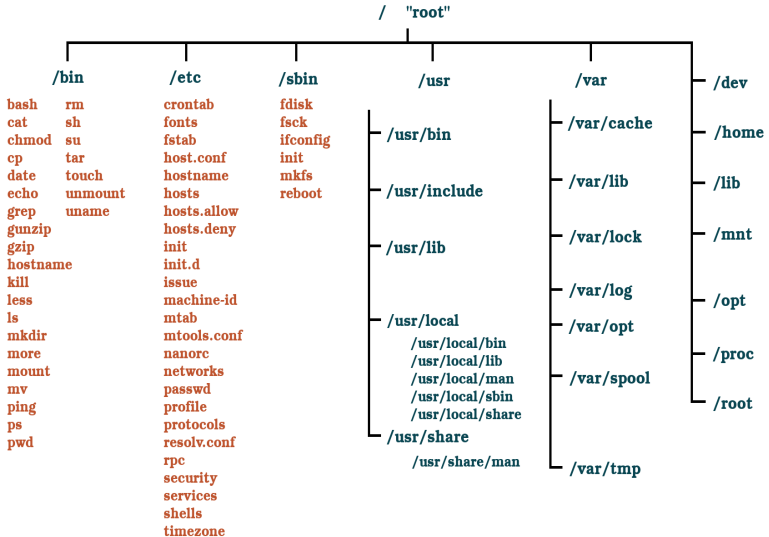
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Why Linux ctd..

- 1 Free
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- 4 Microsoft gives you windows. Linux gives you whole house

File System Hierarchy



Linux File System: Basic commands



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use : `man <command>` - to get the full details regarding any command

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Linux File System: Basic commands

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- 5 `cd` - change directory

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Users, Group and Permissions

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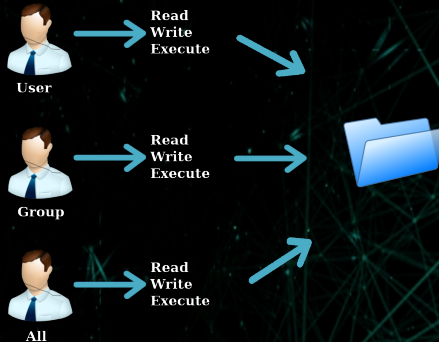
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For each file, permissions are given in three categories.

Users, Group and Permissions

Owners assign permission on every file and directory



TODO

hint

OWNER|GROUP|ALL.

RWX-RWX-RWX

1 use `ls -l` command to find out permission of files given to you.


TODO


hint

OWNER|GROUP|ALL.

RWX-RWX-RWX

- 1 use `ls -l` command to find out permission of files given to you.
- 2 try executing
- 3 `./hello_perm.sh`
- 4 what do you see

- 
- 5 change permission the file using
 - 6 `chmod 111 hello_perm.sh`
 - 7 try executing now .



5 change permission the file using

6 `chmod 111 hello_perm.sh`

7 try executing now .

8 try to read file using

9 `cat hello_perm.sh`

10 `chmod 755 hello_perm.sh`

11 `cat hello_perm.sh`

Echo and output redirection

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- 3 appending (`a+`), `echo "added new line" » test-file`
- 4 substitutions, `echo `pwd``
- 5 substitutions , `echo `cat test-file``
- 6 `echo "current directory is `pwd`"`

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ans : `cut -d ',' -f1 cut-input`

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❹ `grep -i ee5 cut-input2 -c`

grep command

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- 1 `grep <find> <filename>`
- 2 `grep pclab cut-input1`
- 3 `grep -i variant`
- 4 `grep -i ee5 cut-input2 -c`
- 5 `grep with regexes`

pipes(|) and the Unix philosophy

Pipe allows us to redirect the output of one command as the input of another command

common syntax - `command1 input-file | command2`

eg: `cat test-file | sort`

Q: write the command to get only the sorted names from file `cut-input2`
use `cat cut-input2` to inspect the file

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what is the command to sort all lines based on names for `EE1`?

