



Continuous Delivery with Spinnaker on Kubernetes Cluster



Ananda Dwi Rahmawati
ananda@btech.id



November 7th 2020

vmware®

boer
technology

ONF



About Me



Cloud Engineer [at] Boer Technology

Applied Undergraduate Student [at] UGM


Activist [at] BlankOn

Tech Enthusiast

Keep in touch with me [at] @misskecupbung

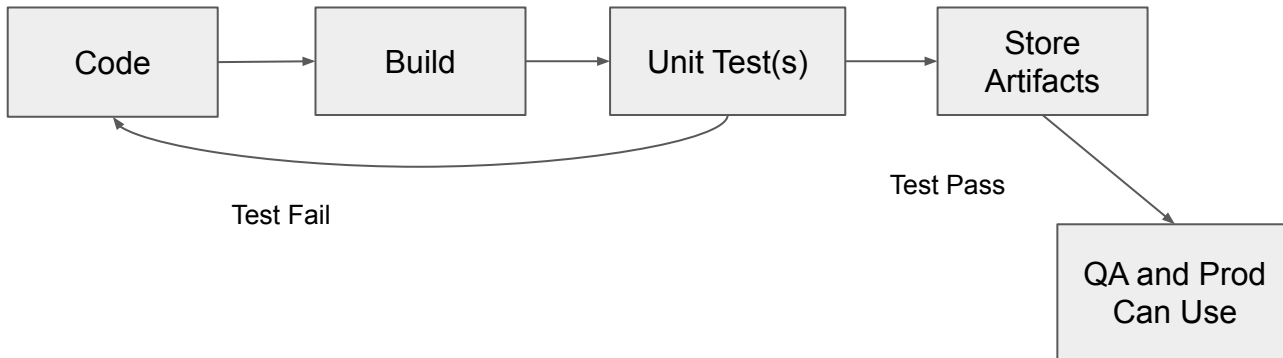


Requirement(s)

