

LibreOffice
The Document Foundation

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* →

LibreOffice

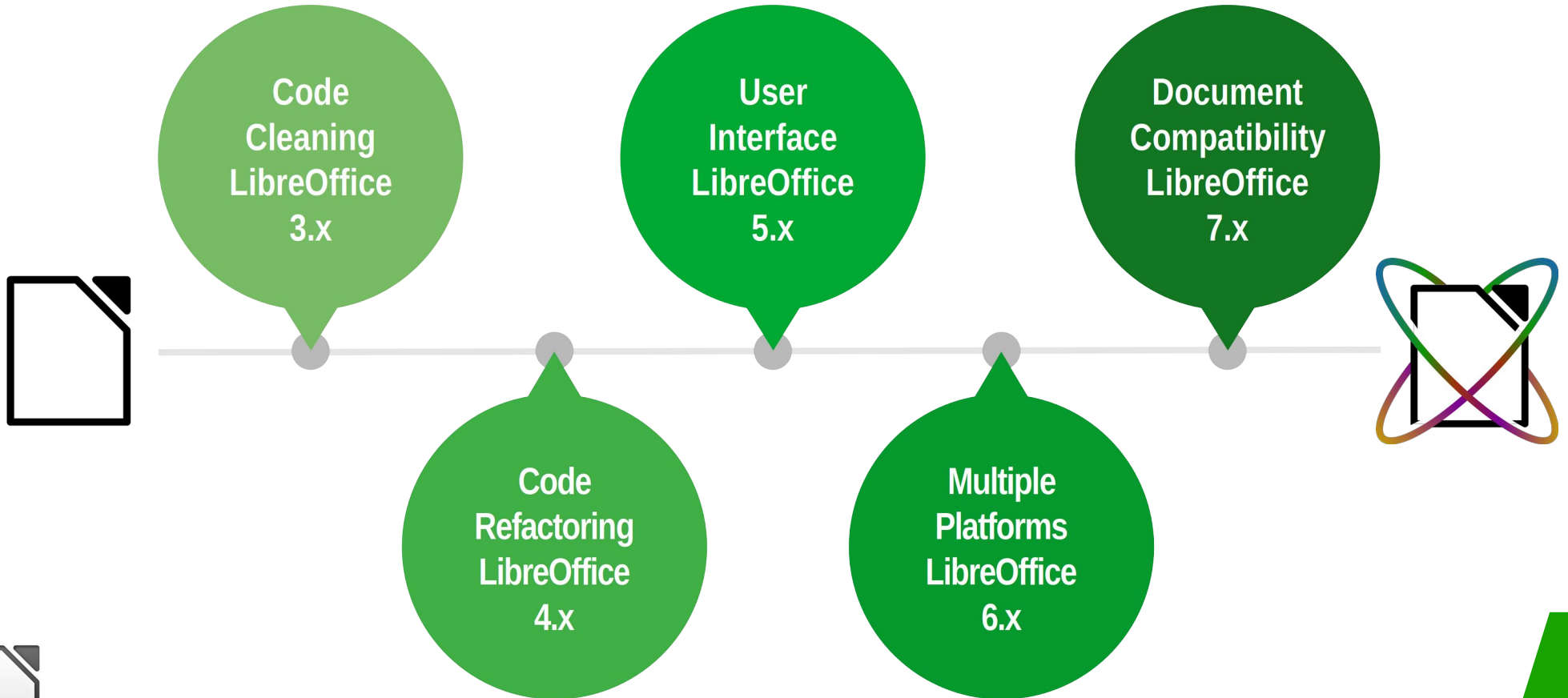
today

OpenOffice

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



LibreOffice Development Cycles



