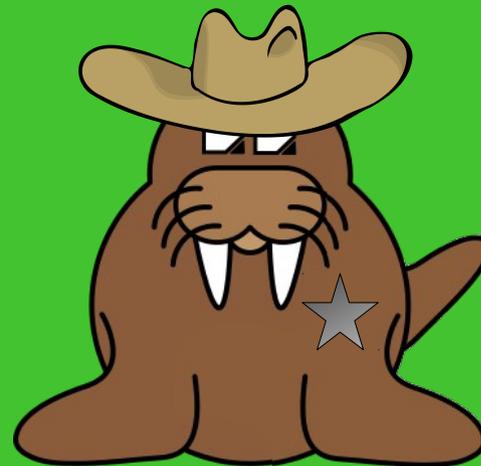


Aarhus 2015 CONFERENCE



Wrangling the Bugzilla Beast

- ▾ Robinson Tryon
- ▾ September 23rd, 2015



About:me

- ▼ Robinson Tryon
- ▼ QA Engineer with *The Document Foundation*
 - ▼ Dabble in Release Engineering
 - ▼ Proofread English
 - ▼ *and lots of other things...*
- ▼ Outreach and marketing in the US
 - ▼ Promote/Coordinate LibreOffice use
 - ▼ Free/Open File Formats
 - ▼ Document Freedom Day

Because everyone seems to ask...

- ▼ Used to live in the North (Vermont), but now live in Texas
 - ▼ It's too hot in Texas
 - ▼ Not actually a cowboy
 - ▼ *(but I do wrangle bugs)*



Bugtracking History

From our humble beginnings...

- ▼ First “LibreOffice” bug filed in Freedesktop.org Bugzilla instance on August 3rd, 2010
 - ▼ **Bug 29381 - crash in office suite**
 - ▼ Precedes the creation of TDF/LibreOffice by about a month
- ▼ So really, this could be classified as a *Go-oo* bug

Bug 29381 - crash in office suite

Status: CLOSED FIXED

Product: LibreOffice

Component: LibreOffice

Version: unspecified
(earliest affected)

Hardware: Other Linux (All)

Importance: medium critical

Assigned To: Not Assigned

QA Contact:

URL:

Whiteboard:

Keywords:

Depends on:

Blocks:

Show dependency [tree](#) / [graph](#)

Attachments

[Add an attachment](#) (proposed patch, testcase, etc.)

Note

You need to [log in](#) before you can comment on or make changes to th

oladipo 2010-08-03 06:30:10 UTC

```
(I) x.org loaded video driver of...
(II) Loading /usr/lib/xorg/modules/drivers//intel_drv.so
(II) Loading /usr/lib/xorg/modules/drivers//intel_master_drv
(==) Depth 24 pixmap format is 32 bpp
```

Freedesktop.org

- ▼ As a fledgling project with essentially no infrastructure, Freedesktop.org (FDO) gave us
 - ▼ A bugtracker
 - ▼ Mailing lists
 - ▼ Git repositories
 - ▼ Wiki space
 - ▼ *....and more*
- ▼ FDO helped technically so that we could deal with everything else that the new project needed

FDO: The Bugtracker

- ▼ Lives at bugs.freedesktop.org
- ▼ Bugzilla instance managed by the FDO infra team
- ▼ Very stable
- ▼ This bugtracker is shared with several other projects
 - ▼ How many others?

