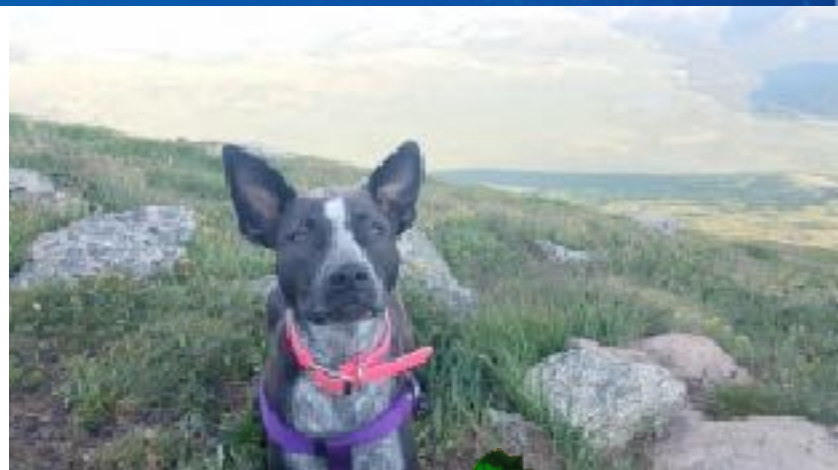# When I Kube All the Things, What Can Watch Kubernetes?

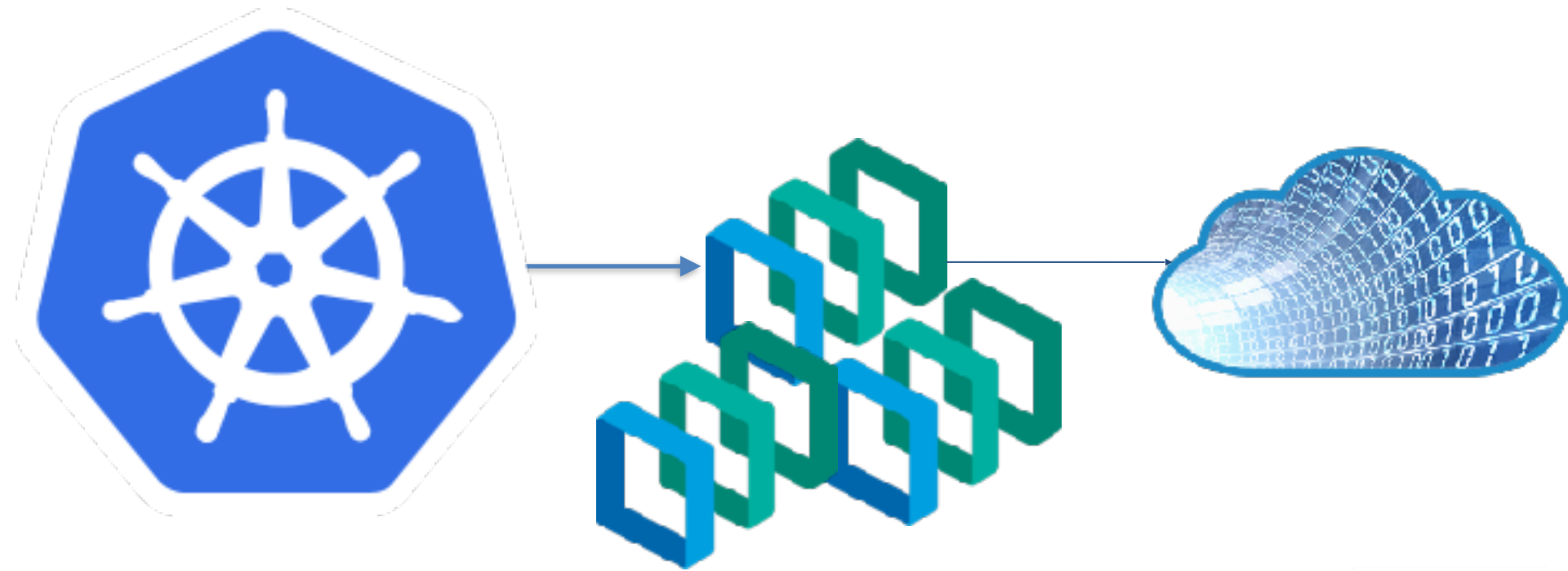Kira Boyle

Pivotal Cloud Foundry

@kiracboyle

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?

