

LCA 2021

Collabora Online & Mobile

By Michael Meeks

General Manager, Collabora Productivity

@mmeeks @CollaboraOffice



“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



Overview

Collabora Online – what is it ?

Wrestling a legacy code base

The web: compound suffering

Mobile: easy ?

Linux secure containment

Scaling & Performance

Business & FOSS Engineering

Tasters from the last year

How to get involved

Collabora Online

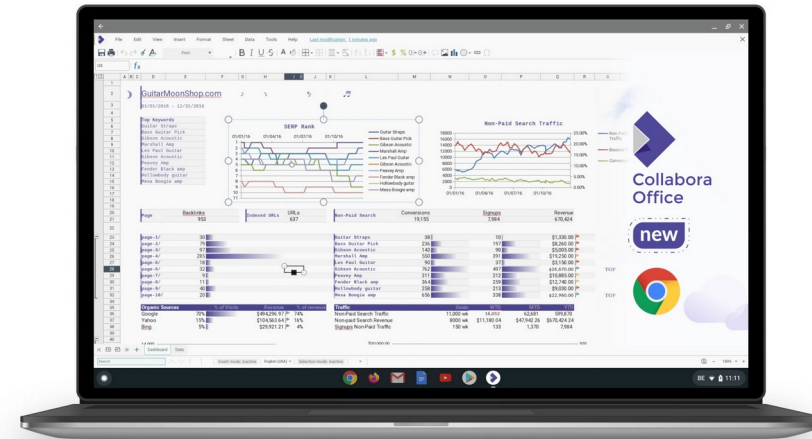
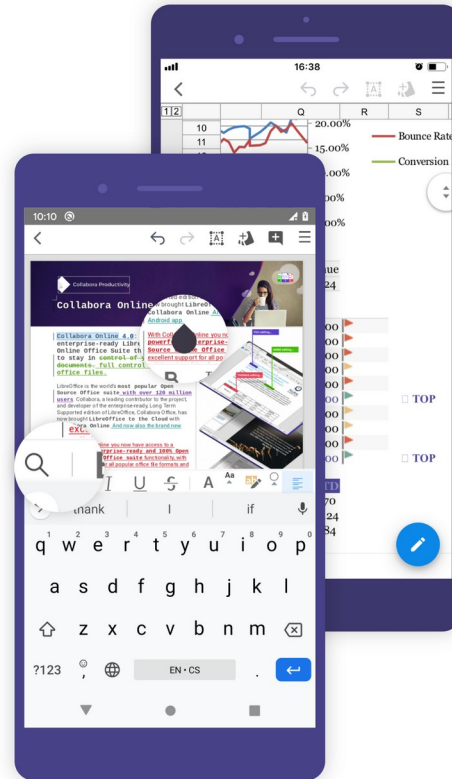
What's that ?



Collabora Online

Built with awesome LibreOffice Technology

Rich, FOSS, secure,
interoperable, collaborative
documents, on-premise ...



Let me show you some pixels:

Collabora Online 6.4

Collabora Online 6.4: the enterprise-ready LibreOffice-based Online Office Suite that allows you to stay in ~~control of your own documents,~~ full control of your office files.


LibreOffice is the world's most popular Open Source Office suite with over 200 million users. Collabora, a leading contributor to the project, and developer of the enterprise-ready, Long Term Supported edition of LibreOffice, Collabora Office, has now brought LibreOffice to the Cloud with Collabora Online.

With Collabora Online you now have access to a powerful, enterprise-ready and 100% Open Source Online Office suite functionality, with excellent



jane
Thu, Apr 27, 2017

Can we add the version number here too?

 Marc Rodrigues
Mon, Aug 10, 2020

Of course, Jane.

Please also note that we changed our version numbering. We went from 4.2 to 6.4 to be in line with Collabora Office on the desktop.

^ **Style**

Default Style

^ Character

Montserrat

B $I \cup \cdot \frac{c}{A}$

A →  → A AV → x^2 x_2

^ Paragraph

Spacing:

Indent:

I 0.00

0.00"

0.00%

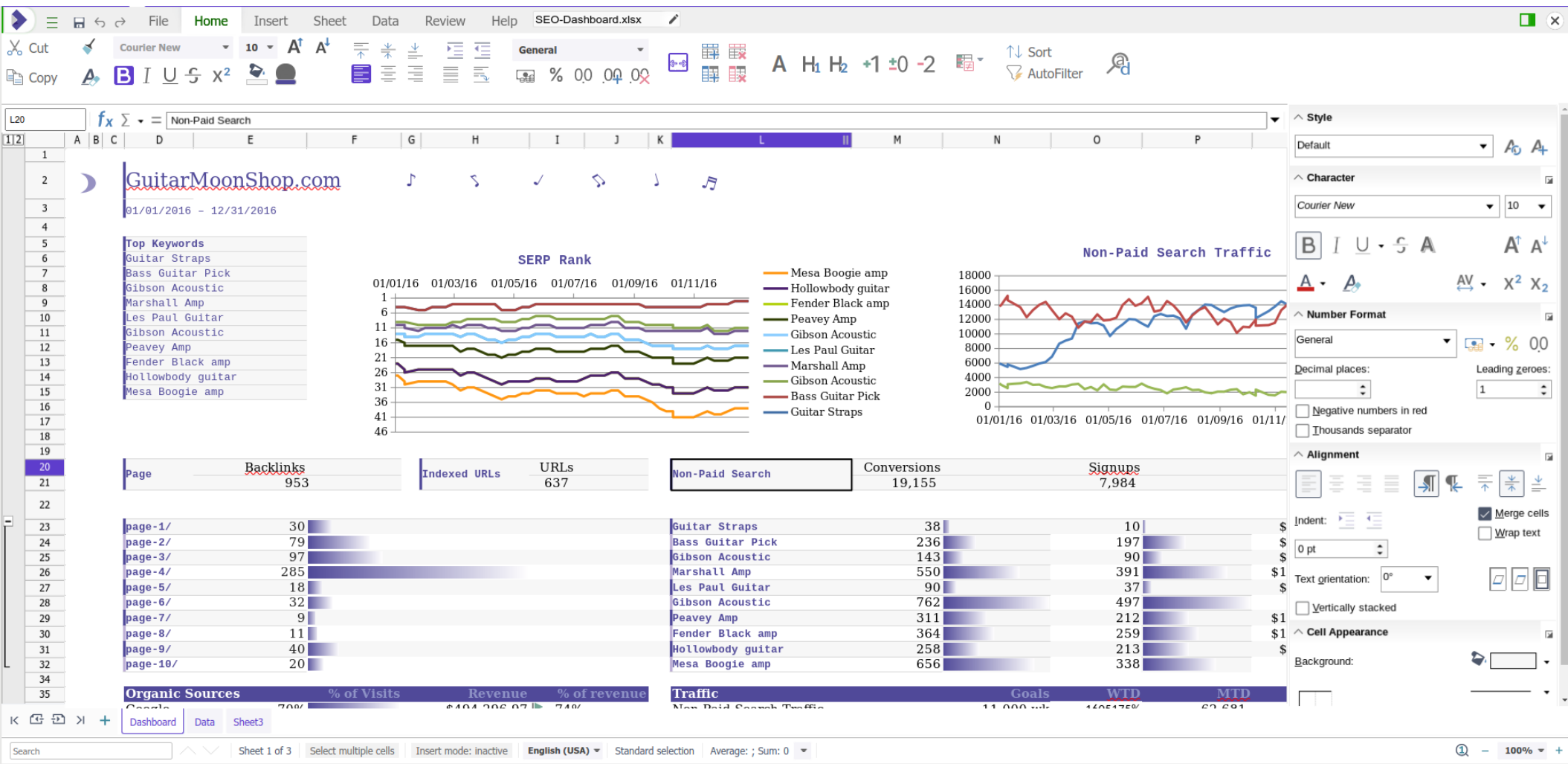
0.00"

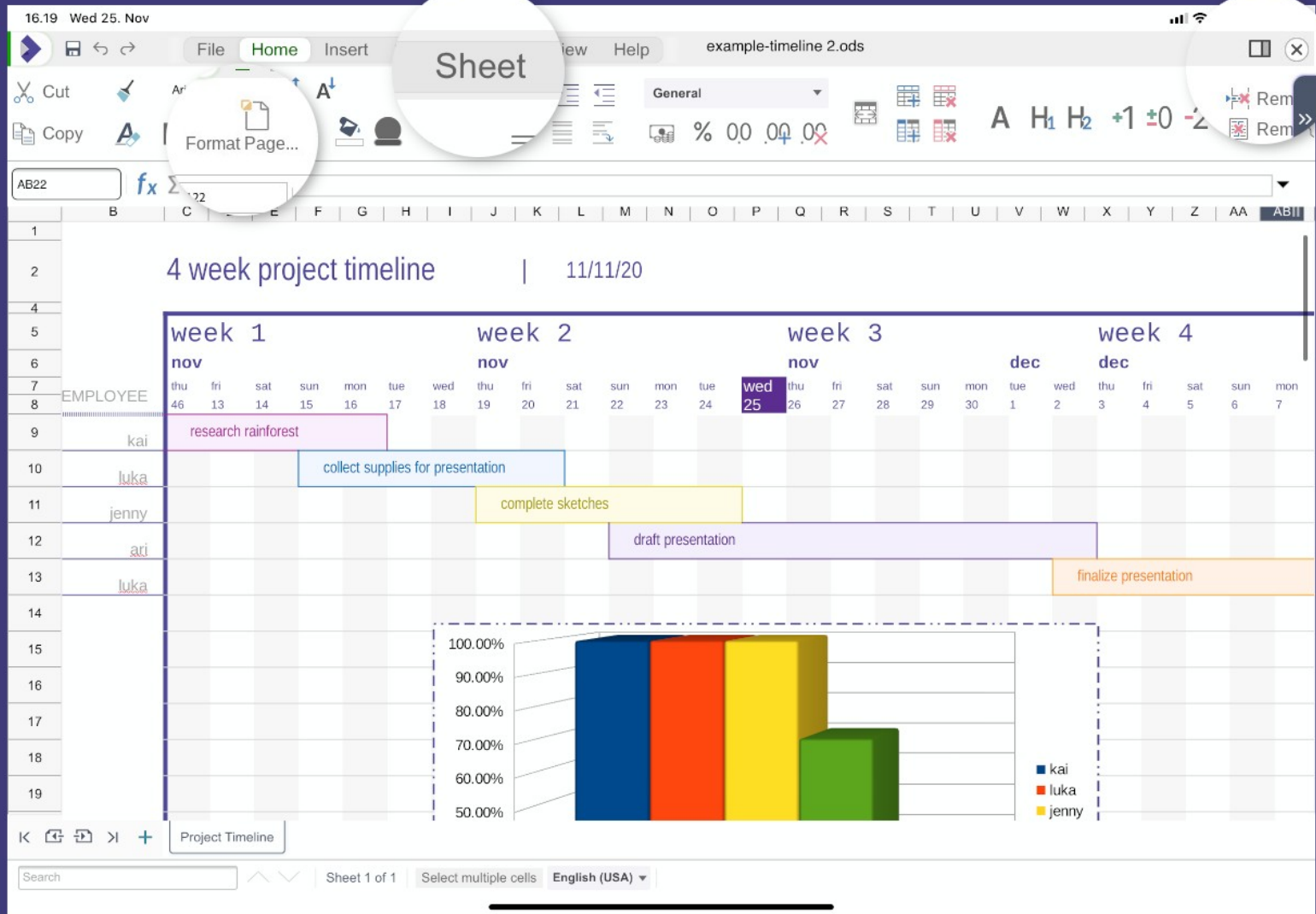


0.00"

Interoperability & Collaboration

collabora online.com





Collabora Productivity
Collabora Online v 4.0

Collabora Online: the enterprise-ready LibreOffice-based Online Office Suite that allows you to stay in control of your own documents: full control of your office files.

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Character

Paragraph

Default Style

Font Name
Karla

Font Size
12

Character

Paragraph

Background Color

Spacing:

Highlight Color

☐ No color

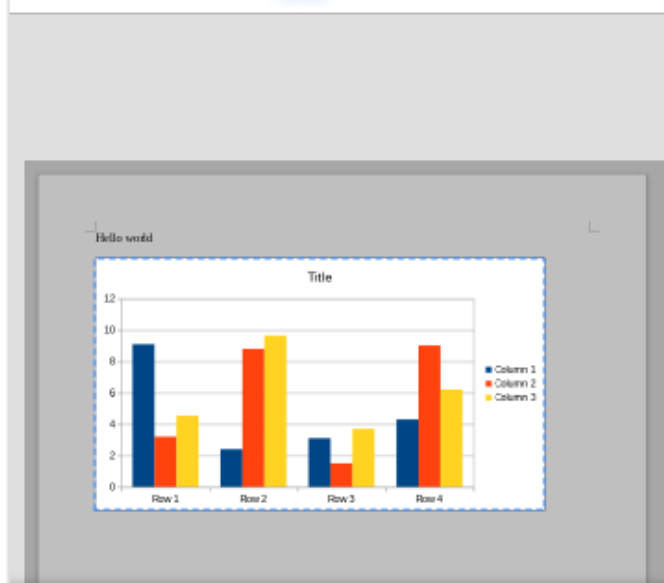


Chart Type

Chart Type:

Column

3D Look ☐

Shape editing

Collaborate

Reduce Latency & Other

High fidelity, accurate rendering

Great interoperability Support

Easy to Deploy

Slide Layouts

Slide

Layouts

Shape editing

Collaborate

Reduce Latency & Other

High fidelity, accurate rendering

Great interoperability Support

Easy to Deploy

Slide Layouts

Slide

Layouts

Format:

Screen 4:3

Orientation:

Landscape

Background:



Download as



File



PDF Document (.pdf)

Download as



ODF text document (.odt)

Edit



Word 2003 Document (.doc)

Track Changes



Word Document (.docx)

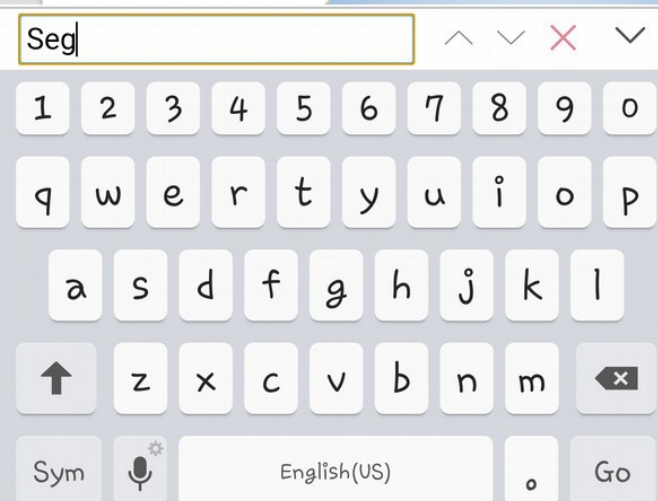
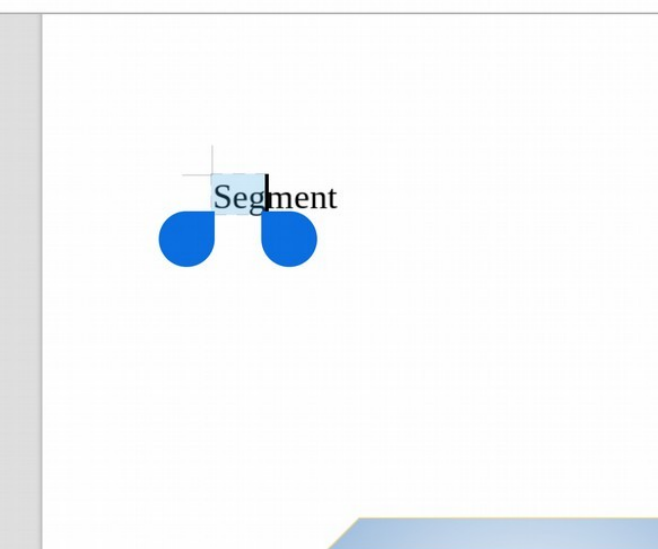
View



Rich Text (.rtf)



About





What is Collabora Online ?

Built on top of LibreOffice Technology:

→ **Excellent interop** with Microsoft

→ cf. Office 365 / Google Docs ...

