

## Exiv2 - Bug #1273

### exiv2 0.25 fails to compile correctly on musl libc due to improper check of strerror\_r return type

20 Jan 2017 23:12 - A. Wilcox

<b>Status:</b>	Closed	<b>Start date:</b>	20 Jan 2017
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Robin Mills	<b>% Done:</b>	100%
<b>Category:</b>	build	<b>Estimated time:</b>	6.00 hours
<b>Target version:</b>	0.26		
<b>Description</b>			
Hello there,			
While packaging exiv2 for our musl libc-based distribution, Adélie Linux, I noticed the exiv2 package failed to compile:			
<pre>/usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp: In function 'std::__cxx11::string Exiv2::strError()': /usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp:340:25: error: invalid conversion from 'int' to 'char*' [-fpermissive]     buf = strerror_r(error, buf2, n);                         ^</pre>			
<pre>src/CMakeFiles/exiv2lib.dir/build.make:782: recipe for target 'src/CMakeFiles/exiv2lib.dir/futils.cpp.o' failed make[2]: *** [src/CMakeFiles/exiv2lib.dir/futils.cpp.o] Error 1</pre>			
This is because musl implements an XSI-conformant <code>strerror_r</code> <sup>1</sup> . Changing the check from <code>CHECK_C_SOURCE_COMPILE</code> to <code>CHECK_CXX_SOURCE_COMPILE</code> - without changing any other part of the check - causes the check to fail correctly on musl (and allow compilation with int-type <code>strerror_r</code> ). I applied this to the source on a glibc test machine and the check passed correctly there, allowing compilation with char*-type <code>strerror_r</code> . So this is a partial re-introduction of changeset #2041 but without the drastic change in the test.			
[1]: <a href="http://git.musl-libc.org/cgiit/musl/tree/src/string/strerror_r.c">http://git.musl-libc.org/cgiit/musl/tree/src/string/strerror_r.c</a>			

#### Associated revisions

##### Revision 4699 - 21 Jan 2017 11:53 - Robin Mills

#1273 Thanks to A Wilcox for reporting this and providing the patch.

##### Revision 4700 - 24 Jan 2017 23:43 - Robin Mills

#1273 Fix for linking on FreeBSD

##### Revision 4701 - 25 Jan 2017 18:33 - Robin Mills

#1273 Correction to r4699

#### History

##### #1 - 20 Jan 2017 23:51 - A. Wilcox

I should note that additionally on some builders, but not others, I've just seen a similar yet not identical build failure:

```
/usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp:54:56: error: ambiguating new declaration of 'char* strerror_r(int, char*, size_t)'
extern char *strerror_r(int errnum, char *buf, size_t n);
                        ^
In file included from /usr/lib/gcc/powerpc-foxkit-linux-musl/5.4.0/include/g++-v5/cstring:42:0,
                 from /usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp:49:
/usr/include/string.h:64:5: note: old declaration 'int strerror_r(int, char*, size_t)'
int strerror_r(int, char *, size_t);
    ^
/usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp: In function 'std::__cxx11::string Exiv2::strError()':
/usr/src/media-gfx/exiv2-0.25-r2/work/exiv2-0.25/src/futils.cpp:340:25: error: invalid conversion from 'int' to 'char*' [-fpermissive]
    buf = strerror_r(error, buf2, n);
                        ^
```

```
src/CMakeFiles/exiv2lib.dir/build.make:782: recipe for target 'src/CMakeFiles/exiv2lib.dir/futils.cpp.o' failed
```

This appears to be because include/exiv2/config.h forcibly defines this for all Linux machines, due to some failure involving GCC 4.8. This is definitely not correct.. Would you be amenable to adding an "`&& defined(GLIBC)`" to that check?

#### #2 - 21 Jan 2017 00:13 - A. Wilcox

- File `exiv2-0.25-dont-overdefine-strerror_r.patch` added

I have confirmed that this patch in addition to the above attached solve all compilation errors for exiv2 against musl libc on x86\_64, x86\_32, and PowerPC.