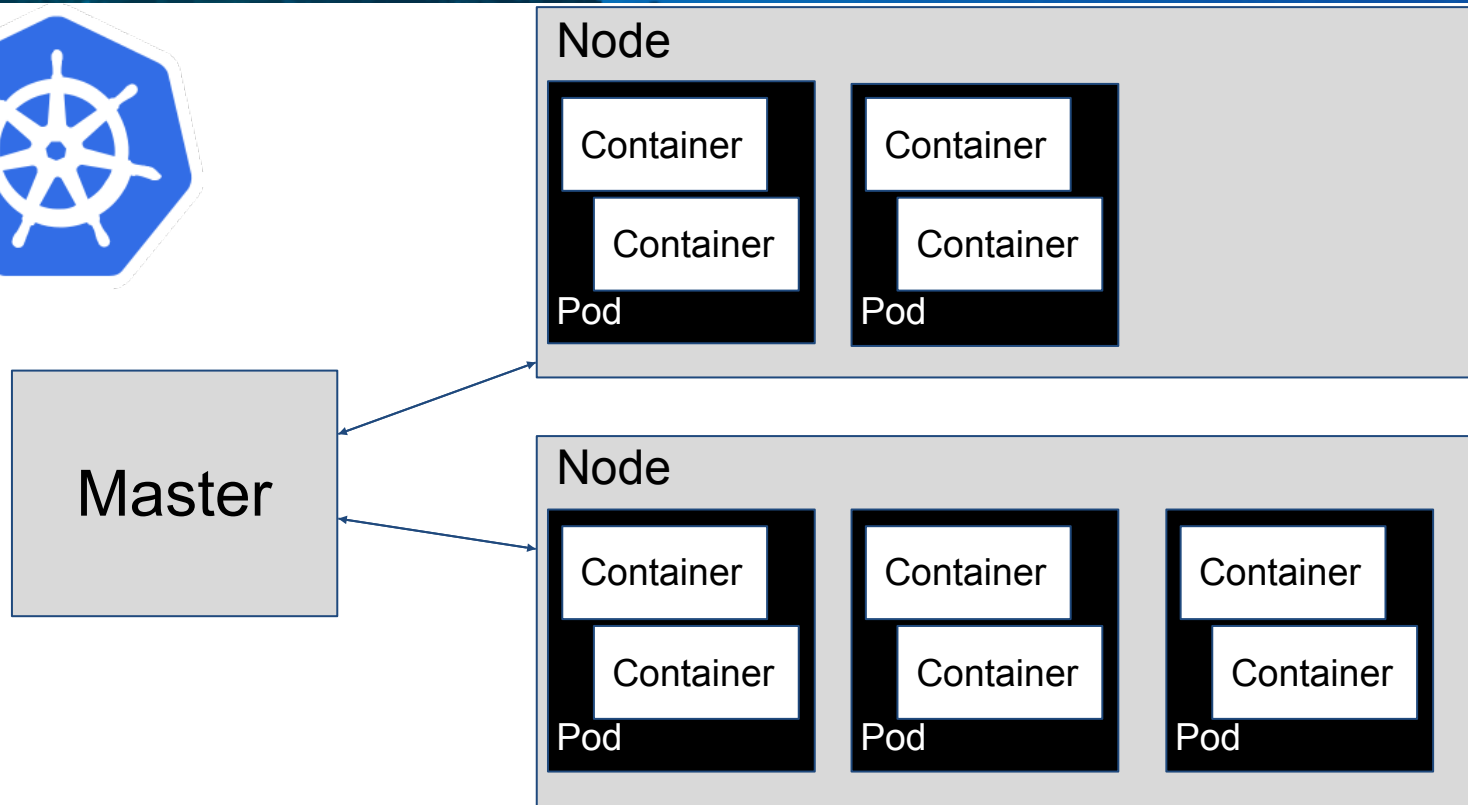# What is Kubernetes?

