

**ERKAN YANAR**

**DOCKER BATTERIES**

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**Consulting**

**Training**



GALERA  CLUSTER

The Galera logo consists of a stylized orange 'G' made of dots, followed by the text "CLUSTER" in a grey sans-serif font.

MariaDB

The text "MariaDB" is written in a brown, serif font.

**LXC**

The text "LXC" is written in a bold, black, sans-serif font.

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codership





**OPEN  
RHEIN  
RUHR**  
Ein Pott voll Software



openstack™  
D A CH e.V.



committer  
conf



**iX OpenStack Tag**  
Die iX Konferenz am 15. April 2015

Eine Veranstaltung von



**DOAG**  
Konferenz + Ausstellung

**DOCKER DOCKER  
BATTERIES**

# DAS IST DOCKER

- Ein Applikations-Virtualisierer
- Einsam auf der HostInsel
- Ohne Infrastruktur

# WAS IST MIT:

- Bidirektionale Kommunikation?
- Multi Host Cluster?
- Orchestrierung?
- Service Discovery?
- Persistenzlayer Management?



# TOPICS

- Docker Volume
- Docker Network
- Docker Swarm
- Docker Compose

# DOCKER VOLUME



# EXPLIZITES ERSTELLEN

```
docker volume create -name storage
docker run --rm -v storage:/srv -ti ubuntu
docker run --rm -v storage:/srv -ti ubuntu
docker run --rm -v storage2:/srv application
```

# DOCKER 1.11

- mount Optionen (man mount)

```
docker volume create \  
--driver local\  
--opt type=btrfs\  
--opt device=/dev/hda\  
name
```

# VOLUME-DRIVER

[https://docs.docker.com/engine/extend/plugin\\_api/](https://docs.docker.com/engine/extend/plugin_api/)

```
docker run -it --volume-driver=rbd --volume foo:/mnt/foo image
```

# DOCKER NETWORK

- Docker 1.9
- libnetwork
- MultiHost Container Netzwerk
- Bi- vs. unidirektional
- Ab 1.11 DNS RoundRobin
- Poor man's Service-Discovery