On-premise Integration with your EFSS:

ownCloud, Nextcloud, Seafile, EGroupware
or LMS: Moodle, or chat: Mattermost

Freedom applied → FLOSS giving Digital Sovereignty

Pragmatism: *“The best line of code, is the one we didn’t have to write” x 10⁷ lines*

Architecture – a bet on CPU threads & network ... getting cheaper.

Over 50m

pulls from

CODE Collabora Online

Development Edition

docker image



Open Document Freedom – sharing the goodness ...

Can share your ODF (and OOXML, DOC) formats with everyone

- Without caring about file-format

Web great for Deployment

- Getting ODF everywhere without a PC / Mobile install.



An(other) end to: “I couldn’t open your document”

→ follow this link in your inbox for something beautiful – cf. Hybrid PDF, OOXML export etc.

Wrestling a legacy code-base

how did we do that thing ?



LibreOfficeKit – wrap and re-use the core

A very simple C & C++ API for LibreOffice

Exposes the core value of LibreOffice:

- File format filters
- Tiled rendering (converting documents to pixels)
- Exposes editing, selections etc.

A very simple ~header-only API – no linking

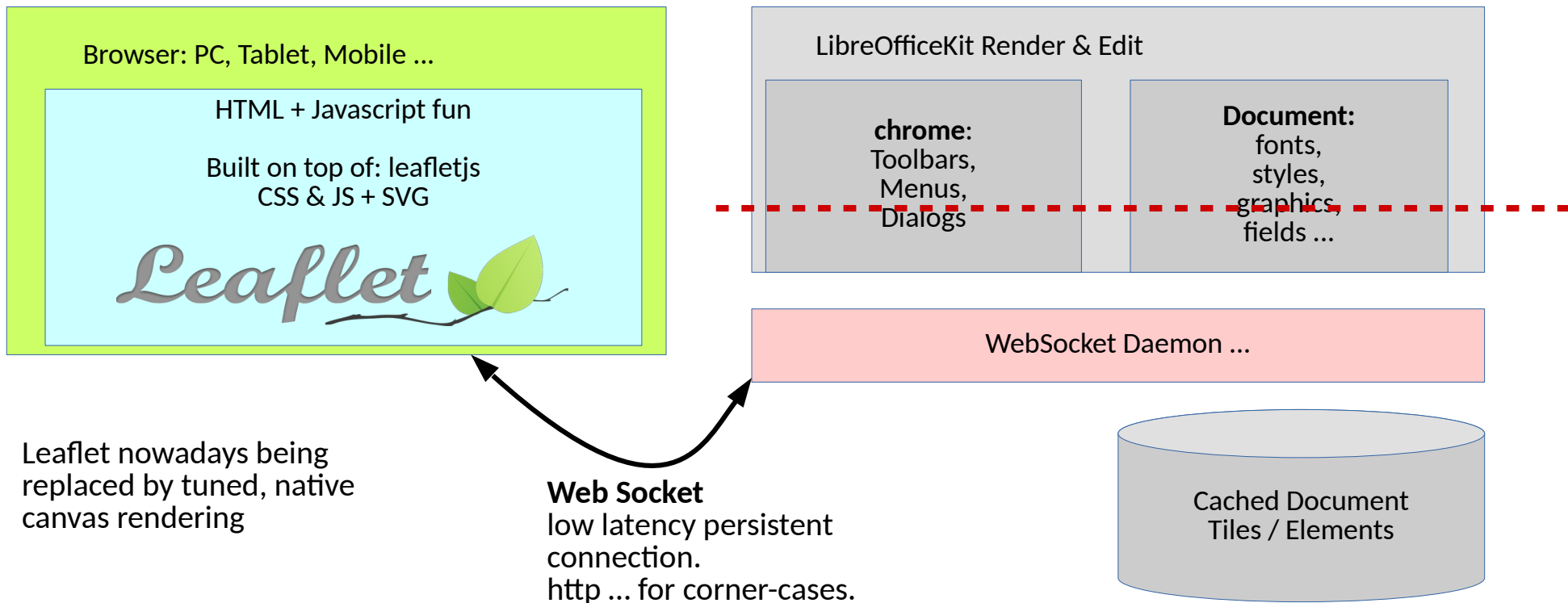
- fully abstract: fn pointers, opaque structs etc.
- No sockets opened, no plugins / simple init.
- Global error messages.

Exposes the Multi-Window (MVCish) core of LibreOffice

- Ever wondered about:
Window → “New Window”
give it a try ...



Online design: a first cut ...



Leaflet nowadays being replaced by tuned, native canvas rendering

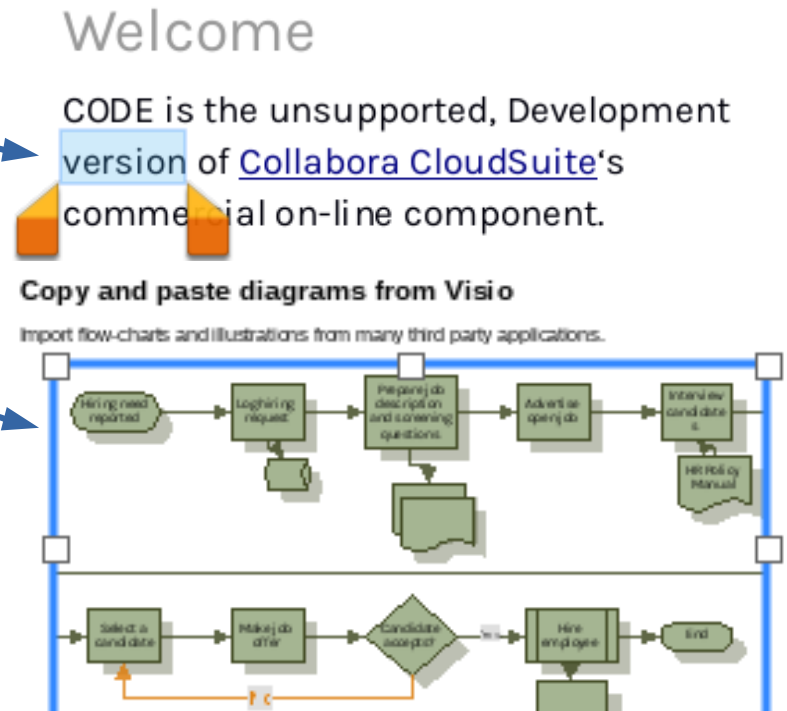


Fast local interactions: local overlays ... (SVG)

Layers over the document:

- Cursor, Selection handles, etc.
- 1st bullet |
- **2nd bullet (bold)**

16	Red	Green
17	Red	Green
18	Richtext	
19	Arial Courier	8point 14point



The web: compound suffering

the bits you don't want to know.

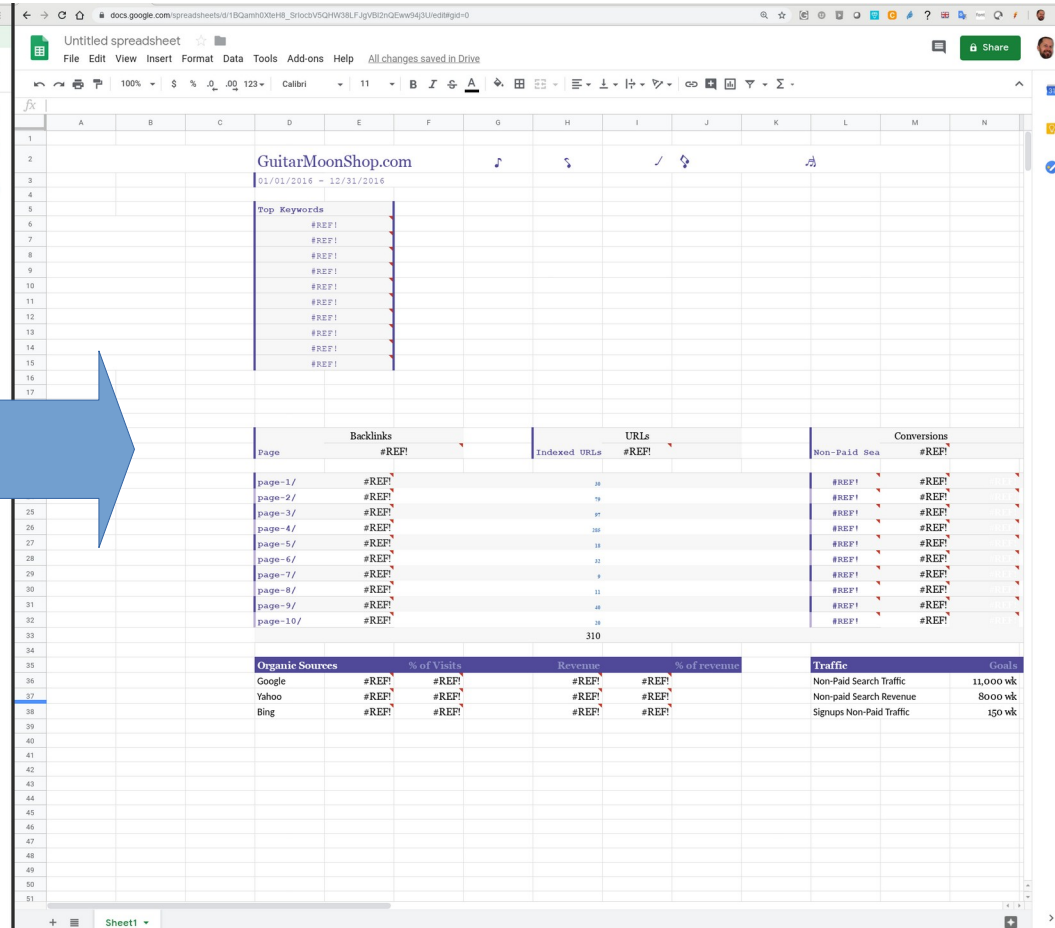
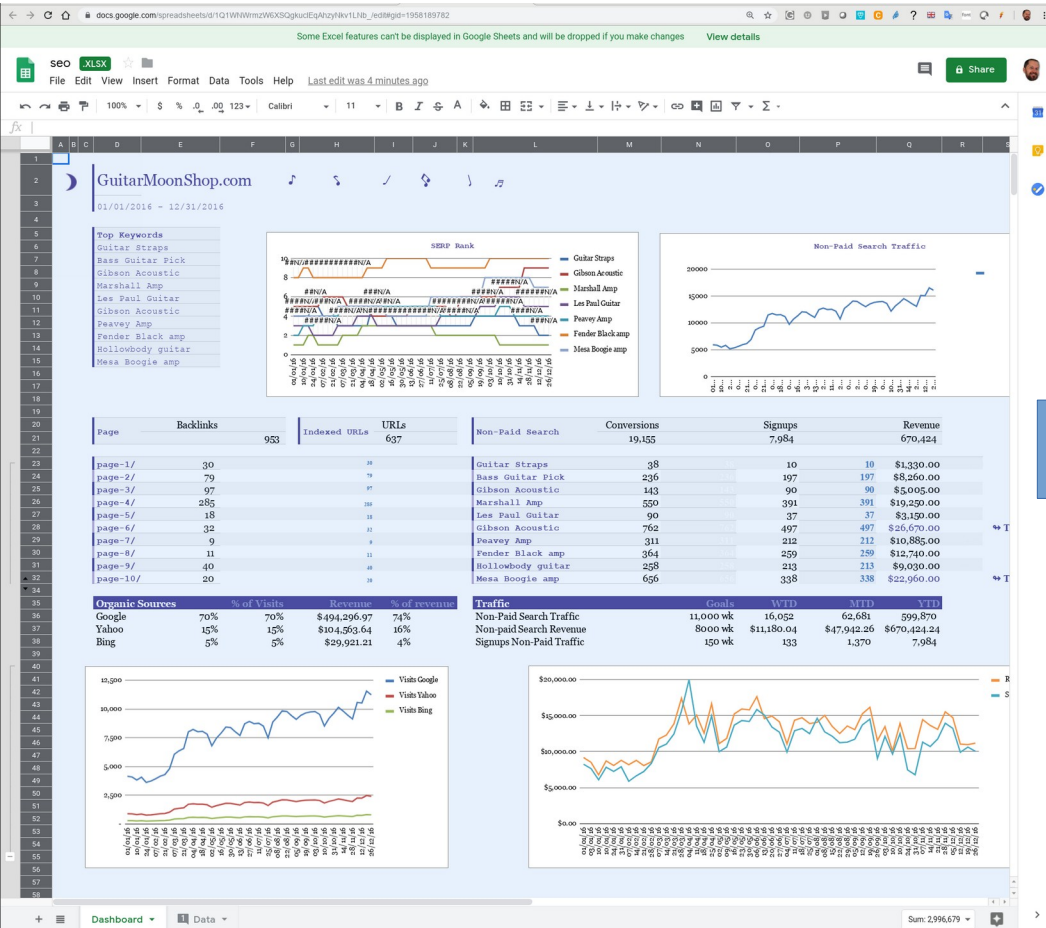


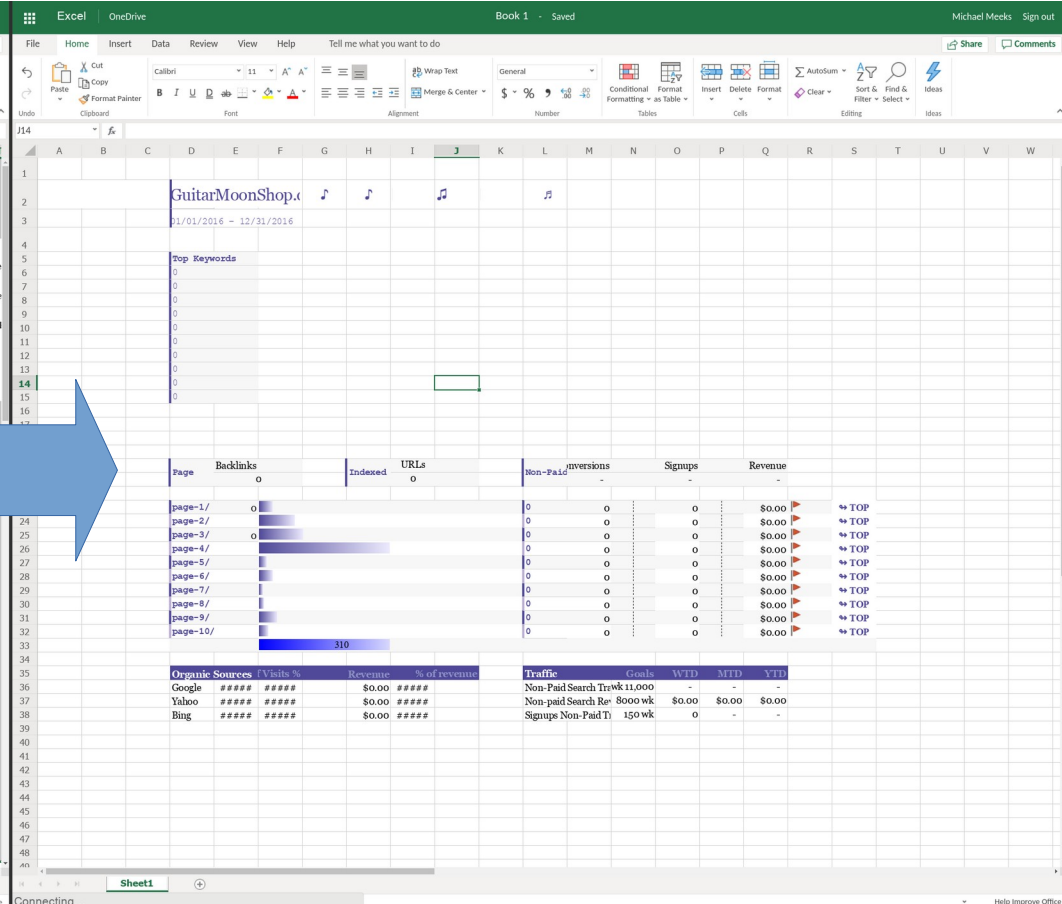
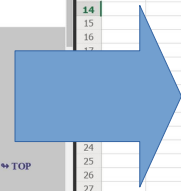
Horrible parts of the web

Keyboard input

- Totally unpredictable
- man months finding out that all the waffle about keyboard & text entry events:
 - Nonsense; no reliable re-construct of text entry from the events possible
 - Mind-blowing cross-browser brokenness [!]
- A hidden entry ... positioned with CSS – at the cursor (for ATs)
- Diff it from A→B, see what changed, emit events:
 - Requires a “<space> | <different-space>” to distinguish delete/backspace
- Then you fight the asynchronous keyboard to keep your text-entry clean.

