FOSDEM 2021

Lowering the Barrier for New Developers

Collabora Productivity

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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
- Member of TDF Membership Committee
- Member of the GNOME Foundation

Lowering the Barrier for New Developers

- Collabora Online
- Situation in the past to start hacking
- Search for the ways to lower the barrier
- Cloud dev environments
- Gitpod
- Setting up the repo for Gitpod integration
- Adapting the infra/CI for faster builds in the cloud
- Quick start on hacking COOL in the cloud
- Some numbers
- What's missing?
- Can it be applied also to core (LibreOffice) repo?

Collabora Online

- LibreOffice in the cloud
- Mainly in C++ and JavaScript
- Needs LibreOffice core

In The Past...

Build core

- Install dependencies
- Do the actual build
- External packages downloaded
- May take many hours
- Number of possible issues

Build COOL

- Build/install POCO
- Install other dependencies
- Do the actual build
- Only on GNU/Linux

In The Past...

Many points of failure

- Hardware requirements
- OS requirements
- Time needed before actual development
- Decrease in motivation
- Lost the way before getting started...

Search for the ways

To lower the barrier:

- Find better candidates
- Spend more time to train
- Got some nice results but…
- Not scalable

Cloud-based dev environments

Development-environment-as-a-service:

- Preconfigured dev environments
- Ready to run from anywhere
- Container-based
- Independent of developer's OS & hardware
- Many alternatives to choose from
- AWS Cloud9, Azure VS Code Online, Eclipse Che, Koding, GH Codespaces, Gitpod…

