

A Gentle Introduction to Kubernetes

Iskandar Abudiab
cluetec GmbH
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Agenda

- cluetec GmbH
- Motivation
- Kubernetes Architecture
- Kubernetes Objects
- Demo



clueteq GmbH



- Backend

- Spring Framework
- Kafka & RabbitMQ



- Web

- Angular & TypeScript



- Native Mobile

- iOS & Android



kubernetes

- GitLab



- Docker

- Kubernetes



GitLab



webpack

We are hiring!



Kubernetes

Kubernetes is a portable, extensible open-source platform for **managing containerized workloads** and services, that facilitates both **declarative configuration** and automation.

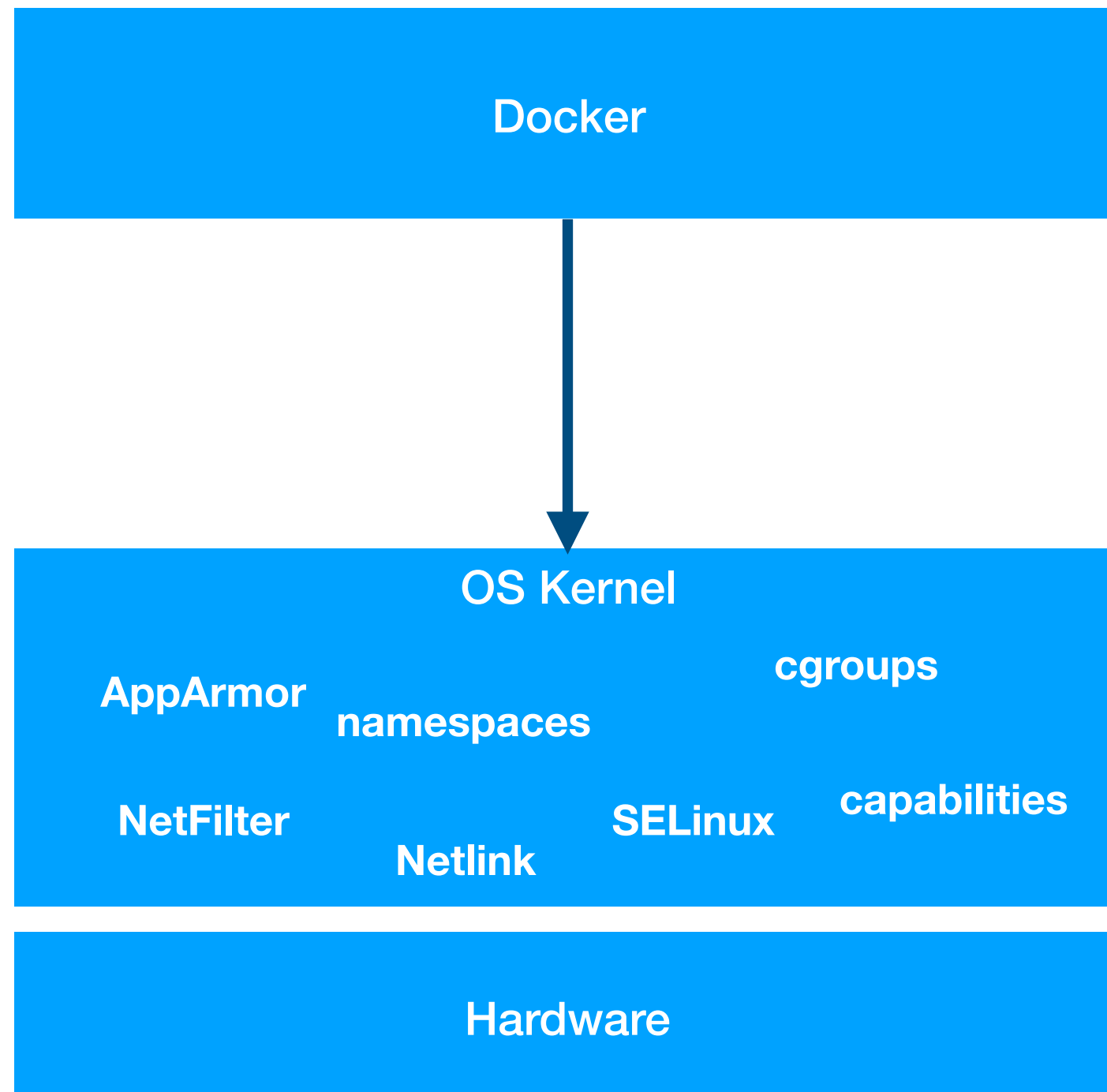


Kubernetes

- Resource costs reduction
- Portability
- Automation
- Scalability / Modularity
- Intelligent Scheduling
- High Availability
- Self-healing
- Declarative Configuration

