



LibreOffice  
from COLLABORA

# The Document Foundation and LibreOffice

*a story from corporate control to  
Freedom*

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[mmeeks](#),[#libreoffice-dev](#), [irc.freenode.net](http://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*

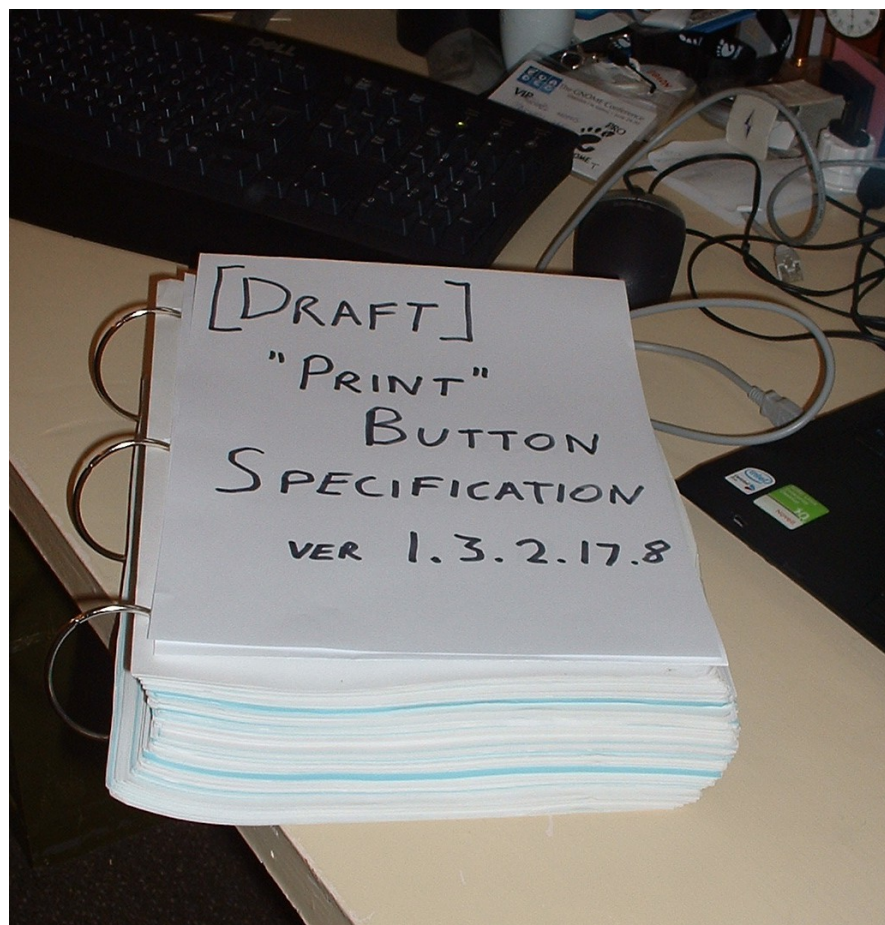
# Rough overview ...

- ▼ I am not speaking for the Document Foundation
  - ▼ These views are mine, but you're welcome to borrow them.
- ▼ History
  - ▼ The somewhat sad beginning ...
  - ▼ The extremely nerve wracking middle
  - ▼ The pleasant present
- ▼ Latest features / fun
- ▼ Questions.

A brief (comedic) sketch of the  
very sad beginning ...

*[ finally using some old pictures I  
took to try to improve things ]*

# Heavy duty / run-away Process ...



## Heavy duty / run-away Process ... #2



# Lots of things not getting fixed ...

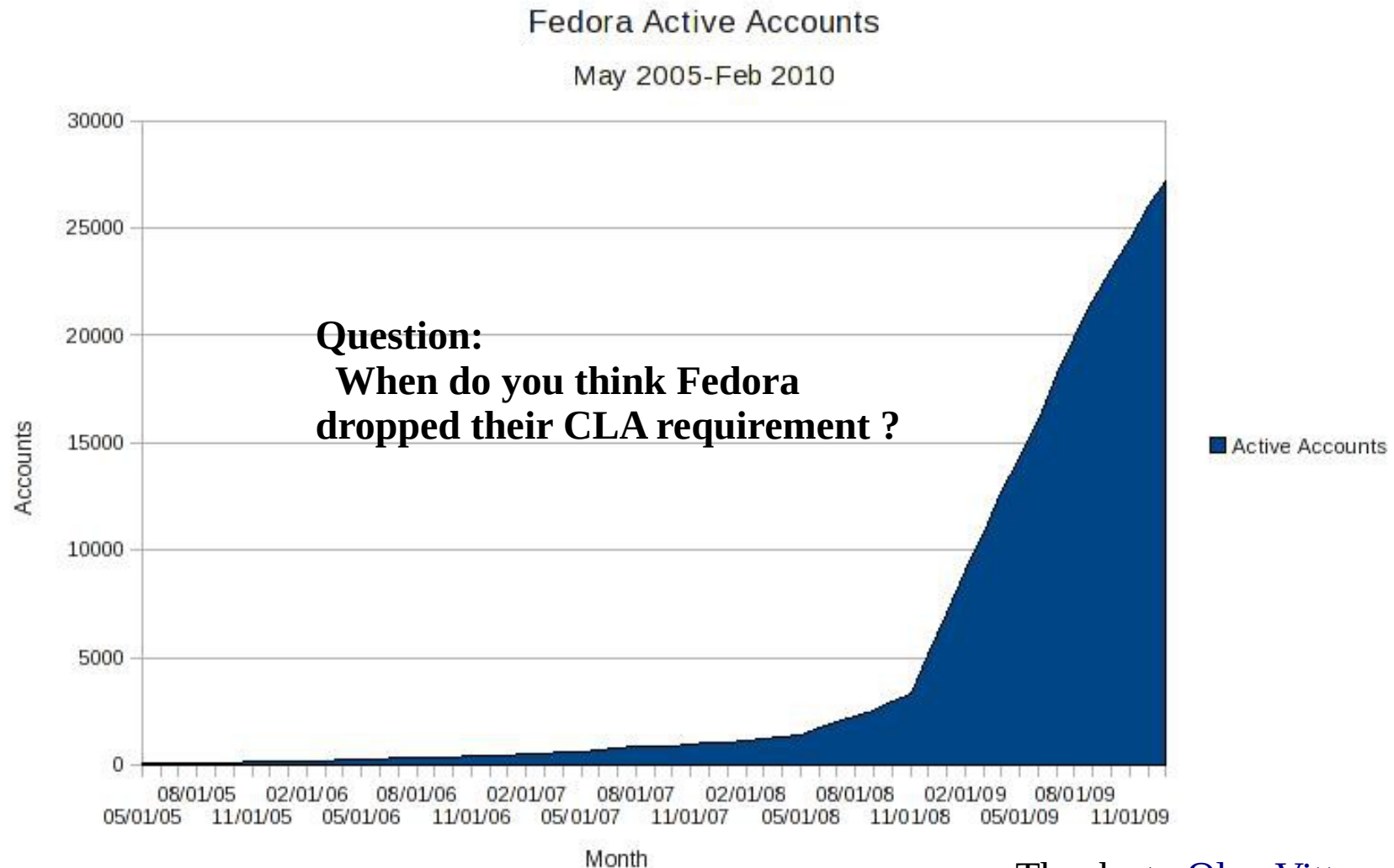


# Release cycle & Route to market ...



# On Contributor License Agreements ...

Why barriers to entry can be **very** costly to erect:



Thanks to Olav Vitters

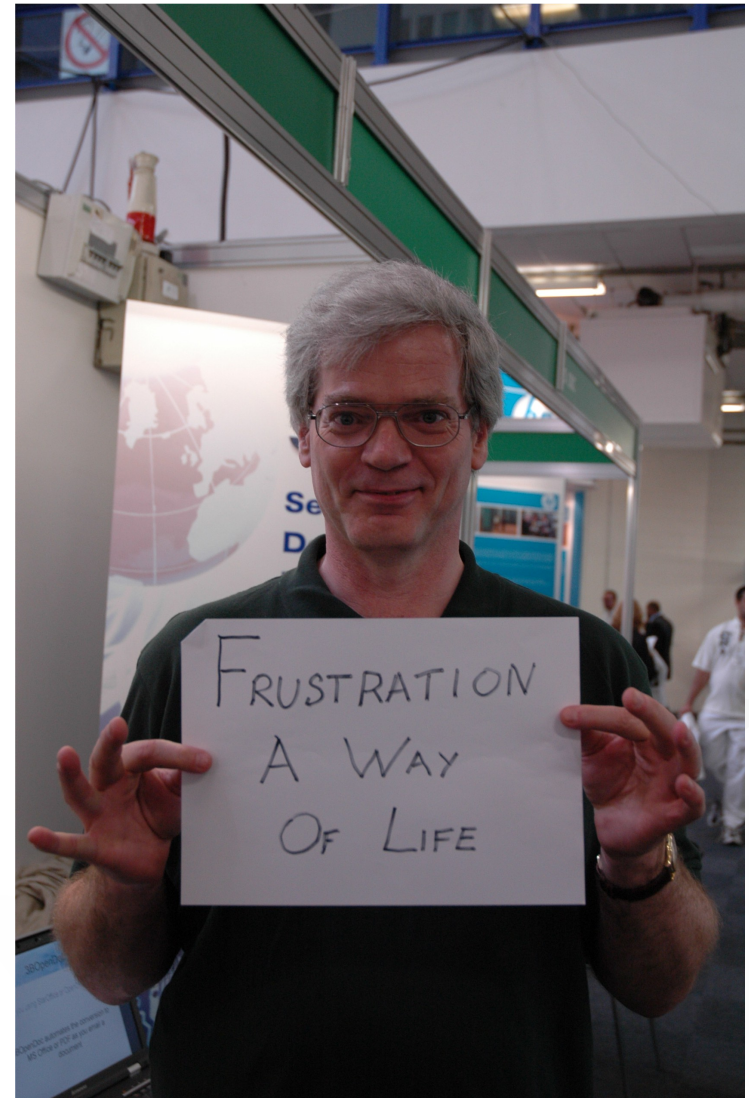


# Single Vendor Dominance



No one  
can control  
more than 30%  
of the votes  
in any statutory  
body of TDF

# Cumulative Frustration & Missed Opportunities ...



## And yet – some wonderful individuals ...



Many heroic StarDivision individuals went beyond the call of duty to work with, mentor, and try to ease the internal process pain for 'external' developers.

Many StarDivision guys were friendly, helpful, respectful, understanding, encouraging and pleasant.

However, there were overall significant issues of corporate / divisional culture.

Preparing a rupture ...

# LibreOffice: planning it ...

**Budapest, Sep 2, 2010**



A celebratory graphic for a 10th anniversary. The number '10' is large and green with a thick outline, followed by 'th' in a smaller green font. Below it, the words 'community anniversary' are written in a green, sans-serif font. At the bottom, 'Happy Birthday!' is written in a blue, handwritten-style font. The entire text is surrounded by a burst of colorful confetti (blue, orange, purple, green) and a faint background of grey geometric shapes.

10<sup>th</sup>  
community  
anniversary  
Happy Birthday!

# Why now ? Is it all Oracle's fault ? [ No: a 2011 slide ]

- ▼ ten years after the promise of a foundation ...
  - ▼ “a foundation is a great idea ... the time is not yet ripe ... perhaps in another three years” etc. etc.
  - ▼ Patience – a virtue, but not an inexhaustible resource.
- ▼ some truly fantastic 'opportunities' for improvement
  - ▼ Vendor neutrality / no copyright assignment barrier
- ▼ ~unrelated to Oracle – StarDivision have real autonomy
  - ▼ please don't hate them, they have hard problems
  - ▼ the 'community' has '~failed' them for many years
  - ▼ we have great friends & hackers there
- ▼ motivated by a **love of freedom**, not by hatred.
  - ▼ would love Oracle to join in with the fun.

## Press release / confidence building ...

*Chris DiBona, Open Source Programs Manager at Google, Inc., has commented: "The creation of The Document Foundation is a great step forward in encouraging further development of open source office suites. Having a level playing field for all contributors is fundamental in creating a broad and active community around an open source software project. **Google is proud to be a supporter of The Document Foundation and participate in the project**".*

- ▼ Who provides the 1<sup>st</sup> / lead Quote ? Thanks to Chris & Jeremy Allison for their confidence.

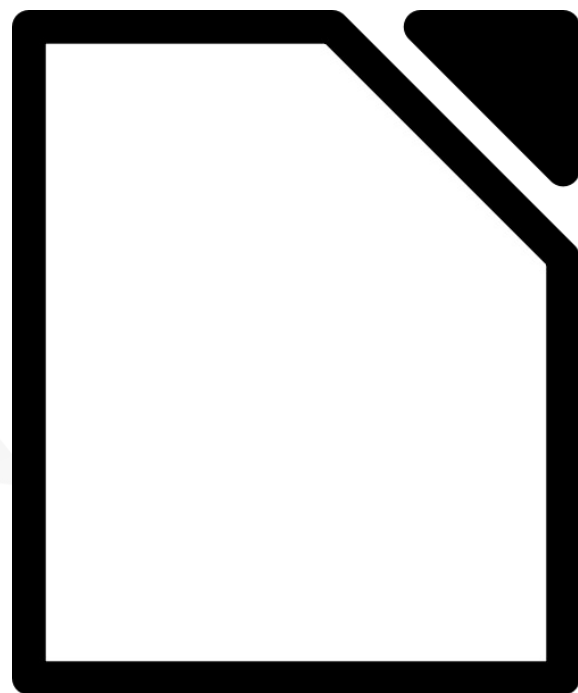
Also thanks to (also giving supporting quotes)

- ▼ SUSE: Markus Rex, Guy Lunardi, RedHat: Jan Wildeboer, Jonathan Blandford, Canonical: Mark Shuttleworth
- ▼ FSF: Richard Stallman, OSI: Simon Phipps, OASIS: Charles Schultz, GNOME: Stormy Peters, NeoOffice: Patrick Luby, Ed Peterlin, Credativ: Chris Halls



## Logo Creation ...

- ▼ Many thanks to Christophe Noack
  - ▼ Beautiful in its simplicity – *though I didn't see it initially*
  - ▼ Checkout Wikipedia's <http://en.wikipedia.org/wiki/Logo> take ...



Going Live ...  
*pre-briefings / up all night*

# Volunteers!

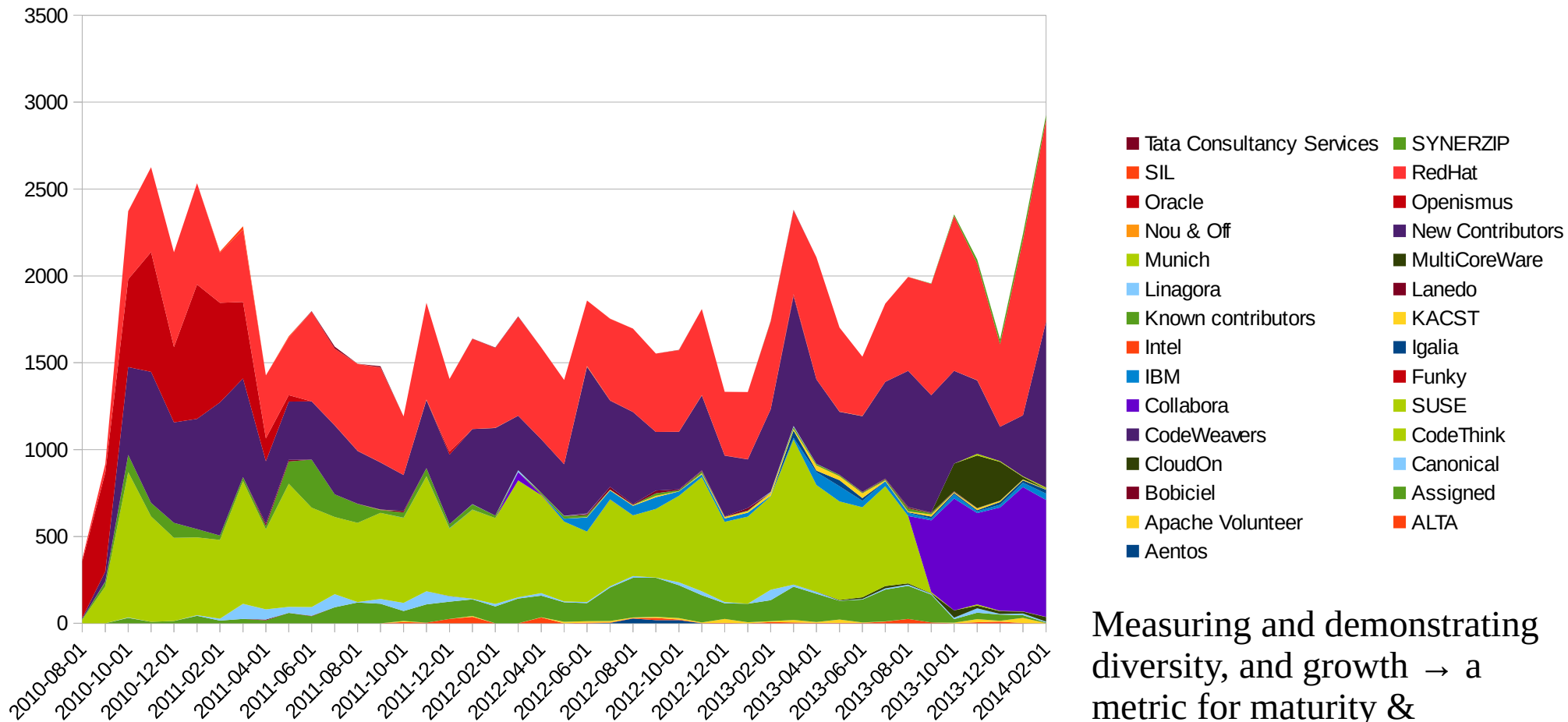






**THE FUTURE BELONGS  
TO THE FEW OF US  
STILL WILLING TO GET  
OUR HANDS DIRTY.**

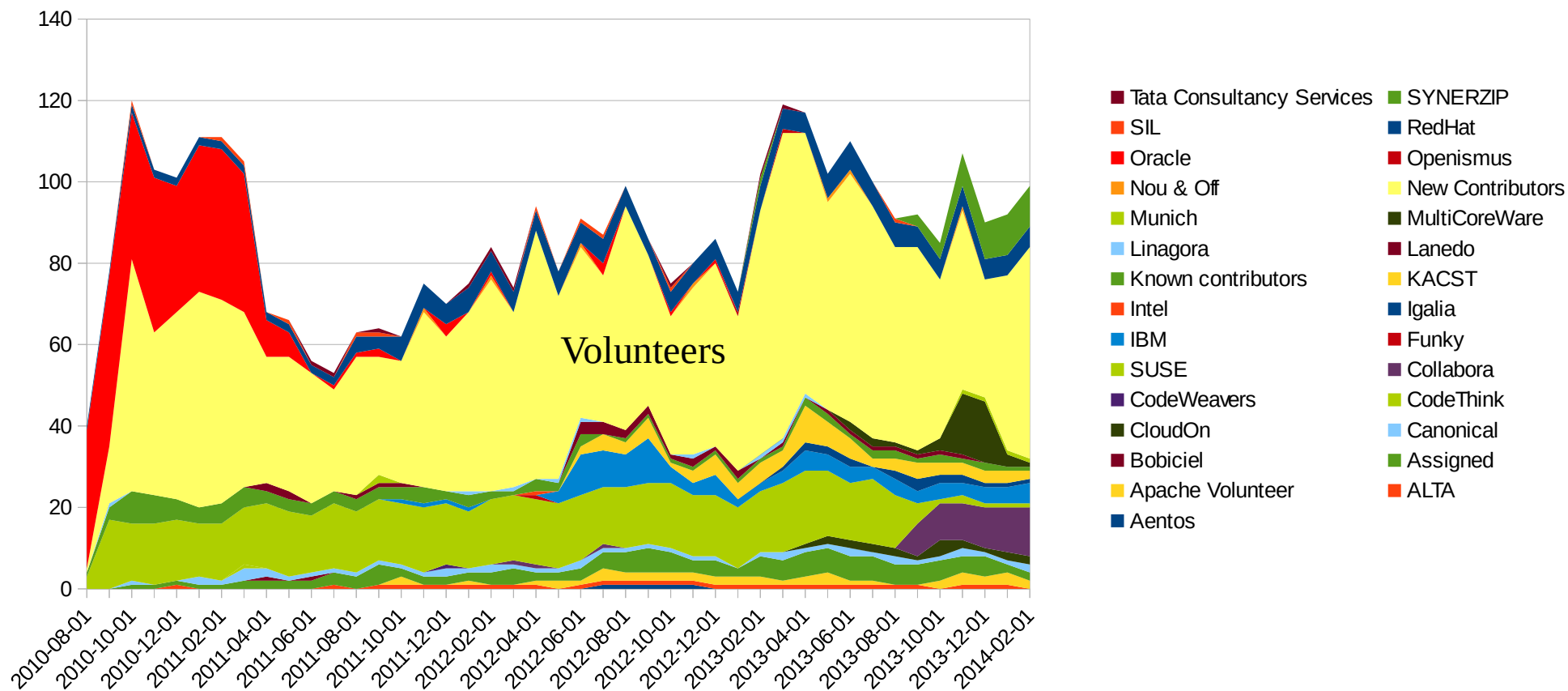
# Commits per month



Measuring and demonstrating diversity, and growth → a metric for maturity & dependability

# Committer Diversity

Active individual committers per month by affiliation









# What is LibreOffice / The Document Foundation

Slide from the initial  
FOSDEM after Launch ...

