

A Polyglot Developer Experience on Kubernetes

Docker-less and YAML-less

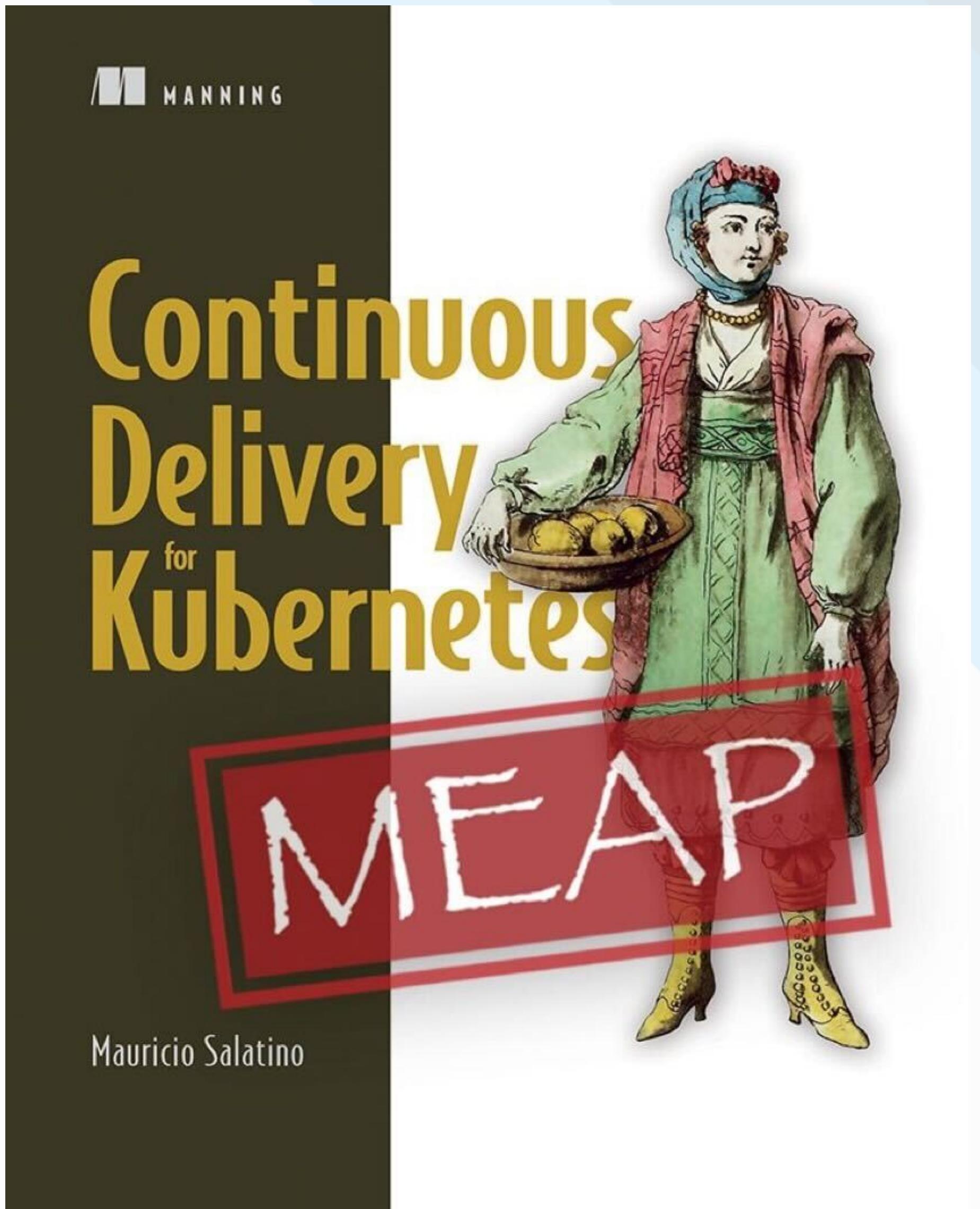
Mauricio Salatino & Thomas Vitale
KubeCon + CloudNativeCon Europe
May 18th, 2022

@salaboy @vitalethomas

Mauricio Salatino

VMware - Knative OSS

- a.k.a @Salaboy
- **Staff Engineer** - Knative Eventing tech lead for VMware
- **Knative OSS** core contributor
- Passionate about Functions, Platforms, Open Source and Kubernetes
- salaboy.com



