

Deployment with Knative

(kay-nay-tiv)

Goals / Agenda

- Deploy K8 Cluster from scratch
- Hands on Demo of a workflow leveraging Knative
- Focus on PFE (proudly found elsewhere) — show what is out there and coming
- Hear questions from you — DO INTERRUPT ME!

Non-Goals

- Dive too deep into Istio
- Knative Eventing functionality
- Knative Auto-Scaling
- Observability (Grafana, Prometheus, Kiali)

Knative Personas

Knative extends Kubernetes, providing a set of middleware components.

These components provide a source-centric and container based applications that can be ran anywhere.



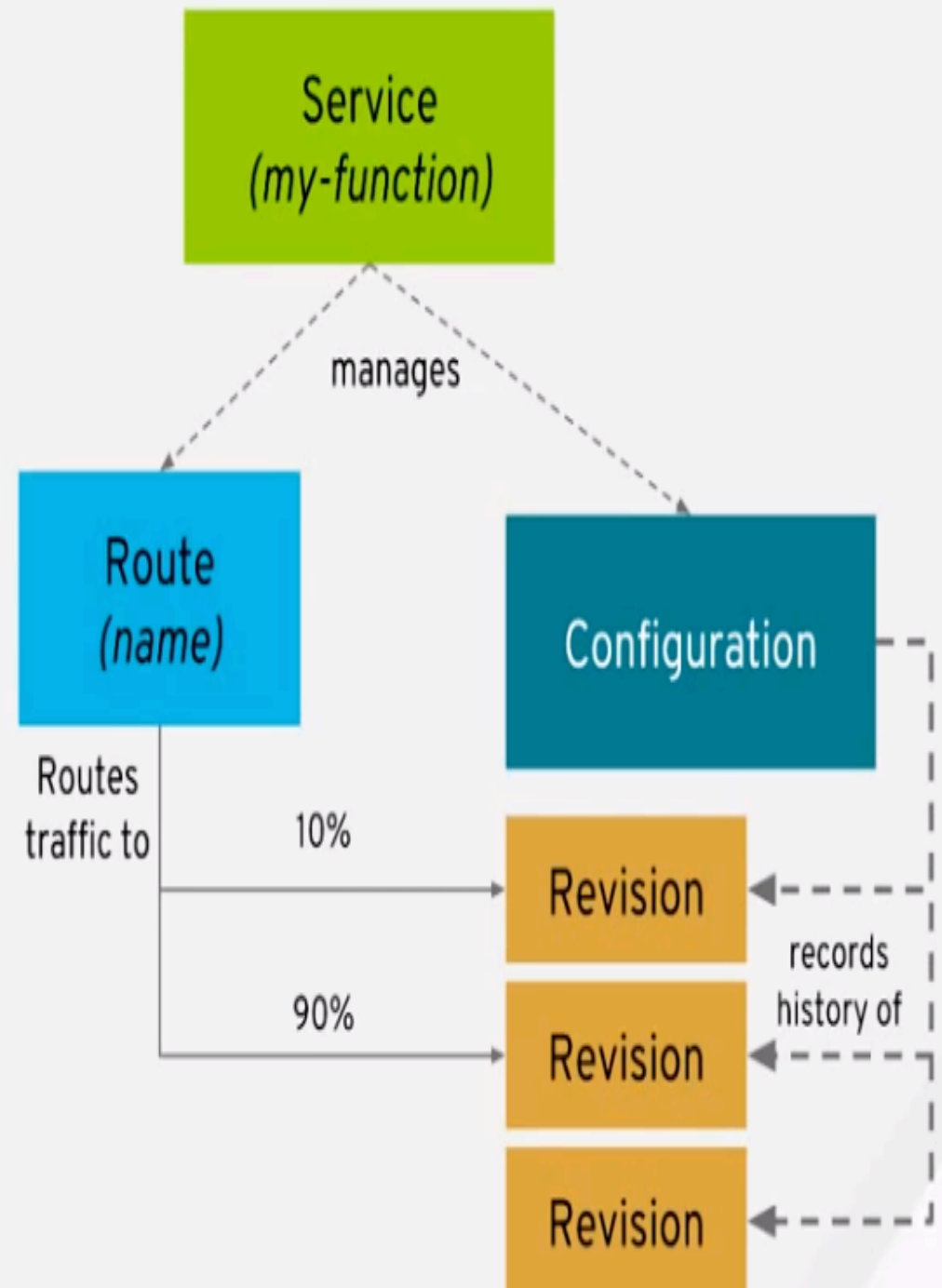
Knative Serving

<https://github.com/knative/serving>

Knative Overview - Serving



- **Configurations** represent the 'floating HEAD' of a history of **Revisions**
- **Revisions** represent immutable snapshot of code and configuration
- **Routes** configure ingress over a collection of **Revisions** and/or **Configurations**
- **Services** (nope, not K8s services) are top-level controllers that manage a set of **Routes** and **Configurations** to implement a network service



<https://github.com/knative/serving/blob/master/docs/spec/spec.md>

Knative Build

<https://github.com/knative/build>

A Knative build extends [Kubernetes](#) and utilizes existing Kubernetes primitives to provide you with the ability to run on-cluster container builds from source. For example, you can write a build that uses Kubernetes-native resources to obtain your source code from a repository, build a container image, then run that image.

