

LibreOffice: как разрабатываются большие проекты?

Василий Меленчук



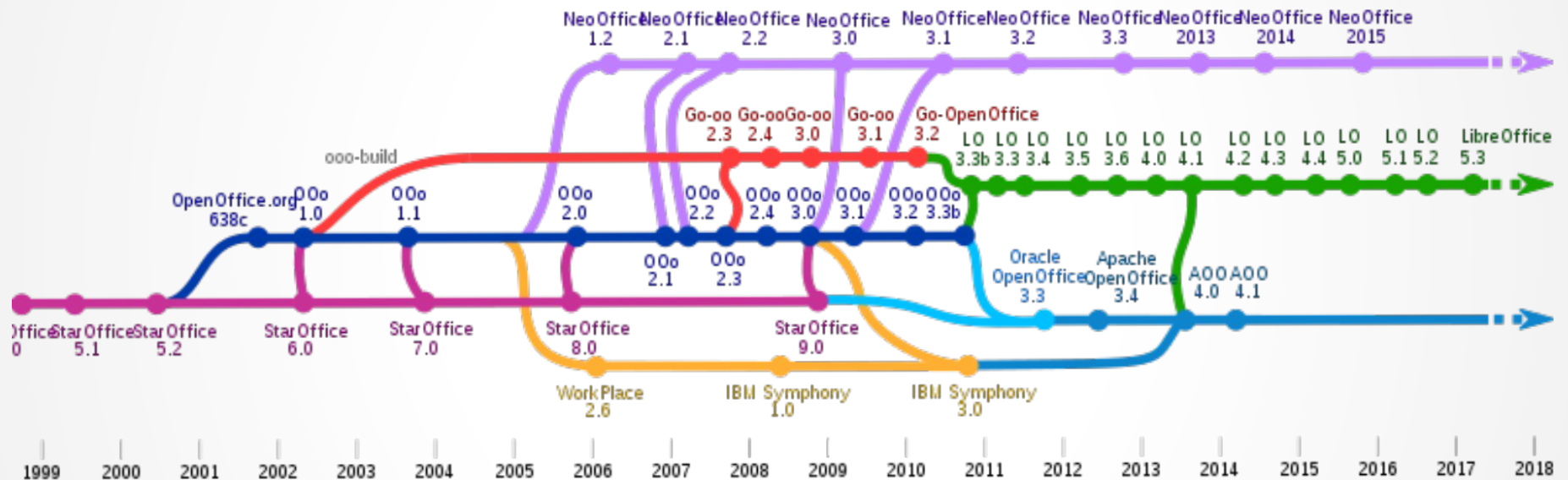
LibreOffice
The Document Foundation



LVEE

Linux Vacation / Eastern Europe

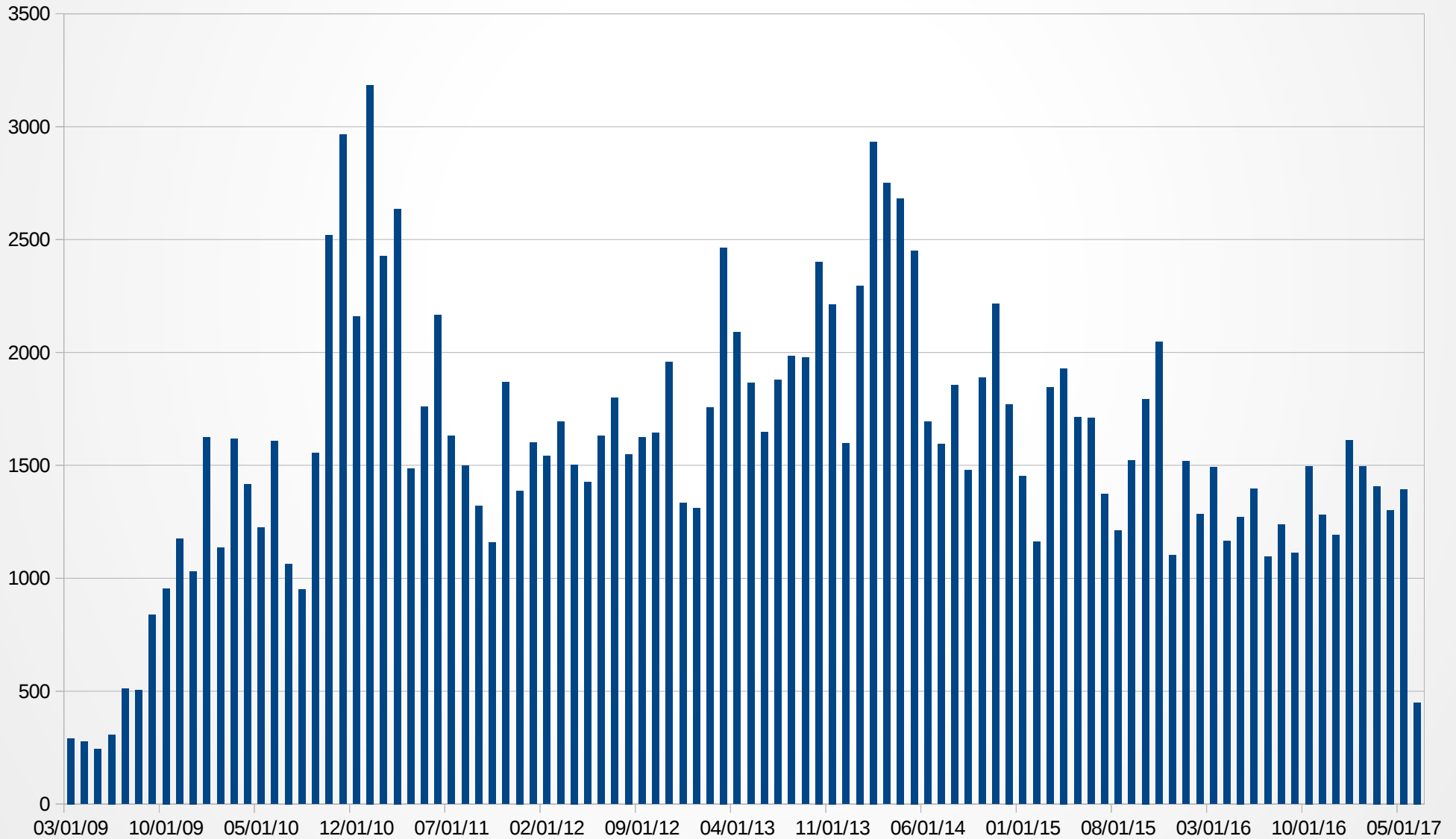
○ LibreOffice



<https://en.wikipedia.org/wiki/StarOffice>

LibreOffice сейчас

Commits per month (master)



LibreOffice сейчас

47253 text files.
43925 unique files.
31494 files ignored.

http://cloc.sourceforge.net v 1.64 T=258.76 s

```
-----  
language      files      blank      comment      code  
-----  
C++           9806      676924      480179      4012619  
IDL           5434      81067       1           325408  
Java          2810      67691       137585      288978  
XML           2606      7271        12999       281922  
other         2380      51457       76835       414543  
-----  
SUM:          23036     884410      707599      5323470  
-----
```

LibreOffice сейчас

- 4 миллиона строк кода на C++
(со сторонними библиотеками — 8 млн)
- ~150 C++ проектов/модулей
- 1500-2000 коммитов в месяц

Окружение

- apt-get build-dep libreoffice
- Visual Studio 2015 / cygwin setup с длинной строкой
- LibreOffice Development Environment (lode)

<https://wiki.documentfoundation.org/Development/lode>

Editors vs IDE

- Возможность генерации проектов для
 - kdevelop
 - QT Creator
 - Visual Studio
- Но vim / emacs быстрее :)

opengrok

<http://opengrok.libreoffice.org/>

Lucene based search for source code

Building

- Время компиляции на неподготовленном компьютере порядка 4-5 часов (в сугwin × 2)
- `ссache`
размер кеша от 32Гб
- `distcc` или `icescream` для распределённой сборки

Code Review: gerrit

<https://gerrit.libreoffice.org/>

All Projects Documentation
Open Merged Abandoned

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Change **38997** - Needs Code-Review Reply... Patch Sets (3/3) ▾ Download ▾

Introduce a range-based iterator for 'references' in a FormulaTokenArray
Take it into use in a couple of places.

