

Cloud-Native Continuous Delivery With Netflix Spinnaker

2017

Agenda

1 Single Click Deployment

2 Netflix's Spinnakers



Single Click Deployment

Single Click Deployment

- Trigger deployment from single point of contact
- Importance of Single Click Deployment
- Microsoft – Single Click Deployment Concept



Netflix Spinnakers

Outline

- 1 Netflix's Spinnakers
- 2 Pivotal's involvement with Spinnaker
- 3 CI, CD and Cloud Native
- 4 Mapping Spinnaker's Cloud Deployment Model To Cloud Foundry
- 5 Spinnaker Processing Flow With Cloud Foundry
- 6 Open Source Collaboration And Innovation

Netflix's Spinnaker

- Spinnaker is Netflix's Cloud-Native, **continuous delivery platform—built from the ground up to intelligently deploy software releases to cloud platforms.**
- Ship code rapidly, with increased confidence and greater visibility.
- Open source project with additional cloud provider support contributed by Pivotal, Google, and Microsoft.
- The platform supports polyglot deployments and provides a cloud agnostic deployment model which supports AWS, Pivotal Cloud Foundry® (PCF), Google Compute Engine, and Microsoft Azure (forthcoming).

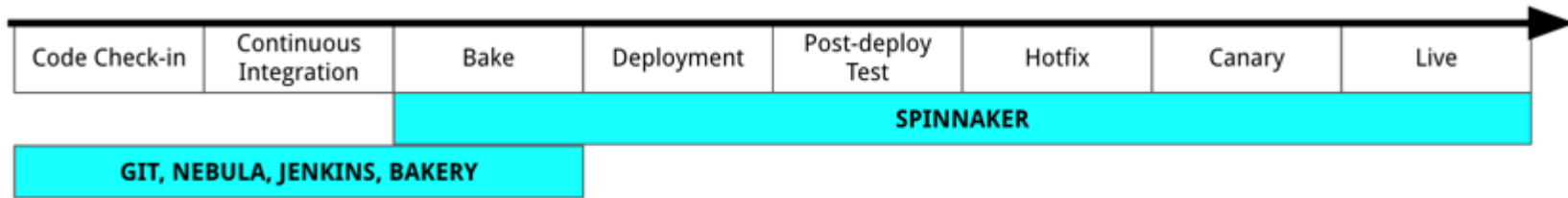
Netflix's Spinnaker - Goals

- Spinnaker incorporates the deployment patterns and lessons learned at Netflix over the past six years of **work with Asgard** and achieves the following goals:
 - Enables repeatable automated deployments captured as flexible pipelines and configurable pipeline stages
 - Provides a global view across all the environments that an application passes through in a deployment pipeline
 - Offers programmatic configuration and execution via a consistent and reliable API
 - Is easy to configure, maintain, and extend
 - Is operationally resilient
 - Addresses a breadth of pipelines

