Configuring, Deploying and Scaling Collabora Online

Michael Meeks, Collabora Online

Collabora Online

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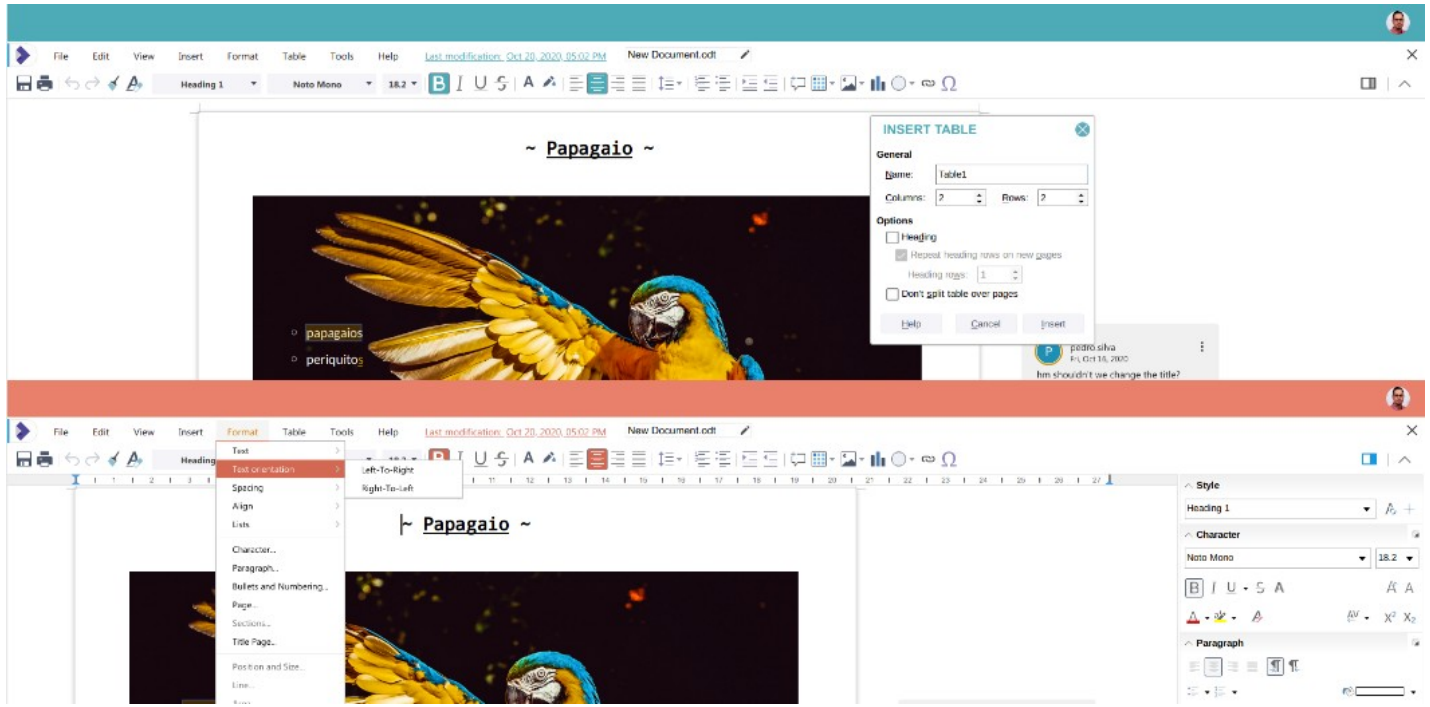
Configuration and customisation
Collabora
Online

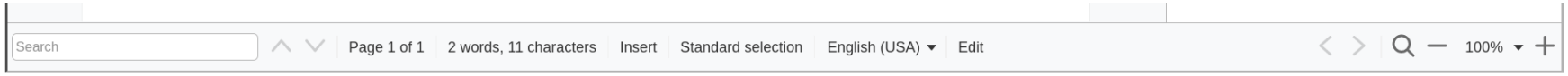
Themeing

- Change the UI to adopt your visual identity
  - With CSS, change the colours and other attributes



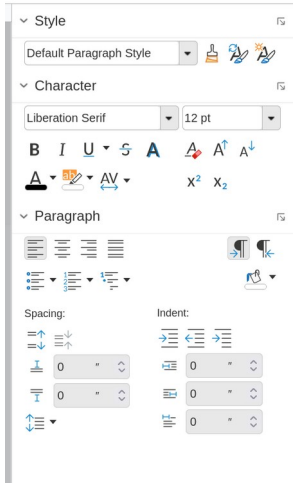
UI layout

- Decide which UI elements are visible
  - Status bar



  - Ruler

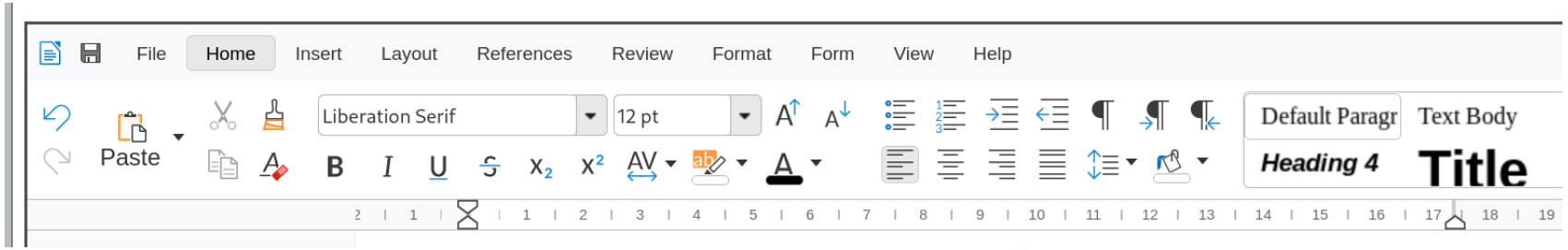
  - Sidebar



UI layout (2)

- Decide to use the traditional compact style UI

- or the newer tabbed interface

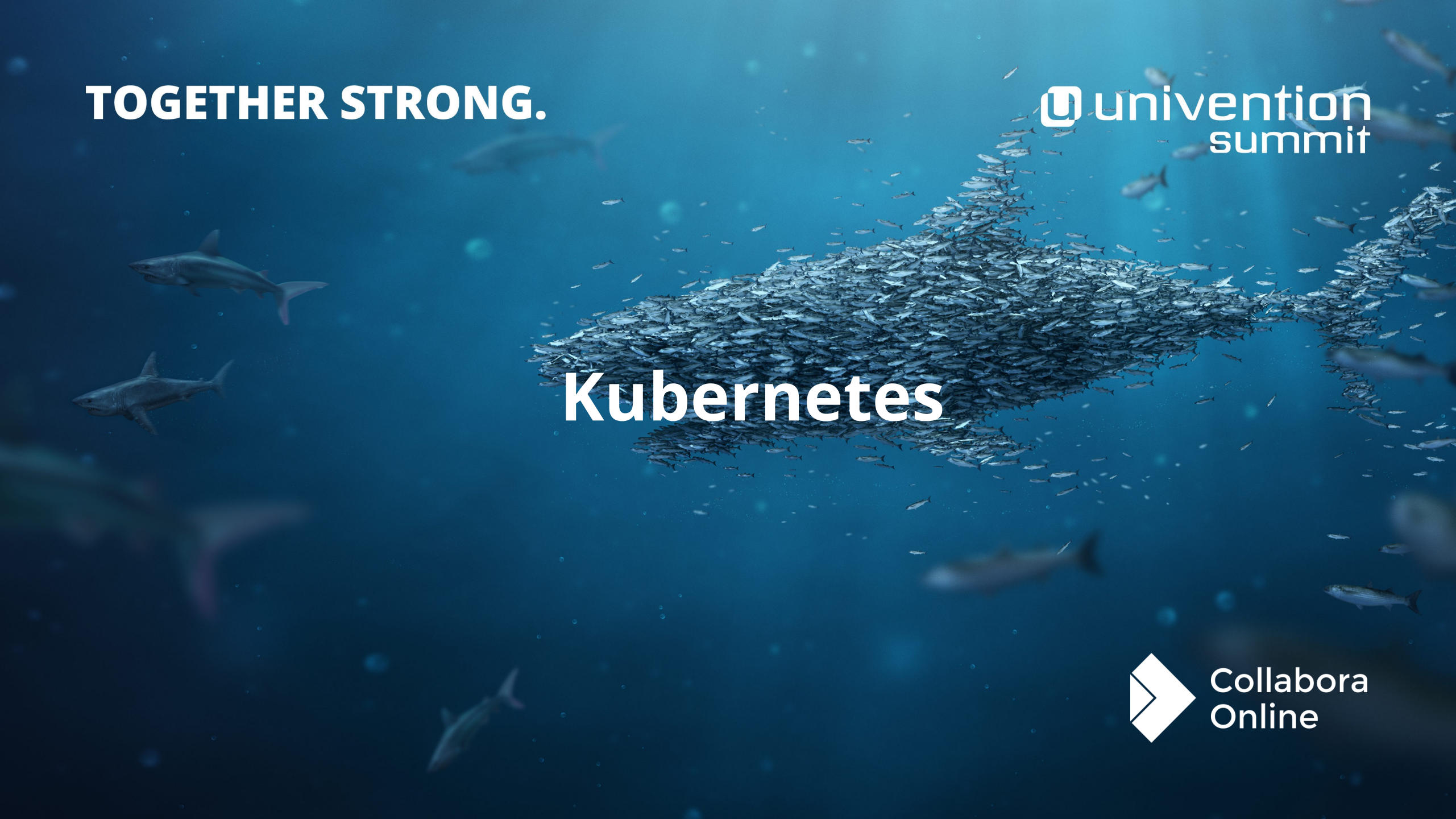


Configure

- Add UI to select files
- When the user wants to insert an image
- To save file under a new name
- Insert a button with a custom action
- An existing command in Collabora Online
- A custom feature you implement
- You can show / hide elements of the existing UI
- Buttons and menus
- Status bar, ruler, etc.
- Customise error messages

Integrate

- You can decide what your application does in response of some Collabora Online actions
- Connect your user list when collaborating
- Mentions
- Avatars
- Manage the storage of the documents, and their access.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Kubernetes
Collabora
Online

Kubernetes references: 1&1

- **1&1: runs mail.com, GMX.DE …**
  - 10’s of millions of users
  - Deployed on Kubernetes
    - 50+ pods for editing, 50+ pods for viewing
    - 35k documents edited / 24 hours
    - 600k documents viewed / 24 hours.
  - Contributed our initial Helm chart (since much improved)
  - Helped to implement Prometheus monitoring
    - Easy beautiful charts in Grafana & Prometheus Operator
  - Video talk on their integration & Kubernetes setup

Kubernetes references:

Technical University Berlin

- **A technology leader in German Universities**
  - 15k total users using COOL
  - Seven schools with 34,900 students
  - Providing a service for many other German universities
- Deployed with:
  - Helm3 chart
  - Flexible (fixed) sizing for horizontal pod allocation
  - Usually, they deploy 16 pods. They found that the CPU usage is not heavily loaded.

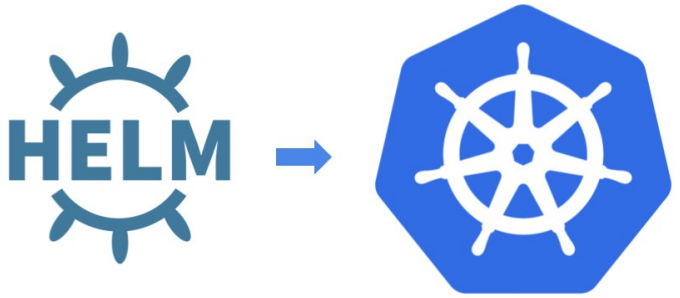
openDesk

- Kubernetes based
- Public details – in OpenCoDE

https://www.openproject.org/blog/sovereign-workplace/
https://gitlab.opencode.de/bmi/souveraener_arbeitsplatz/info#opendesk
https://gitlab.opencode.de/bmi/souveraener_arbeitsplatz/info#opendesk

Collabora Online helm chart

- Easy to deploy using helm chart
- Available on artifacthub.io
- Support for dynamic config
  - For big setups, you maybe not want to restart every pod to modify WOPI hosts, therefore it is possible to setup an additional webserver to serve a ConfigMap for using Remote/Dynamic Configuration
- Works well with Prometheus Operator (Helmchart) and there is setup of Grafana



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COOL Controller Improvements
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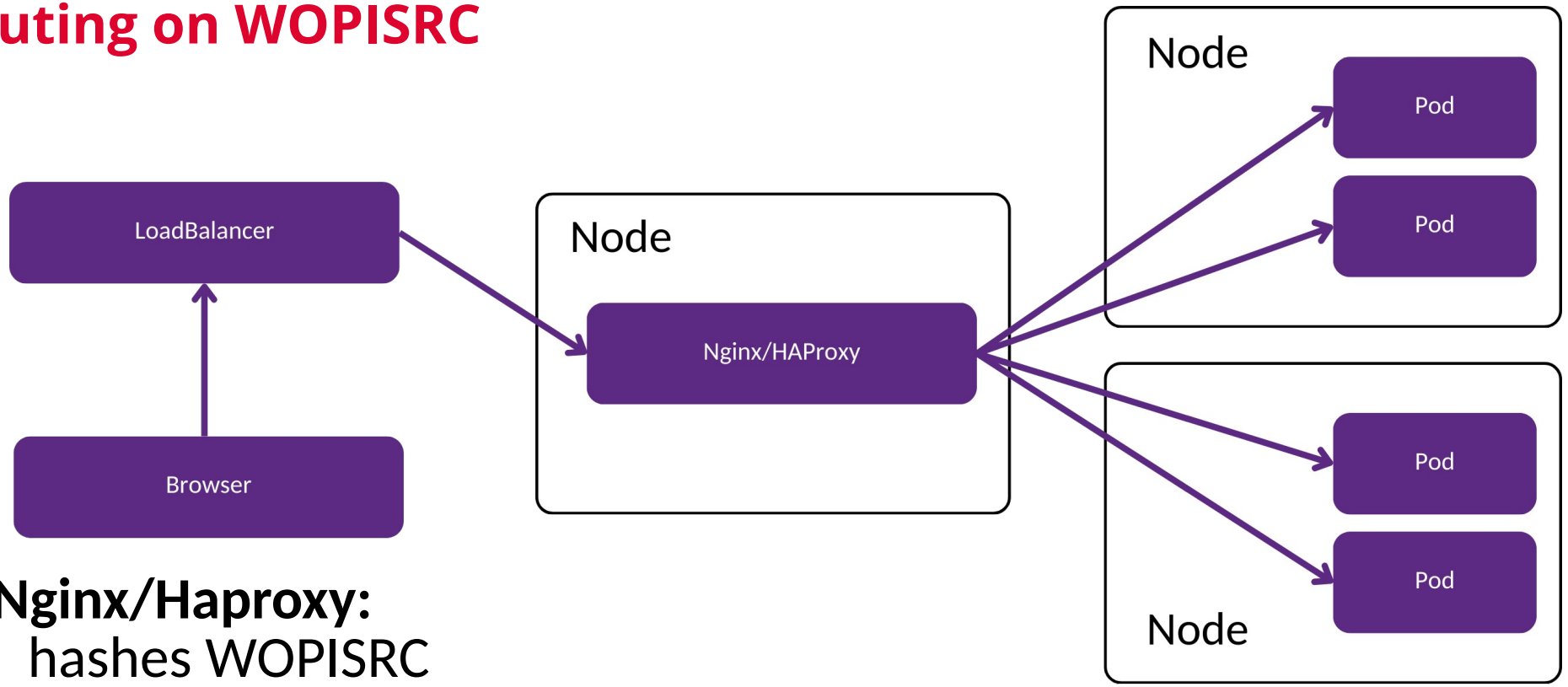
Current setup

Static routing on WOPISRC

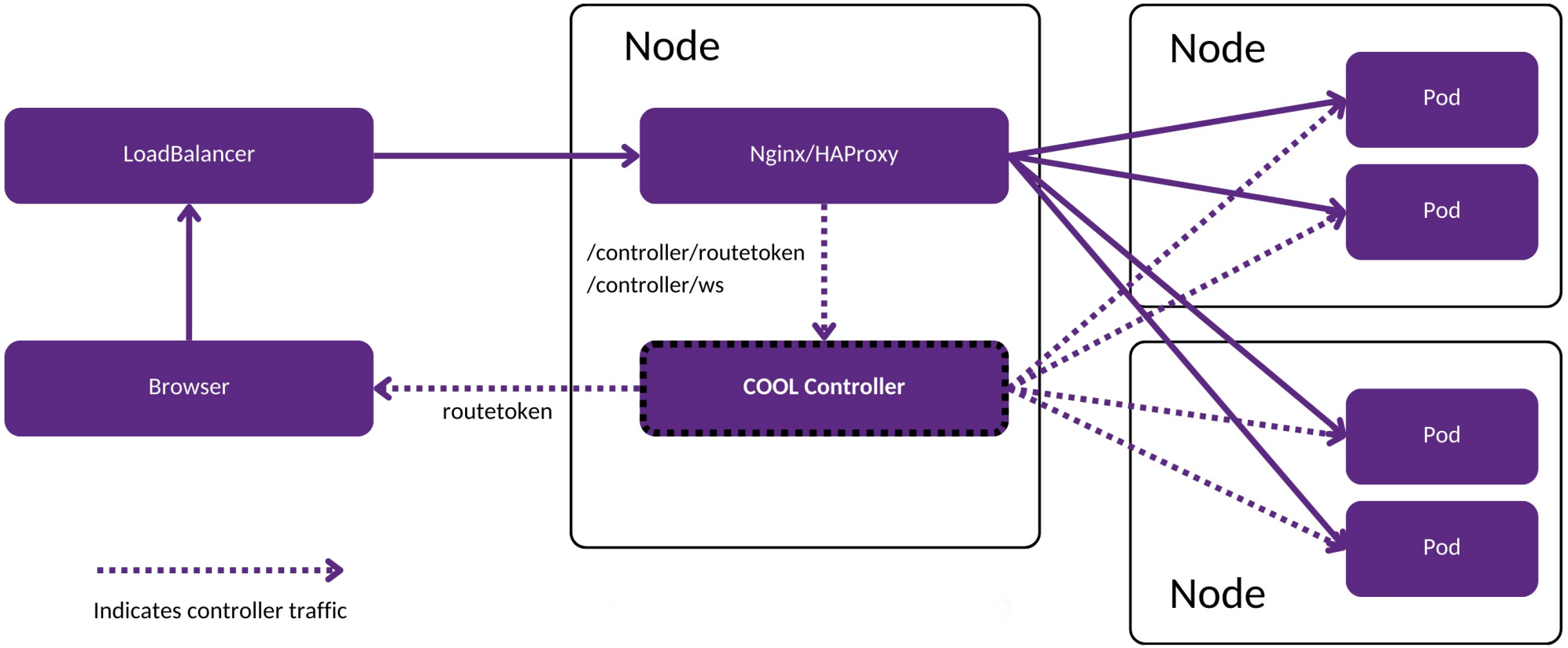


Each Nginx/Haproxy:

hashes WOPISRC
modulo # of pods ...

