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#AzConfDev



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#AzConfDev



Continuous Delivery using Spinnaker on Azure

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About Me

- Ananda Dwi Rahmawati
- Cloud Engineer [at] Btech
- <https://linktr.ee/misskecupbung>



Agenda

- Spinnaker (Intro, Features, Components, etc)
- Data Flows of Spinnaker (Application Management and Application Deployment)
- Spinnaker Integration with Azure
- Automating with Spinnaker

Spinnaker

- Pronunciation → spĭn'əkər
- Open Source multi-cloud CD platform
- 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)Cluster Management

Spinnaker Advantages



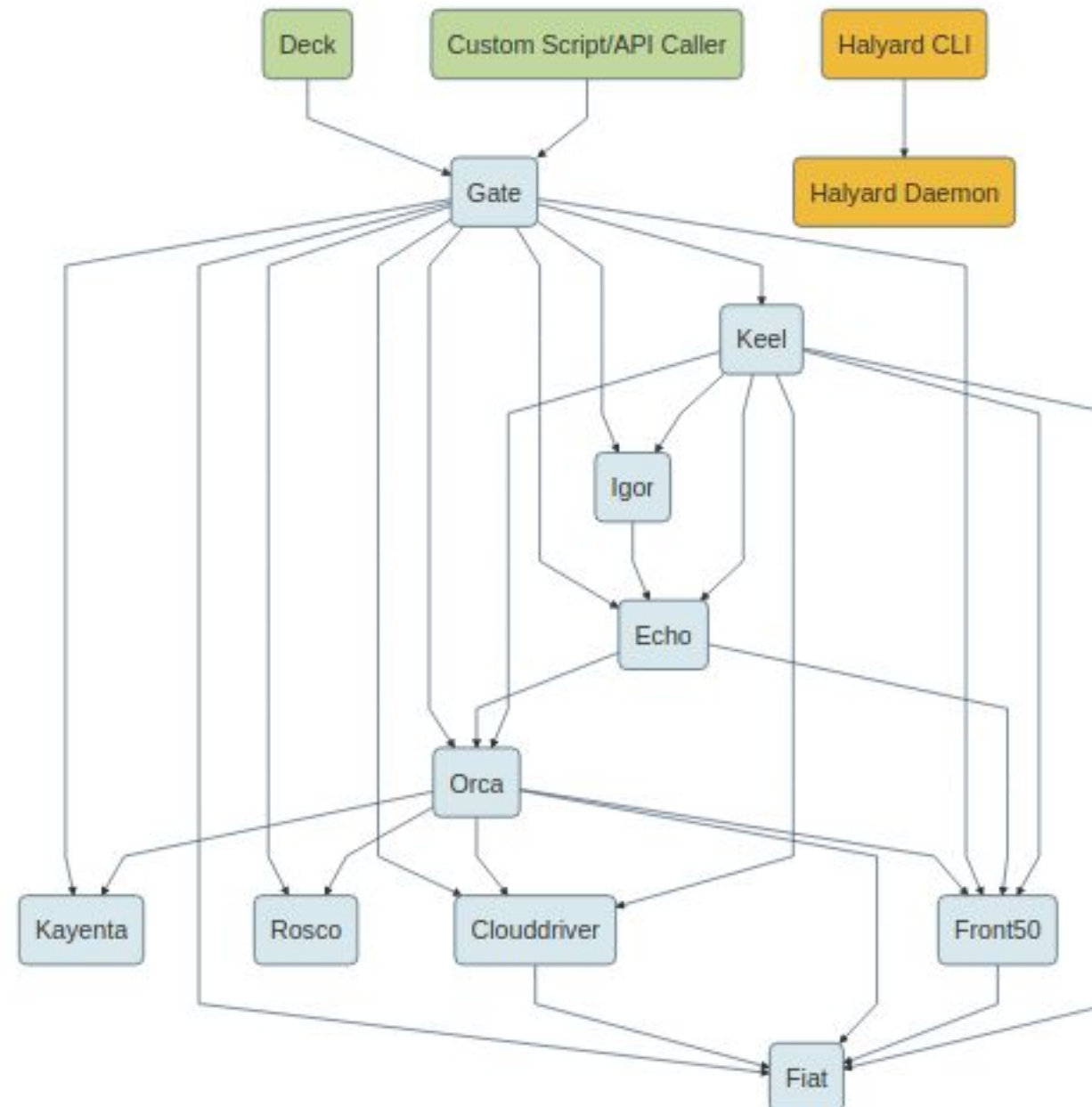
- Multi-Cloud CI/CD
- Variable pipeline type, easy rollback
- Flexible pipeline management system
- Variable deployment strategy (Blue-Green, Rolling Red/Back, Canary)
- Hybrid Cloud (VM/Container)
- CI Integrations
- Halyard CLI
- VM Backery
- RBAC
- Notifications
- Safe Deployment: judgement
- Chaos Monkey Integration
- Restrict Execution Windows

