

docker



WHC Container Workshop

Helsinki June 2019

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Poll

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- Who has heard about Containers, Docker & Orchestration?
- Who has played around and used Containers & Orchestration tools?
- Who is using these tools for real in industry?

- What got you interested in this workshop?
- Who is using Mac OS, Ubuntu, Windows, anything else?

The Growth of the Tech Industry:

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- Large demand in software
- Pressure for companies and organizations to sell & deliver innovative products
- Significant change in how software is developed and deployed into production
- Software design divided into smaller pieces

Microservices:

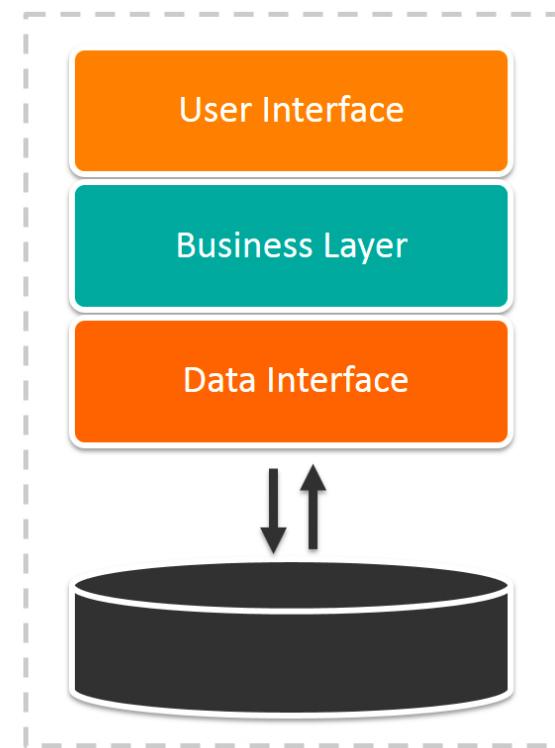
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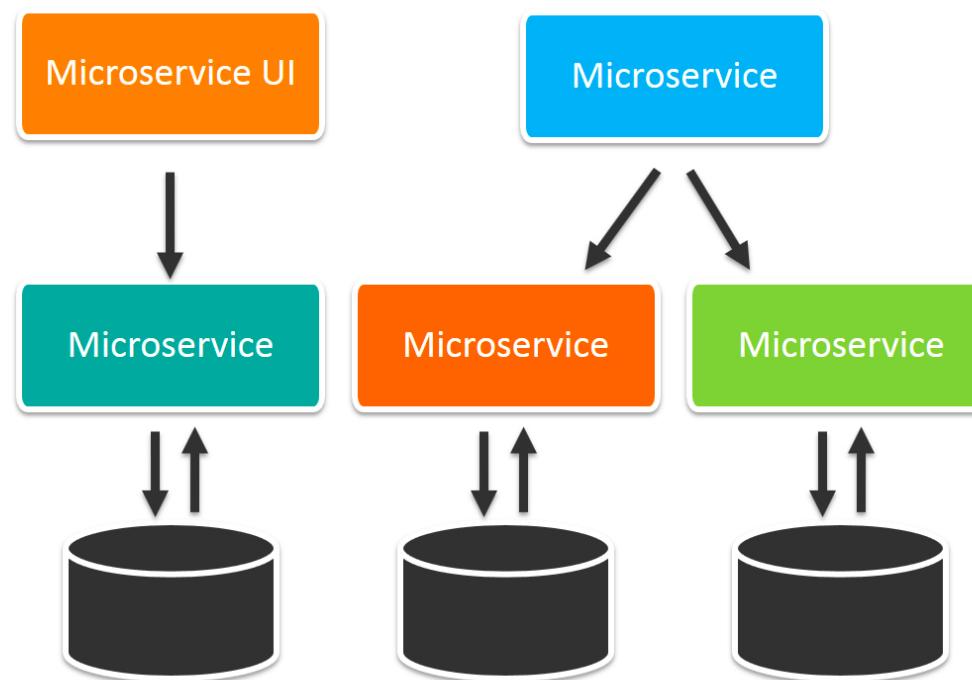
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Monolithic Architecture