New cool-controller setup

Controller manages pod scaling



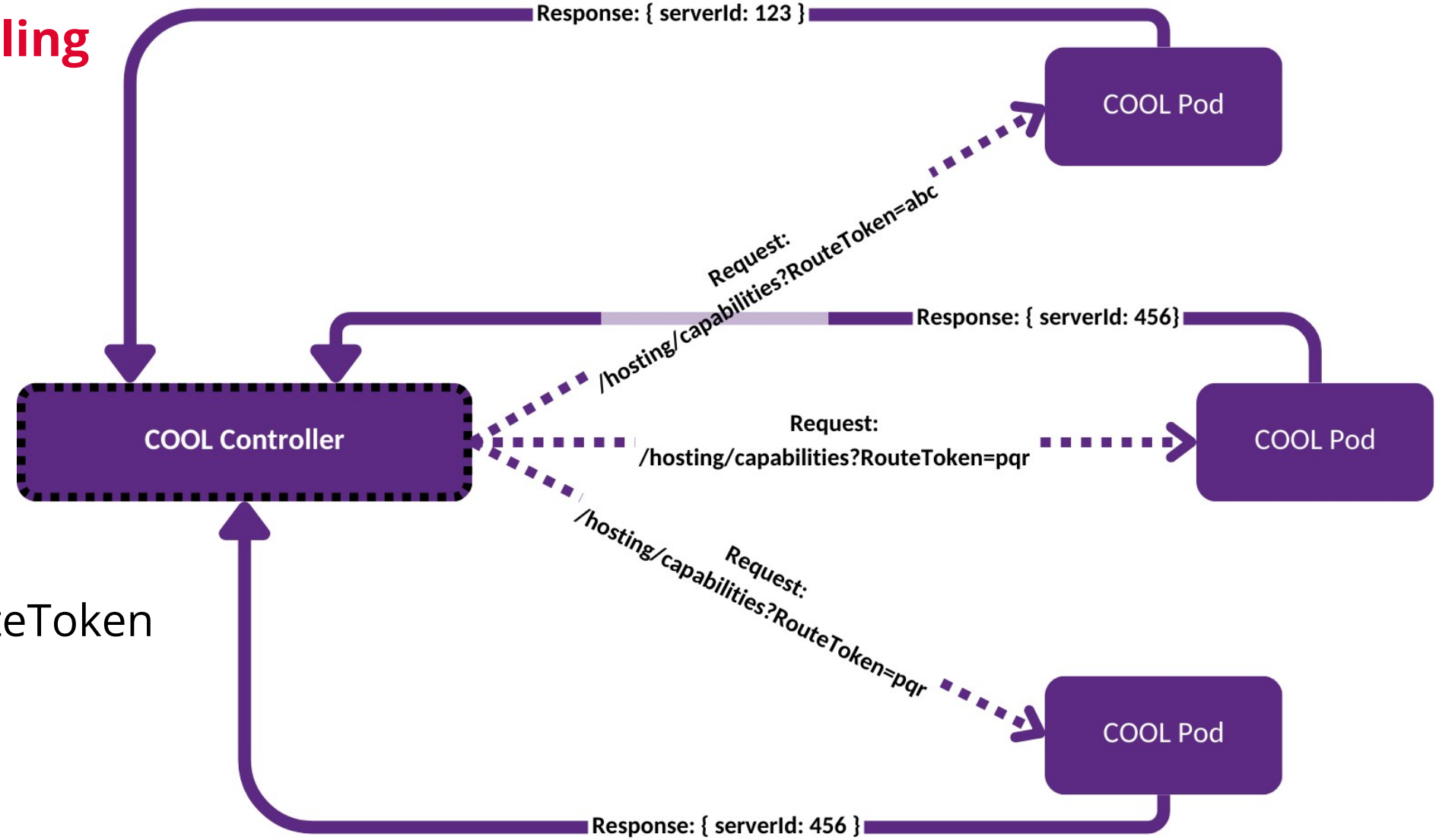
Improving autoscaling

- Without COOL controller requires static configuration
  - Routing by WOPISRC is based on the number of pods
    - If cluster auto-scales up/down this number changes
  - New users could end up on the wrong pod
    - Splits the document and copy-paste stops working
- Improved access to COOL admin console of individual pods

Improving autoscaling

- When cluster topology changes, cool-controller creates a hash map of ServerId ↔️ RouteToken by sending */capabilities* requests to each pod
- RouteToken is a random token that identify to which pod request should end up
  - Like a ZIP code for postage
- If RouteToken is present in any request done to COOL, the request like opening a document, copy-paste etc will always go to the correct pod.
- Every request to open a document goes to controller first and controller sends user URI for websocket connection with amended RouteToken parameter of the least loaded pod
- Controller also sends respective routetoken to server pods so copy-paste request are handled smoothly

Improving autoscaling

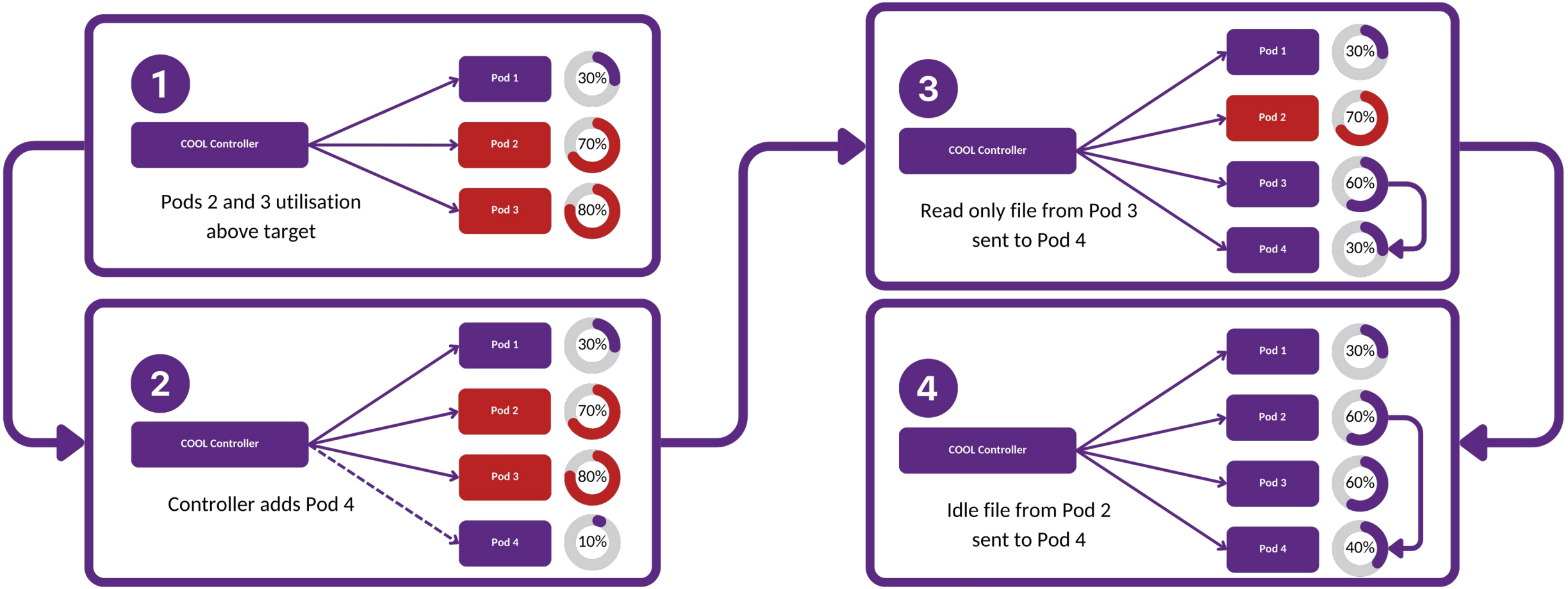


Hashmap:
ServerId ↔ RouteToken
123 ↔ abc
456 ↔ pqr
789 ↔ xyz

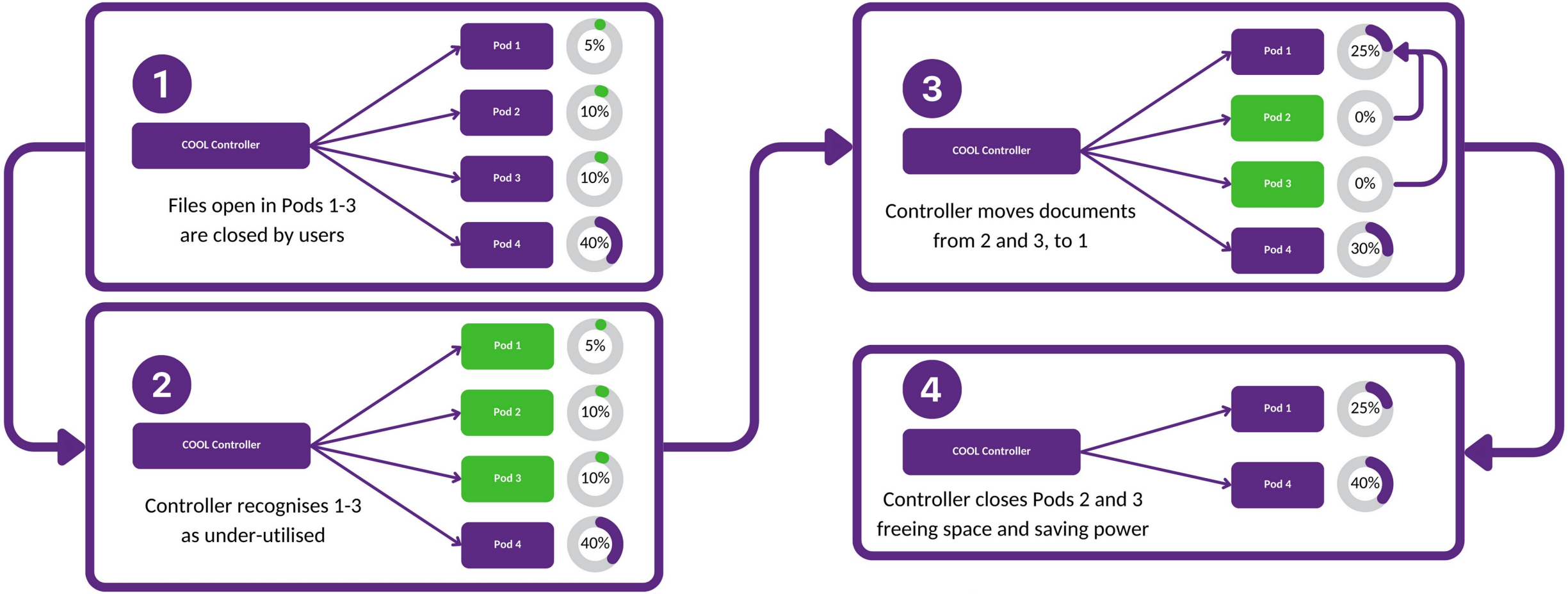
Improving Load Distribution

- When new pods have been spawned:
  - COOL-controller tries to migrate documents from busy pods to newly spawned least loaded pods.
- Migration is strategic:
  - We choose first read-only, idle, few-user pods to minimize disruption
- Migration is smooth:
  - With new COOL versions retains user focus in the document
- This optimization results in an enhanced user experience and smoother collaborative editing.

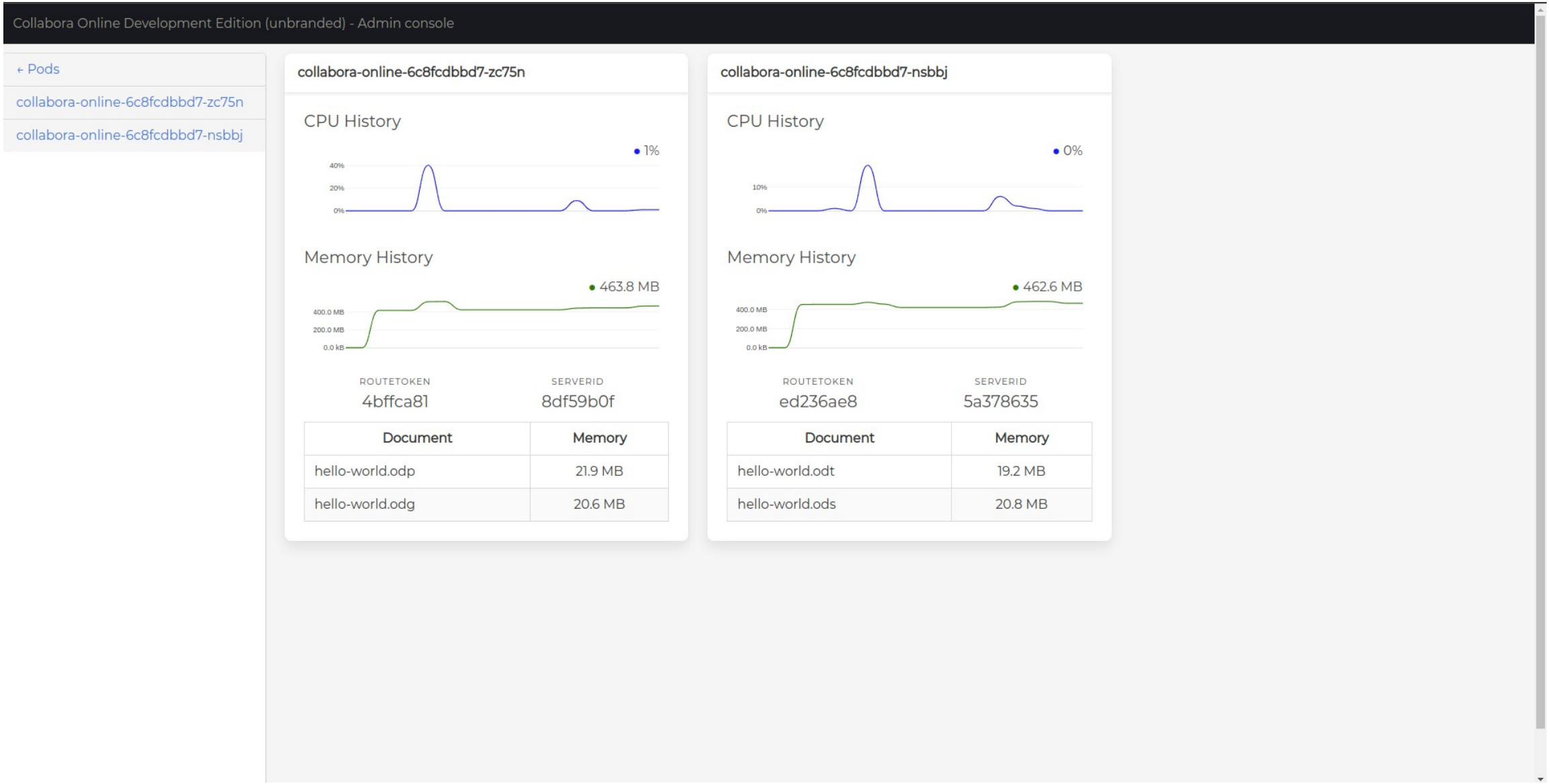
Load Scaling Example – Target Pod Utilisation <70%