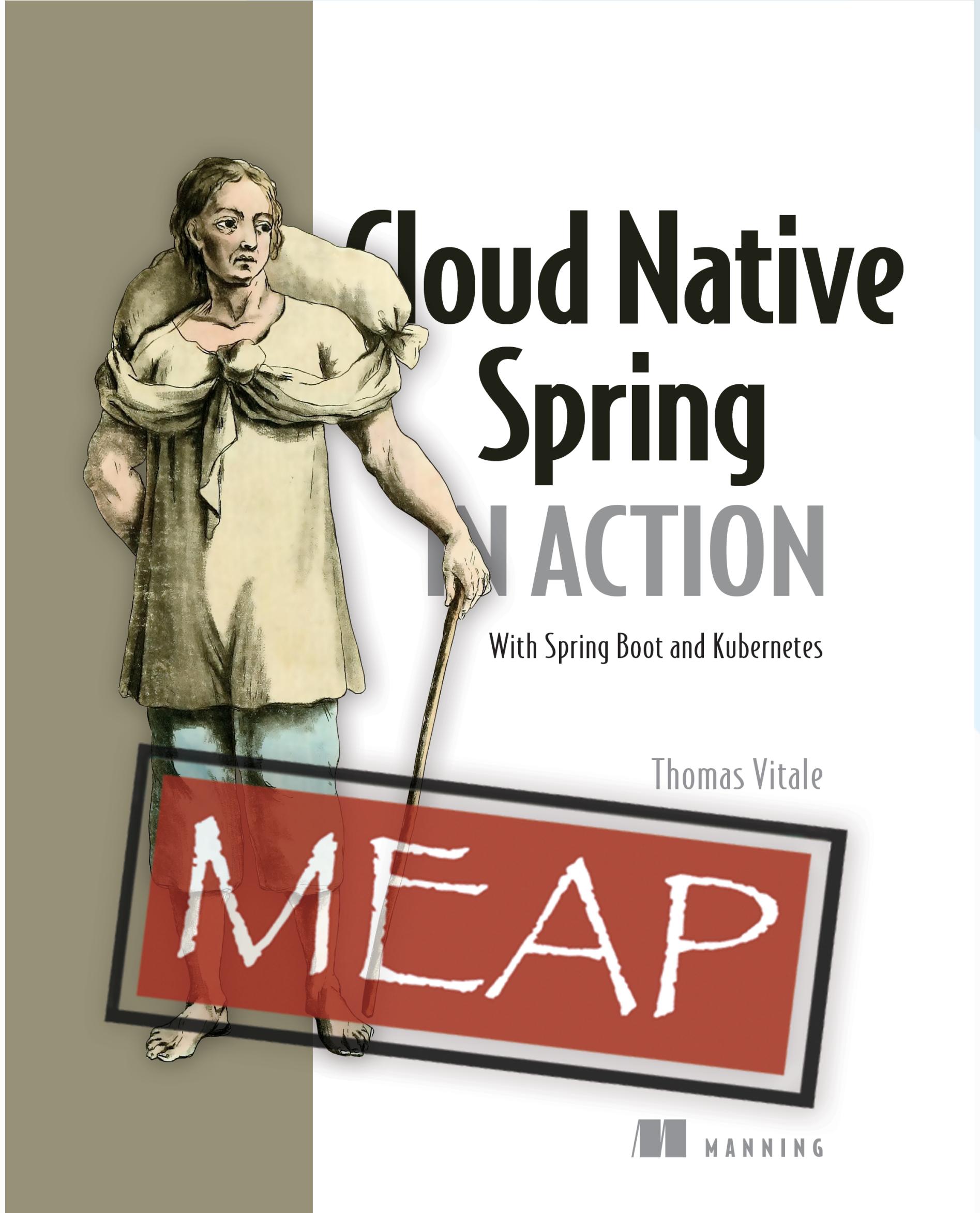
Thomas Vitale

Systematic

- Software Architect at Systematic, Denmark.
- Author of “**Cloud Native Spring in Action**” (Manning).
- **Spring Security** and **Spring Cloud** contributor.

thomasvitale.com

@vitalethomas



Quiz Game

Building applications using functions

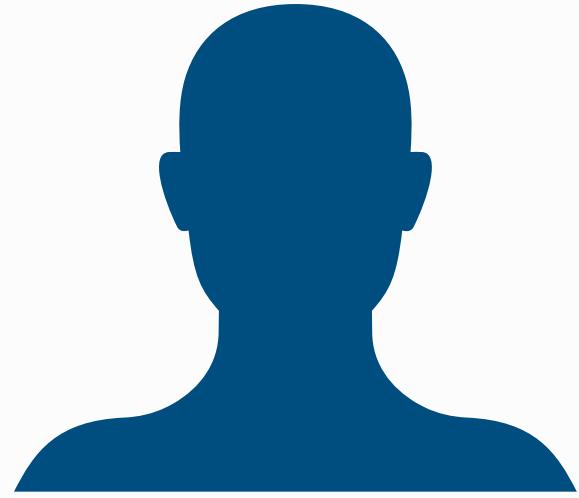
Serverless

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Serverless Architectures

Developers focus on code



Developer



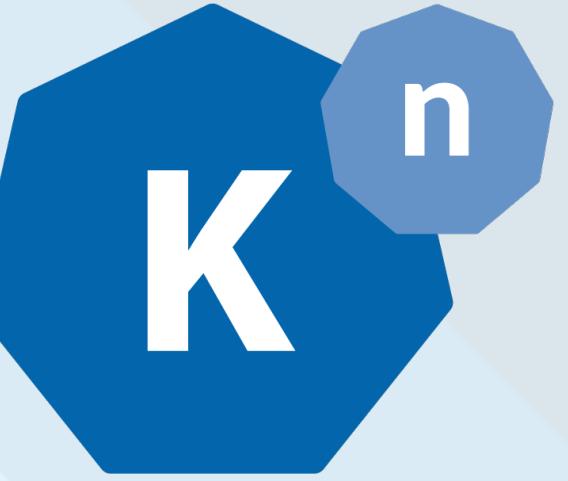
Platform

Focus on business logic

Infrastructure
Provisioning

Workload
Management

Dynamic
Scaling



Knative Serving

Serverless Containers on Kubernetes

Developer-friendly
abstractions

From code to URL

Autoscaling
Scaling to zero

Progressive
Rollouts

Request-driven
Event-driven

Cloud agnostic

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Cloud Native Buildpacks

transform your application source code into
images that can run on any cloud.

Get Started

Why Cloud Native Buildpacks?

Control



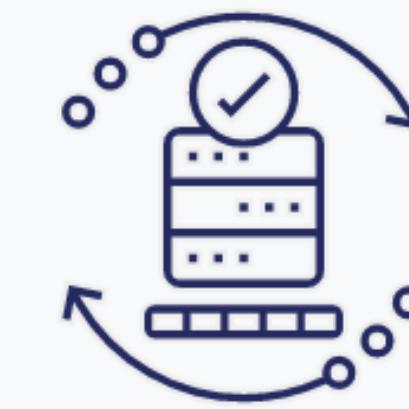
Balanced control between App Devs
and Operators.