- ▼ Finally “doing it right”
  - ▼ vendor neutral, no code ownership aggregation
  - ▼ a real Free Software / hackers project
  - ▼ Volunteers + RedHat + Novell + Debian + Canonical + Google ...
  - ▼ **FSF** + OSI support, boycott + Novell support etc.
  - ▼ *FreeDesktop* hosting
  - ▼ **LGPLv3+** / **MPL for new code** ...
- ▼ An idea – whose time has finally come ...
  - ▼ a beautiful, Office suite we can be proud of (in due course)  
backed by a real, open community
- ▼ Shipping now on Windows, Mac, GNU / Linux, \*BSD etc.
- ▼ ODF enables trivial migration with your data ...















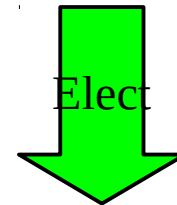
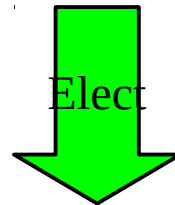




# How all of this interacts ...

*All decisions about the project are taken by the elected representatives of the Members, and/or their appointees.*

**Trustees  
( Members )**



**Advisory  
Board**



**Board**

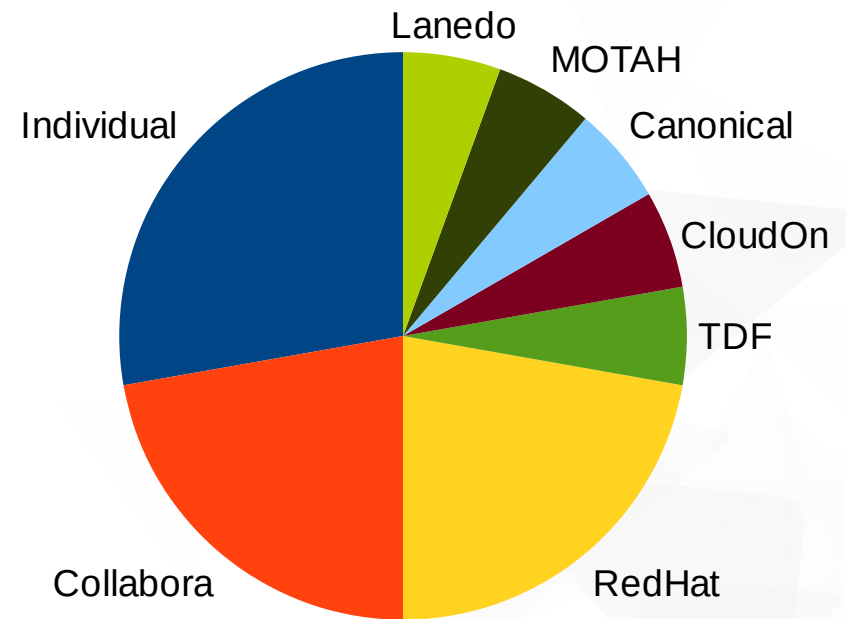
**Membership  
Commitee**



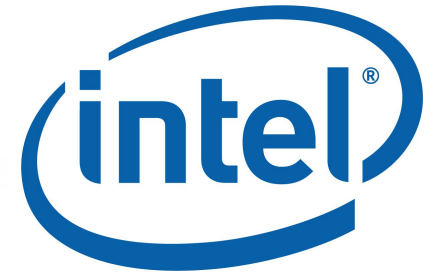
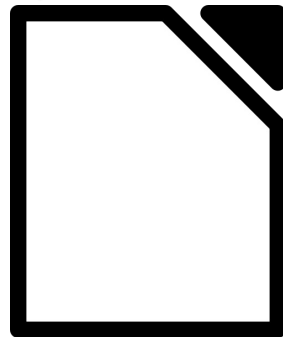
**Engineering  
Steering Commitee**

# Engineering Steering Committee

- ▼ Empowered by the board to handle day-to-day Engineering
- ▼ Primary role: to be boring
- ▼ 99% consensus based
  - ▼ one controversial decision / vote – when to have 4.0
- ▼ Packed with good people ...
  - ▼ Includes relevant stake-holders; QA, UX, Dev, L10n ...
  - ▼ minutes each week.
- ▼ Like all other bodies of TDF any single entity cannot be dominant.



# Supporters of LibreOffice: the Advisory Board



مدينة الملك عبد العزيز  
للعلم و التقنية KACST



FREE SOFTWARE  
FOUNDATION



# LibreOffice Conferences: Paris 2011



*Thanks to La Cantine and IRILL*

# LibreOffice Conferences: Berlin 2012

Getting better a conference photos



*Thanks to German Federal Ministry of Economics and Technology.*

# LibreOffice Conferences: Milan 2013



*Thanks to The University of Milan*



# LibreOffice Conference: 2014 ... Bern Switzerland

- ▼ Beautiful Bern
  - ▼ September 3<sup>rd</sup> → 5<sup>th</sup> 2014 ...
  - ▼ Thanks to the University of Bern
  - ▼ Talks from all the core developers (that can attend)
  - ▼ Deployments / case studies / etc.
  - ▼ Look forward to seeing you there.

*The best conference yet ...  
( constant improvement )*



People started using it en-masse ...

*Too many to count, but here are a handful of  
Government deployments ...*

# Public Administration

## Umbria moves 5,000 to LibreOffice

°C | Districts | Surroundings | Webcam | MVG

Munich as an App English

**muenchen.de**  
Das offizielle Stadtportal

City map | Public transport

City Hall | Events | Culture, Leisure | Restaurants | Shopping | Hotels, Accommodation | Sights | Tourism | Business | Living | Traffic | Topics

Official website for the city of Munich

**City Hall**  
On the following pages you find a compilation of all information by the municipality available in English: Tourist-Information, Economic Development... more

**Hotels, Accommodation**  
Where do you want to stay during your travel to Munich? This listing of hotels, hostels and camp sites will help. more

**New in München & der Region**  
New to Munich? All information at a glance! >>

**Munich at a glance**

- > Hotel, Accommodation
- > Sightseeing
- > Restaurants Munich
- > Shopping Munich

**LibreUmbria**  
documenti liberi, aperti e condivisi

HOME | CHI SIAMO | IL PROGETTO | DOCUMENTI | MATERIALE DIDATTICO | RASSEGNA STAMPA | FOTO | LIBREOFFICE E DINTORNI

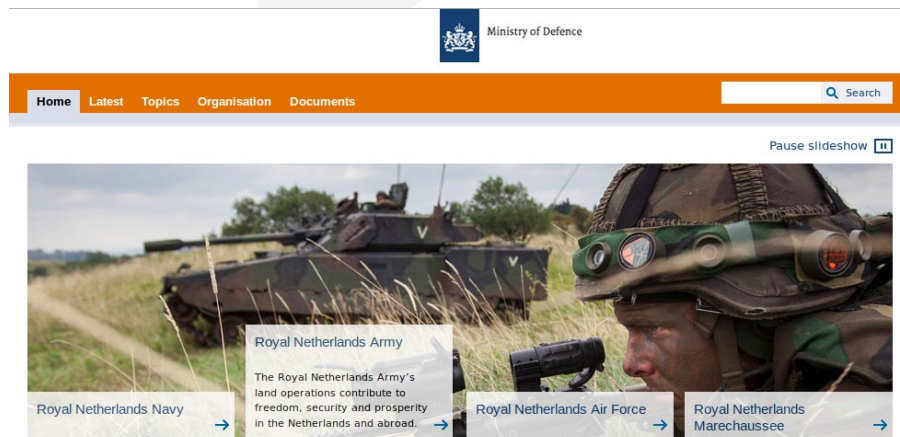


*Adozione di LibreOffice nella Pubblica Amministrazione Umbra*

## Munich advocacy of OSS LibreOffice on 15,000 PC

# Public Administration

## 25,000 Copenhagen Workers will use LibreOffice



## Netherlands defence ministry LibreOffice on 42,000 PCs

# Public Administration

Valencia region government completes switch of 120,000 PCs to LibreOffice

Support interministériel d'installation de la suite bureautique MIMO

Télécharger le support MimO version ISO  
Caractéristiques du support

Télécharger le support MimO auto-extractible  
Caractéristiques du support

Ce support a été conçu par le groupe de Mutualisation InterMinistérielle pour une bureautique Ouverte (MimO). Formé à l'initiative de l'Agence pour le Développement de l'Administration Électronique, service du Premier ministre, MimO réunit plusieurs ministères ou administrations : environnement, défense, intérieur, économie, budget, culture, justice, agriculture, éducation, DILA, ENA, Assemblée nationale, CAF...

Ce support contient :

Está en: Dirección General de Tecnologías de la Información > Actualidad > La Generalitat implanta software libre ofimático en todos los ordenadores

### Actualidad

#### La Generalitat implanta software libre ofimático en todos los ordenadores

La Generalitat ha completado el despliegue de software libre de ofimática en todos los puestos de trabajo informático de la Generalitat. La iniciativa permitirá ahorrar anualmente 1,5 millones de euros en la adquisición de licencias a partir de 2014.

"Iniciamos el proyecto en el segundo semestre de 2012 y, a fecha de hoy, Libre Office ya está instalado en el 100% del parque informático de la Generalitat, unos 120.000 ordenadores entre el ámbito docente, administrativo y judicial", ha explicado la directora general de Tecnologías de la Información, Sofía Belés.

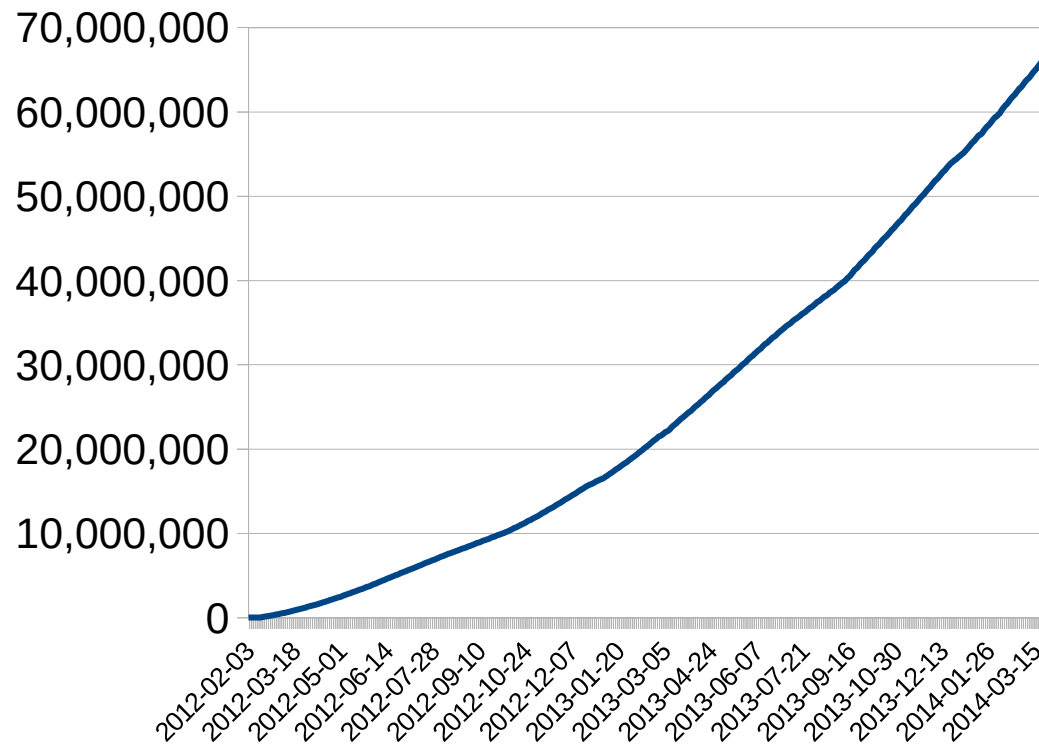
La iniciativa forma parte de las medidas de ahorro y contención del gasto tomadas por el Consell con el fin de reducir el gasto corriente en TIC, en concreto, el gasto por el uso de licencias de software privativo. Según Belés, "esta actuación ya nos ha permitido ahorrar 1,3 millones de euros desde el inicio del proyecto y, a partir del año que viene generará unos ahorros anuales de 1,5 millones de euros en licencias de software propietario".

Además de los beneficios económicos, la apuesta por el software libre conlleva otras ventajas como la disponibilidad de las aplicaciones en valenciano y castellano, la independencia del fabricante, por lo que fomenta la competencia, y la libertad para modificar y adaptar el software a

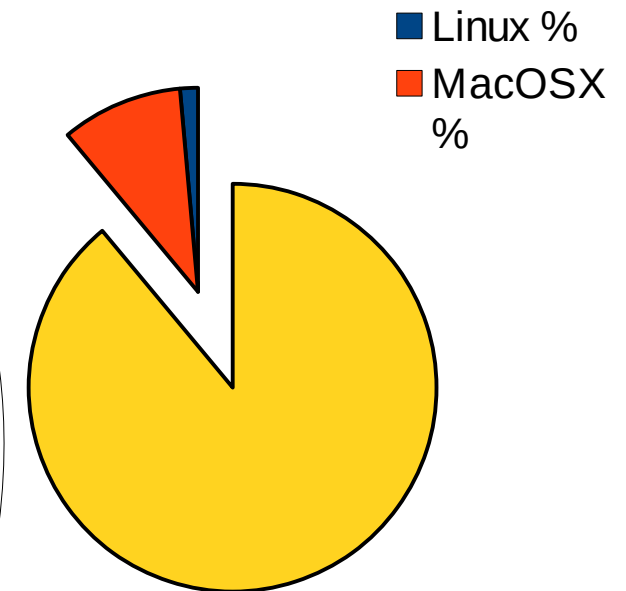
Paris plans 800,000 roll-out of LibreOffice

# Users: Direct Downloads

Cumulative unique Update IP Addresses vs. time.



Breakdown by platform



**Plus** the global Linux Desktop user-base (not counted):  
~35m (a Gartner guess )

*>1 million new unique IP addresses look for an update each week (never before seen)*

# It's easy to get involved: no really !

- ▼ From basket case to:

*“LibreOffice is now ridiculously easy to build”*

[Karl Fogel](#) – (now working on “*Producing OSS*” (v2) ...)

- ▼ Credit to team on gnumake port & other cleanups
- ▼ We love people to contribute changes:
  - ▼ We want your first patch to be non-controversial, and easy, so you're up-to-speed and included outright:
  - ▼ [http://wiki.documentfoundation.org/Development/Easy\\_Hacks](http://wiki.documentfoundation.org/Development/Easy_Hacks)

# New developer training bits ...

- ▼ gnumake overview documentation: 'make dump-deps-png'
  - ▼ Thanks to *David Ostrovsky* and *Peter Foley*
- ▼ Training slideware with code overview / basics:
  - ▼ Module overview:
    - ▼ <http://people.gnome.org/~michael/data/2013-07-26-libreoffice-code-structure.pdf>
  - ▼ Low-level types / utilities overview:
    - ▼ <http://people.gnome.org/~michael/data/2013-07-26-libreoffice-low-level.pdf>
- ▼ Code overview focused on comprehensibility – not machismo
  - ▼ Focus on core coding not extensions ...



