

C++11 and LibreOffice

The future has arrived (it was about time)

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C++98

- First ISO C++ standard
- Poorly implemented for many years
- It has too many features
- But it lacks features

C++11

- Major revision of ISO C++ standard
- “C++11 feels like a new language” (Stroustrup)
- Commercially available compilers actually implement it
 - GCC
 - Clang
 - MSVC
- C++14 “bugfix release”

... and LibreOffice?

- Rewrite in ~~Haskell~~ Rust didn't happen yet
- If we're stuck with C++, then at least give us *modern* C++

Inspiration from other projects...

- LLVM is switching to C++11
- Minimum requirements:
 - Clang 3.1
 - GCC 4.7
 - MSVC 2012
- Offers a good subset of C++11, bringing both core and library improvements

LibreOffice 4.3, C++98

Platform	Min requirement	TDF release	Min OS target
Windows	MSVC 2010	MSVC 2012	Windows XP
Linux	GCC 4.1 Clang 2.?	GCC 4.4	RHEL 5
Mac OS X	Mac OS X SDK 10.6	Apple GCC 4.2 XCode 3.2 (Mac OS X SDK 10.6)	Mac OS X 10.6 32bit (libstdc++)

LibreOffice 4.4 requires (some) C++11

Platform	Min requirement	TDF release	Min OS target
Windows	MSVC 2012	MSVC 2012	Windows XP
Linux	GCC 4.7 4.6 Clang 3.1	GCC 4.8 (DTS, no bundling libstdc++)	RHEL 5
Mac OS X	Mac OS X SDK 10.8	Apple Clang 6.0 (Mac OS X SDK 10.8)	Mac OS X 10.8 64bit (libc++)

LibreOffice 4.5 will require even more C++11

Platform	Min requirement	TDF release	Min OS target
Windows	MSVC 2013	MSVC 2013	Windows XP
Linux	GCC 4.7 4.6 Clang 3.1	GCC 4.8 (DTS, no bundling libstdc++)	RHEL 5 ?
Mac OS X	Mac OS X SDK 10.8	Apple Clang 6.0 (Mac OS X SDK 10.8)	Mac OS X 10.8 64bit (libc++)

dropping MSVC 2012 for 2013: new features

- Variadic templates
- Initializer lists
- Default template arguments for function templates
- Explicit conversion operators
- Raw string literals
- Defaulted and deleted functions

<http://msdn.microsoft.com/en-us/library/hh567368.aspx>

...and dropping GCC 4.6 for 4.7 would allow...

- Non-static data member initializers
- Alias templates
- Delegating constructors

<https://gcc.gnu.org/projects/cxx0x.html>

- (For completeness, clang's status)

http://clang.llvm.org/cxx_status.html



Fin.
Thanks for your attention