Multi-lock support for Office offline and online apps in CERNBox
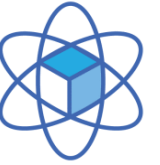
Giuseppe Lo Presti
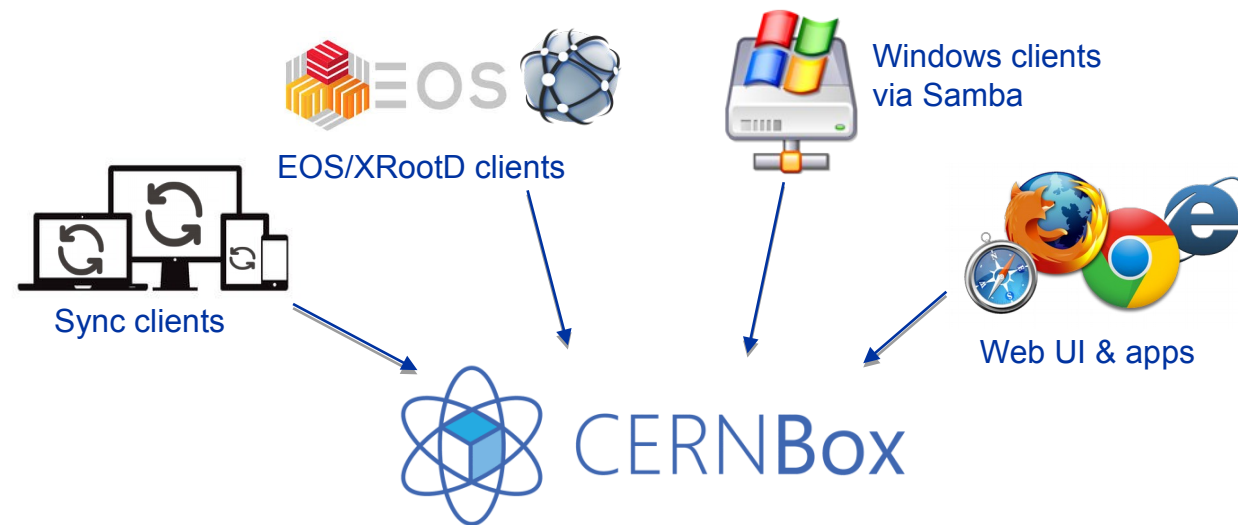
CERN IT-ST

Home folders at CERN

EOS/CERNBox proposed as "user home space" to all CERN users

- Increased usage of CERNBox for any activity, including **office document authoring**

- User base of 8K monthly active CERNBox users

EOS/XRootD clients

Windows clients via Samba

Sync clients

Web UI & apps

The CERN(Box) Office Apps Portfolio

- **Microsoft Office, LibreOffice, OnlyOffice are all offered at CERN**

- **CERNBox features the web editions of all of them**

- **Documents may be edited:**

  - *Offline* – you fly to your conference (hopefully soon again…) and finish off your slides on the plane. Once online, changes are synchronized by the CERNBox sync client.
  - *Online/Desktop* – you edit your spreadsheet on your PC, accessing the file from `/eos`
  - *Online/web* – you edit your document with a web editor, directly within cernbox.cern.ch

- **Only the latter supports *collaborative editing*** (and only if using the same app)

- **Any other method implies exclusive access to the file!**

Typical Problem Scenario

- **Example case**
  - Alice is collaborating with Bob on a very important document
  - Alice opens it with Microsoft Office on her PC from H:\eos\project\...\important.docx, then goes for lunch
  - Bob opens it with OnlyOffice online on his browser on Linux, quickly adds some notes, and closes it
  - Alice, back from lunch, keeps editing the file, saving it at the end

- **Where are Bob's changes? How can we ensure that changes are not lost, and users are warned instead when files are already opened?**
  - Note how many variations can happen, as most editing methods by default do assume exclusive access to the file!

Proposed Solution

- **As we control the storage, we have implemented *interoperable locking* behind the online web applications**

    - OnlyOffice, Microsoft Office Online, Collabora Online

    - Covering Desktop applications as well

    - Aims to cover all possible cases, with two options

        - Detect a file is being edited, and block further editing

        - When that's not possible (e.g. a sync client overwrote file), adopt sync clients' behaviour: create conflict file if timestamp changed meanwhile

    - Technically, this is based on creating "lock files" and/or detecting their existence

        - "`~$`MyPresentation.pptx" or "`.~lock.`Example.odt`#`" anyone?

Example UIs
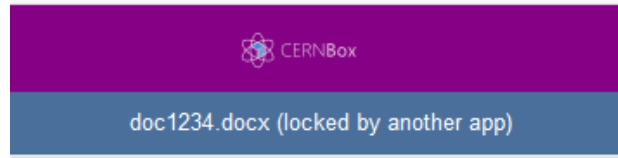
OnlyOffice opening a document in read-only mode because it's opened in another Desktop or web editor

The document could not be locked, and is opened in read-only mode. Server returned this reason: "The file was locked by another application"
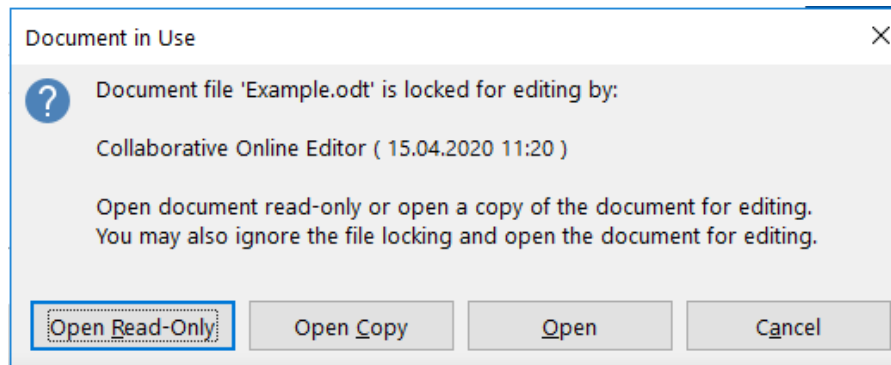
OK

Collabora Online and PowerPoint Online opening a file already opened by another editor

Microsoft PowerPoint Online

PowerPoint Online can't open this presentation for editing because it's locked by a Microsoft PowerPoint user.

Session ID: d5424265-b29f-4274-b5f1-564a59d949f4

Document in Use

Document file 'Example.odt' is locked for editing by:

Collaborative Online Editor (15.04.2020 11:20)

Open document read-only or open a copy of the document for editing. You may also ignore the file locking and open the document for editing.

Open Read-Only   Open Copy   Open   Cancel

LibreOffice for Windows prompt when opening a file opened by Collabora Online