



KubeCon



CloudNativeCon

North America 2018

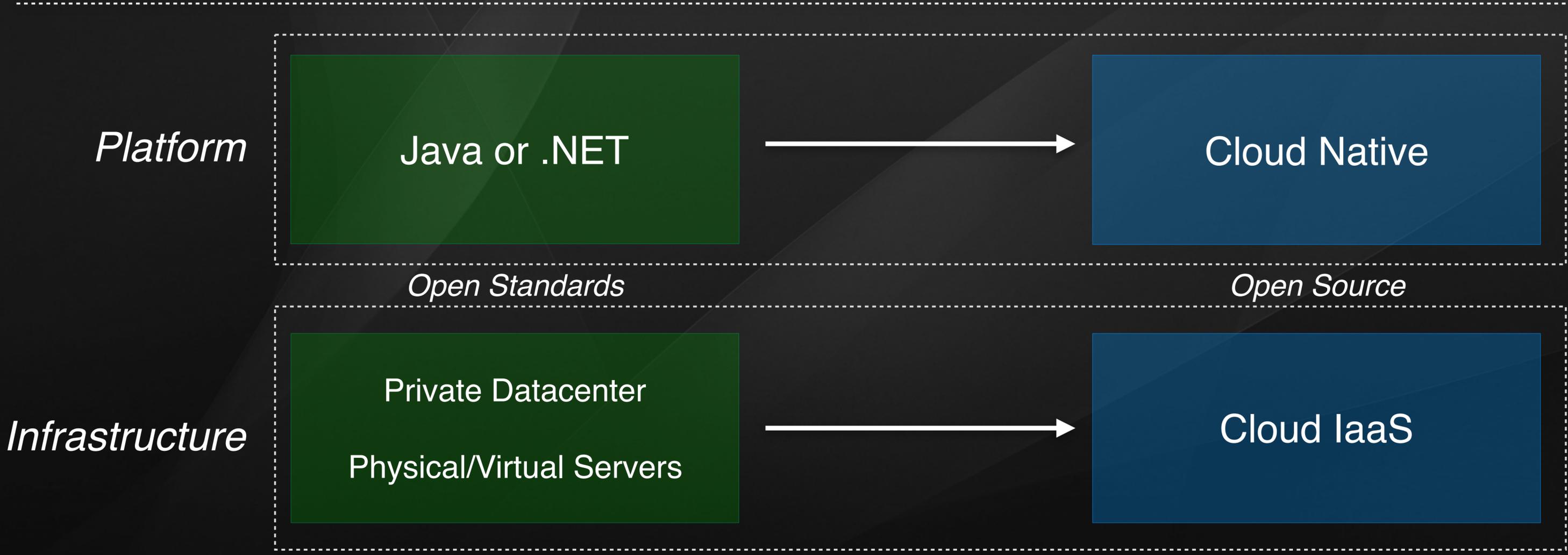
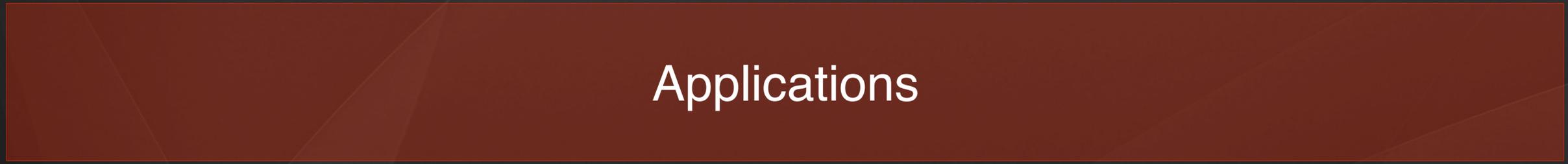
The Unification of Containers, Apps and Functions

Jason McGee

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Evolution of the App Platform



circa 1998

circa 2018

Tradeoffs in app design

Application Requirements

Stateful & Stateless

Events & Requests

Simple & Flexible

Platform

3 Stacks for 3 Styles

12-Factor Apps



Cloud Foundry
+ others

Functions



OpenWhisk
+ many others

Containers



Kubernetes

Container Runtime



Common elements in the stack



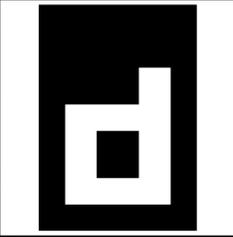
Service Mesh (Istio/Envoy)



