

# Obtaining and Compiling Fluidity

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## Session Overview

- ▶ Installing Fluidity from packages
- ▶ Obtaining Fluidity sourcecode
- ▶ GitHub and Buildbot
- ▶ Configuring, building, testing and installing
- ▶ A brief introduction to running Fluidity
- ▶ Updating Fluidity

## How to obtain Fluidity

- ▶ **Binary** (release only)  
Prebuilt packages are available for Ubuntu 14.04 (LTS), and CentOS 6 and 7 (which should be binary-compatible with Red Hat Enterprise Linux).
- ▶ **Source** (release, master, or branch)  
Available from GitHub as a tarball (release only) or git repository

## Installing the Fluidity package: Ubuntu

Add the Fluidity package repository to your system:

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

Then install Fluidity:

```
sudo apt-get -y install fluidity
```

This is a ready-to-run binary package and comes with a PDF manual and the Fluidity examples.

## Installing the Fluidity package: CentOS/RHEL

Fluidity on CentOS/RHEL requires the EPEL repository to be enabled (see <http://fedoraproject.org/wiki/EPEL>).

Add the Fluidity repository to your system:

```
sudo yum-config-manager --add-repo \  
    https://fluidityproject.github.com/yum/fluidity-rhel6.repo
```

(change '6' to '7' as appropriate). Then install Fluidity:

```
sudo yum install fluidity
```

This is a ready-to-run binary package and comes with a PDF manual and the Fluidity examples.

## Downloading Sourcecode

The source code for the latest release of Fluidity can be downloaded from:

```
https://github.com/FluidityProject/fluidity/releases/latest
```

The latest development source for Fluidity ('master branch') can be cloned using git:

```
git clone https://github.com/FluidityProject/fluidity.git
```

<http://github.com/FluidityProject>

The screenshot shows the GitHub repository page for the Fluidity Project. The browser's address bar displays 'GitHub, Inc.' and the repository URL. The page header includes the GitHub logo, a search bar, and navigation links for 'Explore', 'Gist', 'Blog', and 'Help'. The repository name 'Fluidity Project' is prominently displayed with its logo, a description stating it develops open-source, general-purpose, multi-phase computational fluid dynamics code, and its website URL. Below this, there are filters and a search bar for repositories, along with a '+ New repository' button. The repository list shows 'fluidity' by 'FORTTRAN' with 14 stars and 5 forks, and 'training' by 'TeX' with 0 stars and 0 forks. On the right, the 'People' section shows a grid of 12 avatars, including team members and contributors, with a total of 44 people listed. Below this is a 'Teams' section with 2 teams and a search bar to 'Jump to a team'.

GitHub, Inc.

Search GitHub

Explore Gist Blog Help

tmbgreaves

**Fluidity Project**

The Fluidity Project develops an open source, general purpose, multi-phase computational fluid dynamics code.

<http://fluidityproject.github.io/>

Filters Find a repository...

+ New repository

**fluidity**

Fluidity

Updated 2 hours ago

**training**

Files pertaining to Fluidity training sessions

Updated 2 days ago

**People** 44

Invite someone

**Teams** 2

Jump to a team

<http://github.com/FluidityProject>

The screenshot shows the GitHub repository page for FluidityProject / fluidity. The repository has 7,781 commits, 71 branches, 1 release, and 24 contributors. The main branch is master. The repository description is "Xhost -> xHost in libadaptivity." The latest commit is by drhodrid, 8 days ago, with the commit hash 3c0e7a2ee5. The repository contains several submodules, including adjoint, assemble, bathymetry, climatology, debian, debug, diagnostics, and error\_measures. The right sidebar shows options to view the code, issues, pull requests, wiki, pulse, graphs, and settings. The HTTPS clone URL is https://github.com/FluidityProject/fluidity.git.