# LibreOffice 4.1 – fun features

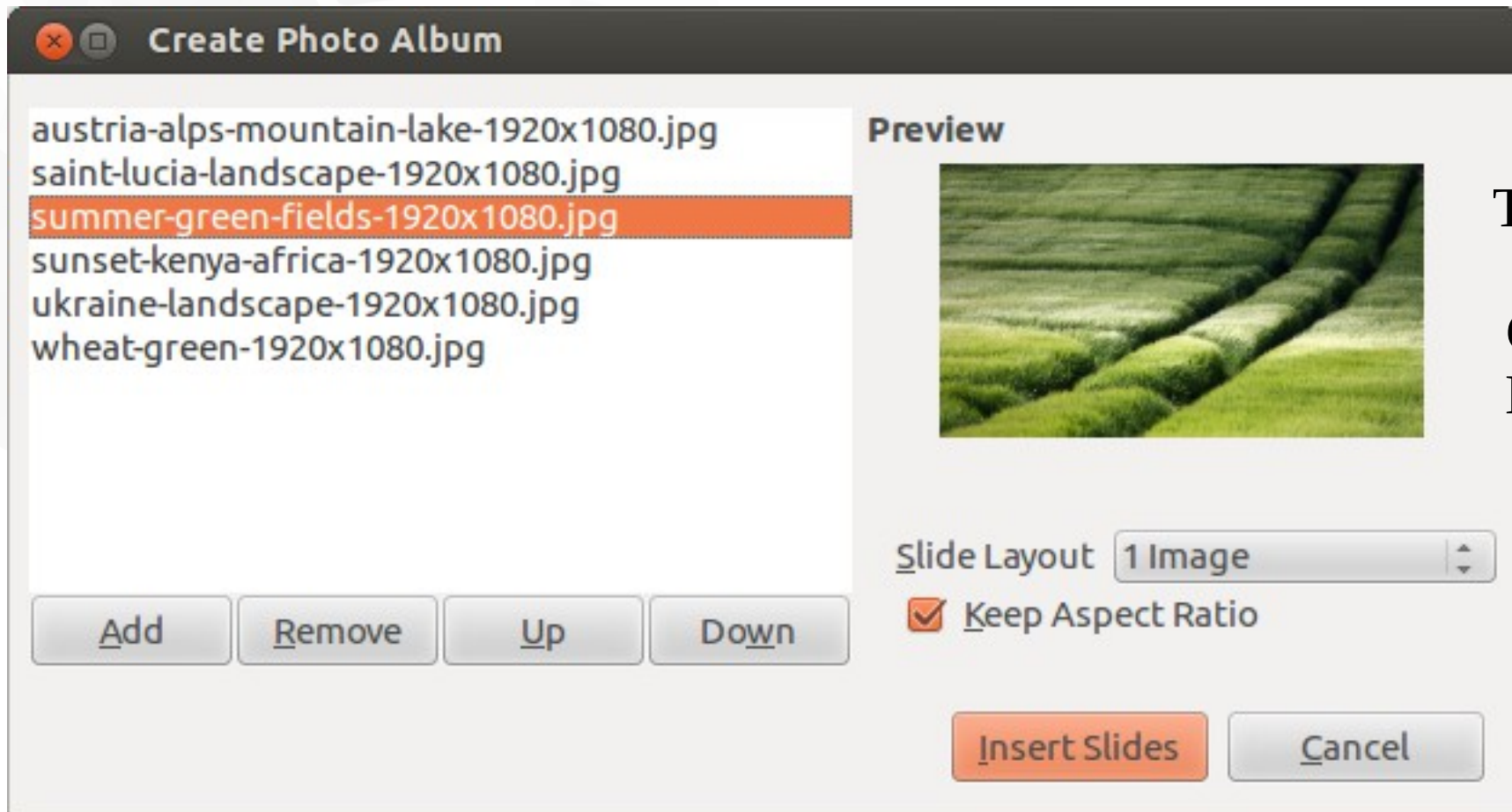
# Font embedding for beauty & fidelity ...

## Embedded fonts test

Libre - Callibri	<b>Libre - Broadway</b>
Libre - Cambria	<b>Libre - Ariel Black</b>
<b>libre - Bauhaus</b>	LIBRE - CASTELLAR
<i>Libre - Blackadder</i>	<b>Libre - Berlin Sans FB</b>
<i>Libre - Vladimir Script</i>	Libre - Gill Sans MT
🔍 ⓘ 🚲 ✕ 📺	<b>Libre - Elephant</b>
<b>Libre - Jokerman</b>	<b>Libre - Impact</b>
<i>Libre - Lucida Cal</i>	<i>Libre - Magneto</i>
Libre - Old English T.	Libre - Playbill
<b>Libre - Radvie</b>	<b>LIBRE - STENCIL</b>
Libre - Sketchflow	<i>Libre - Vivaldi</i>

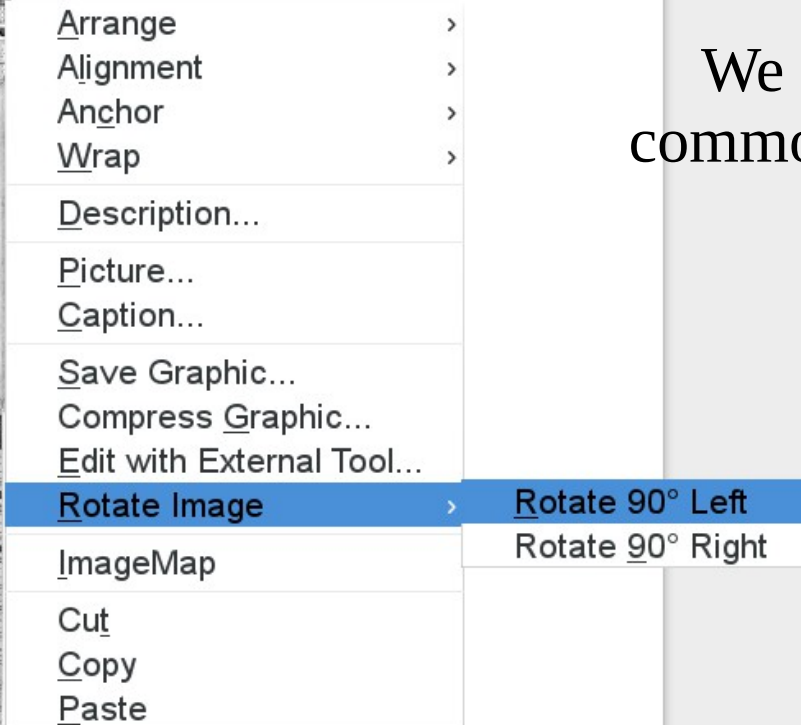
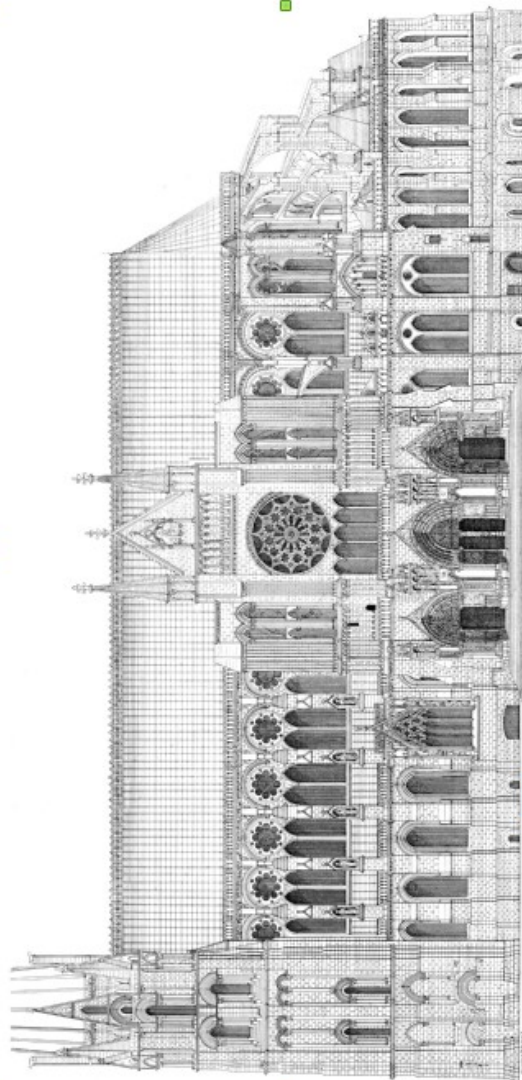
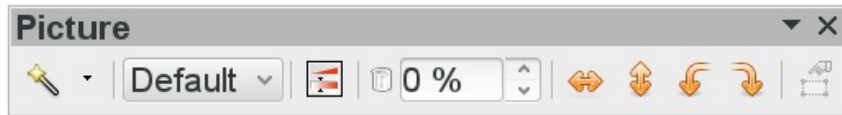
Import / export to ODF and OOXML  
- thanks to *Lubos Lunak, Noel Power, Radek Doulik* and the *Open Source Business Alliance*.

# Easy photo album deck building ...



Thanks  
to  
Gergő  
Mocsi

# UI tweaks / wins: 90 degree image rotation



Writer could not rotate images at all.

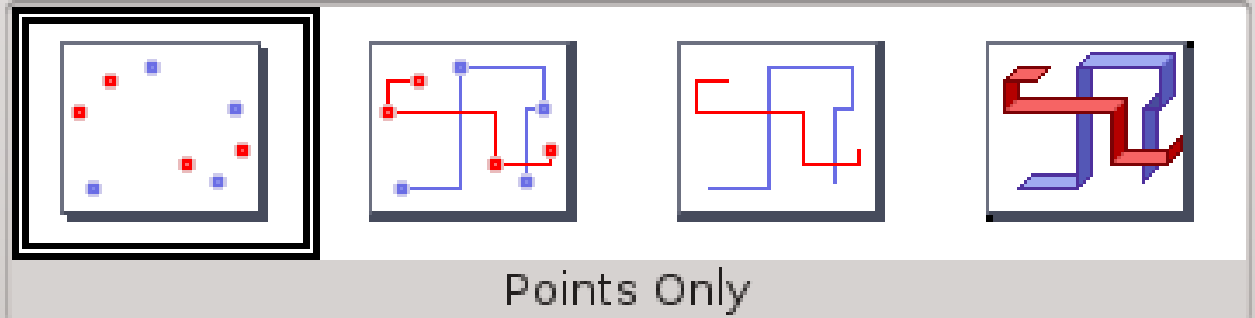
Thanks to *Tomaž Vajngerl*

We now do the common case easily.

# Stepped line scatter charting ...

## Choose a chart type

- Column
- Bar
- Pie
- Area
- Line
- XY (Scatter)**
- Bubble
- Net
- Stock
- Column and Line



Points Only

Line type **Stepped** v

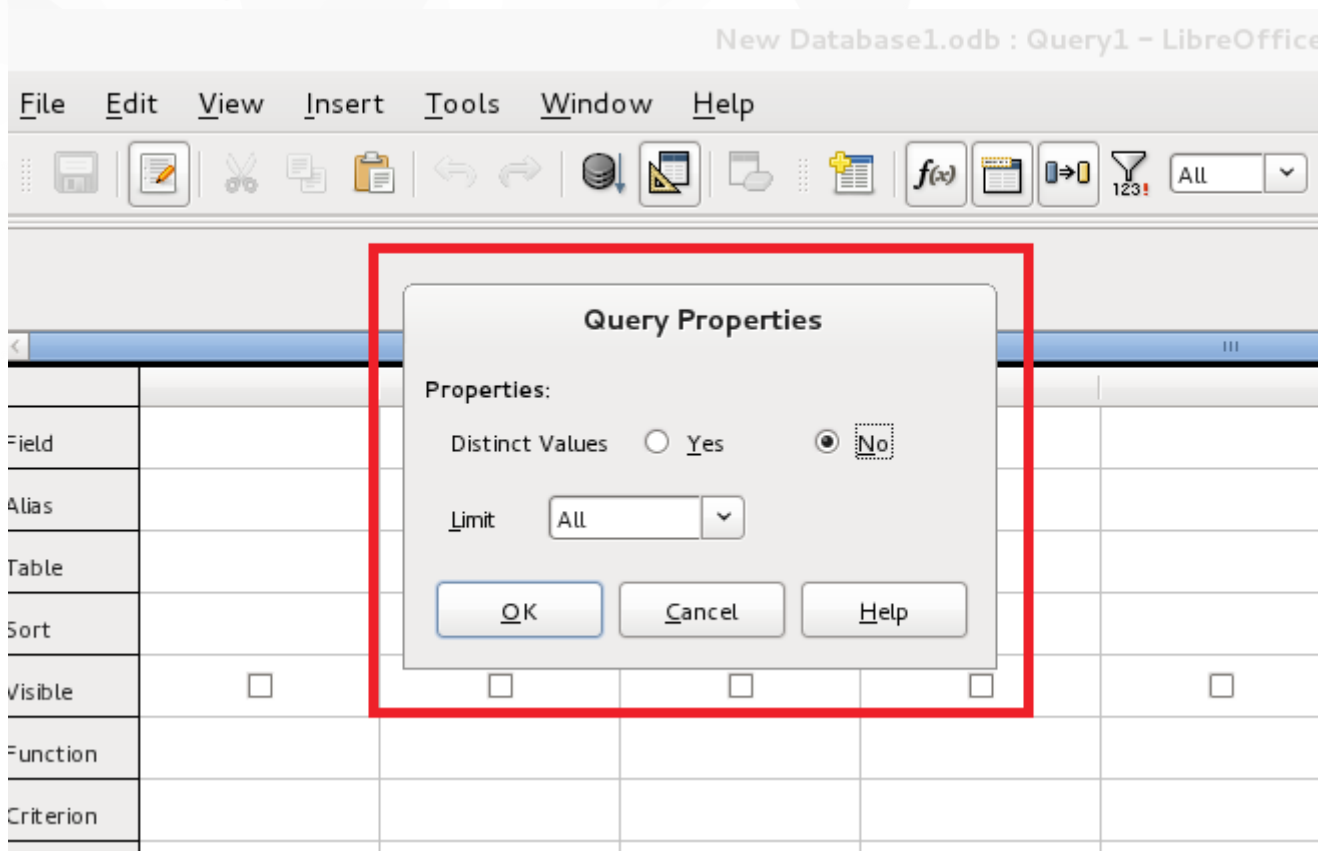
Properties...

Sort by X values

With thanks  
to *Eric*  
*Seynaeve*

# Many Base improvements: finally getting some love ...

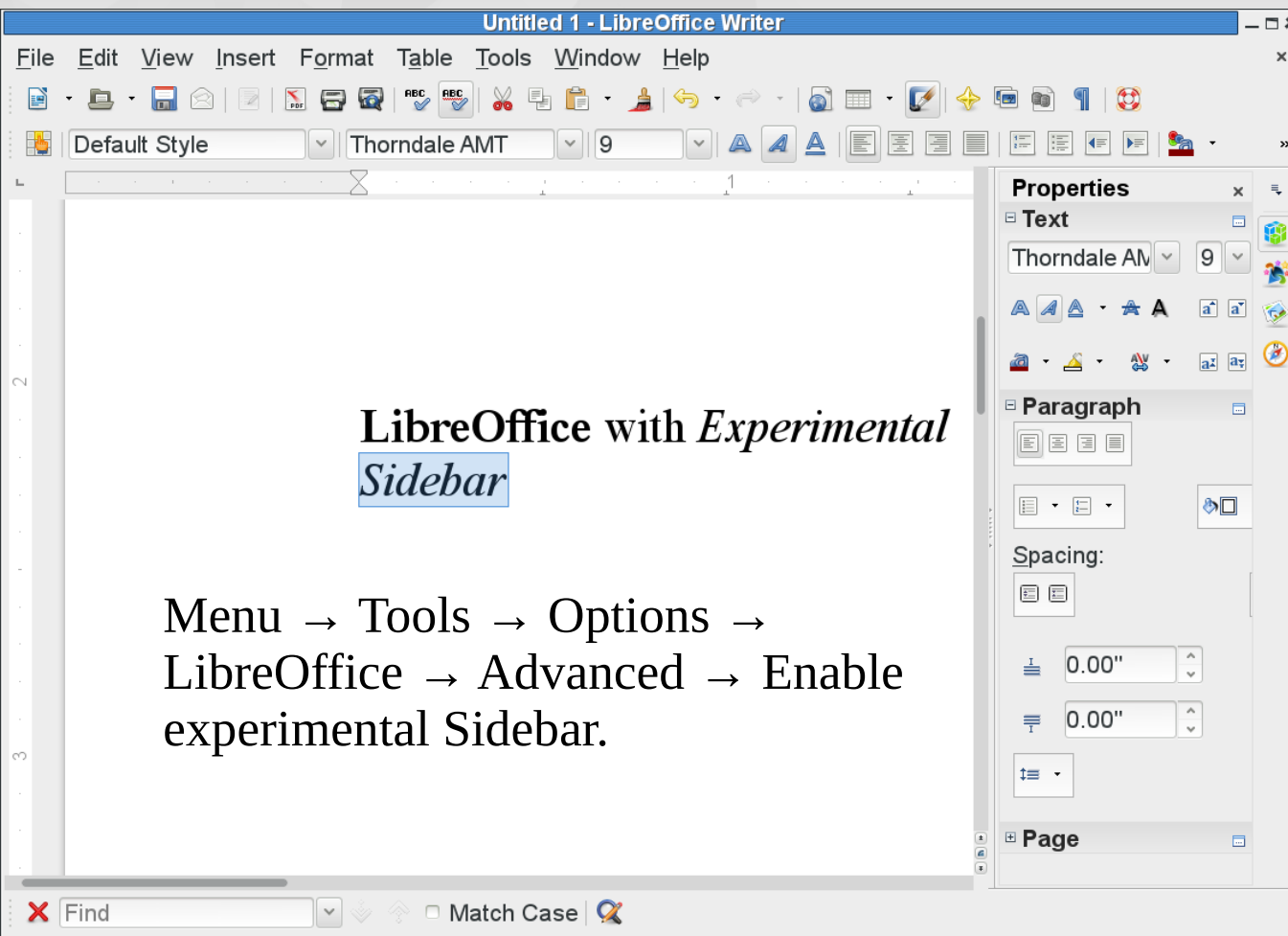
Limit and Distinct values support: with thanks to *Tamás Zolnai*



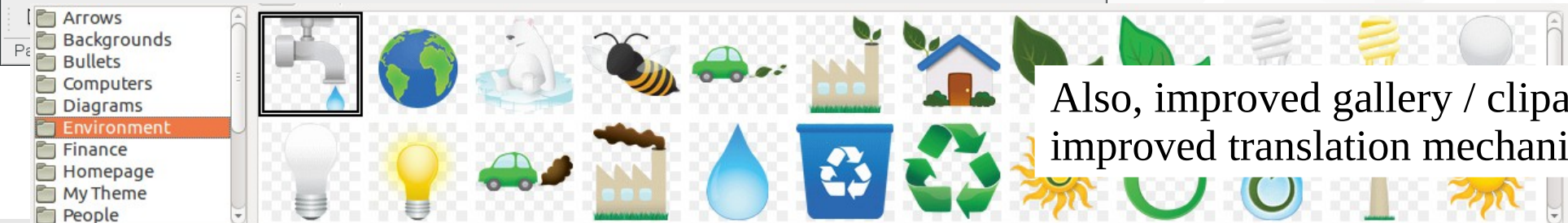
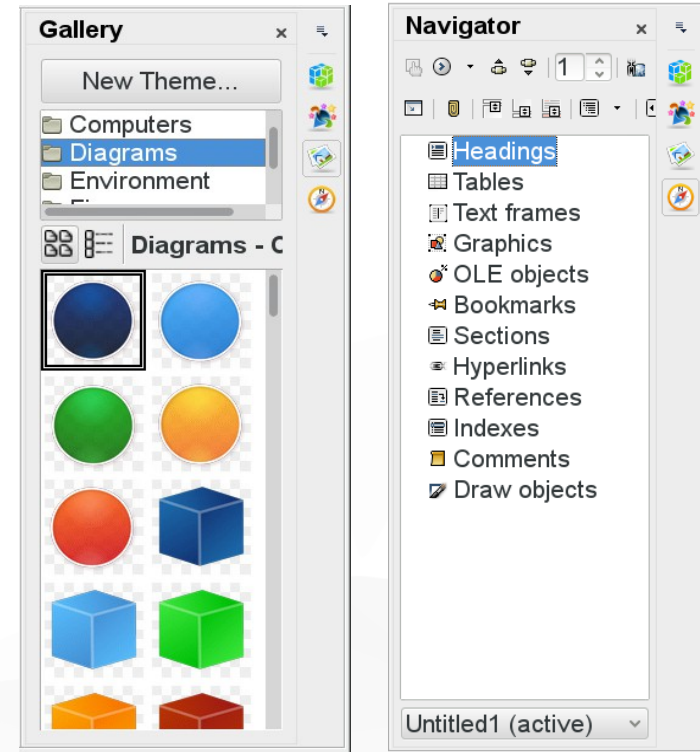
Also significant work cleaning / debugging base & lots of work on eg. Nanosecond timestamps from many thanks to *Lionel Elie Mamane*

# Sidebar from IBM / AOO (Experimental)

Various tabs ... embed existing gallery & navigator conveniently.



