Linux : Get your feet wet

Bridge Course '19

EE Dept IITB

24 July 2019

Outline

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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Why Linux

1. Access to hardware - almost no restrictions
2. Opensource - view code , modify , learn create
3. Tailor Made - servers , fedora scientific
4. Top 100 fastest supercomputers run linux
5. Almost all tech giants funds linux development

Why Linux ctd..

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1. Free

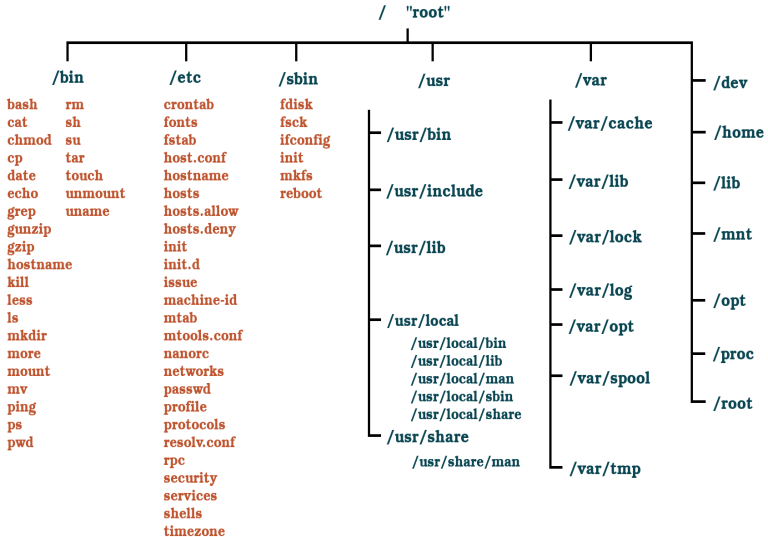# Why Linux ctd..

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4. Microsoft gives you windows. Linux gives you whole house

File System Hierarchy


```
                                    /    "root"
        ┌──────────┬──────────┬──────────┬──────────┬──────────┐
      /bin        /etc       /sbin      /usr        /var        /dev

   bash    rm     crontab    fdisk                             /home
   cat     sh     fonts      fsck     /usr/bin     /var/cache
   chmod   su     fstab      ifconfig                          /lib
   cp      tar    host.conf  init     /usr/include /var/lib
   date    touch  hostname   mkfs                              /mnt
   echo  unmount  hosts      reboot   /usr/lib     /var/lock
   grep   uname   hosts.allow                                  /opt
   gunzip         hosts.deny          /usr/local   /var/log
   gzip           init                  /usr/local/bin         /proc
   hostname       init.d                /usr/local/lib /var/opt
   kill           issue                 /usr/local/man         /root
   less           machine-id            /usr/local/sbin /var/spool
   ls             mtab                  /usr/local/share
   mkdir          mtools.conf
   more           nanorc              /usr/share
   mount          networks              /usr/share/man
   mv             passwd
   ping           profile                          /var/tmp
   ps             protocols
   pwd            resolv.conf
                  rpc
                  security
                  services
                  shells
                  timezone
```

Linux File System: Basic commands

Note

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

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Linux File System: Basic commands

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4. mkdir <dir_name> - create a directory

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Linux File System: Basic commands

1. ls - list the files the current directory

2. pwd - print the working directory

3. touch <file_name> - create an empty file

4. mkdir <dir_name> - create a directory

5. cd - change directory

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Users, Group and Permissions

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For each file, permissions are given in three categories.

Users, Group and Permissions

Owners assign permisssion on every file and directory

User → Read Write Execute

Group → Read Write Execute

All → Read Write Execute
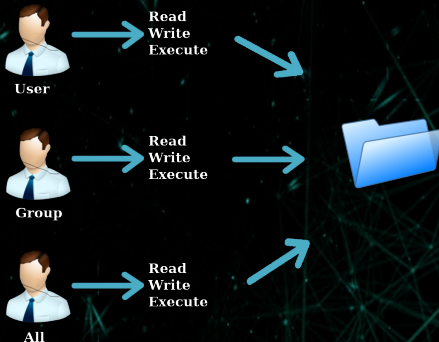
USER|GROUP|ALL .

RWX-RWX-RWX

Tables and Figures

- Use `tabular` for basic tables – see Table 1, for example.
- You can upload a figure (JPEG, PNG or PDF) using the files menu.
- To include it in your document, use the `includegraphics` command (see the comment below in the source code).

Item	Quantity
Widgets	42

Readable Mathematics

Let $X_1, X_2, \ldots, X_n$ be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$ and $\text{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \cdots + X_n}{n} = \frac{1}{n} \sum_i^n X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.