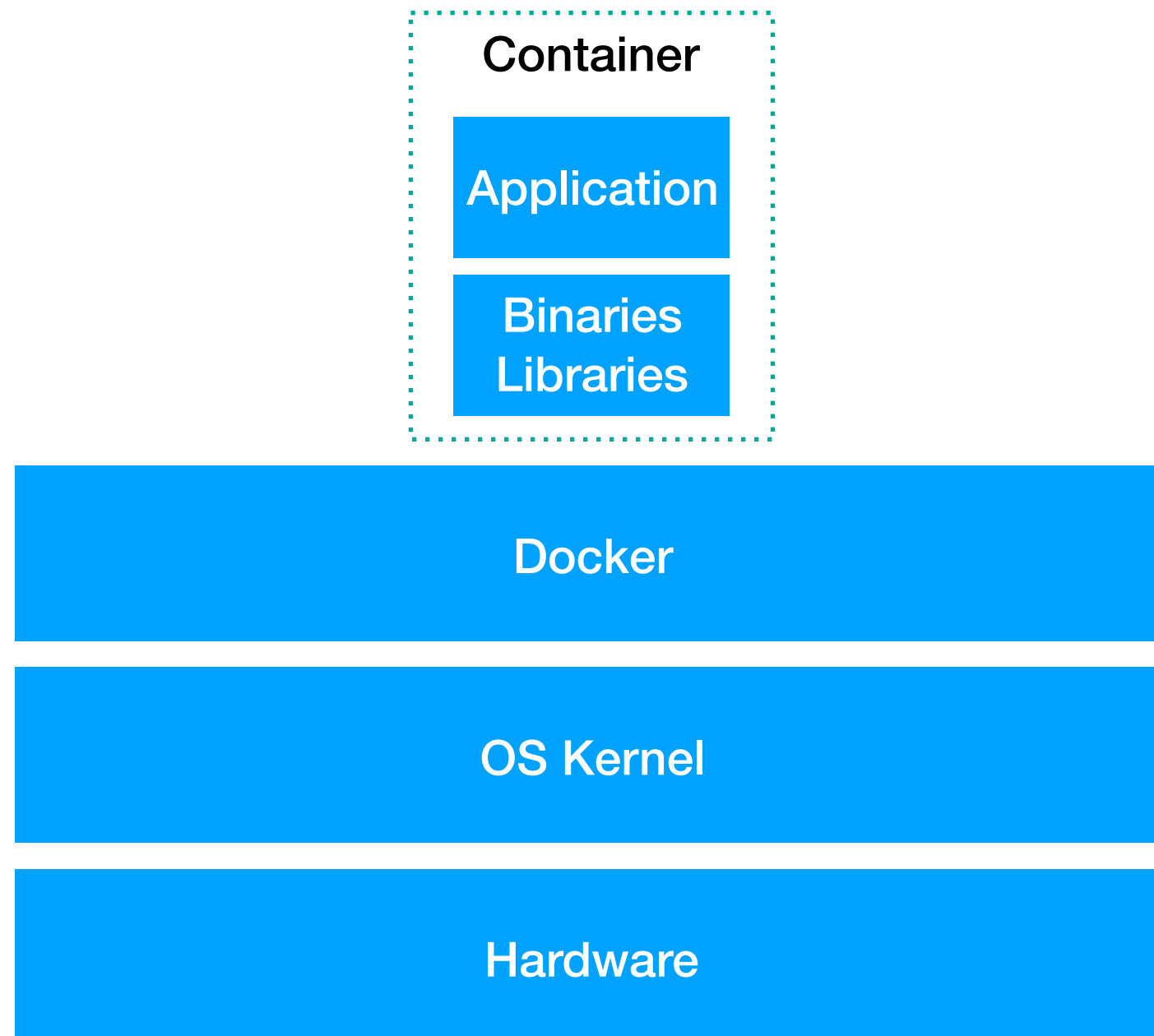


Containers



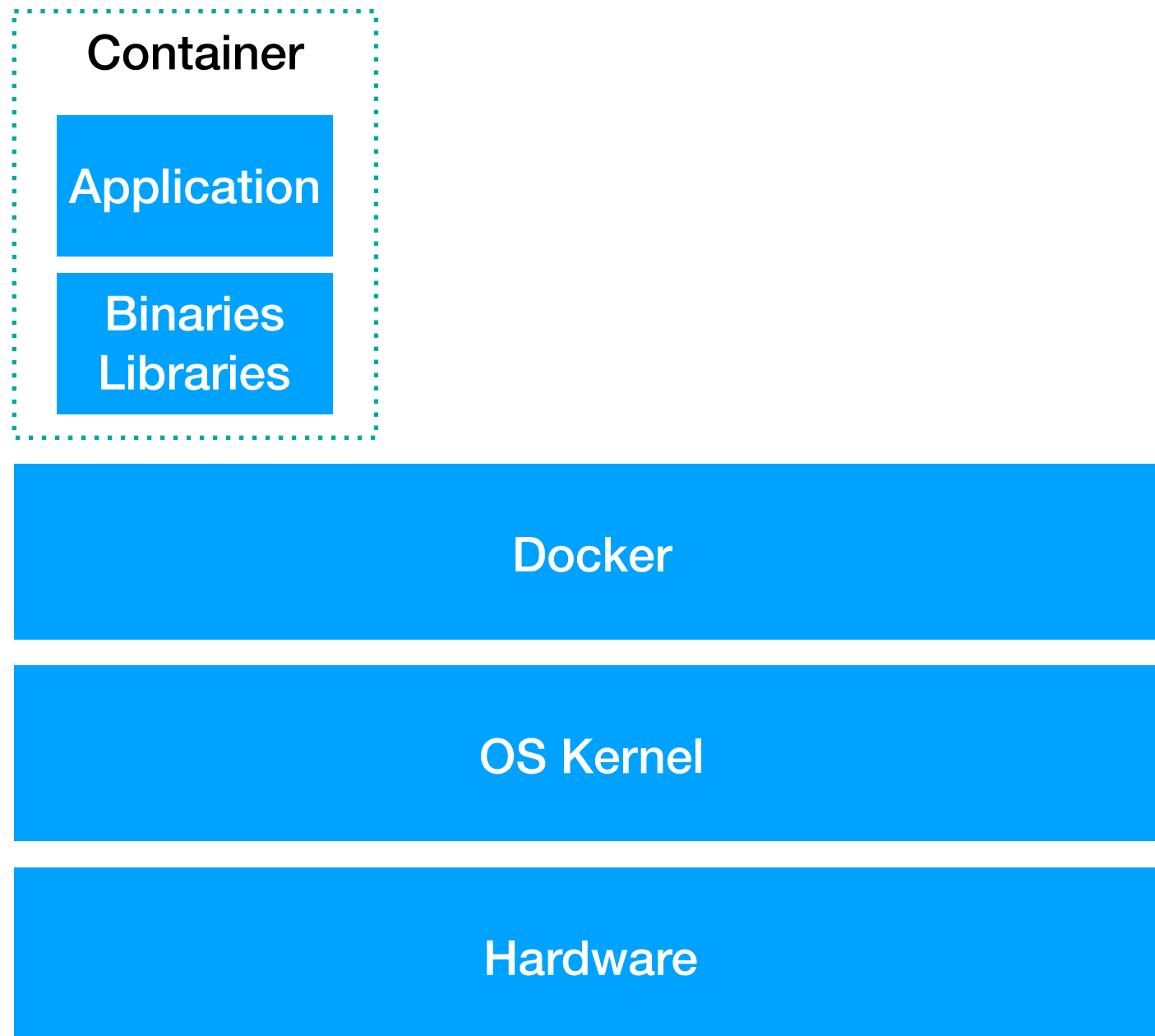


Containers



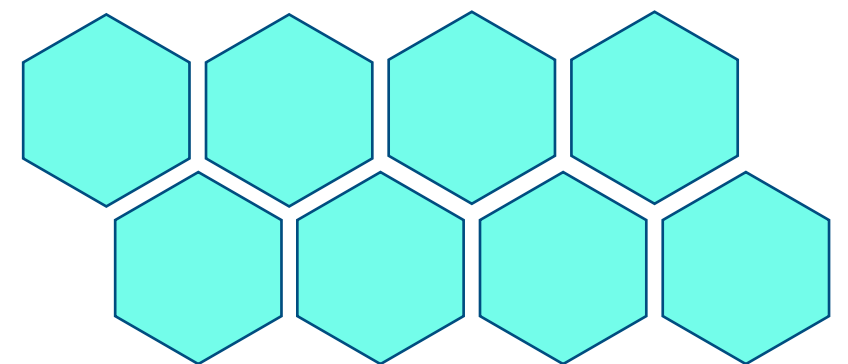
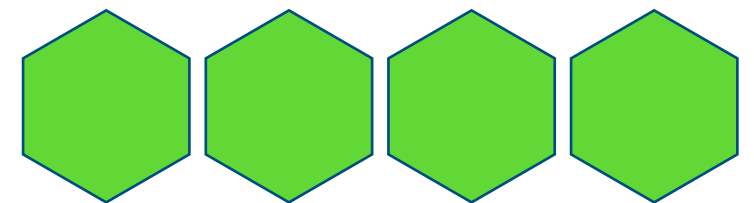
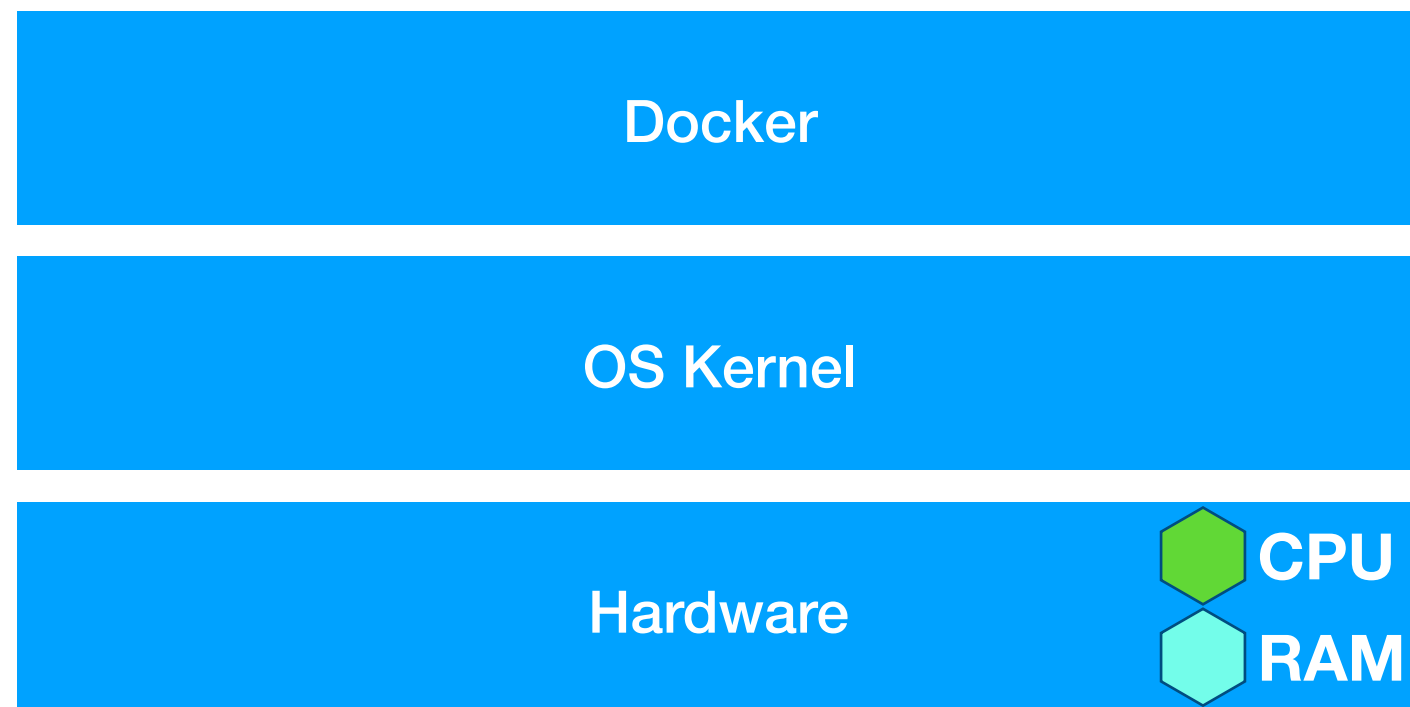
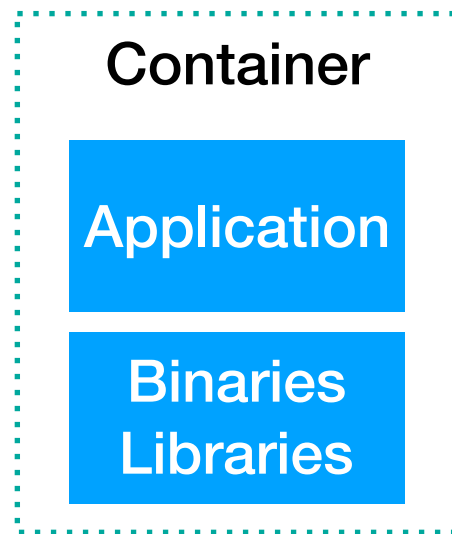


Resources



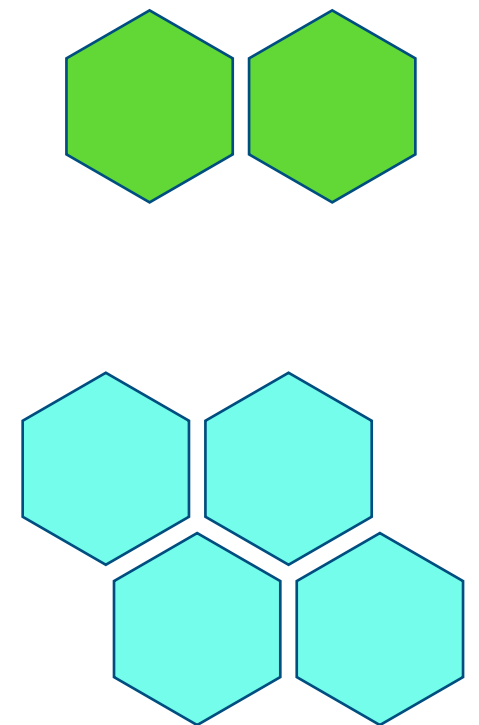
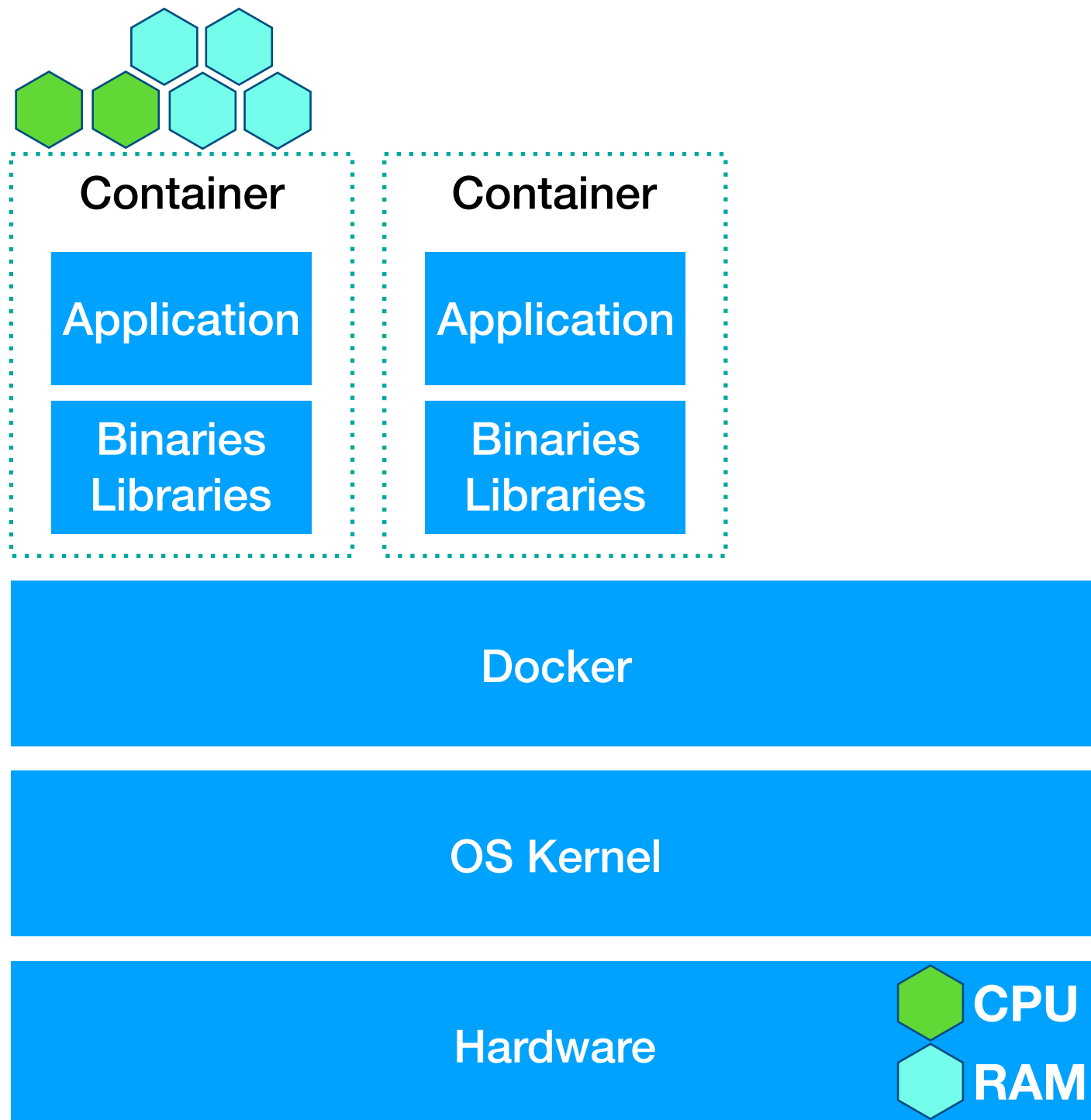