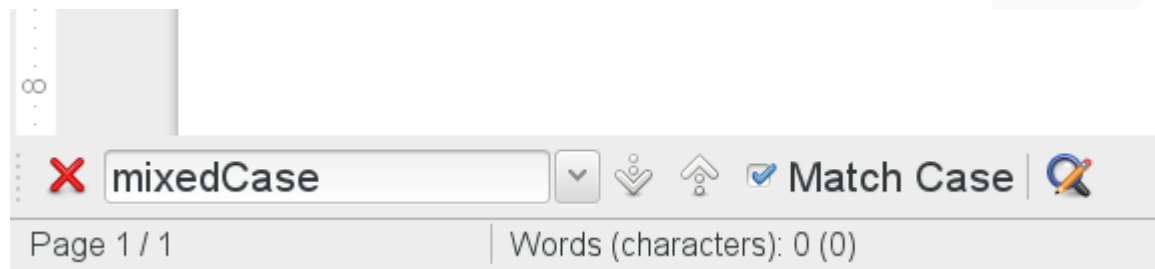
Menu → Tools → Options → LibreOffice → Advanced → Enable experimental Sidebar.



Also, improved gallery / clipart & improved translation mechanism

# Other misc. flavours:

- ▼ GStreamer 1.0 support (as well as 0.10)
- ▼ ~3000 bug fix patches ( 400 from @apache)
  - ▼ cf. ~5000 open bugs @ fdo
- ▼ 10k commits since 4.0
- ▼ Lots of incremental interoperability wins.
- ▼ Ctrl-F search bar: close + match case thanks to *Andrzej Hunt & Joren De Cuyper*





LibreOffice 4.2 new stuff ...  
*Shipping in a rather stable mode ~now ...*

# Shell / overview ...

LibreOfficeDev

File Tools Help

Open File

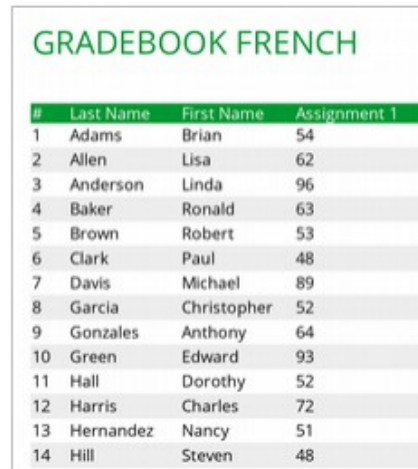
Templates

Create:

- Writer Document
- Calc Spreadsheet
- Impress Presentation
- Draw Drawing
- Math Formula
- Base Database



Writer



Gradebook French



The Anarchists

*Thumbnails of recent document types from all applications*

Help

Extensions

# Much improved Android Impress remote

With thanks to *Artur Dryomov*


3G 1:30 3G 1:31 3G 1:24

Slide 3 of 12 5 minutes remaining

Slide 3 of 12 5 minutes remaining

Connection

Рефлекторная деятельность мозга



Мышление

1

2

3

4

5

6

7

8

9

10

11

12

### Connection failed

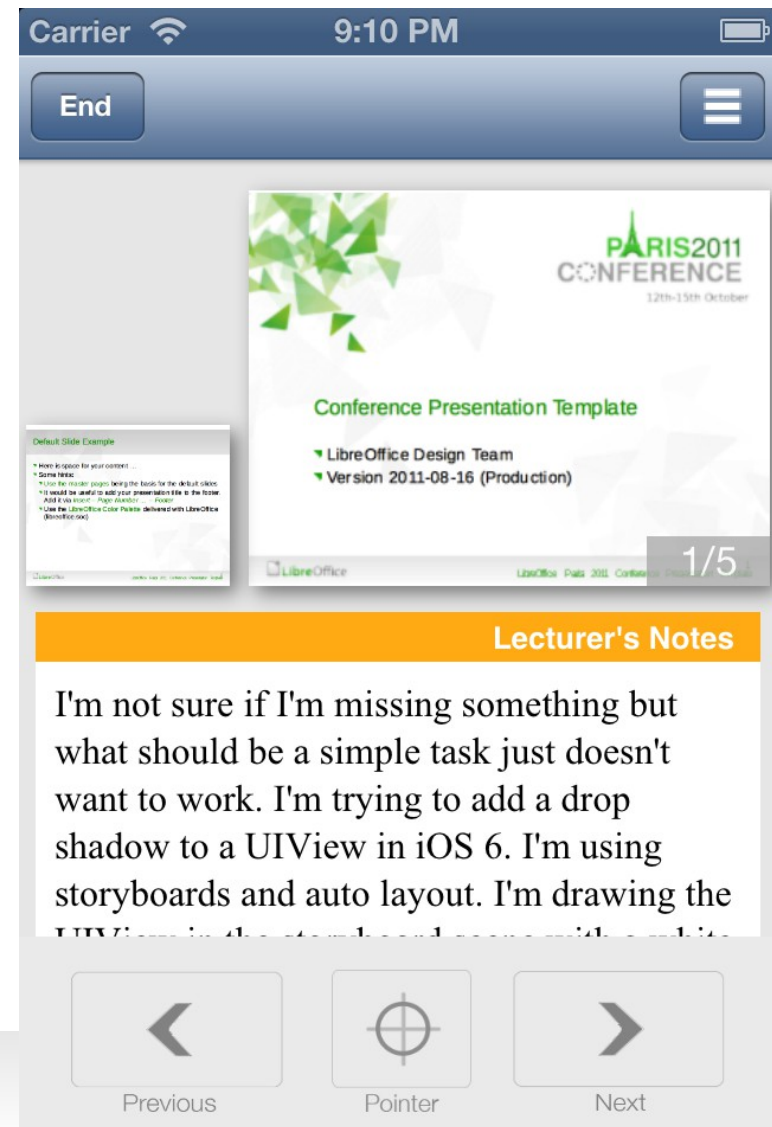
Make sure you enabled remote control. Go to "Tools → Options → LibreOffice Impress → General" in LibreOffice Impress.

You should enable experimental features at "Tools → Options → LibreOffice → Advanced" as well.

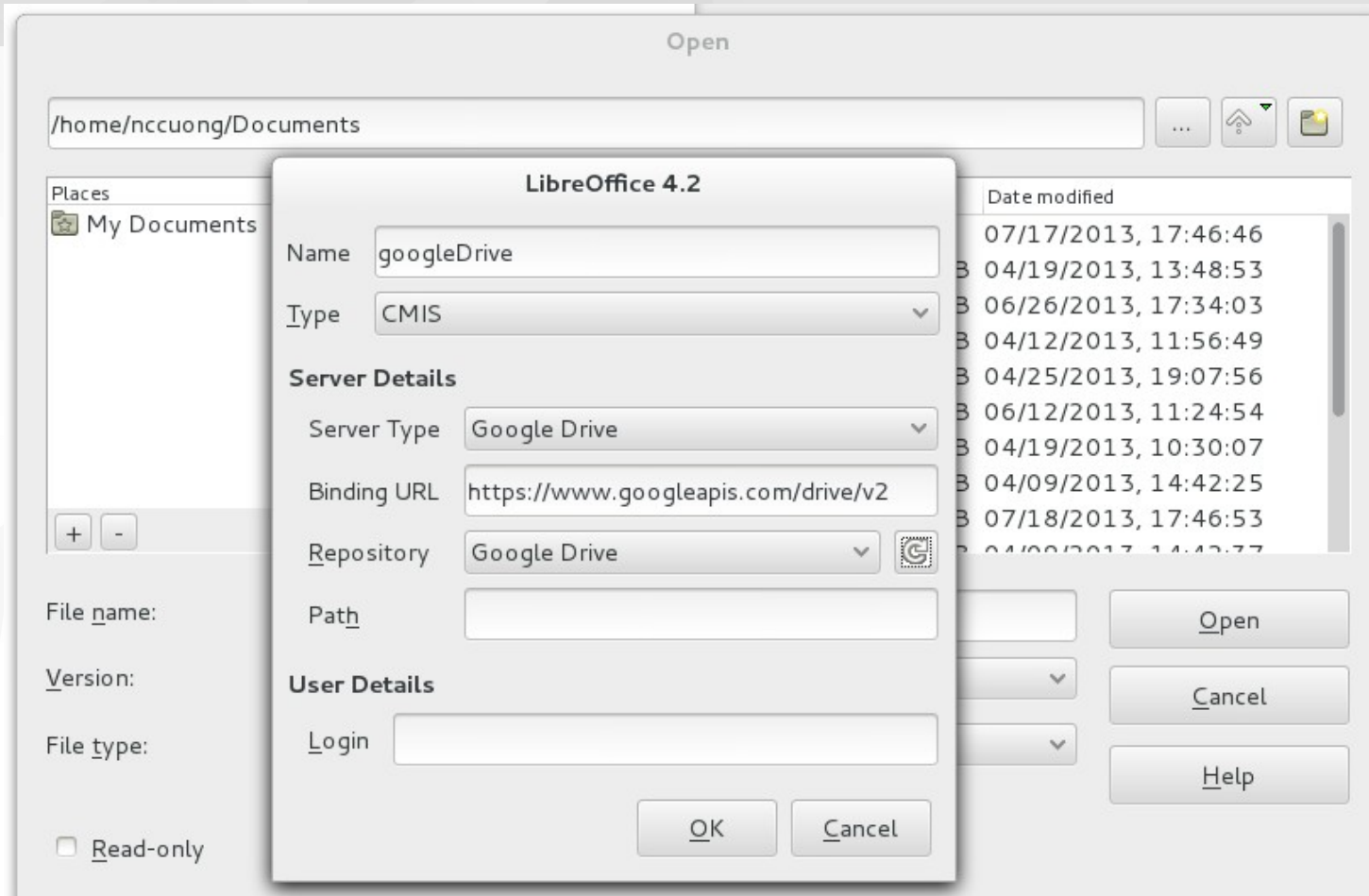


# Initial iOS Impress remote control

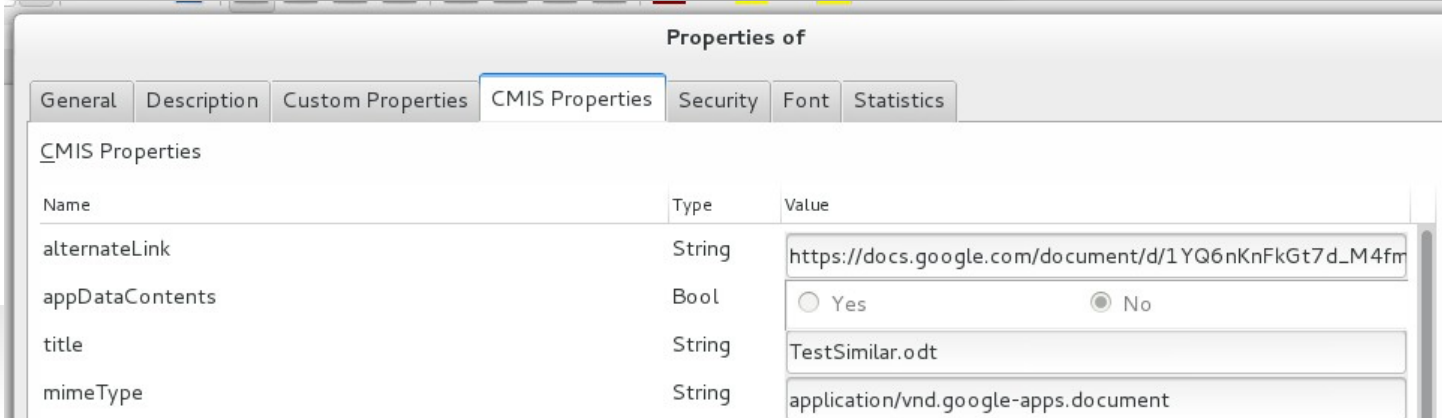
With thanks to *Siqi Liu* – sign up for the Beta



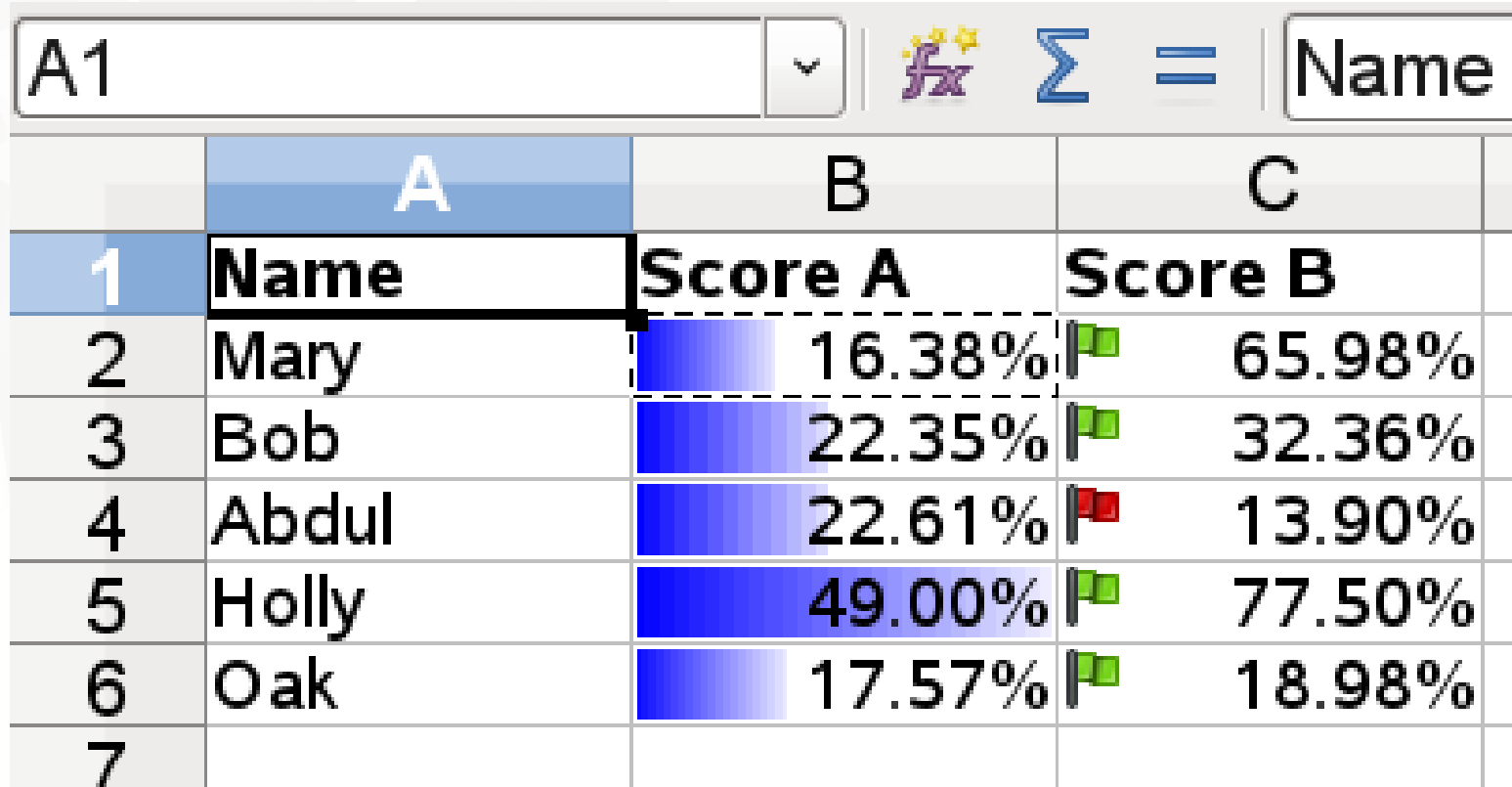
# GDrive integration (via libcmis)



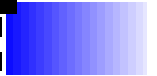



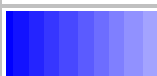





With  
thanks to  
*Cuong  
Cao Ngo*  
and  
*Cedric  
Bosdonnat*



# Conditional fmts: bars + icons



The screenshot shows a spreadsheet interface with a formula bar containing 'A1' and a dropdown menu. The spreadsheet has three columns: 'A', 'B', and 'C'. Row 1 is the header row. Row 2 is the first data row. Rows 2-6 contain data for 'Mary', 'Bob', 'Abdul', 'Holly', and 'Oak' respectively. Row 7 is empty. The 'Score A' column (B) uses blue bars to represent percentages. The 'Score B' column (C) uses green and red flags to represent percentages. The 'Name' column (A) is highlighted in blue.

	A	B	C
1	<b>Name</b>	<b>Score A</b>	<b>Score B</b>
2	Mary	 16.38%	 65.98%
3	Bob	 22.35%	 32.36%
4	Abdul	 22.61%	 13.90%
5	Holly	 49.00%	 77.50%
6	Oak	 17.57%	 18.98%
7			

Customer requested feature:  
Implemented by a Collabora  
Engineer.

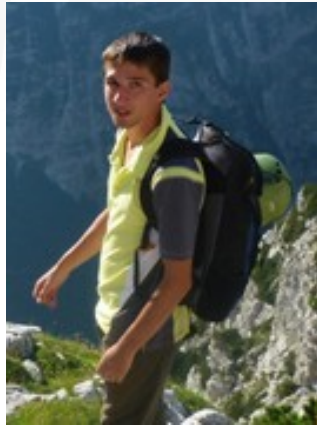
# Developers behind the calc re-work:



Kohei Yoshida:  
MDDS maintainer  
Heroic calc core re-factorer  
Code Ninja etc.