Service Catalog (OSBAPI)



Container Orchestration (Kubernetes)



Container Engine (Containerd)

Docker Swarm, Nomad, Mesos, Diego... →

Docker, Garden, runc, Rkt →

**What about apps
and functions?**

Cloud Foundry for apps



Service Broker

Cloud Foundry

Go Router

CAPI

Diego

Garden-linux

BOSH

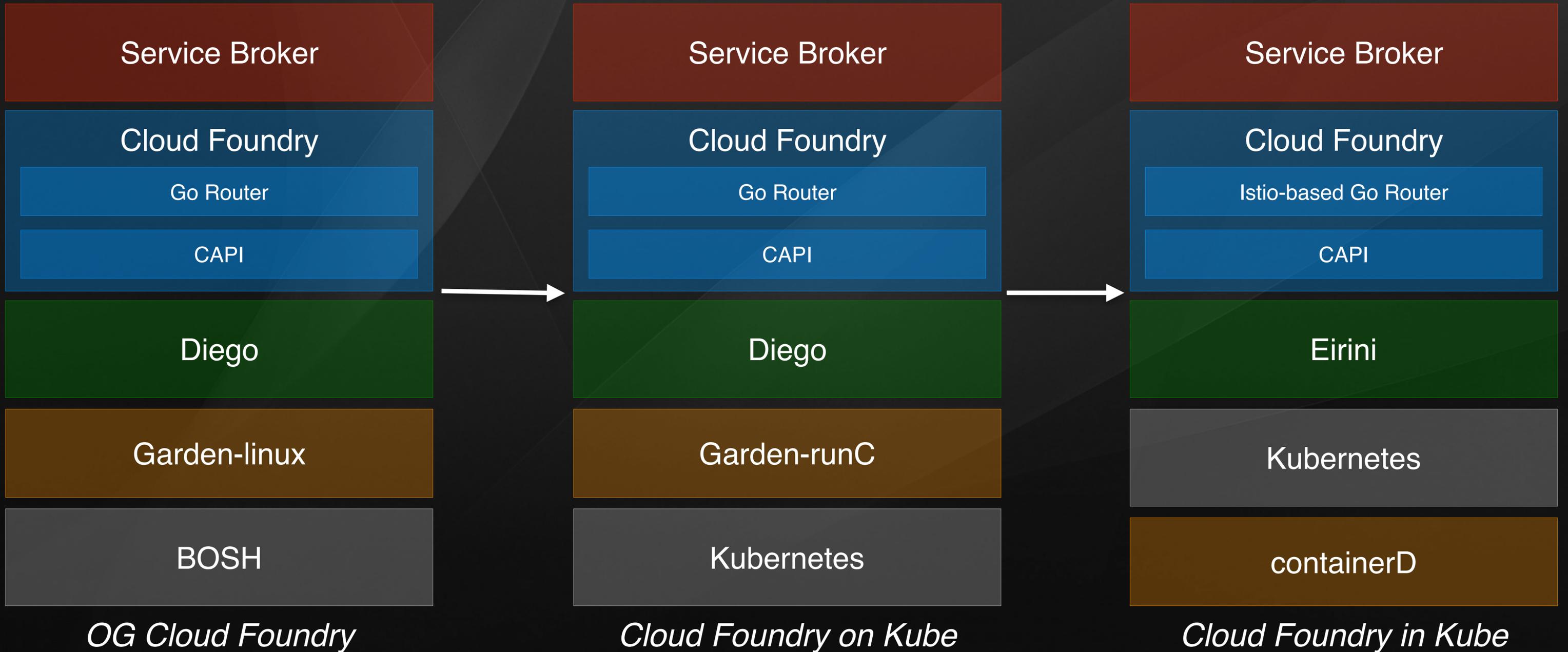
OG Cloud Foundry

Aligned on container engine

Service broker pioneer became
OSBAPI

