Two years of LibreOffice

Michael Meeks <michael.meeks@suse.com>
mmeeks,#libreoffice-dev, irc.freenode.net

“Stand at the crossroads and look; ask for the ancient paths, ask where the good way is, and walk in it, and you will find rest for your souls...” - Jeremiah 6:16
The messages in a nutshell ...

- LibreOffice project progress
- The Document Foundation update
- LibreOffice schedule
- LibreOffice 4.0
  - Interoperability, calc, fun, UI, Infrastructure
- LibreOffice – prototypes / future ...
- Getting involved
LibreOffice: progress as graphs ...
Code contributors …

- Steadily diversifying and growing the team …
- New guys since we launched

Active code committers breakdown by month
600k entirely new, unique IP addresses each week
The Document Foundation

what we are, how we work.
LibreOffice Release Schedule
Time based release train ...

- We release .0 every six months:
  - A purely time based release
  - – avoids moral hazard & emotive process
  - 1\textsuperscript{st} week of February, 1\textsuperscript{st} week of August
  - Monthly bug-fix releases thereafter
- .x.2 – in sync. with six-monthly distro cycle
  - LibreOffice 3.6.2 – October 7\textsuperscript{th}
  - GNOME 3.6.1 – October 15\textsuperscript{th}
  - Ubuntu Q.Q – October 18\textsuperscript{th}
  - Fedora 18 – November 6\textsuperscript{th}
LibreOffice 4.0

a very quick & partial snapshot of 

some of the new features
Interoperability in 4.0
Core interoperability features

Range comments – sponsored by the Open Source Business Alliance
RTF: Drawing Object import

Same document in LibreOffice 3.6
RTF improved eg. Formulae

\[ A = \pi r^2 \]
\[ (x+a)^n = \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k} \]
\[ (1+x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \ldots \]
\[ f(x) = a_0 + \sum_{n=1}^{\infty} \left( a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \]
\[ a^2 + b^2 = c^2 \]
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]
\[ e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots, -\infty < x < \infty \]
\[ \sin \alpha \pm \sin \beta = 2 \sin \frac{1}{2}(\alpha \pm \beta) \cos \frac{1}{2}(\alpha \mp \beta) \]
\[ \cos \alpha + \cos \beta = 2 \cos \frac{1}{2}(\alpha + \beta) \cos \frac{1}{2}(\alpha - \beta) \]

Thanks to Miklos Vajna
This is a sample document. Pretty basic, really.

Except, it has ink annotations. O_O

Thanks to Eilidh McAdam / Lanedo
CMIS: Sharepoint / Alfresco / Nuxeo ...

Using the CMIS protocol – load / save / checkout to your favourite content / document management system:
Proprietary → ODF continues

Wordperfect, Works, Visio, Corel Draw ...

Microsoft Publisher import thanks to Brennan Vincent (GSOC)
Valek Filippov
Fridrich Strba
Visio: all file formats now imported

Thanks to Fridrich Strba Valek Filippov

Includes the un-released Visio 2013 format.
Calc improvements …

*a few details on one component*
Arbitrary XML → spreadsheet

Thanks to Kohei Yoshida ...
Conditional fmts: bars + icons

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Score A</th>
<th>Score B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mary</td>
<td>16.38%</td>
<td>65.98%</td>
</tr>
<tr>
<td>3</td>
<td>Bob</td>
<td>22.35%</td>
<td>32.36%</td>
</tr>
<tr>
<td>4</td>
<td>Abdul</td>
<td>22.61%</td>
<td>13.90%</td>
</tr>
<tr>
<td>5</td>
<td>Holly</td>
<td>49.00%</td>
<td>77.50%</td>
</tr>
<tr>
<td>6</td>
<td>Oak</td>
<td>17.57%</td>
<td>18.98%</td>
</tr>
</tbody>
</table>

Many thanks to:
Markus Mohrhard & Stefan 'Astron' Knorr
Stock option pricing formulae ...

Thanks to Tino Kluge
Fun improvements …

*Those features that make life better*
Android remote control ...

Thanks to Andrzej J. R. Hunt (and GSOC)

- Use your smart-phone as a powerful remote control
- see your notes
- switch slides
- up-load your slides?
Android remote control ...

- Pretty slide sorter / selector
- Clock / count-down etc.
- Potential future work
  - accelerometer / laser pointer?
  - fuse with viewer code to allow projection from a tablet?
- Should ship in 3.7/4.0
Schools: LibreLogo integration ...

