

How to docker?

Docker something

Julia Winkler

19.06.2024

Gliederung

Why use Docker?

Trusted by developers. Chosen by Fortune 100 companies.

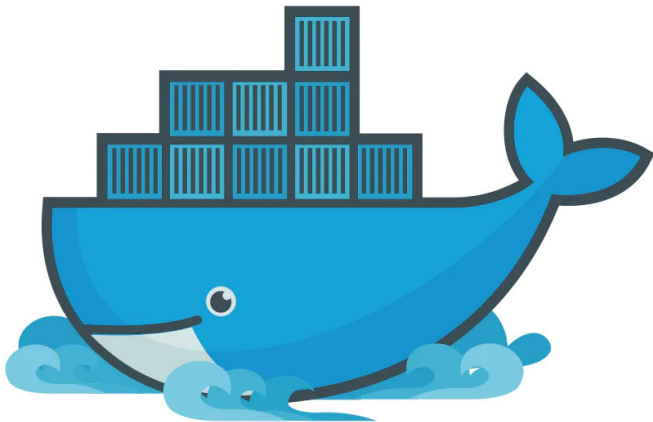
Docker provides a suite of development tools, services, trusted content, and automations, used individually or together, to accelerate the delivery of secure applications.

"a sandboxed process on your machine that is isolated from all other processes on the host machine"

"It works on my computer"

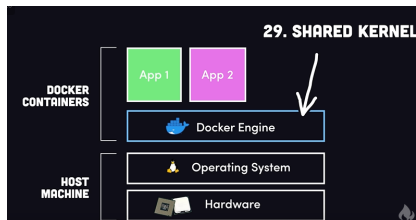
"faster onboarding and testing while also simplifying the deployment of services"

Wer ist Moby Dock?



Was ist Docker?

- ▶ ? (vllt nicht als Folie sondern nur was erwähnen)
- ▶ Toolbox
- ▶ sandbox
- ▶ konfigurierbare Umgebung



Was ist Docker?

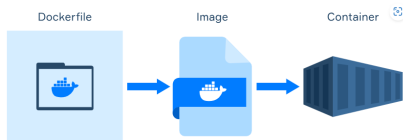


Figure: Zusammenhang der Docker Komponenten

Wichtige Begriffe

Docker

freie Software zur Isolierung von Anwendungen mit Hilfe von Docker Containervirtualisierung

Container

Umgebung in der die tatsächliche Anwendung läuft

Image

Blaupausen, um einen Container zu erstellen

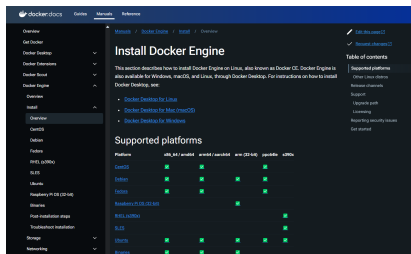
Dockerfile

Anleitung, um ein Image zu erstellen

Registry

z.B. Docker Hub, EAC.... Ort an dem viele verschiedene Images gespeichert und geteilt werden können

Wie kriege ich dieses "Docker"?



<https://docs.docker.com/engine/install/>

Hello World

```
$ docker -v
```

```
$ docker --help
```

```
$ docker run hello-world
```

Ab ins Terminal

Was ist Docker?

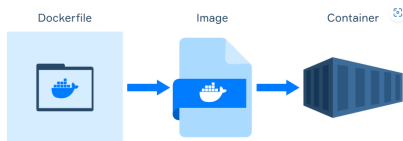


Figure: Zusammenhang der Docker Komponenten

Dockerfile

- ▶ Ein Dockerfile ist die Anleitung um ein Image zu erstellen.
- ▶ Image zu einem Dockerfile erstellen: `docker build .`
- ▶ Image mit einem namen versehen: `-t name:version` (version ist optional)
- ▶ Standardmäßig heißt die Datei 'Dockerfile'
- ▶ `-f <Dateiname>` für eigens benannte Dateien

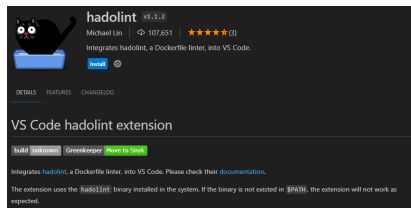


Figure: Plugin für die Arbeit mit Docker

Dockerfile

required

FROM base_image:tag

hier ein beispiel, wie ARG gesetzt wird

ARG name

- ▶ FROM, CMD & Entrypoint, RUN, COPY, ARG
- ▶ Layer

title

```
docker build -t example:cmd -f Dockerfile.cmd .
```

```
docker build -t example:entry -f Dockerfile.entry .
```

```
docker run example:cmd
```

```
docker run example:cmd hello
```

```
docker run example:entry hello
```

title

```
docker build -t example:single -f Dockerfile.single  
docker build -t example:multi -f Dockerfile.multi
```

```
docker ps -a  
docker images
```

Python bsp

```
FROM alpine
```

```
# Exec form
```

```
CMD ["echo", "Hello World."]
```

```
#shell form
```

```
CMD echo Hello Students
```

Volumes



React

```
FROM alpine
```

```
# Exec form
```

```
CMD ["echo", "Hello World."]
```

```
#shell form
```

```
CMD echo Hello Students
```

Multistage builds

► 1

React - Multistage

```
FROM alpine
```

```
# Exec form
```

```
CMD ["echo", "Hello World."]
```

```
#shell form
```

```
CMD echo Hello Students
```

Dockerfile Best practices

- ▶ RUN commands
- ▶ Order of COPY
- ▶ Volumes
- ▶ Multistage

Docker Compose

- ▶ Vorteile
- ▶ UseCases

Docker Compose zu Python

```
FROM alpine
```

```
# Exec form
```

```
CMD ["echo", "Hello World."]
```

```
#shell form
```

```
CMD echo Hello Students
```

Docker Compose Webapp

```
FROM alpine
```

```
# Exec form
```

```
CMD ["echo", "Hello World."]
```

```
#shell form
```

```
CMD echo Hello Students
```

title

- ▶ OpenDrone Map

tes Arbeit

liwi arbeit

ame work

Cheatsheet

- ▶ `docker run`
- ▶ `docker build`
- ▶ `docker push`, `pull`
- ▶ `docker ps -a`
- ▶ `docker rm / rmi`
- ▶ ...

Cooler Quellen und so weiter

- ▶ <https://www.docker.com/>
- ▶ <https://docs.docker.com/get-started/>
- ▶