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Spinnaker – CD Tool for K8’s

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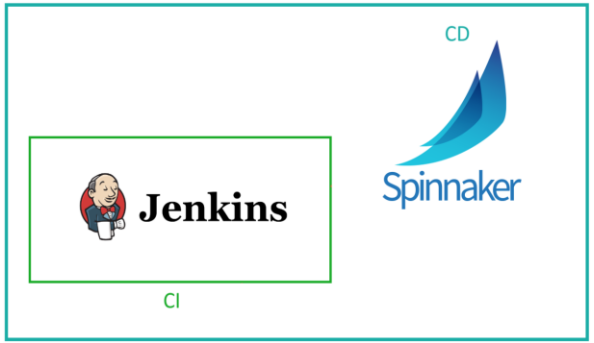
What is CI and CD?

Continuous Integration *refers to the process of verifying the build, allowing teams to detect problems early and thereafter creating a container image automatically*

Continuous Delivery *is the extension of Continuous Integration: an approach in which teams ensure that every change to the system is releasable, and that we can release any version at the push of a button*



Why Spinnaker?

Canary: Supports phased, canary deployments. Deploy to a percentage of traffic or to specific regions, and easily change your canary approach on the fly.

Visibility: Provides UI visibility to the Infrastructure where the application is deployed.

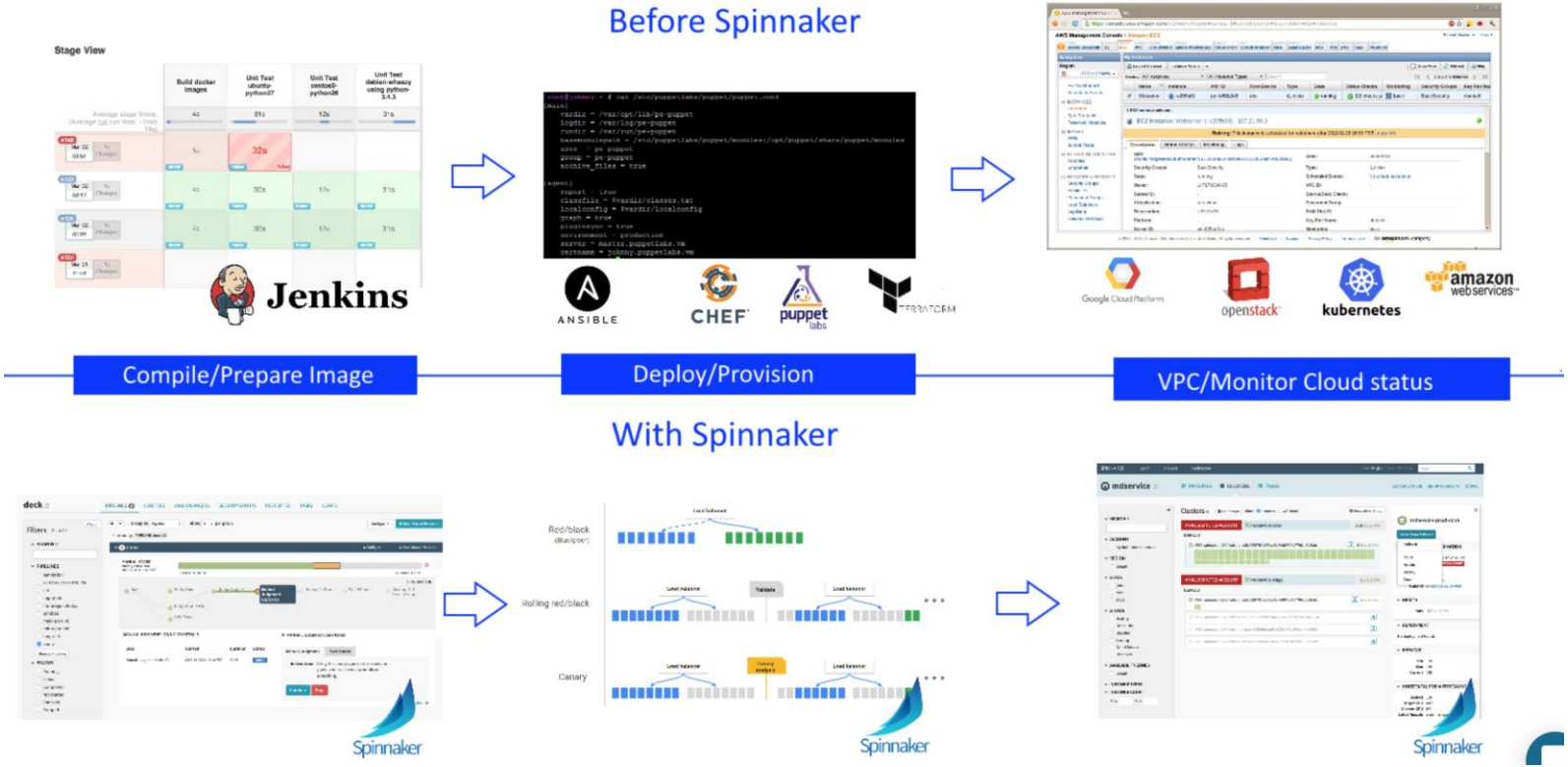
Roll Back: Supports “Red/Black” deployments, enabling fast roll-backs to previous application versions if needed. You define how long you want to keep previous versions of applications available, and how many past versions to keep as backups.

