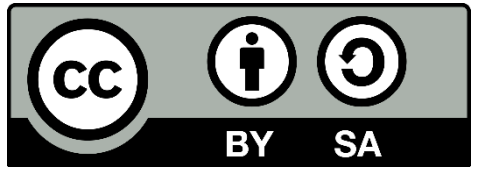
Kontinuierliche Übersetzung von LaTeX-Dokumenten mittels CircleCI

Oliver Kopp



Motivation

- LaTeX-Umgebung: Verschiedene Paketversionen
- Kollaboration: GitHub (nahezu) de-facto Standard

Verschiedene LaTeX-Umgebungen

Snapshot der aktuellen LaTeX-Umgebung:
mkjobtexmf – Generate a texmf tree for a particular job

LaTeX Installation

- apt-get install texlive-full
- Was ist mit latexmk?
  - apt-get install latexmk
- Was ist mit minted?
  - apt-get install python-pygments
- Was ist mit pax?
  - apt-get install openjdk-8-jre-headless
  - perl `kpsewhich -var-value TEXMFDIST`/scripts/pax/pdfannotextractor.pl --install

Die Antwort: 

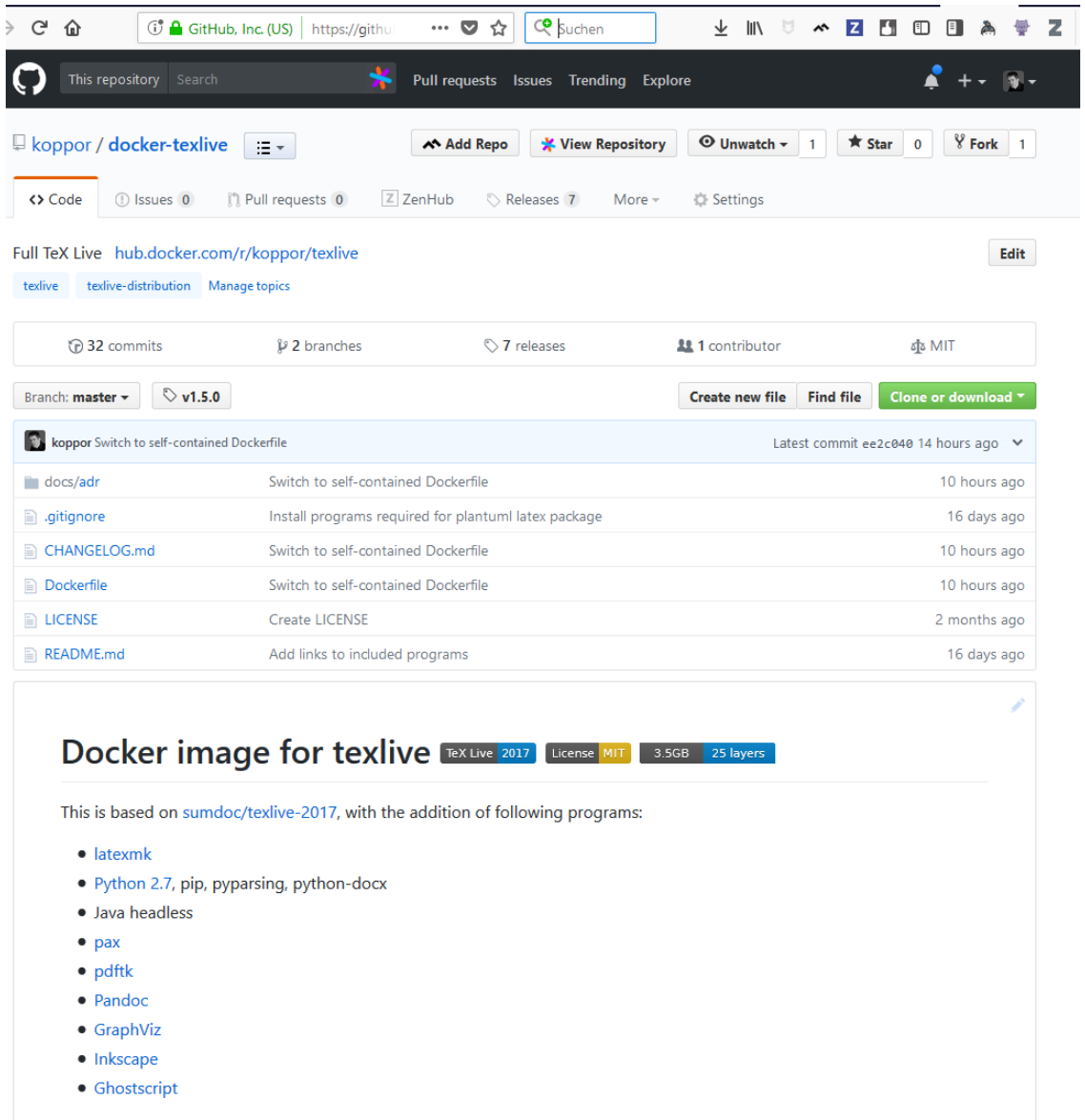

```
FROM debian:sid
RUN apt-get update -qq && apt-get upgrade -qq && \
  apt-get install -y texlive-full latexmk fonts-texgyre && \
  apt-get install python-pygments openjdk8-jre-headless
RUN perl `kpsewhich -var-value TEXMFDIST`/scripts/pax/pdfannotextractor.pl
--install
```

