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Application Delivery: Kubernetes Is NOT Enough

BOV-1180

Kubernetes, PaaS, or both?

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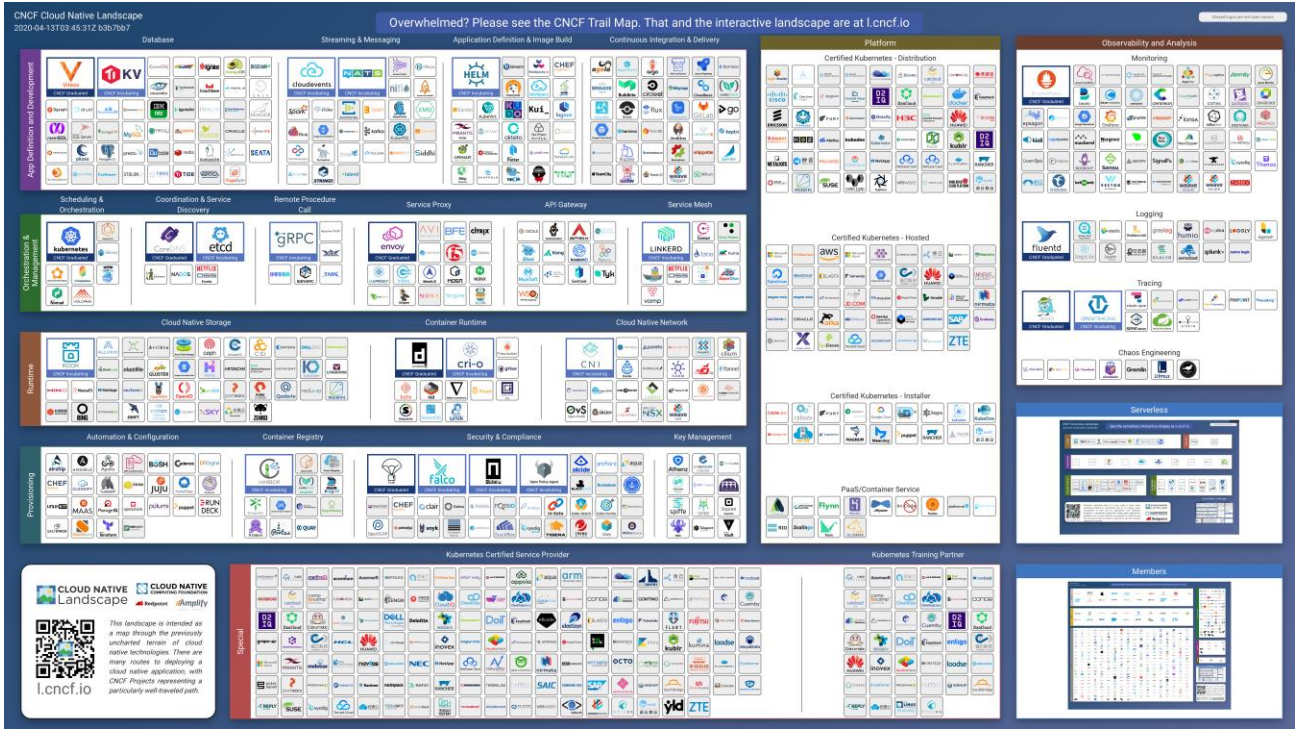
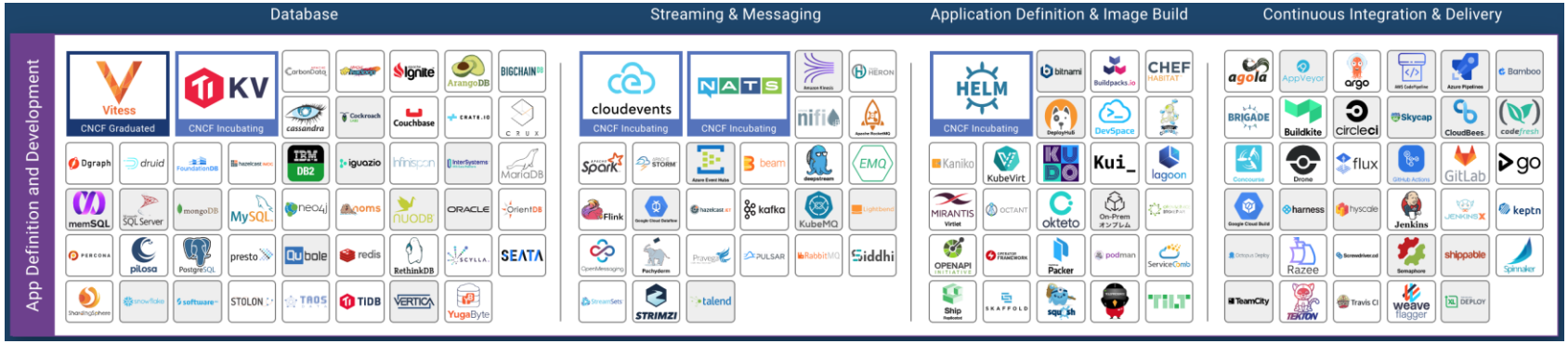
SUSE

What makes Kubernetes Hard for Application Developers?

CNCF Landscape



CNCF Application Development Landscape



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~~Kubernetes Is NOT Enough~~

Kubernetes Is TOO MUCH

How Is Platform-as-a-Service Different?

About Building Platforms ...

