

A Paved Path to Production

On Kubernetes

Thomas Vitale
GOTO Aarhus
Jun 16th, 2022

@vitaletomas

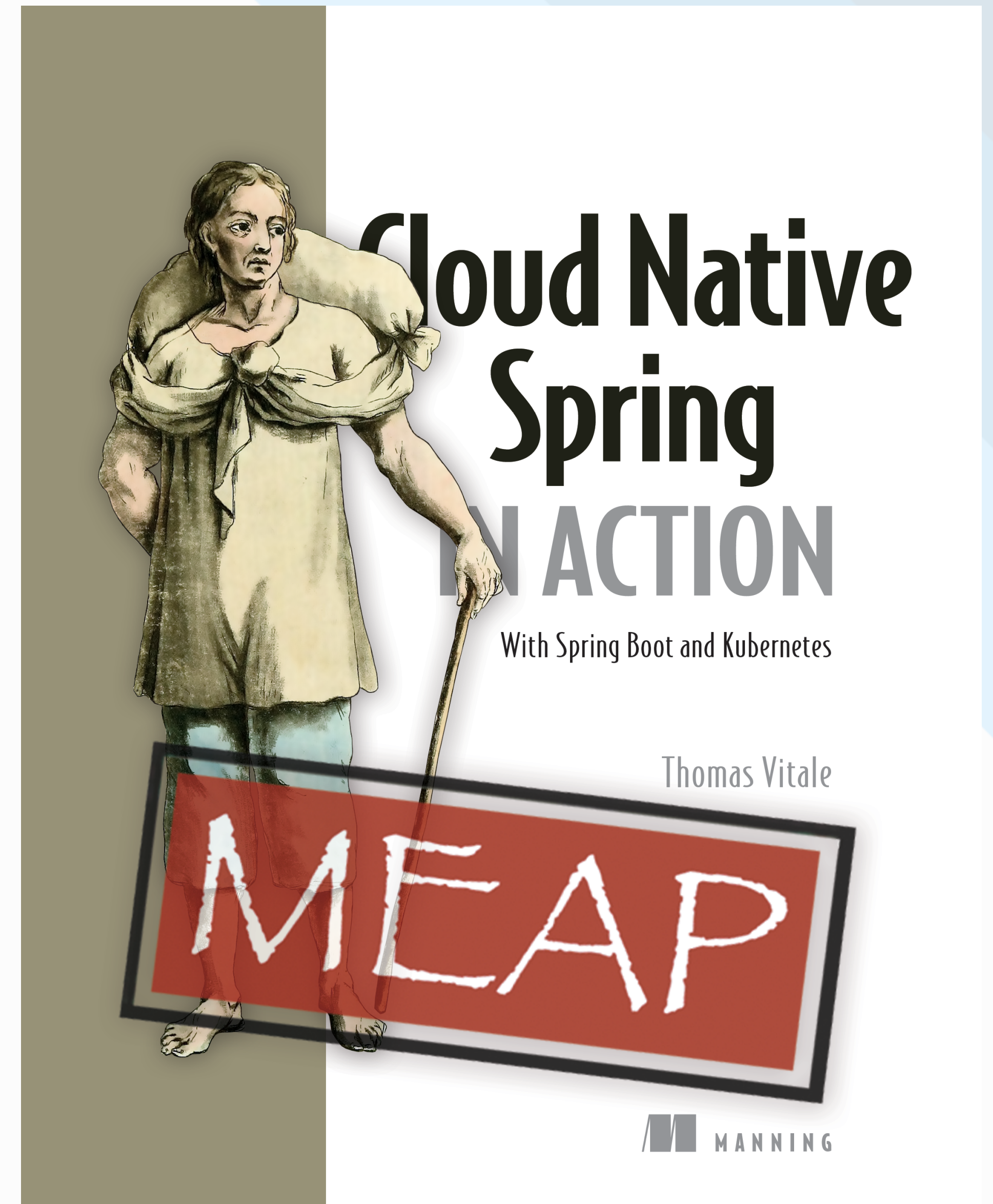
Thomas Vitale

Systematic

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

thomasvitale.com

@vitaletomas



Value

Delivering Value

From idea to production



Continuous Delivery

Path to Production

Requirements

Fast

Resilient

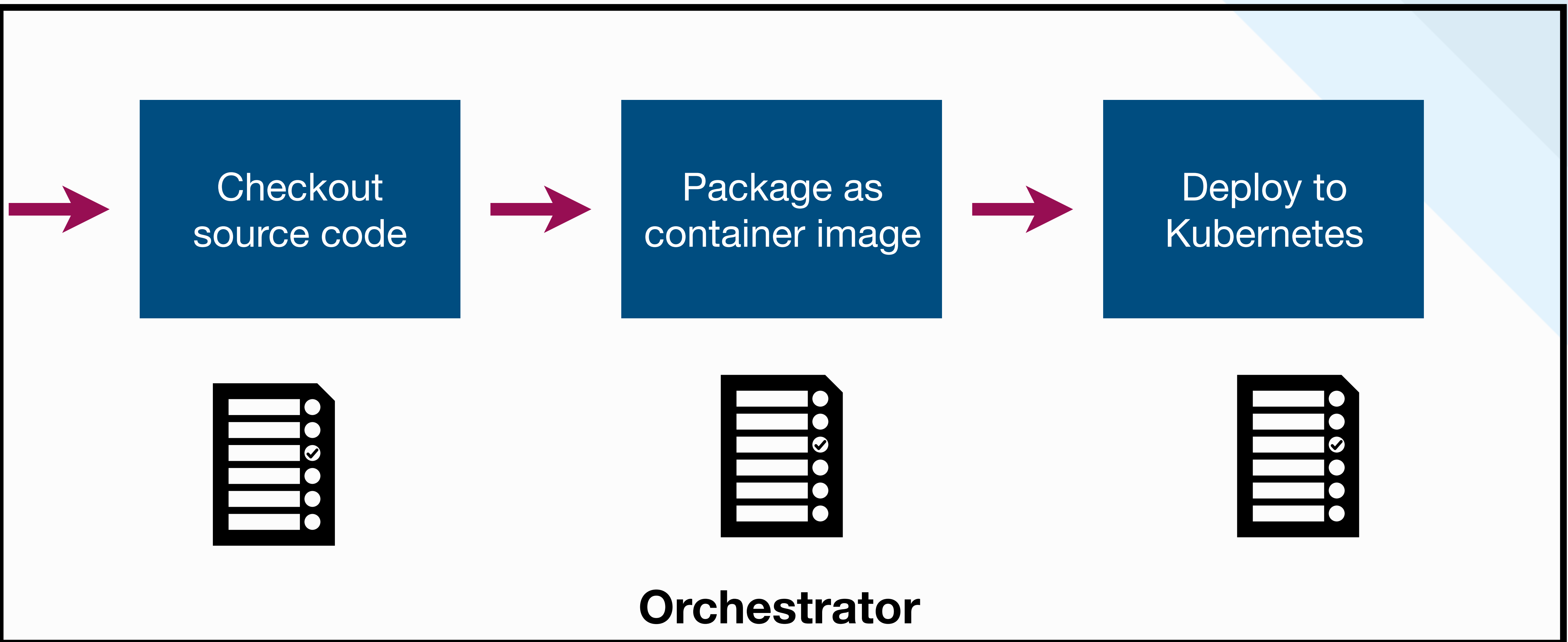
Scale

Safe

Secure

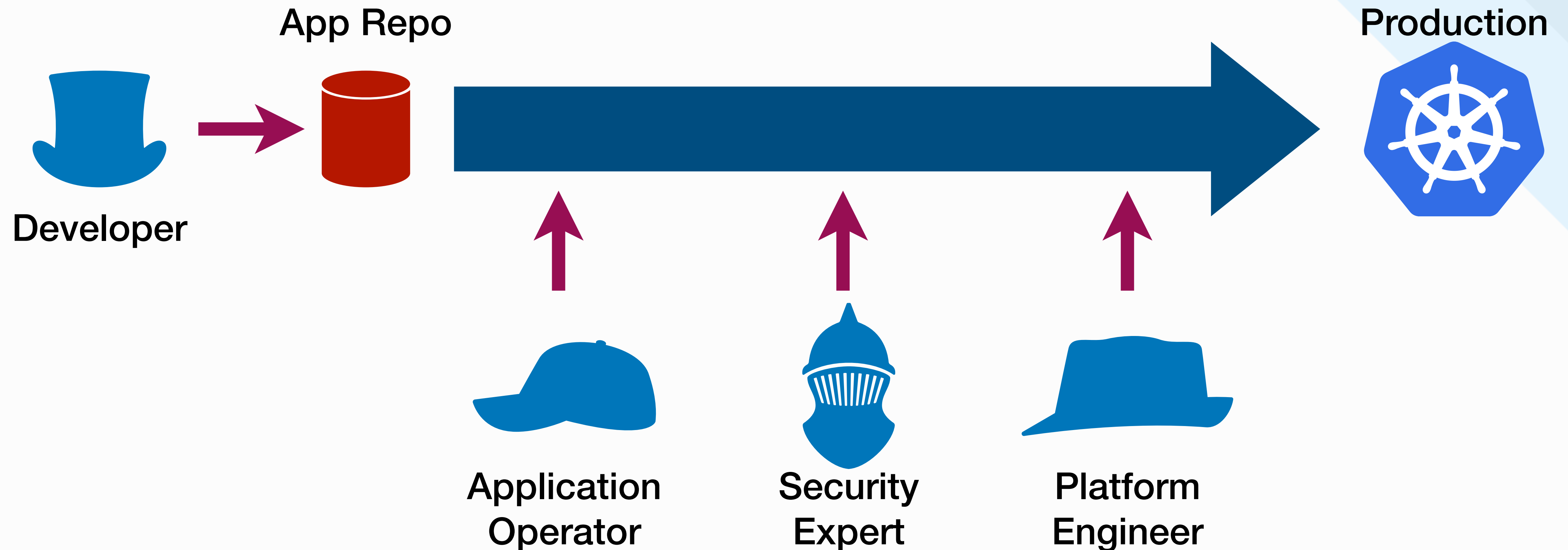
CI/CD Pipeline - Imperative