Load Scaling Example – Pod Under-utilisation



New unified cluster overview

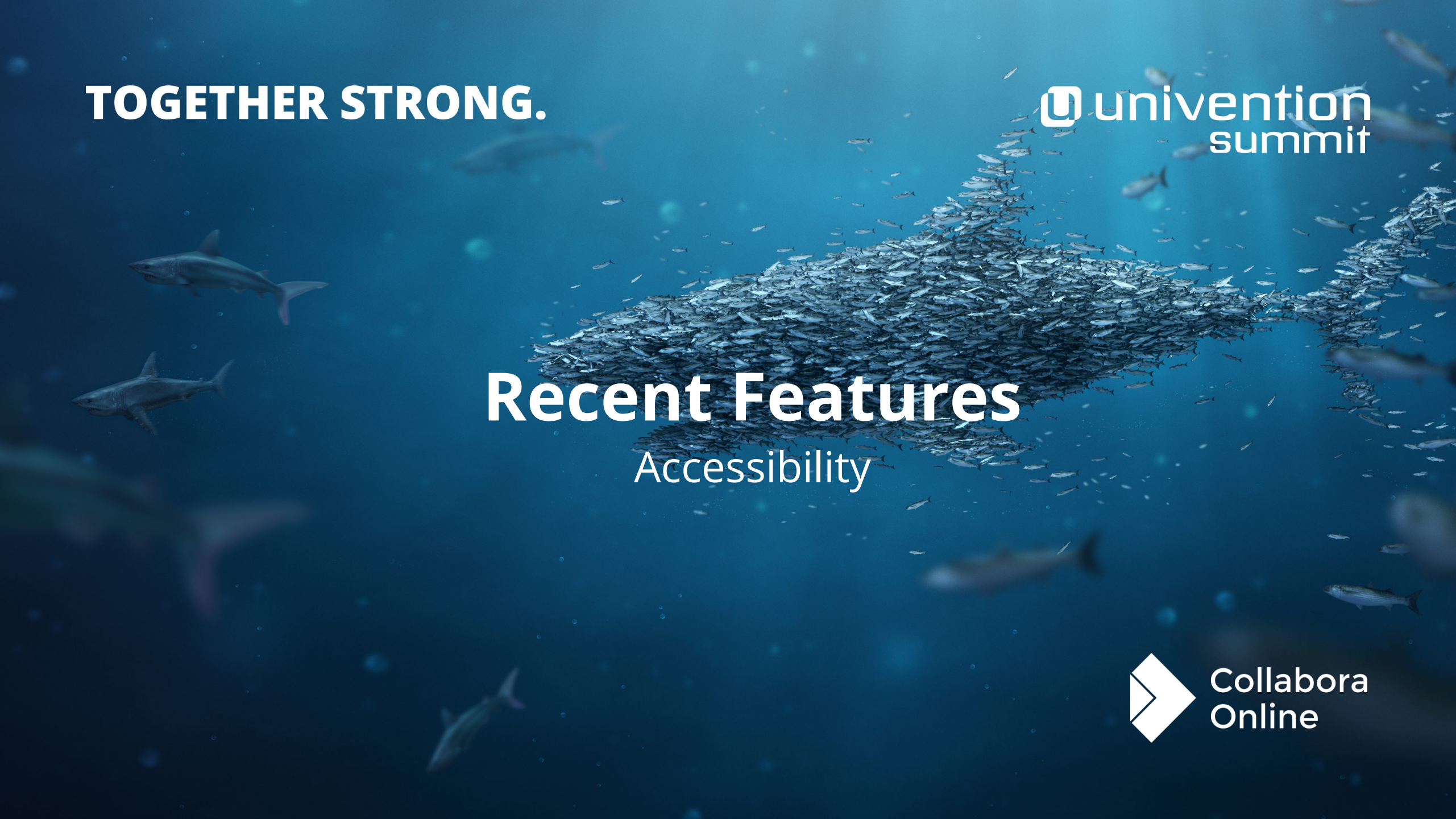


Benefits

- Ensures session consistency in document editing.
- Mitigates performance degradation during scale events.
- Simplifies management with a cluster overview.
- **Highly Available**
  - Multiple COOL-controllers can be run concurrently.
  - COOL-controller uses the kubernetes leaderelection api to achieve high availability.
- There is one leader pod and multiple follower pods.
  - If leader pod dies a follower pod will quickly become leader.
  - This rapid transition only affects new users connecting to documents.
- Easy to deploy by using helm chart of the controller.

Kubernetes conclusions

- Kubernetes
  - Used in many large deployments
  - Easy to deploy, use & monitor
  - Few want to be reference customers
- Collabora is investing to improve auto-scaling
  - This will also improve Admin-console management.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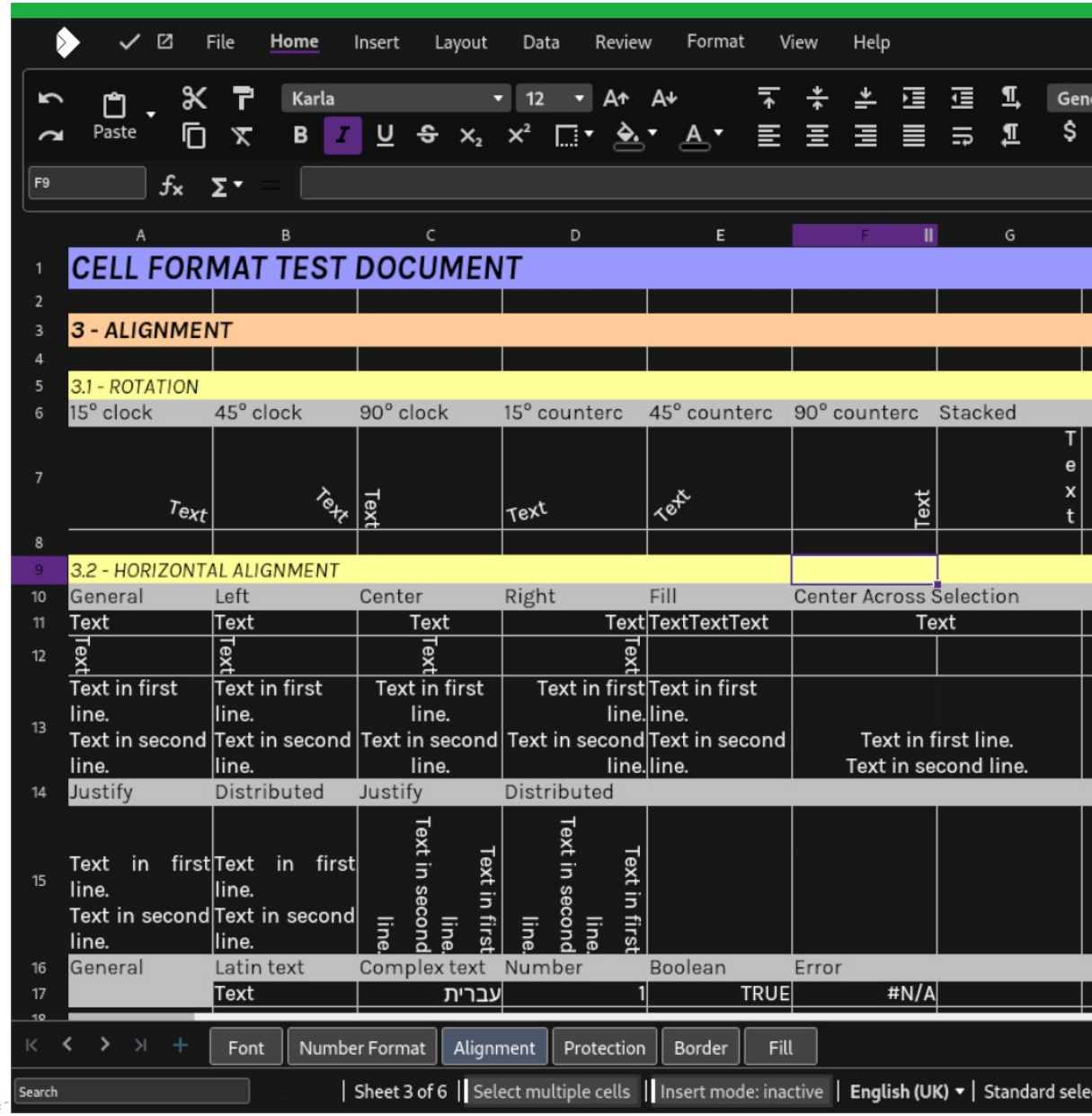
Accessibility

Dark mode + view settings

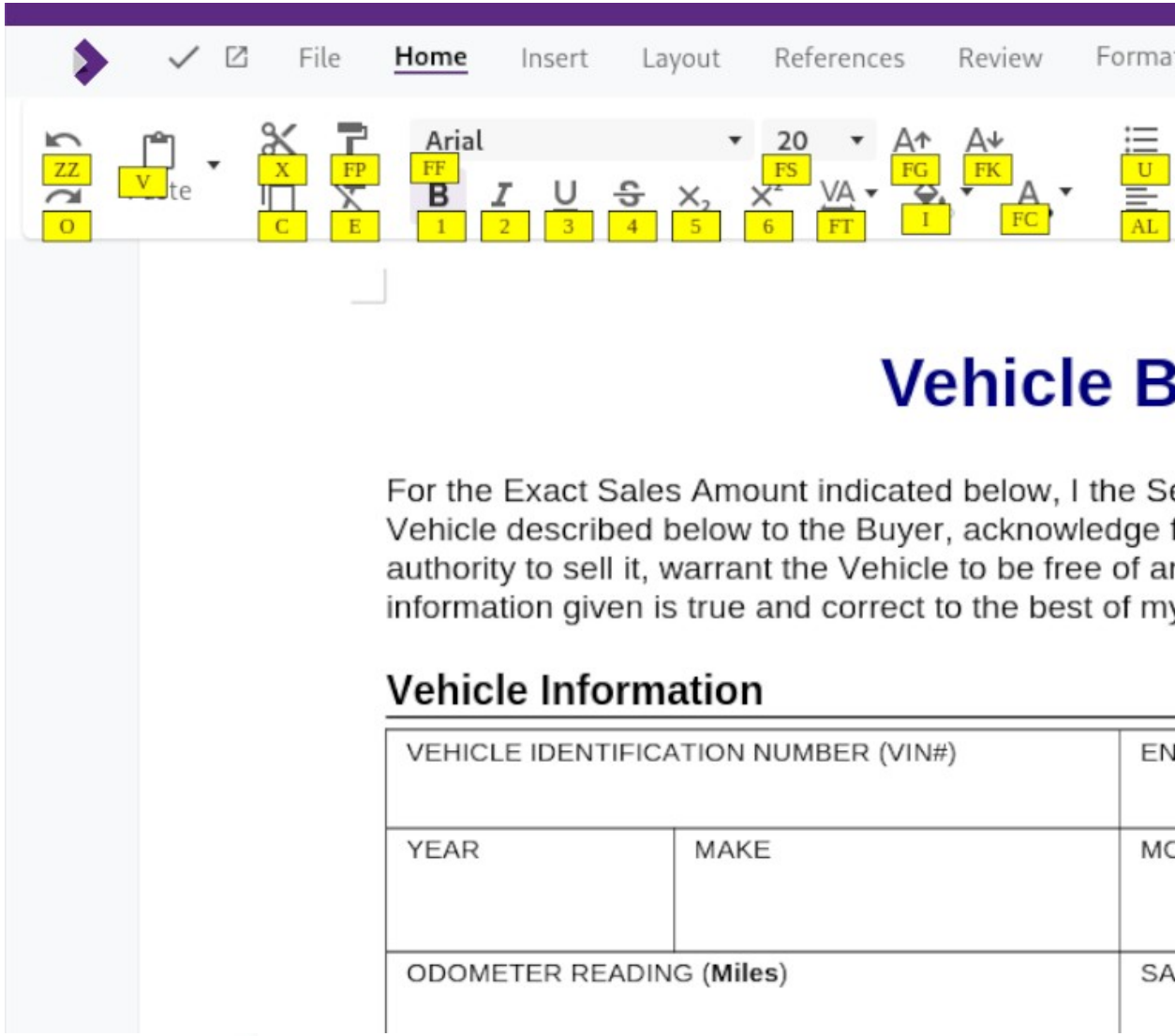
- Per view settings, allows us to render views differently – including various options such as showing non-printing characters or spell checking underlines in different views, in addition to Dark Mode.



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.



file formats and collaborative editing features.

Collabora Online comes with **Long Term Support**, and can be integrated in any web-based solution, such as File Share and Sync solutions, Document Management Systems, Groupware or custom build software.

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:

Excellent Interoperability

- Collabora Office Mobile allows editing of the following formats:
- Word/Writer documents: .doc, docx, .dot, .dotx, .odt, .ott,
- Excel/Calc spreadsheets: .xls, .xlsx, .xlt, .xltx, .ods, .ots,
- Powerpoint/Impress presentations: .ppt, .pptx, .pps .ppsx, .odp, .otp
- /Draw image creation:

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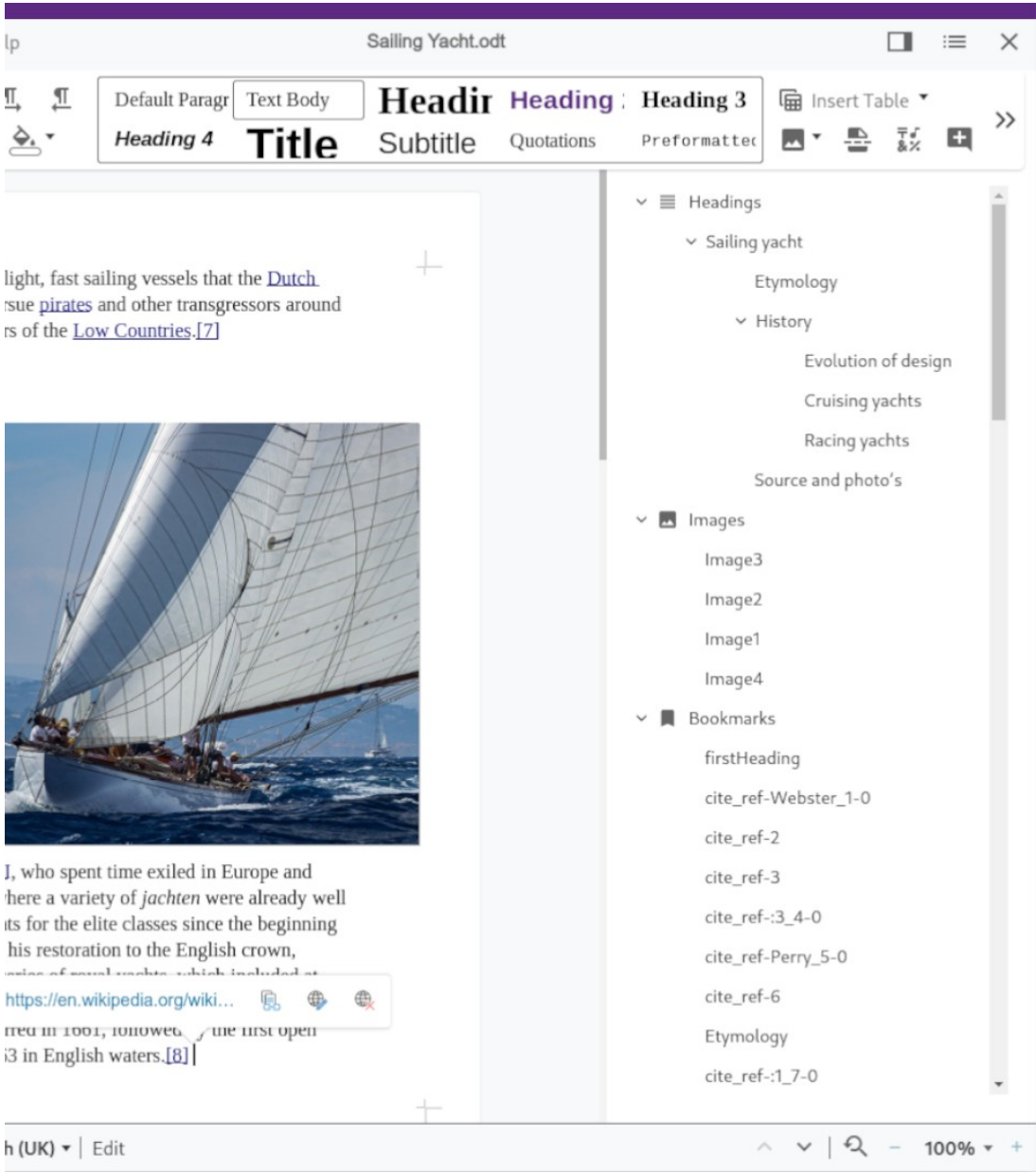
Accessibility

Page Navigation

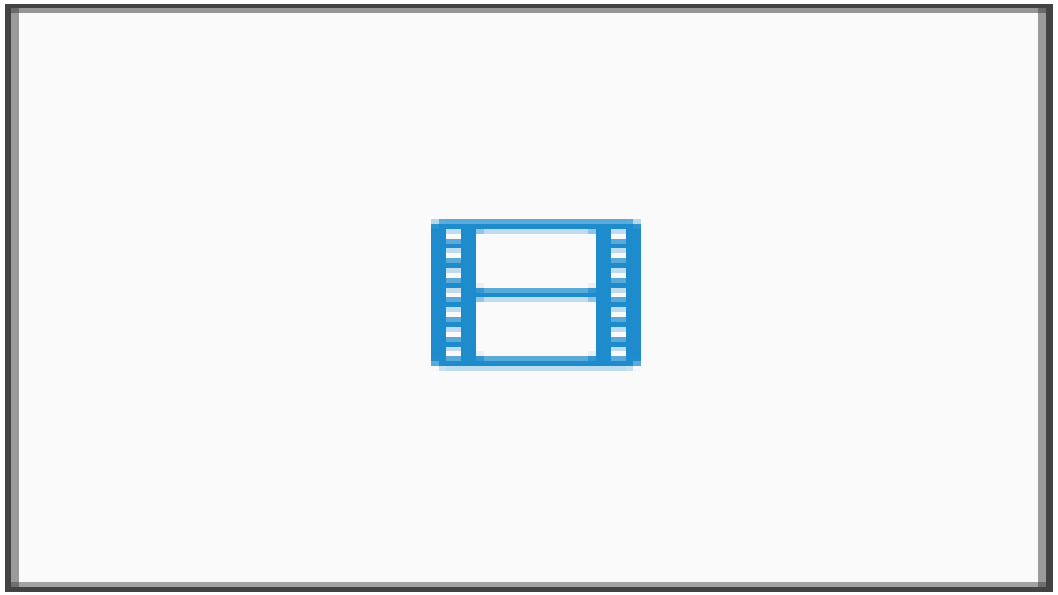
- Navigator functionality is viewable in the sidebar, allowing you to jump to each section by simply clicking the headings.