`grep -i ee1 | sort -t ',' -k1`


Git - What & Why?



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- 1 Version control system
- 2 Manages source code history
- 3 Git is local

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- 1 Version control system
 - 2 Manages source code history
 - 3 Git is local
 - 4 Free and open source
 - 5 Fast and small



GitHub

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 - 3 You can have private projects as well
 - 4 Can be used for issue tracking, documentation, and wikis

Other Git repo hosting platforms

- 1 AWS codecommit
- 2 Gitlab - you can also create your own git server using gitlab
- 3 Bitbucket
- 4 Sourceforge
- 5 ...
- 6 git.ee.iitb.ac.in

Getting Started



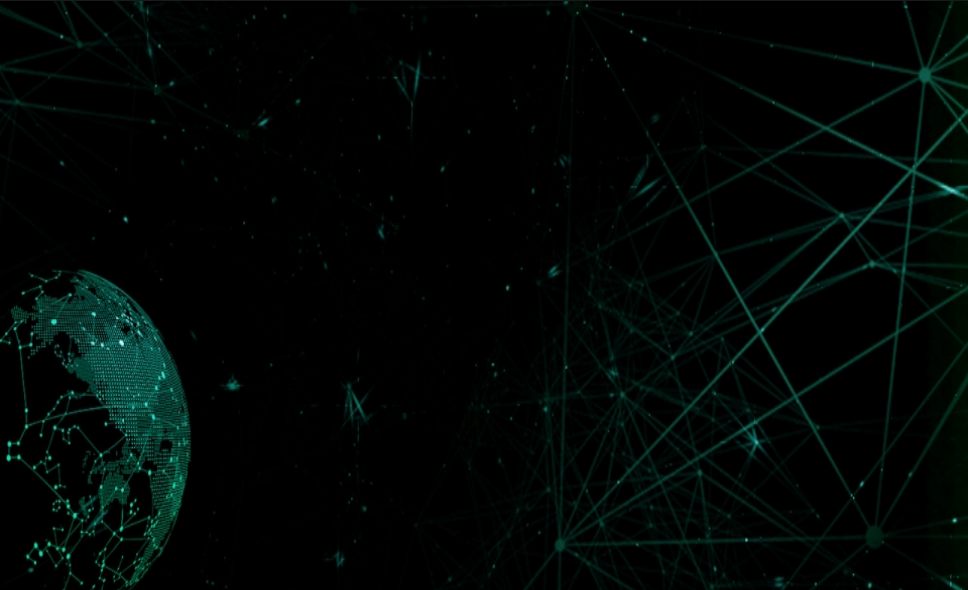
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- 1 Install git
- 2 `sudo apt install git-all`

Getting Started

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- 3 Check installation
- 4 `git --version`

Getting Started



Getting Started

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- 2 `git clone repo-address`
- 3 Eg. `git clone`

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- 4 Adding the changes
- 5 `git add updated-filename`

Getting Started



Getting Started

- 6 Committing changes
- 7 `git commit -m "Commit message"`

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- 8 Pushing changes to remote repository
- 9 `git push origin branch-name`
- 10 Pulling latest changes from remote repository
- 11 `git pull origin branch-name`

Getting Started



Getting Started

12 Other useful commands

13 `git branch`

14 `git status`

15 `git diff filename`

Running python code



Running python code

1 Install Python



Running python code

- 1 Install Python
- 2 For Python 3: `python3 <filename>.py`
- 3 For Python 2: `python <filename>.py`

Facilities Provided by EE Dept



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- 1 Matlab Servers - Ravan and Rudra
- 2 Ravan - 10.107.1.5
- 3 Rudra - 10.107.1.6

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- 6 PC Lab, 1st Floor, EE Dept.

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7 For more details : Visit PCLab FAQ

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- 9 Use : Thunderbird