Markus Mohrhard  
Calc maintainer,  
Chart2 wrestler  
Unit tester par  
Excellence  
etc.



Matus Kukan

Data  
Streamer,  
G-builder,  
Size  
optimizer ..



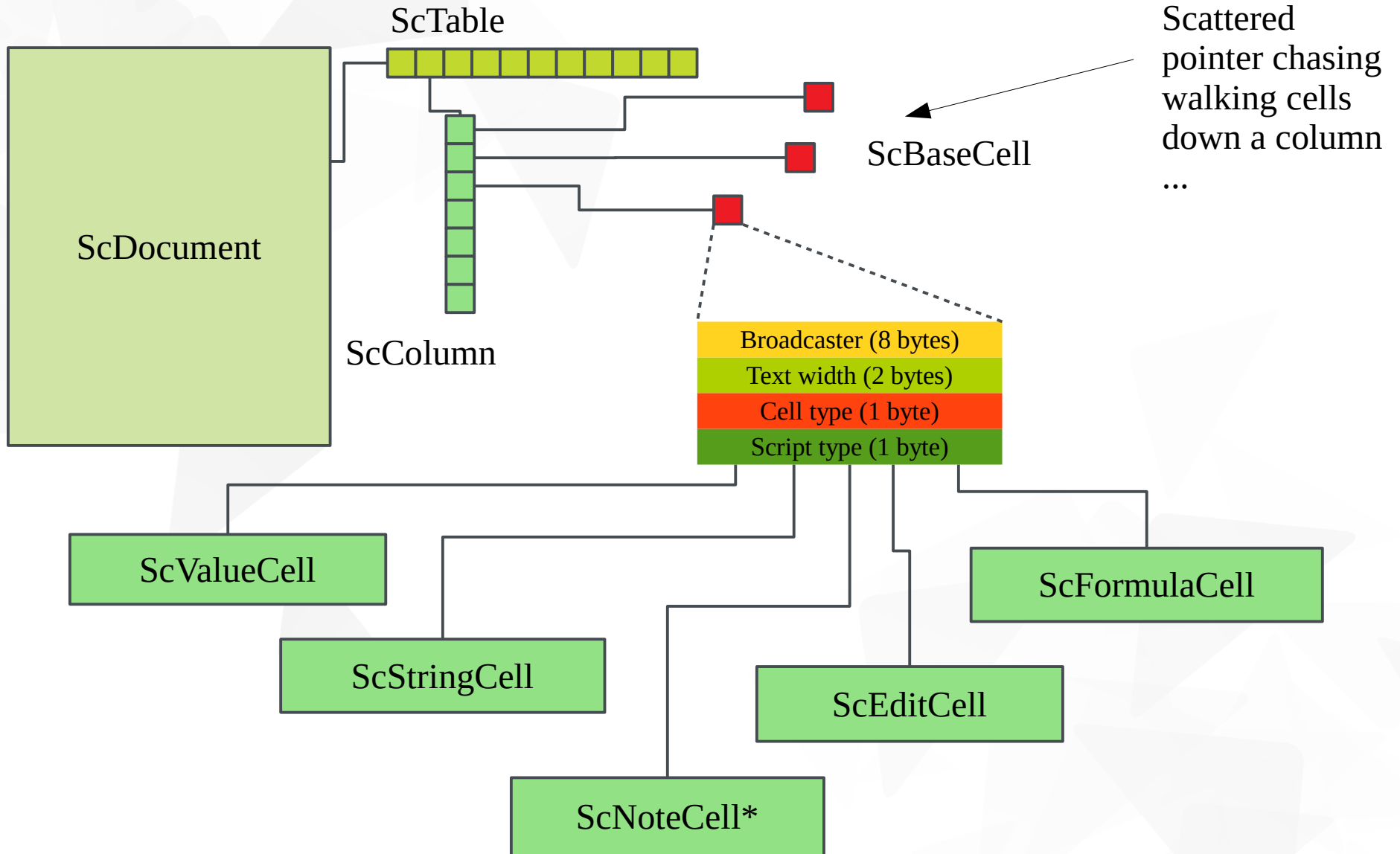
Jagan Lokanatha  
Kismat Singh



*A large OpenCL team,  
Particularly I-Jui (Ray) Sung*

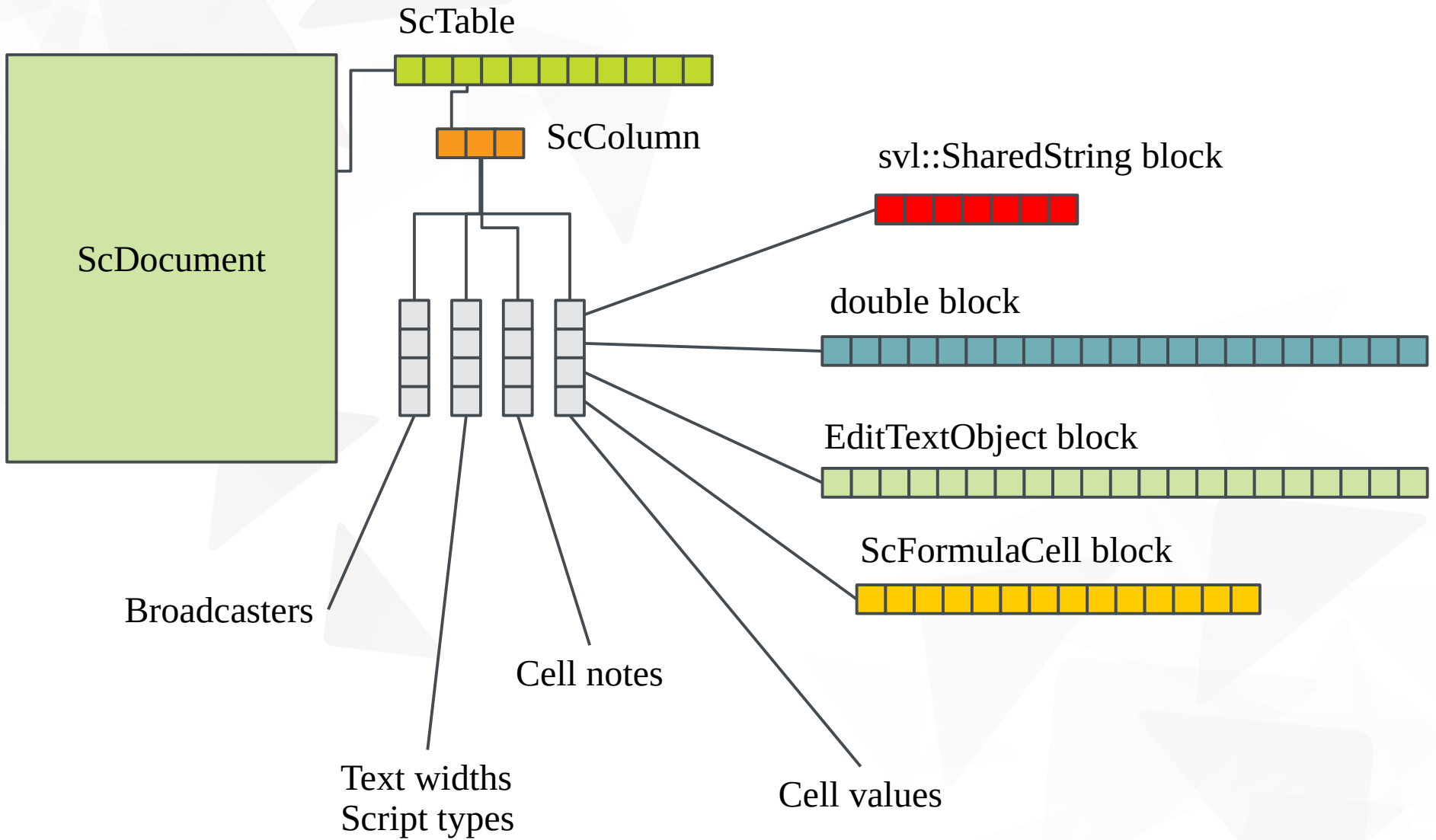


# Before (ScBaseCell)

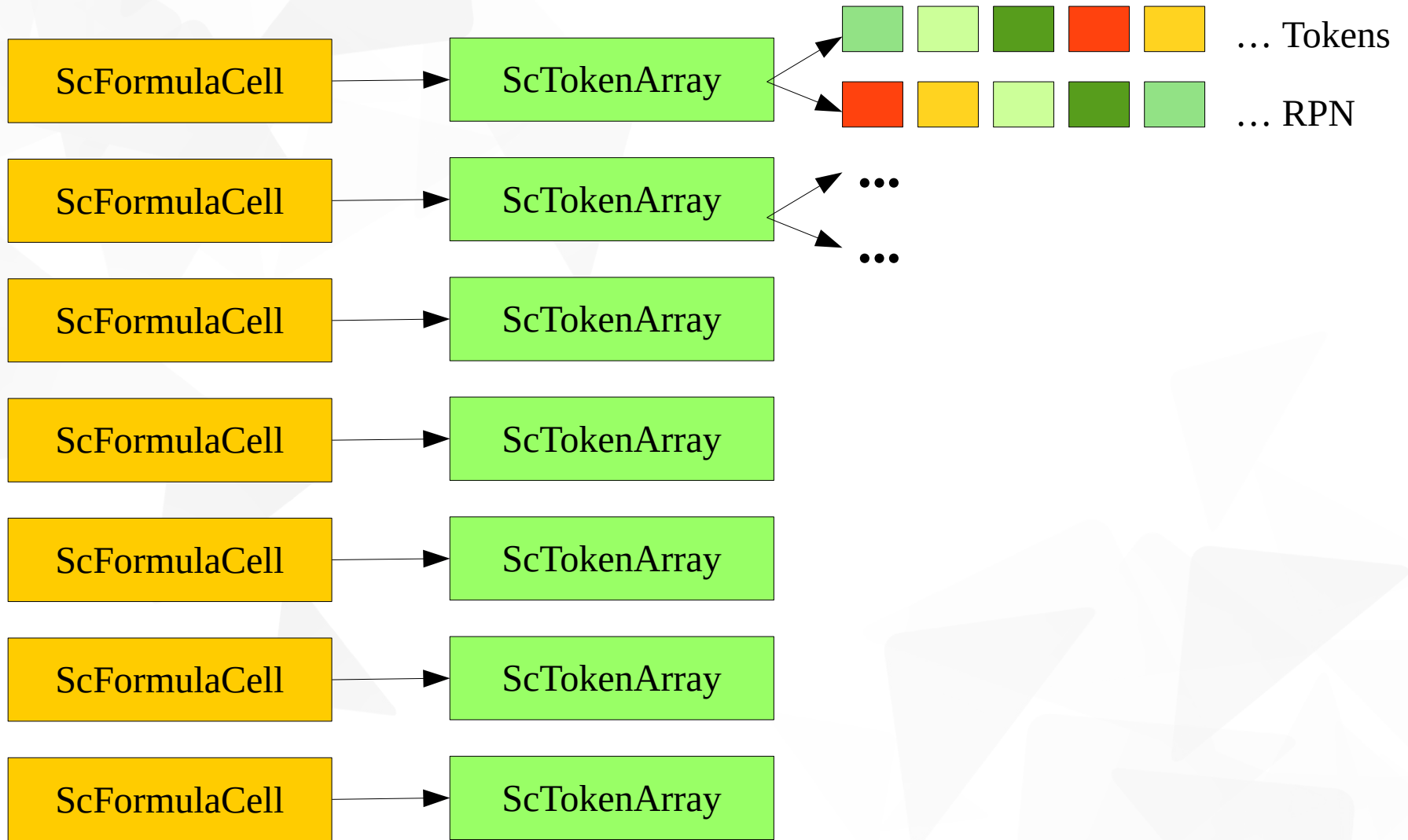




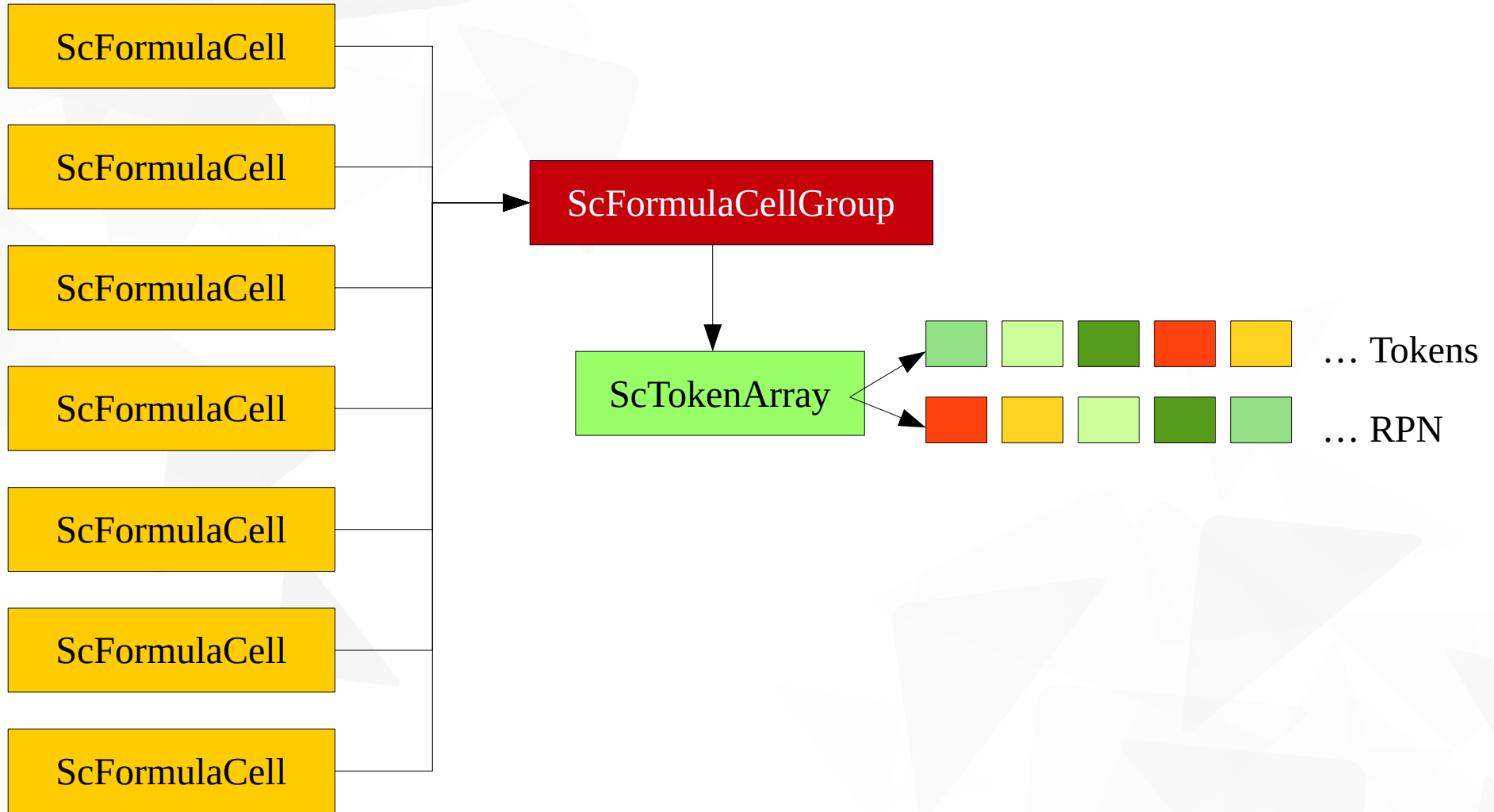
# After (mdds::multi\_type\_vector)



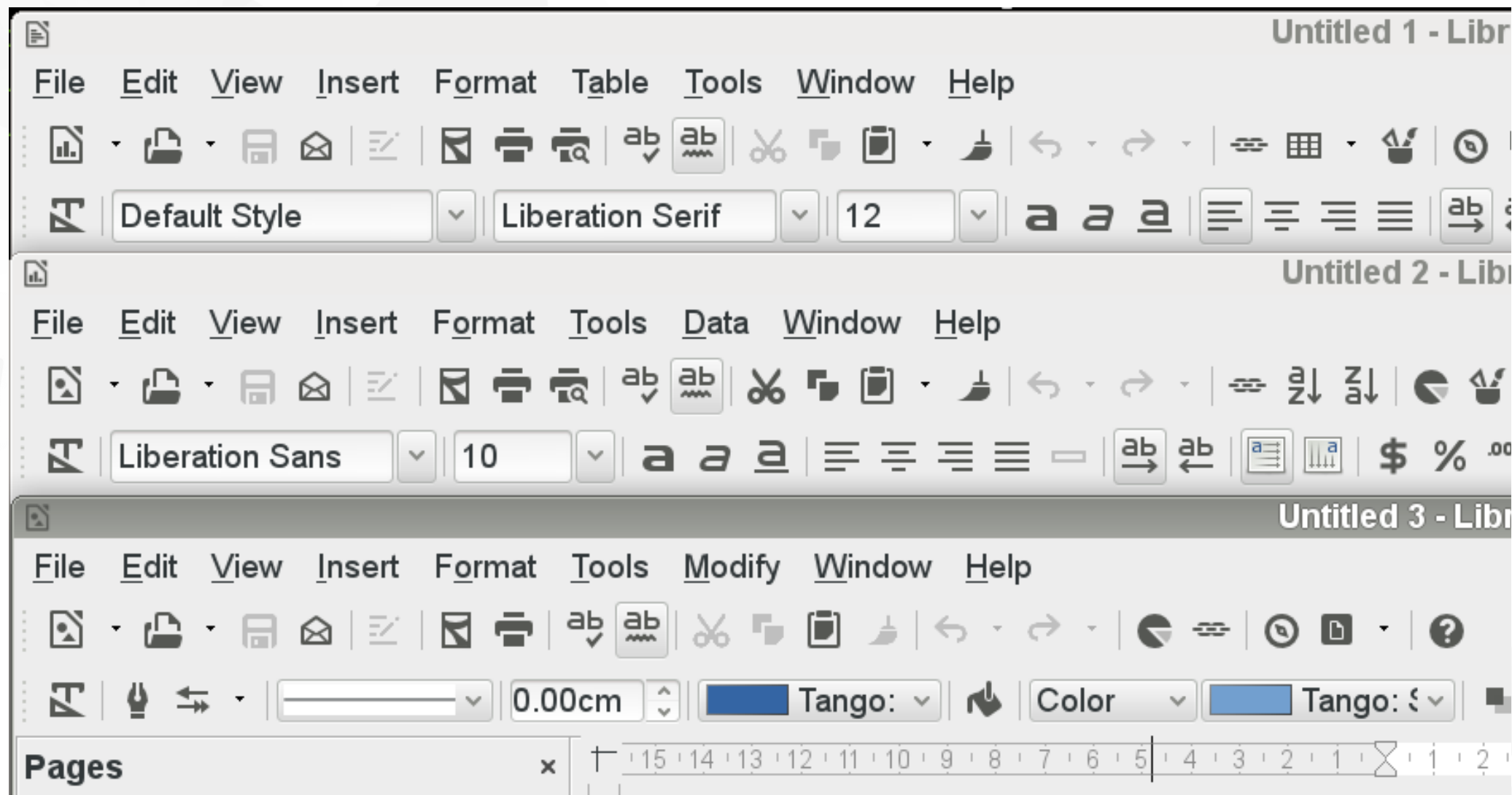
# Before



# After



# New Feature: Sifr Icon Set



Thanks to *Issa Alkurtass (KACST)*, *Norah A. Abanumay (KACST)*

# New Feature: Firebird Database

Bringing love to the 'Base' backend

Thanks to

*Andrzej Hunt*

*Lionel Elie Mamane*

An Experimental feature  
replacing HSQLDB in 4.3 ...