Chrome / GDocs spreadsheet copy/paste



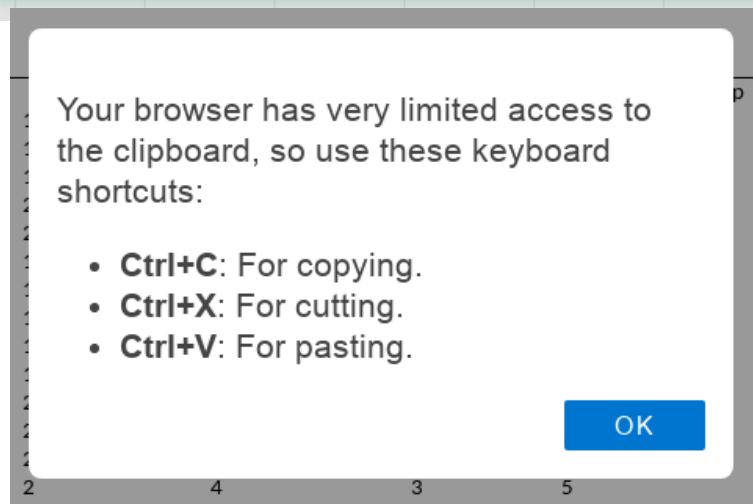
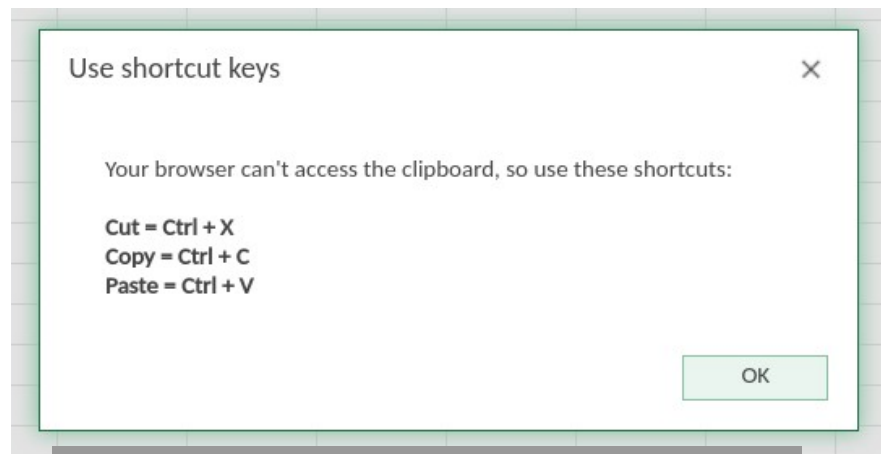




Web copy/paste is baroque & paranoid beyond belief.

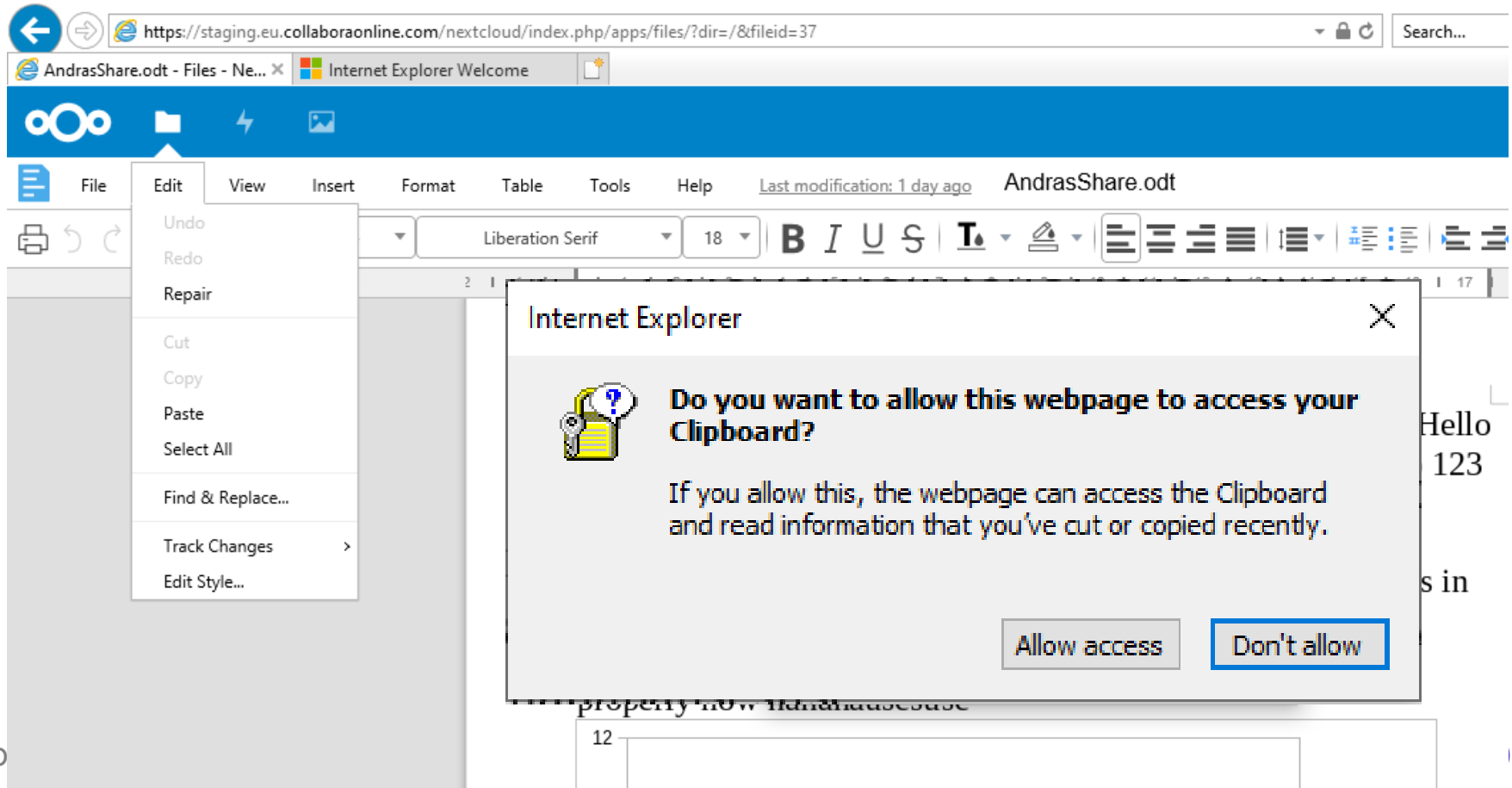
APIs for copy/paste are very mixed

- In many browsers copy/cut can put ~anything (HTML/txt/RTF/IMG) on the clipboard ~whenever they like.
 - But they have to work-around layers of obsolete 'security' foo.
- 1. Find/focus/select content-editable
 - 2. `document.execCommand('copy')`
 - 3. catch events if you get them
 - 4. tweak your content-editable,
 - 5. retry from 1.





IE11 – had a great initial approach:





Google Chrome / Docs – joined up thinking ?

Google Chrome's

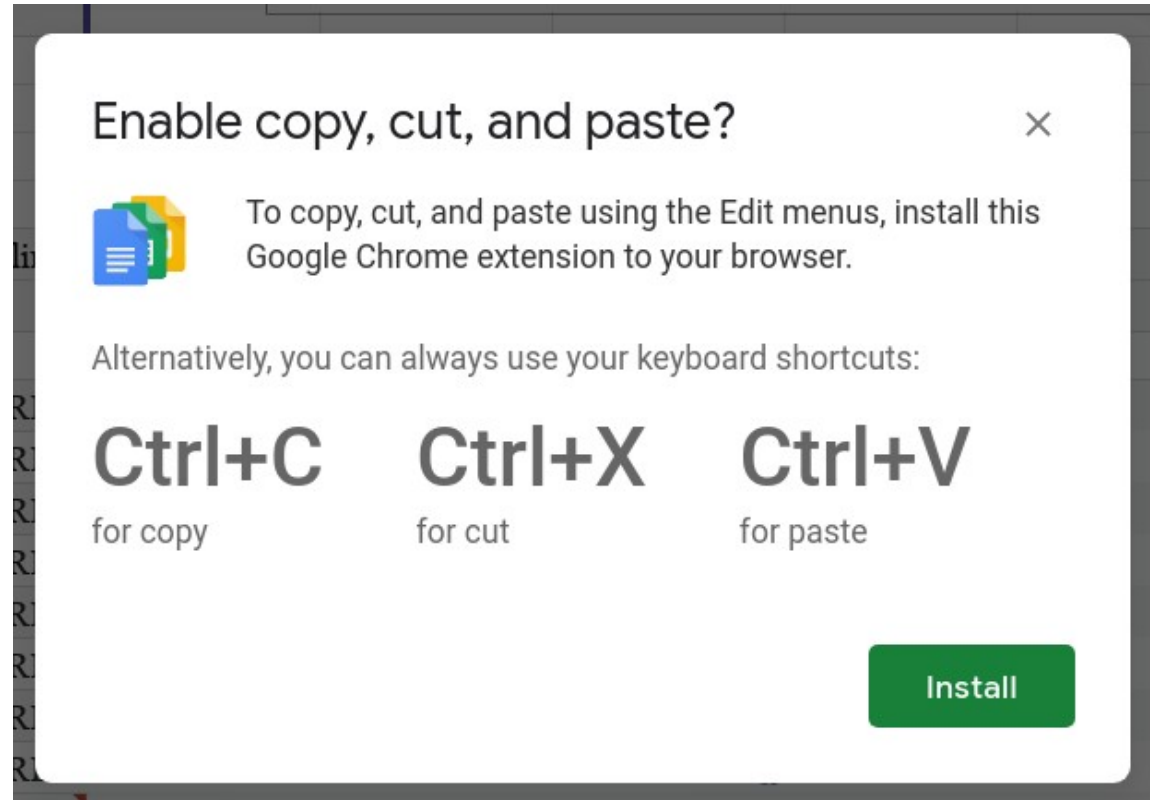
- Security team hardened by many issues → so rightly paranoid.

Google Doc's

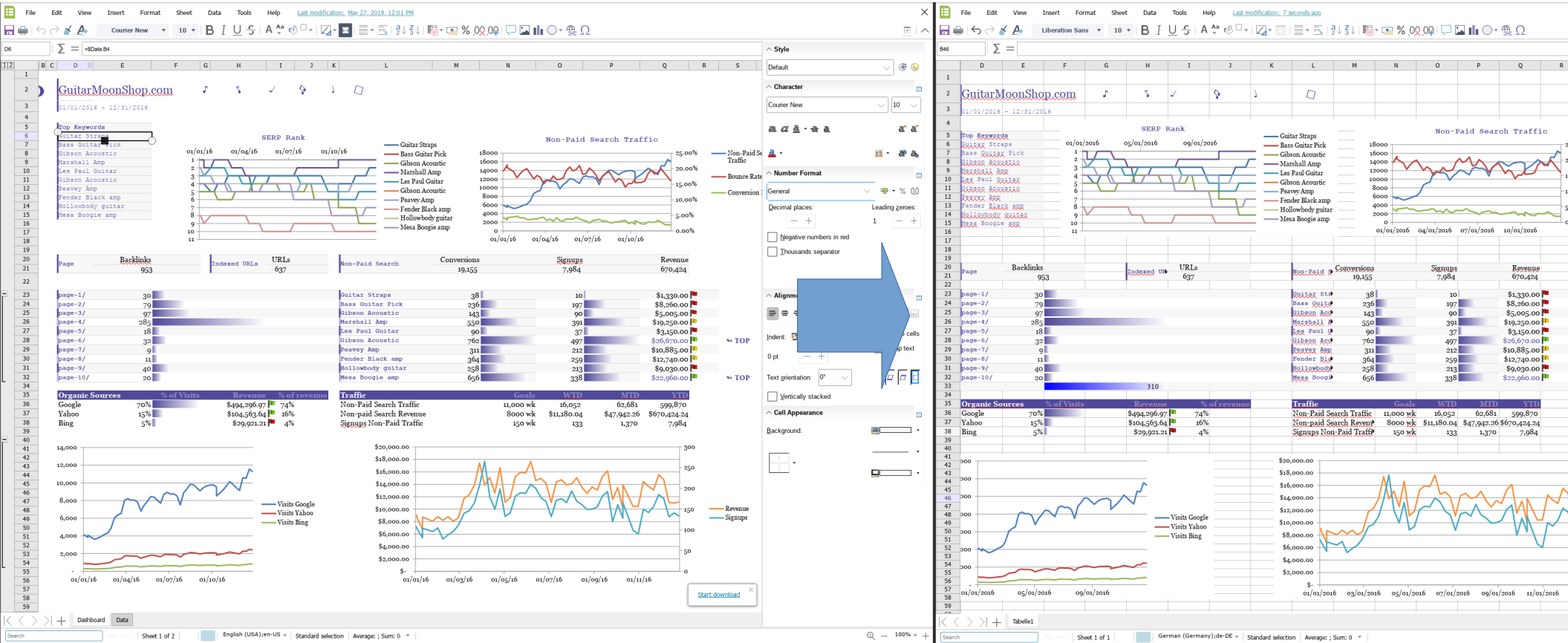
- Users cannot copy/paste using context menus → make a plugin for that.

The Security situation ?

- Snooping is indeed bad:
 - IE11 solution was a good one.
 - Signed sites you trust ... ?



HTML → plus back-channel to fetch the real data



Mobile: easy ?

a decade of work & fun ...



New platform / form-factor fun

A decade getting here

- Cross compilation ...
- Android C++ system library dynamic patching.
- Android: fixed 96 DSOs
 - 45+ system libs
 - crash at the limit ...
- Faster linking, profiling

Native mobile UX

- Fennec seemed a good base
- Wrote in Java

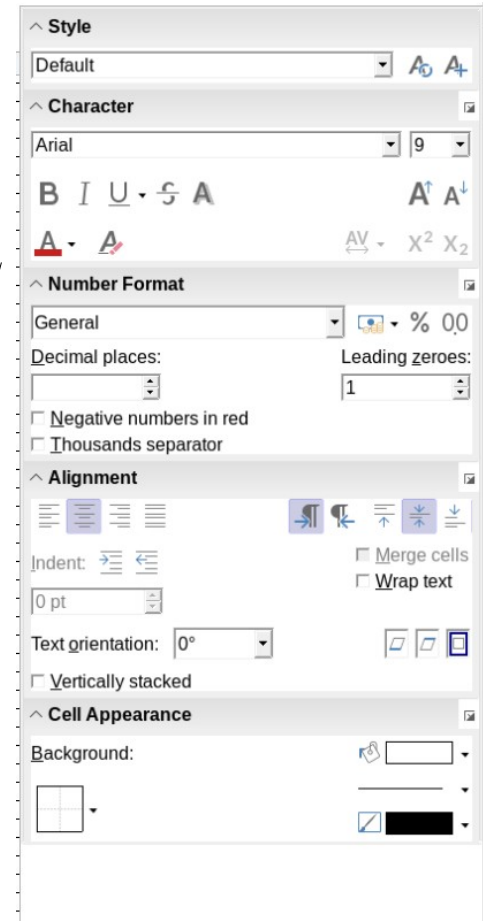
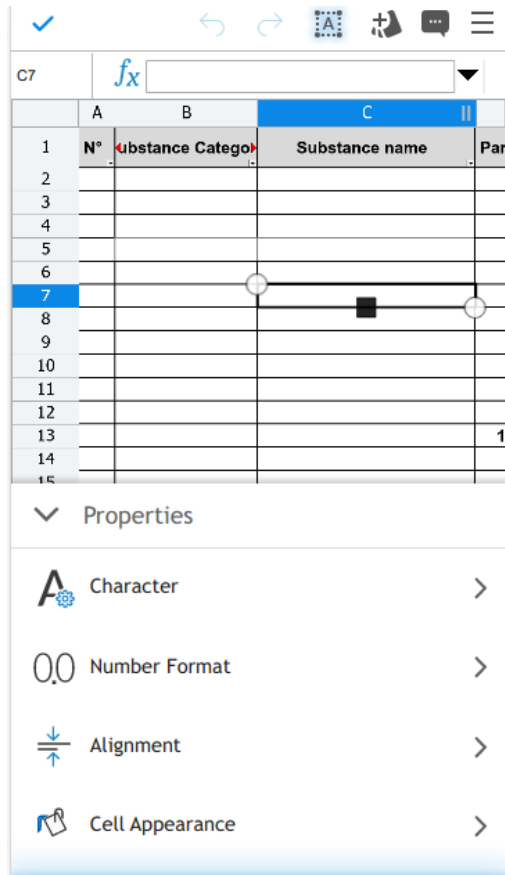
Switch to Online

