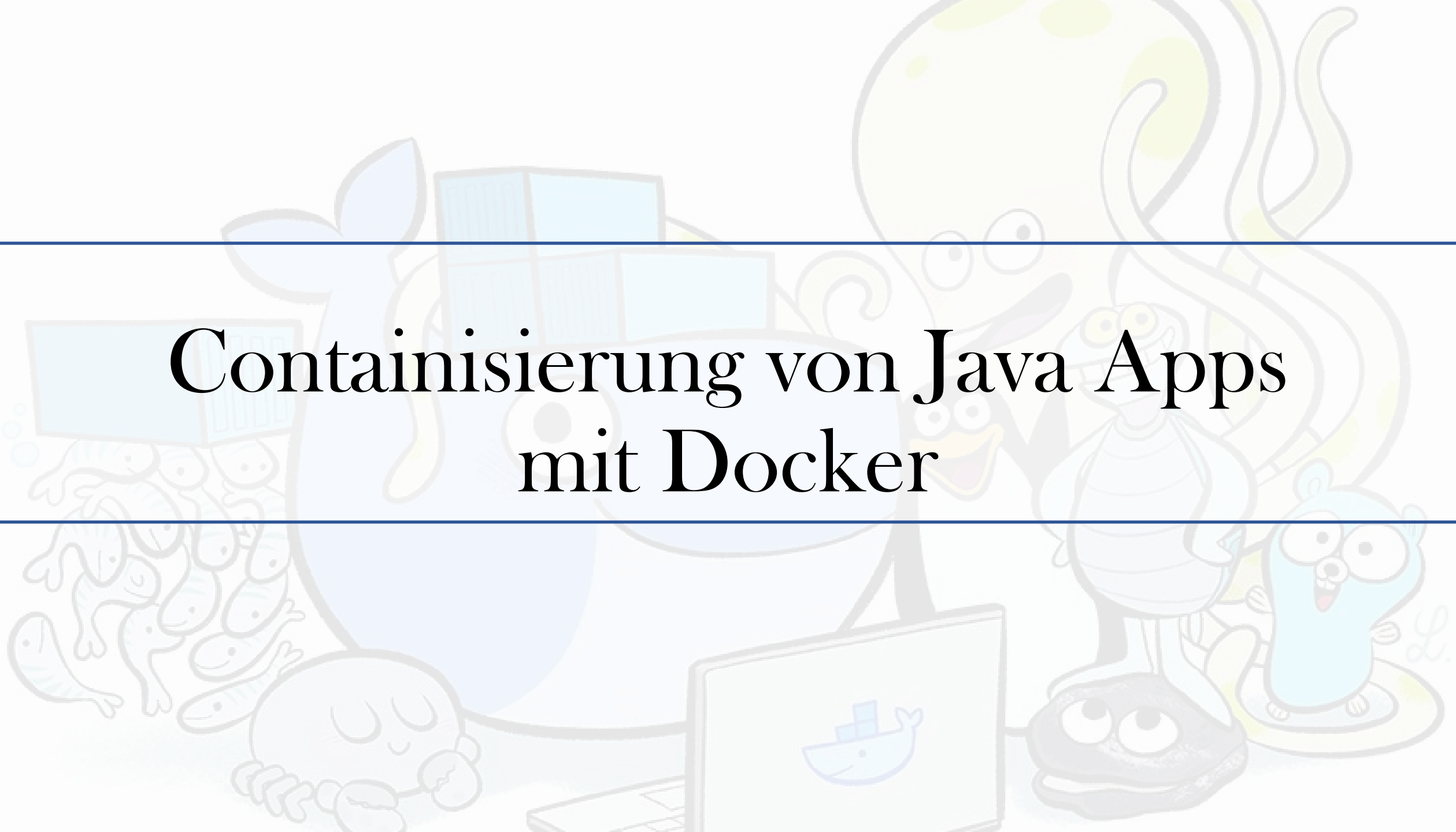
Containisierung von Java Apps mit Docker



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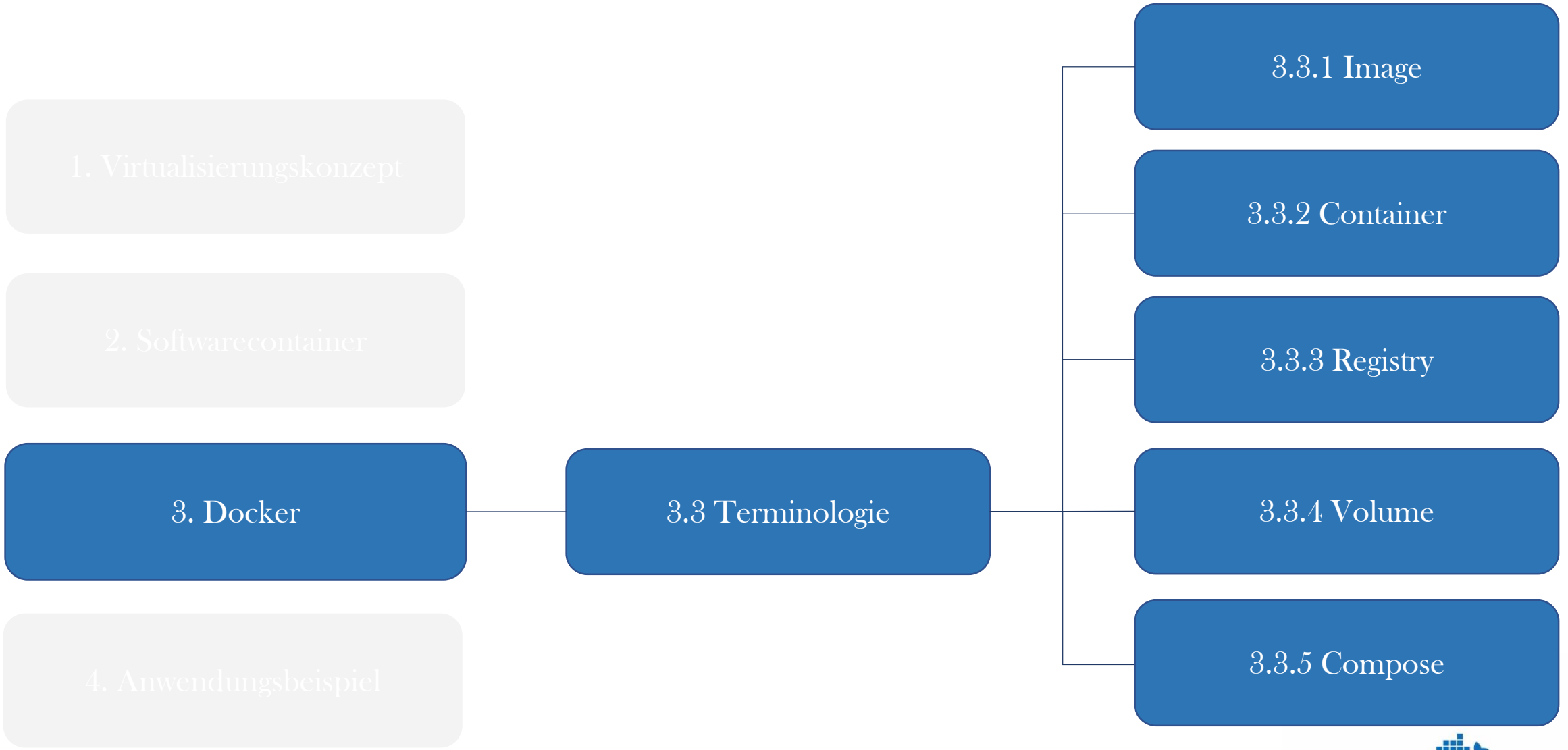
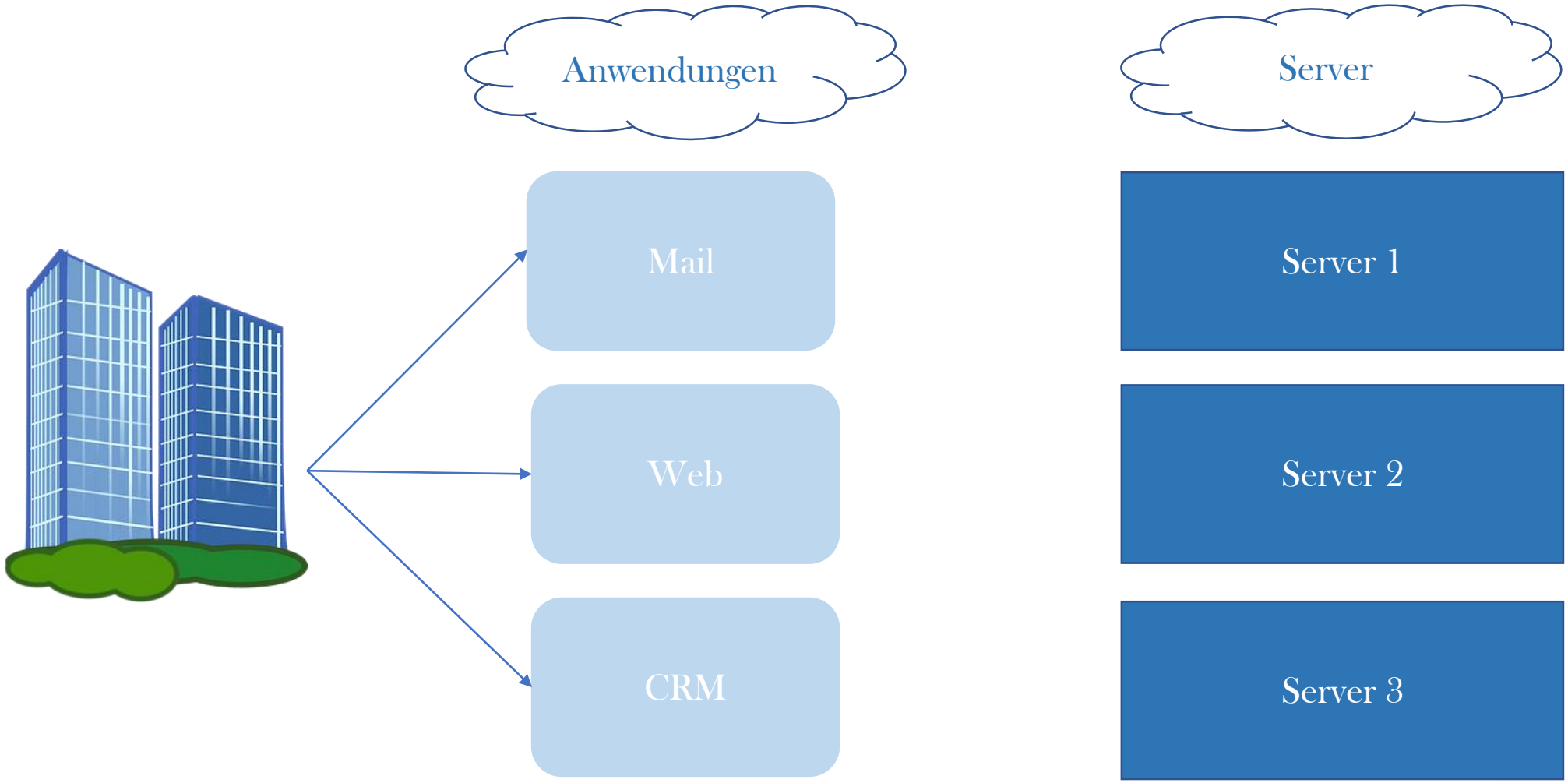

