

API Management on Kubernetes' managed Clouds using Fabric8

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Content

- From MicroAdventures to MicroServices
- Introduction to Fabric8
- API Management
- Angry Pods on RaspberryPi

#microadventures



#microadventures

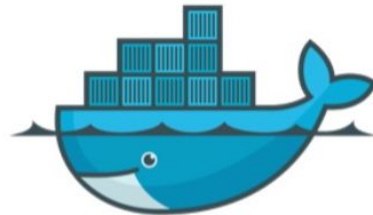
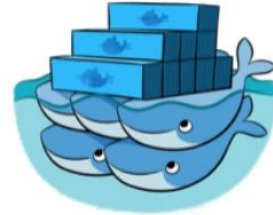


#microadventures



#microadventures





OPENSIFT



**CLOUD
FOUNDRY™**





OPENSIFT



docker

- Fabric8: iPaas
- OpenShift: Paas
- Kubernetes: Docker Orchestration
- Docker OS Level Virtualization



OS Level Virtualisation



Docker Orchestration



**PaaS Platform on top
of Kubernetes**

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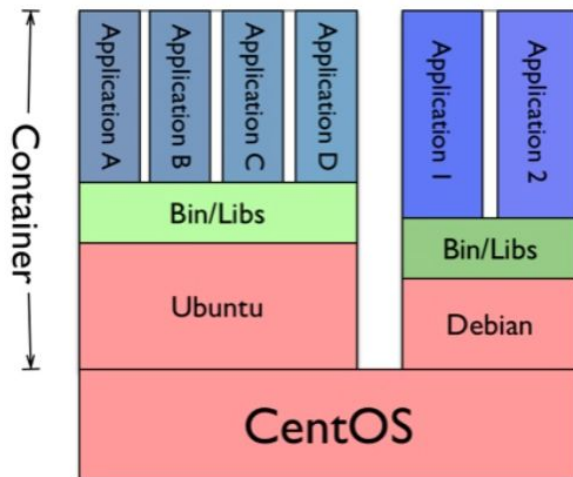
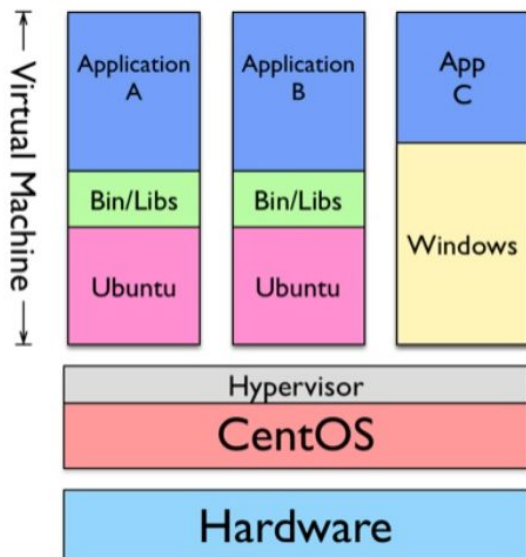
**Services and Tools for
Kubernetes and OpenShift**