Kelsey Hightower
@kelseyhightower

Kubernetes is a platform for building platforms. It's a better place to start; not the endgame.

1:04 PM · Nov 27, 2017 · Twitter Web Client

https://twitter.com/kelseyhightower/status/935252923721793536

About Building Platforms ...

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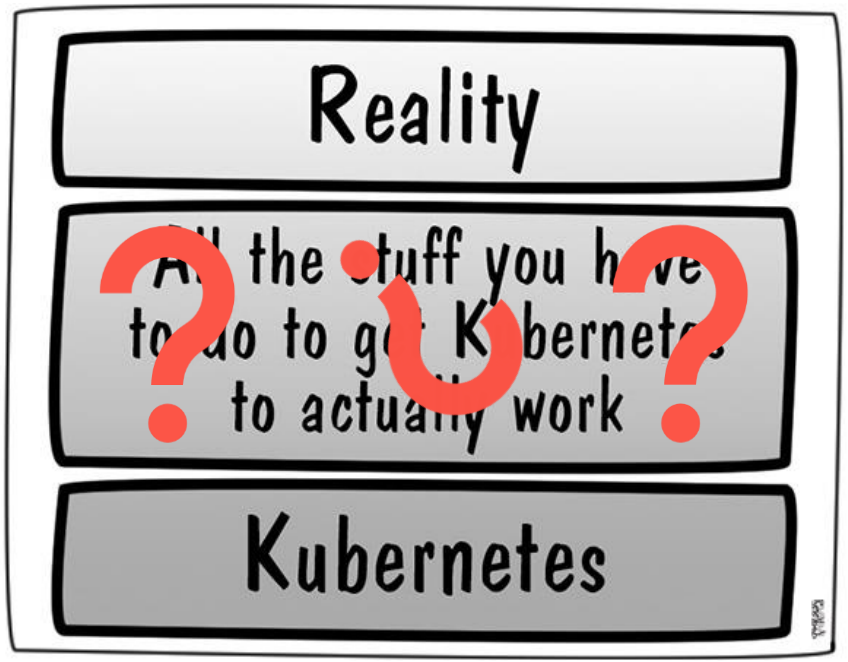
252 Retweets **721** Likes

Luke Youngbrrrr @LukeYoungblood · Nov 27, 2017
Replying to @kelseyhightower
Honest question: do we really want to encourage every single dev team on earth to build their own platform? So many great startups have failed because they focused on building "an amazing platform" instead of just shipping code...

4 10

Kelsey Hightower ✓ @kelseyhightower · Nov 27, 2017
Not when an existing platform suits their needs.

16



- devops.com, March 2020

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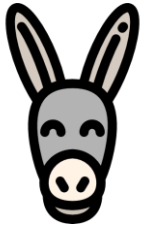
What Is A Platform?

Comparing *aaSes

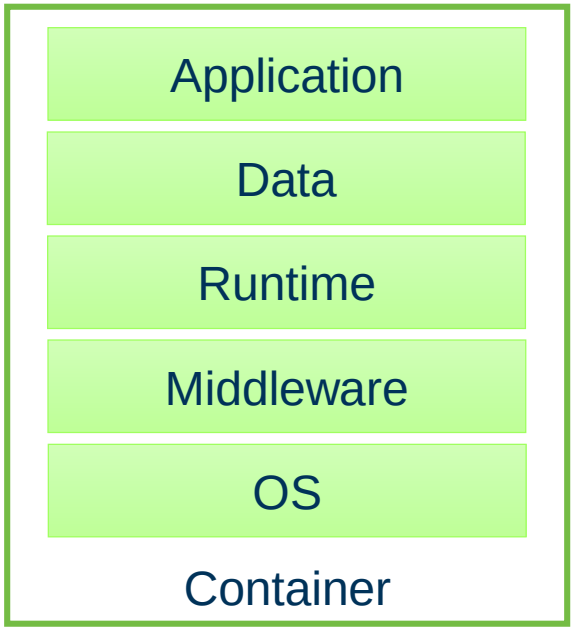


Applications	Applications	Applications
Data	Data	Data
Runtime	Runtime	Runtime
Middleware	Middleware	Middleware
OS	OS	OS
Virtualization	Virtualization	Virtualization
Storage	Storage	Storage
Networking	Networking	Networking
Compute	Compute	Compute
IaaS	PaaS	SaaS