Just a few of the FDO projects

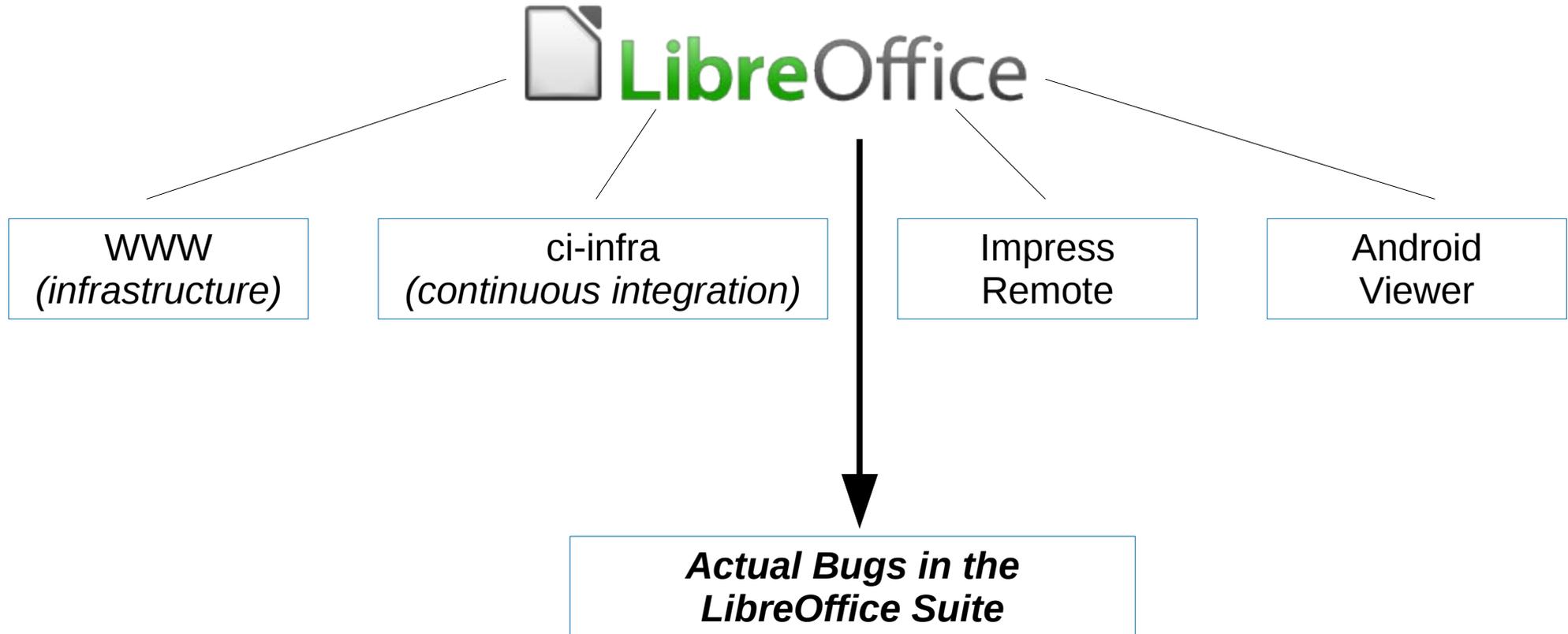
- Over 130 projects share the Freedesktop bugtracker:



- Androgenizer:** a tool for generating Android.m
- Beignet:** Beignet, an OpenCL implementa
- Bustle:** A D-Bus activity monitor inexpli
- ConsoleKit:** Track users, logins, sessions, an
- DRI:** Direct Rendering Infrastructure
- Debrix:** Modular X Server Build
- DejaVu:** Font library with near-universal
- Farstream:** Farstream streaming media libr
- FriBidi:** A free library implementing the
- GLU3:** Utility library targeting OpenGL
- GStreamer SDK:** SDK for GStreamer and related
- GTK-Qt Engine:** Integration of GTK and Qt them
- Galago:** Desktop-neutral presence syste
- GeoClue:** Location framework
- Gypsy:** GPS multiplexing daemon with a
- HarfBuzz:** Common OpenType Layout engi
- Hieroglyph:** Hieroglyph PostScript rendering
- ITS Tool:** Translate XML with PO files usin
- Icon theme:** Base icon theme
- LDTP:** The Linux Desktop Testing Proj
- LTSP:** Linux Terminal Server Project
- LibreOffice:** LibreOffice office suite - http://l
- MPRIS:** Media Player Remote Interfacin
- Mesa:** Mesa is a 3-D graphics library w
- ModemManager:** ModemManager is a DBus syste
broadband modems, regardless
specific AT, QCDM, QMI, MBIM.
- OHM:** Open Hardware Manager
- OpenRaster:** The OpenRaster file format
- Orc:** Orc Runtime Compiler
- PackageKit:** Package management service

FDO: Limitations

- ▼ With such a widely-shared resource, LibreOffice and TDF had just one top-level project
 - ▼ Everything else was nested underneath it



FDO: Drawbacks for Administration

- ▼ None of our own admins
- ▼ Frequently difficult to get in touch with admins
- ▼ Couldn't provide user management
- ▼ Couldn't delegate roles



FDO: Drawbacks of Sharing

- ▼ Couldn't customize bug tracker lest we interrupt others
- ▼ Limitations on field values (Keywords, Operating Systems, etc.)
- ▼ Statistics include data from all 130+ projects
 - ▼ Complicated to drill-down to just TDF



FDO: Drawbacks for Bug Reporting

- ▼ Had to design special *Bug Submission Assistant* front-end for customization
- ▼ Limited in how bug reporting could take place based on exposed APIs
- ▼ No “report a bug” button in LibreOffice that would automatically pass-in project information to Bugzilla bug report form
- ▼ FDO infra changes could break tooling