Microservices Architecture



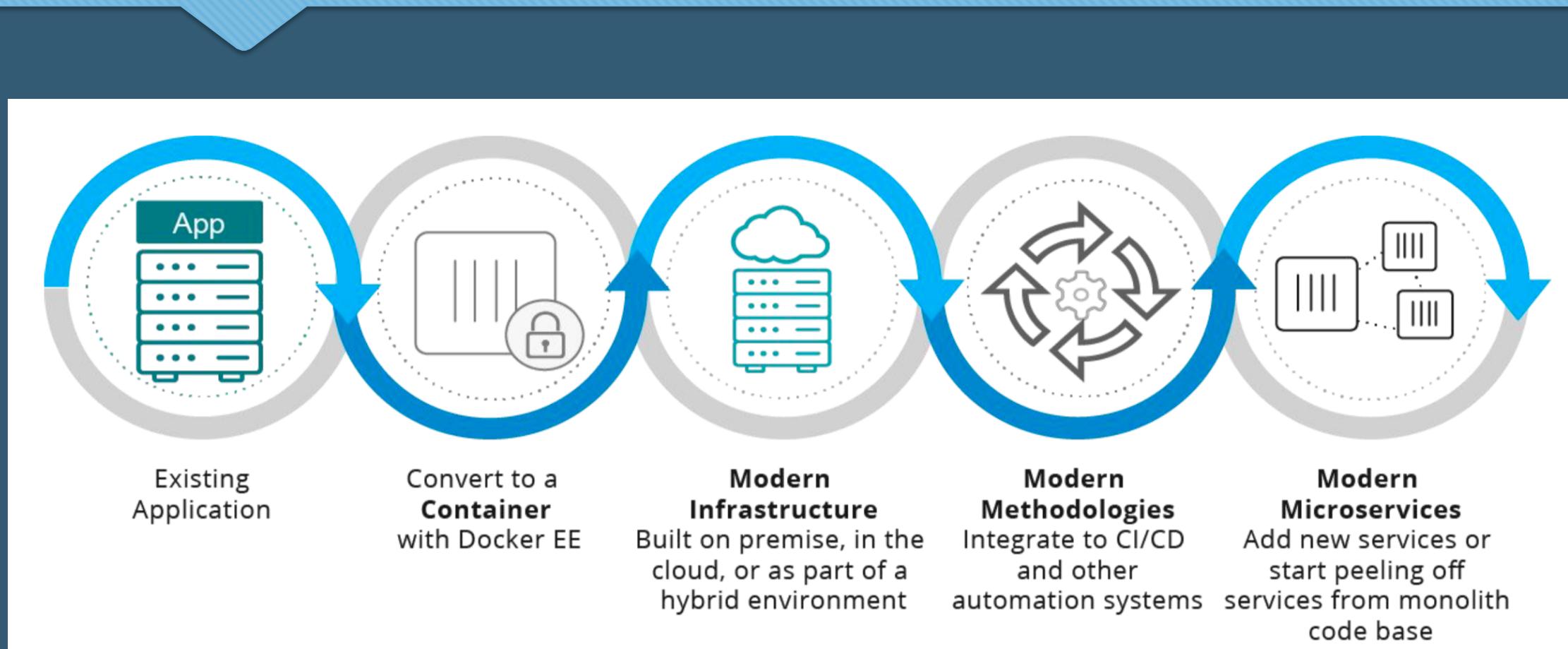
Microservices:

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Containers

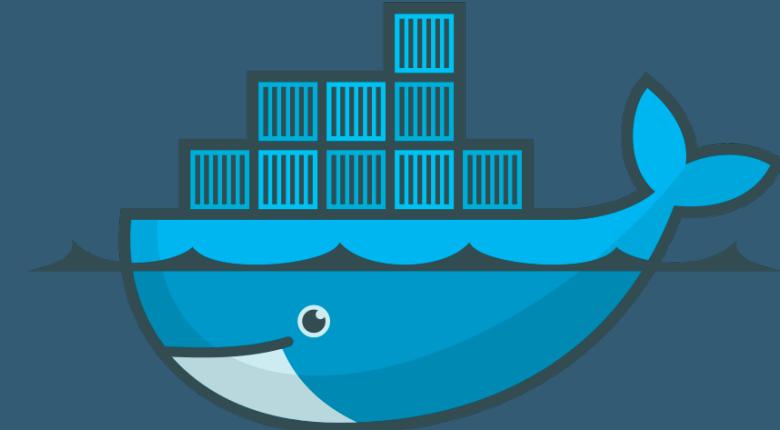
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- Containers keep logically distinct pieces of software separate.
- They can be built, deployed, maintained, managed and scaled on their own.
- Docker is the dominant leader
- Containers running across a distributed network
- Kubernetes used for Container Orchestration



kubernetes

Agenda

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- Container Theory:

- Container Architecture
- Why are containers useful?
- Terminology
- Docker Security & troubleshooting

- Container Workshops:

- Hello World with Busybox
- Static sites & Dockerizing web app
- Dockerizing your Node App

- Orchestration Workshop:

- Intro to Orchestration
- Kubernetes Theory & Architecture
- Minikube examples

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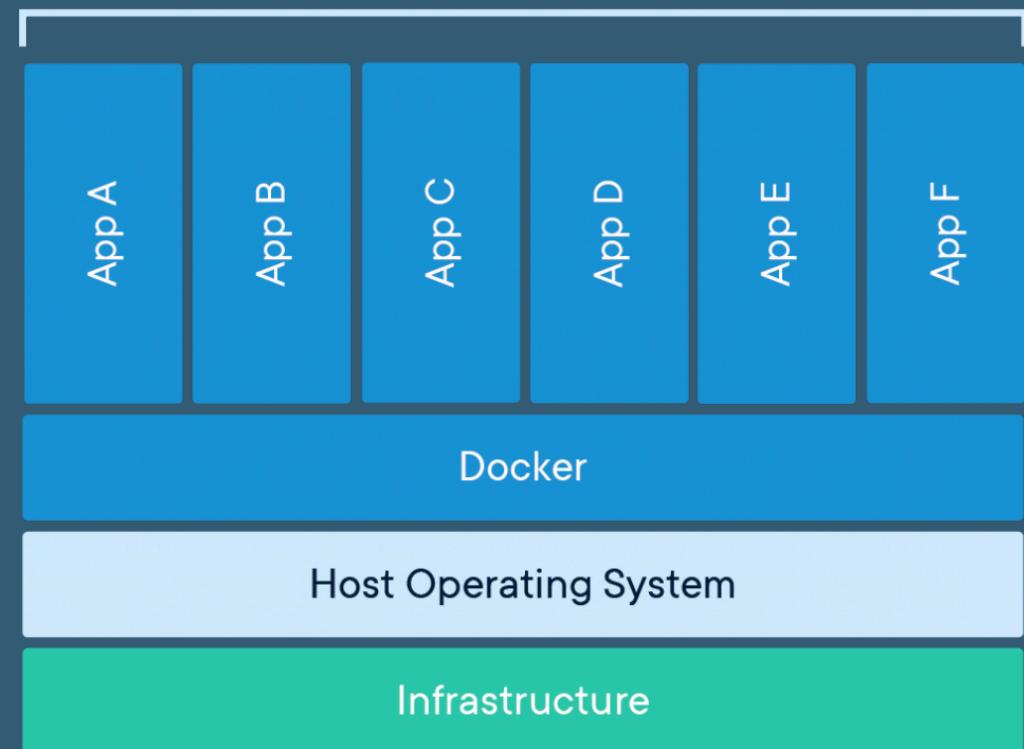
Let's get started!

