Unleash the Power of COOL

Seamless Integration, Cutting-Edge Features and Empowered Collaboration

Michael Meeks
CEO
michael.meeks@collabora.com

Collabora Online

CW2

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Powerful Online Collaboration

What is Collabora Online?

Documents + Spreadsheets + Slides + Drawings

- Viewing and collaborative editing
- Feature rich

Interoperability with Microsoft formats

- docx, doc, rtf, xlsx, xls, pptx, ppt

Import filters and viewing for

- PDF, Visio, Publisher and many more

Powerful WYSIWYG rendering

On-premise integration

Architecture – a bet on CPU threads and network getting cheaper over time

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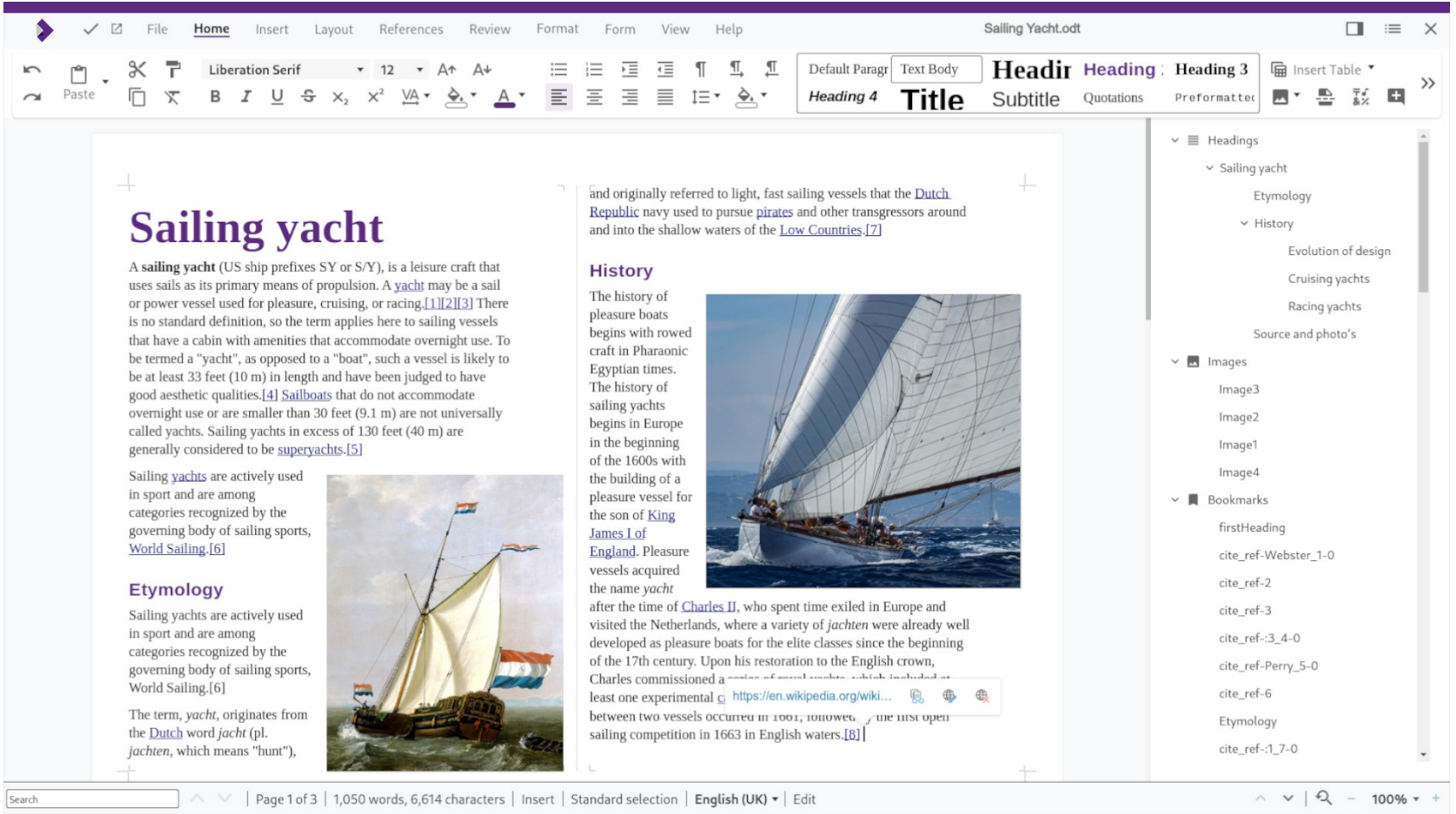
Collaborative Writer



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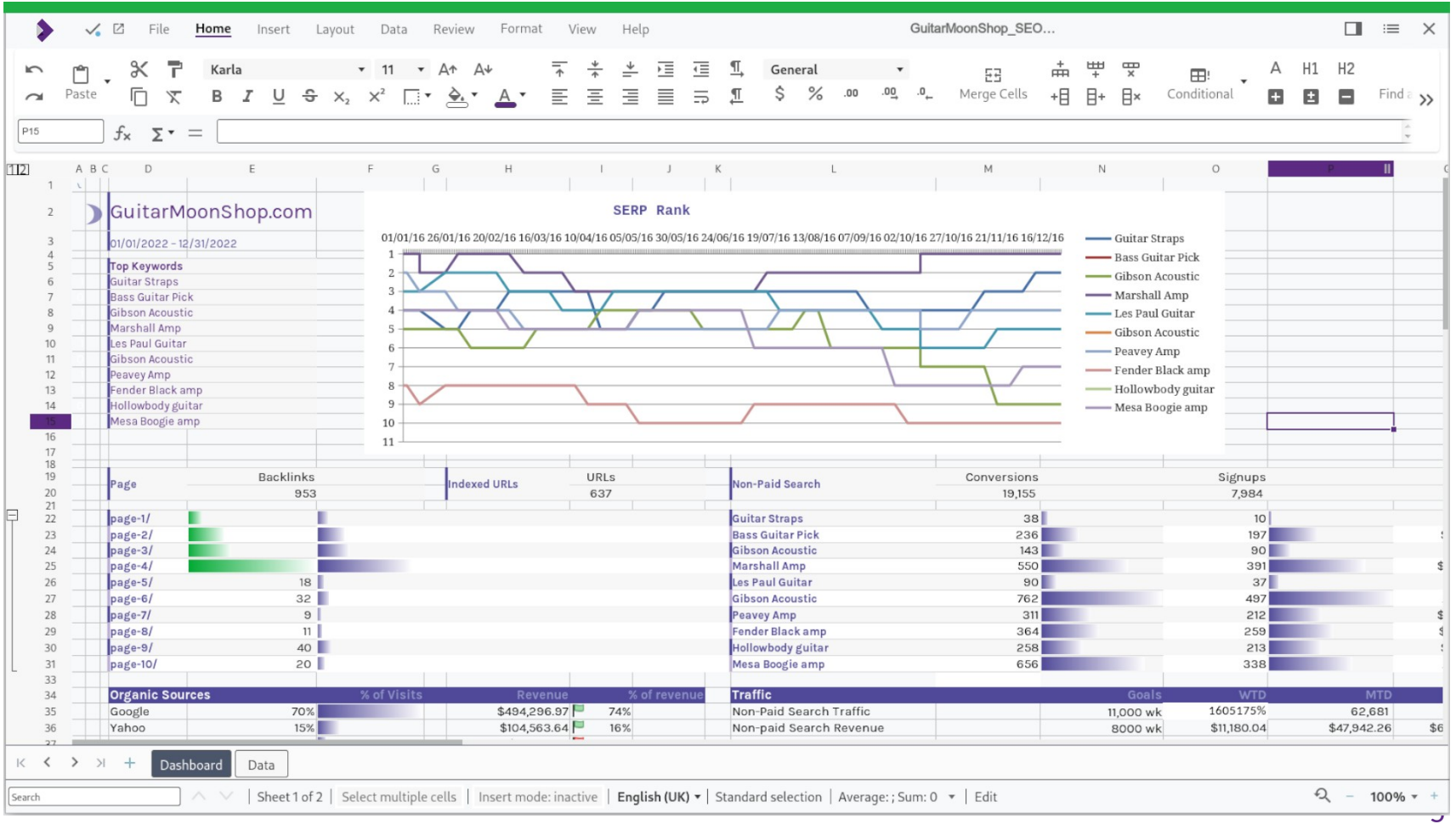
Collaborative Spreadsheets



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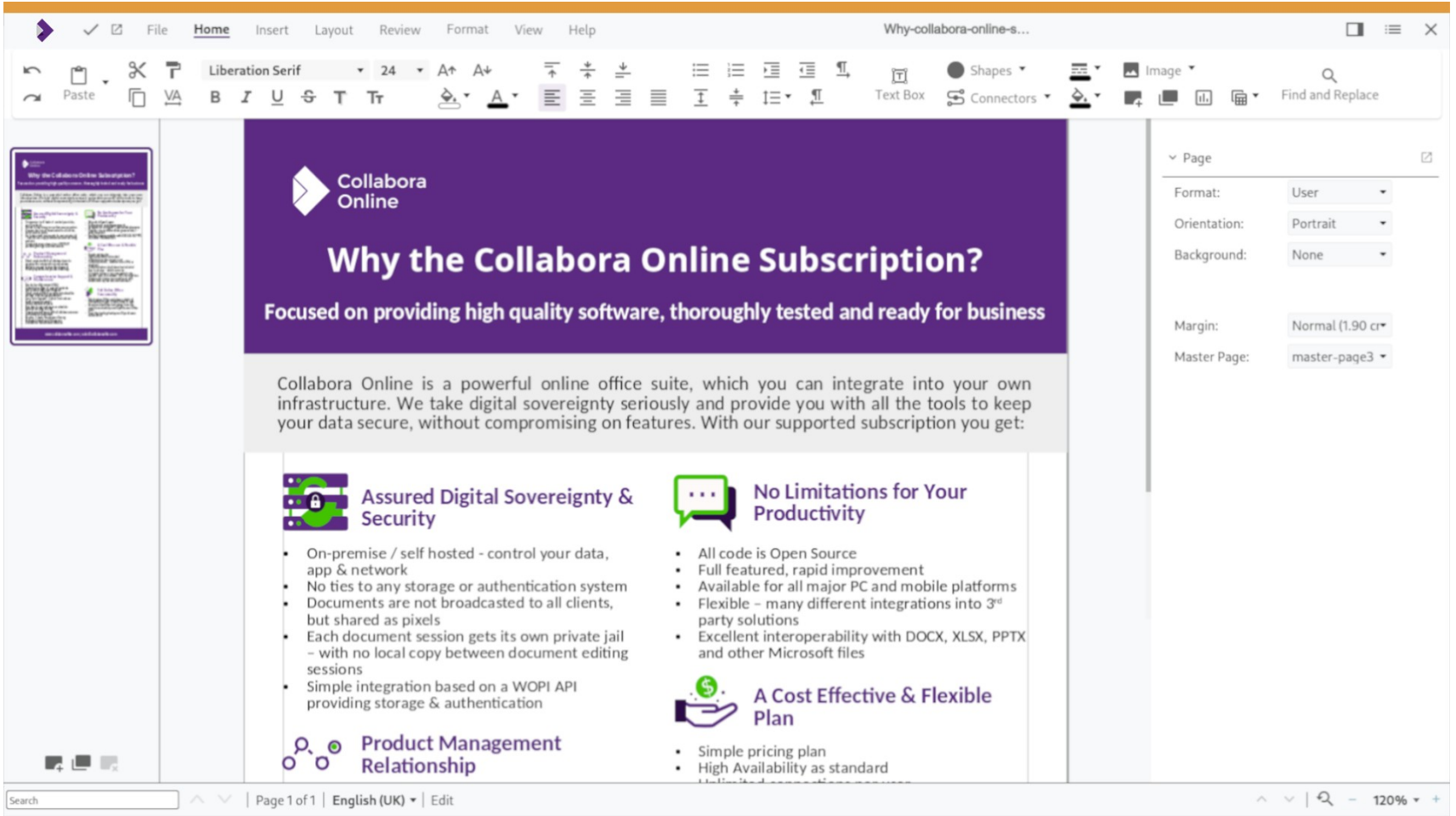
Collaborative Drawing



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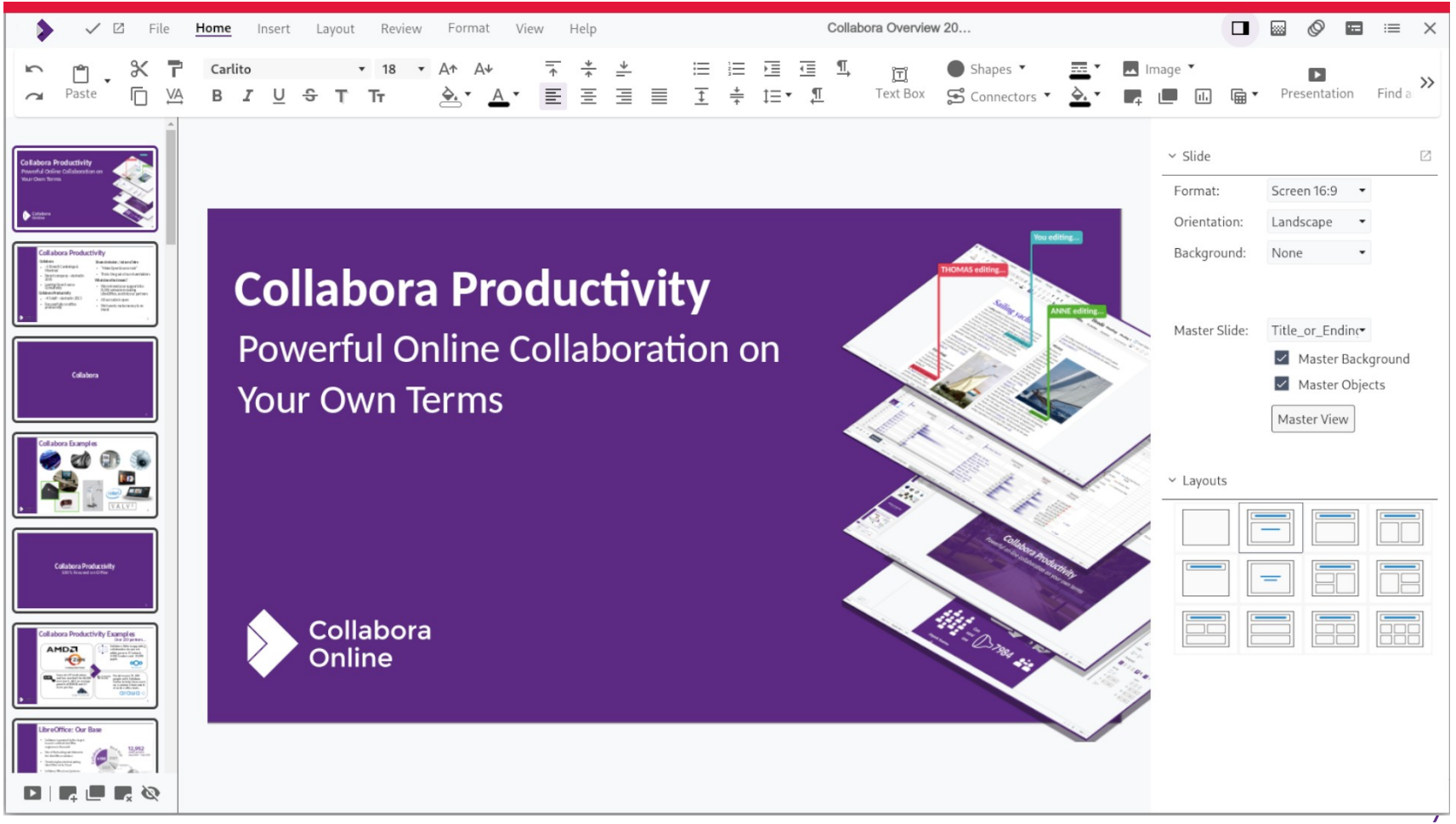
Collaborative Presentations



