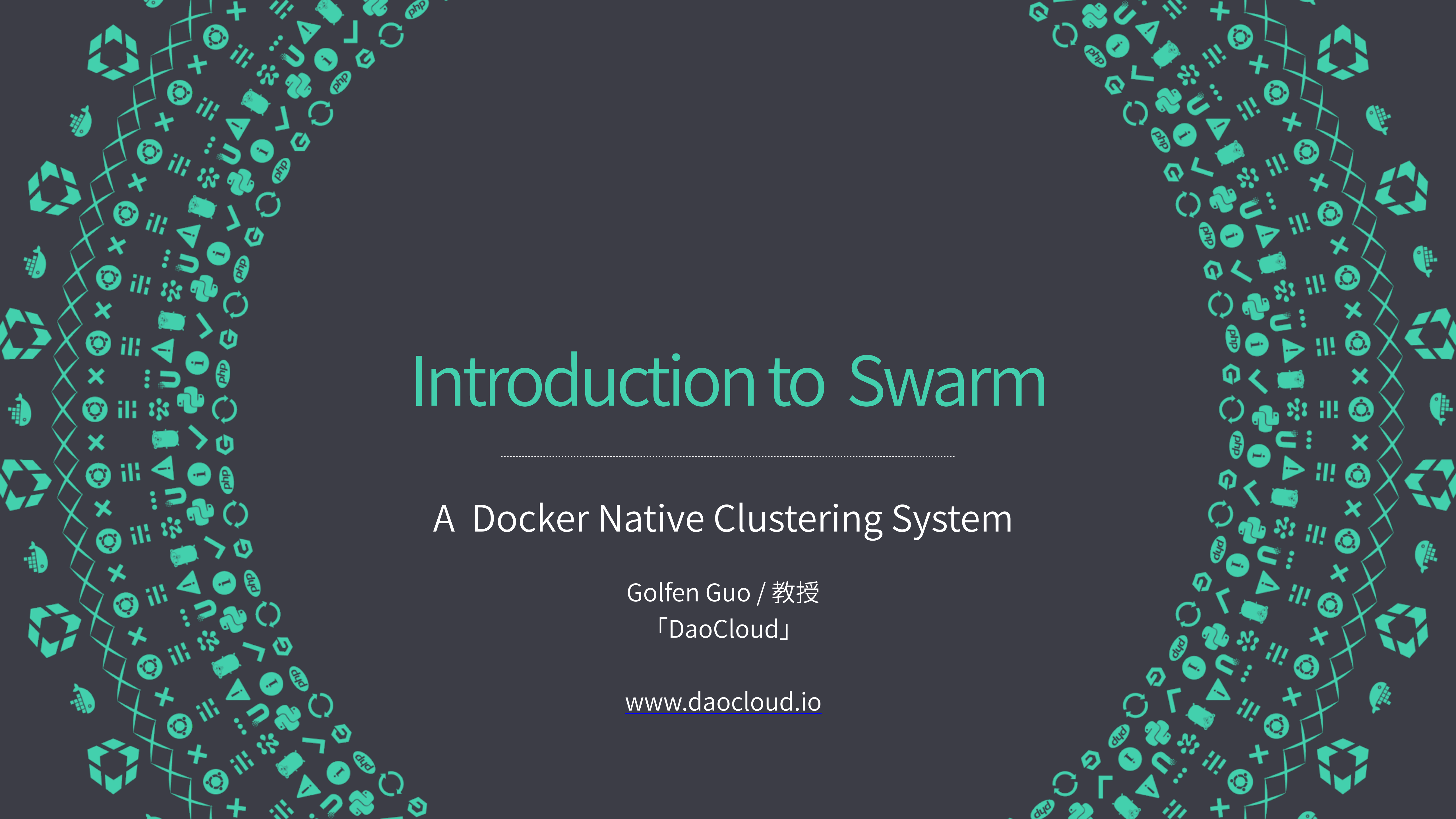


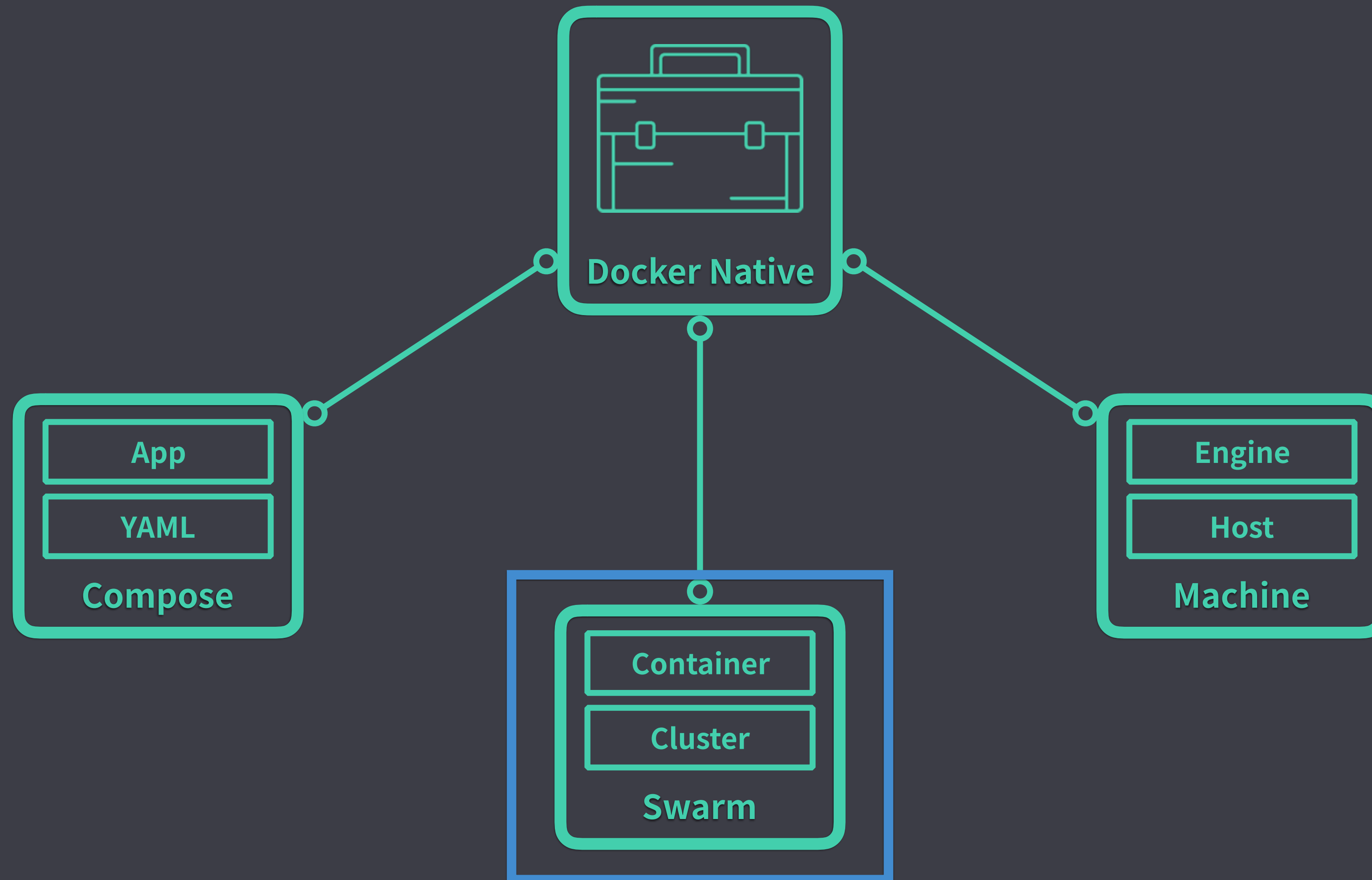


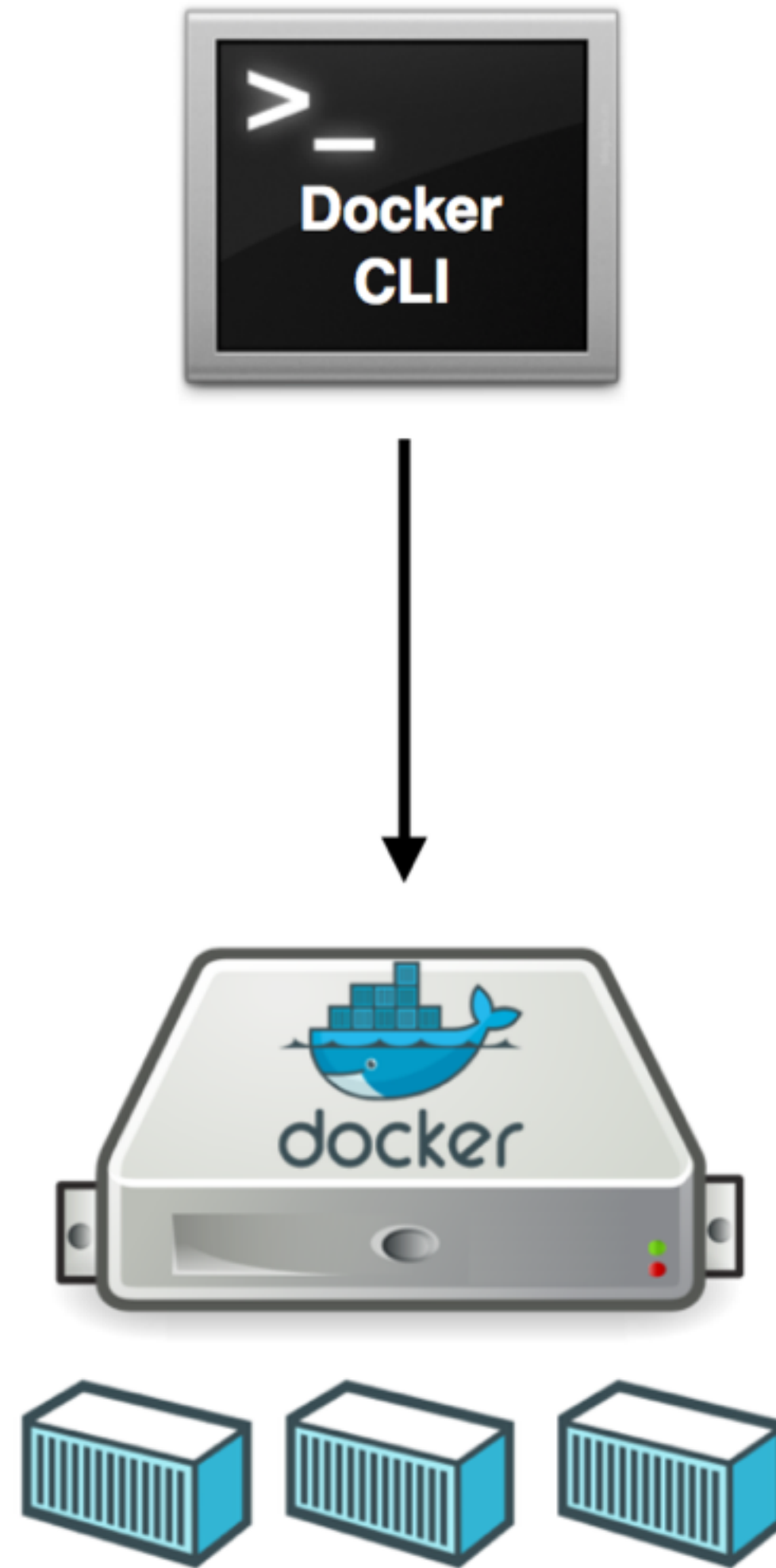
Introduction to Swarm

A Docker Native Clustering System