- 
- Bash Shell
 - Cloud Provider
 - Docker
 - Kubernetes

Continuous Integration

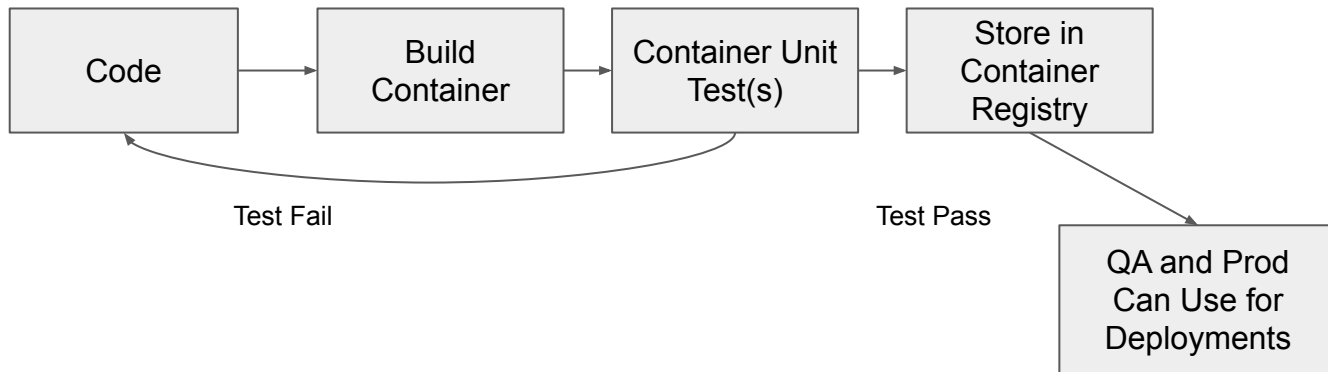
Integrating Continuous Integration



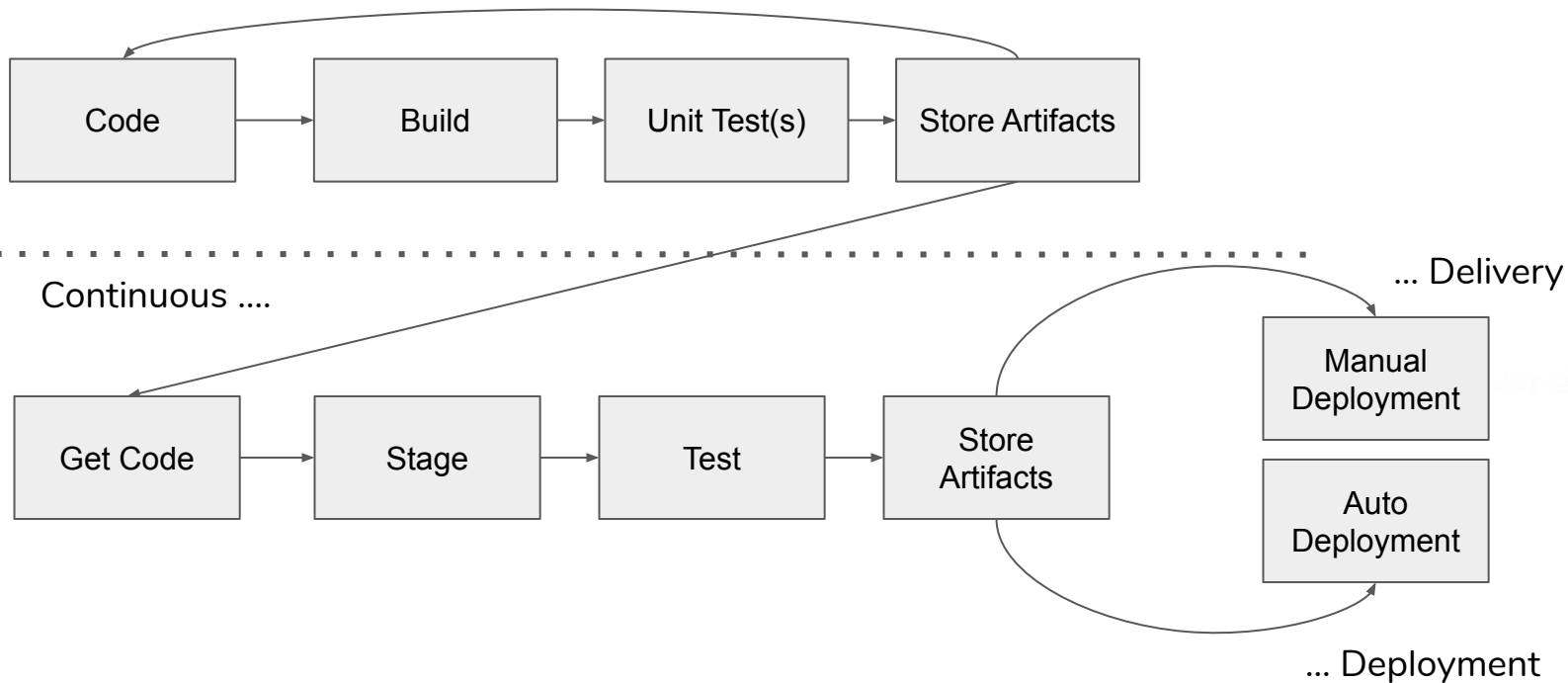


Continuous Integration with Containers

Integrating Continuous Integration




Deployment or Delivery?






Deployment or Delivery?