Resources



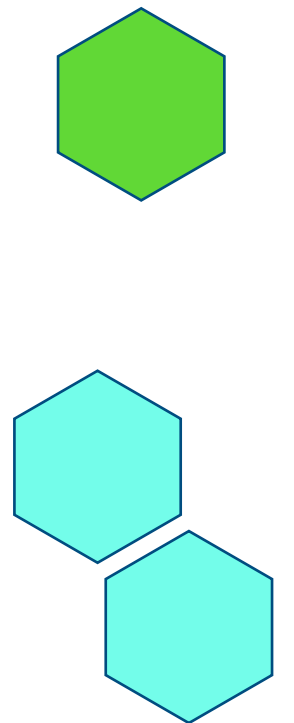
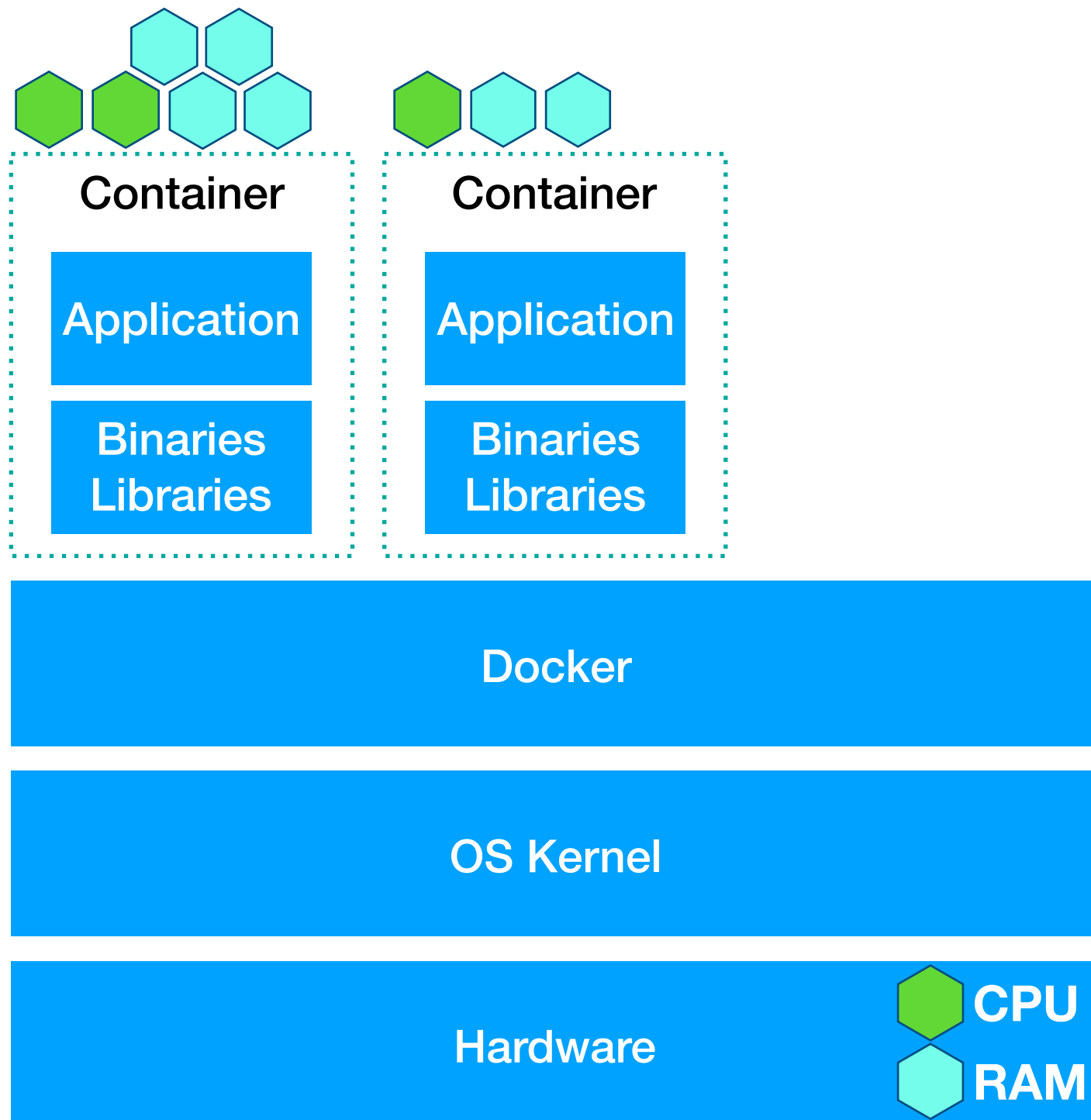


Resources





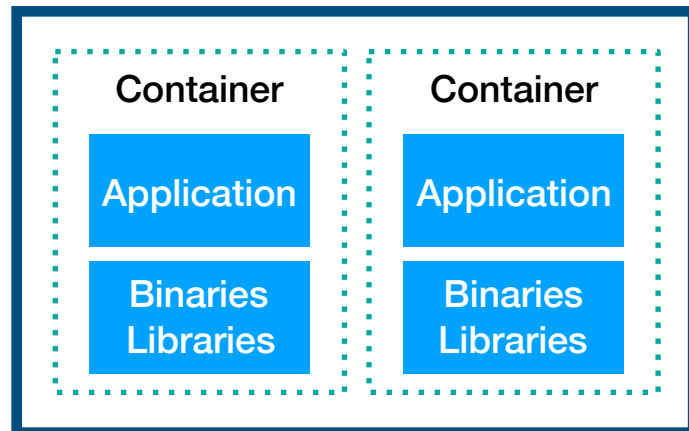
Resources





Pods

Let's call this a "Pod"