FluidityProject / fluidity

Unwatch 48 Star 14 Fork 5

Fluidity <http://fluidityproject.github.io/> — Edit

7,781 commits 71 branches 1 release 24 contributors

branch: master fluidity / +

Xhost -> xHost in libadaptivity.

drhodrid authored 8 days ago latest commit 3c0e7a2ee5

Module	Description	Last Commit
adjoint	Burgers equation and Shallow water models also now compile.	2 years ago
assemble	Allowing users to specify which multimaterial mean to use in the bulk...	3 months ago
bathymetry	Introduced a new marco for checking libraries which first checks if t...	2 years ago
climatology	Introduced a new marco for checking libraries which first checks if t...	2 years ago
debian	With the move to testing on Ubuntu Trusty (14.04) an error was	3 months ago
debug	This commit focuses on adding the make install rule.	3 years ago
diagnostics	Allowing users to specify which multimaterial mean to use in the bulk...	3 months ago
error_measures	Reorder modules and other hacks for intel 14 build.	12 days ago

Code

Issues 5

Pull Requests 5

Wiki

Pulse

Graphs

Settings

HTTPS clone URL

<https://github.com/FluidityProject/fluidity.git>

You can clone with HTTPS, SSH, or Subversion.



<http://github.com/FluidityProject>

FluidityProject / fluidity

Unwatch 48 Star 14 Fork 5

Fluidity <http://fluidityproject.github.io/> — Edit

7,781 commits 71 branches 1 release 24 contributors

branch: master fluidity / +

Switch branches/tags

Find or create a branch...

Branches Tags

fluidity-intel-build

aso/wetdryaspect\_merge\_proposal

bathymetry\_from\_vtu

cianwilson/bulk\_viscosity

cianwilson/bulk\_viscosity-rebase

dmpalexreader

f-mithaler/fsi-model

latest commit 3c0e7a2ee5

ow water models also now compile. 2 years ago

ch multimaterial mean to use in the bulk... 3 months ago

checking libraries which first checks if t... 2 years ago

checking libraries which first checks if t... 2 years ago

Ubuntu Trusty (14.04) an error was 3 months ago

ling the make install rule. 3 years ago

ch multimaterial mean to use in the bulk... 3 months ago

hacks for intel 14 build. 12 days ago

<> Code

Issues 5

Pull Requests 5

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Pulse

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Settings

HTTPS clone URL

<https://github.com/>

You can clone with HTTPS, SSH, or Subversion.

Open "https://github.com/FluidityProject/fluidity/tree/fluidity-intel-build" in a new tab behind the current one

<http://github.com/FluidityProject>

The screenshot shows the GitHub repository page for FluidityProject/fluidity. The repository is owned by tmbgreaves and has 48 Unwatch, 14 Star, and 5 Fork actions. The repository has 7,806 commits, 71 branches, 1 release, and 24 contributors. The current branch is Fluidity-intel... and the latest commit is a5052a122a. The repository is 37 commits ahead and 12 commits behind master. The commit history shows a list of commits with their descriptions and dates. The right sidebar contains links to Code, Issues, Pull Requests, Wiki, Pulse, Graphs, and Settings. The bottom of the page shows the HTTPS clone URL and a note about cloning with HTTPS, SSH, or Subversion.

Fluidity <http://fluidityproject.github.io/> — Edit

7,806 commits 71 branches 1 release 24 contributors

branch: Fluidity-intel... fluidity / +

This branch is 37 commits ahead, 12 commits behind master Pull Request Compare

Update comment.

stephankramer authored on Oct 3 latest commit a5052a122a

adjoint	Burgers equation and Shallow water models also now compile.	2 years ago
assemble	Allowing users to specify which multimaterial mean to use in the bulk...	3 months ago
bathymetry	Introduced a new marco for checking libraries which first checks if t...	2 years ago
climatology	Introduced a new marco for checking libraries which first checks if t...	2 years ago
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Code

Issues 5

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HTTPS clone URL

<https://github.com/FluidityProject/fluidity>

You can clone with HTTPS, SSH, or Subversion.