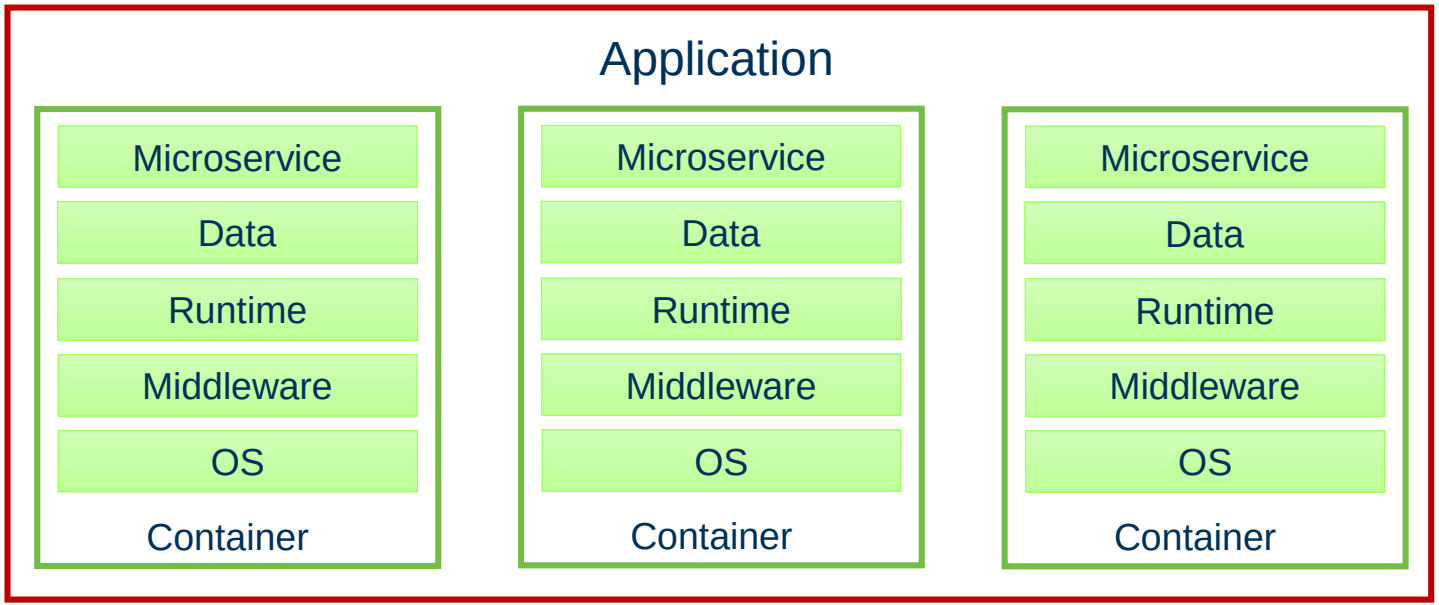
Vendor-managed

Self-managed

Perception: Application In A Container



Reality: Applications Are **Not** Containers



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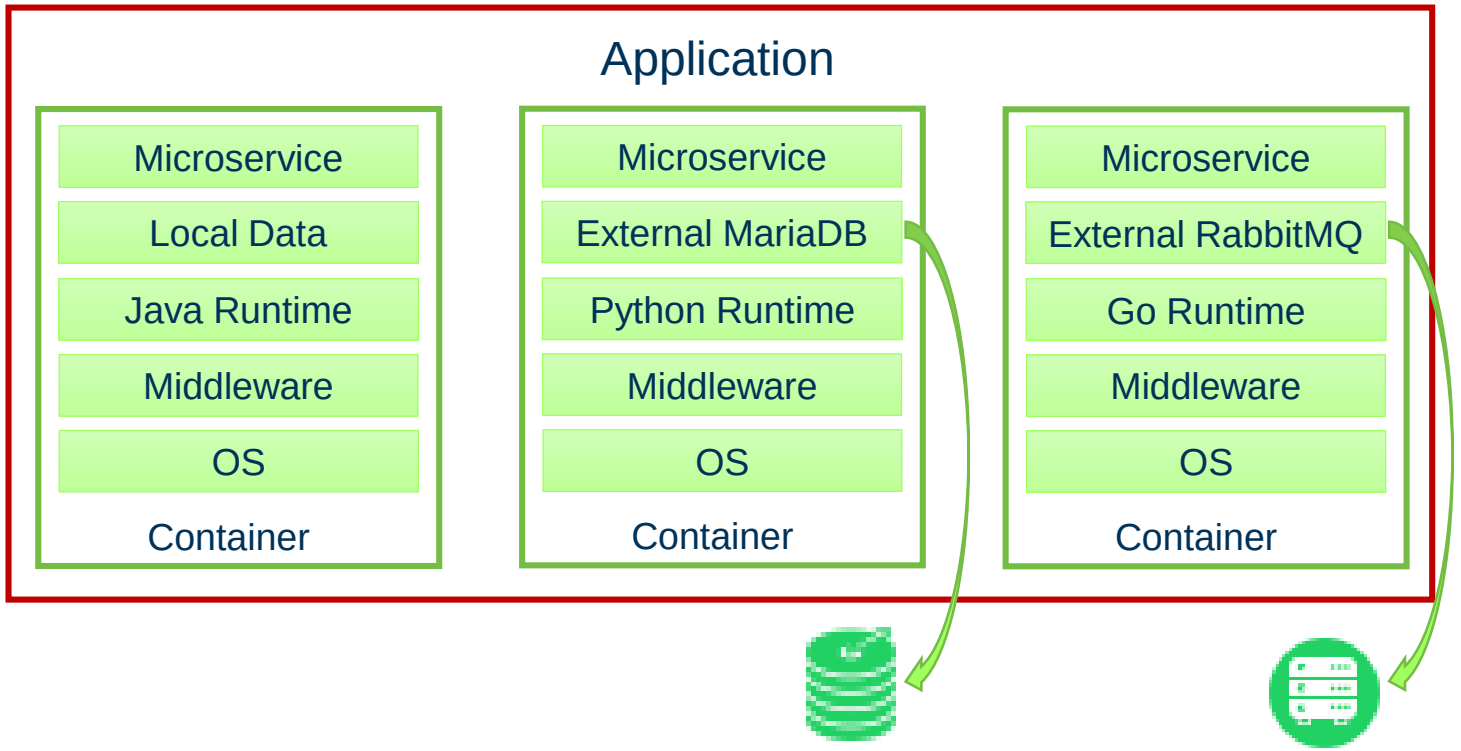