Spinnaker Architecture

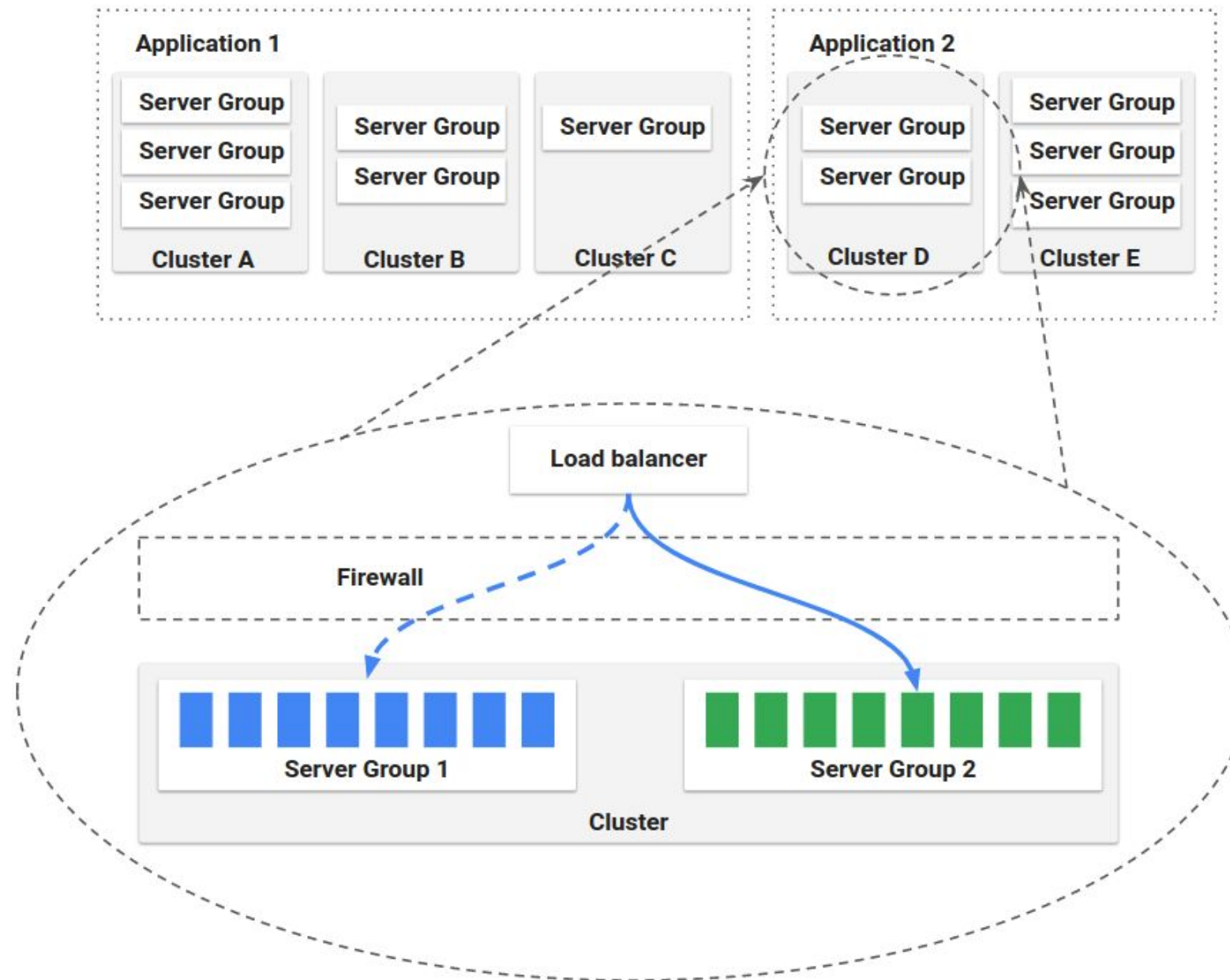


- Deck: Web-Based UI
- Gate: API Gateway
- Orca: Orchestration Engine
- Clouddriver: Indexing/Caching
- Front50: Metadata
- Rosco: Prod VM Images
- Igor: Trigger Pipeline
- Echo: eventing bus
- Flat: Auth service
- Kayenta: Canary Analysis
- Keel: Managed delivery
- Halyard: Configuration service

