ONLYOFFICE

Finding an optimal approach to document collaboration in integrated environments: interoperability, decentralization and limitations

Speaker: **Mikhail Korotaev**

January 2022

Methods of integration of office applications in collaborative environments

Using WOPI

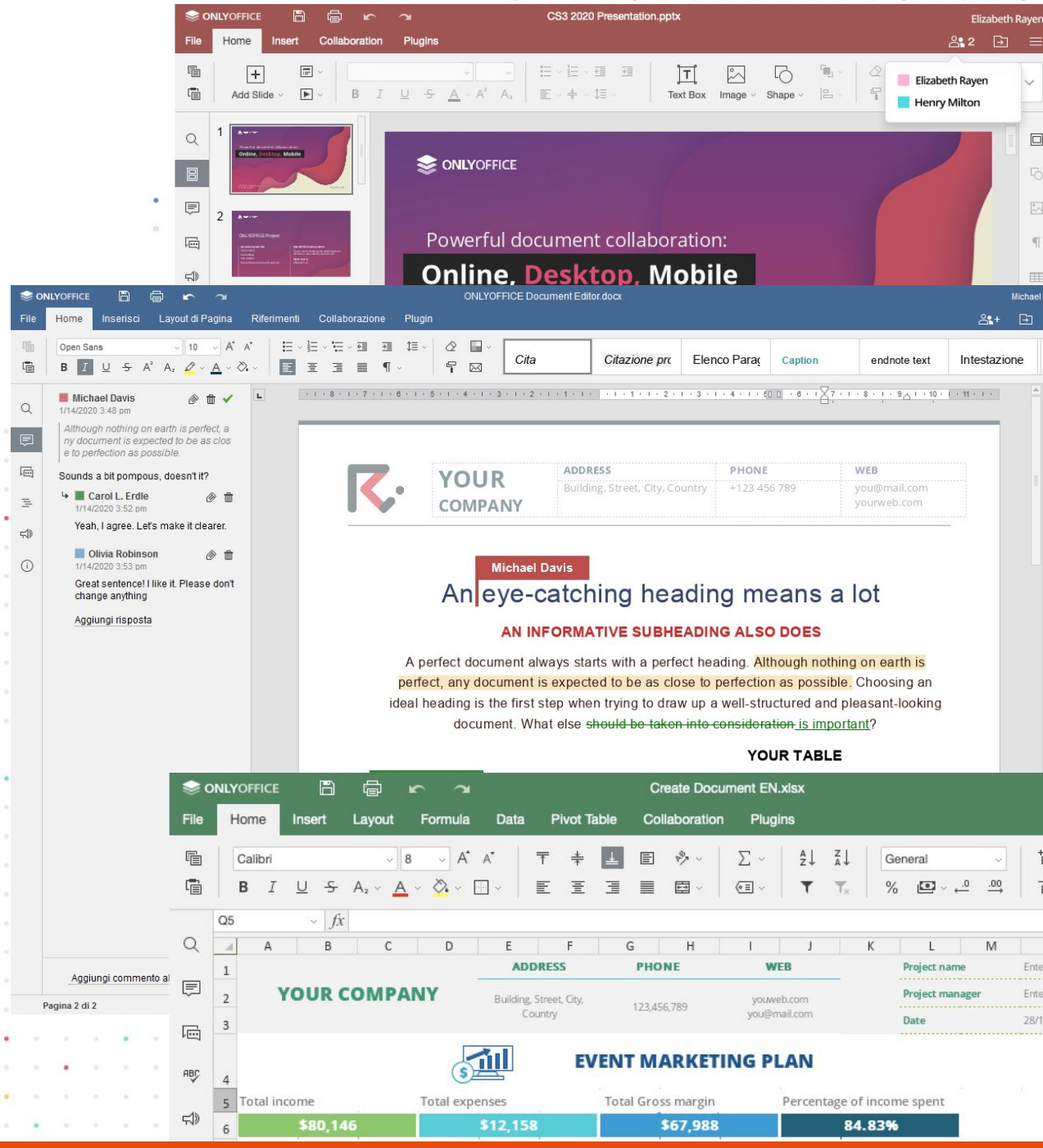
Using own API

Both WOPI and API integrations

ONLYOFFICE

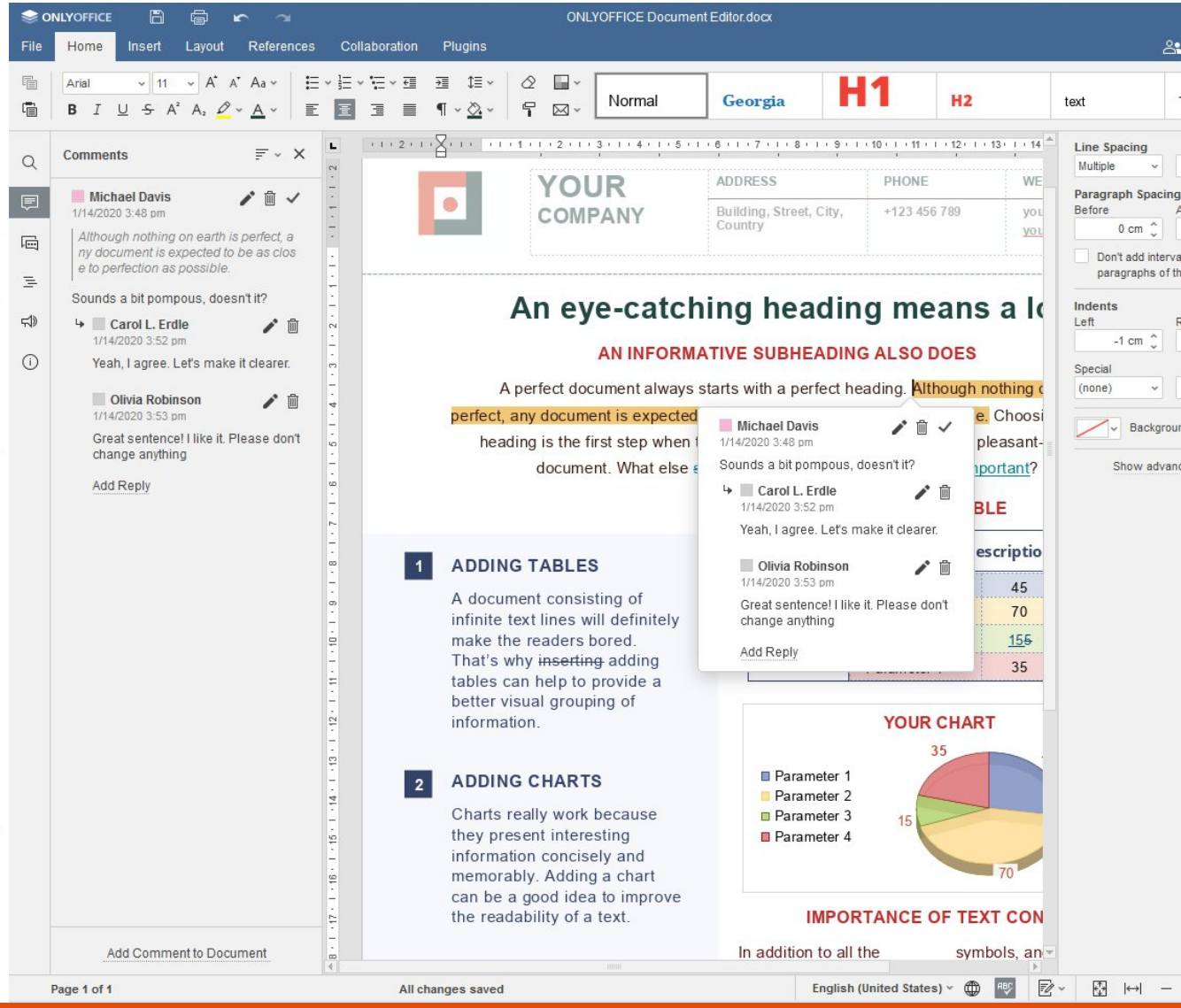
About ONLYOFFICE Docs

- Editors for documents, spreadsheets and presentations
- OOXML as core formats
- Web, desktop, and mobile apps
- Node.js for server-side code, JavaScript SDK for client-side interaction
- Available as DEB, RPM, Docker, Snap, UCS, Cloudron, AMI, Kubernetes
- Open-source