1. Virtualisierungskonzept
2. Softwarecontainer
3. Docker
4. Anwendungsbeispiel
3.3 Terminologie
3.3.1 Image
3.3.2 Container
3.3.3 Registry
3.3.4 Volume
3.3.5 Compose

INHALT

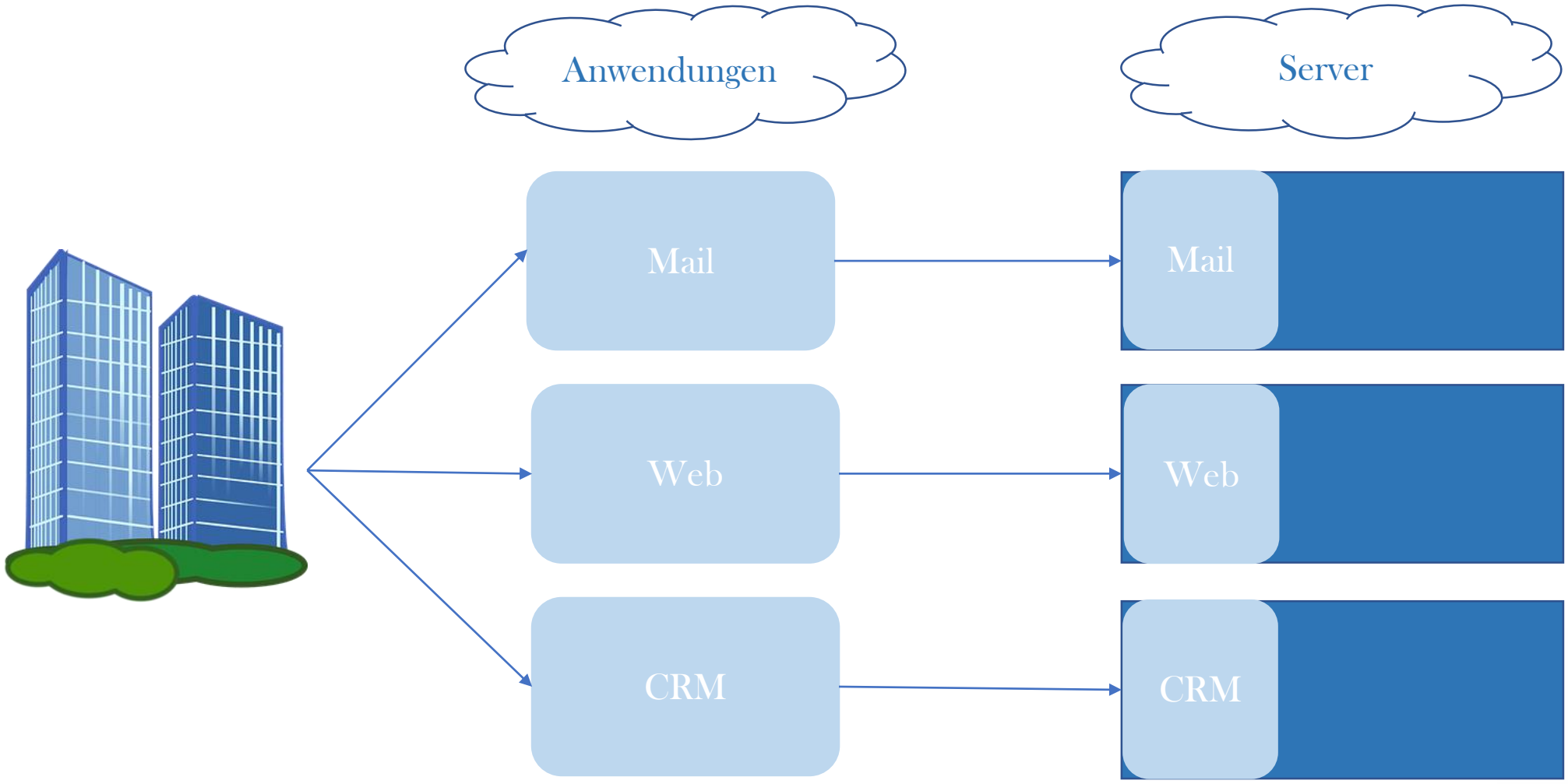
1. VIRTUALISIERUNGSKONZEPT

1.1 ENTSTEHUNG



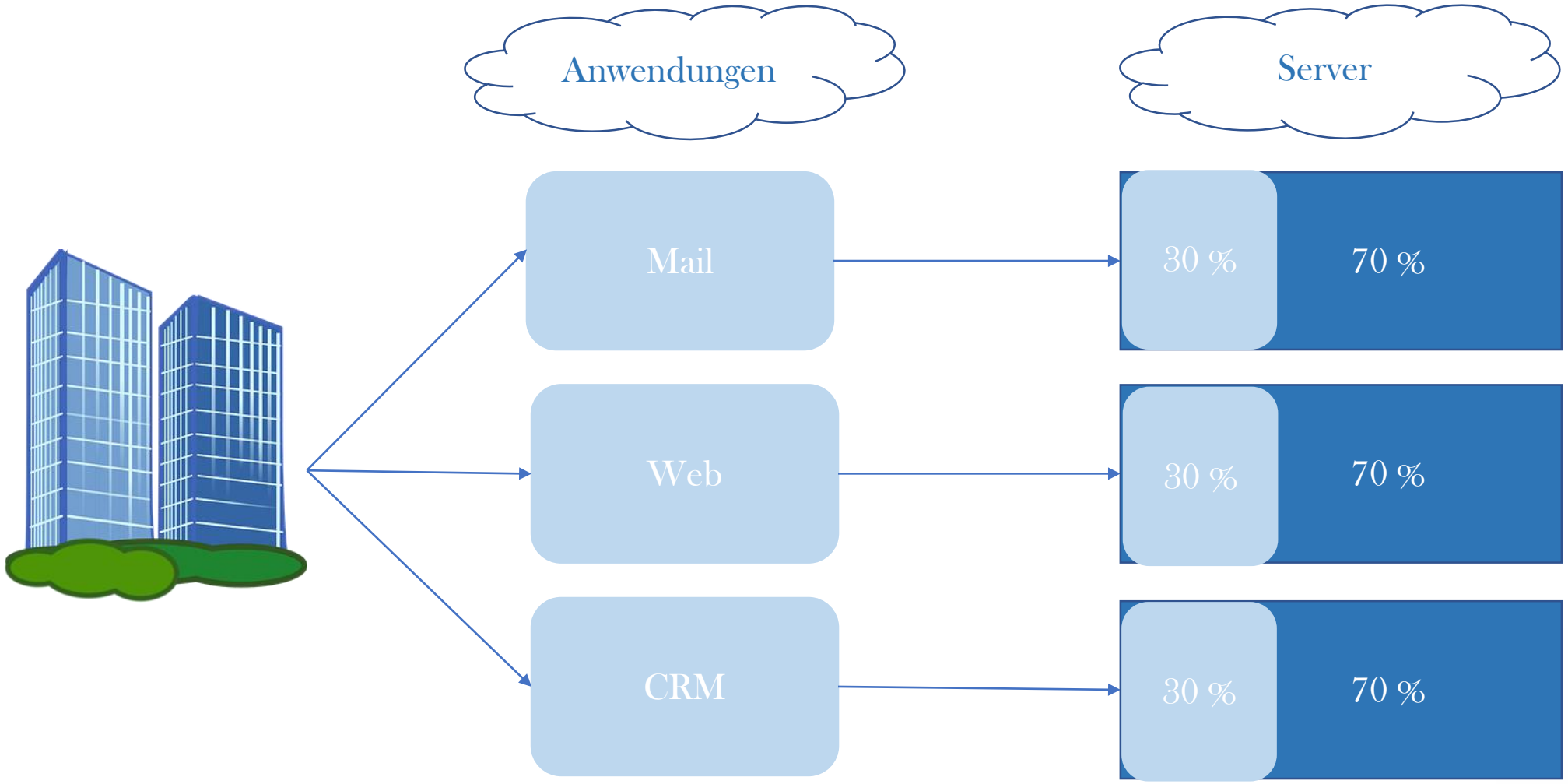
1. VIRTUALISIERUNGSKONZEPT

1.1 ENTSTEHUNG



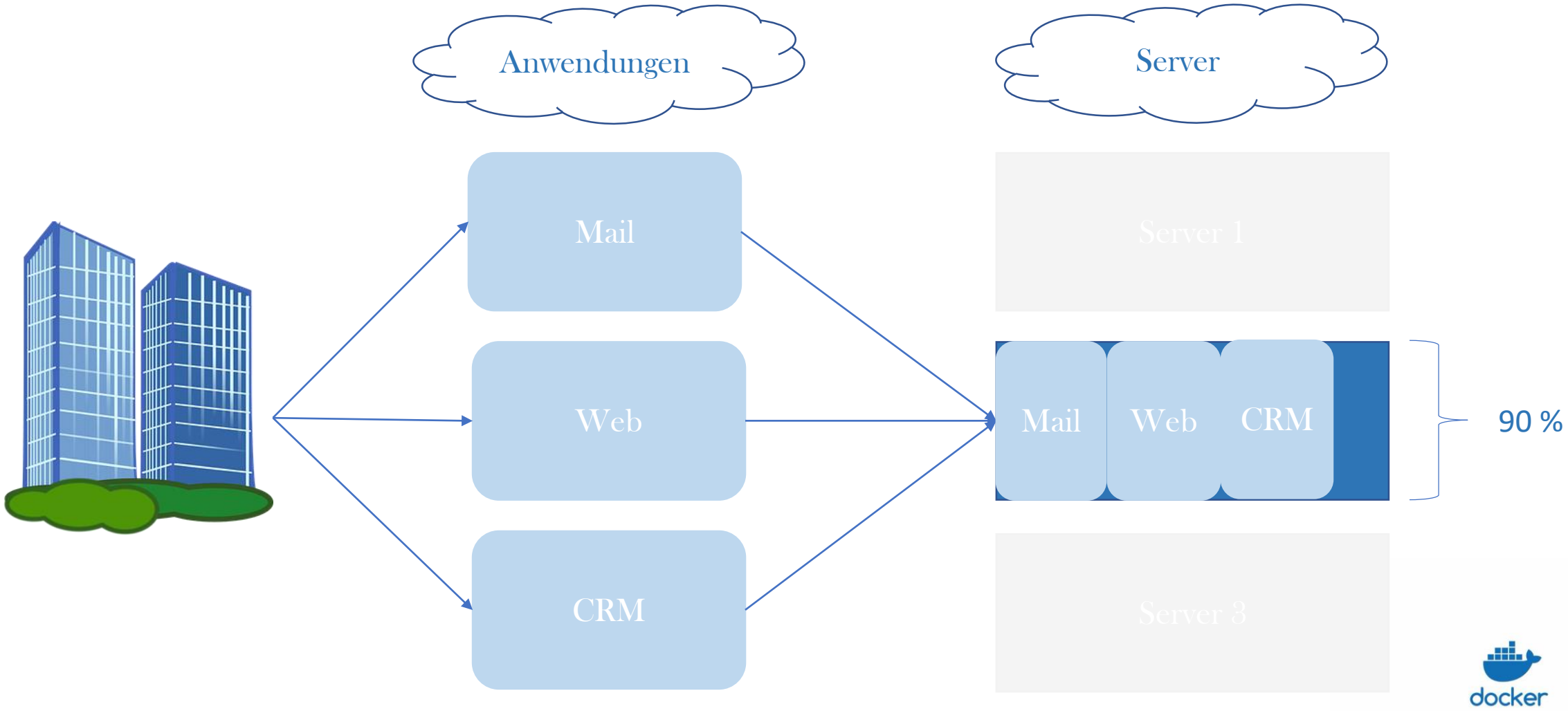
