

Installing CompuCell3D from source

3.4.1

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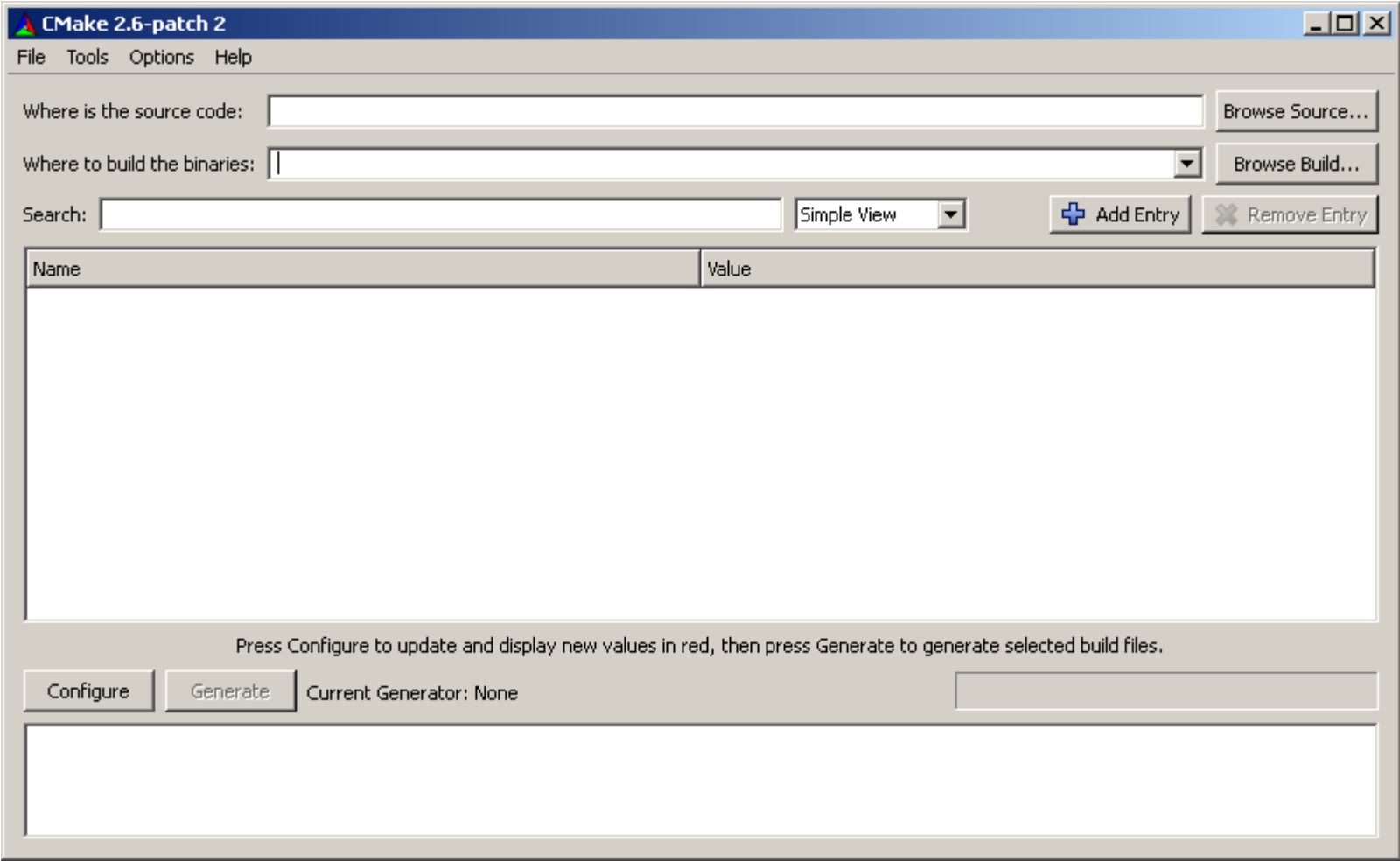
Why you might want to install from source?

1. There are no binaries for your platform (e.g. gentoo linux)
2. You want to develop new modules
3. You want to have latest version of CompuCell3D (we do not post new binaries as often as we do with source code)
4. You want to run CompuCell3D on a cluster where programs are installed in non-standard locations
5. The install script does not work properly (this is especially true if the dependencies are installed in non-standard locations. We will work in the future to improve installation script so that it will be more robust)

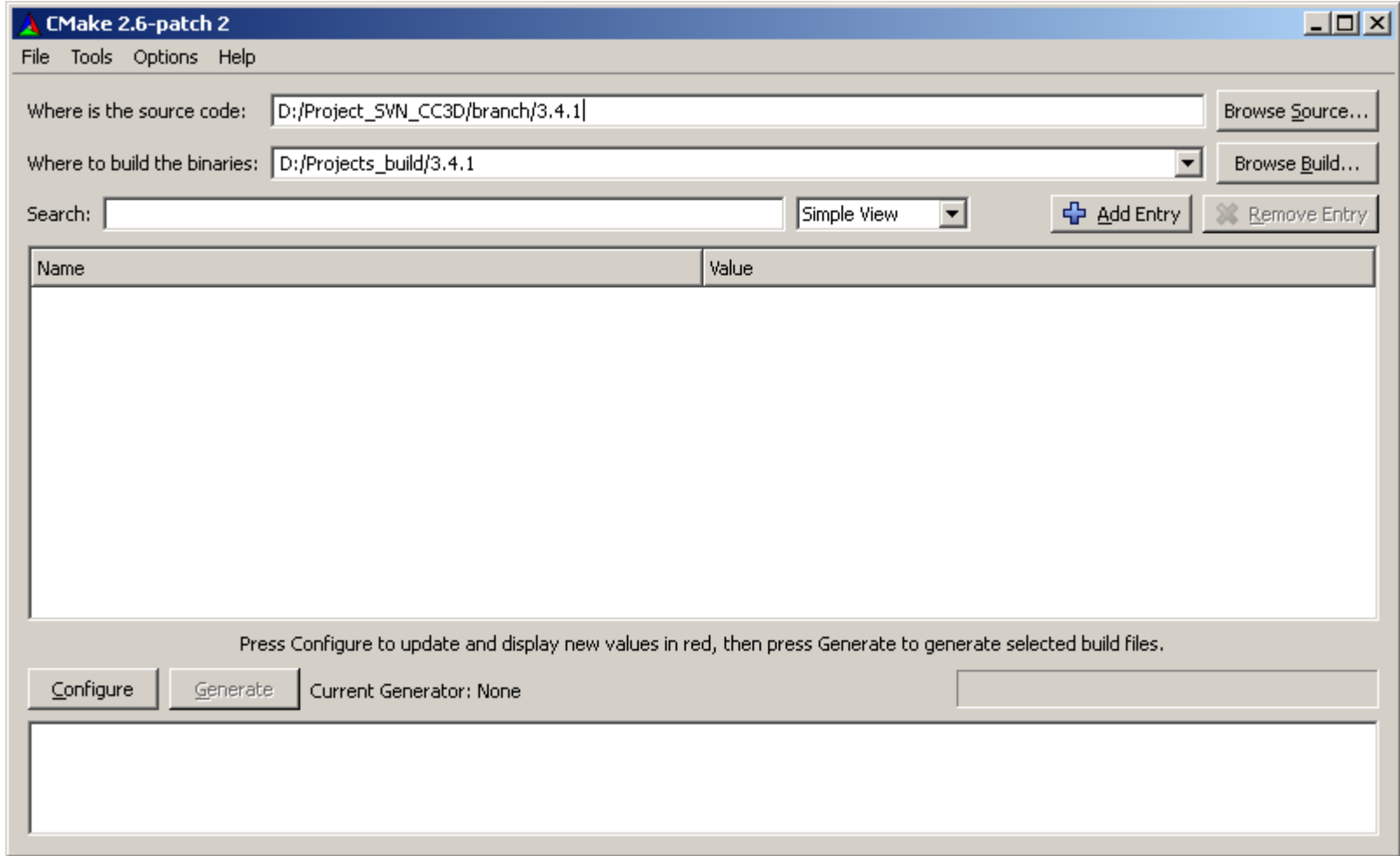
Prerequisites:

- C++ Compiler (g++ or Visual Studio compilers)
- CMake 2.6 or higher (www.cmake.org)
- VTK 5.x or higher (www.vtk.org)
- Qt4 (www.qtsoftware.com)
- PyQt4 (<http://www.riverbankcomputing.co.uk/news>)
- Python Development files 2.4 or higher ,but **NOT** 3.x series (www.python.org)
- SWIG 1.3 or higher (www.swig.org)

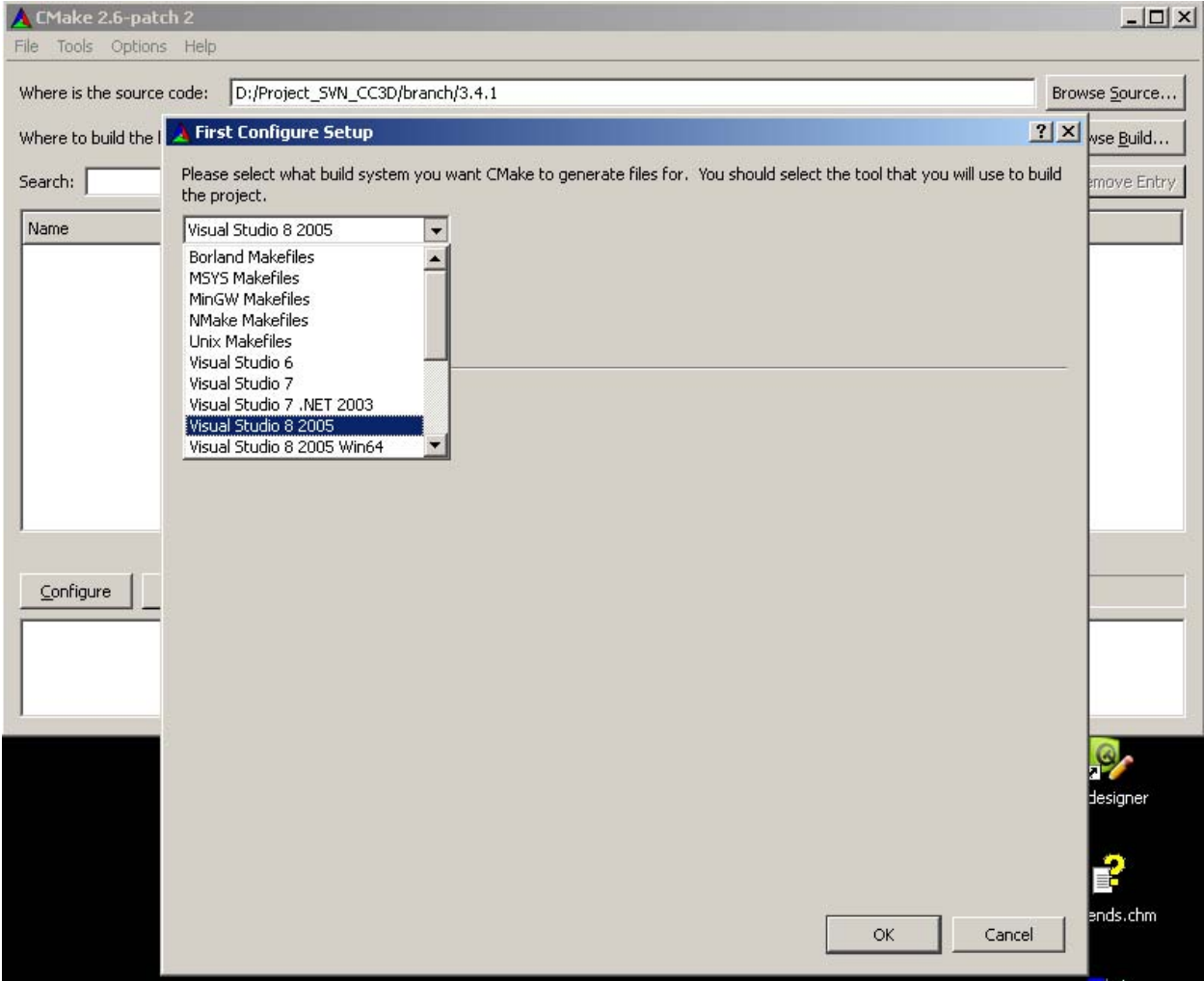
Unpack or check out CompuCell3D package (in my case I will store source code in this directory D:\Project_SVN_CC3D\branch\3.4.1). Open cmake-gui (it will work on all the platforms). Here I am showing you how to configure CompuCell3D for compilation on Windows