#### #3 - 21 Jan 2017 00:55 - Robin Mills

- Status changed from *New* to *Assigned*

- Target version set to *0.26*

- % Done changed from *80* to *50*

- Estimated time changed from *1.00 h* to *2.00 h*

Thank you for reporting this and providing a patch. I returned from vacation yesterday and will review/submit your patch on Tuesday.

It's been a few years since I've had to service the `strerror_r` hackery. If you're confident that your fix is good on Adélie Linux, our buildserver will validate your patch on Fedora/Ubuntu/Cygwin/MinGW/Mac (Intel 64 and PPC 32) and MSVC (2005,8,10,12,13,15).

#### #4 - 21 Jan 2017 01:17 - A. Wilcox

I have already pushed the packages live to the alpha2 repos for Adélie; additionally, I have tested the patch on Galapagos Linux (a minimal fork of Gentoo based on glibc), and my personal Mac running OS X 10.11.3. If there are any build failures on the other platforms, I will be happy to revise the patch.

As an aside, I notice the BSD family is curiously missing from your build farm. Is there a particular reason? I can toss this at my FreeBSD 10 SPARC box if you want.

#### #5 - 21 Jan 2017 01:28 - Robin Mills

Your patch seems fine to me. It's 1am in England and I'm awake with jet-lag after a 28 hour flight home from New Zealand. I don't want to start messing with code tonight.

Ah, that's an interesting offer to build on your Sparc. You know how it is with open-source, everything grows in response to requests and contributions. If I can access your Sparc with SSH, I could get our build server to run builds on your machine.

#### #6 - 21 Jan 2017 14:58 - Robin Mills

Fix submitted. [r4699](#). Thanks to A Wilcox for reporting this and providing the patch.

I've installed FreeBSD on a virtual machine on the build server (a Mac Mini). I haven't succeed yet in building on FreeBSD for two reasons:

1) `cmake` compiles and fails to link "cannot find `-ldl`"

(I know why and I'll submit a fix for this)

2) `make config; ./configure` is generating errors

I haven't investigated yet. However I will and submit a fix.

I would be useful to build on the big endian Sparc. My 2004 PowerBook G4 is really old and I only power it up occasionally to build/test on Big Endian.

#### #7 - 25 Jan 2017 19:22 - Robin Mills

- Status changed from *Assigned* to *Closed*

- % Done changed from *50* to *100*

- Estimated time changed from *2.00 h* to *6.00 h*

I've updated `src/CMakeLists.txt` to provide support for building exiv2 on FreeBSD. However it requires `-DEXIV2_ENABLE-NLS=OFF` as `gettext` and `libintl` is not installed by default on FreeBSD. Additionally, the autotools (`./configure`) build fails to generate valid makefiles. Debugging this is complicated because I'm running FreeBSD on a virtual machine under Parallels on a Mac. This environment does not appear to be able to install Parallels Tools and consequently Gnome is almost un-usable. All-in-all, working with FreeBSD has been a misery.

As nobody else has requested support for FreeBSD, I don't intend to spend more time on this. If A Wilcox wishes to work on this and provide patches, I will be happy to review, test and commit them. When we have FreeBSD building effortlessly (both `CMake` and `./configure`) I will seriously consider adding FreeBSD to the nightly build when development begins on v0.27.

I appreciate this matter being reported and patched by A Wilcox. We are in the final stages before shipping v0.26 and the original issue concerning

strerror\_r has been resolved and therefore this issue is being closed. If A Wilcox would like to contribute to the effort to support FreeBSD, please open a new issue with the title "Build Support for FreeBSD" and assign the target version as 0.27.

## Files

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exiv2-0.25-check-return-type-properly.patch	518 Bytes	20 Jan 2017	A. Wilcox
exiv2-0.25-dont-overdefine-strerror_r.patch	497 Bytes	21 Jan 2017	A. Wilcox