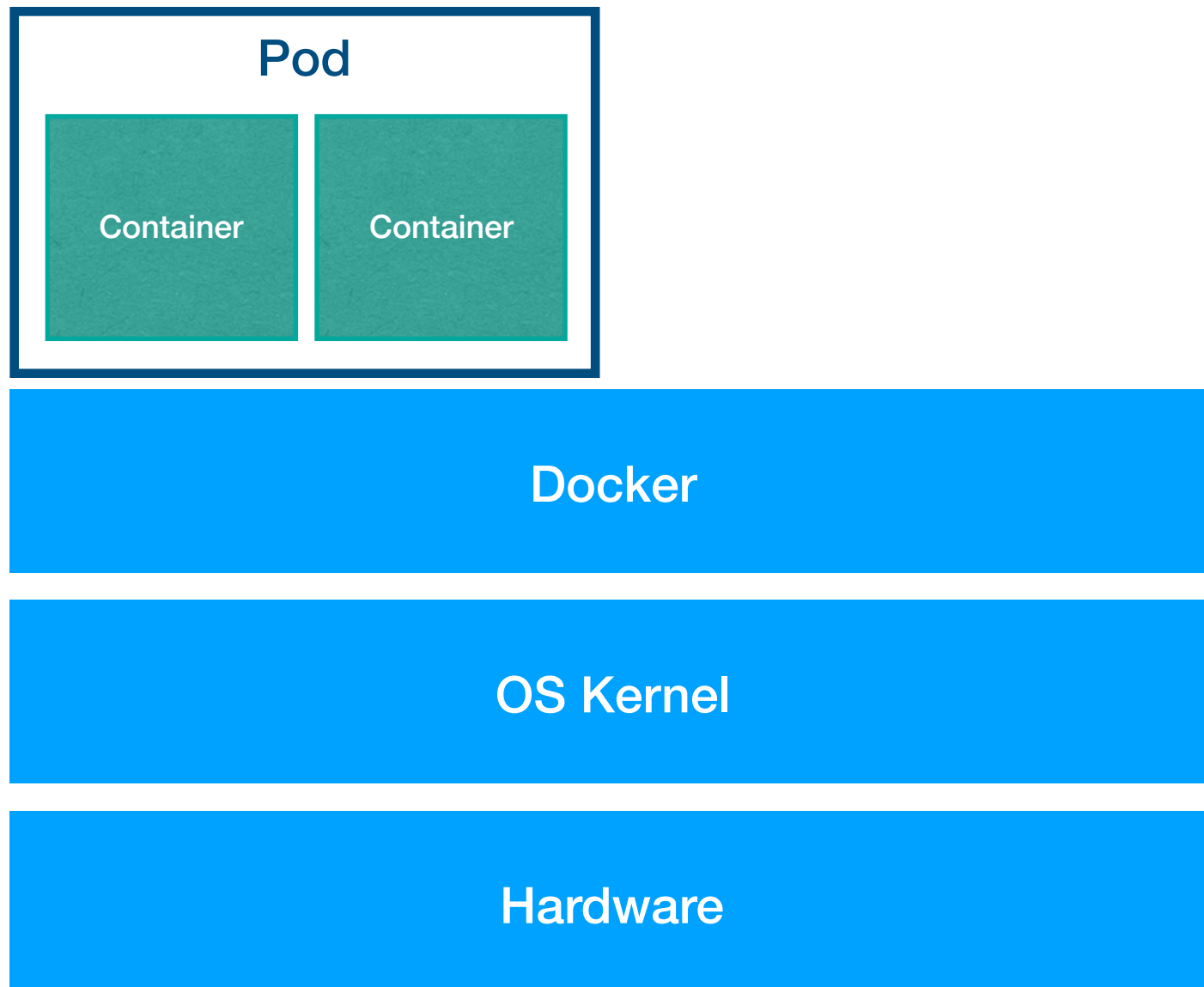


Docker

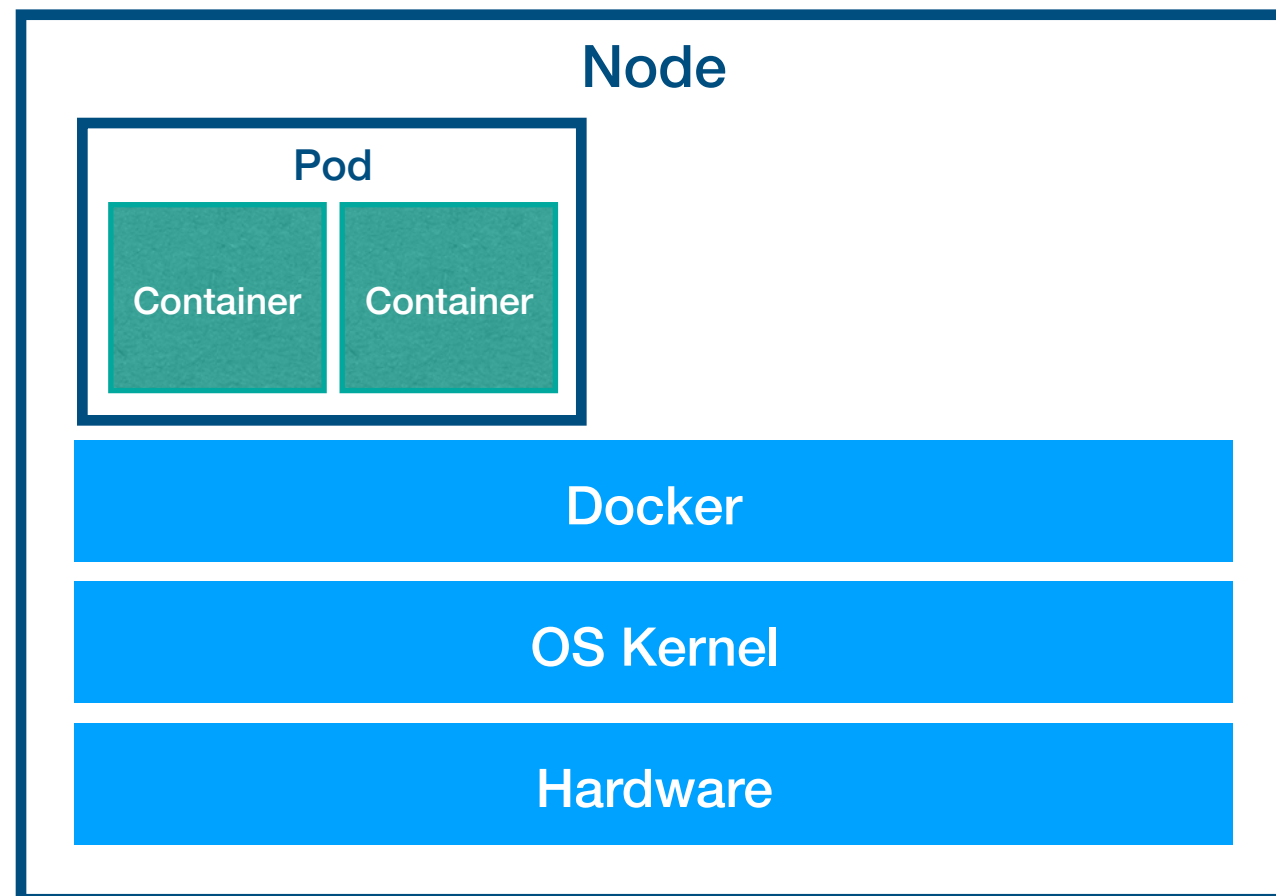
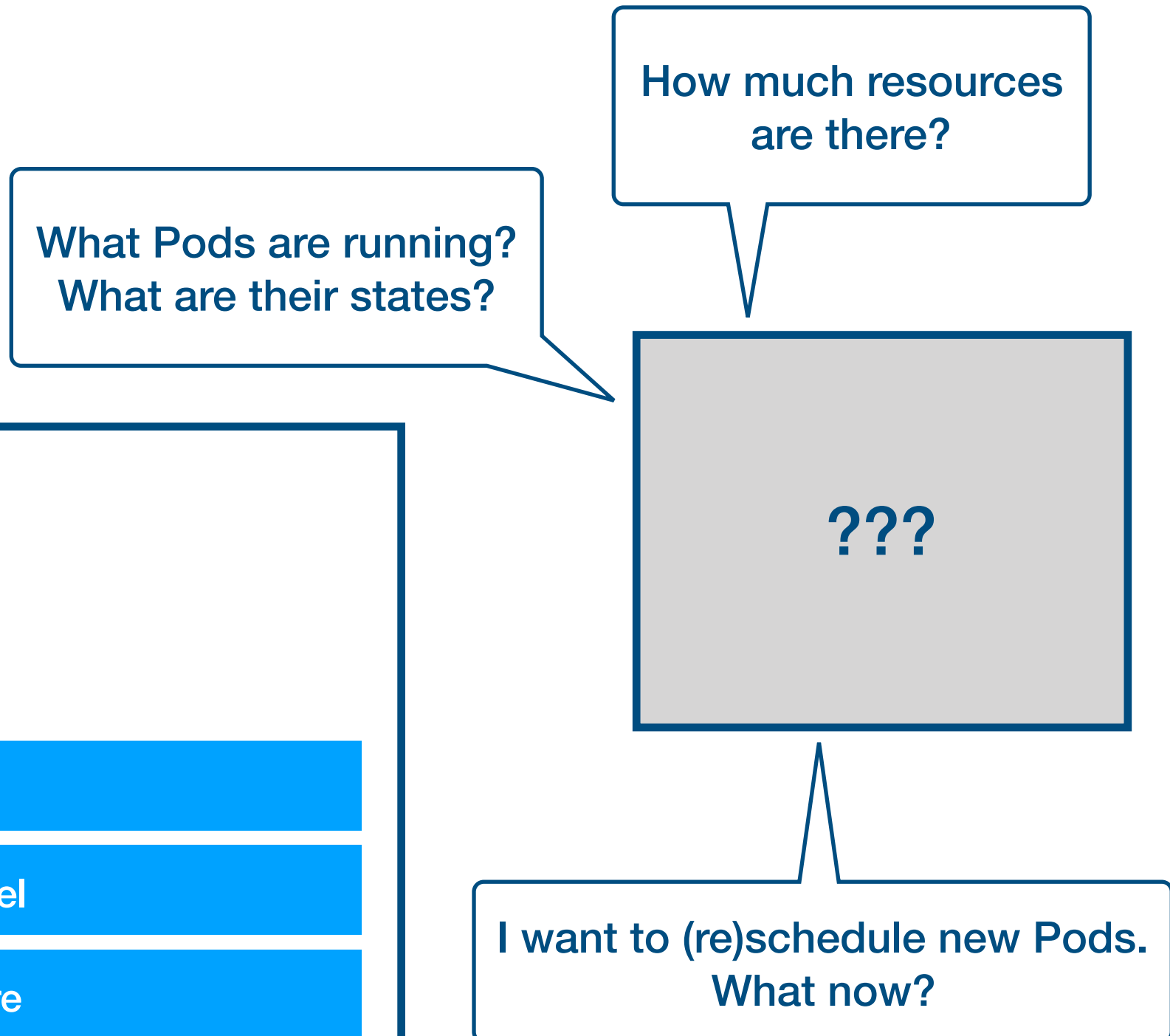
OS Kernel