- Environment setup & prerequisites
- [https://github.com/nishalad95/WCHelsinkiWorkshop
blob/master/Workshops/ContainerWorkshop1/
EnvironmentSetUp.md](https://github.com/nishalad95/WCHelsinkiWorkshop/blob/master/Workshops/ContainerWorkshop1/EnvironmentSetUp.md)

Container Theory

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- Allows developers to easily automate the deployment of their software application
- Packages an application with all of its dependencies into a standardized unit for software development
 - Source code
 - Libraries
 - Binary files
 - Other dependencies
- Don't get OS specific compilation errors
- Lightweight on the kernel
- Secure & isolated



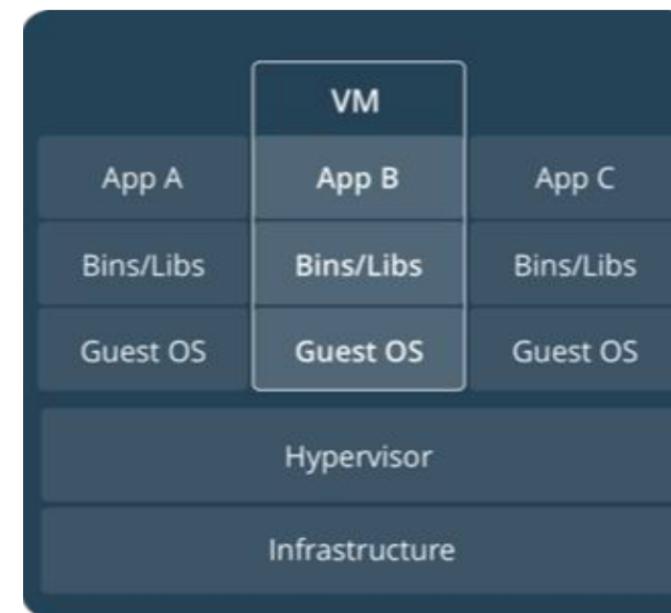
VMs vs Containers

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Container layout



VM layout



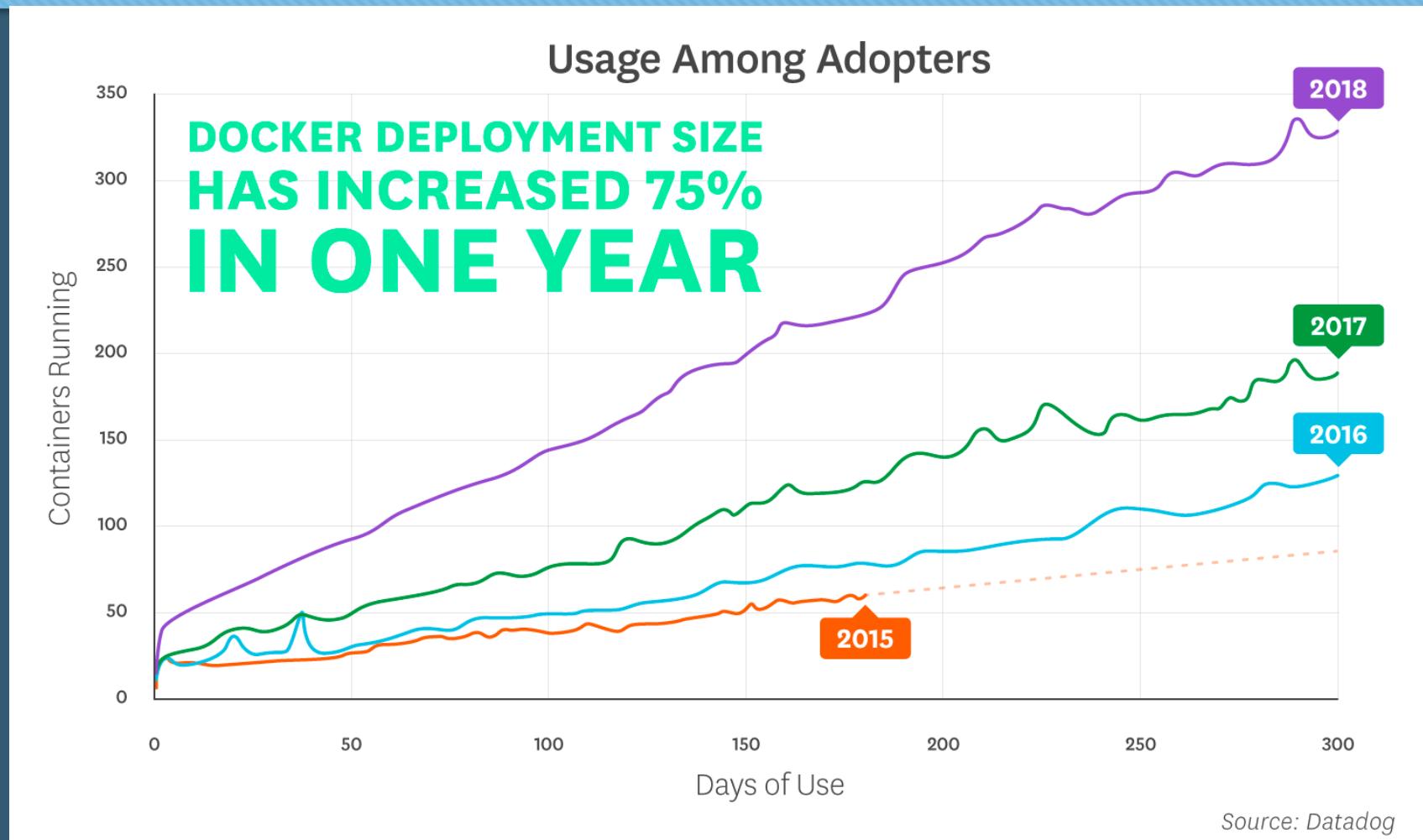
Why use Containers?