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

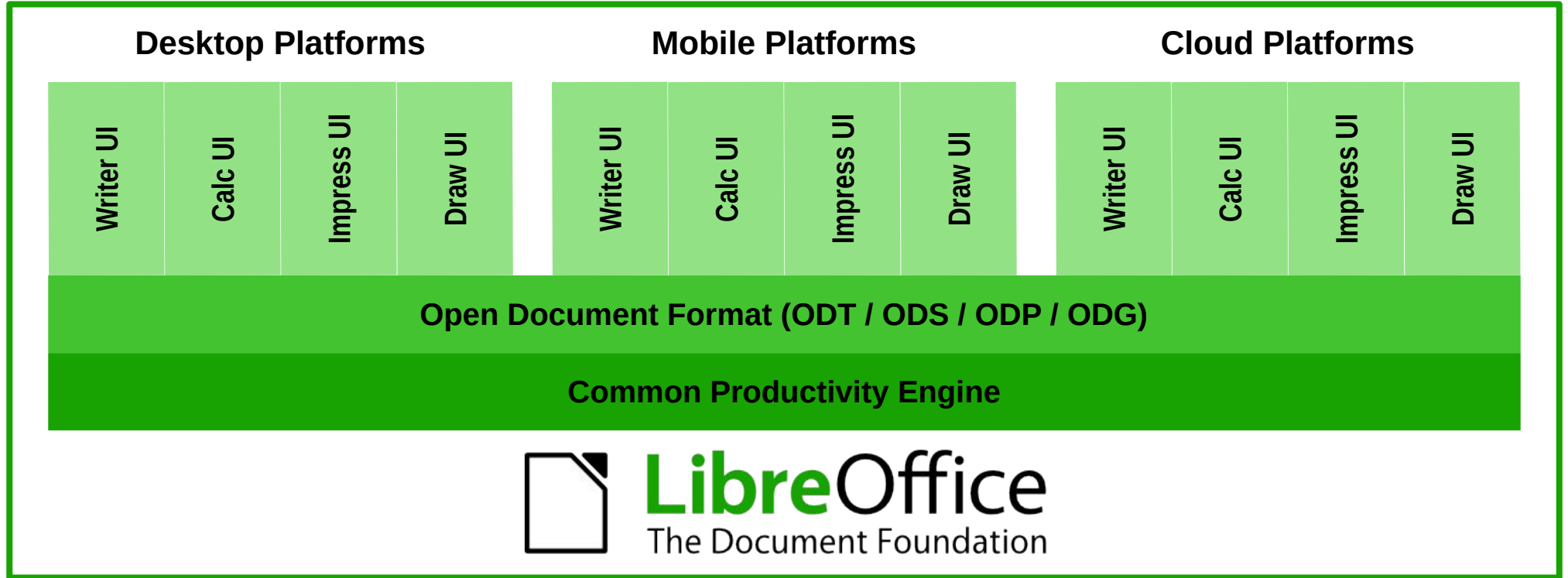


LibreOffice Technology

- 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



Office Suites Loose Architecture

WP UI	SS UI	PS UI
DOCX	XLSX	PPTX
WP Engine	SS Engine	PS Engine

Desktop Platforms

