# Cat Terrain and the Open Source Software Qt

January 2019

In Terrain for grading and loading the software uses open-source software called Qt. The Qt open-source license requires the software developers to include the following in the Terrain software:

* Qt source code
* How to compile Qt to create custom dlls
* How to apply the new custom build of Qt to Terrain

Note: Customers do not need to do anything for Qt to work in Terrain.

## Qt source code

Find the source code at:

<https://download.qt.io/official_releases/qt/4.8/4.8.7/>

### Install Qt for Windows

Additionally, find the instructions to build Qt at:

<http://doc.qt.io/qt-4.8/install-win.html>

### Licensing information

Additionally, find the Qt licensing information at:

<https://www.qt.io/faq/>

## How to compile Qt to create custom dlls

Requirements:

1. Windows 7/8/8.1
2. Visual Studio 2015 Community
3. Terrain v7.0 installed

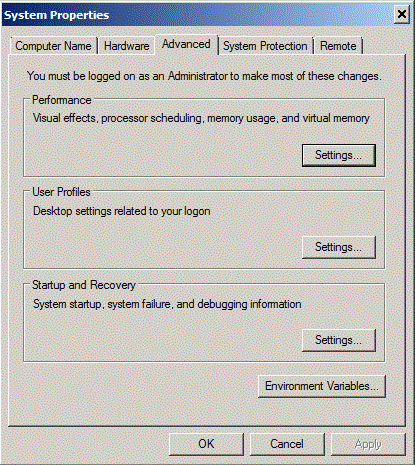
Note: Terrain v7.0 uses Qt 4.8.7. If you compile a different version Terrain may crash.

### Verify the source code of Qt is 4.8.7

1. In the Terrain installer executable file find the zip file that contains the Qt source code called “qt-everywhere-opensource-src-4.8.7.zip”.
2. Unzip the Qt source code, and place it in the location C:\Qt\4.8.7.
3. Open the README file to check the Qt version is 4.8.7.

### Set the environmental variables

* 1. In the Control Panel, open the System Properies window and then select the Advanced tab.
  2. Select Environment Variables…

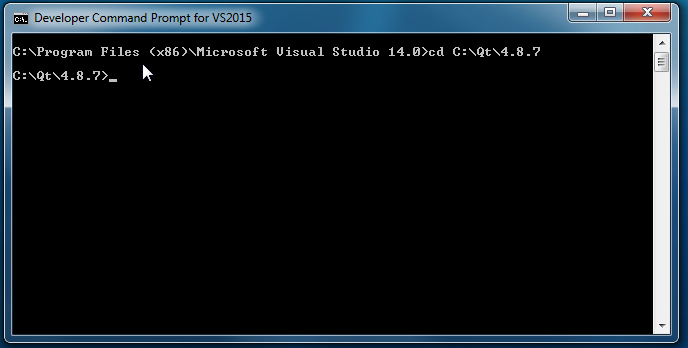


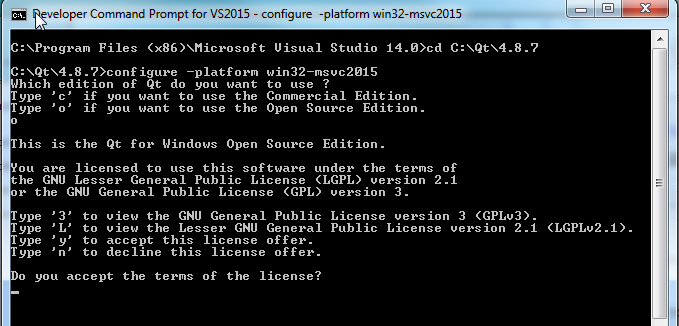
* 1. In the System Variables pane, highlight “Path” and select Edit.
  2. Add (do not replace) the following text to the current path:

C:\Qt\4.8.7\bin; C:\Qt\4.8.7; C\Qt\4.8.7\lib

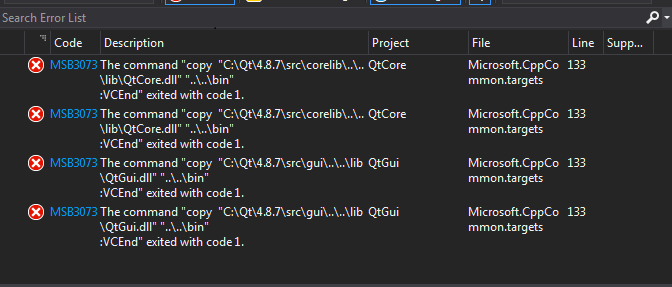
* 1. Select OK to save and exit.

### Configure the Qt source code

1. Open the Start menu and search for “Developer Command Prompt for VS2015”. Run this and a special command prompt will open.
2. Change the directory to C:\Qt\4.8.7. 
3. Enter a command to configure:  
   “configure –platform win32-msvc2015”  
   You will be asked if you want to use the Commercial Edition or Open Source Edition. Type ‘o’ to choose Open Source Edition.
4. Then Type ‘y’ to accept the terms of the license and wait while this processes.



1. Locate the “project.sln” file in C:\Qt\4.8.7.
2. Open “project.sln” in Visual Studio 2015.
3. Set the Project to “Release”.
4. In Visual Studio locate the project called “QtGui”. Right click on the file and select Build to build ONLY that project. This will take a while.
5. If you see these errors, do nothing. The errors say that the software cannot copy the dll files to the specified location.



1. Verify that the Qt library is in C:\Qt\4.8.7\lib. The important files are: “QtCore4.dll” and “QtGui4.dll”.

## How to apply the custom build of Qt to Terrain

1. Copy the custom built “QtCore4.dll” and “QtGui4.dll” from your computer to a USB memory module.
2. On the G610, attach a keyboard and press Alt-F4 to close the current Terrain application. You will see the Windows desktop with the CAT logo on it.
3. In the Start menu select My Computer and open D:\CAES\exe.
4. Shift “QtCore4.dll” and “QtGui4.dll” from the USB memory module to D:\CAES\exe.
5. Restart the on-board software.

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