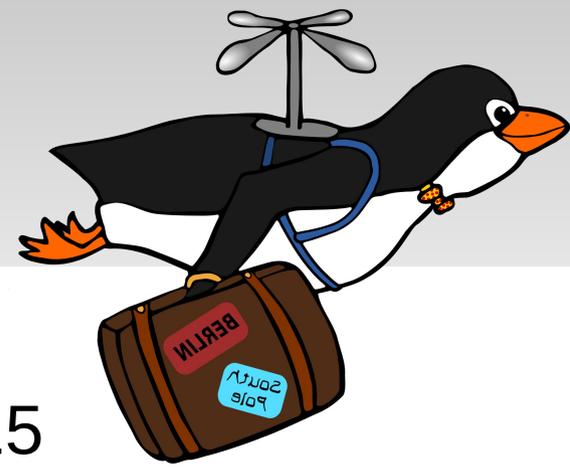
FDO: We got too big

- ▼ Like any well-nourished child, LibreOffice grew
 - ▼ ...and grew
 - ▼ ...and grew
- ▼ In 2012, LibreOffice accounted for 59% of FDO bug reports
- ▼ In 2013, that raised to 62%
- ▼ In 2014, it stayed over 61%
- ▼ One thing was very clear:
It was time to have our own Bugzilla



Migration to our own Bugzilla

Bugzilla Migration



- ▼ Bugzilla migration took place on Jan 24th, 2015
- ▼ Migration gave us flexibility
- ▼ Allowed us to add as many admins as we wanted
- ▼ Delegate roles and privileges
 - ▼ *Previously:* Had to request addition of new versions
 - ▼ *Now:* Whenever we produce a new release candidate, we can immediately add the version to Bugzilla

Bugzilla Migration: Statistics

- ▼ Cover just TDF projects now
- ▼ Plan to provide finer-grained results in the future

Some bug summary info from bugs.documentfoundation.org, covering the last 7 days.

Total Reports: 10273 ([201](#) reports opened and [120](#) reports closed. Including enhancement requests)

Top 15 bugs.documentfoundation.org modules

Product	Open bugs	Opened in last 7 days	Closed in last 7 days	Change
LibreOffice	7330	+197	-115	82
libvisio	14	+0	-0	0
libcdr	11	+0	-0	0
LibreOffice Online	10	+4	-5	-1
libmspub	10	+0	-0	0
Document Liberation Project	6	+0	-0	0
Impress Remote	5	+0	-0	0
libabw	4	+0	-0	0
QA Tools	4	+0	-0	0
libetonyek	2	+0	-0	0
libpagemaker	1	+0	-0	0

Top 15 bug closers

Position	Who	Number of bugs closed
1	Beluga	19
2	Maxim Monastirsky	13
3	Julien Nabet	10
4	Yousuf (Jay) Philips	10

Improvements since the Migration

Bugzilla Migration: Guided Forms

- ▼ Bugzilla Guided Forms now automatically include information passed-in by the program

Step 2 of 3 - give information

If you've tried a few searches and your bug really isn't in there, tell us all about it.

Product	LibreOffice
Component	<div><input type="text" value="Android Viewer"/> Base BASIC Calc Chart</div> <p>Select a component to see its description here.</p> <p>The area where the problem occurs. To pick the right component, you could use the same one as similar bugs you found in component descriptions (opens in new window) if you need more help.</p>
Hardware	<input type="text" value="Other"/>
Operating System	<input type="text" value="Other"/>
Build Identifier	<input type="text" value="LibreOffice 5.0.1.2"/> <p>This should identify the exact version of the product you were using. Feel free to copy the version information from the 'Help' page. If the product won't start, instead paste the complete URL you downloaded it from.</p>
Summary	<input type="text"/>

Fixes and Features

- ▼ We've fixed longstanding issue of many MIMETypes not being recognized
 - ▼ Now able to investigate additional MIMEtype issues
- ▼ We've added much clearer language about licensing and use of Bugzilla content and attachments
- ▼ Provided informational text for bug reporters about what is needed when a bug is put in NEEDINFO status
 - ▼ Creates consistent feedback for users
 - ▼ Saves a ton of time during bug triage

Fixes and Features

- ▼ Rewrote the product-chooser page to make it easier to go to LibreOffice and the Impress Remote first, as these are the the most common

First, you must pick a product on which to enter a bug:

The projects you are looking for:

[LibreOffice](#)

[Impress Remote](#)

These are not the projects you are looking for:

[cppunit](#): [Cppunit](#) is the C++ port of the famous JUnit unit testing framework.