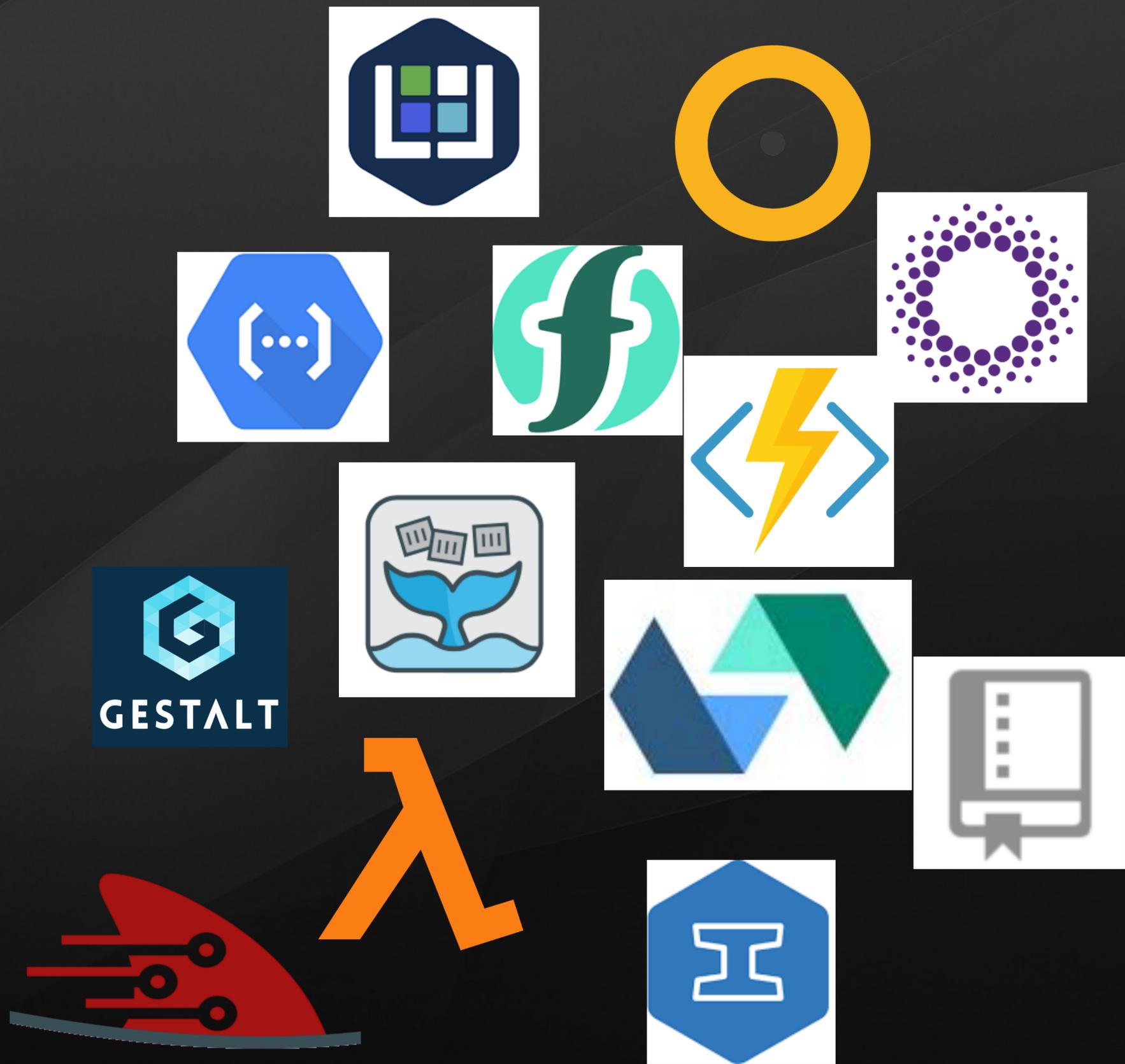
Evolving to come closer to Kubernetes
and Istio

Cloud Foundry for apps



Functions landscape

Many products and projects
Some aligned with Kubernetes - some not



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Build

Eventing

Serving



OpenWhisk

Serverless abstractions (actions, triggers, rules, etc.)
& multi-tenancy

Higher-level abstractions (action, trigger, rules)