While Knative builds are optimized for building, testing, and deploying source code, you are still responsible for developing the corresponding components that:

- Retrieve source code from repositories.
- Run multiple sequential jobs against a shared filesystem, for example:
 - Install dependencies.
 - Run unit and integration tests.
- Build container images.
- Push container images to an image registry, or deploy them to a cluster.

The goal of a Knative build is to provide a standard, portable, reusable, and performance optimized method for defining and running on-cluster container image builds. By providing the “boring but difficult” task of running builds on Kubernetes, Knative saves you from having to independently develop and reproduce these common Kubernetes-based development processes.

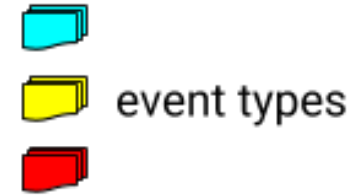
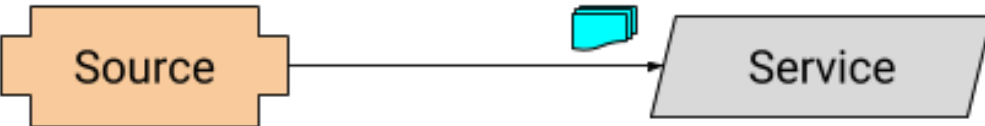
While today, a Knative build does not provide a complete standalone CI/CD solution, it does however, provide a lower-level building block that was purposefully designed to enable integration and utilization in larger systems.