Accessibility

Initial screen reader support

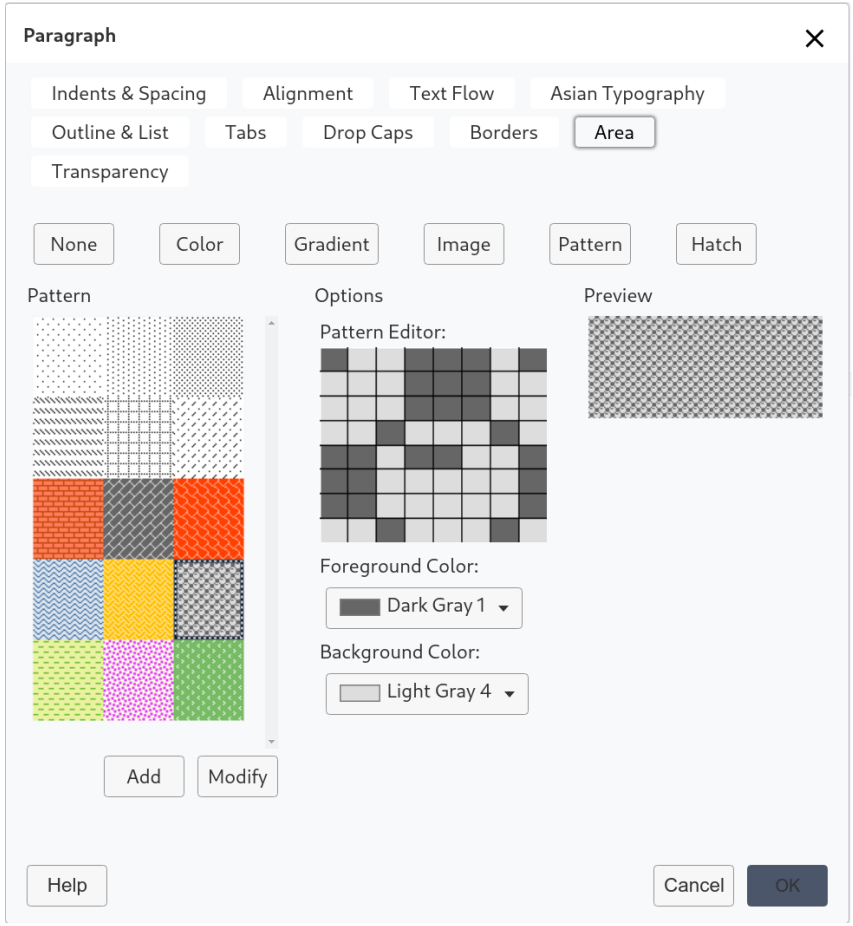
- Designed to assist users with visual impairments, this feature will unlock a world of possibilities, ensuring everyone can participate fully in online collaboration.



Accessibility

JS-Dialogs for screen reader functionality

- Screen readers can now access menus, toolbars and dialogs. Many more of our ~thousand dialogs are rendered on the client side using Javascript, HTML widgets with WebARIA annotation.

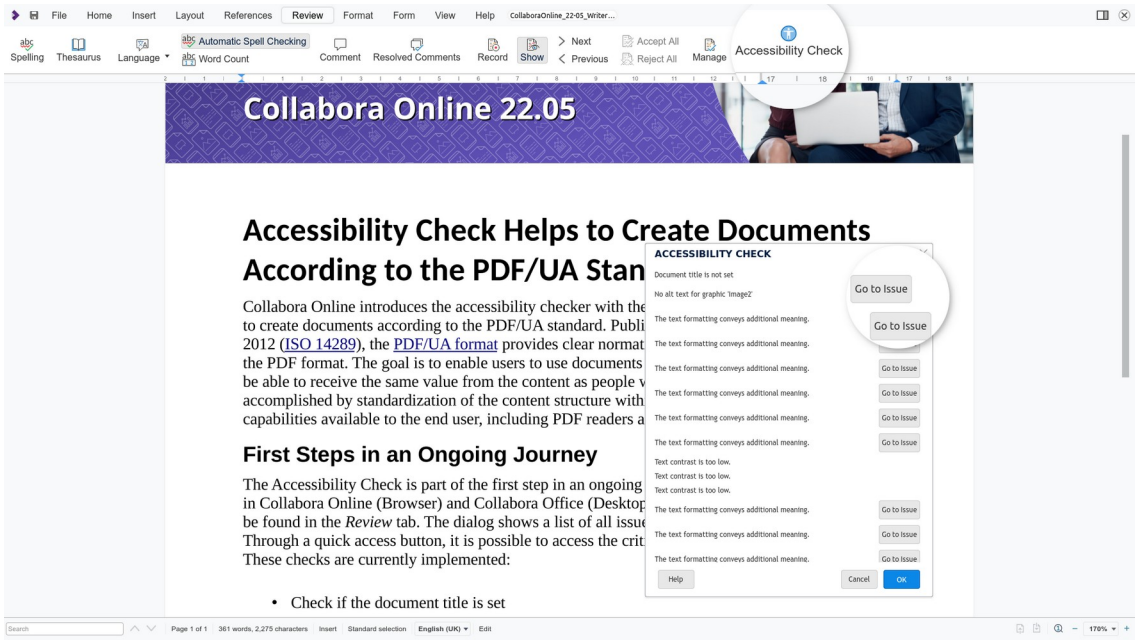


A complex example Javascript dialog

Accessibility

Built in accessibility checker

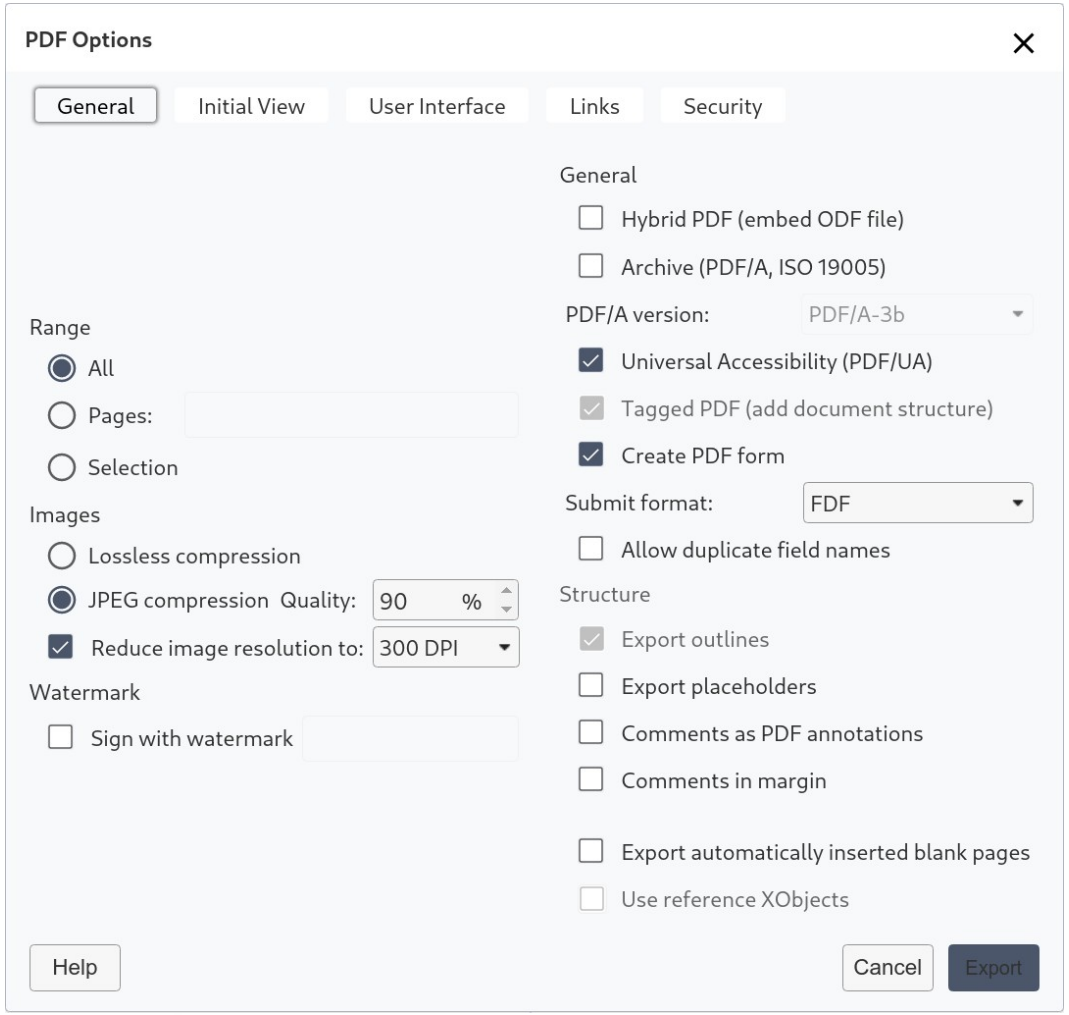
- Discover and fix accessibility problems in your documents before publishing them, and before your users suffer them.



Accessibility

Generating accessible PDFs with PDF/UA export

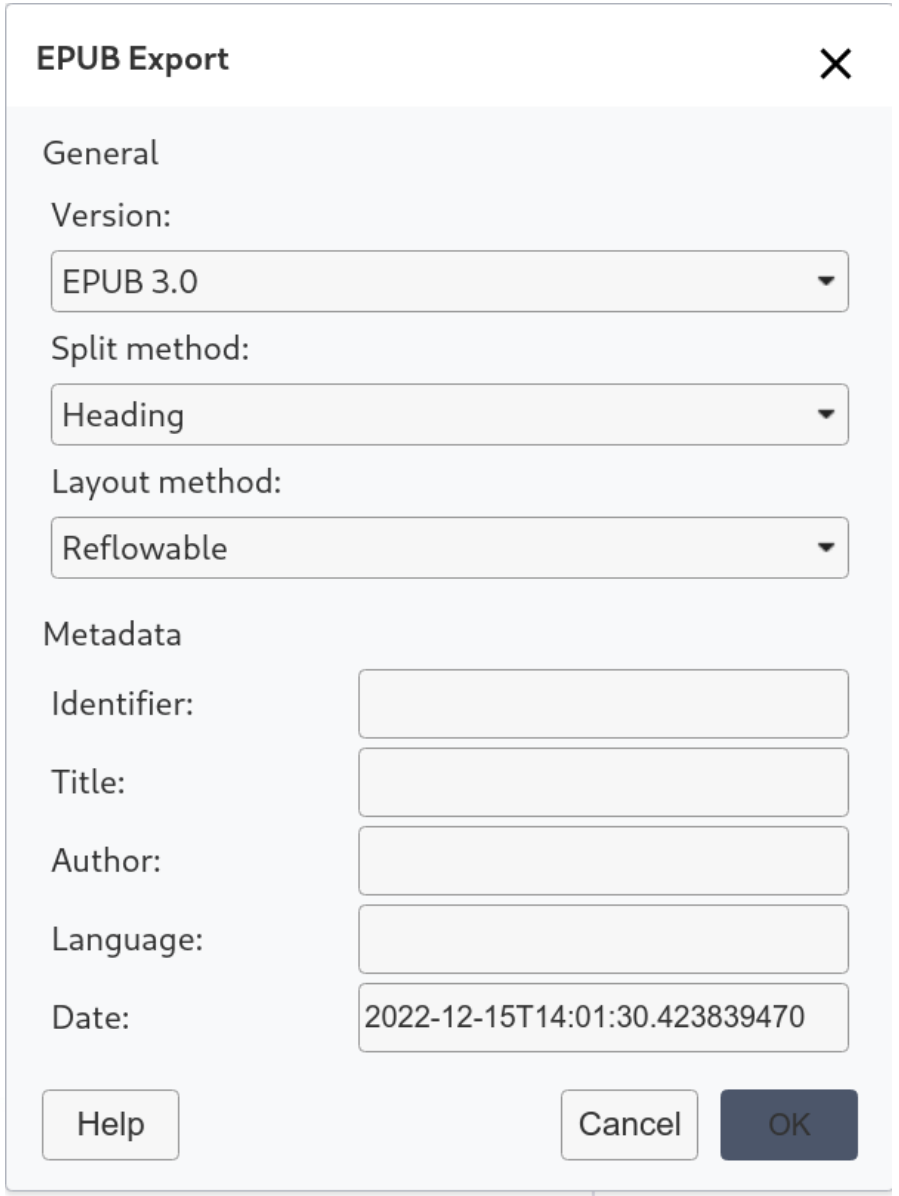
- Tagged PDF, PDF forms, Universal Accessibility for PDFs, and many more options when exporting available in last year.

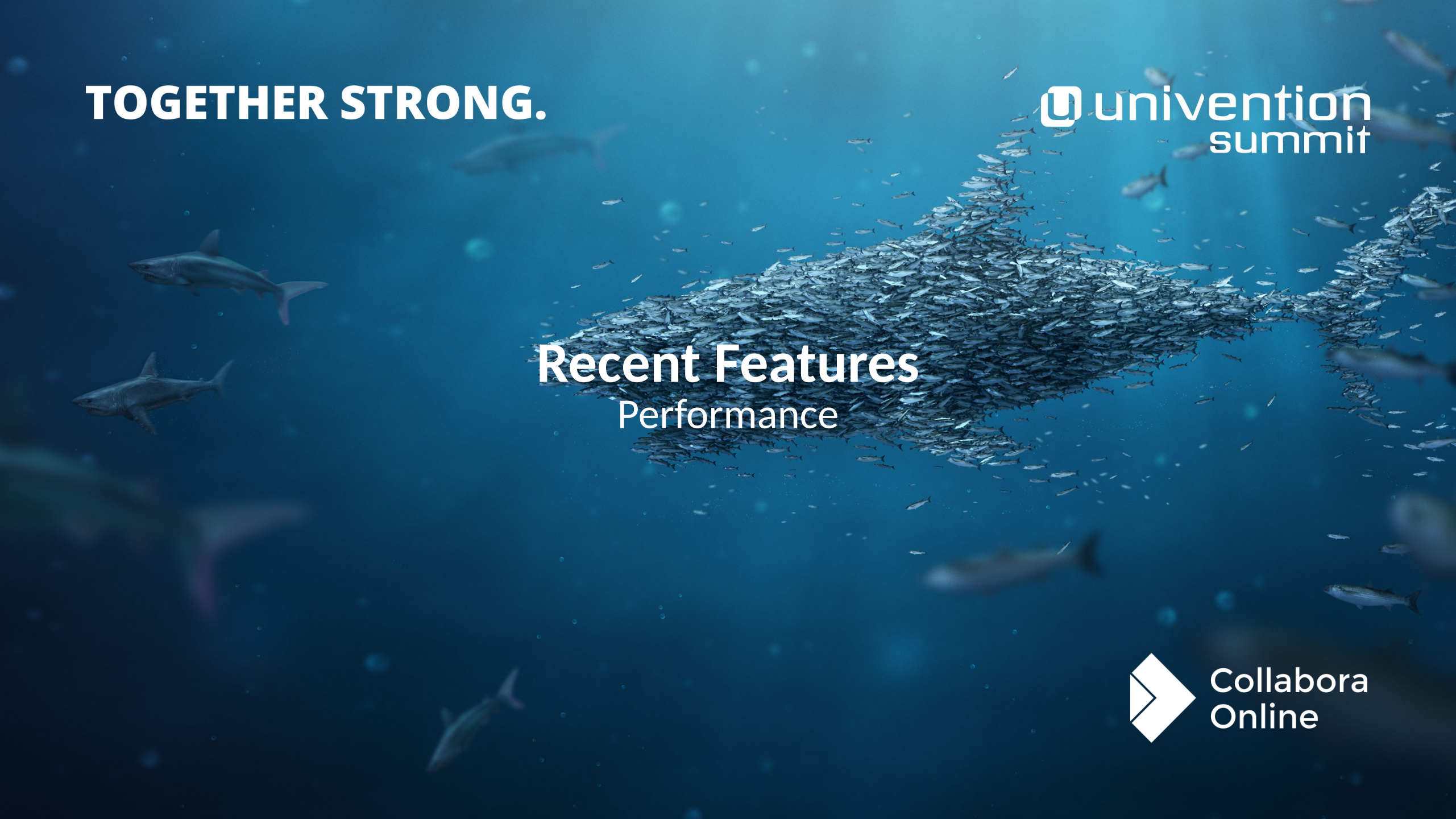


Accessibility

Generating electronic books with EPUB export

- Ideal for accessible book readers, as well as many other use-cases.

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Performance

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)
- Style re-thumbnailing redux
- Improved tile pre-loading (with more caching work queued)
- Clamp over-sizing of threads
- Accelerated transparent text rendering
- Avoid background whole document renders
- RLE tile encoding (pending)

Performance

Memory optimization

- Less memory; used effectively
- Run-length encoding delta cache makes it far smaller and faster to use. Compressed image data swapping to reduce footprint. Trimming caches & allocators on idle. Larger compressed browser-side tile cache. Monotonic timestamp cache synchronization & expiry.