Collabora Online

Collabora for Android, iOS & Chromebooks

Also available on Desktop, Mobile & Chrome OS

Collabora Online

Collabora Online for You

Collabora Productivity

Case Study

Collabora Productivity Ltd provides Duden Korrektor functionality for BFA Staatendokumentation

Collabora Productivity SURF ownCloud

Case Study

How ownCloud and Collabora Online Increased Productivity In the Dutch University and Research Landscape

Collabora Productivity

Case Study

Open Source helps students learn from home during lockdown

Collabora Productivity arawa

Case Study

Extinguishing Barriers of a Diverse Workforce

Collabora Productivity Nextcloud

Case Study

SIB delivering Nextcloud to 2500 teachers and 33000 pupils in Brittany, France

SMBs

Enterprises

Education

Hosting

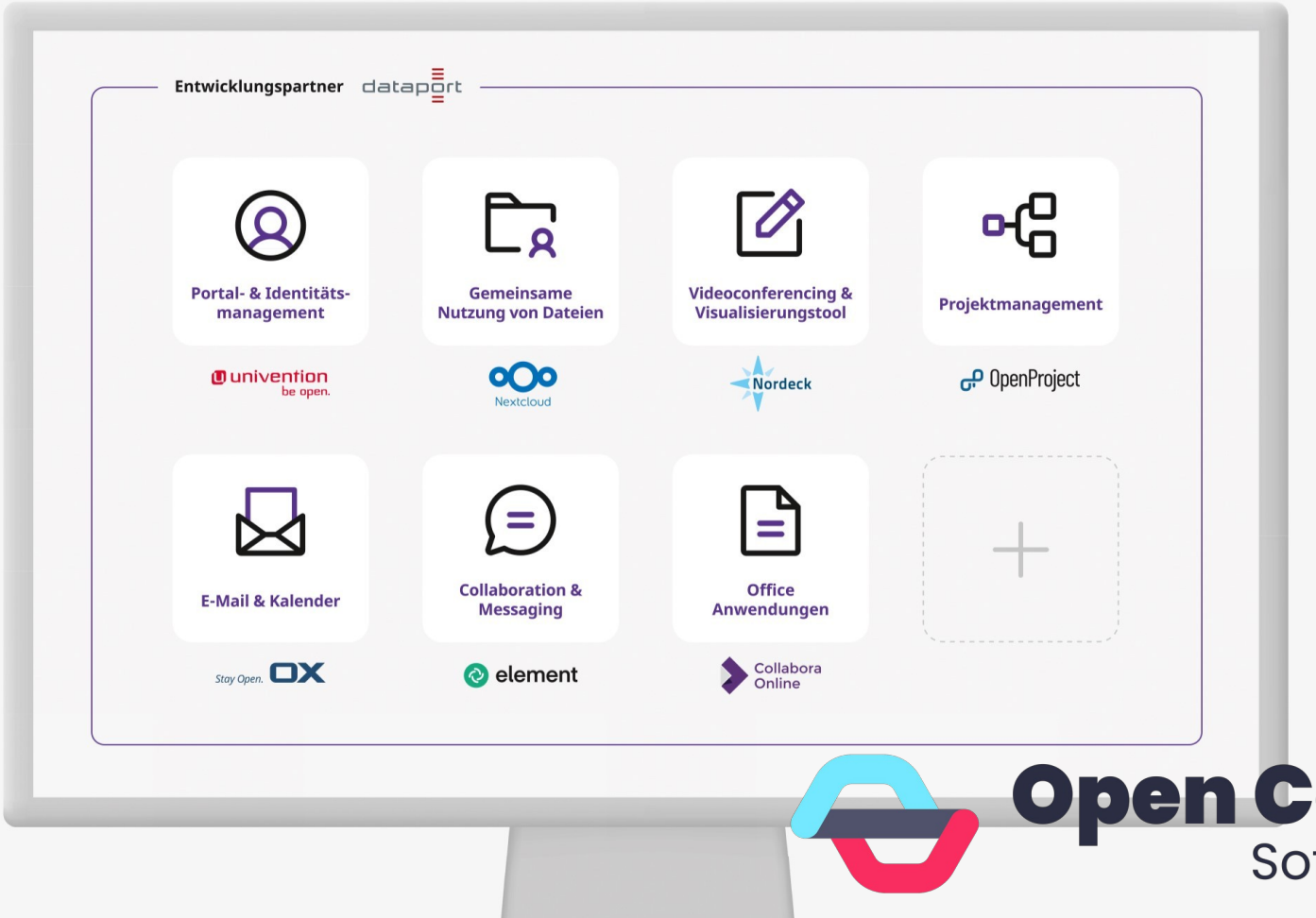
OEM

Collabora Online

openDesk

Der Souveräne Arbeitsplatz

Including IT-Grundschutz work with Dataport



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Open CoDE Software

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Distinctives

Friendly Open Source Project

Real Open Source

- 100% Open Source code
- Built with LibreOffice technology
- Built with Free Software technology stacks: primarily C++
- Runs best on Linux

Open Development

- Anyone can contribute & participate
- Follow commits and tickets
- Public community calls - forum has details

Focus

- A non-renewable resource
- Office Productivity & Documents
- Excited about migrating your documents
- Grateful to our partners for solving other problems

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Friendly Open Source Project

Responsive Support

- Standing behind our customers
- ISO 9001, and ISO 27001 certified

Sensible licensing

- As many servers & connections & containers & VMs as you need

“Office for the free world”

- Friendly Developers
  - 50% EU, 75% NATO, global org + LibreOffice technology community
- Friendly Investors
  - 50/50 ~Canada/UK
- Engineers that can travel to you
- Clean hands

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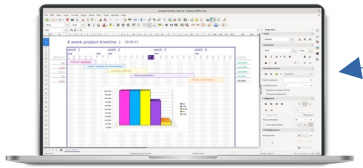
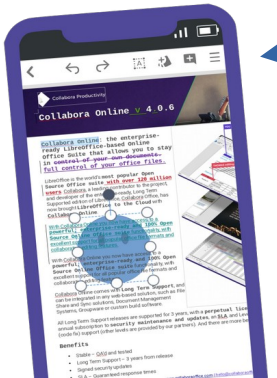
Document Security

Firewall
VPN
Proxy

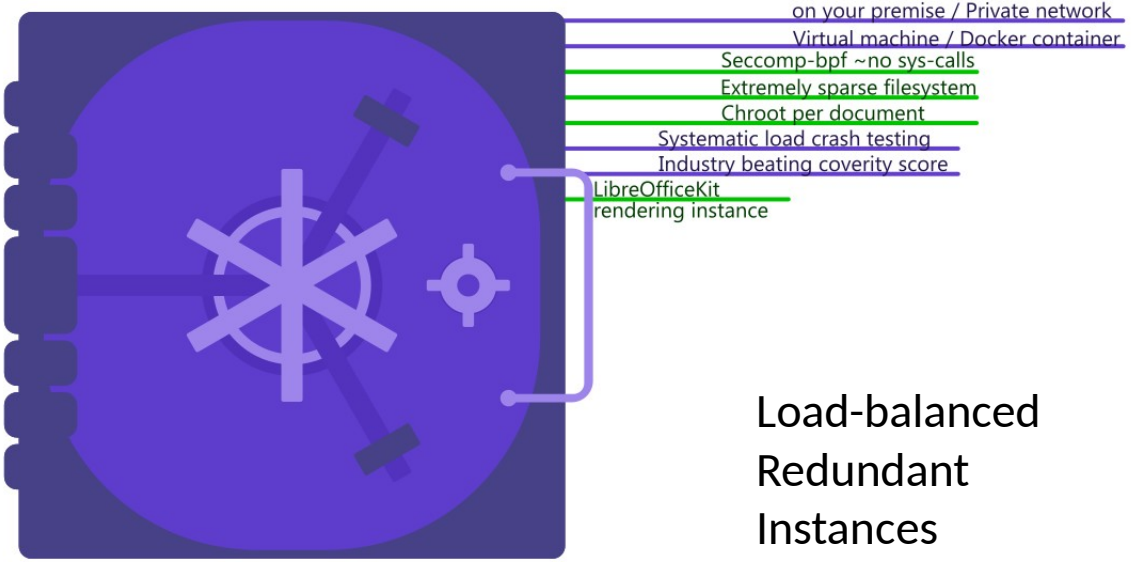
Untrusted Clients





Sending
pixels
to screens

Trusted, Secure, Collabora Online Server

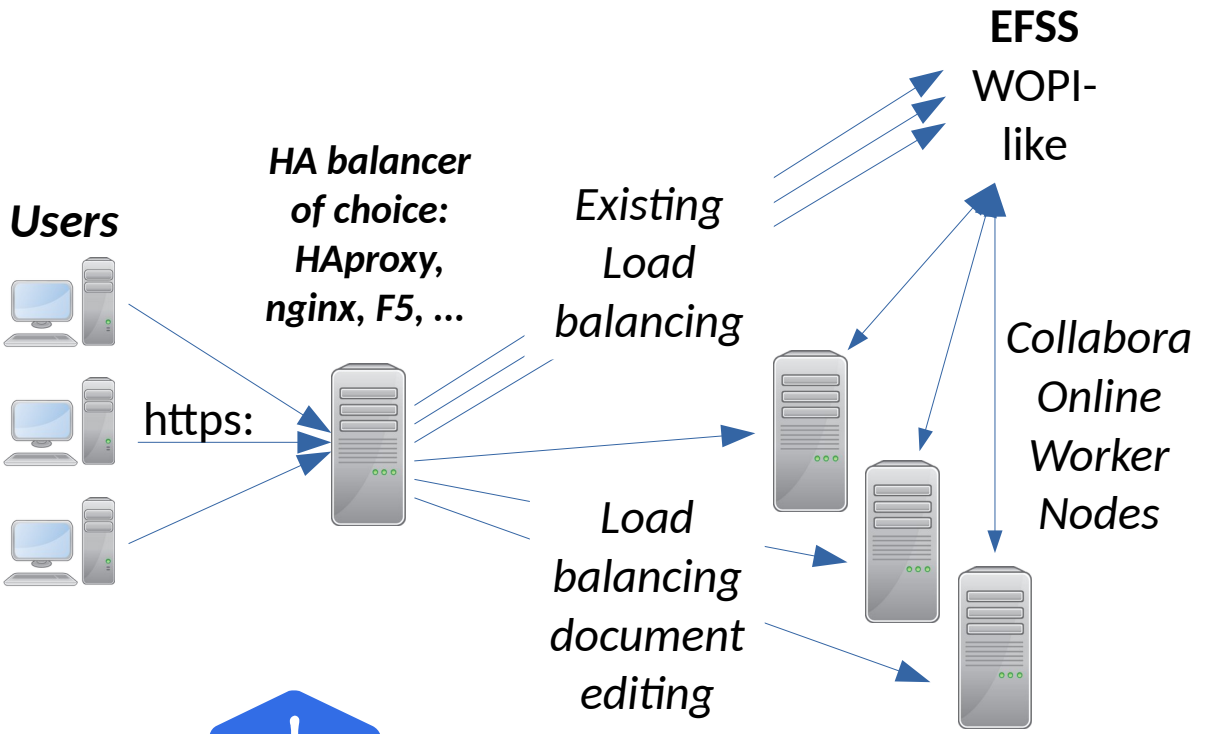


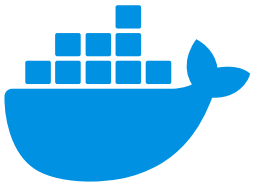
Load-balanced
Redundant
Instances

Highly Available & Simply Scalable

eg. grab our helm-chart

- Incremental / available upgrade-ability
- No extra services
- Management (eg. Kubernetes)





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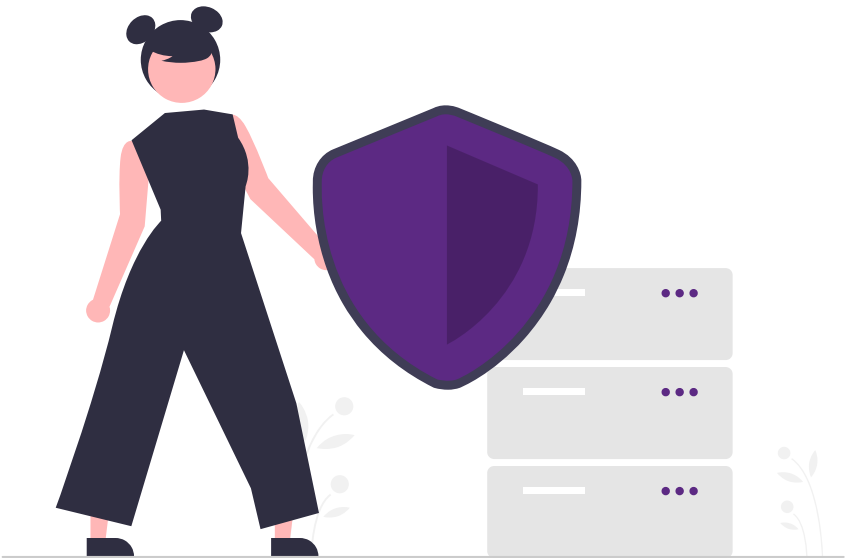
COOL Controller

Even easier deployment & scaling

Scaling Collabora Online with Kubernetes

- Improved scaling and load distribution
- Cost efficient server usage
- Perfect for large deployments