Hardware

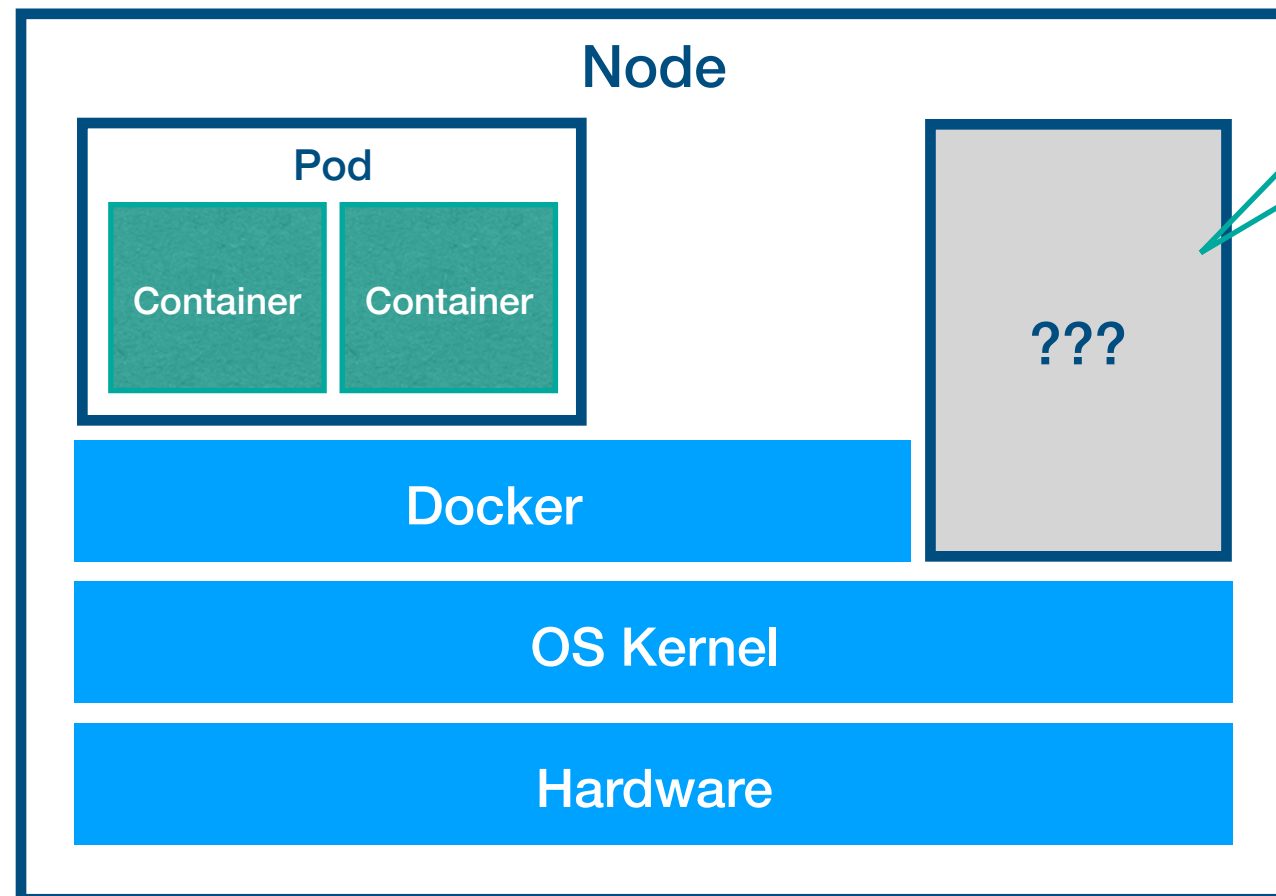
Pod/Container Management



Pod/Container Management

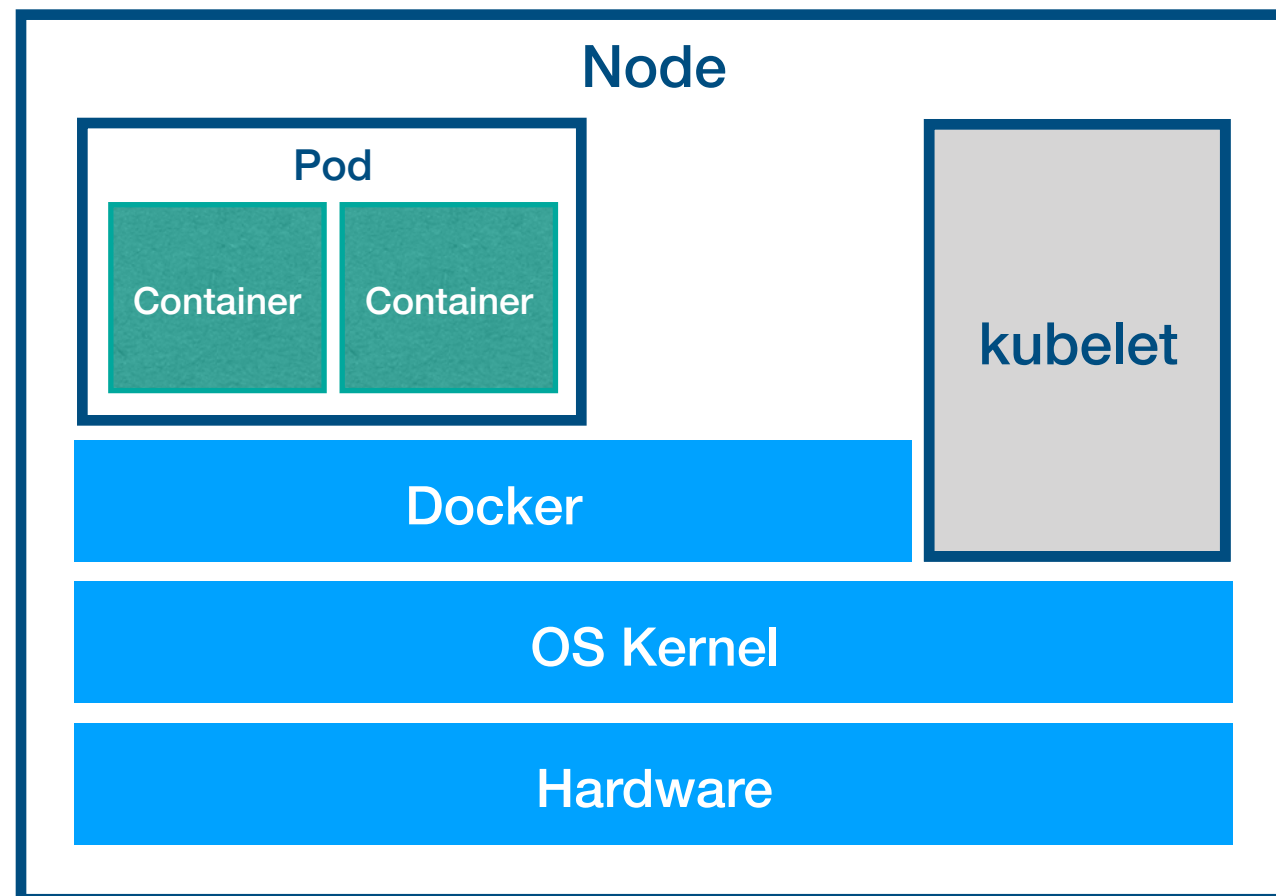


Pod/Container Management



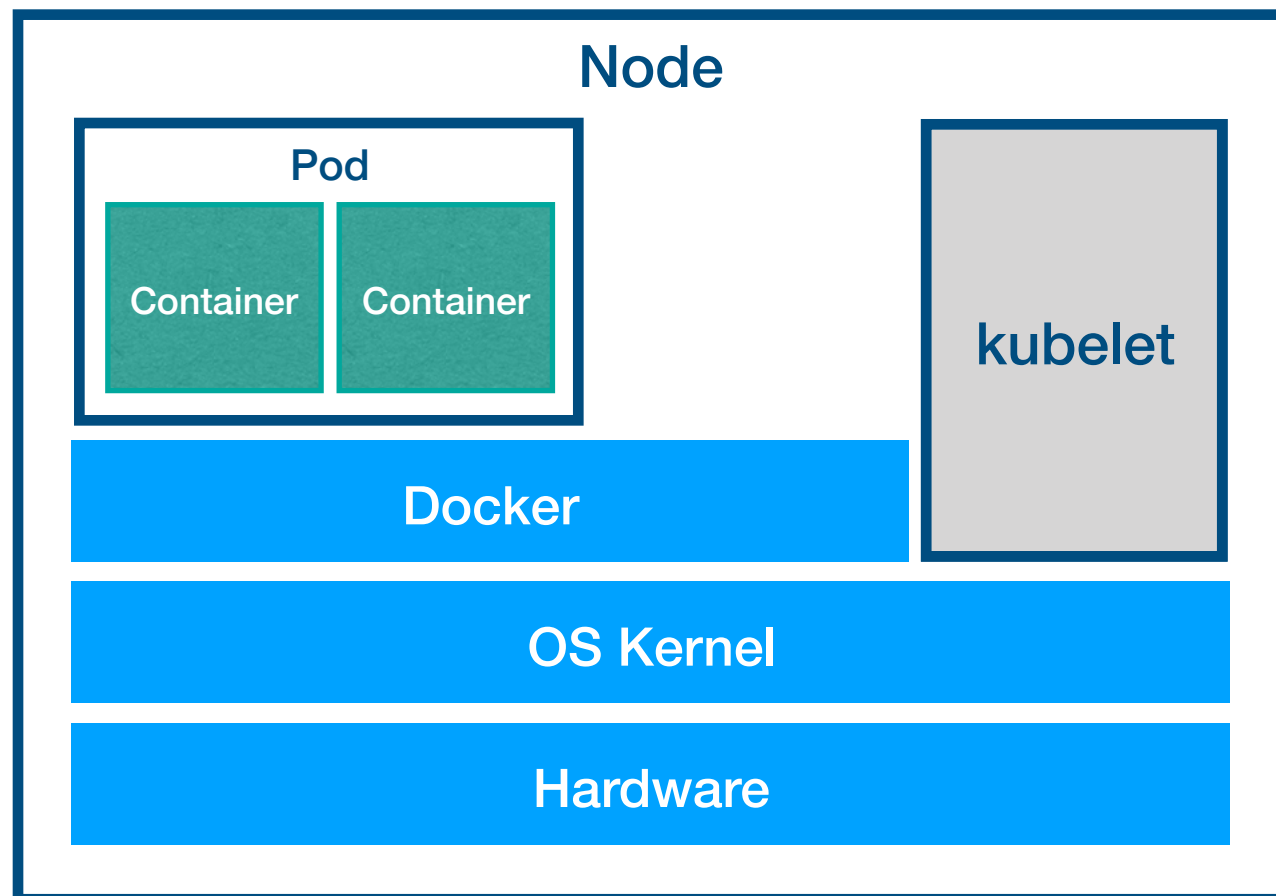
Let's call this a "kubelet"