1. VIRTUALISIERUNGSKONZEPT

1.1 ENTSTEHUNG



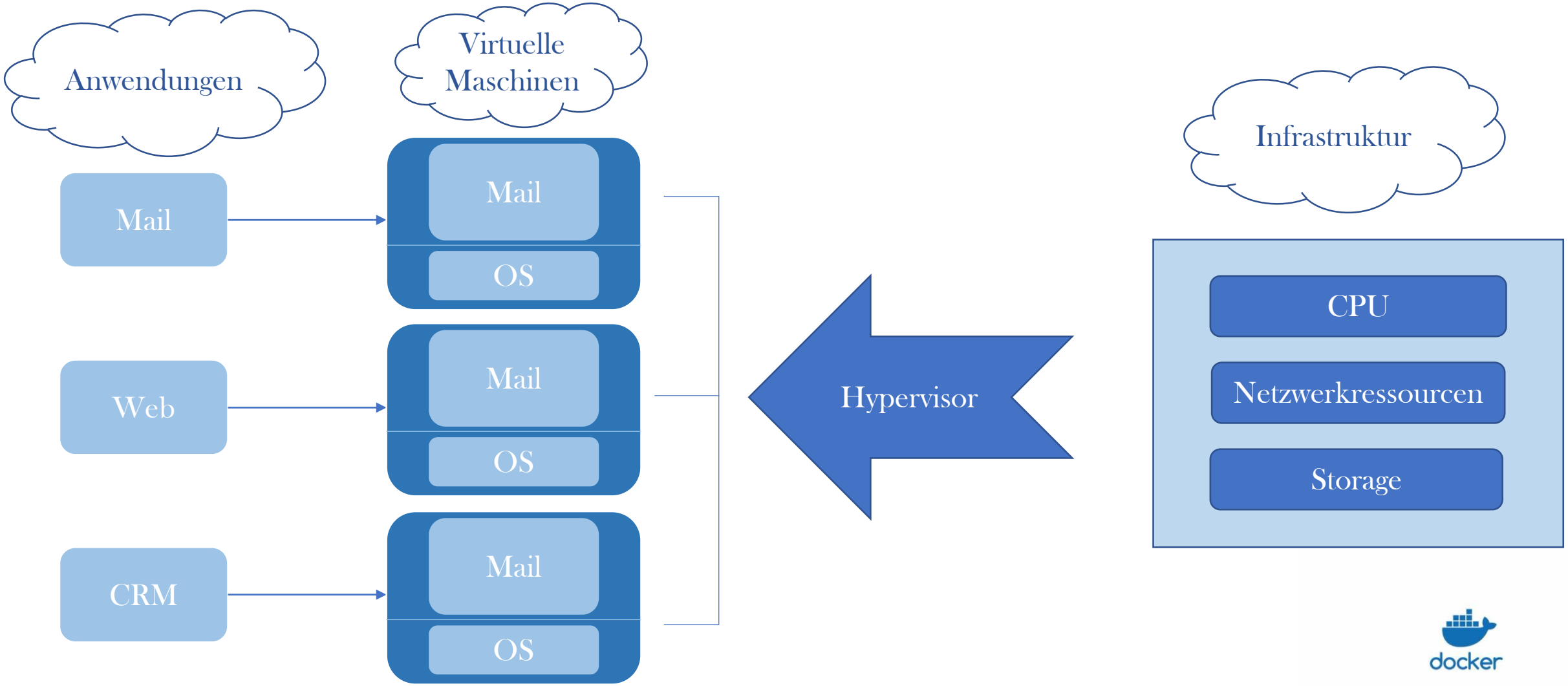
1. VIRTUALISIERUNGSKONZEPT

1.1 ENTSTEHUNG



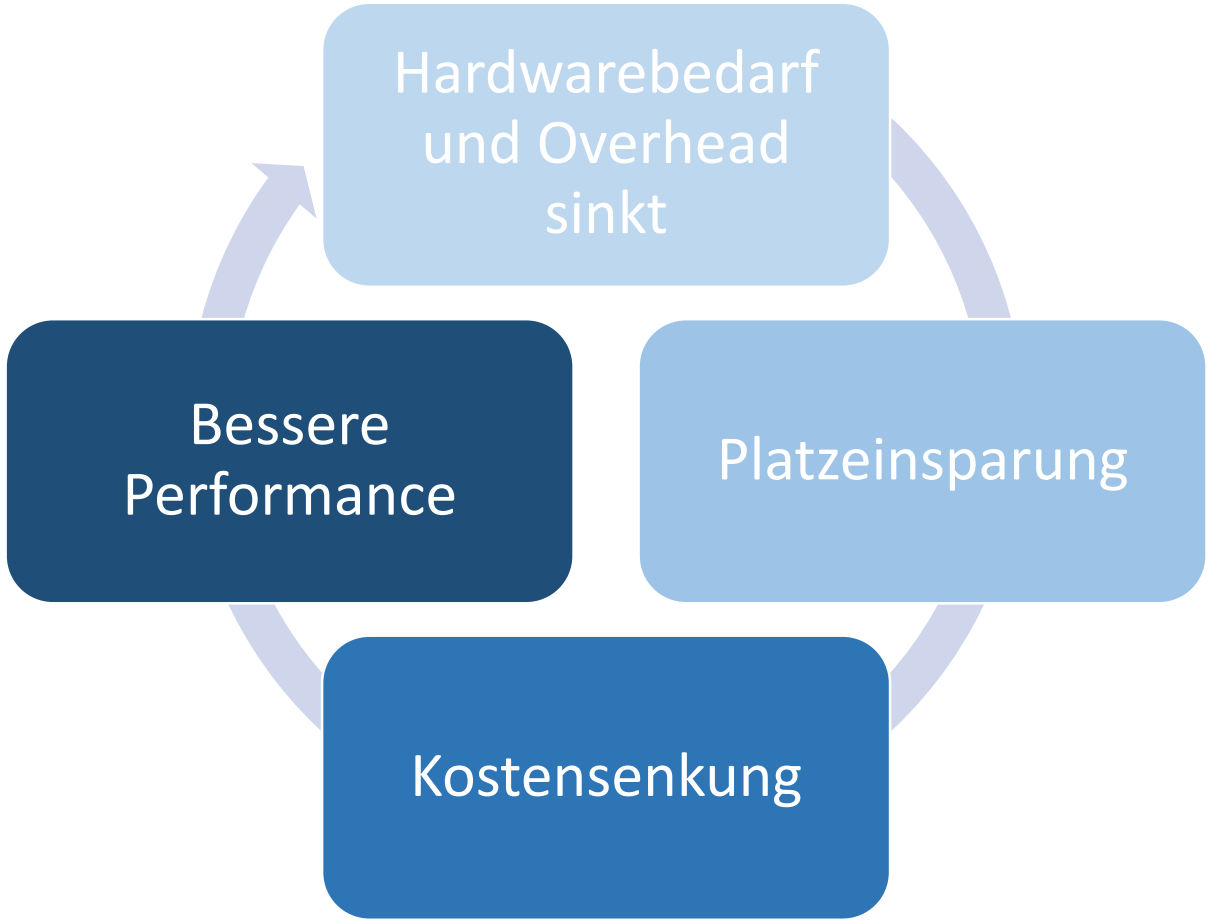
1. VIRTUALISIERUNGSKONZEPT

1.2 VIRTUELLE MASCHINE



1. VIRTUALISIERUNGSKONZEPT

1.3 MEHRWERT

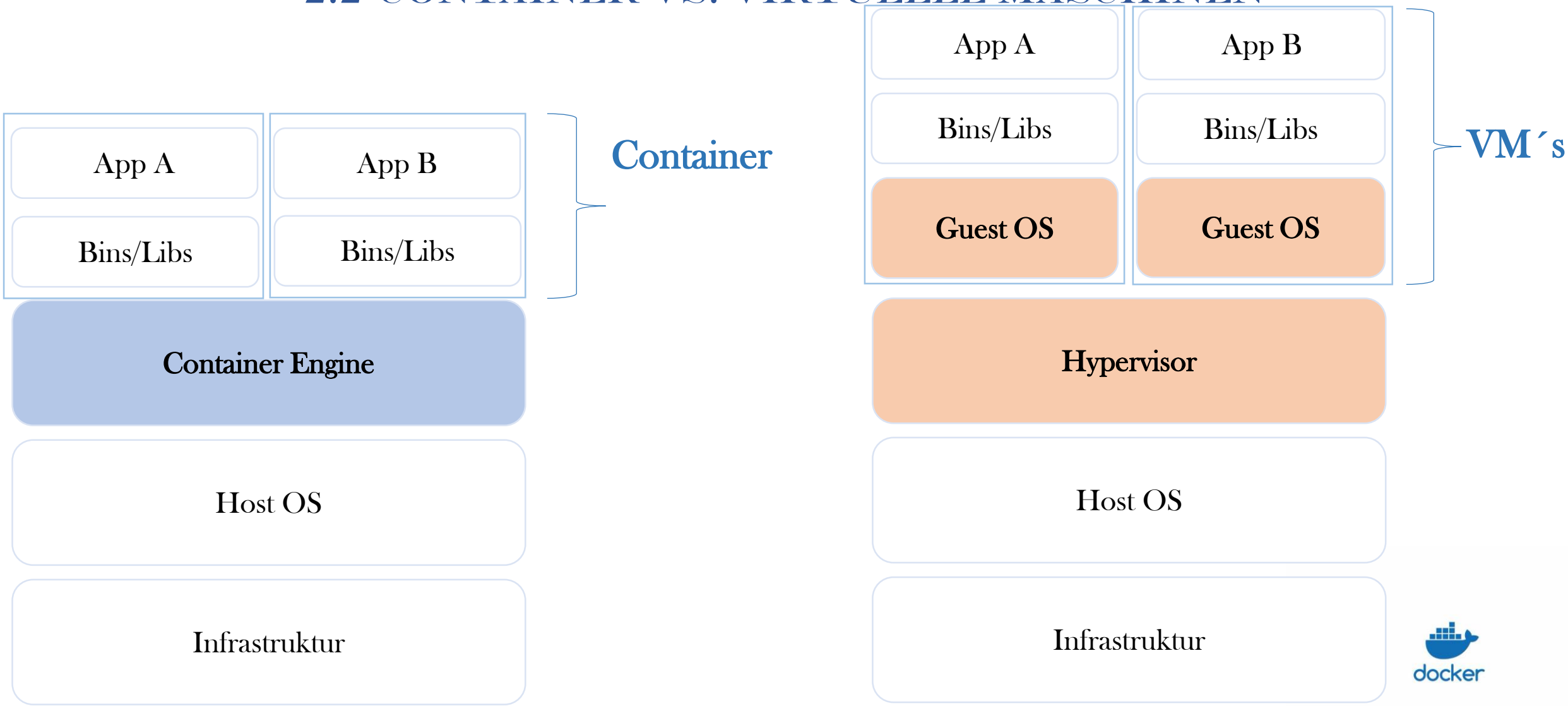


2. SOFTWARECONTAINER

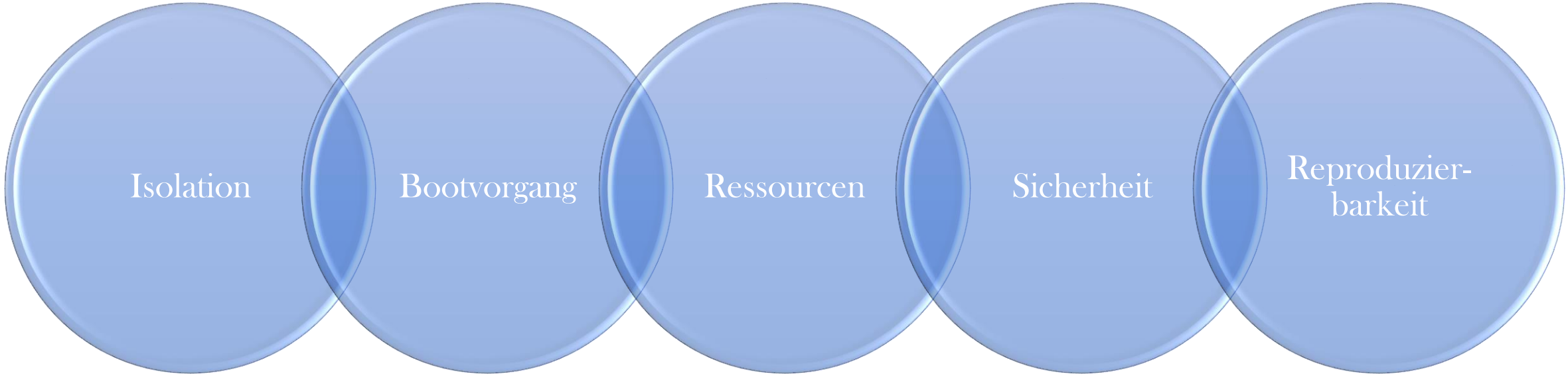
2.1 WAS SIND CONTAINER