Knative Eventing

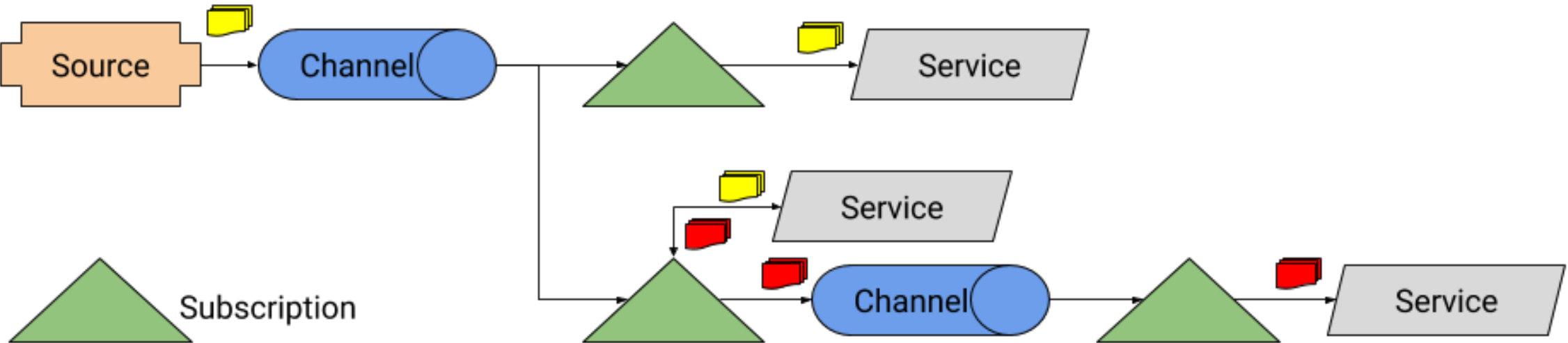
Honorable Mentioning

<https://github.com/knative/eventing>

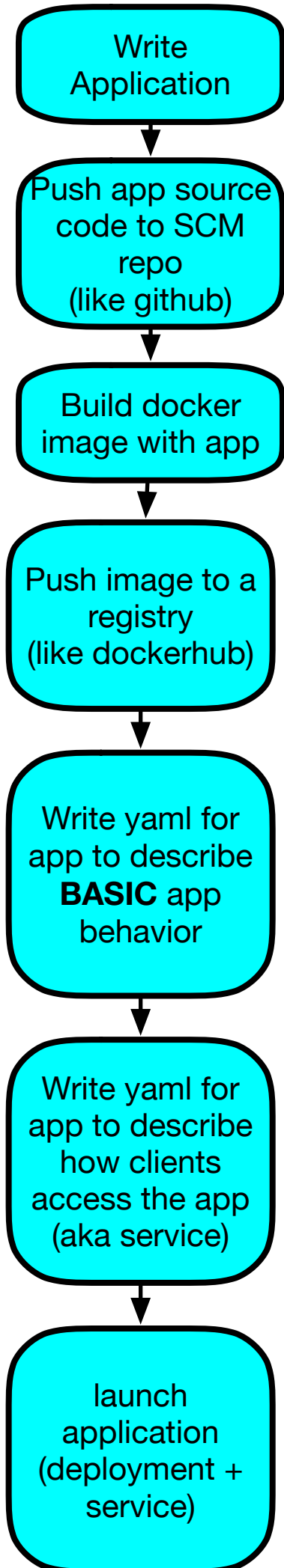
Simple Delivery



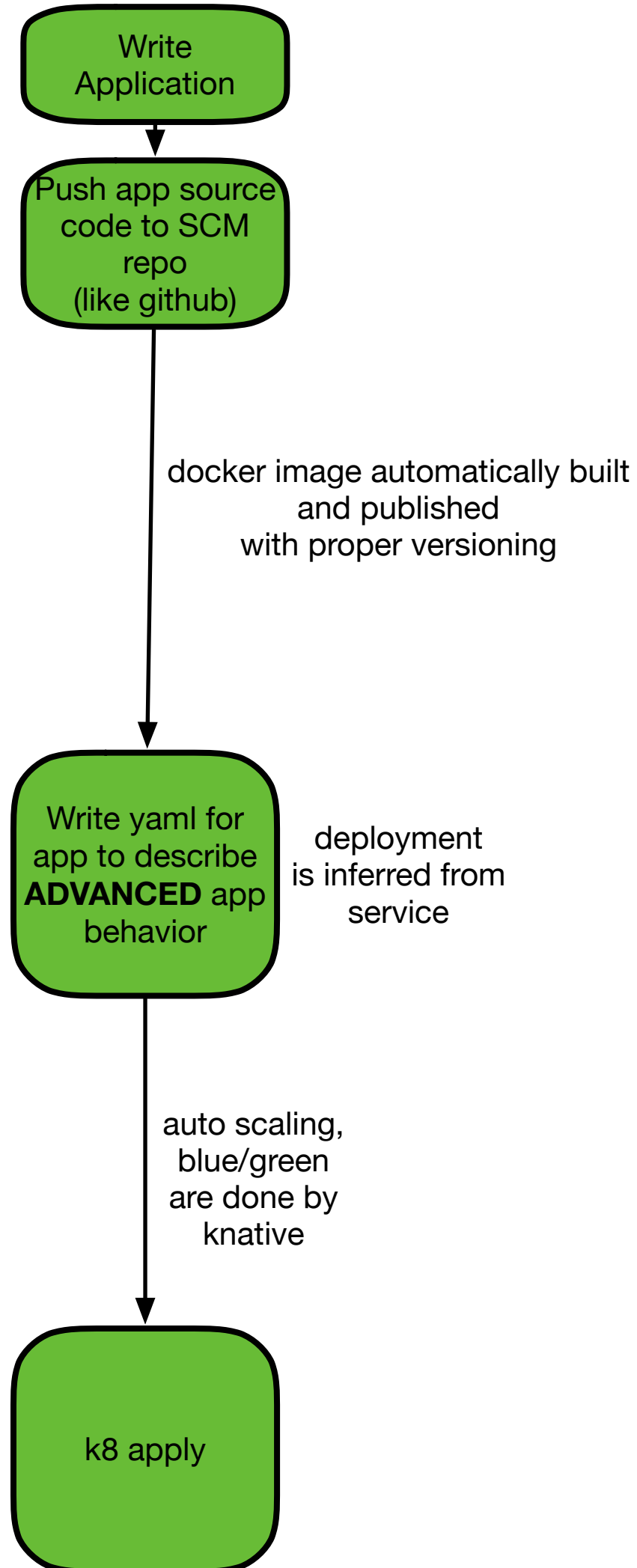
Complex Processing



Non-Knative Way



Knative Way



Some of the Tools Used



<https://gloo.solo.io/>



 Google Cloud



<https://stackoverflow.com/>



<https://www.getpostman.com/>



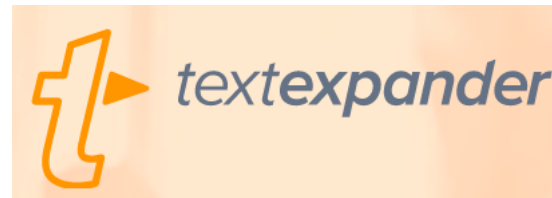
<https://www.jetbrains.com/pycharm/>



<https://github.com/GoogleContainerTools/kaniko>



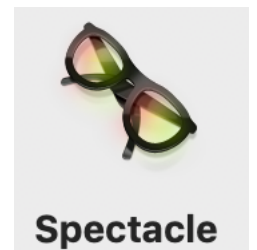
<https://www.knative.dev/docs/>



<https://textexpander.com/>



<https://clipy-app.com/>



<https://github.com/eczarny/spectacle>



<https://www.vagrantup.com/>



<https://www.virtualbox.org/>



<https://www.omnigroup.com/>



<https://evernote.com/>



<https://github.com/sharkdp/bat>