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Intro: Operator Framework

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KubeCon ‘18

What is an Operator?

What is an Operator?

Containers brought simplicity to the development world

```
$ docker pull postgres
$ docker pull redis
```

```
$ docker run --name some-postgres -e POSTGRES_PASSWORD=foo -d postgres
$ docker run --name some-redis -d redis
```

What is an Operator?

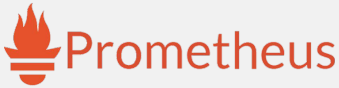
- This workflow translate 1:1 to production environments
- Needs platforms like Kubernetes to provide an environments to run containers
- Complexity is abstracted thanks to generic features like
  - Deployments
  - Stateful Sets
  - CSI
  - So much more...
- Many applications still require custom logic/strategies.
- Users still need to know a lot about the platform in order to utilize it

What is an Operator?

- An operator is a pattern for building kubernetes native applications
  - Leverages and extends the kubernetes API (usable with kubectl)
  - Runs on kubernetes as containers

- Purposely built for a specific application
  - Operational knowledge baked in and automated
    - handling upgrades from one version to another
    - handling complex failure recovery scenarios
    - scaling a stafeful application up and down
  - Best suited for complex and stateful services (but not only!)
  - Example: a prometheus operator specifically designed for it

OPERATORS ACROSS THE INDUSTRY



...and many more

https://github.com/operator-framework/awesome-operators

OPERATOR FRAMEWORK

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OPERATOR FRAMEWORK

- **Operator SDK** - Allows developers to build, package and test an Operator based on your expertise without requiring all the knowledge of Kubernetes API complexities

- **Operator Lifecycle Manager** - Helps you to install, and update, and generally manage the lifecycle of all of the Operators (and their associated services) running across your clusters

- **Operator Metering** - Enable usage reporting for Operators and resources within Kubernetes

Demo

Where to get started?

- https://github.com/operator-framework
- https://github.com/operator-framework/getting-started
- https://commons.openshift.org/sig/operators.html
- #kubernetes-operators on the kubernetes slack
- https://groups.google.com/forum/#!forum/operator-framework

Kubecon sessions about operators

Wednesday, December 12 • 1:45pm - 2:20pm

Deep Dive: Operator Framework BoF - Diane Mueller & Sebastien Pahl, Red Hat

Thursday, December 13 • 9:51am - 9:56am

Keynote: Maturing Kubernetes Operators - Rob Szumski, Principal Product Manager for OpenShift, Red Hat

Thursday, December 13 • 4:30pm - 5:05pm

Collecting Operational Metrics for a Cluster with 5,000 Namespaces - Rob Szumski & Chance Zibolski, Red Hat

Operator Workshop

Friday, December 14 • 9:00am - 1:00pm

Kubernetes Operator Framework Workshop (Additional registration required)

SOLD OUT

Questions?
&
Thank you!