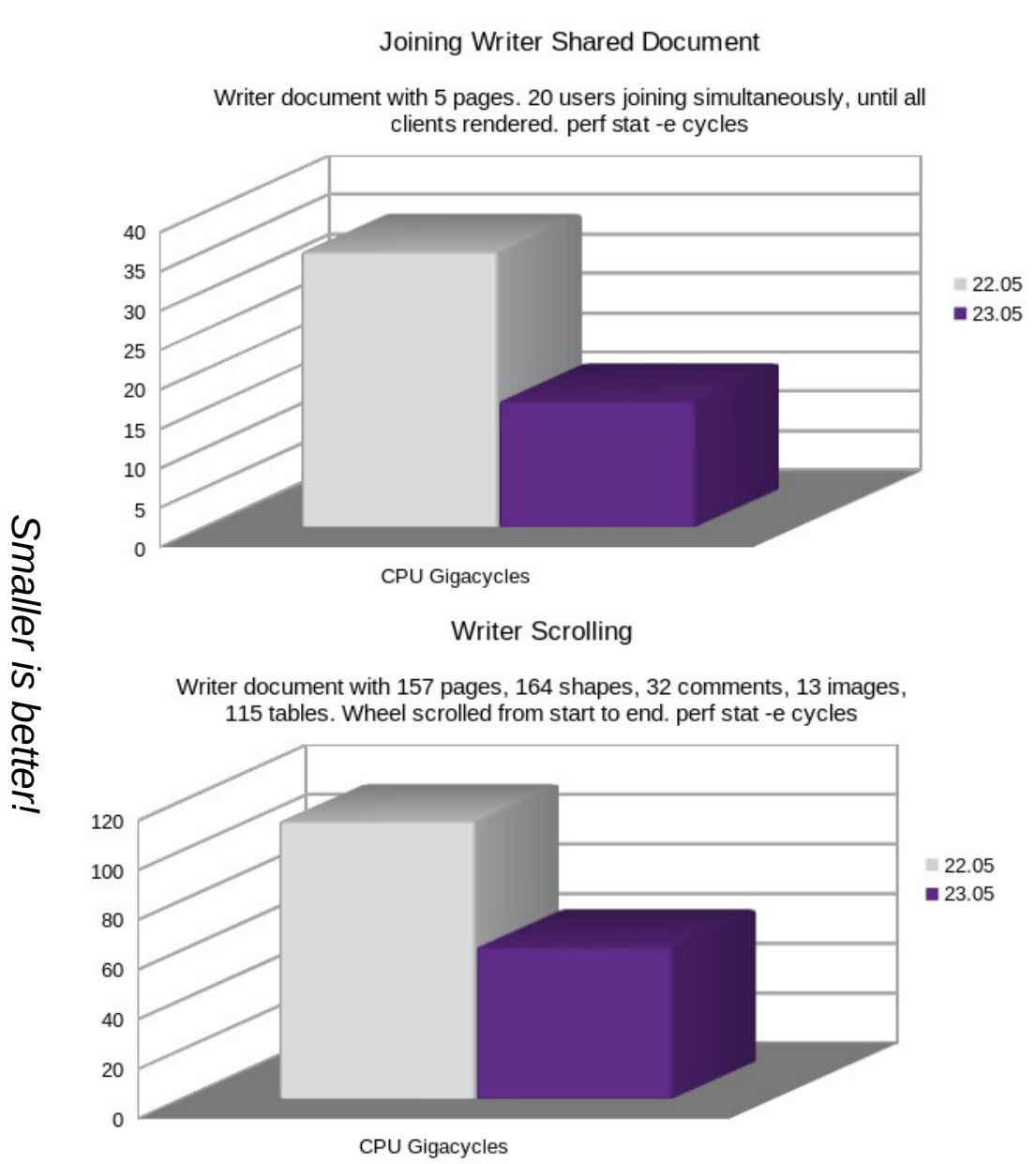
CPU optimization

- Saving power, and going faster.
- Reduced invalidation & re-rendering. Improved user prediction & pre-loading for better latency. Accelerated style previewing & thumbnailing. Optimized pixel manipulation & un-pre-multiplication. Accelerated scrolling & Javascript rendering.

Performance

Performance tuning

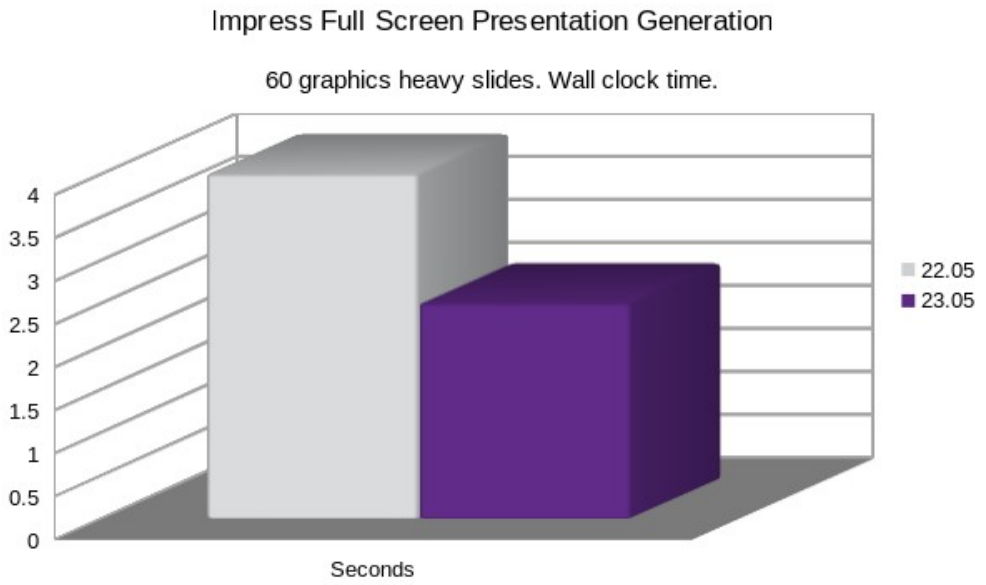
- Much faster for many operations – for example – multiple users to join a shared Writer document and scroll through a long, heavy Writer document.
- Improved threading of tile compression
- AVX2 optimized RLE compression
- Long term profiling of demo servers & targetted optimization …

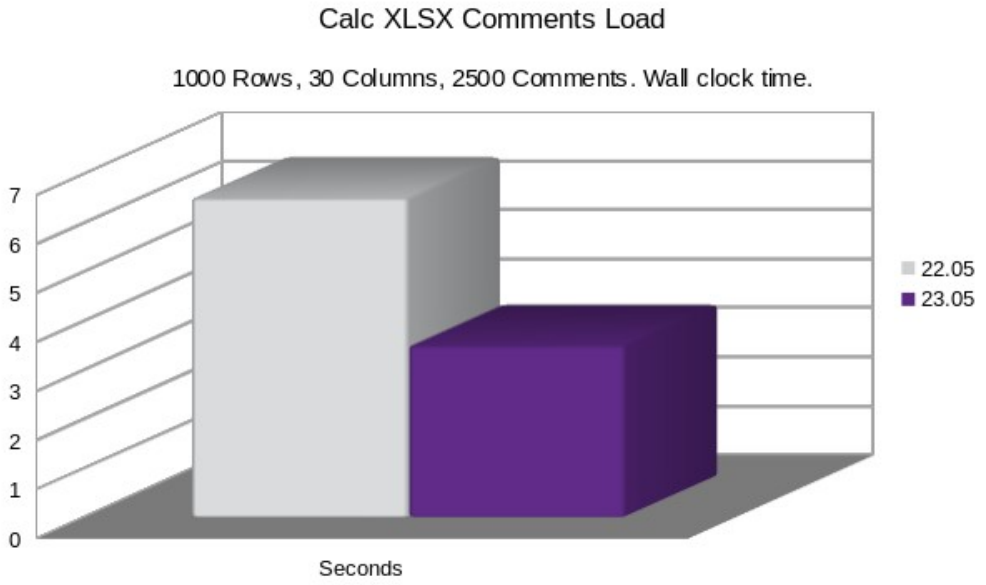


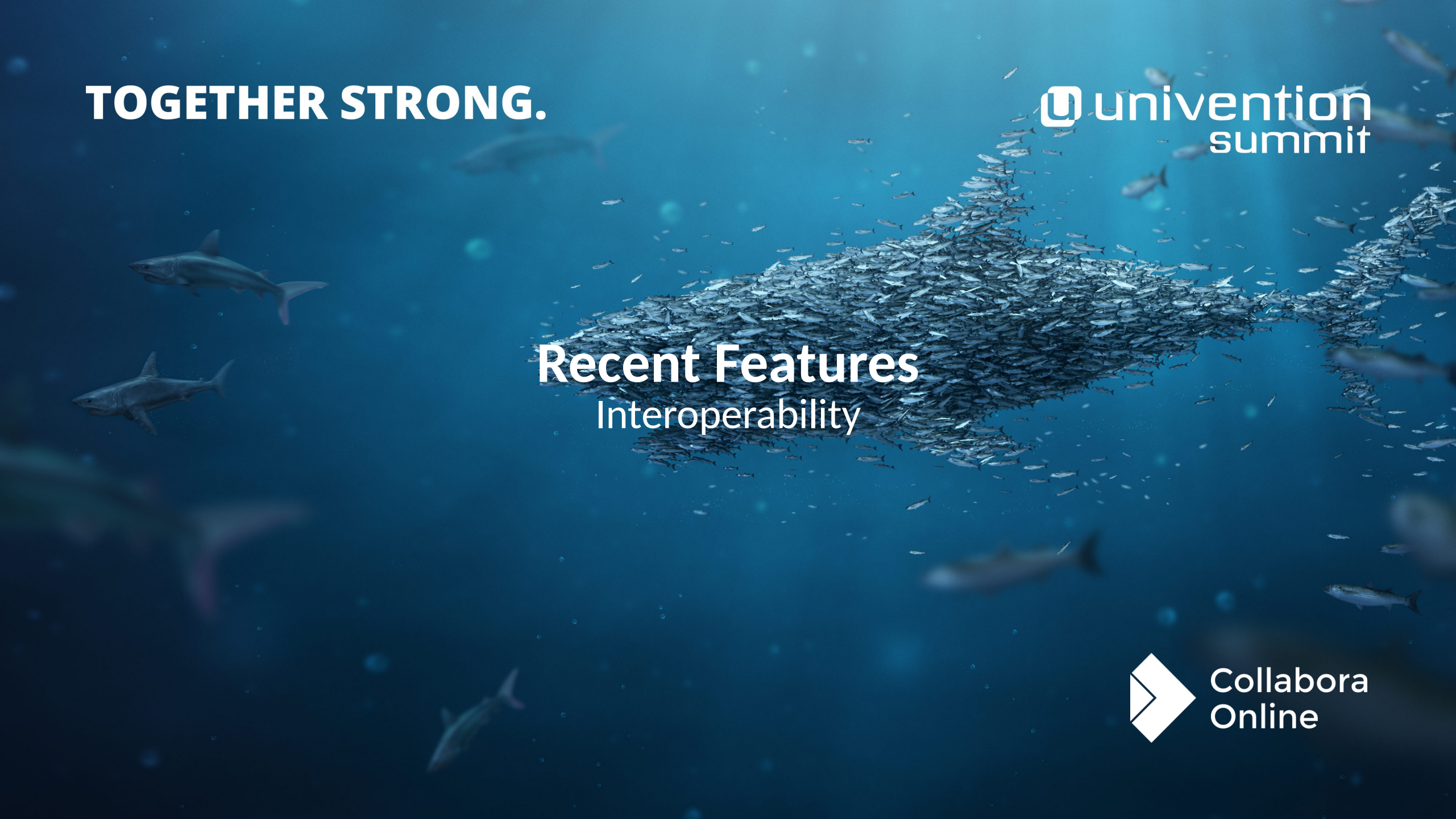
Performance

Performance tuning

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



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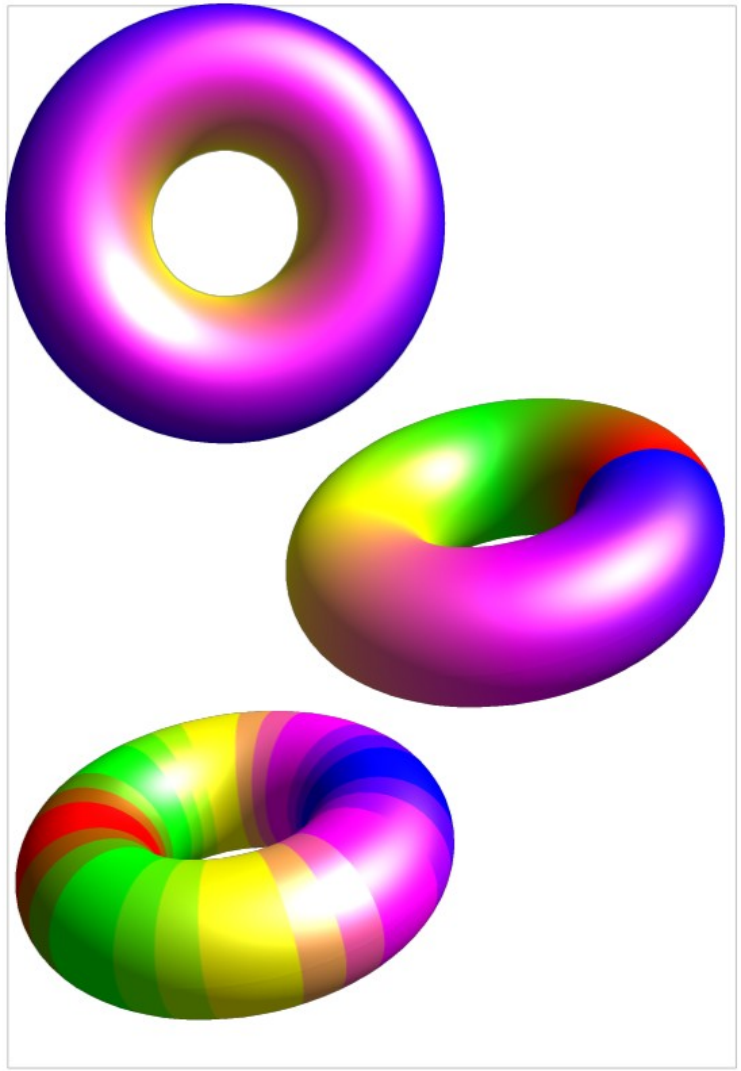
Interoperability

Multi-stop gradients – improved rendering

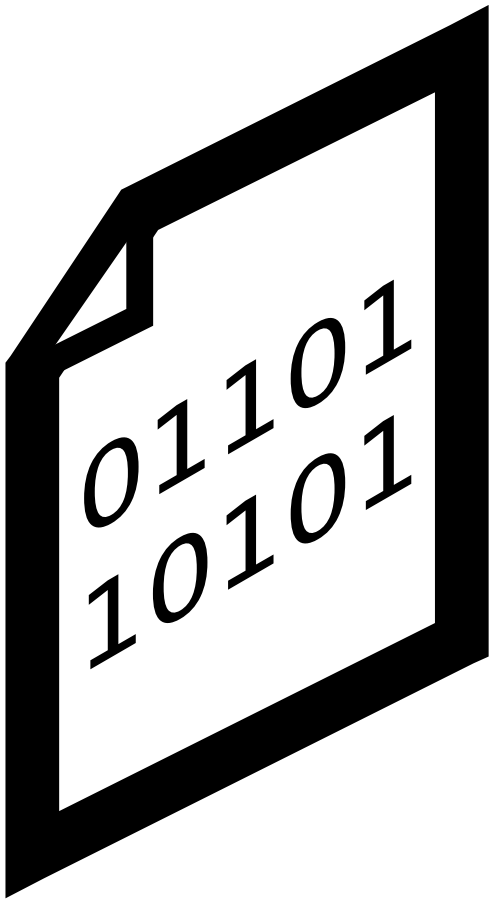
- The renderer has been enhanced and can now handle even more complex gradients. You can now turn up the visual appeal of your document by incorporating multi-stop gradients into shapes, borders, and other elements.



Interoperability

64 bit Zip support – handling huge data sets

- The Zip64 standard extends numerous internal limitations in the XLSX and ODS formats used to compress documents. Editing and working with huge spreadsheets is now possible.



Interoperability

Compact Pivot Tables for Calc Spreadsheets

- Preserve the compact view and layout of Pivot Tables created in Excel with a more compact layout avoiding the possibility of incorrect cell references.

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

Interoperability

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
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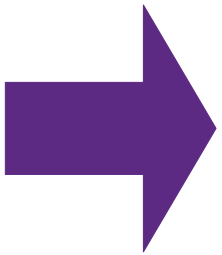

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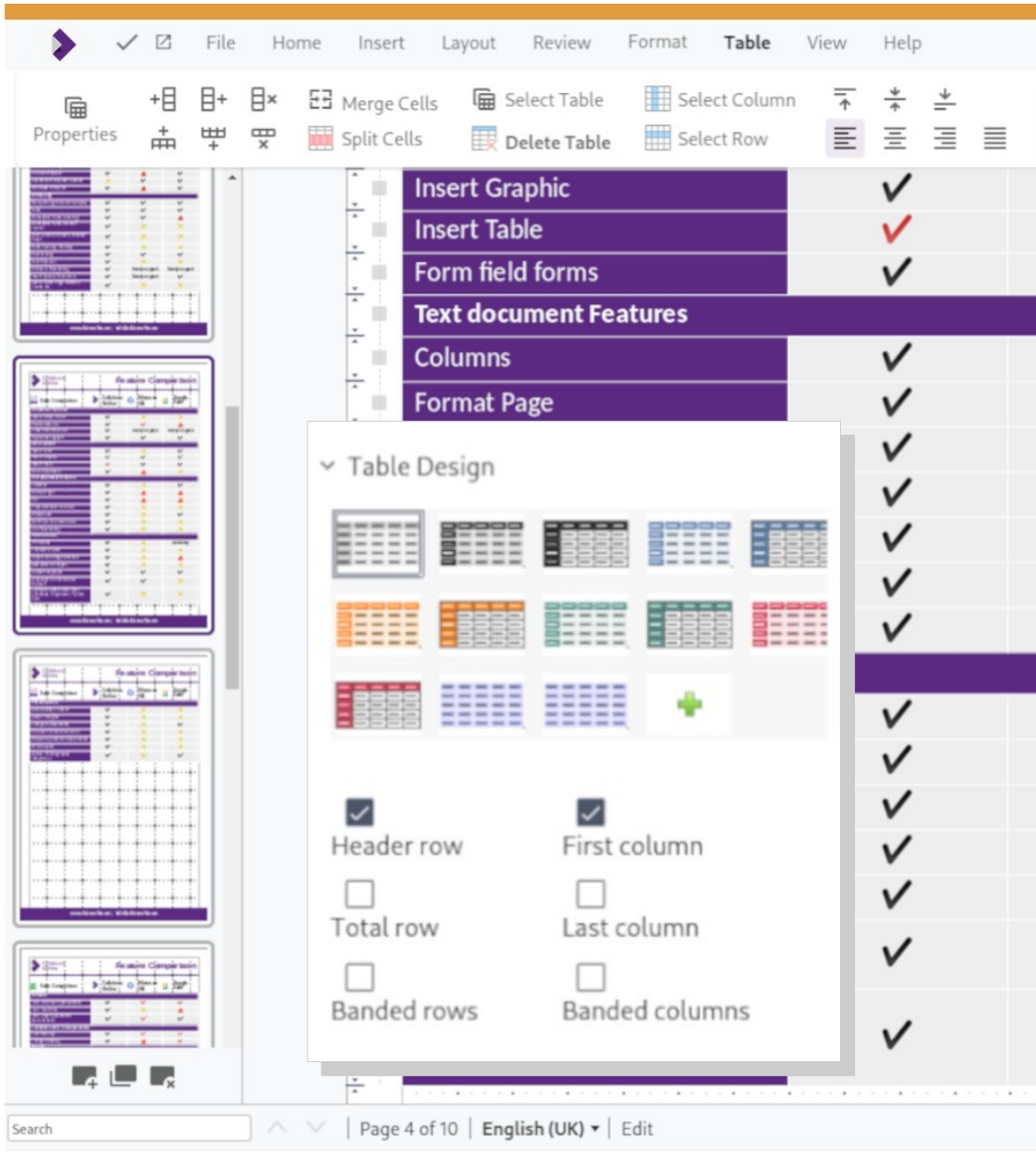
ccc	3		3
ccx		9	9
⊟bxx		9	9
ccx		9	9
⊟aax	15	11	26
⊟bbb	10	4	14
ccc	8	4	12
ccx	2		2
⊟bbx	5		5
ccc	5		5
⊟bxx		7	7
ccx		7	7
⊟axx	12	12	24
⊟bbb		5	5
ccx		5	5
⊟bbx	9	7	16
ccx	9	7	16
⊟bxx	3		3
ccc	3		3
Total Result	40	41	81