Kubernetes Support: Enables more sophisticated deployments to Kubernetes.

Multi-Cloud: Users can manage resources using cloud-agnostic constructs, abstracting deployments to IaaS providers like AWS, GCP, and Azure.

Flexible: Easy creation and modification of deployment pipelines (including complex pipelines) using a visual interface (or via programmatic endpoints).

Before and After



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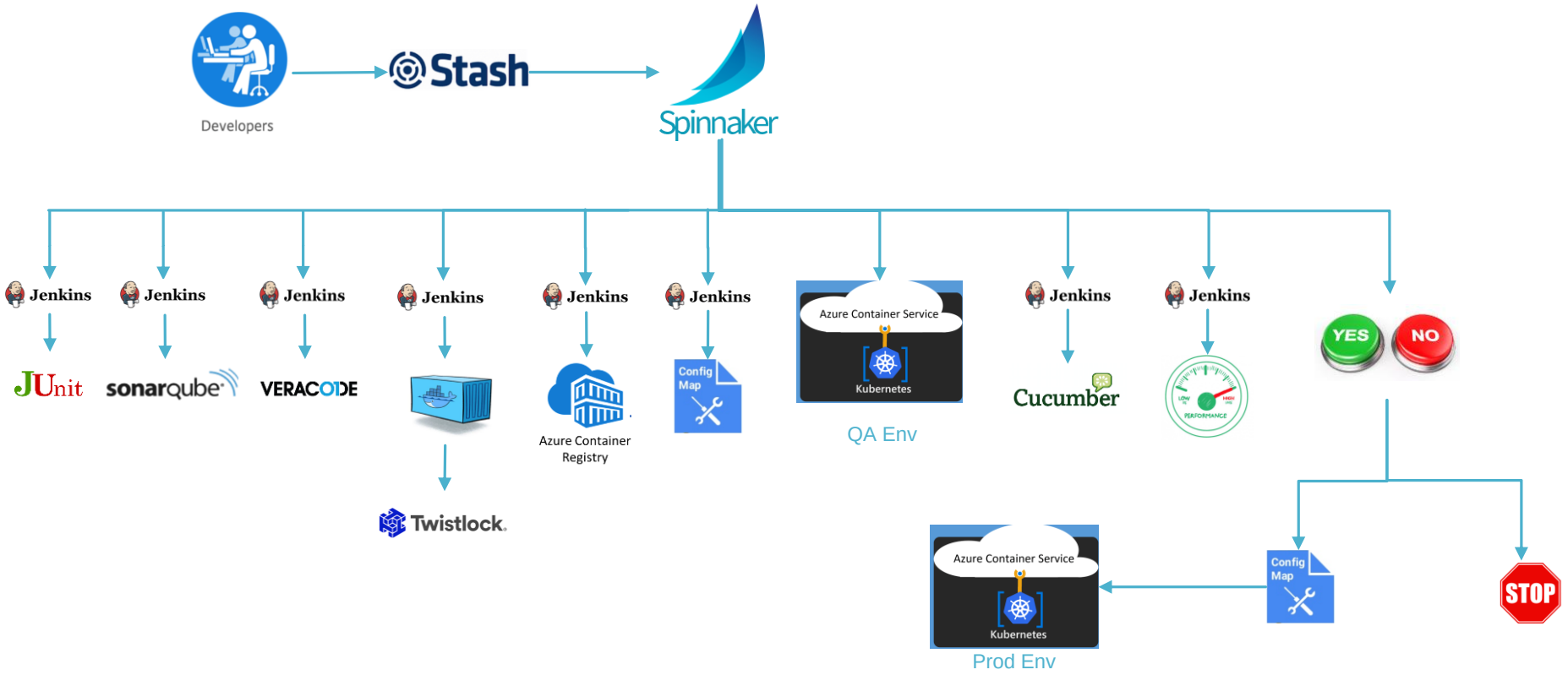
Spinnaker with Jenkins