What do you want to do?

Create a new database

Embedded Database:

Open an existing database file

Recently used:

# Misc. New Features

- ▼ OOXML import/export fidelity
  - ▼ round-trip of un-interpreted data (*CloudOn, SyneZip, Igalia*)
  - ▼ Agile encryption (*Tomaz Vajngerl*)
- ▼ BCP47 Language Tags (*Eike Rathke*)
- ▼ Import filter for various e-book formats, mostly Palm-based (*David Tardon*)
  - ▼ FictionBook 2, PalmDoc, PeanutPress (eReader), Plucker, TealDoc, zTXT
- ▼ Import of more legacy Mac document types (*Laurent Alonso*)
  - ▼ Acta Mac Classic Document, Beagle Works / WordPerfect Works Document, Great Works Document, MacDoc Document, More Mac v2-3 Document

# Initial Keynote Filter

preview.key - LibreOfficeDev Impress 4.2 [5eb37896ca344276cc0753ad93b822d7be9b21d6]

File Edit View Insert Format Tools Slide Show Window Help

0.00" Tango: Color

Slides

Normal Outline Notes Handout Slide Sorter


1 **Apple Keynote import**

Since version 4.2, LibreOffice can import Apple Keynote presentations.

This is a preview release: we can import many parts of the content, but details (like formatting :-)) are often lost.

Anyway, the main author of the code believes in the "release early, release often" idea :-)

Samples:

I  LibreOffice

hello

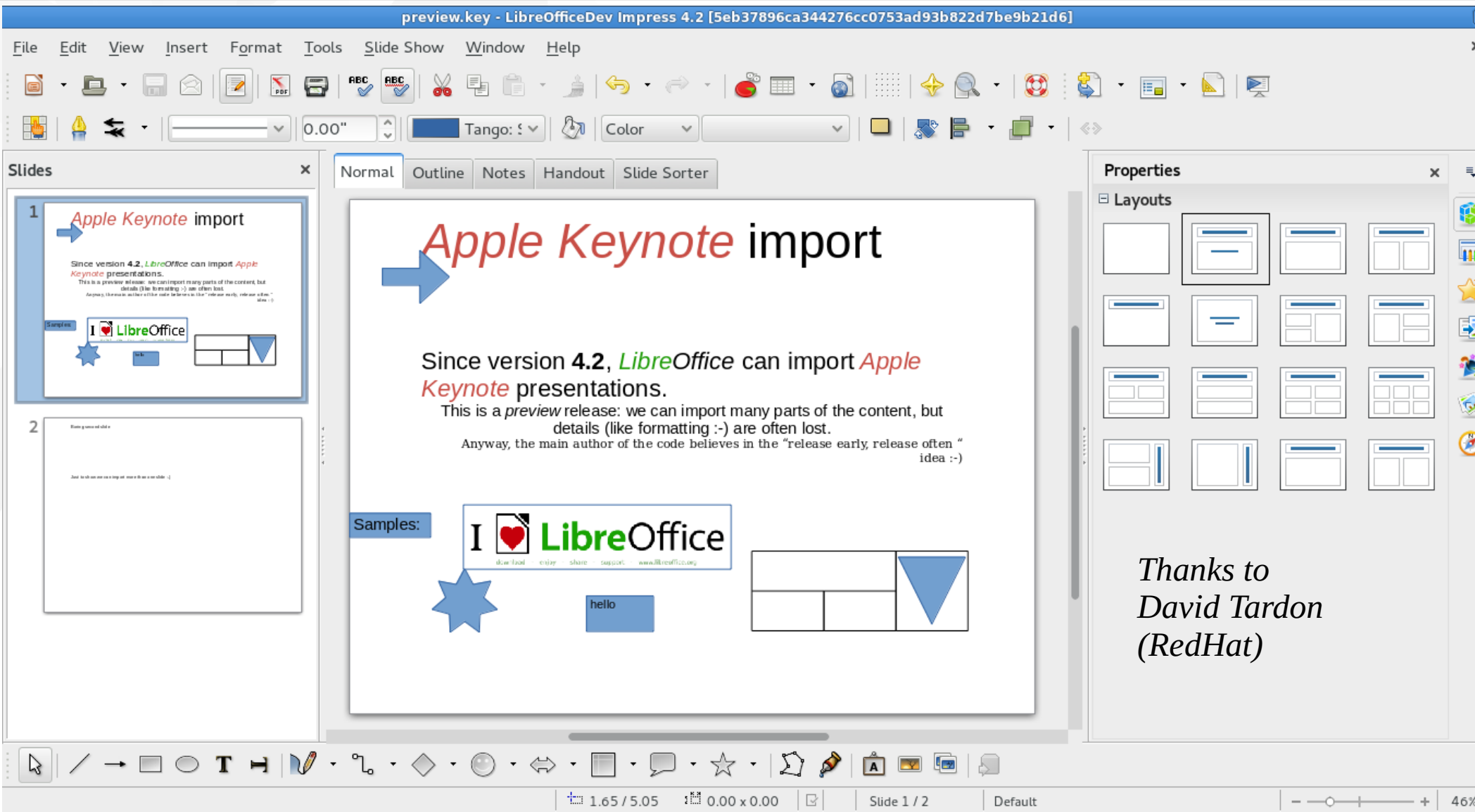
2

Properties

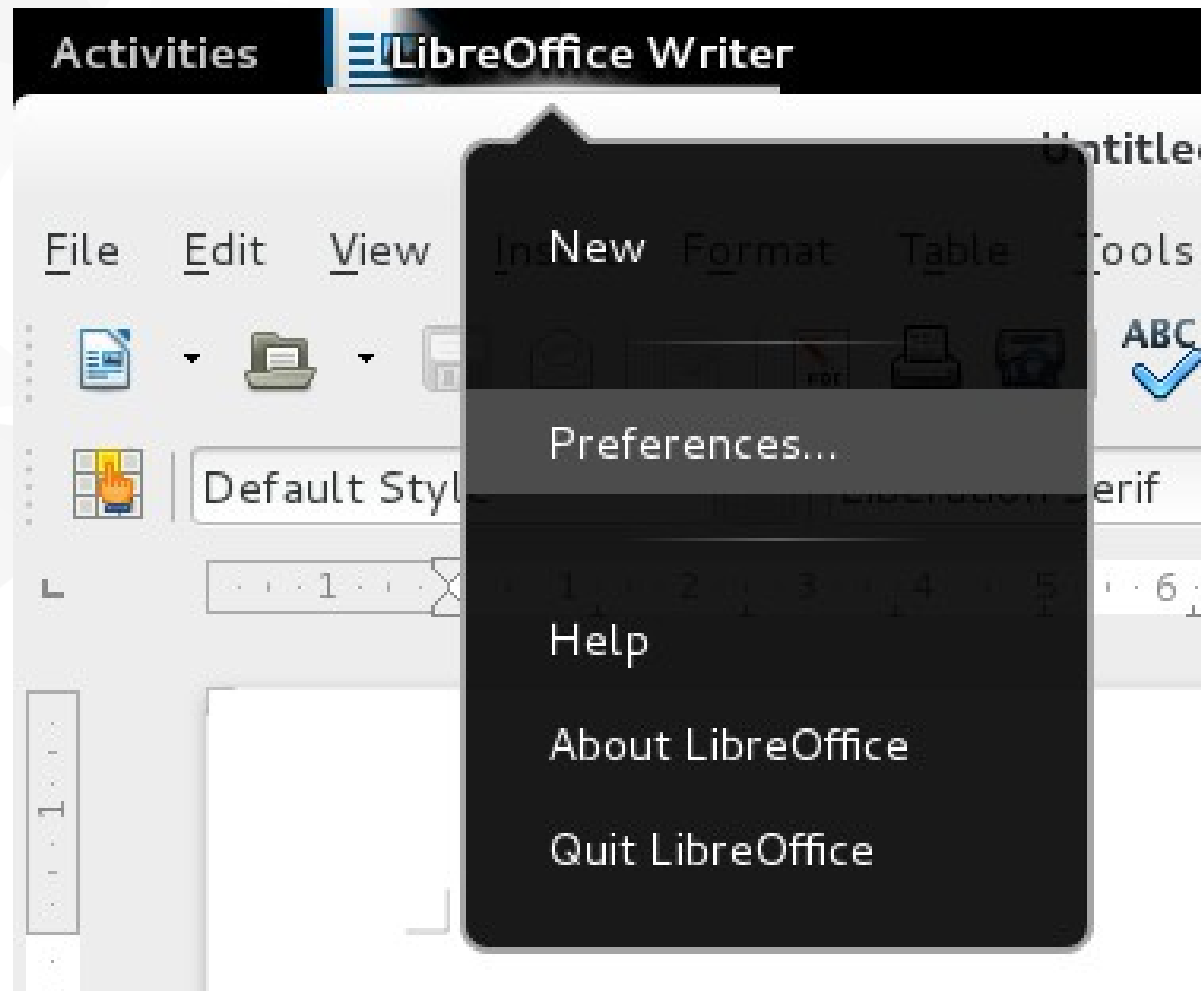
Layouts

Thanks to David Tardon (RedHat)

1.65 / 5.05 0.00 x 0.00 Slide 1 / 2 Default 46%



# GNOME 3.0 Menu





# UI → Layout conversion

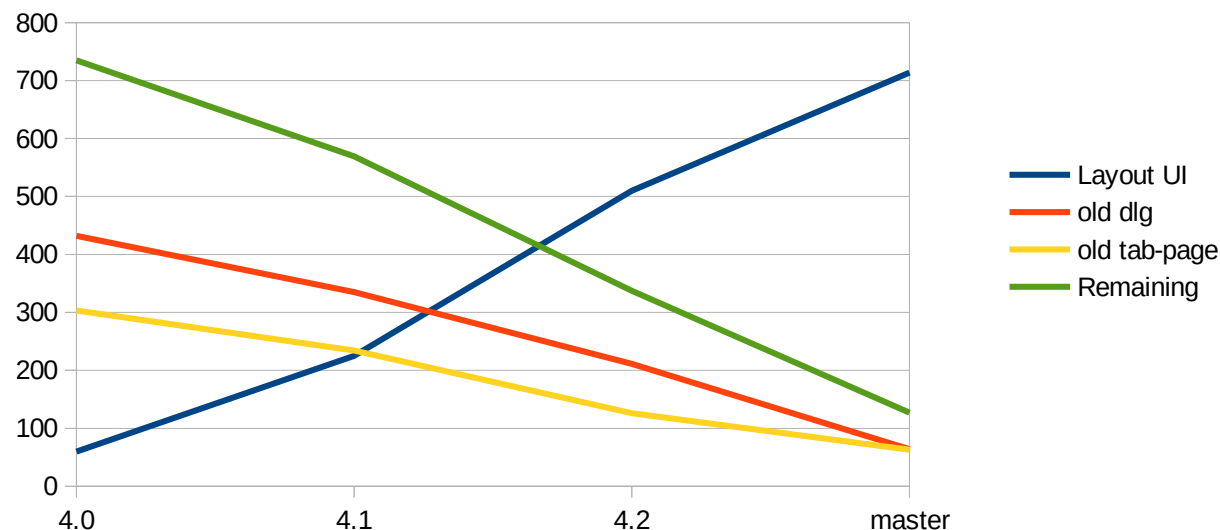
▼ 84% complete 64 dialogs to go in 4.2

▼ Thanks to:

▼ **Caolán McNamara** (Red Hat), Manal Alhassoun (KACST), Olivier Hallot (EDX), Faisal M. Al-Otaibi (KACST), Laurent Balland-Poirier, Efe Gürkan Yalaman, Krisztian Pinter, Jan Holesovsky (Collabora), Andras Timar (Collabora), Cao Cuong Ngo, Gergo Mocsi, Katarina Behrens, Abdulmajeed Ahmed (KACST), and Alia Almusaireae (KACST)

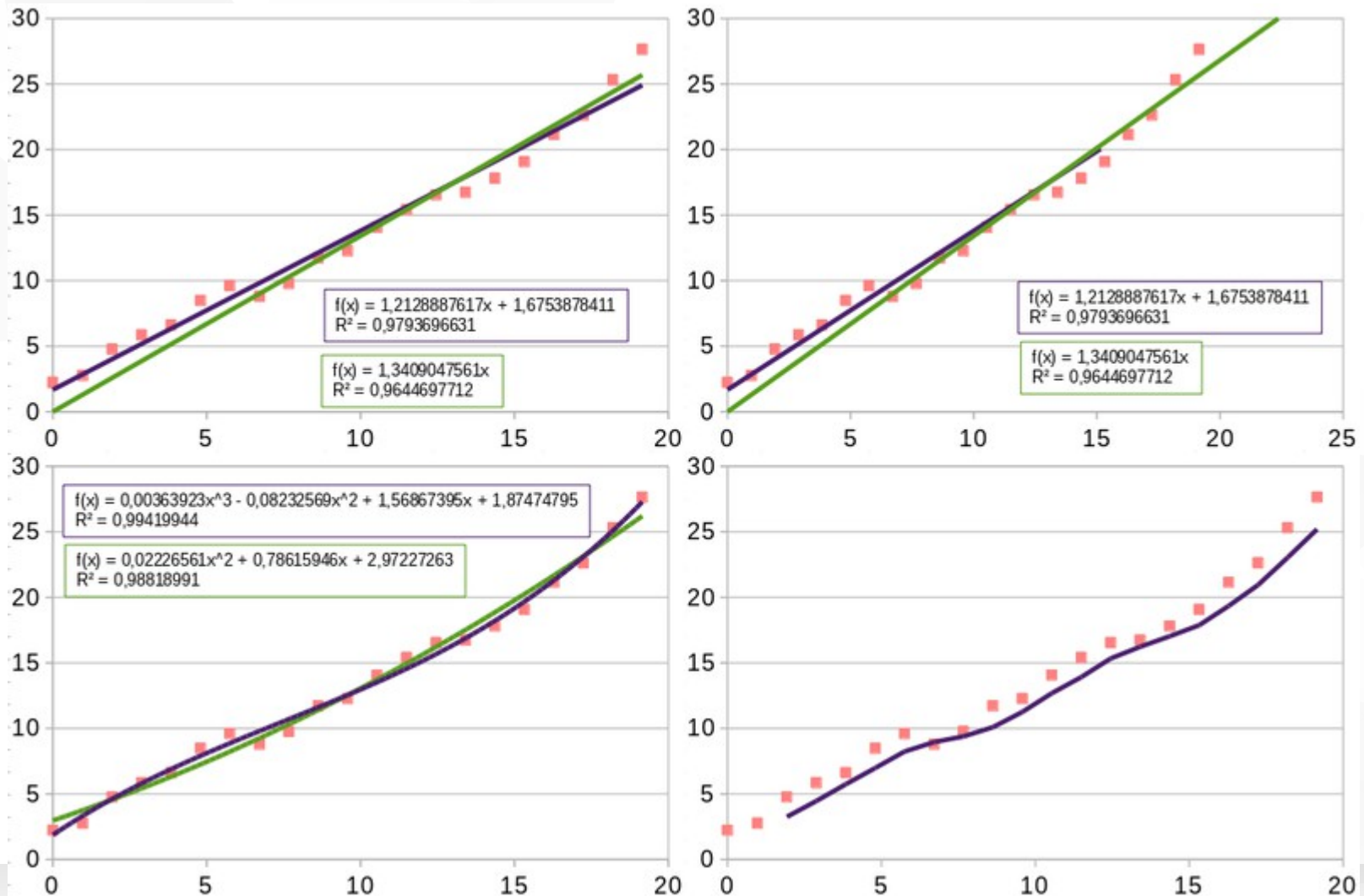
▼ Checkout [Caolan's blog](#) to help out ...

UI Layout Dialog Conversion



# Chart: new Trend lines

Thanks to *Tomaž Vajngerl*

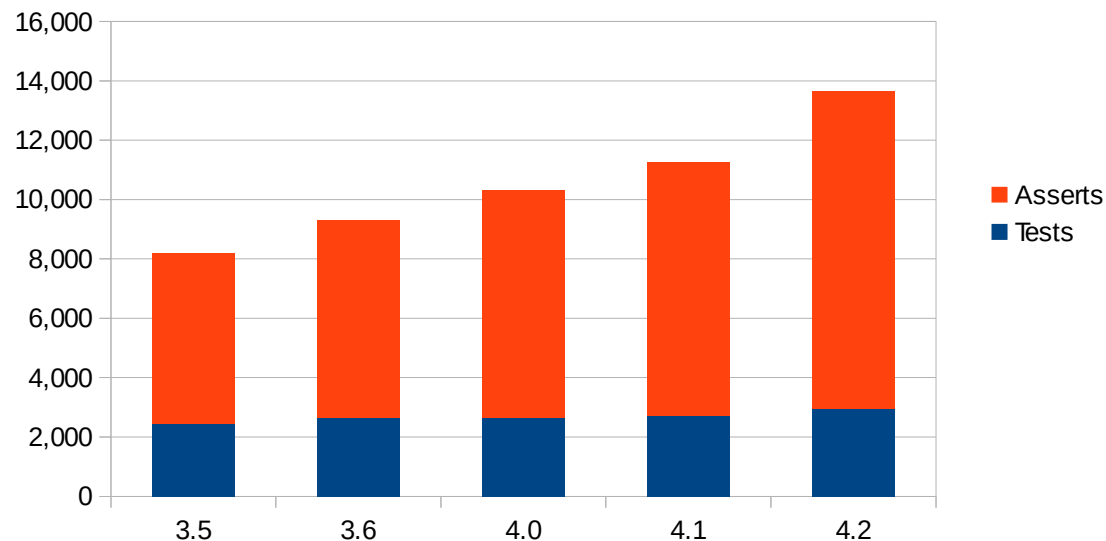


# Unit testing ...

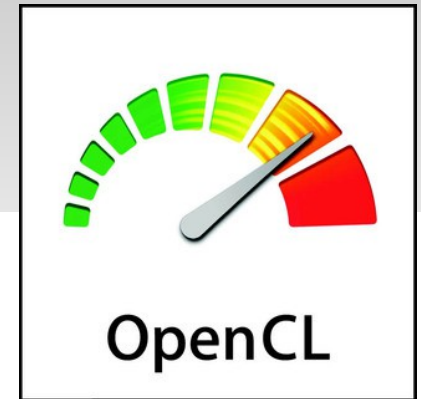
- ▼ 216 new CPPUNIT\_TESTS
- ▼ 2160+ new CPPUNIT\_ASSERTS
- ▼ Lots of format import / test / export / re-import / re-test – round-trip interop.