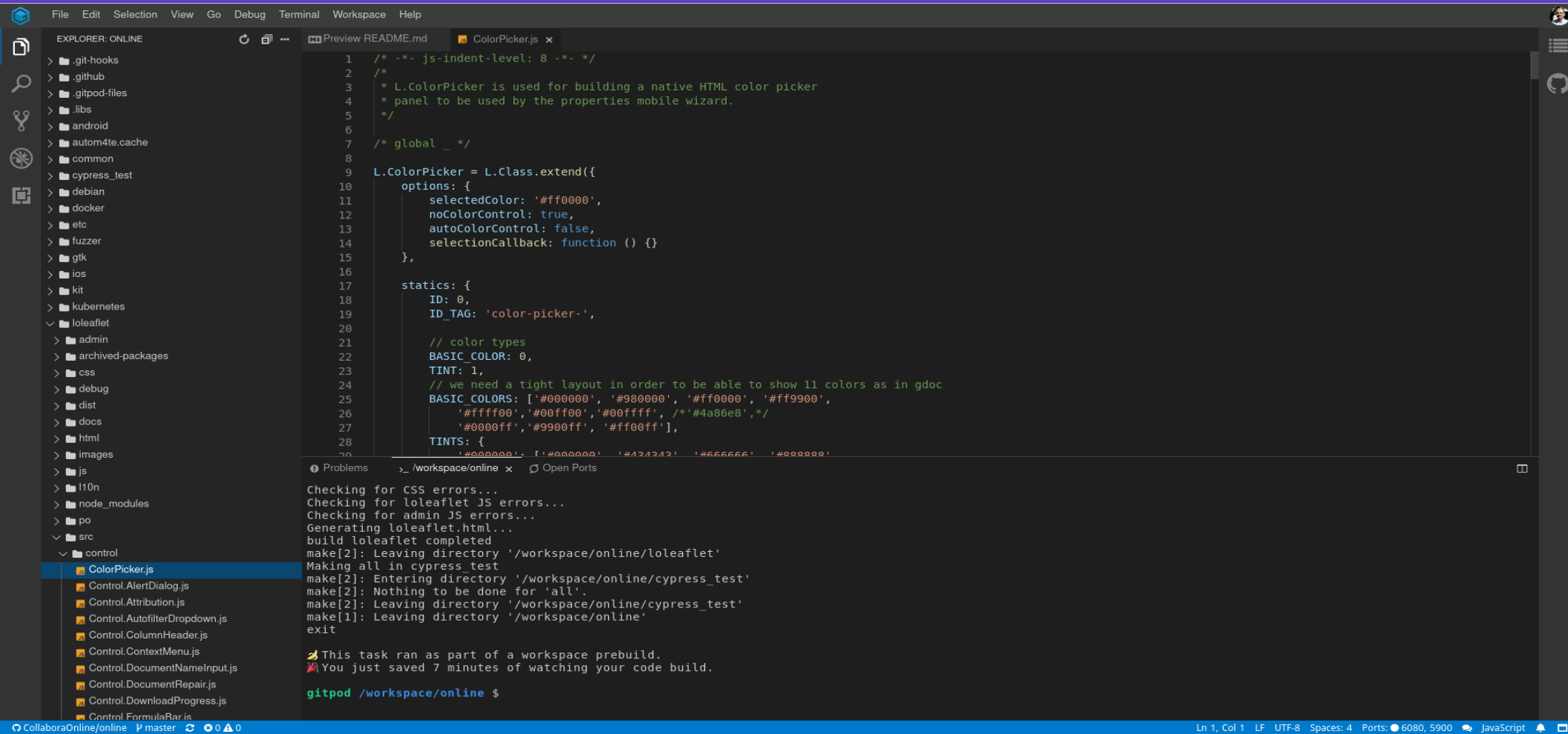
Gitpod

Open-source dev environment in the cloud

- Docker images
- Prebuilt Workspaces
- Parallel Workspaces
- VS Code Extensions
- GitLab, GitHub, and Bitbucket Integration
- Workspace Sharing
  - Training sessions
  - Pair-programming
- Snapshots
- Free tier for Open Source projects/devs

https://gitpod.io

How it looks


File Edit Selection View Go Debug Terminal Workspace Help
EXPLORER: ONLINE
Preview README.md
ColorPicker.js
/* -*- js-indent-level: 8 -*- */
/*
* L.ColorPicker is used for building a native HTML color picker
* panel to be used by the properties mobile wizard.
*/
/* global _ */
L.ColorPicker = L.Class.extend({
options: {
selectedColor: '#ff0000',
noColorControl: true,
autoColorControl: false,
selectionCallback: function () {}
},
statics: {
ID: 0,
ID_TAG: 'color-picker-',
// color types
BASIC_COLOR: 0,
TINT: 1,
// we need a tight layout in order to be able to show 11 colors as in gdoc
BASIC_COLORS: ['#000000', '#980000', '#ff0000', '#ff9900',
'#ffff00','#00ff00','#00ffff', /*'#4a86e8',*/
'#0000ff','#9900ff', '#ff00ff'],
TINTS: {
Problems
/workspace/online
Open Ports
Checking for CSS errors...
Checking for loleaflet JS errors...
Checking for admin JS errors...
Generating loleaflet.html...
build loleaflet completed
make[2]: Leaving directory '/workspace/online/loleaflet'
Making all in cypress_test
make[2]: Entering directory '/workspace/online/cypress_test'
make[2]: Nothing to be done for 'all'.
make[2]: Leaving directory '/workspace/online/cypress_test'
make[1]: Leaving directory '/workspace/online'
exit
This task ran as part of a workspace prebuild.
You just saved 7 minutes of watching your code build.
gitpod /workspace/online $
CollaboraOnline/online master
Ln 1, Col 1 LF UTF-8 Spaces: 4 Ports: 6080, 5900 JavaScript

Setting up the repo for Gitpod integration

On GitHub:

- Step 1: Create *.gitpod.yml*
- Step 2: Change Base Image
- Step 3: Update Readme
- Step 4: Configure Prebuilds

Step 1: Create *.gitpod.yml*

```
ports:
  - port: 9980
    onOpen: ignore
  - port: 6080
    protocol: "http"
  - port: 5900
    onOpen: ignore

vscode:
  extensions:
    - ms-vscode.cpptools@0.26.2:Pq/tmf2WN3SanVzB4xZc1g==
```

```
tasks:
  - init: cd .. && wget https://github.com/CollaboraOnline/online/releases/download/for-code-assets/core-cp-6.4-assets.tar.gz
```

Step 2: Change Base Image

```yaml
image:
  file: .gitpod.dockerfile

ports:
  - port: 9980
    onOpen: ignore
  - port: 6080
    protocol: "http"
  - port: 5900
    onOpen: ignore

vscode:
  extensions:
    - ms-vscode.cpptools@0.26.2:Pq/tmf2WN3SanVzB4xZc1g==

