



Knative

A platform to build a serverless platform on
top of the Kubernetes platform

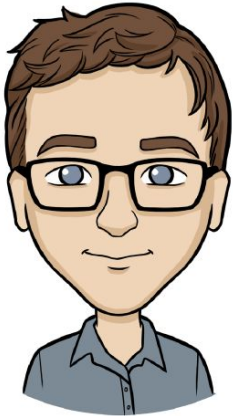


Johannes M. Scheuermann

Macht Dinge mit der Cloud

Official: Cloud Platform Engineer

Unofficial: Chaos Monkey



Hendrik Still

Macht Dinge mit in der JVM

Official: Application Developer

Unofficial: "DROP TABLE"-Expert

Kubernetes-based platform to build,
deploy, and manage modern serverless
workloads.

Agenda

- › Overview
- › Build
- › Serving
- › Eventing
- › Conclusion

Overview



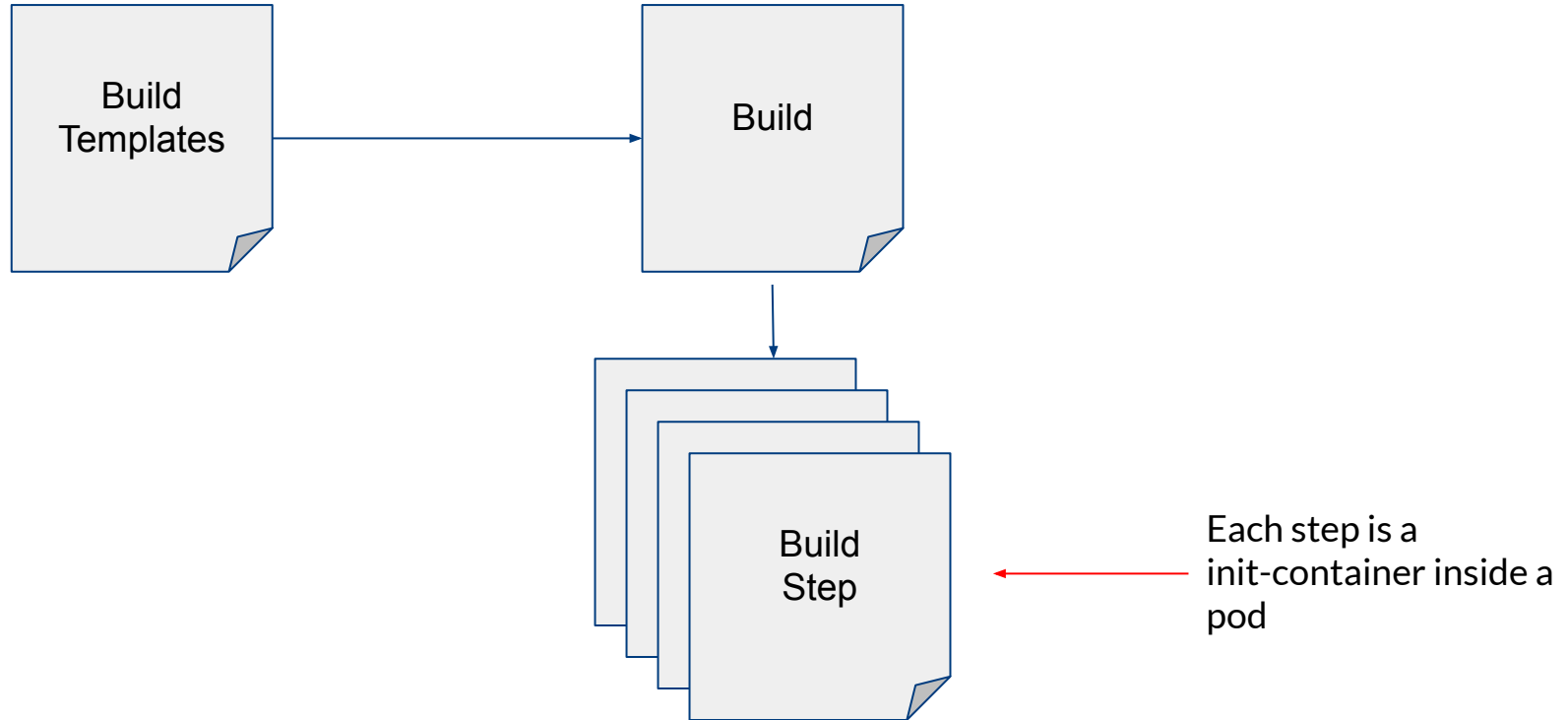
Overview



Build

Kubernetes native builds

Build



Build - Features

- › Authentication
 - › git / basic auth / Docker
- › Build-templates: <https://github.com/knative/build-templates>
 - › Predefined templates
 - › Can be customized
- › Pods share workspace over emptydir