Spinnaker Architecture



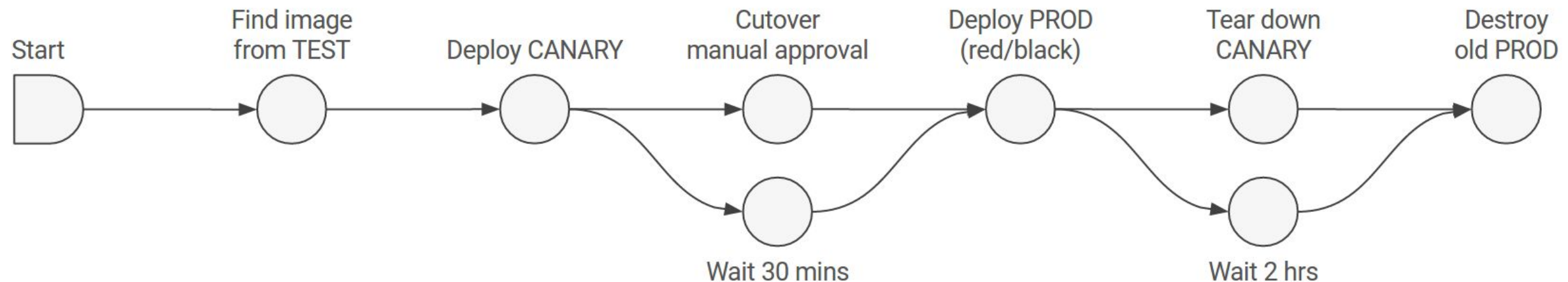
Application Management



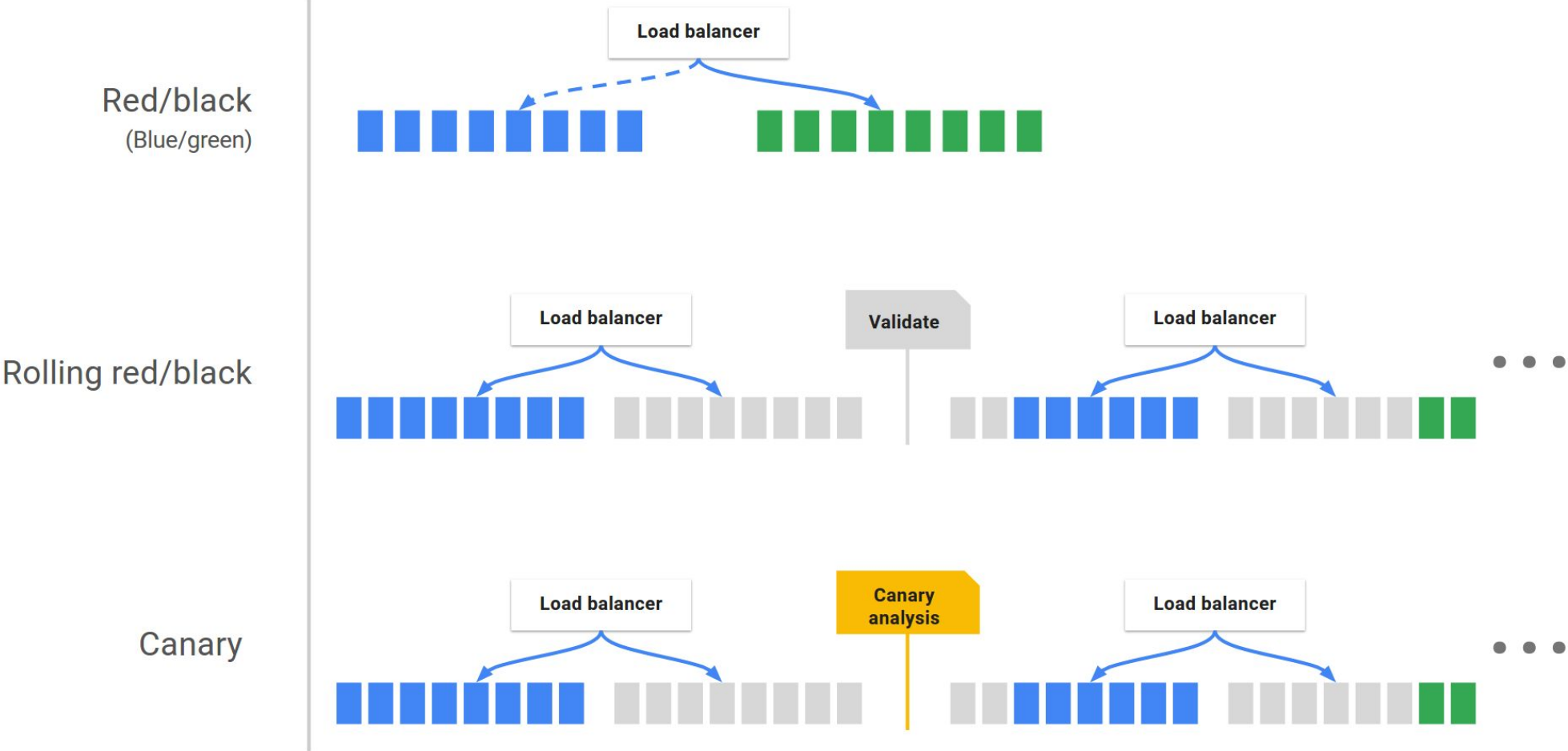
Application Deployment

Consists of:

- Pipeline
- Stage
- Task
- Deployment Strategies



Deployment Strategies



SPINNAKER

Search

Projects

Applications

stevenkim@spinnaker-test.net

Search

mdservice

PIPELINES

CLUSTERS

TASKS

LOAD BALANCERS

SECURITY GROUPS

CONFIG

SEARCH

ACCOUNT

my-kubernetes-account

REGION

default

STACK

(none)

prod

stage

STATUS

Healthy

Unhealthy

Disabled

Starting

Out of Service

Unknown

AVAILABILITY ZONES

default

INSTANCE TYPES

INSTANCE COUNT

Min: Max:

Clusters

Edit multiple

Show

Instances

with details

Create Server Group

MY-KUBERNETES-ACCOUNT

mdservice-prod

128 : 100%

DEFAULT

V059: spinnaker-1022/mdservice:5c0220767b237ad0fd7e007304a7796cb5a2fafd

128 : 100%

MY-KUBERNETES-ACCOUNT

mdservice-stage

2 : 100%

DEFAULT

V073: spinnaker-1022/mdservice:5c0220767b237ad0fd7e007304a7796cb5a2fafd

2 : 100%

V072: spinnaker-1022/mdservice:165d775bcd90cc4a4002ce26ec7db20d1aae9714

V071: spinnaker-1022/mdservice:bace3150dddadff1e3f0ee84e155da49d588921

V070: spinnaker-1022/mdservice:58e1c233b8414286543dcaf41b828af2852d28d9

mdservice-prod-v059

Server Group Actions

Rollback

Resize

Disable

Destroy

Clone

Rollback

6 14:24:18 PDT

MY-KUBERNETES-ACCOUNT

mdservice-prod-v059

HEALTH

Pods 128 : 100%

DEPLOYMENT

No deployment found.

REPLICAS

Min 128

Max 128

Current 128

HORIZONTAL POD AUTOSCALING

Desired 128

Target CPU 40%

Current CPU 0%

Latest Rescale a minute ago

with Spinnaker



- Accessing Spinnaker from Deck UI

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
- ☐ Enable re-run button on active pipelines