WP UI	SS UI	PS UI
DOCX	XLSX	PPTX
WP Engine	SS Engine	PS Engine

Mobile Platforms

WP UI	SS UI	PS UI
DOCX	XLSX	PPTX
WP Engine	SS Engine	PS Engine

Cloud Platforms

Proprietary and Open Core Office Suites

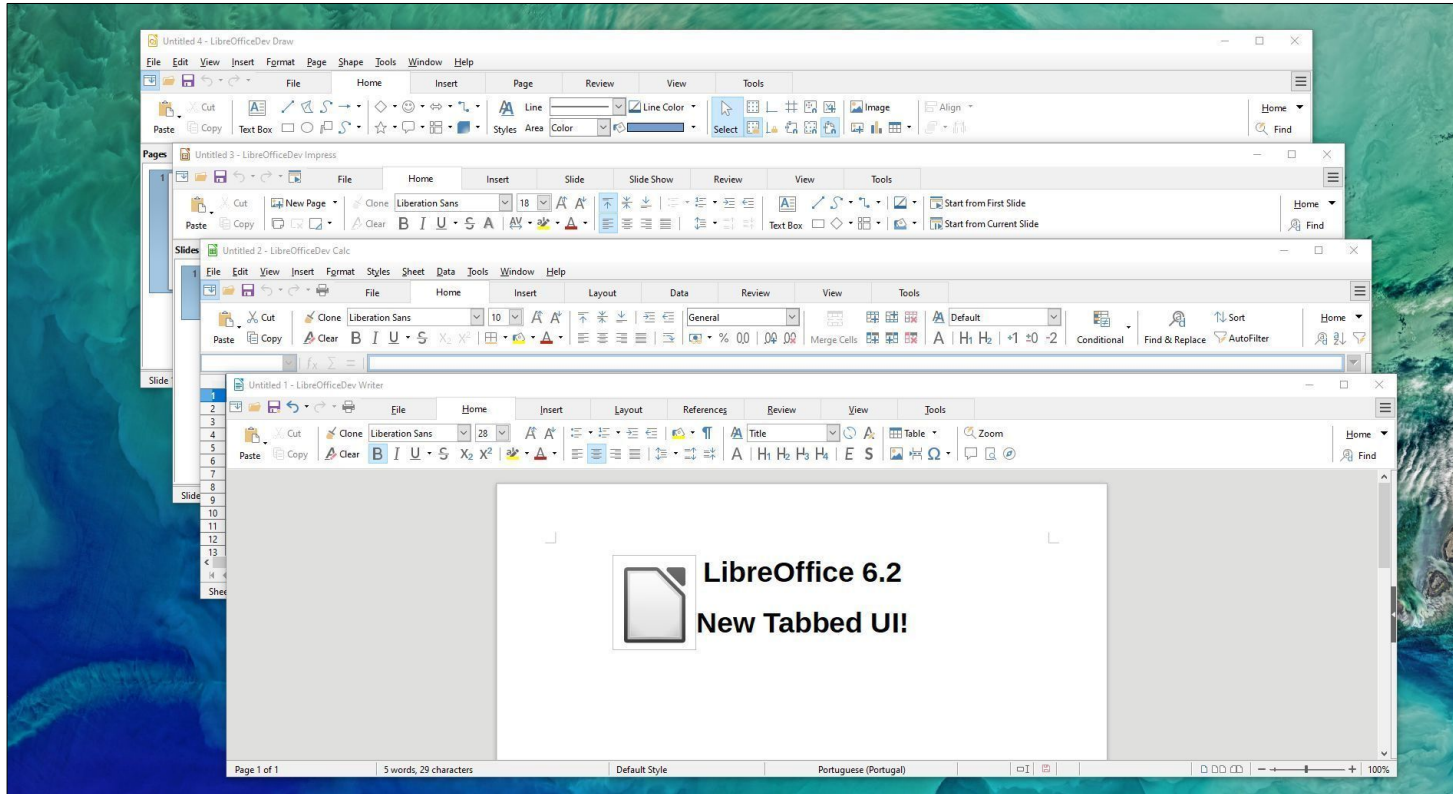


Huge Localization Effort

