Armory Spinnaker
OpenShift Commons Briefings

@spinnakerio

https://join.spinnaker.io/

Speakers

German Muzquiz

Software Engineer at Armory with more than 10 years of experience, working with industries of telecom, entertainment and technology, with main expertise in backend development and DevOps.

Lee Faus

Field CTO at Armory with more than 25 years of experience, supporting open source communities, enterprise development and delivery in insurance, financial services, healthcare. Former Red Hatter from 2006-2009 working on RHX and RHN.

@MuzquizGerman

german.muzquiz@armory.io

@leefaus

lee@armory.io

About Spinnaker

Spinnaker is the **world's most powerful continuous delivery platform**, developed and open sourced by Netflix and Google, and **battle-tested in production** by hundreds of the world's leading enterprises. Spinnaker is an **open source platform** with a modern, **developer-friendly view of software delivery**. It is **target agnostic**, so teams can instantly deploy their code at scale to any and all clouds using a single, golden path to production.

Created by Technology Leaders
Built by Netflix and Google to solve CD at scale in the most technically challenging environments

Backed by an Open Source Community
Spinnaker is supported by a strong community including the world's leading cloud providers & enterprises

Target-agnostic Delivery Platform
Spinnaker was built from the start as a target-agnostic, multi cloud delivery platform

Empowers DevOps Teams with Guardrails, not Gates
Enable ops to create a "paved road" that empowers devs with automated operational best-practices

Built for Resilience, Safety, & Speed
Spinnaker creates a "paved road" for DevOps teams to deploy consistently & scalably, thousands of times a day

Pluggable, Extensible Platform
Spinnaker is, by design, a pluggable, extensible platform that integrates easily across the entire SDLC

Spinnaker

Spinnaker is **next-gen Software Delivery Orchestration** to Hybrid & Public Cloud

Committers from the top cloud innovators

NETFLIX   Google   amazon   armory   Pivotal.   ORACLE®   Microsoft

HUAWEI CLOUD   Tencent Cloud   Alibaba Cloud

560+ contributors   **25000+** commits   **160000+** GitHub Events

Thriving ecosystem of 9700+ engineers across 100s of enterprises (& growing)