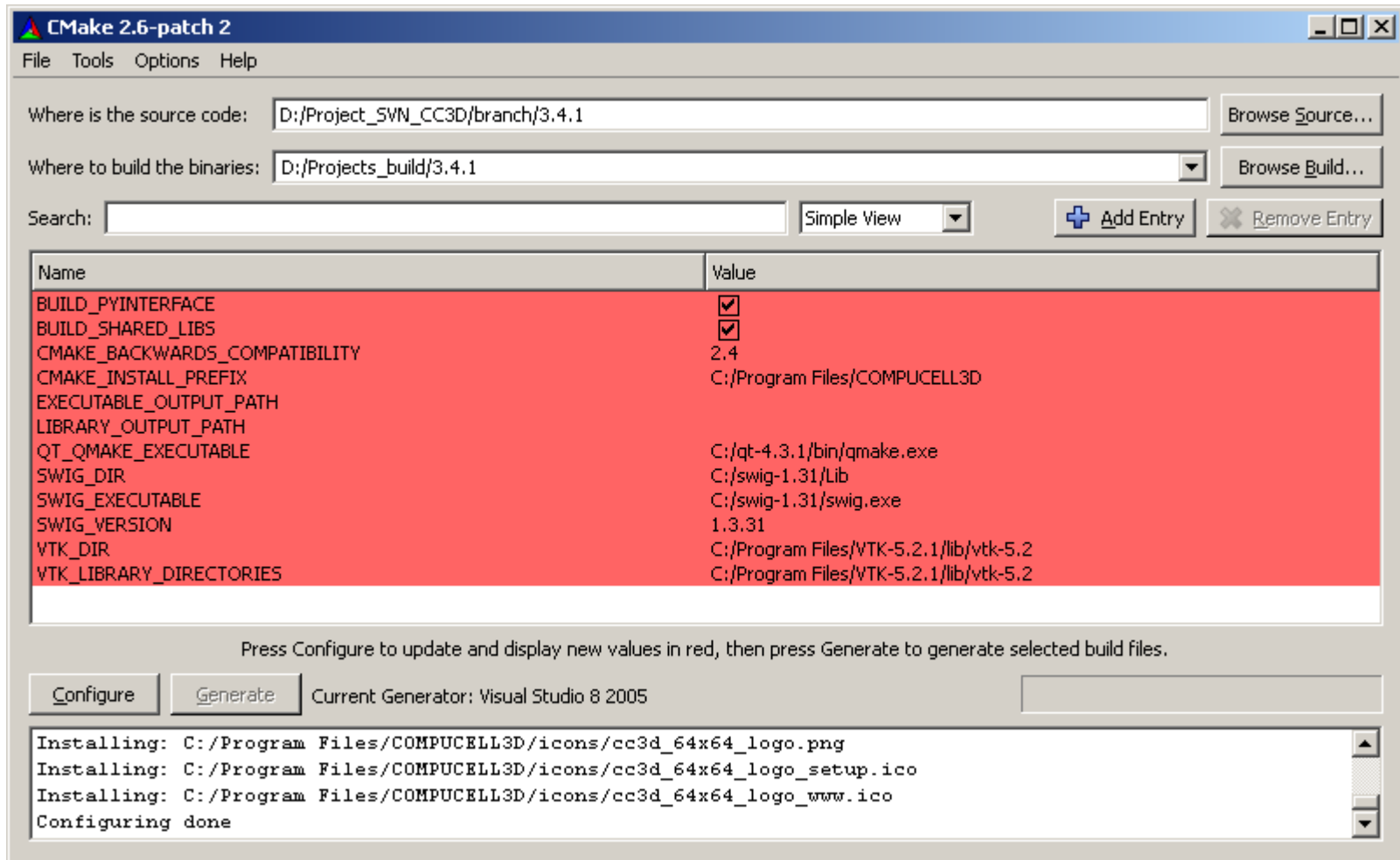
Point to locations where the source code is and where you want to store project files (makefiles, objectfiles, metafiles etc. this is internal directory used by CMake and your edvelopment environment – XCode, KDevelop ,Eclipse, or Visual Studio)



Press “Configure” to start configuring the project. A dialog will pop up asking about your build system . This means you have to choose how you want to build CompuCell3D – using makefiles and command line tool, or using IDE such as Visual Studio, Kdevelop, Eclipse or XCode



Here I have chosen to use Visual Studio 8 2005. Depending on your system you might have to make different selection. Now CMake will check your system to see if you have required tools.



Few important things:

As you can see all the dependencies were found without any problem on my system. To make sure this is the case do the following:

- Add swig to your search path
- Add Python to your search path
- Create environment variable `VTK_DIR=<VTK_installation_DIR>/lib/vtk-5.x`. In my case I use the following value for this variable

```
VTK_DIR=c:\Program Files\VTK-5.2.1\lib\vtk-5.2
```