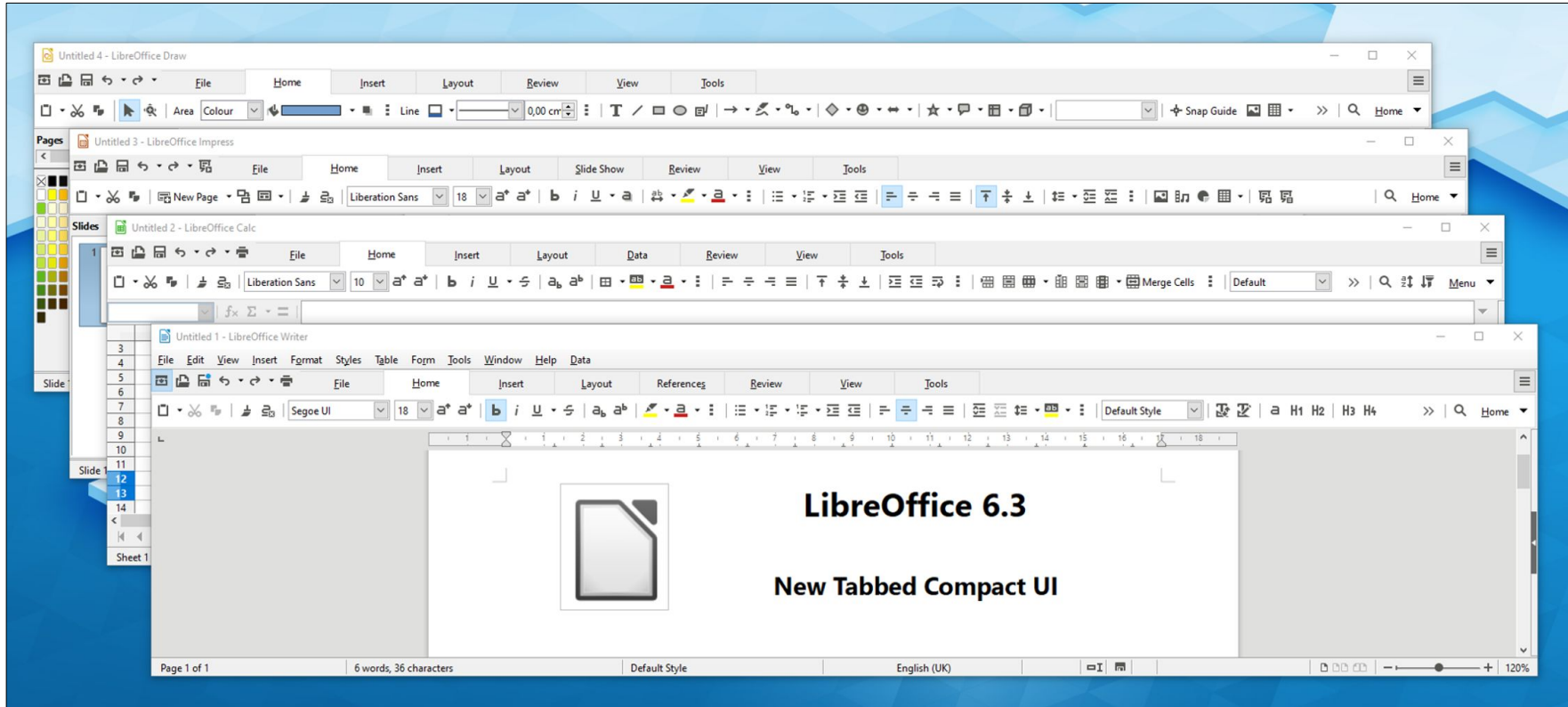
- **Localization Teams**
 - ~**120** shipping languages
 - **145** active language projects
 - **4605** registered translators
 - Over **400K** translations made
- **LibreOffice is available in more native language versions than any other application**