Growth in unit tests over time

count of various CPPUNIT macros



# Why OpenCL & HSA ...



- ▼ GPU and CPU optimisation ...
  - ▼ Why write custom SSE2/SSE3 etc. assembly detect arch, and select backend cross platforms.
  - ▼ Instead get OpenCL (from APU vendor) to generate the best code ...
- ▼ Heterogenous System Architecture rocks:
  - ▼ An AMD64 like innovation:
  - ▼ shared Virtual Memory Address space & pointers: GPU ↔ CPU.
  - ▼ Avoid wasteful copies, fast dispatch
  - ▼ Great OpenCL 2.0 support.
  - ▼ Use the right Compute Unit for the job.

# Auto-compile Formula → OpenCL

```
#pragma OPENCL EXTENSION cl_khr_fp64: enable
int isNaN(double a) { return isnan(a); }
double legalize(double a, double b) { return isNaN(a)?b:a;}
double tmp0_0_fsum(__global double *tmp0_0_0)
{
```

	A	B	C
1	=SUM(\$B\$1:\$B\$3)	1	3
2		2	2
3		3	1

```
double tmp = 0;
{
int i;
i = 0;
tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
i = 1;
tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
i = 2;
tmp = legalize(((tmp0_0_0[i])+(tmp)), tmp);
} // to scope the int i declaration
return tmp;
}
```

*Formulae compiled idly / on entry in a thread ... to hide latency.*

*Kernel generation thanks to:*



```
double tmp0_nop(__global double *tmp0_0_0)
{
double tmp = 0;
int gid0 = get_global_id(0);
tmp = tmp0_0_fsum(tmp0_0_0);
return tmp;
}
__kernel void DynamicKernel_nop_fsum(__global double *result, __global double *tmp0_0_0)
{
int gid0 = get_global_id(0);
result[gid0] = tmp0_nop(tmp0_0_0);
}
```

```

__kernel void
tmp0_0_0_reduction(__global double* A,
                   __global double *result,
                   int arrayLength, int windowSize)
{
    double tmp, current_result =0;
    int writePos = get_group_id(1);
    int lidX = get_local_id(0);
    __local double shm_buf[256];
    int offset = 0;
    int end = windowSize;
    end = min(end, arrayLength);
    barrier(CLK_LOCAL_MEM_FENCE);
    int loop = arrayLength/512 + 1;
    for (int l=0; l<loop; l++) {
        tmp = 0;
        int loopOffset = l*512;
        if((loopOffset + lidX + offset + 256) < end) {
            tmp = legalize(((A[loopOffset + lidX + offset])+
(tmp)), tmp);
            tmp = legalize(((A[loopOffset + lidX + offset +
256])+ (tmp)), tmp);
        } else if ((loopOffset + lidX + offset) < end)
            tmp = legalize(((A[loopOffset + lidX + offset])+
(tmp)), tmp);
        shm_buf[lidX] = tmp;
        barrier(CLK_LOCAL_MEM_FENCE);
        for (int i = 128; i >0; i/=2) {
            if (lidX < i)
                shm_buf[lidX] = ((shm_buf[lidX])+
(shm_buf[lidX + i]));
            barrier(CLK_LOCAL_MEM_FENCE);
        }
        if (lidX == 0)
            current_result =((current_result)+(shm_buf[0]));
        barrier(CLK_LOCAL_MEM_FENCE);
    }
    if (lidX == 0)
        result[writePos] = current_result;
}

```

**The same formula for a longer sum ...**

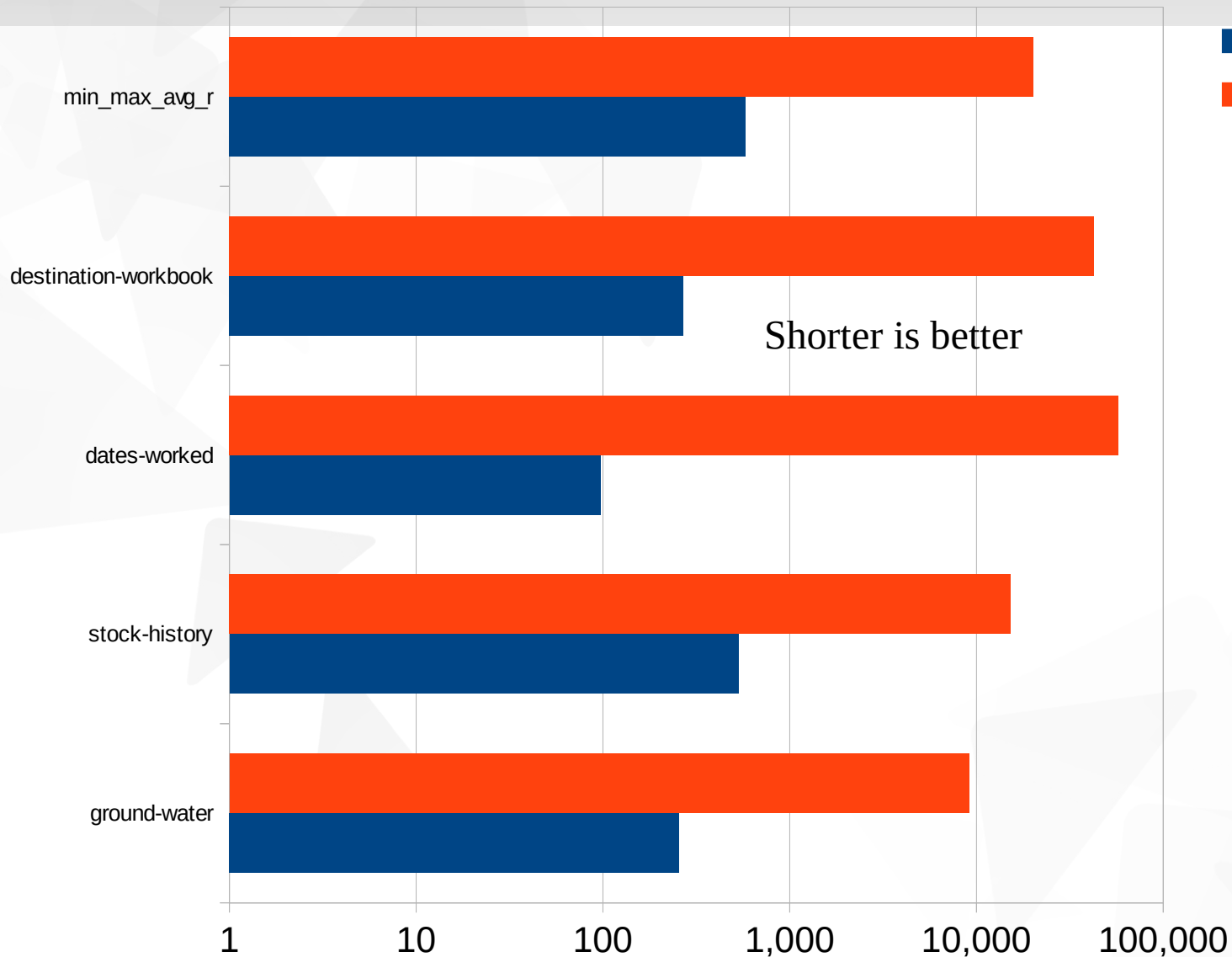
**Compiled from standard formula syntax**

```

double tmp0_0_fsum(__global double
*tmp0_0_0) {
    double tmp = 0;
    int gid0 = get_global_id(0);
    tmp = ((tmp0_0_0[gid0])+(tmp));
    return tmp;
}
double tmp0_nop(__global double
*tmp0_0_0) {
    double tmp = 0;
    int gid0 = get_global_id(0);
    tmp = tmp0_0_fsum(tmp0_0_0);
    return tmp;
}
__kernel void
DynamicKernel_nop_fsum(__global double
*result,
__global double *tmp0_0_0)
{
    int gid0 = get_global_id(0);
    result[gid0] = tmp0_nop(tmp0_0_0);
}

```

# Performance numbers for sample sheets.



■ GPU / OpenCL  
■ Software

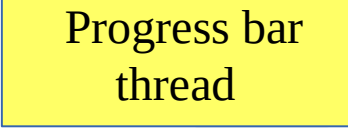
30x → 500x  
faster for these  
samples vs. the  
legacy  
software  
calculation  
on Kaveri.

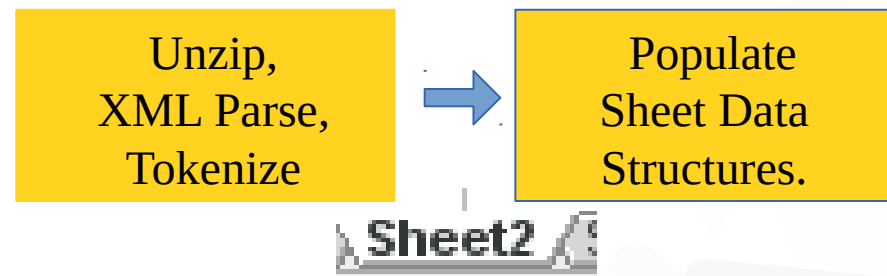
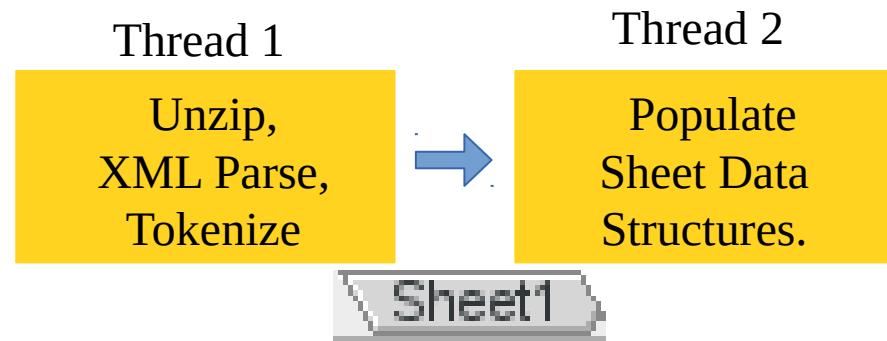
*Yet another log plot ... milliseconds on the X axis ...*

# Parallelised load: (boxes are threads).

- Split XML Parse & Sheet populate

- Parallelised Sheet Loading  
...

- Parallel  compilation

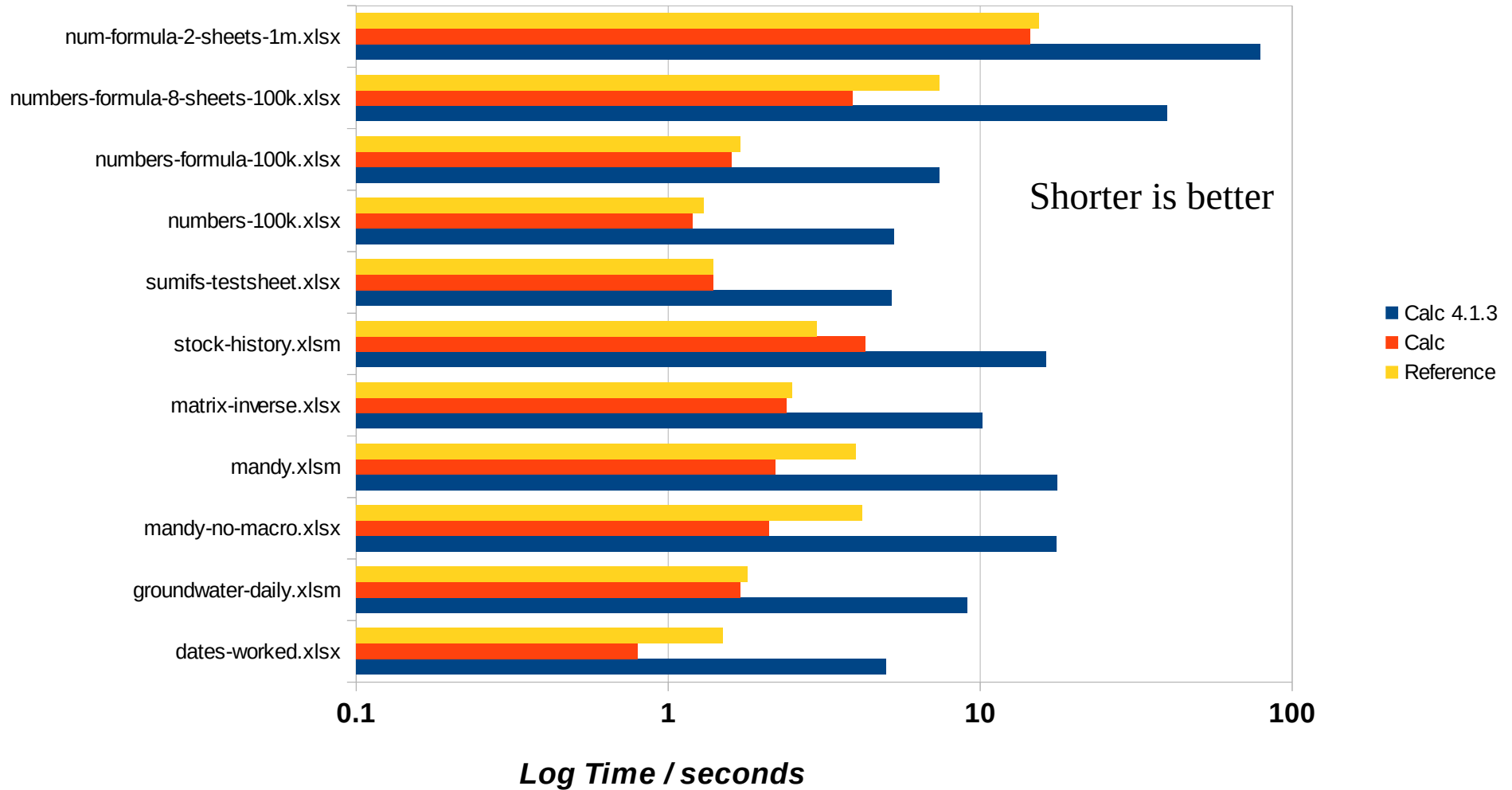


=COVAR(A1:A300,B1:B300)  
→ OpenCL code  
→ Ready to execute kernels

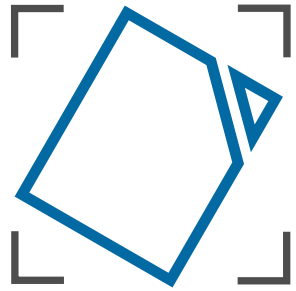


# Does it work ? with Parallel enabled

Wall-clock time to load set of large XLSX spreadsheets: 8 thread Intel machine



Apologies for another log scale: **Average 5X vs. 4.1.3**



Document  
**Liberation**  
Own your content

Fantastic work on a diversity of file filters:  
Wordperfect, MS Publisher,  
MS Works, Keynote,  
Visio, MWAW (stable),  
Abiword, E-book, Freehand  
& more in progress.

David Tardon, Fridrich Štrba, Валёк  
Филиппов & others



LibreOffice 4.3 new stuff ...  
*the deep future (2-3 months out)*

# Completed OUString migration → Long Paragraphs ...

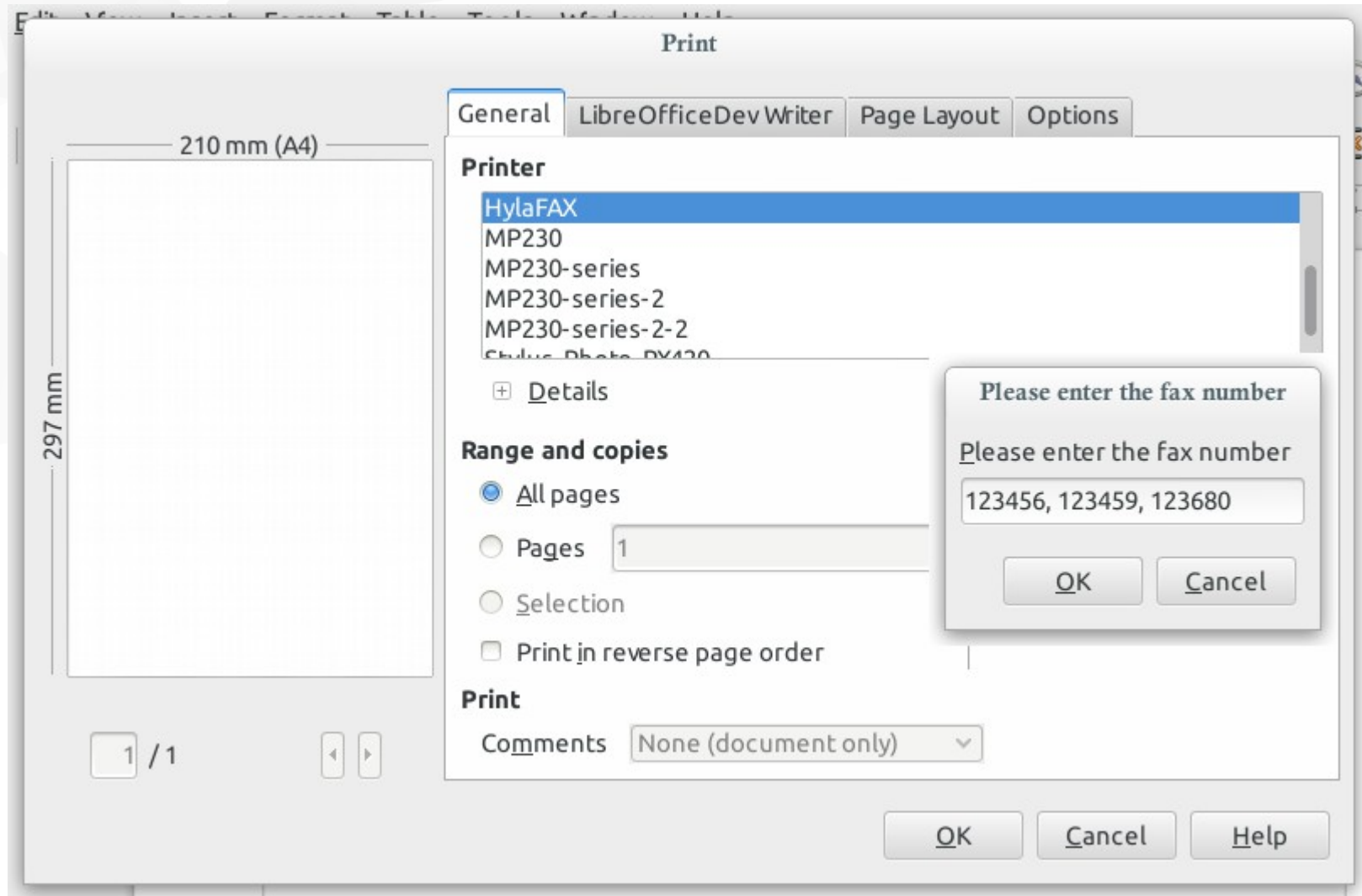
A single writer paragraph with more than 65535 characters.