- 
- Delivery:
 - Land of Operator
 - Deployment may be automated, but often as a part of idempotent deployment tools (e.g Ansible, Puppet, etc)
 - Deployment:
 - Release and idempotently deploy an application
 - Need to support rollback
 - May still make us of deployment tools
 - Containers make this much simpler




Spinnaker

- 
- Pronunciation → spīn'əkər
 - Open Source multi-cloud CD platform | Inventory + Pipelines
 - A supplemental sail to the main sail, especially a triangular one, used on yachts for running before the wind
 - Initially developed by Netflix's Asgard (2014), Open-Sourced in 2015 | Built for releasing software changes with high velocity, confidence | Designed with pluggability in mind
 - Support for all major Cloud Provider (App Engine, GCP, Azure, AWS, DC/OS, Oracle Cloud, Cloud Foundry)



Spinnaker Core Features

- 
- Cluster Management
 - Deployment management
 - Multi-cloud capable
 - Deployments are built-in and no custom scripting is needed



Spinnaker Advantages



- Multi-Cloud CI/CD
- Variable pipeline type, easy rollback
- Flexible pipeline management system
- Variable deployment strategy (Blue-Green, Rolling Red/Back, Canary)
- Hybrid Cloud (VM/Container)
- CI (Jenkins and more)
- Halyard CLI
- Packer, Helm Packaging, Terraform,
- RBAC
- Notification: email, slack, and even sms
- Safe deployment: judgement
- Chaos monkey built-in
- Community (github, slack, <https://community.spinnaker.io>)