[Document Liberation Project](#): The [Document Liberation Project](#) is a sister project to LibreOffice, aimed at facilitating the conversion of outdated/proprietary file formats to ODF via the creation and improvement of import file filters.

[libabw](#): [Libabw](#) is a [DLP](#) library that parses the file format of AbiWord documents.

[libcdr](#): [Libcdr](#) is a [DLP](#) library that parses CorelDRAW files.

[libetonyek](#): [Libetonyek](#) is a [DLP](#) library that parses the file format of Apple Keynote documents.

[libexttextcat](#): [Libexttextcat](#) is an N-Gram-Based Text Categorization library primarily intended for language guessing.

[libfreehand](#): [Libfreehand](#) is a [DLP](#) library that parses the file format of Aldus/Macromedia/Adobe FreeHand documents.

[libglTF](#): [libglTF](#) is a rendering library for glTF models.

Fixes and Features

- ▼ Updated field labels to be clearer
 - ▼ We use some of the fields in Bugzilla in unique ways
 - ▼ New field labels describe correct use
- ▼ Beyond changing descriptions, we've implemented actual access control
 - ▼ Lock-down the “*Importance*” fields
 - ▼ Remove access to Severity:*blocker*
 - ▼ Restrict Severity field
 - ▼ Restrict Priority field to Bugzilla users who have signed up to be a “*contributor*”



You tried to change the **Severity** field from *critical* to *blocker*, but only a user with the required permissions may change that field to 'blocker'.

Please press **Back** and try again.

Bugzilla Extensions

Extensions

- ▼ Bugzilla extensions can be used to add new functionality to the bugtracker
- ▼ We have a few extensions installed
 - ▼ Most notably: WeeklyBugSummary
 - ▼ We use this extension to review information about active contributors, bugs opened vs. closed, etc.

Top 15 bug closers

Position	Who	Number of bugs closed
1	Beluga	16
2	Maxim Monastirsky	13
3	Julien Nabet	11
4	Yousuf (Jay) Philips	9
5	Michael Meeks	5
6	tommy27	5

Top 15 bug reporters

Position	Who	Number of bugs reported
1	Yousuf (Jay) Philips	30
2	Richard Prins	5
3	tmacalp	5
4	Julien Nabet	4
5	robertw	4
6	Bernard Moreton	3

Extensions

- ▼ We can also extend/modify the behavior of Bugzilla directly
 - ▼ *In fact*, most changes so far are direct modifications of the core code
 - ▼ For TDF-specific tweaks we'll continue to modify Bugzilla code
- ▼ However: extensions are a great way to share new features with other Bugzilla deployments
 - ▼ So we'll consider using them more as we further customize our bug tracker

Extensions: Learning from the code

- ▼ To start, read the upstream-provided “Example” extension
- ▼ The WeeklyBugSummary code is also rather straightforward
 - ▼ And even has some helpful comments!
- ▼ Making small tweaks is the best way to become familiar with the extension code or the core code
 - ▼ To do that, you'll want to have a copy of Bugzilla installed

Installing Bugzilla



Installation

- ▼ Mozilla provides some great documentation for basic Bugzilla installation
 - ▼ We're still on the v4.4 branch, so [the right docs are here](#)
- ▼ For historical reasons, and perhaps because we like to do things the hard way, we have chosen to differentiate our setup process significantly
 - ▼ We use a different web server and database
 - ▼ We deploy Bugzilla using an automation tool
 - ▼ We store the Bugzilla code, metadata files, templates, and more all in one git repository