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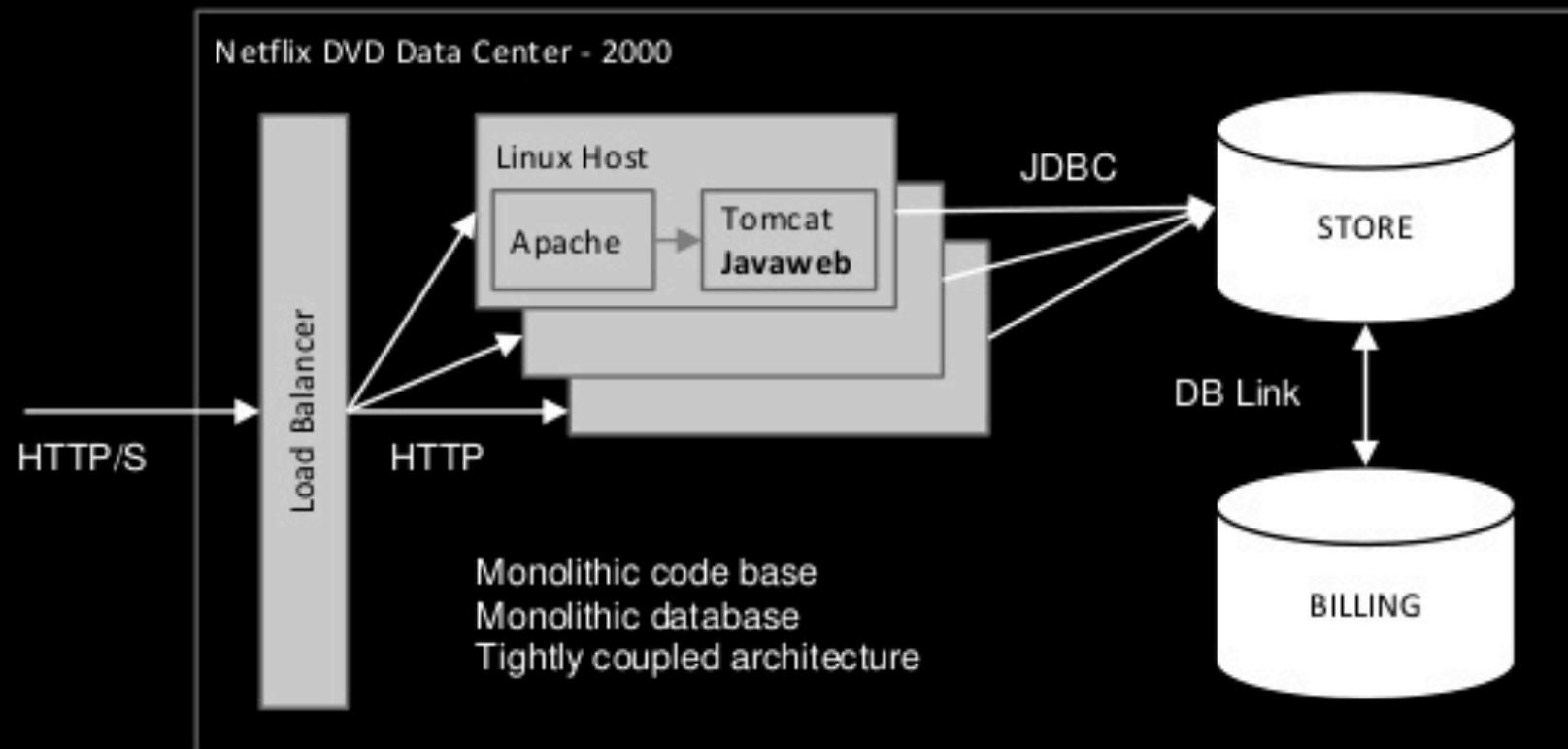
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How Netflix uses containers:

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What microservices are not



Container Demos

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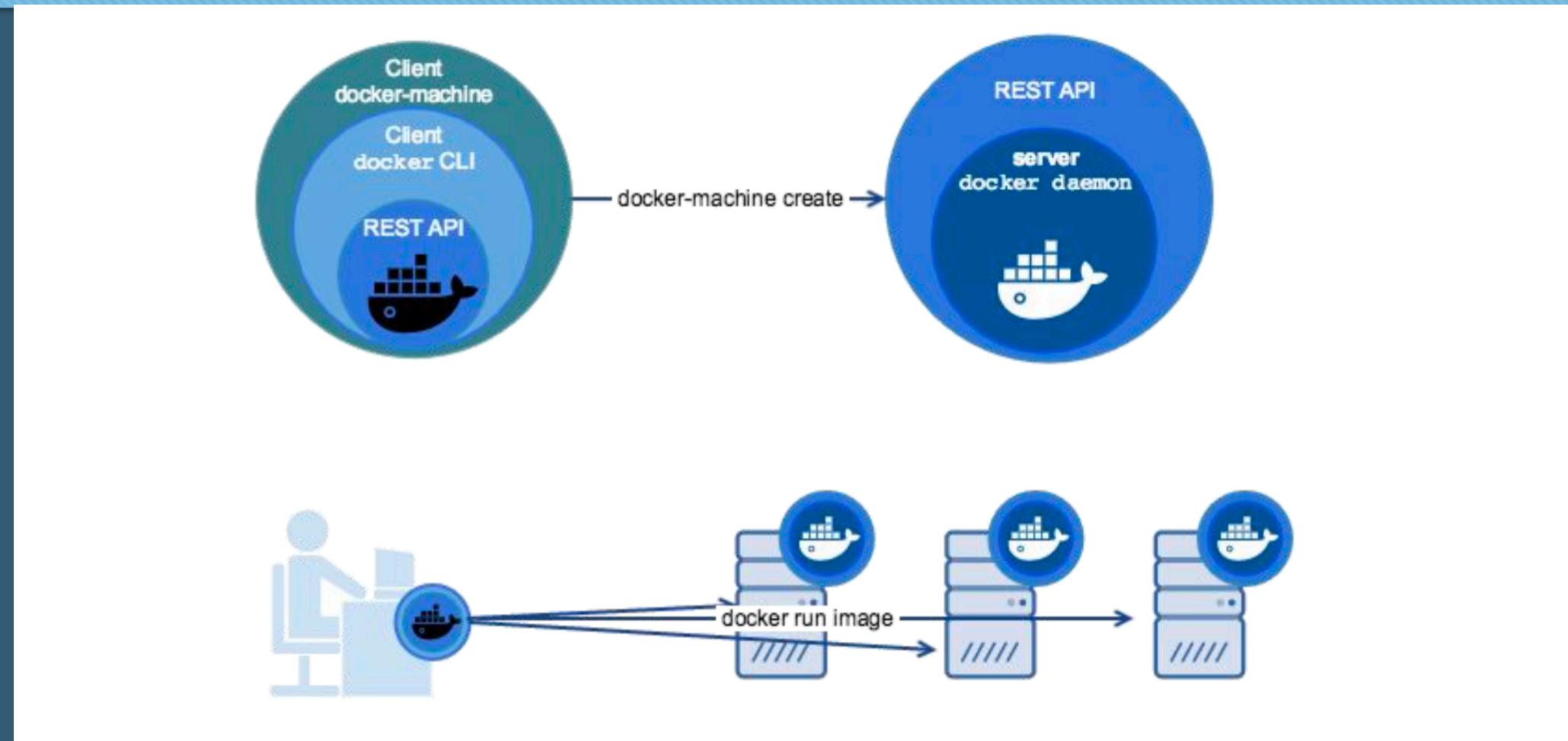
Docker Architecture