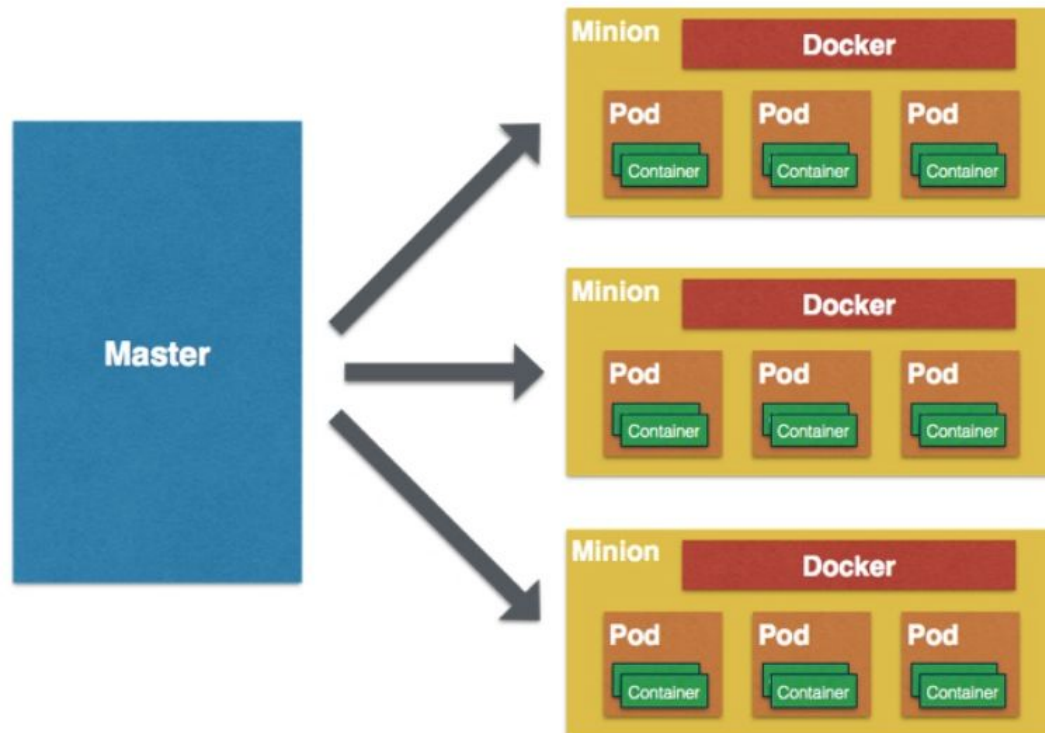
Lightweight Container vs. VM



Containers are isolated, but sharing the kernel and (some) files

→ faster & lighter





Three flavors:

OnLine (Public PaaS),

Enterprise (Private Paas),

Origin (Community Paas)

Written in GO Lang

Kubernetes Implementation

CLI tools (oc)



Fabric8



Fabric8 Management:

Hawtio Console, Logging, Metrics, Maven plugin

----- containers -----

Fabric8 iPaaS:

ActiveMQ Messaging, Camel, **API management**

iPaaS Quickstarts:

micro service examples
(**cdi demo**)

Fabric8 DevOps:

CD pipeline, jenkins, gogs, chat, gerrit, hubot

APIMan



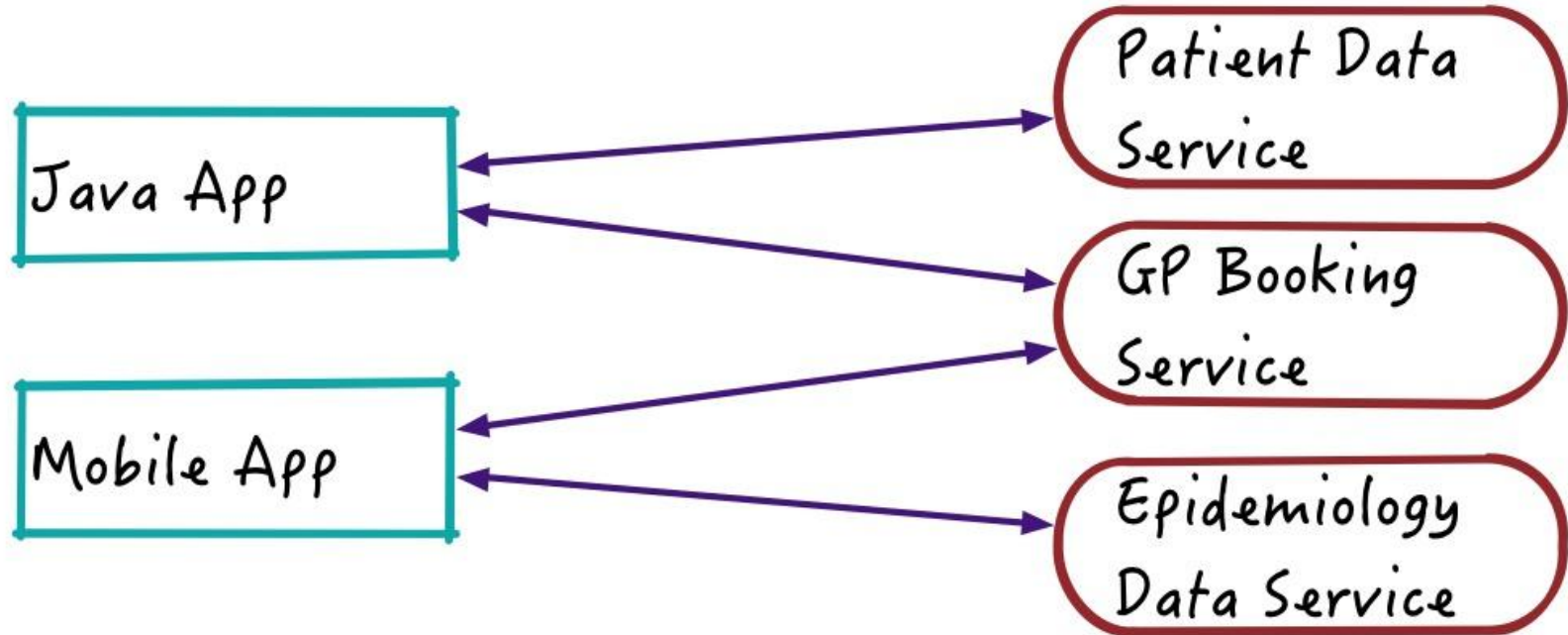
APIMan

- Gateway
- Management

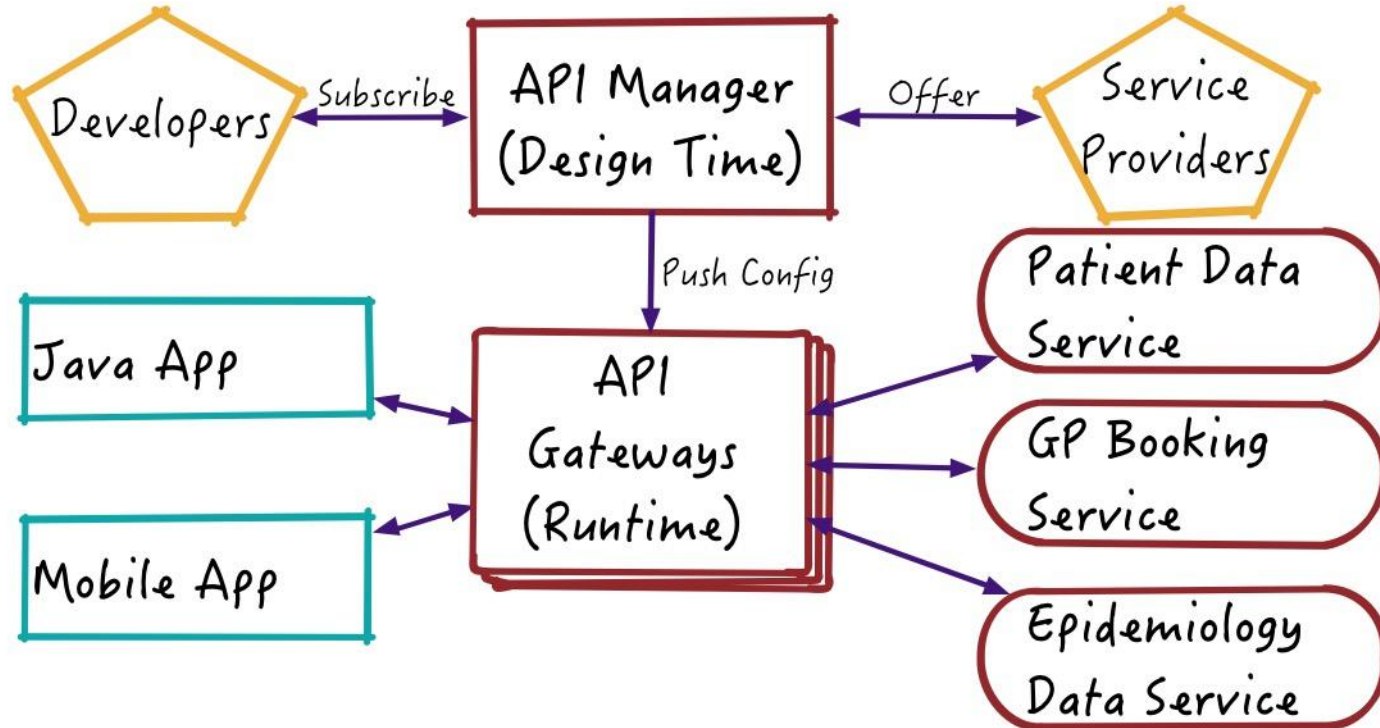
Use Cases

- Centralized security
- Throttling/Quotas
- Billing and Metrics

The traditional approach



Extracting common functionality



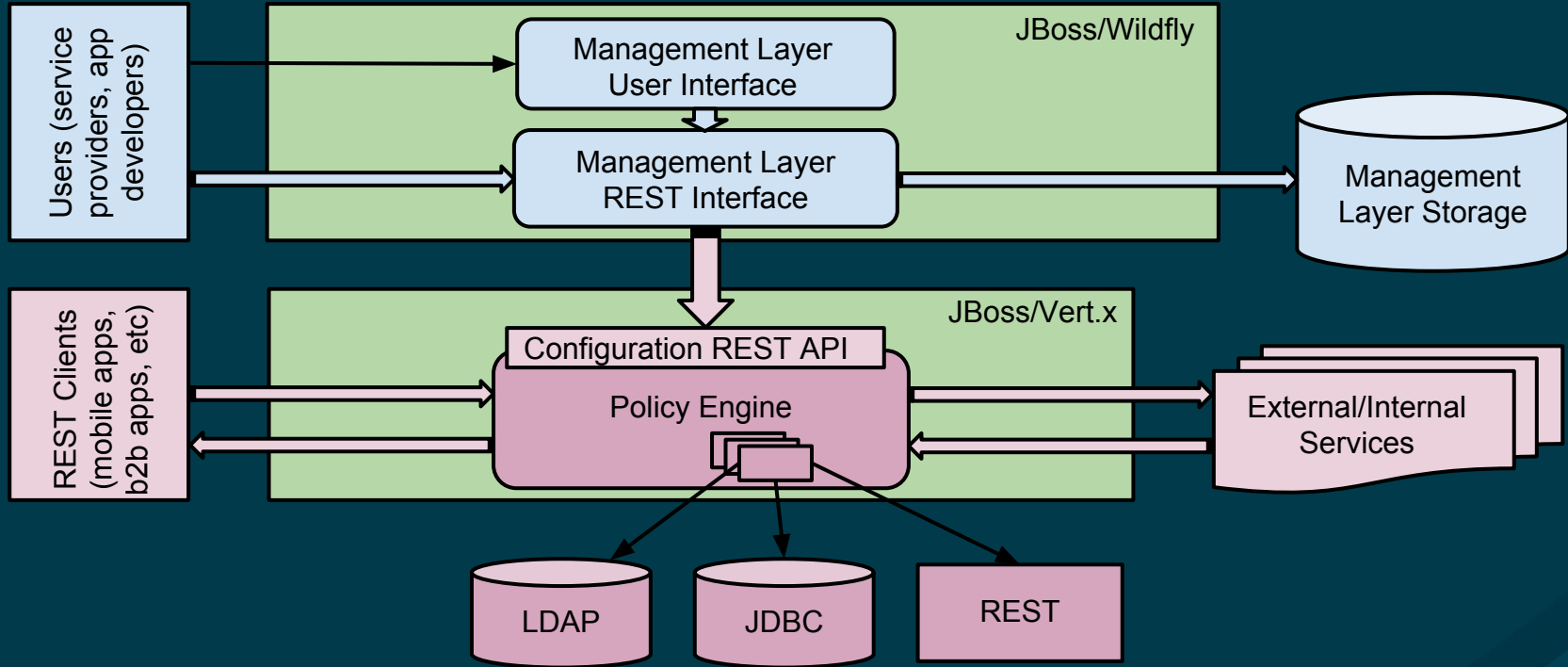
API Management + Micro-Services

- Registry of services
 - Service discovery
 - Service contracts
- Collection of metrics/statistics
- Central management of common API functionality (e.g. security)

Architecture

- API Manager
 - Configure/Manage APIs
 - Consume APIs
- API Gateway
 - Apply configured governance policies at runtime

Architecture



API Manager

- Configure/manage APIs
 - Service Provider role
 - Plan Manager role
- Consume APIs
 - Application Developer role (Service Consumer)