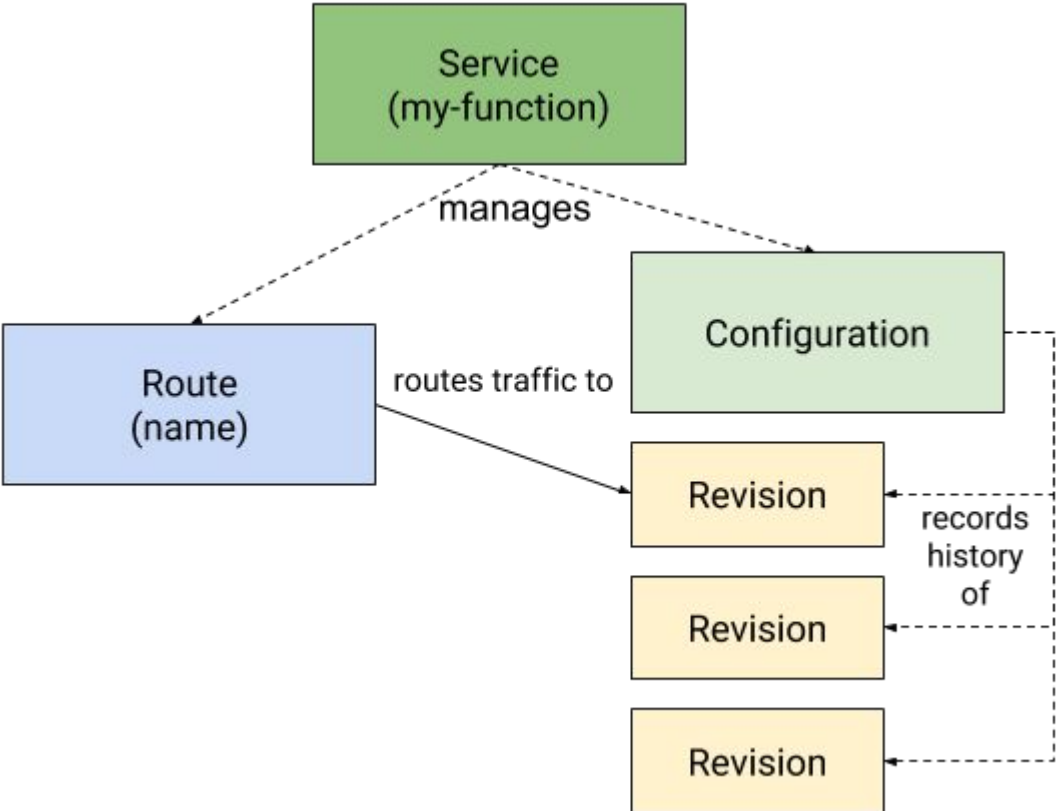
TEKTON

Bonus Question:
Why init-containers?

Serving

Set of APIs that help you host applications that serve traffic. Provides features like custom routing and autoscaling.

Serving - components



Serving - Features

- › Rapid deployment of serverless containers
- › Automatic scaling up and down to zero
- › Routing and network programming for Istio (or Gloo) components
- › Point-in-time snapshots of deployed code and configurations
- › Source-to-App
- › Implements own auto-scaler (more aggressive + scale-to-zero)

Eventing

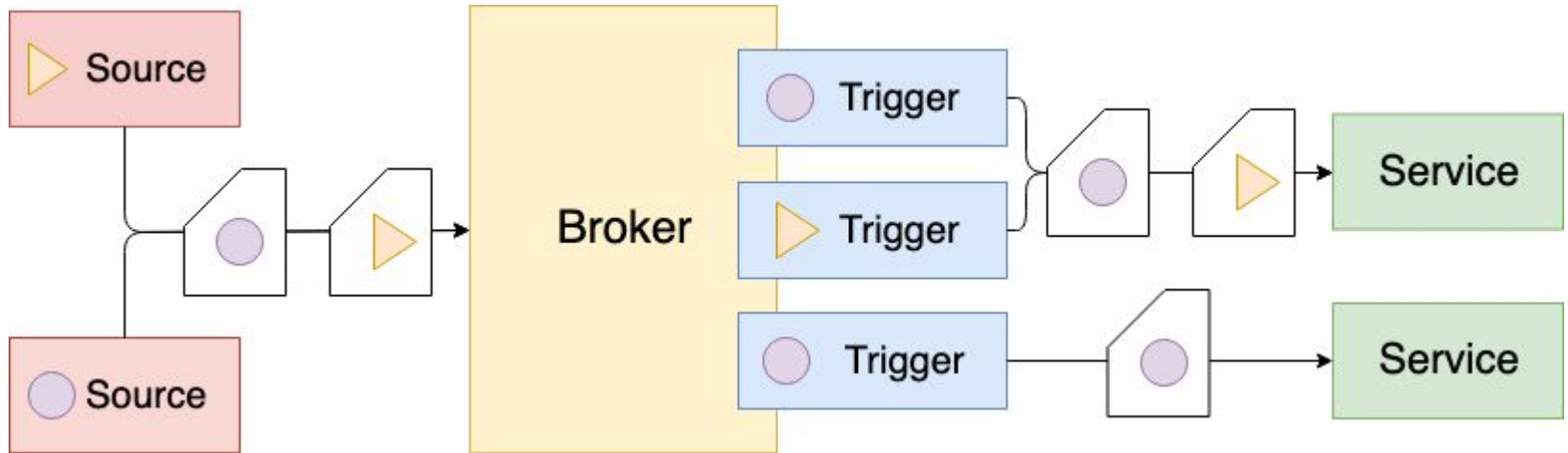
... provides composable **primitives** to enable **late-binding** event sources and event consumers.