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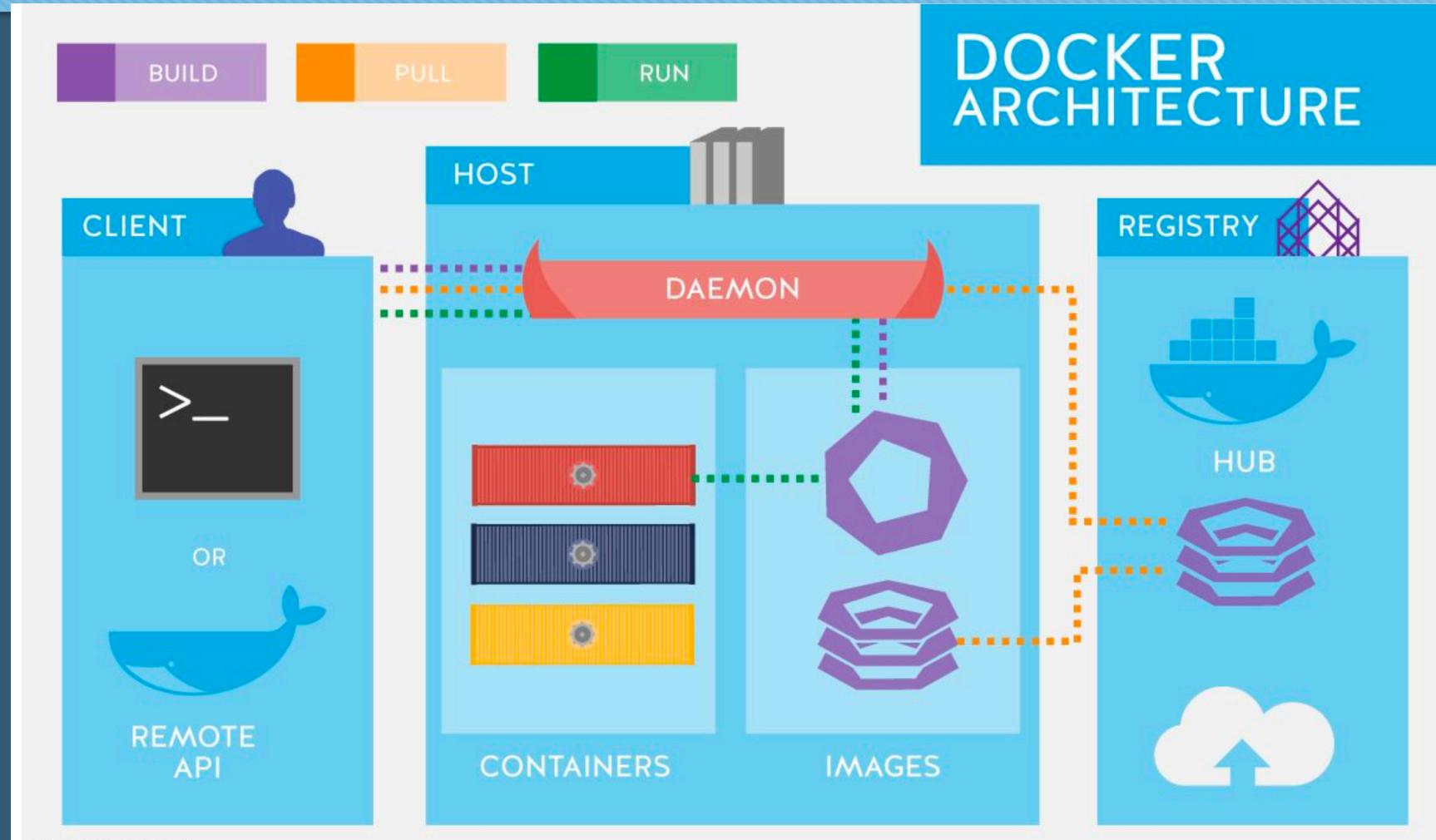
Docker Architecture

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Orchestration & Devops

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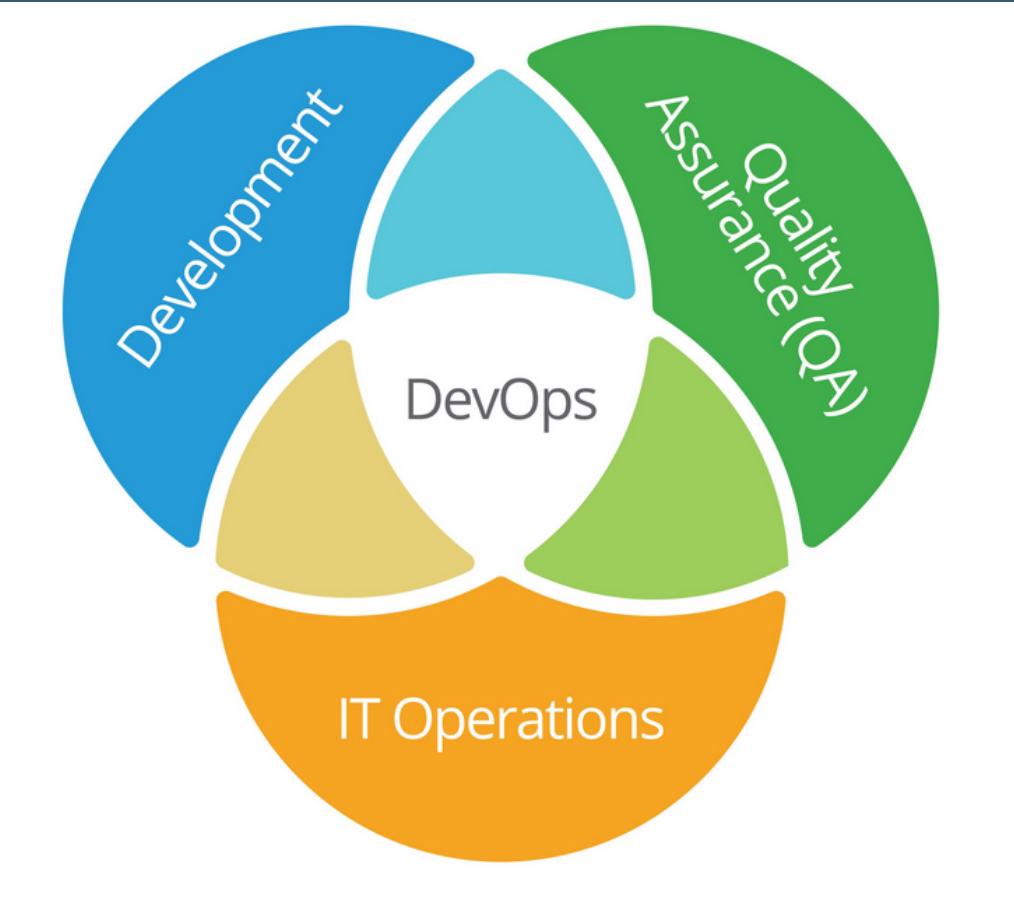
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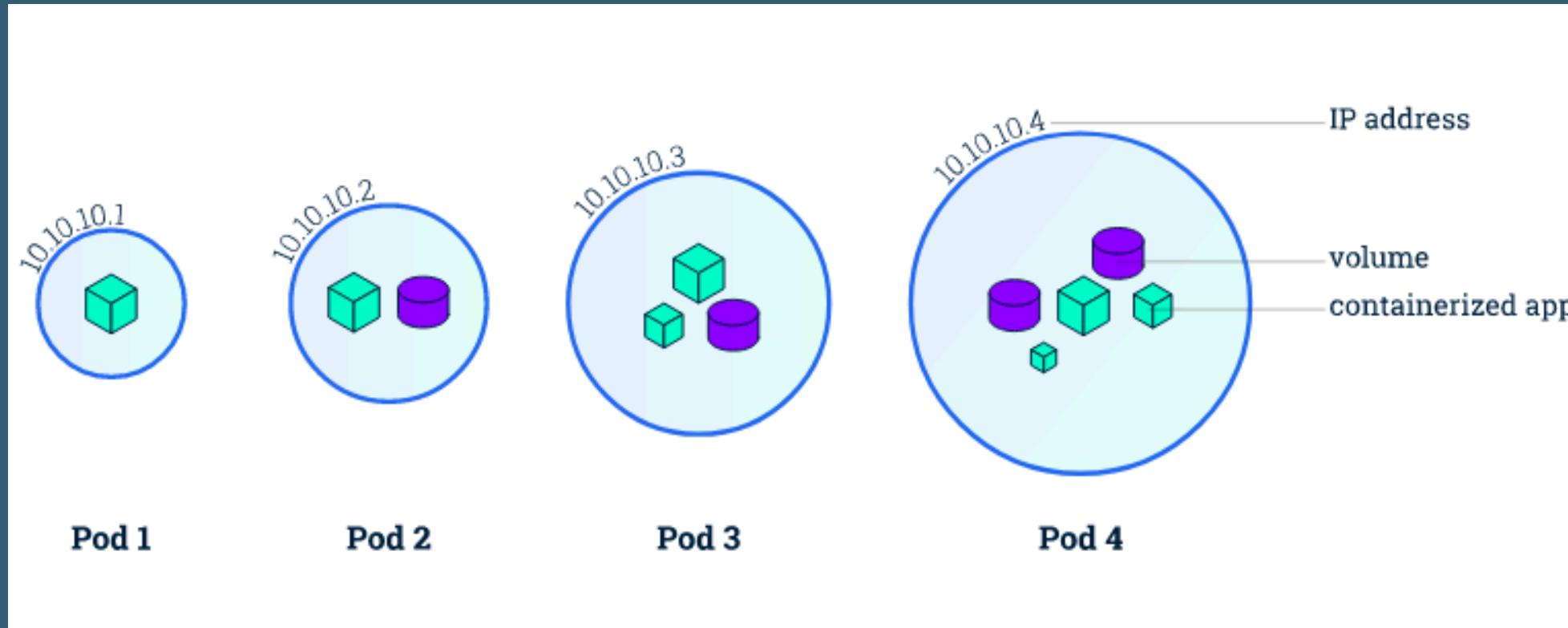
Devops