Orchestration of tasks



Delivering Value

From code to production



Paved Path to Production

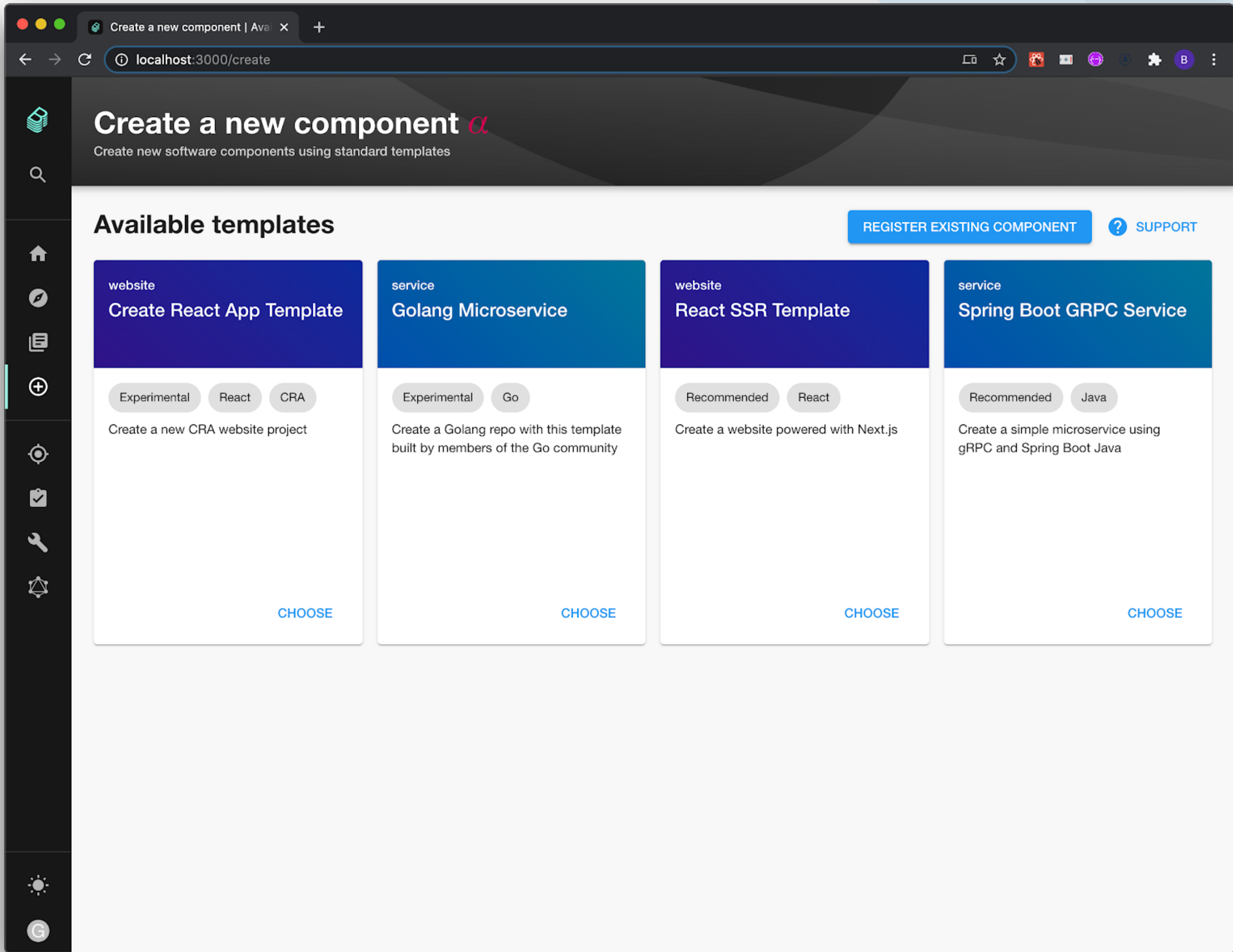
Golden Path to Production

Paved Road to Production

Developer Platform

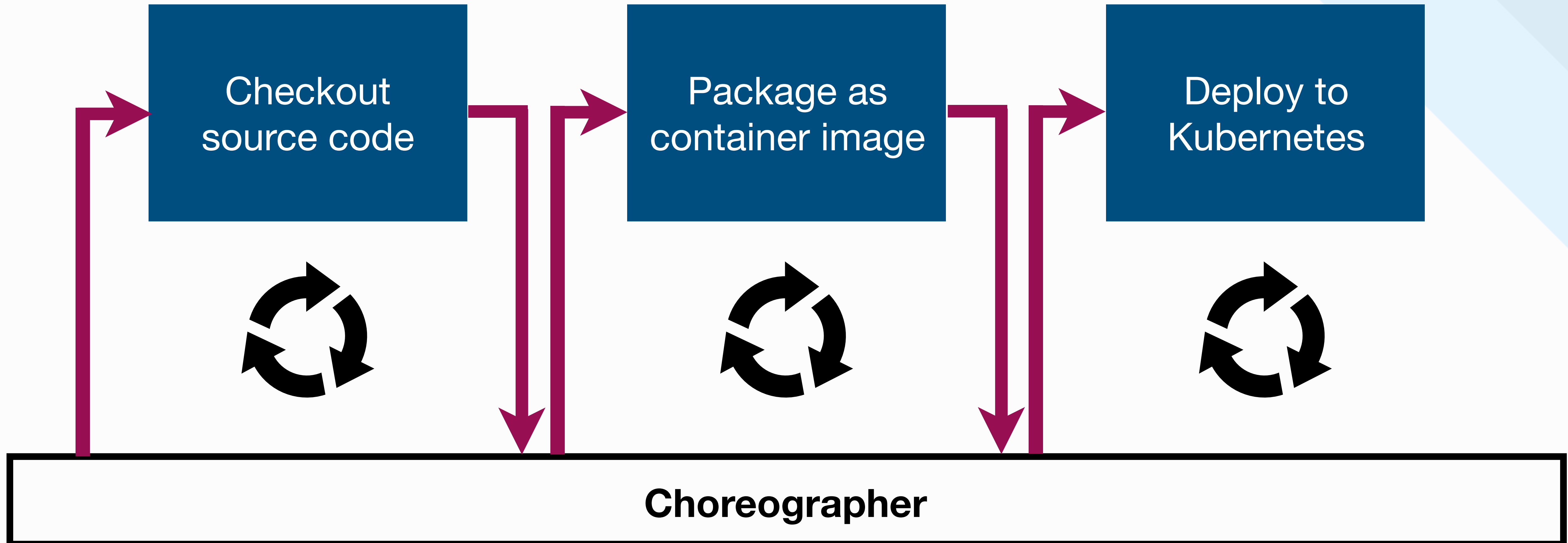
Application Platform

Developer Control Plane



CI/CD Pipeline - Reactive/Declarative

Choreography of events



Reactive CI/CD Pipelines

The Benefits

Declarative
pipelines

Separation of
concerns

Kubernetes
interoperability

Reusable
pipelines

