% Unix

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Definition

Unix

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THE

C

unix

https://youtu.be/XvDZLjaCJuw

grep

https://youtu.be/NTfOnGZUZDk

Unix Commands

Listing files

- `ls` list files in current directory
- `ls` -l list files in a long format
- `ls` -a list all files (including hidden files) in current directory
- `ls` -F adds indicators to the list output to identify directories and different types of files.

> For example `ls -al` would list all files in the current directory, including hidden files, in a long format.

Special characters

- `.` the current working directory
- `..` the parent directory to working directory
- `~` your home directory
- `/` the root (top-level) directory. This is also the separator for directories
- `*` a wildcard meaning any string of characters
- `?` a wildcard meaning any single character

Files

- `cp` file1 file2 makes a copy of file1 and calls it file2
- `mv` file1 file2 moves (renames) file1 to file2
- `rm` file1 removes (deletes) file1
- `rm` -i file1 asks for confirmation that you want to delete file1

> there are the `r` and `f` arguments where `r` is for recursive and `f` if for force

Directories

- `pwd` print the working directory
- `cd` *dirname* change directory to *dirname*
- `cd` *..* change to the parent directory of the current
- `cd` ~ change to your home directory
- `mkdir` *dirname* makes a new directory with name "dirname"
- `rmdir` *dirname* removes the directory with name "dirname".
- `rmdir` -r *dirname* recursively removes directories and subdirectories

Text files

- `cat` *file1* writes the whole of file "file1" to the terminal, also useful for concatenating files
- `more` *file1* displays the file "file1" a page at a time
- `less` *file1* a more versatile version of "more"
- `head` -30 *file1* show the first 30 lines
- `tail` -25 *file1* show the last 25 lines
- `tail` -f *file1* show the last few lines and keep updating as the file grows
- `wc` *file1* counts lines, words and characters in a file

control keys

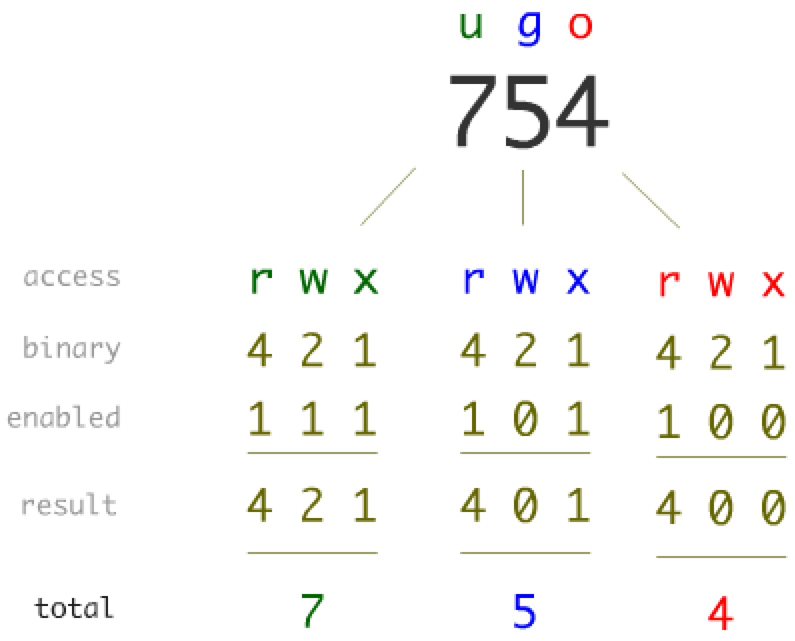
- `ctrl C` interrupts whatever is currently running.
  (It can get you out of trouble at embarrassing moments)
- `ctrl Z` puts a foreground process into the background.
- `ctrl S` suspends current terminal
- `ctrl Q  ` resumes current terminal

Permissions

Unix allow to set ACL (access control list) to files.
User ROOT (Super User) can do anything so can assign permissions.
There are three sets:

- first byte of the set will give access to the OWNER of the file
- Second byte will give access to the GROUP beloging the file
- Third byte will give access privilege to anyone.

Permission bytes



u g o

754

access	r w x	r w x	r w x
binary	4 2 1	4 2 1	4 2 1
enabled	1 1 1	1 0 1	1 0 0
result	4 2 1	4 0 1	4 0 0
total	7	5	4

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List files

```
bash-3.2$ ls -la
total 72
drwxr-xr-x   7 sdipietr  staff    224 Mar 22 08:46 .
drwxr-xr-x  14 sdipietr  staff    448 Mar 21 14:38 ..
-rw-r--r--   1 sdipietr  staff   8196 Mar 21 14:42 .DS_Store
-rw-r--r--   1 sdipietr  staff  12387 Mar 21 16:50 05-Unix.html
-rw-r--r--   1 sdipietr  staff   3204 Mar 22 08:46 05-Unix.md
drwxr-xr-x   7 sdipietr  staff    224 Mar 21 14:53 images
-rw-r--r--   1 sdipietr  staff   1110 Mar 21 14:44 instituteStyle.html
```

Permission alias

- `u` user
- `g` group
- `o` others
- `a` all (equivalent to ugo)
- `+` gain
- `-` lose
- `r` read permission
- `w` write permission
- `x` execute permission

chmod chown

chmod changes file and directory permissions

- `chmod` u+r file1 change permissions of "file1" so user ("u") gains ("+") read permission ("r").
- `chmod` -R 754 *directory*

chgrg change group ownership

- `chgrp` group1 file1 change "file1" to belong to group "group1"

chown change ownership

- `chown` -R *root:user directory*