2. SOFTWARECONTAINER

2.2 CONTAINER VS. VIRTUELLE MASCHINEN

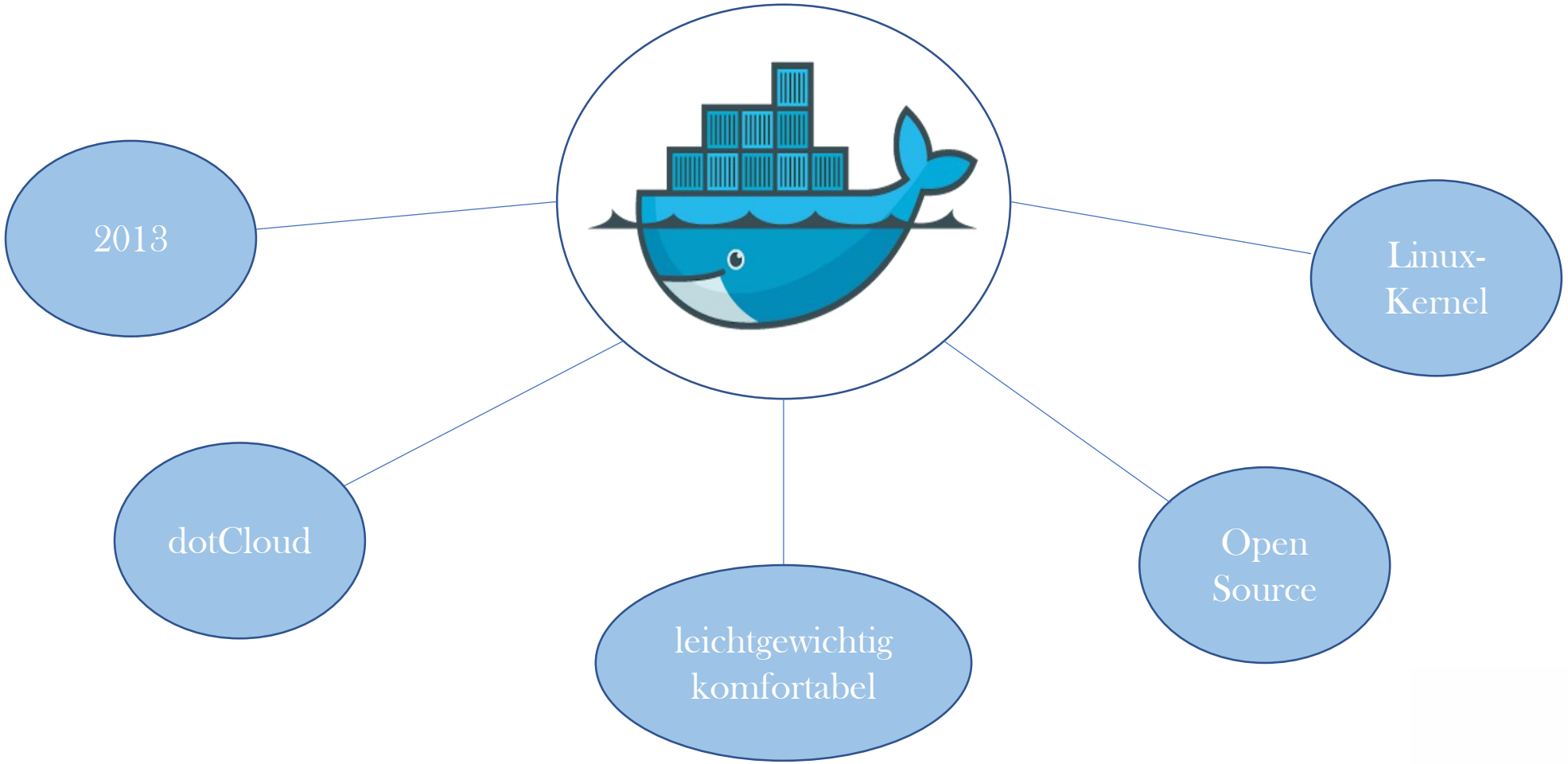


2.2 CONTAINER VS. VIRTUELLE MASCHINEN
2.2.2 UNTERSCHIEDE

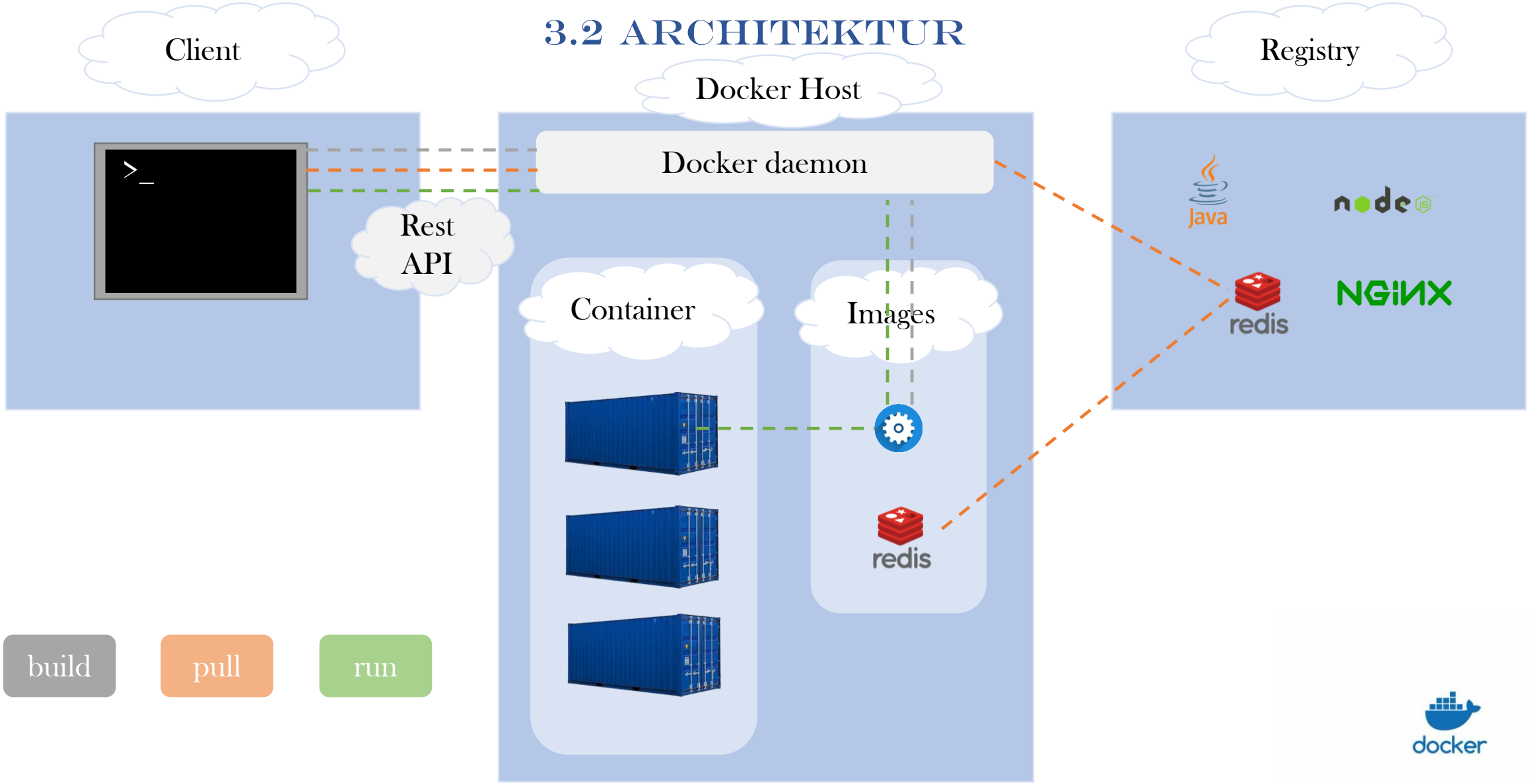


3. DOCKER

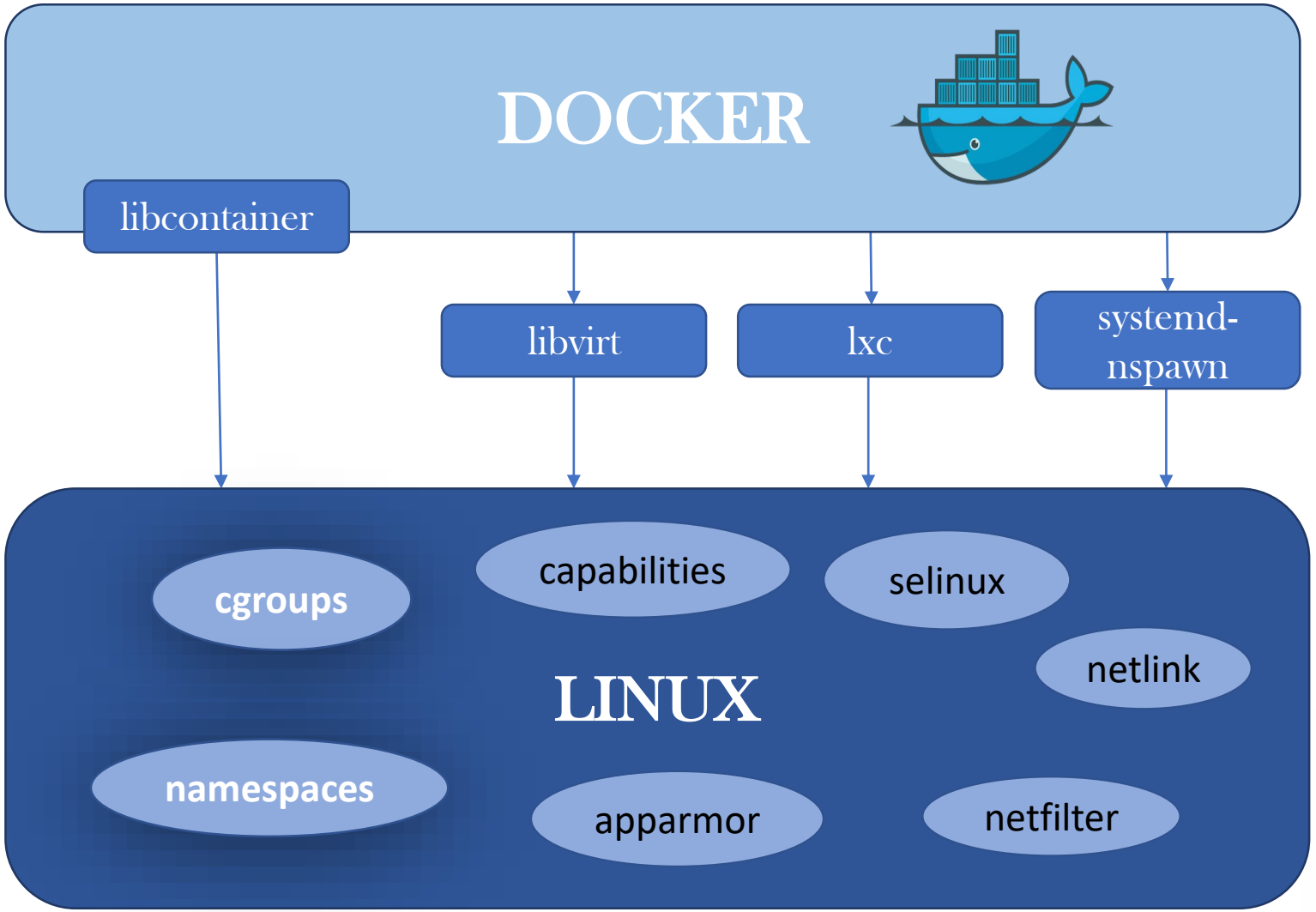
3.1 WAS IST DOCKER

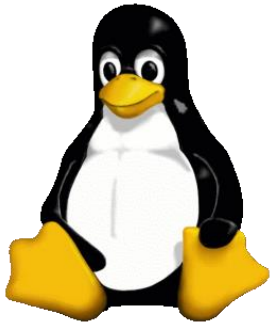


3.2 ARCHITEKTUR



3.2 ARCHITEKTUR



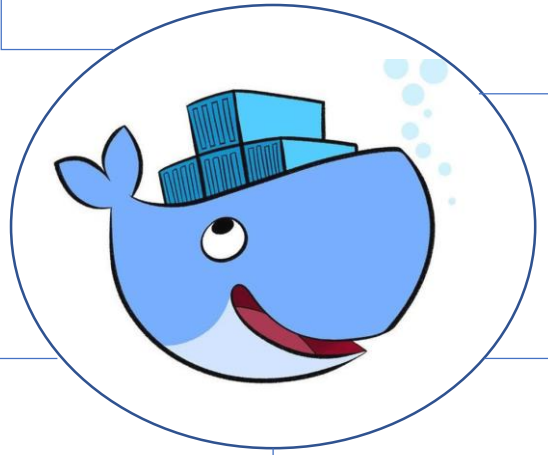