API Gateway & management

CLI & dev tools

Multi-tenancy

High-level control flow logic

Throttles

Web actions



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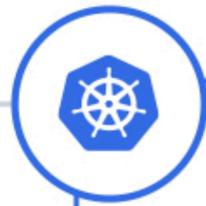
Serverless infrastructure building blocks & routing

Autoscaling

Eventing infrastructure

Routing

Code → Container conversion



Kubernetes

Foundational container scheduling and infrastructure management

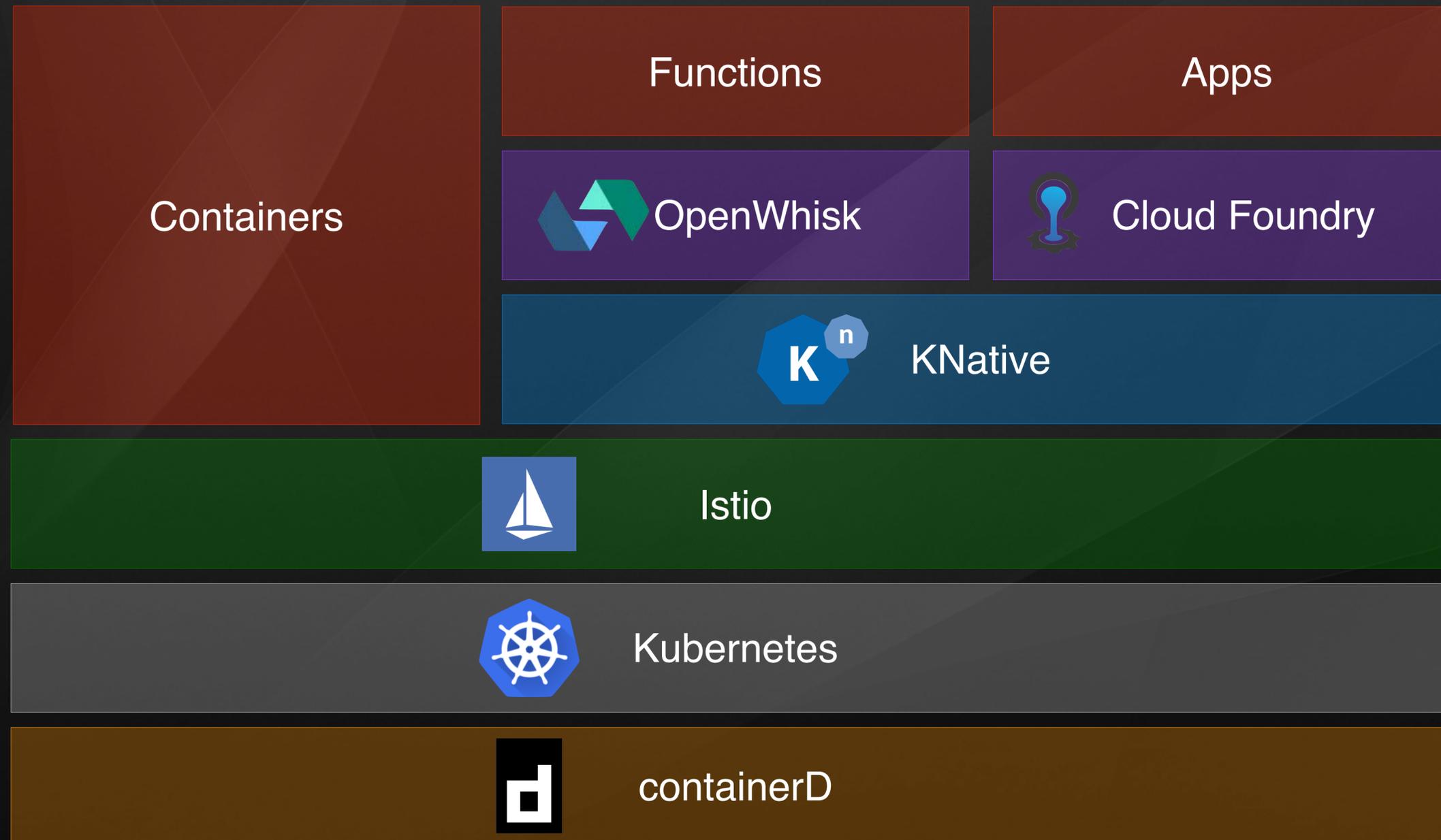