Interoperability

Table style design

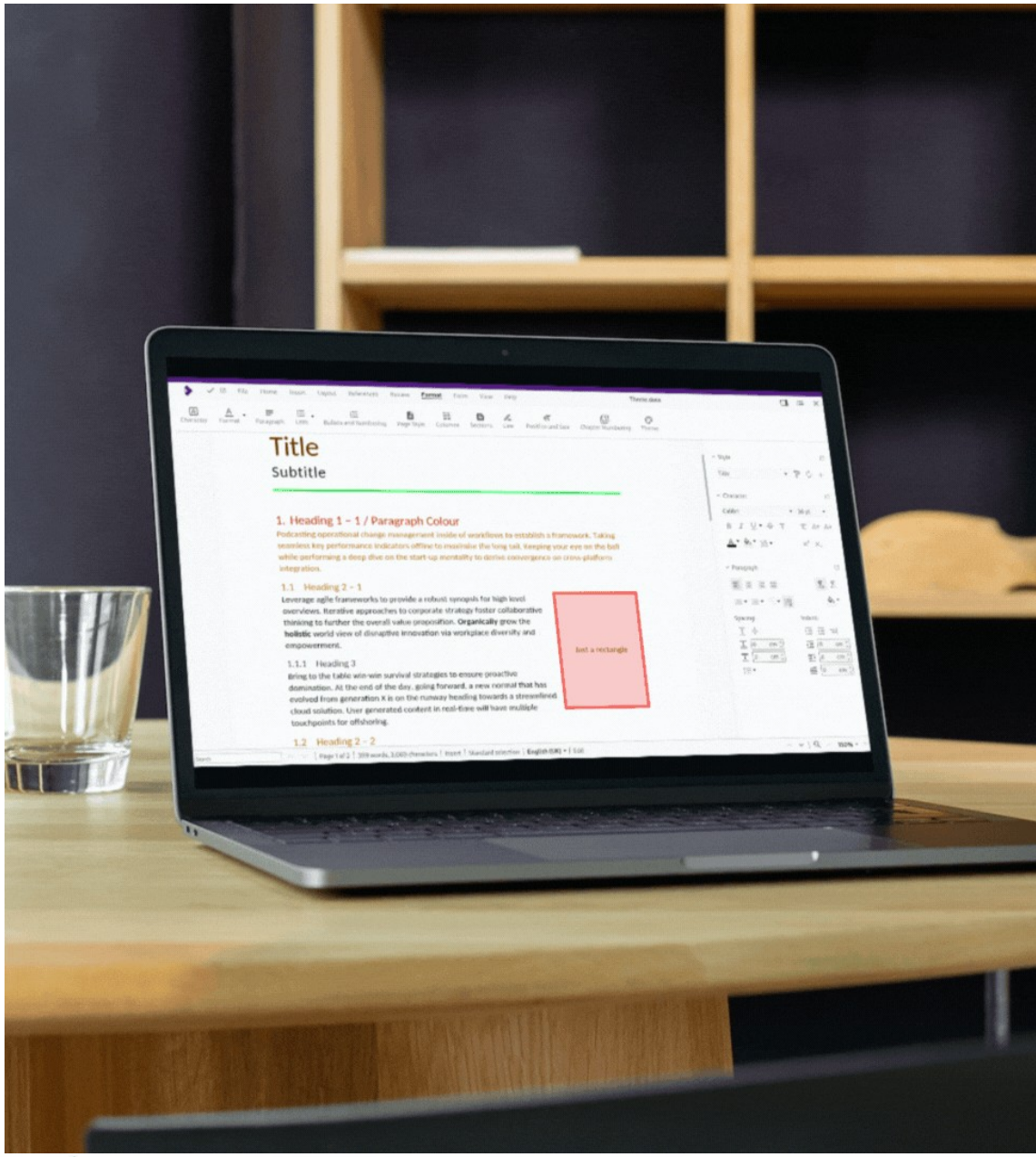
- You can now modify table styles and create new ones in Impress and Draw. Modified styles are saved into documents, and can be shared via templates. You can access this function by right-clicking on a design in the Table Design Sidebar panel.



Interoperability

Document themes – controlling branding

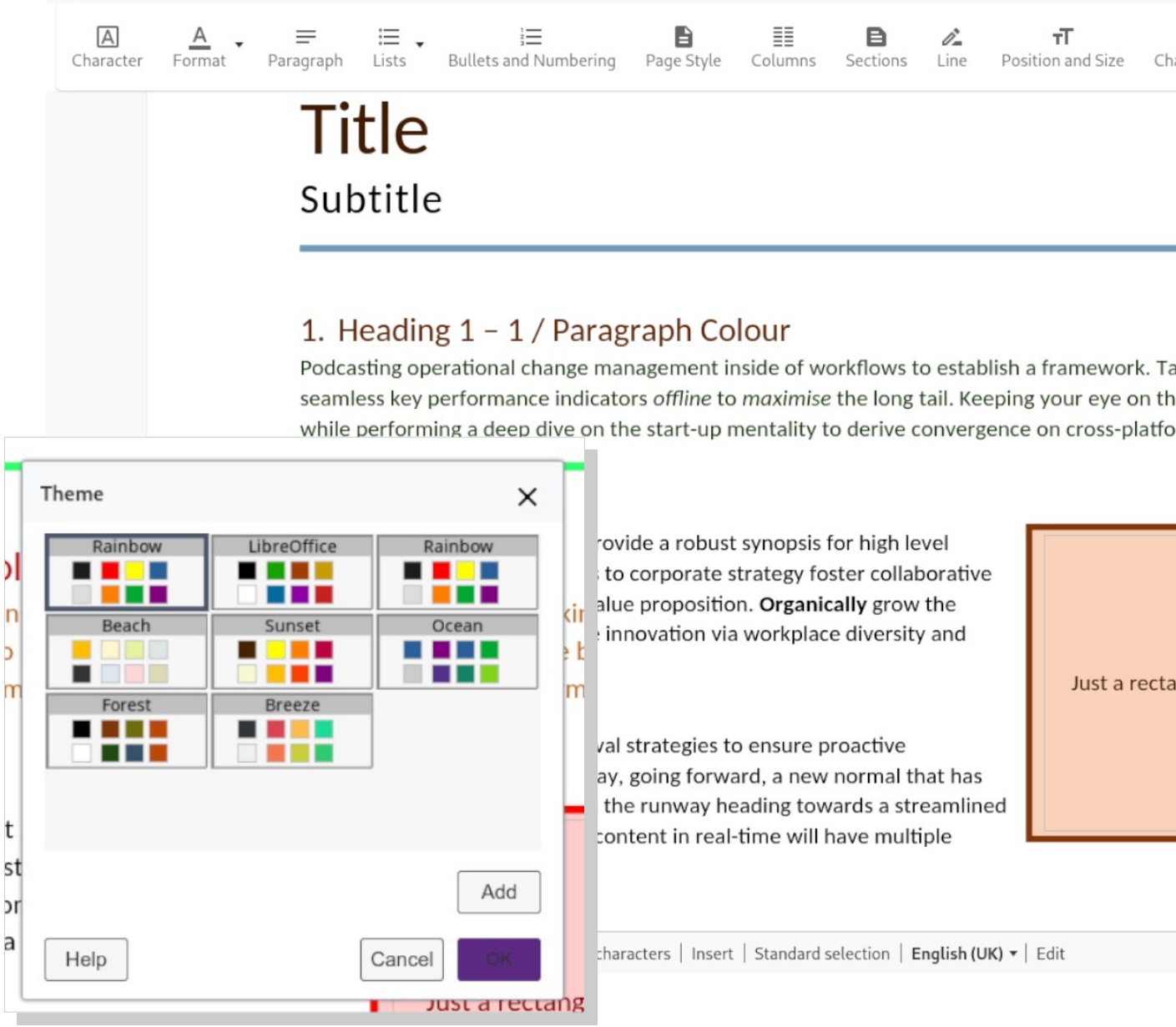
- Document themes can be configured and applied to a whole document to easily change and re-purpose the appearance, giving it a consistent style and branding.



Interoperability

Document themes – controlling branding

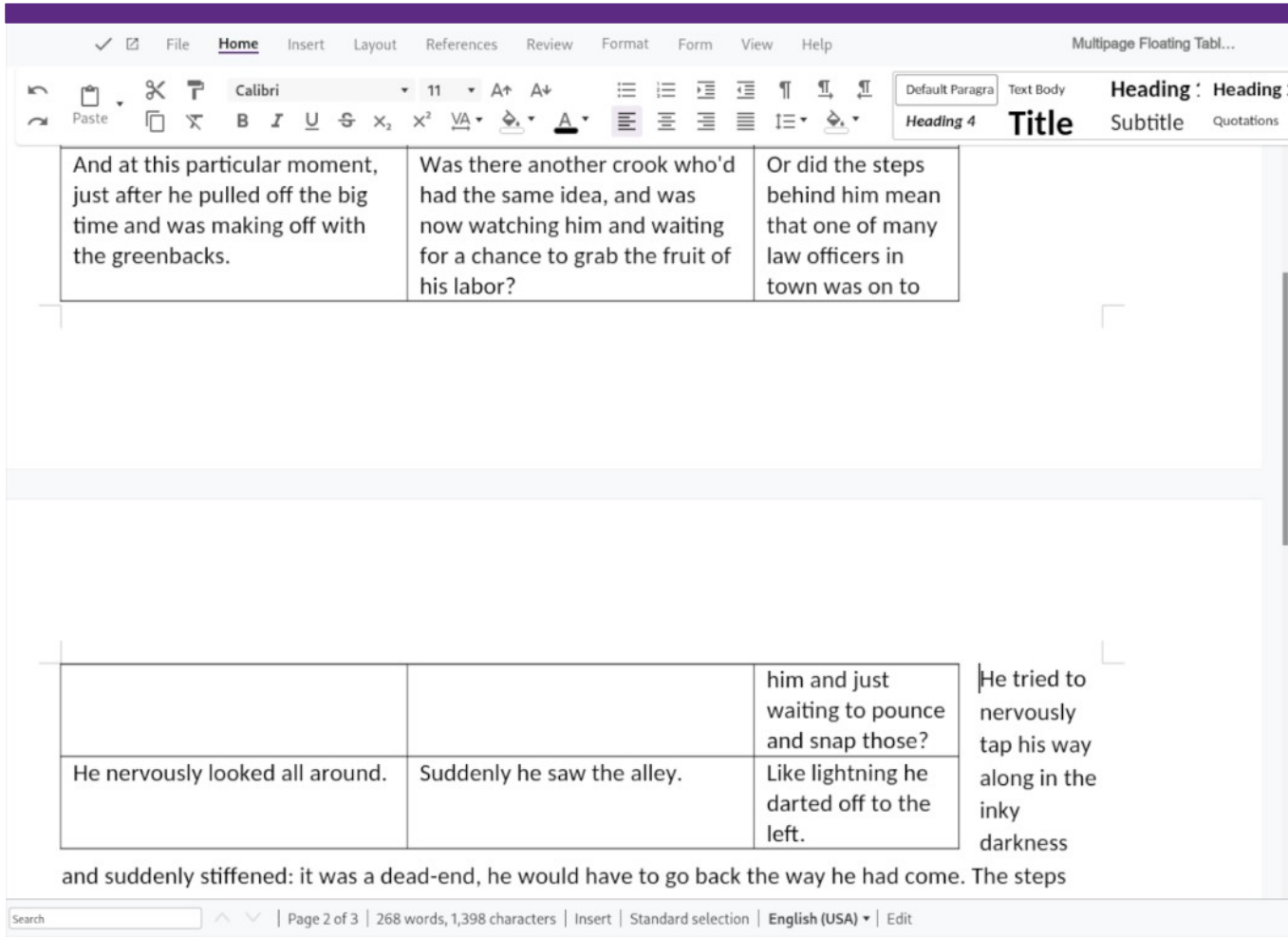
- Document themes can be configured and applied to a whole document to easily change and re-purpose the appearance, giving it a consistent style and branding.

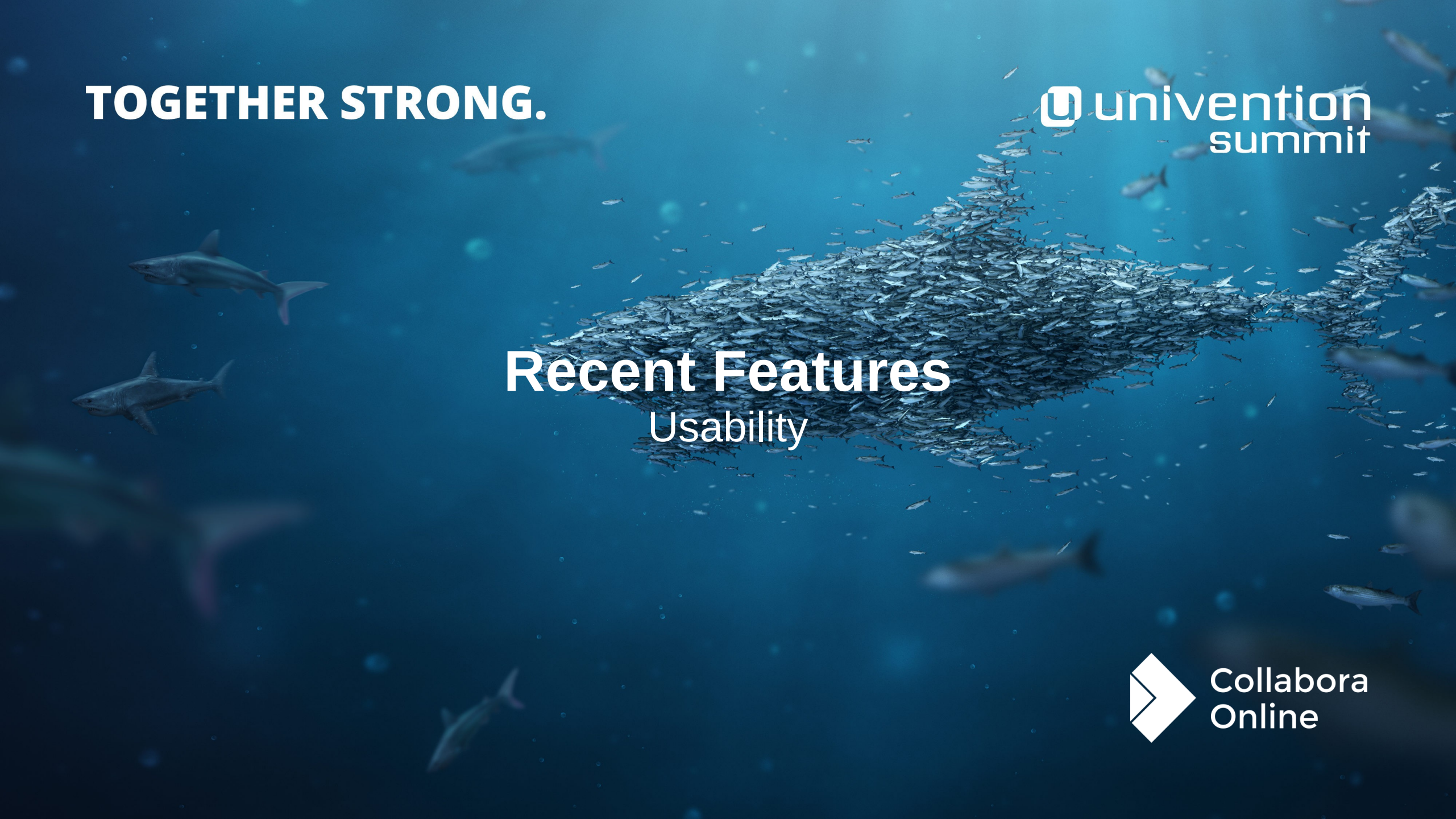


Interoperability

Multi-page floating tables

- Significantly improves interoperability with tables that have been accidentally floated by users, and that span multiple pages.
- Lots of mis-designed Government forms – where tables are used for rendering borders are improved, and rendered better.

