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Downloading and building Fluidity

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Outline

Getting Fluidity

Configuring and building

Installing

Today...

...we will learn how to:

- Build Fluidity
- Make a mesh
- Set up a Fluidity simulation
- Run a Fluidity simulation
- Look at the output
- Run Fluidity in parallel

Where to get Fluidity

- **Binary** (release only)
  Prebuilt Debian package available through wajig, apt-get, etc.
- **Source** (release, trunk or branch)
  Download using bzr commands, accessing Launchpad.
- **Archived** (release only)
  Tarballed release source code (.tgz)

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Downloading the Release binary

*** please don't do this bit now ***

```
sudo apt-add-repository -y ppa:fluidity-core/ppa
sudo apt-get update
sudo apt-get -y install fluidity
```

The binary of Fluidity requires no compiling or building and will be updated automatically by apt-get.

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Downloading the Release source

*** please don't do this bit now ***

Alternatively, the source code for the release can be accessed using bzr.

```
bzr co lp:fluidity/4.1 fluidity-release/
```

This will require configuring and building, which we will cover later.

Downloading the Trunk source

The source code for the trunk (or any branch) can also be accessed using bzr.

```
bzr co lp:fluidity/ fluidity/
```

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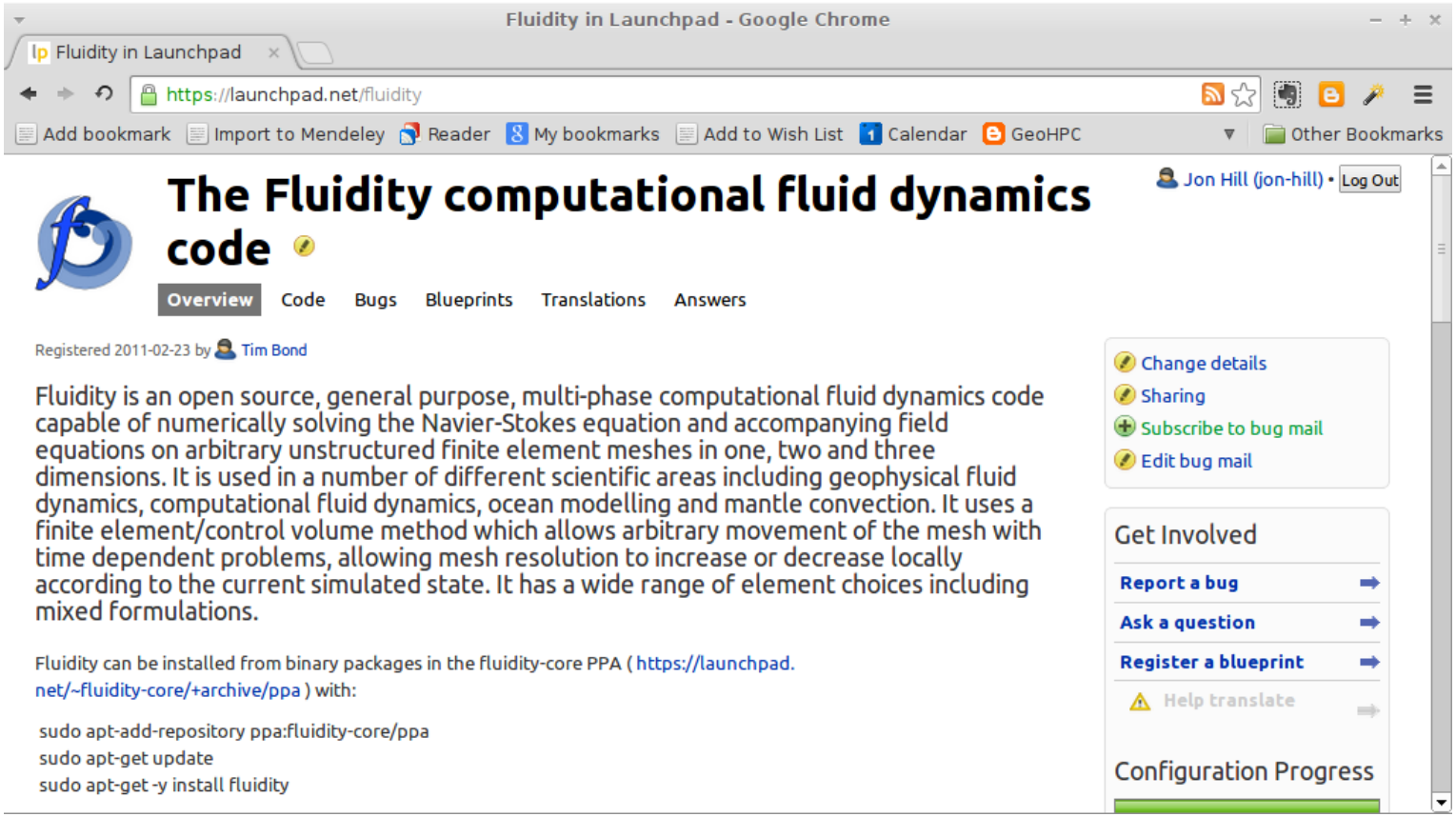
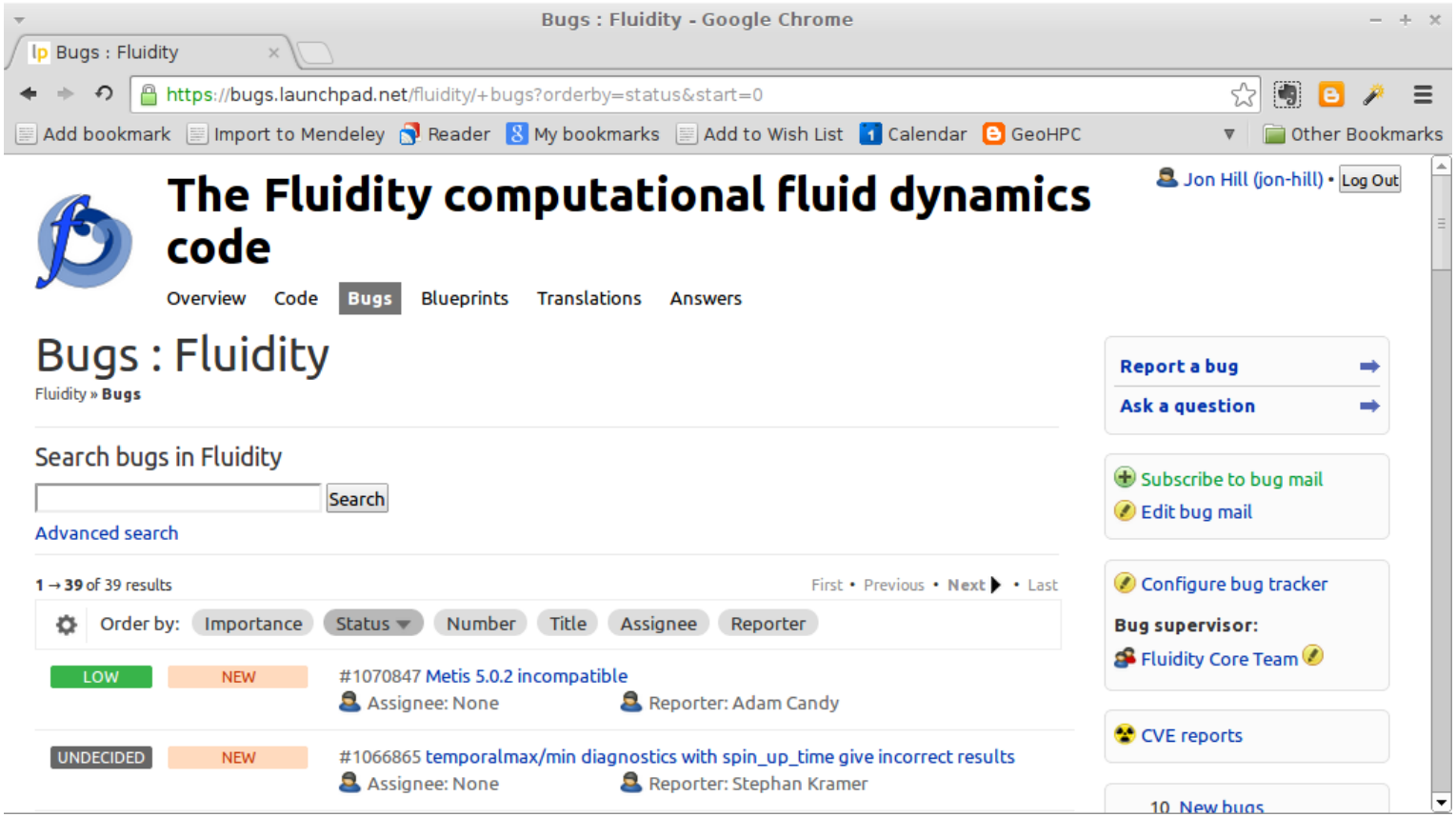
Launchpad