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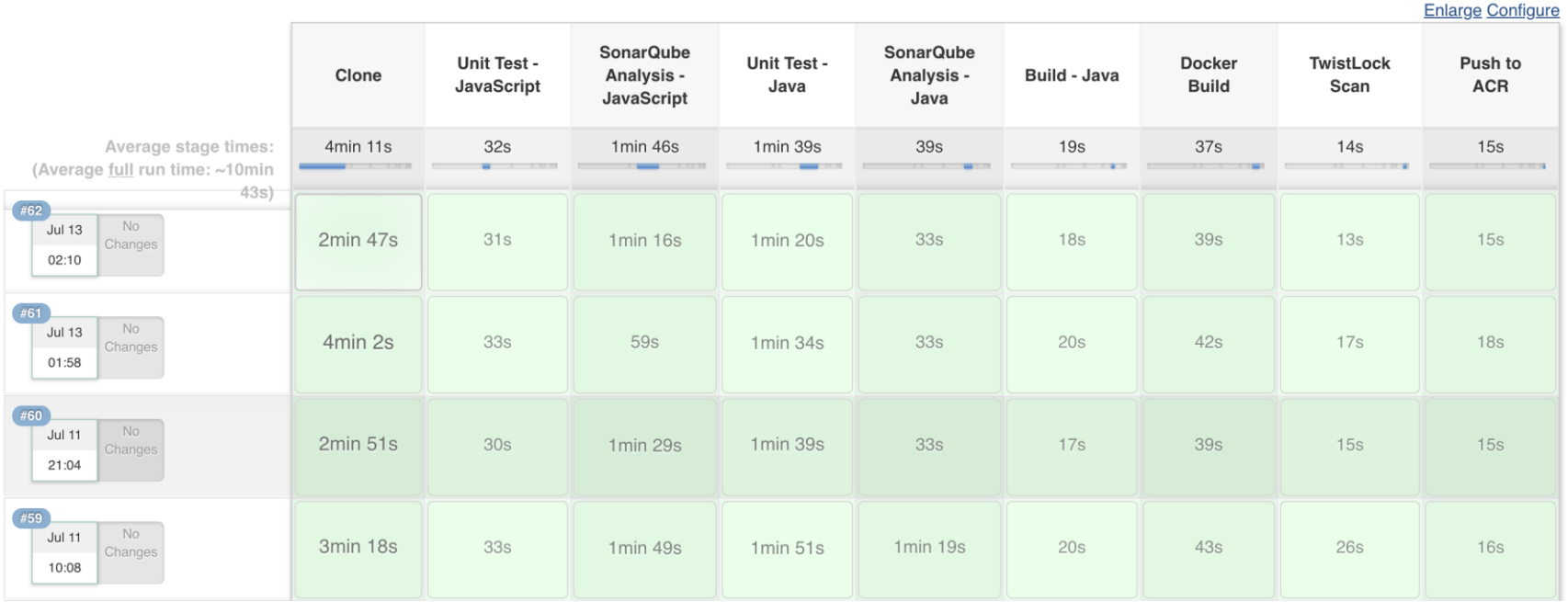
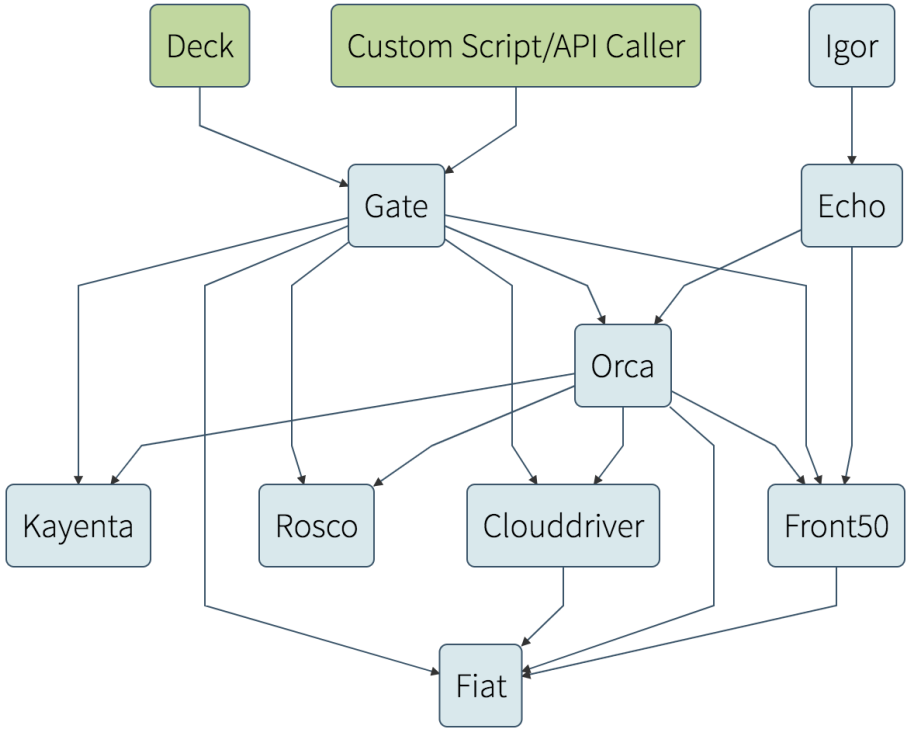
Jenkins Stages



