When I Kube All the Things, What Can Watch Kubernetes?

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Who am I?
Gameplan

- What is Kubernetes?
- What is Kubernetes Missing?
- What is BOSH
- Intro to the Cloud Foundry Container Runtime
- Why Cloud Foundry Container Runtime?
What is Kubernetes?
What is Kubernetes?
What is Kubernetes?

• Deploy
• Scale

• Operate
• Automate
What is Kubernetes?

Master

Node
- Container
- Container
- Pod

Node
- Container
- Container
- Pod
- Container
- Container
- Pod
- Container
- Container
- Pod
What is Kubernetes?

- kube-apiserver
- kube-scheduler
- controller manager
- etcd

Master
What is Kubernetes?

kubectl
What is Kubernetes?

Kubernetes the hard way:
https://github.com/kelseyhightower/kubernetes-the-hard-way

https://www.youtube.com/watch?v=kOa_llowQ1c
What is Kubernetes?

- Live config editing
- Zero downtime
- Granular config options
- Self contained apps
What is Kubernetes Missing?
What is Kubernetes Missing?

- Deploying multiple clusters easily
- Does not build or deploy source code
- Ability to self-heal

https://kubernetes.io/docs/concepts/overview/what-is-kubernetes/
Enter a VM Management Solution
What is BOSH?

VM Management:
- Identifiable
- Reproducible
- Consistent
- Agile
What is BOSH?
What is BOSH?

https://bosh.io/stemcells
What is BOSH?

Common Releases: https://bosh.io/releases
What is BOSH?

myproduct.sh

Common Releases:https://bosh.io/releases
What is BOSH?
What is BOSH?

MANIFEST

DEPLOYMENT
What is BOSH?

https://bosh.io
What is BOSH?
What is BOSH?

Google + Pivotal + vmware
What is CFCR?

- BOSH deployment
- Re-deployable K8s
- Scaling of clusters
- Vm healing
- Rotation of credentials
What is CFCR?
Similarities

Manifest

```yaml
apiVersion: v1
kind: Service
metadata:
  name: my-nginx
spec:
  labels:
    app: nginx
  selector:
    app: nginx
  ports:
    - port: 80

jobs:
- name: kubo-dns-aliases
  release: kubo
  name: bosh-dns-aliases

release:
- name: kubel
  version: latest
- name: cfn-ctl
  sha256: f73333f80293547a23aaac8a370837c14e34e30c8
  url: https://github.com/cloudfoundry-incubator/cfn-ctl-release/releases/download/v1.4.0/cfn-ctl-release-1.4.0.tgz
  version: 1.4.0
- name: docker
  sha256: 102702345861783666656fc9345665656
  url: https://github.com/cloudfoundry-incubator/docker-boshrelease/releases/download/v32.0.0/docker-32.0.0.tgz
  version: 32.0.0
```
Similarities

Canaries

```
name: frontend
replicas: 3
...
labels:
  app: guestbook
tier: frontend
track: stable
...
image: gb-frontend:v3
```

```
name: frontend-canary
replicas: 1
...
labels:
  app: guestbook
tier: frontend
track: canary
...
image: gb-frontend:v4
```

```
update:
canaries: 1
canary_watch_time: 10s-300000
max_in_flight: 1
update_watch_time: 10s-300000
```
Similarities

Community
What is CFCR?
Why Cloud Foundry Container Runtime?

- Management of K8s cluster
- VM healing
- Multiple AZ support
What? Cloud Foundry?

- Very similar to K8s
- Cloud Native applications
- Cloud or on prem
- Simple design for devs
Ask me about

• Cloud Foundry

• BOSH and the CFCR

• Pivotal’s Proprietary Solution
Pivotal PKS

https://github.com/cloudfoundry-incubator/kubo-release/

https://github.com/cloudfoundry-incubator/kubo-deployment
[https://www.youtube.com/watch?v=kOa_IlowQ1c](https://www.youtube.com/watch?v=kOa_IlowQ1c)
[https://kubernetes.io/docs/home/?path=users&persona=app-developer&level=foundational](https://kubernetes.io/docs/home/?path=users&persona=app-developer&level=foundational)

Cloud Foundry Container Runtime (Kubo)
[https://github.com/cloudfoundry-incubator/kubo-release/](https://github.com/cloudfoundry-incubator/kubo-release/)
[https://github.com/cloudfoundry-incubator/kubo-deployment](https://github.com/cloudfoundry-incubator/kubo-deployment)

For more about Cloud Foundry
[https://www.cloudfoundry.org/](https://www.cloudfoundry.org/)

For more about BOSH
[https://bosh.io/docs/](https://bosh.io/docs/)
[https://ultimateguidetobosh.com/](https://ultimateguidetobosh.com/)
[https://bosh.io](https://bosh.io)