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## Building CompuCell3D on OSX - 10.9+

This writeup presents easy-to-follow instructions on how to build CC3D on OSX 10.9+ using CompuCell3D channel of Anaconda. Anaconda is a cloud-based system that provides easy-to-use cross-platform system for managing software packages and dependencies

## Prerequisites

- conda installation - use python 2.7 installer for linux from this webpage <https://conda.io/miniconda.html>
- git
- c++ compiler

**Important: GCC/G++ on OSX:** The default gcc/g++ on OSX ships with faulty OpenMP implementation. for this reason you need download gcc/g++ compiler separately. The [hpc.sourceforge.net](http://hpc.sourceforge.net) provides you with a proper gcc/g++ compiler and we are using them to compile CC3D on OSX. once you install proper compiler (usually you will just unpack it so that it gets installed in **/usr/local**) you are ready to begin the compilation

## CC3D\_BUILD\_SCRIPTS repository

Get main cc3d repository by running from your home directory the following command

```
mkdir ~/CC3D_GIT
cd ~/CC3D_GIT
git clone https://github.com/CompuCell3D/CompuCell3D.git .
```

Get cc3d\_build\_scripts repository by running from your home directory the following command

```
git clone https://github.com/CompuCell3D/cc3d_build_scripts.git
```

Once the cloning process is complete go to the directory where the **build.py** script for the current version of cc3d is located:

```
cd cc3d_build_scripts/mac/376
```

To run the build/install script run the following command:

```
python build.py --prefix=~/.376_auto --source-root=~/.CC3D_GIT --build-
```

```
dir=~/.376 auto build --version=3.7.6 --cores=2 --conda-env-
name=cc3d_test_12 --c-compiler=/usr/local/bin/gcc --cpp-
compiler=/usr/local/bin/g++
```

**Notice**, that because of the gcc/g++ issue on OSX you need to manually point the build script to the gcc and g++ compiler using **--c-compiler** and **--cpp-compiler** command line options. **IMPORTANT:** the values above are valid for my configuration in your case those will be probably be different so please do not copy verbatim the above line

After last command completes few things will happen:

1. new conda environment (**cc3d\_test\_12**) will be created (**build.py** script will do this automatically for you). BTW feel free to change the name of this environment to your liking
2. the dependencies needed to build CC3D will be downloaded
3. CC3D will be installed will be installed in **~/cc3d\_376** . Temporary compilation files will get stored in **~/cc3d\_376\_build**

Now all you have to do is to go the the installation directory and run CC3D:

```
cd ~/cc3d_376
./compuCell3d.command
```


**Possible qt conflicts:** When running the above command you may get qt-related error that would say something like

```
You might be loading two sets of Qt binaries into the same process.
Check that all plugins are compiled against the right Qt binaries.
Export DYLD_PRINT_LIBRARIES=1 and check that only one set of binaries
are being loaded.
This application failed to start because it could not find or load the
Qt platform plugin "cocoa"
in "".

Available platform plugins are: cocoa, minimal, offscreen.
```

This is an indication that there is another [PyQt](#) library installed on your system. For example you might have installed qt or pyqt using Homebrew . In this case Homebrew will create **~/local/lib/python2.7/site-packages/homebrew.pth** file that will specify Python module search path which in turn causes python to search locations specified by homebrew first. If this is the case you may want to temporarily deactivate this file by e.g. renaming it to e.g. **~/local/lib/python2.7/site-packages/homebrew.pth\_1**

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