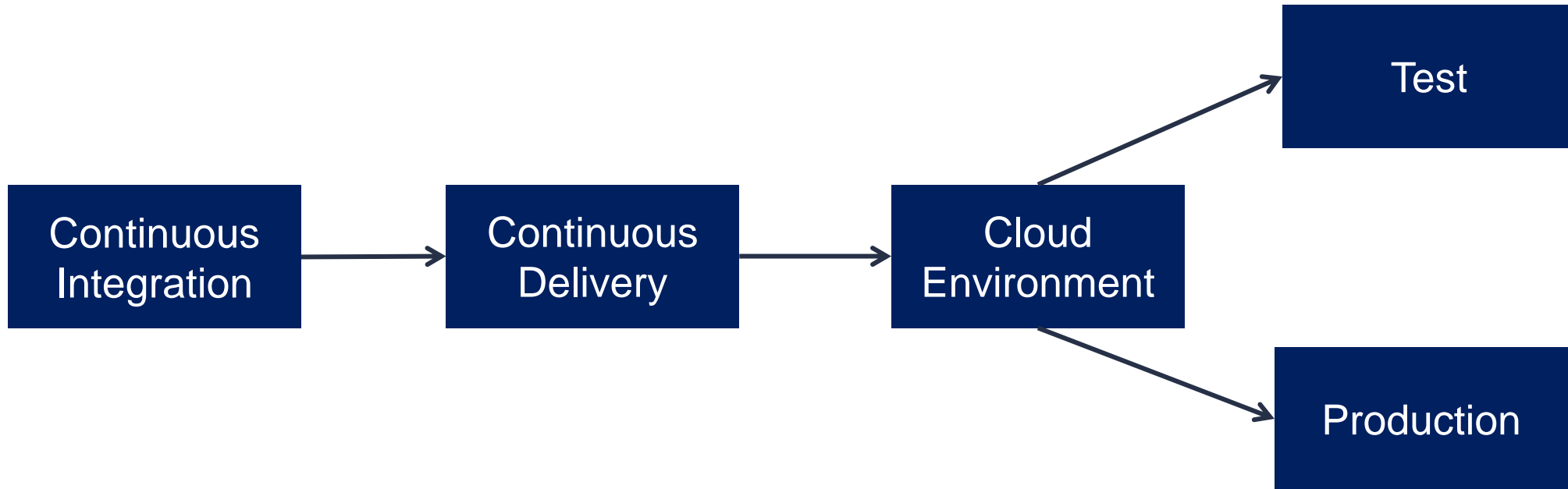
Pivotal's involvement with Spinnaker

- Spinnaker planned to provide an open and pluggable system, enabling the open source community to easily extend the platform and support additional cloud platforms.
- Netflix is collaborating with industry leaders like Pivotal, Google, and Microsoft to ensure Spinnaker's adoption and advance the technology.
- Pivotal has contributed Cloud Foundry support, ensuring our enterprise customers and community can easily take advantage of Spinnaker for their Cloud-Native deployments.
- **Spinnaker itself can be deployed to PCF just like any other application.**
- Additionally, a Cloud Foundry driver has been contributed.
- It maps Spinnaker's deployment model to Cloud Foundry APIs, making it simple to deploy user applications.

How we build Code at Netflix



Continuous Integration, Continuous Delivery and Cloud Native



Continuous Integration, Continuous Delivery and Cloud Native

[PIPELINES](#)[CLUSTERS](#)[LOAD BALANCERS](#)[SECURITY GROUPS](#)[PROPERTIES](#)[TASKS](#)[CONFIG](#)

Group by Pipeline ▾

Show 2 ▾ per group

Create New Pipeline

Start Manual Execution

▼ deploy-to-cloud-foundry

Trigger: Enabled

Configure

Start Manual Execution

BUILD #1117

MANUAL START

[anonymous]

2015-11-05 10:09:08 PST

Status: COMPLETED

Duration: 01:42

Deploy

Deploy

Hide Details ✕

DEPLOY DETAILS

✓ DEPLOY

Step	Started	Duration	Status
Deploy	2015-11-05 10:09:08 PST	01:41	COMPLETED

Deployment Config

Task Status

Task

Duration

✓ Create Deploy00:00

✓ Monitor Deploy00:31

✓ Wait For Up Instances01:10

Source | Permalink

Continuous Integration, Continuous Delivery and Cloud Native

The screenshot displays the JanitorMonkey web application interface. At the top, there is a navigation bar with links for SPINNAKER, Applications, Infrastructure, and Data, along with a search bar and a 'What's New' notification. Below this, the 'janitormonkey' logo is visible, followed by tabs for PIPELINES, CLUSTERS, LOAD BALANCERS, SECURITY GROUPS, PROPERTIES, TASKS, and CONFIG. The main content area shows a list of pipelines, with 'janitor triggered pipeline' selected. A sidebar on the left contains filters for SEARCH, PIPELINES, and STATUS. The selected pipeline is 'BUILD #1465', which is a 'TRIGGERED BUILD' for 'cloudmonkey' that started on '2016-02-22 17:46:59 PST' and has a status of 'SUCCEEDED' with a duration of '16:11'. Below the pipeline overview, there is a 'Multi-region Bake' section with a progress bar and a 'Deploy' button. The 'MULTI-REGION BAKE DETAILS' table shows the following steps:

Step	Started	Duration	Status
Bake in us-east-1	2016-02-22 17:46:59 PST	07:36	SUCCEEDED
Bake in us-west-1	2016-02-22 17:46:59 PST	05:33	SUCCEEDED
Bake in us-west-2	2016-02-22 17:46:59 PST	06:04	SUCCEEDED
Bake in eu-west-1	2016-02-22 17:46:59 PST	06:37	SUCCEEDED

To the right of the table, the 'BAKE IN US-EAST-1' configuration is shown:

Bake Config		Task Status	
Provider	Amazon	Base OS	trusty
Image	ami-	VM Type	HVM
Region	us-east-1	Store Type	EBS
Package	cloudmonkey	Label	release

A 'View Bakery Details' button is located below the configuration table. At the bottom of the main content area, another pipeline 'BUILD #1464' is visible, also with a 'SUCCEEDED' status and a duration of '16:35'.

