

# Building IMF Tool under Mac OS X (also applicable to Linux)

Wolfgang Ruppel, 2017-07-21

## Preparations

Create directories for asdcplib, IMF Tool and for Debugging with Eclipse:

```
drwxr-xr-x 17 wolfgangruppel staff 578 Mar 18 13:24 asdcplib
drwxr-xr-x 10 wolfgangruppel staff 340 Mar 18 13:39 imftool
drwxr-xr-x 5 wolfgangruppel staff 170 Mar 18 13:39 imftool-debug
```

## Prerequisites

You will need a functional build environment on your system. This chapter is for additional libraries only.

### Git:

Download & install Git from for your system from <https://git-scm.com/download/mac>

### Cmake:

Download: <https://cmake.org/download/>

Binaries are provided for various operating systems, e.g. MacOS

### Xerces

Download source code from

<http://artfiles.org/apache.org//xerces/c/3/sources/xerces-c-3.1.3.tar.gz>

Unpack to temp directory, configure, build and install:

```
tar xzvf ../Downloads/xerces-c-3.1.3.tar.gz
cd xerces-c-3.1.3/
./configure
make
sudo make install
```

### Qt5

Download: <http://www.qt.io/download/>

Choose Open Source Distribution / YES / YES

Download installer

Run installer, deselect iOS and Android (saves 10 GB of disk space!)

### libxsd

Download binaries from

<http://www.codesynthesis.com/products/xsd/download.xhtml>

```
tar xzvf ../Downloads/xsd-4.0.0-i686-macosx.tar.bz2
```

Set LibXSD\_root\_DIR in Cmake to point to that directory plus libxsd/, e.g.  
/Users/wolfgangruppel/src/xsd-4.0.0-i686-macosx/libxsd/

### OpenJPEG

Download and build OpenJPEG from <https://github.com/uclouvain/openjpeg/>

Note: OpenJPEG 2.2 (with multi-threading support) is required!

### regxmlibc (fork)

Download tar or zip archive from

<https://github.com/IMFTool/regxmlib/tree/FEATURE-regxmlibc>

Configure, build and install using CMake

### Installing and downloading asdcplib

Asdcplib is an Open Source Library for reading and writing A-02 MXF files.

Download asdcplib-2.7.19 from

<http://download.cinecert.com/asdcplib/asdcplib-2.7.19.tar.gz>

Extract archive (tar -xvzf)

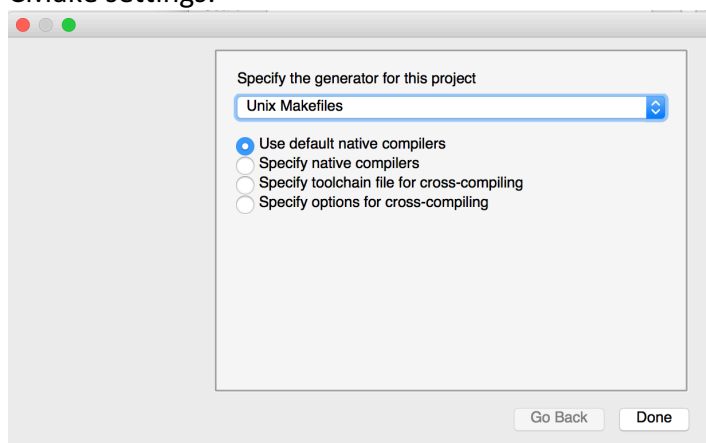
### Linux command line configuration and build:

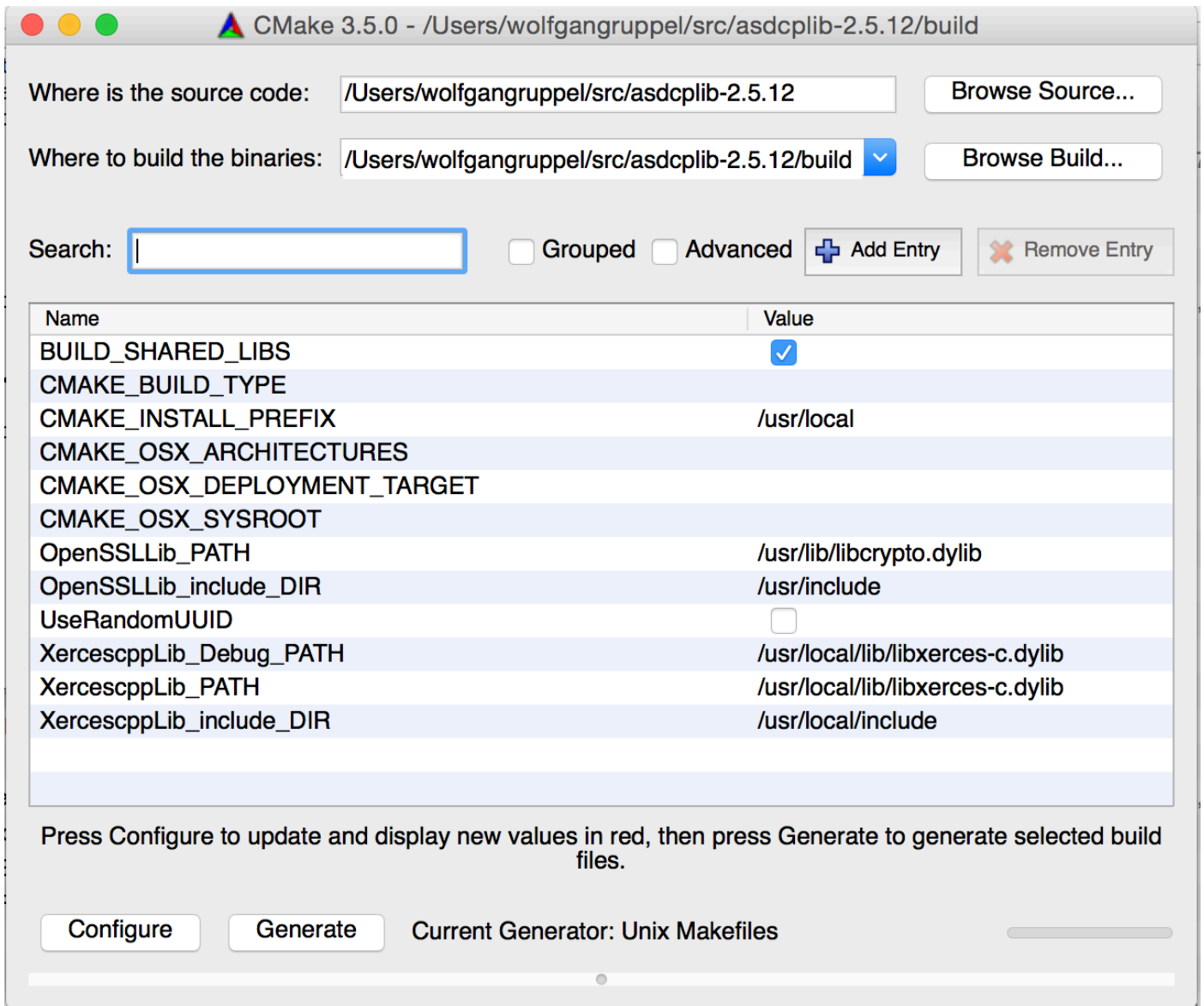
```
cd asdcplib2.9.17/  
mkdir build/  
cd build/  
cmake ..  
make && sudo make install
```

### Configuration using CMake (Mac) / cmake-gui (Linux):

Start CMake from the Applications menu (Mac) or start cmake-gui (Linux)

CMake settings:





Press “Configure” (twice) , choose “UNIX Makefile” and “Generate”.

Building asdcplib (from asdcplib-2.5.14/):

```
cd build/
make && sudo make install
```

## Installing and downloading IMF Tool

```
cd imftool/
git clone http://github.com/IMFTool/IMFTool
```

Start CMake

Carefully fill in all PATHs as shown above!  
 ..and set CMAKE\_BUILD\_TYPE to “Debug”

Press “Configure” and “Generate”, choose “Eclipse CDT4 – Unix Makefiles” as generator.

Specify the generator for this project

Eclipse CDT4 - Unix Makefiles

☒ Use default native compilers  
☐ Specify native compilers  
☐ Specify toolchain file for cross-compiling  
☐ Specify options for cross-compiling

CMake 3.6.1 - /Users/wolfgangruppel/src/kweiss/imftool-merged-debug

Where is the source code: /Users/wolfgangruppel/src/kweiss/imftool-merged Browse Source...

Where to build the binaries: /Users/wolfgangruppel/src/kweiss/imftool-merged-debug Browse Build...