Compliance

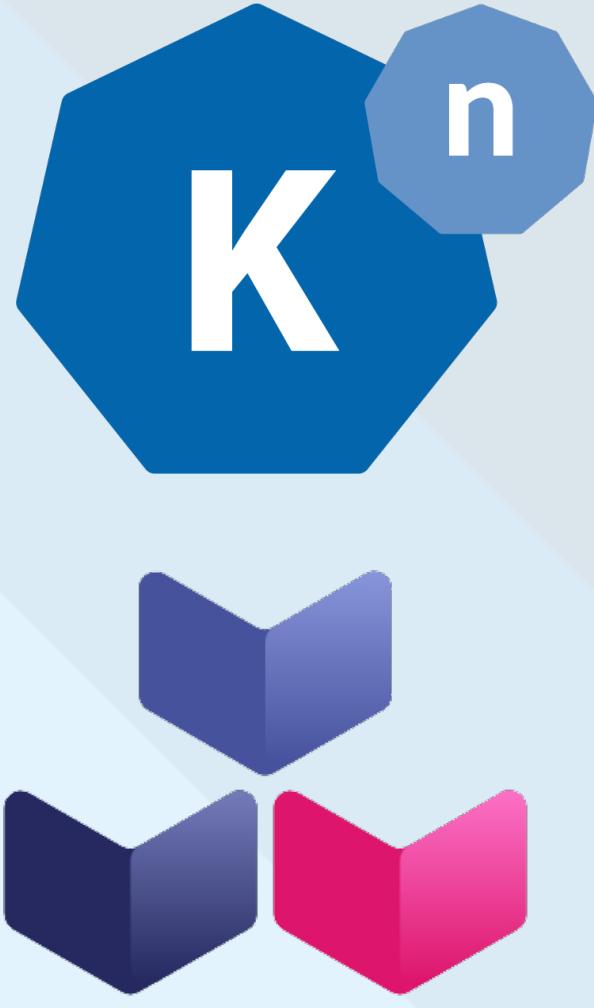


Ensure apps meet security and
compliance requirements.

Maintainability



Perform upgrades with minimal
effort and intervention.



Demo

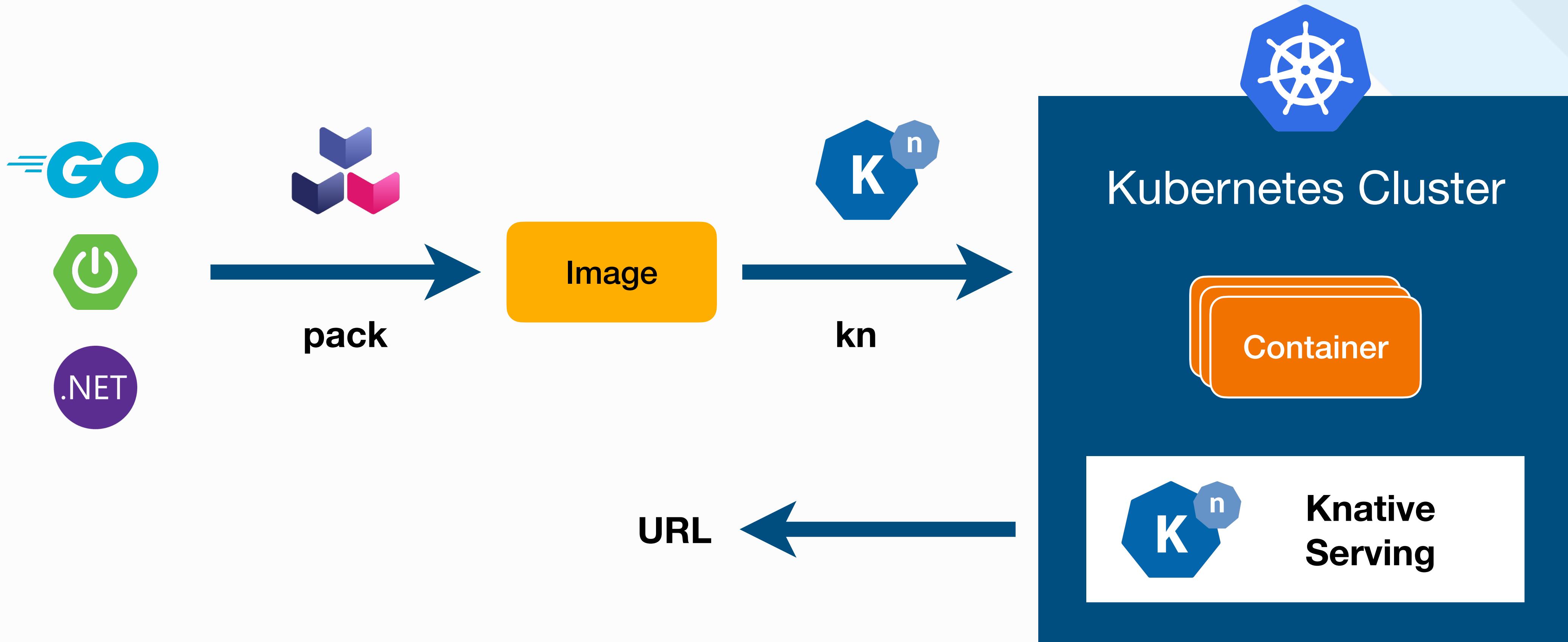
Knative Serving and Buildpacks - From code to URL

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Platform 1 - Serverless experience

From containers to deployment with autoscaling



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Functions

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Functions

Functional programming model

Triggered by
requests or events

Stateless

Smaller scope

Cold start

Cost optimization

Functions Patterns

Topologies for functional programming



Synchronous

Fire and Forget

Request/
Response

Request/
Response (State)



Asynchronous

Asynchronous
processing

Event-based

Data stream
via chained
functions



Demo

Knative Functions - From idea to URL

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More on Knative Functions

In active development, join the community!