Visualize Spinnaker's Growth

134K+ Contributions · 2500+ Contributors · 220+ Companies · 27k+ Commits
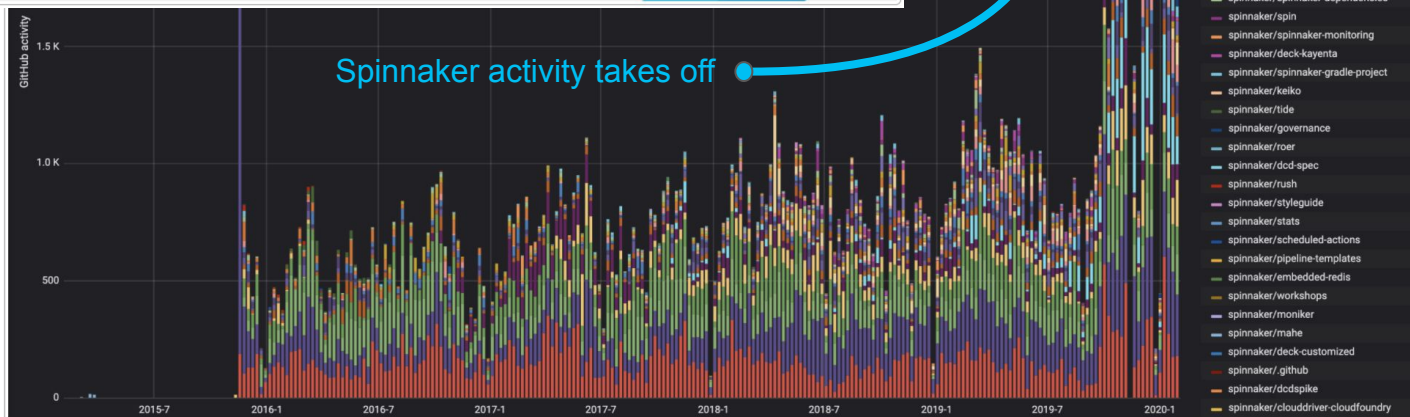
10k+ Pull Requests · 40+ Repositories · 2500 Forks · 8500 Slack Participants
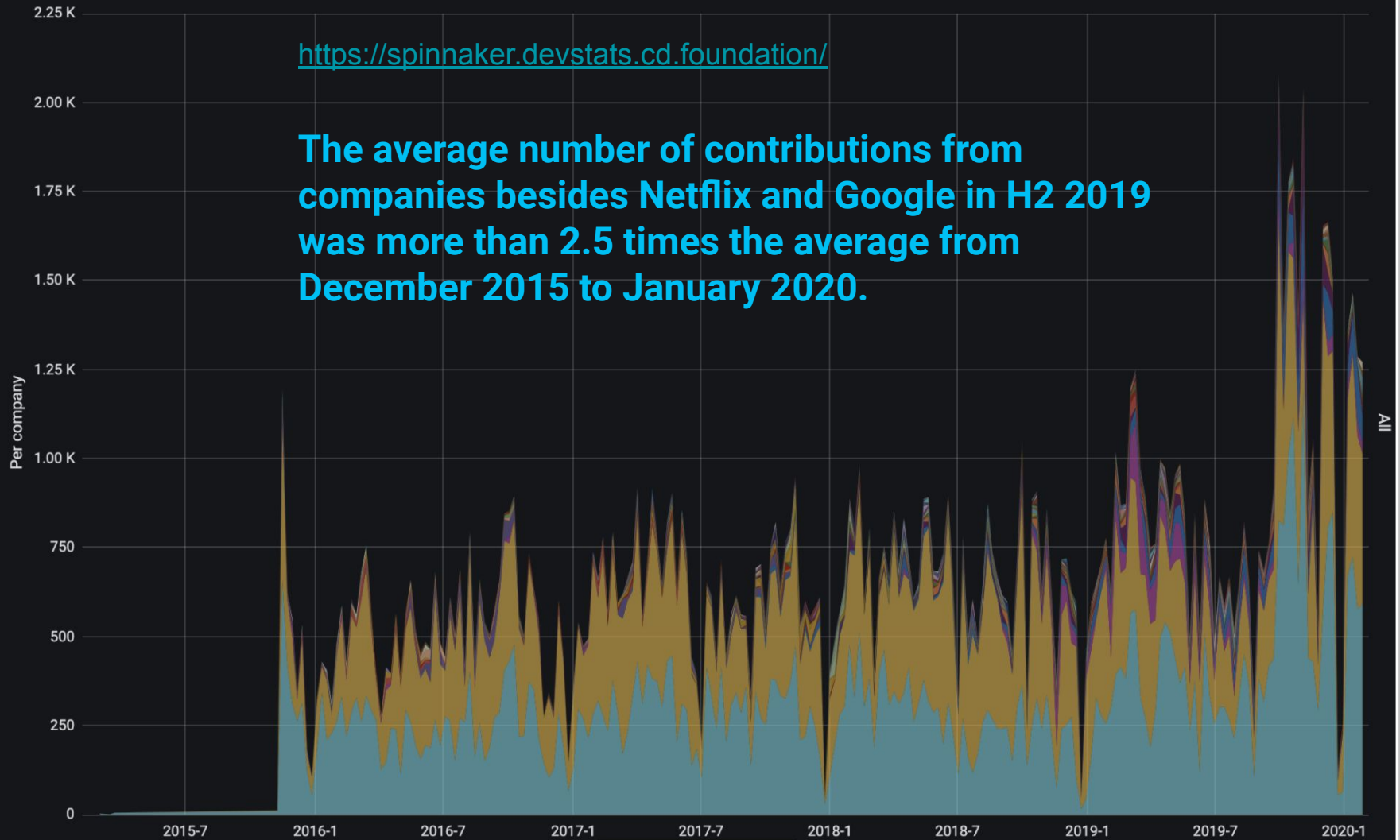
Spinnaker activity takes off

Read more in the
Captain's Log
on spinnaker.io

The average number of contributions from companies besides Netflix and Google in H2 2019 was more than 2.5 times the average from December 2015 to January 2020.