Reality: Applications Are **Not** Containers

- How do I …
  - build it (once or 1000 times)
  - connect it to services
  - scale it
  - route to it
  - manage its lifecycle

A Platform should understand the world from the application point of view

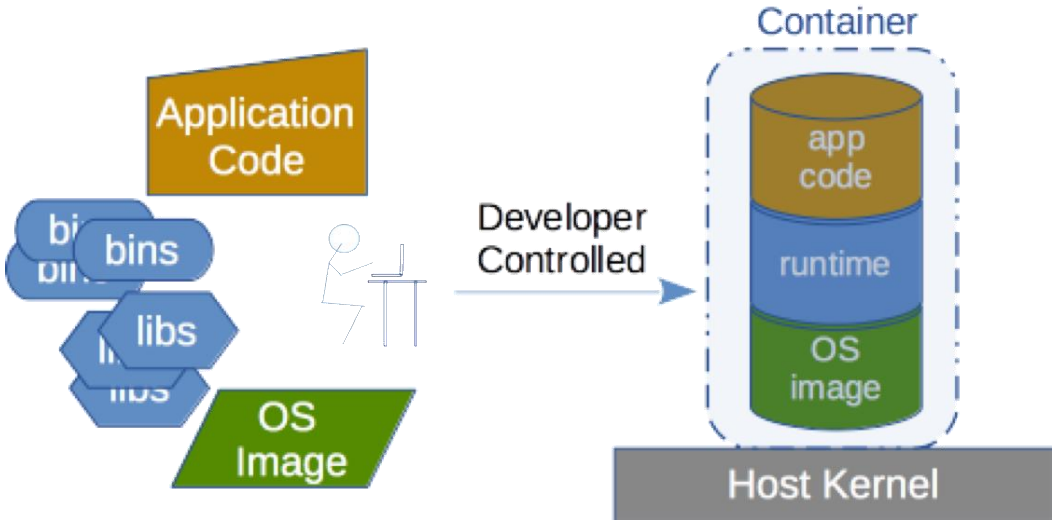
CLOUD FOUNDRY

What Is Cloud Foundry As A **Platform**

- API driven, resilient, and scalable application aware system
- Separation of concerns between application, middleware, and OS
- Routing and dynamic route management
- Role-based access control with Organization and Space concepts
- Centralized logging
- Service brokering with services ecosystem

