UMass LIGO Group
Private Working Area

Software & Tutorials

1) Unix tutorials

This is a collection of Unix tutorials to familiarize with the shell and basic commands. There are links to external sites, so if they break (or if you find better ones!) please speak up or feel free to edit this list and keep it up to date for new students joining the group.

- UNIX tutorial (customized version – for the original, see here)
- learn UNIX in 10 minutes - another starter guide with the most commonly used commands
- a useful overview of the shell
- Quick reference of line commands: linux bash and MAC OS X
- Introduction to bash scripting
- bourne shell for more advanced shell scripting

2) Editor

Emacs is really the way to go, here. It will change your life!

- emacs See also: beginner HOWTO's, tutorial, quick reference of emacs commands
- vim
- nedit (note: this one needs X running – not the best option for the mac, but it is simple to use – also does not come by default)

3) Logging in/out of LDG clusters

Bookmark and explore this page, which is a great reference for everything cluster-related: https://www.lsc-group.phys.uwm.edu/daswg/wiki/LAACDA

Get familiar with the clusters you'll be using. I just mean logging in, having a look around your home directory (which will be empty), copying files to and from the cluster and it'd probably be good to have an idea of how to put things in a place you can view them with a web browser (this is really useful for looking at plots)

Before doing anything on the clusters, you need a valid grid proxy. Type the following in a terminal and hit return:

```
grid-proxy-init
```

To log in:

```
gsissh ldas-grid.ligo.caltech.edu
```

That's to caltech, add -wa or -la to ligo for LHO or LLO. And you'll have the details in emails for UWM and Atlas.

To copy files *to* a cluster, you use scp (or the grid-enabled version):

```
gsiscp <filename> ldas-grid.ligo.caltech.edu:
```

This will copy a file with name <filename> to your *home* directory on the cluster. Note the : at the end. If you want to copy it anywhere more specific, just give the relative pat after your home. e.g.,

```
gsiscp <filename> ldas-grid.ligo.caltech.edu:relative/path
```

(assuming you have a directory called 'relative' with another directory inside that called 'path' in your home directory).

To copy them *from* a cluster, it's the same command in reverse:

```
gsiscp ldas-grid.ligo.caltech.edu:<filename> .
```

Note that '.' is your current directory on your laptop where you perform the command from.

I would make sure you understand this stuff by just copying a text file around.

If you want to put a file somewhere you can view it with a browser, just create a directory in your home on any cluster called public_html and put something in it.

Then point your browser at:

```
ldas-jobs.ligo.caltech.edu/~jkarlen/
```

(assuming it's on caltech and your username is jkarlen)

4) Working on the clusters

A lot of the time, you will probably find yourself editing code, compiling code or running bits and pieces of post-processing pipelines 'by hand' (i.e., from the command line, not from condor – more on that later) on the cluster, just like you would on your local machine.
There are two important things to note:

1. If you're running code, *use a development machine, **not** the head node*. That is, if you are running code you should really log into something like ldas-pcdev1.ligo.caltech.edu and NOT ldas-grid.ligo.caltech.edu! The first is designed to be used by lots of people at once for running memory/cpu intensive jobs, the second (the head node) is designed as a general access machine and to submit condor jobs.
2. If you just log in and leave something running, the connection will eventually hang up and you will LOSE unsaved work, including running processes. The same will happen if you leave something running and shut down your computer or lose your connection. This is very bad. The best way to get around this is to learn to use a program called 'screen'. I **strongly** encourage you to take a tutorial (e.g., http://www.kuro5hin.org/story/2004/3/9/16838/14935 – you can find others by googling for 'screen tutorial') and get used to doing work in screen (tip: try and remember to reconnect to screen sessions and don't leave them running indefinitely – bad things will happen and you won't be able to log in).

5) Python tutorials

- Notes from PHY890D
- ipython installation instructions (also part of PHY890D)
- Practical python for astronomers

UMass LIGO Group
Proudly powered by WordPress.