Supply chain
security

Deployment

Serverless Architectures

Developers focus on code



Developer

Focus on business logic



Platform

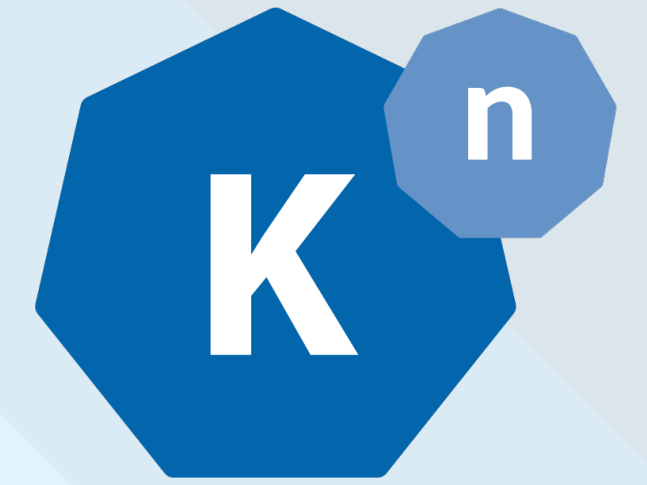
Infrastructure
Provisioning

Workload
Management

Dynamic
Scaling

Knative Serving

Serverless Experience on Kubernetes



Developer-friendly
abstractions

From image to URL

Autoscaling
Scaling to zero

Progressive
Rollouts

Request-driven
Event-driven

Cloud agnostic



Demo

Knative Serving - From image to URL

Configuration Management

Configuration Management

On Kubernetes





Build on Kubernetes with confidence

Carvel provides a set of reliable, single-purpose, composable tools that aid in your application building, configuration, and deployment to Kubernetes.



kapp-controller

A Package Manager that is compatible with Gitops ideas. Continuous delivery for Kubernetes Apps and Packages.



ytt

Template and overlay Kubernetes configuration via YAML structures, not text documents. No more counting spaces, or manual quoting.

