

Multi-cloud CI/CD with Failover





kubernetes
SEATTLE

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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:

arm

GIPHY

Hewlett Packard
Enterprise

Gladly

STEELHOUSE

G5

unicef

Steelcase

LE FIGARO

CBS

SF MO
MA

Hippo



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

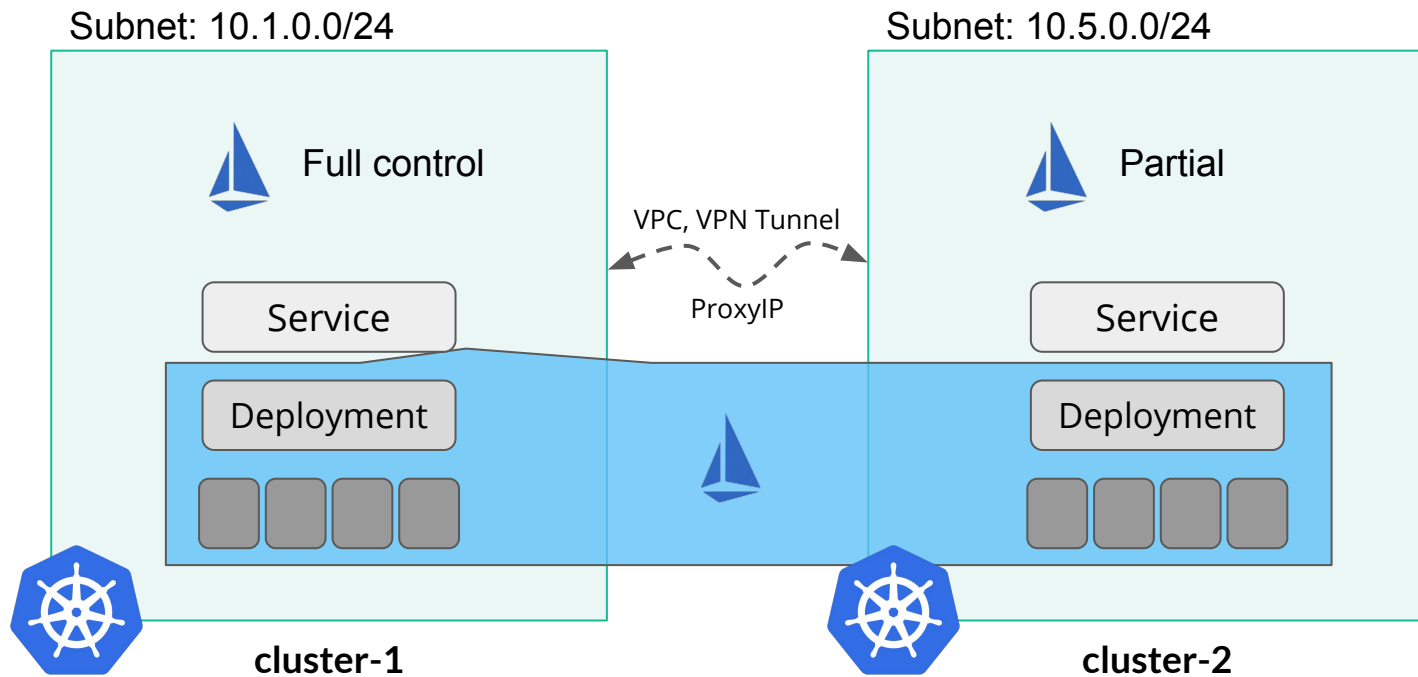


Downtime stinks

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

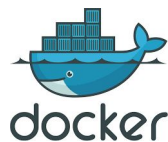
Use cheap preemptible clusters

Let's talk CI/CD

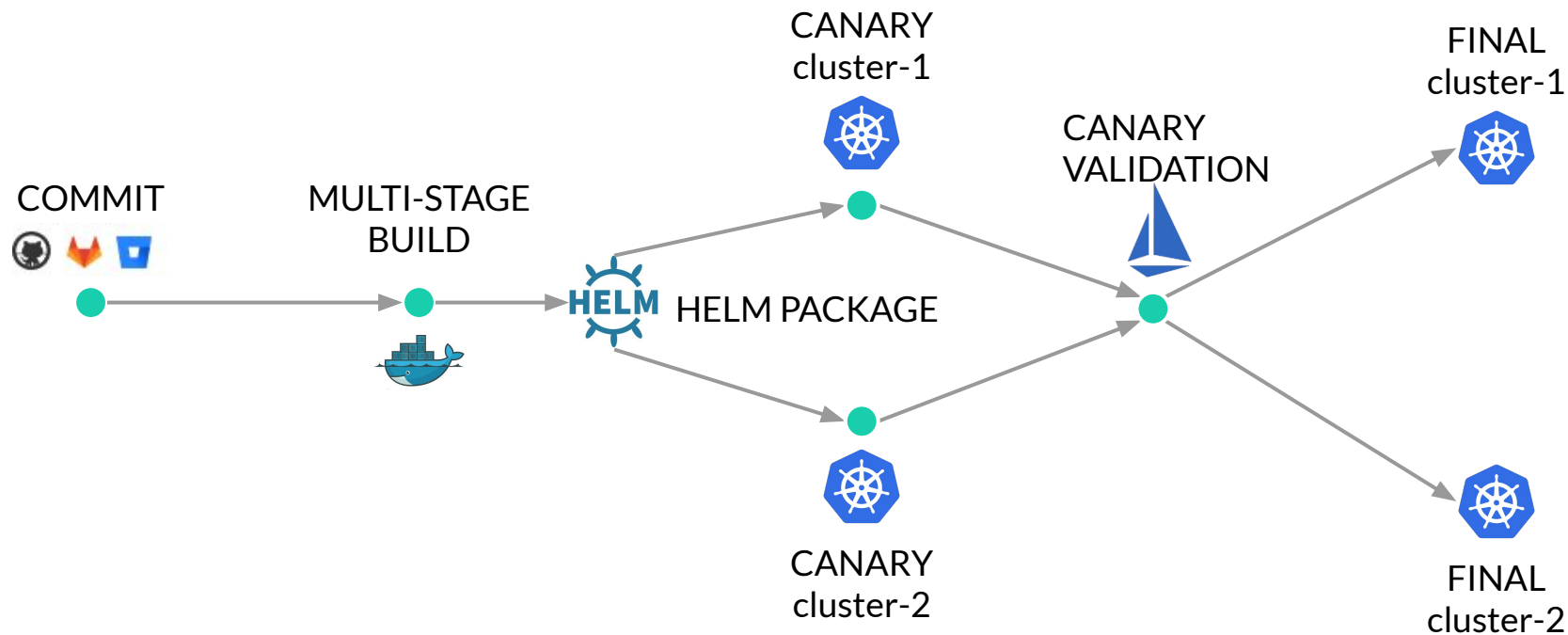
The Goal: Build an assembly line