New for 2020

- Spinnaker Operator → Easier Management of Spinnaker
- Plugins → Lean Core, Extensible Platform
- Minnaker → Dev Environment Setup
- Keel → Declarative Delivery
- More to come...

Don't miss V2 of Spinnaker Gardening Days, your open source hackathon

Have fun and move the needle on continuous delivery at our virtual hackathon, training, and community celebration, sponsored by AWS!
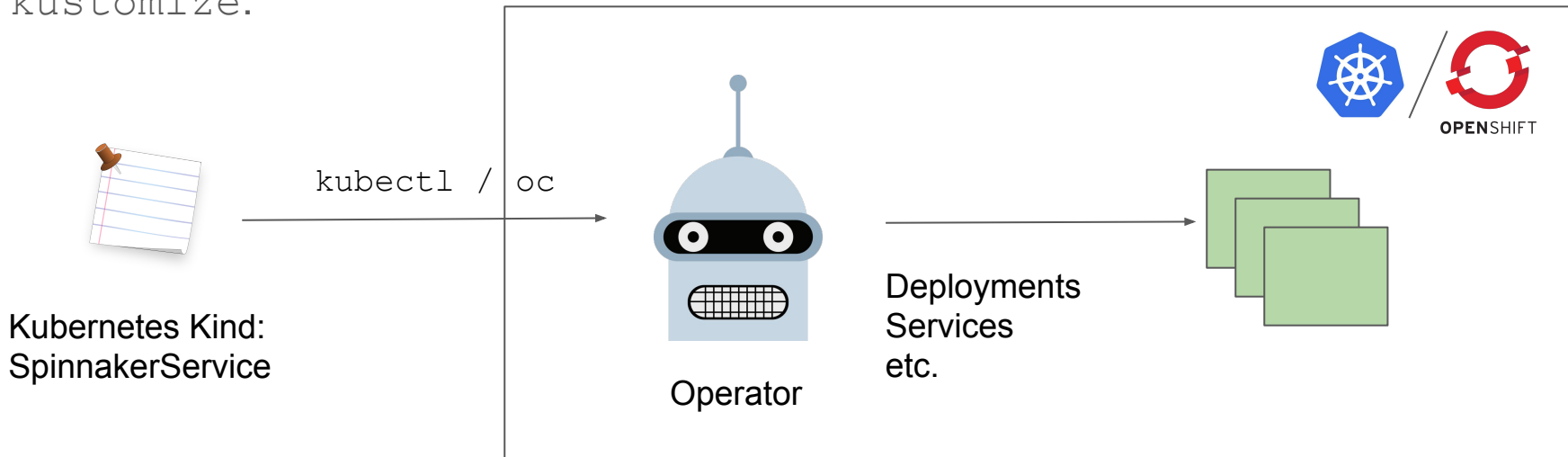
- July 16 - 23, 2020 - https://go.armory.io/gardening
- Master event schedule with hackathon, training, community, and fun activity tracks to mix and match.
- What to hack list, with project info, beginner-friendly issues, stack overflow and documentation tasks to help you contribute.
- Guide to setting up your Spinnaker development environment, with local, cloud, and kubernetes options to help you optimize for your resources.
- Hackathon logistics with project pitch, repository management, and staging environment information.
- Slack map with a list of Spinnaker Slack channels to visit during the event.