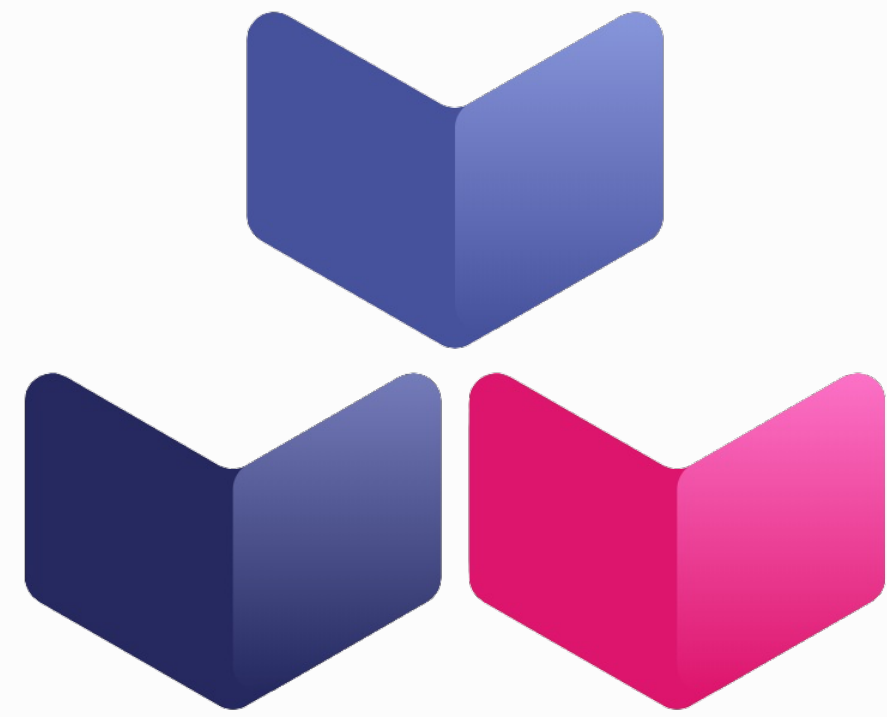


kapp

Install, upgrade, and delete multiple Kubernetes resources as one "application". Be confident your application is fully reconciled.

Image Management

Image Management On Kubernetes



Buildpacks.io



Kaniko



Buildpacks.io

[Features](#)

[Community](#)

[Blog](#)

[Registry](#)

[Docs](#)

[GitHub](#)

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



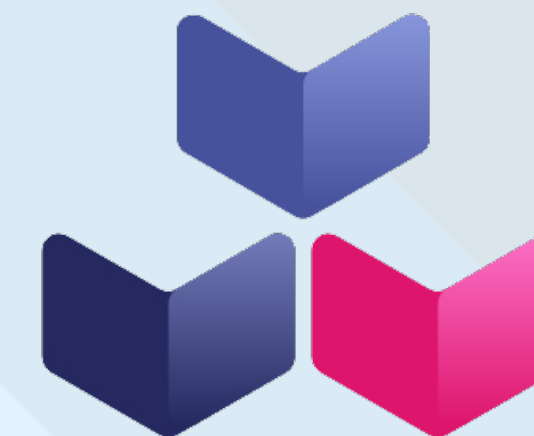
Ensure apps meet security and
compliance requirements.

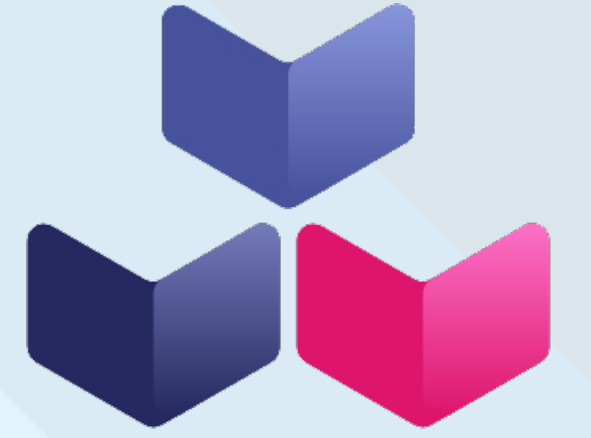
Maintainability



Perform upgrades with minimal
effort and intervention.