Eventing - Primitives

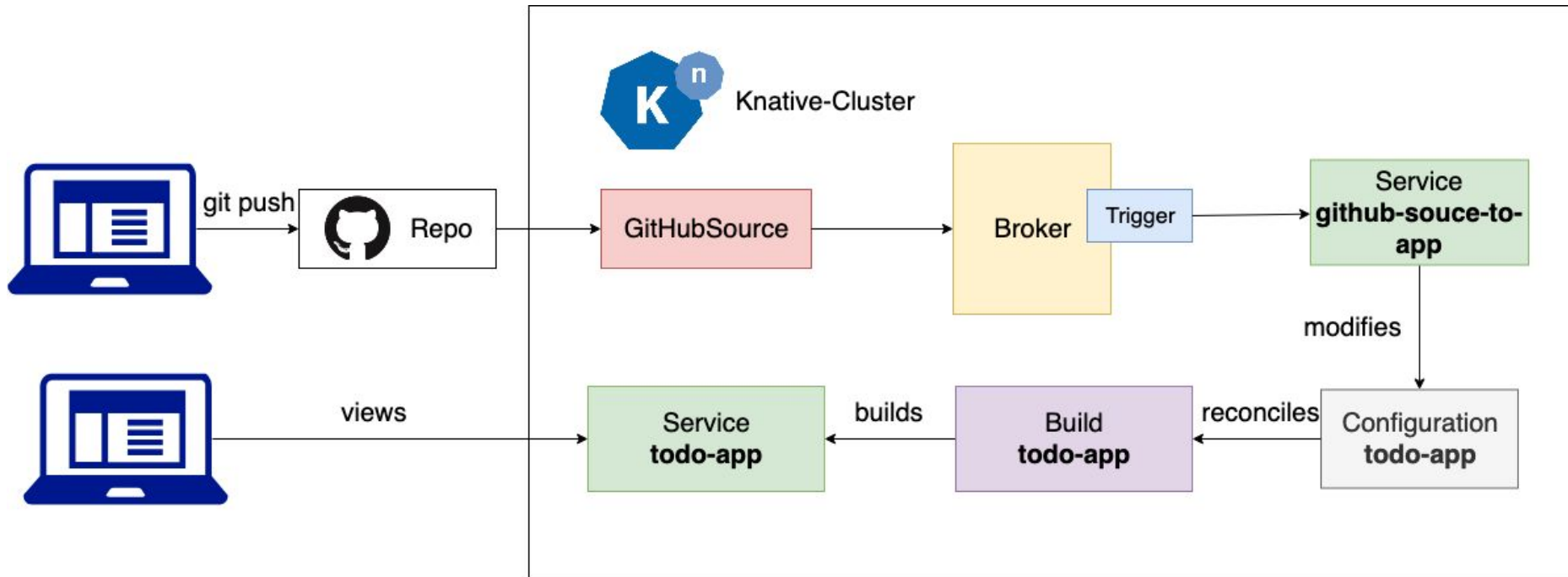
- › Source
- › Subscription
- › Channel

- › Broker
- › Trigger

Eventing - Brokers and Triggers



Demo Overview



Conclusion

Conclusion

- › Better abstraction than “bare” Kubernetes
- › Simple Deployment model
- › Can be used to build a “platform”
- › Google Product: Cloud Run
- › Gloo doesn't support all features (issues with eventing)
- › Same cluster one worked one didn't
- › Still in the early days (alpha/experimental)
- › Adding complexity (istio+ knative)
- › Many stakeholders

Q&A

Vielen Dank

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Reading list

- › <https://cloud.google.com/knative>
- › <https://github.com/knative/build-templates>
- › <https://github.com/GoogleCloudPlatform/knative-build-tutorials>
- › <https://codelabs.developers.google.com/codelabs/knative-intro>

Images

- › <https://www.pexels.com/photo/black-and-white-dartboard-1552617>
- › <https://www.pexels.com/photo/person-holding-square-white-ceramic-plate-687824>