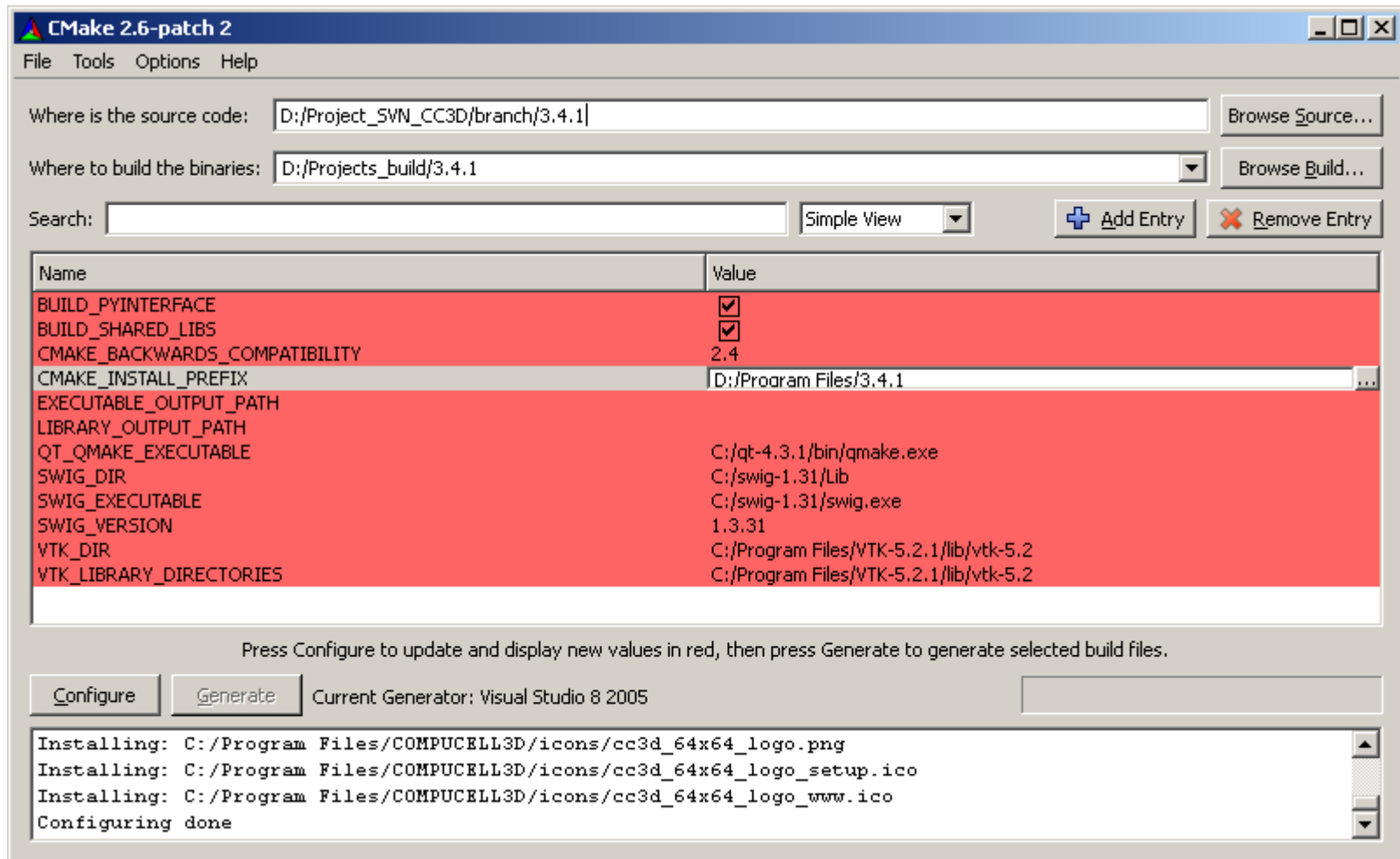
- Add qmake (or qmake.exe) to your path
- Create environment variable `QMAKESPEC` describing how you have built Qt4 library

In my case it is

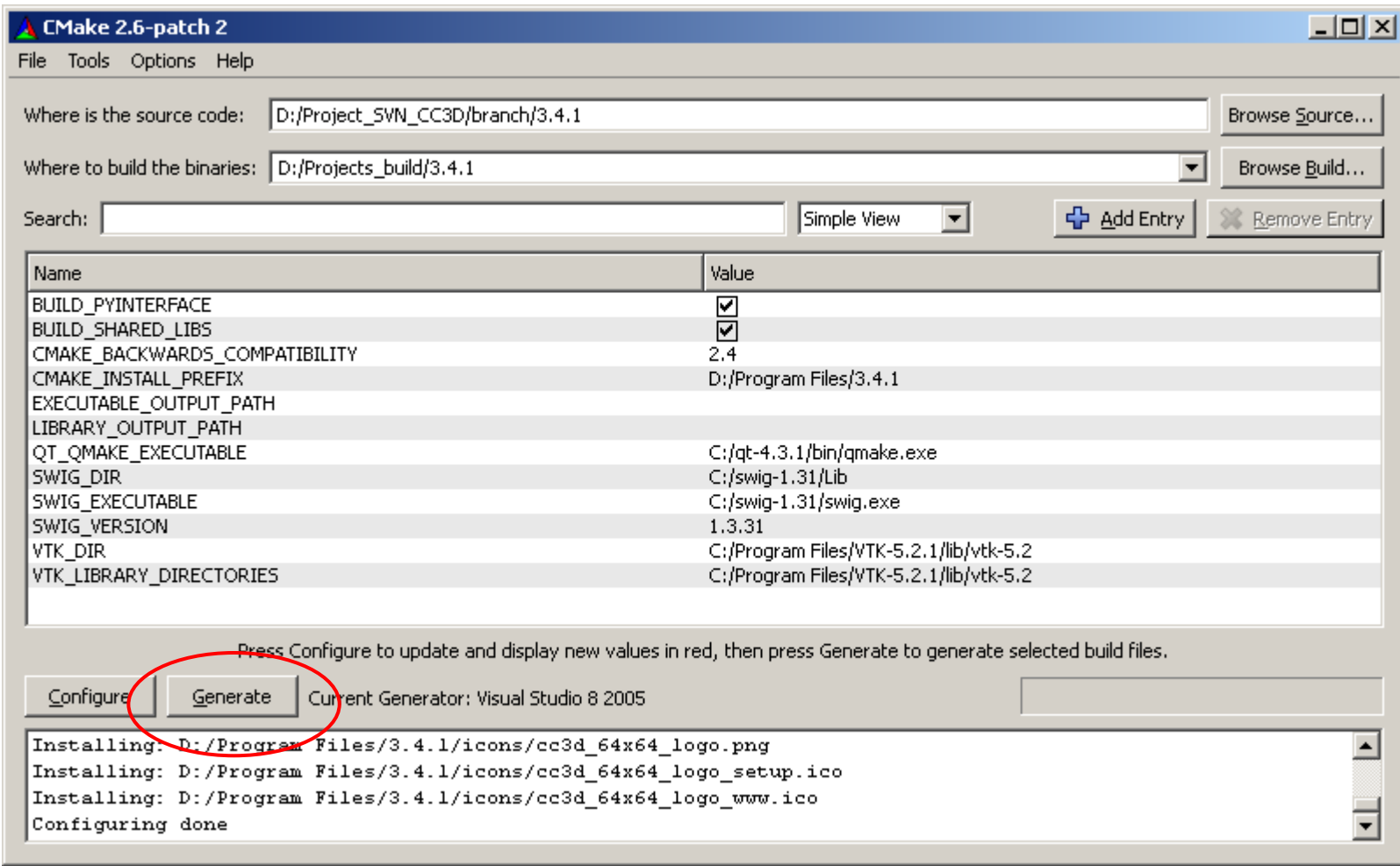
```
QMAKESPEC=win32-msvc2005
```

But you may want to consult `INSTALL` or `README` manuals that ship with Qt4 source code