CI/CD Should marry all these tools together

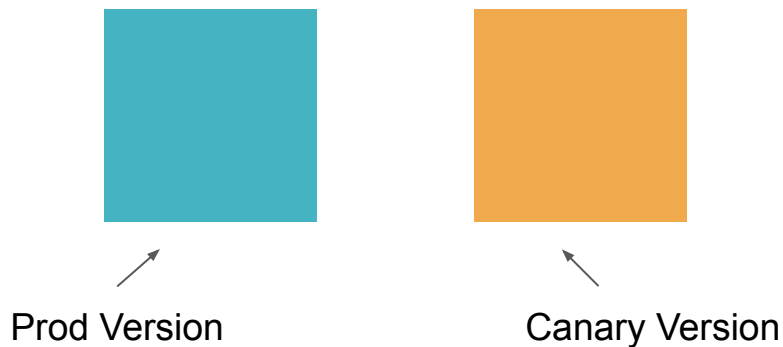


Multi-cloud rollout process



Demo

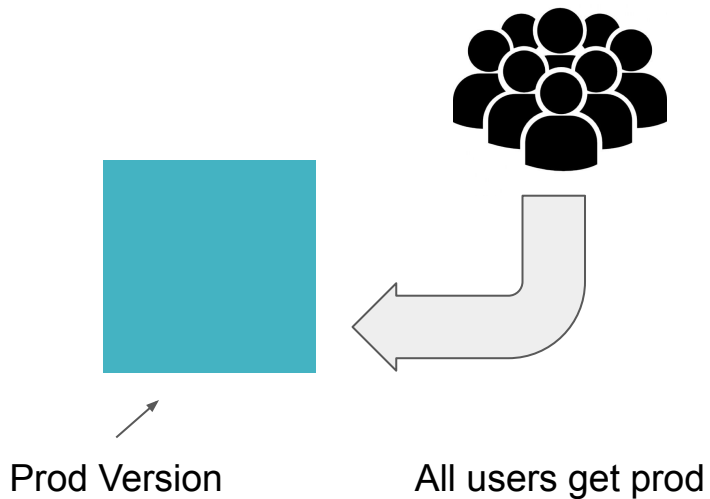
Canary



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

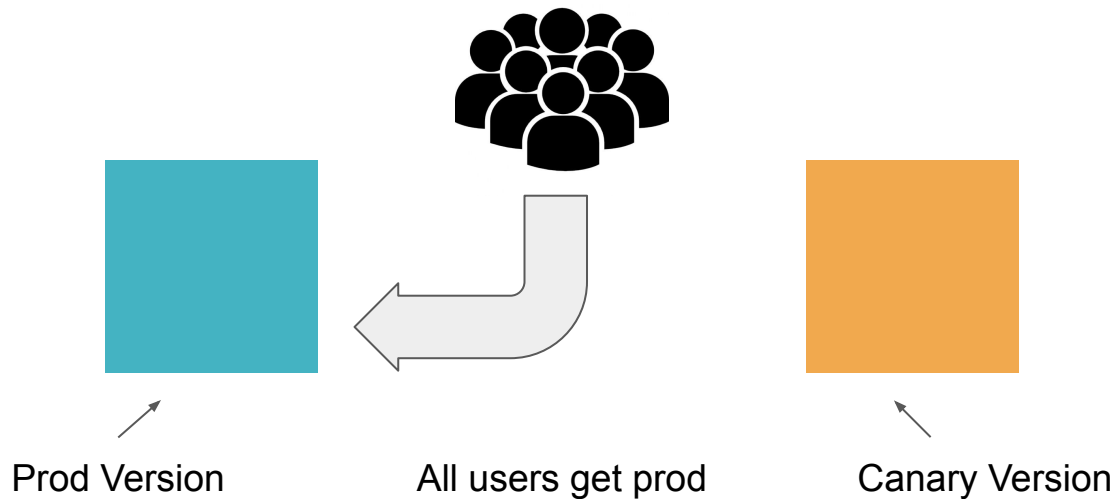
Canary

Start with the prod version of your app.