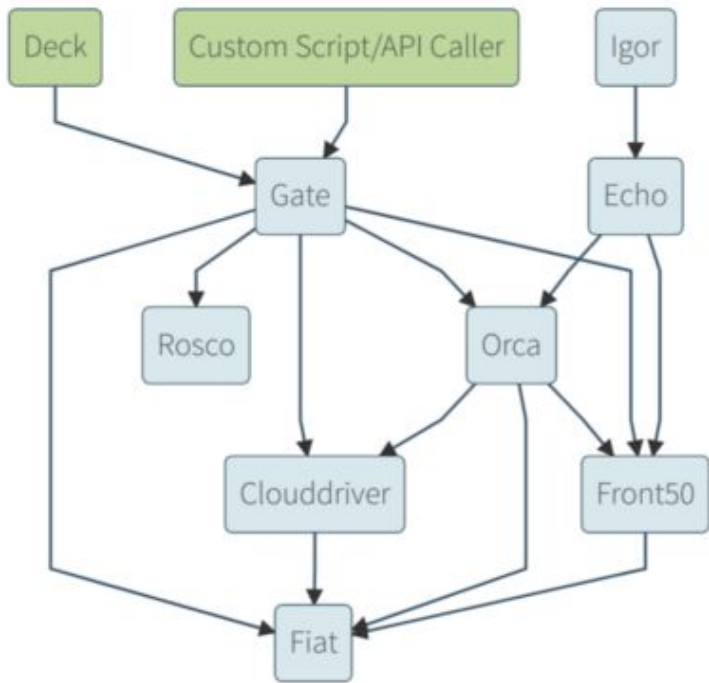


Spinnaker Architecture

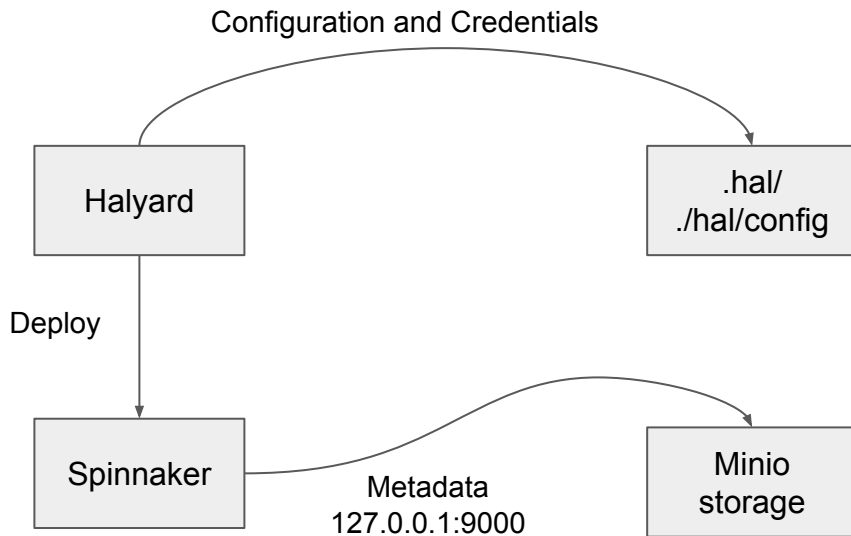


- Deck: Web-Based UI
- Gate: API Gateway
- Orca: Orchestration Engine
- Clouddriver: Indexing/Caching
- Front50: Metadata
- Rosco: Prod VM Images
- Igor: Trigger Pipeline
- Echo: eventing bus
- Flat: Auth service
- Kayenta: Canary Analysis
- Halyard: Configuration service

Spinnaker Architecture



Spinnaker Halyard



Azure Storage
Google Cloud Storage
Minio
Redis
S3
Oracle Object Storage

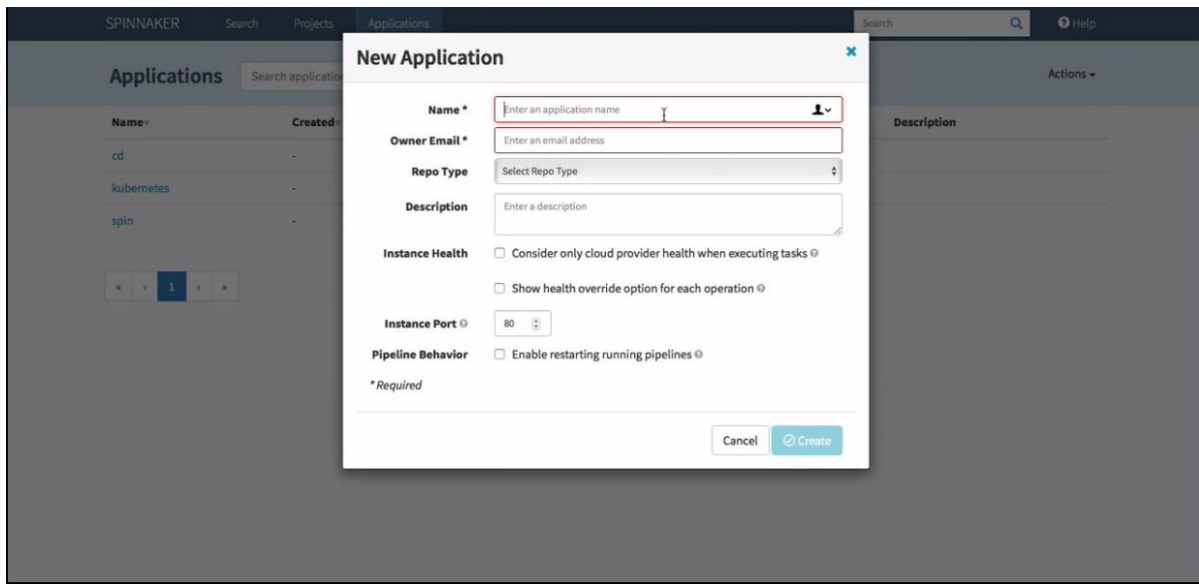


Let's Try

<https://s.id/sp-oicndi2020>



Create an Application



SPINNAKER Search Projects Applications Search Help

Applications Search application

Name	Created
cd	-
kubernetes	-
spin	-

« 1 »

New Application ✕

Name * ⓘ

Owner Email *

Repo Type ⌵

Description

Instance Health

- Consider only cloud provider health when executing tasks ⓘ
- Show health override option for each operation ⓘ