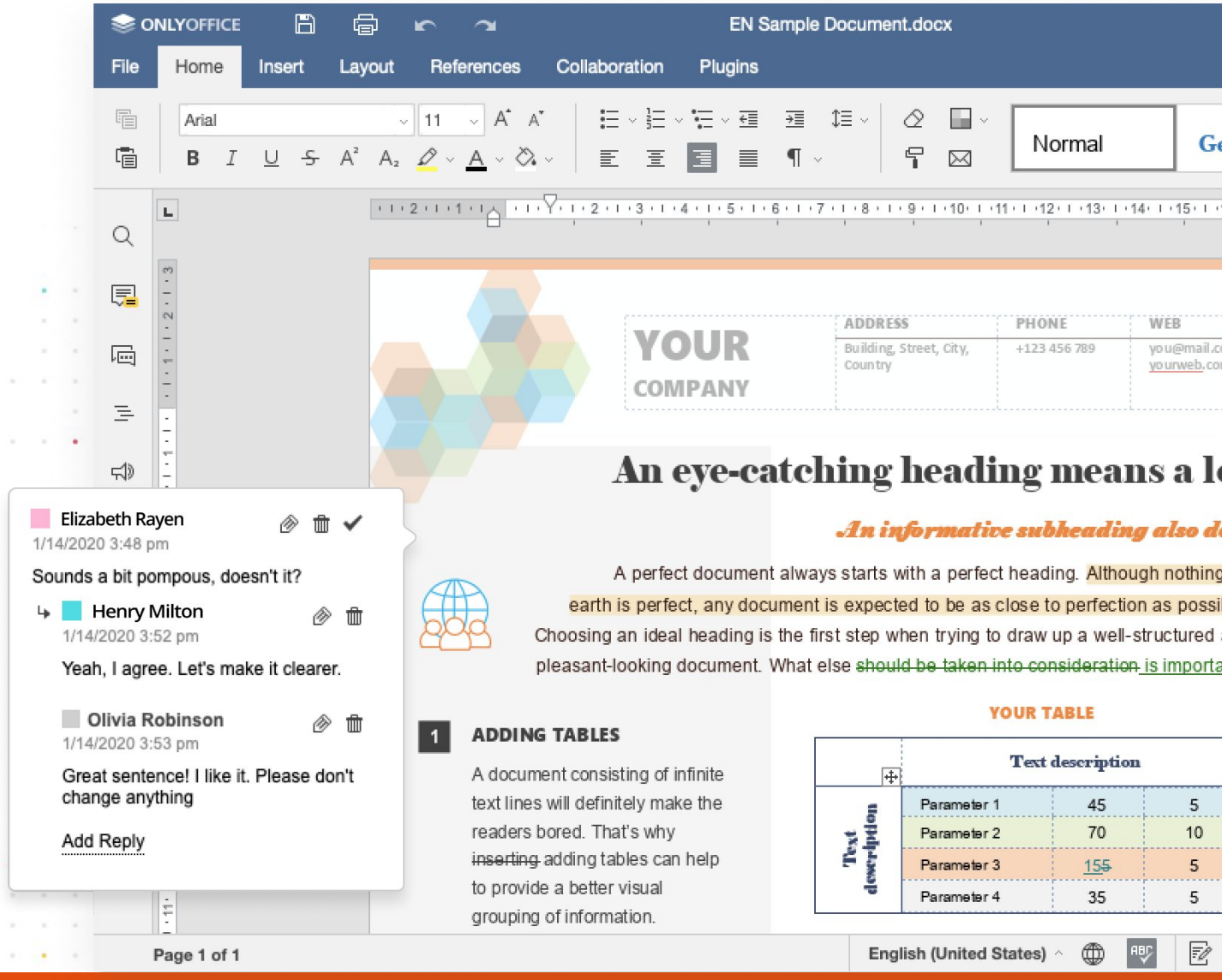
Professional editing tools

- **Full set of editing and formatting tools:** all operations with fonts and styles, paragraph and text formatting
- **Creating and customizing all kinds of objects:** shapes, charts, tables and text boxes
- **Formatting and navigation:** footnotes, endnotes, table of contents, bookmarks
- **Content controls**
- Collection of **plugins**
- **Forms**
- **Full Dark Mode**



Collaboration features

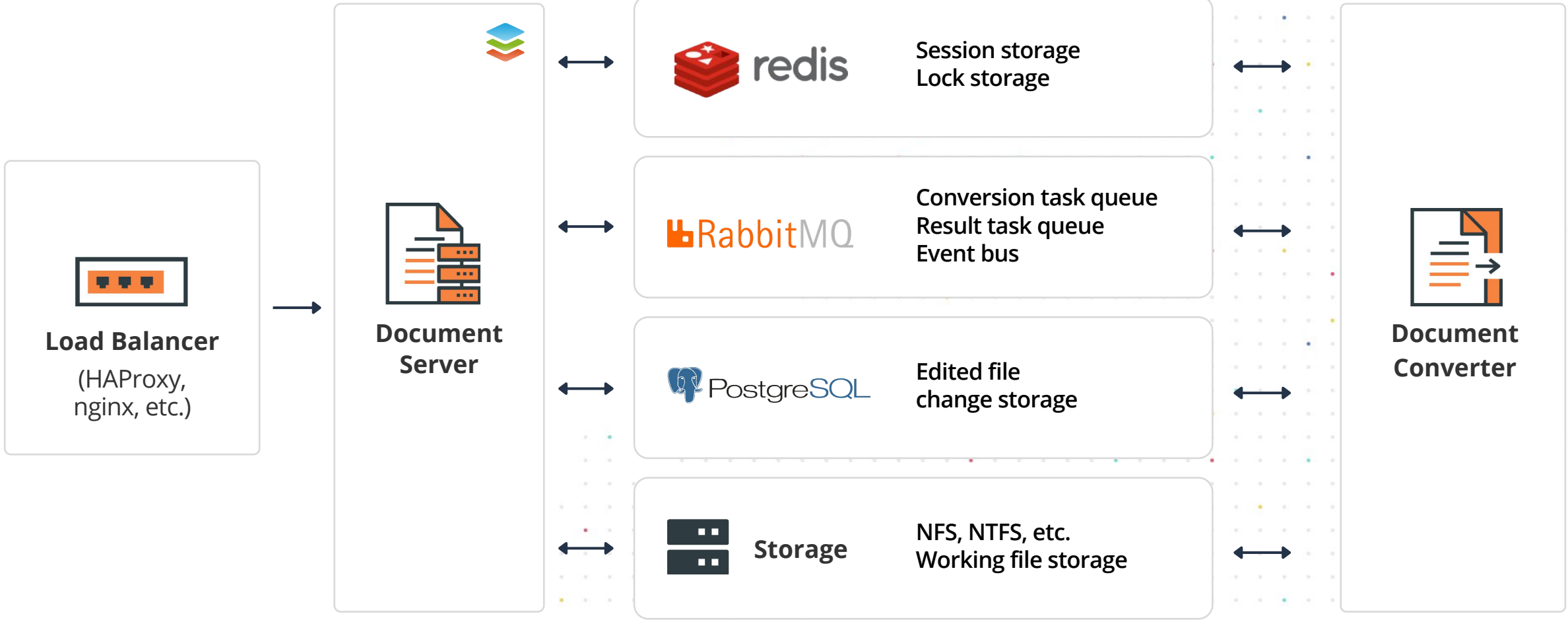
- Flexible access rights: viewing, editing, reviewing, commenting only, field filling, custom filtering
- Strict and Fast co-editing modes
- Version and revision control
- Review mode with Track Changes
- Comments with mentions
- Built-in chat
- Document Comparison
- Sheet Views in spreadsheets



Reinforced security

- **Self-hosted solution**
- **Document access control:**
  - password protection
  - e-signature
  - JWT protection
  - flexible permissions
  - watermarking
  - copy/download/printing restriction
- **Encryption:**
  - HTTPS data encryption in transit
  - End-to-end document encryption

Architecture:
document editing service structure



Powerful architecture

ONLYOFFICE Docs (Document Server)

4 core CPU

8 Gb RAM

8 Gb swap

150 Gb SSD

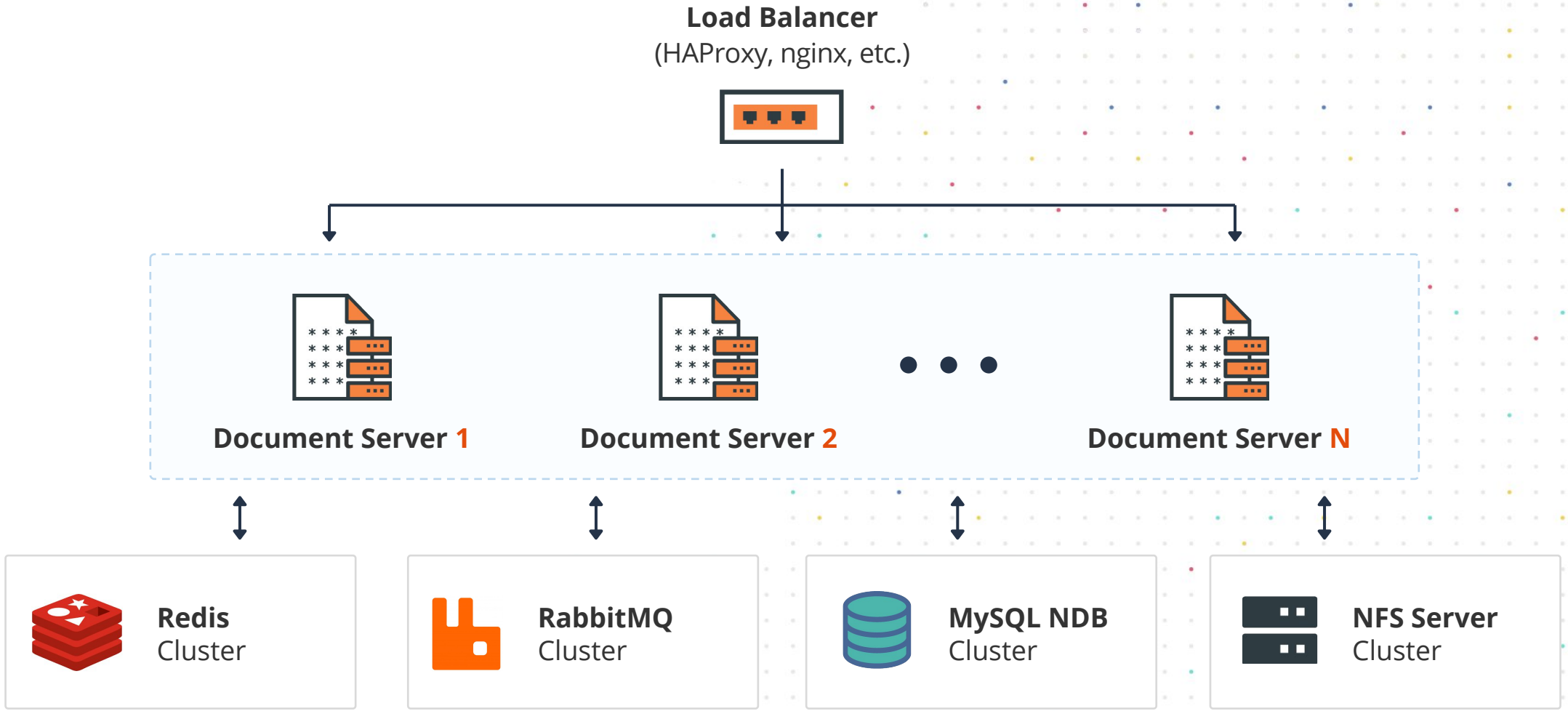
Ubuntu 20.04

=

1000 simultaneously edited documents

- Every 4 seconds, changes are made to all documents (250 changes per second for 1000 connections).
- Every 60 seconds, 9-10% of connections are closed and documents are sent to the server for converting and building (i.e. 90-100 closed connections). The same number of new connections are being created. **During an 1-hour-test 5931 documents were sent for converting and building.**

ONLYOFFICE Docs for a cluster



ONLYOFFICE Docs for Kubernetes

kubernetes

Run on managed services that support Kubernetes.