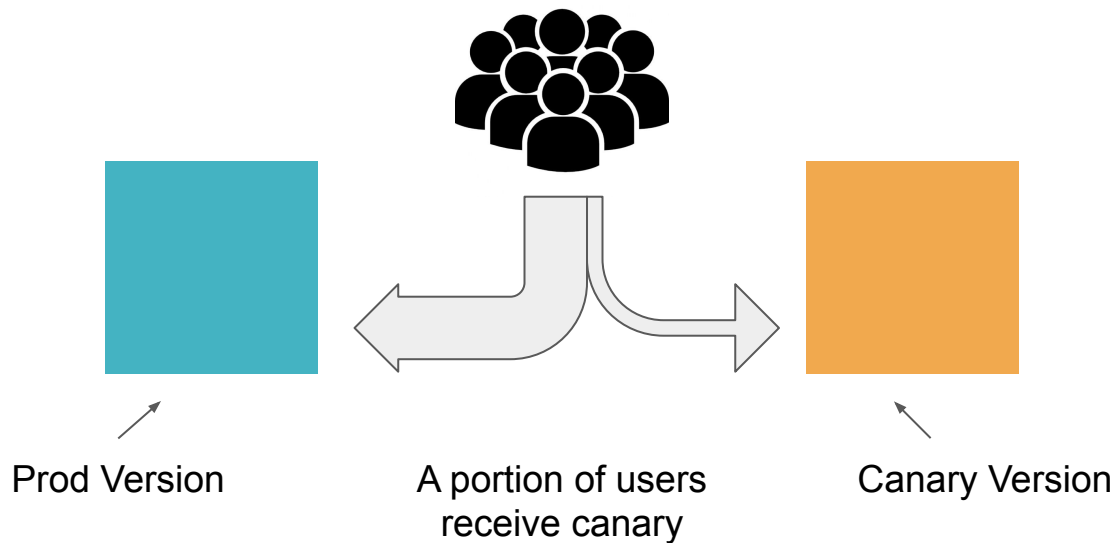
Canary

Deploy a Canary version.