Next thing you should do is to change CompuCell3D installation directory to point to different than default location. As a matter of fact on OSX/Linux/Unix systems you might get warnings about not having write permissions for installation directory. This is because by default on those systems CMake will try to install CompuCell3D into e.g. /usr/local and you need to be superuser to write there. To change installation directory pick different path for the CMAKE_INSTALL_PREFIX

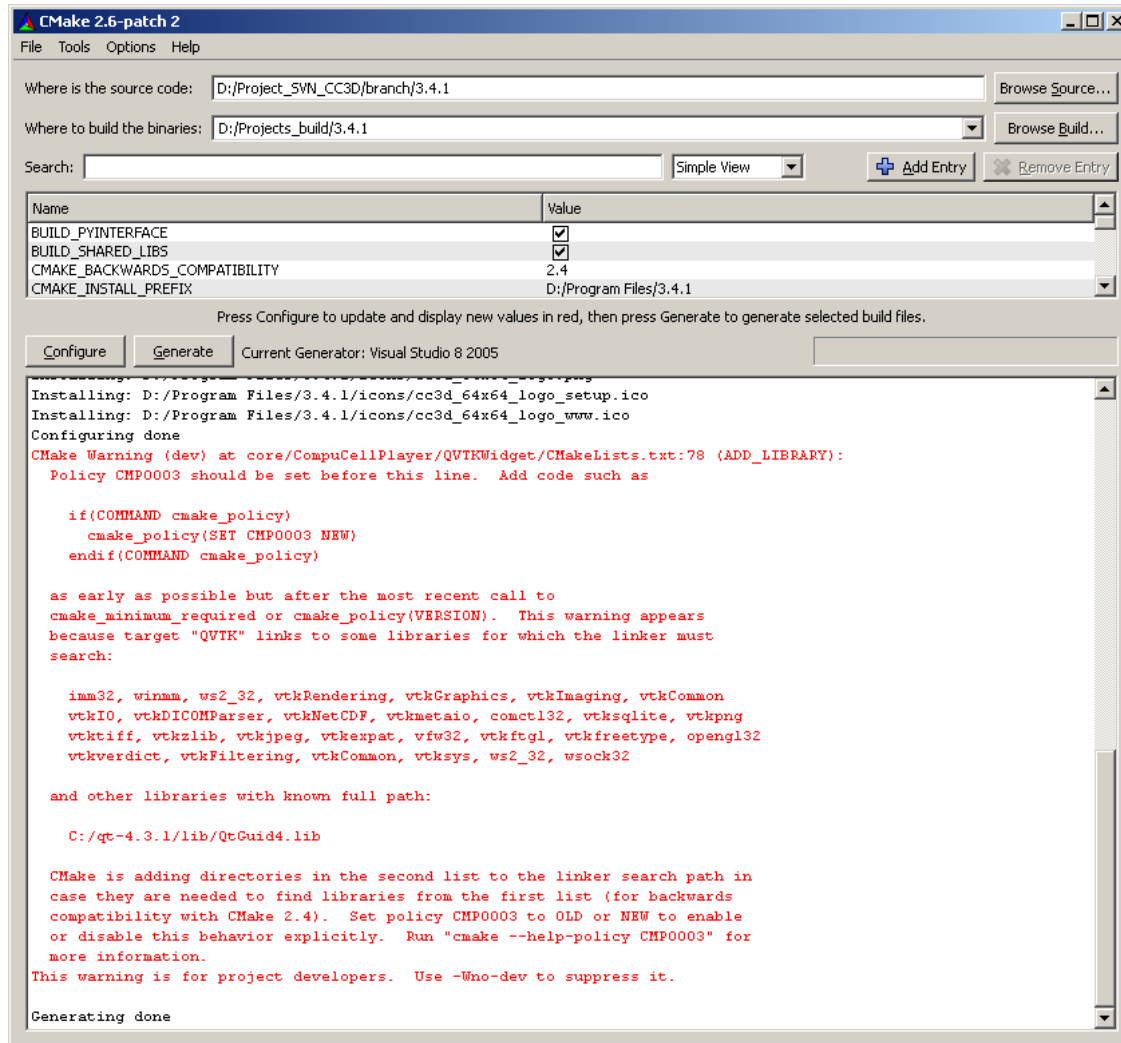


Press "Configure" again and...