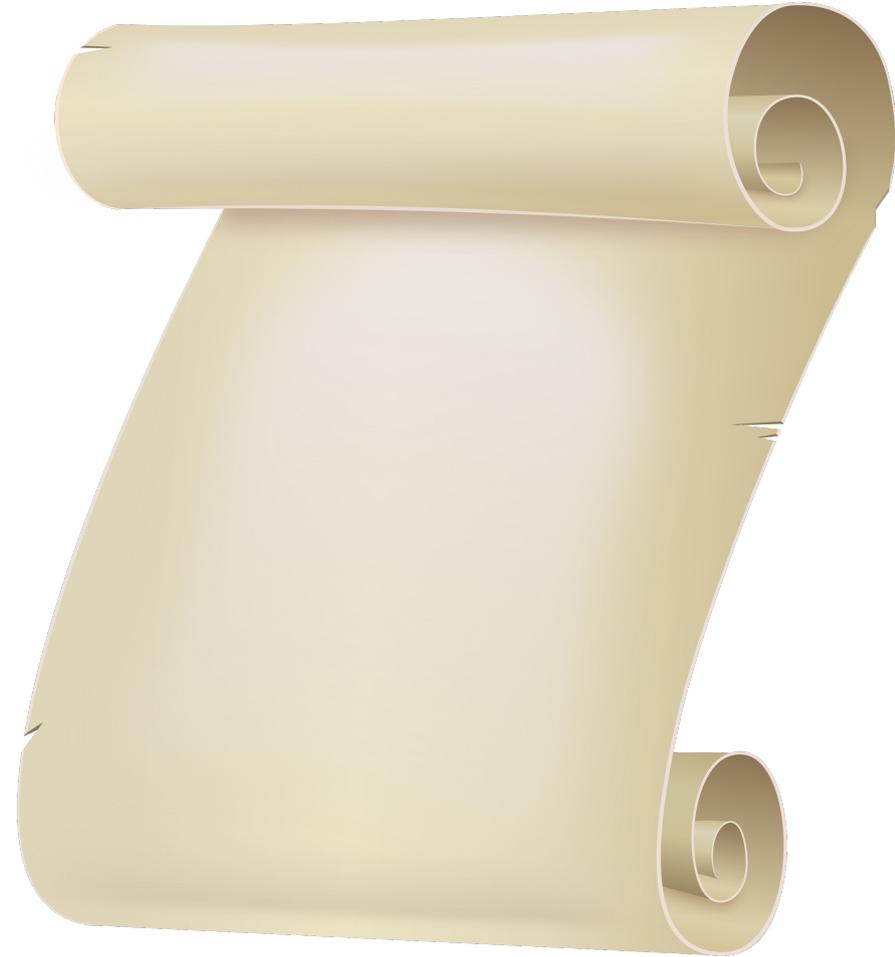
Installation:

Designed for collaboration

- ▼ Our installation changes are intended to make it easier to configure, modify, and deploy Bugzilla
 - ▼ Traditionally, Bugzilla isn't designed to be customized and deployed in a communal fashion
- ▼ By storing configuration metadata in git, we can keep track of changes, additions, and fixes by individuals
- ▼ Improvements can be submitted via gerrit, verified on our Bugzilla-Test Virtual Machine, then deployed to production.
- ▼ Public git repository allows easy collaboration *and* reuse of our modifications between anyone participating in development
 - ▼ No need to file a request before reading our Bugzilla source

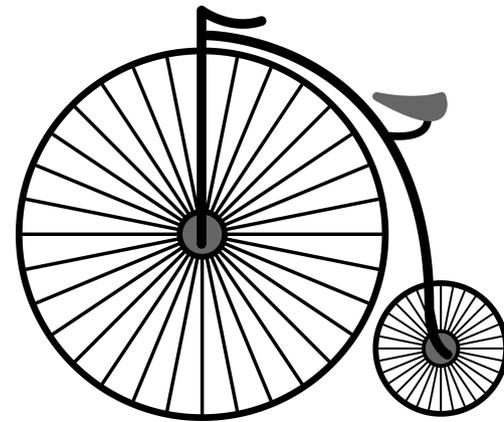
Installation: Documentation

- ▼ To make installation easier, I'm currently authoring step-by-step documentation
 - ▼ Docs will cover installation, commits, testing, & deployment
 - ▼ Brief notes on new development
- ▼ It's possible to install and test without docs, but following the same instructions will provide consistency + simplicity
- ▼ We'll have testing/feedback from QA Team soon



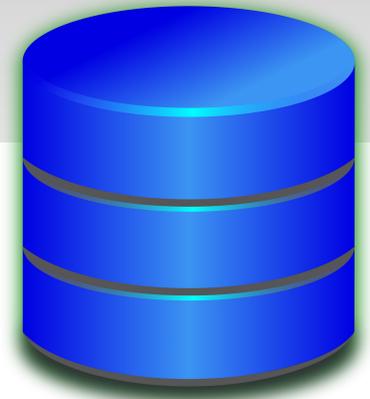
Installation: Legacy Database

- ▼ Installing our latest Bugzilla (v4.4.10) creates a new database
 - ▼ ...but that's not what LibreOffice uses in production
- ▼ We are using a legacy database that
 - ▼ **Started being used** in January of 2003
 - ▼ Has been upgraded and modified since Bugzilla v2.16
 - ▼ Grown to over 13GB in size
 - ▼ Includes bug ids up to #94457, but contains half that many bugs (*non-LibreOffice bugs were deleted during migration*)
 - ▼ Contains legacy data from previous users, groups, projects, and configuration
 - ▼ Contains user emails, passwords, and other non-distributable content