buildpacks.io





Demo

kpack - Image management

Git Source

Git Source

On Kubernetes



flux



argo

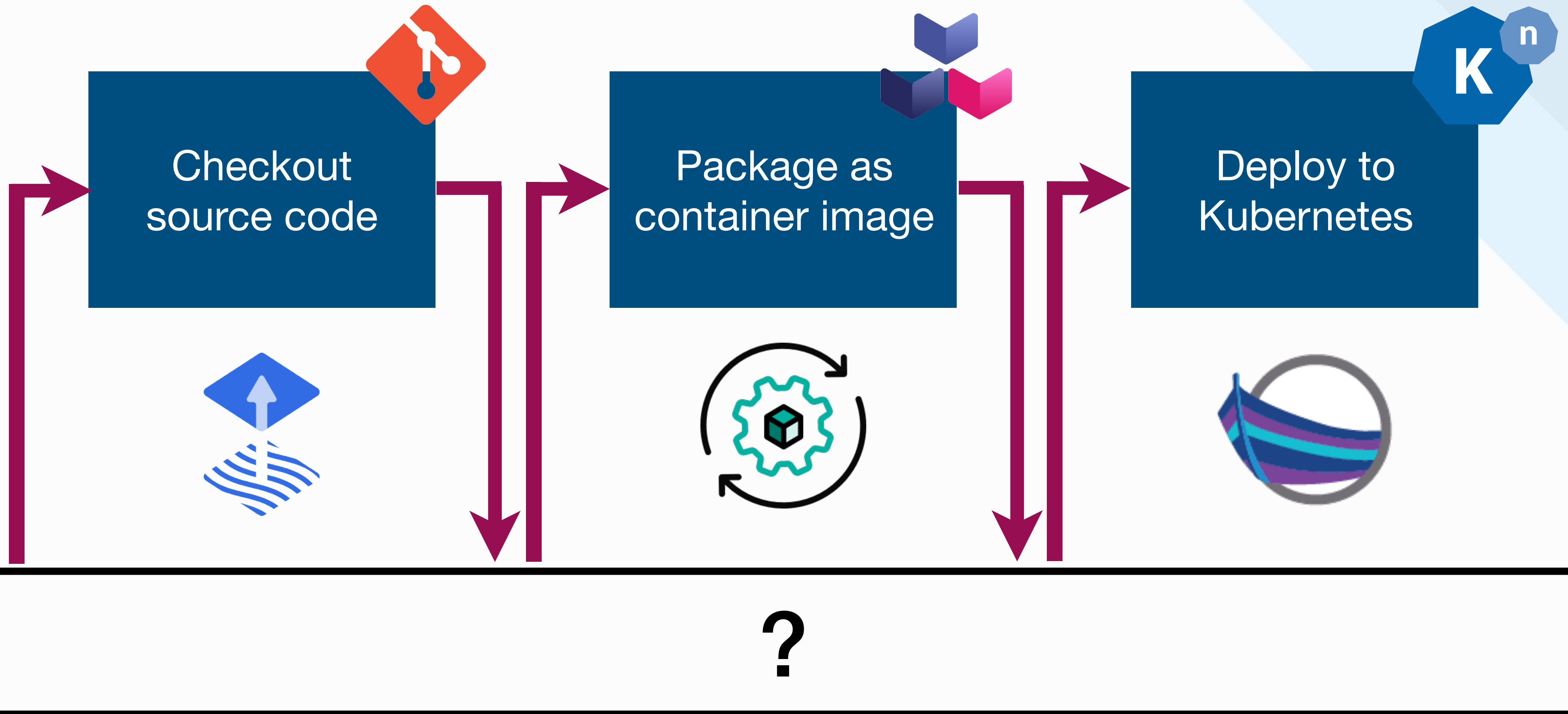


Demo

Flux - Git Source

Minimal CI/CD Pipeline

Source -> image -> URL



Cartographer

thomasvitale.com

[@vitalethomas](https://twitter.com/vitalethomas)

Kubernetes-native Choreographer

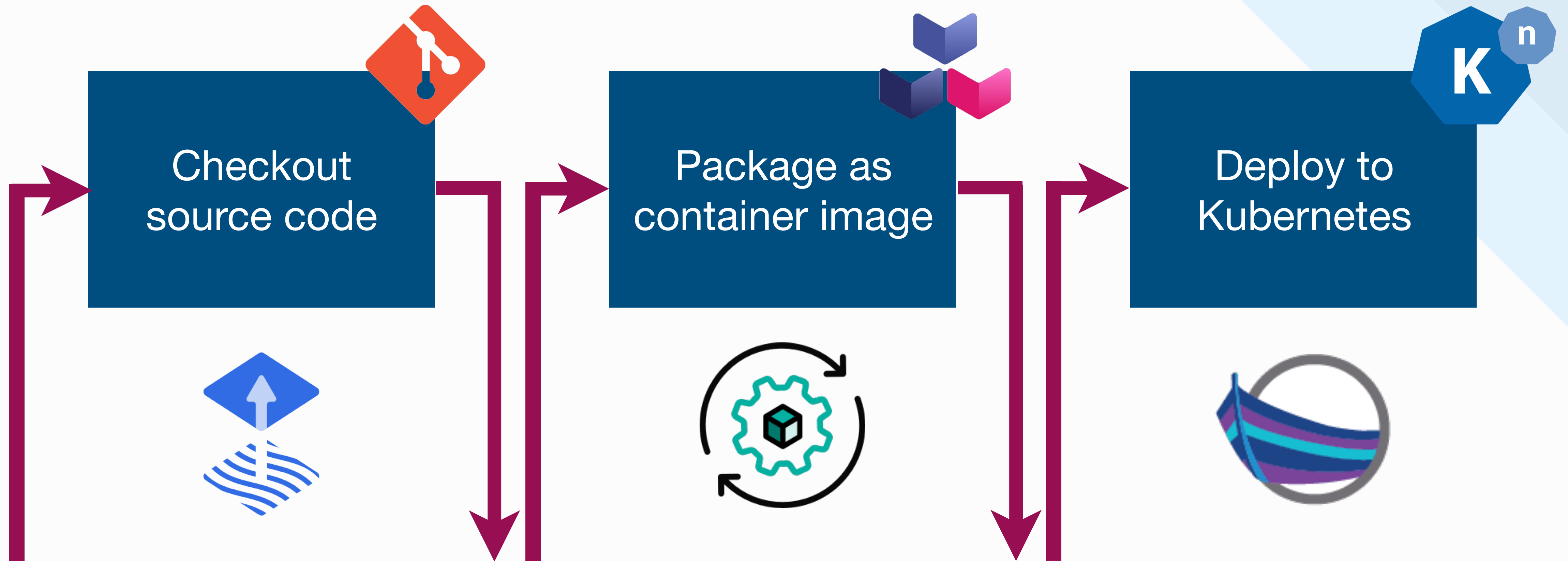
Reactive, secure, and reusable supply chains