Spinnaker Architecture

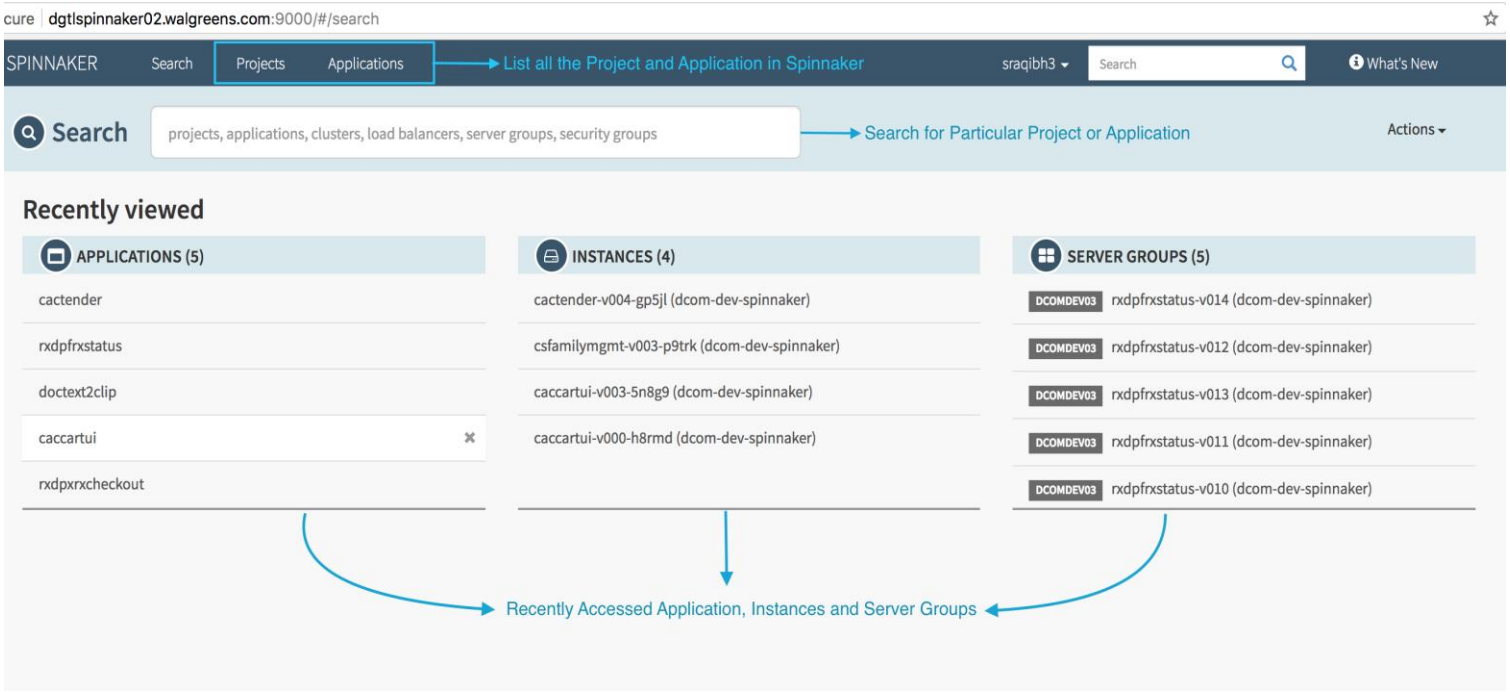


Spinnaker Architecture - Services

Spinnaker is composed of a number of independent micro-services

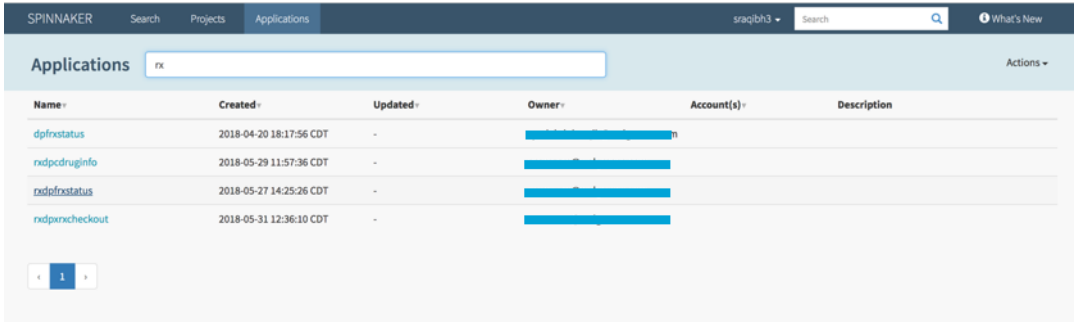
- Deck is the browser-based UI.
- Gate is the API gateway.
- The Spinnaker UI and all api callers communicate with Spinnaker via Gate.
- Orca is the orchestration engine. It handles all ad-hoc operations and pipelines.
- Clouddriver is responsible for all mutating calls to the cloud providers and for indexing/caching all deployed resources.
- Front50 is used to persist the metadata of applications, pipelines, projects and notifications.
- Rosco is the bakery.
- It is used to produce machine images (for example GCE images, AWS AMIs, Azure VM images). It currently wraps packer, but will be expanded to support additional mechanisms for producing images.
- Igor is used to trigger pipelines via continuous integration jobs in systems like Jenkins and Travis CI, and it allows Jenkins/Travis stages to be used in pipelines.
- Echo is Spinnaker's eventing bus.
- It supports sending notifications (e.g. Slack, email, Hipchat, SMS), and acts on incoming webhooks from services like Github.
- Fiat is Spinnaker's authorization service.
- It is used to query a user's access permissions for accounts, applications and service accounts.
- Kayenta provides automated canary analysis for Spinnaker.
- Halyard is Spinnaker's configuration service.
- Halyard manages the lifecycle of each of the above services. It only interacts with these services during Spinnaker startup, updates, and rollbacks.