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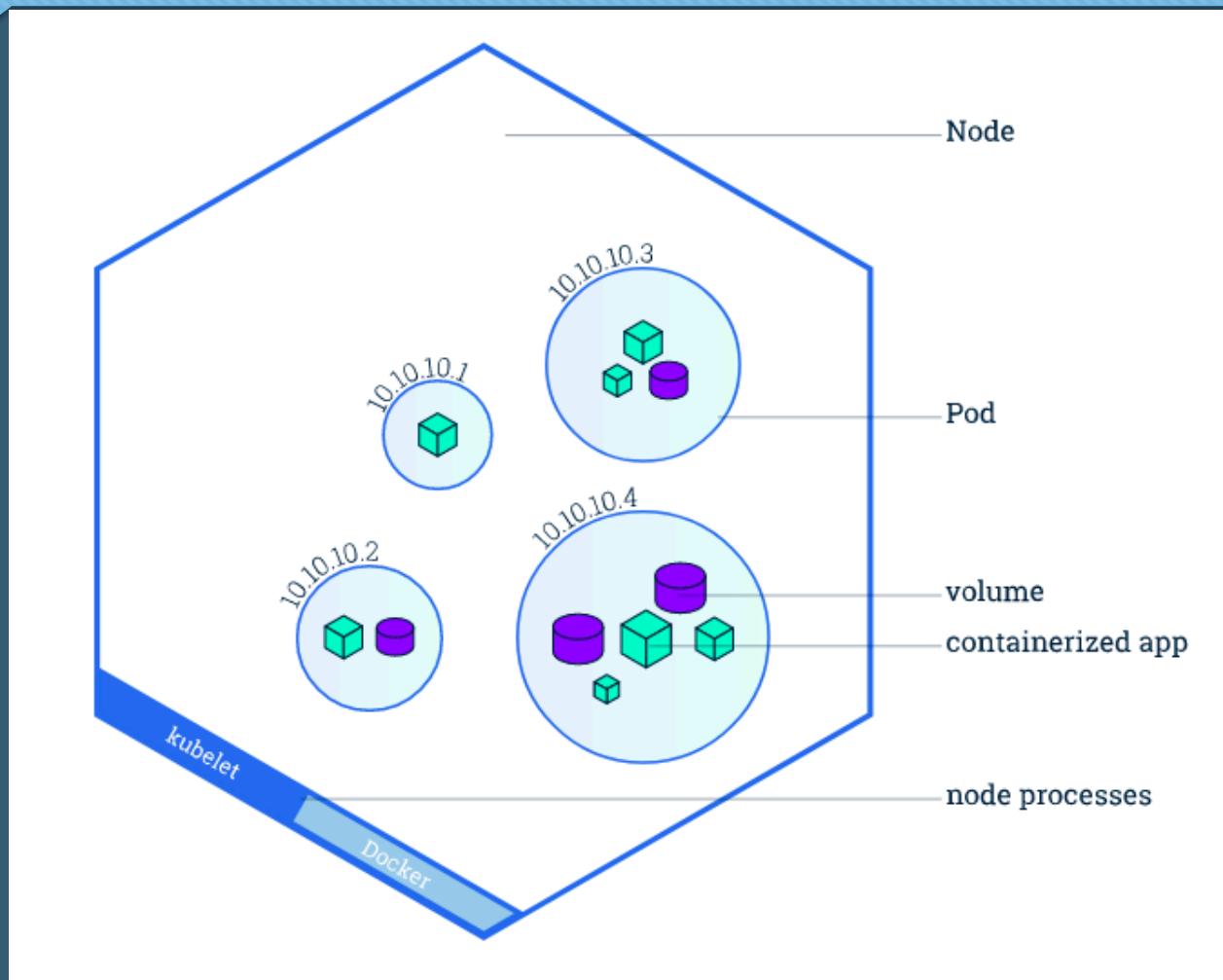
Kubernetes Primitives

