Command line crash course

A quick introduction to the linux command line and frequently used commands.

Paths

There are full paths and partial paths in linux. These behave similar to windows and other OSs

- Full paths begin with `/` in linux and specify the exact location of a file or folder (think of any paths that being with C:/ in windows)
- Partial paths are relative to the currently directory they do not begin with any special symbols. (ie `cd somefolder/somefile` would tell linux to append somefolder/somefile to your current path and go there)
- You can also specify current directory with a dot. (ie `cd ./somefolder/somefile` is the same as the previous bullet point)
- Previous directory is specified with two dots (ie `cd ..` will take you up a directory)
- You can also specify your home directory with `~`. Your home directory is the one that the terminal puts you in when you first login (usually /home/username)

Basic Common Commands

Here are some basic commands in linux that most people will want to use

`cd <directory>`

Change directories.

- `cd .` does not do anything
- `cd ..` takes you up a directory
- `cd ~` takes you back to your home directory

```
amdhome@biostats:~$ cd /srv/shiny-server/spins-abcd/
amdhome@biostats:/srv/shiny-server/spins-abcd$ cd .
amdhome@biostats:/srv/shiny-server/spins-abcd$ cd ..
amdhome@biostats:/srv/shiny-server$ cd ~
amdhome@biostats:~$
```

`pwd`

Print working directory: prints the current folder you are in

```
amdhome@biostats:~$ pwd
/home/amdhome
```

`ls`

List files and folders in the current directory You can also specify a full or partial path to print that directories files/folders instead You can append `-al` for more information on the files

```
amdhome@biostats:/srv/shiny-server$ ls
index.html   sample-apps   spins-abcd


amdhome@biostats:/srv/shiny-server$ ls -al
total 12
drwxr-xr-x 3 root root 4096 Jun 13 13:37 .
drwxr-xr-x 3 root root 4096 Jun 13 12:41 ..
lrwxrwxrwx 1 root root   38 Jun 13 12:41 index.html -> /opt/shiny-server/samples/welcome.html
lrwxrwxrwx 1 root root   37 Jun 13 12:41 sample-apps -> /opt/shiny-server/samples/sample-apps
drwxr-xr-x 2 root root 4096 Jun 13 14:07 spins-abcd
```

`mv <source> <destination>`

Move file/folder. Both You also use this to rename things

```
amdhome@biostats:~$ ls
app.R


amdhome@biostats:~$ mv app.R app2.R
amdhome@biostats:~$ ls
```

```
  app2.R

  amdhome@biostats:~$ mv app2.R /tmp/
  amdhome@biostats:~$ ls /tmp
  app2.R
```

`cp <source> <destination>`

Copies files. You can specify `-r` if you want to copy directories

`rm <target>`

Removes files. You can append `-r` to remove directories

`mkdir <target>`

Creates a folder

`sudo`

Sudo is a special command that lets you run commands with elevated (root) permissions. All you have to do is put `sudo` at the beginning of a command. An administrator must have already granted you sudo rights in order to use this command

Exception

The only exception to this is `cd`. This is because for most commands that you run, you are telling your shell (command line/terminal) to run a program. `sudo` is a program that will run another program with elevated permissions. The `cd` command is technically not a program, but a command to tell your shell to change state. Because `cd` is not a program it can not be sudo-ed.

If you need to `cd` to a directory that requires elevated permissions, you can just become root by using the command `sudo -i`:

```
  amdhome@biostats:~$ sudo -i
  root@biostats:~$
```

Do be careful of any action taken while as root or when running with sudo as many sanity checks are bypassed when using linux as root.