



# Continuous Delivery in Kubernetes

*Sandeep Parikh*

*@crcsmnky*

*Solutions Architect*

*Google Cloud Platform*

# Why Is This Important

Bulletproof process to go from code to production

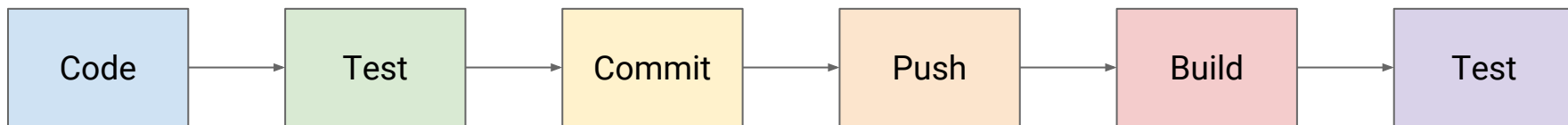
Centralized, repeatable building/tagging/pushing

Iterate quickly and reliably

Hands off my kubect!

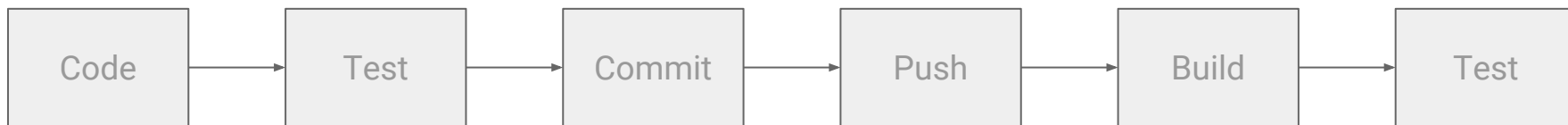