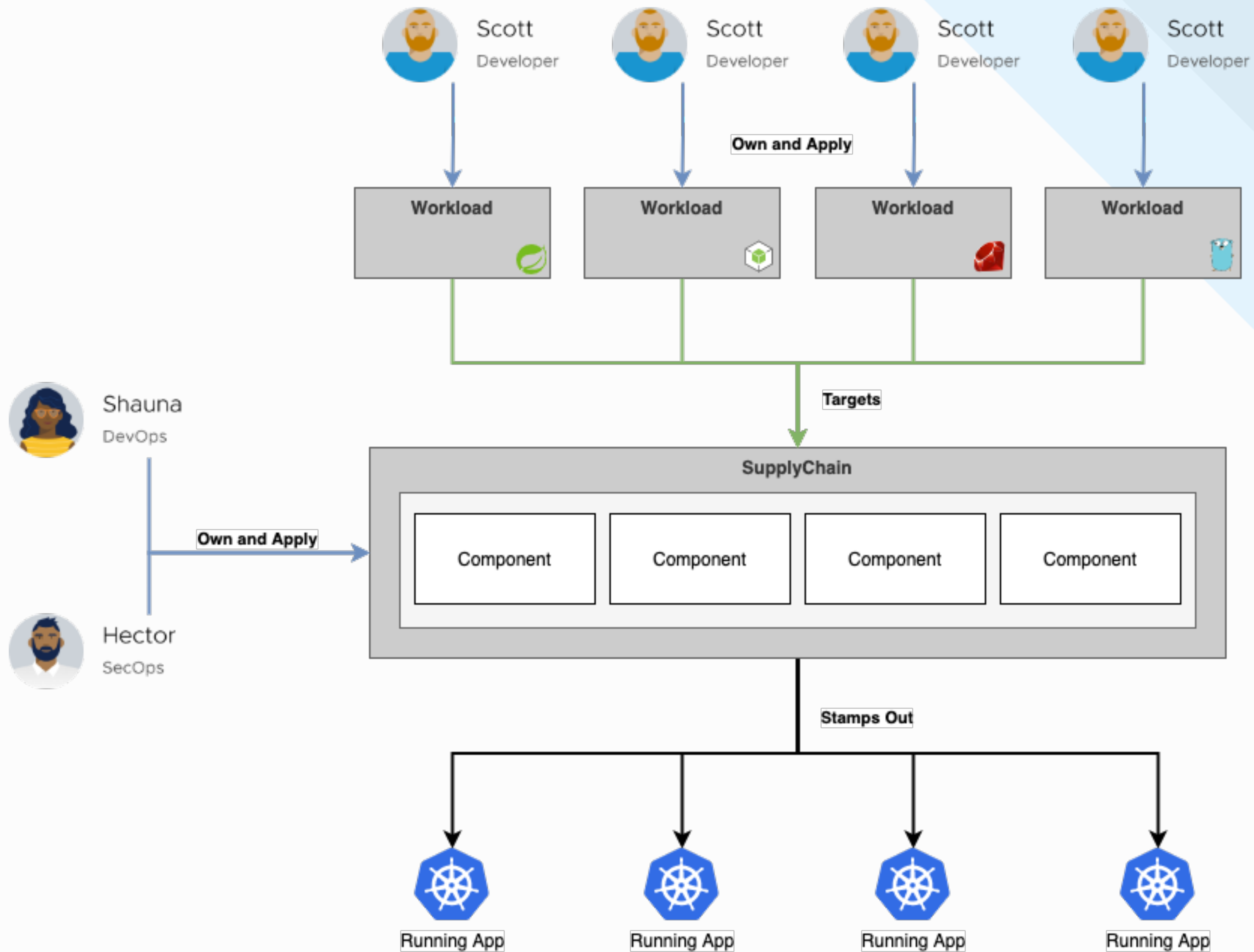


CARTOGRAPHER

Minimal CI/CD Pipeline

Source -> image -> URL







Demo

Cartographer - Supply chains

Testing

Imperative Workflows

Testing and more



TEKTON



Demo

Tekton - Testing

Next?