3.3 TERMINOLOGIE

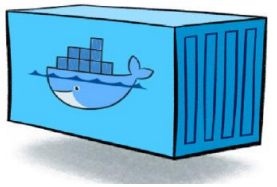
Docker Compose

Docker Image

Docker Volume



Docker Container

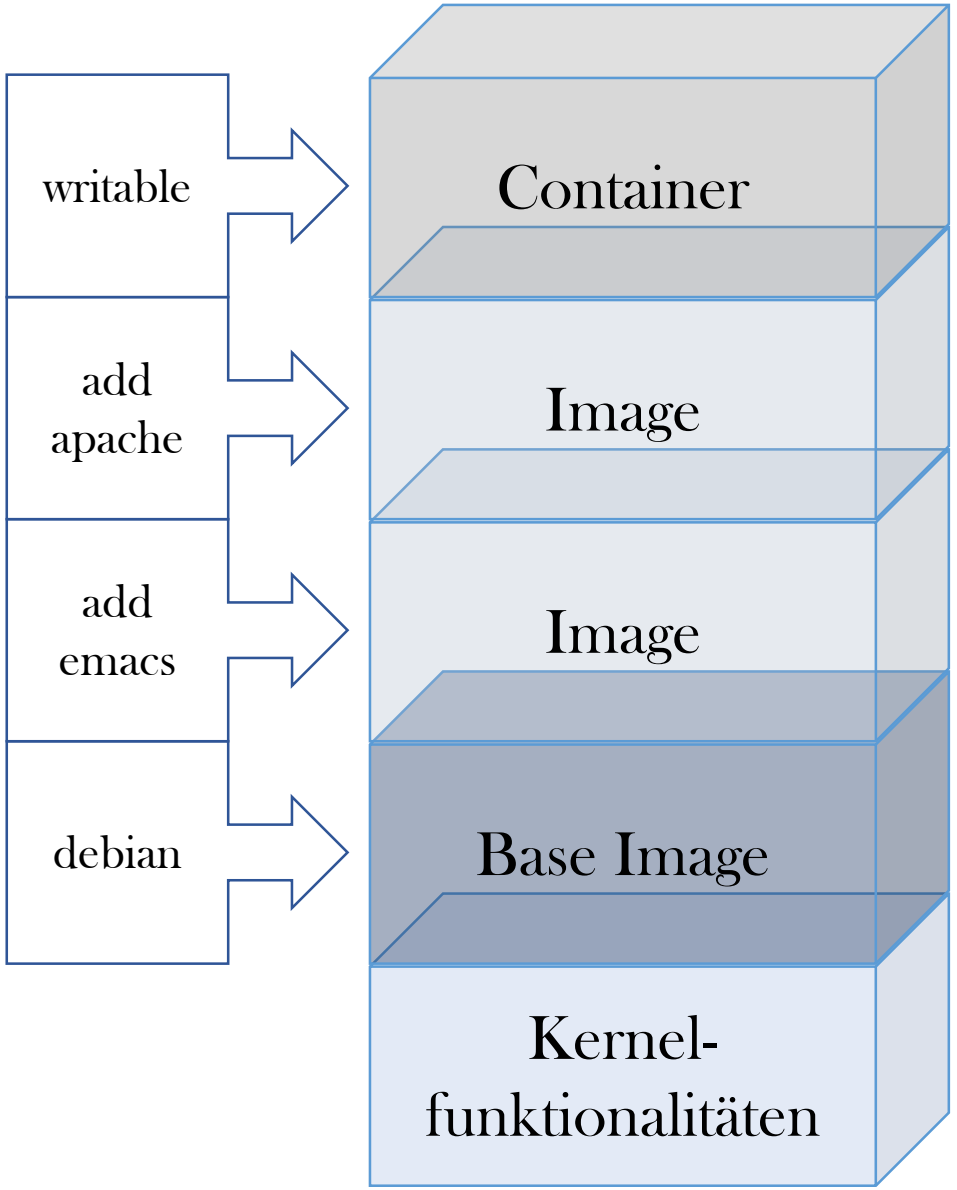


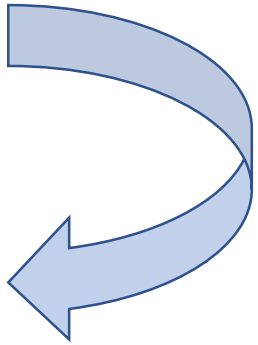
Docker Registry

3. DOCKER

Docker Image

stapelbare Dateisystem





Referenz

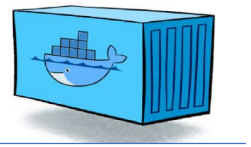
3.3 TERMINOLOGIE

Docker Image

Dockerfile

- FROM
- RUN
- WORKDIR
- USER
- ENV
- ADD
- EXPOSE
- ENTRYPOINT
- CMD
- VOLUME

3.3 TERMINOLOGIE

Docker Container 

- Isoliert voneinander laufende Prozesse
- Starten aus der Image heraus
- docker run
- Vergleich = Objektorientierte Programmierung
- Anwendung + Abhängigkeit

3.3 TERMINOLOGIE

Docker Registry

- Docker Hub
- Cloudbasierte Plattform
- Repository
- Private/Öffentliche Bereiche
- Vergleich = Git Hub