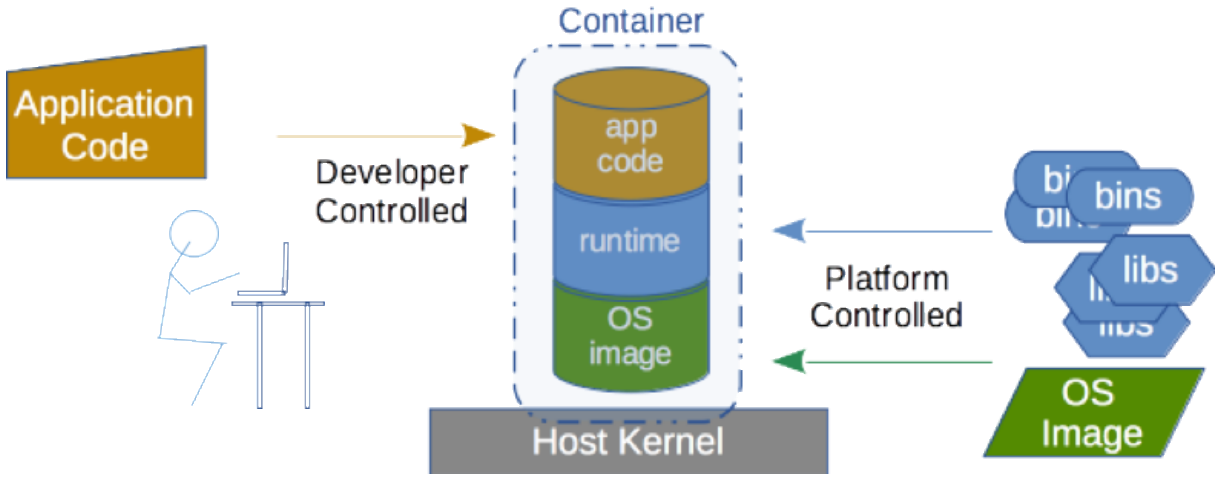
Separation Of Concerns

- "Fullstack Engineer" - jack of all trades, master of none



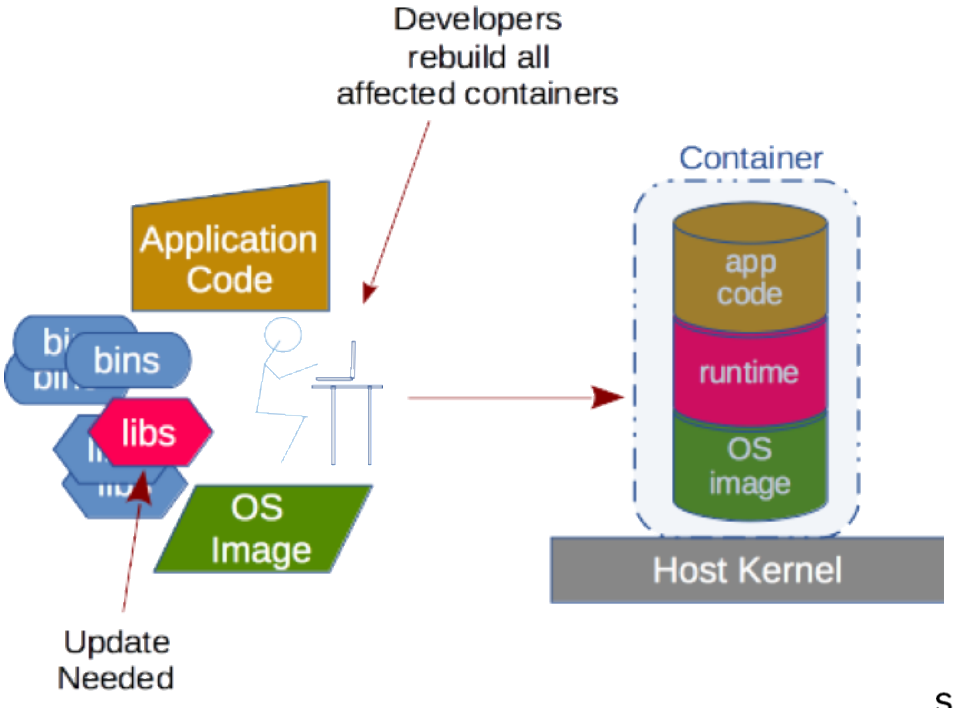
Separation Of Concerns

- Why rely on the developer for all elements of the stack?



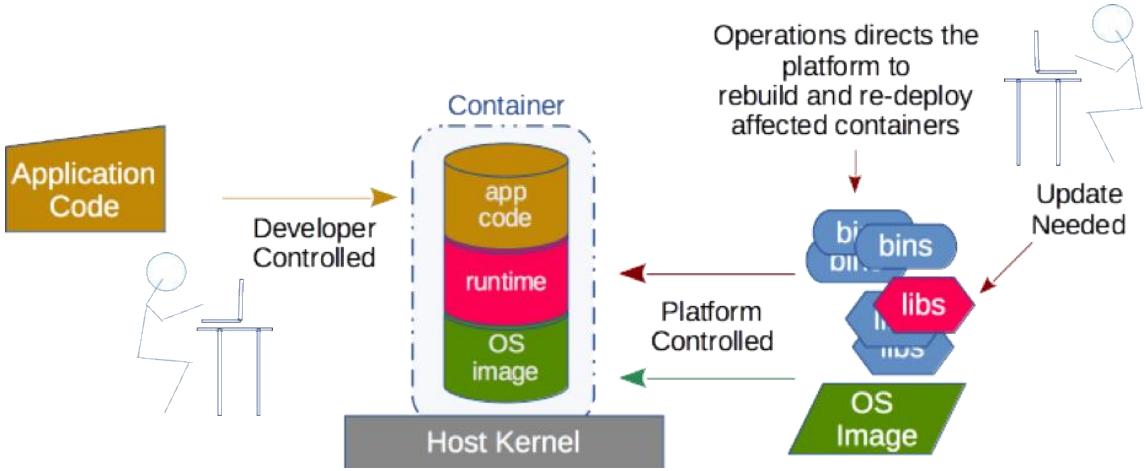
Separation Of Concerns

- What do you do when one element needs updating?



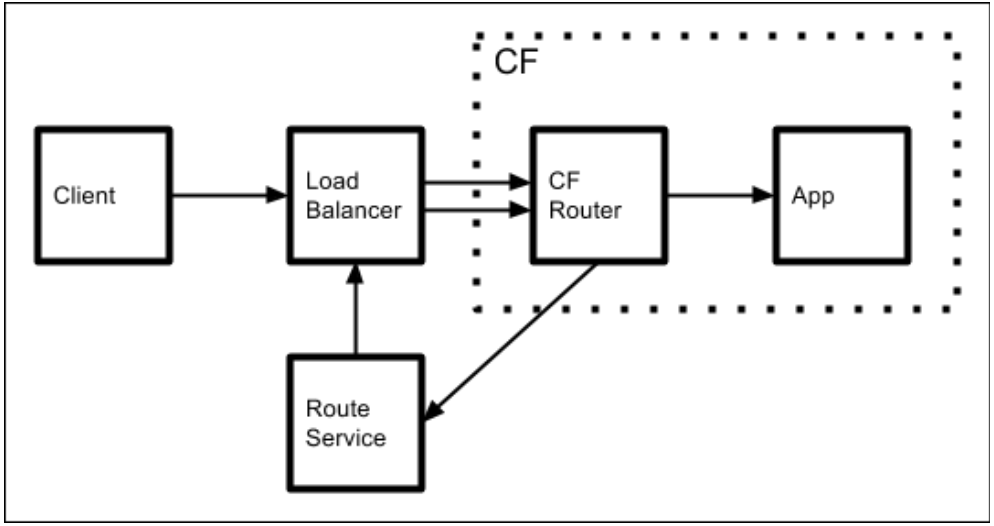
Separation Of Concerns

- Clean separation means different responsible parties can manage the lifecycle of each area without involving the others



