Multi-cloud CI/CD with Failover

kubernetes
SEATTLE

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codefresh

Chief Evangelist
Codefresh
@todaywasawesome

Who is Codefresh

- **Product** - Kubernetes-native CI/CD
- **Company** - Founded in 2014, headquartered in Mountain View, California
- **Global** - 20,000 users
- Used by teams at:

Stuart Thomas
@stuartthomas
Follow
Mmm. Can’t turn some of my lights on at home cos @IFTTT is down. Welcome to the future!
@internetofshit
There was a problem with your request. Please try again.
10:14 AM - 28 Feb 2017
928 Retweets 987 Likes
32
928
987

⚡ **Owen**

@ow

Follow

can't login to @nest thermostat because s3 is down lol

11:50 AM - 28 Feb 2017

12 Retweets **82** Likes

6 12 82

Galaxy themed pronto.
@_pronto_

Follow

Not to raise alarm here or anything, but I'm unable to turn off my #IoT oven ever since #s3 went down...

It's getting kinda toasty in here

11:12 AM - 28 Feb 2017

585 Retweets **900** Likes

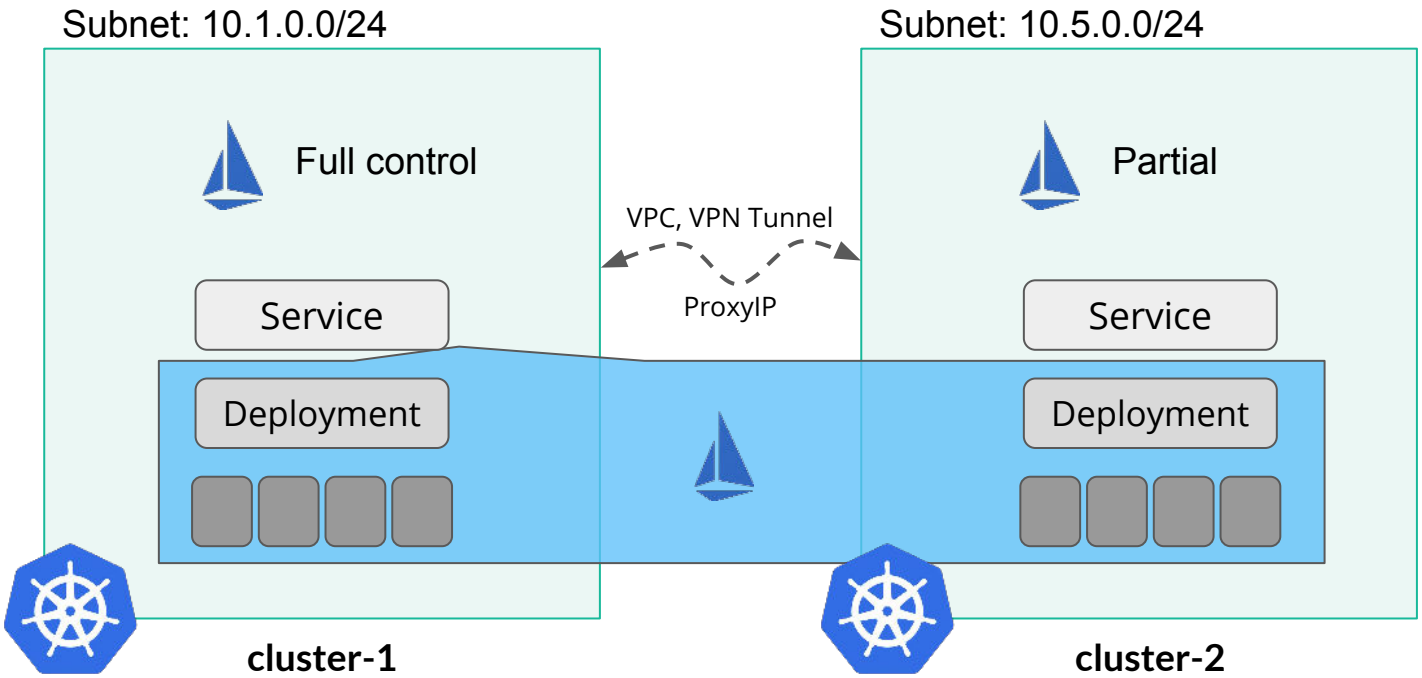
37 585 900

Downtime stinks

Why your app can fail on Kubernetes

- Out of resources
- Bad config
- Node failure

Multi-cluster setup



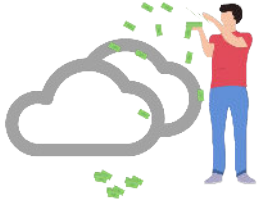
Use Cases

Multi-cloud/region

Mitigate outages on individual providers

Hybrid On Prem

Mitigate outages with an on prem cluster



Cost Mitigation

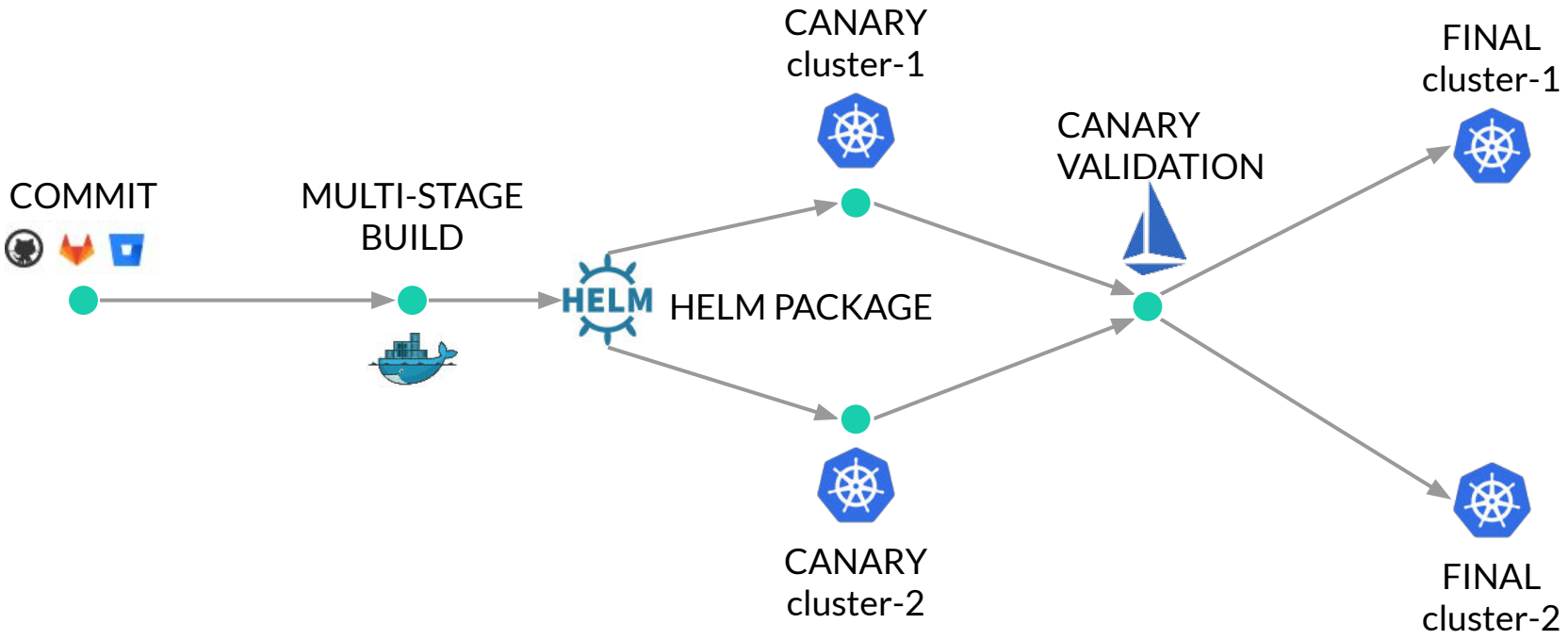
Use cheap preemptible clusters

Let’s talk CI/CD

The Goal:
Build an assembly line

CI/CD Should marry all these tools together

Multi-cloud rollout process



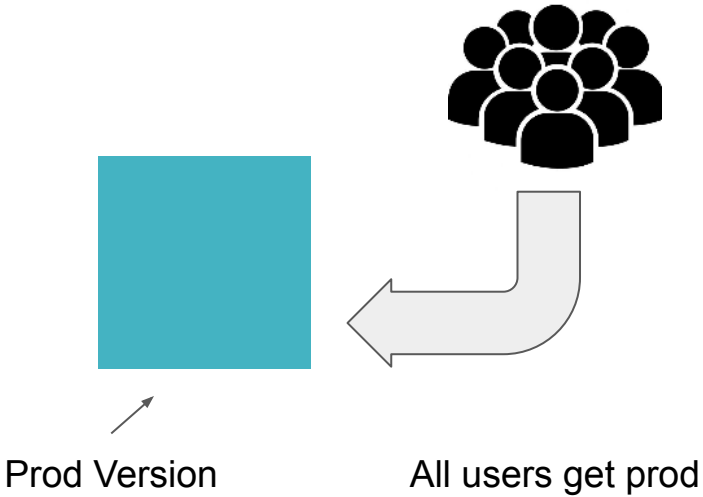
Demo

Canary

- Deploy a new version of your app
- Give a percentage of traffic the new version
- If it works, give it 100%