Read more at https://www.spinnaker.io/community/gardening/ and register now!
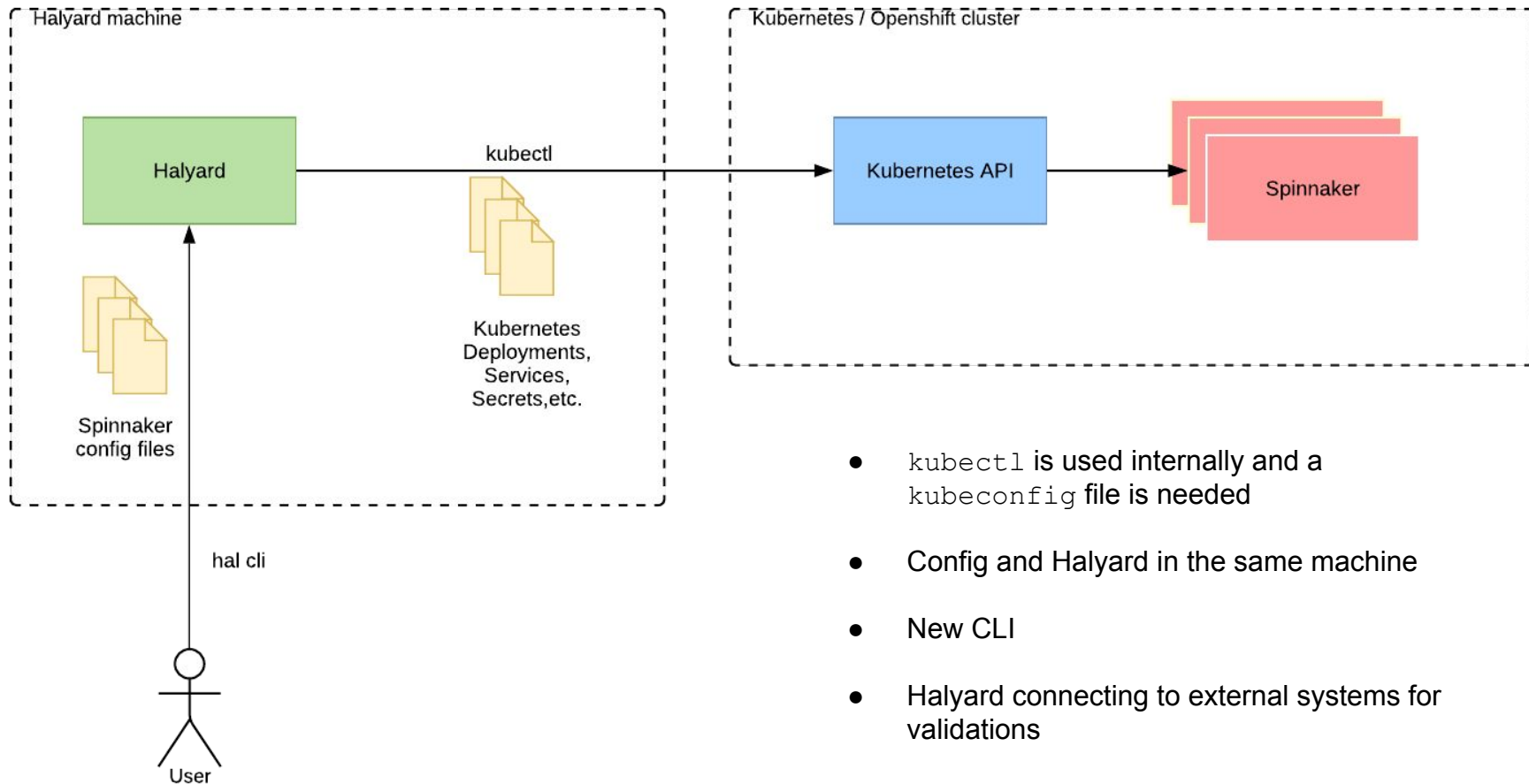