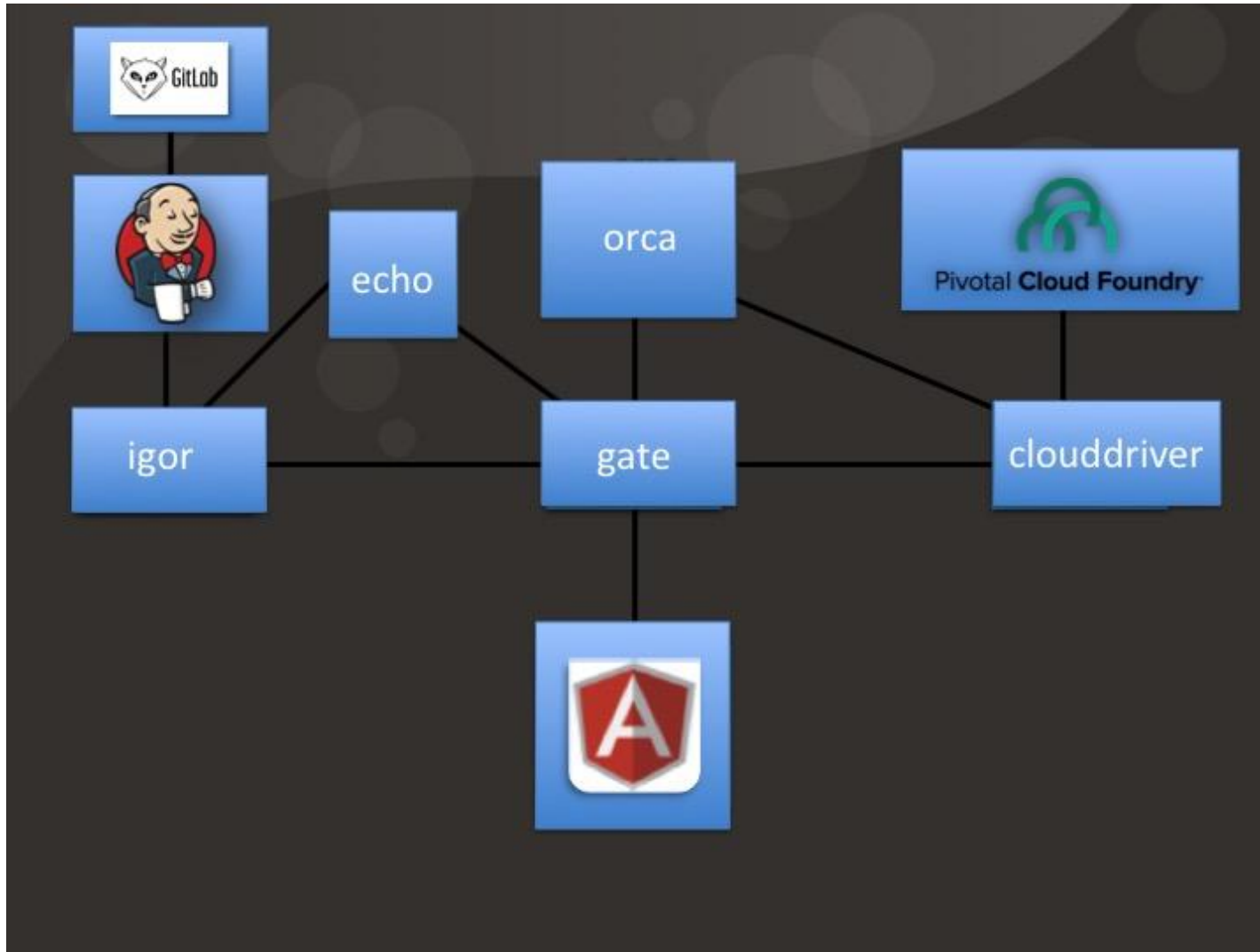
Mapping Spinnaker's Cloud Deployment Model To Cloud Foundry