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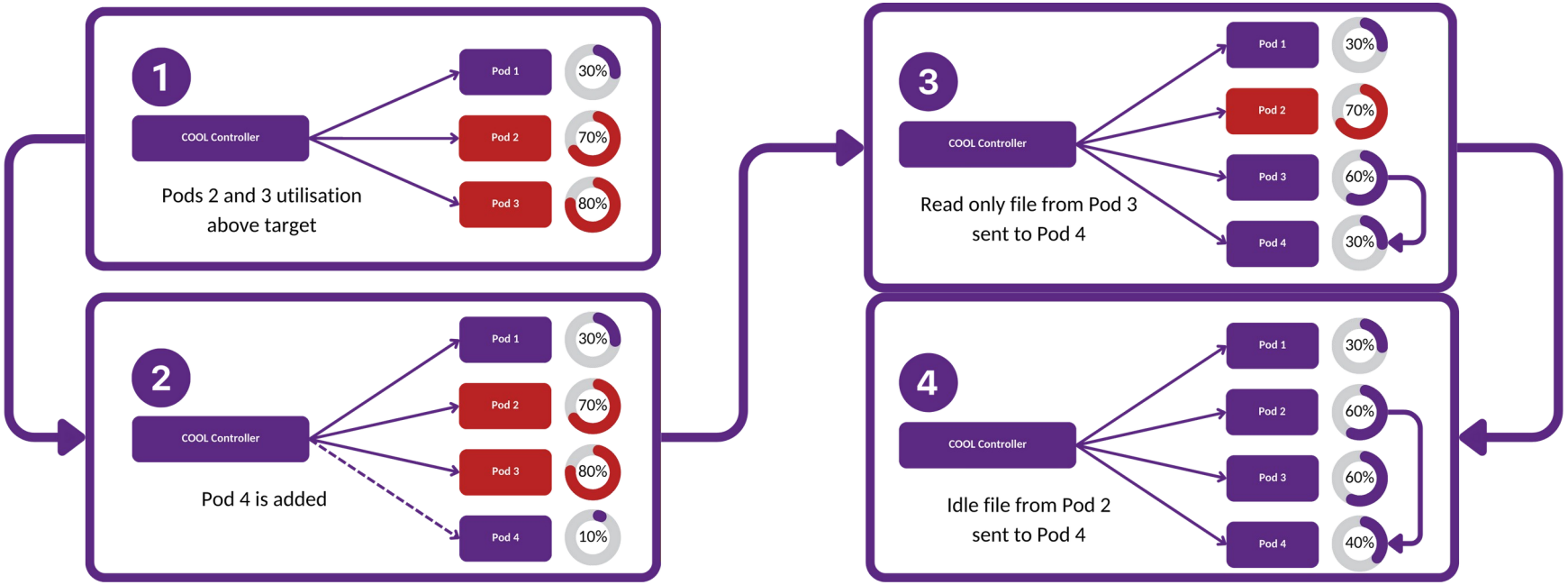
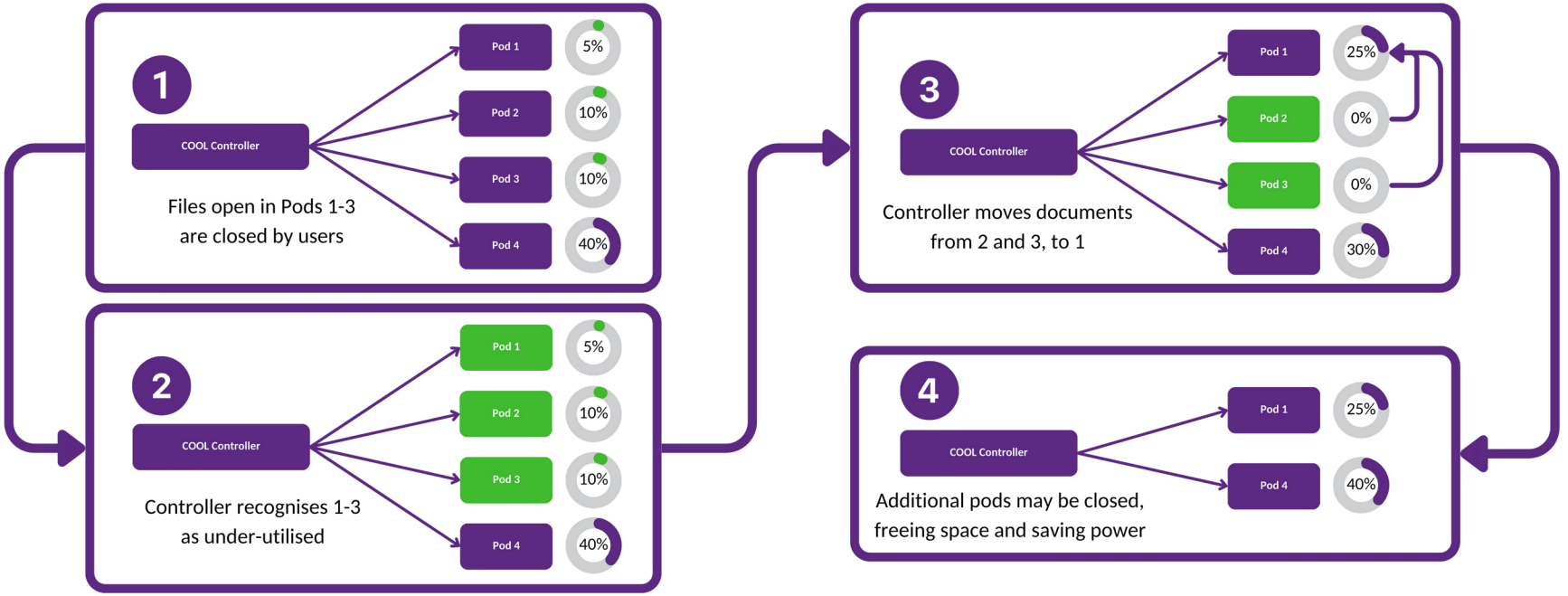
Scaling Collabora Online with Kubernetes

- Load scaling example – target pod utilisation <70%



Scaling Collabora Online with Kubernetes

- Load scaling example – pod under-utilisation



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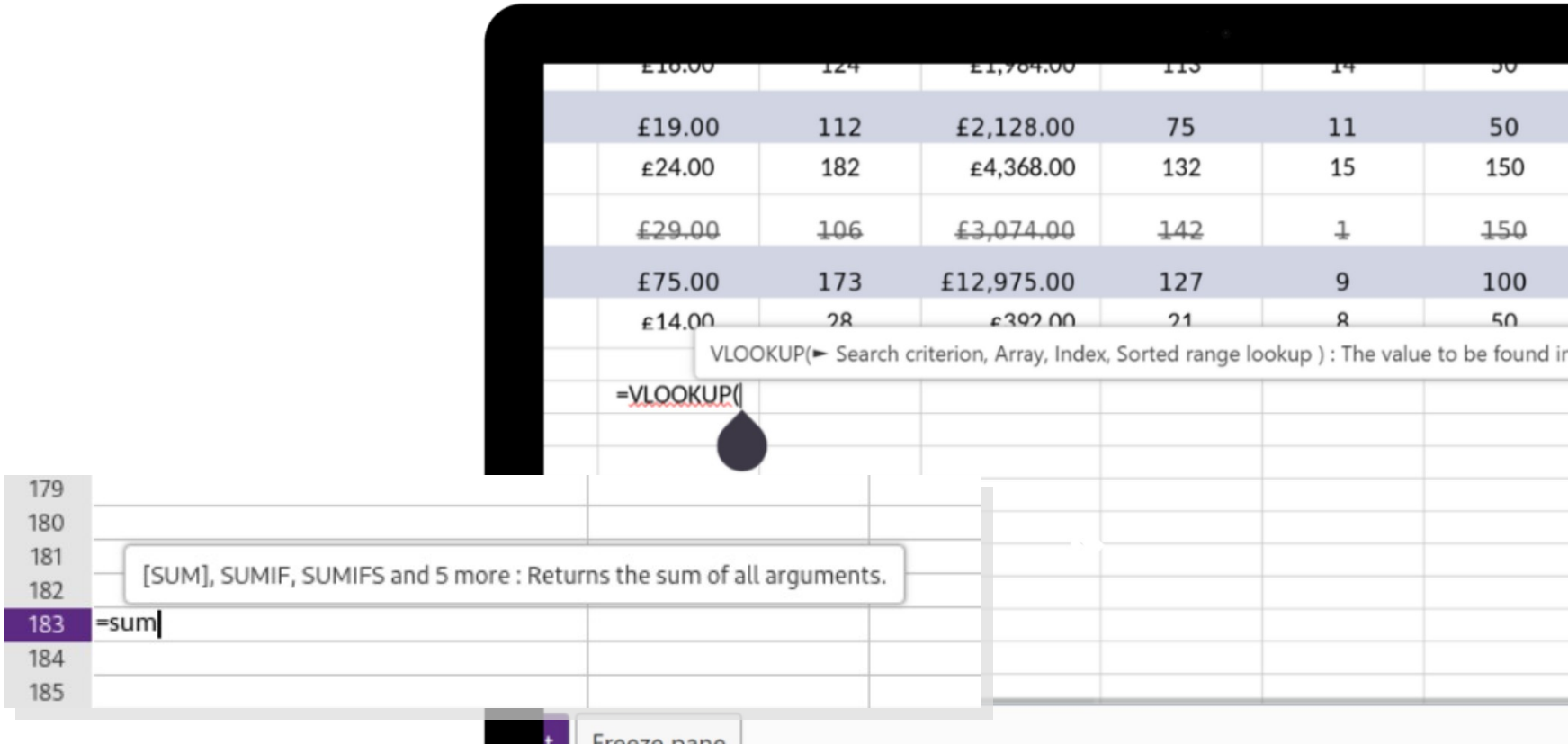
Latest Features in 24.04

Lots of work over the past year – let us free your documents!

Contextual Tooltips

- Start to type a formula and a list of available formulas appear



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Better Tracked Change Processing

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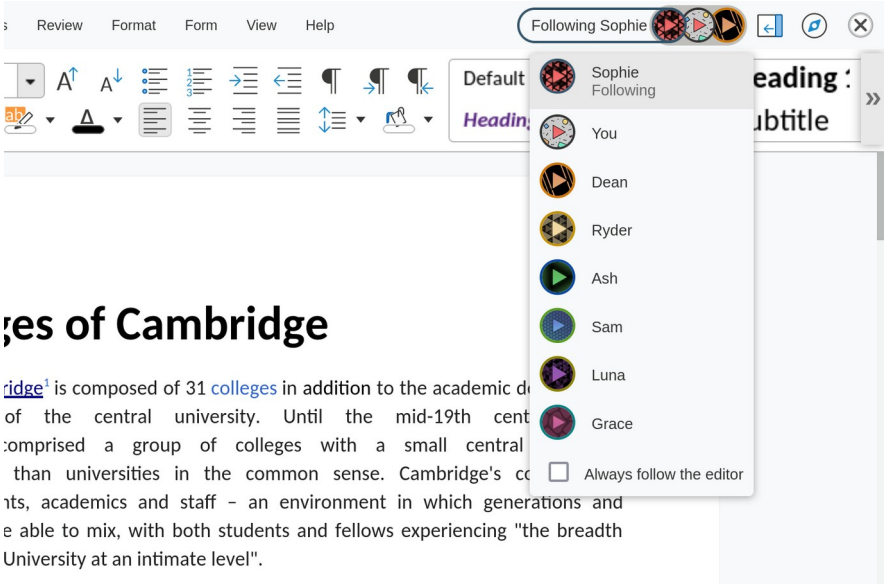
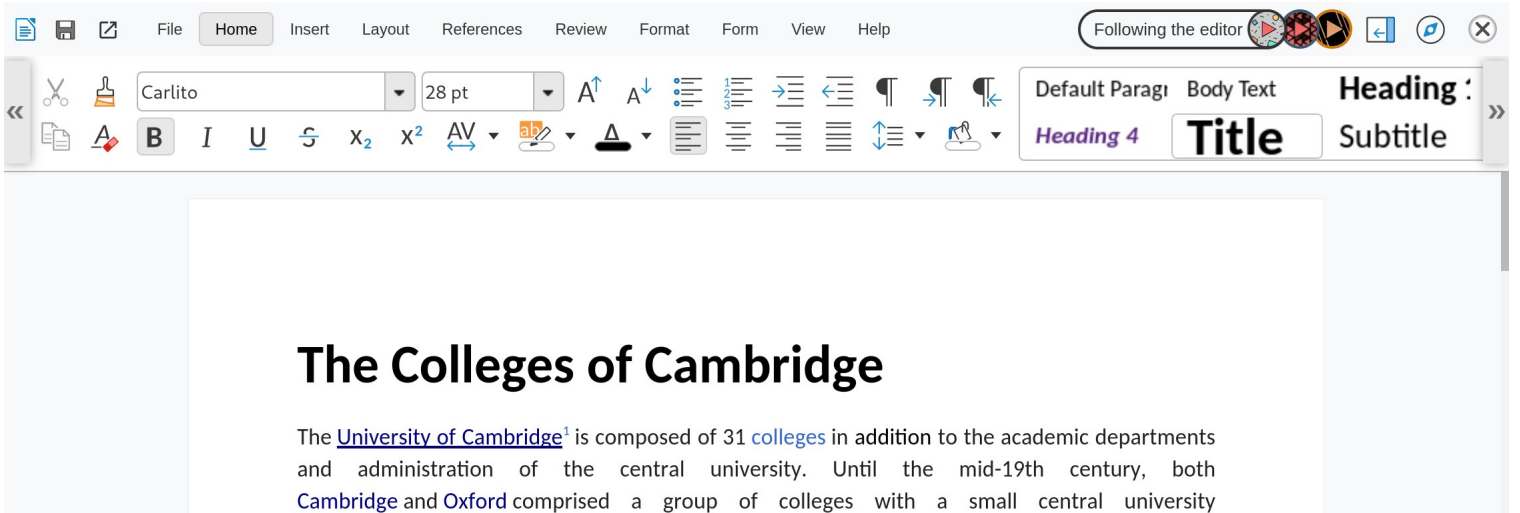
Follow Users

- New interface for clarity
- Unfollow with just a click





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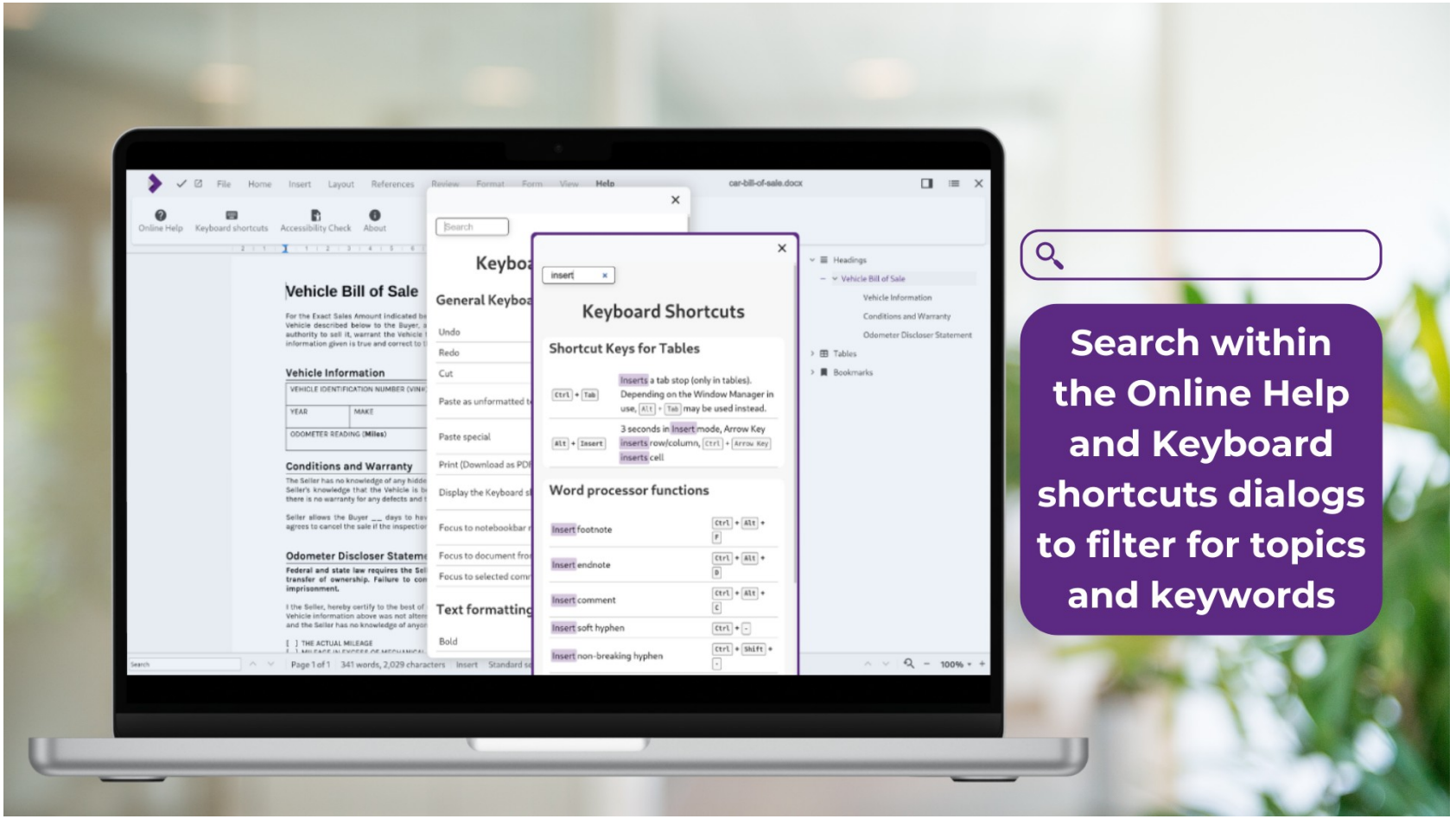
Search for Help