Tested examples:

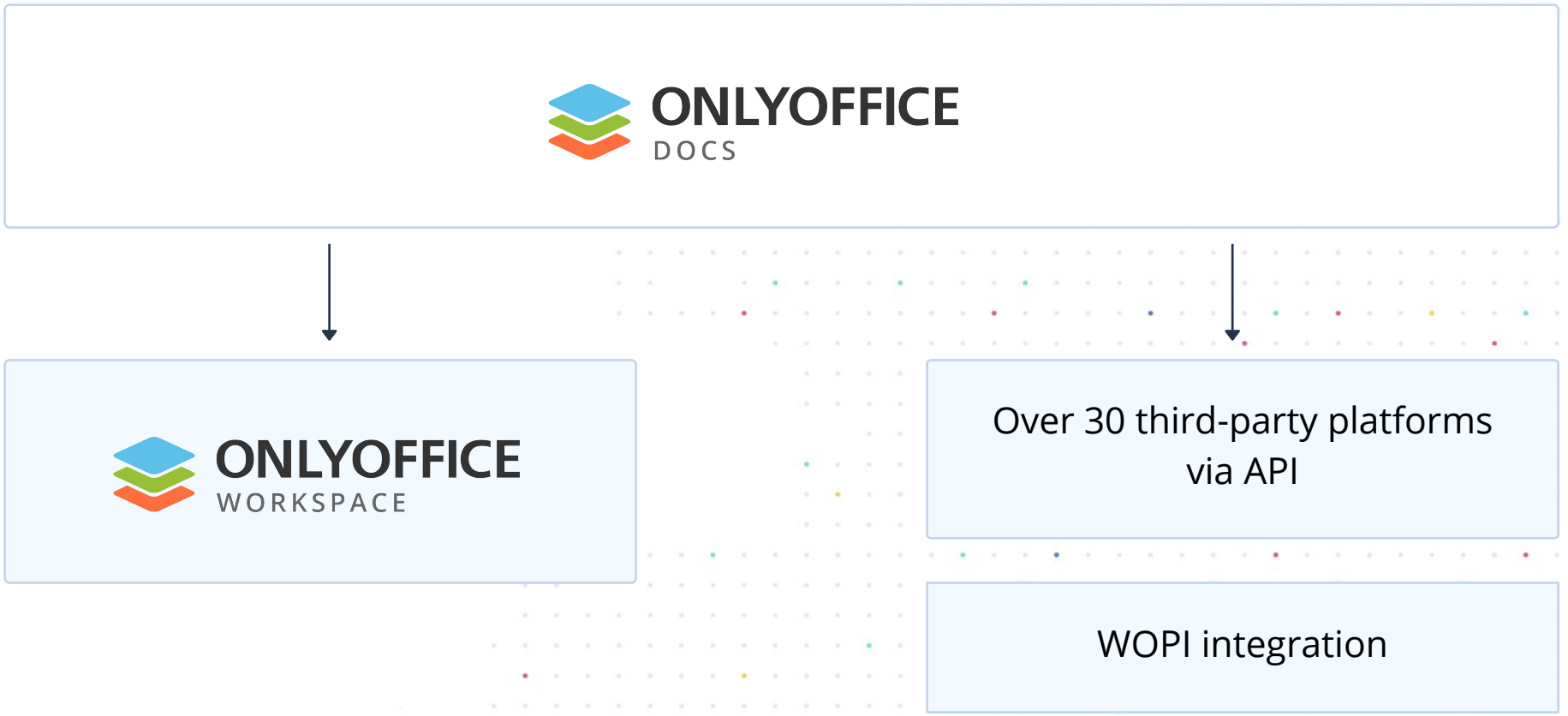
DigitalOcean

Amazon EKS

IBM Cloud

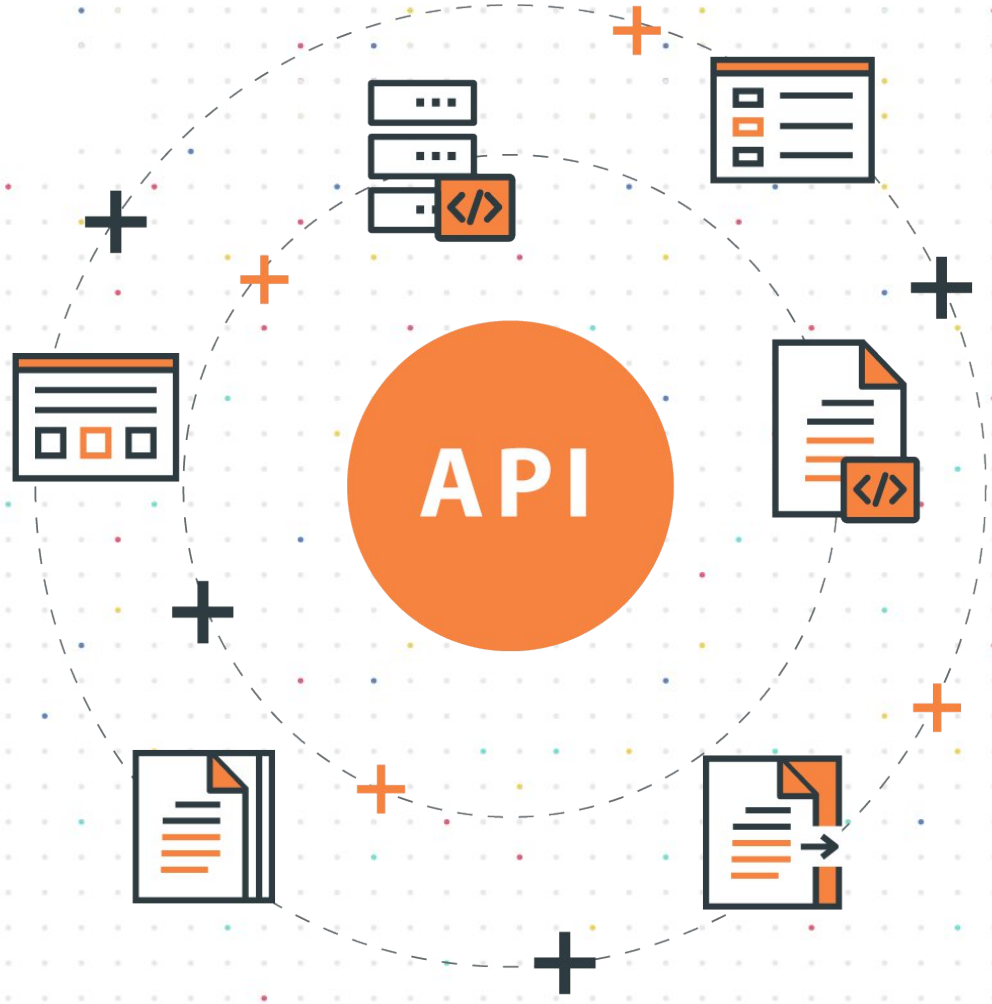
minikube

ONLYOFFICE Docs in use



API-based integration

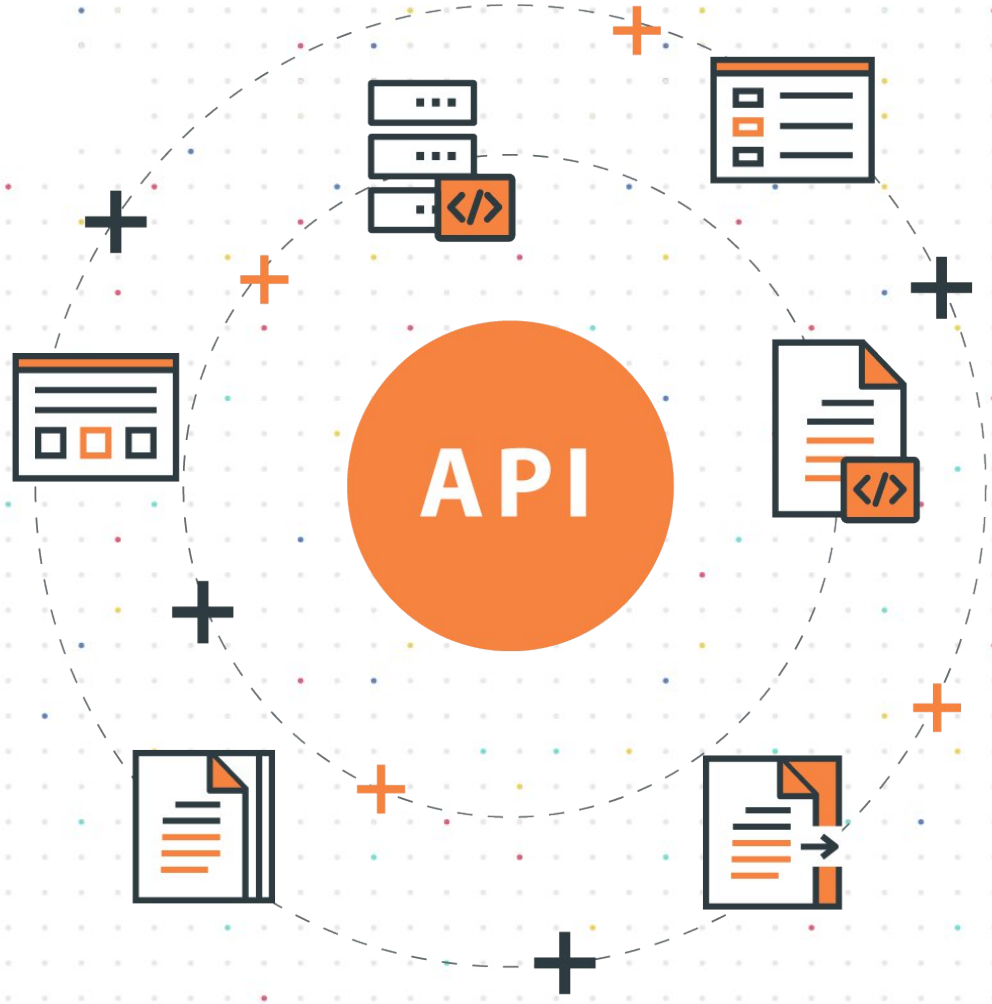
- Application Programming Interface
- Typically HTTP- and REST-based
- Designed to connect specific applications and has its own software development lifecycle
- Allows the client to perform a variety of operations provided in the integrated service