# Continuous Integration

The ideal development flow

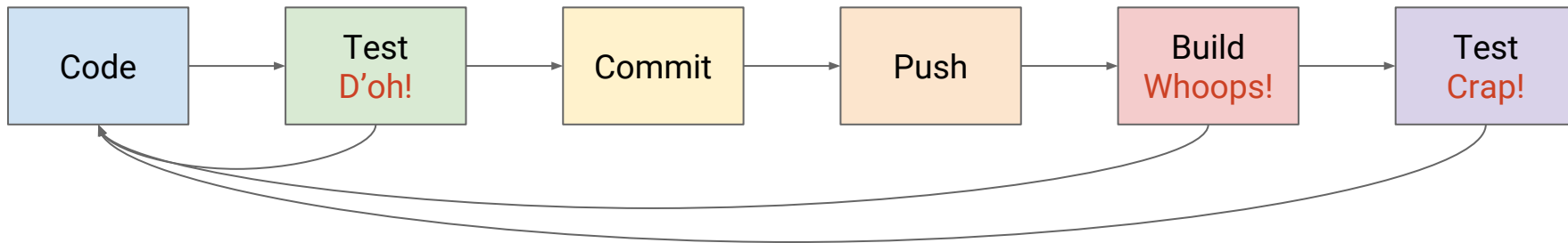


# Continuous Integration

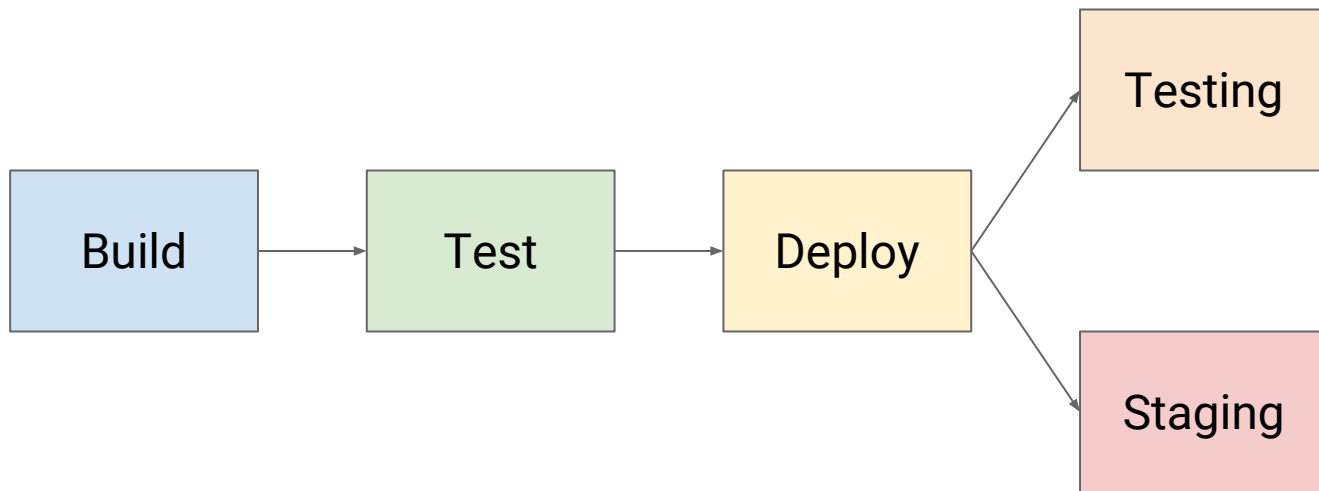
~~The ideal development flow~~



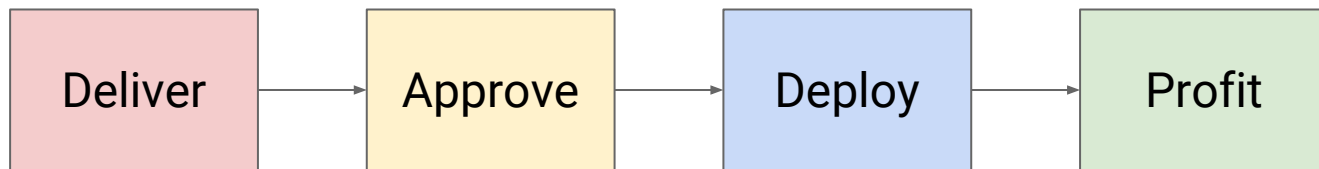
The real development flow



# Continuous Delivery



# Continuous Deployment



# Why Continuous?

**Fail fast**

*I broke the build!*