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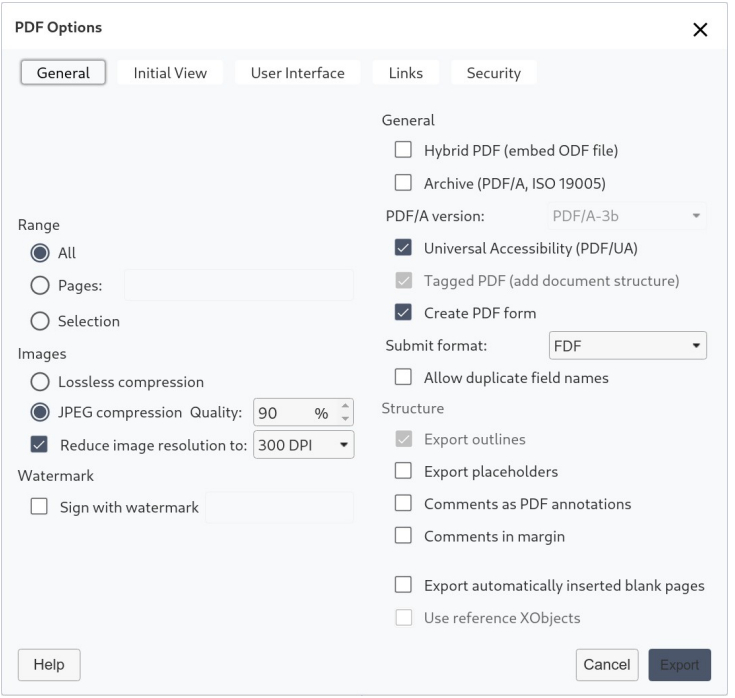
PDF Improvements

- Generating accessible PDFs with PDF/UA export
- Exporting to PDF v.1.7 by default
- Tagged PDFs produced by default
  - Include hidden accessibility markups to improve the reading experience with screen readers and other assistive technologies
- Hybrid PDFs now storing original ODF documents
  - For sharing documents with others as a pdf, while retaining the functionality of being able to modify the original file



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Continued Accessibility Wins

- Screen reading & keyboard usability wins
- Processing lots of Audit results
  - Actively fixing and polishing large numbers of improvements
- Target full WCAG 2.0 AA conformance

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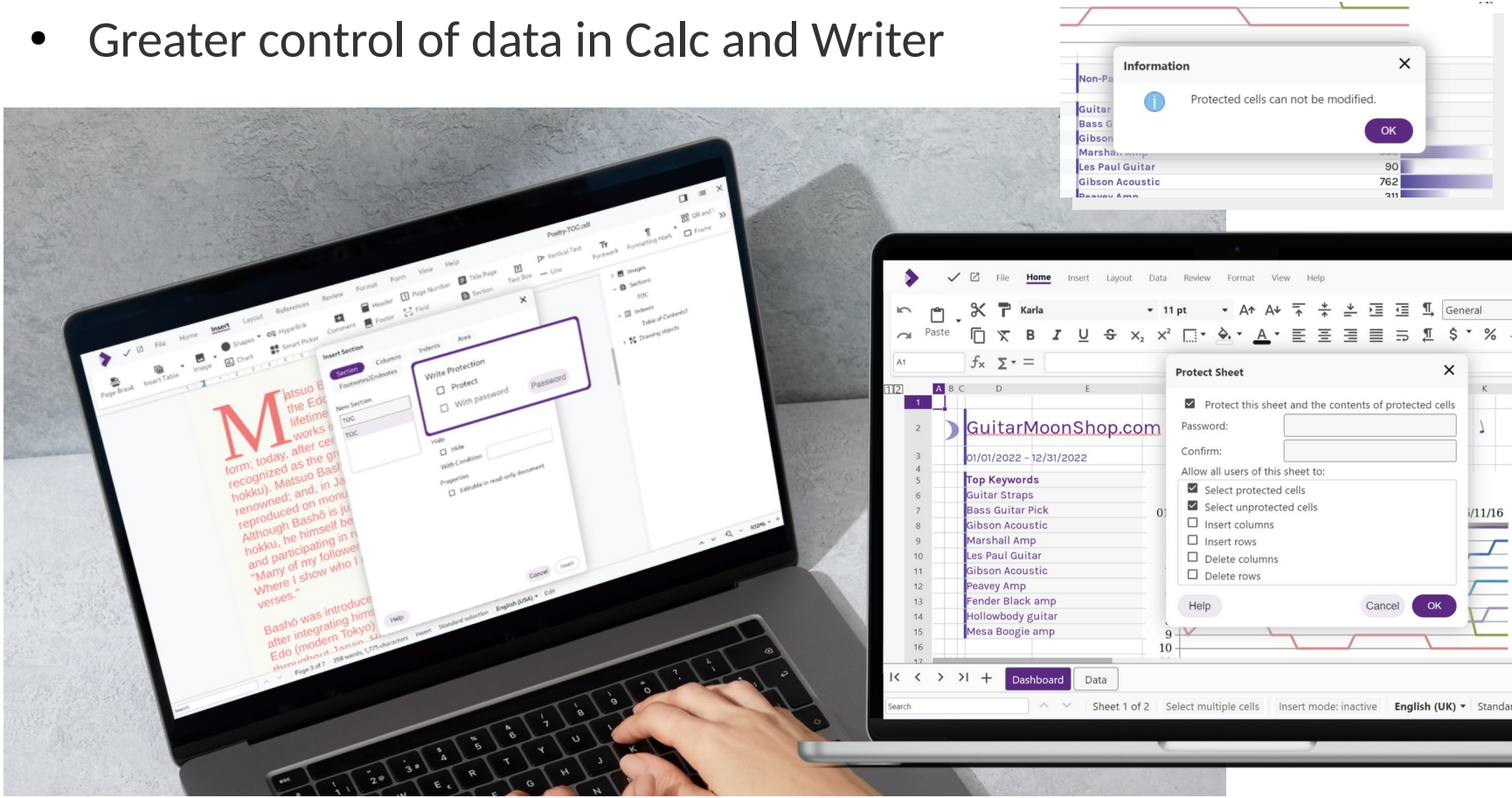
Cell Protection and Section Editing

- Greater control of data in Calc and Writer



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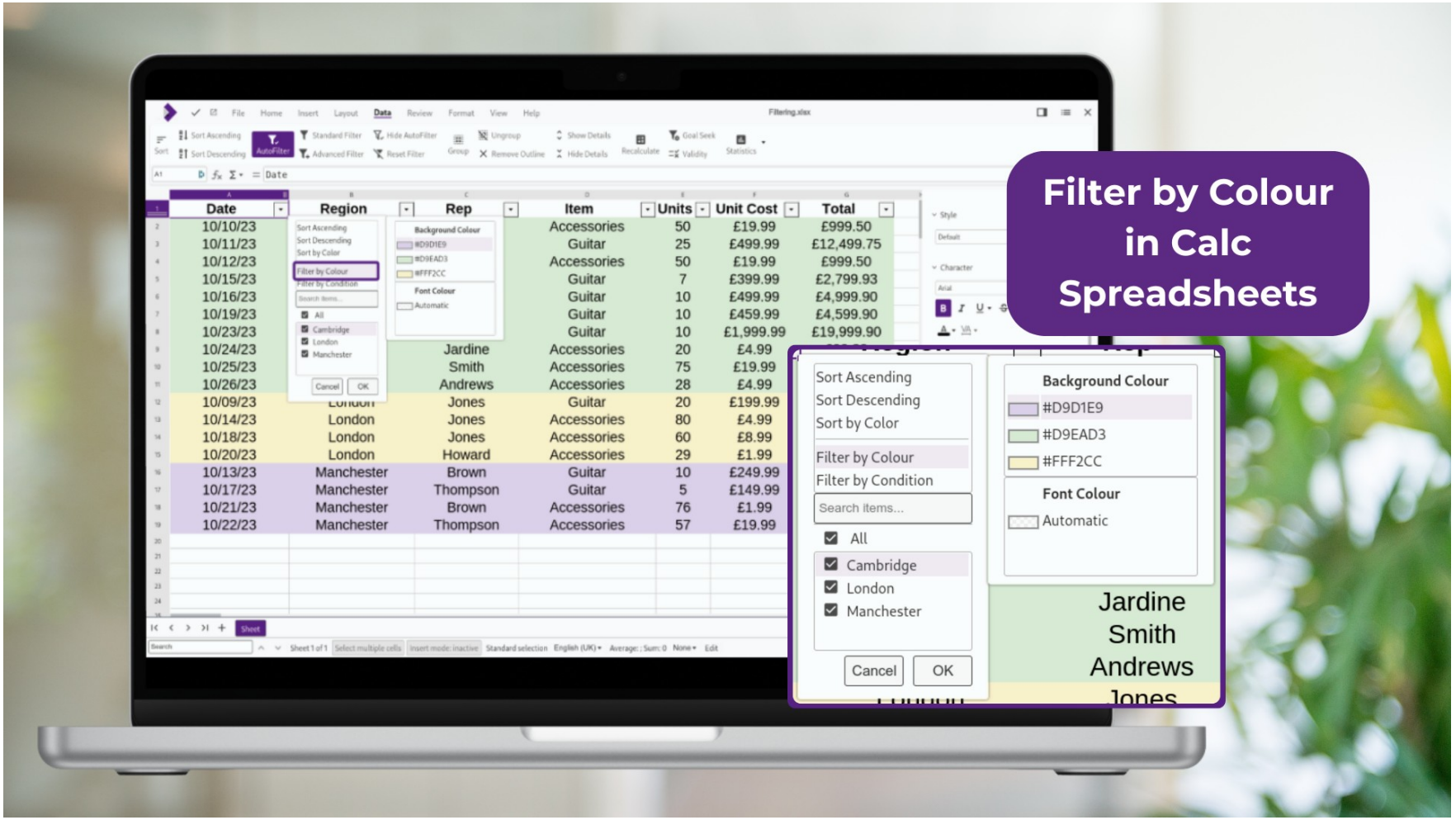
New Filter Options



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Improved Read-Only Mode

- Previously, read-only access was not interactive
- Now we offer more granular control for documents and spreadsheets
  - Allow users to select document text
  - Improved accessibility
- Plus you can now follow hyperlinks in read-only documents

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Present in Window

- New option to present slides in a new window

Useful for video conferencing and large screens

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Quarantine

- Rescue documents from corner-cases
- Imagine someone changing permissions on the document you are editing…
- Suspends the state-less-ness we know and love somewhat
  - Off by default

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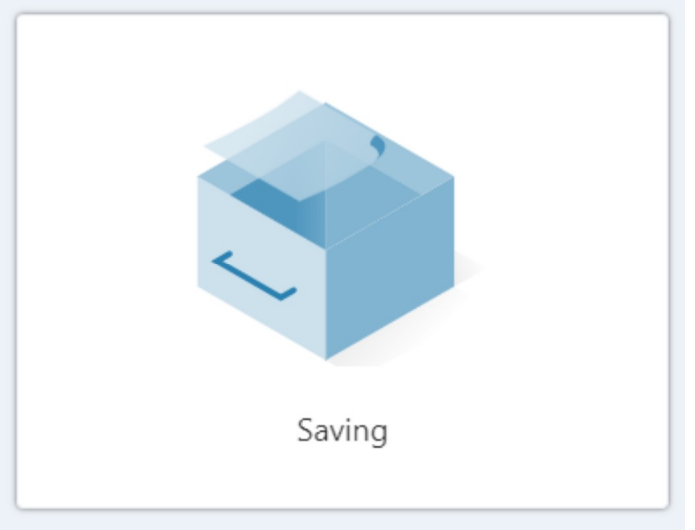
Auto-Save

- Auto-saving can now be carried out in the background
- Fewer interruptions to editing
- 700ms before the animation, 7ms to fork…



Fewer interruptions with 24.04

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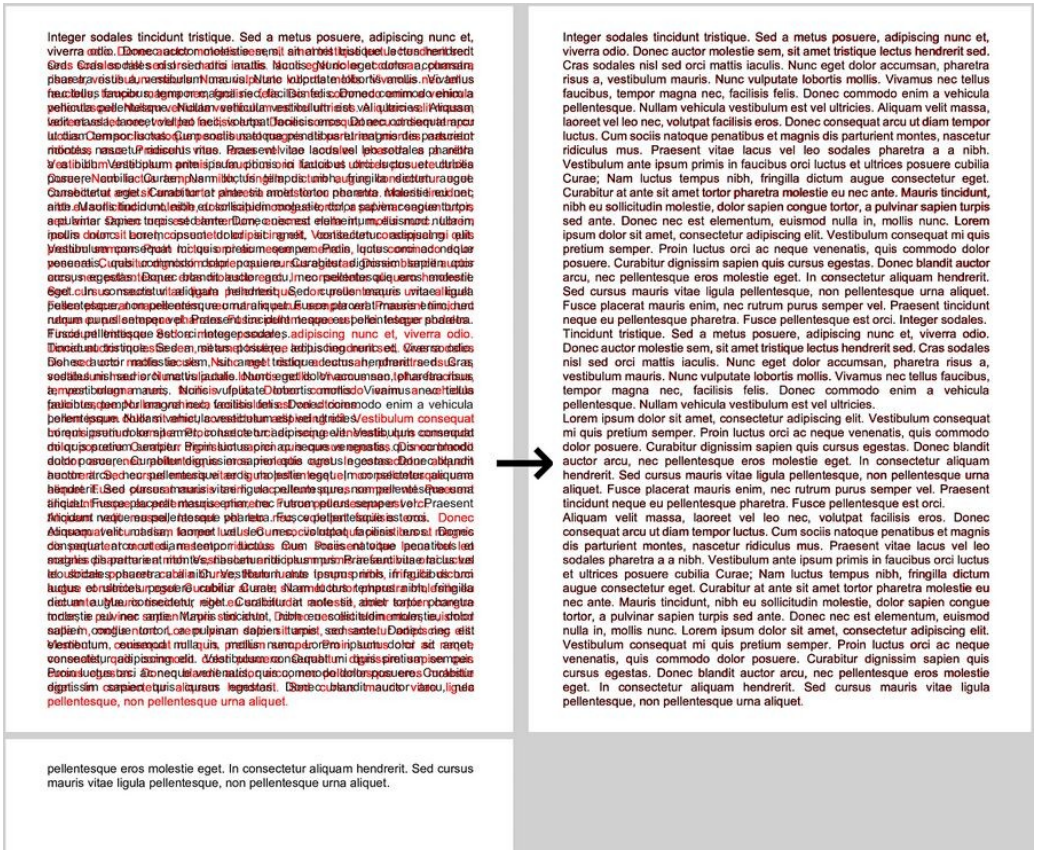
Interoperability

Smart Justify

- Maximised interoperability with Microsoft Word
- Image shows a composite of pages typeset by Writer (black) and Microsoft Word (red) before and after the update.
  - The line breaks ultimately resulted in a two-page document for Writer, where Word rendered as one.