Pod/Container Management



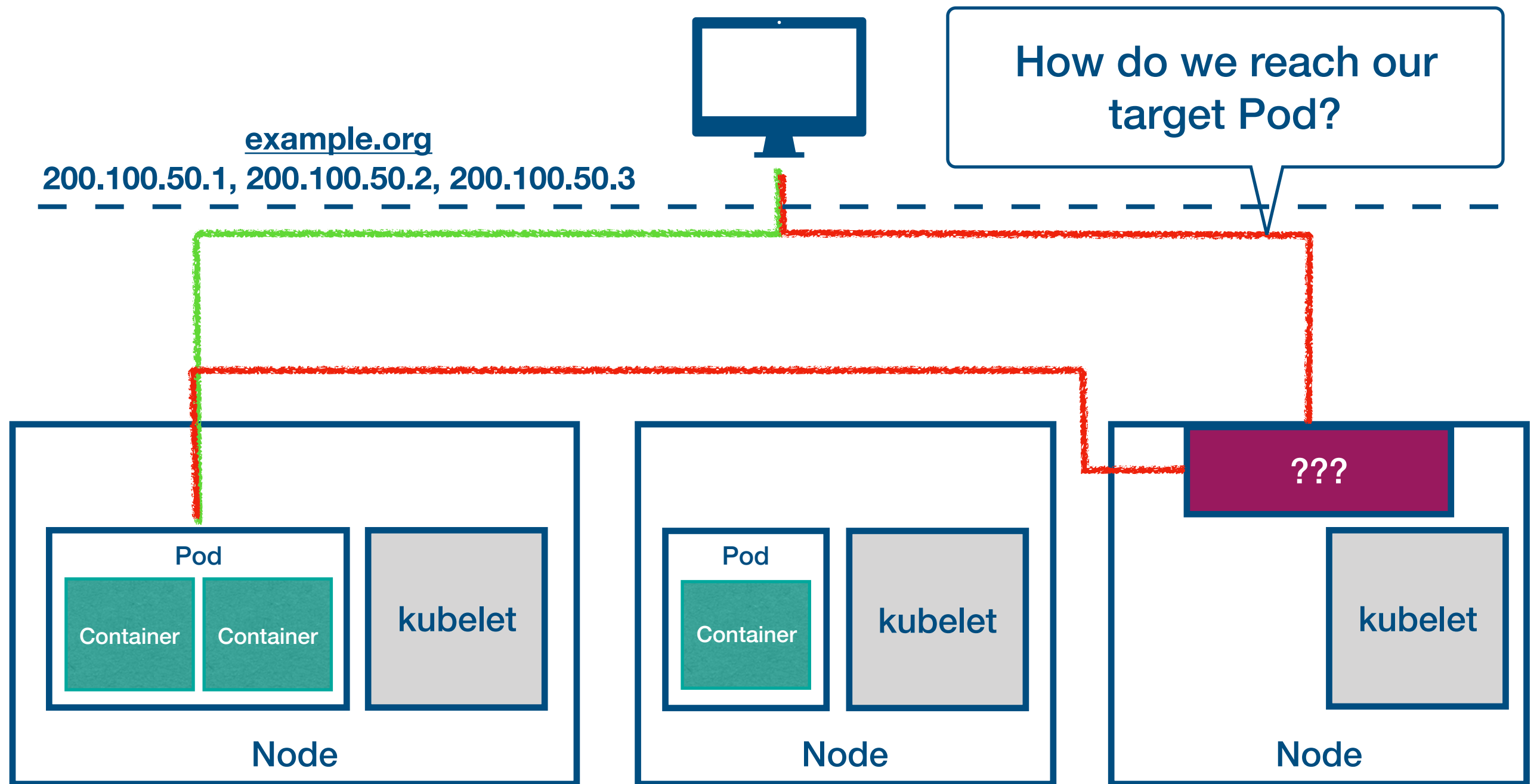


Networking



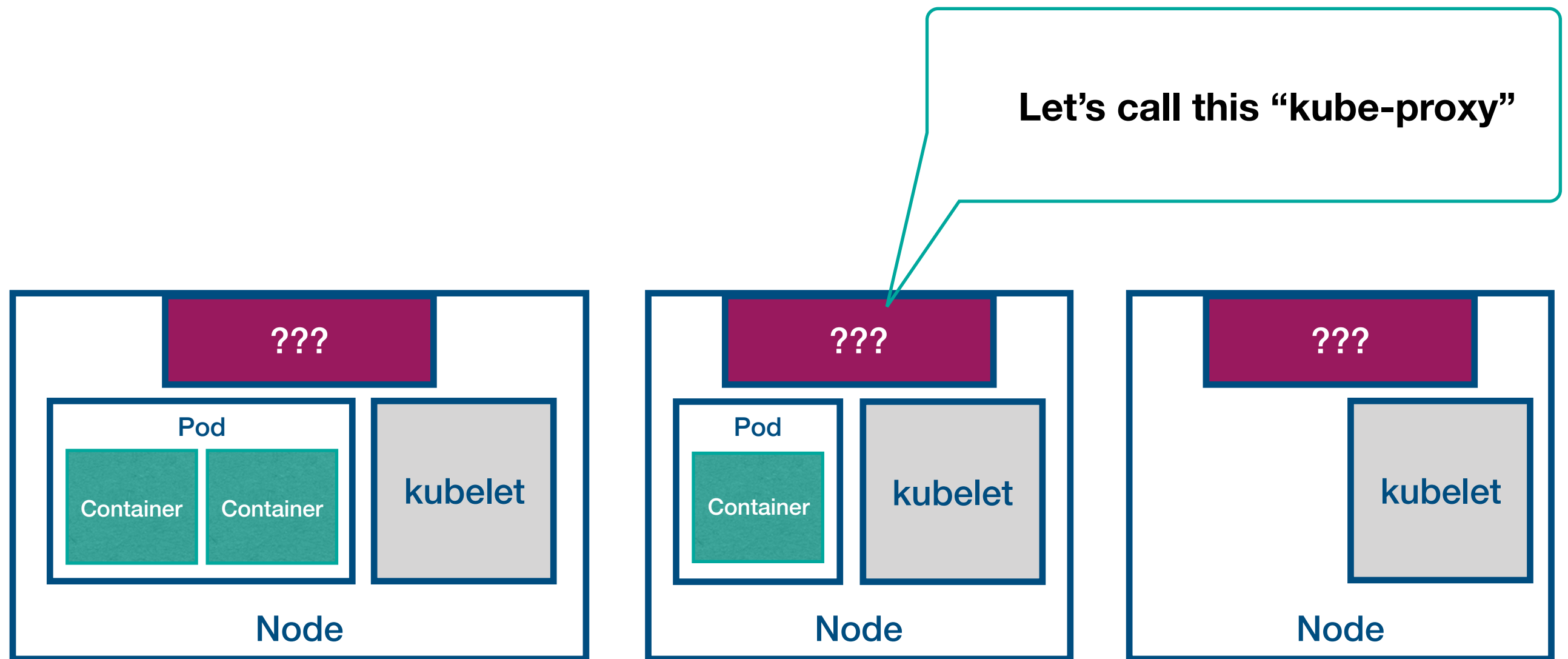


Networking



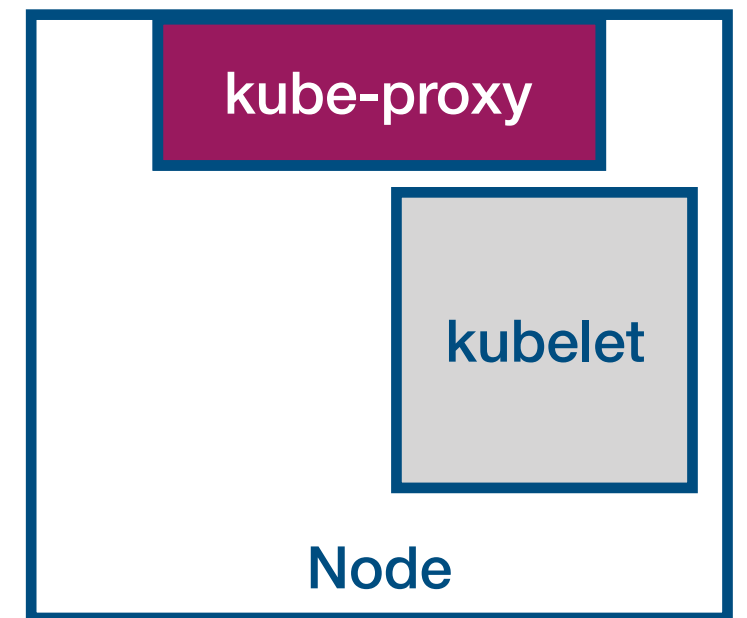
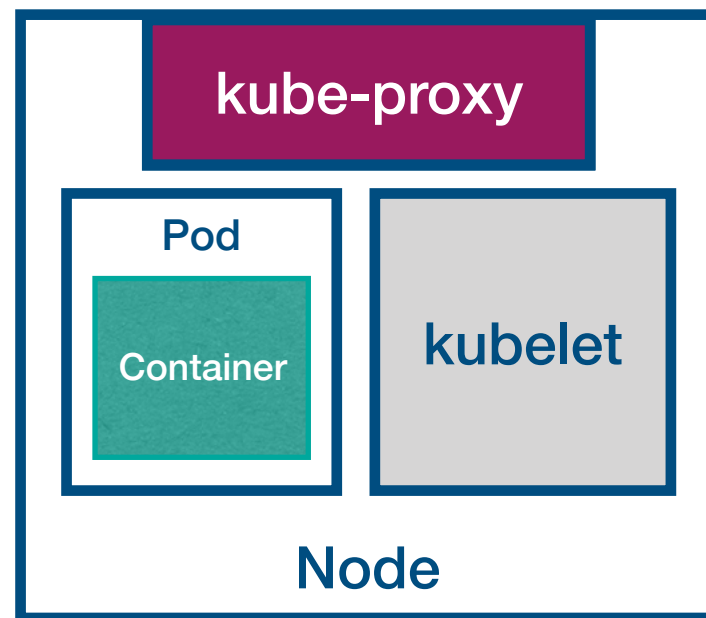
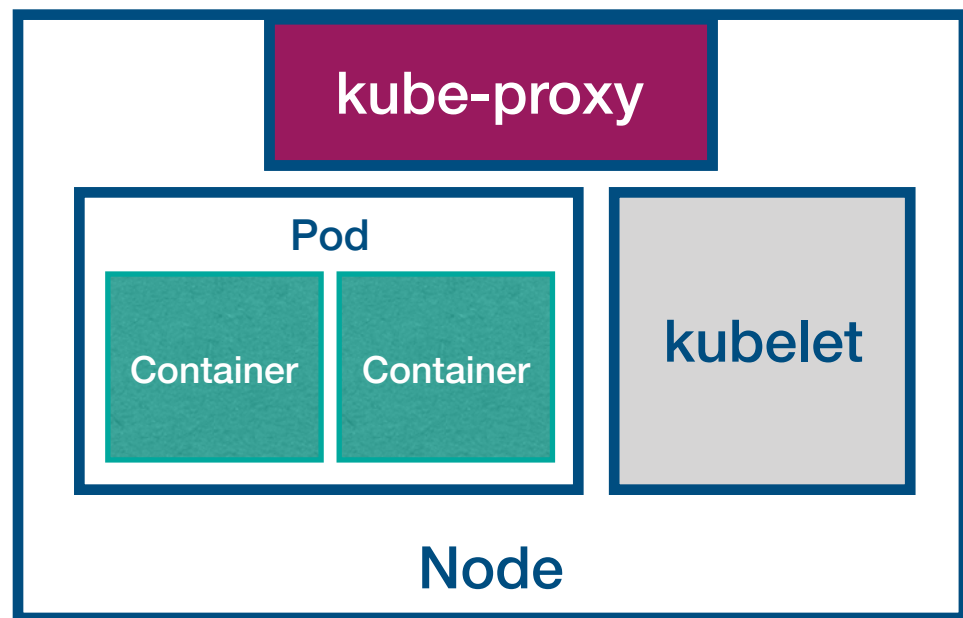


Networking





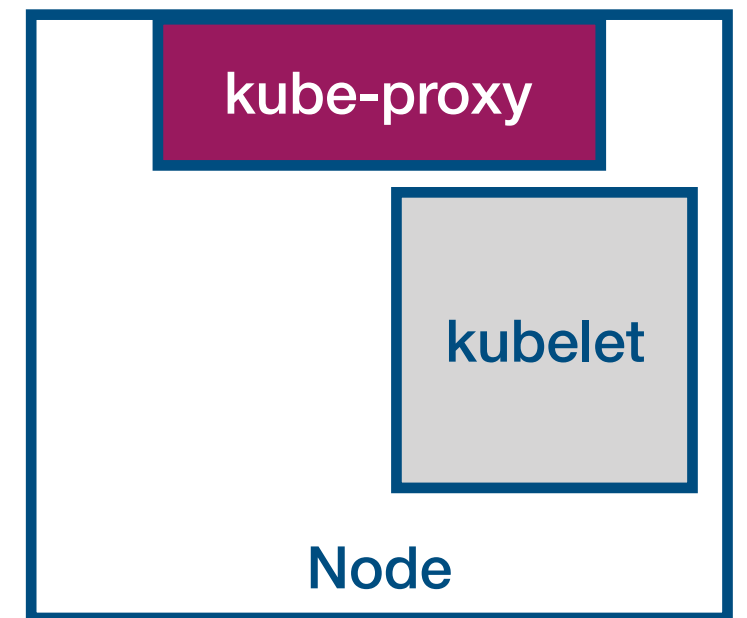
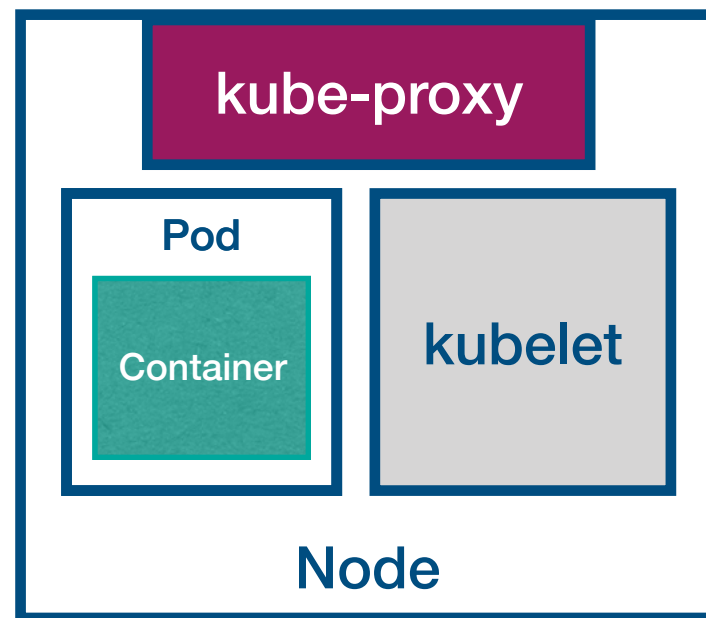
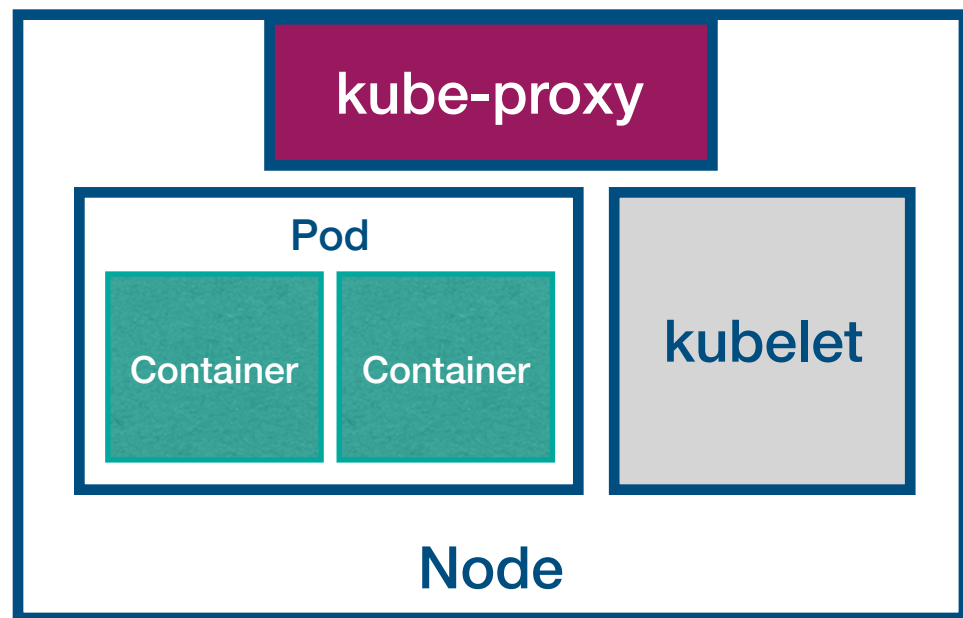
Networking