thomasvitale.com

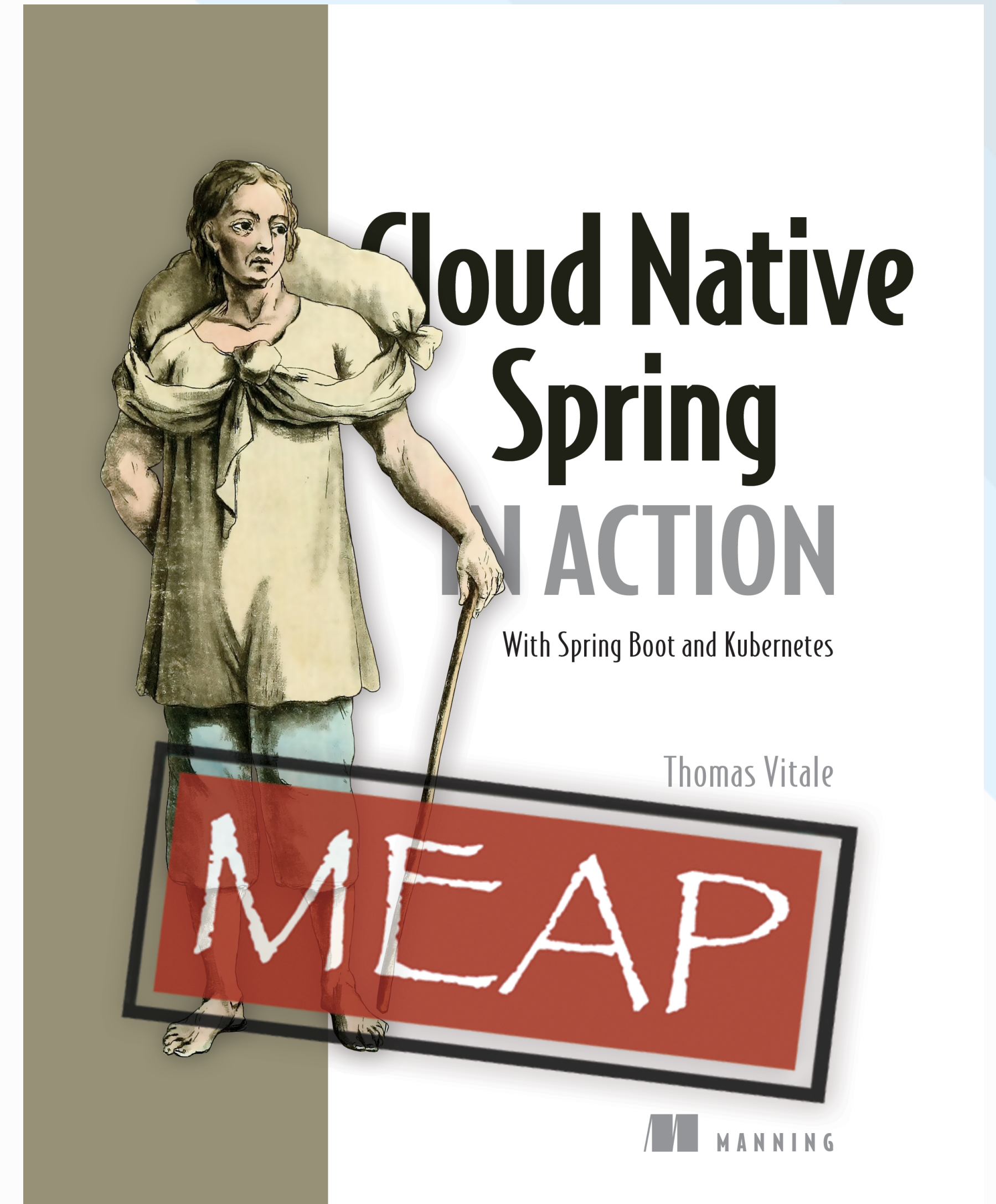
[@vitalethomas](https://twitter.com/vitalethomas)

Discount codes

Manning

- 35% discount code, valid for all products in all format
 - **ctwgotoaar22**
- manning.com

thomasvitale.com



@vitaethomas

A Paved Path to Production

On Kubernetes

Thomas Vitale
GOTO Aarhus
Jun 16th, 2022

@vitaletomas