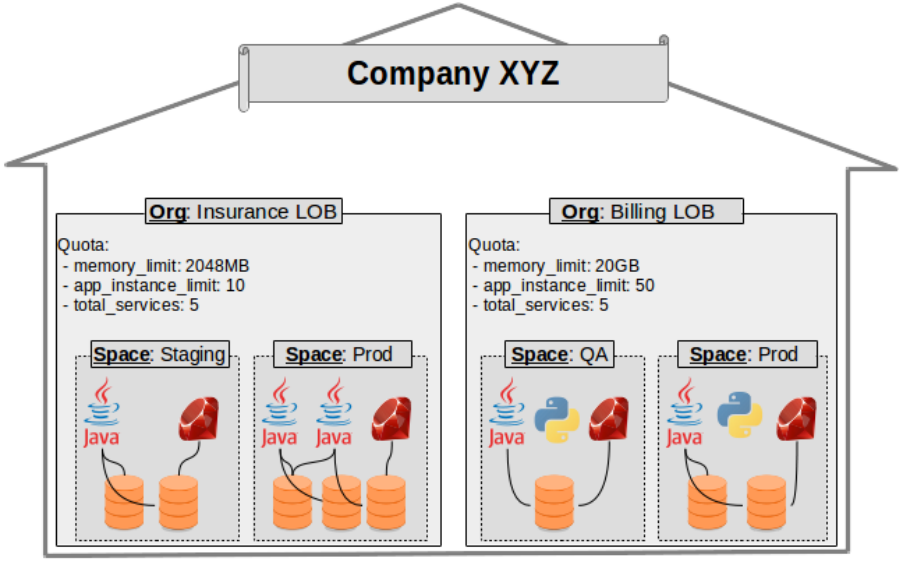
Cloud Foundry Routing

- Software (Go) based virtual routing layer with enhanced features
- Load balances across application instances

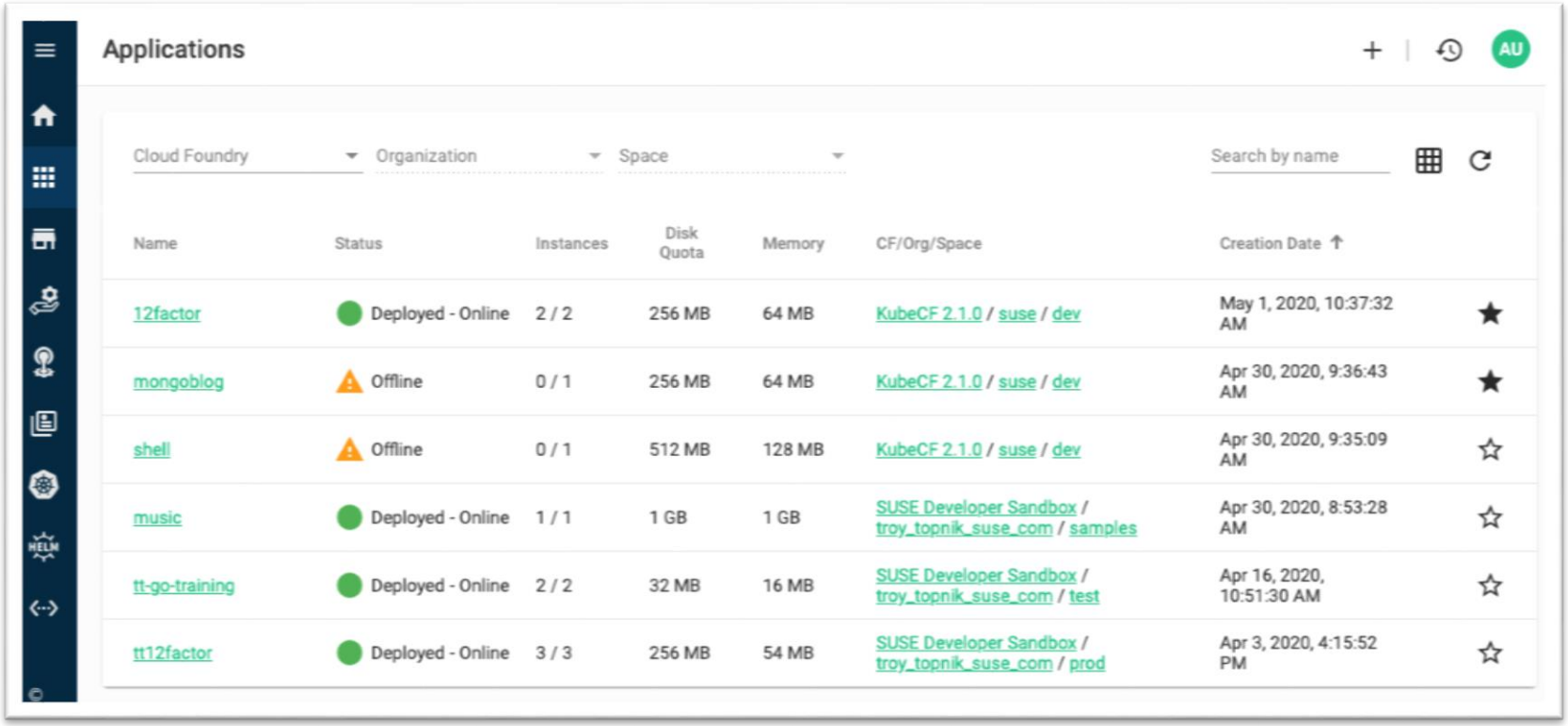


Cloud Foundry RBAC

- User management structured into Organizations and Spaces
- Multi-tenant aware with fine grained quota management