Spinnaker Main Page



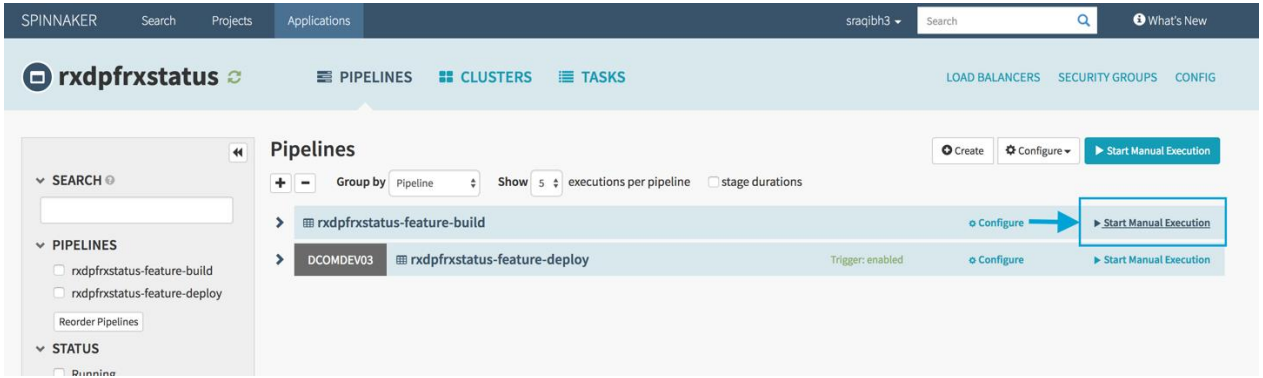
- To Browse all the Project and Application
- To Search Application, Project
- Body shows the recent project and application

Access Application, Pipeline, Check POD instance



Click on application name, the default page is clusters – click on pipelines to access them

After logging in - > Search for an application -> eg : rx . This will list the applications with rx