Properties of Untitled1			
General	Description	Custom Properties	
CMIS Properties	Security	Font	Statistics
Number of Pages:	22		
Number of Tables:	0		
Number of Images:	0		
Number of OLE Objects:	0		
Number of Paragraphs:	1		
Number of Words:	18144		
Number of Characters:	104328		
Number of Characters excluding spaces:	86184		
Number of Lines:	713		

Update

OK Cancel Help Reset

# Builtin CUPS / FAX support (no more psadmin) ...



# Printing Notes ...

These guys on Paper / PDF:

DEARBHÚ UILE-CHOITEANN CEARTA AN DUINE

BROLLACH

De Bhrí gurb é aithint d'inte dúchais agus chearta combhionanna do-shannta an uile dhuine den chine daonna is foras don tsaorise, don cheartas agus don tsíocháin sa domhan,

ge nitive singular of dúchas

Caolán McNamara  
Today, 10:36

De Bhrí gur thionscáin a neamhaird agus an mí-mheas ar chearta an duine gníomhartha barbartha a chuir uafás ar choinsias an chine daonna, agus go bhfuil forógartha gurb é meanmarc is uaisle ag an gcoitiantacht saol a thabhairt i réim a bhéarfás don duine saoirse chainte agus chreidimh agus saoirse ó eagla agus ó amhgar,

De Bhrí go ndearna pobail na Náisiúin Aontaithe sa Chairt dearbhú athuair ar a gcreideamh i gcearta bunúsacha an duine, i ndínt agus i bhfiúntas pearsan an duine agus i gcearta combhionanna fear agus bean, agus gur chinneadar tacú leis an ascnamh sóisialach agus réim maireachtana níos fearr a thabhairt i gcrích faoi shaoirse níos fairsinge,

Noun masculine  
1st declension

Caolán McNamara  
Today, 10:37

De Bhrí gur ghabhadar na Stát-Chomhaltai faoi chuing ghealtanais go ndéanfaid, i gcomhar leis na Náisiúin Aontaithe, urraim uile-choiteann éifeachtach d'áirithiú do chearta agus do shaoirsí bunúsacha an duine.

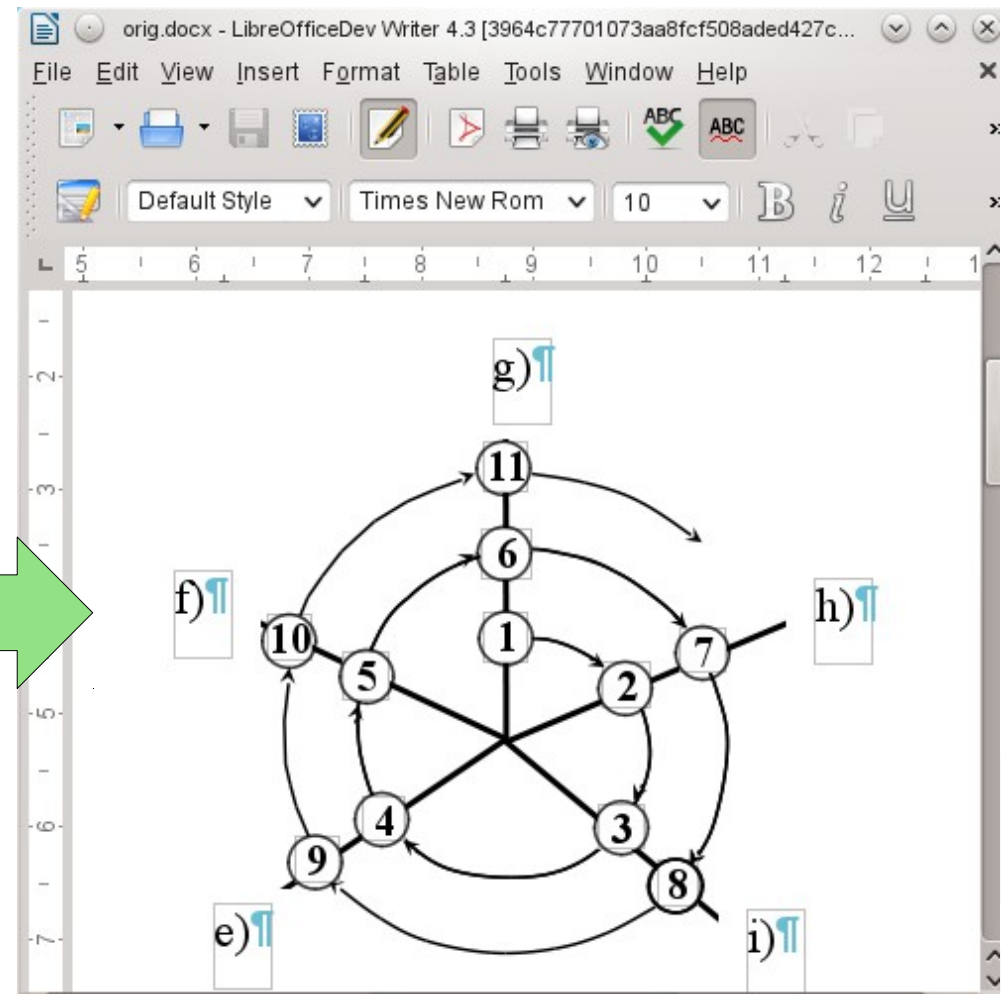
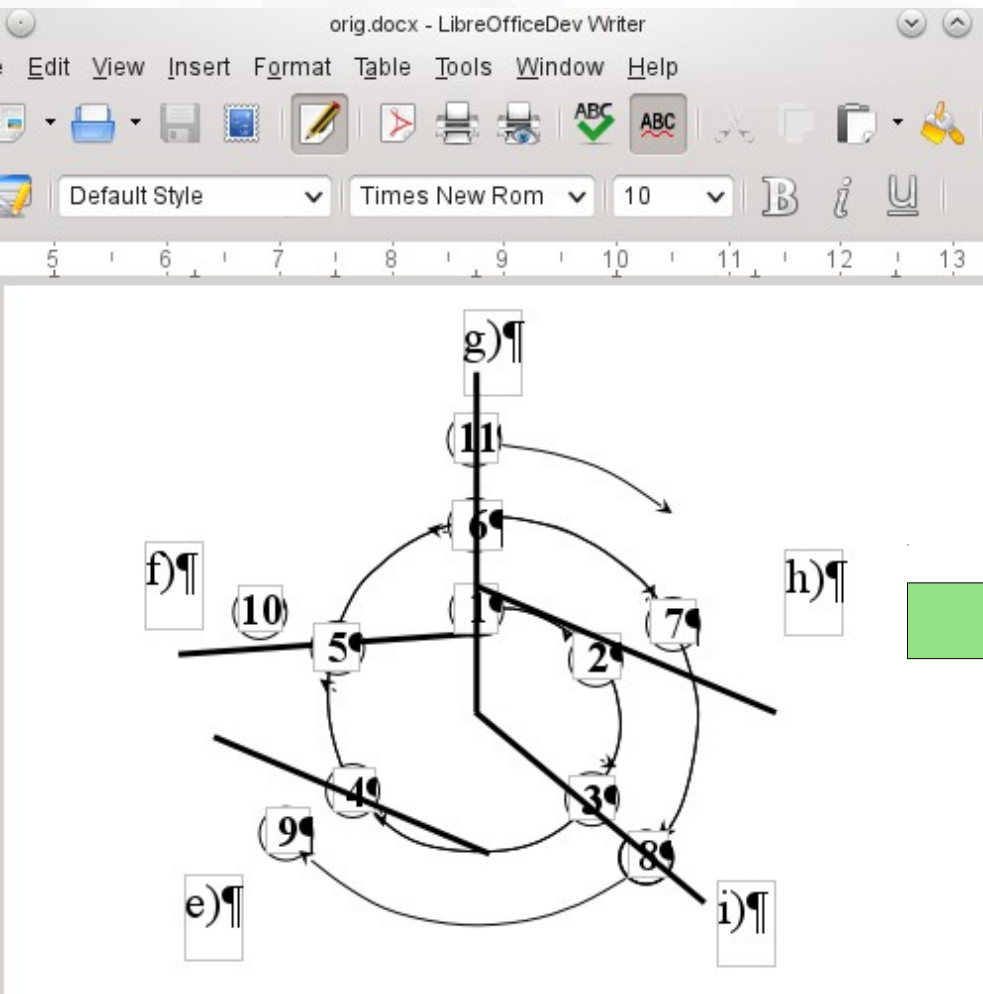
De Bhrí go bhfuil sé fíor-thábhachtach, chun an gealltanais sin a chomhalladh ina iomláine, go mbeifí ar aon-tuiscint maidir leis na cearta agus na saoirsí sin,

Anois ar an abhar sin forógrainn an Tionól Ginearálta an Dearbú Uile-choiteann seo ar Chearta an Duine mar chomhchaighdeán le tabhairt i réim ag gach pobal agus gach náisiún ionas go ndéanfaidh gach uile dhuine agus gach uile organ den chomhdhaonnacht, agus iad de shíor ag tabhairt an Dearbhuithe seo dá n'aire agus dá n-úidh, dícheall, tríd an teagasc agus an t-oideachas, chun ur aim do na cearta agus do na saoirsí sin a chothú agus chun a áirithiú tríd bearta ascnaimh, náisiúnta agus eadarnáisiúnta, go mbeidh aithint agus feidm éifeachtach uile-choiteann acu, ní hamháin i measc pobal na Stát-Chomhaltai féin, ach fós i measc pobal na gcriócha atá faoina ndlíse sin.

And easier to format; thanks to  
Caolan McNamara

The screenshot shows a comment interface with two comments. The first comment is titled "A comment" and is by Caolán McNamara, posted yesterday at 16:49. The second comment is titled "Another one" and is also by Caolán McNamara, posted yesterday at 16:49. A context menu is open over the second comment, showing options: "Delete Comment", "Delete All Comments by Caolán McNamara", "Delete All Comments", and "Format All Comments". The "Format All Comments" option is highlighted in blue.

# Much improved Shape / Text Frame / OOXXML interop.



## Other bits and pieces ...

- ▼ HiDPI Support (thanks to Keith Curtis)
- ▼ Native toolbar rendering on Mac (Joren De Cuyper)
- ▼ Initial support for OOXML Strict (Markus Mohrhard, Miklos Vajna)
- ▼ Much improved PDF Import (Vort)
- ▼ Improved Calc selection reporting (Manmeet Singh)
- ▼ Improved Calc cell reference highlighting (Rachit Gupta)
- ▼ Improved Document Navigation (Samuel Mehrbrodt)
- ▼ Light Blue for non-printing Characters (Tomaž Vajngerl)

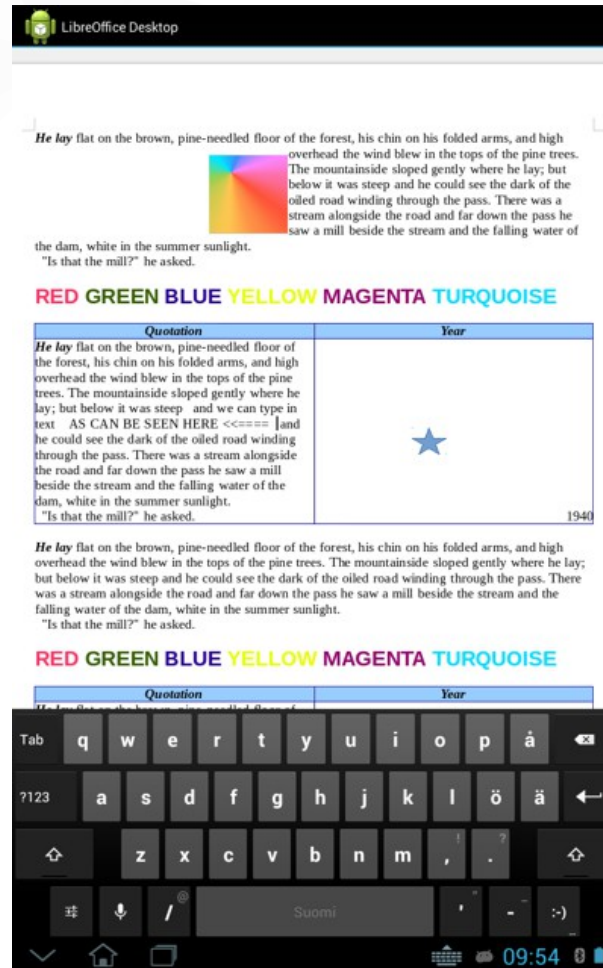
→ Lorem · ipsum · dolor · sit · amet, · consectetur  
adipiscing · elit. · Pellentesque · massa · metus, ←  
varius · eget · feugiat · eget, · tincidunt · vel · justo · Morbi  
vitae · metus · et · nunc · semper · dapibus. ¶

- ▼ And still not feature complete yet ...



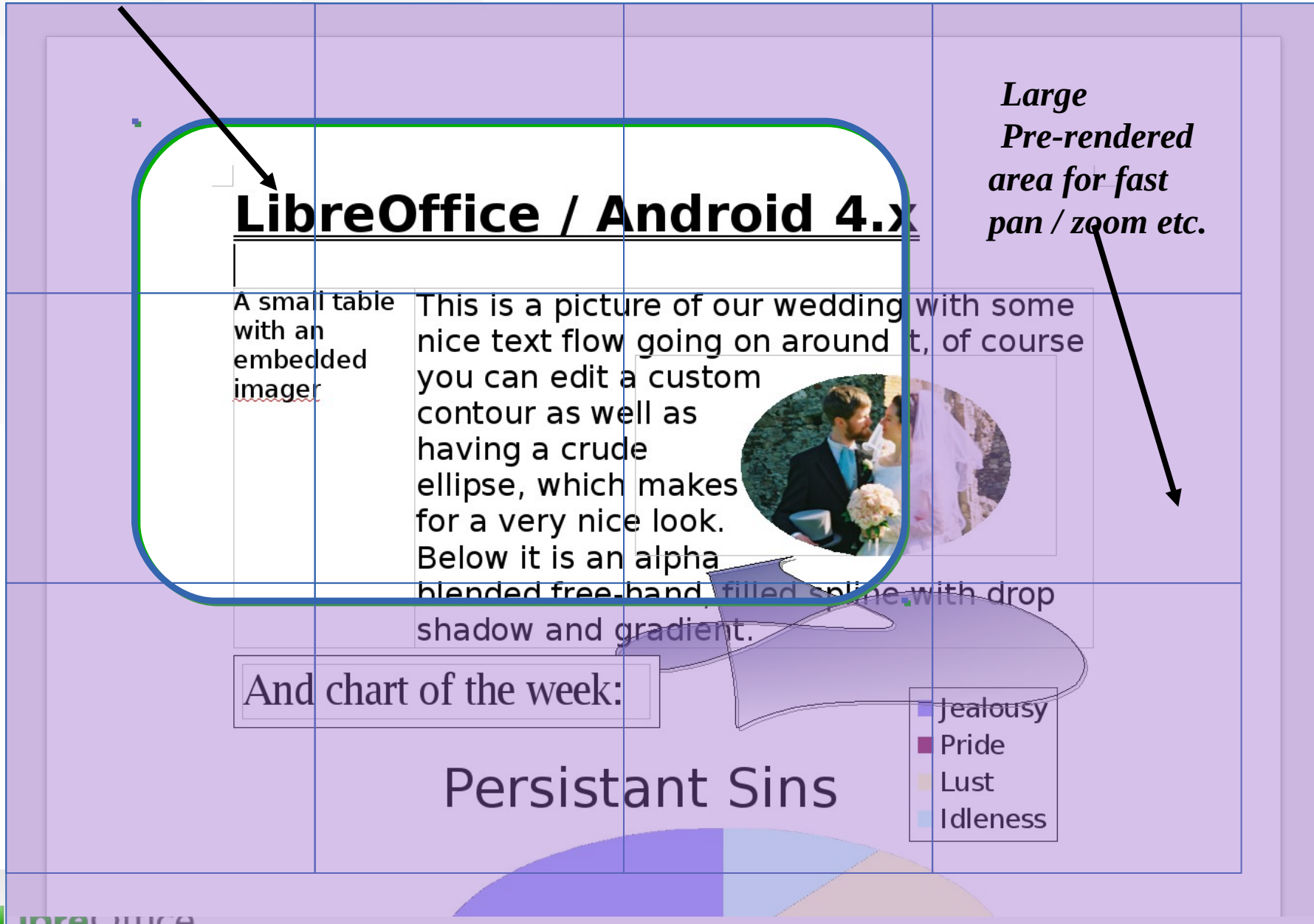
**Future / research pipeline ...**  
(or some things we're slowly working on)

# Android & iOS prototypes



# Fast Tiled Rendering in textures

Tablet display



*Large  
Pre-rendered  
area for fast  
pan / zoom etc.*

**LibreOffice / Android 4.x**

A small table with an embedded imager

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

- Jealousy
- Pride
- Lust
- Idleness

# Collabora Productivity

- Subsidiary of Collabora  
Leading Open Source Consultancy  
12 Certified LibreOffice Developers

Collabora fixes your problems !

Consultancy: new features, custom fixes. Long term support & maintenance.

- Team spun out of SUSE  
SUSE needed to focus ...  
LibreOffices' growth areas:  
Windows, Android, iOS, not a great match.  
Best Possible outcome given the circumstances

<http://libreoffice-from-collabora.com/>

- Personally impressed by SUSE's commitment to the community  
Cudos to: Ralf, Nils, Gerald, Jan Weber etc.  
Be encouraged ...

# LibreOffice Conclusions

- **LibreOffice is growing & executing**
  - We've changed radically since we started
  - We continue to be open to new things, ways to improve etc.
  - Code & feature set significantly better
- **LibreOffice is diverse & easy to deploy**
  - Lots of corporate and individual support
    - Encouraging progress
- **Thanks for all of your help and support !**
  - **we rely on you**, to prove the power of Freedom with us.
  - to get people **excited** about Free Software they use ...
- **Please do get involved** and help us ...





*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*