- Embedded Webkit → Online / LibreOfficeKit
- Easy ! Except:

New User Experience

Re-using much of the LibreOffice sidebar

- glade XML → VCL → JSON → Re-layout



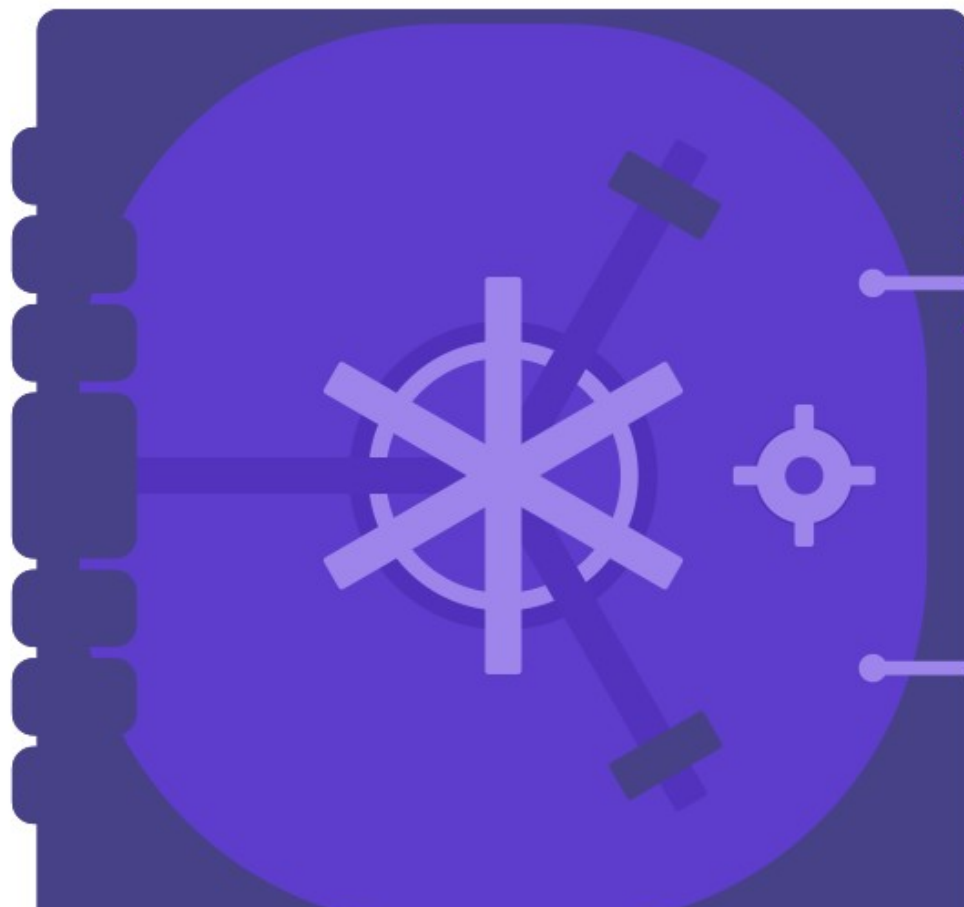
Linux containment

making this secure on servers



Fork & drop capabilities ...

Everyone in their own chroot + seccomp-bpf + ...



on your premise / Private network

Virtual machine / Docker container

Seccomp-bpf ~no sys-calls

Extremely sparse filesystem

Chroot per document

Systematic load crash testing

Industry beating coverity score

LibreOfficeKit

rendering instance

chroot

- no shell
- handful of NSS shared libraries, etc.
- fonts
- one document.

Pixels come out ...

Scaling & Performance

making this efficient on servers



Different optimizations

Online

- dlopens ~world (RTLD_BIND_NOW)
- Loads ~all config, dictionaries & hyphenation
- then forks children
 - Copy-on-write-ness (COW) everywhere.
- Burn memory in pre-init to save in children
- Burn CPU time on startup to save it later.

How to catch anti-social behaviour:

- Eg. touching / un-sharing pages:



Compare COW / shared memory pages: loolmap

Useful tool for eg. kdeinit, webrowsers?

heap page: 0x011e9000 (310/967) - touched: 17 - was shared - from [heap]

```
...
0x0130  03 00 00 00 0a 00 00 00 4d 00 61 00 74 00 68 00 | .....M.a.t.h.
-par't-  1
0x0140  4d 00 4c 00 20 00 32 00 2e 00 30 00 00 00 65 00 | M.L. .2...0...e.
0x0150  00 00 00 00 00 00 00 00 61 00 00 00 00 00 00 00 | .....a.....
```

Shows parent data / diff: here a ref-count in a Unicode string from 1->3

Also dumps all strings it can find with --strings

Totals for heap

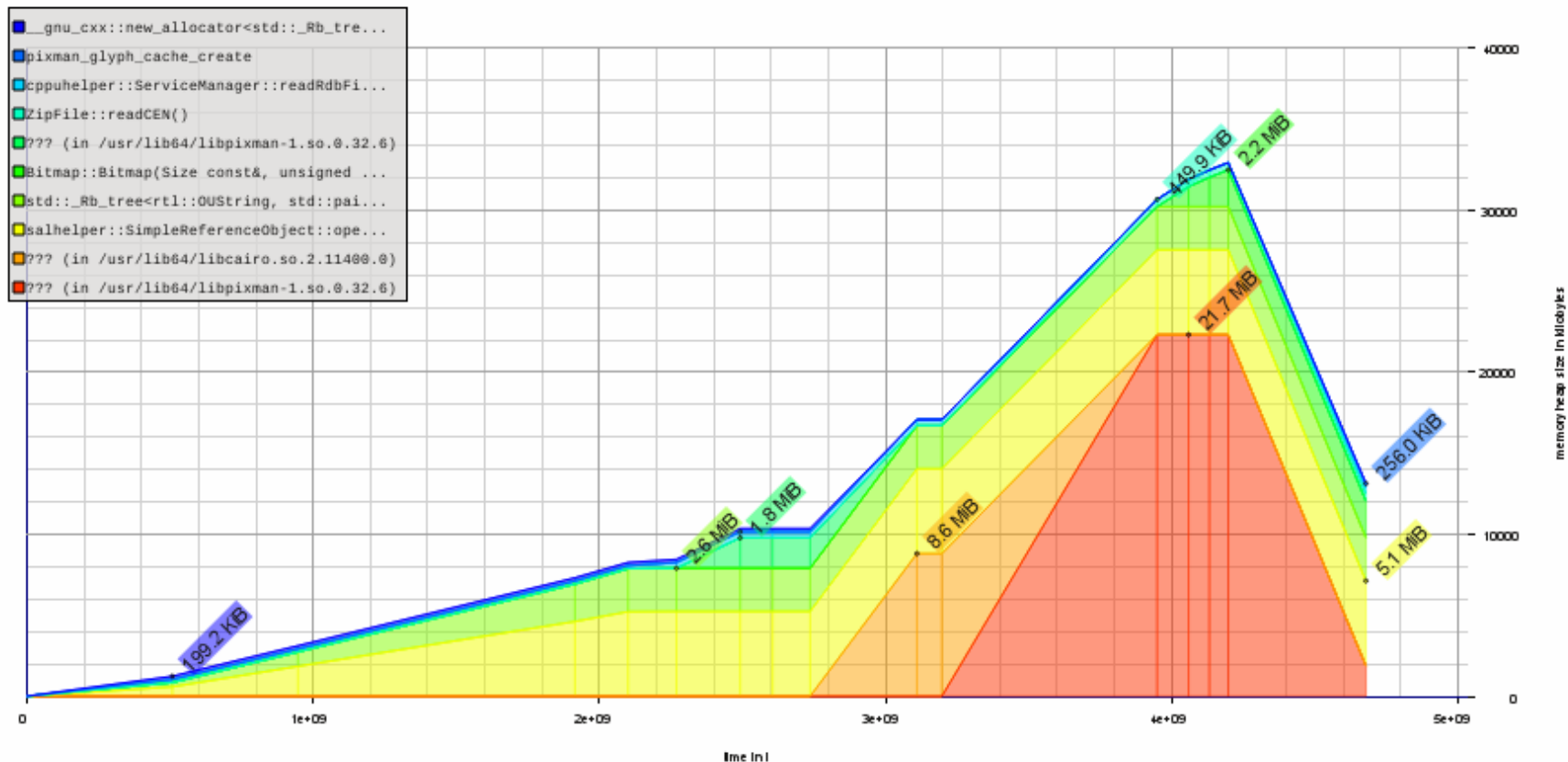
- shared 23040 (92160kB)
- unshared 982 (3928kB)
- same but unshared 191 (764kB)
- dirtied bytes touched 30718 per page 31.28

→ **staticize our pre-init strings**

*Would love help
expanding the tool to
track that to the
respective allocations ...*

Tilebench – simple test tool: 38 Mb peak.

Memory consumption of /data/opt/libreoffice/master/workdir/LinkTarget/Executable/tilebench
Peak of 38.1 MiB at snapshot #48





Amazing what you find: running on your machine now:

pixman/pixman-glyph.c (pixman_glyph_insert) - 40Mb *since May 2012*

```
/* XXX: These numbers are arbitrary---we've never done any  
measurements.
```

```
#define N_GLYPHS_HIGH_WATER  (16384)
```

```
#define N_GLYPHS_LOW_WATER   (8192)
```

How many glyph bitmaps to keep around.

cairo/src/cairo-scaled-font.c - *since March 2009*

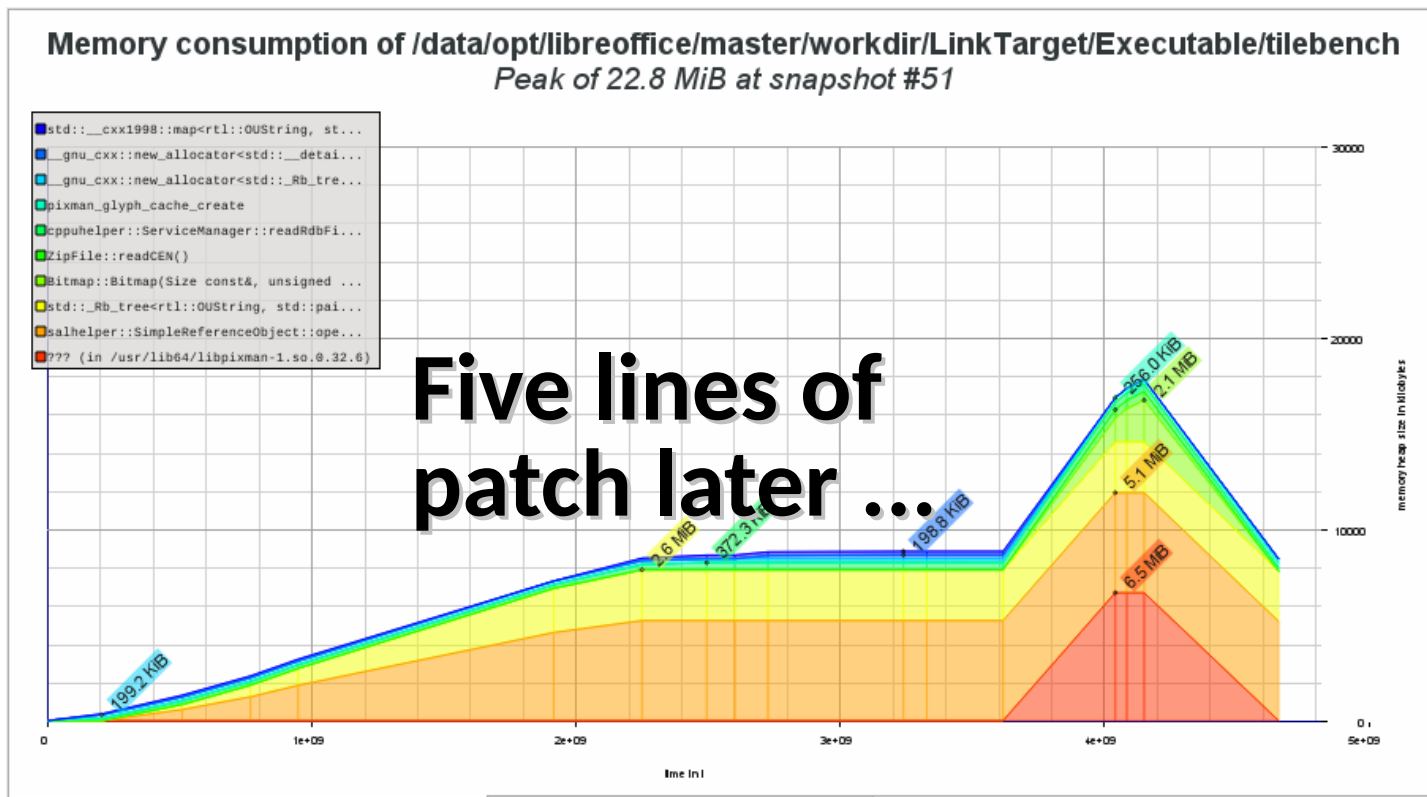
```
/* XXX: This number is arbitrary---we've never done any measurement  
of this. */
```

```
#define MAX_GLYPH_PAGES_CACHED 512
```

Patches for internal versions to better manage the size of that ...



TileBench: with some optimization:





COW sharing across processes is efficient:

**Heap is only one way to burn RAM
but still a popular way:**

- Red waste removed: 9Mb
- Remaining: ~14Mb

of which

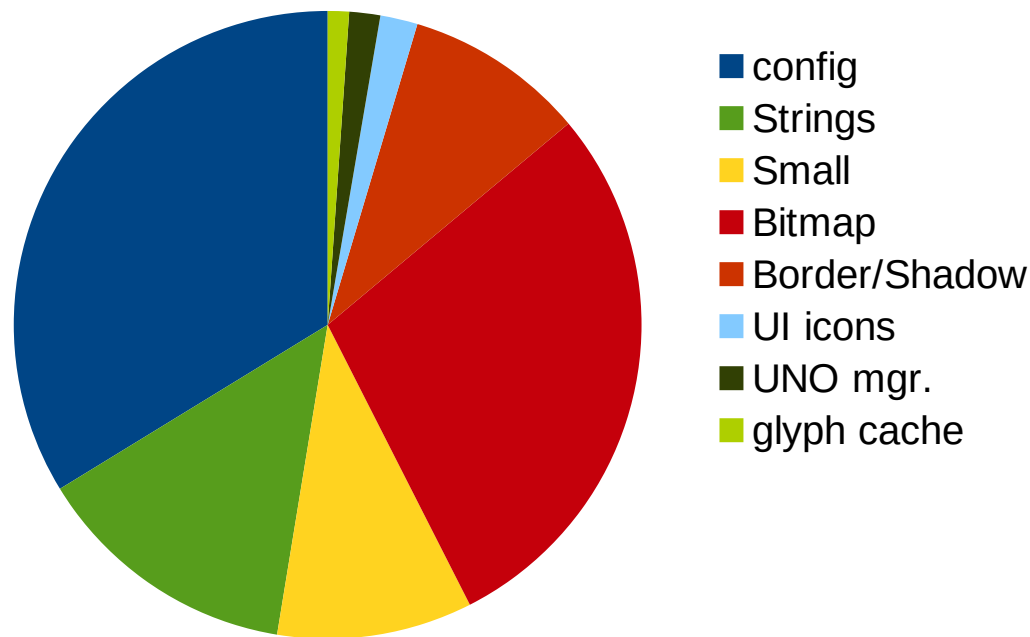
~12Mb is shareable by forkit

~<5Mb ... base use

- Real-world guess: ~50Mb / doc.

Breakdown of tilebench heap size by type (24Mb total)

red pieces are easy to remove.



Simplicity & Scalability

Large deployments / HA pieces

- Scales with the network.