- Cloud Foundry's Spinnaker modules have adopted Spinnaker terminology, where possible, to make the integration simpler. A few examples are given below to illustrate the mapping of Spinnaker concepts to Cloud Foundry concepts:
 - Application
 - Cluster
 - Server Group
 - Instance
 - Load Balancer

Spinnaker Processing Flow With Cloud Foundry

- Spinnaker consists of a series of microservices, allowing the system to be scaled and managed independently in production. The primary components of the Spinnaker system are:
 - Igor
 - Echo
 - Orca
 - Cloud Driver
 - Deck

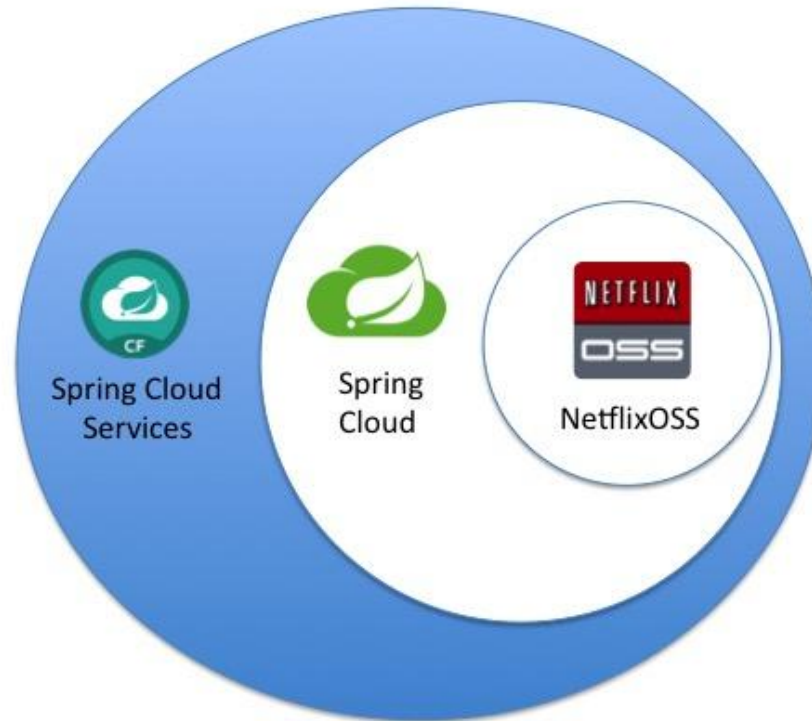
Spinnaker Processing Flow With Cloud Foundry



Spinnaker Processing Flow With Cloud Foundry

- How does it works:
 - Step 1: A developer commits code, which kicks off a Jenkins build
 - Step 2: The Jenkins build completes and an application deployment artifact is created
 - Step 3: Igor reacts to the build's completion and posts an event to Echo
 - Step 4: Echo routes the event to Orca, which and starts the delivery pipeline instance and sends a request to the Cloud Driver
 - Step 5: Cloud Driver pulls the artifact from Jenkins and deploys it to PCF
 - Step 6: The Orca pipeline completes when Cloud Driver detects a new server group up and running on PCF

Open Source Collaboration And Innovation



THANK YOU

People matter, results count.

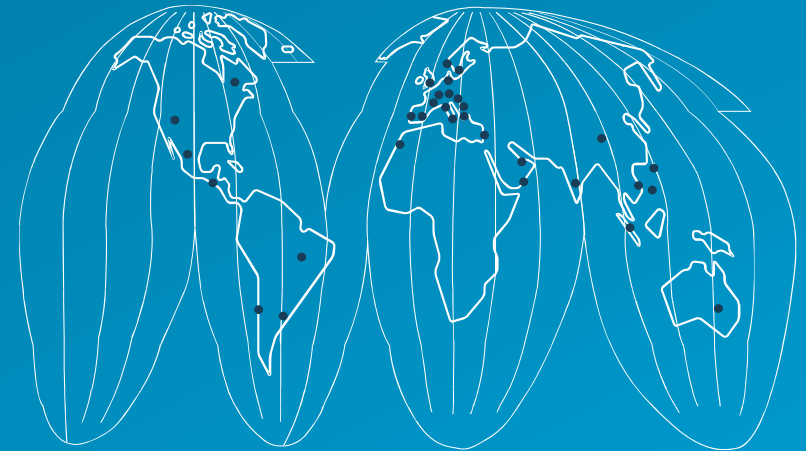


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