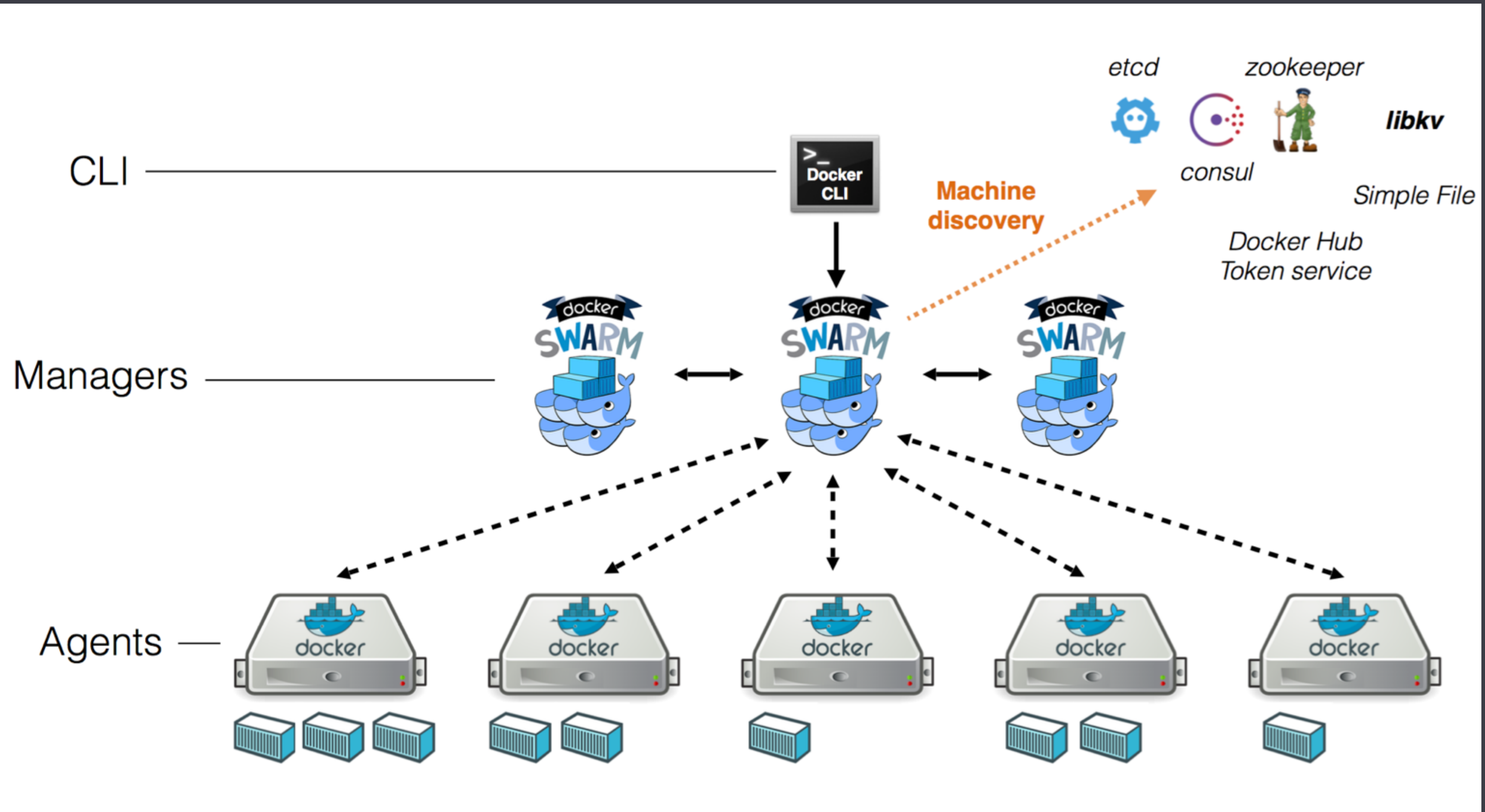
Golfen Guo / 教授
「DaoCloud」

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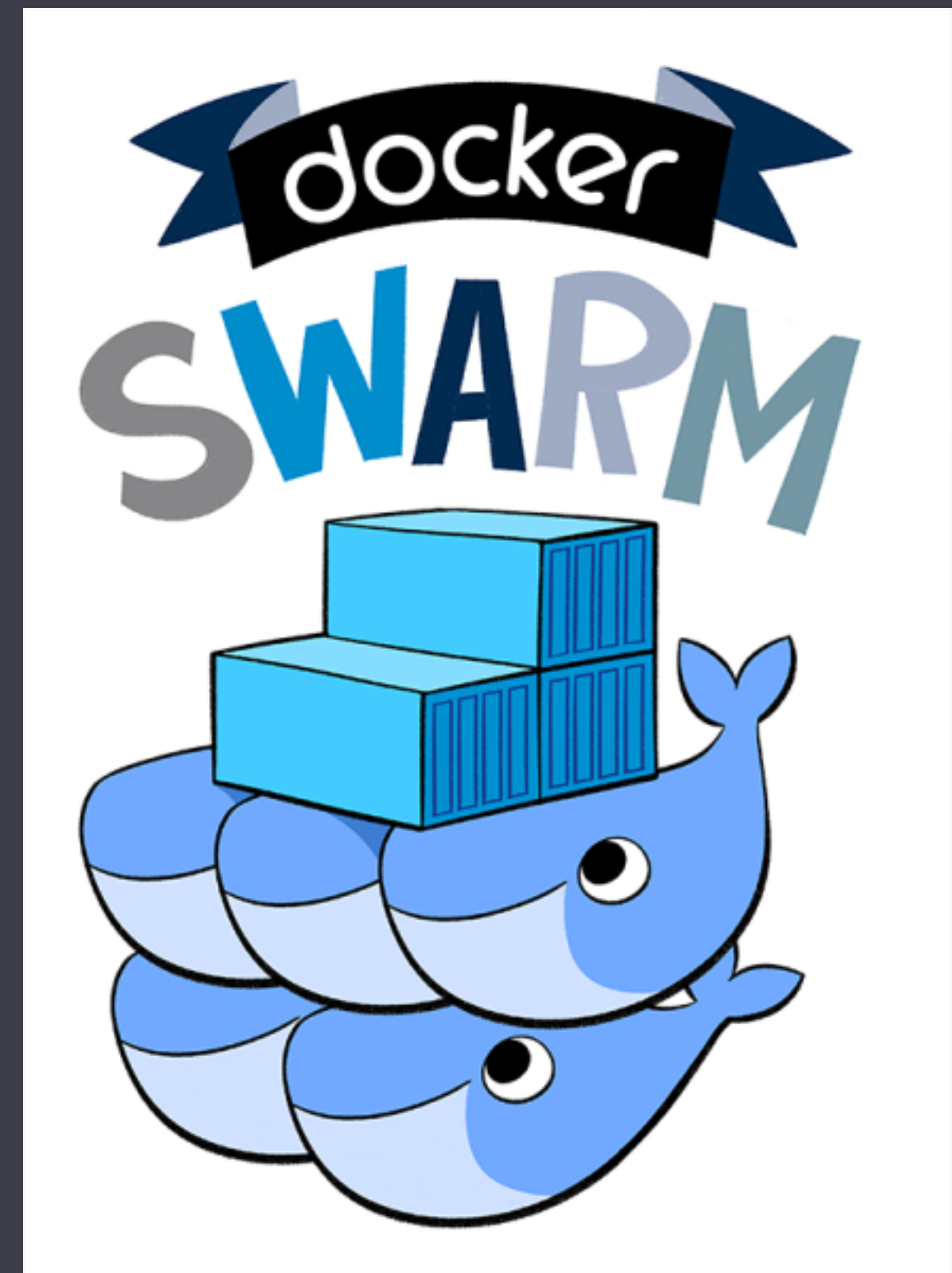


多机 Docker 环境 = Swarm