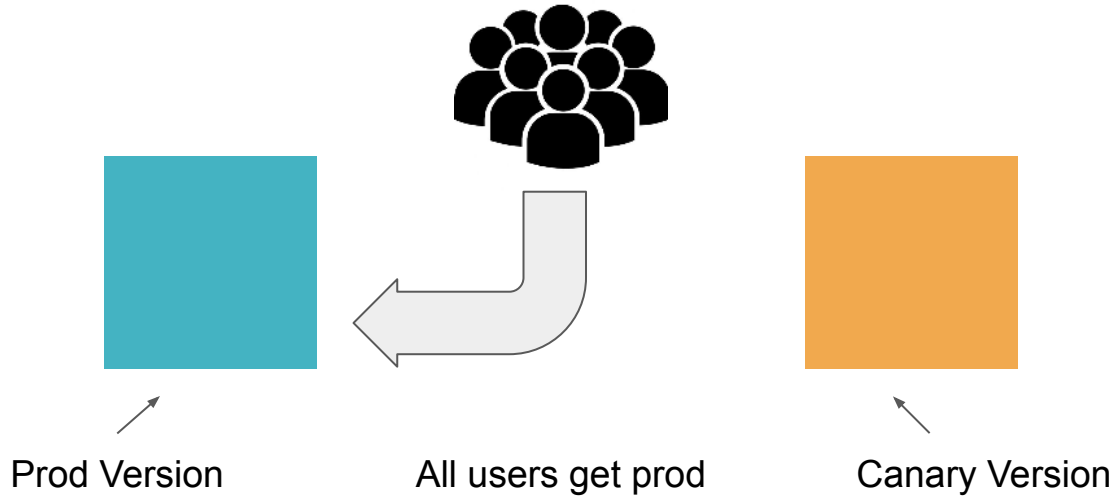
Canary

Start with the prod version of your app.



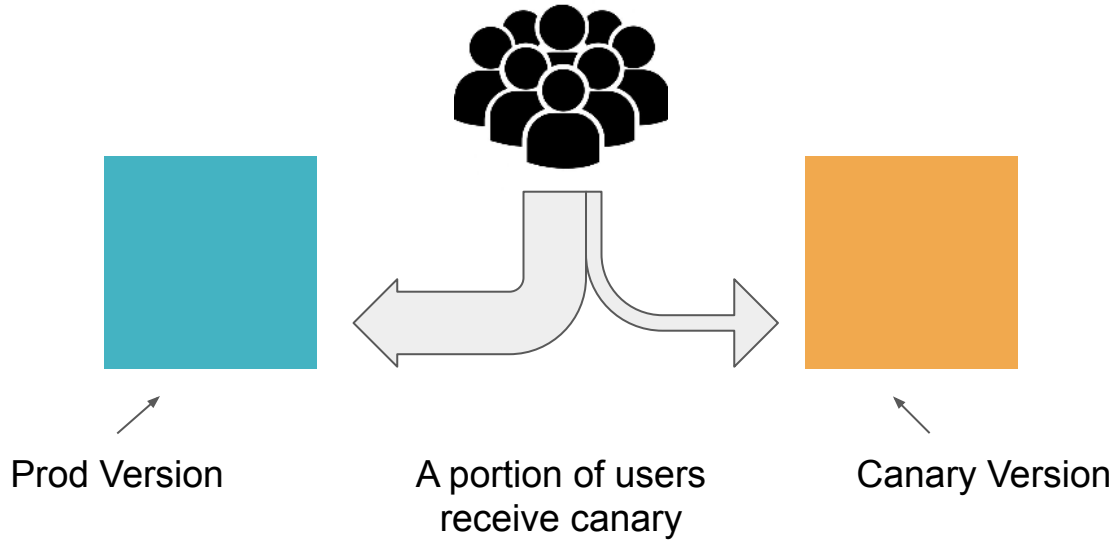
Canary

Deploy a Canary version.