3.3 TERMINOLOGIE

- Persistente Daten
- Speicherschicht
- Mount Points
- Zusatzparameter -v

Docker Volume

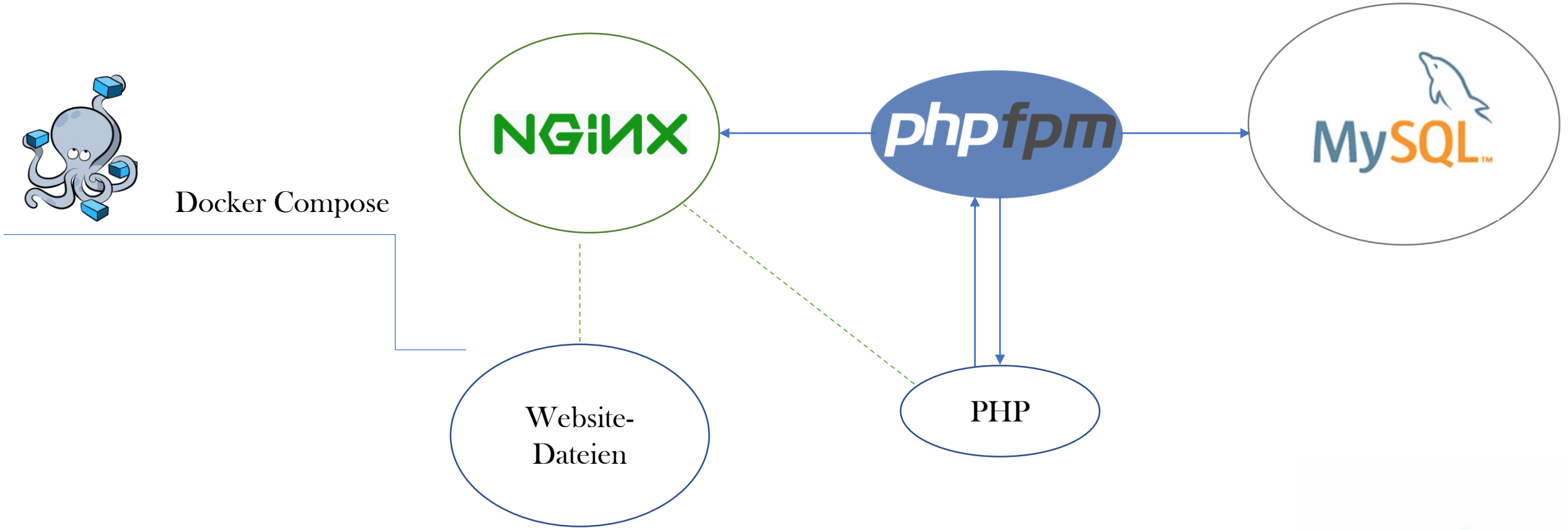
3.3 TERMINOLOGIE

Docker Compose

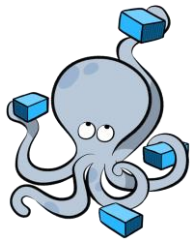
- Tool
- Verwaltung & Verlinkung
- YML

3. DOCKER

3.3. TERMINOLOGIE

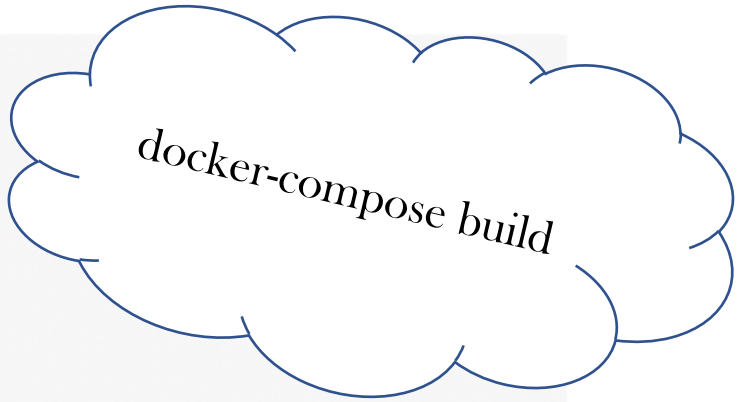


AUFBAU YAML

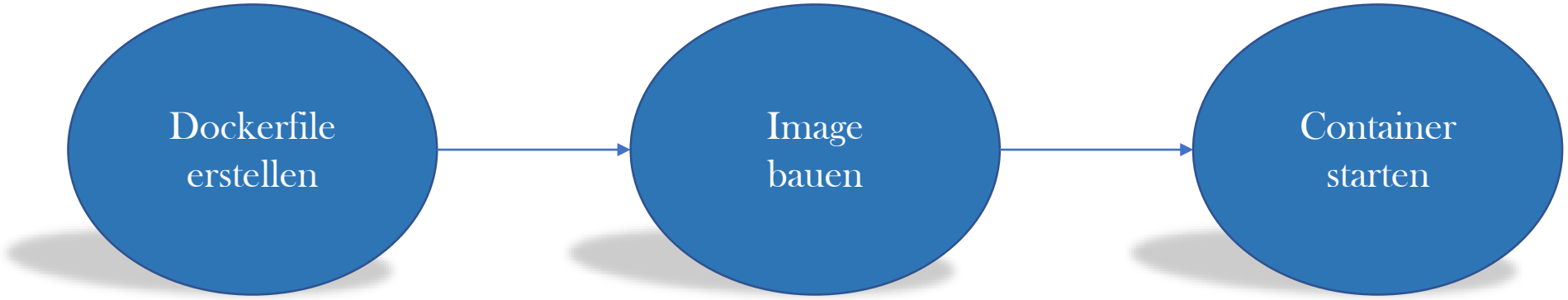


Docker Compose

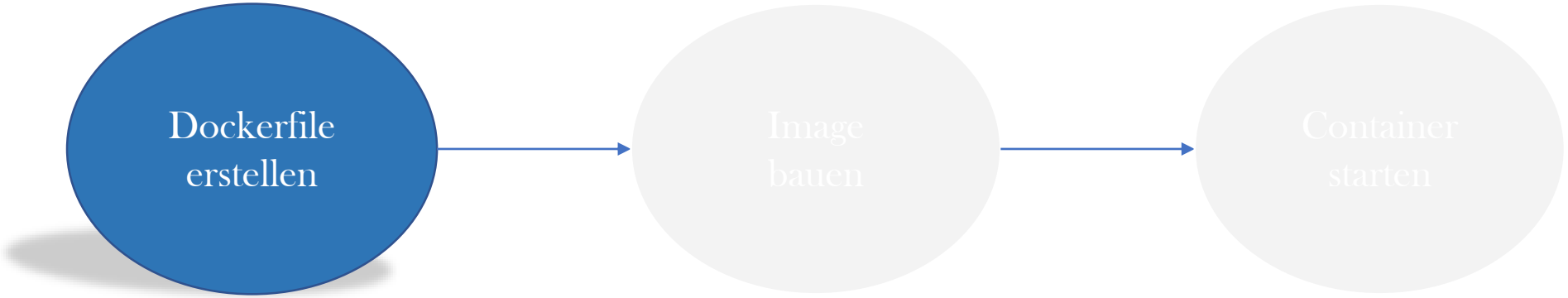
```yaml
version: '3'

services:
  database:
    image: redis
  frontend:
    build: .
    links:
      - database
    environment:
      - SPRING_REDIS_HOST=database
  load-balancer:
    image: dockercloud/haproxy
    links:
      - frontend
    volumes:
      - /var/run/docker.sock:/var/run/docker.sock
    ports:
      - 80:80
```



ANWENDUNGSBEISPIEL



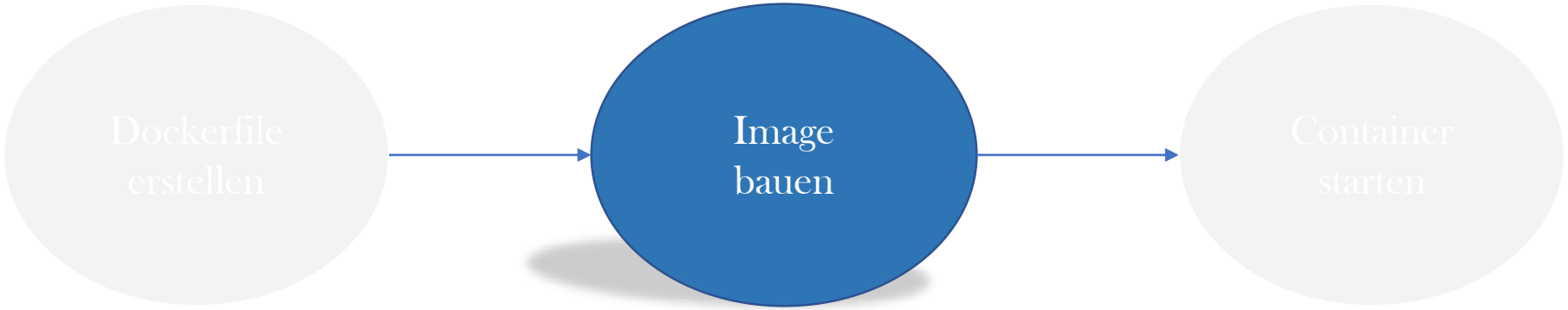
DOCKERFILE ERSTELLEN



Dockerfile

```
1  FROM openjdk:latest
2  ADD target/docker-spring-boot.jar docker-spring-boot.jar
3  EXPOSE 8085
4  ENTRYPOINT ["java", "-jar", "docker-spring-boot.jar"]
5
```

DOCKERFILE ERSTELLEN




```
Luzies-MBP-2:docker-spring-boot luzie$ docker build -f Dockerfile -t spring-boot-app .
Sending build context to Docker daemon  16.39MB
Step 1/4 : FROM openjdk:latest
 ---> c3e386dcd062
Step 2/4 : ADD target/docker-spring-boot.jar docker-spring-boot.jar
