

# Manage the App on Kubernetes

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**Goal:** make apps easier to...

Build

Deploy

Operate

Upgrade

Decommission



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Build

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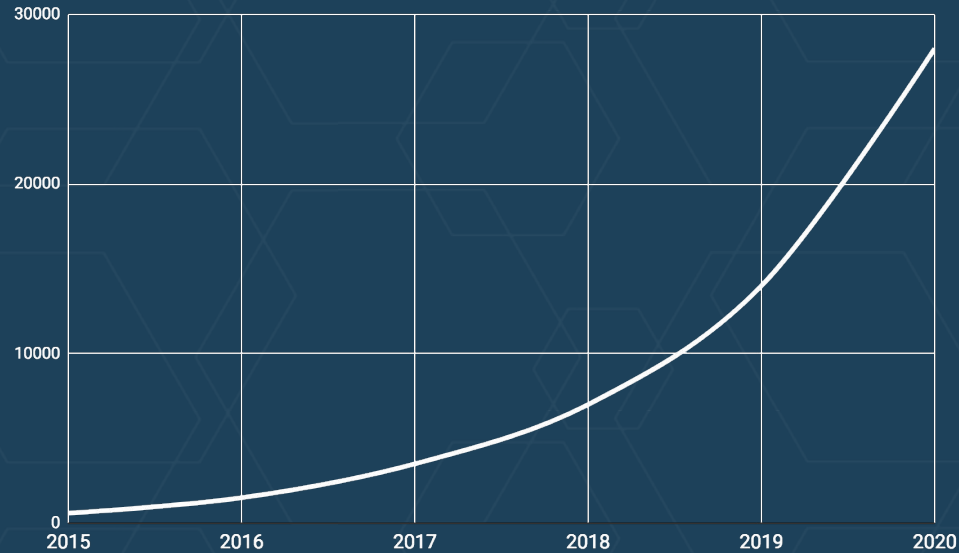
**with minimum toil**

“

It is a confusion of ideas to suppose that the economical use of fuel is equivalent to diminished consumption. The very contrary is the truth.

- William Stanley Jevons

# When something is readily available: Growth



# Managing lots of apps you need to know...

What apps types exist? Versions?

What app instances are deployed? How many? Where?

What is the app instance health? How much does it cost?

Who are the app owners? Who gets paged?

What CI pipelines associate with each app?

# Pre-Kubernetes State

App Binaries



CI/CD

Scripts



CI/CD

Production



CI/CD

# Pre-Kubernetes State

App Binaries



CI/CD

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CI/CD

Production



CI/CD



# Current State

## Containers



CI/CD

## Manifests



CI/CD

## Production



CI/CD

# Current State

Containers



Manifests



Production

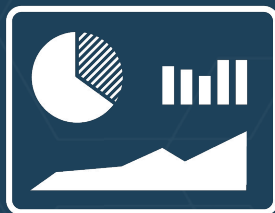


# Current State

Owners



Dashboards



Metrics & SLAs



Docs



Internal Wiki  
Spreadsheet  
Tribal Knowledge

# Future State

Containers



Manifests



App Version

**v1.0.0**

CI/CD

CI/CD

# Future State

App Version

App Catalog

**v1.0.0**



**v1.0.0**

v0.9.0

v0.8.0

CI/CD

CI/CD

# Future State

App Version

**v1.0.0**



App Catalog

**v1.0.0**

v0.9.0

v0.8.0



Instances

**Dev**  
v1.0.0



**Prod**  
v0.8.0



CI/CD

# Future State

App Version

**v1.0.0**



App Catalog

**v1.0.0**

v0.9.0

v0.8.0



**Debug**  
v0.9.0



**Pentest**  
v0.8.0



**Dev**  
v1.0.0



**Prod**  
v1.0.0

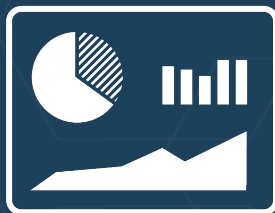


# Future State

Owners



Dashboards



Metrics & SLAs



Docs



Kubernetes  
Resources






# Demo

## Open Cloud Services

NAME	PROVIDER
Open Cloud Services	CoreOS, Inc

## Applications

NAME ↑		STATUS	
	<b>etcd</b> 0.6.1 by CoreOS, Inc	Not enabled	<a href="#">Enable</a> <a href="#">Disable</a>
	<b>Prometheus</b> 0.14.0 by CoreOS, Inc	Not enabled	<a href="#">Enable</a> <a href="#">Disable</a>
	<b>Vault</b> 0.1.5 by CoreOS, Inc	Not enabled	<a href="#">Enable</a> <a href="#">Disable</a>

# Create a shared toolkit

## App Catalog

App Types

App Versions

App Instance

```
kind: CatalogEntry
metadata:
  name: vault-operator.0.1.3
spec:
  displayName: Vault
  install:
    strategy: deployment
  version: 0.1.3
  maintainers:
    - email: support@coreos.com
      name: CoreOS, Inc
  ...
```

# Create a shared toolkit

App Catalog

App Types

App Versions

**App Instance**

```
kind: InstallPlan
metadata:
  name: vault-operator.0.1.3-qkmz0
  namespace: default
spec:
  approval: Automatic
  clusterServiceVersionNames:
  - vault-operator.0.1.3
status:
  phase: Complete
```

# Wait, what about...

Kubernetes YAML

Kubernetes Deployments

Helm Charts

Helm Deployments

Operators

Ksonnet packages

Ksonnet registries

Kubecfg

Koki

Metaparticle



**Solving Good Problems!**

# Can we answer these questions consistently?

What apps types exist? Versions?

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## First Step: App Labels

Define a set of well-known labels for grouping Kubernetes resources related to an application.

See [App-Def Working Group](#)

## Think and Discuss

This is a big problem space. Try out the tools that exist today, reflect on your own workflows, discuss.

Join [SIG Apps](#)

# Come Chat @ CoreOS Booth

Open Cloud Service Catalog: Prometheus, etcd, Vault  
Chargeback and Application Accounting  
Application Lifecycle Management

Try out CoreOS Tectonic: [coreos.com/tectonic](https://coreos.com/tectonic)