**Blame fast**

*Who broke the build?*

**Deliver faster**

*Better software in customers hands!*

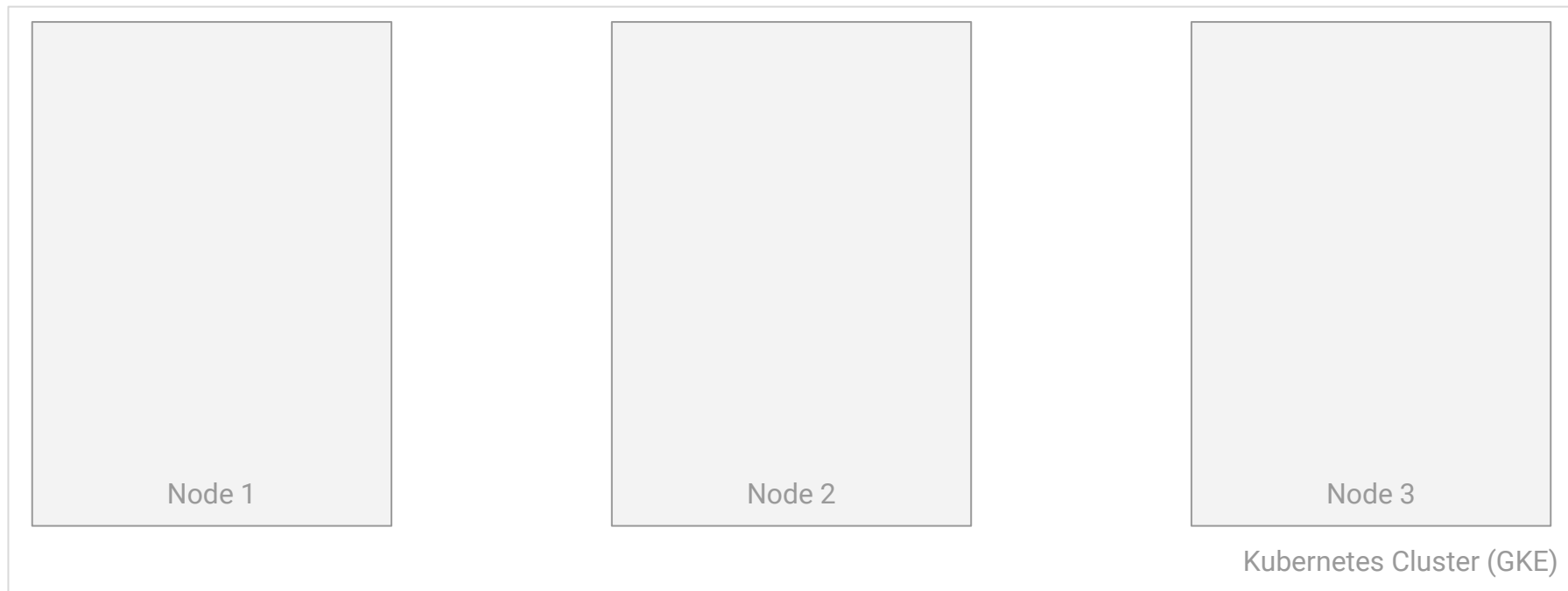
# Tools



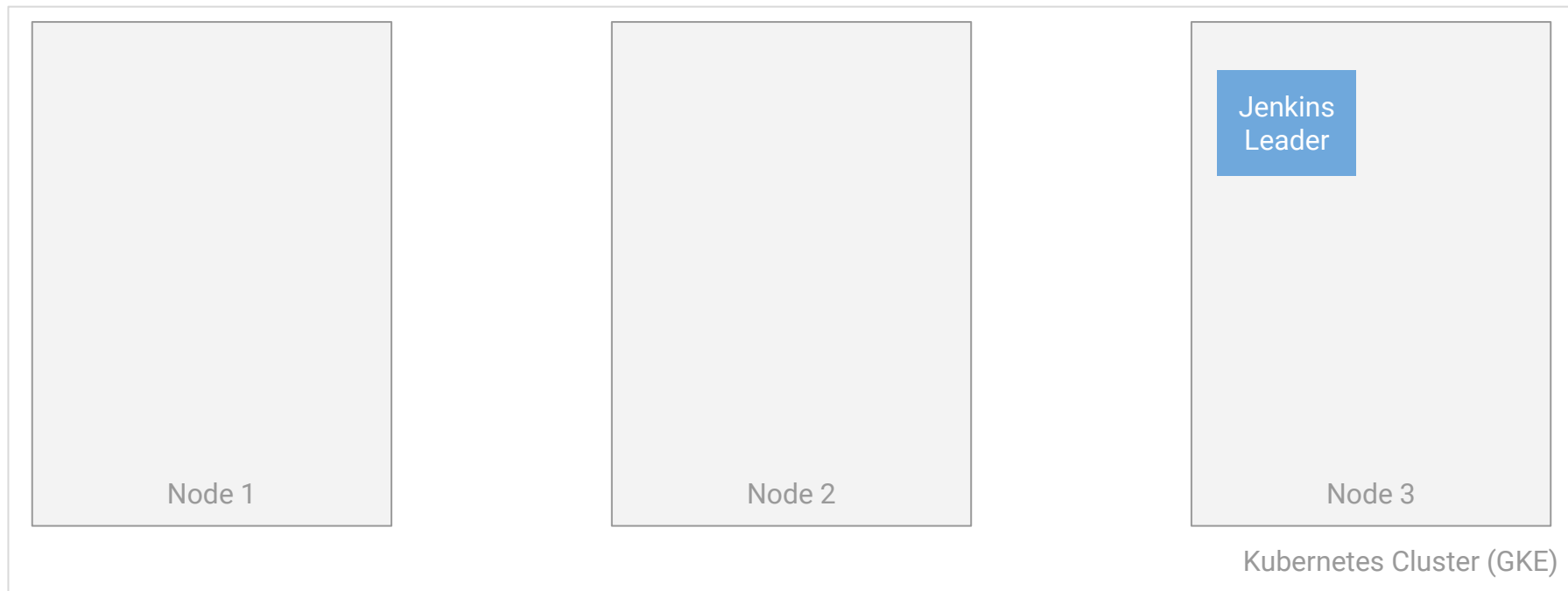


# Jenkins

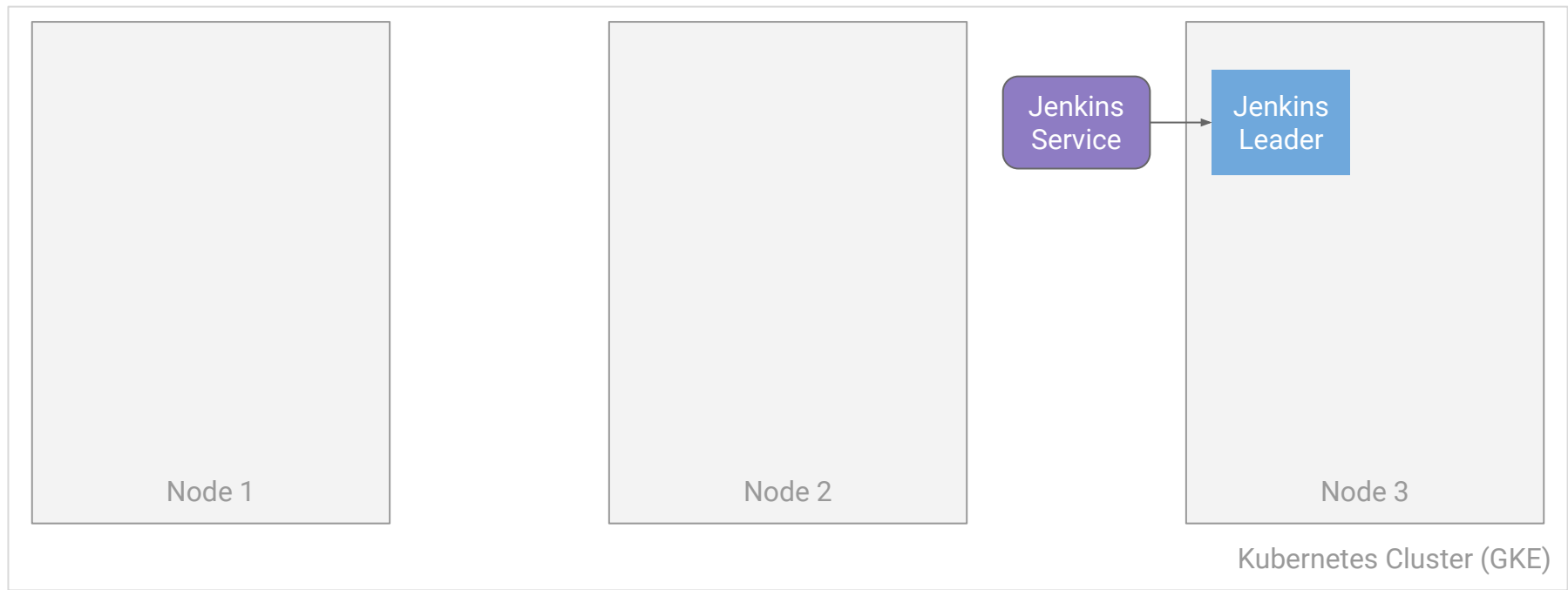
# Kubernetes Cluster



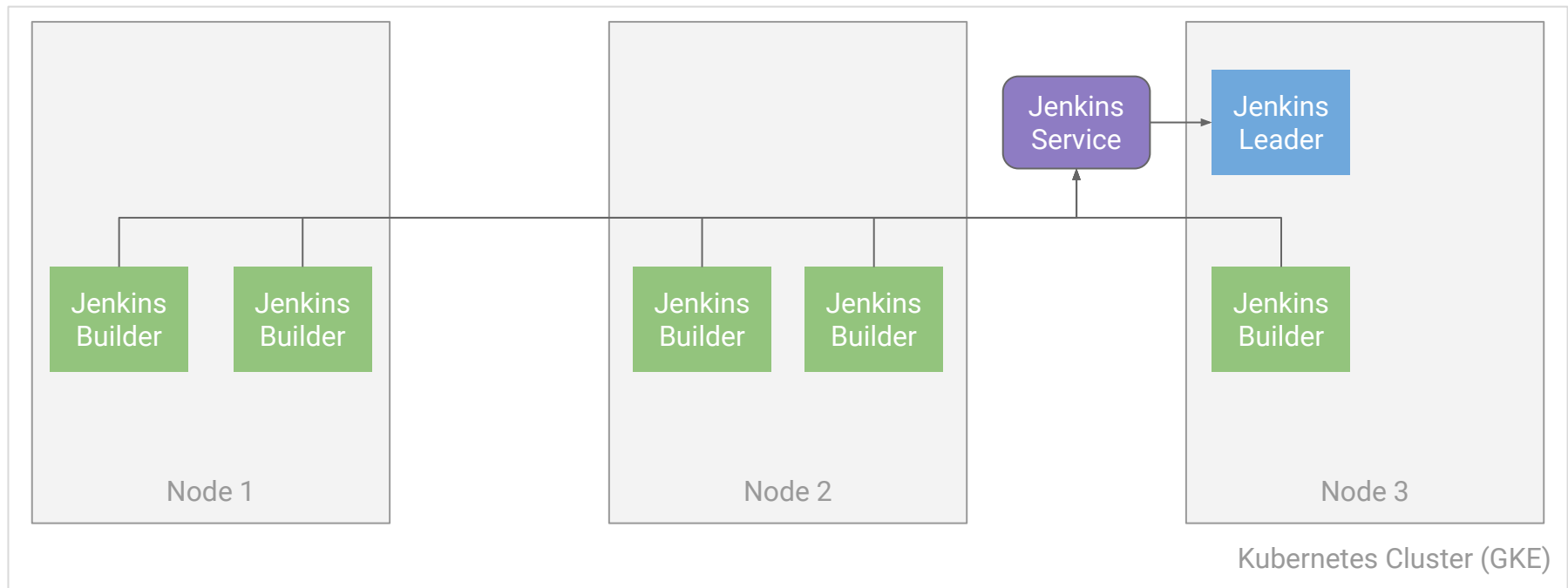
# Jenkins Leader



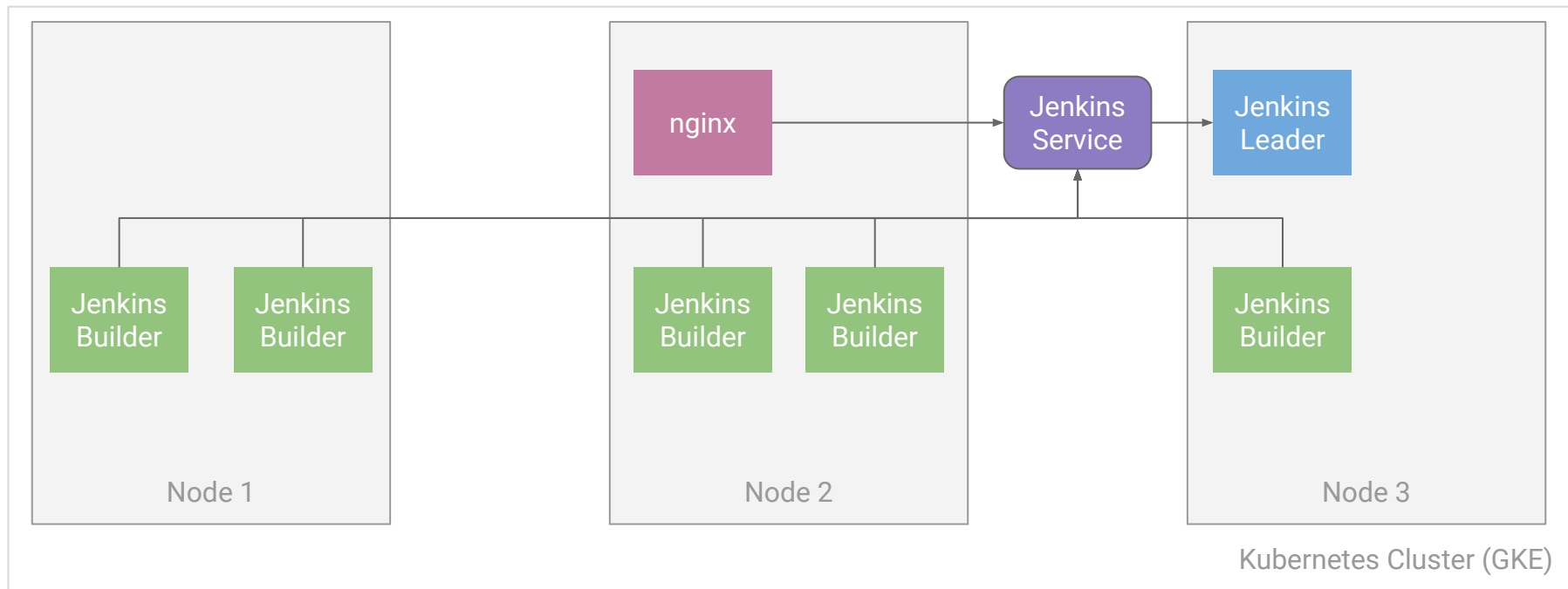