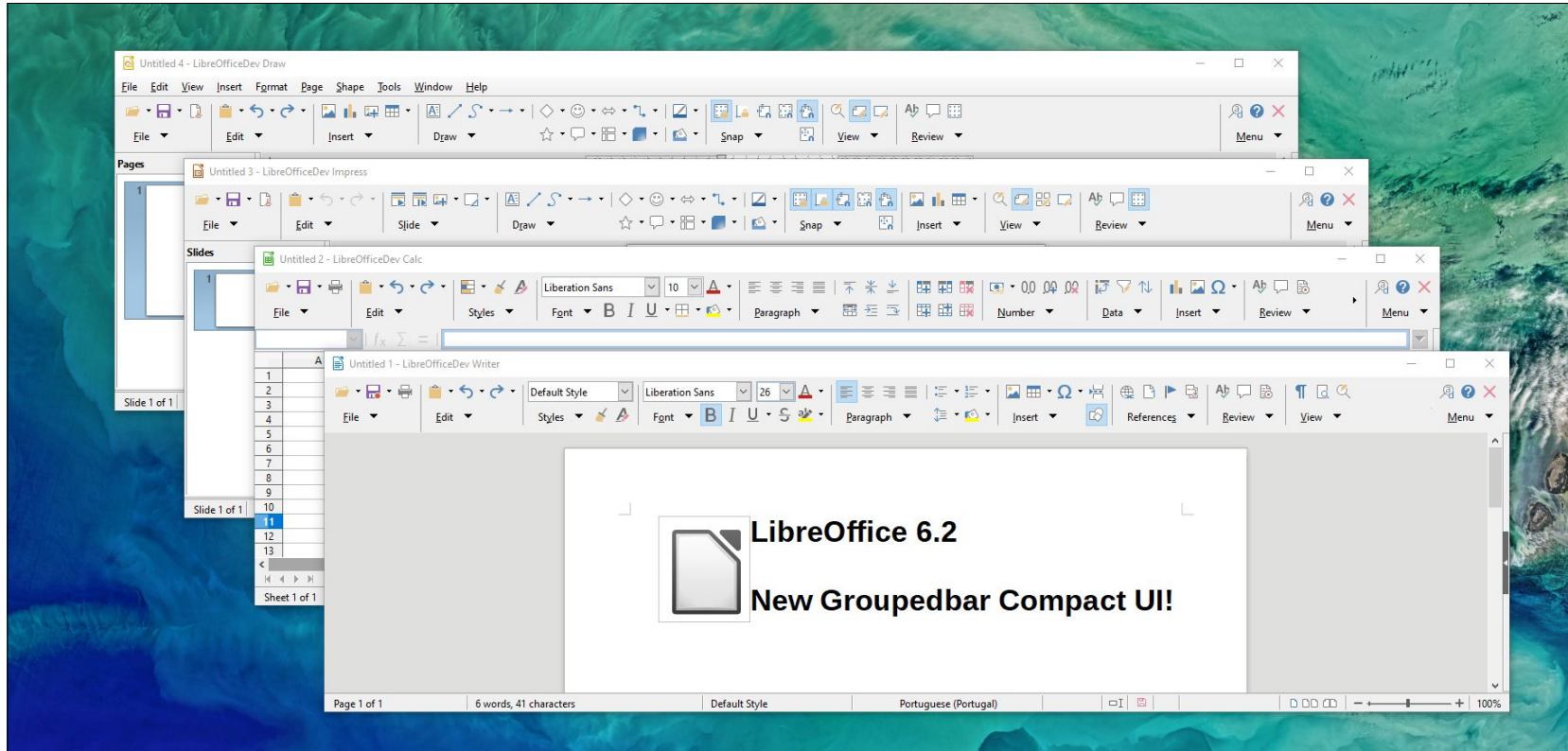
NotebookBar



NotebookBar Compact



GoupedBar Compact



Websites related to LibreOffice Development

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

TinderBox present the result of the many, many tinderboxes that build Libreoffice all day and all night.

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

Bugzilla is the tool for LibreOffice developers, QA and users to submit, triage, handles bug reports.

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

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

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

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

We run a set of Callgrind Performance tests. the result of which are presented graphically on there.

We run a cppcheck regularly.

We collect crash reports.