*Many thanks to László Németh, the European Commission's Next Generation Internet programme and NLnet

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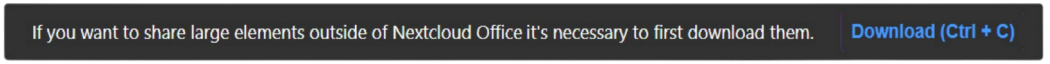
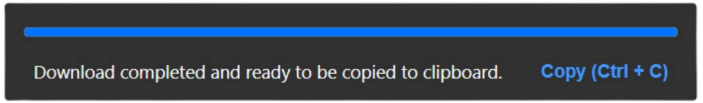
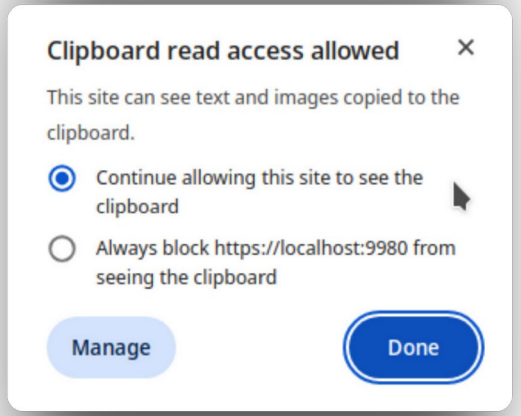
Simplifying Copy and Paste

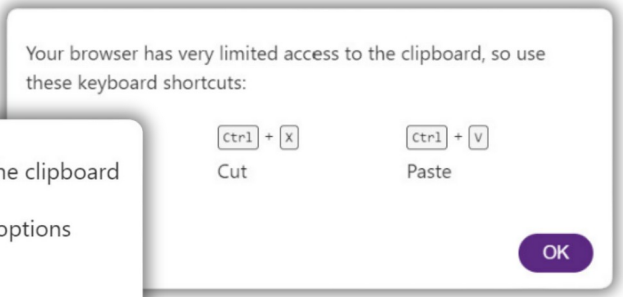
- Toolbar buttons work as expected
- Easier for the end user
- No download required







New clipboard API pop-up



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HTML Copy/paste with Google Sheets

- Reverse-engineered and documented Google Sheets extensions
  - Preserves formulae vs values and styling
  - Ensuring that data copied from Calc includes markers such as <google-sheets-html-origin/> to fully work with Google Sheets
- Help Collabora Office Desktop ↔ Collabora Online copy/paste as well as from Google Sheets

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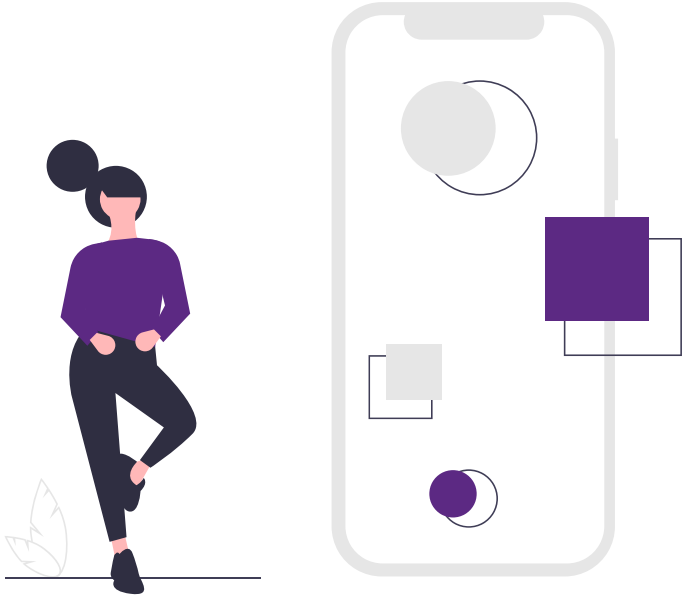
Improved Graphics Support

- Previously SVGs would default to the fallback PNG
  - OOXML should now render the SVG image correctly
- Three interoperability issues related to Windows EMF and EMF+ files have also been resolved
- Smoother experience when working with SVGs, EMF and EMF+ files



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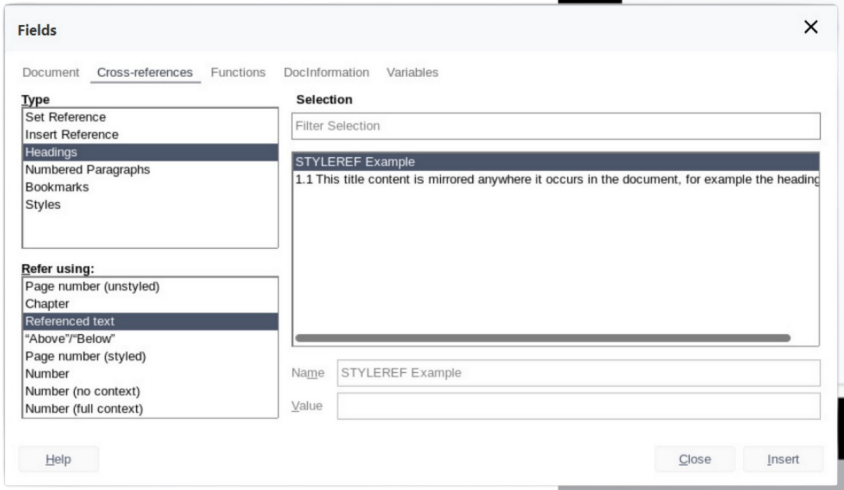
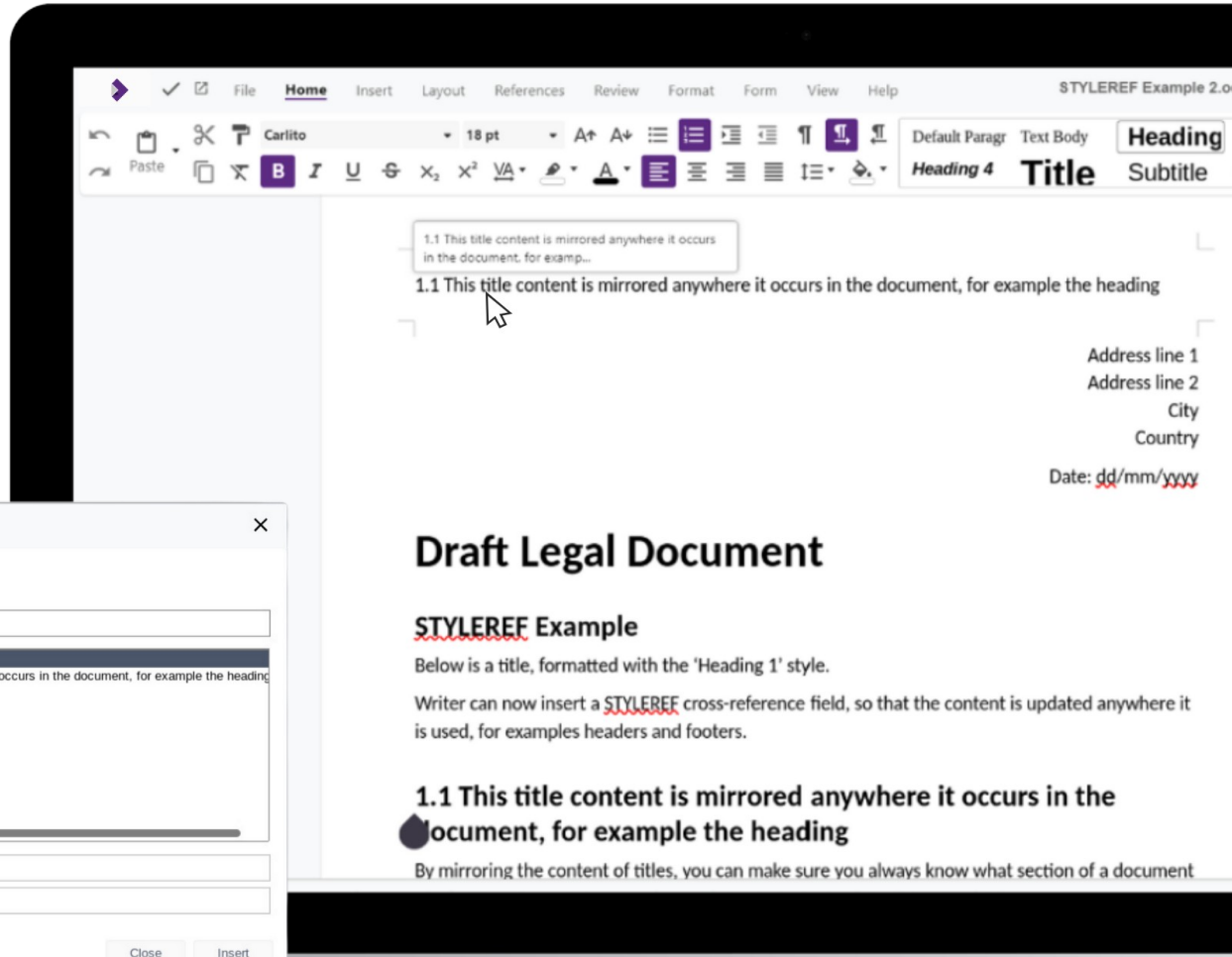
STYLEREF

- Create dynamic headers or footers that automatically update based on changes in the document.





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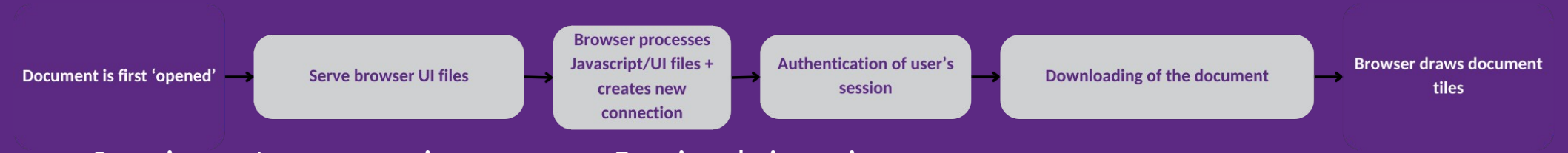
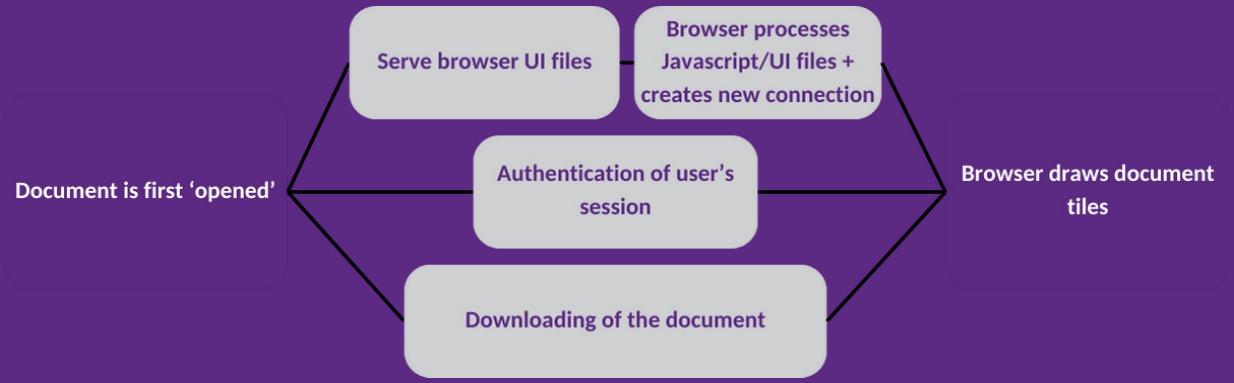
Performance

2x Faster Document Loading



Carrying out processes in parallel to halve load times

Previously in series



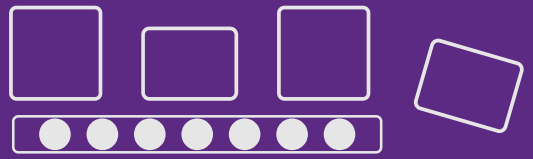
Up to 2x faster in parallel

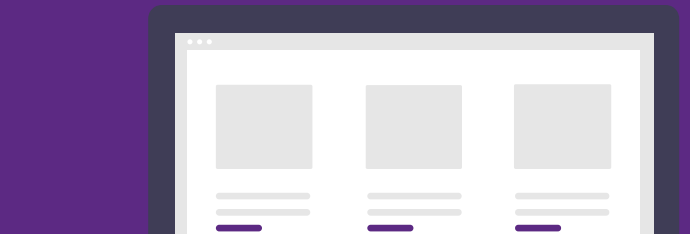
Up to ~18x Faster Tile Compression

- This speed-boost stacks two improvements
  - 4.5x performance from run length encoding
  - 4x performance improvement from improved threading
- Combined for ~18x speed boost for tiles

Improved Threading in Calc

- We tested time for loading, recalculation, and saving
- 650,000 test spreadsheets
- Time reduced from 3 days, to 36 hours
  - ~2x speedup

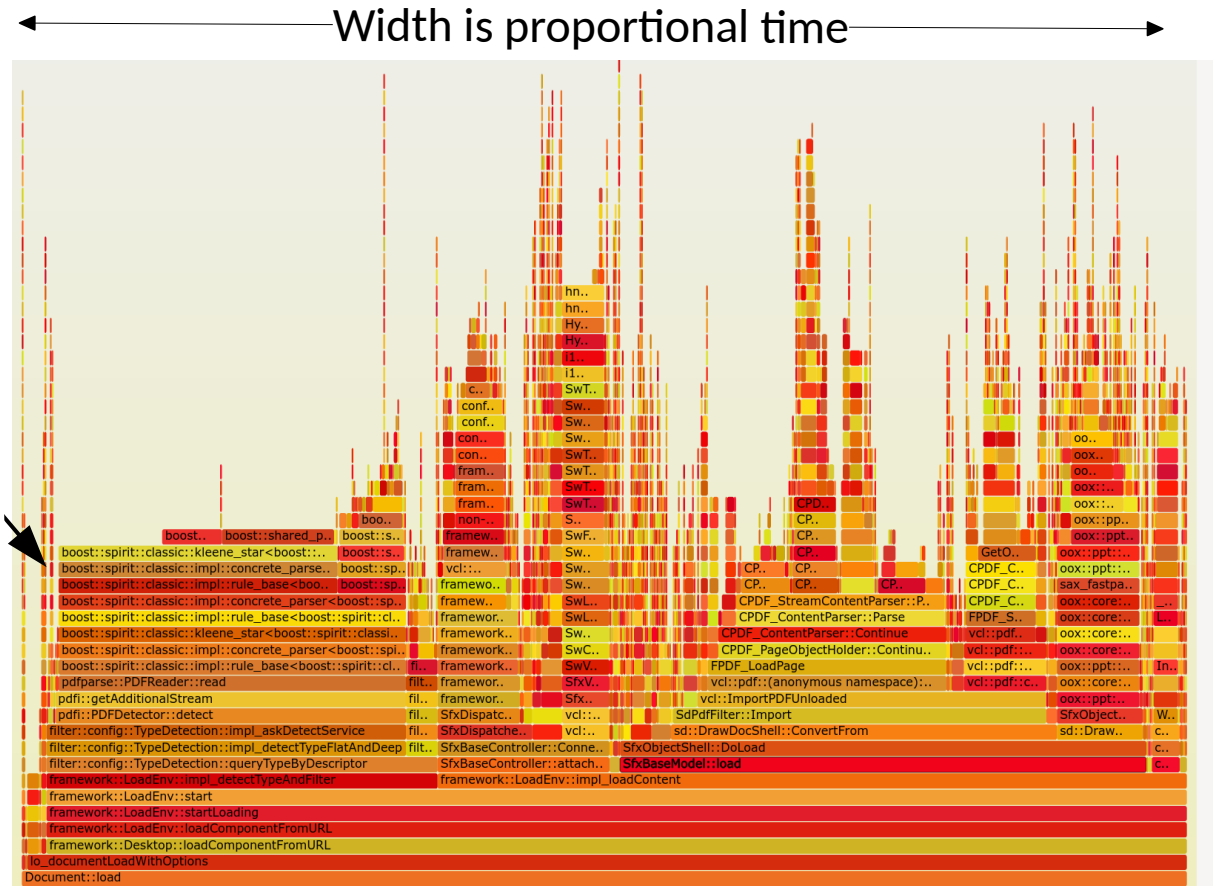




Long Running Demo Profiles: A Week

What does it mean?