Simple architecture:

- No new HA Database
- No new message-bus
- No shared data storage

eg. 1&1 / GMX

- ~millions of users with access

The image shows a presentation slide titled "Kubernetes - Horizontal Pod Autoscaler" with a diagram illustrating the autoscaling process. The diagram shows a "Horizontal Pod Autoscaler" box connected to a "Metrics Server" box. The process is described in three steps: 1. Check for CPU and Memory metrics, 2. If threshold not Change number of replicas, and 3. Scale number of pods. Below the diagram, a table shows metrics for resource memory on pods, with a current value of 40% (1294229504) and a target of 70%.

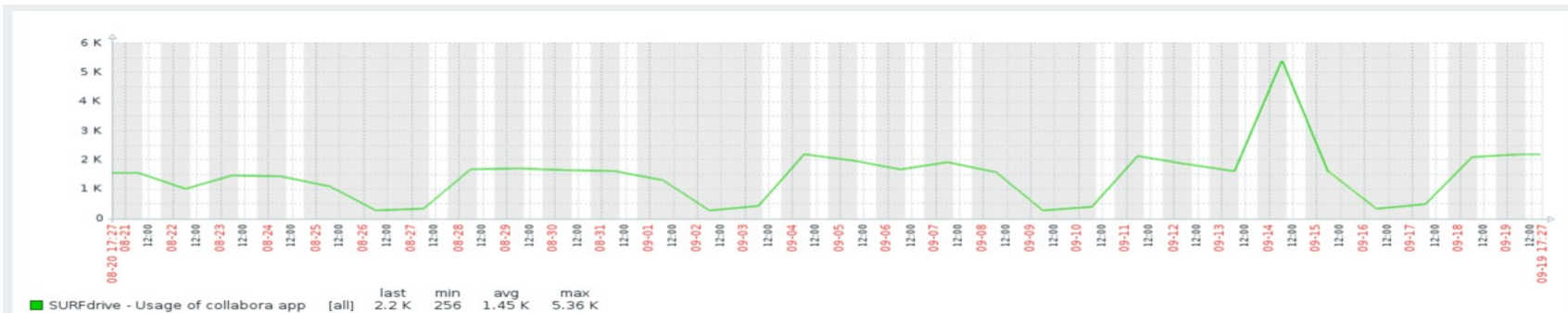
Below the slide, a browser window displays the GMX web interface. The browser has multiple tabs open, including "Eduard Andrei Ardelean", "navigators-bs.gmx.com", "Free Email Addresses", and "Helm". The GMX interface shows a navigation bar with icons for Home, E-mail, Contacts, Organizer, Cloud, and Online Office. A "Format" dialog box is open, showing options for line spacing, page size, and orientation. The background of the browser window shows a LibreOffice Online document editor with a sidebar for "Open File" and "Recently used" files.

Collaboration Protocol

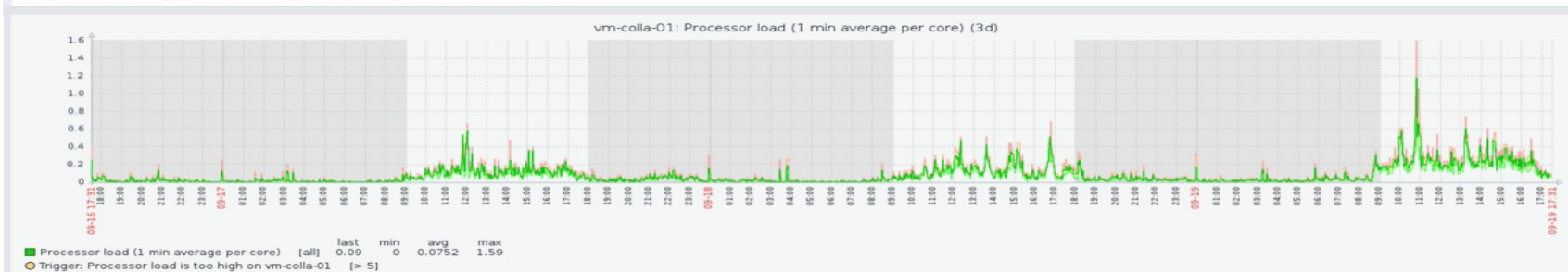
- **Not** composable operations: CompSci → get all excited about this.
 - Horrors of async model sync. → consistency, save, perf. etc.
- Real-world use-cases:
 - 90% of the time → “One user working alone on the authoritative document”
 - ~10% of the time → “Lots of users in a call, co-editing / scoring / minuting”
 - ~0% of the time → conflicting edits with undo/redo on the same document
- Conflicts fundamentally not computer-resolvable always
 - Better to back-off & show the user
- Bring all the keystrokes & mouse movements
 - Into the same process – same memory space – same CPU

Real world: ~45k users – Collabora Online – SURFdrive

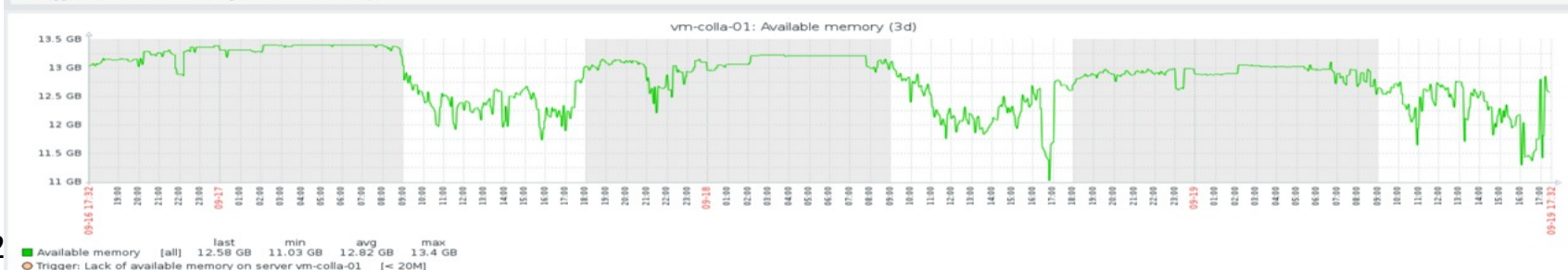
Usage



CPU



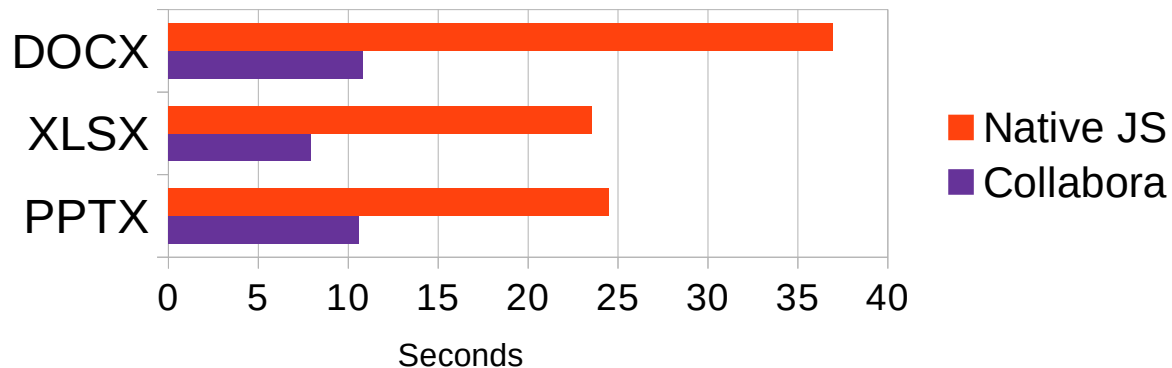
Free
RAM:
13.5Gb
→
11Gb





Mobile: do the work on battery, or in the data-center ?

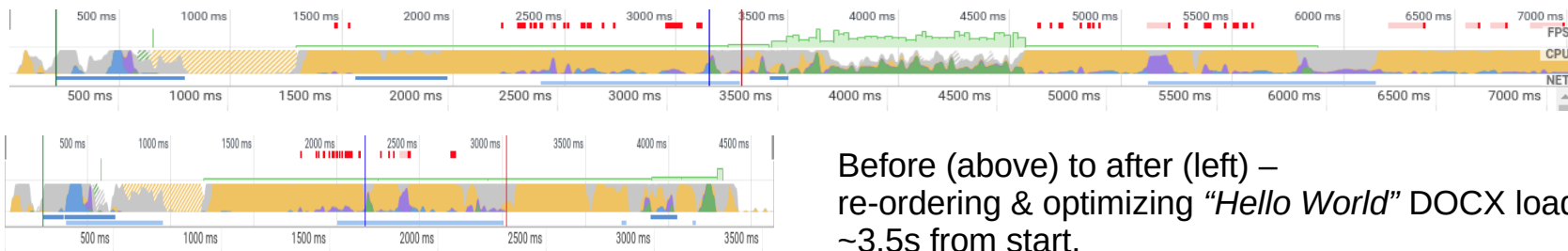
Time to load & render blank files - Galaxy S4



First cut pre-optimized numbers

With data: larger spreadsheets
10x faster → 1000X faster.

Threaded, GPU accelerated
spreadsheet core



Progress this year

a taste of where we placed our investment bets



Quick try-out: built-in demo servers ...

Please make sure you understand that the following will happen if you set up the Collabora Online demo.

- The service will send users documents to Collabora and/or third party demo servers.
- This service is not intended for production use, hence the documents will show tile watermarks.
- The demo service may be under heavy load, and its performance is not representative in any way of the performance of an on-premise installation.
- These servers are used for testing and development, and may run test versions of the software. As such they may crash, burn, and re-start without warning.
- The users documents will not be retained by a third party after their session completes except in exceptional circumstances. By using the service, the user gives permission for Collabora engineers to exceptionally use such document data, solely for the purpose of providing, optimizing and improving Collabora Online. Such document data will remain confidential to Collabora and/or any third party providing a demo server.

At the first use and after an update, each user will get the warning, explaining all the above.

I agree, and use the demo server

I will setup my own server

☒ Use a demo server

You can use a demo server provided by Collabora and other service providers.

Select a demo server

Friprogramvarusyndikatet — Sweden

Collabora Productivity Ltd. — Ireland

Collabora Productivity Ltd. — North California, USA

Collabora Productivity Ltd. — Tokyo, Japan

Collabora Productivity Ltd. — São Paulo, Brazil

Easy to test your new integration against



Built-in demo servers: iff safe & route-able ...

● Use a demo server

You can use a demo server provided by Collabora and other service providers for giving Collabora Online a try.

Your NextCloud setup is not capable of connecting to the demo servers because:

- *it is a local setup (localhost)*
- *it uses an insecure protocol (http)*

For use cases like this, we offer instructions for a [Quick tryout with Nextcloud docker](#).



Better: Nextcloud Hub / AppImage install ...

A lovely, simple one-click install ...

- A small / fast PHP forwarding proxy & an AppImage
- Please upgrade to a faster, native server quickly ...

☐ Use your own server

Collabora Online requires a separate server acting as a WOPI-like Client to provide editing ca

☒ Use the built-in CODE - Collabora Online Development Edition

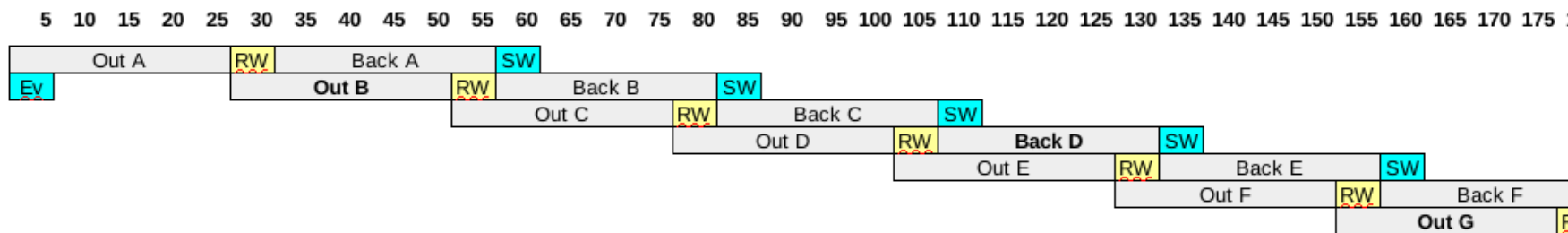
Easy to install, for personal use or for small teams. A bit slower than a standalone server and



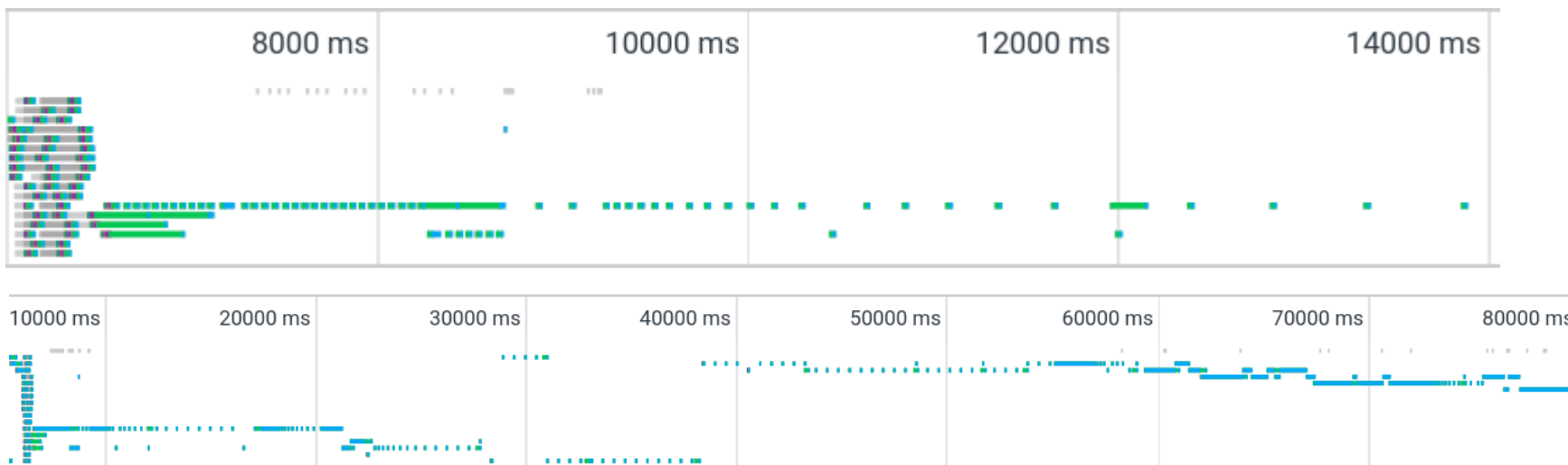
Polling websocket-alikes over keep-alive'd https://

Time / milliseconds

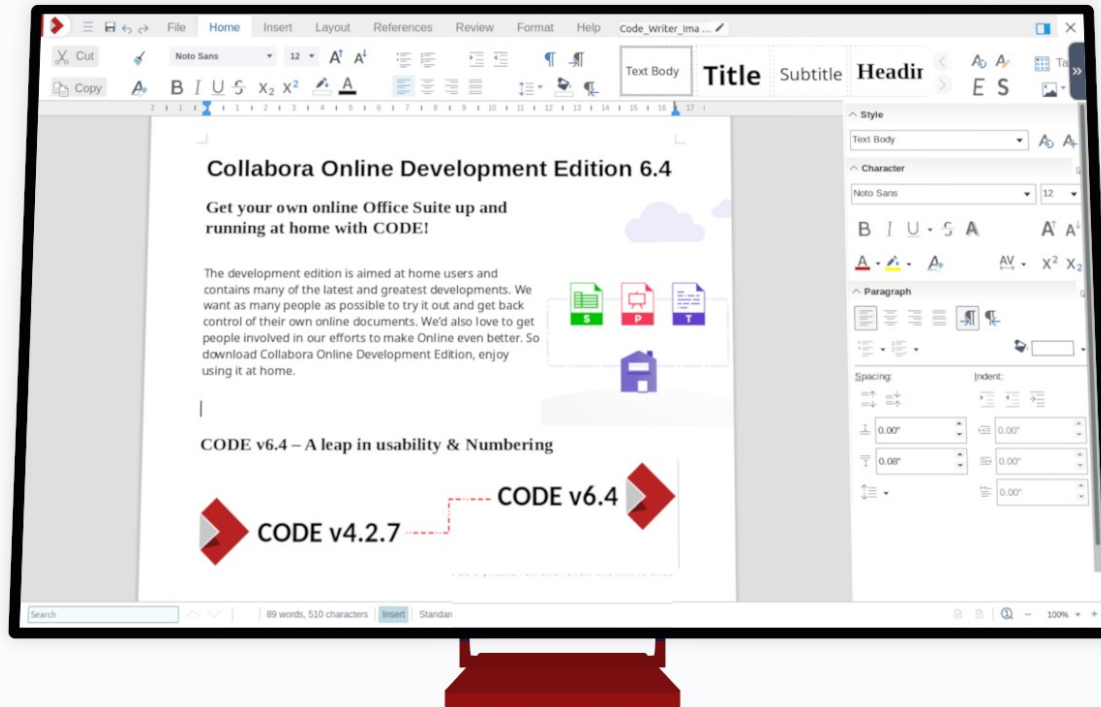
Notify to reply:



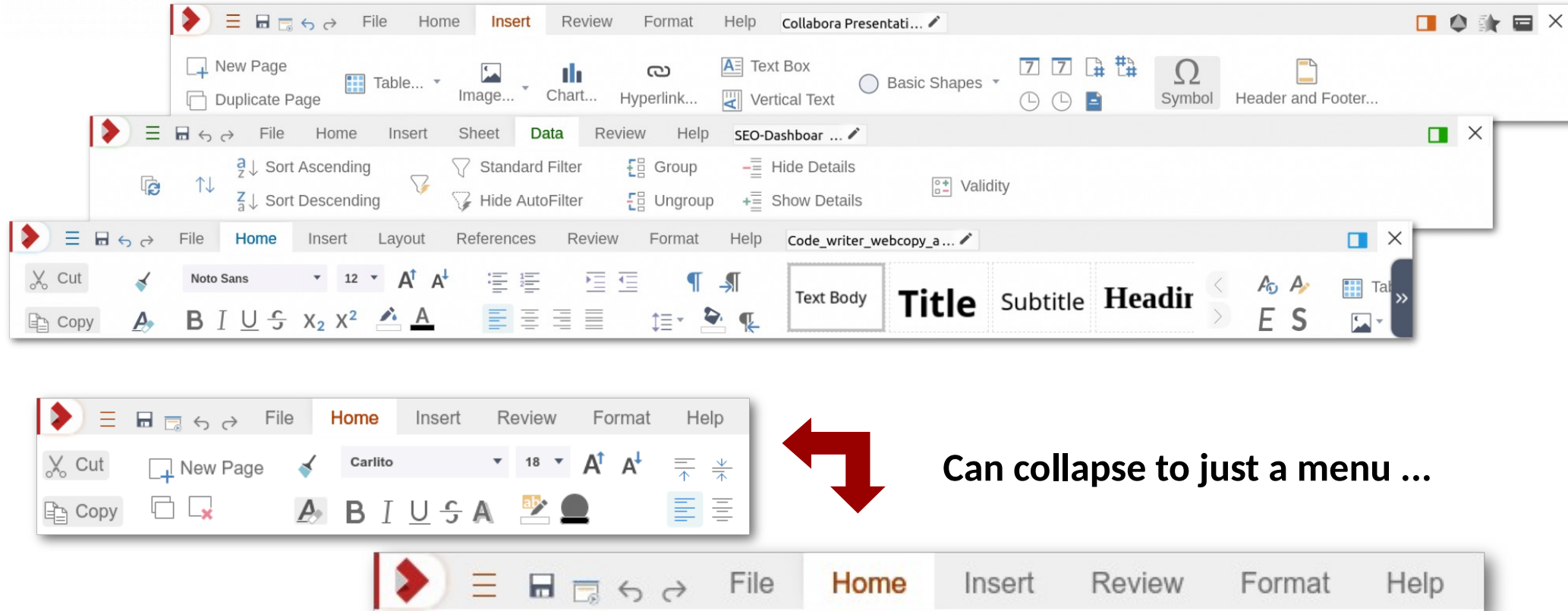
... worst case notify to reply latency ... 180ms (from 50ms ping)



Collabora Online 6.4.0 (Nov 20)



Eclectic Notebookbar UX choices: to taste



Insert Rows Above Insert Columns Before Insert Row Break Delete Rows Remove Row Break Freeze First Column
 Insert Rows Below Insert Columns After Insert Column Break Delete Columns Remove Column Break Freeze Rows and Columns Freeze First Row

G34 $f_x \sum = 3$

	A	E	F	G	H	I	J	K
1								
2								
3	Top Keywords							
4	Date	mp	Les Paul Guitar	Gibson Acoustic	Peavey Amp	Fender Black amp	Hollowbody guitar	Mesa Boogie amp
19	04/04/16	3		3	5		8	14
20	11/04/16	3		3	5		9	14
21	18/04/16	3		4	5		9	14
22	25/04/16	3		4	5		9	14
23	02/05/16	3		4	5		9	14
24	09/05/16	3		4	5		10	15
25	16/05/16	3		4	5		10	15
26	23/05/16	3		4	5		10	15
27	30/05/16	3		4	5		10	15
28	06/06/16	3		4	5		10	15
29	13/06/16	3		4	5		10	15
30	20/06/16	3		3	5		10	15
31	27/06/16	3		3	5		10	15
32	04/07/16	3		3	5		10	15
33	11/07/16	3		3	5		9	15
34	18/07/16	2		3	5		9	15
35	25/07/16	2		4	3	4	9	15
36	01/08/16	2		4	3	4	9	14
37	08/08/16	2		4	3	4	9	14
38	15/08/16	2		4	3	4	9	14
39	22/08/16	2		4	3	4	9	14
40	29/08/16	2		4	3	4	9	14
41	05/09/16	2		4	3	4	9	14
42	12/09/16	2		4	3	4	9	14
43	19/09/16	2		5	3	4	9	14
44	26/09/16	2		5	3	4	9	14
45	03/10/16	2		5	3	4	10	14
46	10/10/16	2		5	3	4	10	13
47	10/10/16	1		6	2	5	10	13
48								
49								
50								
51								

Style
Default

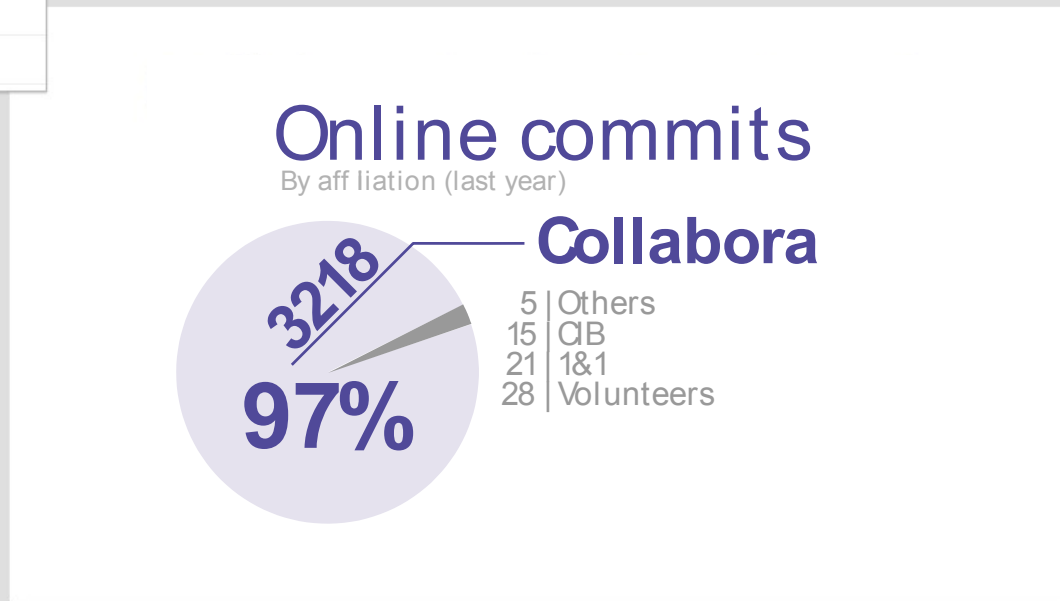
Character
Calibri 11

Number Format
General 0.00
Decimal places: 2 Leading zeroes: 1

Alignment
Merge cells Wrap text

Freeze Rows / NotebookBar / SmartArt

- Local Image...
- Image...
- Set Background Image...
- Comment**
- Chart...
- Hyperlink...
- Special Character...
- HeaderAndFooter



Marc


Wed, Aug 26, 2020

You can now add annotations to PDF Files in Collabora Online via the Comment function

PDF Search, Collaboration & Annotation

Import SmartArt Graphics in
Collabora Online 6.4

a	•b
	•c
X	•y
	•z
empty	

 **Import SmartArt Graphics in
Collabora Online 6.4**

a	•b
	•c
X	•y
	•z
empty	

Slide

Format: User

Orientation: Landscape

Background: None

Master Slide: Title Slide

☒ Master Background

☒ Master Objects

Master View

Layouts

[Grid of 12 layout thumbnails]

Online 6.4.x ...

rapid fire

incremental goodness

SEO-Dashboard.xlsx

share.collabora.com/index.php/apps/files/?dir=/ADemo&fileid=6...

File Home Insert Sheet Data Review Help SEO-Dashboard.xlsx

Cut Copy Callibri 11 A+ A- General % 00 .00 .00

f_x Σ =

12 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 31 32 33 34 35 36

A B C D E F G H I J K L M

Guitar Shop 01/01/2016 - 12/31/2016

01/01/16

Edit Chart Titles & Sub titles

Directly in the side-bar

1 3 5 7 9 11

■ Guitar Straps ■ Bass Guitar Pick
 ■ Gibson Acoustic ■ Marshall Amp
 ■ Les Paul Guitar ■ Gibson Acoustic
 ■ Peavey Amp ■ Fender Black amp
 ■ Hollowbody guitar ■ Mesa Boogie amp

Page Indexed URLs Non-Paid Search

Organic Sources	% of Visits	Revenue	% of revenue	Traffic
Google	70%	\$494,296.97	74%	Non-Paid Search Traffic
Yahoo	15%	\$104,563.64	16%	Non-paid Search Revenue
Bing	5%	\$29,921.21	4%	Signups Non-Paid Traffic

Dashboard Data

Search Select multiple cells Insert mode: inactive English (USA) Selection mode: inactive 100%

Chart Type: Line

3D Lines

Stack series

On top

Percent

Line type: Straight Properties...

Elements

Titles

✓ Title

Edit Chart Titles & Sub titles

✓ Subtitle

Directly in the side-bar

Legend

✓ Show legend

Placement: Right

Axes

✓ X axis

X axis title

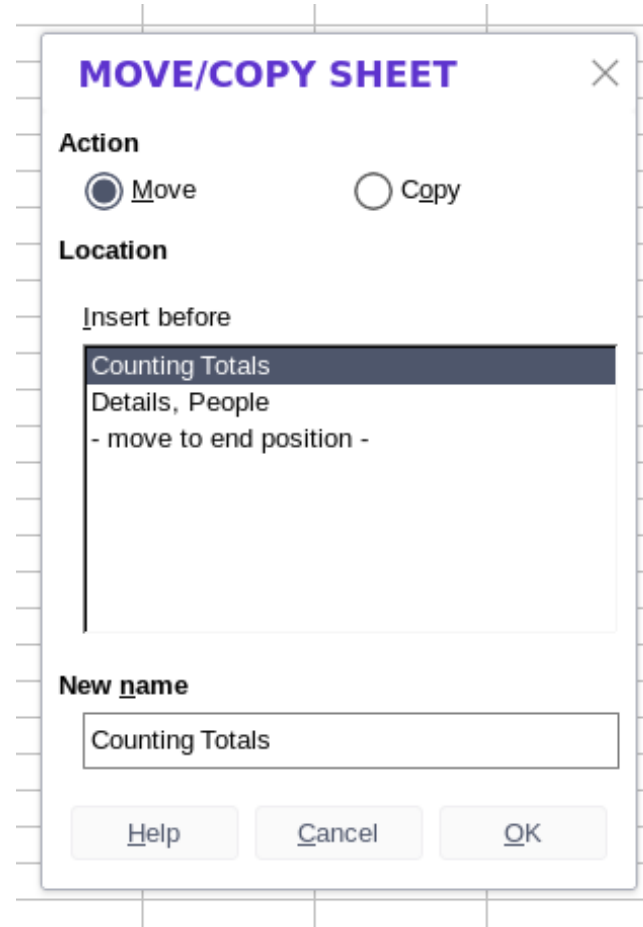
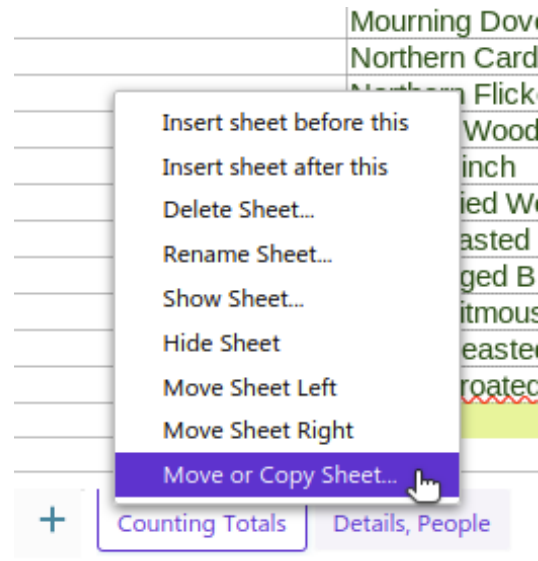
✓ Y axis

Y axis title

Improved chart editing sidebar functionality



Calc: Improved sheet movement:





Calc: customize & create Pivot Tables

SELECT SOURCE

☒ Current selection

☐ Named range:

Help

PIVOT TABLE LAYOUT

FILTERS: Country

COLUMN FIELDS: Data

ROW FIELDS: Country

DATA FIELDS: Sum - Apple & Pear Trees

AVAILABLE FIELDS:

- Country
- Size
- Orchards count
- Apple & Pear Trees
- Peach & Apricot Trees
- Olive Trees

DRAG THE ITEMS INTO THE DESIRED POSITION

> Options

> Source and Destination

Help

Cancel

OK

PIVOT TABLE LAYOUT

FILTERS: Country

COLUMN FIELDS: Data

ROW FIELDS: Country

DATA FIELDS: Sum - Apple & Pear Trees

AVAILABLE FIELDS:

- Country
- Size
- Orchards count
- Apple & Pear Trees
- Peach & Apricot Trees
- Olive Trees

DRAG THE ITEMS INTO THE DESIRED POSITION

> Options

> Source and Destination

SOURCE

☐ Named range

☒ Selection 'Sorted Data'!\$B\$3:\$G\$75

DESTINATION

☐ New sheet

☐ Named range

☒ Selection 'Sorted Data'!\$J\$53

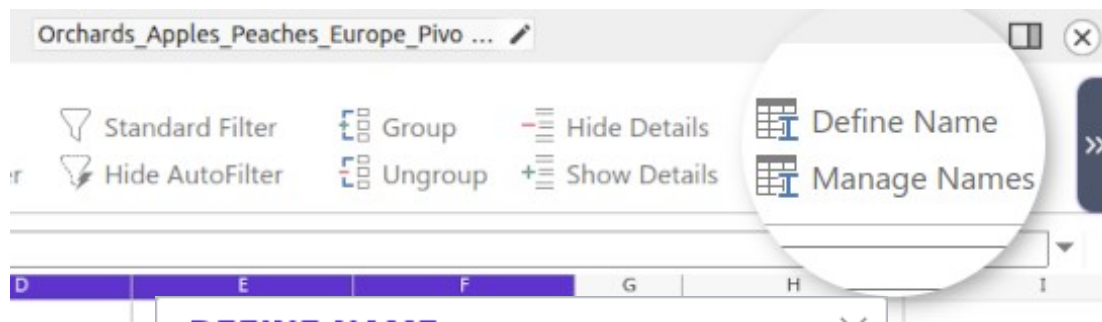
Help

Cancel

OK



Calc: define & manage range names & print ranges



DEFINE NAME

DEFINE THE NAME AND RANGE OR FORMULA EXPRESSION.