A tiny Python implementation

Includes a complete schools beginner / training primer for Logo with some beautiful designs.

Thanks to Laszlo Nemeth
Infrastructure improvements

Fixing some of the really stupid stuff
Reliable out-of-master builds ...

Lots of big / fast / ccache enabled tinderbox slaves.

All major platforms

Building & up-loading binaries as well for QA.

Thanks to
Norbert Thiebaud
Bytemark & more
Using a standard make tool (gnumake)

- Ongoing work to kill 'dmake'
- Faster, more standard & hack-able
- Huge parallelism possible for builds on big-iron.
- Enables library merging → one monster lib.

With thanks to
David Tardon
(RedHat)
Matúš Kukan
David Ostrovsky
Pierre-Eric
Pelloux-Prayer
(Lanedo)
and more ...

\textbf{gnumake vs. dmake by module count}

gnu: blue line

dmake: red line
Unit testing for quality ...

- Improved quality through unit testing
- Coverage & number of tests increasing rapidly
- Security regressions, document layout, formulae calcs etc.

Count of types of gnumake enabled unit tests
(each runs a battery of tests)

With many thanks to
Markus Mohrhard
(above)
Artur Dorda
Daniel Bankstone
(GSOC)
Kohei Yoshida
Miklos Vjana
(SUSE)
Caolan McNamara
Michael Stahl
(Redhat)
And many more
Who got tired of fixing
The same bugs ...
Gerrit – easy to contribute ...

- Gerrit - https://gerrit.libreoffice.org

- Magic to turns an openID account (eg. Gmail)

- Into no-ask git commit / push access to gerrit

- Submit to patch queue backed by mailing-list

- Code inclusion is: git fetch / cherry-pick FETCH_HEAD

- Test build integration on it's way.

  Thanks to
  Norbert Thiebaud
  Bjoern Michaelsen
  David Ostrovsky
Bugzilla Assistant on freedesktop

- Connected to Help menu “Send Feedback”
- pre-populates version, component, etc. for you
- Avoids ~unusable default bugzilla / file bug UI
- Thanks to:
  Loic Dachary & Rob Snelders
Misc. improvements ...

- Mork Driver – don't build/bundle an ancient Thunderbird snapshot (*David Ostrovsky*)
- 20Mb download size reduction – 205Mb → 184Mb (*Istvan Turi & others*)
- All legacy containers ported to STL (Noel Grandin, Michael Stahl and more)
- Performance improvements
  - ODS, XLSX import (*Daniel Bankstone*)
  - Large autocorrect tables (*Tomaž Vajngerl*)
  - RTF import (*Miklos Vajna, Michael Meeks*)
  - ODP import (*Michael Meeks*)
UI improvements ...

or how we're looking less awful
Improved graphics scaling

OLD:

NEW:

Higher quality image rendering
Improved image smoothing tool
Re-sizing, re-scaling, and adapting compression of embedded objects now possible during editing.

Thanks to Tomaž Vajngerl
Snapshots of the great work from KACST: Motah
Getting Arabic & Right-To-Left right.

Funky OLE object dragging fixed.

And much more; see above link.
New Template selection UI

- Thanks to Rafael Dominguez (GSOC) Cedric Bosdonnat & Design team
- Making template selection and search prettier & simpler.
Style previews in drop-down

- Thanks to Jan Holesovsky
- Making styles easier to use.
Catching up to 1995: widget layout

Thanks to **Caolan McNamara**

- Sizing, positioning, Designer tweaking, much improved l10n
- Start of a long process:
  - 94 dialogs converted so far ...
Unity menu integration

Thanks to
(Antonio Fernandez, Björn Michaelsen, Alberto Ruiz, Ryan Lortie, Ted Gould)
Personas ... shared with Firefox

LibreOffice 4.0 can use Firefox Personas!

In LibreOffice 4.0, choose Tools → Options → Personalization → Select Persona:

A dialog opens that leads you through the process:

Thanks to (Jan Holesovsky)
Future / research pipeline ...
(or some things we're slowly working on)
Android & mobile platforms
(something in your pocket)
Who did all of this?

- I'm a fraud! The real work & glory should be addressed to: Tor Lillqvist's hours of toil
- Why do it? - futures ...

![Graph showing search volume for Windows and Android from 2004 to 2012.](image)

The man himself ...

Thanks to: [http://trends.google.com/](http://trends.google.com/)
LibreOffice / Android

A small table with an embedded drawing.

```
Jealous
Pride
Lust
Idleness
```

This is a picture of our wedding with some nice text flow going on around it, of course you can edit a custom contour as well as having a crude ellipse, which makes for a very nice look. Below it is an alpha blended free-hand, filled spline with drop shadow and gradient.