 ---> 3b5d8f0b36ca
Step 3/4 : EXPOSE 8085
 ---> Running in c076c5befc4d
Removing intermediate container c076c5befc4d
 ---> 7e1d2ed21d85
Step 4/4 : ENTRYPOINT ["java", "-jar", "docker-spring-boot.jar"]
 ---> Running in b7c67e388dc2
Removing intermediate container b7c67e388dc2
 ---> 8a3fcd44ac2c
Successfully built 8a3fcd44ac2c
Successfully tagged spring-boot-app:latest
```

```
Luzies-MBP-2:docker-spring-boot luzie$ docker images
REPOSITORY                    TAG                 IMAGE ID            CREATED             SIZE
spring-boot-app               latest              8a3fcd44ac2c        40 seconds ago      742MB
```

DOCKERFILE ERSTELLEN


```
Luzies-MBP-2:docker-spring-boot luzie$ docker run -d -p 8085:8085 spring-boot-app
5a7ca7e7b66e98e6dea3432c65ed456222b6564fbfb7dcb0929243eec0bdf89b
```

```
Luzies-MBP-2:docker-spring-boot luzie$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS                    NAMES
5a7ca7e7b66e        spring-boot-app     "java -jar docker-sp…"   About a minute ago   Up About a minute   0.0.0.0:8085->8085/tcp   admiring_euclid
```

http://localhost:8085
/rest/docker/hello

Ich heiße euch herzlich Willkomen zu meiner Präsentation

FAZIT

Geschwin-
digkeit

Einfach

Reichlich
Angebote
an Support
und
Tutorials

Vielen Dank für die Aufmerksamkeit!