How to deploy Spinnaker itself?
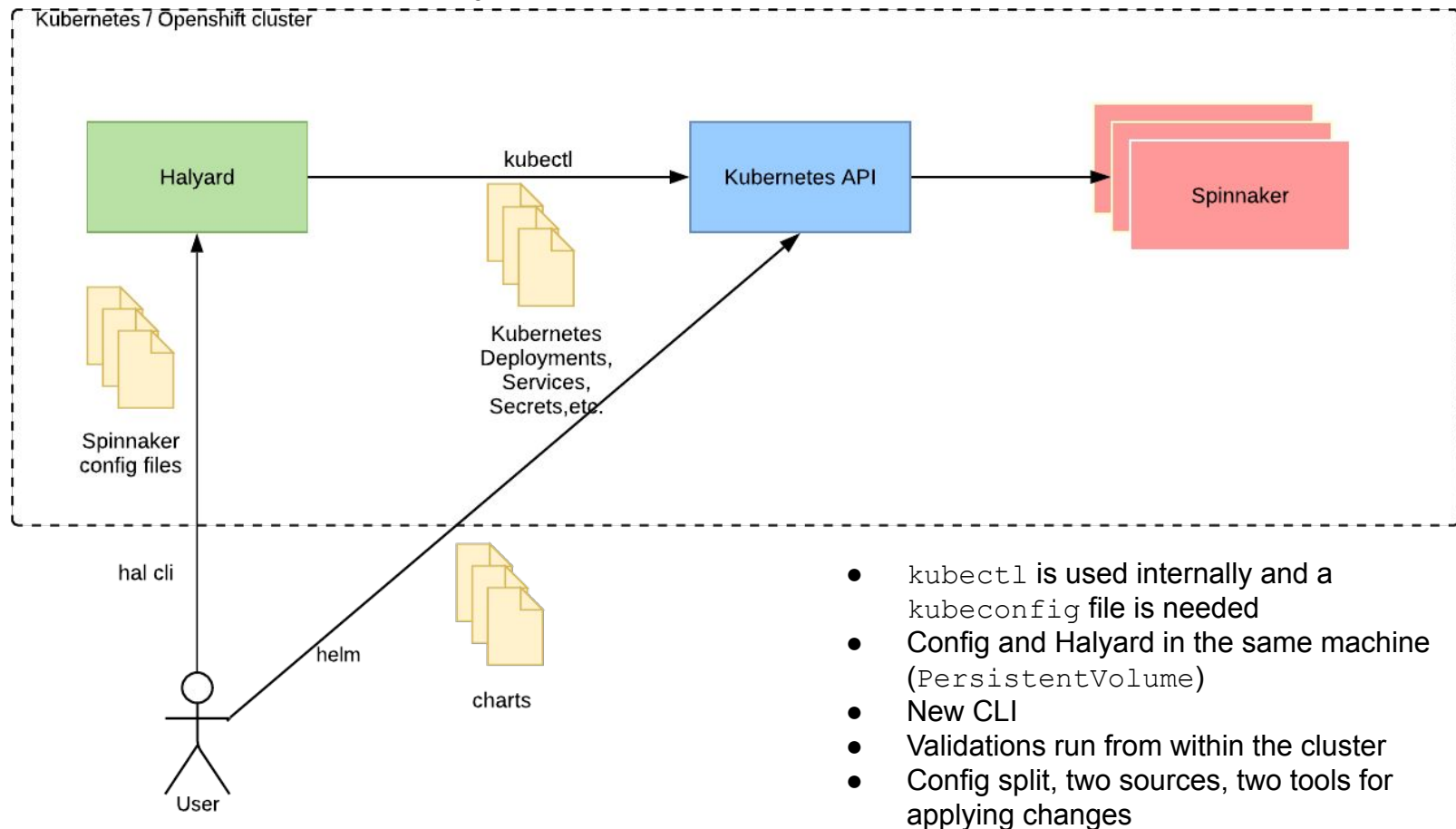
Spinnaker Operator Abstract