Scalably Manage Applications

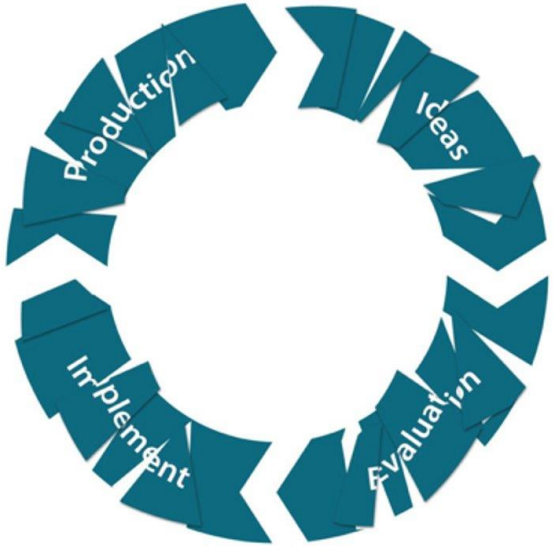


Platform as a Service

A good application platform will provide the tools that empower developers on the larger scale in an enterprise environment

- Freedom to choose
- Ability to innovate quickly
- Manage apps at scale

… while adhering to enterprise standards



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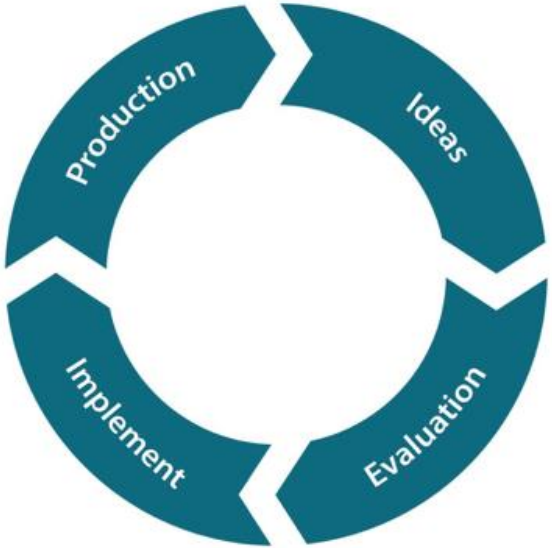


CLOUD FOUNDRY

So When Kelsey Says...

Kelsey Hightower ✓
@kelseyhightower

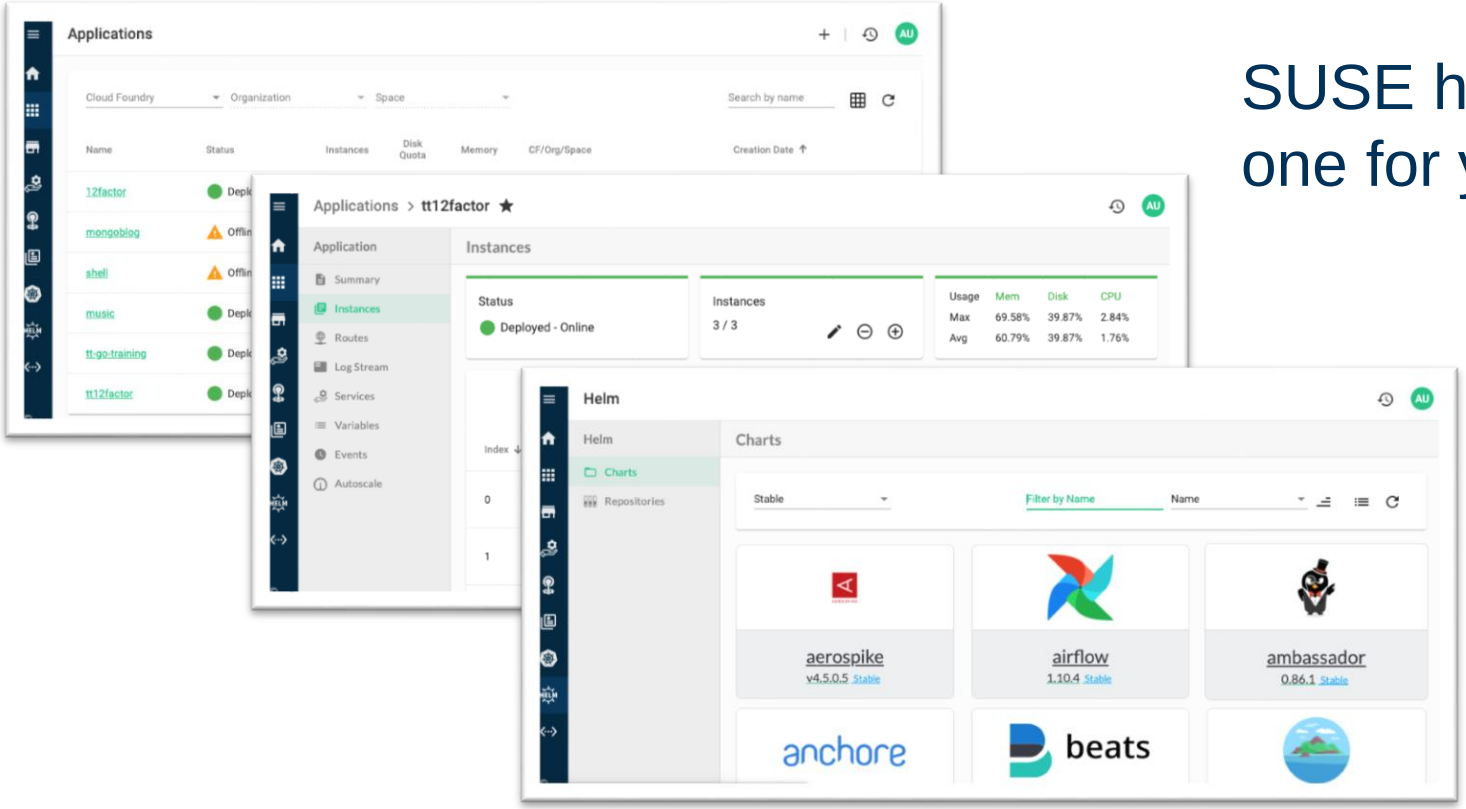
Still true.