Instance Port ⓘ ⌵

Pipeline Behavior

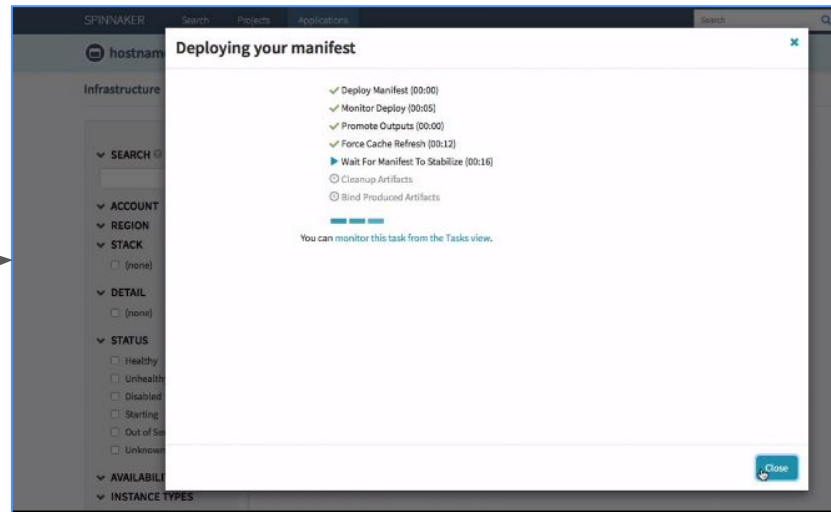
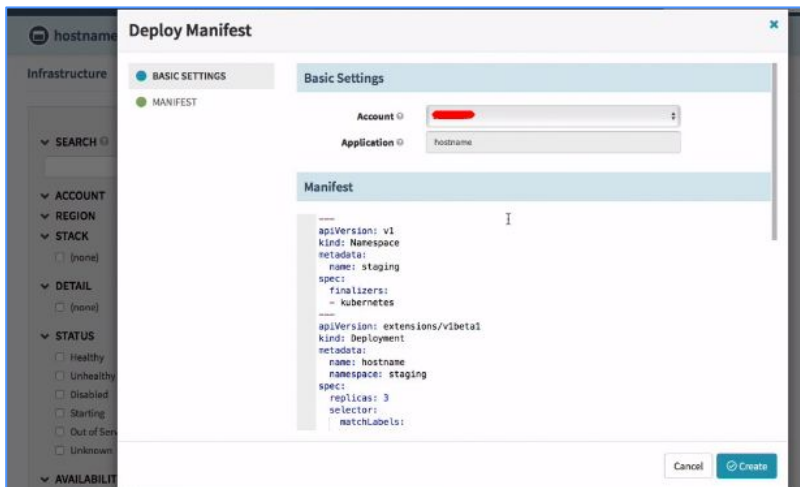
- Enable restarting running pipelines ⓘ

* Required

Cancel Create

<https://github.com/misskecupbung/spinnaker-example>

Create a Manifest



<https://github.com/misskecupbung/spinnaker-example>

Create a Pipeline

Create New Pipeline

Type: Pipeline

Pipeline Name:

Create From: Pipeline Template

Cancel

Scale Deployments

Configuration Scale (Manifest)

Scale (Manifest)

Stage type: Scale (Manifest)
Scale a Kubernetes object created from a manifest.

Type: Scale (Manifest)

Stage Name: Scale (Manifest)

Depends On:

SCALE (MANIFEST) CONFIGURATION Scale (Manifest) Configuration

MANUAL START
[anonymous] a few seconds ago

▼ Details

Scale (Manifest)
Status: SUCCEEDED
Duration: 00:16


Scale (Manifest)

STAGE DETAILS: SCALE (MANIFEST)
Duration: 00:15

Step	Started	Duration	Status
Scale (Manifest)	2019-02-07 22:01:52 PST	00:15	SUCCEEDED



More Explore(s)

- 
- Parallel Action
 - Integrating artifacts
 - Triggering from webhooks
 - Parameterization of manifests
 - Rollback and Scale
 - Manual Gate
 - etc



Resource(s)



- <https://spinnaker.io/setup/install/>
- <https://min.io/download#/linux>
- <https://kubernetes.io/id/docs/>
- <https://spinnaker.io/community/releases/versions/1-19-0-changelog>
- <https://github.com/spinnaker/halyard>

Thank you.

Sponsored by:

vmware®

 boer
technology

 ONF



OICNDI

November 7th 2020