

Exiv2 - Bug #857

CMake compilation issue on MacOS-X 4.5.1/Mountain Lion

07 Oct 2012 11:30 - Robin Mills

| | | | |
|------------------------|-------------|------------------------|-------------|
| Status: | Closed | Start date: | 07 Oct 2012 |
| Priority: | Normal | Due date: | |
| Assignee: | Robin Mills | % Done: | 100% |
| Category: | build | Estimated time: | 1.00 hour |
| Target version: | 0.25 | | |

Description

There's a strange compilation warning with CMake/Makefiles on Mountain Lion. exiv2 built this way passes the test suite. So the issue is ugly and benign.

```
162 rmills@clanmills:~/gnu/exiv2/testbuild $ xcodebuild -version
Xcode 4.5.1
Build version 4G1004
163 rmills@clanmills:~/gnu/exiv2/testbuild $ sw_vers
ProductName:    Mac OS X
ProductVersion: 10.8.2
BuildVersion:   12C60
164 rmills@clanmills:~/gnu/exiv2/testbuild $
```

To reproduce:

```
$ cd <exiv2>
$ mkdir build ; cd build; cmake .. ; make
```

... rattle'n'roll

```
[ 1%] Building CXX object xmpsdk/CMakeFiles/xmp.dir/src/ExpatAdapter.cpp.o
[ 2%] Building CXX object xmpsdk/CMakeFiles/xmp.dir/src/MD5.cpp.o
/Users/rmills/gnu/exiv2/testbuild/xmpsdk/src/MD5.cpp:133:24: warning: 'memset' call operates on ob
jects of type 'struct MD5_CTX' while
    the size is based on a different type 'struct MD5_CTX *' [-Wsizeof-pointer-memaccess]
    memset(ctx, 0, sizeof(ctx)); /* In case it's sensitive */
           ^~~
/Users/rmills/gnu/exiv2/testbuild/xmpsdk/src/MD5.cpp:133:24: note: did you mean to dereference the
argument to 'sizeof'
    (and multiply it by the number of elements)?
    memset(ctx, 0, sizeof(ctx)); /* In case it's sensitive */
           ^~~
1 warning generated.
```

Oddly this doesn't appear with the autotools build. \$ make config ; ./configure ; make

There must be something different about the compilation options/search path generated by CMake. The command \$ make VERBOSE=1 will echo the commands being executed by CMake builds.

Related issues:

| | | |
|--|---------------|--------------------|
| Related to Exiv2 - Bug #859: Compilation warning using Clang | Closed | 11 Oct 2012 |
| Related to Exiv2 - Bug #920: Cross compiling for Android on OSX is keep using... | Closed | 22 Sep 2013 |
| Related to Exiv2 - Bug #1131: Please explain the RCSID macro at the start of ... | Closed | 25 Oct 2015 |

Associated revisions

Revision 2904 - 13 Oct 2012 22:50 - Robin Mills

Fix: Bug #857. Get CMake to compile with g++ instead of c++ (clang) compiler to eliminate warnings.

Revision 2906 - 14 Oct 2012 14:22 - Robin Mills

Fix: Bug #859 (and #857). Redefine EXIV2_RCSID macro for clang as empty (to eliminate warnings).

History

#1 - 13 Oct 2012 23:08 - Robin Mills

- Status changed from Assigned to Resolved

- % Done changed from 0 to 90

Fix submitted: SV#2904.

I couldn't find compiler flags to eliminate the compiler warnings on the CMake build.

However, I discovered that the ./configure build uses /usr/bin/g++ and was happy. CMake uses /usr/bin/c++ and gives warnings. Here are the paths in the file system to the compilers.

```
528 rmills@rmills-imac:~/gnu/exiv2/exiv2.master $ which g++ ; which c++
/usr/bin/g++
/usr/bin/c++
529 rmills@rmills-imac:~/gnu/exiv2/exiv2.master $ ls -alt $(pathname $(which g++))
-rwxr-xr-x 1 root wheel 117168 Oct 12 22:35 /usr/llvm-gcc-4.2/bin/llvm-g++-4.2
530 rmills@rmills-imac:~/gnu/exiv2/exiv2.master $ ls -alt $(pathname $(which c++))
-rwxr-xr-x 1 root wheel 21622640 Oct 12 22:35 /usr/bin/clang
531 rmills@rmills-imac:~/gnu/exiv2/exiv2.master $
```

I modified CMakeLists.txt (in the project's root) to get CMake to use g++. I've successfully built and run the test suite.

Presumably there are important differences between clang and llvm-g++. If the user wishes to compile with clang, CMakeLists.txt can be modified and the resulting executables will pass the test suite. TAKE CARE: make CC=/usr/bin/c++ does not change the compiler for a CMake generated Makefile. To change the compiler, it is necessary to change CMakeLists.txt and regenerate the Makefile. CMake uses the compiler to generate the Makefile and "bakes" the compiler path into the Makefile.

I feel confident about marking this issue as resolved (until someone says otherwise!).

#2 - 15 Oct 2012 04:26 - Andreas Huggel

[r2904](#): I'd rather have the warning than change the default compiler just because we don't understand the warning. Sooner or later someone will tell us what's really wrong.

On the other hand, this compiler generates refreshingly verbose and clever warnings: Try change the sizeof(ctx) to sizeof(*ctx) and I'm confident it will go away. The compiler found a bug. The intention of this code is to clear memory the size of struct MD5_CTX, not the size of a pointer to that struct, which is what it's currently doing.

-ahu.

#3 - 15 Oct 2012 04:26 - Andreas Huggel

- Status changed from Resolved to Feedback

#4 - 15 Oct 2012 04:29 - Andreas Huggel

What warnings you get with the original EXIV2_RCSID macro?

-ahu.

#5 - 15 Oct 2012 08:58 - Robin Mills

```
libtool: compile: /usr/bin/c++ -O2 -fvisibility=hidden -fvisibility-inlines-hidden -Wall -Wcast-align -Wpointer-arith -Wformat-security
-Wmissing-format-attribute -Woverloaded-virtual -W -MMD -I. -I/usr/local/include -DEXV_LOCALEDIR="/usr/local/share/locale/" -I../xmpsdk/include -c
-DEXV_BUILDING_LIB=1 asfvideo.cpp -fno-common -DPIC -o .libs/asfvideo.o
asfvideo.cpp:30:1: warning: variable 'rcsid' is uninitialized when used within its own initialization [-Wuninitialized]
EXIV2_RCSID("@(#) $Id$")
^~
~..
./rcsid_int.hpp:59:38: note: expanded from macro 'EXIV2_RCSID'
const char* rcsId = getRcsId(rcsId); \
~..      ^~
```

#6 - 23 Jan 2013 21:51 - Robin Mills

- Status changed from Feedback to Assigned

I'm moving this back to "Assigned" and I'll investigate again - hopefully before 0.24.

#7 - 24 Jul 2013 15:58 - Robin Mills

- *Target version changed from 0.24 to 0.25*

Deferred to 0.25.

#8 - 07 Oct 2014 20:00 - Robin Mills

- *Status changed from Assigned to Resolved*

I'm going to mark this as "resolved" as we are build without these warning using cmake and ./configure on the current mac platform (10.9.5/Xcode6).

#9 - 08 May 2015 16:39 - Robin Mills

- *% Done changed from 90 to 100*

#10 - 21 Jun 2015 16:42 - Andreas Huggel

- *Status changed from Resolved to Closed*