What is Kubernetes?

What is Kubernetes?

- Deploy
- Scale
- Operate
- Automate

What is Kubernetes?

What is Kubernetes?

kube-apiserver

kube-scheduler
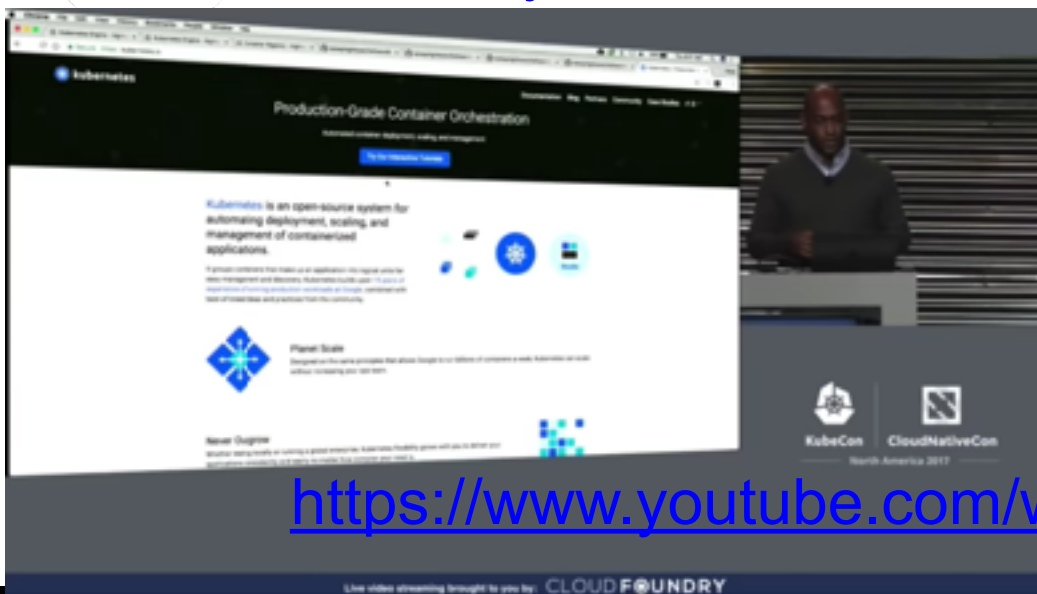
Master

controller manager

etcd

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

-

Enter a VM Management Solution

What is BOSH?

VM Management:

- Identifiable
- Reproducible
- Consistent
- Agile

What is BOSH?

STEMCELL

RELEASE

MANIFEST

DEPLOYMENT

What is BOSH?

STEMCELL

https://bosh.io/stemcells

What is BOSH?

STEMCELL

Job	Package	Source	Blob

Common Releases:https://bosh.io/releases

What is BOSH?

RELEASE

myproduct.sh

Common Releases:https://bosh.io/releases

What is BOSH?

RELEASE

STEMCELL

RELEASE
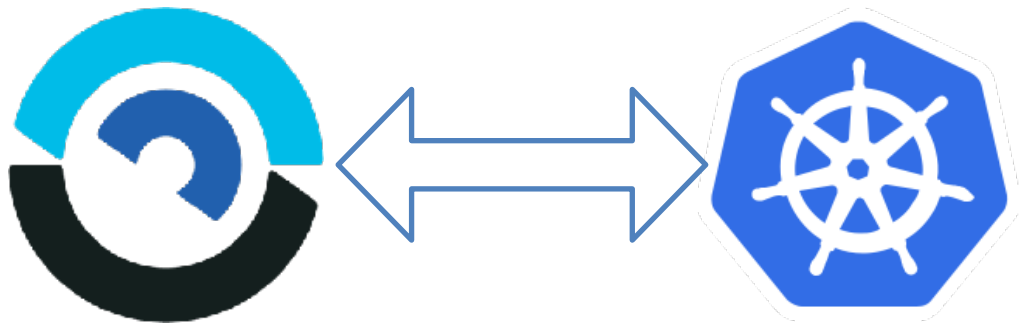
What is BOSH?