- 17% of a week of profiling:
- Detecting: “is it a Hybrid PDF”?
- Unbelievably wasteful
- Scan last 4k block ‘AdditionalStreams’ +17%



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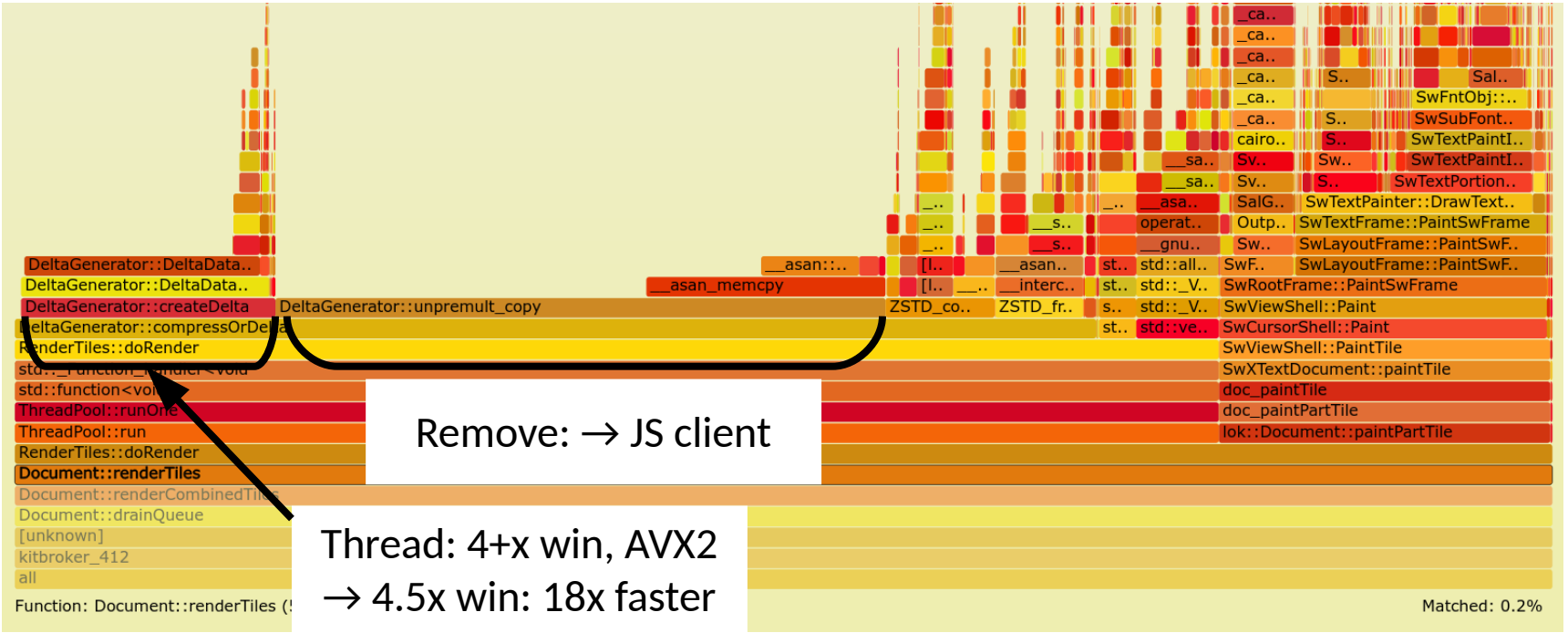
Rendering Tiles 40% of Your Profile ?

Lots of unnecessary re-rendering

- Pruning the simple cases out

Silliness in various places

- Now much improved



The Magic of AVX2 – Branch Free RLE

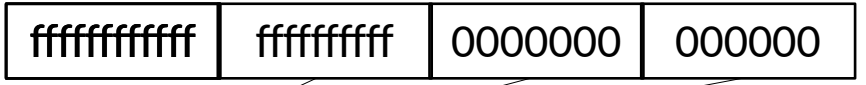
prepend 'last' pixel of the last block

Block of next four pixels to RLE …

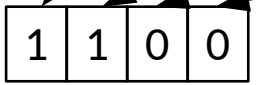
Next time's 'last' pixel:

Build comparison register:

Compare: cmpeq_epi32



Magic: floating point sign mask: movemask_ps



This is our RLE mask.

NB. really 8 pixels at a time, not four and more 0's and f's needed …

How many pixels to copy? popcount(RLE mask)
Which ones ? RLE Mask → LUT + AVX2 gather
permutevar8x32_epi32 … is your friend

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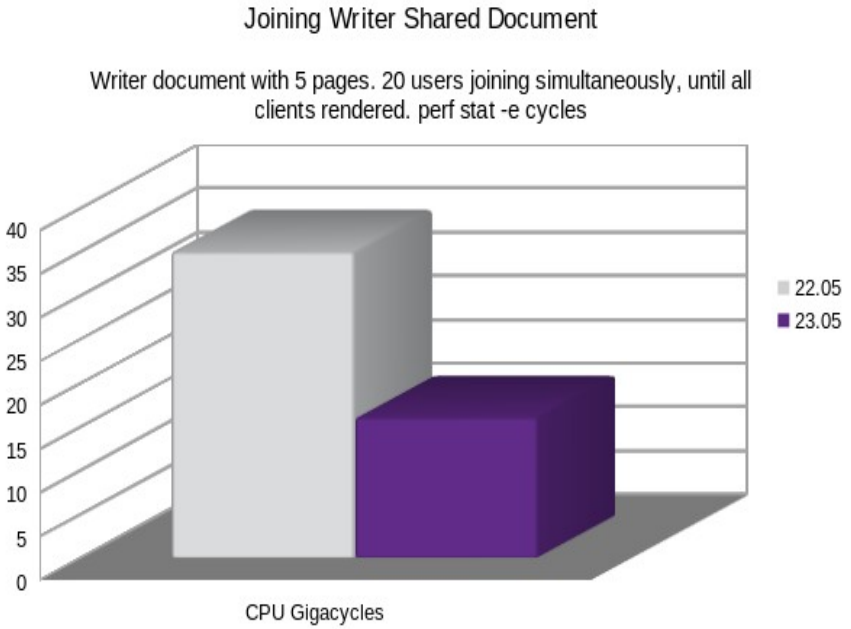
Performance – Faster & Simpler

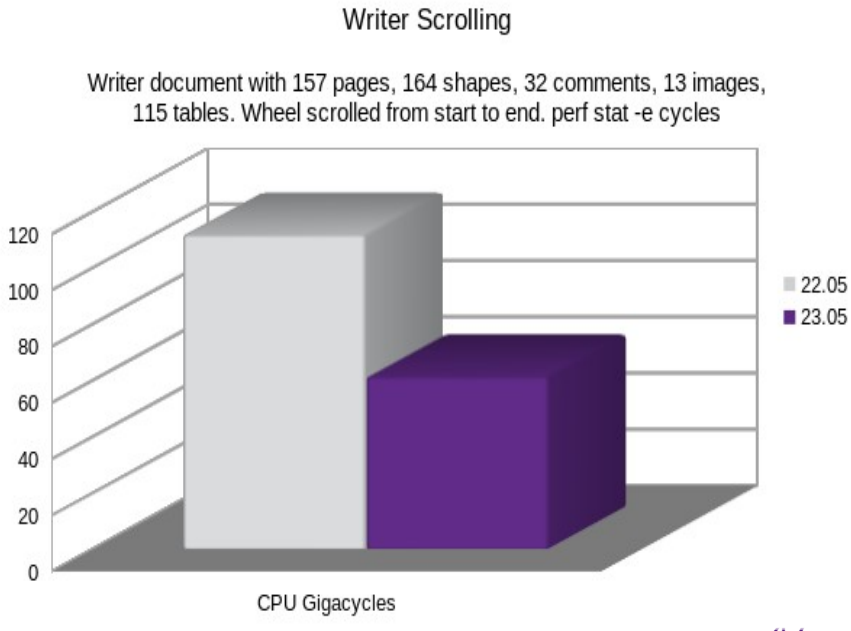
A faster, slicker experience

- Memory trimming on idle: cleans caches & frees up memory
- Swap out compressed image data as well as uncompressed
- Faster load of large spreadsheets
- Significantly reduced re-rendering (even more pending)
- Continual style re-thumbnailing redux – caching of generated JSON
- Improved tile pre-loading (with more caching work queued)
- Clamp over-sizing of threads
- Accelerated transparent text rendering
- Avoid background whole document renders
- Compress RLE'd tiles on the wire
- Scan /proc/<pid>/smaps_rollup

Performance Tuning

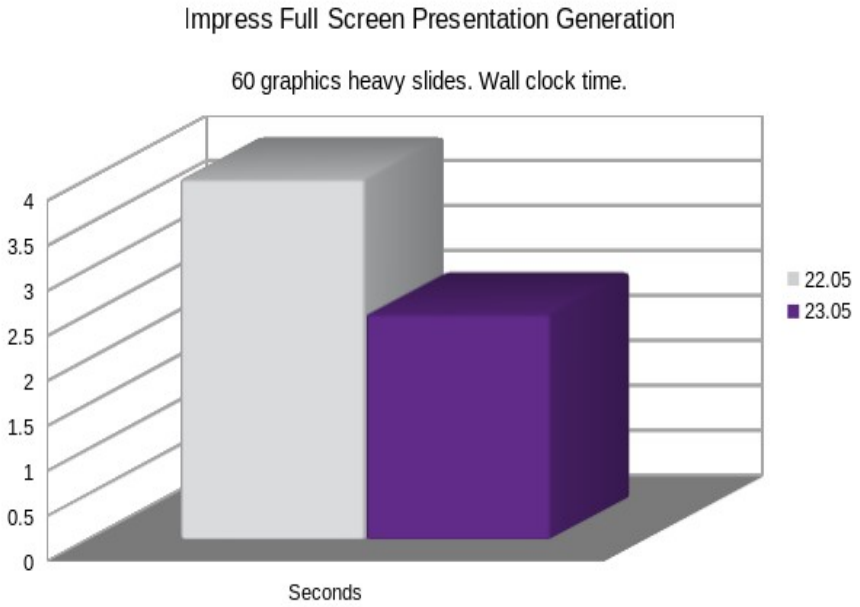
- Much faster for many operations – for example – multiple users to join a shared Writer document and scroll through a long, heavy Writer document.

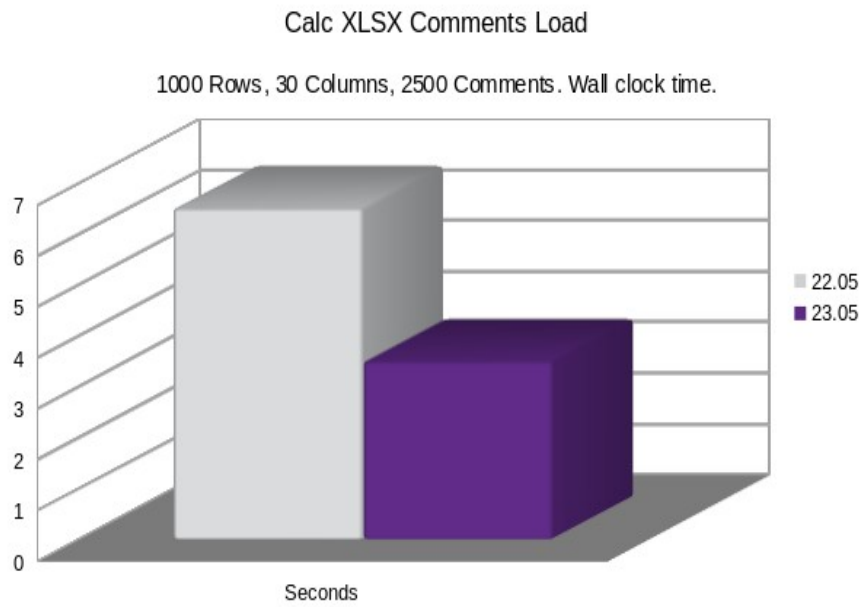




Performance Tuning

- Reduced time to load graphic heavy Impress slide decks, and comment heavy Calc spreadsheets.





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Other Updates in the Last Year

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Accessibility Features

Dark Mode

Initial Screen Reading Support

Keyboard Navigation

Accessibility Checker

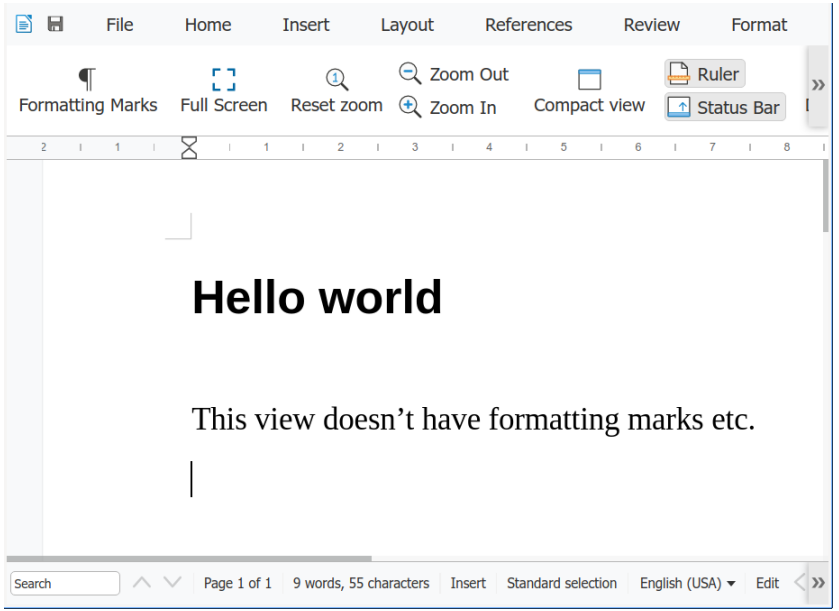
PDF/UA

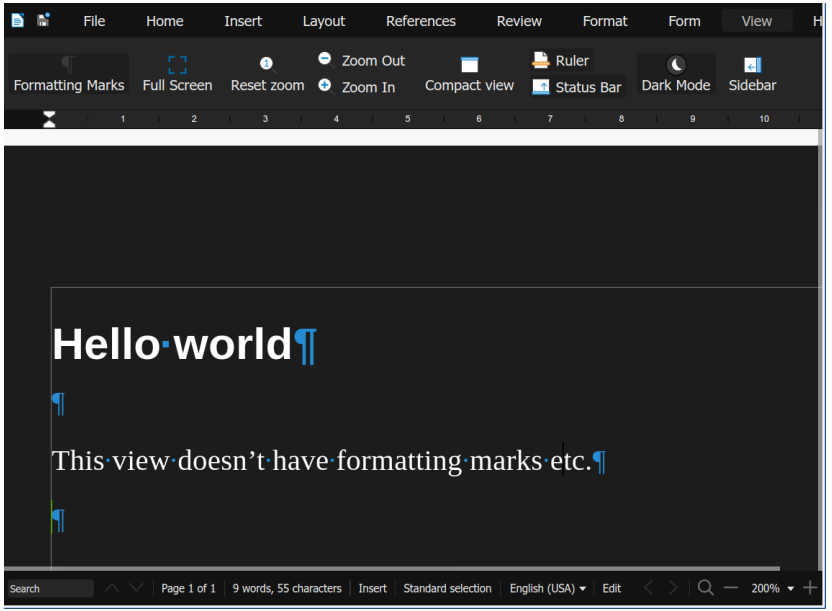
Find out more: col.la/accessibility

Accessibility

Dark Mode

- Also added various UI properties per-view: eg. non-printing characters, spell-underlines etc.