NAME:

RANGE OR FORMULA EXPRESSION:

SCOPE:

> Range Options

MANAGE NAMES

Name	Range or formula expression	Scope
Apples	'Sorted Data'.\$E\$4:\$E\$19	Document (Global)
Orchards	'Sorted Data'.\$B\$39	Document (Global)
Peaches	'Sorted Data'.\$F\$4:\$F\$22	Document (Global)

NAME:

RANGE OR FORMULA EXPRESSION:

SCOPE:

> Range Options

Calc: Statistical tools for data analysis

File Home Insert Sheet Data Review Help Orchards_Apples_Peaches_Europe_PivotTable (...

Refresh Pivot Table Sort Ascending AutoFilter Standard Filter Group Hide Details Define Name
Delete Pivot Table Sort Descending Advanced Filter Hide AutoFilter Ungroup Show Details Manage Names Validity Statistics

B3:G75 \sum σ σ^2 σ^3 σ^4 σ^5 σ^6 σ^7 σ^8 σ^9 σ^{10} σ^{11} σ^{12} σ^{13} σ^{14} σ^{15} σ^{16} σ^{17} σ^{18} σ^{19} σ^{20} σ^{21} σ^{22} σ^{23} σ^{24} σ^{25} σ^{26} σ^{27} σ^{28} σ^{29} σ^{30} σ^{31} σ^{32} σ^{33} σ^{34} σ^{35} σ^{36} σ^{37} σ^{38} σ^{39} σ^{40} σ^{41} σ^{42} σ^{43} σ^{44} σ^{45} σ^{46} σ^{47} σ^{48} σ^{49} σ^{50} σ^{51} σ^{52} σ^{53} σ^{54} σ^{55} σ^{56} σ^{57} σ^{58} σ^{59} σ^{60} σ^{61} σ^{62} σ^{63} σ^{64} σ^{65} σ^{66} σ^{67} σ^{68} σ^{69} σ^{70} σ^{71} σ^{72} σ^{73} σ^{74} σ^{75} σ^{76} σ^{77} σ^{78} σ^{79} σ^{80} σ^{81} σ^{82} σ^{83} σ^{84} σ^{85} σ^{86} σ^{87} σ^{88} σ^{89} σ^{90} σ^{91} σ^{92} σ^{93} σ^{94} σ^{95} σ^{96} σ^{97} σ^{98} σ^{99} σ^{100} σ^{101} σ^{102} σ^{103} σ^{104} σ^{105} σ^{106} σ^{107} σ^{108} σ^{109} σ^{110} σ^{111} σ^{112} σ^{113} σ^{114} σ^{115} σ^{116} σ^{117} σ^{118} σ^{119} σ^{120} σ^{121} σ^{122} σ^{123} σ^{124} σ^{125} σ^{126} σ^{127} σ^{128} σ^{129} σ^{130} σ^{131} σ^{132} σ^{133} σ^{134} σ^{135} σ^{136} σ^{137} σ^{138} σ^{139} 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Country Size Orchards count Apple & Pear Trees Peach & Apricot Tree Olive Trees

Austria S 4,518.19 767.46 71.63
Austria M 2,344.80 3,837.32 214.90
Austria L 2,655.50 3,069.85 429.80
Belgium S 2,208.49 1,736.58 838.69
Belgium M 9,587.01 2,315.44
Belgium L 2,934.50 1,736.58
Bulgaria S 6,918.00 495.80
Bulgaria M 4,518.49 991.60
Bulgaria L 3,500.76 3,470.59
Croatia S 14,518.60 891.82
Croatia M 6,318.49 2,229.54
Croatia L 2,354.64 1,337.72
Cyprus S 11,007.59 75.35
Cyprus M 1,518.49 113.03
Cyprus L 1,550.55 188.38
Czechia S 4,578.88 1,563.72
Czechia M 3,955.49 4,691.16
Czechia L 1,306.54 1,563.72
Denmark S 918.92 125.50
Denmark M 500.65 376.49
Denmark L 207.95 752.99
France S 39,522.80 11,489.49
France M 31,580.03 22,978.98
France L 14,074.47 3,829.83
Germany S 9,901.44 8,478.29
Germany M 15,698.11 14,130.48
Germany L 10,518.29 5,652.19
Greece S 549,528.32 2,813.21
Greece M 132,518.22 2,813.21
Greece L 79,220.36 3,750.94
Hungary S 23,221.55 5,008.80
Hungary M 5,539.26 5,008.80
Hungary L 7,530.67 15,026.41
Italy S 873,425.28 11,161.98
Italy M 294,518.49 16,742.97

Size - all -
Data
Country Som - Apple & Pear
Austria
Belgium

ANALYSIS OF VARIANCE (ANOVA)

DATA
INPUT RANGE: '\$Sorted Data'!\$B\$3:\$G\$75
RESULTS TO: '\$I\$34'
TYPE
☒ Single factor ☐ Two factor
GROUPED BY
☒ Columns ☐ Rows
PARAMETERS
ALPHA: 0.05
ROWS PER SAMPLE: 1
Help Cancel OK

Sampling
Descriptive Statistics
Analysis of Variance (ANOVA)
Correlation
Covariance
Exponential Smoothing
Moving Average
Regression
Paired t-test
F-test
Z-test



The pieces you can't see

Performance

- faster rendering
- Snappier interactive editing of cells
- Bind-mounting of document jails (instead of hard-linking)
- Improved watermark caching
- Slide content pre-fetching
- On-demand slide thumbnail fetching.
- Significant PDF rendering improvements
- Significant thumbnail / download speedups

Misc

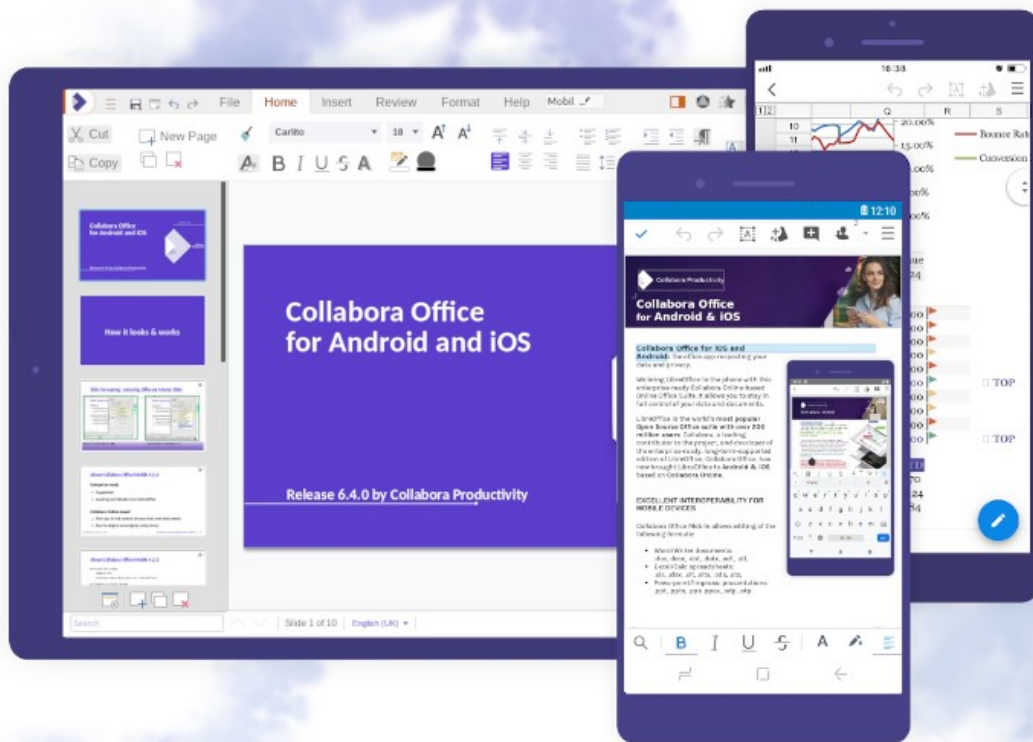
- iOS multi-document support
- Substantial cypress automated test coverage.
- Cluster debugging / warnings ... check matching ServerIds

And much much more ...

- 3600+ commits.
- Innumerable bug-fixes & improvements

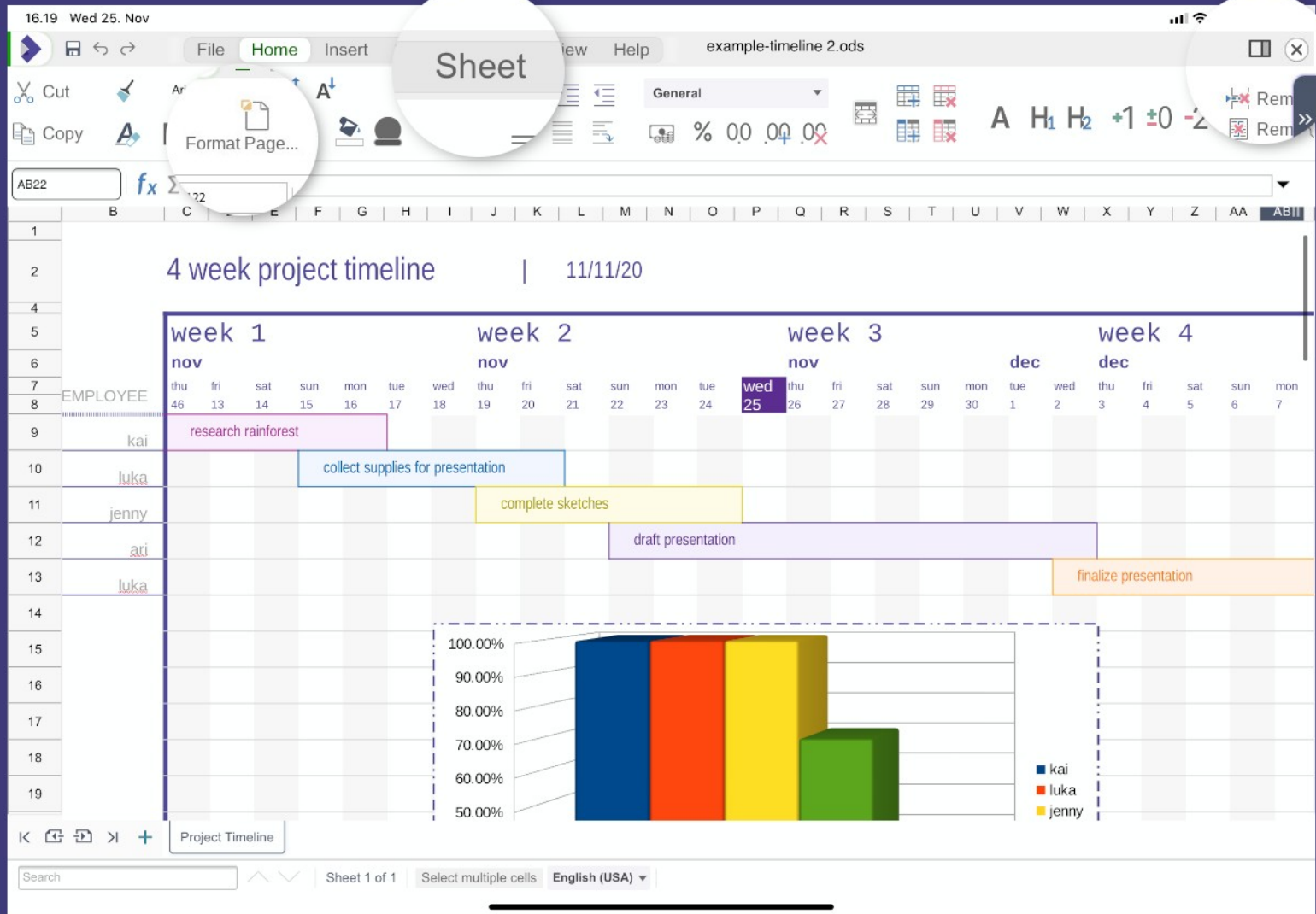
Mobile 6.4.x ...

bringing goodness to your phone



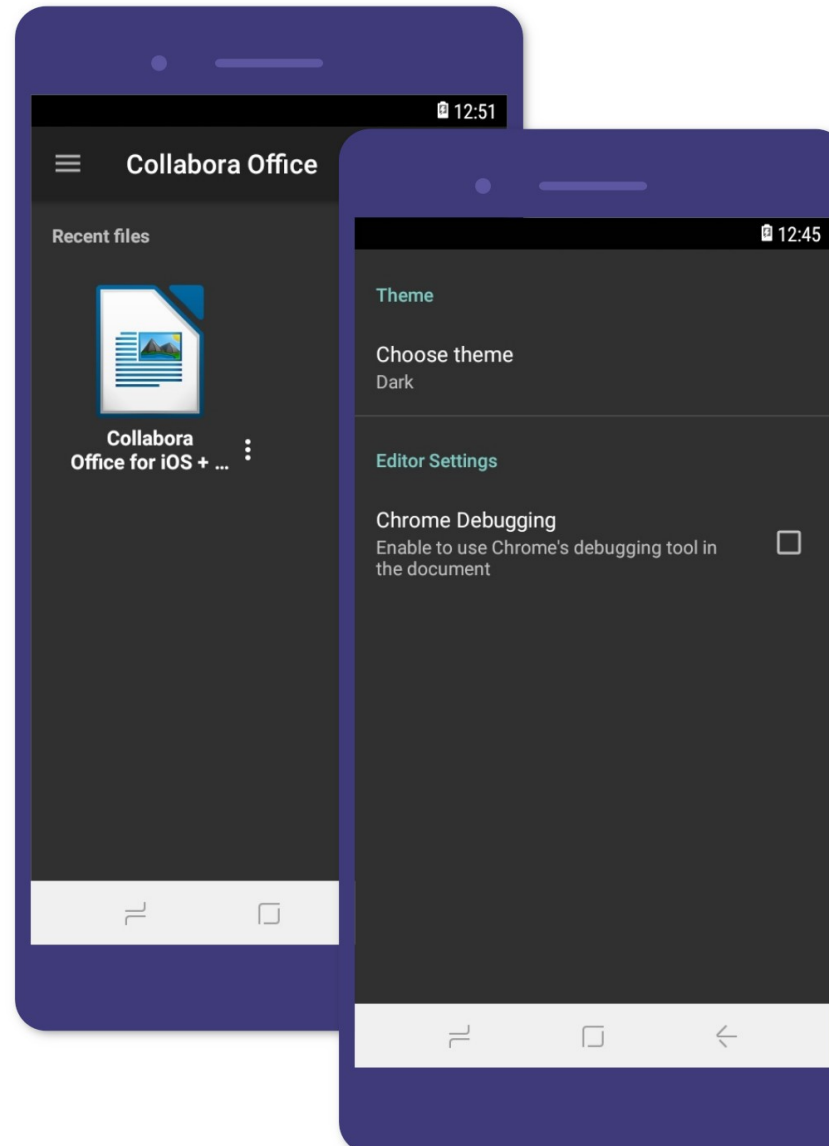
Collabora Office

6.4





**Android: start of a
Dark Mode for the
Online shell.**

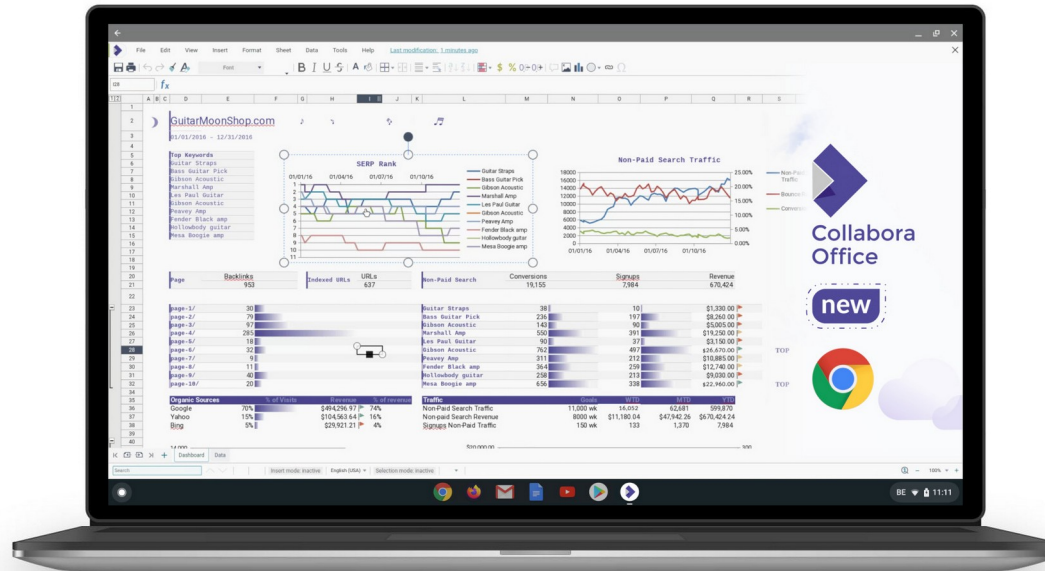




500k installs

Available for iOS, Android & Chrome OS

ChromeBooks:



- Collabora Office_DemoDocs - to be finished

Name Size Type Date modified

< >

File Edit View Insert Format Table Tools Help Last modification: 30 seconds ago

Default Style Montserrat 14 B I U A

Collabora Office 4.2.5

Collabora Office 4.2.5: the enterprise-ready LibreOffice-based Mobile Office Suite that allows you to stay in control of your own documents, full control of all your office files.