* Required

SPINNAKER Search Projects Applications Pipeline Templates

Search applications

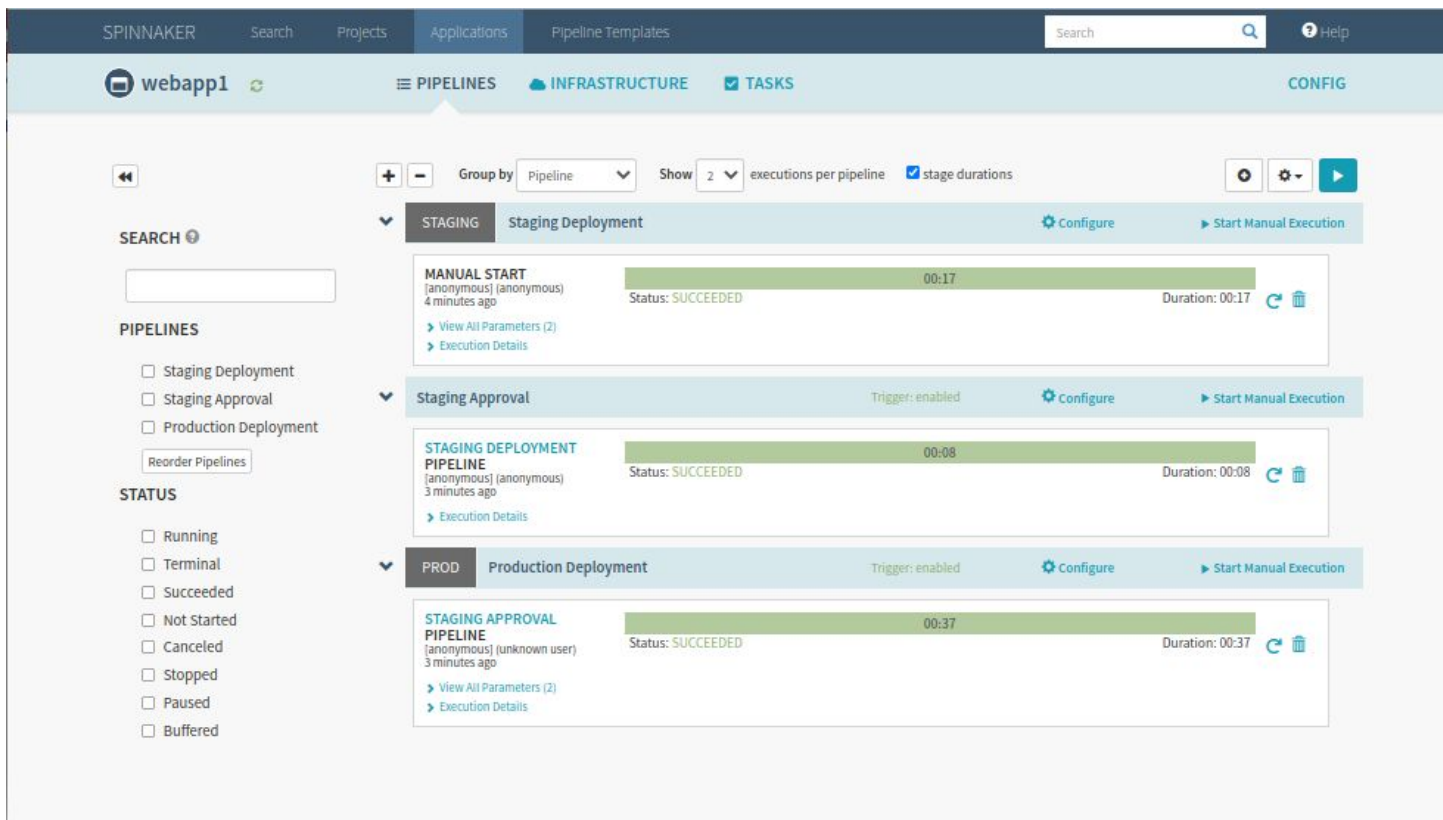
Actions

Name	Created	Updated	Owner	Account(s)	Description
webapp1	-	2021-10-29 23:36:36 PDT	admin@here.com	prod, staging	Demo Web Application - Echo Server
coredns	-	-		prod, spinnaker, staging	
deck	-	-		spinnaker	
gate	-	-		spinnaker	
ingress	-	-		prod, spinnaker, staging	
kube	-	-		prod, spinnaker, staging	
kubernetes	-	-		prod, spinnaker, staging	
spin	-	-		spinnaker	