Change-Id: I72127f4236220f6e6fbf9ea25cdd56470be89961

Owner: [Tor Lillqvist](#)
Reviewers: [Eike Rathke](#) [Jenkins](#)
[Noel Grandin](#)
Project: [core](#)
Branch: [master](#)
Topic:
Strategy: [Cherry Pick](#)
Updated: 21 minutes ago

Code-Review
Verified

Author: [Tor Lillqvist <tml@collabora.com>](#) Jun 19, 2017 7:56 PM
Committer: [Tor Lillqvist <tml@collabora.com>](#) Jun 22, 2017 11:29 AM
Commit: [9c4b4f7595fb49f63fffcddccb2361baf1db6a7a](#) [\(gitweb\)](#)
Parent(s): [9ec1ccb23af0de56f141d906f2eb60bab40aefb8](#) [\(gitweb\)](#)
Change-Id: [I72127f4236220f6e6fbf9ea25cdd56470be89961](#)

Files Open All Diff against: **Base** ▾

File Path	Comments	Size
Commit Message		
include/formula/tokenarray.hxx	106	<div style="width: 100%; height: 10px; background-color: green;"></div>
sc/source/core/data/colorscale.cxx	4	<div style="width: 100%; height: 10px; background-color: red;"></div>
sc/source/core/data/conditio.cxx	4	<div style="width: 100%; height: 10px; background-color: red;"></div>
sc/source/core/tool/compiler.cxx	15	<div style="width: 100%; height: 10px; background-color: red;"></div>
	+112, -17	<div style="width: 100%; height: 10px; background-color: green;"></div>

History Expand All

- Tor Lillqvist Uploaded patch set 1.
- Jenkins Patch Set 1: Build Started http://ci.libreoffice.org/job/lo_gerrit/13324/
- Noel Grandin**
Patch Set 1:
(1 comment)

Continuous Integration: jenkins

Сборка и запуск тестов в 4 конфигурациях:

- Linux (gcc)
- Linux (clang)
- Windows (cygwin / Visual Studio)
- Mac OS (clang)

clang plugins

```
PositionHolder::~~PositionHolder() try
{
    mxSeekable->seek(mnPosition);
}
catch (...)
{
}
```

<https://www.youtube.com/watch?v=pdxImM477KY>

<https://conference.libreoffice.org/assets/Conference/Aarhus/Slides/SBergmanLOCON2015-plugin.pdf>

clang plugins (II)

- ~ 80 плагинов
- Проверка:
 - прямое сравнение чисел с плавающей точкой на равенство;
 - использование C-style приведения типов;
 - поиск неиспользуемых методов классов; методов, которые используются только внутри класса и в одном месте;
 - параметры методов, которые могут быть константными;и т.д

https://wiki.documentfoundation.org/Development/Clang_plugins

Static code analysis

- `cppcheck`
- `coverity`

Code Coverage: gcov / lcov

<http://lcov.libreoffice.org/>

LCOV - code coverage report

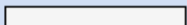


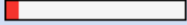
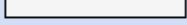
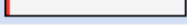


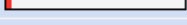

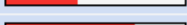


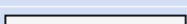
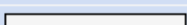
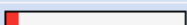

Current view: [top level](#)

Test: [jenkins core coverage \(view descriptions \)](#)