Of course, this is a terrible UI experience – please the cross-compiles look so much better. render...

The UI is not ideal even for a desktop. This is a proof of porting / concept hack not the headline.
Iain Billett's GSOC project

- an android viewer app ...
- with a document collection manager / shell
Pages are rendered to textures by something like a 'liblibreoffice'

The Java native app renders textures / page numbnnails etc.
Interactive Collaboration

with a rare view of our architecture
Actual simplified internals diagram

Not quite the amusing:
class ModelViewController { ... };
So what can we do?

- Make some hard up-front design decisions:
  - Ordering is King
  - It doesn't matter what you do but **always** do everything, everywhere in the **same order**, on **every client** – and we will have consistent documents.
  - Interactive conflicts can be dealt with by users as they occur: both edit the same cell, and see who wins ...
Collaboration prototype design:

By no means perfect but functional.
Some consequences ....

- Constraints:
  - cell editing is applied asynchronously ...
  - eg. enter “foo” in A1
    - edit sent to the IM bus
  - user moves to another cell
    - apply all messages from IM bus in order
    - “foo” entered into A1 ...
  - Potential latency issue

- Implementable is feasible in linear time
- No blue-sky monster re-work necessary ...

- DEMO – Thanks to:
  
  *Matus Kukan (GSOC), Will Thompson (Collabora),
  Eike Rathke (RedHat), Michael Meeks (SUSE)*
LibreOffice on-line ...
(getting pixels to users)
Cloud Office / HTML5 prototype...

- Rendering using the **HTML5 Canvas** ...
- Communication using Web-Sockets *(now with v7)*
- very simple plain-text event / control protocol
- **compressed png** for screen updates ...
- Bandwidth usage **low** for simple tasks:
  - We can see what is re-rendered as we type:
  - But really as we type a character: only *this* is sent:
  - And that tiny rectangle is png compressed ...
- CopyArea on the client for scrolling.

```
Hello World this is me typing
```
Cloud Office … technologies ...

- Uses gtk+ 3's / broadway backend to render (via some javascript shims) in the browser:
  - All intelligence and rendering on the 'server' app.
  - `broadway.js` - < 3k LOC ...
- Still a prototype
  - rendering performance improving, but lumpy in places.
- This approach allows a full-feature experience
  - ie. complex text-layout, large, complex spreadsheets, WYSIWYG (eg. edit your footnotes on the page), VBA macros, Pivot Tables etc.
- Also a number of challenges:
  - Good APIs for printing etc.
Example:
Custom contoured picture, with text fill

Gnome/OpenOffice 1.1

A small table with an embedded image

This is a picture of our wedding with some nice text flow going on around it, of course you can edit a custom contour as well as having a crude ellipse, which makes for a very nice look. Below it is an alpha blended free-hand, filled spline with drop shadow and gradient.

And chart of the week:

Persistant Sins

LibreOffice
It can't possibly perform!

- LibreOffice in-use in multi-user remote/X environments
- Load avg 0.05/0.3/0.34 for 73 live users in writer, and 10 in calc.
- 4 CPU Quad-Core estimated 200-300 concurrent users.
- If rented servers in the cloud are truly cheaper it should be cheap.
Getting involved ... how you can make a difference
Easy hacks page

- Generated from simple whiteboard annotation in bugzilla
- changes welcome!
- Thanks to Bjoern Michaelsen (Canonical) and others.

Gerrit - https://gerrit.libreoffice.org

- Magic to turns an openID account (eg. Gmail)
- Into no-ask git commit / push access to gerrit

QA / Bug Triage: [bibsect]

- Keeping on-top of the incoming bug flow ...
- See http://wiki.documentfoundation.org/BugTriage
- Get involved in testing master or release-candidates
Conclusions & Thanks …

- **LibreOffice is growing & executing**
  - Improving for developers: still lots to do …
  - Improving for users: still a long way to go …
- **We have fertile work for new contributors**
  - Want to make a real difference? Apply here …
- **Please do get involved in whatever way you can:**
  - Bug triage, QA, coding, web-design … appreciated.
- **Thank you for your support!**

Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27

All text and image content in this document is licensed under the Creative Commons Attribution-Share Alike 3.0 License (unless otherwise specified). “LibreOffice” and “The Document Foundation” are registered trademarks. Their respective logos and icons are subject to international copyright laws. The use of these therefore is subject to the trademark policy.