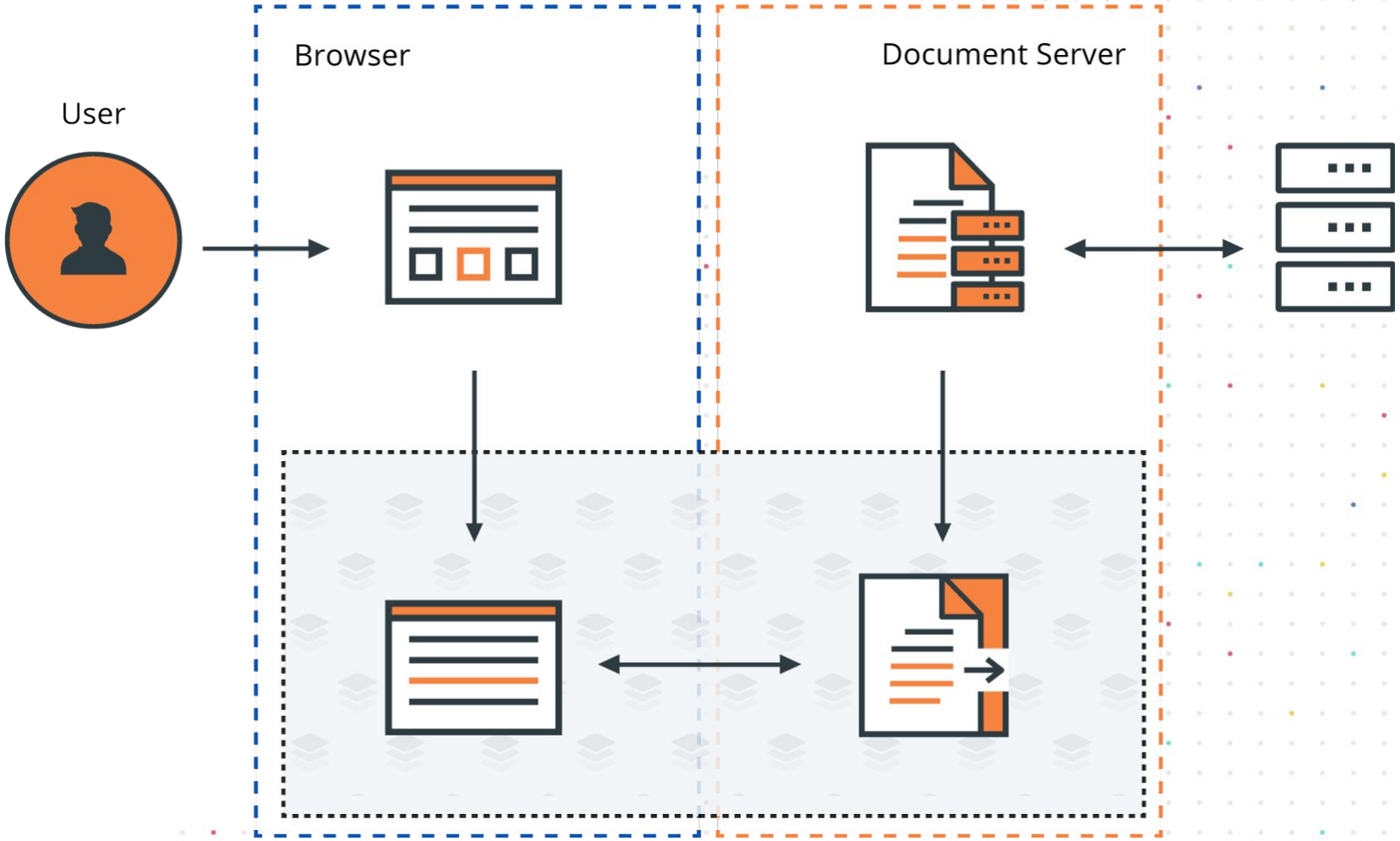
ONLYOFFICE open API

- Document editing and collaboration
- Document building
- Mentions
- Content Controls
- Version History

and more

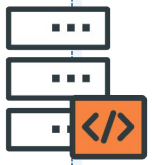


ONLYOFFICE integration API



ONLYOFFICE integration API

Integration APP (connector)



Back end:

- Conversion of data to formats of the counterpart
- Requesting information about users and rights
- Requesting operations with files
- Signing (e.g. JWT requests)

Document Server

Front end:

- Configuration unit (settings directory) for managing data transport
- A page for the editors in the interface
- Action buttons

Cloud solution server

ONLYOFFICE integration API: examples

Developed by our team

ownCloud, Liferay, Alfresco, Confluence, HumHub, Jira Software, Nextcloud, Chamilo E-Learning & Collaboration Software, NUXEO, REDMINE flexible project management, Plone, SharePoint

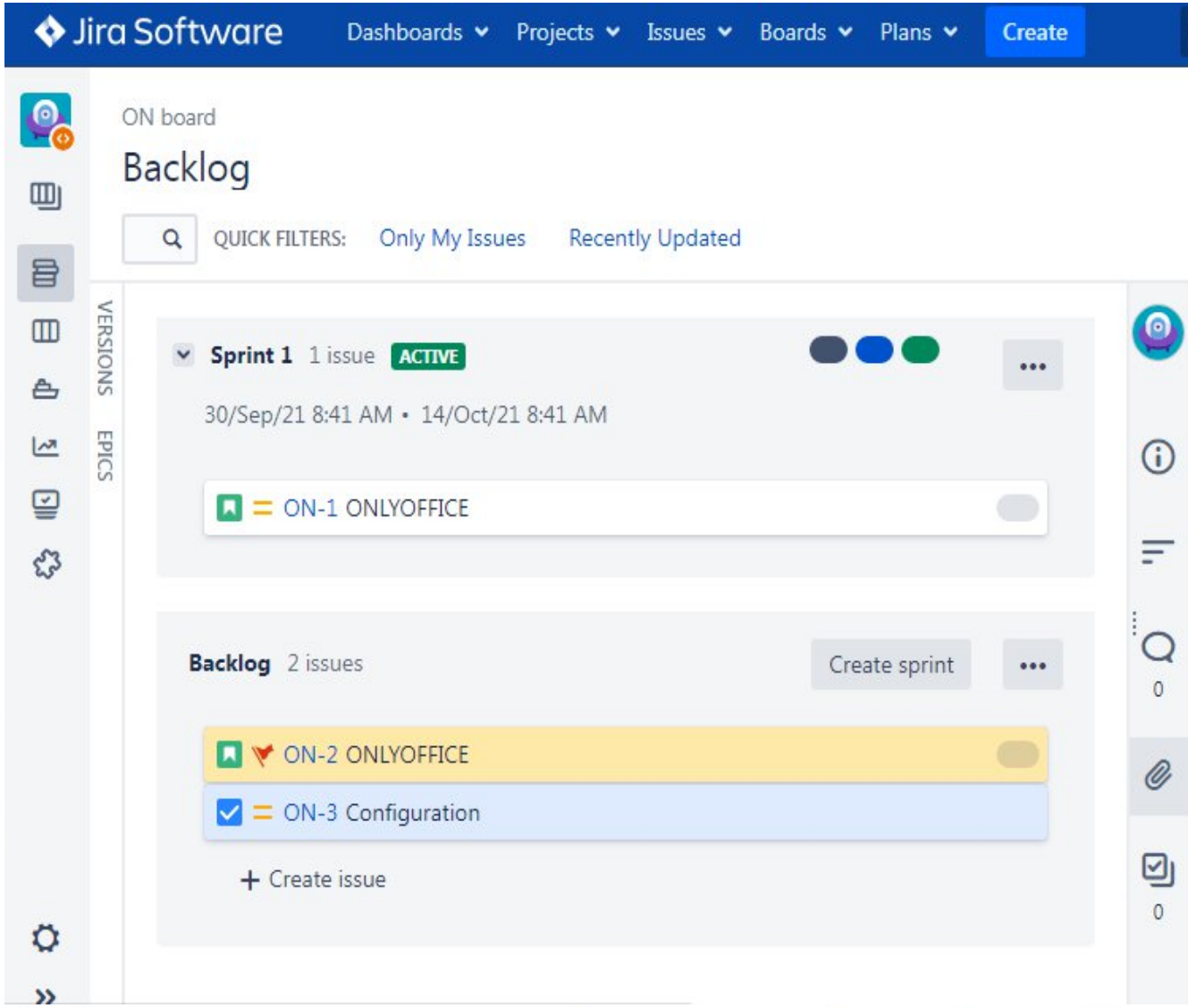
Provided by official partners

XWIKI, GoFAST, CommuniGate SYSTEMS, OpenOlat, eXo, pydio, Seafile, PowerFolder, WebWeaver®