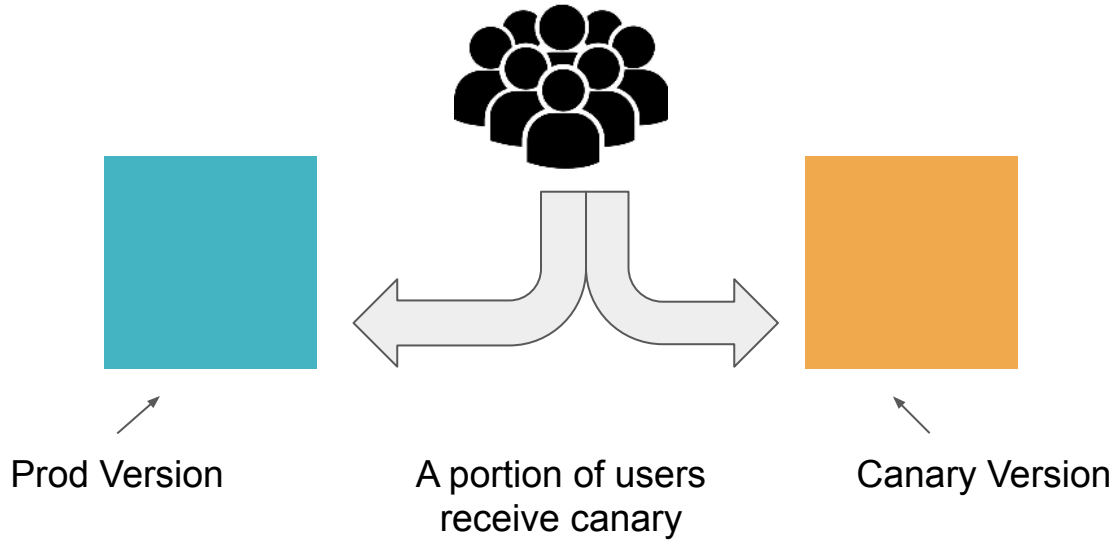
Canary

Mix traffic



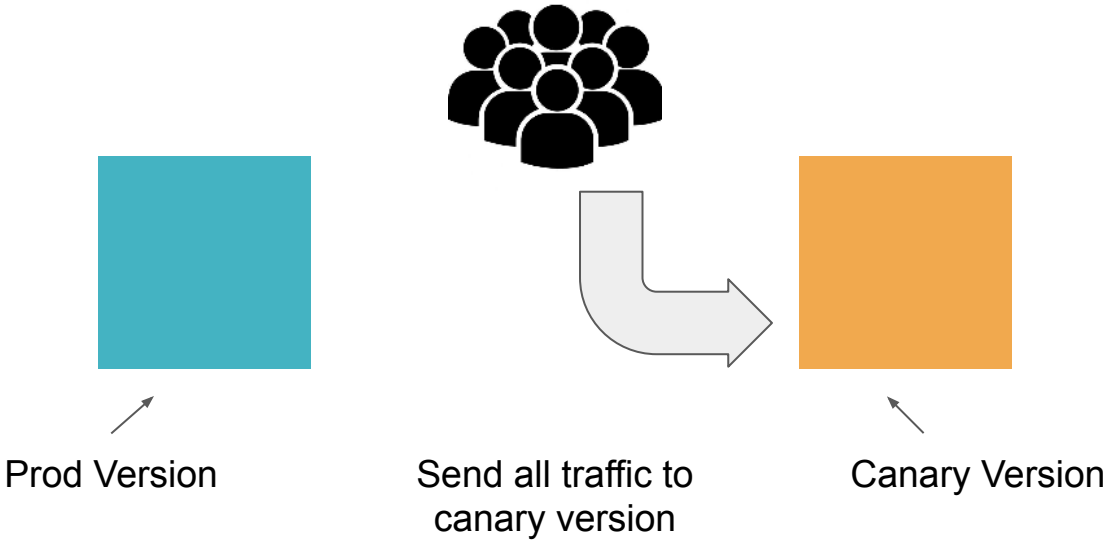
Canary

Monitor canary, if everything looks good, send more traffic



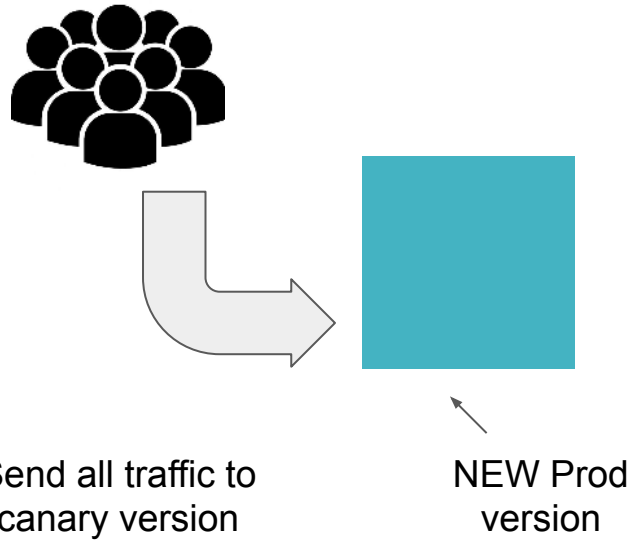
Canary

Complete rollout, now the canary version, becomes the prod version



Canary

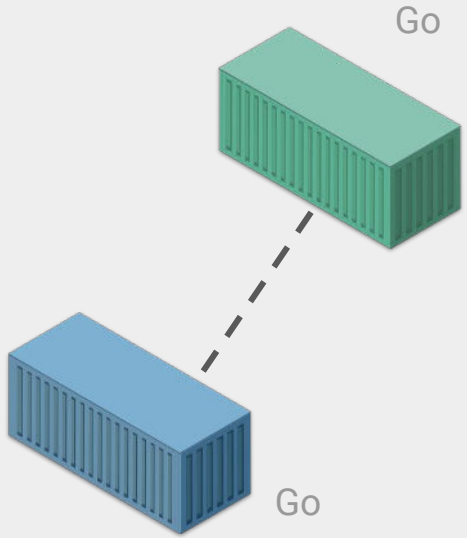