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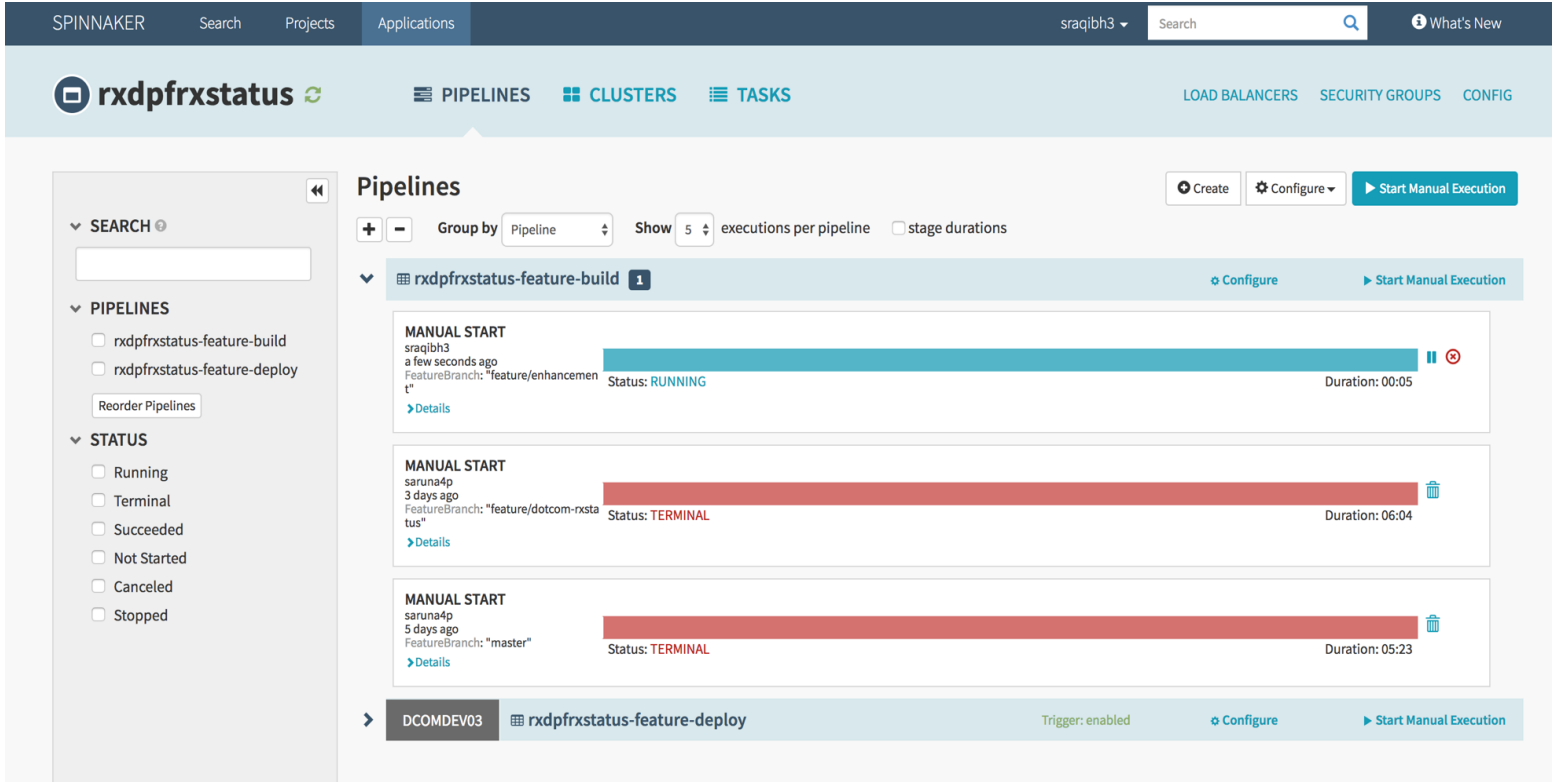
