



Making Online trivial to setup

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OPENSUSE-LIBREOFFICE CONF'20





Muhammet Kara

Work

- Previously: Working on the core & UI
- Lately: Working on Online & integrations mostly
- Since Dec 2018
- Was @Pardus project before

Community

- Loves mentoring GSoC projects, and running workshops for university students
- Long-time FOSS, primarily GNOME & LibreOffice, contributor
- LibreOffice certified developer
- TDF Membership Committee
- Member of the GNOME Foundation



Collabora Online?

- LibreOffice in the Cloud
- Collaborative editing
- Extensive file format support
- All nice & cool stuff
- Sounds great!?





So how do I get it?

Enterprises

- Go buy it
- You get all the support, scalability, etc.
- Let your IT people set it up & configure (with some help)

Home Users

- Grab a Docker image, or Linux package of CODE
- Or compile it from the source
- Then do the set-up & configuration
- All free!?



Ideal Requirements

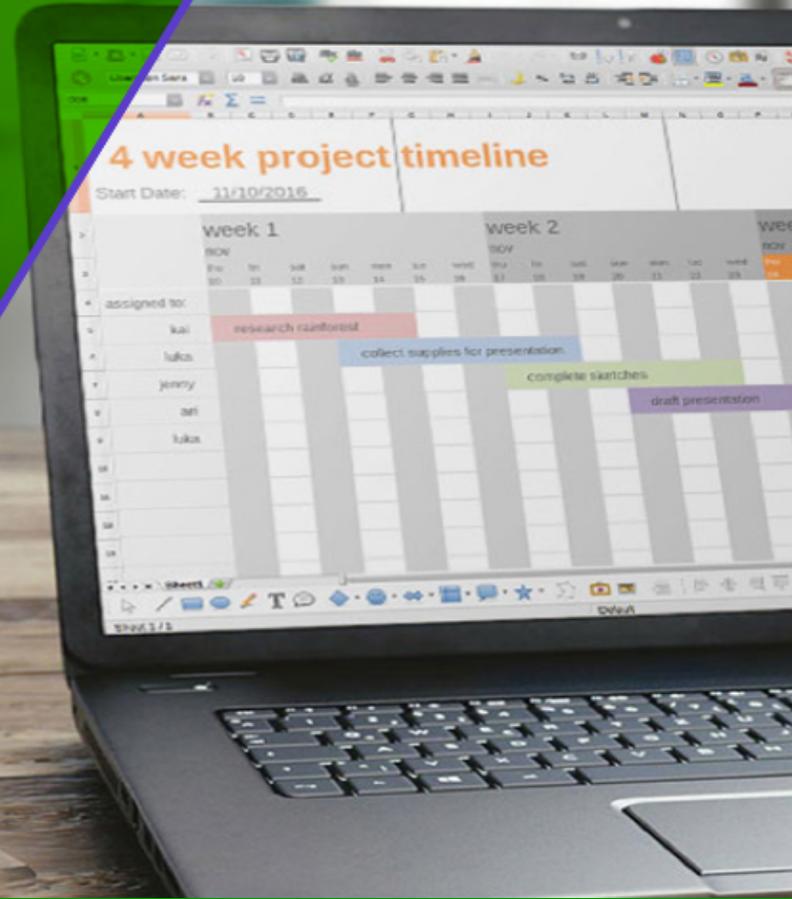
- A public facing server
- Apache / NginX setup
- https:// address with valid certificates
- Some knowledge about ssh, terminal commands etc.
- Patience



Set-up & Configuration

- Get CODE as docker image or install the Linux packages
- Configurations in loolwsd.xml
- Setup an Apache or NginX reverse proxy if needed
- Some knowledge about ssh, terminal commands etc.
- More on <https://collaboraoffice.com/code>

Casual user: What?





Is there an easier way?

Not yet, but maybe we can...

- Make the web server setup to proxy our requests nicely
- Re-using the PHP stuff in our current app
- Make CODE live maybe in an Appliance
- As simple as reading the `php://input` & writing to `php://output`
- And build a one-click option for the home users
- Sounds doable...



Oh, but wait...

Some hardships

- No built-in support for web-sockets for this use-case
- PHP processes are short-lived
- Don't have a JS API to send low-latency messages
- TLS is desired, but handshake is costly (higher latency)



Some progress

Persistent connections (keep-alive)

- Many requests on the same TLS connection

Running our daemon

- Disowning the spawned processes
- Launch an app-image on failure to connect



PHP as a proxy: the problems

Latency

- Tricky to get data through Apache & php process on socket
- Requests re-parsed at multiple points
- Latency jumps from ~3ms to ~110ms
- Solved with some help & config on web server

PHP input/output

- `php://input` not as expected
- `php://output` doesn't let us write on it



Polling vs. long-polling

Latency...

- Reply latency concerns
- Attempt to solve by having a rotating series of 'wait' requests
- Consumes web server's concurrent PHP processes limit
- Not viable
- Re-attempt to solve by aggressive polling



A solution

A balance of latency & concurrent PHP processes

- Have to ping the server every ~25ms
- Reduce polling frequency to 500ms when idle
- Any user activity will quickly increase the frequency
- Seems good so far



One app to bind them all

A new Nextcloud app - Collabora Online - Built-in CODE Server

- Consists of everything needed
- Comes bundled with new Nextcloud installations
- Ready-to run after installation
- And installable with one-click at any time
- Auto-enabled on install
- Can be enabled/disabled on Collabora Online settings



One app to bind them all

Inside

- CODE AppImage
- proxy.php
- Necessary app bits like UI, l10n etc.
- Certain checks for platform and dependencies

Collabora Online Settings



Collabora Online

Collabora Online is a powerful LibreOffice-based online office suite with collaborative editing, which supports all major documents, spreadsheet and presentation file formats and works together with all modern browsers.



Collabora Online server is reachable.



Use your own server

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



Use the built-in CODE - Collabora Online Development Edition

Easy to install, for home use or small groups. A bit slower than a standalone server and without the advanced scalability features.



Use a demo server

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



Auto-enable on Installation

Inside lib/AppInfo/Application.php of richdocuments app

- checkAndEnableCODEServer()
- Checks for platform & architecture
- Checks if user has richdocumentscode app installed & enabled
- Checks if custom url is set
- Then enables the built-in server automatically



Some of used tech, languages etc.

- PHP in the prox.php, relay station between loolwsd and richdocuments
- JS, Vue.JS etc. on the UI
- ApplImage
- ...



Limitations & Caveats

- **Security** – no longer chroot jails & doc isolation
- Only **AMD64**
- **Latency** still a bit higher than usual setup
- **Bandwidth** – HTTP requests with many headers, rather than binary websocket
- **Scalability** – Should be good for family & friends, but not for many concurrent users



A Team Work

- Michael – initial prototype
- Kendy, Ash – mainly around proxy.php
- Muhammet – Auto-enable, UI & JS mostly
- Mert – Various fixes around JS & PHP
- Andras – coordination, testing, packageing
- Julius from Nextcloud – a lot of help, solving issues on the Nextcloud side



More

- GitHub repo for richdocumentscode:
<https://github.com/CollaboraOnline/richdocumentscode>
- Michael's blog (the presentation is heavily inspired by it):
<https://people.gnome.org/~michael/blog/2020-06-03-php-online-proxy.html>
- CODE page: <https://www.collaboraoffice.com/code/>
- Instructions to build CODE from source:
<https://collaboraonline.github.io/post/build-code/>



Collabora Office

Thank you!

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