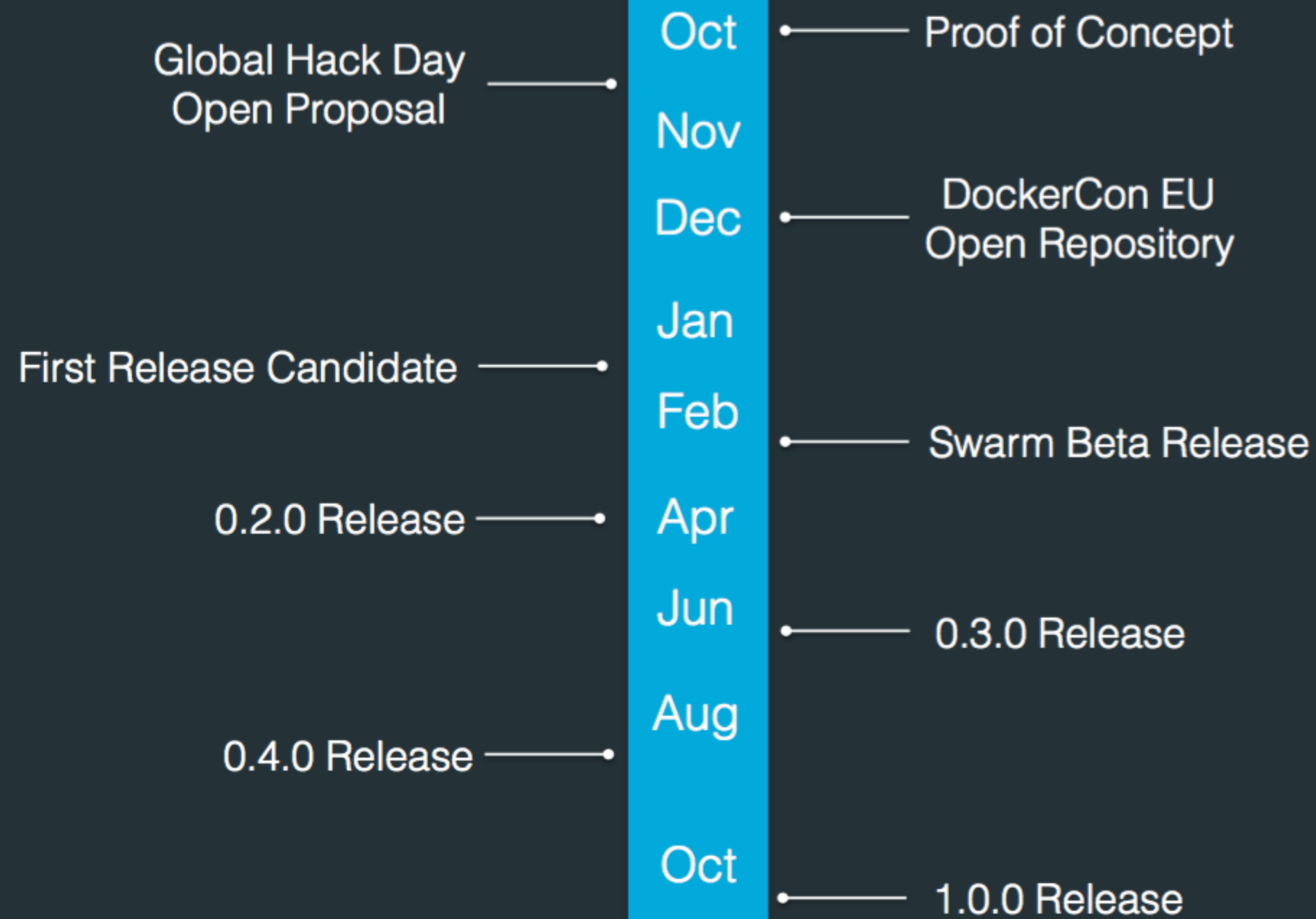


什么是 Swarm

- 多容器主机的资源池
- 支持 Docker REST API (99%)
- 资源管理 (CPU、Mem、Networking)
- 容器调度
- 节点服务发现
- 安全和验证
- 多租户



Swarm 1.2.0 NOW!