External templates
repository

Works with multiple
languages and
frameworks

Run locally with
func run

On-cluster build,
no Docker required

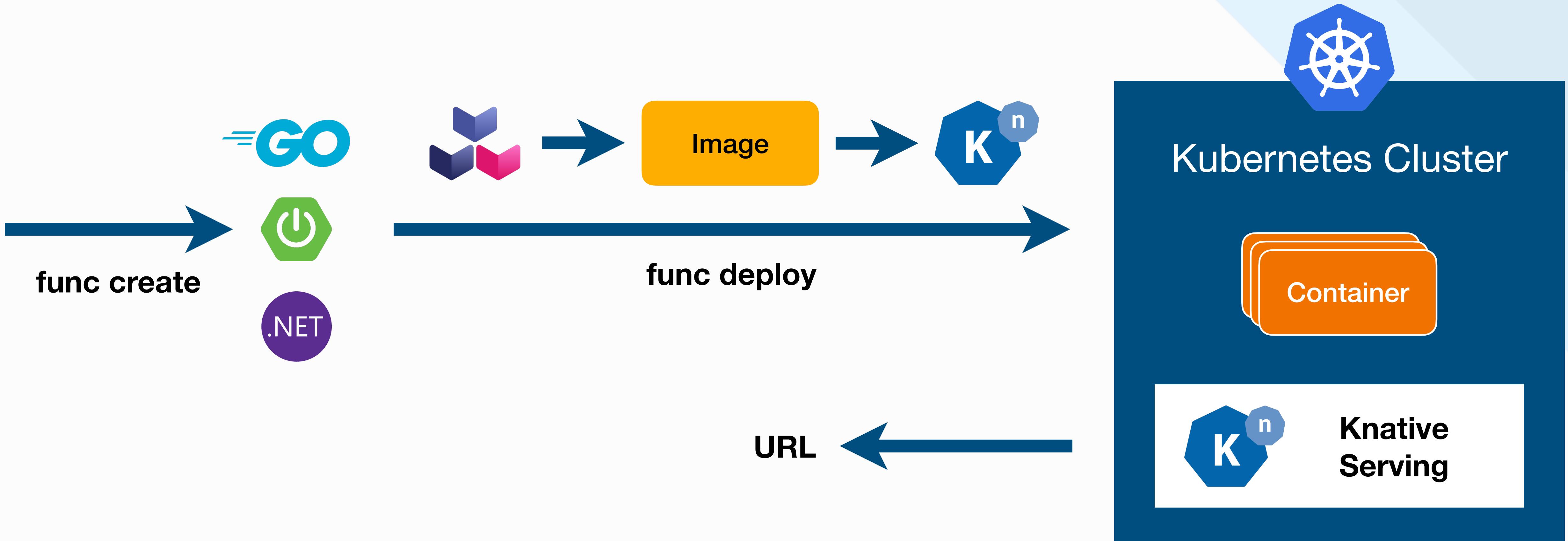
Roadmap to 1.0 GA

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Platform 2 - Polyglot Functions

From idea to deployment with autoscaling



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Events

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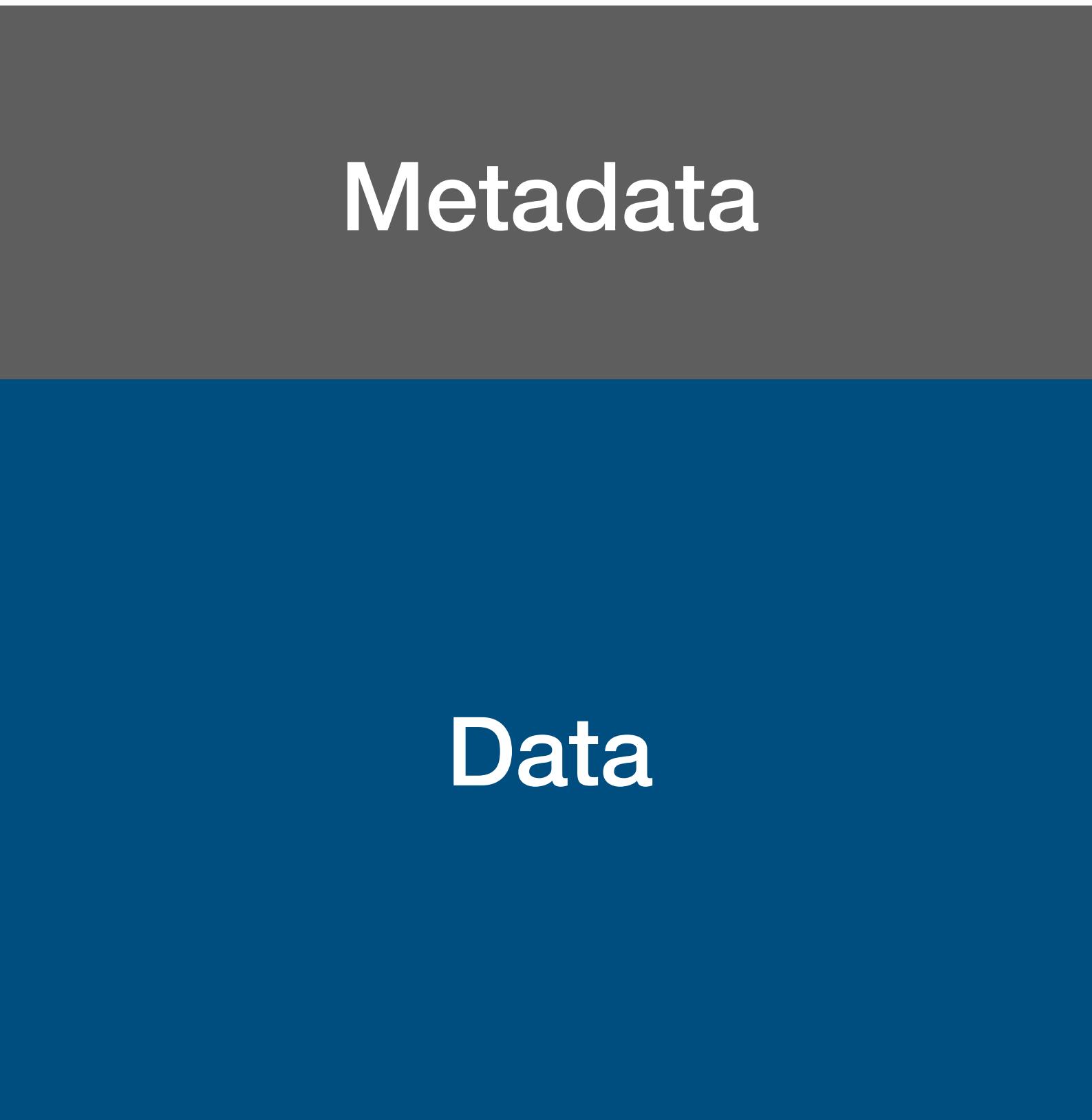
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CloudEvents

