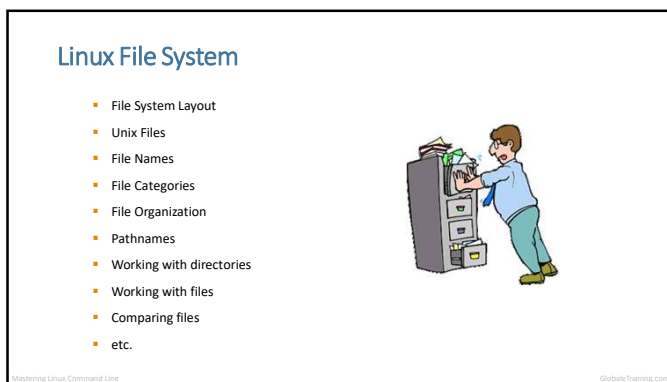




1



2



3

Analogy - House

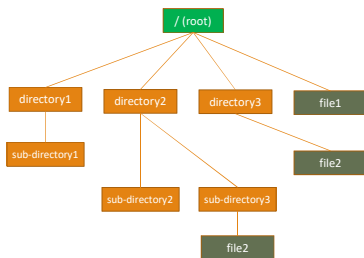
- Living Room
- Kitchen
- Master Bedroom
- Guest Bedroom
- Game Room
- Bathroom

- Living Room
- Kitchen
- Bedroom
- Bathroom

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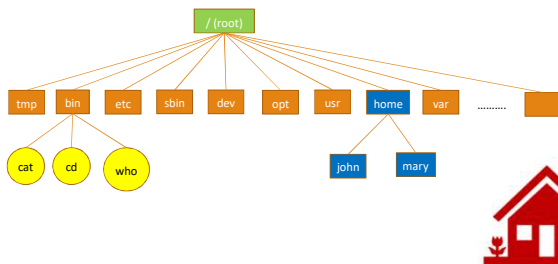
4

Linux File System Organization

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Linux File System Organization - Sample

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Directories

Directory	Purpose
/	Represents the root of the file system. Everything else falls under root.
/bin	Contains binaries
/sbin	Contains system binaries
/var	A place for files that may change often. Example of usage: User Emails
/usr	The "user file system". Contains executables, libraries, man files and other types of documentation
/opt	Contains locally installed software.
/home	User's home directories are located under this directory
/etc	Contains system-wide configuration files and system databases i.e system administration related files.
/dev	Contains files that represent hardware like hard drives etc.
/lib	Stores the needed libraries and data files for programs stored within /usr or elsewhere.
/tmp, /var/tmp	Location for temporary files.

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System Administration Related Info

Hard Disk – Partitions & Mount-points

- Hard disk is partitioned into multiple partitions at the time of OS installation.
- These PARTITIONS are mounted (or mapped or linked) to desired spot.
- A partition with the **mount-point "/"** (called as root) is MUST!
- A partition is configured as "swap partition" which is used by the OS. This is also MUST!
- Optionally, more partitions can be created and mount at:
 - **/opt** (*/opt is referred as the mount-point for the partition mounted*)
 - **/var** (*/var is referred as the mount-point for the partition mounted*)
 - etc.
- If /opt partition is not created, /opt is still created and becomes part of "/" partition.

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System Administration Related Info

"lost+found"

- Each partition has a "lost+found" directory.
- If a partition is mounted at **/opt**, then you will see **/opt/lost+found**.
- It is used by the "fsck" command or similar functionality commands.
 - File System Check.
- Used by Linux System Administrators for filesystem management.

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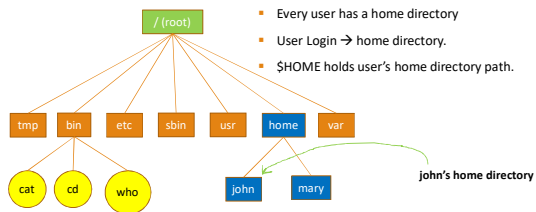
Home Directory

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Home Directory



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File Types

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File Types

- Regular Files (-)
- Directory Files (d)
- Special Files
 - ✓ Block Device Files (b)
 - ✓ Character Device Files (c)
 - ✓ Named pipe files (p)
 - ✓ Symbolic link files (l)
 - ✓ Socket files (s)

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Regular Files

- Readable file
- A binary file
- Image file
- Compressed file

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Directory Files

- This type of file contains other files and sub-directories.

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Special Files

Block Device File

These files are hardware files most of them are present in /dev.

Character Device File

Provides a serial stream of input or output. Your terminals are classic example for this type of files.

Pipe File

Pipes allow separate processes to communicate without having been designed explicitly to work together.

Example: |

Symbolic Link File

These are links to other files.

Socket Files

A socket file is used to pass information between applications for communication purpose

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Everything is a file

- Everything is a file in Linux.
 - ✓ Hard Disk
 - ✓ CD-ROM
 - ✓ Memory
 - ✓ Printer

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File Naming Restrictions

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File Names

- **Case-sensitive**
- **You can use:**
 - Alphabets – Upper & Lower
 - Numbers
 - . (dot)
 - _ (underscore)
 - - (hyphen)
 - Etc

- myfile
- Myfile

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File Names – Avoid these

- /
- *
- ?

- :
- &

- >
- <

- (
-)
- {
- }

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File Names – File Extension

- File extension has no significance
- It only adds visual value.
- **Example:**
 - myfile
 - myfile.txt

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Understanding Linux Paths

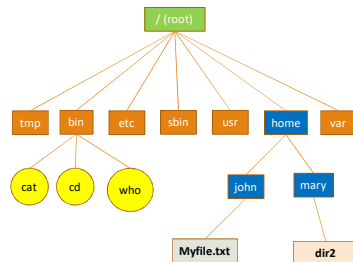
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Paths

- Parent Directory
- Sub-directory or Child-directory
- Absolute Paths
- Relative Paths
- ./
- .
- ..
- Home Directory
- ~

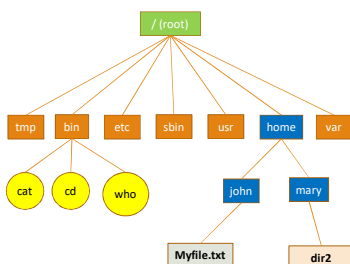


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Paths



Absolute Path Example

/home/john/Myfile.txt

Relative Path Example

./Myfile.txt

~/Myfile.txt

. → Current Directory

.. → Parent Directory

~ → Home Directory

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DOTS

- Filenames or directory names that start with a dot (.)

Hidden Files/Folders

- System/User level dot files

- ✓ .profile
- ✓ .exrc
- ✓ .bashrc
- ✓ DOT (.)

Command	Purpose
ls	List contents of a folder
ls -l	Long list
ls -a	List hidden files also

- Two DOTS (..)

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Wild Cards

Special Character	Purpose
*	Match all character
?	Match any one character
[]	Match specified between [and]

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