

INTRODUCTION TO LINUX

(in an HPC context)

Version 20.09 | HPC.NRW Competence Network

LINUX DIRECTORY STRUCTURE

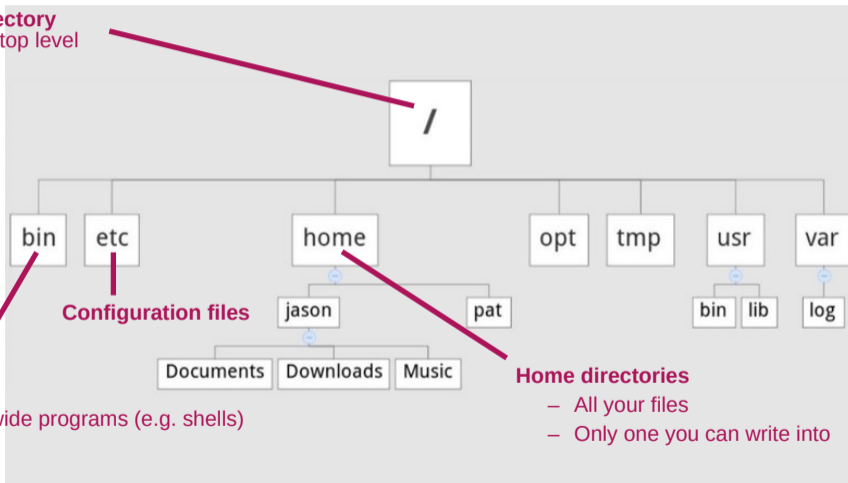
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INTRODUCTION TO LINUX

- Directory tree structure different from Windows
 - No drive letters (`C:\`)
 - Top level (mostly) identical on every Linux system
 - “Mounting points”: location of hard drive in tree structure
- “Path”: location inside file system
 - Example: `/home/bob/Documents/pdf`
 - Absolute path (starts with `/`)
 - Relative path: relative to (current) **working directory**
- Print working directory: `pwd`

EXAMPLE DIRECTORY STRUCTURE

Root directory
Absolute top level

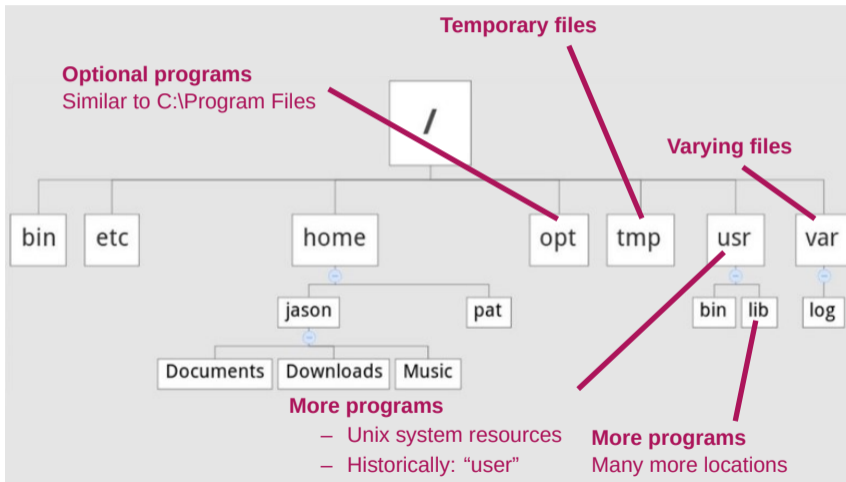


Binaries
System-wide programs (e.g. shells)

Home directories

- All your files
- Only one you can write into

EXAMPLE DIRECTORY STRUCTURE



- Linux principle: everything is a file
 - `/dev` : Device files
 - `/proc` : System information files
- (Almost) every command is a program or script somewhere
`which <Commandname>` to see
- Special abbreviations for directories:
 - `.` (period): current directory
 - `..` (two periods): parent directory
 - `~` (tilde sign): your home directory

- `cd` Command (change directory)
 - Part of POSIX standard
- Usage: `cd <Path>`
 - Can be relative or absolute
 - Must have at least execute permissions
 - Possible to execute but not read a file
 - May be special character, e.g. `cd ..` (parent directory)
- Common mistake: `cd . .` (no space in between)
 - Often defined as an alias to mitigate typo

- `ls` Command
 - Short for “List”
 - List directory contents
 - One of the most common commands in Linux (like `dir` in Windows)
 - `ls -l` is so common that it often has its own shortcut: `ll`
 - Can also show hidden files with `-a`
 - Can sort results, e.g. `-t` to sort by time modified

<Middle Mouse> paste selected text

- NOT Ctrl-C / Ctrl-V, see below

<Ctrl-C> stop current command

<Ctrl-Z> suspend current command

<Ctrl-D> send “End-of-File” to application

- Will usually quit console when on an empty command line
- Quit console with `exit` (SSH connection: back to local console)
- Clear screen: `clear` command