Installation:

A Database we can Distribute



- ▼ To ensure a realistic test environment, we're creating a new database based on our existing data
- ▼ We'll remove all passwords, most user data, and slim-down the content
- ▼ We'll shed a large number of attachments (and possibly bugs) to keep the size down (hopefully under 1GB)
- ▼ We'll make sure that the db contains useful test bugs, comments, attachments, and bug-change data, and includes several pre-registered accounts for testing

Development

Development: Before you start

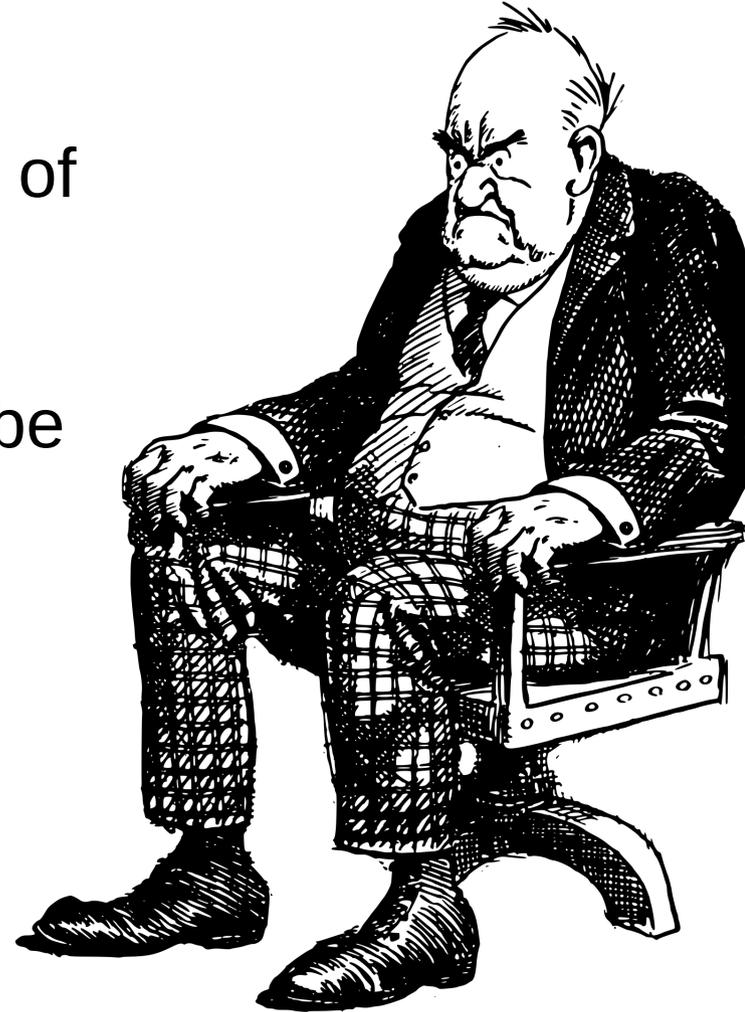
- ▼ Let's say that
 - ▼ you've got Bugzilla installed,
 - ▼ you've read some code, and
 - ▼ you're ready to add a new feature
- ▼ What should you know before you start coding?

Development: Before you start

- ▼ Hurdles in the technical features of the system can make extension and modification more difficult
 - ▼ The *Bugzilla Way* may seem somewhat counterintuitive
 - ▼ Example: The Bugzilla devs suggest that if possible, one should repurpose an existing field rather than adding a new field.
 - ▼ This seems potentially problematic
 - ▼ Inconsistencies can scare away new contributors

Development: Hurdles & Limitations

- ▼ Bugzilla is an old system, and doesn't have some of the features and flexibility of other bugtrackers
- ▼ With so many fields, drop-downs, multi-select boxes, etc., the bug tracker can be intimidating to many beginning users
 - ▼ Similarly, the codebase can feel somewhat clumsy at times
- ▼ Some features aren't abstracted-out properly
 - ▼ Example: the value 'blocker' for the Severity field shows up in the code many different times



Development: Metadata everywhere

- ▼ Bugzilla stores metadata in 3 places: data/params, the database, and localconfig
 - ▼ Keeping track of all of these pieces can be frustrating
 - ▼ There's overhead to learn how and where to store new data
 - ▼ We keep our copy of localconfig mostly stock
 - ▼ (This makes things a bit easier)