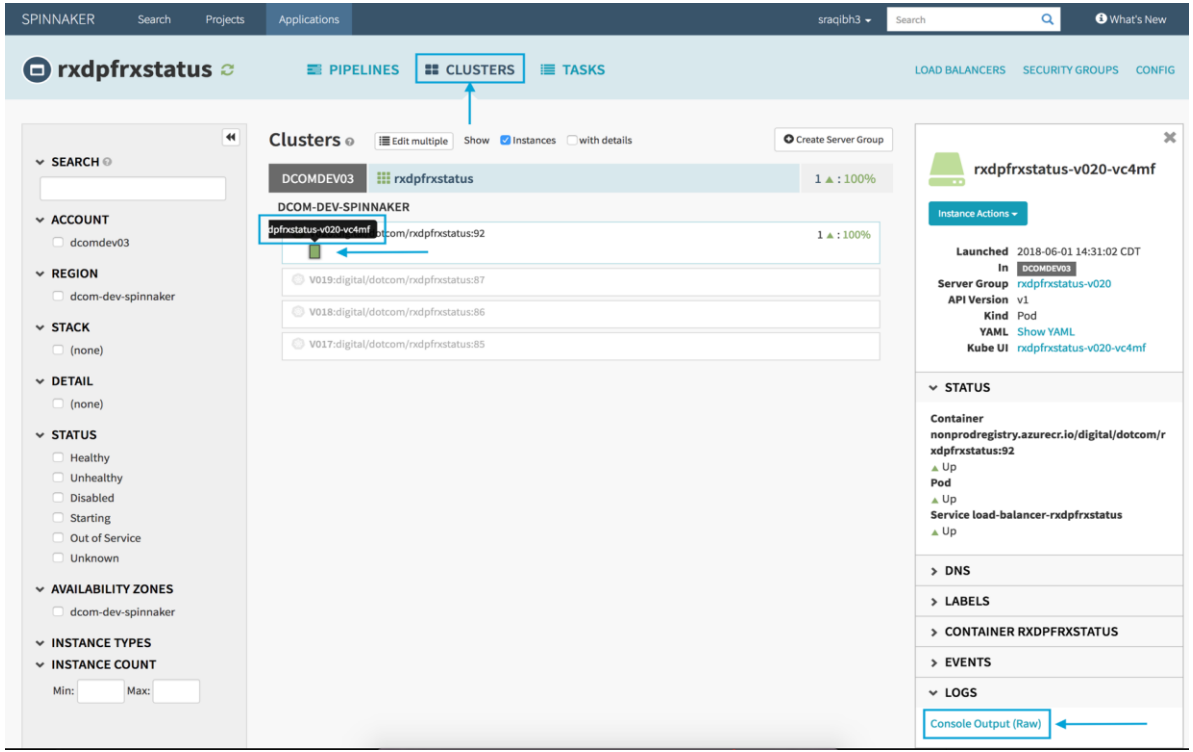
Spinnaker will trigger a Jenkins job in the back end



