SAM Development with Visual Studio 2013 and wxWidgets 3.0.2

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1. Download Visual Studio Express 2013 for Windows Desktop from <http://www.visualstudio.com/en-US/products/visual-studio-express-vs>. Usually it is more reliable to download the .iso disk image, and then use a utility like WinCDEmu to mount the .iso image to a virtual drive. You can download WinCDEmu from <http://wincdemu.sysprogs.org/>
2. Install VS 2013. Run VS 2013 and select Help->About->Product license information. Sign in or create a Microsoft.com account to obtain a free license.
3. Check out SAMnt from <https://efmsvn.nrel.gov/SAMnt/svn/trunk>. Before compiling, create a new environment variable SAMNTDIR that points to the local SAMnt folder.
4. Download wxWidgets 3.0.2 (wxWidgets-3.0.2.zip) from [http://sourceforge.net/projects/wxwindows/files/3.0.2/wxWidgets-3.0.2.zip/download](http://sourceforge.net/projects/wxwindows/files/3.0.1/wxWidgets-3.0.1.zip/download)
5. Extract to c:\wxWidgets-3.0.2
6. Copy the files in <SAMNTDIR>\wx patches\3.0.2\src\aui\auibook.cpp and <SAMNTDIR>\wx patches\3.0.2\src\common\dcgraph.cpp to the c:\wxWidgets-3.0.2 folder to fix two bugs that affect SAM.
7. Start VS 2013, and open c:\wxWidgets-3.0.2\build\msw\wx\_vc12.sln
8. Build Debug and Release configurations for both Win32 and x64 platforms. Note: wxWidgets 3.0.2 does not require a separate folder for the 64-bit build anymore. The libraries for 32-bit go into lib\vc\_lib and 64-bit into lib\vc\_x64\_lib.
9. Setup the WXMSW3 environment variable to point to c:\wxWidgets-3.0.2 (Control Panel->System->Advanced system settings->Environment variables). Also, delete your old WXMSW3x64 environment variable if you have it – it’s no longer needed.
10. Check out the LK script engine from <https://efmsvn.nrel.gov/lk/svn/trunk> There’s a folder called vc2013\_wx3 with VS 2013 project files. Build the Debug/Release configurations for both win32 and x64. If successful, the libraries lkvc13wx3.lib, lkvc13wx3d.lib, lkvc13wx3x64.lib, and lkvc13wx3x64d.lib will be created in the “lk” folder. Create a new environment variable called LKDIR that points to your local LK folder.
11. Check out the wxWidgets Extensions (wex) library from <https://efmsvn.nrel.gov/wex/svn/trunk>. There’s a folder called vc2013\_wx3 with VS 2013 project files. Build the Debug/Release configurations for both win32 and x64. If successful, the libraries wexvc13wx3.lib, wexvc13wx3d.lib, wexvc13wx3x64.lib, and wexvc13wx3x64d.lib will be created in the wex folder, and dview{x64}.exe and sandbox{x64}.exe will exist in the project solution folder. Both of the executables should run fine. Create a new environment variable called WEXDIR that points to your local WEX folder.
12. Check out the SSC SDK from <https://efmsvn.nrel.gov/ssc/svn/trunk>. Use the build\_vc2013\ssc\_vc2013.sln project file and build Debug/Release for both win32/x64. After compiling, the project file automatically copies the Release ssc.dll to the SAMNTDIR/deploy/win32 or x64 folder, so that SAM always is using the latest simulation engine library. Create a new environment variable SSCDIR that points to the local SSC folder.
13. Open the SAMNTDIR/vc2013\_wx3/SAMnt\_vc2013.sln project file, and build both Debug/Release and win32/x64. The sam.exe binaries should appear in SAMNTDIR/deploy/win32/ and SAMNTDIR/deploy/x64.
14. The WEX SVN contains precompiled binaries for libcurl which SAM uses to access the internet. Simply copy everything in WEXDIR\vc2013\_wx3\libcurl\_ssl\_win32\bin to SAMNTDIR\deploy\win32, and similarly for the x64 folders. You also need to do this if running the SDKtool, copy the appropriate 32/64 bit libcurl dlls into SSCDIR\build\_vc2013/Win32/<release/debug> and SSCDIR/build\_vc2013/Win64/<release/debug>
15. To get around the authentication process (which will otherwise occur every time you rebuild SAM), you must modify the registry.
    1. Click on the Windows button in the bottom left of the desktop. In the white search bar, type: regedit
    2. Open the folder HKEY\_CURRENT\_USER -> Software -> NREL -> SAMnt
    3. In the right side of the registry editor, right click and select New->String-Value
    4. Name the new string: developer-registration
    5. Right click on the new string and click “Modify”. Enter 09332s into the box.

SAM should now run properly!