# Jenkins Service



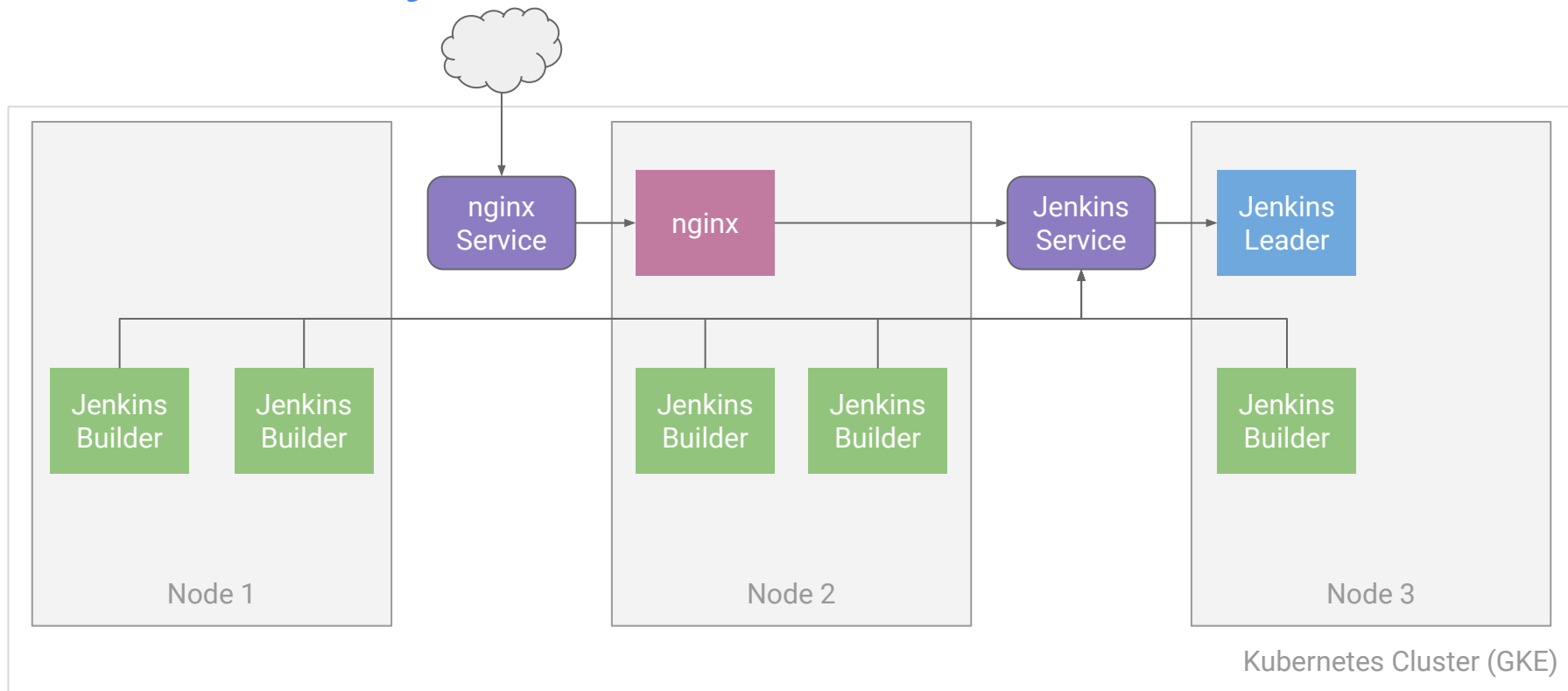
# Jenkins Builder



# Jenkins Proxy



# Jenkins Proxy Service



# Microservices



## Backend that serviced this request

Name	gke-kdemo-2bb76e56-node-c5v9
ID	10030282358769741291
Hostname	gke-kdemo-2bb76e56-node-c5v9.c.kubecon-demo.internal
Zone	us-central1-f
Project	kubecon-demo
Internal IP	10.240.0.2
External IP	104.197.184.149