Deployment UI



When the Deployment completes click on clusters -> POD instance to check if the instance is up, will be indicated by red if it is down, you will be able to see the POD instance information, images, console output

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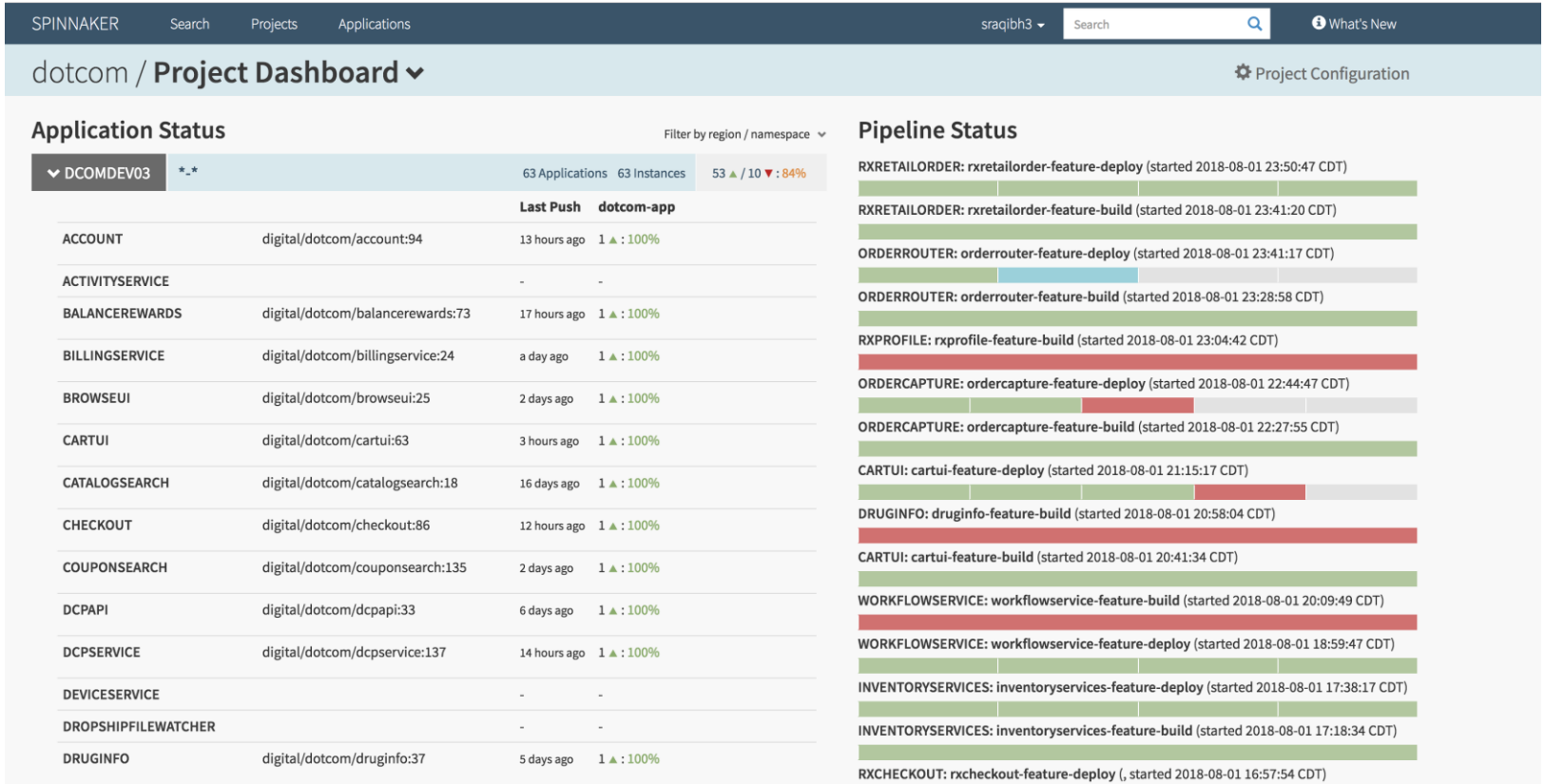
Project Dashboard



K8 Deployment with Spinnaker

Questions?

Know more:

https://www.spinnaker.io/
https://www.spinnaker.io/community/faqs/
https://www.armory.io/

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