An Introduction to the Linux Command Line

Matt Gitzendanner: magitz@ufl.edu

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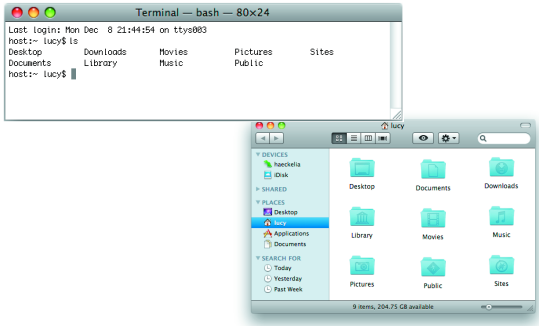
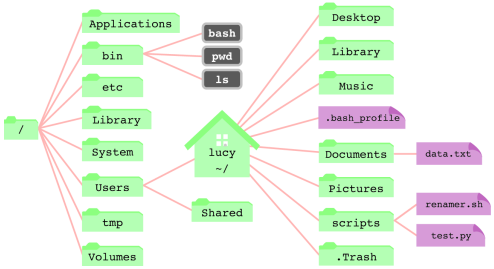
Don't be intimidated!

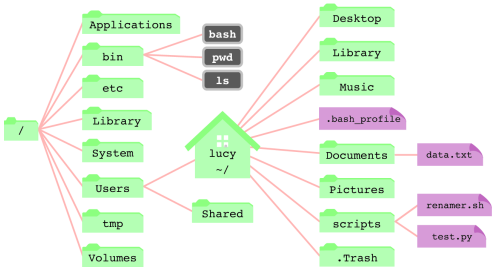
File system



File system

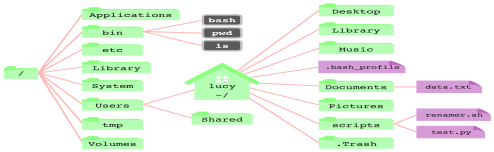


File system: Paths



/Users/lucy/scripts/test.py

File system: `ls` & `cd`




```
[magitz@gator1 scripts]$ ls
renamer.sh  test.py
[magitz@gator1 scripts]$ cd ../Documents/
[magitz@gator1 Documents]$ ls
data.txt
[magitz@gator1 Documents]$
```

The command prompt

user host current directory

```
[magitz@gator1 scripts]$ ls
renamer.sh  test.py
[magitz@gator1 scripts]$ cd ../Documents/
[magitz@gator1 Documents]$ ls
data.txt
[magitz@gator1 Documents]$
```


File system: Basic commands

- `pwd`: Present Working Directory
- `ls`: List--show contents of directory
- `cd`: Change Directory
- `mkdir`: Make directory
- `rm`: Remove a file (`rm -r` for directories)
- `rmdir`: Remove directory

- `cp`: Copy a file: `cp data.txt ../analysis/`
- `mv`: Move a file: `mv data.txt ../analysis/`

Command arguments

- Modify how a command works
  - Used from the most basic command like `ls`, to most applications you will run

```
[magitz@gator1 scripts]$ ls
renamer.sh  test.py
[magitz@gator1 scripts]$ ls -l
total 0
-rw-rw-r-- 1 magitz ufhpc 0 Jul 25 12:22 renamer.sh
-rw-rw-r-- 1 magitz ufhpc 0 Jul 25 12:22 test.py
[magitz@gator1 scripts]$ ls -la
total 8
drwxrwxr-x 2 magitz ufhpc 4096 Jul 25 12:22 .
drwxrwxr-x 4 magitz ufhpc 4096 Jul 25 12:25 ..
-rw-rw-r-- 1 magitz ufhpc    0 Jul 25 12:22 renamer.sh
-rw-rw-r-- 1 magitz ufhpc    0 Jul 25 12:22 test.py
[magitz@gator1 scripts]$
```


Linux permissions

Indicates a directory (d) or a file (–)
Group (set of users)
`drwxrwxrwx`
Other users (everyone else)
User (owner) permissions

- Change with: `chmod o-rwx file`
  - `ls –l` shows permission details

```
-rw-rw-r-- 1 magitz ufhpc 0 Jul 25 12:22 renamer.sh
```

u g o user group

Viewing text files

- `more` and `less`: show contents of a file, `less` has more features (search, scroll up, etc.)
- `head`: show start of file (10 lines by default)
  - `head –n 20 file.txt`
- `tail`: show end of file (10 lines by default)
- `grep`: search for text in file
  - `grep Gainesville weather.txt`

- Text editors: `nano`, `vi`, `vim`, `emacs`, etc.