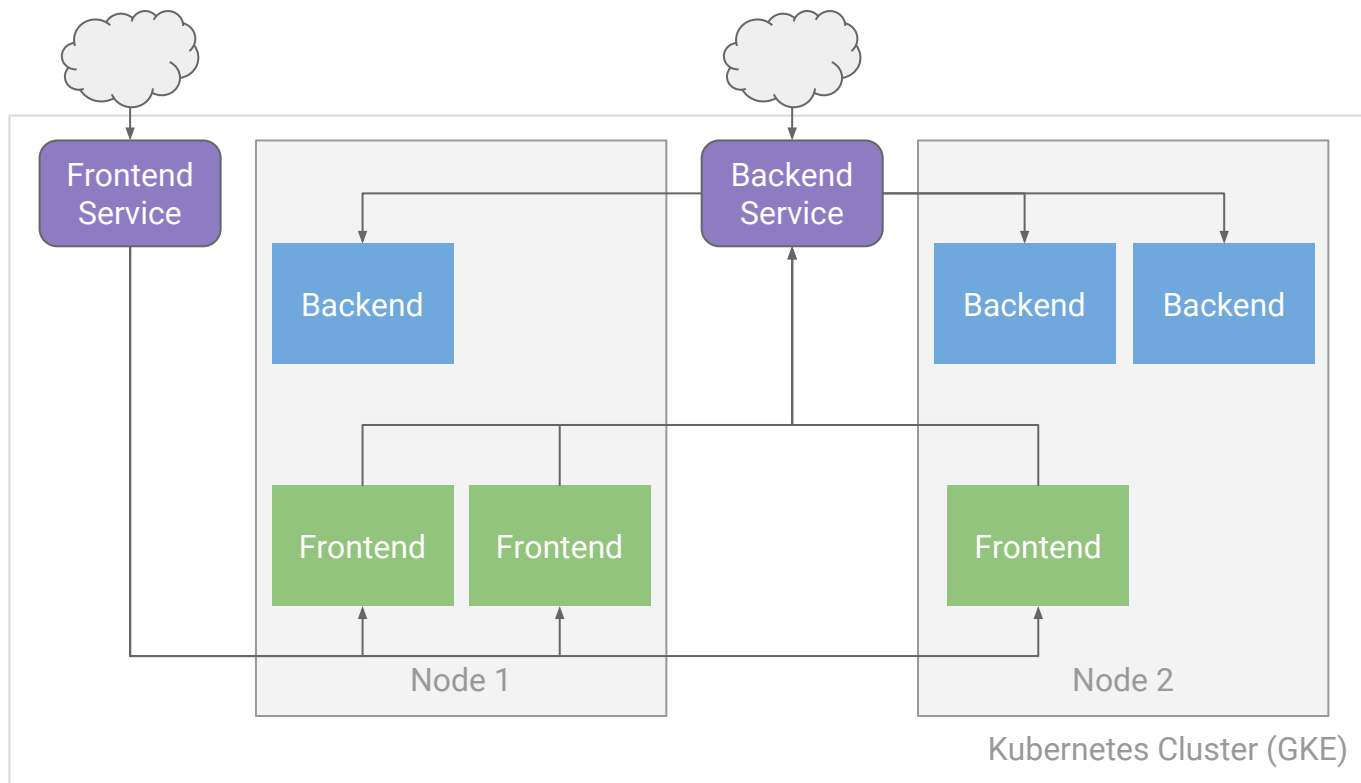
## Proxy that handled this request

Address

Request GET / HTTP/1.1 Host: 10.187.253.55:8080 Accept-Encoding: gzip User-Agent: Go-http-client/1.1

Error

# Microservices



# Microservices & Namespaces

Virtual clusters backed by the same physical cluster

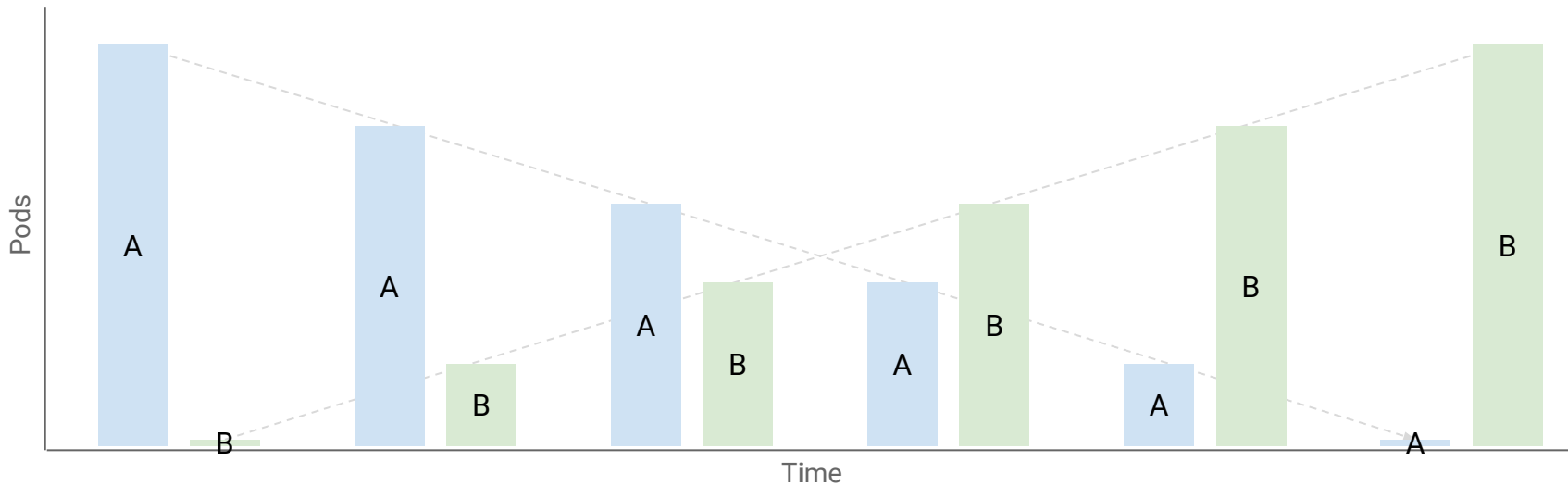
Divide cluster resources by different use cases

Supports quotas for managing resources

Test, Staging, Production, etc.

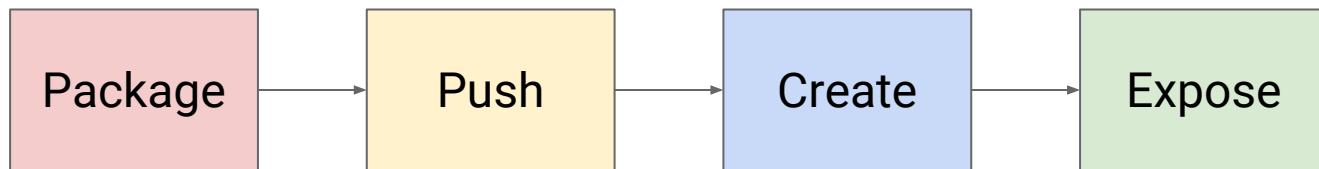
# Microservices & Rolling Update

Replace Replication Controller A with Replication Controller B by updating one Pod at a time.