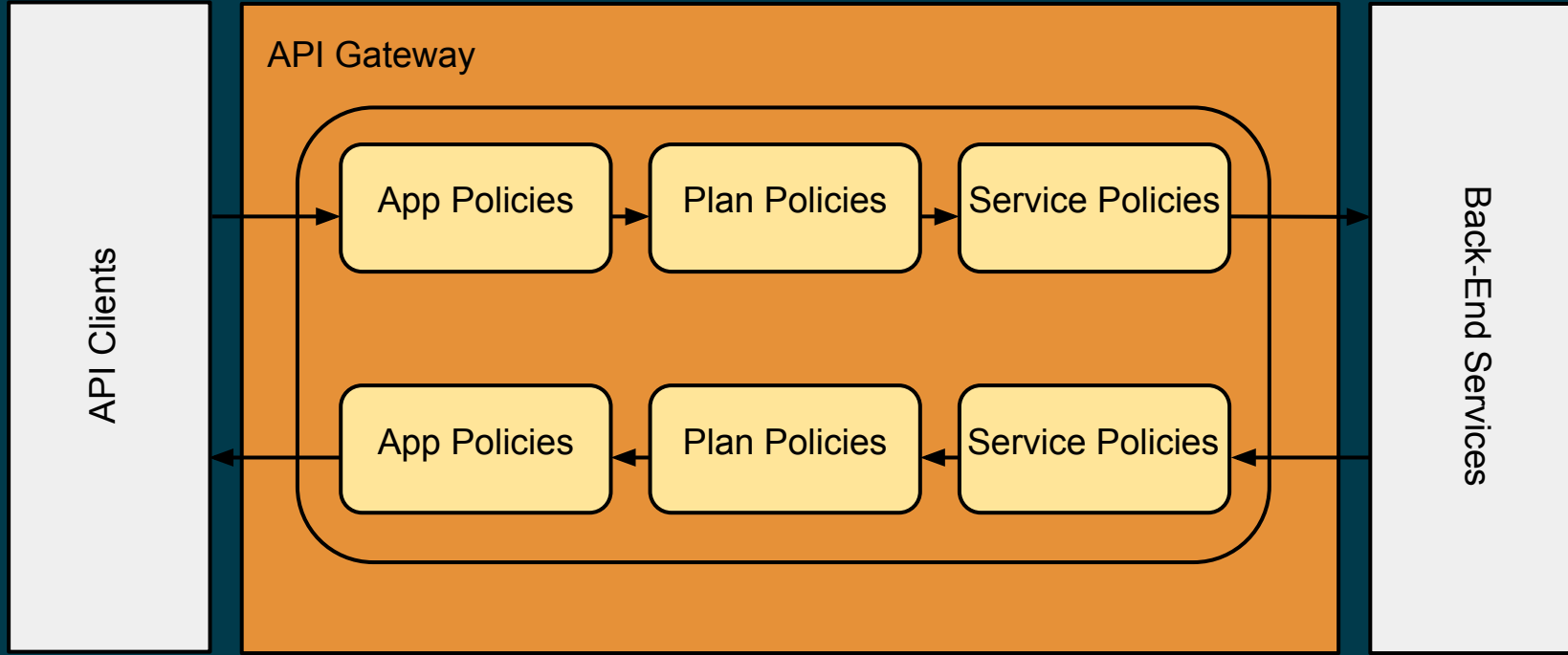
API Manager

- Organizations
 - Plans
 - Services
 - Applications
- Configure API Policies at each level

API Gateway

- Sits between the REST client and server
- Contains a subset of configuration from the API Manager
- Applies configured Policies to API requests at runtime
- Proxies requests to back-end services

API Gateway: Policy Chain



Plugins: Create Custom Policies

- Simple archive based plugin (WAR format)
- JSON descriptors (plugin and policy definition)
- Easy testing with JUnit and deployment via Maven
- Plugin management in the API Manager UI
- Both runtime and UI aspects encapsulated

CXF Demo

Camel Demo



Continuous Delivery Pipeline using Fabric8 and Jenkins



fabric8

Home » Develop » default » Projects » gogsadmin-awesome

Overview Pipelines Builds Metrics Tools Detail

Environments

Testing

Staging

awesome : 1.0.2 1
 Build #2 Commit 95a0832

Production

awesome : 1.0.2 1
 Build #2 Commit 95a0832

Pipelines

#2
started 25 minutes ago

canary release
2 minutes

»

integration test
2 minutes

»

