

Kubernetes Operators with Ansible

Tim Appnel

Senior Product Manager, Ansible

Ansible ATL Meetup

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The Ansible Operator SDK makes it easy to deploy and manage Kubernetes applications with native Ansible support

Kubernetes Operators With Ansible

What Are Kubernetes Operators?

Why Build Operators with Ansible?

Developing Your First Operator with Ansible

Next Steps

What Is Kubernetes?

An open source orchestration system for implementing a microservices architecture as containerized applications run and coordinated across a cluster of nodes.



Red Hat® OpenShift® is comprehensive enterprise-grade application platform built for containers with Kubernetes at its core.

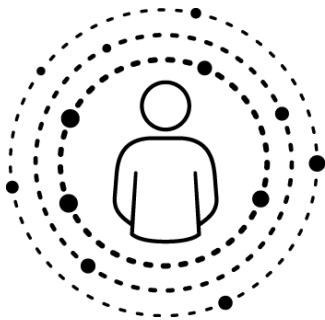
STATELESS IS EASY,
STATEFUL IS HARD

Kubernetes Operators



- Encode human operational knowledge
- **Automatically patch, upgrade, recover, and tune apps and services**
- Kubernetes-native
- Purpose-built for a specific application or service
- Enable “day 2” management

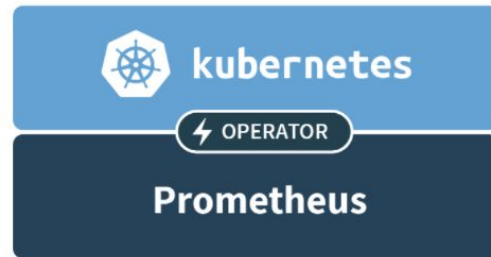
Encoding And Automating Ops Knowledge



Without Operators

Reactive

- Continually checks for anomalies
- Alert humans for response
- Requires manual change to fix



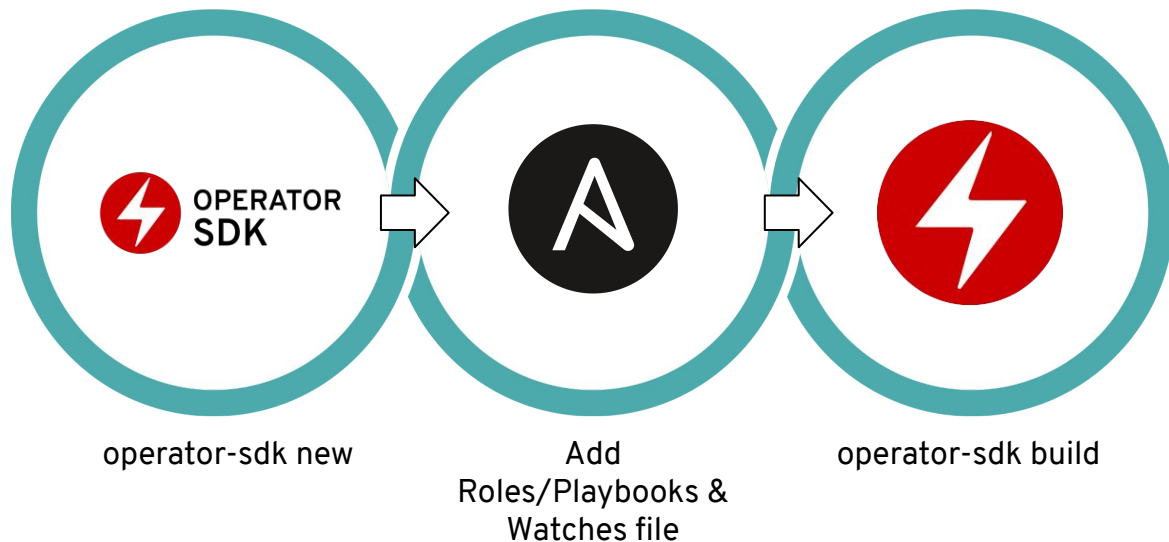
With Operators

Proactive

- Continually adjusts to optimal state
- Automatically acts in milliseconds

Ansible Operator SDK

Making it easy to deploy and manage Kubernetes apps with native Ansible support via the Operator SDK



Why Build Operators With Ansible?

Existing Skills & Ecosystem

- Same tried & trusted Ansible tooling
- Utilize existing skills
- Supports cloud-native & traditional IT automation with one simple language
- Leverages vibrant existing ecosystem

Lower Barrier Of Entry

- No programming required
- Faster iterations and easier maintenance
- Declarative state definitions like K8s
- Templating of resources
- Abstraction layer & helpers that reduces necessary K8s API experience

Developing Your First Operator With Ansible

- Initialize Your Operator With Ansible
 - `$ operator-sdk new foo-operator --api-version=cache.example.com/v1alpha1 --kind=Foo --type=ansible`
- Automate With Ansible
 - Create new roles and playbooks or reuse an existing one
- Define a watch file
 - Map a Kubernetes object to your Ansible content
- Build Your Operator
 - `$ operator-sdk build foo-operator:v0.0.1`
- Deploy Your Operator to a Kubernetes Cluster

Next Steps

Learn About Ansible



ansible.com

Get Started With the
Ansible Operator SDK



[Online Guide](#)

Join the Community

A N S I B L E

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More Resources

```
$ kubectl create -f example/deployment.yaml
```

Install etcd Operator

etcd Operator

<https://github.com/water-hole/etcd-ansible-operator>

A great example of a sophisticated Kubernetes Operator using Ansible

Memcached Operator

<https://github.com/operator-framework/operator-sdk-samples/tree/master/memcached-operator>

Simple walkthrough for building an Operators using the Ansible Operator SDK and Kubernetes CRDs



#ANSIBLEFEST ATLANTA 2019



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Thank You



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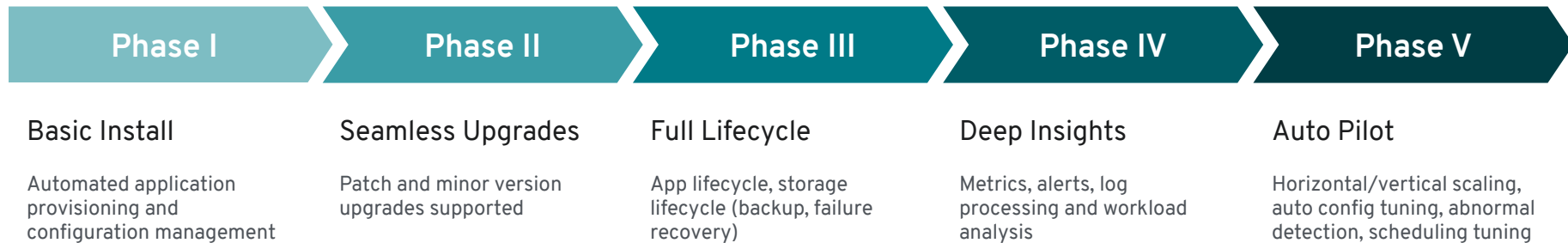


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Operator Capability Level



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