Cluster Management

Capacity Management

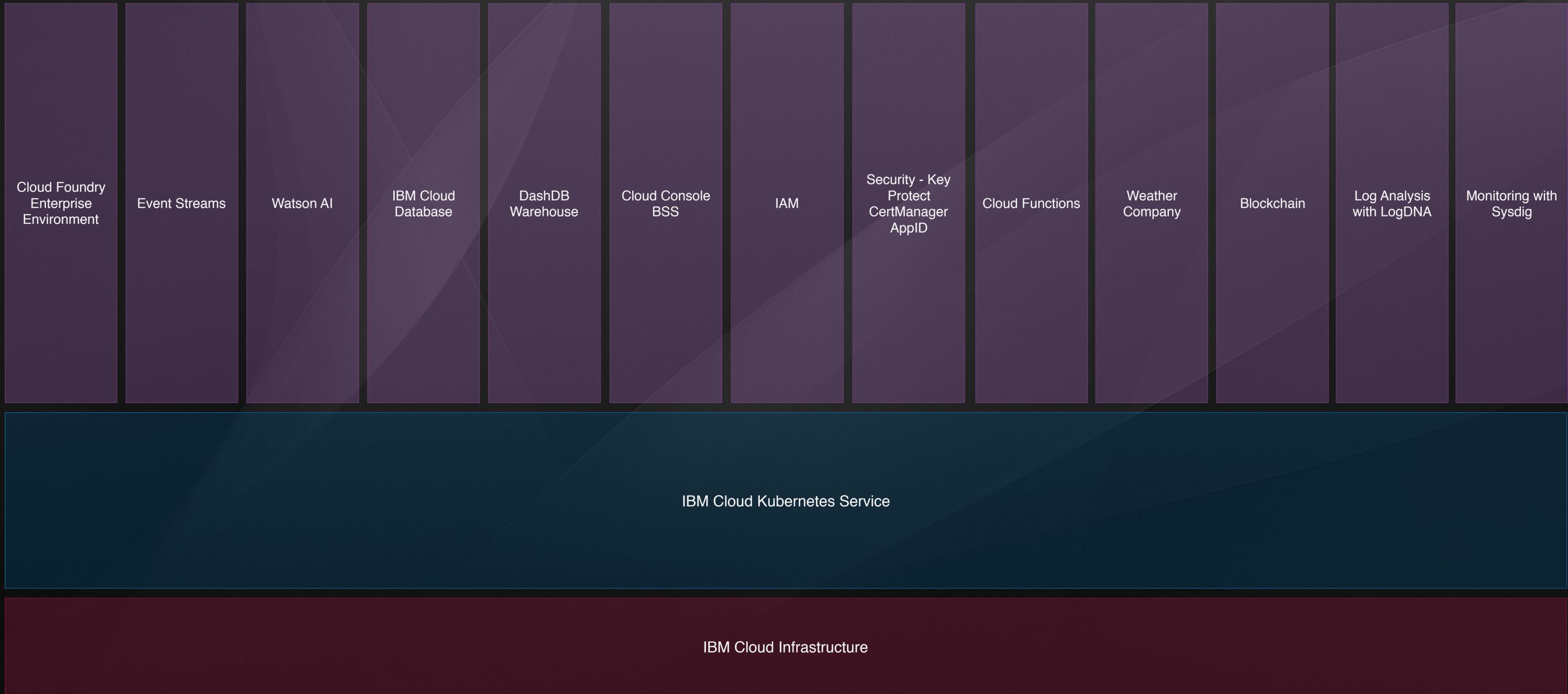
Network Management

Consistent & repeatable deployment

Unified Platform for containers, apps, and functions



Kubernetes: the core of IBM Cloud





IBM Cloud



IBM Cloud
Kubernetes Service



IBM Cloud Functions



IBM Cloud Foundry



IBM Cloud Private

Give it a try today:
<http://ibm.biz/knative>

cloud.ibm.com



Thank you

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