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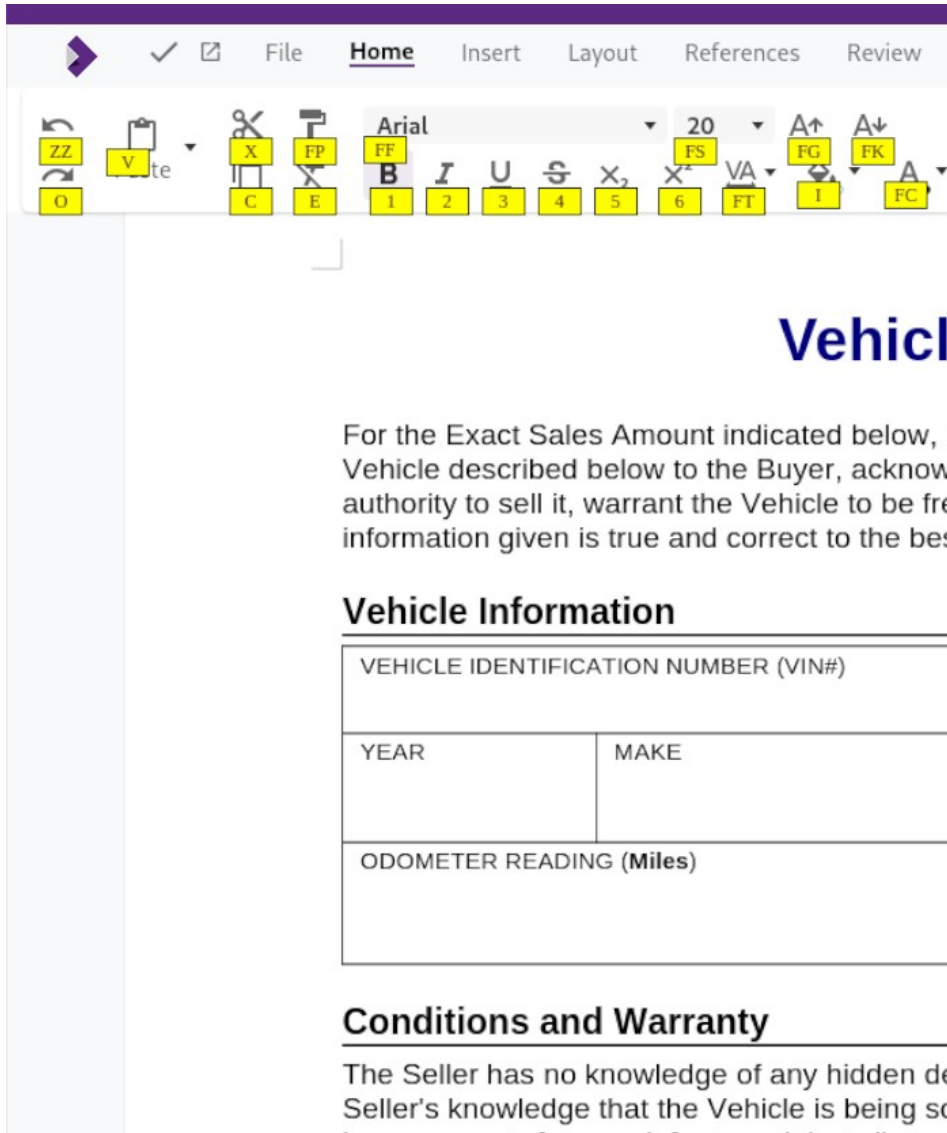
Accessibility

Keyboard Accelerators

- Expansion for languages
  - Keyboard shortcuts have been expanded to allow all users to be able to use their own language's keyboard shortcuts when editing a file collaboratively.
  - Holding down the 'Alt' key will also highlight options for learnability.



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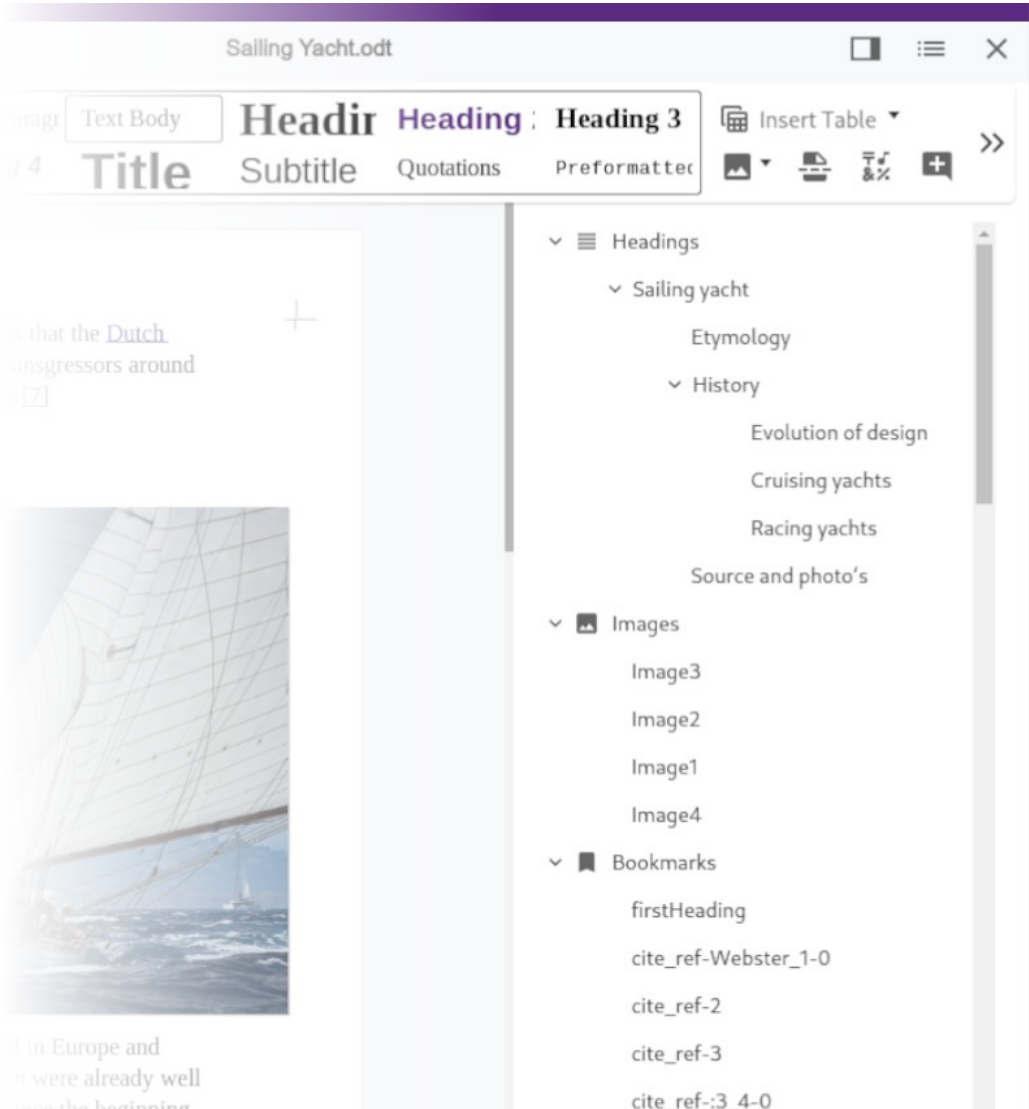
Accessibility

Page Navigation

- Navigator functionality is viewable in the sidebar, allowing you to jump to each section by simply clicking the headings.



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Interoperability

Document themes – controlling branding

- Document themes can be configured and applied to a whole document to easily change and re-purpose the appearance, giving it a consistent style and branding.

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Interoperability

Compact Pivot Tables for Calc Spreadsheets

K	L	M	N	O	P
Sum of Val			D		
A	B	C	ddd	ddx	Total Result
aaa			13	18	31
	bbb		10		10
		ccc	10		10
	bbx		3	9	12
		ccc	3		3
		ccx		9	9
	bxx			9	9
		ccx		9	9
aax			15	11	26
	bbb		10	4	14
		ccc	8	4	12
		ccx	2		2
	bbx		5		5
		ccc	5		5
	bxx			7	7
		ccx		7	7
axx			12	12	24
	bbb			5	5
		ccx		5	5
	bbx		9	7	16
		ccx	9	7	16
	bxx		3		3
		ccc	3		3
Total Result			40	41	81

K	L	M	N
Sum of Val	D		
Row Labels	ddd	ddx	Total Result
⊟aaa	13	18	31
⊟bbb	10		10
ccc	10		10
⊟bbx	3	9	12
ccc	3		3
ccx		9	9
⊟bxx		9	9
ccx		9	9
⊟aax	15	11	26
⊟bbb	10	4	14
ccc	8	4	12
ccx	2		2
⊟bbx	5		5
ccc	5		5
⊟bxx		7	7
ccx		7	7
⊟axx	12	12	24
⊟bbb		5	5
ccx		5	5
⊟bbx	9	7	16
ccx	9	7	16
⊟bxx	3		3
ccc	3		3
Total Result	40	41	81

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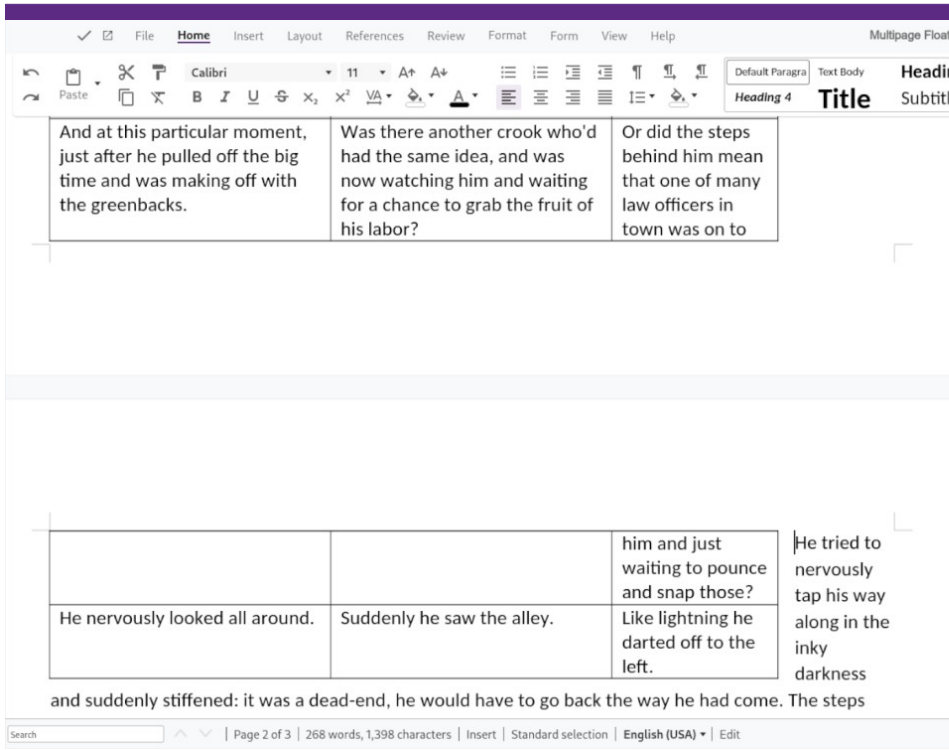
Interoperability

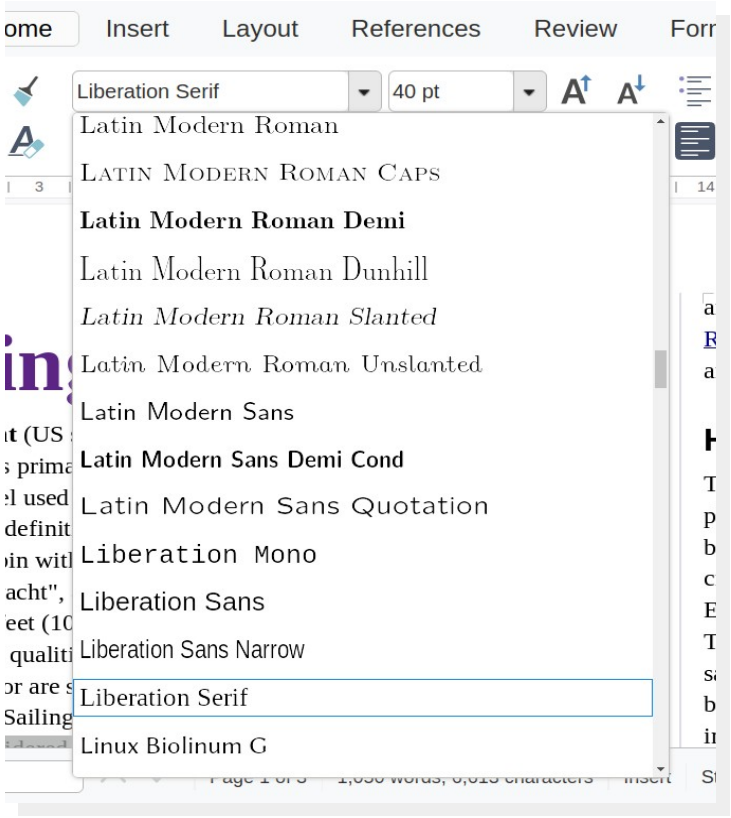
Multi-page floating tables

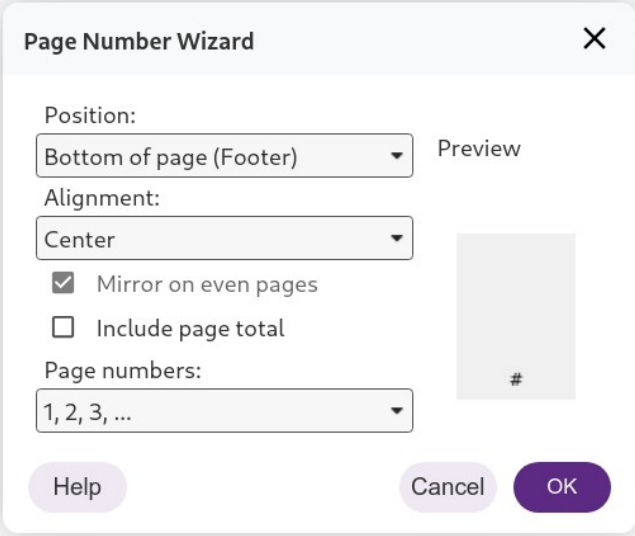
- Allows your tables to span content over multiple pages inside floating frames
- Significantly improves interoperability with tables that have been accidentally floated by users, and that span multiple pages.
- Preserving layouts across platforms
  - Lots of mis-designed Government forms – where tables are used for rendering borders are improved, and rendered better.