> **Kelsey Hightower** ✓ @kelseyhightower · Apr 11, 2017
> I'm convinced the majority of people managing infrastructure just want a PaaS. The only requirement: it has to be built by them.

10:03 AM · Apr 25, 2020 · Twitter Web App

109 Retweets **634** Likes

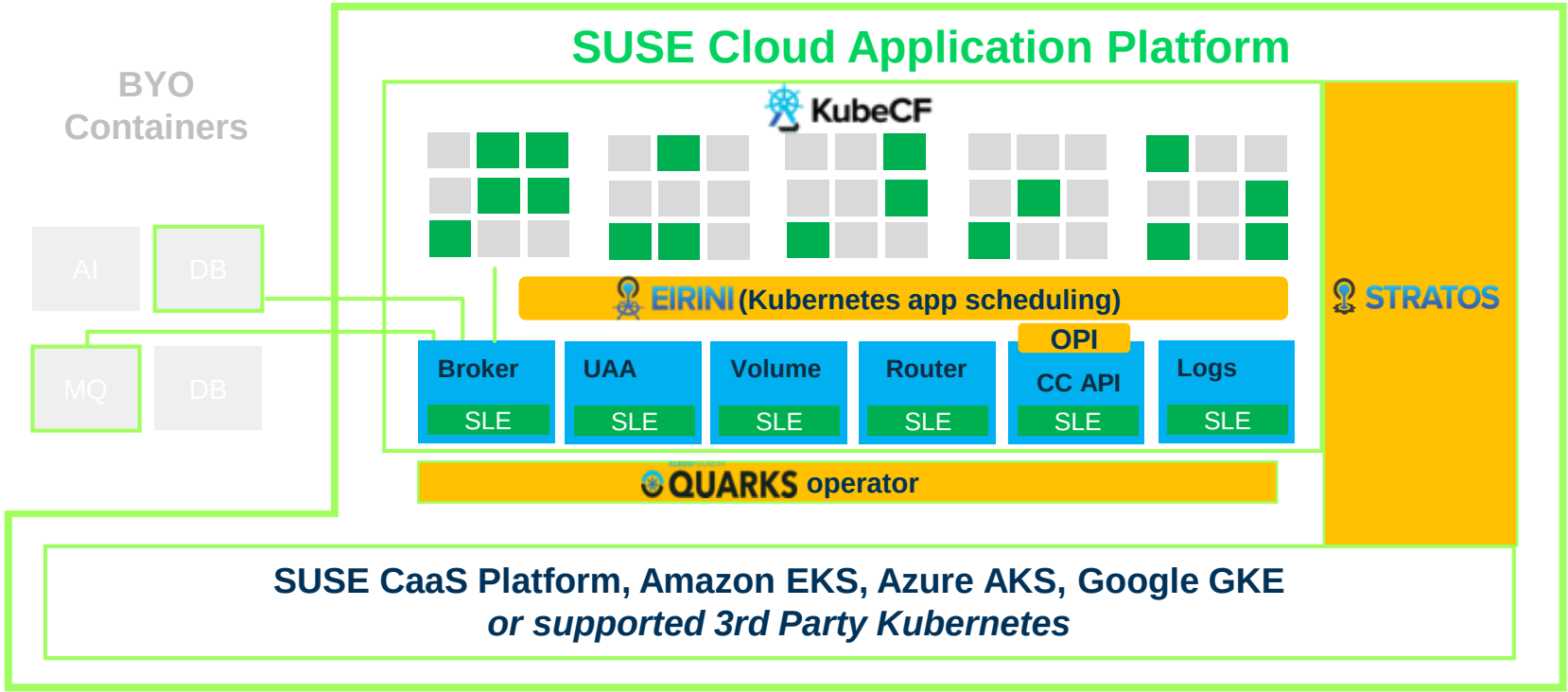
… You Don't Have To Start From Scratch



SUSE has built one for you!

SUSE Cloud Application Platform

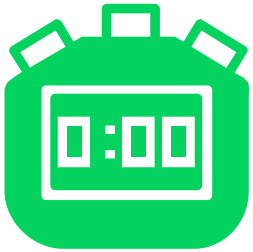
Eirini & Quarks



Deliver Real Business Value

Increase agility with a modern application platform

$100,000 average cost saving per application development cycle*



10 weeks faster time-to-market per application on average*

3 public cloud deployment options for maximum flexibility (Amazon EKS, Azure AKS, Google GKE)

* Cloud Foundry Foundation Application Runtime User Survey, Oct 2018

Resources

SUSE Cloud Application Platform

- https://www.suse.com/products/cloud-application-platform/

Documentation

- https://documentation.suse.com/suse-cap/

Github

- https://github.com/cloudfoundry-incubator/kubecf
- https://github.com/cloudfoundry/stratos
- https://github.com/cloudfoundry-incubator/cf-operator
- https://github.com/cloudfoundry-incubator/eirini

Slack

- http://slack.cloudfoundry.org/
- #stratos #kubecf-dev #quarks-dev

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