LibreOffice is the world's most popular Open Source Office suite with over 200 million users. Collabora, a leading contributor to the project, and developer of the enterprise-ready, Long Term Supported edition of LibreOffice, Collabora Office, has now brought LibreOffice to the Cloud with Collabora Online already back in 2016 - and is still doing most of the work - e.g. 97% of commits if from Collabora.

With Collabora Online you now have access to a powerful, enterprise-ready and 100% Open Source Online Office suite functionality, with excellent support for all popular office file formats and collaborative editing features.

jane
jeu. 27 avr. 2017
Can we add the version nu too?

cor
jeu. 18 juin 2020
I agree Emmy that this c/stated more clearly

Search Page 1 of 2 407 words, 2,742 characters Insert Standard selection English (USA) 100%

All Long Term Support releases are supported for 3 years, with a **perpetual license**, annual subscription to **security maintenance and updates**, an **SLA**, and Level 3 (code fix) support (other levels are provided by our partners). And there are more benefits:

UX integration:

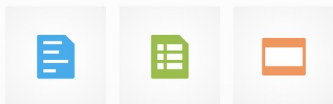
*Letting you theme your
your integration to match
(cf. [blog](#))*



Getting style guide: a how-to ...

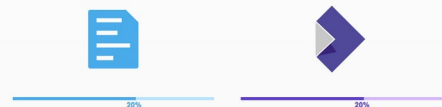
Documents

Document types



Loading...

Options

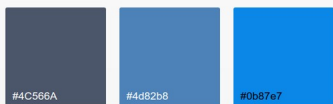


Colours

Neutral colours



Accent colours



Colour-coded tools



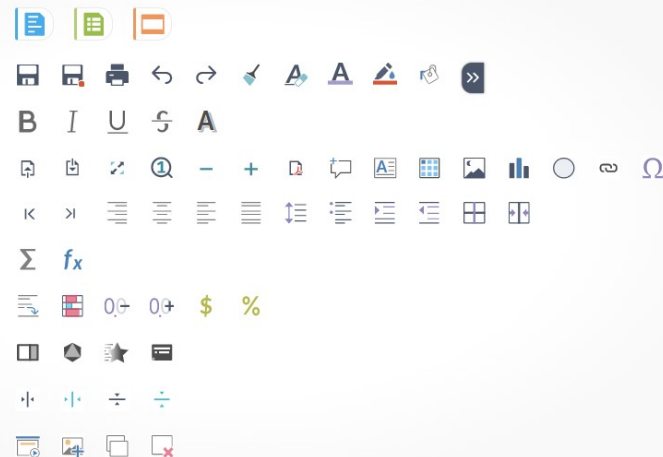
Typography

Sans-serif

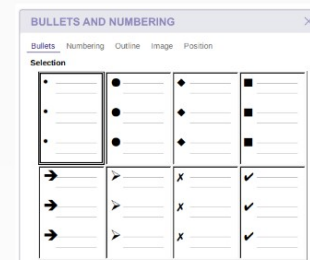
Sans-serif fonts with a variety of weights for each purpose.

Aa Bb Ww a abcdefghijklm
Aa Bb Ww nopqrstuvwxyz

Iconography



Dialog Windows





ui_defaults: posted with the iframe:

```
<input name="ui_defaults" value="TextRuler=false;StatusBar=false" type="hidden"/>
```

‘;’ delimited options in a post field.

uiMode=classic/notebookbar – **select menu/toolbars**

StatusBar=false – **hide status bar**

TextStatusBar=false – **hide status bar only for Text**

other prefixes: Presentation/Spreadsheet

Sidebar=false – **hide sidebar by default**

Ruler=false – **hide ruler by default ... etc.**

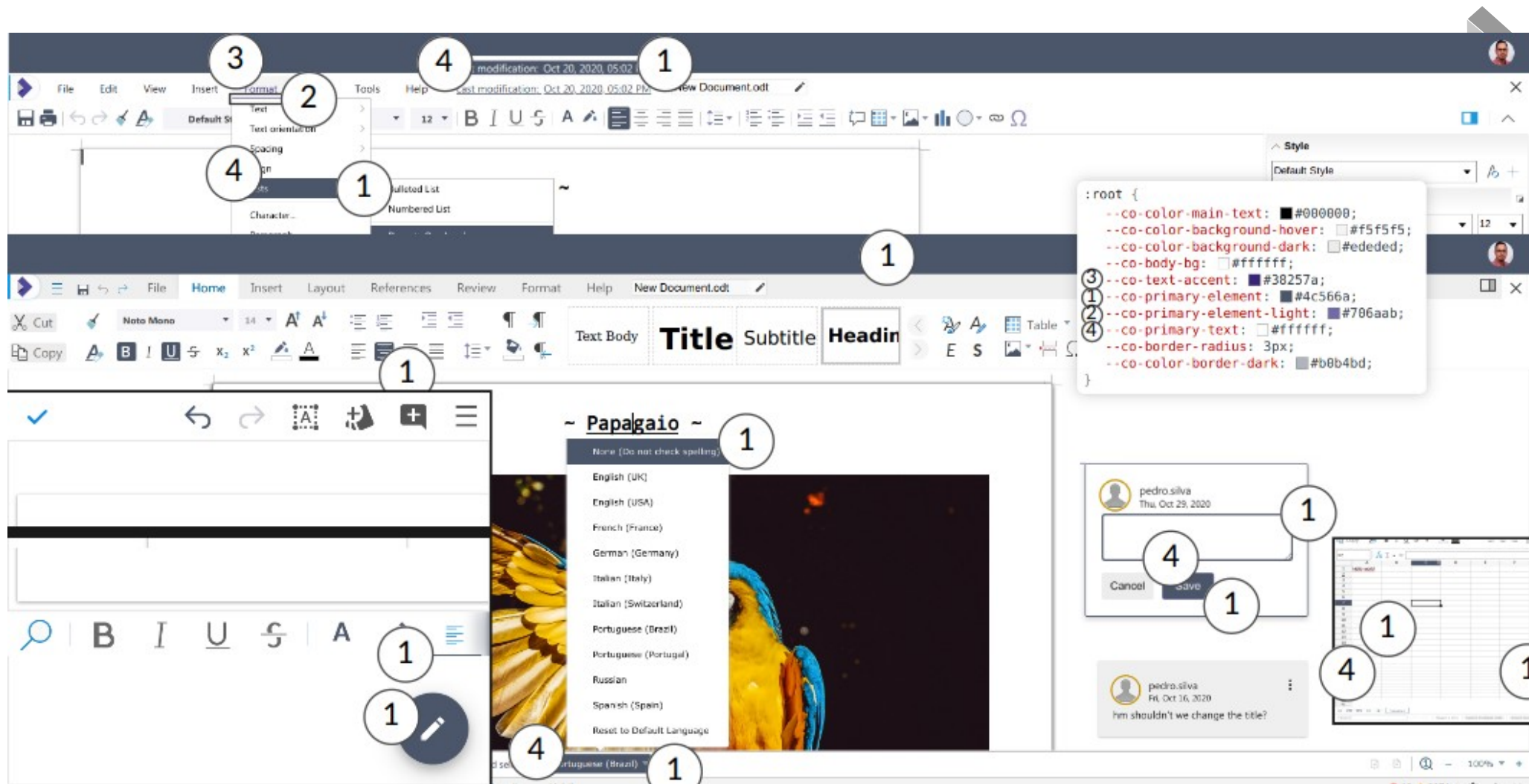


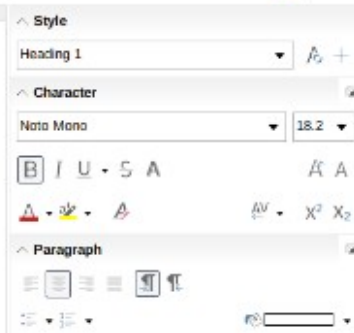
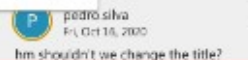
css_variables: posted with the iframe:

```
<input name="css_variables" value="co-color-main-text=#000;- -co-body-bg=#FFF- -co-txt-accent=#38257a;" type="hidden"/>
```

‘;’ delimited options in a post field, default (for now) are:

```
--co-primary-element: #4c566a  
--co-primary-element-light: #706aab  
--co-txt-accent: #38257a  
--co-primary-text: #ffffff  
--co-border-radius: 3px  
--co-body-bg: #ffffff  
--co-color-main-text: #000000
```





Before:

Collabora Online.odt - Files - Nextcloud - Mozilla Firefox

Collabora Online.odt - x +

localhost/nextcloud/index.php/apps/files/?dir=/Documents&fileid ... Vyhledat

File Edit View Insert Format Table Tools Help Last modification: 7 minutes ago Collabora Onlin ...

Save
Save As...
Share...
Print...
See revision history
Download as

Collabora Online

Welcome to the Collabora Online Demo

Thank you for your interest in the Collabora Online demo. Collabora Online is an open source on-premise office suite solution based on LibreOffice Online. It enables you to collaboratively edit, save and write text files, spreadsheets and presentations online. Collabora Online works on any modern browser and offers excellent interoperability for all popular office formats.

There are two versions of Collabora Online. The scale-able and supported enterprise-ready [Collabora Online](#) and [CODE](#) — the Collabora Online Developers Edition. While Collabora Online is aimed at professional business users, CODE is perfect for home users that want to start to run their online office suite in an own private environment or tech-enthusiast, that want to be among the first to see and test new features. Learn more about the differences [here](#).

One more thing before you start! This demo runs on our servers and grants you access to the latest snapshot from

Style
Text Body

Character
Vegur 10.5
B I U S A
A a X² X₂

Paragraph
Text alignment and bullet point options

Spacing:
Line spacing: 0.00" 0.08"
Paragraph spacing: 0.00" 0.00"

Indent:
First line indent: 0.00" 0.00"

After: theming / palette & settings ...

Collabora Online.odt - Files - Nextcloud - Mozilla Firefox

Collabora Online.odt - x

localhost/nextcloud/index.php/apps/files/?dir=/Documents&fileid ...

Vyhledat

File Edit View Insert Format Table Tools Help Last modification: 1 minutes ago Collabora Onlin ...

Save
Save As...
Share...
Print...
See revision history
Download as

Nextcloud highlight colors

Ruler off by default

Sidebar was here ...

Lighter document background

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Business & FOSS Engineering

*time to market, branding &
who dares pays ...*



Engineering - Business / Community

How to fill this gap

- Paris → GDK-Broadway based prototype
 - 2011
- Collabora Online 1.0
 - 2016
- Why ? Investment → return.
 - *Eur million(s)*

Engineering choices

- Getting a product bootstrapped
“ship it when it’s perfect”
vs.
“release early & iterate to perfection”
- Technical / release schedule choices.
- Economics / Marketing / Sales ...



The awesome LibreOffice
community of friends.

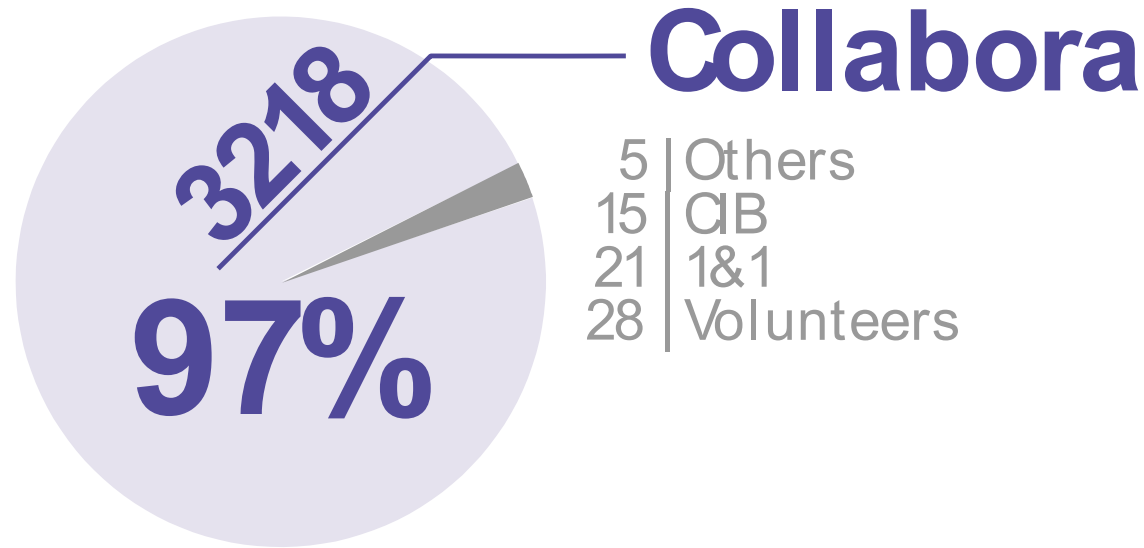
(who still disagree sometimes)



Putting in the investment ...

Online commits

By affiliation (last year)





Moving our development to github

Clear brand story

- Helps to drive investment and avoid user / customer confusion
- Unwinds LibreOffice vs. Collabora brand conflict

Removed reminder for users in CODE

Developer pool growth ...

Continue to support, work on LibreOffice

- TDF doing well – Eur 1.3m raised last year from Desktop +~30%

Tackles the “Free Compliments” problem

- At least marketing-wise ...

Similar to Nextcloud/ownCloud/pydio/seafiler/etc.

- A clear flow of users through their projects
- An obvious place for support
- Clear credit given in the product name
- No complex structures necessary.

FLOSS company assets: cash + their brands

- ROI is important → in marketing.



Example new Online volunteer contributions

Lots of Design / CSS work

- Thanks to Andreas Kainz

Improving icon-sets

- Thanks to Rizal Muttaqin

Python tooling improvements

- Thanks to Alan Verdugo, corleone77, Batuhan Görkem Benzer, Kuesji Koesnu and Mücahid Aydın

Javascript code cleanups & wins

- Thanks to Dilaver Demirel, Pelin Kuran, Buğra Kurt, Irina Hristova, Rashesh Padia and Ayhan Yalçınsoy

FreeBSD port improvements

- Thanks to Gleb Popov

C++ core code cleanups

- Thanks to Jan Dagefoerde, Yusuf Keten

Easy to contribute – with [gitpod](#)

How to get involved ...

Easy wins left & right for many skills



It is easy to get involved:

LibreOffice features:

<http://www.libreoffice.org/>

Code

<https://git.libreoffice.org/core>

Get involved:

- <https://www.libreoffice.org/community/get-involved/>
- C++, python, l10n and more
- <https://translations.documentfoundation.org/>

Collabora Online

<https://collaboraonline.github.io/>

Easy Hacks:

<https://github.com/CollaboraOnline/online>

- C++, Javascript, CSS, Design ...

<https://hosted.weblate.org/projects/collabora-online/>

Forum:

<https://forum.collaboraonline.com/>

Weekly dev. meetings

Making Open Source ROCK





Conclusions:

Easy to deploy on your existing:

- Nextcloud, ownCloud, Moodle, Seafile, Mattermost, EGroupware ...

Regain control of your data & documents today

Easy to integrate into your web app

Server load-wise, small compared to EFSS

Improving at significant pace

Created by Collabora

- with the generous [help of many](#)
- easy to contribute to

based on LibreOffice Technology

Thanks for your support !



Thank you!

By Michael Meeks

@mmeeks @CollaboraOffice

CollaboraOffice.com

CollaboraOffice.com/CODE

michael.meeks@collabora.com

**Open Source,
Open First**

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