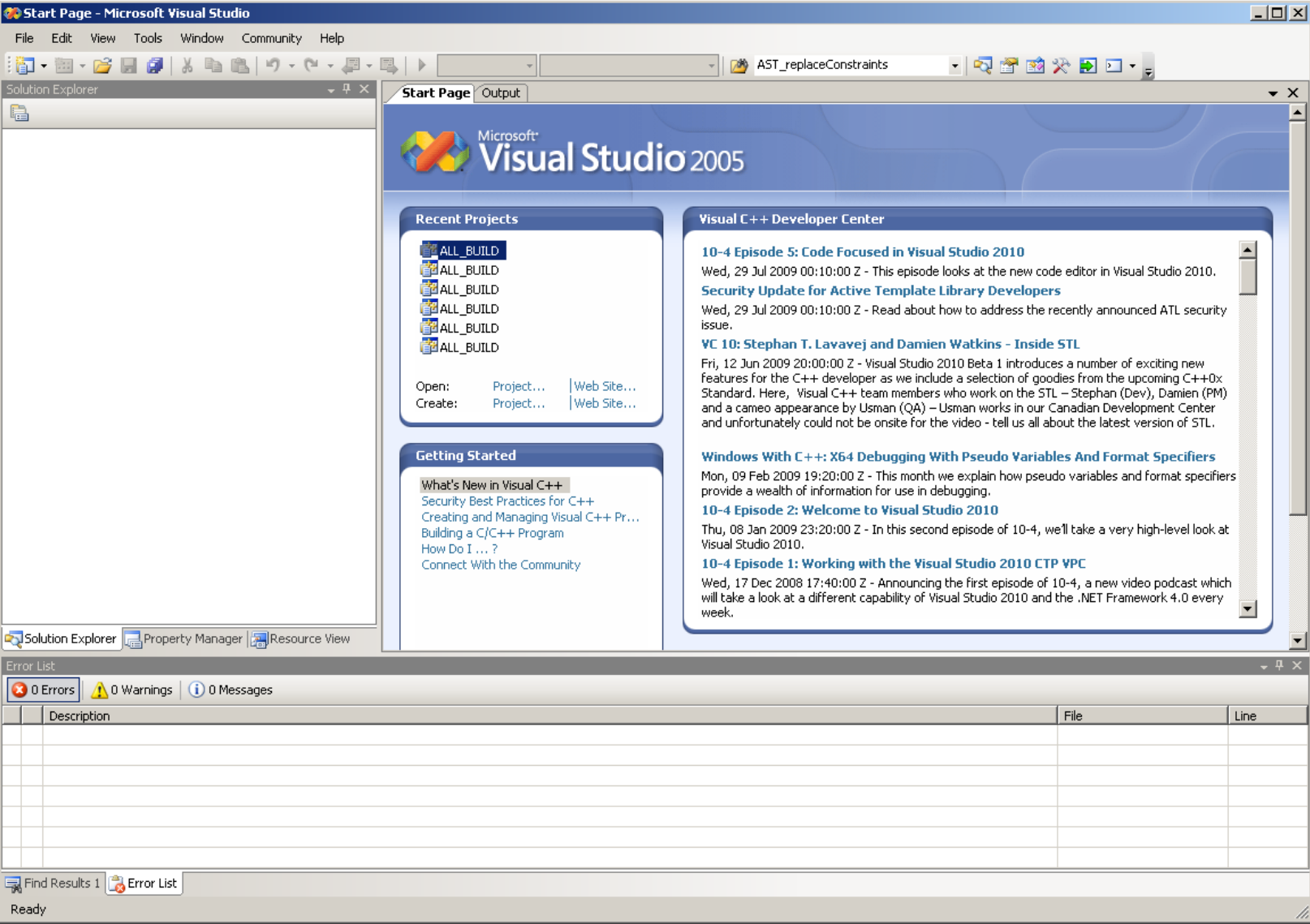
Notice, the "Generate" button is activated, now all you have to do is to press it and it will generate Visual Studio project that we will use to compile CompuCell3D.

If you look into CMake message panel you will notice the following warning:

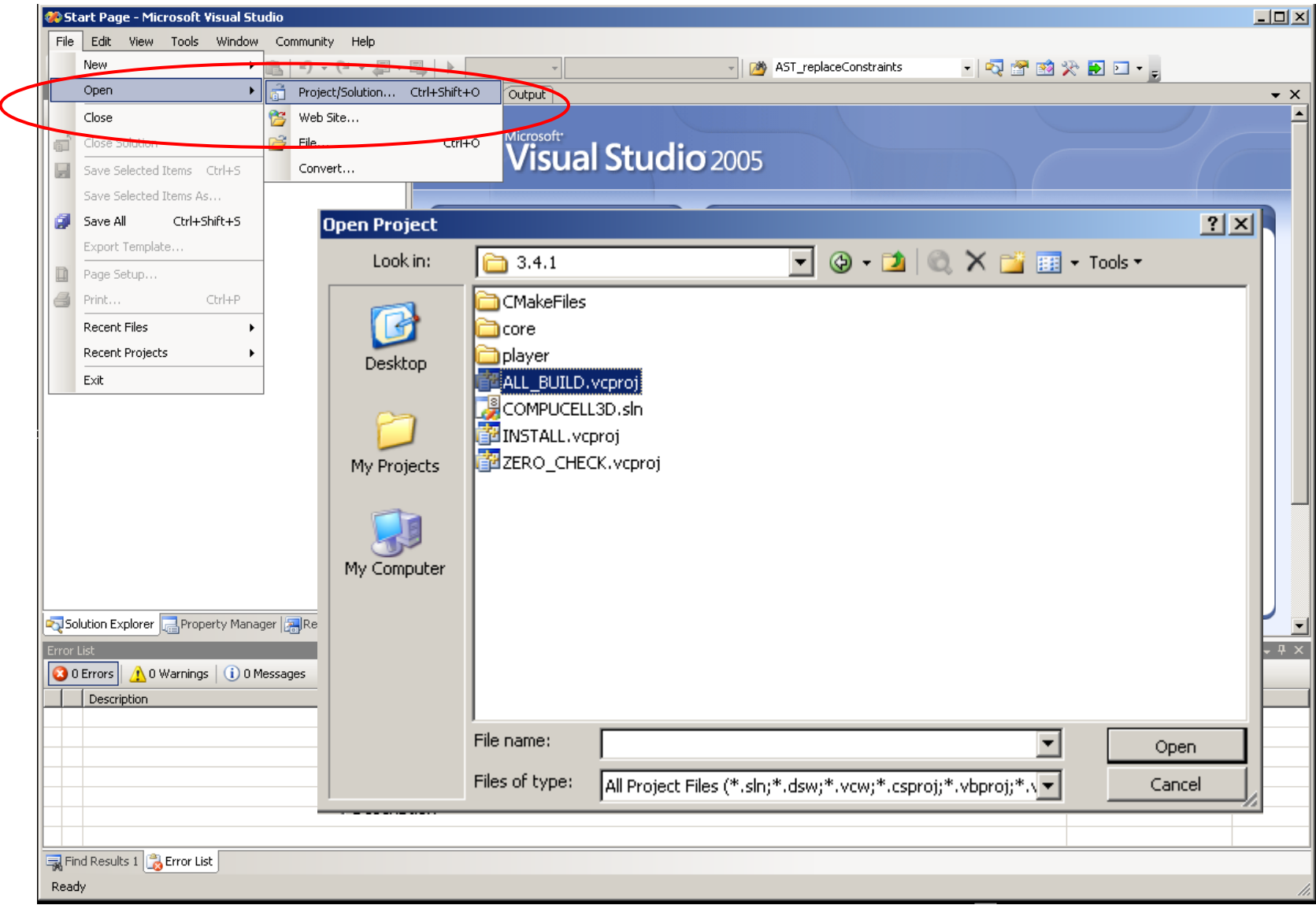


It means that we need to set up Library policy but we have not done it. It is OK to ignore this warning in this case. Now our project is generated. **All the steps show here apply to all the platforms.** Now let's see how we compile CC3D in VS 2005.