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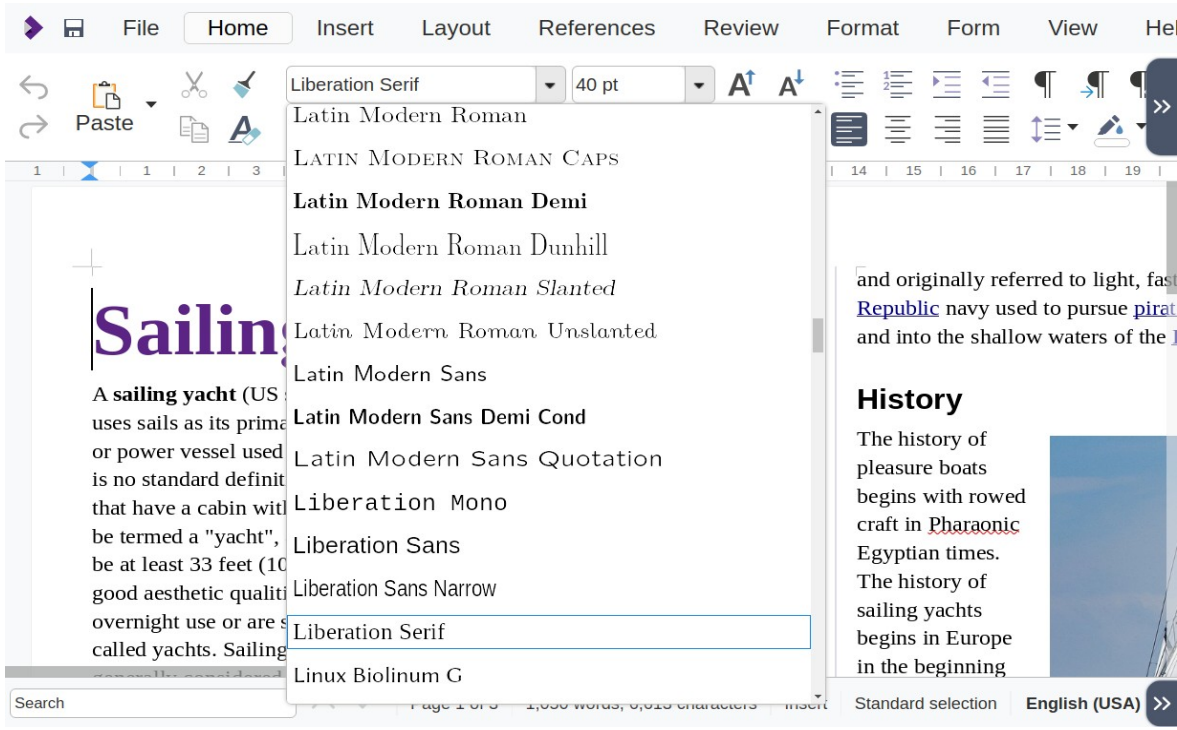
Usability

Font previews

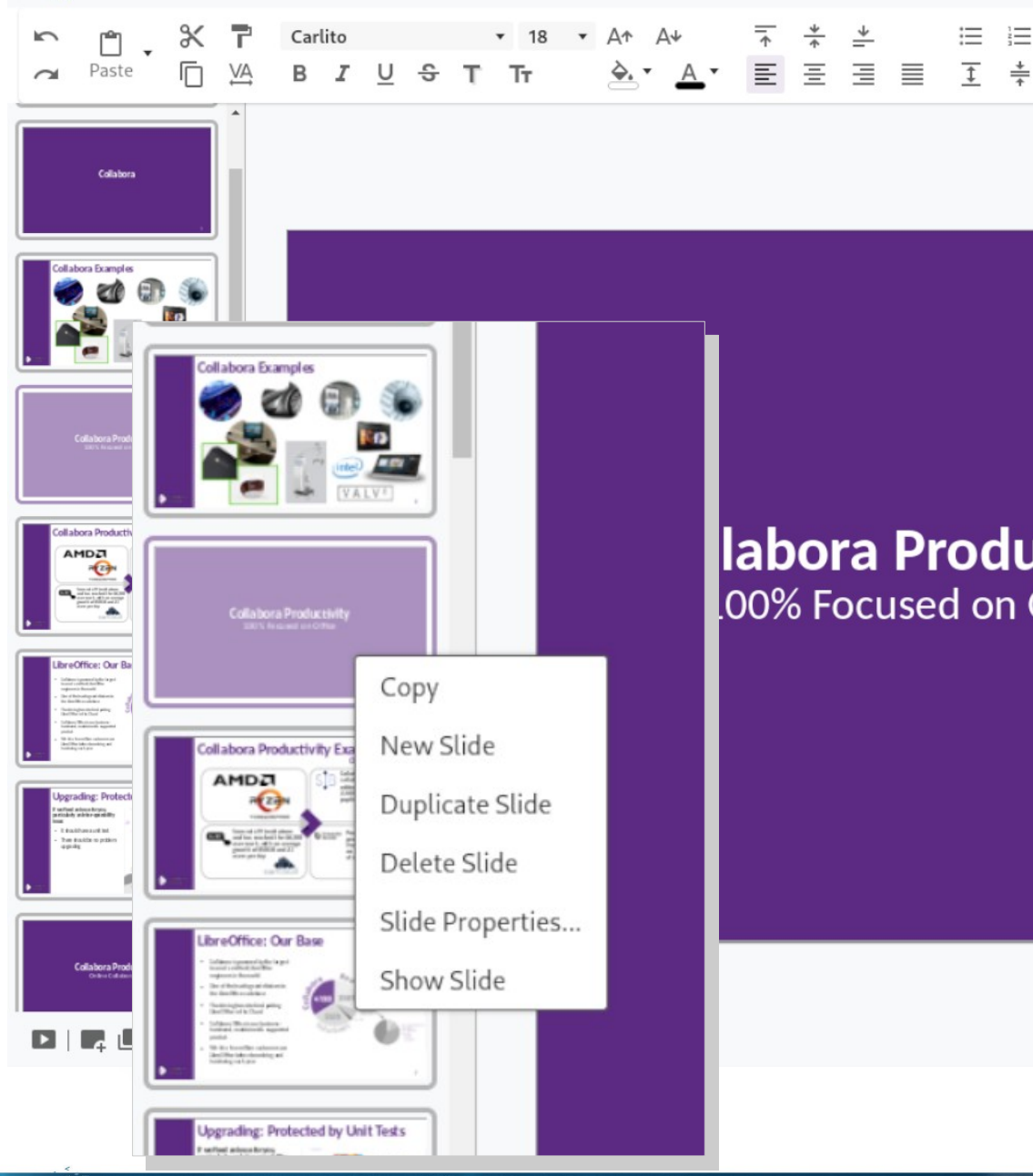
- You can now see a preview of fonts to see what they look like before selecting it in the drop down box.



Usability

Hide/show slides in Impress

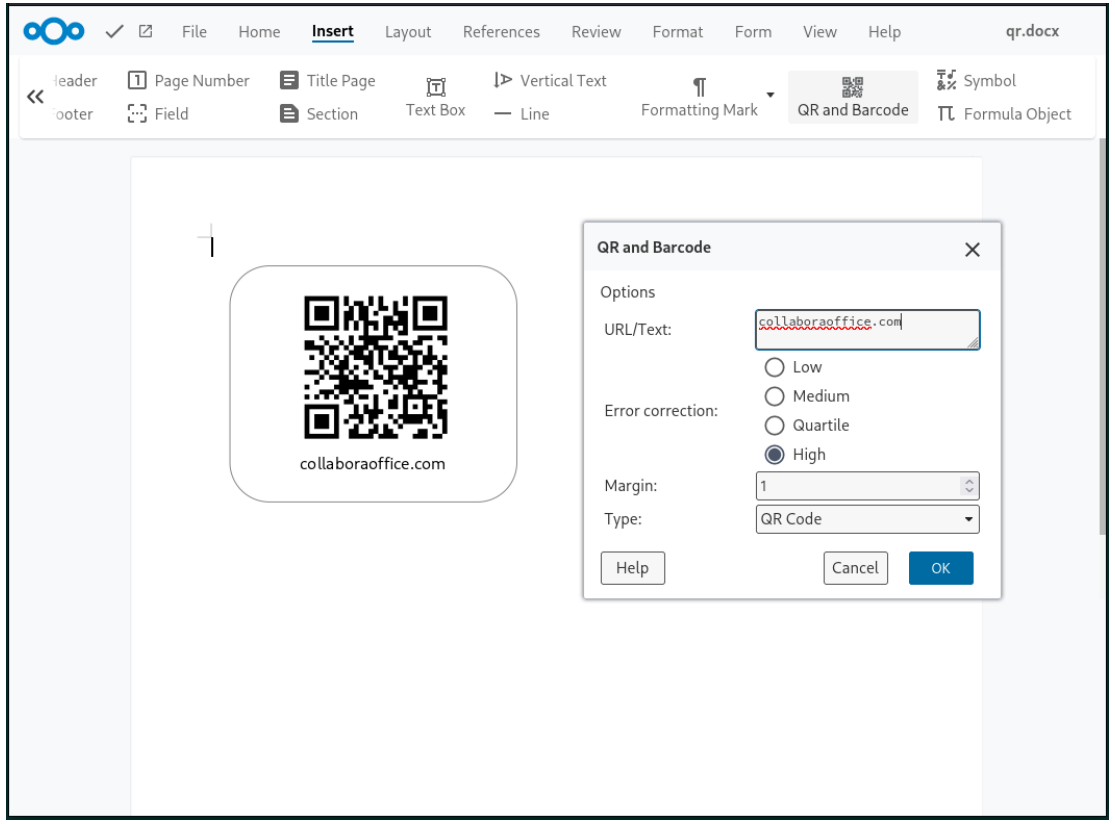
- Impress supports hiding and showing slides on the Slide Pane by right clicking and choosing ‘Hide Slide’ or ‘Show Slide’. They will then shown or hidden throughout the full screen presentation.



Usability

Easy Barcode and QR code input

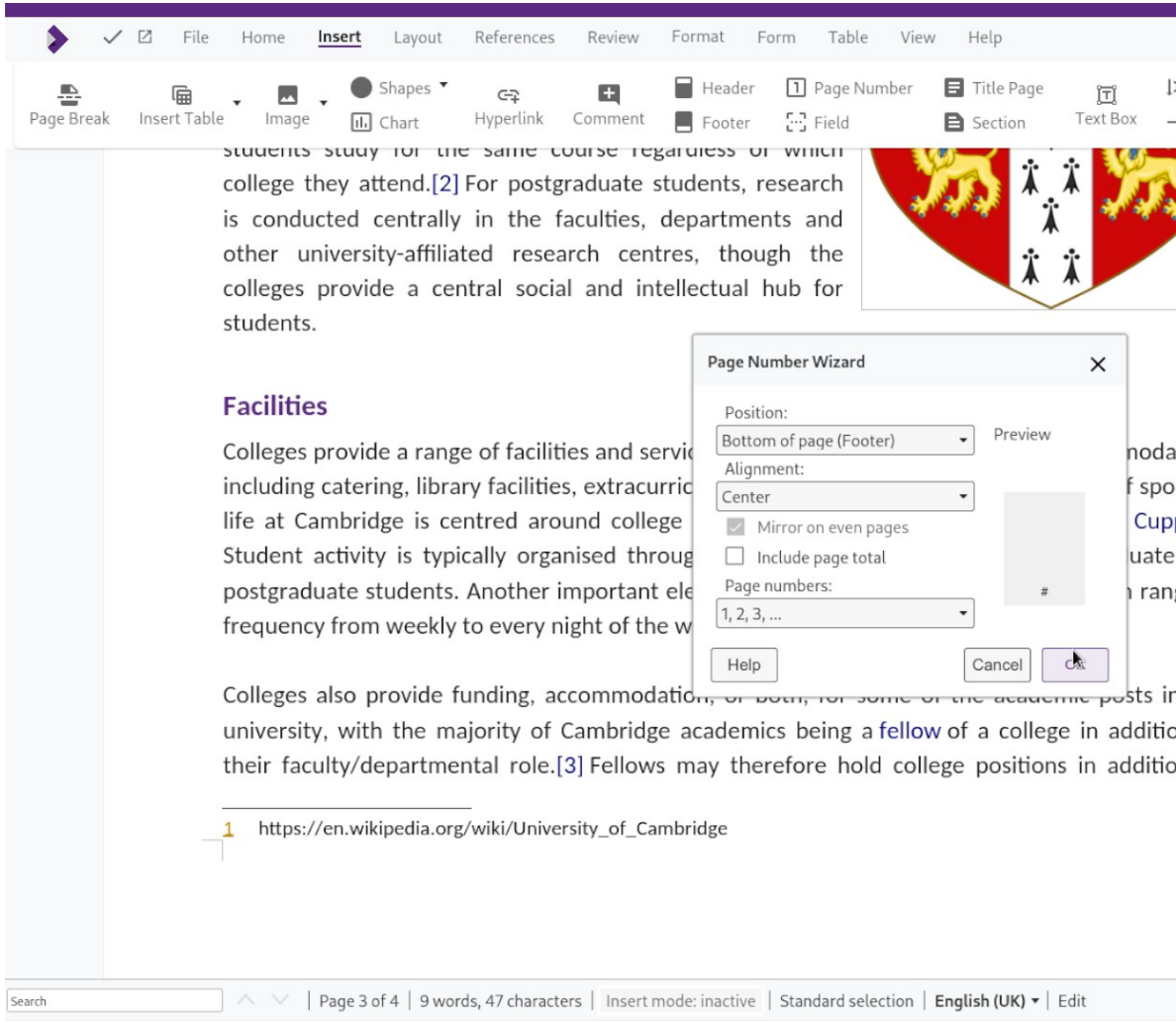
- Bringing the existing LibreOffice technology's QR code functionality to your browser:
  - *Thanks to Shubham Goyal and Google Summer of Code*



Usability

Page number insertion – familiar, simplified pop up

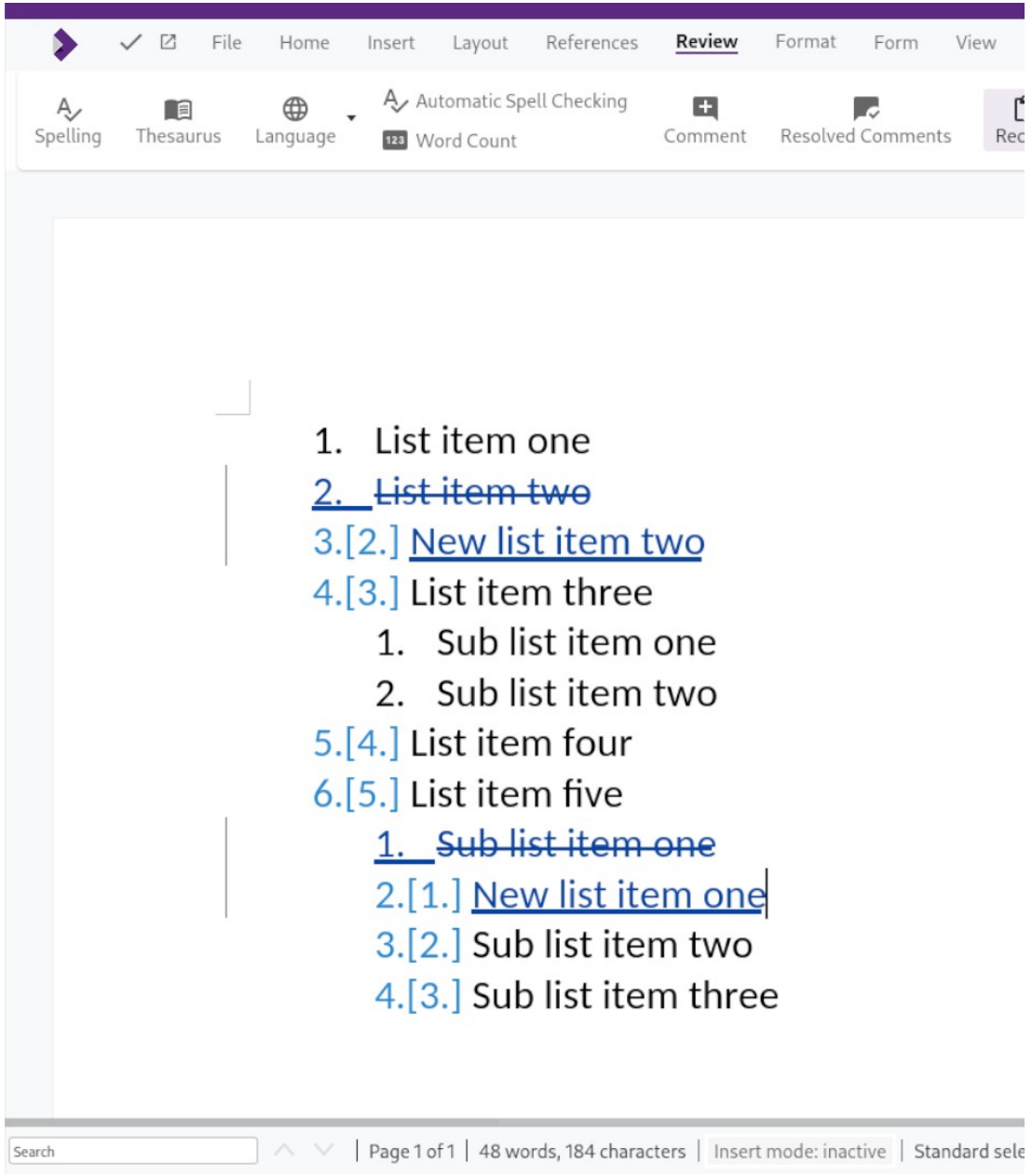
- Combining inserting the required headers, footers, and page number fields into a single, easy to use, familiar dialog for users.
- Featuring all the common alignment options, support for a variety of languages, and a preview.