```

.gitpod.dockerfile

```
FROM gitpod/workspace-full-vnc

RUN sudo sh -c "echo deb-src http://archive.ubuntu.com/ubuntu/ focal main restricted >> /etc/apt/sources.list" \
 && sudo sh -c "echo deb-src http://archive.ubuntu.com/ubuntu/ focal-updates main restricted >> /etc/apt/sources.list" \
 && sudo sh -c "echo deb-src http://security.ubuntu.com/ubuntu/ focal-security main restricted >> /etc/apt/sources.list" \
 && sudo sh -c "echo deb-src http://security.ubuntu.com/ubuntu/ focal-security universe >> /etc/apt/sources.list" \
 && sudo sh -c "echo deb-src http://security.ubuntu.com/ubuntu/ focal-security multiverse >> /etc/apt/sources.list" \
 && sudo apt-get update \
 && sudo apt-get install -y \
    build-essential git libpoco-dev libcap-dev python3-polib npm libpng-dev python3-lxml libpam-dev firefox \
 && sudo apt-get build-dep -y libreoffice \
 && pip install lxml \
 && pip install polib \
 && sudo rm -rf /var/lib/apt/lists/*

```

Step 3: Update Readme

In case you want to tell your team or community about the automated dev environments you can add a badge to your README.md.

```
[![Gitpod Ready-to-Code](https://img.shields.io/badge/Gitpod-ready--to--code-blue?lo
```

Alternatively you can use a button and put it into your documentation:

```
[![Open in Gitpod](https://gitpod.io/button/open-in-gitpod.svg)](https://gitpod.io/#
```

Step 4: Configure Prebuilds

```yaml
github:
  prebuilds:
    # enable for the master/default branch (defaults to true)
    master: true
    # enable for all branches in this repo (defaults to false)
    branches: false
    # enable for pull requests coming from this repo (defaults to true)
    pullRequests: false
    # enable for pull requests coming from forks (defaults to false)
    pullRequestsFromForks: false
    # add a check to pull requests (defaults to true)
    addCheck: false
    # add a "Review in Gitpod" button as a comment to pull requests (defaults to false)
    addComment: false
    # add a "Review in Gitpod" button to the pull request's description (defaults to false)
    addBadge: false
    # add a label once the prebuild is ready to pull requests (defaults to false)
    addLabel: false

tasks:
  - init: cd .. && wget https://github.com/CollaboraOnline/online/releases/download/for-code-assets/core-cp-6.4-assets.tar.gz
    prebuild: tar xvf core-cp-6.4-assets.tar.gz && rm core-cp-6.4-assets.tar.gz && cd online && ./autogen.sh && ./configure --enable-silent-rules
```

Adapting the infra/CI for faster builds in the cloud

- Do a daily build of LibreOffice core
- zip/tar.gz it, and download for prebuilds
- Only include the necessary pieces in the zip
  - *include*
  - *Instdir*
- Down to ~10 minutes to prebuild after each commit on master

Quick start on hacking COOL in the cloud 1/2

- Sign-up on gitpod.io with your GitHub account
- Install the proper extension for your browser
- Go to COOL repo
- Click on the green Gitpod button near the top of the GitHub repo page

Quick start on hacking COOL in the cloud 2/2

- Wait for a few minutes…
- Get a full development environment with COOL already cloned & built
- Ready-to-start developing
- Also ready to run for testing
- Up-to-date instructions are on the forum
  - https://forum.collaboraonline.com/t/start-developing-cool-on-any-platform-in-5-minutes/52

Let’s see!

Some numbers & results

- Time to start hacking is down from several hours to ~10 minutes
- Tens of new code contributors (22+) since October 2020
- No more restricted by the OS or hardware of the dev
- Open to an ocean of potential code contributors on GitHub

What's missing?

- Direct external SSL connection to running COOL in a Gitpod
- Auto-start browser & novnc on *make run*
- Suggestions and pull requests are welcome!
  - https://github.com/CollaboraOnline/online

What about core (LibreOffice) repo?

- Initial support was already introduced
- Needs an update on the config files to adapt to new image releases
- Prebuilds are a must-have
- Currently times-out during cloning the translations submodule
  - Optimize the translations repo?
  - A flag to not clone submodules on the Gitpod side?
  - A dummy repo, using ~daily builds and compressed archives of the repo?
- Potential to gain the potential contributors we lost during the init phase

Collabora Productivity

Thank you!

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