New ONLYOFFICE integrations

Jira Software

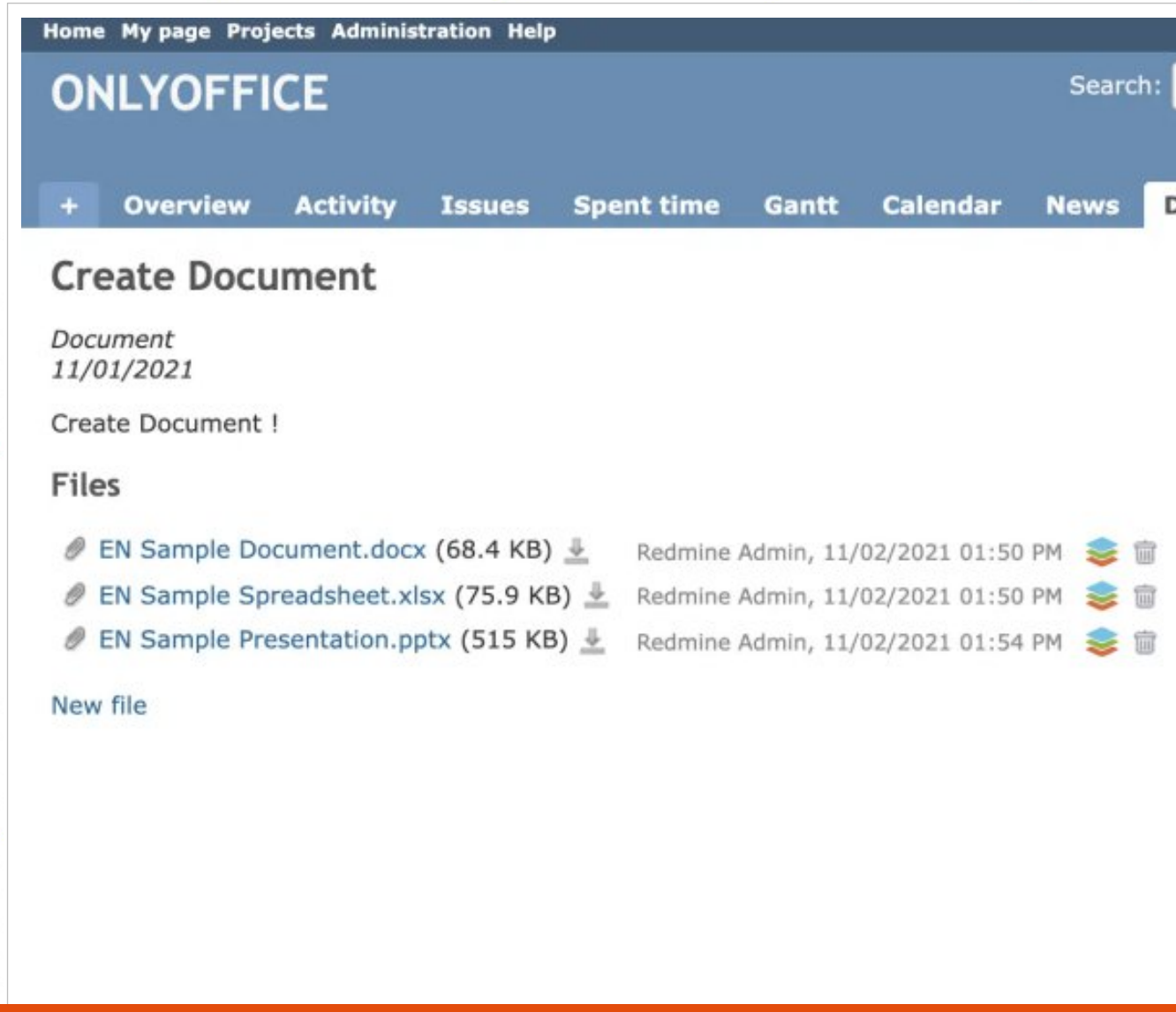
- Viewing and editing office files attached to Jira tasks
- Real-time collaboration, review, comments, chat
- Working with online forms
- Easy configuration from the Jira administration panel



New ONLYOFFICE integrations

REDMINE
flexible project management

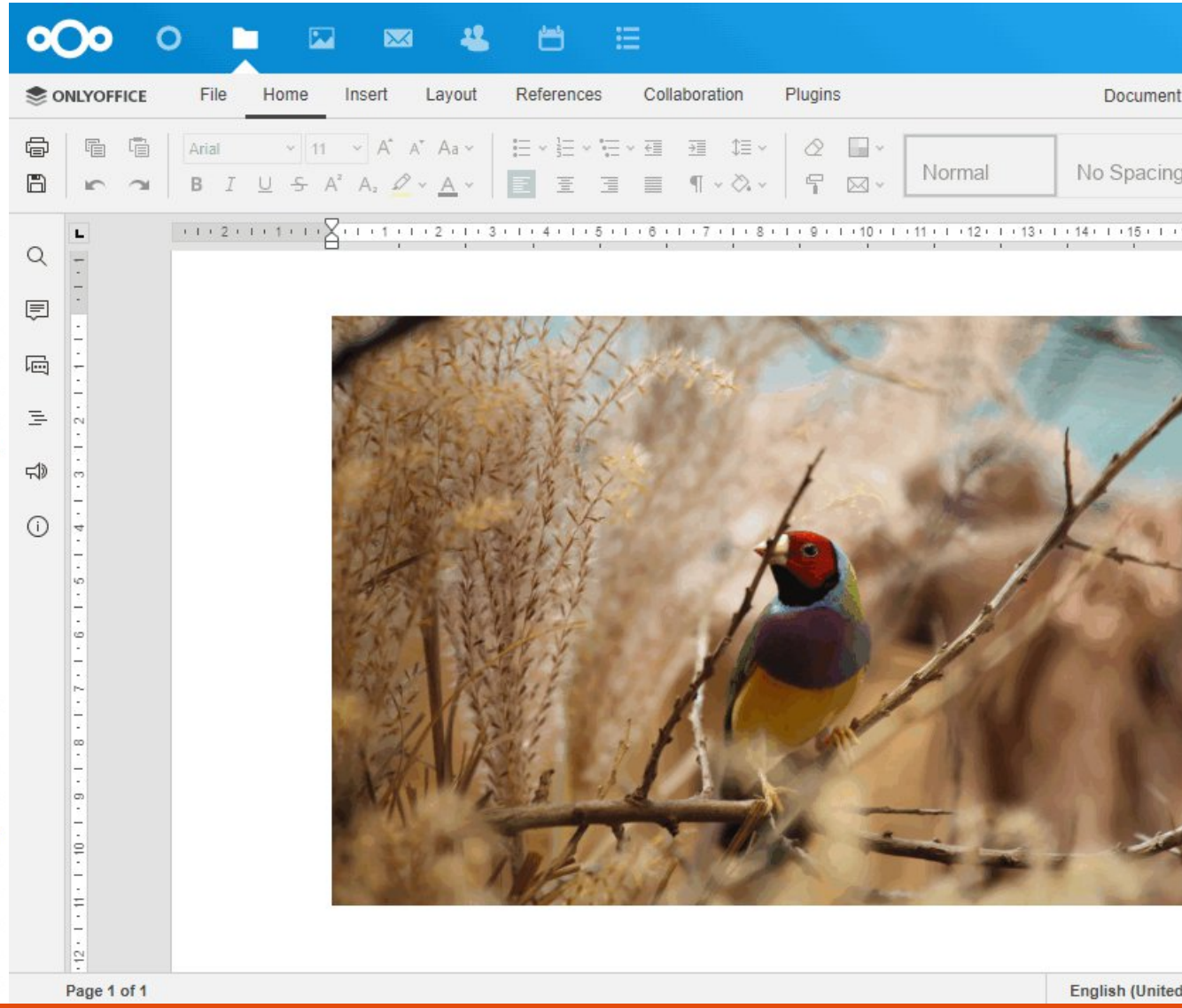
- Editing files within Issues, Files, Documents, Wiki, News modules
- Real-time collaboration, Track Changes, comments, chat
- Working with forms
- Quick configuration
- Editor customization settings



New ONLYOFFICE integrations: third-party connectors

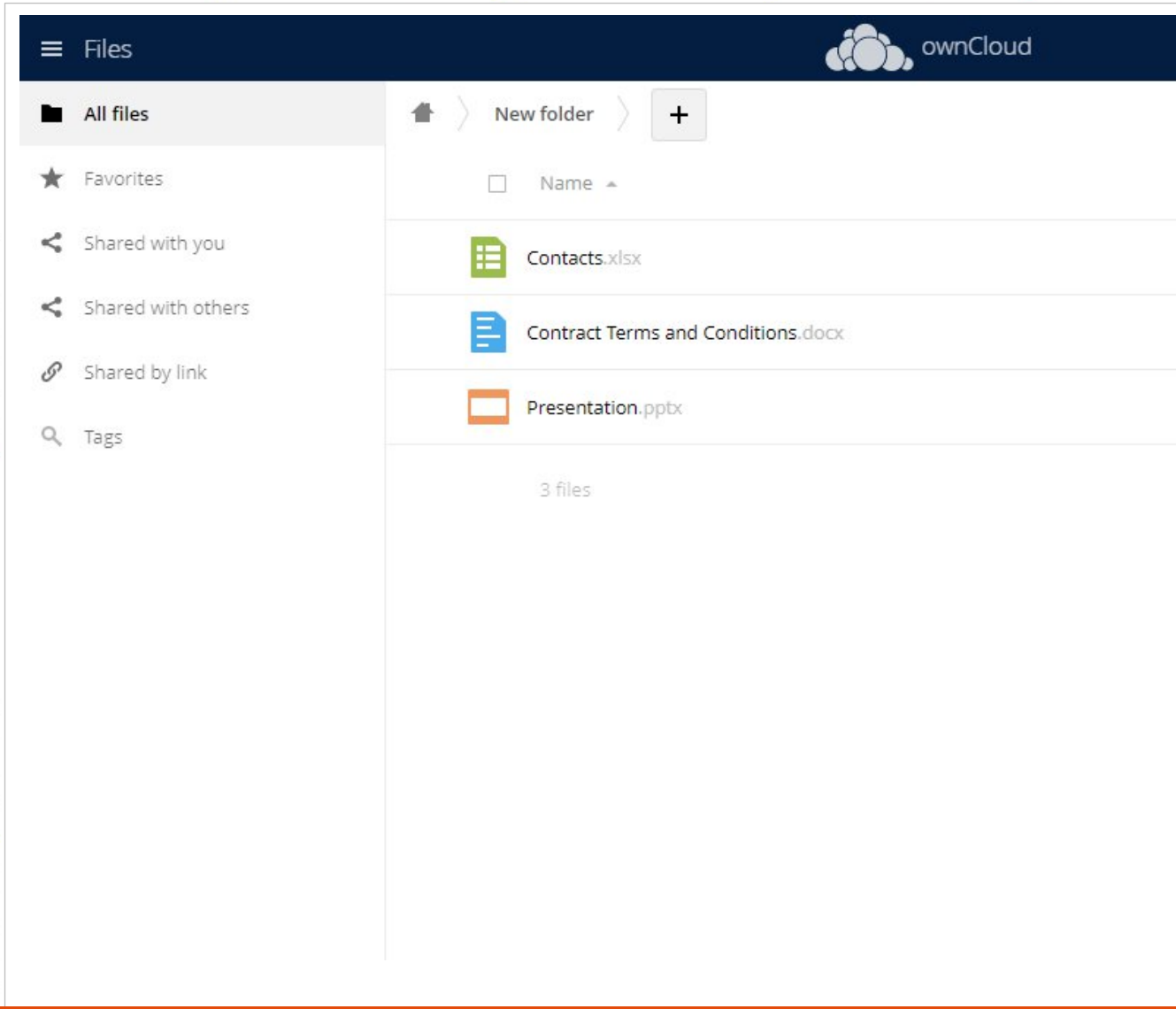
Nextcloud integration: what's new

- Online form creation and filling
- File creation from the editor
- Document templates
- Ability to restrict copying of document data
- New languages for blank file creation (23 in total)
- Restoring previous versions of documents in the editors' interface
- ONLYOFFICE favicons on browser tabs
- By-default opening of documents shared via external links