Date: 2017-06-21 20:45:31

Legend: Rating: low: < 75 % medium: >= 75 % high: >= 90 %

	Hit	Total	Coverage
Lines:	1096909	2289918	47.9 %
Functions:	212406	397336	53.5 %

Directory	Line Coverage ↕	Functions ↕
/home/tdf/lode/jenkins/workspace/internal_lcov_master	 0.0 %	0 / 3
UnoControls/inc	 25.0 %	2 / 8
UnoControls/source/base	 6.0 %	38 / 630
UnoControls/source/controls	 7.5 %	67 / 896
UnoControls/source/inc	 0.0 %	0 / 2
accessibility/inc/extended	 2.4 %	3 / 123
accessibility/inc/helper	 35.6 %	26 / 73
accessibility/inc/standard	 33.3 %	3 / 9
accessibility/source/extended	 3.0 %	165 / 5510
accessibility/source/helper	 65.0 %	102 / 157
accessibility/source/standard	 39.6 %	1911 / 4820
animations/source/animcore	 71.6 %	546 / 763
avmedia/source/framework	 8.8 %	81 / 925
avmedia/source/gstreamer	 21.8 %	126 / 577
avmedia/source/inc	 0.0 %	0 / 2
avmedia/source/openssl	 0.0 %	0 / 426
avmedia/source/viewer	 6.7 %	40 / 601

Performance: callgrind

<http://perf.libreoffice.org>

LibreOffice
The Document Foundation

OUT-OF-TREE

calc

empty

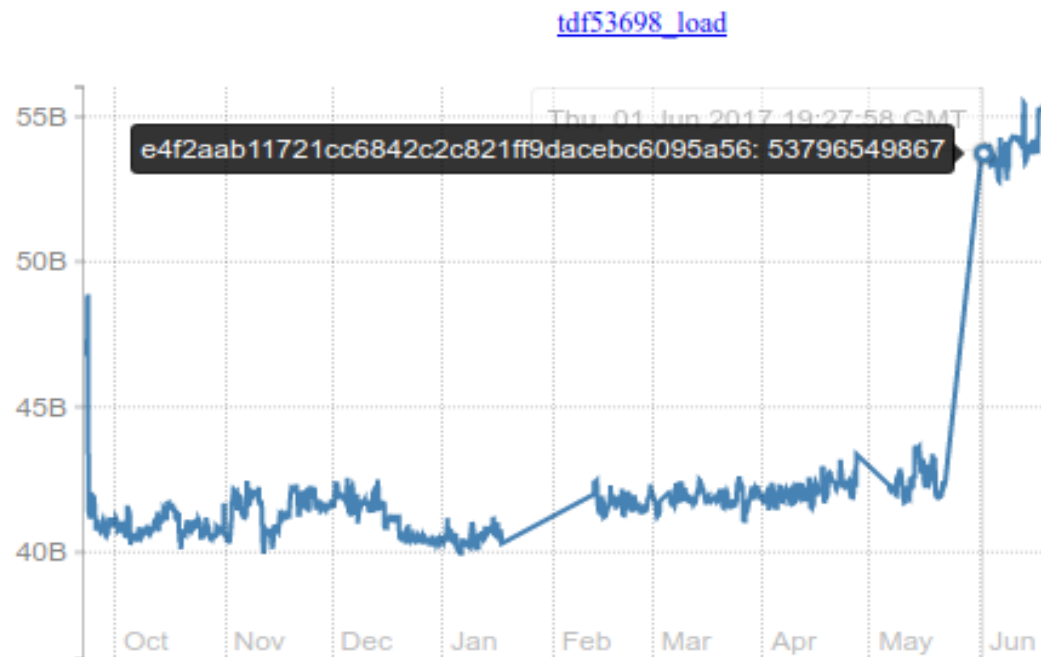
writer

PERFCHECK

cppu_sc

cppu_test

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tinderbox

Дополнительные машины для сборки

~ 80 зарегистрированных

21 активных на данный момент

<http://tinderbox.libreoffice.org/>

bibisect

- bibisect = binary bisect
- бинарные репозитории специально для запуска `git bisect`

<https://wiki.documentfoundation.org/QA/Bibisect>

That's all!



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