Search:  ☐ Grouped ☐ Advanced

Name	Value
CMAKE_BUILD_TYPE	Debug
CMAKE_ECLIPSE_EXECUTABLE	CMAKE_ECLIPSE_EXECUTABLE-NOTFOUND
CMAKE_ECLIPSE_GENERATE_LINKED_RESO...	<input checked="" type="checkbox"/>
CMAKE_ECLIPSE_MAKE_ARGUMENTS	-j4
CMAKE_ECLIPSE_VERSION	4.5 (Mars)
CMAKE_INSTALL_PREFIX	/usr/local
CMAKE_OSX_ARCHITECTURES	
CMAKE_OSX_DEPLOYMENT_TARGET	
CMAKE_OSX_SYSROOT	
LibXSD_root_DIR	/Users/wolfgangruppel/src/xsd-4.0.0-i686-macosx/libxsd
OpenJPEGLib_Debug_Path	/usr/local/lib/libopenjp2.dylib
OpenJPEGLib_Path	/usr/local/lib/libopenjp2.dylib
OpenJPEG_Targets_PATH	/usr/local/targets/OpenJPEGTargets.cmake
OpenJPEG_include_DIR	/usr/local/include
Qt5Core_DIR	/Users/wolfgangruppel/Qt5.7/5.7/clang_64/lib/cmake/Qt5Core
Qt5Gui_DIR	/Users/wolfgangruppel/Qt5.7/5.7/clang_64/lib/cmake/Qt5Gui
Qt5Multimedia_DIR	/Users/wolfgangruppel/Qt5.7/5.7/clang_64/lib/cmake/Qt5Multimedia
Qt5Network_DIR	/Users/wolfgangruppel/Qt5.7/5.7/clang_64/lib/cmake/Qt5Network
Qt5Widgets_DIR	/Users/wolfgangruppel/Qt5.7/5.7/clang_64/lib/cmake/Qt5Widgets
SVN_EXECUTABLE	/usr/bin/svn
XercescppLib_Debug_PATH	/usr/local/lib/libxerces-c.dylib
XercescppLib_PATH	/usr/local/lib/libxerces-c.dylib
XercescppLib_include_DIR	/usr/local/include
asdcplib_Targets_PATH	/usr/local/targets/asdcplibtargets.cmake
asdcplib_include_DIR	/usr/local/include

Press Configure to update and display new values in red, then press Generate to generate selected build files.

Current Generator: Eclipse CDT4 - Unix Makefiles

(Note: I had to manually configure the paths to the QT directories and the libXSD directory.)

```
cd imftool-debug/
make
```

Run IMF-Tool:

```
nohup ./src/IMF-Tool&
```

## Debugging using Eclipse MARS on MacOS Yosemite

Install Homebrew: <http://brew.sh>

Install gdb:

```
brew update
brew tap homebrew/dupes
brew install gdb
```

Signing the gdb binary (from <http://andresabino.com/2015/04/14/codesign-gdb-on-mac-os-x-yosemite-10-10-2/> )

*To enable gdb access to other processes, we must first code sign the binary. This signature depends on a particular certificate, which the user must create and register with the system.*

*To create a code signing certificate, open the **Keychain Access application**. Choose menu Keychain Access -> Certificate Assistant -> Create a Certificate...*

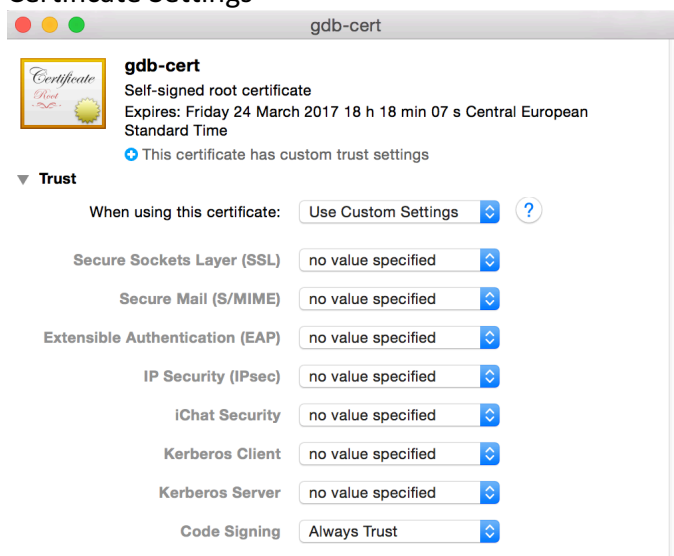
*Choose a name for the certificate (e.g., gdb-cert), set Identity Type to Self Signed Root, set Certificate Type to Code Signing and select the Let me override defaults. **Click several times on Continue until you get to the Specify a Location For The Certificate screen, then set Keychain to System.***

*Double click on the certificate, open Trust section, and set Code Signing to Always Trust. Exit Keychain Access application.*

*Restart the taskgated service, and sign the binary.*

```
$ sudo killall taskgated
$ codesign -fs gdb-cert /usr/local/bin/gdb
```

## Certificate Settings



Finally, point eclipse to the gdb binary:

(Input in field "GDB Debugger" was /usr/local/bin/gdb, eclipse has changed the path afterwards)