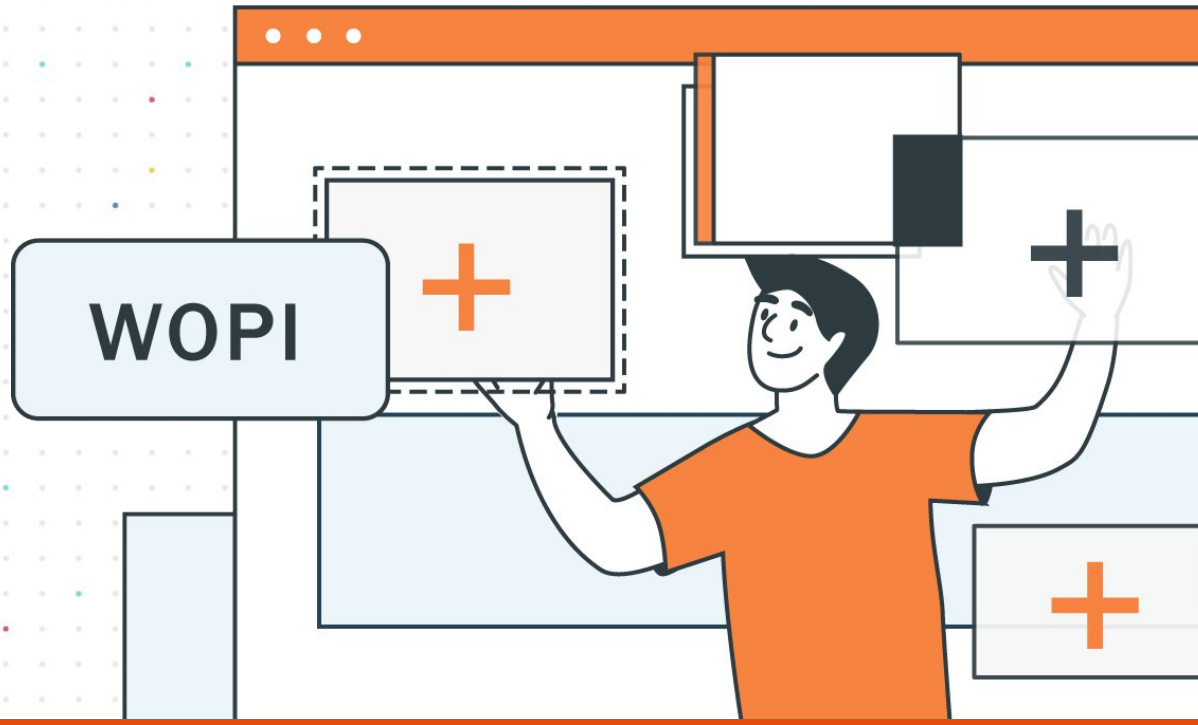
ownCloud integration: what's new

- Online form creation and filling
- File creation from the editor
- Support for custom templates
- Ability to restrict copying of document data
- New languages for blank file creation: Azeri, Slovak, Ukrainian, and Vietnamese
- Restoring previous versions of documents in the editors' interface
- By-default opening of documents shared via external links
- Support for ownCloud Web



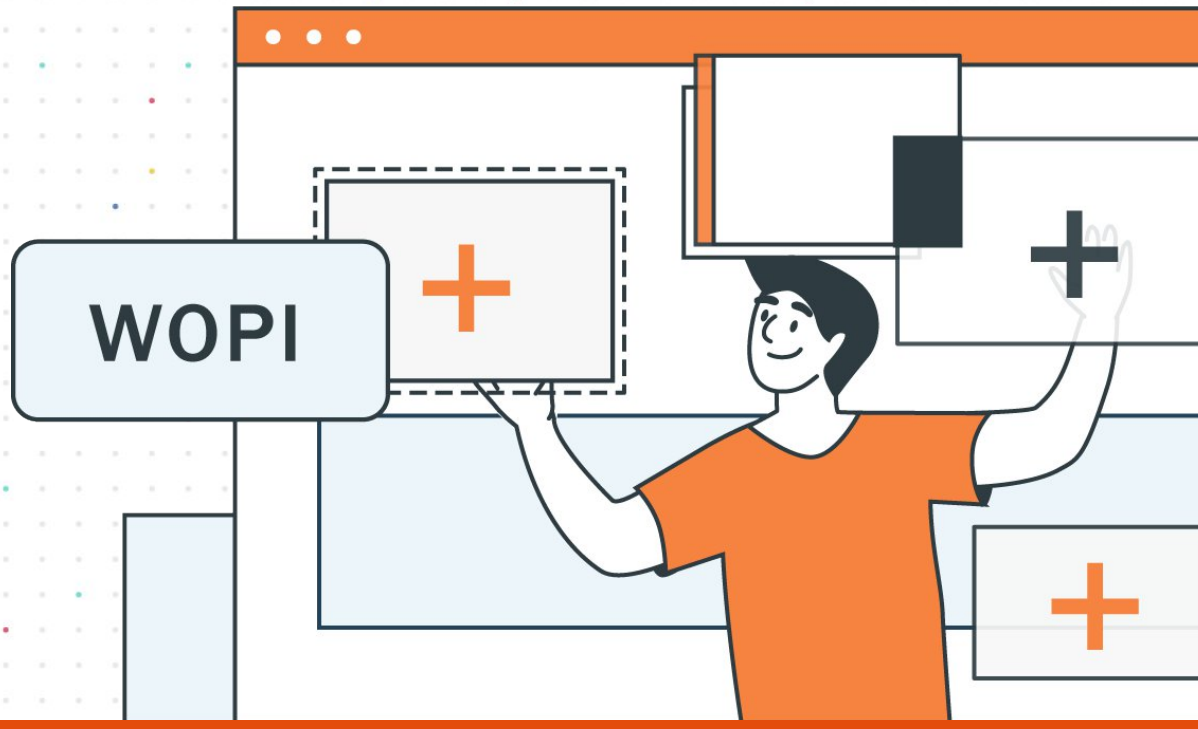
Integrating ONLYOFFICE Docs using WOPI

- Supported since version 6.4 of ONLYOFFICE Docs
- Allows connecting ONLYOFFICE Docs to cloud services which provide a universal WOPI connector
- Already available, tested integrations: SharePoint, FileCloud, OpenKM, ownCloud (oCIS)