Interoperability and standardization



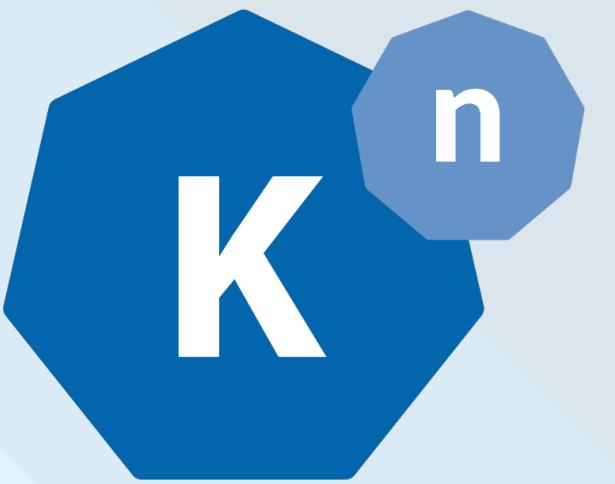
Id
Source
Type



JSON
AMQP
Kafka
MQTT

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Knative Eventing

Event routing and triggers

Developer-friendly abstractions

Event-driven architectures

Event routing

Polyglot support with CloudEvents

Pluggable

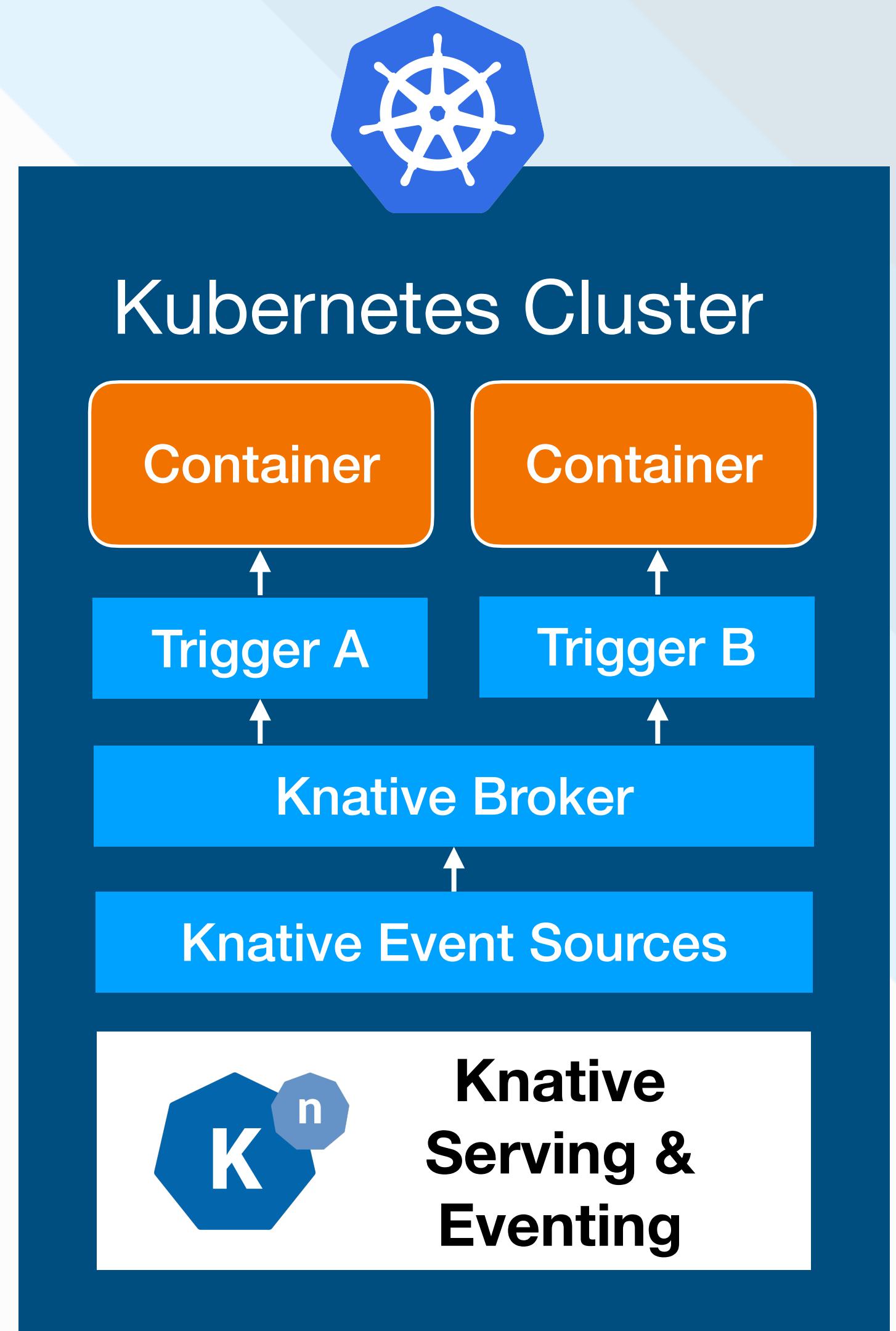
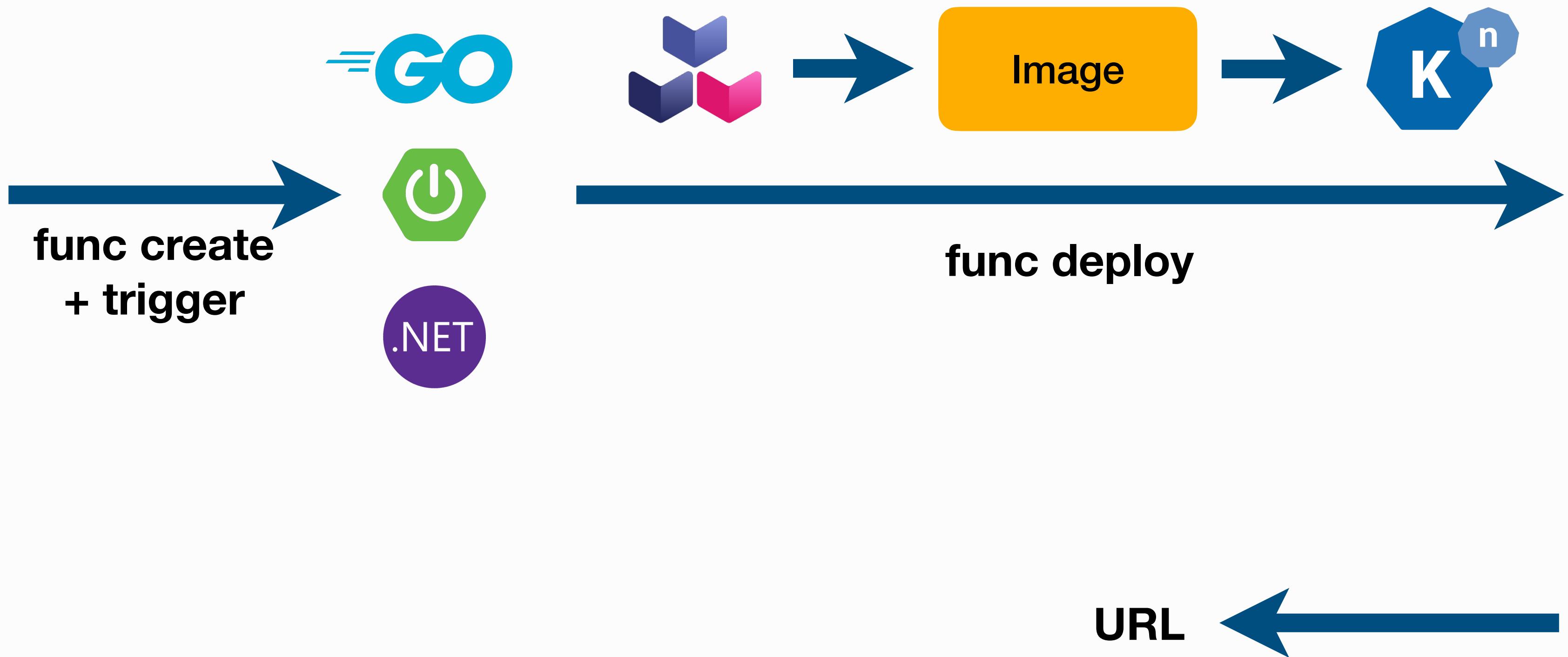
Cloud agnostic

