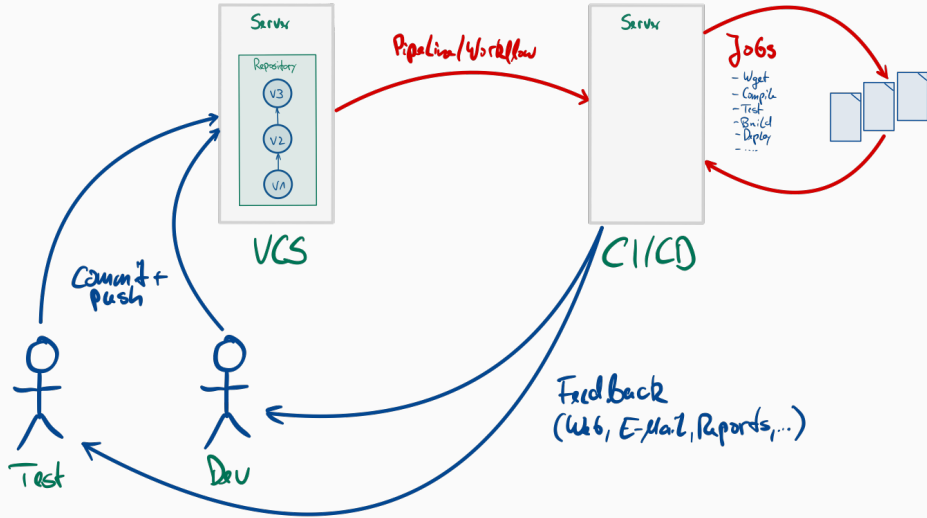


Einführung in Docker

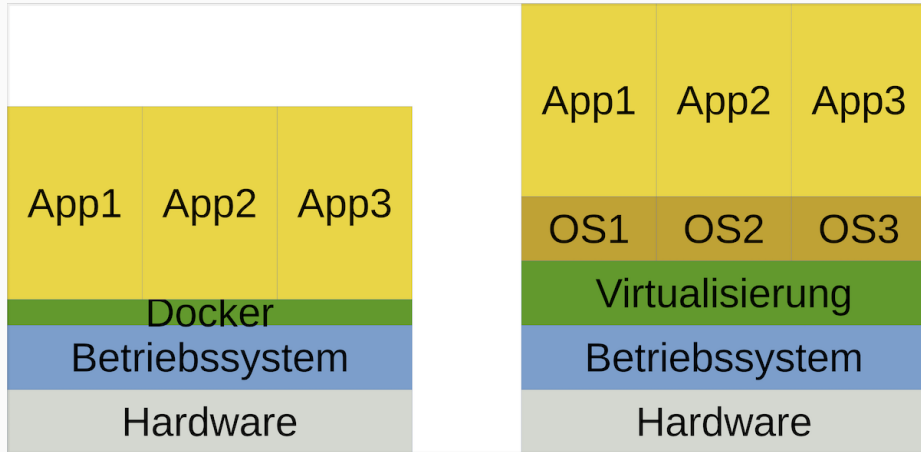
Carsten Gips (FH Bielefeld)

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Motivation CI/CD: WFM (*Works For Me*)



Virtualisierung: Container vs. VM



Getting started

- DockerHub: fertige Images => hub.docker.com/search
- Image downloaden: `docker pull <IMAGE>`
- Image starten: `docker run <IMAGE>`

Beispiele

```
docker pull debian:stable-slim
docker run --rm -it debian:stable-slim /bin/sh
```

```
docker pull openjdk:latest
docker run --rm -v "$PWD":/data -w /data openjdk:latest javac Hello.java
docker run --rm -v "$PWD":/data -w /data openjdk:latest java Hello
```

Images selbst definieren

```
FROM debian:stable-slim

ARG USERNAME=pandoc
ARG USER_UID=1000
ARG USER_GID=1000

RUN apt-get update && apt-get install -y --no-install-recommends \
    apt-utils bash wget make graphviz biber \
    texlive-base texlive-plain-generic texlive-latex-base \
    #
    && groupadd --gid $USER_GID $USERNAME \
    && useradd -s /bin/bash --uid $USER_UID --gid $USER_GID -m $USERNAME \
    #
    && apt-get autoremove -y && apt-get clean -y && rm -rf /var/lib/apt/lists/*

WORKDIR /pandoc
USER $USERNAME
```

```
docker build -t <NAME> -f <DOCKERFILE> .
```

CI-Pipeline (GitLab)

```
default:
  image: openjdk:17

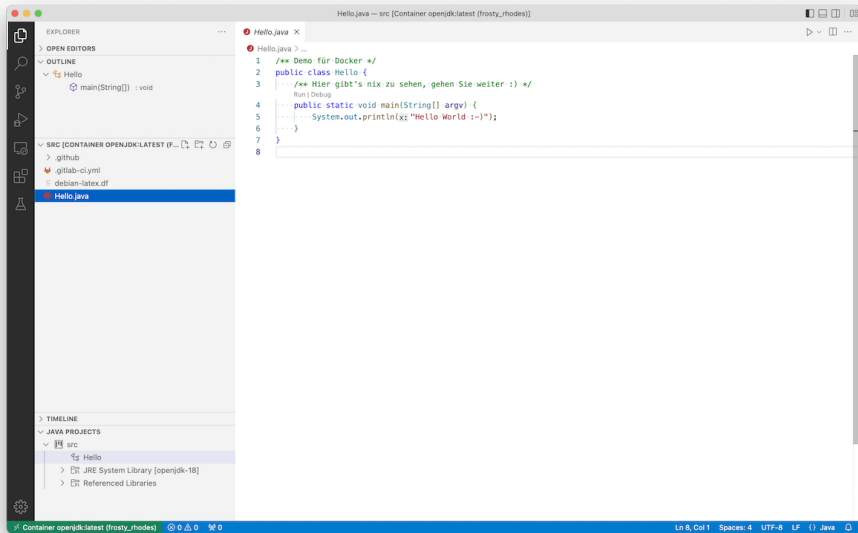
job1:
  stage: build
  script:
    - java -version
    - javac Hello.java
    - java Hello
    - ls -lags
```

CI-Pipeline (GitHub)

```
name: demo
on:
  push:
    branches: [master]
  workflow_dispatch:

jobs:
  job1:
    runs-on: ubuntu-latest
    container: docker://openjdk:17
    steps:
      - uses: actions/checkout@v3
      - run: java -version
      - run: javac Hello.java
      - run: java Hello
      - run: ls -lags
```

VSCode und das Plugin “Remote - Containers”



- Schlanke Virtualisierung mit Containern (kein eigenes OS)
- *Kein* Sandbox-Effekt
- Begriffe: Docker-File vs. Image vs. Container
- Ziehen von vordefinierten Images
- Definition eines eigenen Images
- Arbeiten mit Containern: lokal, CI/CD, VSCode ...

LICENSE



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Exceptions

- Website hub.docker.com