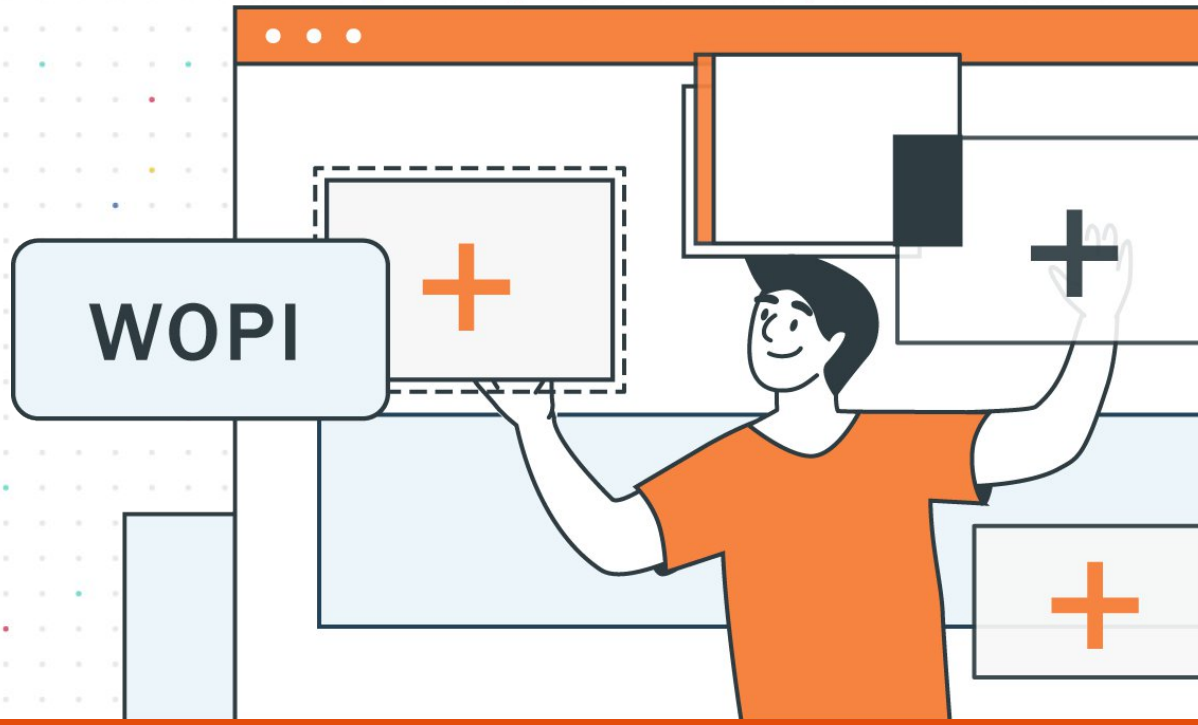
WOPI-based integration

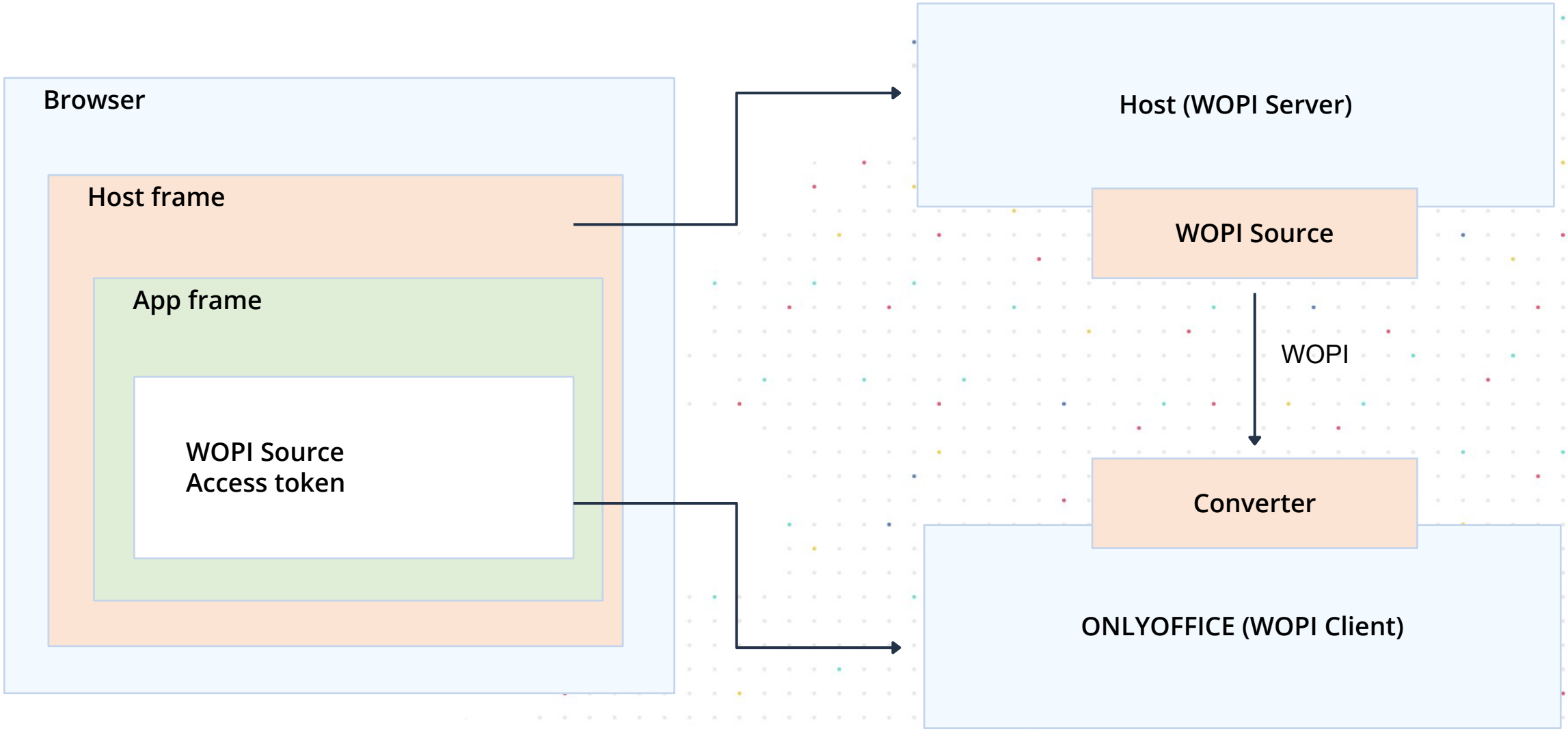
- Web Application Open Platform Interface
- REST-based protocol
- Universally adopted approach first introduced by Microsoft in 2012
- Defines a set of operations that enables a client to access and change files stored by a protocol server
- Allows the client to render files and provide file editing functionality



WOPI-based integration

- Primarily supports docx, pptx, xlsx
- Used by 3rd parties to integrate Office Online/Office Online Server
- Adopted by FileCloud, Nextcloud, ownCloud, eXo Platform, Odoo, and other sync&share services
- Also allows integrating Collabora Online, ONLYOFFICE Docs




Browser
Host frame
App frame
WOPI Source
Access token
Host (WOPI Server)
WOPI Source
WOPI
Converter
ONLYOFFICE (WOPI Client)