We can remove the old version, or keep it for a hot swap



Demo

Color Coded

https://github.com/todaywasawesome/color-coded



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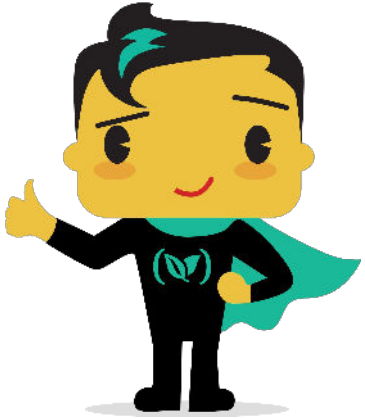
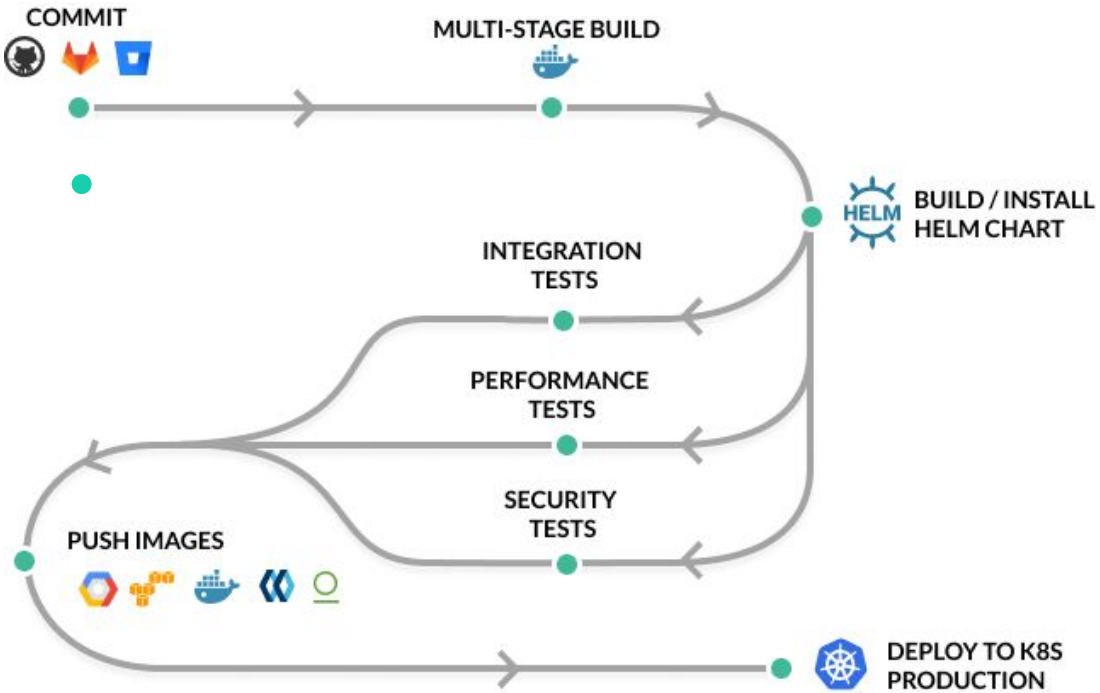


https://codefresh.io

Kubernetes Pipeline

Leveraging Helm