Vollständiges Beispiel

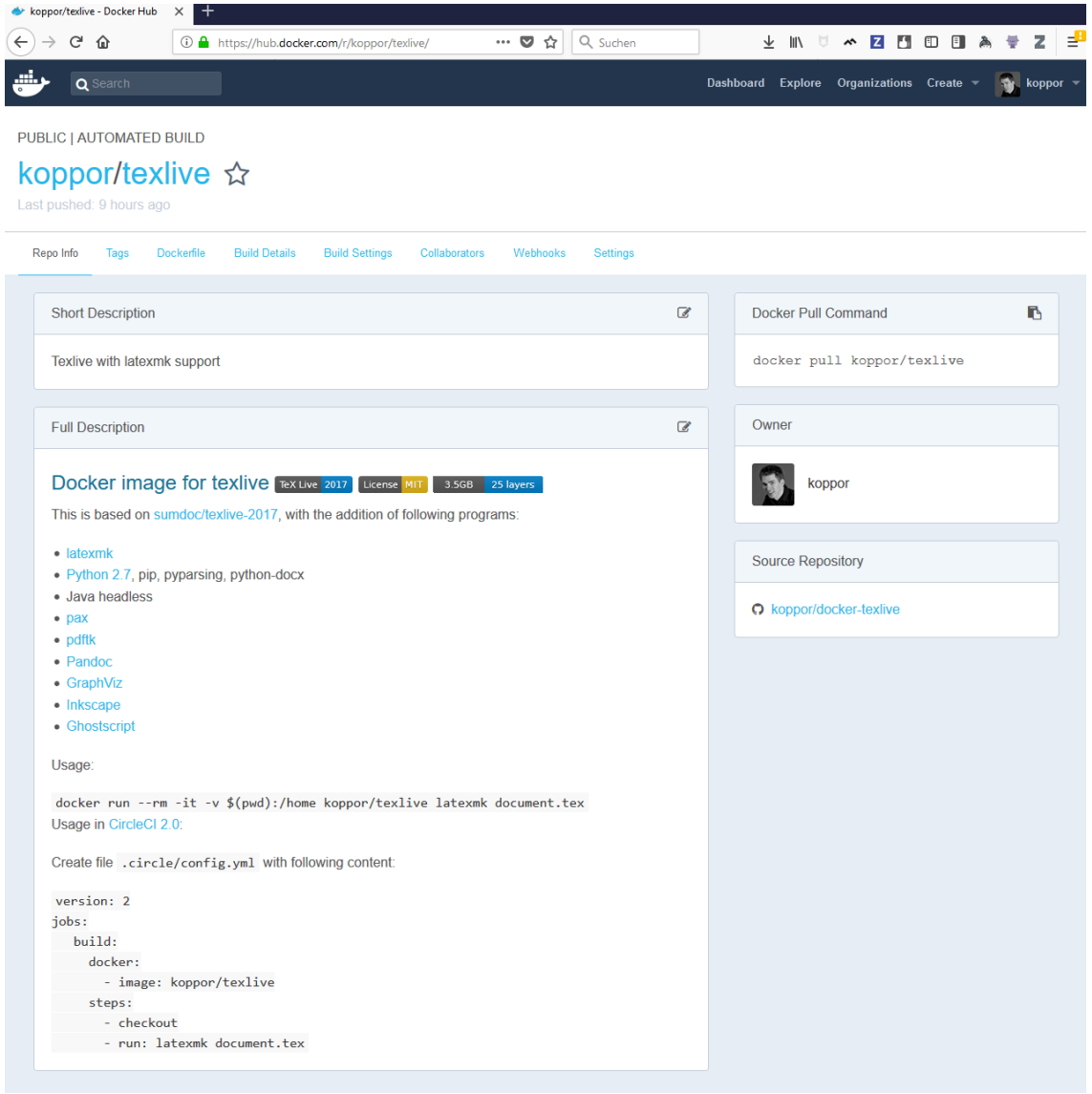
```
FROM debian:sid
LABEL maintainer "Oliver Kopp <kopp.dev@gmail.com>"
ENV LANG=C.UTF-8 \
    LC_ALL=C.UTF-8 \
    TERM=dumb
ARG BUILD_DATE

# we additionally need python, java (because of pax), perl (because of pax), pdftk, ghostscript, and unzip (because of pax)
RUN apt-get update -qq && apt-get upgrade -qq && \
    # proposal by https://github.com/sumandoc/TeXLive-2017
    apt-get install -y wget curl libgetopt-long-descriptive-perl libdigest-perl-md5-perl fontconfig && \
    # libfile-copy-recursive-perl is required by ctanify
    apt-get install -y --no-install-recommends openjdk-8-jre-headless libfile-which-perl libfile-copy-recursive-perl pdftk ghostscr
    apt-get install -y ruby poppler-utils && \
    # for plantuml, we need graphviz and inkscape. For inkscape, there is no non-X11 version, so 200 MB more
    apt-get install -y --no-install-recommends graphviz inkscape && \
    # install texlive-full. The documentation ( texlive-latex-base-doc- texlive-latex-extra-doc- texlive-latex-recommended-doc- tex
    apt-get install -y --no-install-recommends texlive-full latexml && \
    # texlive-full depends on pyhton3. These packages curently depend on python2.7.