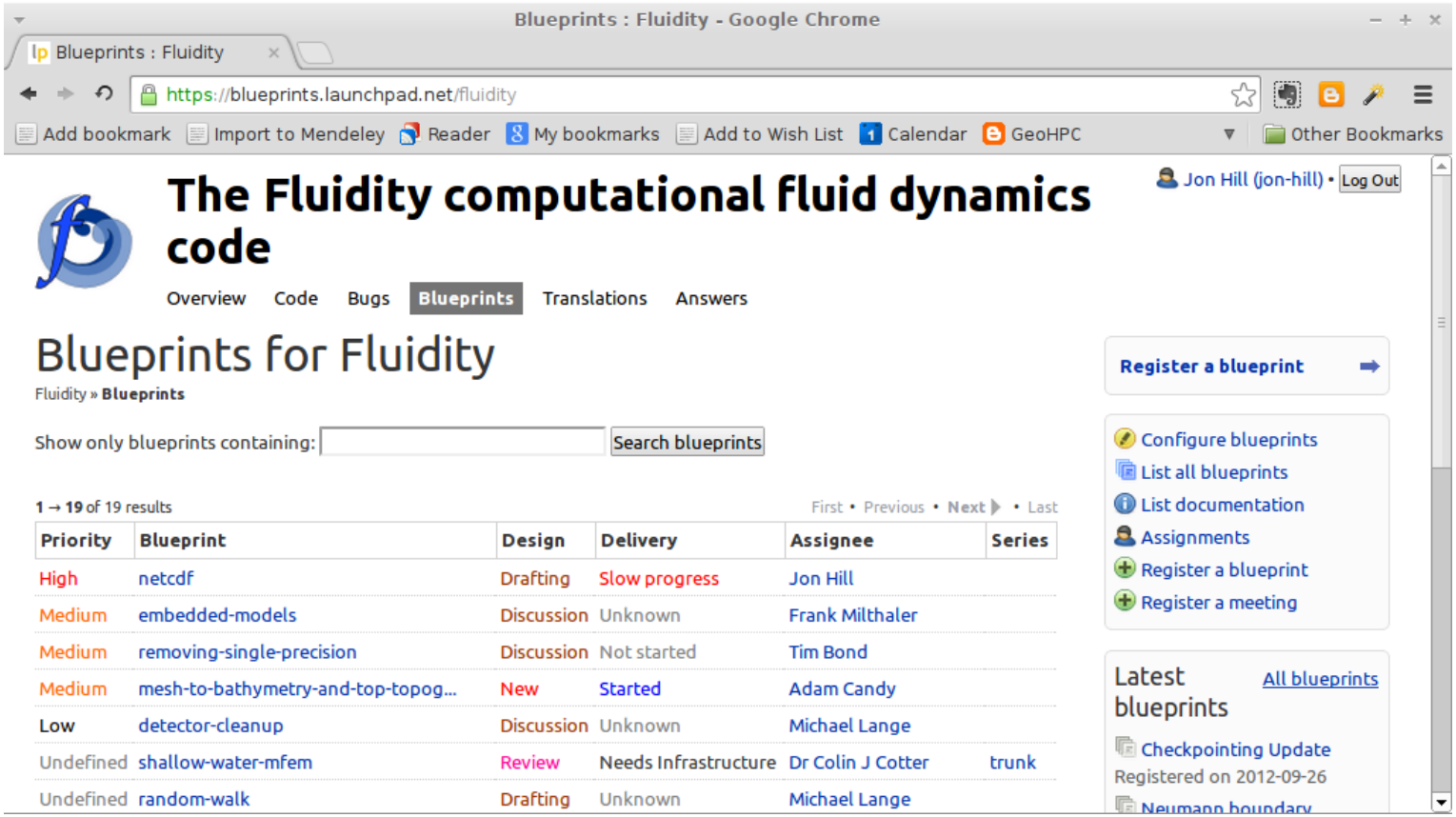
http://launchpad.net/fluidity

Launchpad



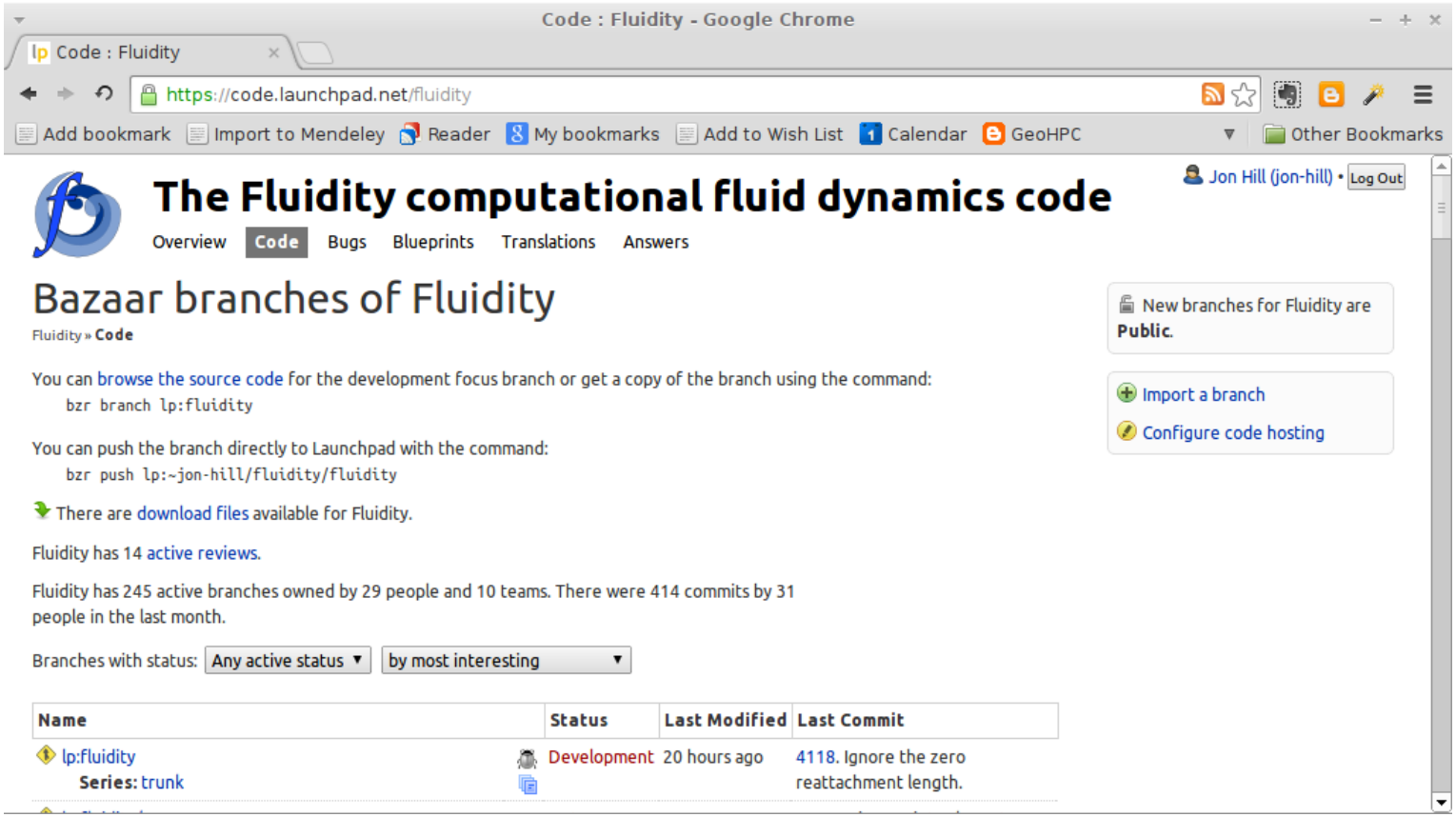