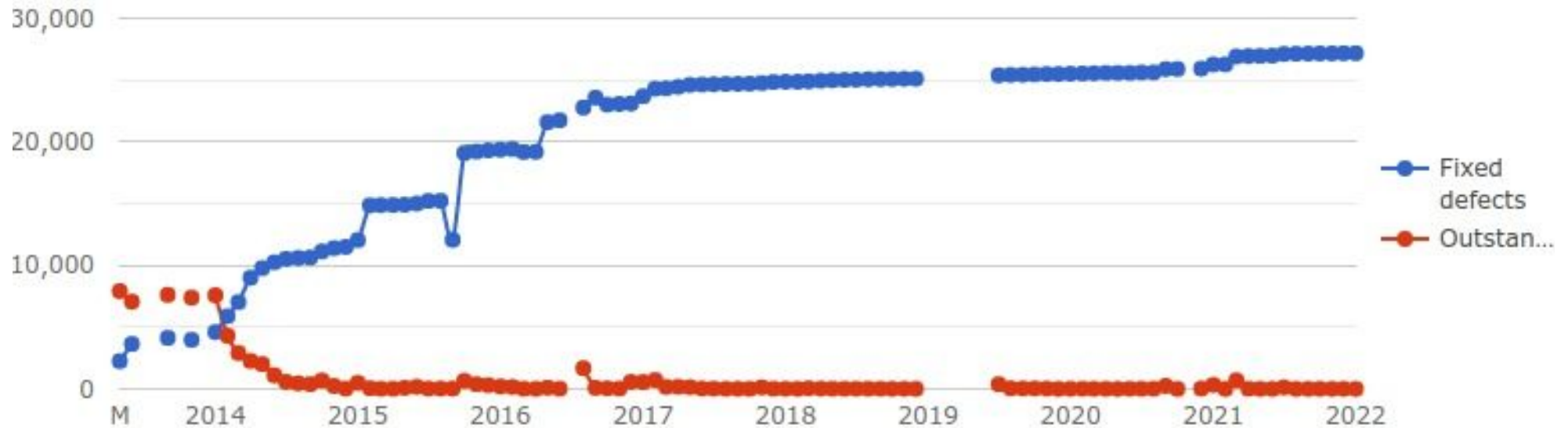
Static Code Analysis

- 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

Outstanding vs Fixed defects over period of time



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

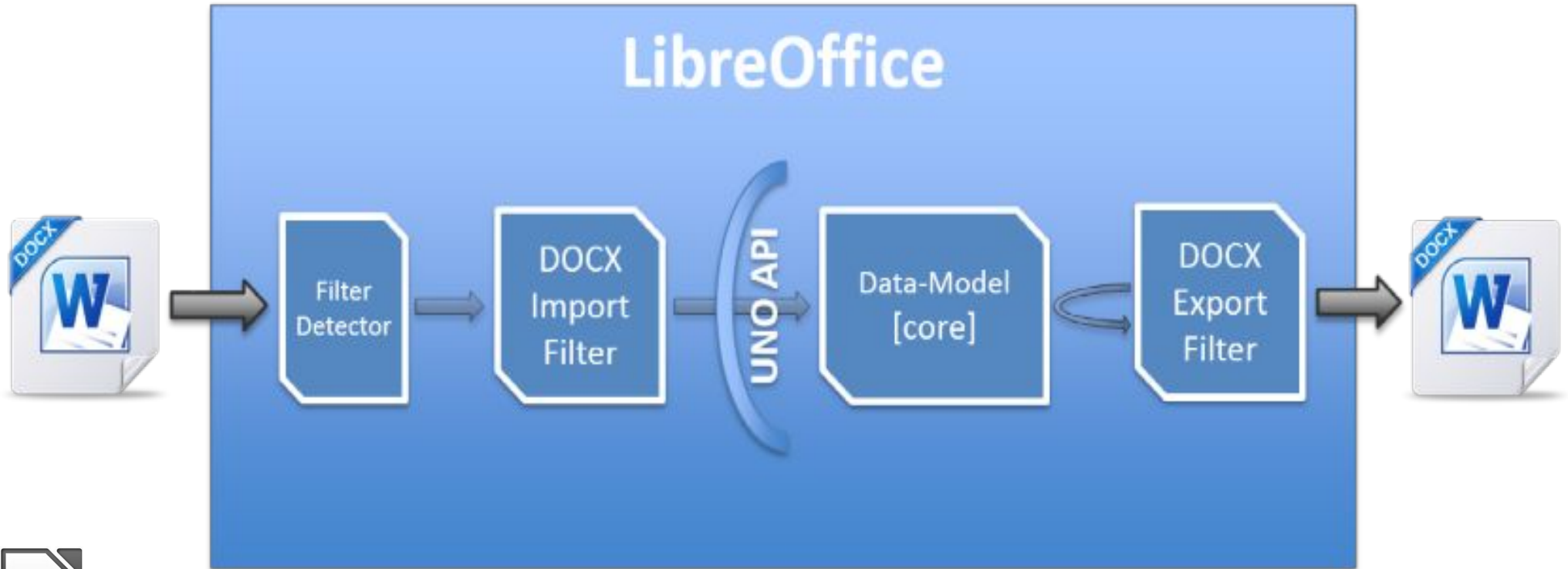


ODF Characteristics

- 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



Original File



Roundtripped File

- 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

.NET TOOL



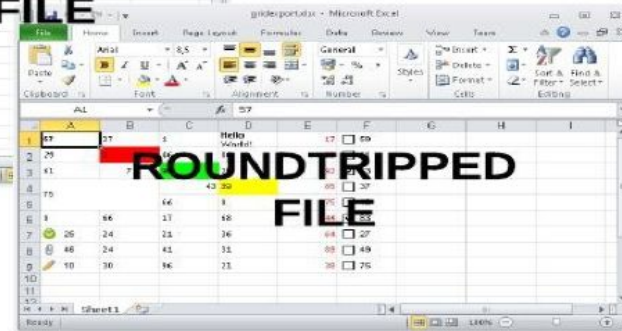
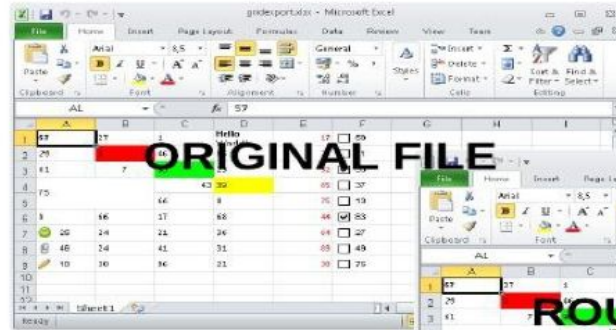
Result CSV



Original File



Roundtripped File



Result CSV

- 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