创建一个 Swarm 集群

- 启动 Swarm Manager

```
docker run -d swarm manage token://<token>
```

- 启动 Swarm Node

```
docker run -d swarm join token://<token>
```

- Let's Play!

```
$ DOCKER_HOST=<manager_ip>
```

```
docker run -d hello-world
```

```
docker ps
```

- DockerHub 内置服务发现
- KV 分布式存储系统
etcd, Consul, ZooKeeper ...
- 静态配置

- Constraints

约束过滤器：操作系统类型、内核版本、存储类型等；
自定义约束，通过Label来指定主机特点。

- Affinity

亲和性过滤：容器和镜像亲和性

- Dependency

依赖过滤： **--volume-from/--link/--net**

- Health filter

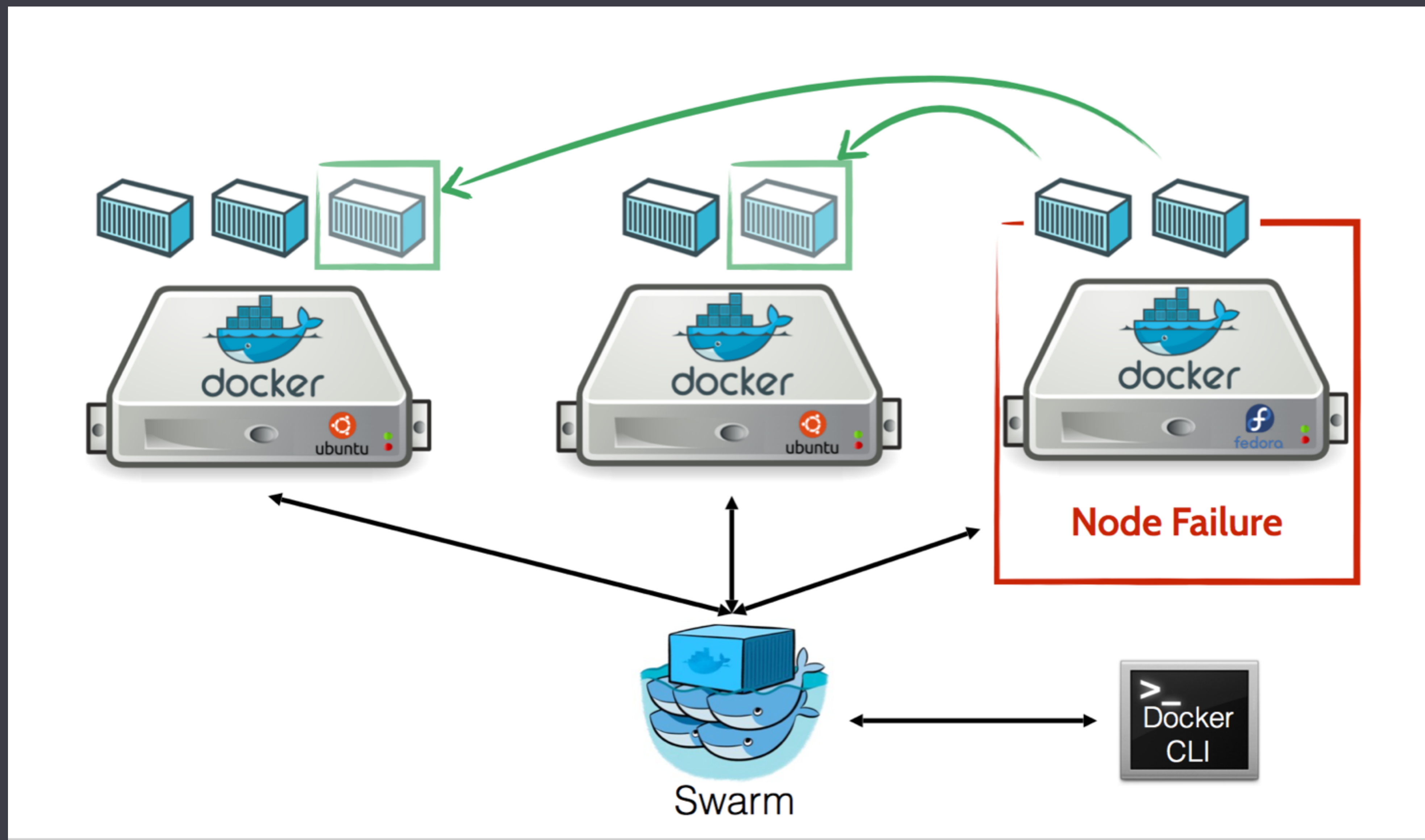
节点状态过滤：去除故障节点。

- Ports filter