Spinnaker Operator is a Kubernetes operator for Spinnaker that makes it possible to install, deploy, and upgrade any version of Spinnaker using standard Kubernetes application workflows and tools, like `kubectl`, `oc`, `helm` or `kustomize`.
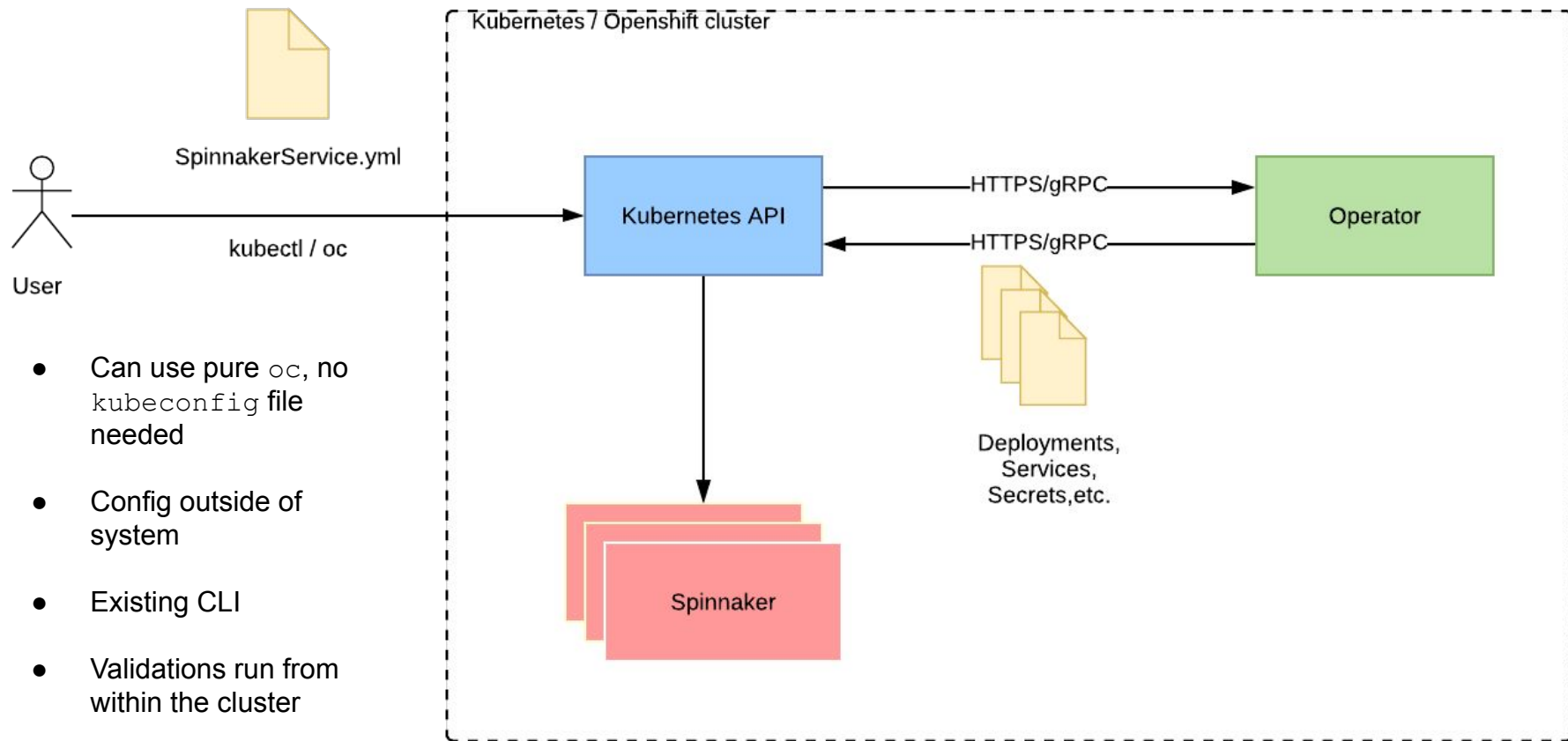