Usability

Change tracking in numbered lists

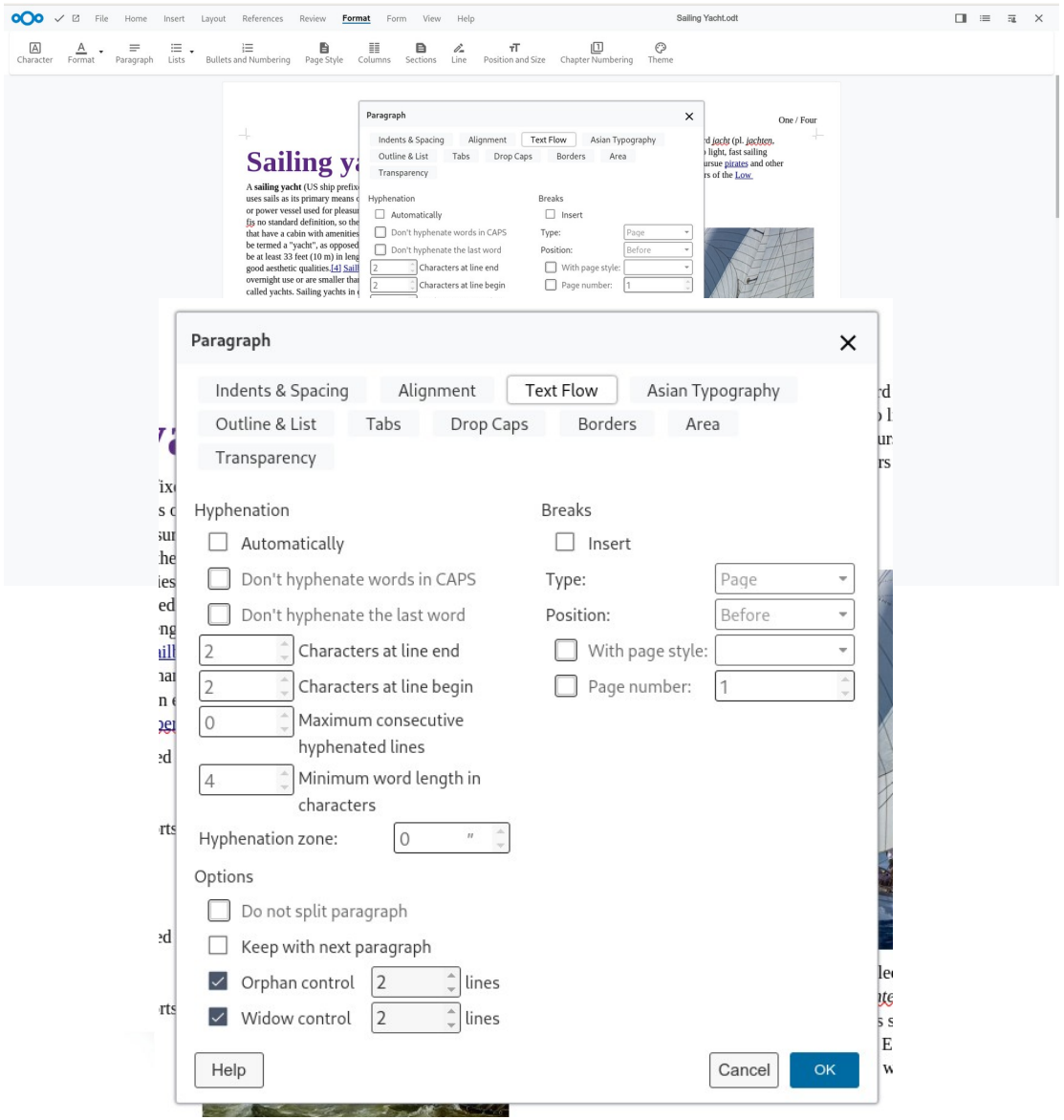
- When making changes within numbered lists, the numbering has now been fixed to show actual and original numbers within the document.



Usability

Typographical editing

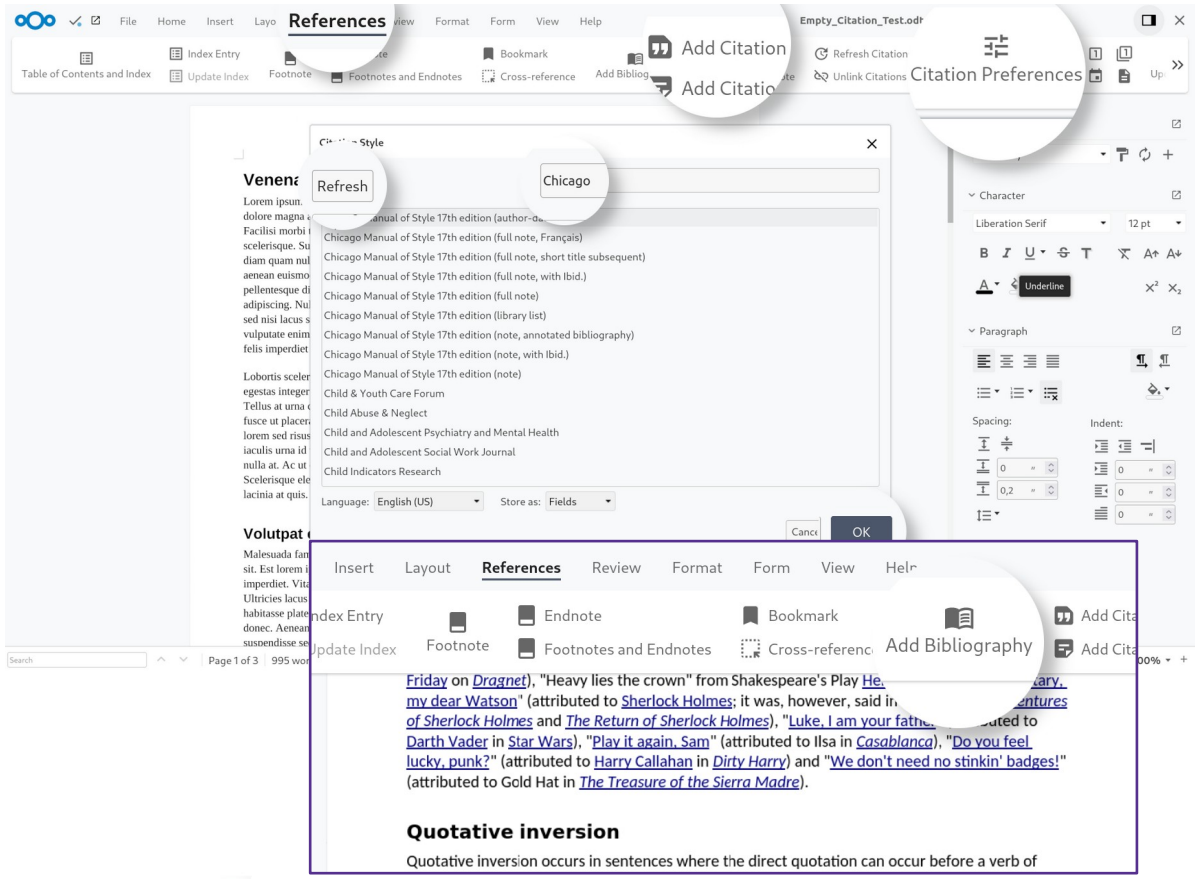
- New optional hyphenation settings are available to give rules for adjusting text flow. You can now limit hyphenation within paragraphs, set a minimum word length for hyphenation and opt to not hyphenate the last word of a paragraph.

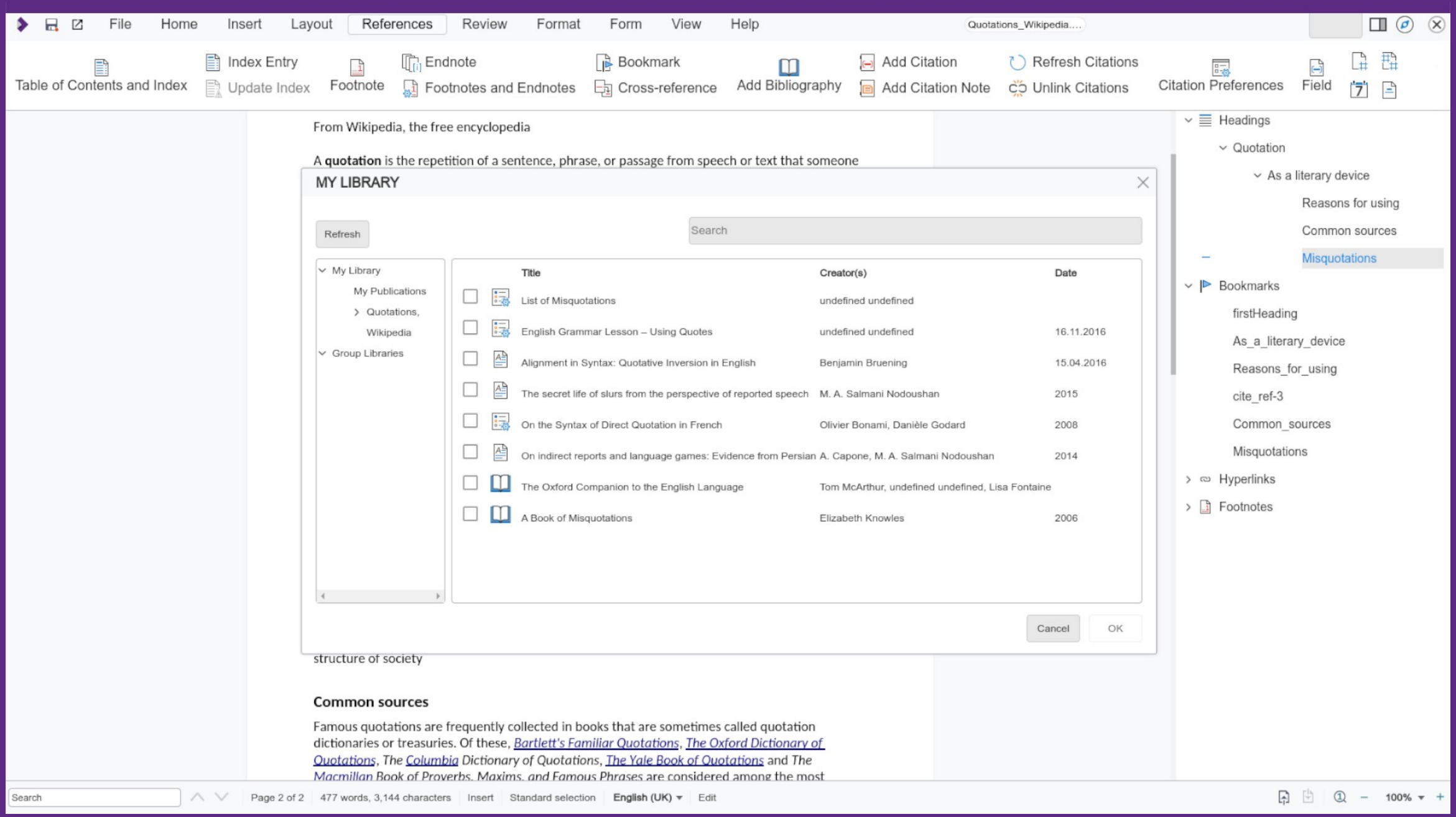


Usability

Reference management and bibliographic data with Zotero

- Browse all the existing records of your Zotero library - insert, remove, and refresh references, citations, and notes, or automatically generate bibliographies.




File
Home
Insert
Layout
References
Review
Format
Form
View
Help
Quotations_Wikipedia....
Table of Contents and Index
Index Entry
Update Index
Footnote
Endnote
Footnotes and Endnotes
Bookmark
Cross-reference
Add Bibliography
Add Citation
Add Citation Note
Refresh Citations
Unlink Citations
Citation Preferences
Field
From Wikipedia, the free encyclopedia
A quotation is the repetition of a sentence, phrase, or passage from speech or text that someone
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Group Libraries
Title
Creator(s)
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Alignment in Syntax: Quotative Inversion in English
Benjamin Bruening
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The secret life of slurs from the perspective of reported speech
M. A. Salmani Nodoushan
2015
On the Syntax of Direct Quotation in French
Olivier Bonami, Danièle Godard
2008
On indirect reports and language games: Evidence from Persian
A. Capone, M. A. Salmani Nodoushan
2014
The Oxford Companion to the English Language
Tom McArthur, undefined undefined, Lisa Fontaine
A Book of Misquotations
Elizabeth Knowles
2006
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structure of society
Common sources
Famous quotations are frequently collected in books that are sometimes called quotation dictionaries or treasuries. Of these, Bartlett's Familiar Quotations, The Oxford Dictionary of Quotations, The Columbia Dictionary of Quotations, The Yale Book of Quotations and The Macmillan Book of Proverbs, Maxims, and Famous Phrases are considered among the most
Headings
Quotation
As a literary device
Reasons for using
Common sources
Misquotations
Bookmarks
firstHeading
As_a_literary_device
Reasons_for_using
cite_ref-3
Common_sources
Misquotations
Hyperlinks
Footnotes
Search
Page 2 of 2
477 words, 3,144 characters
Insert
Standard selection
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Edit
100%

Usability

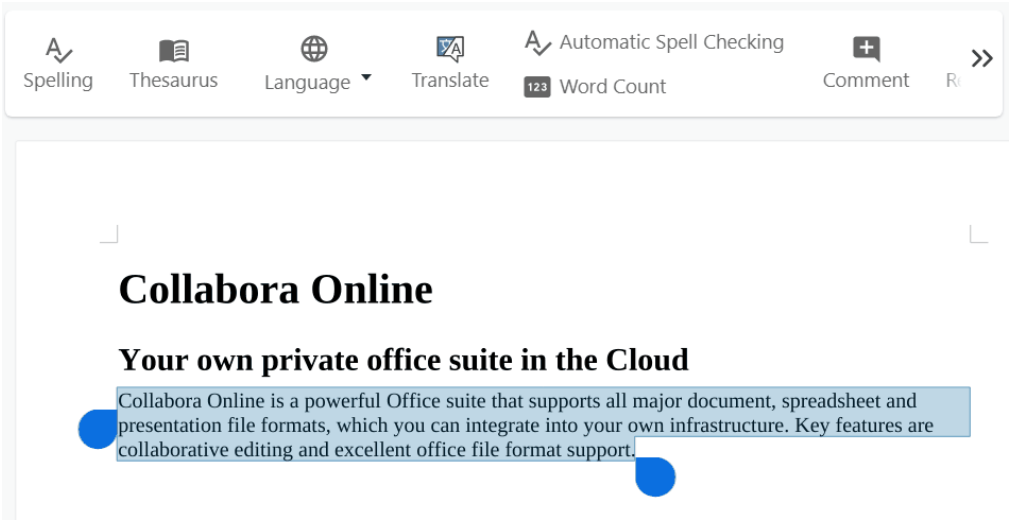
AI grammar checking with LanguageTool & DUDEN

- Connect LanguageTool and DUDEN for multilingual spelling, style, and grammar checking that helps correct or paraphrase texts.

Usability

AI based translations with DeepL

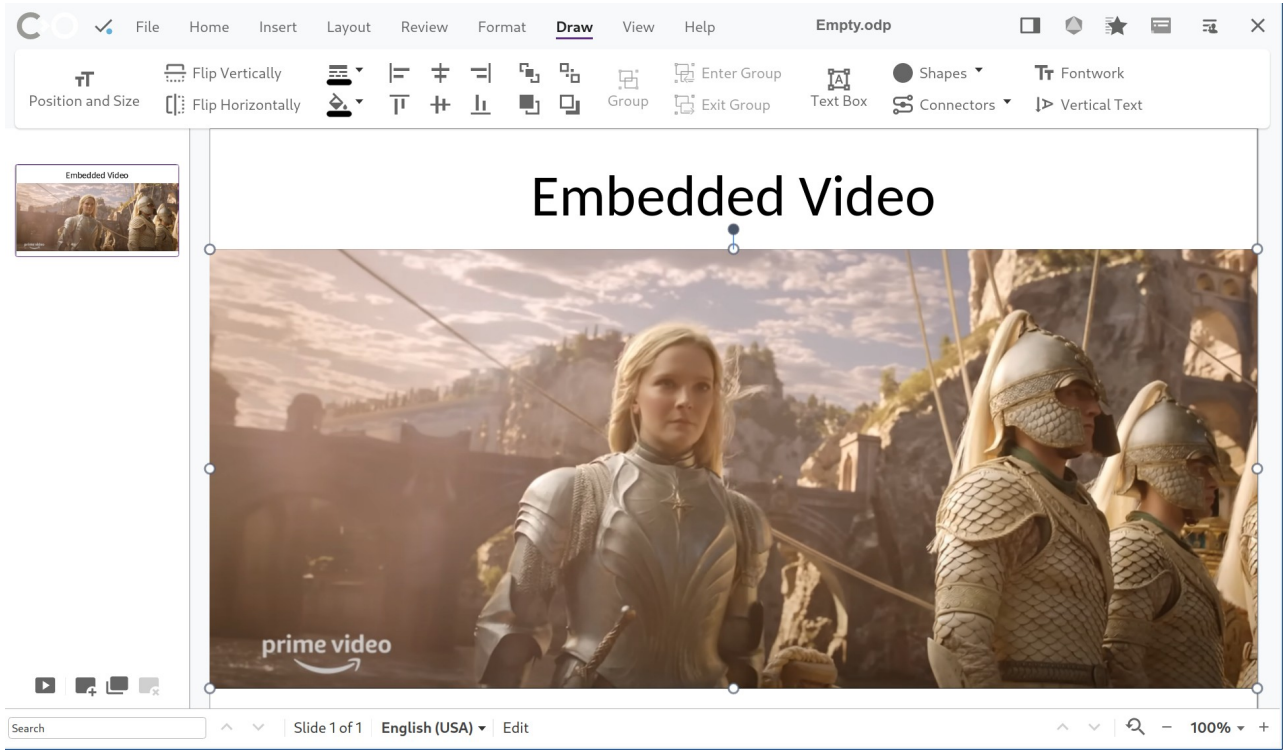
- Translating text with DeepL inside a Writer document is as easy as selecting it, clicking the “Translate” button and choosing the target language from dialog.



Usability

Play videos Embedded into your documents

- Embedding the content of your videos, ensures a smooth, advert-free presentation at the right time.



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Getting support
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L1 Support

- A dedicated team of support specialists to help with Level 1 support
  - Dedicated portal for customers and partners
  - Direct escalation with engineering as needed

Development support

- Partners and customers that have integration questions:
  - A dedicated team of pre-sales software engineers
    - Provide direct support for development of integration if needed
    - Drive engineering resolutions of problems
    - Can also step in to fix issues
- In some cases consulting services are also available

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