stage
30 seconds

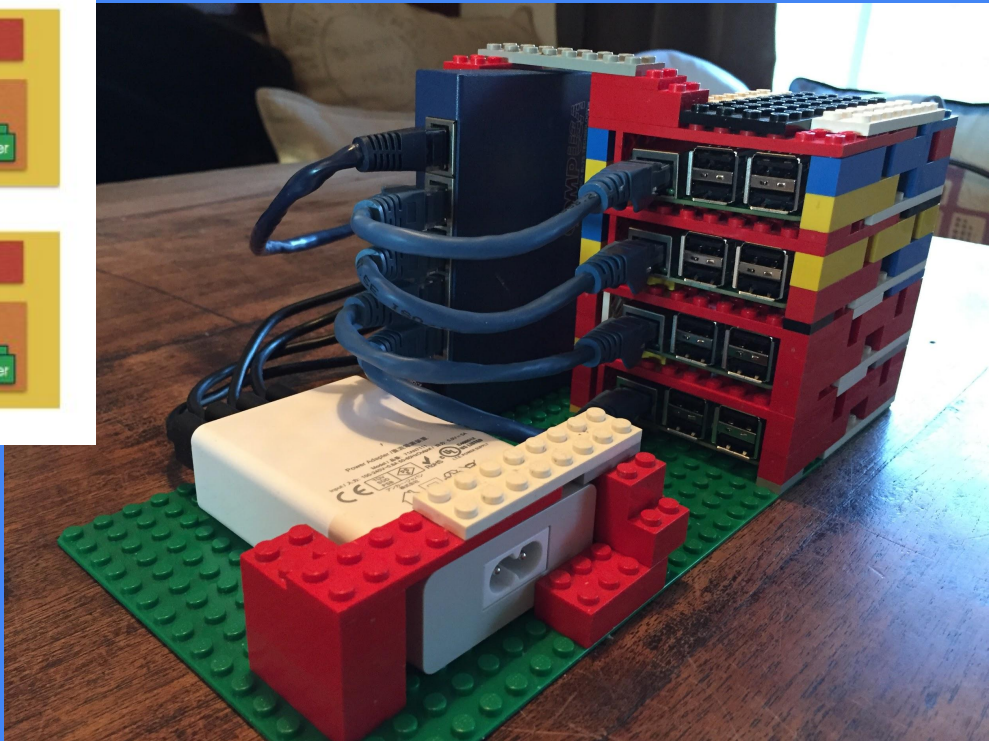
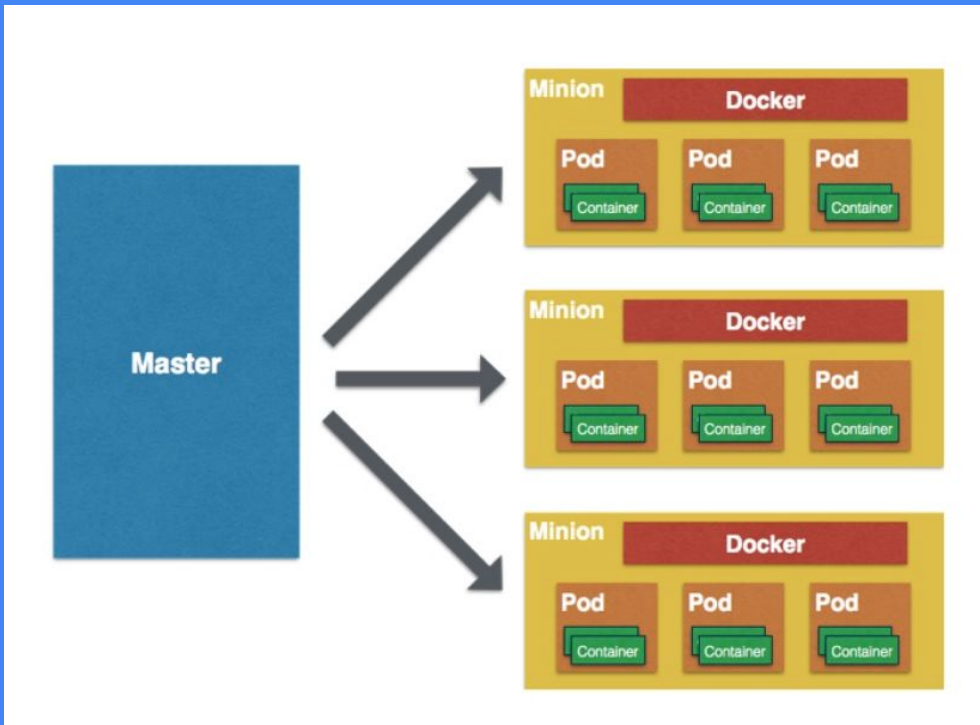
»

approve
2 minutes

»

promote
7 seconds

Angry Pods!



Questions?

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