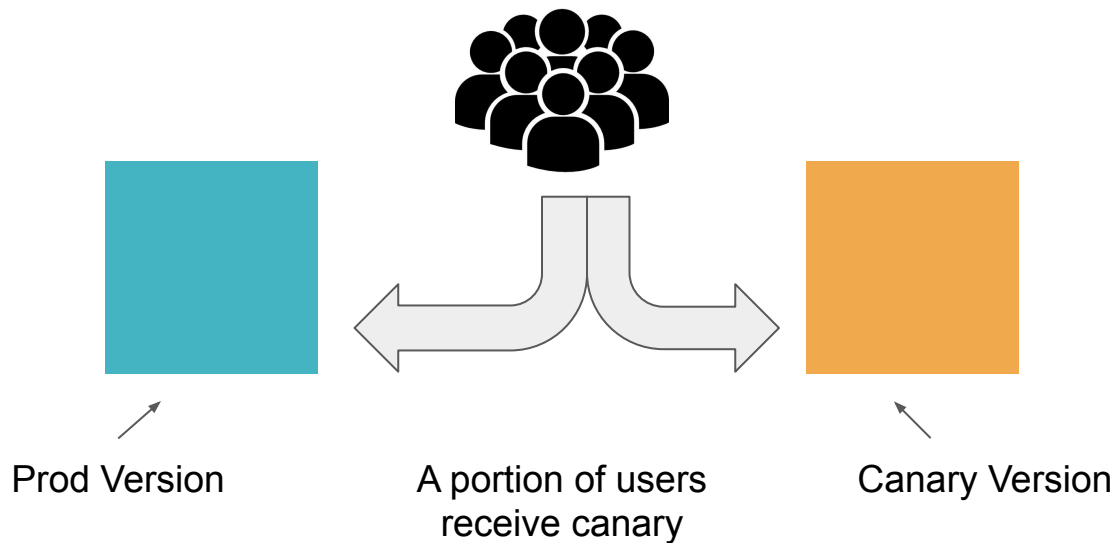
Canary

Mix traffic



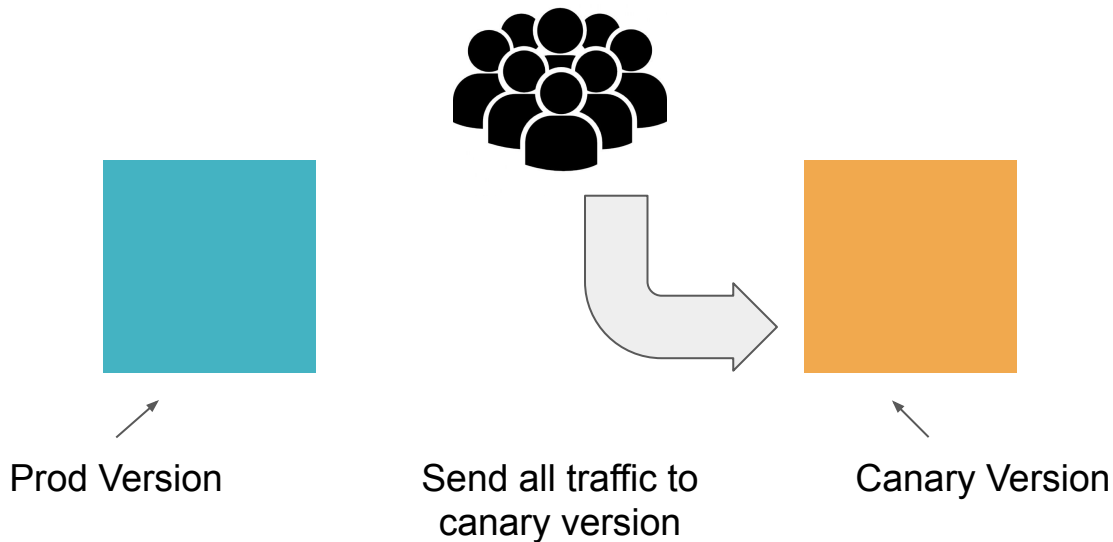
Canary

Monitor canary, if everything looks good, send more traffic



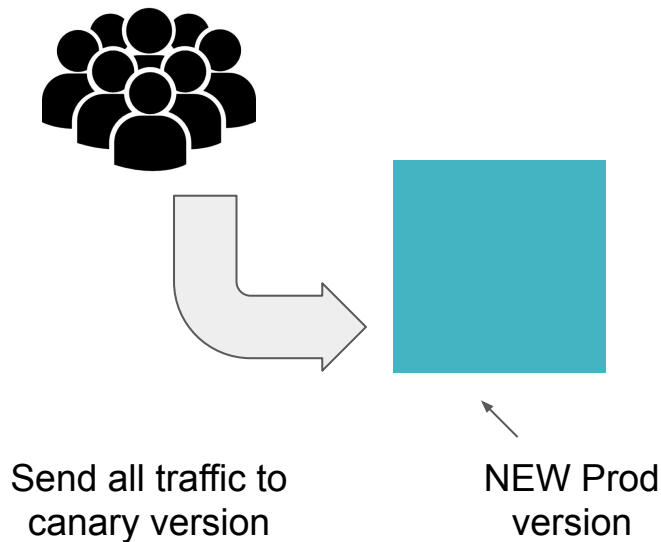
Canary

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



Canary

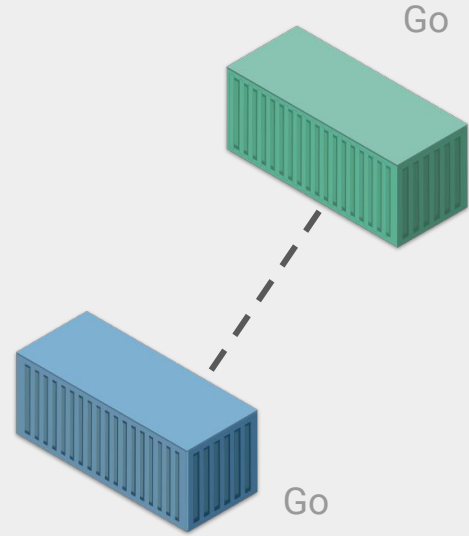
We can remove the old version, or keep it for a hot swap



Demo

Color Coded

[https://github.com/
todaywasawesome/color-coded](https://github.com/todaywasawesome/color-coded)



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Kubernetes Pipeline

Leveraging Helm