Node Components

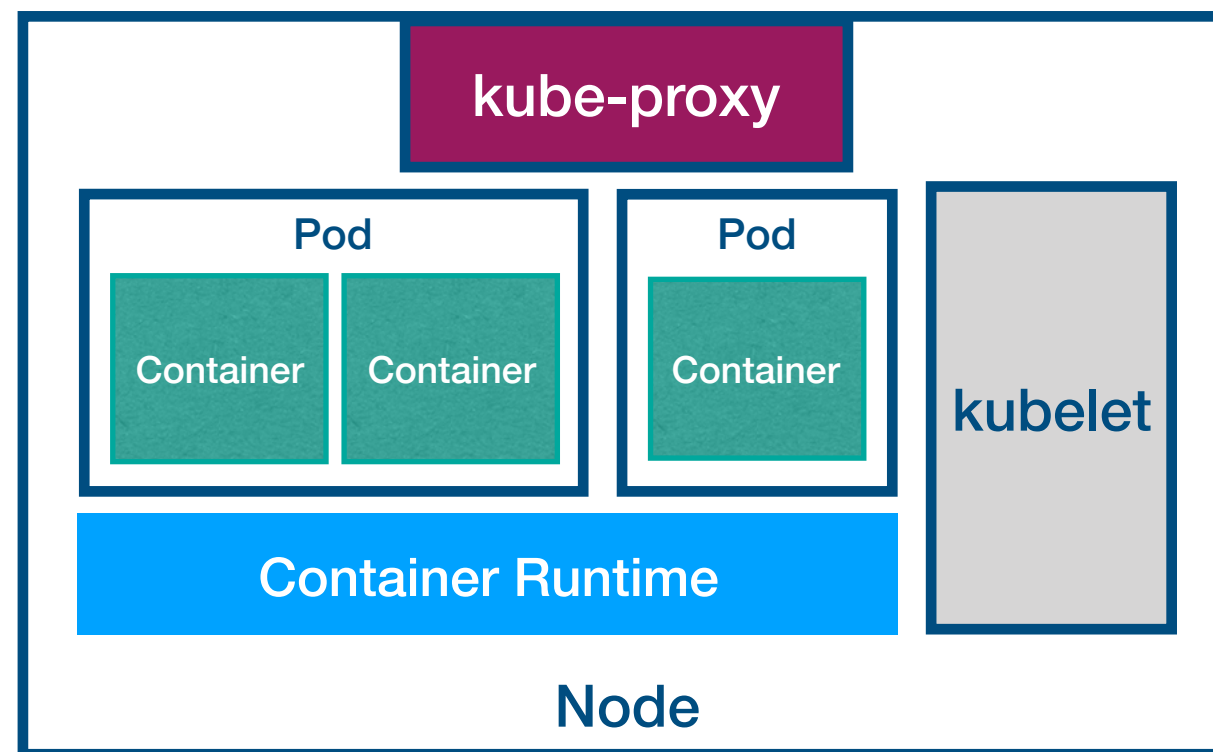
- Container Runtime
- kubelet
- kube-proxy





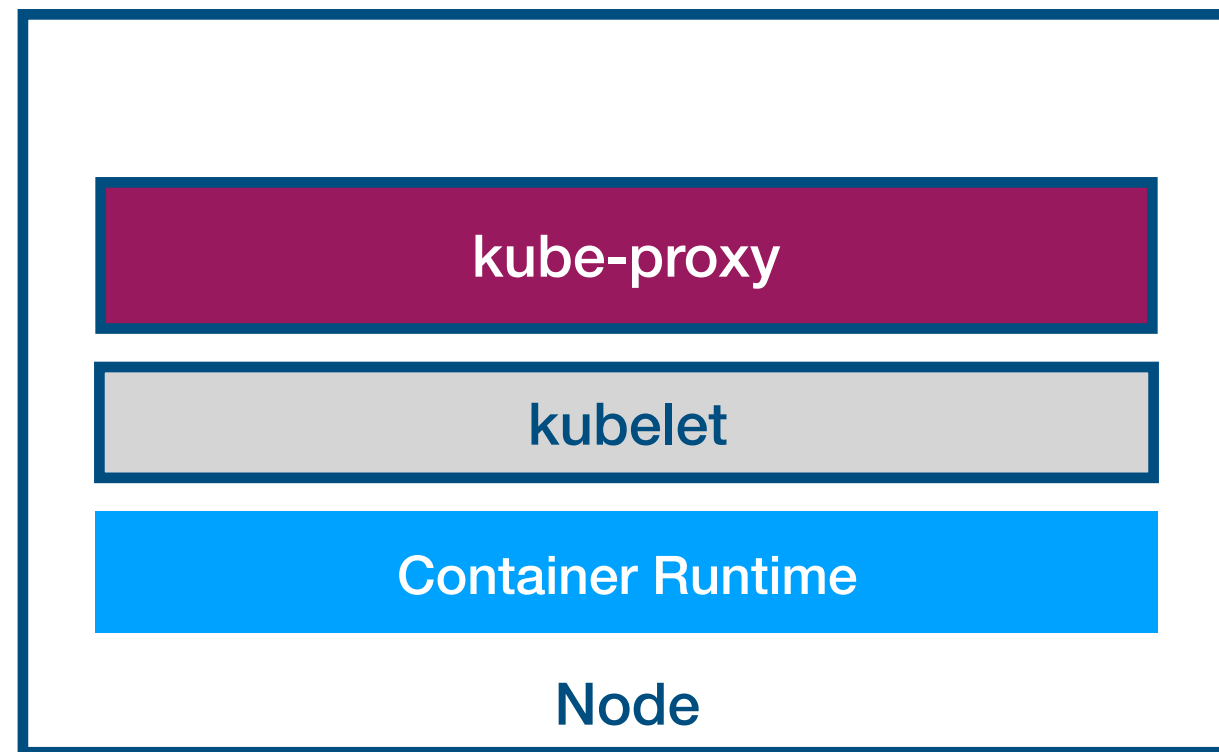
Node Components

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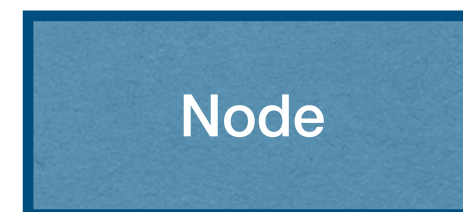
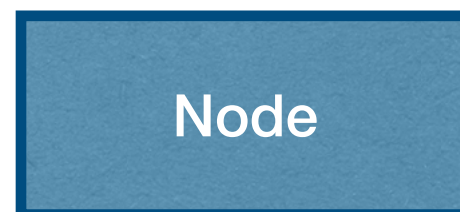
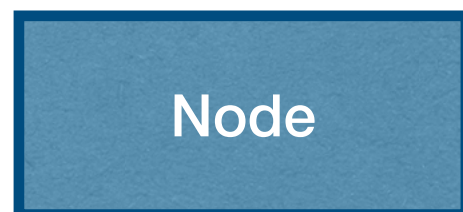
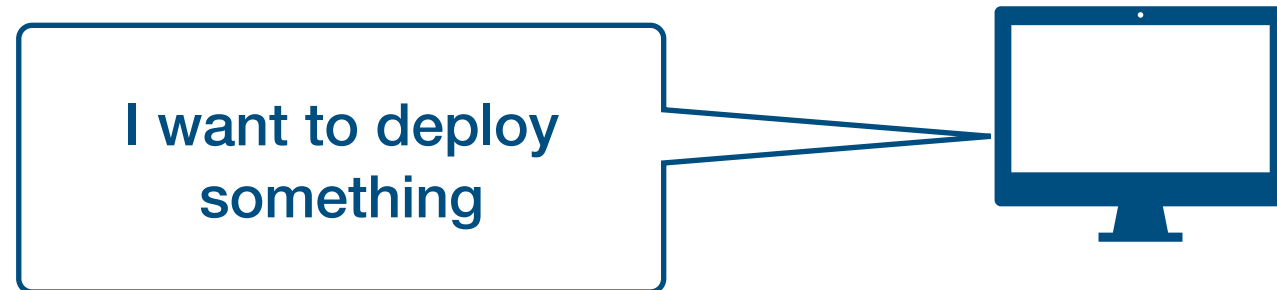