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Platform 3 - Knative Eventing

Event-driven and reactive functions



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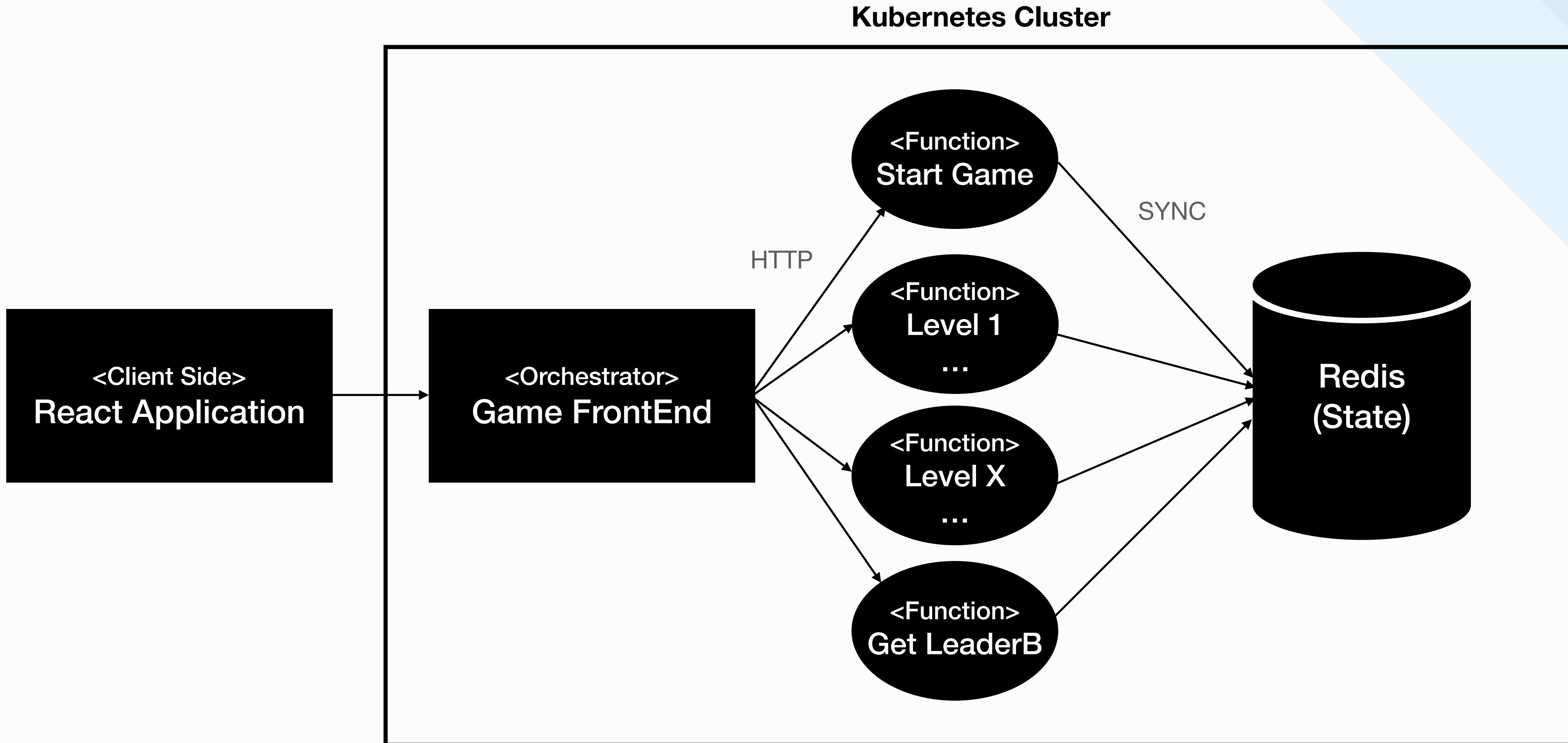
Game - Architecture