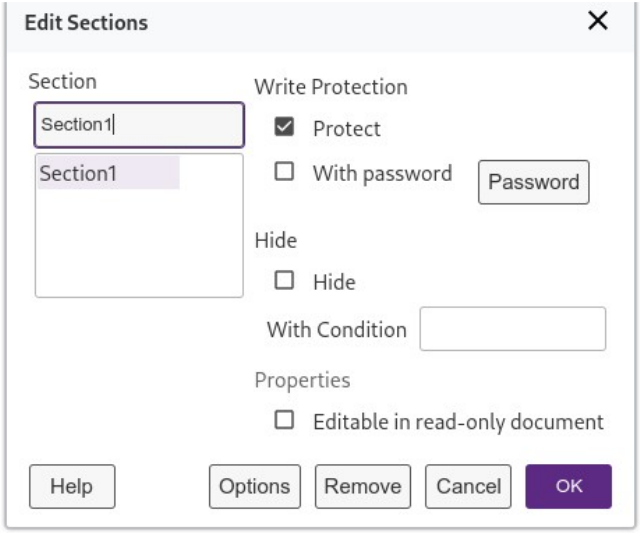


Usability

Updated, simplified dialogs







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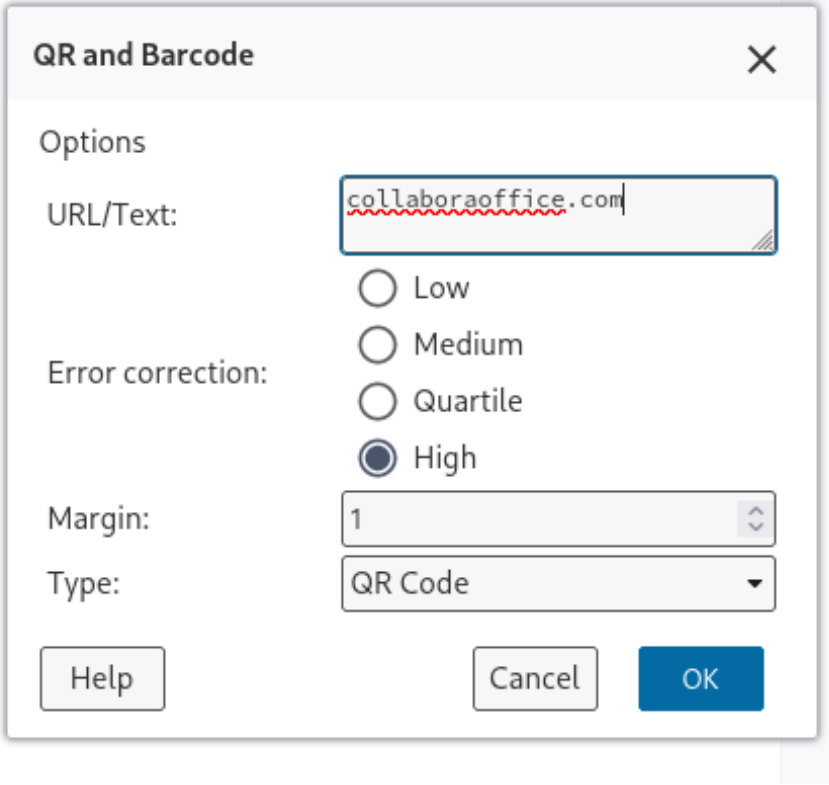
Usability

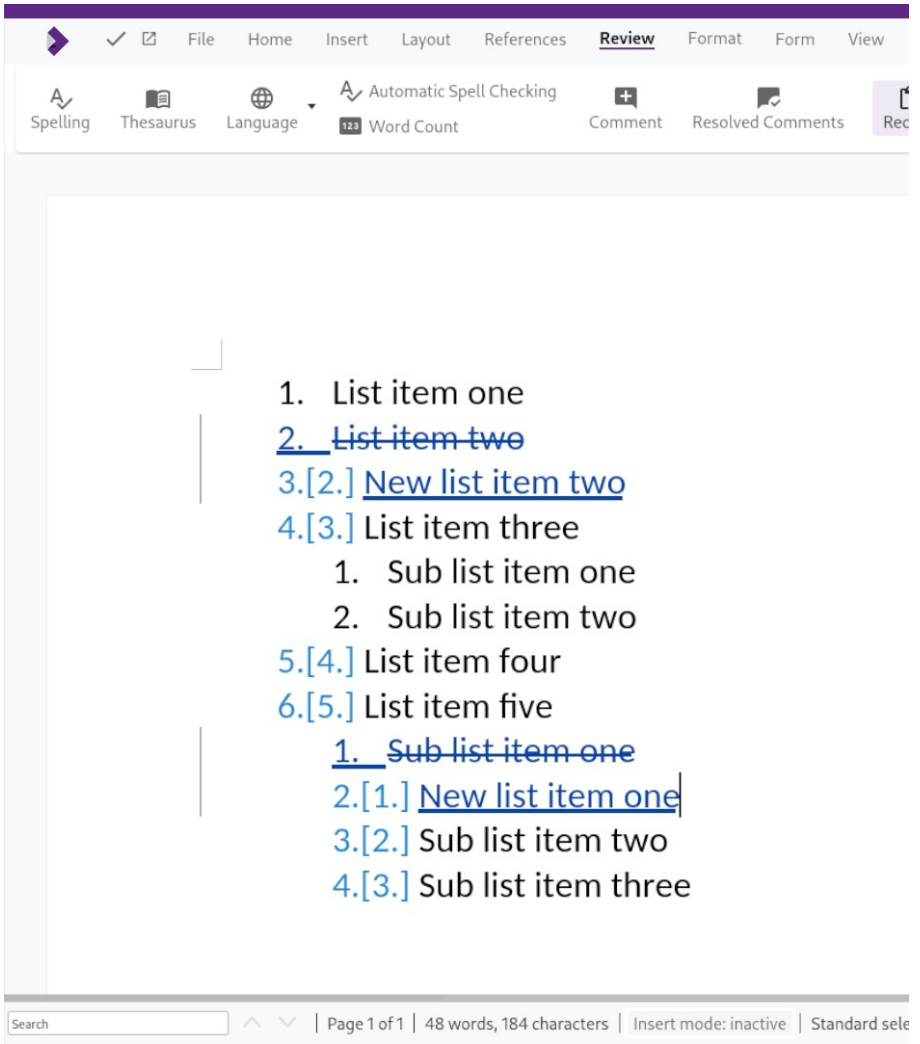
Easy QR Code Generation



Usability

Change tracking in numbered lists

- When making changes within numbered lists, the numbering has now been fixed to show actual and original numbers within the document.



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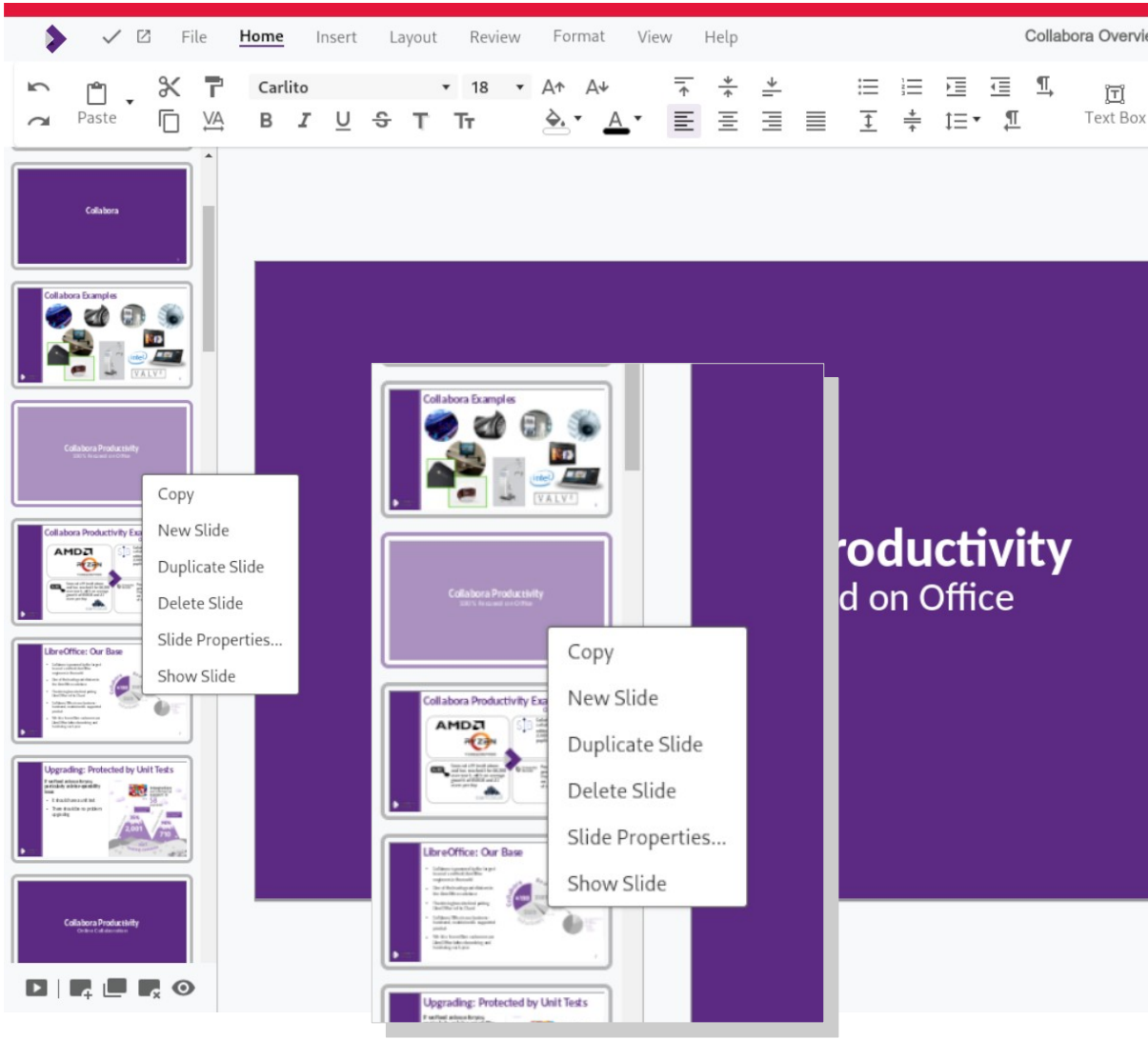
Usability

- Hide/Show slides in Impress
  - Easily choose which slides are visible



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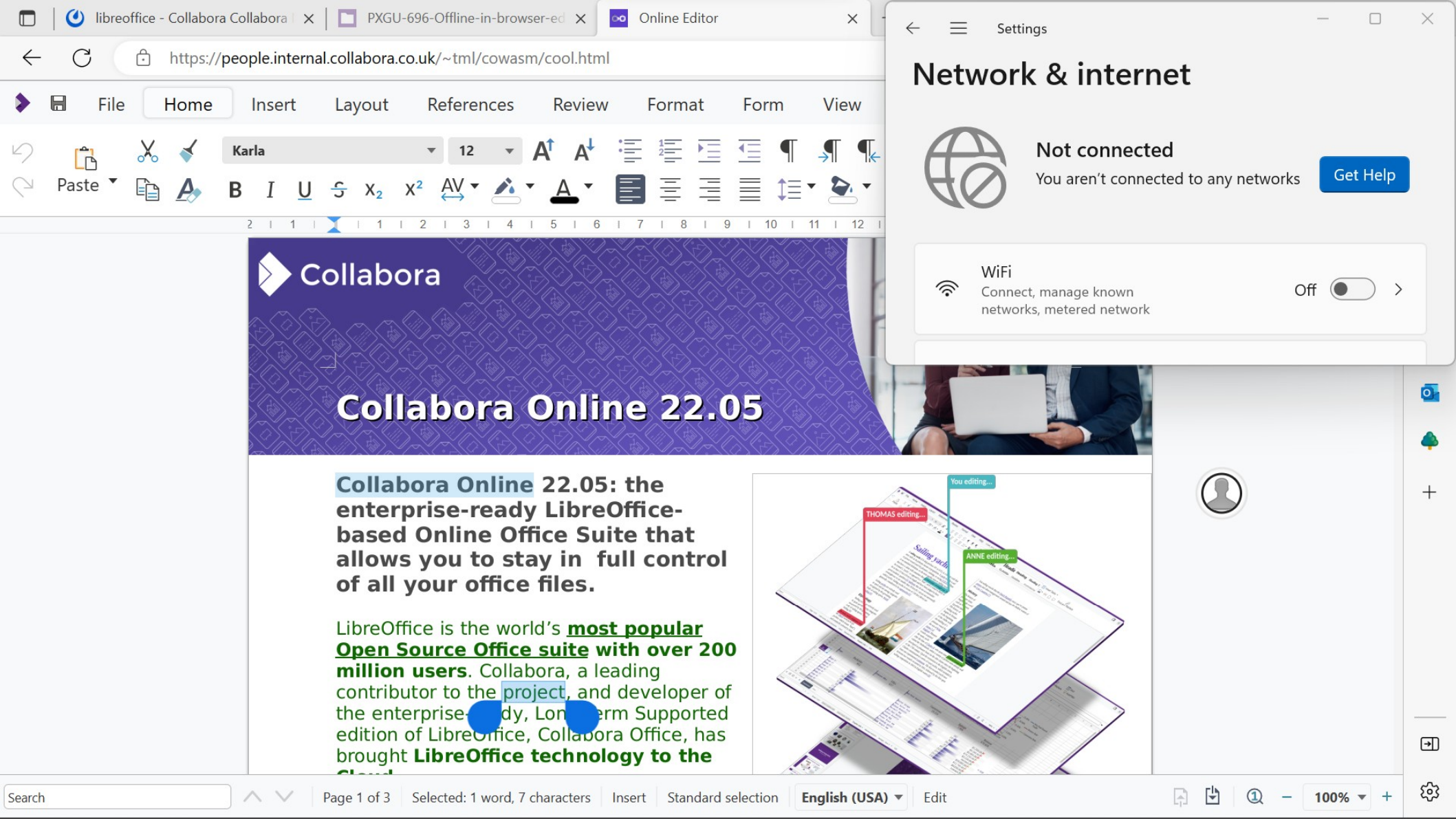
Playground: WASM Prototype:

(not a product)


libreoffice - Collabora Collabora
PXGU-696-Offline-in-browser-ed
Online Editor
https://people.internal.collabora.co.uk/~tml/cowasm/cool.html
File
Home
Insert
Layout
References
Review
Format
Form
View
Paste
Karla
12
Settings
Network & internet
Not connected
You aren't connected to any networks
Get Help
WiFi
Connect, manage known networks, metered network
Off
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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 brought LibreOffice technology to the
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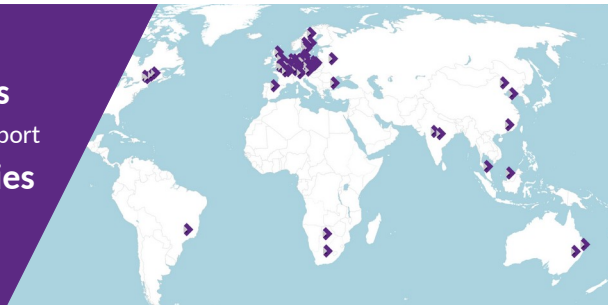

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CW2

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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

Thank you!

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