Redirecting output

- The ">" can be used to redirect output:
  - `grep GNV weather.txt > Gainesville.txt`
  - `ls -l > file_list.txt`
  - **Caution:** > will overwrite the specified file!
- You can append to a file with ">>"

Connecting commands

- The pipe, "|", can be used to send, or pipe, the output of one command to the input of another:
  - `ls -l | grep Jun > files_modified_in_June`

Tip: Don't use spaces in file or directory names

Tools

ssh client to connect to hipergator.rc.ufl.edu

e.g.: Terminal, PuTTY

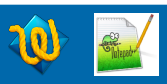
SFTP client to move files to/from your computer

e.g.: Cyberduck, FileZilla

Text editor to prepare files

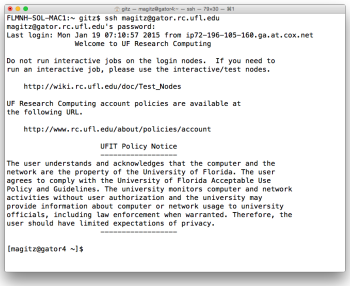
Especially on Windows, be sure to convert DOS line breaks to Unix, and *don't use Word*

Both have SFTP built in



e.g.: TextWrangler, Notepad++

SSH Clients

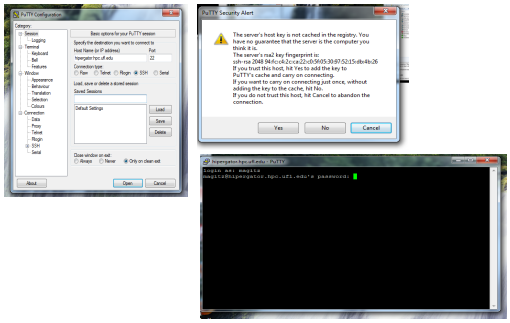


Mac/Linux: Terminal

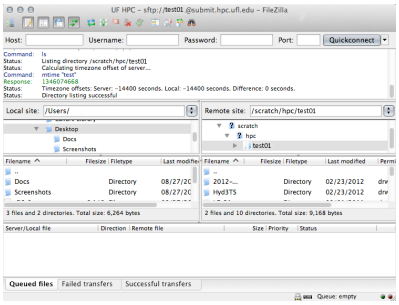
Windows: PuTTY

ssh user@gator.rc.ufl.edu

PuTTY



FileZilla



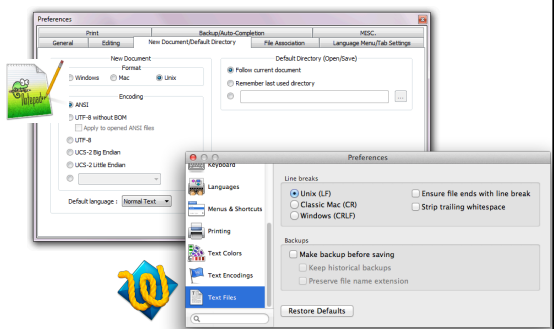
Tutorial at: http://wiki.hpc.ufl.edu/doc/FileZilla

Text Editors

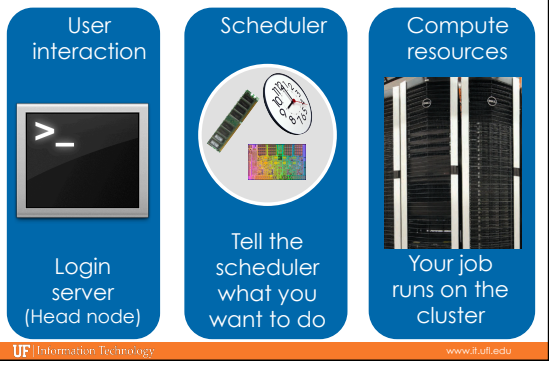
- ***Not*** Microsoft Word or other word processor
- Contextual coloring
- Built-in SFTP Client
- Regular expression find/replace

- **Unix line breaks**

Unix line breaks

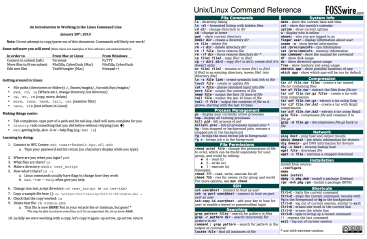


Cluster basics



Learn by doing…

Handouts also available on Wiki



UF Research Computing

- Help Request Tickets
  - https://support.rc.ufl.edu
  - For any kind of question or help requests
  - Searchable database of solutions
- http://wiki.rc.ufl.edu
  - Documents on hardware and software resources
  - Various user guides
  - Many sample submission scripts