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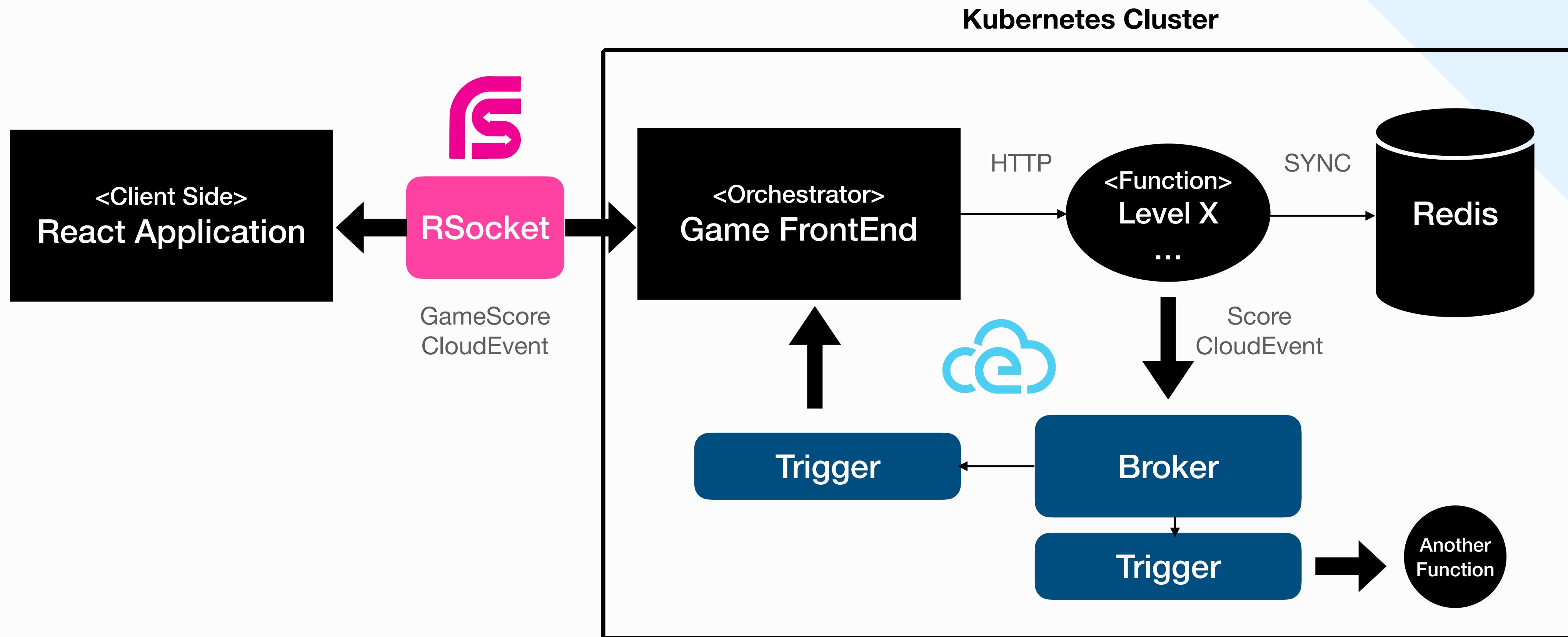
Game - Functions