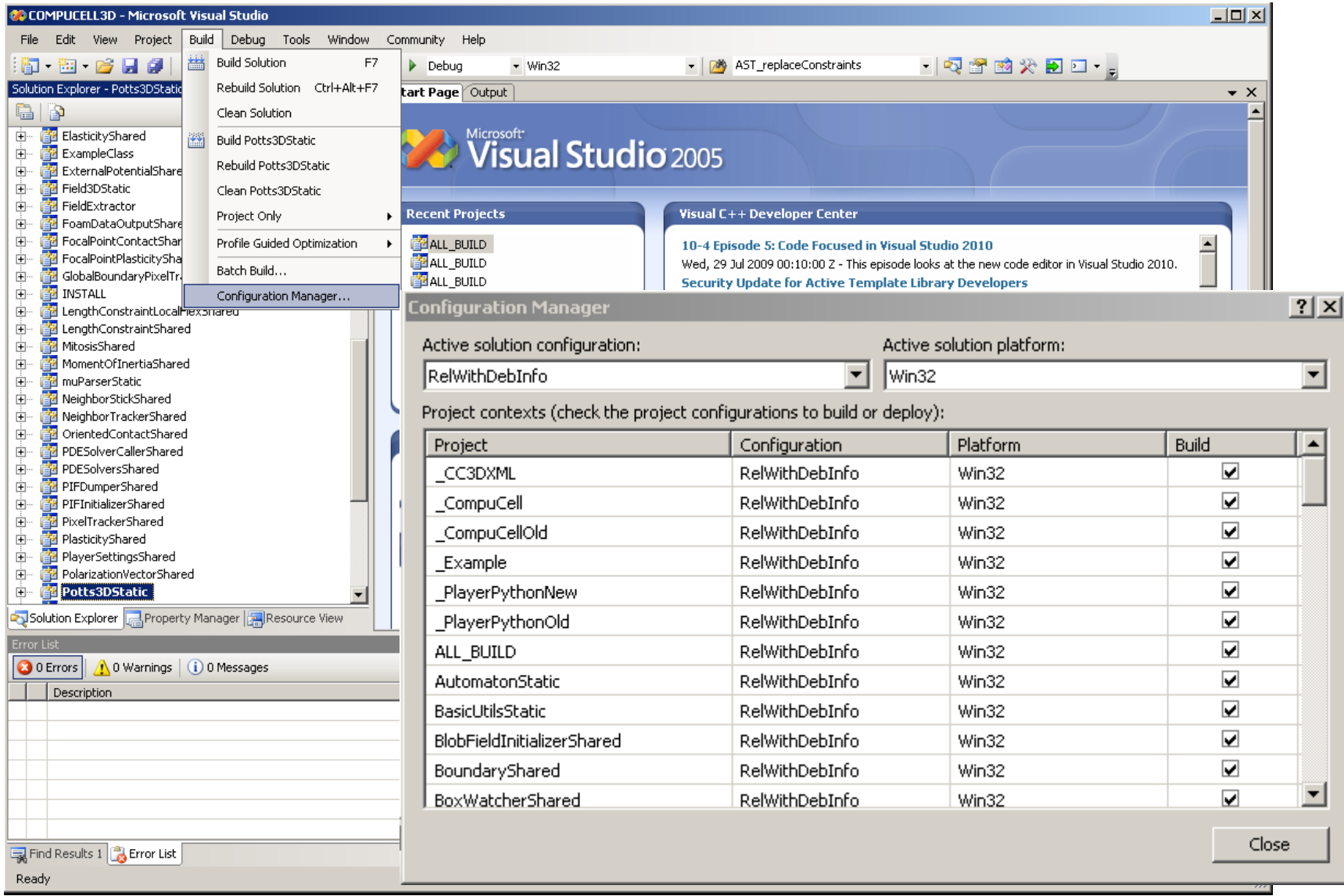
Open Visual Studio



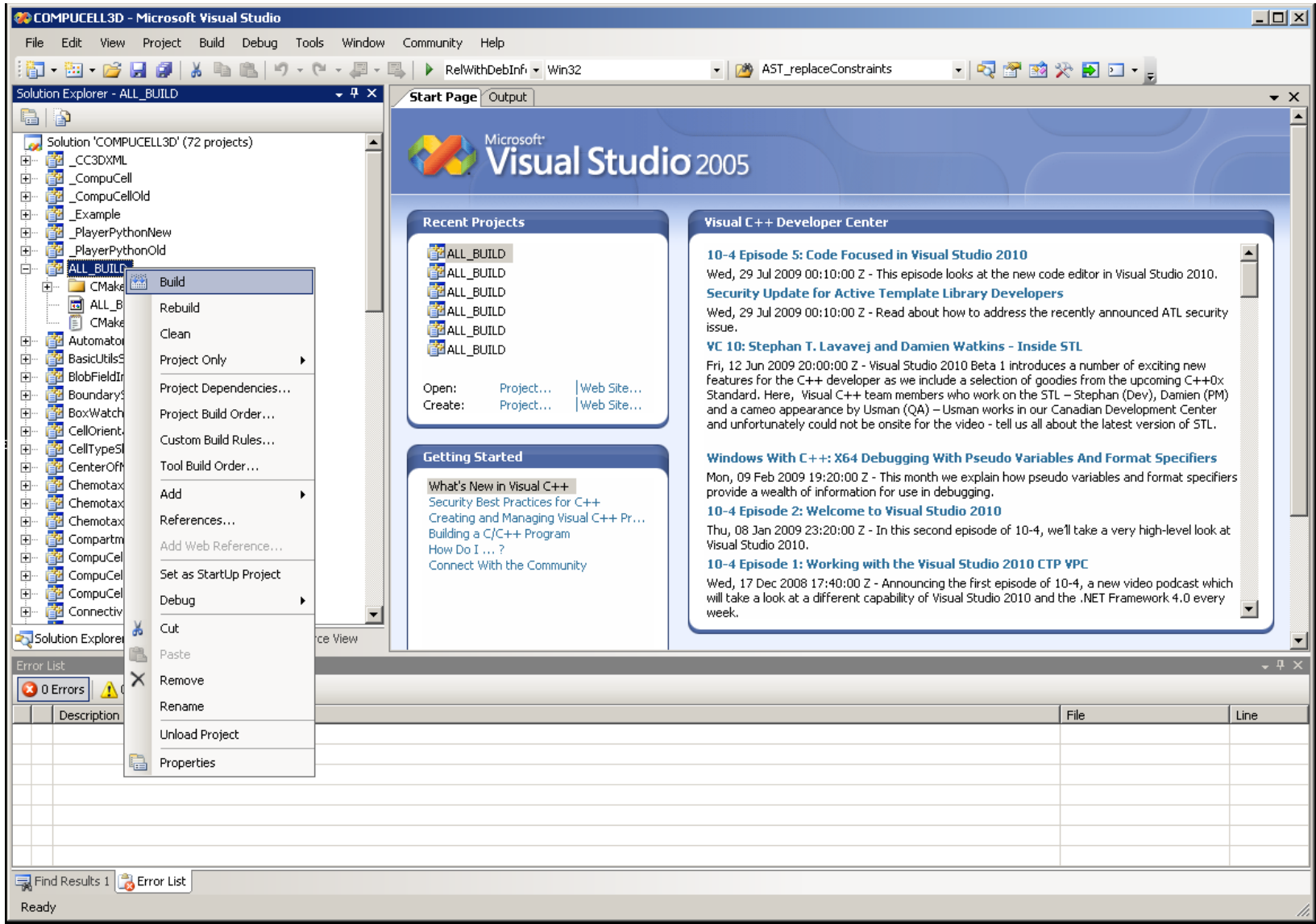
Open CompuCell3D project file. It will be file called ALL_BUILD.vcproj in D:\Projects_build\3.4.1