    # install pygments to enable minted
    apt-get install -y python-pygments python-pip && \
    rm -rf /var/lib/apt/lists/*

# update texlive is not required as we base on debian/sid

# update font index
RUN luaotfload-tool --update

WORKDIR /home

# pandoc is installed because of CTAN package releasing, where .md is converted to .pdf
# pandoc in the repositories is 1.x, but there is 2.x released, which changed command line parameters.
# To enable release.sh working also in CircleCI, we use a recent pandoc version there, too.
RUN wget https://github.com/jgm/pandoc/releases/download/2.1.3/pandoc-2.1.3-1-amd64.deb -q --output-document=/home/pandoc.deb && dp

# get PlantUML in place
RUN wget https://netix.dl.sourceforge.net/project/plantuml/1.2018.2/plantuml.1.2018.2.jar -q --output-document=/home/plantuml.jar
ENV PLANTUML_JAR=/home/plantuml.jar

# install Ruby's bundler
RUN gem install bundler

# enable using the scripts of https://github.com/gi-ev/LNI-proceedings
RUN pip install pyparsing && pip install python-docx

# prepare usage of pax
RUN mkdir /root/.texlive2017 && perl `kpsewhich -var-value TEXMFDIST`/scripts/pax/pdfannotextractor.pl --install

# output current version
CMD ["tlmgr", "--version"]
```