Development: When we change the rules

- ▼ The LibreOffice project (and thus TDF in general) doesn't always use the Bugzilla fields in the same way as other projects
 - ▼ Example: we set the version field to the earliest version in which we can reproduce a bug, whereas Eclipse and some other projects keep this field set to the earliest version of a bug instead.
 - ▼ Example: We use/abuse the Component field to include *ux-advise*, a quasi Assigned/NEEDINFO state
- ▼ Adding external documentation can help
- ▼ Ideally we'll use an intuitive design, so users and devs understand our process without extensive docs

Contributions

Contributing

- ▼ There are many different ways to help us improve Bugzilla
- ▼ Code is great, but there are several opportunities for non-developers
- ▼ Ways to help:
 - ▼ Writing clear proposals for improvement that considers UI and implementation details
 - ▼ Polling users, devs, QA, and other parts of the community to see what kinds of tools are most requested
 - ▼ Helping to fix issues or implement requested features upstream
 - ▼ *And of course*, writing clear, commented patches and submitting them via Gerrit or email



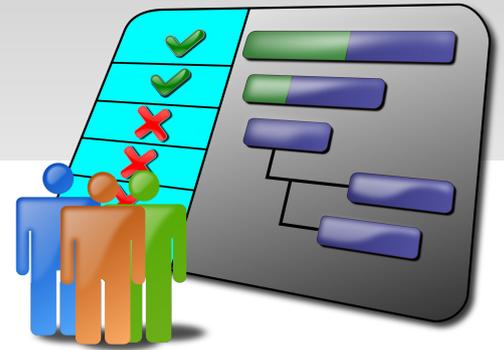
Improving Bugzilla Upstream

- ▼ Many powerful features we'd love to see in Bugzilla
- ▼ Would be beneficial to all Bugzilla instances
- ▼ Examples:
 - ▼ Attachments: Open compressed archives and list contents
 - ▼ Attachments: Multi-file concurrent upload
 - ▼ Hiding/Prioritizing comments
 - ▼ Helps devs and QA focus on relevant bug details
 - ▼ Easier to use charts
 - ▼ Easier querying of bugs over time



Current Plans

What's on the schedule



- ▼ Several improvements are already on the roadmap
- ▼ More people involved → faster completion
- ▼ Improvements include:
 - ▼ Further restrictions on Severity and other fields
 - ▼ Turning common Whiteboard tags into Keywords
 - ▼ Upgrading to Bugzilla 5.0
 - ▼ Which will provide newer APIs, easier stats
 - ▼ Improved Statistics

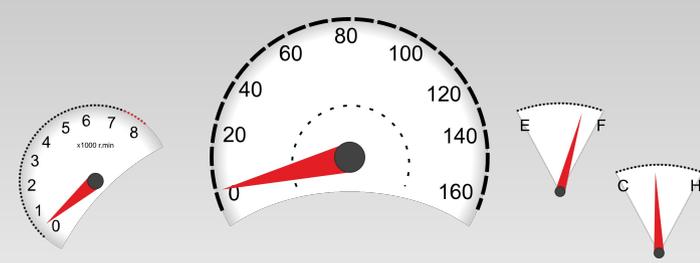
Future Ideas

Ideas and Brainstorms

- ▼ Everyone has ideas about how we can improve Bugzilla
- ▼ We're always happy to introduce more people to the process of making Bugzilla improvements
- ▼ Here are some of the popular ideas
 - ▼ Add recruitment language to Bugzilla
 - ▼ Distributable Bugzilla VM: Fast startup to hack on Bugzilla
 - ▼ Improved inter-bug linking (compare with Redmine?)
 - ▼ Automatic-linking to cgit, Ask LibreOffice, TDF Wiki, and other resources
 - ▼ Guided Forms: Parse and process incoming data more intelligently (*e.g. Version field*)