<http://github.com/FluidityProject>

The screenshot shows the GitHub interface for the repository `FluidityProject / fluidity`. The browser address bar shows `github.com`. The repository name is `FluidityProject / fluidity`. The repository has 48 Unwatched issues, 14 Stars, and 5 Forks. The `Issues` tab is selected, showing a list of 5 Open issues and 6 Closed issues. The filter is set to `is:issue is:open`. The issues listed are:

- Intel GMSH bug...** #27 opened 4 days ago by `drhodrid`
- Unitialised variables in ocean forcing** #16 opened on Aug 12 by `stephankramer` (bug)
- No vtkGhostLevels when dgify\_fields is true with continuous model** #11 opened on Jul 24 by `markgoffin` (bug, question)
- Balzano wetting and drying cases are using LinearMomentum** #3 opened on Jun 10 by `stephankramer`
- Free surface mesh movement with LinearMomentum is broken** #2 opened on Jun 10 by `stephankramer`

At the bottom, a ProTip! message states: `Updated in the last three days: updated>2014-10-30.`

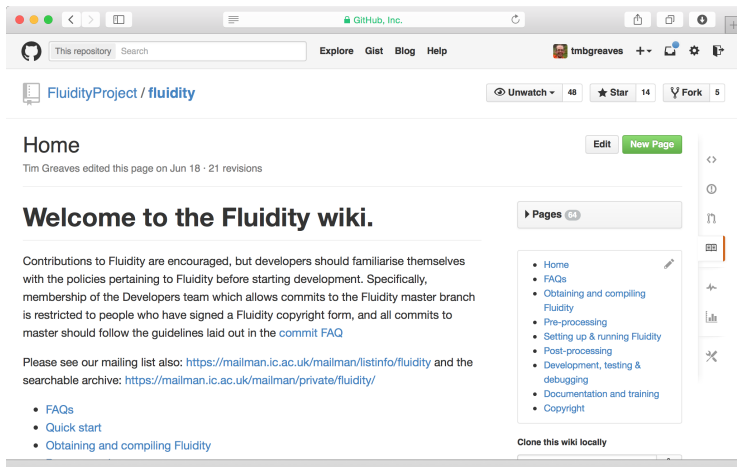
<http://github.com/FluidityProject>

The screenshot shows the GitHub interface for the `FluidityProject / fluidity` repository. The repository has 48 Unwatched items, 14 Stars, and 5 Forks. The 'Pull requests' tab is selected, showing a list of 5 open pull requests and 11 closed ones. The pull requests are:

- Allow running project\_vtu without donor mesh.** (#20) opened on Aug 15 by stephankramer
- Fix pvtu2vtu for DG pvtus.** (#19) opened on Aug 15 by stephankramer
- Fix face local node numbering for hex elements** (#14) opened on Aug 4 by markgoffin
- Include element halos in dg-ify fields process in vtk\_write\_fields** (#13) opened on Jul 31 by markgoffin
- Change configure scripts to allow out-of-tree builds.** (#7) opened on Jun 22 by stephankramer

At the bottom, there is a ProTip! to check team mentions with `team:FluidityProject/fluidity-developers`.

<http://github.com/FluidityProject>



The screenshot shows a web browser window displaying the GitHub repository page for `FluidityProject / fluidity`. The browser's address bar shows the URL `http://github.com/FluidityProject`. The repository page includes a search bar, navigation links (Explore, Gist, Blog, Help), and user avatars. The repository name is `FluidityProject / fluidity`. The page shows the repository is watched by 48 people, starred by 14, and forked by 5. The main content area displays the `Home` page of the Fluidity wiki, edited by Tim Greaves on Jun 18. The welcome message reads: "Welcome to the Fluidity wiki. Contributions to Fluidity are encouraged, but developers should familiarise themselves with the policies pertaining to Fluidity before starting development. Specifically, membership of the Developers team which allows commits to the Fluidity master branch is restricted to people who have signed a Fluidity copyright form, and all commits to master should follow the guidelines laid out in the [commit FAQ](#). Please see our mailing list also: <https://mailman.ic.ac.uk/mailman/listinfo/fluidity> and the searchable archive: <https://mailman.ic.ac.uk/mailman/private/fluidity/>". A sidebar on the right lists the wiki pages: Home, FAQs, Obtaining and compiling Fluidity, Pre-processing, Setting up & running Fluidity, Post-processing, Development, testing & debugging, Documentation and training, and Copyright. At the bottom, there is a button to "Clone this wiki locally".