Siehe https://github.com/koppor/docker-texlive

Versionierung

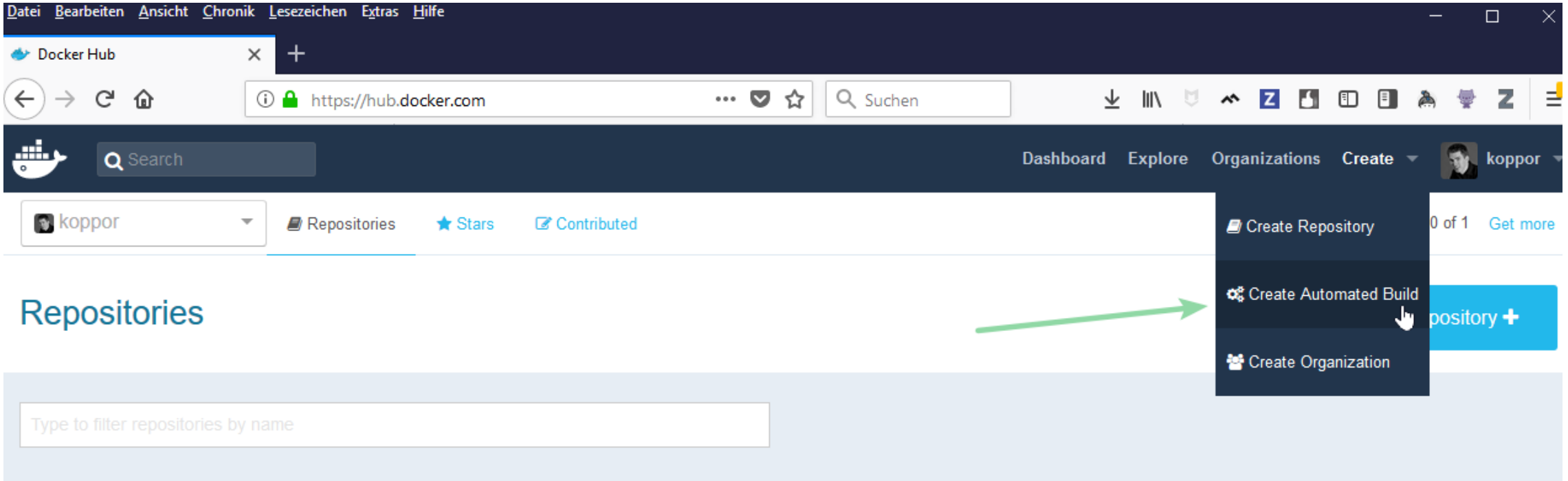


Wo liegt das Image?