http://launchpad.net/fluidity

Launchpad



http://launchpad.net/fluidity

Launchpad



http://launchpad.net/fluidity

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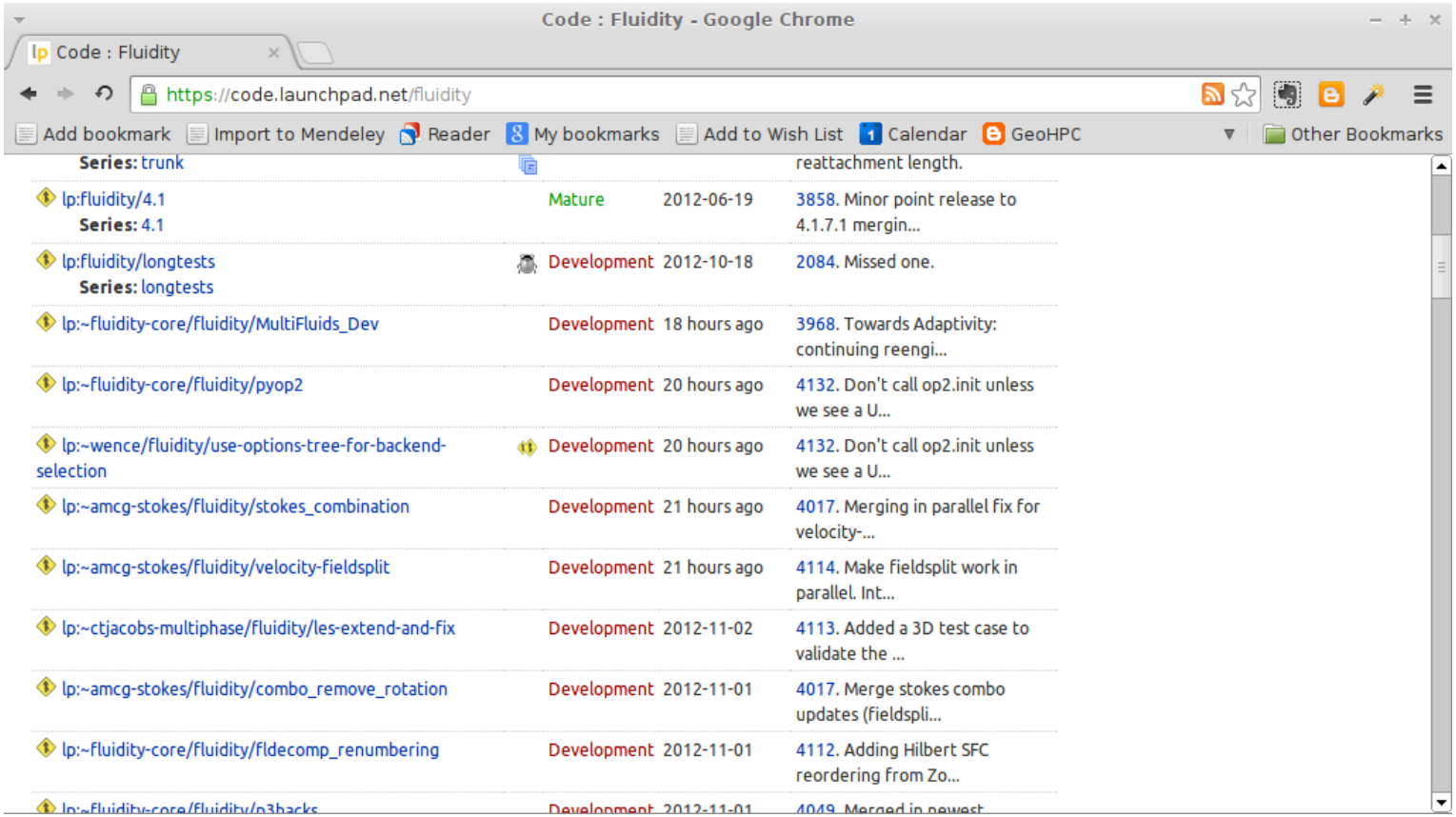
Launchpad