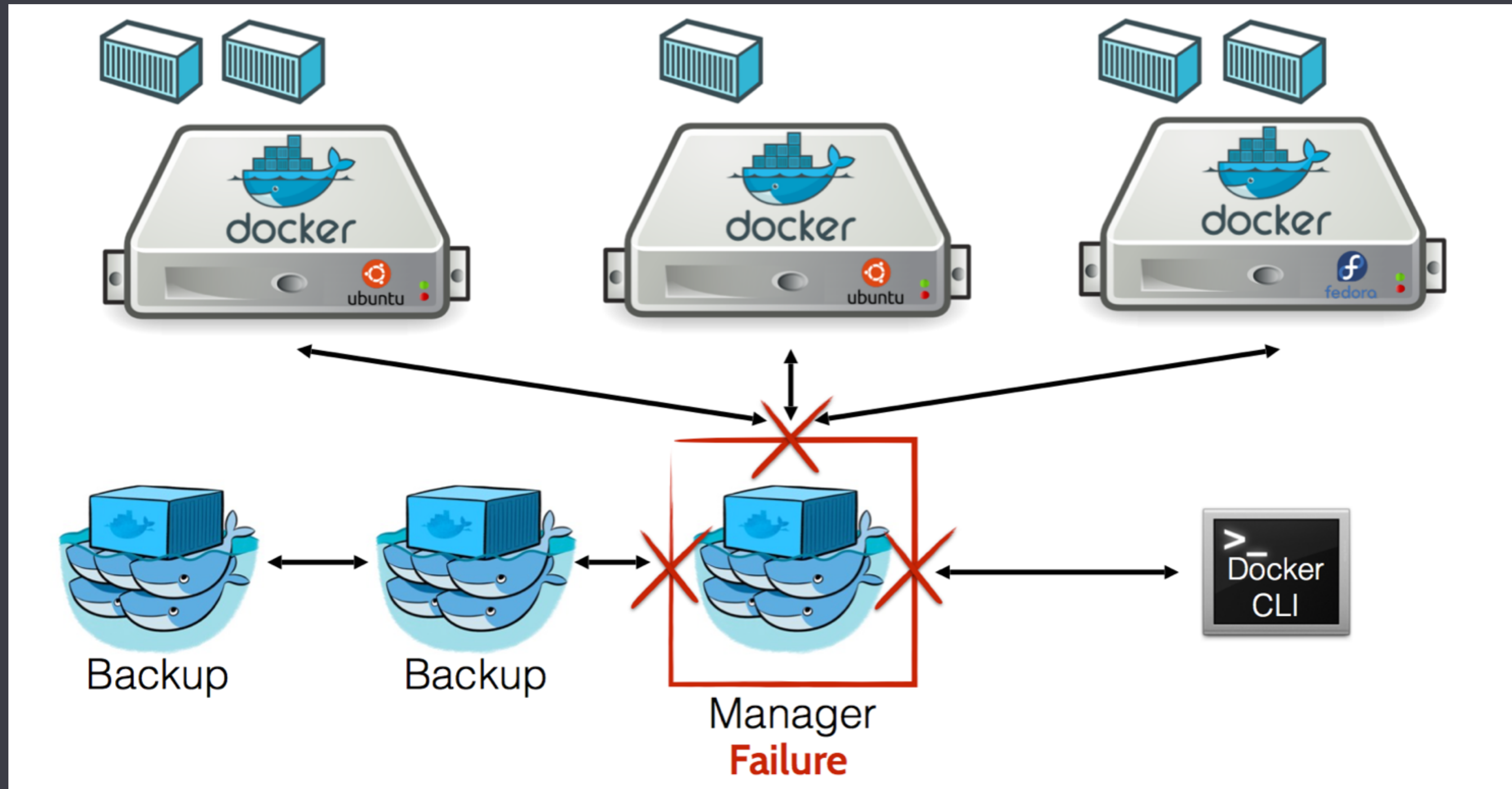
端口现状过滤：会根据端口的使用情况过滤。

- BinPack
- Spread
- Random

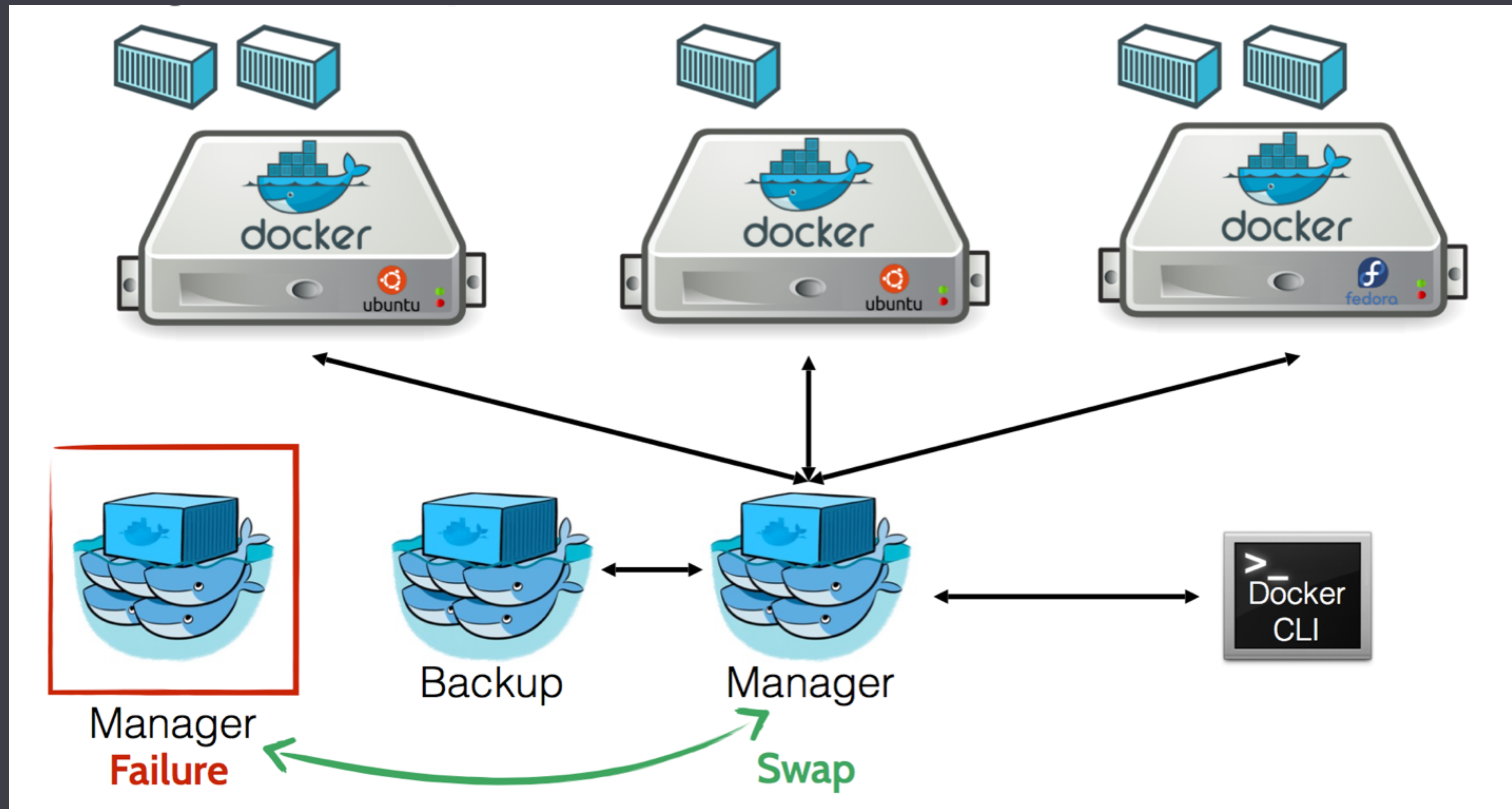
节点错误重新调度

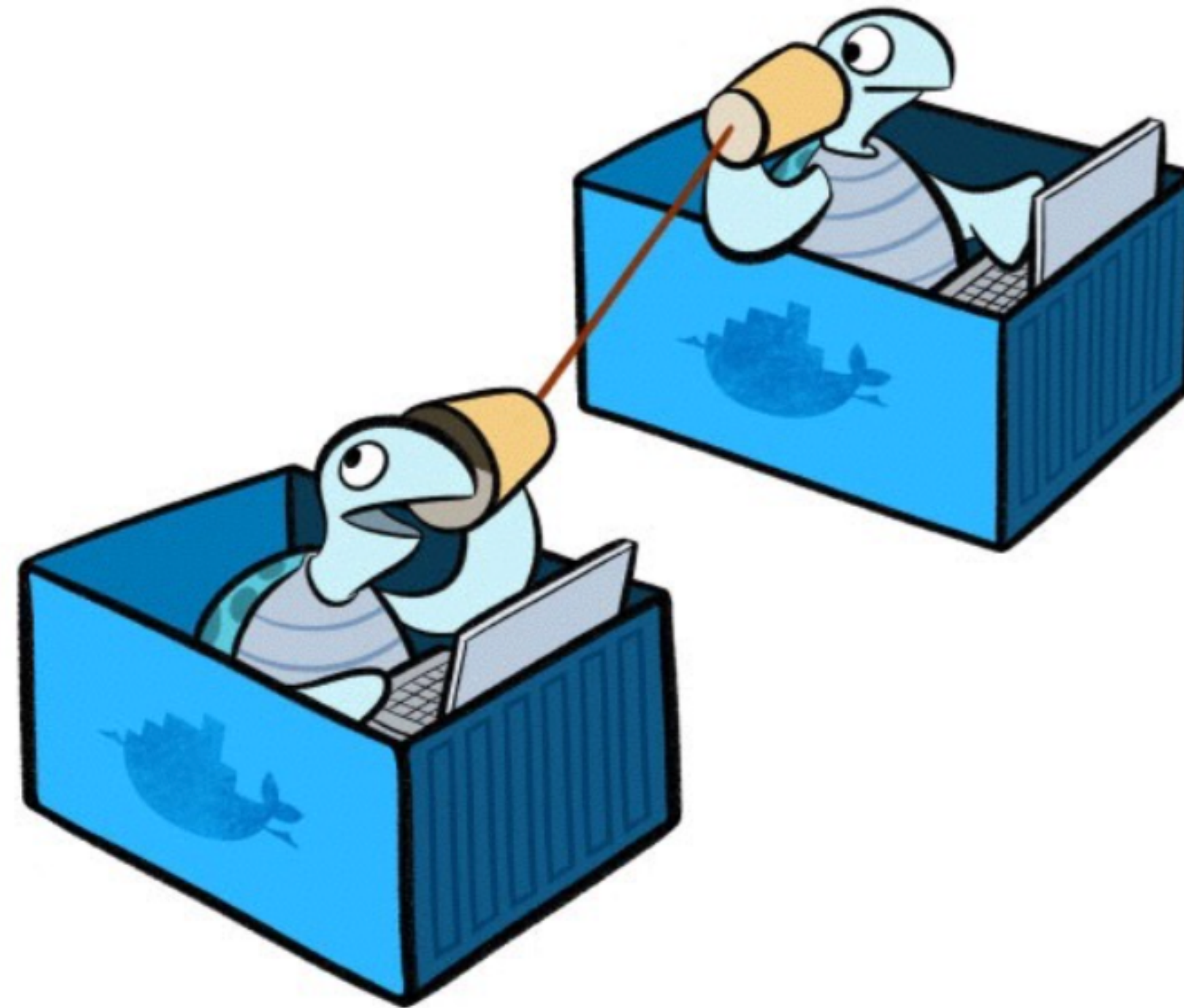


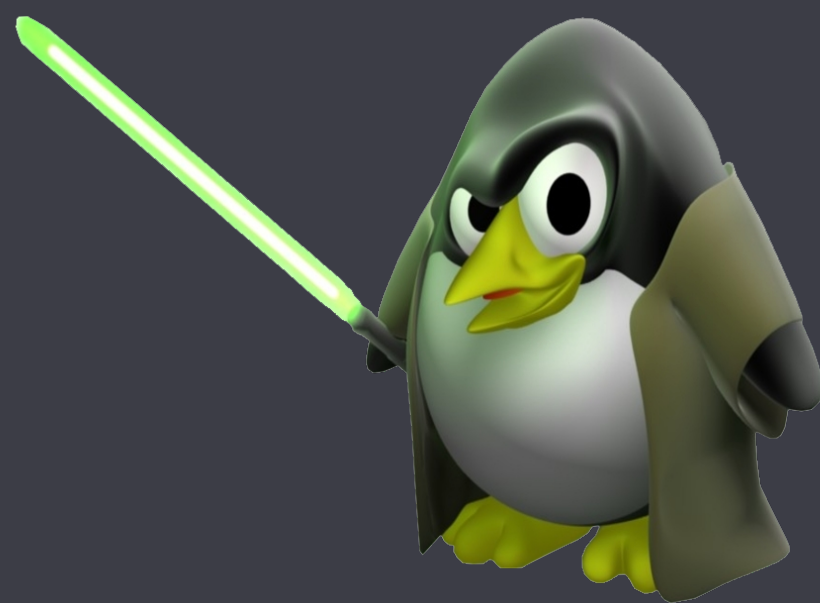
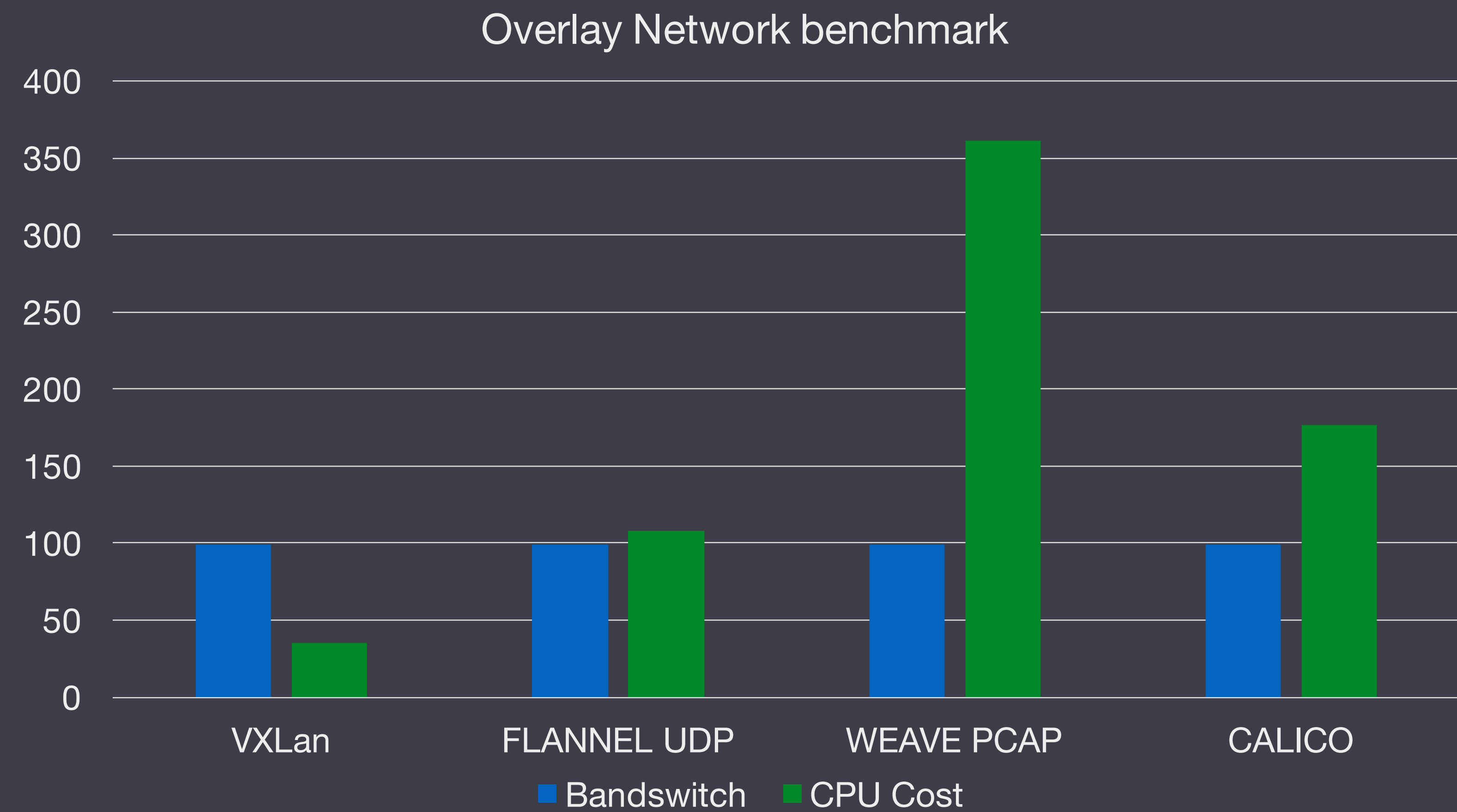
Manager 高可用