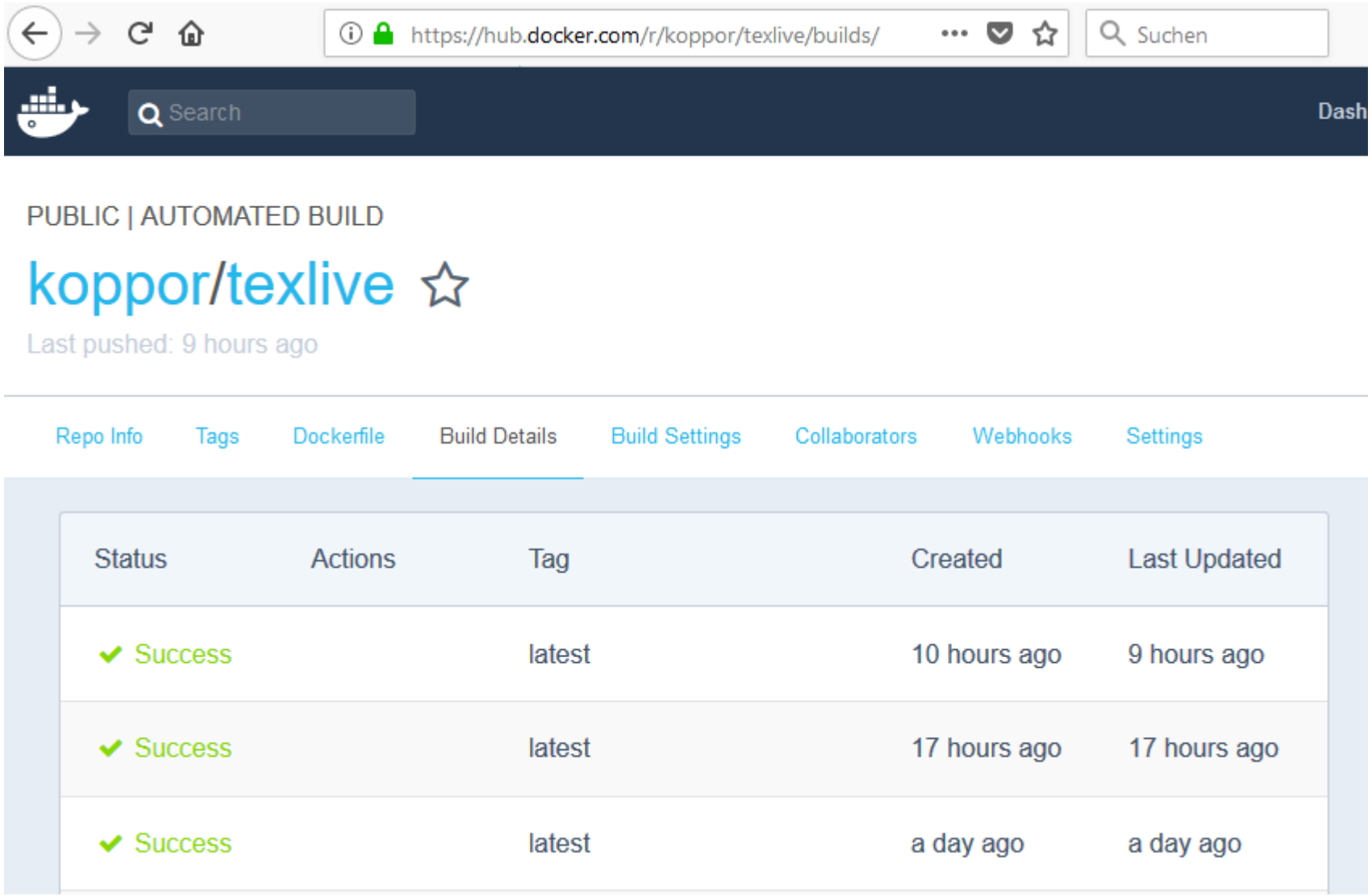


Siehe https://hub.docker.com/r/koppor/texlive/

Wie wird es erstellt?



Aktueller Build



Nutzung

- docker run -v"C:\git-repositories\latex-templates\scientific-thesis-template:/home" --rm -it koppor/texlive bash

Interaktiv zum Ausprobieren

```
> docker run -v"C:\git-repositories\latex-templates\scientific-thesis-template:/home" --rm -it koppor/texlive bash
Unable to find image 'koppor/texlive:latest' locally
latest: Pulling from koppor/texlive
2115d46e7396: Already exists
36cf1fbab58a: Downloading [>                                                  ]  3.211MB/3.533GB
0ba7b181d05d: Download complete
c87ba1a19185: Downloading [=====>                                             ]   3.06MB/27.33MB
c1a918cd55f7: Downloading [========>                                          ]  1.113MB/6.675MB
ce2925d6a703: Waiting
75f1728e39a4: Waiting
744fb89c7dc1: Waiting
```

