

Linux Spoken Tutorial

The Linux File System

Talk to a Teacher
National Mission on Education through ICT
<http://spoken-tutorial.org>

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Pre-requisites :



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- ▶ Ubuntu 10.04
- ▶ Please refer to spoken tutorial on Getting Started with Linux on <http://spoken-tutorial.org>
- ▶ Linux is case sensitive.



File



What is a file?



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- ▶ In real life we know that a file is where we store our documents and papers.



What is a file?

- ▶ In real life we know that a file is where we store our documents and papers.
- ▶ **Similarly in Linux a file is a container for storing information.**



Directory



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- ▶ **A collection of files and other (sub)directories.**



Directory

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- ▶ It gives:



Directory

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- ▶ **It gives:**

a Systematic storage of files.



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 - a Systematic storage of files.
 - b Better protection and access control



Directory

What is a directory?

- ▶ A collection of files and other (sub)directories.
- ▶ It gives:
 - a Systematic storage of files.
 - b Better protection and access control
 - c Easier naming scheme for files



File Inode



File Inode

- ▶ **Along with its contents, a file has a name and some properties, like:
The files creation/modification date, owner, size, its permissions and where on the disk its stored.**



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- ▶ The properties are stored in the files inode, a special block of data in the file system.



File Inode

- ▶ Along with its contents, a file has a name and some properties, like:
The files creation/modification date, owner, size, its permissions and where on the disk its stored.
- ▶ The properties are stored in the files inode, a special block of data in the file system.
- ▶ A directory is a file that holds the inode numbers and names of other files.



Types of Files



Types of Files

In Linux there are three kinds of files:



Types of Files

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- 1. Regular Files or Ordinary files**



Types of Files

In Linux there are three kinds of files:

1. Regular Files or Ordinary files
2. **Directories**



Types of Files

In Linux there are three kinds of files:

1. Regular Files or Ordinary files
2. Directories
3. Device Files
 - helps to read from and write to devices in a way similar to that for ordinary files.



All files in Linux are related



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- ▶ **A directory containing files and subdirectories have a parent child relationship with each other.**



All files in Linux are related

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- ▶ **Linux File System Tree**



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- ▶ At the top is the root(denoted by a frontslash /).



All files in Linux are related

- ▶ A directory containing files and subdirectories have a parent child relationship with each other.
- ▶ Linux File System Tree
- ▶ At the top is the root(denoted by a frontslash /).
- ▶ Easy navigation from one file or directory to other .



Home directory and Current directory



Home directory and Current directory

- ▶ When we login into the Linux system we are by default in a home directory.



Home directory and Current directory

- ▶ When we login into the Linux system we are by default in a home directory.
- ▶ The **pwd** command helps us to see the current directory.



Change Directory(cd)



Change Directory(cd)

- We can move from one directory to other.
The cd command is used for this.



Change Directory(cd)

- ▶ We can move from one directory to other. The cd command is used for this.
- ▶ **Absolute Pathnames and Relative Pathnames**



Change Directory(cd)

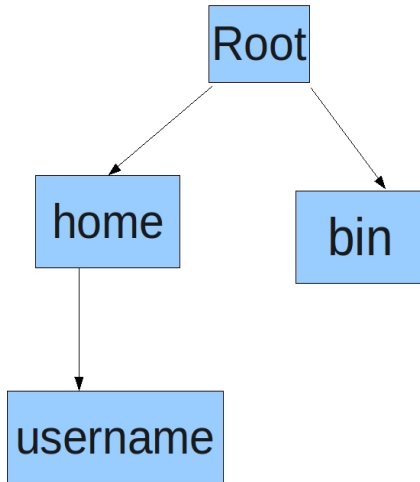
- ▶ We can move from one directory to other. The cd command is used for this.
- ▶ Absolute Pathnames and Relative Pathnames
- ▶ **. represents current directory**



Change Directory(cd)

- ▶ We can move from one directory to other. The cd command is used for this.
- ▶ Absolute Pathnames and Relative Pathnames
- ▶ . represents current directory
- ▶ .. represents the parent of the current directory





The mkdir command



The mkdir command

- Used to create a directory



The rmdir command



The rmdir command

- **Used for removing a directory or directories.**



The rmdir command

- ▶ Used for removing a directory or directories.
- ▶ **A directory can be removed by us only**



The rmdir command

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- ▶ A directory can be removed by us only
 1. if we are its owner



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 2. **our current directory is hierarchically above the directory to be removed**



The rmdir command

- ▶ Used for removing a directory or directories.
- ▶ A directory can be removed by us only
 1. if we are its owner
 2. our current directory is hierarchically above the directory to be removed
 3. the directory is empty



Acknowledgement

- ▶ Spoken Tutorial Project is a part of Talk to a Teacher Project
- ▶ Supported by the National Mission on Education through ICT, MHRD, Government of India.
- ▶ More information:
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