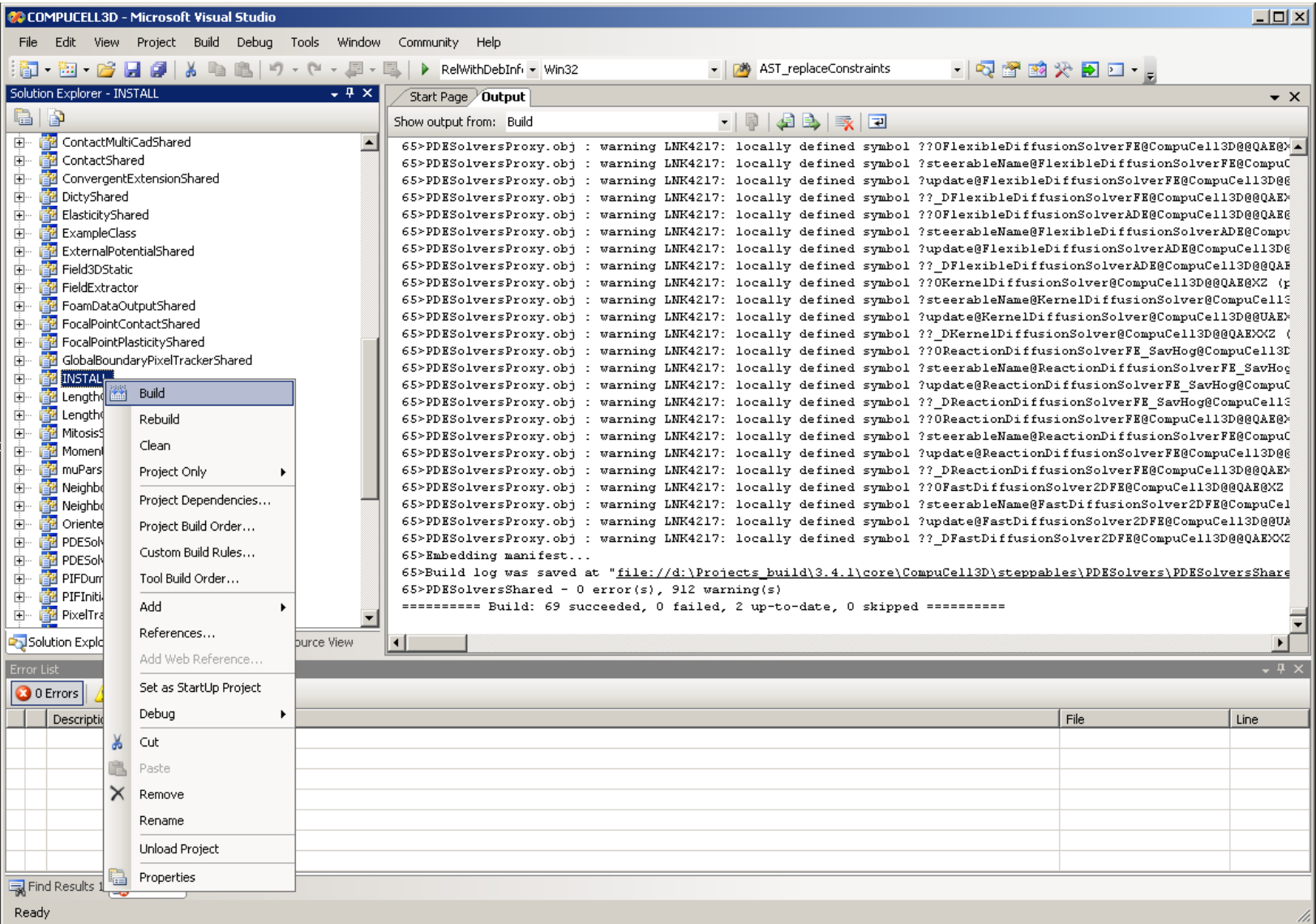
Go to Build->Configuration Manager... and change ActiveSolutionConfiguration to RelWithDebInfo or to Release



Now you are ready to compile CompuCell3D. Right-click on ALL_BUILD in Solution Explorer and choose "Build"



After you are done with compilation you have to install CompuCell3D to the installation directory (CMAKE_INSTALL_PREFIX). Simply right-click on INSTALL in Solution Explorer and choose "Build". After this step CompuCell3D is ready to use.



If you are using other IDE like Eclipse, KDevelop or XCode, the steps involved in compilation are fairly similar to those on Visual Studio.

If you are using command line tools (make or nmake) then after generating you Makefiles by CMake all you need to do is to type:

make

And when compilation is done do:

make install