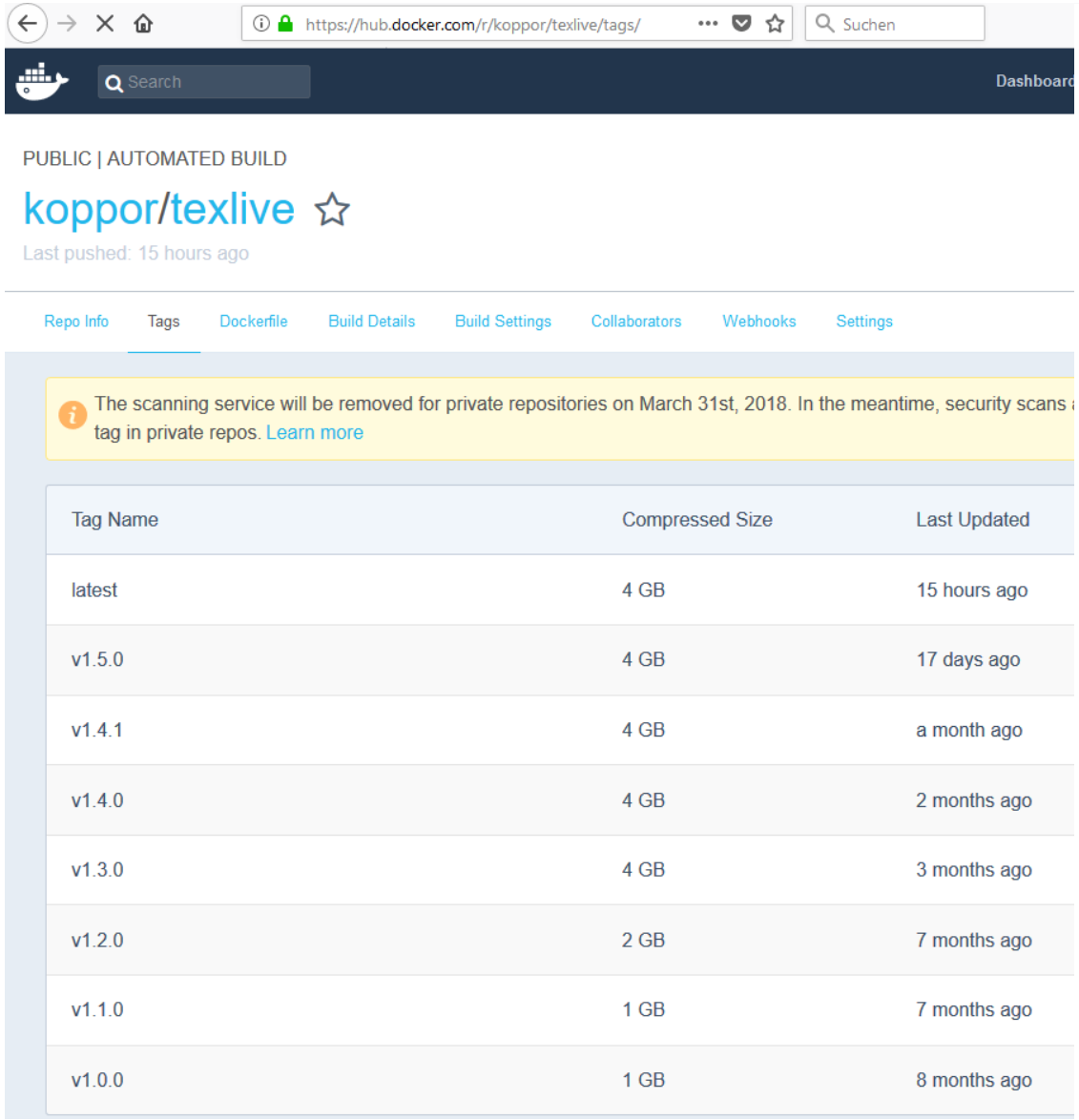
Bereit

```
> docker run -v"C:\git-repositories\latex-templates\scientific-thesis-template:/home" --rm -it koppor/texlive bash
Unable to find image 'koppor/texlive:latest' locally
latest: Pulling from koppor/texlive
2115d46e7396: Already exists
36cf1fbab58a: Pull complete
0ba7b181d05d: Pull complete
c87ba1a19185: Pull complete
c1a918cd55f7: Pull complete
ce2925d6a703: Pull complete
75f1728e39a4: Pull complete
744fb89c7dc1: Pull complete
Digest: sha256:01be49df03e9dc6f4e8412a7c8e71c9324100d4d9822fde1801af4b6cbbe7a05
```

Starte Kompilierung

- latexmk main-english

Reproduzierbare Builds



- docker run -v"C:\git-repositories\texdoc\l2kurz:/home" --rm -it koppor/texlive:v1.5.0 latexmk main

Automatisierung?

- CircleCI 2.0

```
version: 2
jobs:
   build:
     docker:
       - image: koppor/texlive
     steps:
       - checkout
       - run: latexmk document.tex
```

Inhalt in .circleci/config.yaml ablegen, bei https://circleci.com/ einloggen, Repository hinzufügen.

Umsetzung bei l2kurz (Demo)

https://github.com/texdoc/l2kurz

- CircleCI aktivieren
- PDF herunterladbar machen? - mkdir build && cp l2kurz.pdf build/
- Homepage?
- PDF auf Homepage
  - ssh-key
  - script

Erweitertes Beispiel: https://github.com/latextemplates/scientific-thesis-template

Zusammenfassung und Ausblick

- GitHub zur Kollaboration
- Docker-Image als definierte Umgebung
- CircleCI als Integrationslösung

- Einsatz bei vielen Projekten auf GitHub

https://github.com/koppor/ | http://latextemplates.github.io/scientific-thesis-template/