Synchronous functions with Knative



Game - Eventing

Knative Eventing, CloudEvents & RSocket

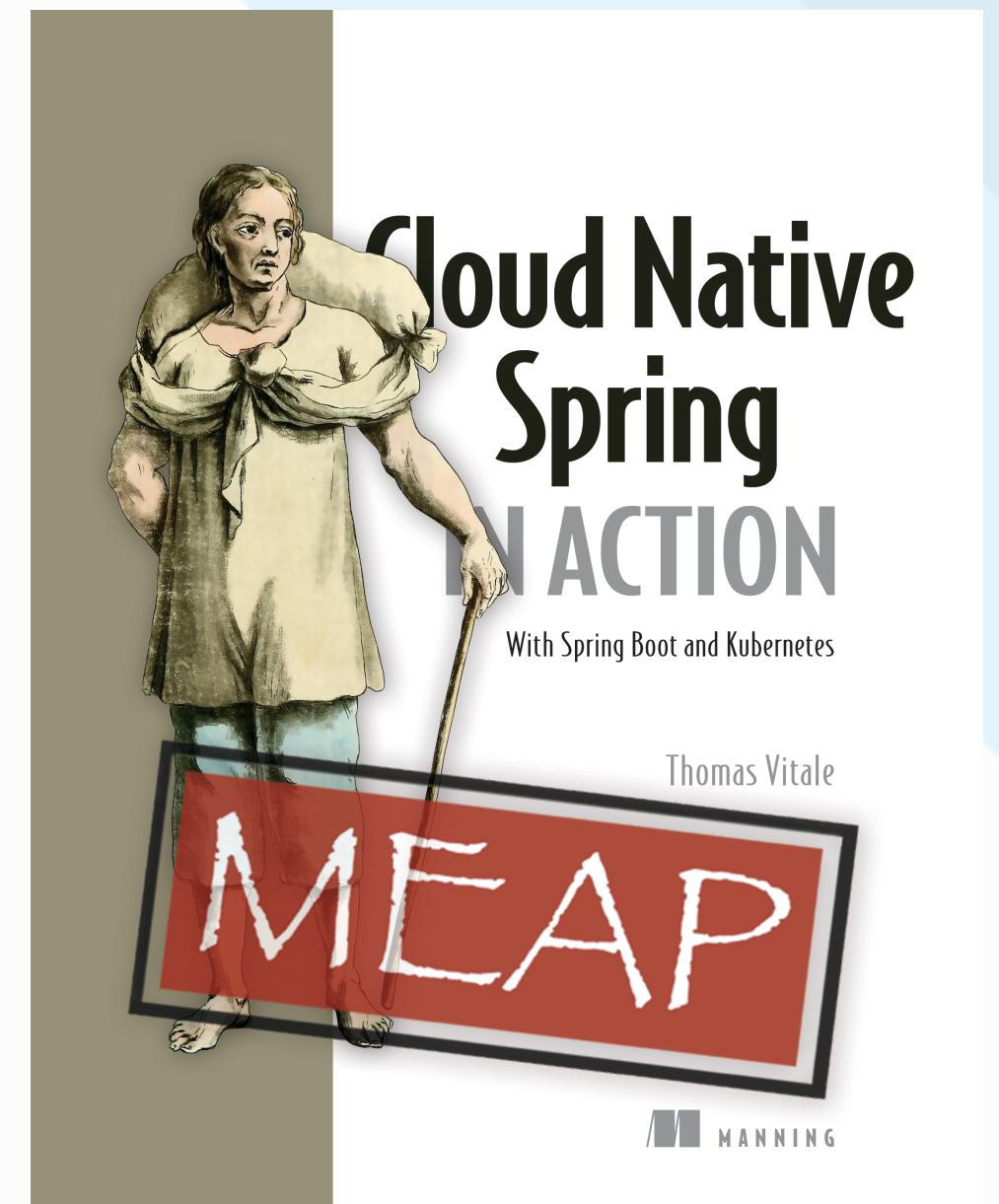
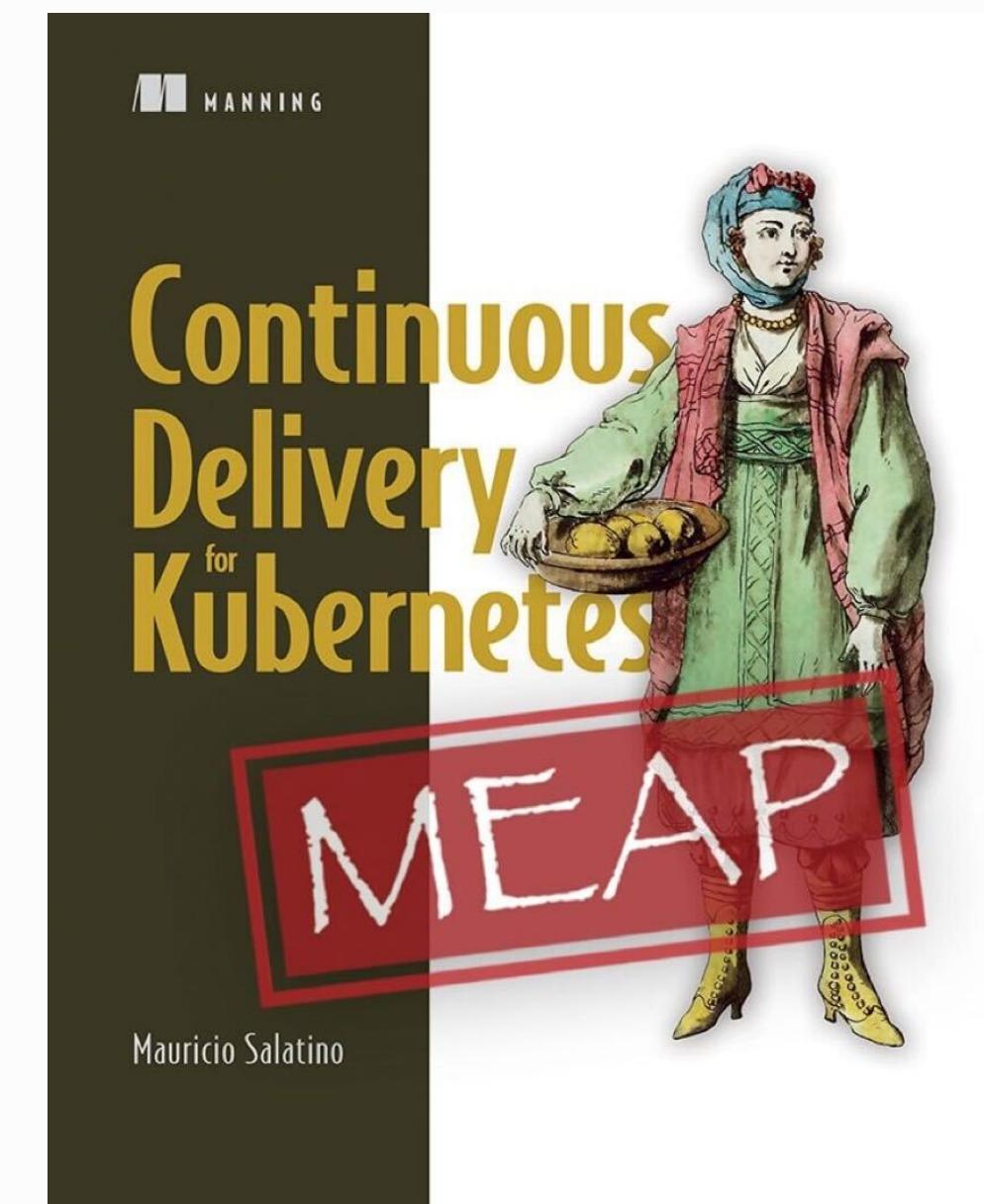


Discount codes

Manning

- 35% discount code, valid for all products in all format

- **ctwkucoeu22**
- manning.com



Resources

Source code

- Learn more about the game:
 - <https://github.com/salaboy/from-monolith-to-k8s/tree/main/game>
- Deploy the game on Kubernetes:
 - <https://github.com/ThomasVitale/eventing-game>
- Knative: <https://knative.dev>
- Knative Functions: <https://github.com/knative-sandbox/kn-plugin-func>

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