# Workflow

# Kubernetes Workflow



# Mapping To Jenkins

Workflow plugin, Freestyle doesn't fit

Define a flexible, extensible, script-based CD pipeline

Groovy for scripting actions

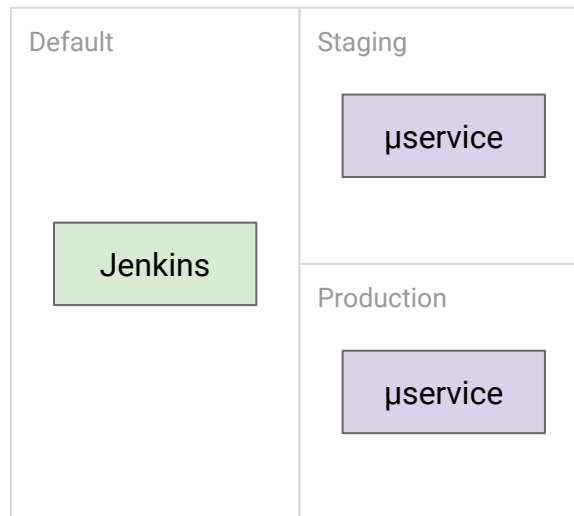
Supports human input/approval

# Workflow

Github

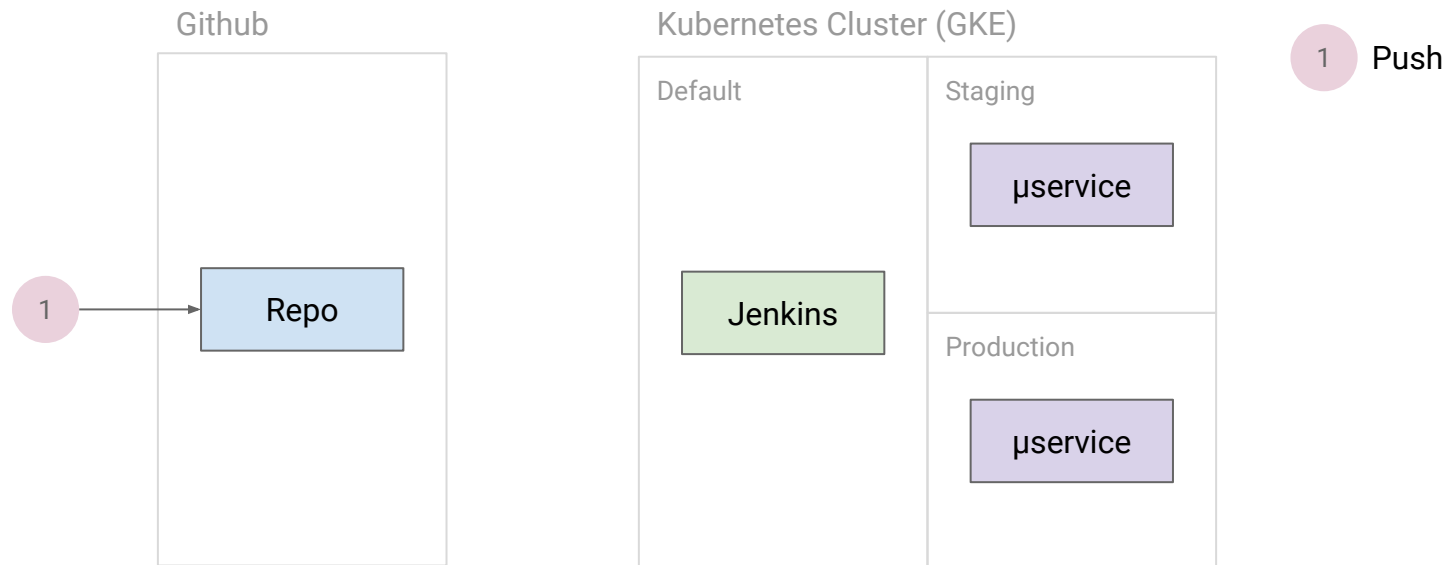


Kubernetes Cluster (GKE)