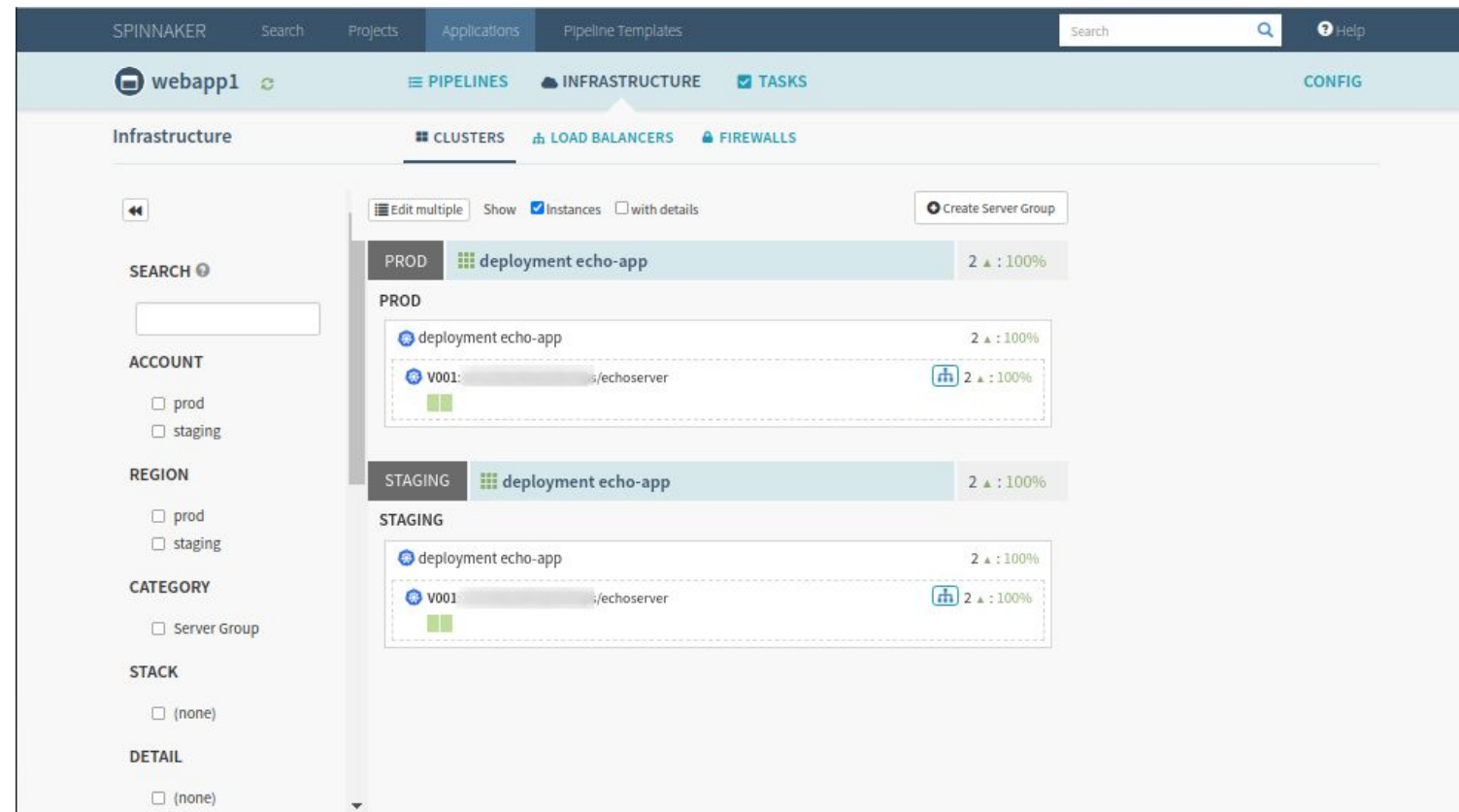
« 1 »

Automating with Spinnaker

- Create pipelines for dev, staging, and prod



The screenshot shows the Spinnaker UI for 'webapp1'. The 'PIPELINES' tab is active, displaying a list of pipeline executions. The left sidebar shows filters for 'PIPELINES' (Staging Deployment, Staging Approval, Production Deployment) and 'STATUS' (Running, Terminal, Succeeded, Not Started, Canceled, Stopped, Paused, Buffered). The main content area shows three pipeline executions: 'MANUAL START' (SUCCEEDED, 00:17), 'STAGING DEPLOYMENT PIPELINE' (SUCCEEDED, 00:08), and 'PRODUCTION DEPLOYMENT' (SUCCEEDED, 00:37). Each execution has a 'Configure' link and a 'Start Manual Execution' button.