# GRUNDIDEE

- KV
- Docker Daemons melden sich am KV an



# KV

```
docker run --rm -p 8500:8500 gliderlabs/consul-server  
-data-dir=/tmp -bind=0.0.0.0 -bootstrap
```

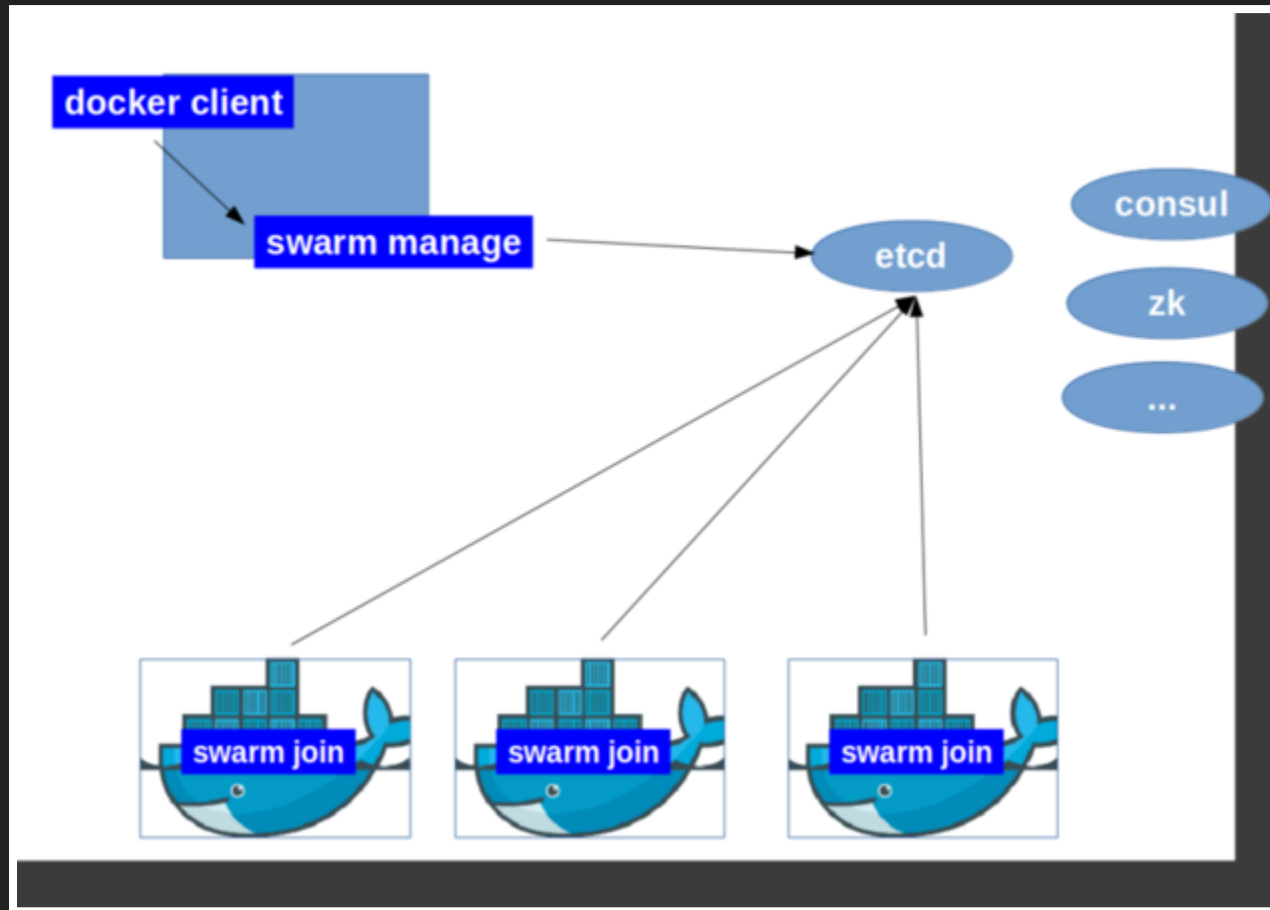
# ANMELDUNG

```
docker daemon -H tcp://0.0.0.0:2375 \  
-H unix:///var/run/docker.sock \  
--cluster-store=consul://$CONSUL_IP:8500 \  
--cluster-advertise=eth0:2375
```

# ZEIGEN

- Bidirektional
- Service Discovery/net-alias

# DOCKER SWARM



# DOCKER SWARM

- Grundidee von Network
- KV
- Daemons melden sich an
- Swarm "Proxy" liest KV aus

\o/

(Ja geht auch ohne KV)

# ANMELDUNG

```
docker [-H tcp://192.168.99.102:2375] run -d --restart always \  
swarm join consul://192.168.99.100:8500/cluster \  
--addr=192.168.99.102:2375 --heartbeat 10s
```

# PROXY/MANAGER

```
docker run --rm -p 4000:2375 swarm manage \  
consul://192.168.99.100:8500/cluster
```

# LABELS

- Von Labels
- Von Rescheduling?

```
docker daemon --label zone=dmz
```

```
docker -H IP:4000 run --label deploy=green\  
-e reschedule:on-node-failure --name www nginx
```

```
docker ps --filter label=deploy=green
```



# SWARM CONSTRAINTS

```
docker run -d -e constraint:zone==dmz nginx  
docker run -d -e constraint:node!=node1 nginx
```

# SWARM AFFINITY

```
docker run -d -e affinity:container==mysql ..  
docker run -d -e affinity:container!=logstash ..  
docker run -d -e affinity:image==~mysql ..  
docker run -d -e affinity:deploy==blue ..
```

# DOCKER-COMPOSE

- Orchestration Tool
- version 2
- Wer kennt Version 1?

net-alias zeigen!

# SWARMKIT

- Neu
- Antwort auf Kubernetes?
- Integrierter KV
- Early

# SWARMKIT

Zeigen \* node \* services \* drain

```
swarmctl create service --name hallo --image nginx  
swarmctl service update hallo --instances 4
```

# FIN

Homepage

Xing