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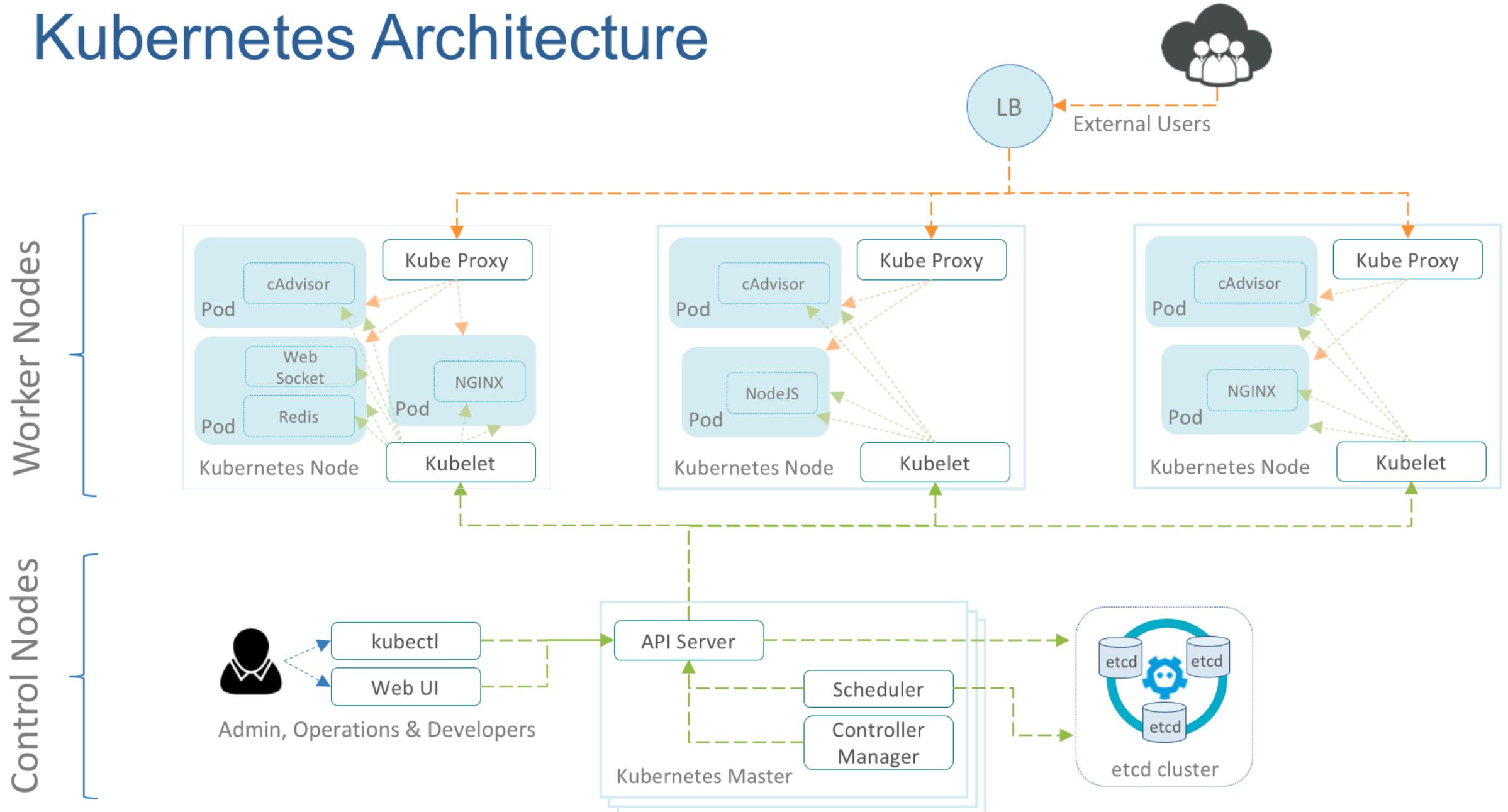


Kubernetes Primitives

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Kubernetes Architecture



Thank You!