The screenshot shows the Spinnaker UI for 'webapp1' in the 'INFRASTRUCTURE' tab. The 'CLUSTERS' sub-tab is active, displaying a list of clusters for 'deployment echo-app'. The left sidebar shows filters for 'ACCOUNT' (prod, staging), 'REGION' (prod, staging), 'CATEGORY' (Server Group), 'STACK' ((none)), and 'DETAIL' ((none)). The main content area shows three clusters: 'PROD' (2 instances, 100%), 'STAGING' (2 instances, 100%), and 'STAGING' (2 instances, 100%). Each cluster has a 'Create Server Group' button.

References

1. <https://spinnaker.io/docs/>
2. <https://spinnaker.io/docs/concepts/ebook/>
3. <https://spinnakerteam.slack.com/>

Sponsors



Microsoft



Community Partner



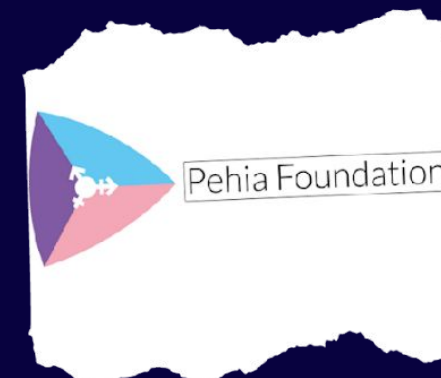
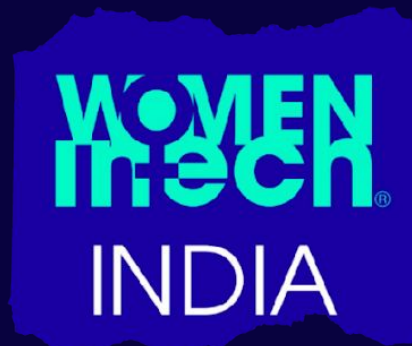
Learning Partners



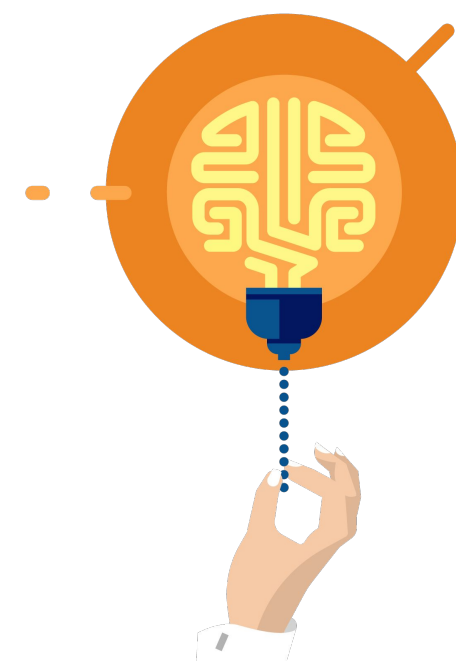
Security Partner



Communities

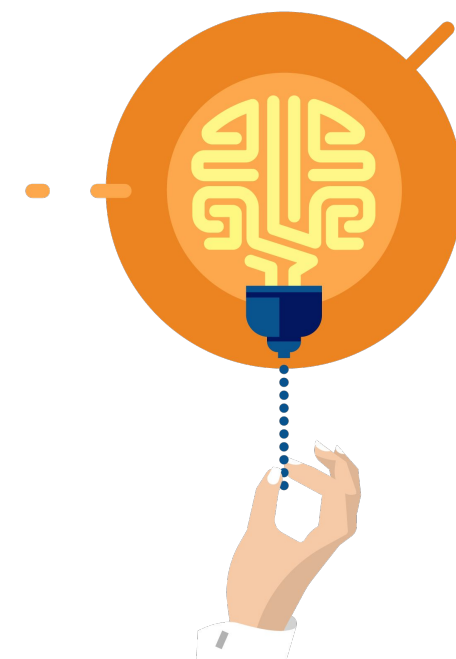


Q & A



Feedback

<https://bit.ly/azsfeedback2021>



THANK YOU!



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