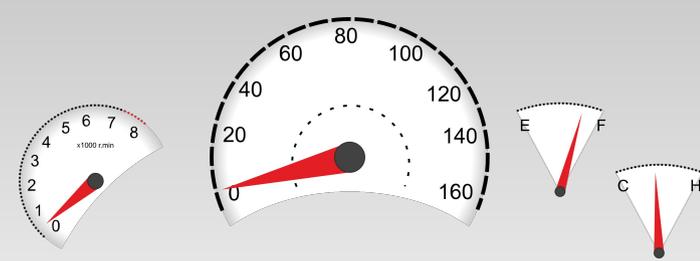


Add Dashboards



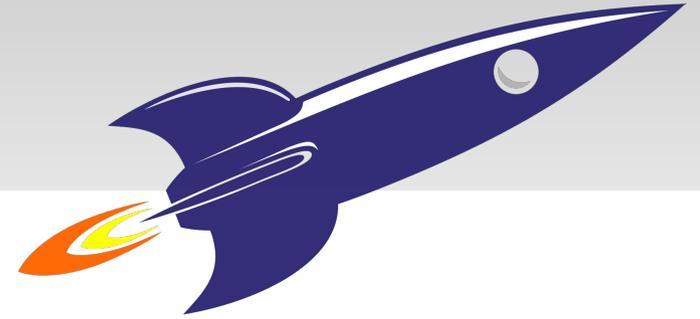
- ▼ Dashboard of useful information for QA and developers
 - ▼ Current backportRequests
 - ▼ Outstanding “MAB”s
 - ▼ Bugs ready for bisecting
 - ▼ Bugs split up by OS, LO version, etc...
 - ▼ Better interface to filter exact set of desired bugs

Dashboard: Gardening & Cleanup



- ▼ How about a Dashboard for things that need attention now?
 - ▼ Bugzilla Gardening tasks that haven't been run recently
 - ▼ Any bugs with invalid data
 - ▼ **Severity:** blocker
 - ▼ Commas in the Whiteboard field
 - ▼ Crashing bugs that don't have “Crash” prominently listed in the Summary field
 - ▼ MABs: Bugs missing **Priority:** highest

Speed-up Bug Triage



- ▼ Tools to save us time when triaging
 - ▼ Use metadata to hide bugs the current user can't repro on their system(s)
 - ▼ Shortcuts/menus/buttons to auto-fill stock user responses
 - ▼ “This is a question, not a bug, see the Ask LibreOffice site for help”
 - ▼ “Here's why your bug isn't critical/highest Importance”
 - ▼ Response to other similar questions that arise
 - ▼ Visualization: Repro table (LO version vs. OS)
 - ▼ Allow for *much* faster assessment of all tests done



Any Questions?

- Robinson Tryon
- Email: qubit@libreoffice.org
- IRC (Freenode): *colonelqubit*
- I usually have business cards, if you'd like one



Bibliography

- ▼ Cowboy Walrus w/TDF eyes – Robinson Tryon (based on Studio Fibonacci's Public Domain walrus):
<https://openclipart.org/detail/169963/cartoon-walrus>
- ▼ Bugzilla mascot *Buggie*-- MPL 1.1
https://en.wikipedia.org/wiki/File:Buggie_new.png
- ▼ USA Politique by laurent – Public Domain
<https://openclipart.org/detail/17221/usa-politique>
- ▼ Handcuffed by algot runeman – Public Domain
<https://openclipart.org/detail/205937/handcuffed>
- ▼ Eco green growth icon by dominique chappard – Public Domain
<https://openclipart.org/detail/183575/eco-green-growth-icon>
- ▼ Migrating Penguin by Moini – Public Domain
<https://openclipart.org/detail/135385/migrating-penguin>
- ▼ Install Computer Software CD by LibertyBudget.com – Public Domain
<https://openclipart.org/detail/190697/install-computer-software-cd>
- ▼ Scroll by DooFi – Public Domain
<https://openclipart.org/detail/127759/scroll>
- ▼ Penny Farthing Bicycle by StudioFibonacci – Public Domain
<https://openclipart.org/detail/97681/penny-farthing-bicycle>
- ▼ Blue Database by Lindsay Bradford – Public Domain
<https://openclipart.org/detail/190594/blue-database>
- ▼ Grumpy Old Man & Boy by j4p4n – Public Domain
<https://openclipart.org/detail/168513/grumpy-old-man-and-boy>
- ▼ Work by nebu – Public Domain
<https://openclipart.org/detail/2884/work>
- ▼ Project Schedule by jabernal – Public Domain
<https://openclipart.org/detail/121699/project-schedule>
- ▼ Car dashboard instruments by prx – Public Domain
<https://openclipart.org/detail/202704/car-dashboard-instruments>
- ▼ Man in chair thinking by Anonymous – Public Domain
<https://openclipart.org/detail/25947/man-in-chair-thinking>
- ▼ R is for Rocket by Maurader – Public Domain
<https://openclipart.org/detail/139759/r-is-for-rocket>
- ▼ Cowboy hat by nicubunu – Public Domain
<https://openclipart.org/detail/14836/cowboy-hat>