Kubernetes Kind:
SpinnakerService

kubectl / oc

Operator

Deployments
Services
etc.

Halyard: Spinnaker official deployment tool

- `kubectl` is used internally and a `kubeconfig` file is needed

- Config and Halyard in the same machine

- New CLI

- Halyard connecting to external systems for validations

Helm Charts: Community contributed

- `kubectl` is used internally and a `kubeconfig` file is needed
- Config and Halyard in the same machine (`PersistentVolume`)
- New CLI
- Validations run from within the cluster
- Config split, two sources, two tools for applying changes

Armory Spinnaker Operator

Kubernetes / Openshift cluster

SpinnakerService.yml

kubectl / oc

User

Kubernetes API

HTTPS/gRPC

HTTPS/gRPC

Operator

Deployments,
Services,
Secrets,etc.

Spinnaker

- Can use pure `oc`, no `kubeconfig` file needed

- Config outside of system

- Existing CLI

- Validations run from within the cluster

Working with Armory Spinnaker Operator

- Get and install operator manifest files:
  - Hosted at Github (https://github.com/armory-io/spinnaker-operator/releases)
  - Not available on `operatorhub.io` yet, but it's on the roadmap
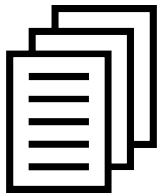
- Create/modify `SpinnakerService` manifest (Spinnaker domain knowledge needed). Store under source control. Secrets are stored somewhere else (K8S, S3, GCS, Vault, etc.)

- Apply manifest to the cluster (`oc apply -f`)
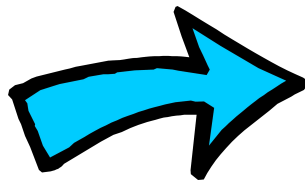
Working with Armory Spinnaker Operator

- **Kubernetes Native:** Use standard tooling for deploying Spinnaker instead of introducing a new tool (`oc apply -f spinnaker/` vs `hal deploy apply`)

- **Validations:** Validate configuration at `apply` time and reject if invalid

- **Automation:** Some tasks like exposing Spinnaker can be automated

- **Kubernetes Secrets Engine:** Store Spinnaker secrets in Kubernetes

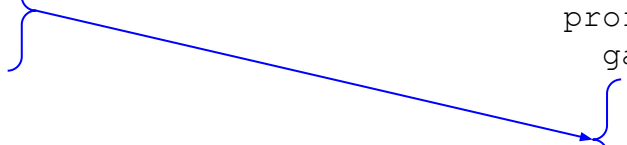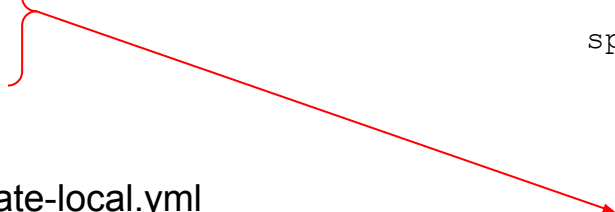# Migrating from Halyard to Operator

~/.hal/config

```
currentDeployment: default
deploymentConfigurations:
- name: default
  version: 1.19.0
  providers:
    kubernetes:
    …
```

~/.hal/default/profiles/gate-local.yml

```
server:
  tomcat:
    internalProxies: .*
```

spinnakerservice.yml

```
apiVersion: spinnaker.io/v1alpha2
kind: SpinnakerService
metadata:
  name: spinnaker
spec:
  spinnakerConfig:
    config:
      version: 1.19.0
      providers:
        kubernetes:
        …
    profiles:
      gate:
        server:
          tomcat:
            internalProxies: .*
```

More information

- https://github.com/armory/spinnaker-operator
- https://www.armory.io/blog/introducing-spinnaker-operator-a-kubernetes-native-blueprint-for-success/
- Migrating from Halyard to Operator
- Spinnaker Operator Reference | Armory Documentation

Demo Time

Introduction to Spinnaker