Control Plane



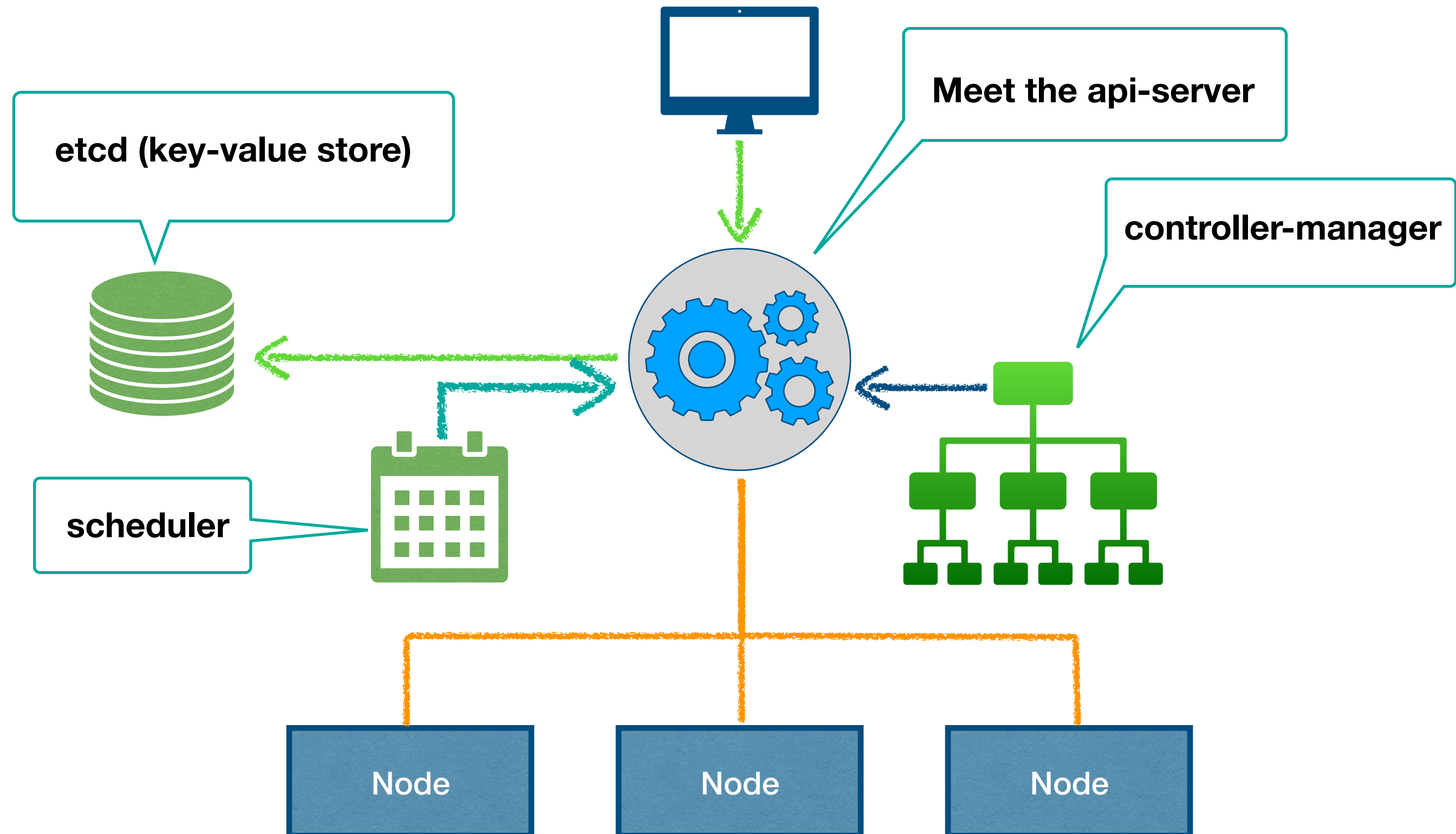


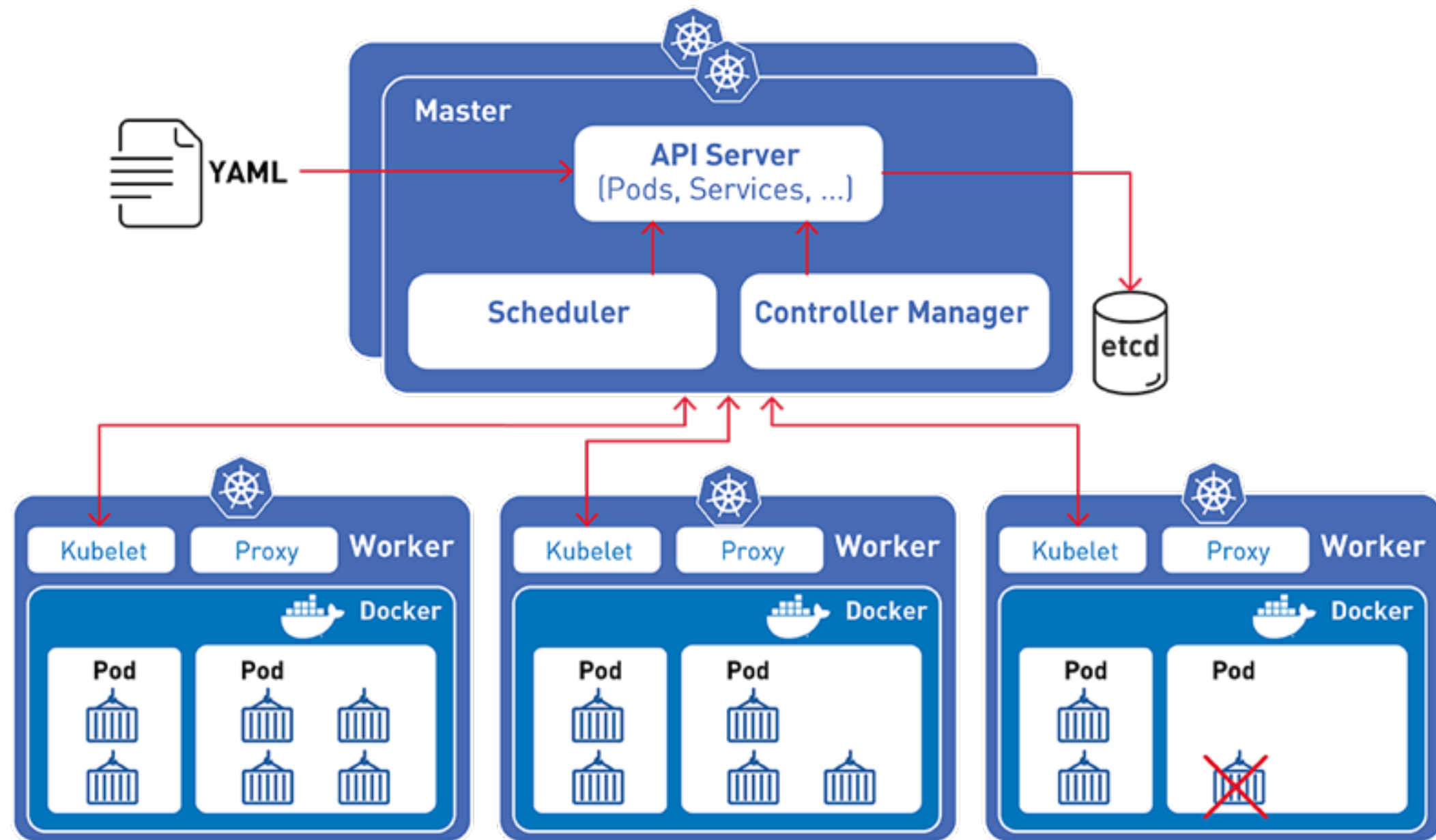
Control Plane

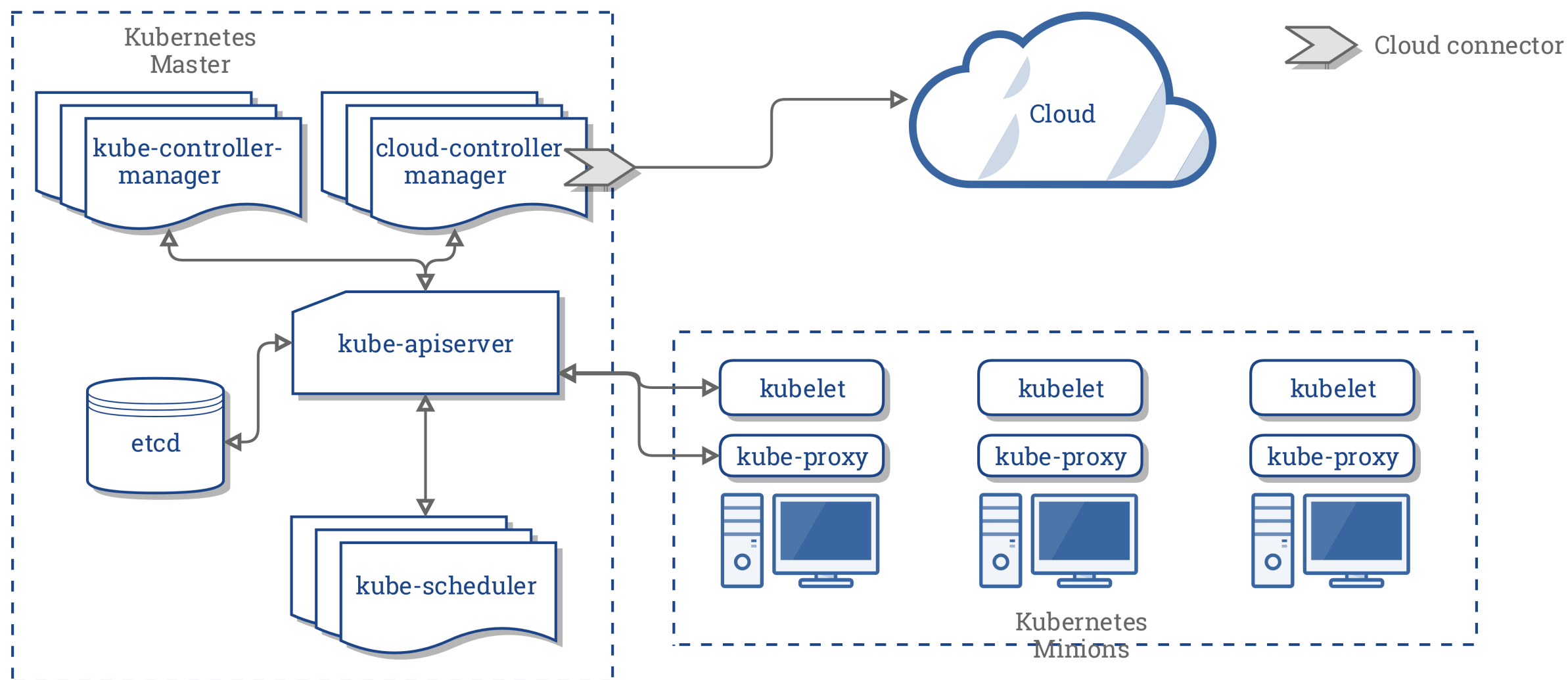




Control Plane







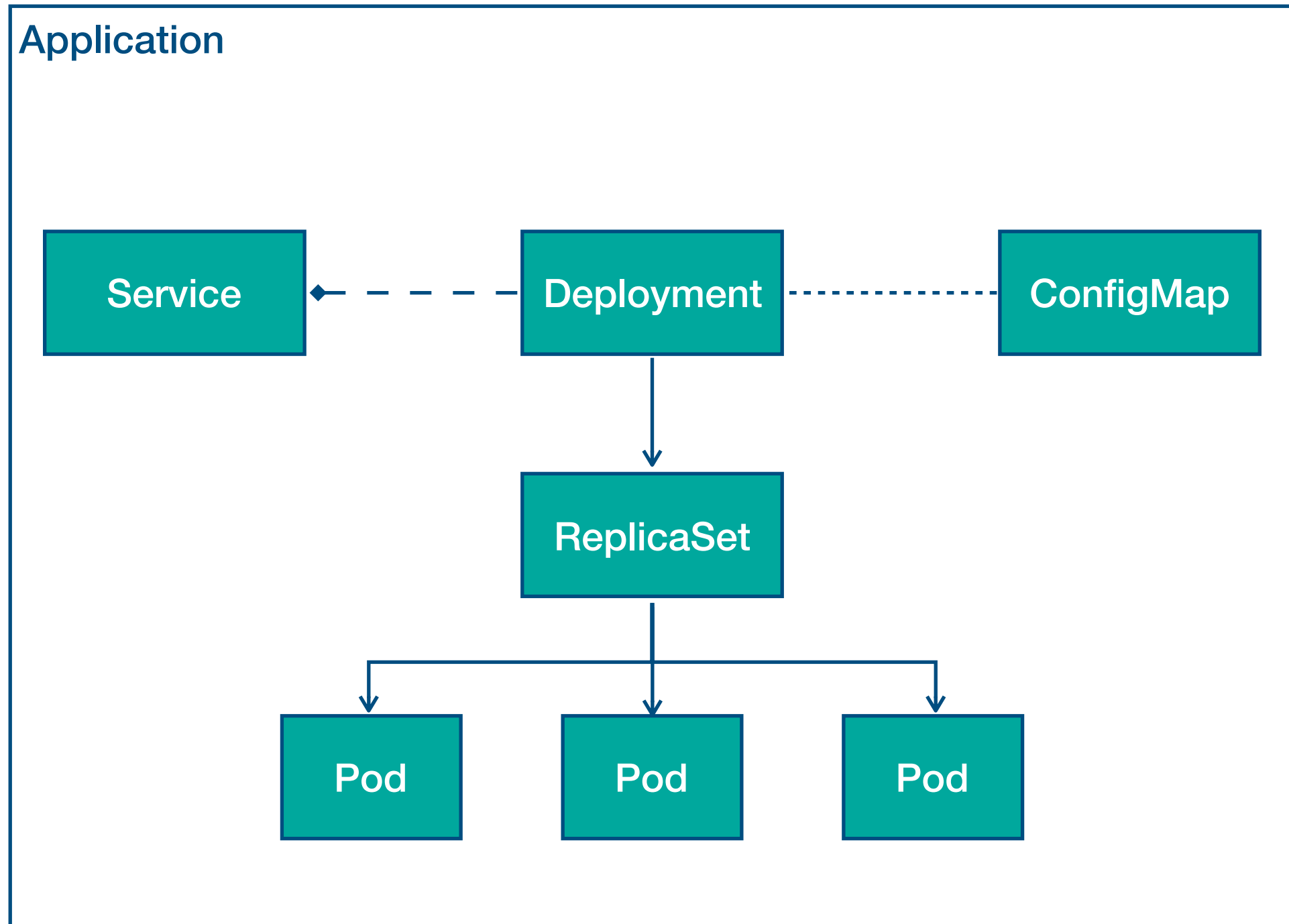


Kubernetes Objects

- Pod
- ReplicaSet
- Deployment
- Service
- Volume
- ConfigMap
- Secret
- .. and some more



Kubernetes Objects



Demo