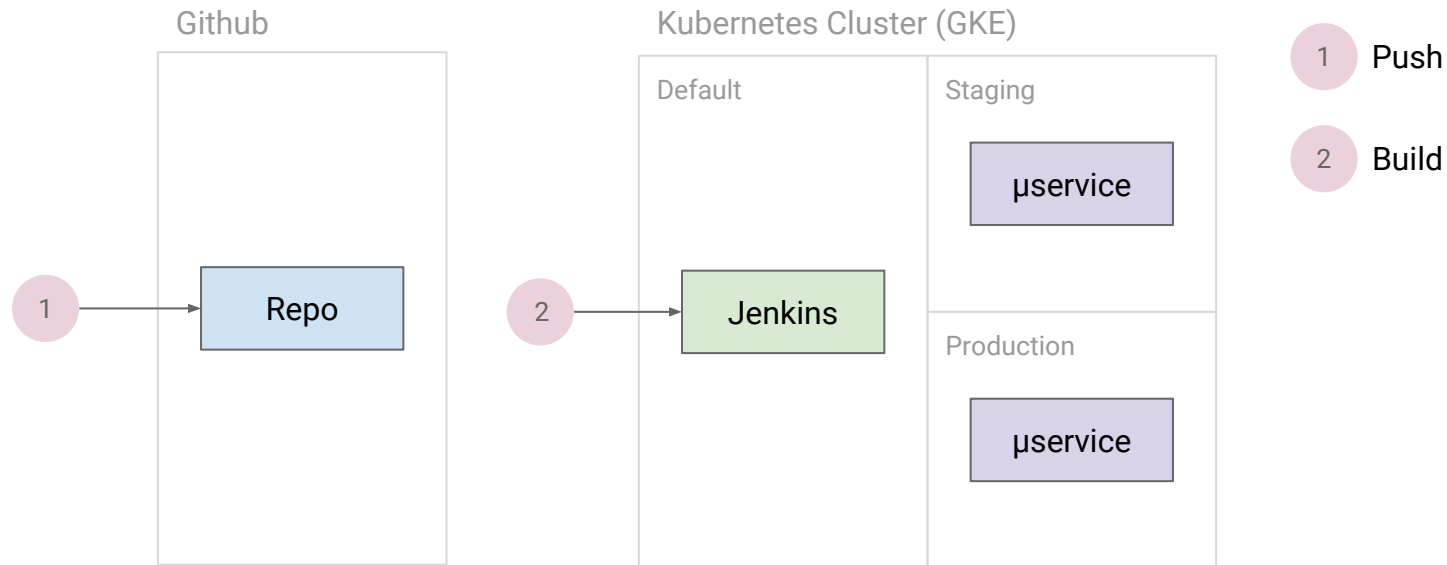




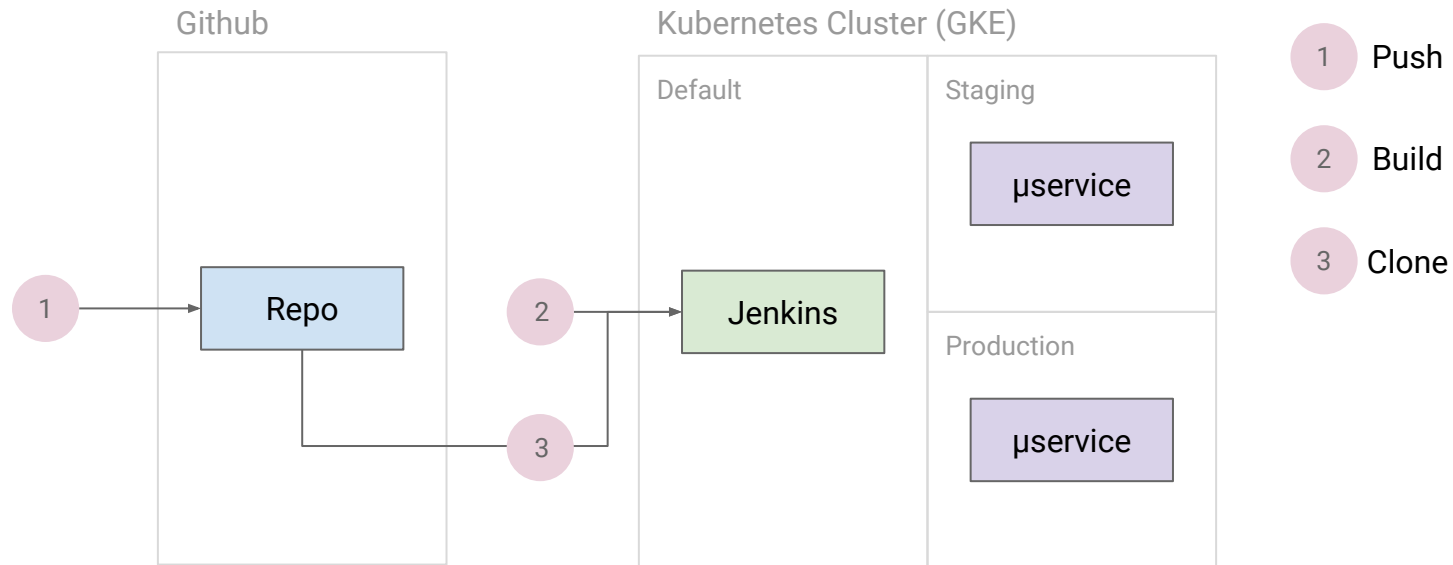
# Workflow



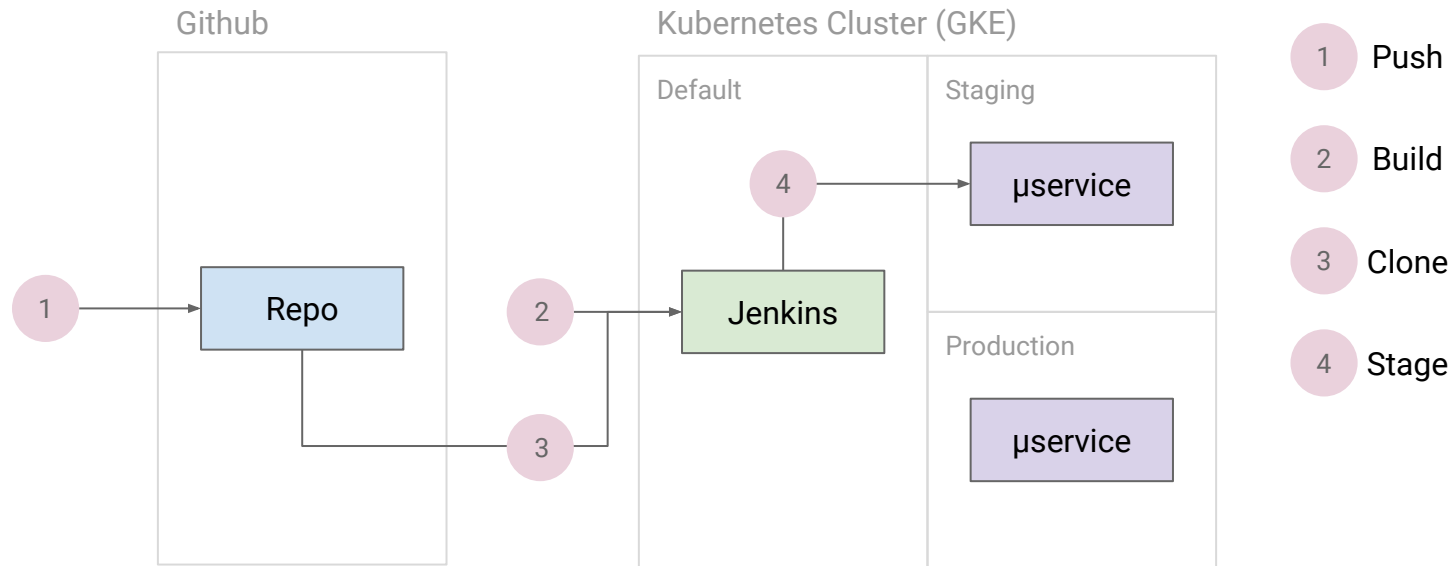
# Workflow



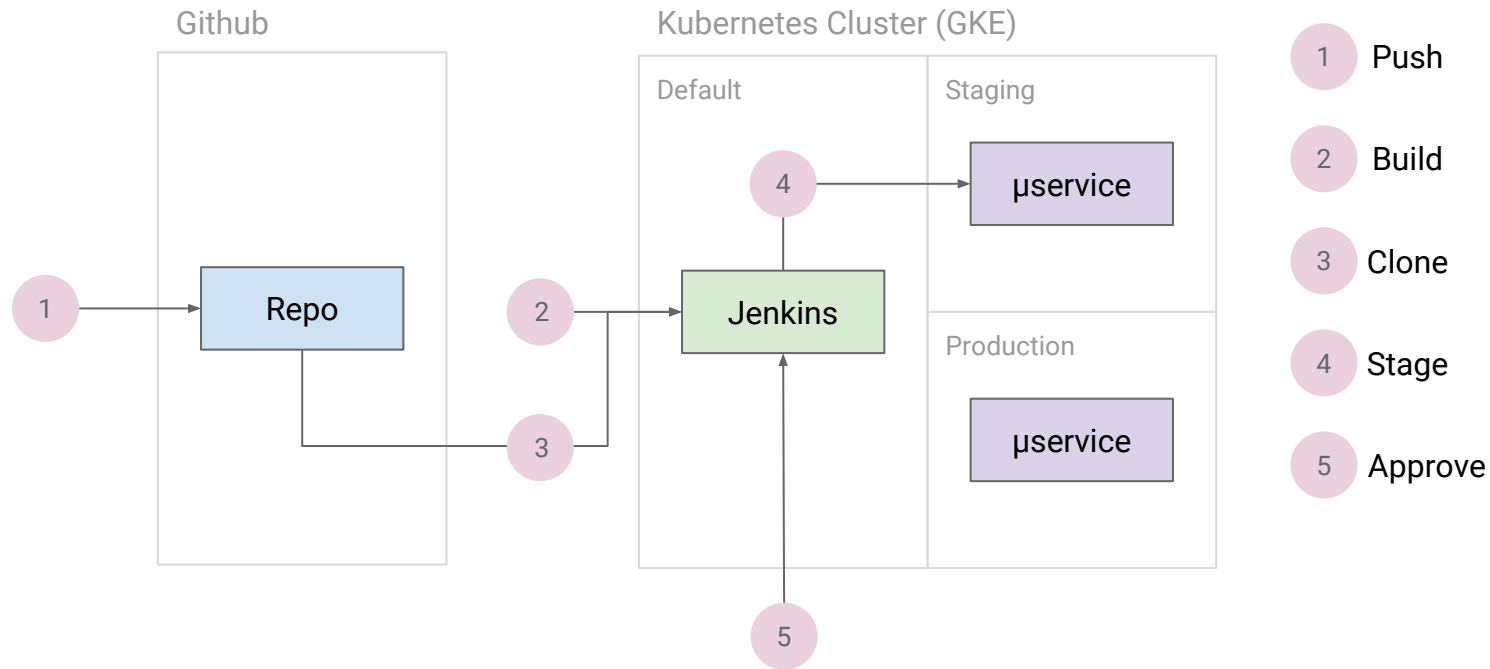
# Workflow



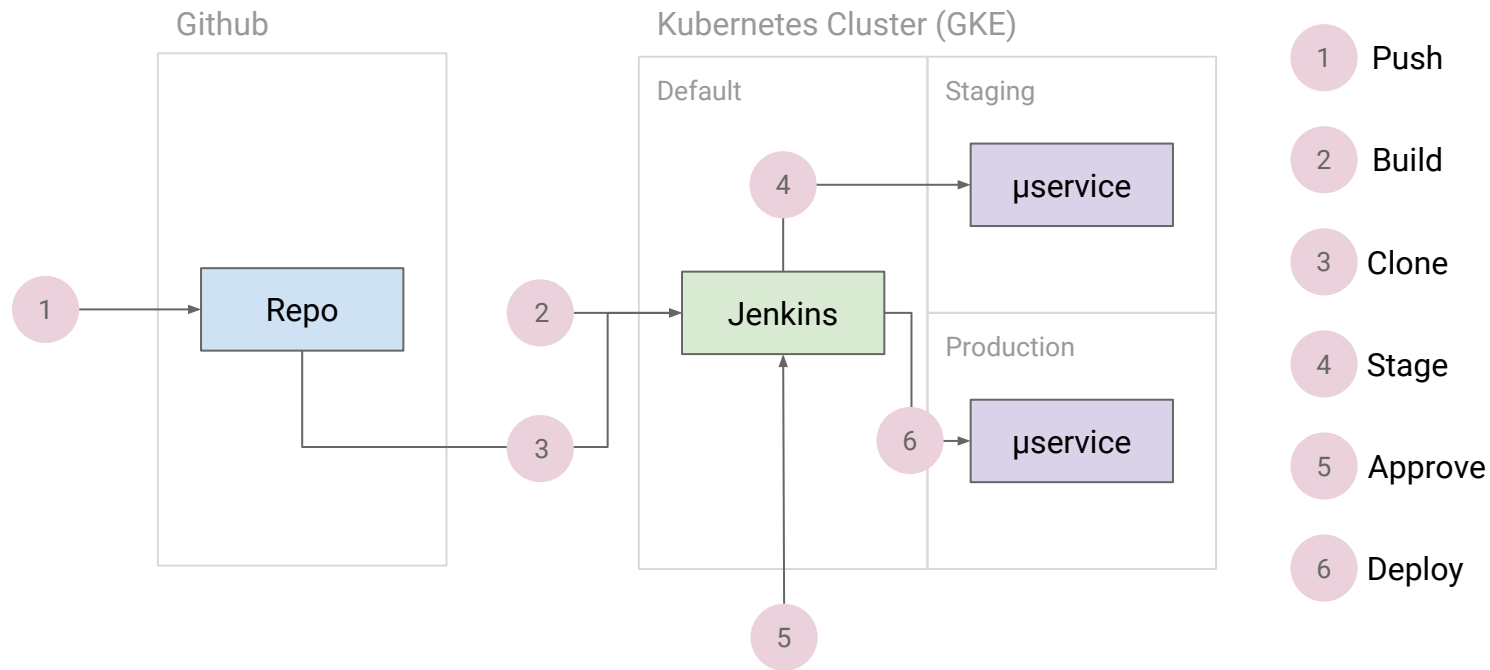
# Workflow



# Workflow



# Workflow



# Demo

Come find me after the talk and I  
promise I'll run it live :)

# Shout Out



Give Evan Brown ([@evanbrown](#)) a high-five next time you see him. He's super smart and got this whole thing working.



# Resources

## Questions, Comments

[@crcsmnky](#)

## Repo

<https://github.com/GoogleCloudPlatform/continuous-deployment-on-kubernetes>

## Docs

[Automated Image Builds with Jenkins, Packer, and Kubernetes](#)

[Distributed Load Testing using Kubernetes](#)

[Real-time data analysis with Kubernetes, Google Cloud Pub/Sub, and BigQuery](#)

[Real-time data analysis with Kubernetes, Redis, and BigQuery](#)