Manager 高可用





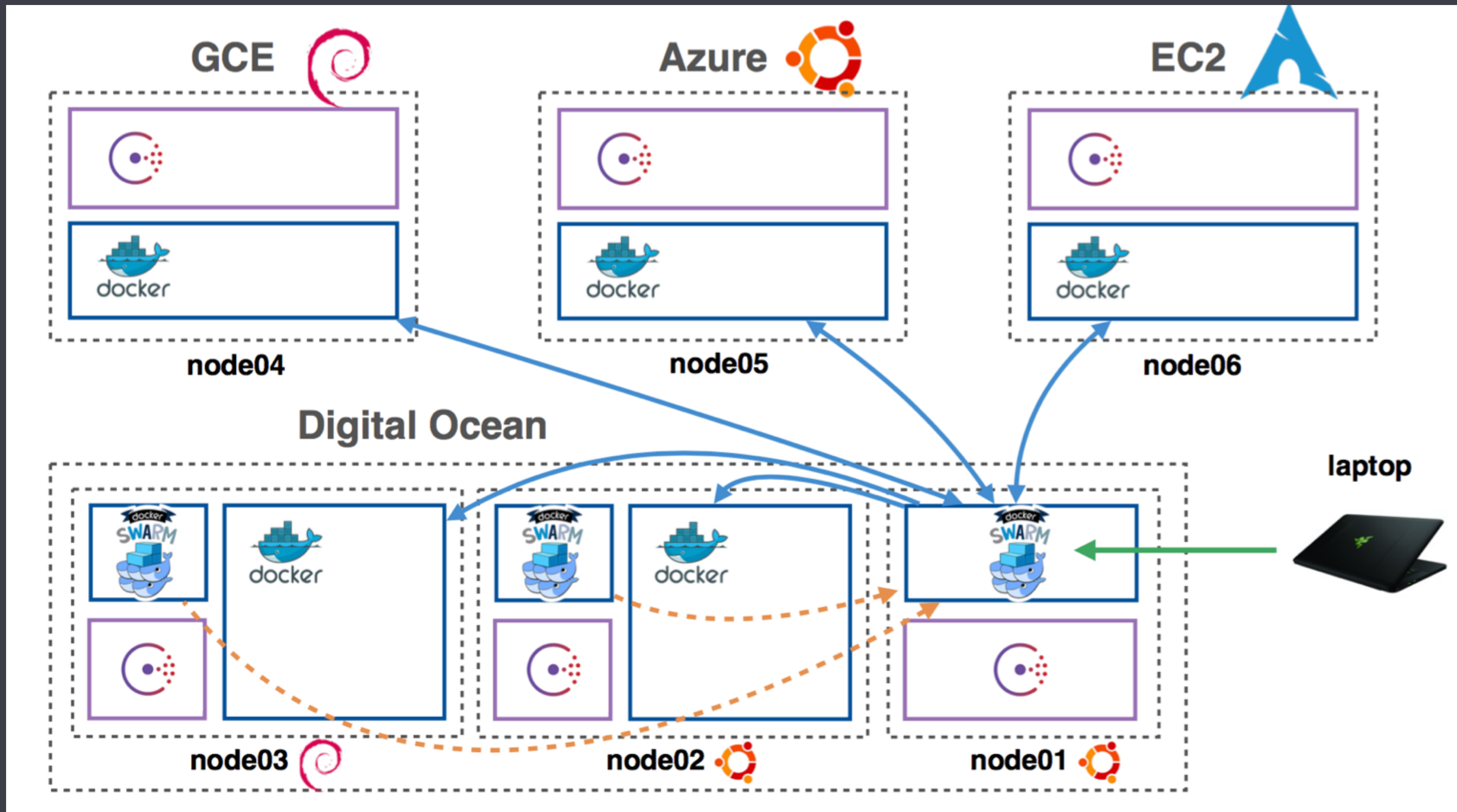


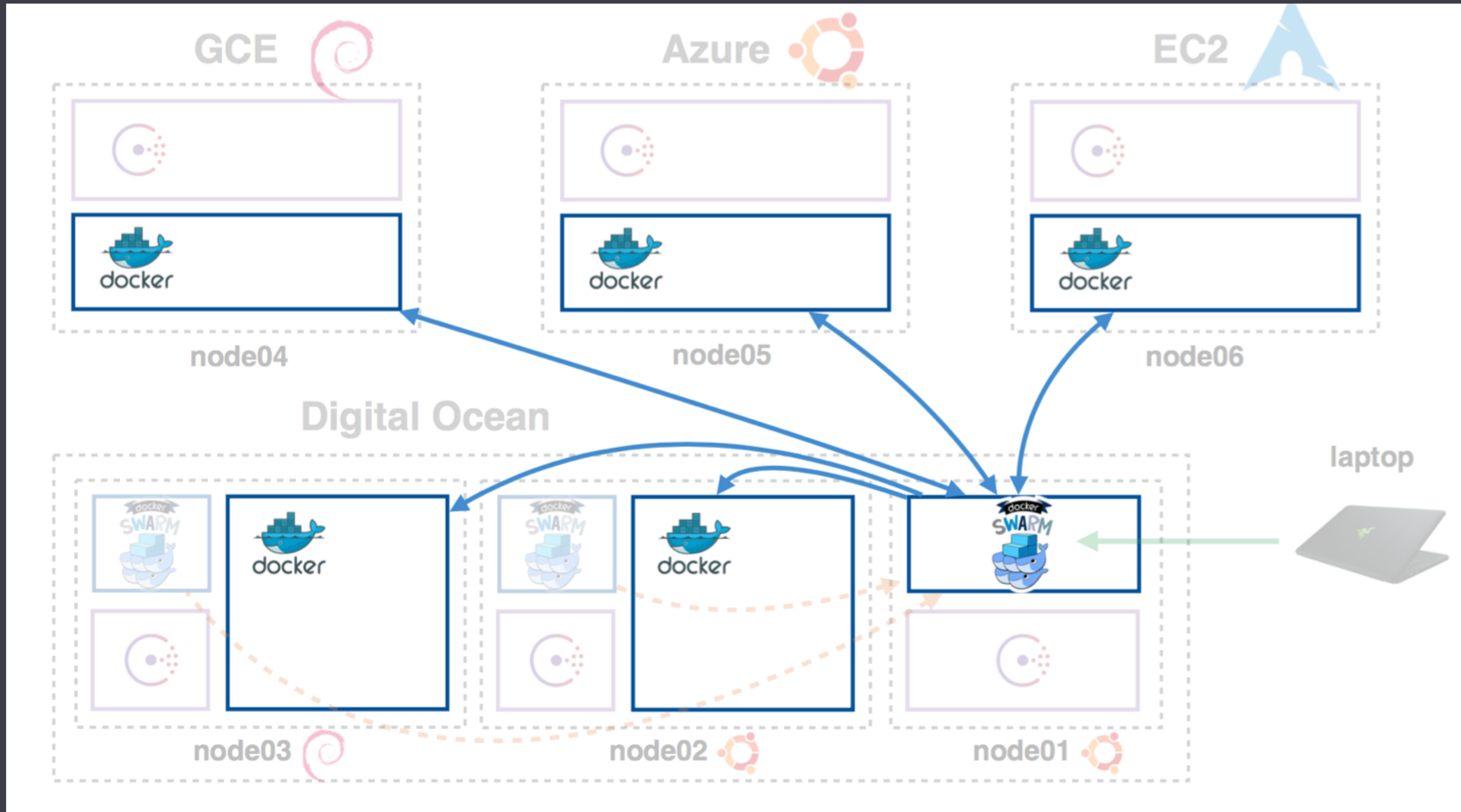

```
$ docker network --help
```

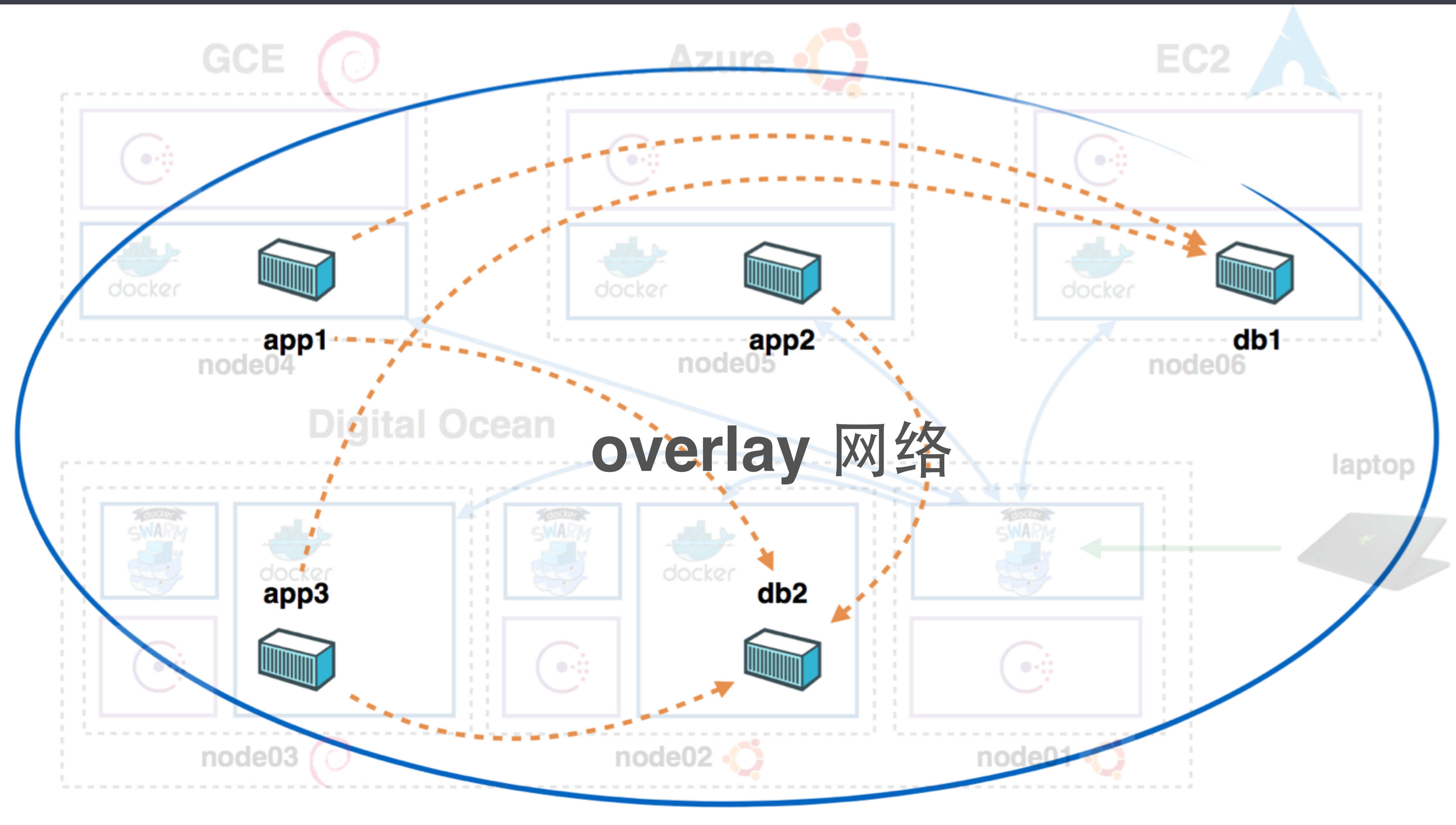
```
Usage:  docker network [OPTIONS] COMMAND [OPTIONS]
```

