Advantages of LibreOffice Technology

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Relaunch the Innovation
OpenOffice to LibreOffice

the community takes control to relaunch the innovation and develop a self sustaining project backed by a solid ecosystem

OpenOffice

risk of abandon by Oracle after 10 years of continuous growth backed by Sun and community

LibreOffice

today
LibreOffice Development Cycles

- Code Cleaning LibreOffice 3.x
- User Interface LibreOffice 5.x
- Document Compatibility LibreOffice 7.x
- Code Refactoring LibreOffice 4.x
- Multiple Platforms LibreOffice 6.x
LibreOffice: Product to Platform

- 2010: LibreOffice only for the Desktop
- 2020: LibreOffice for the Desktop, LibreOffice LTS optimized for Enterprises, LibreOffice Online for the Cloud, LibreOffice Mobile for Android & iOS, and LibreOffice for Chrome OS
- All these products, from different organizations, share the same engine, which is common to all modules
LibreOffice Technology
LibreOffice Technology

• LibreOffice Technology is the result of 10 years of development in the right direction
• Same processing engine common to all modules
• Based on a cleaned and refactored source code
• With a focus on code quality and consistency
• Supported by easy and extensive APIs
• The best open source platform for personal productivity tightly integrated on desktop, mobile and cloud
**LibreOffice Tight Integration**

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Open Document Format (ODT / ODS / ODP / ODG)

Common Productivity Engine

LibreOffice
The Document Foundation
## Office Suites Loose Architecture

### Desktop Platforms
- WP UI
- SS UI
- PS UI
- DOCX
- XLSX
- PPTX

### Mobile Platforms
- WP UI
- SS UI
- PS UI
- WP Engine
- SS Engine
- PS Engine

### Cloud Platforms
- WP UI
- SS UI
- PS UI
- DOCX
- XLSX
- PPTX

Proprietary and Open Core Office Suites
Huge Localization Effort

- Localization Teams
  - ~120 shipping languages
  - 145 active language projects
  - 4605 registered translators
  - Over 400K translations made
- LibreOffice is available in more native language versions than any other application
NotebookBar

LibreOffice 6.2
New Tabbed UI!
LibreOffice 6.3
New Tabbed Compact UI
GoupedBar Compact

LibreOffice 6.2
New Groupedbar Compact UI!
Websites related to LibreOffice Development

**GERRIT**
Gerrit is the tool LibreOffice developers use for code review. This is where developers submit and review patches.

**TINDERBOX**
TinderBox presents the result of the many, many tinderboxes that build LibreOffice all day and all night.

**CONTINUOUS INTEGRATION**
LibreOffice has a Continuous Integration system, running gerrit verification jobs, tinderboxes and all sort of other task.

**BUGZILLA**
Bugzilla is the tool for LibreOffice developers, QA and users to submit, triage, handle bugs reports.

**WIKI**
LibreOffice has a Wiki where you can find a trove of information. It is a wiki, so help organize and keep the content up-to-date.

**OPENGROK**
OpenGrok is a source browser, that allows you to do search on the very large LibreOffice code base.

**ONLINE HELP**
The Online help for LibreOffice contains the end user documentation for Writer, Calc, Draw, Base, Math, and Basic.

**API FOR UNO**
You will find the documentation and examples of use of the API for Universal Network Objects (UNO).

**WEBLATE**
LibreOffice operates a Weblate server with which we manage the translation of the product in many languages.

**PERFORMANCE**
We run a set of Caligraf Performance tests, the result of which are presented graphically on there.

**CPPCHECK**
We run a cppcheck regularly.

**CRASHREPORT**
We collect crash reports.
Static Code Analysis

• Tool: Coverity Scan
  • Free for open source projects
  • Detects dead code, uninitialized variables, uncaught exceptions...
• Defect density reduced from 1.1 to \(~0,00x\)
  • Density measured in defects every 1,000 lines
  • Average density for similar sized projects: 0.71
Coverity Scan @ LibreOffice
Fuzzing

• Feeding a program random data in order to induce faults
• Black box fuzzing assumes nothing about the expectations of the program
• White box fuzzing knows about the underlying formats and protocols
Open Document Format
the true document standard
which offers freedom of choice
ODF Characteristics

• ODF is simple, solid, robust and secure
• ODF is consistent across operating systems
• ODF is based on many existing ISO standards
• ODF is predictable and consistent in term of behavior vs contents and formats
• ODF is human readable by normal users
Roundtrip Test
- Use Interop libraries provided by Microsoft
- Capture the following details from document:
  - # of Page
  - # of Words
  - # of Characters (no spaces)
  - # of Characters (with spaces)
  - Paragraphs
  - Lines
- Compare the results for Original and Roundtripped files
- Generate the result files
- Scan active grid for following:
  - Cell Values
  - Cell Formulas & Functions
  - Pivot Table & Sorting Metadata
  - Objects / Charts
  - Images / Shapes
- Repeat the same for remaining worksheets (Sheet 2 ... Sheet n)
- Compare values for Original and Roundtripped Files
- Generate the result file
- Scan slides for following:
  - Plain Text
  - Shapes / Images
  - Objects / Charts
  - Master Layouts
- Compare values for Original and Roundtripped Files
- Generate the result file
LibreOfficeKit

• LibreOfficeKit can be used for accessing LibreOffice functionality through C/C++, without any need to use UNO

• The essence of the idea is to provide a thin API for LibreOffice, that allows people to write small, external apps without having to compile or link to LibreOffice, and learn UNO or other complex topics

• Allows fast rendering of documents for any application
ScriptForge Libraries

• ScriptForge libraries are an extensible and robust collection of macro scripting resources for LibreOffice to be invoked from user Basic or Python scripts

• ScriptForge libraries help overcome LibreOffice Application Programming Interface (API) steep learning curve, as they offer easy access to and management of actual windows and documents, automation on Calc sheets, cells and ranges of cells, management of dialogs and their controls as well as access to data contained in databases
LibreOffice Technology Based SW

- Desktop (TDF, Red Hat & SUSE)
- Enterprise LTS (Collabora & allotropia)
- Online / Cloud (Collabora & allotropia)
- Android (Collabora)
- iOS & Apple Store (Collabora)
- Windows Store (allotropia)
LibreOffice USP

• The best open source office suite ever, backed by a strong community and a strong ecosystem
• Based on the ODF ISO standard document format for interoperability and digital sovereignty, and providing a superior compatibility with proprietary document format
• The best of FOSS, with professional support available for organizations using office productivity for production and management of strategic business contents
Thanks

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