Home

Tim Greaves edited this page on Jun 18 · 21 revisions

## Welcome to the Fluidity wiki.

Contributions to Fluidity are encouraged, but developers should familiarise themselves with the policies pertaining to Fluidity before starting development. Specifically, membership of the Developers team which allows commits to the Fluidity master branch is restricted to people who have signed a Fluidity copyright form, and all commits to master should follow the guidelines laid out in the [commit FAQ](#)

Please see our mailing list also: <https://mailman.ic.ac.uk/mailman/listinfo/fluidity> and the searchable archive: <https://mailman.ic.ac.uk/mailman/private/fluidity/>

- [FAQs](#)
- [Quick start](#)
- [Obtaining and compiling Fluidity](#)

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- [Documentation and training](#)
- [Copyright](#)

Clone this wiki locally

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

BuildBot: Fluidity - Mozilla Firefox

BuildBot: Fluidity

[buildbot.ese.ic.ac.uk:8080/waterfall?cate](#) Search

[Home](#) - [Trunk](#) [Compiles](#) [Longtests](#) [Shorttests](#) [Examples](#) [Branches](#) [Mapdes](#) [Software](#) [Console](#) - [Waterfall](#) [Grid](#) - [About](#)

## Waterfall

[waterfall help](#)

	centos6-standard	centos7-standard	fedora22-standard	intel2015-x86_64	intel2015-x86_64-anaconda	intel2015-x86_64-binmod-cx1	intel2015-x86_64-binmod-cx2	intel2015-x86_64-db
last build	build successful	build successful	failed shell_4 shell_5	build successful	build successful	build successful	build successful	build successful
current activity	waiting next in ~ 43 hrs 54 mins at 10:16	waiting next in ~ 43 hrs 54 mins at 10:16	waiting next in ~ 43 hrs 54 mins at 10:16	waiting next in ~ 9 hrs 38 mins at 00:00	idle	waiting next in ~ 132 hrs 38 mins at 03:00	waiting next in ~ 132 hrs 38 mins at 03:00	waiting next in ~ 132 hrs 3 mins at 03:00
GMT	<a href="#">changes</a>	<a href="#">centos6-standard</a>	<a href="#">centos7-standard</a>	<a href="#">fedora22-standard</a>	<a href="#">intel2015-x86_64</a>	<a href="#">intel2015-x86_64-anaconda</a>	<a href="#">intel2015-x86_64-binmod-cx1</a>	<a href="#">intel2015-x86_64-binmod-cx2</a>
00:42:26								
00:20:48								
00:00:31					dispatch compiler <a href="#">stdio</a>			
					update <a href="#">stdio</a>			

## Configure

Set up compile-time options, such as:

- ▶ External non-LGPL libraries
- ▶ Non-standard library locations
- ▶ Compiler flags
- ▶ Debugging

```
cd [fluidity directory]  
./configure --enable-2d-adaptivity
```

## Building

Before building Fluidity, clean your source code:

```
make clean
```

Now make the main code:

```
make -j 4
```

And build the Fluidity tool suite:

```
make fltools
```



## Python

Fluidity contains several Python packages that are required for it to run. Where you have not installed Fluidity system-wide, the Fluidity python directory must be added to the existing environment variable PYTHONPATH.

From the fluidity/ directory, run:

```
export PYTHONPATH=$PYTHONPATH:$PWD/python
```

This can be checked by using the echo command.

```
echo $PYTHONPATH
```

## Tests

To check that all the verification tests run and pass with your Fluidity build, you can issue the following commands:

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

## Installing

Installing Fluidity enables access for all other users of your computer; this may require 'sudo' or other administrative access.

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

## Running Fluidity

From source:

```
<fluidity-clone>/bin/fluidity -v2 -l  
[filename].flml
```

From binary:

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

## Updating

If you want to update your local clone of the Fluidity repository to the newest commit, run:

```
git pull
```

from within the local clone.