Building EPICS, the QE framework, and qegui on windows 10, Qt 5.9

# Environment:

* Microsoft ‘Surface’ running Windows 10 Pro
* 64 bit Operating System x64-based processor

# EPICS configuration and build

* Set EPICS\_HOST\_ARCH=windows-x64
* Set EPICS\_BASE=C:\epics\base
* EPICS 3.15.5 source copied to C:\epics
* Installed strawberry perl 5.26.1 to C:\stawberry
* Installed Visual Studio 2017
* Installed mingw-w64 7.1.0 (to get make) – Note, mingw32-make.exe copied to make.exe

Additions to PATH to build EPICS

* C:\Qt\Tools\QtCreator\bin  
  (jom.exe – could not be used as it does not understand ‘make’ ‘wildcard’)
* C:\Strawberry\c\bin  
  (a lot of gcc stuff, but not make. Is this required?)
* C:\Strawberry\perl\bin  
  (perl.exe)
* C:\Program Files (x86)\mingw-w64\i686-7.1.0-posix-dwarf-rt\_v5-rev0\mingw32\bin  
  (for gcc make – last to avoid picking up other gcc stuff in preference to msvc)

Commands to build EPICS

* cd C:\epics\base
* "C:\Program Files (x86)\Microsoft Visual Studio\2017\Community\VC\Auxiliary\Build\vcvarsall.bat" x86\_amd64

# Qt 5.9 configuration

The following was installed for building EPICSQt in QtCreator:

* Qt 5.9 development environment
* Windows SDK 10.1.0.0 (provides debugger for QtCreator)
* CMake 3.9.0 (not required?)

Qt 5.9 installed with the following kits:

* Desktop Qt 5.9.0 MSVC2017 64bit  
  This kit required manual selection of:  
  - Microsoft Visual C++ Compiler 15.0  (amd64) for both C and C++  
  - Widows SDK 10 cdb x64 (after first installation SDK)  
  - CMake (after first installing CMake)  
  Still complained CMake ‘Configuration has no path to a C and C++ compiler set, even though the kit has a valid tool chain’, but worked OK.
* Desktop Qt 5.9.0 MinGW 32bit  
  This kit had no errors.
* Qt 5.9.0 for UWP 32bit (MSVC 2017)  
  This kit also complained of no compilers. Selected Microsoft Visual C++ Compiler 15.0  (x86) for both C and C++
* Qt 5.9.0 for UWP 64bit (MSVC 2017)  
  This kit also complained of no compilers. Selected Microsoft Visual C++ Compiler 15.0  (amd64) for both C and C++
* Qt 5.9.0 for UWP armv7 (MSVC 2017)  
  This kit also complained of no compilers. No arm compiler to select.

Qt 5.9 further configuration:

Build and Run – Debuggers – Add (following install of Windows SDK):

* Name: Widows SDK 10 cdb x64
* Path: C:\Program Files (x86)\Windows Kits\10\Debuggers\x64\cdb.exe
* Type: CDB
* ABIs: x86-windows-msvc2017-pe-64bit
* Version: 10.0.15063.400

Version control – Git (following installation of Git Desktop app):

* Prepend to PATH: C:\ProgramData\user\GitHubDesktop\app-0.5.9\resources\app\git\mingw64\bin

# EPICSQt

Prerequisites for epicsqt:

* QWT 6.1.3  
  Source copied to C:\qwt-6.1.3  
  Project built by QtCreator
* FFMPEG  
  3.3.1 ‘dev’ and ‘shared’ 64 bit binary downloaded and both copied to C:\ffmpeg  
  (Note there are some common files to each)
* C:\epicsqtTarget directory created

Additions to PATH to either use Qt Creator or run qegui:

* C:\Program Files\CMake\bin\  
  CMake
* C:\Program Files (x86)\Windows Kits\10\Windows Performance Toolkit\  
  Microsoft debugger
* C:\epicsqtTarget\bin\windows-x64  
  qegui.exe
* C:\epicsqtTarget\lib\windows-x64  
  qeplugin.dll
* C:\ffmpeg\bin  
  ffmpeg
* C:\epics\base\bin\windows-x64  
  ca.dll, com.dll
* C:\qwt-6.1.3\lib  
  qwt libraries
* C:\Qt\5.9\msvc2017\_64\bin
* C:\Qt\Tools\QtCreator\bin