http://launchpad.net/fluidity

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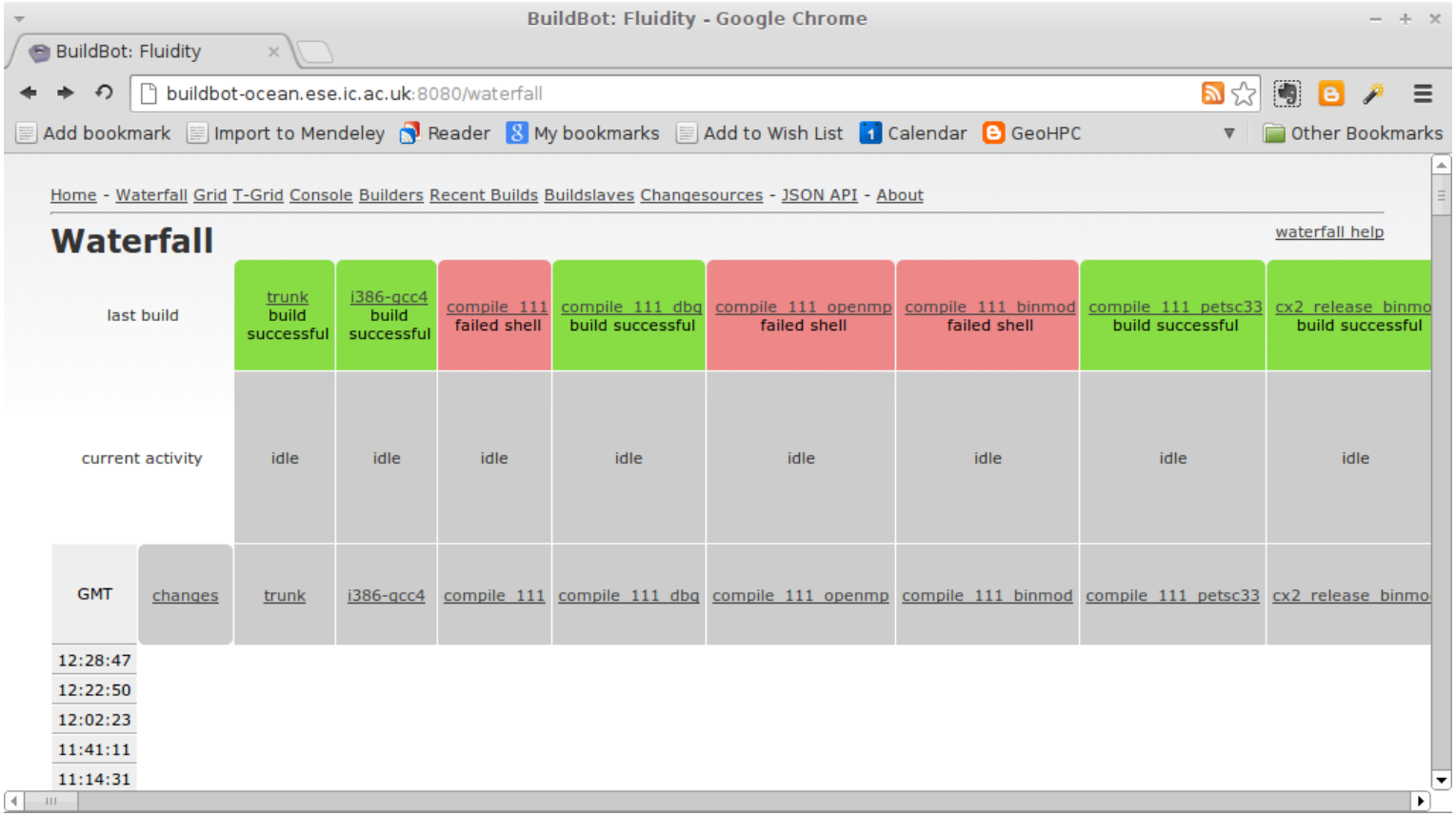
Buildbot



http://buildbot-ocean.ese.ic.ac.uk:8080/waterfall

Configure

Set up compile-time options, such as:

- External non-LGPL libraries
- Non-standard libray locations
- Compiler flags
- Debugging

```
module load petsc-gcc4
cd [fluidity directory]
./configure --enable-2d-adaptivity
```

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Building

```
make clean && make -j 4 && make fltools
```

Python

Fluidity contains several Python packages that are required for it to run. The Fluidity python directory must be added to the existing environment variable PYTHONPATH.

```
export PYTHONPATH=$PYTHONPATH:/data/fluidity/python
```

This can be checked by using the echo command.

```
echo $PYTHONPATH
```

Tests

If you wished to check that a particular build of Fluidity passes the group's library of verification tests then you can use one of these commands.

*** please don't do this bit now ***

```
make unittest
make test
make mediumtest
```

Installing

Installing Fluidity enables access for all other users of your computer.

```
make install
make install-diamond
make install-user-schemata
```

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Running Fluidity

From source:

```
[fl.  dir.]/bin/fluidity -v2 -l [filename].flml
```

From binary:

```
fluidity -v2 -l [filename].flml
```

Updating

```
bzr up

M preprocessor/Populate_State.F90

bzr status
bzr status -SV
bzr diff filename
```

edit ~/.bashrc

.bashrc is a file run everytime you open a new terminal.

```
cd
gedit .bashrc &
```

Go to the end of the file and add the following lines:

```
module load petsc-gcc4
export PYTHONPATH=$PYTHONPATH:/data/[your
username]/fluidity/python
```