Commands:

rm	Remove a network
create	Create a network
connect	Connect container to a network
disconnect	Disconnect container from a network
inspect	Display detailed network information
ls	List all networks








```
$ docker volume --help
```

```
Usage:  docker volume [OPTIONS] [COMMAND]
```

```
Manage Docker volumes
```

```
Commands:
```

```
  create
```

```
Create a volume
```

```
  inspect
```

```
Return low-level information on a volume
```

```
  ls
```

```
List volumes
```

```
  rm
```

```
Remove a volume
```


Create a volume

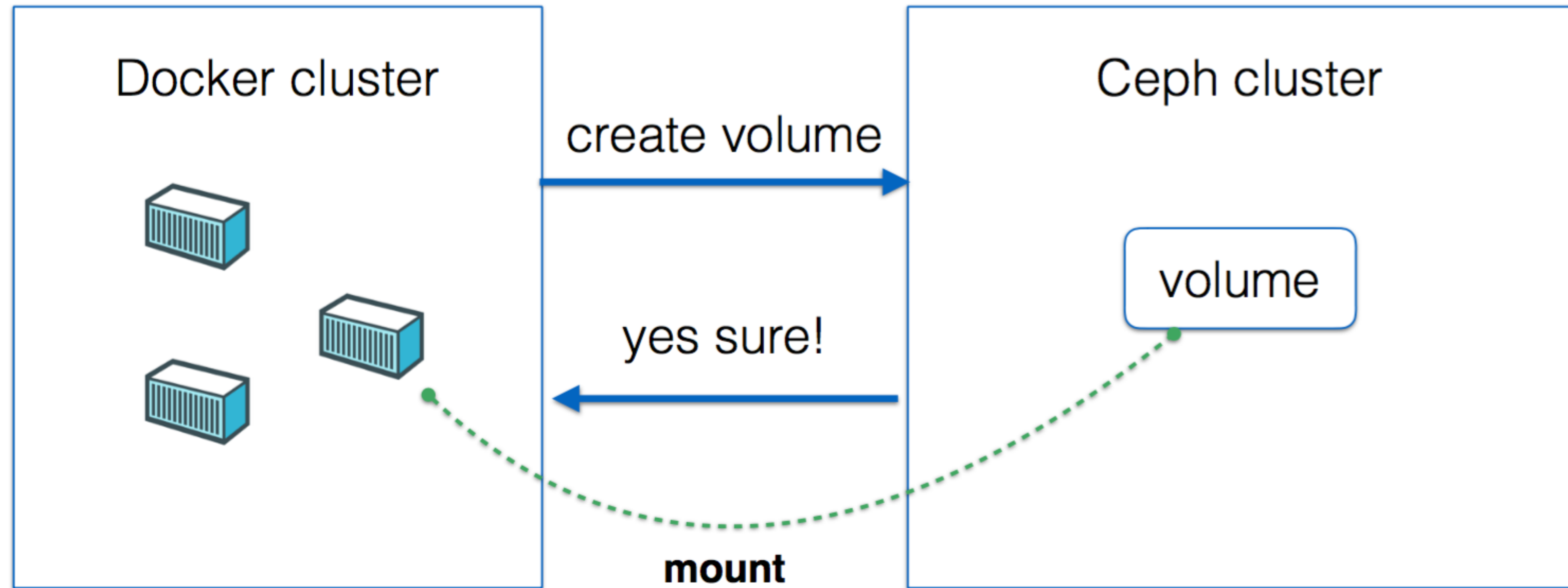
```
$ docker volume create --name=data  
data
```

Run a container with the volume

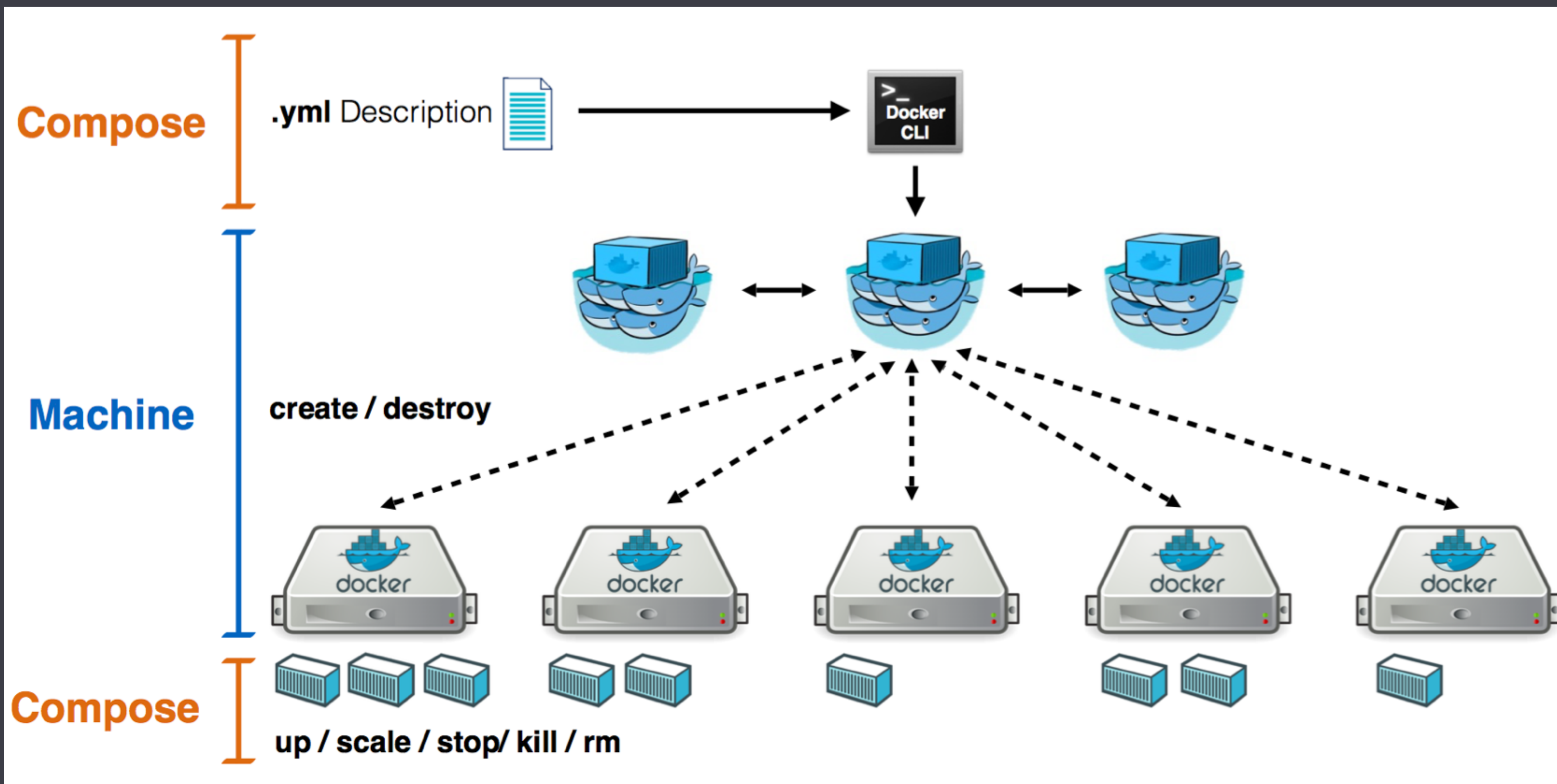
```
$ docker run -ti -v data:/data alpine /bin/sh -c "echo hello > /data/world"
```

Running another container with that volume

```
$ docker run -ti -v data:/data alpine cat /data/world  
hello
```



Swarm + Compose + Machine



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