MANIFEST

DEPLOYMENT

What is BOSH?
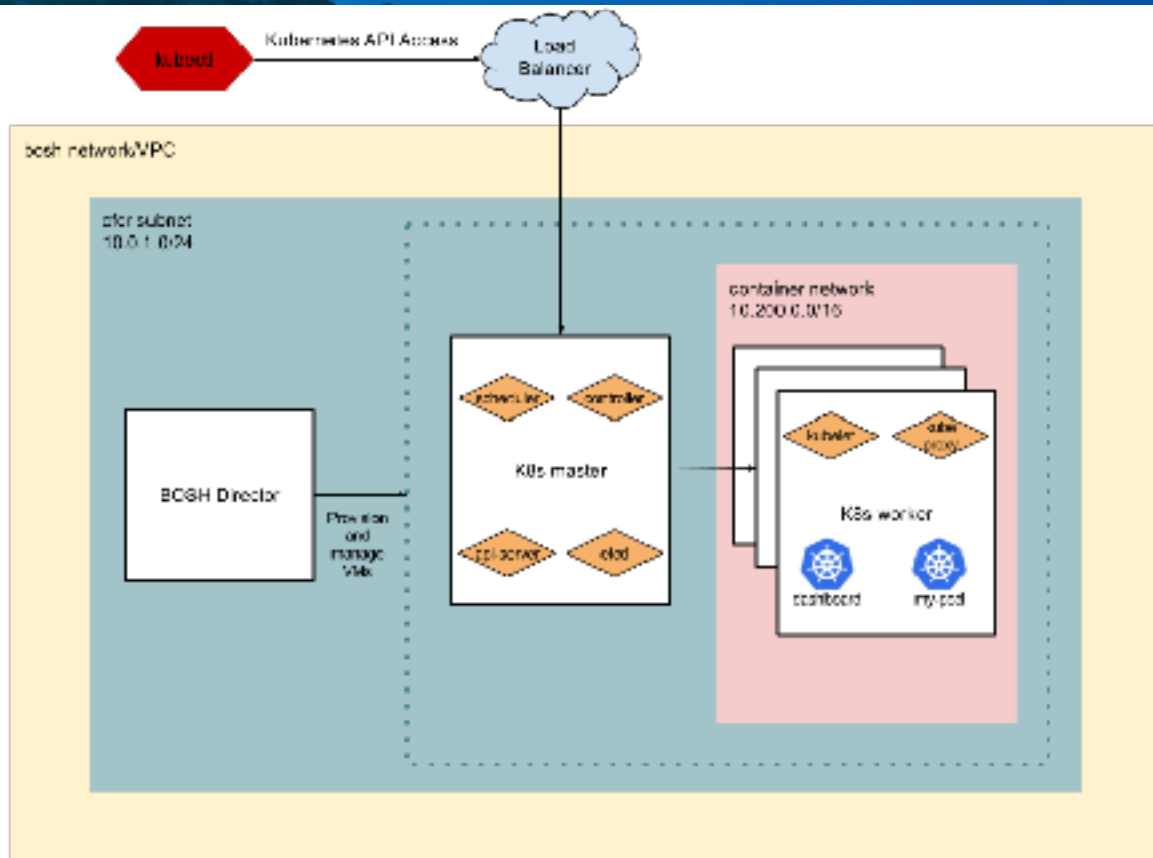

https://bosh.io

What is BOSH?