ONLYOFFICE Docs WOPI connectors

FILECLOUD

SharePoint

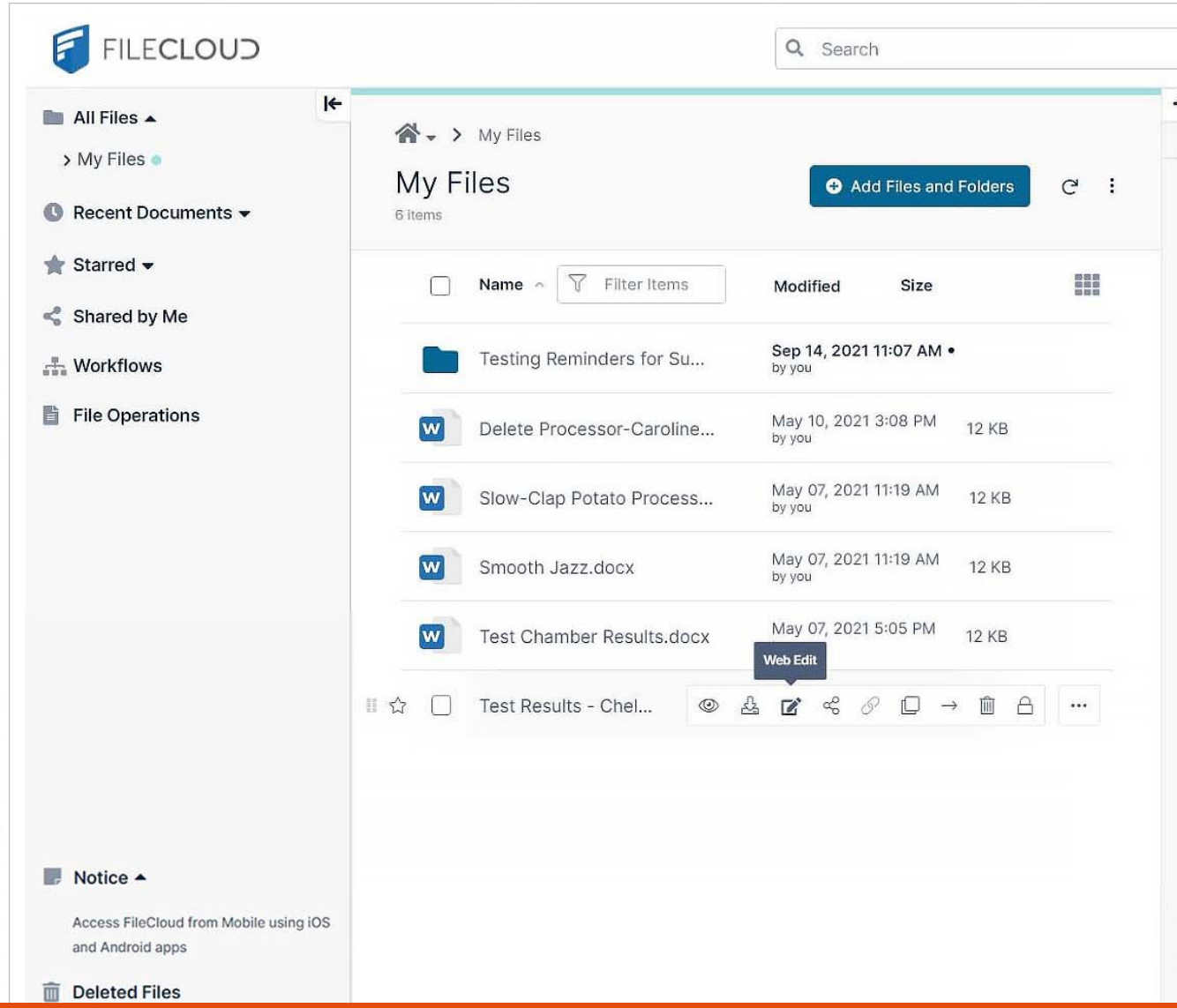
ownCloud

openkm
KnowledgeManagement

New partner integrations

FILECLOUD

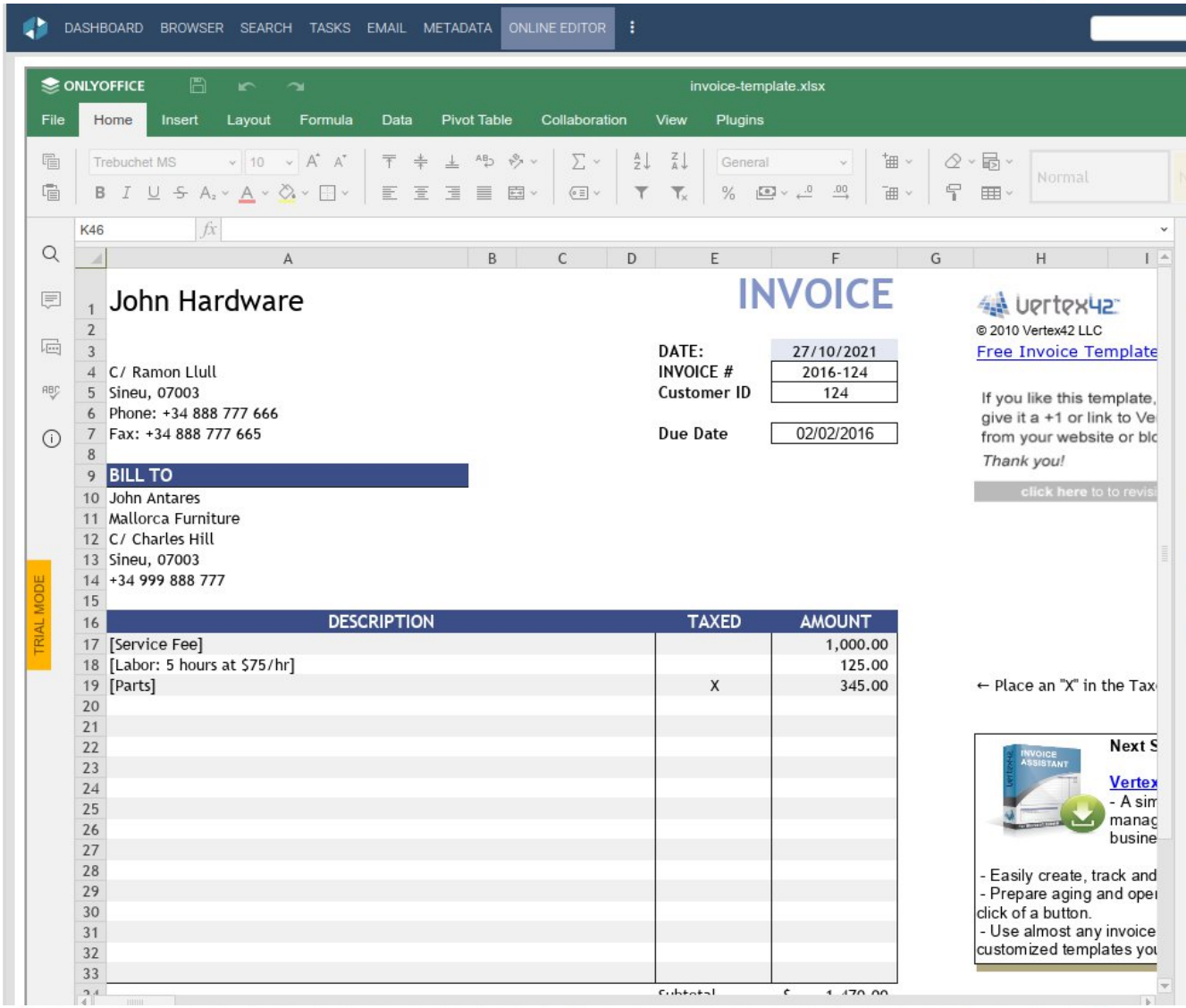
- Easy and secure access
- Real-time collaboration
- Custom experience
- WOPI integration



New partner integrations

openkm KnowledgeManagement

- Seamless document editing and collaboration regardless of the device configuration
- Integration via WOPI



Pros and cons of WOPI-based model

Pros:

- Abundant and standardized documentation
- Ready ways to perform connectivity checks
- Ability to integrate services into protected systems

Cons:

- Limited number of standardized methods (even for MS)
- Inability to enable most of existing functionality without new code from scratch
- Same need to create individual connectors

Current functionality limitations

	Our integration API	WOPI
Supported Formats	**For viewing and editing:** DOCX, XLSX, PPTX, PPSX **For viewing only**: PDF, DJVU, TXT, CSV, ODT, ODS, ODP, DOC, XLS, PPT, PPS, EPUB, RTF, HTML, HTM, MHT, XPS	**For viewing and editing:** DOCX, XLSX, PPTX, PPSX **For viewing only**: PDF, DJVU, TXT, CSV, ODT, ODS, ODP, DOC, XLS, PPT, PPS, EPUB, RTF, HTML, HTM, MHT, XPS
Collaboration	Switching between real-time and paragraph-locking co-editing modes	Only real-time co-editing, switching between the modes is not available in the interface
Limitations	All features available in the editors are available for integration	Version History, Mail Merge, inserting images from storage and comparison with a document from storage are not available

Overcoming limitations

1.Extending the API

Some features are not supported by the standard

Creation of own WOPI-compatible extension/layer to add non-standardized features (Document Comparison, Version History) is required

2. Extending support for standardized methods

ONLYOFFICE Docs within CS3MESH4EOSC

- **ownCloud (oCIS) connector-based integration**
- **WOPI-compatible connector developed by ownCloud**
- **Currently enabled features in ONLYOFFICE Docs-through-WOPI integration:**
  - File viewing and editing
  - Collaboration (real-time only)
  - Access rights management: viewing, editing, reviewing, printing, renaming
  - Version History (different from API version)
- **Supported formats:**
  - For viewing and editing: DOCX, XLSX, PPTX, PPSX
  - For viewing only: PDF, DJVU, TXT, CSV, ODT, ODS, ODP, DOC, XLS, PPT, PPS, EPUB, RTF, HTML, HTM, MHT, XPS

Integrating ONLYOFFICE Docs: summary

- **ONLYOFFICE Docs can be connected** to any cloud service using our API or WOPI
- Each platform requires its own **WOPI connector**
- **WOPI is not a complete alternative** to our integration API
- **We will continue to develop WOPI integration** where integrators prefer WOPI protocol or when building a connector using our API is not possible due to restrictions

WOPI integration: plans

1. We have enabled most of the features that an average user of the integrated platform requires.

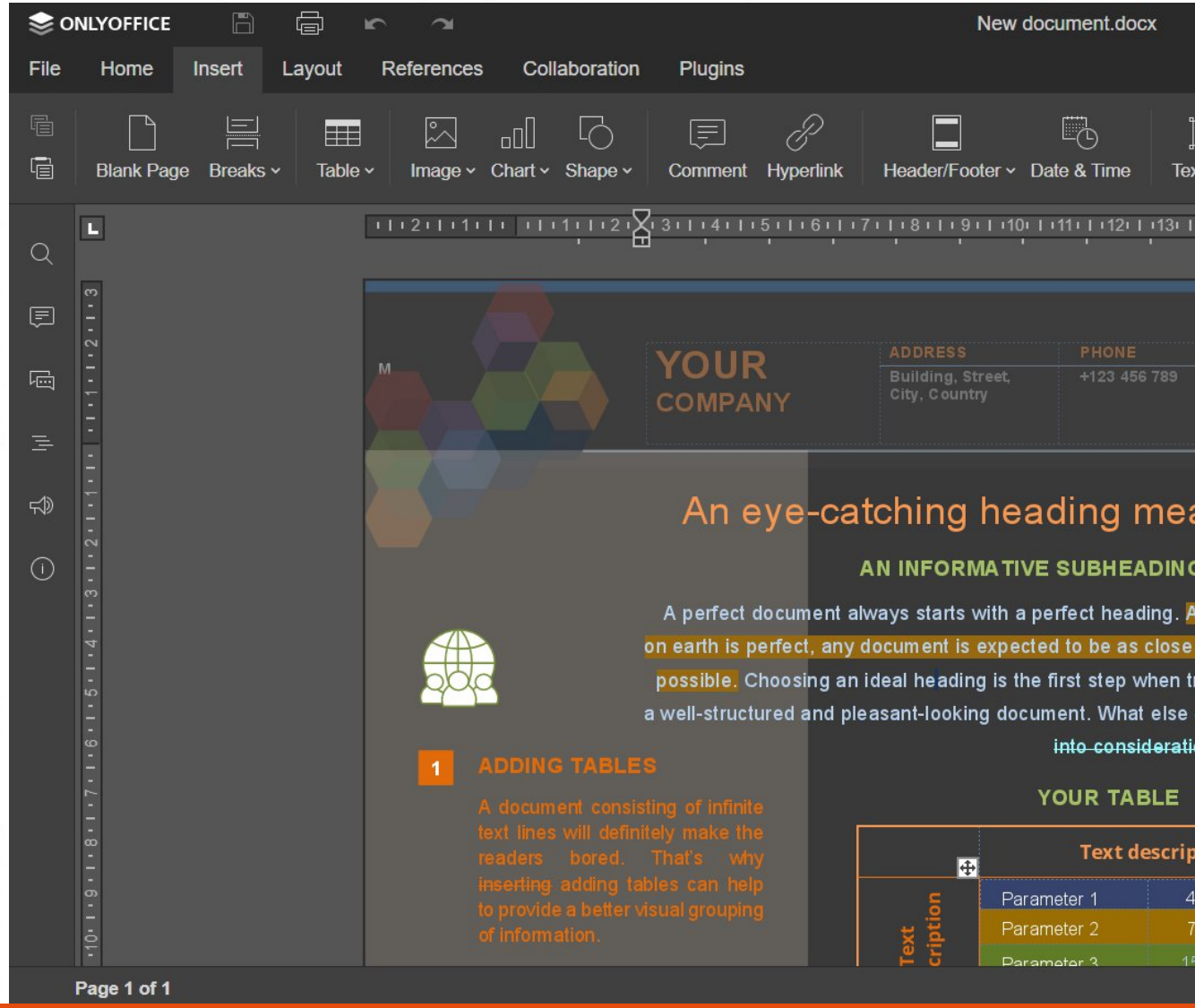
2. We plan to create our own WOPI-compatible extension to start releasing the unique functionality specific to ONLYOFFICE Docs in integrations.

3. We plan to build individual WOPI-based connectors for each Sync&Share platform to work with this extension.

Recent updates: ONLYOFFICE Docs 7.0

- **Form creation and filling;**
- **Accessibility and usability:** full Dark Mode, new scaling options, shortcuts
- **Collaboration:** Version History in spreadsheets, new changes display, user coursor in spreadsheets, new comment sorting options
- **New formats:** presentations to BMP and PNG, DOCXF and OFORM forms, editable PDF
- **Presentations:** Transitions tab, playing animations;
- Ability to select local file for Mail Merge;
- **Autocorrection:** hyperlinks and network paths (spreadsheets, presentations);
- **Spreadsheets:** password protection, query table viewing/saving
- **Jitsi plugin** for video calls

and more



Integration roadmap

1. New connectors: Slack, Trello, Strapi
2. Further enhancements for forms in integrations
3. ONLYOFFICE Docs in the cloud → www.onlyoffice.com/docs-cloud.aspx
4. Further work on WOPI integration
5. Integration with ONLYOFFICE Virtual Channels
6. Ready-to-use integrations in mobile apps

ONLYOFFICE

Thank you!

Contacts:

sales@onlyoffice.com
partners@onlyoffice.com

onlyoffice.com

Questions & info