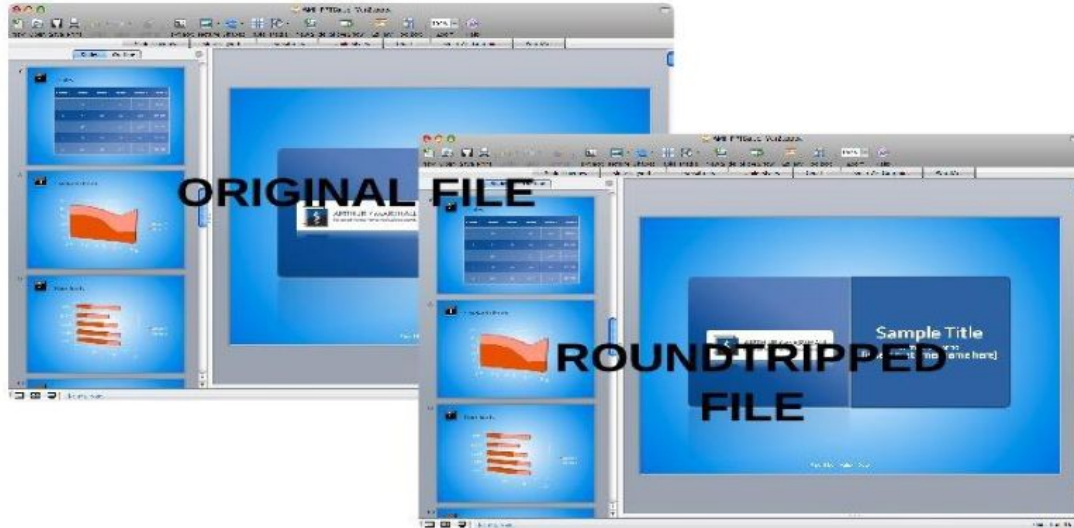




Original File



Roundtripped File



- Scan slides for following:
 - Plain Text
 - Shapes / Images
 - Objects / Charts
 - Master Layouts
- Compare values for Original and Roundtripped Files
- Generate the result file



Result CSV



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 Versions & Users

Beta / RC

Early Adopters
Quality Assurance
Feature Testing
(power users)

Community

Community
Individual Users
SMB Deployments
(desktop users)

Enterprise

Enterprises
Large Migrations
Large Deployments
(professional users)



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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