What is BOSH?

Cloud Foundry Container Runtime

What is CFCR?

- BOSH deployment
- Re-deployable K8s
- Scaling of clusters
- Vm healing
- Rotation of credentials

What is CFCR?

Similarities

Manifest

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: 10000-300000
    max_in_flight: 1
    update_watch_time: 10000-300000
```

Similarities

High Skill Requirements

Similarities

Community

What is CFCR?

Why Cloud Foundry Container Runtime?

- Management of K8s cluster
- VM healing
- Multiple AZ support

CLOUD FOUNDRY

What? Cloud Foundry?

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

CLOUD FOUNDRY

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

Resources.   (Questions?)

- Kubernetes THW: https://github.com/kelseyhightower/kubernetes-the-hard-way
  https://www.youtube.com/watch?v=kOa_IlowQ1c

  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-deployment

- For more about Cloud Foundry

  https://www.cloudfoundry.org/

- For more about BOSH
  https://bosh.io/docs/
  https://ultimateguidetobosh.com/
  https://bosh.io

Picture Credits

Running Shoes - https://www.racked.com/2018/1/9/16849572/running-shoes-so-ugly-why

Illidari (WOW) Banner - https://www.deviantart.com/yodragon-studios/art/Illidari-Banner-644043907

Kubernetes logo - https://en.wikipedia.org/wiki/Kubernetes#/media/File:Kubernetes_(container_engine).png

PKS Container logo - https://network.pivotal.io/products/pivotal-container-service

Cloud image - http://resource.onlinetech.com/benefits-of-cloud-based-disaster-recovery-explained/

Cloud Native Computing Foundation logo - https://www.youtube.com/channel/UCvqbFHwN-nwalWPjPUKpvTA

Google logo - https://pixabay.com/en/google-logo-shadow-1088004/

Play Button - https://openclipart.org/detail/188943/play-button-clear-style

Stop Button - https://www.vectorstock.com/royalty-free-vector/stop-button-icon-vector-10062060

BOSH logo - https://bosh.io/docs/

BOSH logo (small) - https://www.cloudfoundry.org/bosh/

Docker logo - https://codeburst.io/basics-of-docker-c1416b02d03c?gi=312eabdabdd

Cloud Foundry Container Runtime logo - https://docs-cfcr.cfapps.io/

Pivotal logo - https://en.wikipedia.org/wiki/File:Pivotal_Software_logo.svg

Google logo (large) - https://en.wikipedia.org/wiki/File:Googlelogo.png

CFCF Architecture diagram - http://engineering.pivotal.io/post/deploy-kubernetes-cfcr/

Race Flag - https://wallpaperstock.net/start-the-race-wallpapers_w31182.html

Kubernetes Manifest Screenshots - https://kubernetes.io/docs/concepts/cluster-administration/manage-deployment/

BOSH Manifest Screenshots - https://github.com/cloudfoundry-incubator/kubo-deployment/blob/master/manifests/cfcr.yml

Community Photo - https://www.creativespot.com/4-ways-to-cultivate-a-community-for-your-brand/

Smiley Face Emoticon - https://emojiisland.com/products/slightly-smiling-face-emoji-icon

Ubuntu logo - https://design.ubuntu.com/brand/ubuntu-logo/

Script image - https://www.iconfinder.com/icons/263845/document_law_paper_roll_script_scroll_writing_icon

Ribbon image - https://www.vexels.com/png-svg/preview/127816/glossy-red-ribbon-bow

Java logo - https://www.softexia.com/windows/programming/java

Golang Gopher - https://blog.golang.org/gopher

MySQL logo - https://twitter.com/mysql

Globe - https://www.iconfinder.com/icons/18282/browser_earth_global_globe_international_internet_network_planet_world_icon

Pivotal Cloud Foundry logo - https://twitter.com/pivotalcf

Slack Logo - https://commons.wikimedia.org/wiki/File:Slack_Technologies_Logo.svg