Agenda

- Feel the Geko way!

- What is GitOps and why

- Kubernetes challenges

- Jenkins X: the easiest CD for Kubernetes

- Demo time!

- Q&A

Feel The Geko Way!

- Startup company based in Barcelona
- Focused on Internet Companies
  - Cloud management and automation tools
  - DevOps implementation
  - CI/CD Pipelines and tools (travis, spinnaker, jenkins…)
  - Container Platform implementation (K8S expertise)
  - Platform reliability, observability and maintenance 24x7
  - Security / Chat / Dev / Ops

https://geko.cloud/

What is GitOps

- Is a method used for Continuous Delivery
- Git as a **single source of truth** for infrastructure management where we:
  - Create, change and destroy for **all** environments
- Accelerate and simplify the application deployments and the operations tasks
- All the changes are traceable, verifiable and reproducible

IaC: Infrastructure as Code

Why GitOps

- **Fast development**: GitOps manages all the updates and new features. Continuously pushing new features and updates. Responding quickly to business and customer needs.
- **Better Ops**: GitOps completes the CI/CD pipeline with pull requests and operations tasks fully reproducible.
- **More control and security**: all changes have an owner and we know when they are made. There is an immutable and auditable source of truth: **Git**.

You can recover totally or partially your infrastructure with 'one button'.

GitOps: IaC tools

Some Kubernetes challenges...

- Learn a new way to do things
- Setup the infrastructure: cloud+kubernetes
- Deploy containers into K8s
- Change/create the Continuous Delivery pipeline for K8s
- Automate everything and improve reliability and observability
- …

And keep giving value to our customers!

Jenkins X is here to help us! :)

Project hosted by:

A Neutral Home for the Next Generation
of Continuous Delivery Collaboration
cd.foundation

How does Jenkins X help us?

- Automates the installation, configuration and upgrade of Jenkins + other tools (helm, skaffold, nexus, monocular, prow, tekton, etc…)
- Automates CI/CD for your applications on K8s:
  - Creates docker images
  - Creates helm charts
  - Creates pipelines
  - ...even creates an entire K8s cluster!
- Uses GitOps methodology to manage promotion between environments:
  - Preview (temporary) > Staging > Production
- Lots of feedback in PR: integration with Github and Bitbucket Cloud

How do I setup Jenkins X?

Installing Jenkins X CLI

Linux

```
curl -L https://github.com/jenkins-x/jx/releases/download/v2.0.278/jx-darwin-amd64.tar.gz | tar xzv
sudo mv jx /usr/local/bin
```

macOS

```
brew tap jenkins-x/jx
brew install jx
```

https://jenkins-x.io/getting-started/install

Setup Jenkins X on Kubernetes

Create a cluster in the public cloud

- `jx create cluster eks`
- `jx create cluster gke`
- `jx create cluster aks`

Installing on a existing cluster (RBAC must be enabled)

- `jx install`

https://jenkins-x.io/getting-started

Demo time

KEEP
CALM
IT'S
DEMO
TIME

Demo time - Steps already done

- ## Install jx cli

```
mkdir -p ~/.jx/bin &&
curl -L https://github.com/jenkins-x/jx/releases/download/v2.0.272/jx-linux-amd64.tar.gz |
tar xzv -C ~/.jx/bin
```

- ## Create GKE cluster

```
jx create cluster gke --skip-login  --default-admin-password=XXXXX \
-n dataops --zone europe-west1-b --domain dataops.geko.cloud --long-term-storage \
--static-jenkins --git-username david-geko --git-api-token XXXXXXX
```

- ## Create DNS entry for *.dataops.geko.cloud

What we get from Jenkins X

- Development tools environment
  - Jenkins master
  - Elastic pool of Jenkins agents (slaves)
  - Tools: Helm,Skaffold, Tekton, Prow,...
  - Nexus+Monocular (artifact repository), ChartMuseum
- Two permanent environments
  - Staging
  - Production
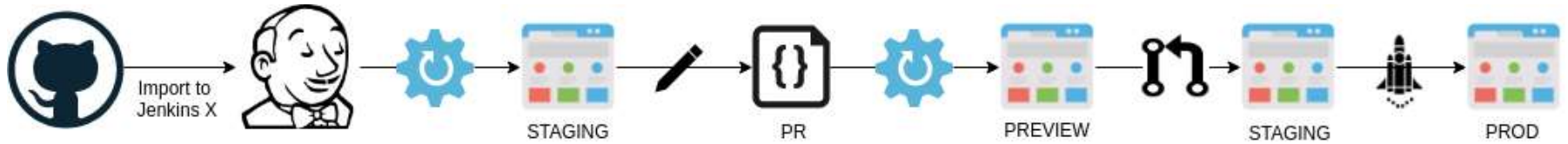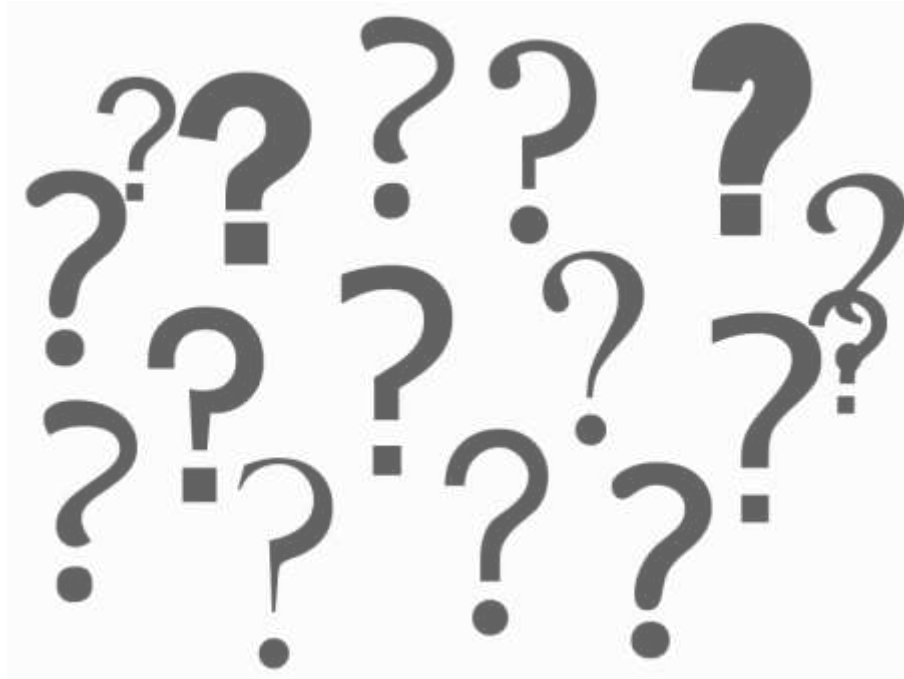- Two Git repositories (one per environment) for CD management

Demo time!

Q&A

Hiring!

```yaml
tasks:
  - name: "Geko Hiring task"
    command: /sbin/joinus -t now
    when: (geko_facts['DevOps'] == "Pipelines, CI/CD, deployment tools, lambda, microservices") and
          (geko_facts['Container-Platforms'] == "Docker-Compose,Swarm,K8S,Istio,Helm") and
          (geko_facts['Orchestration-tools'] == "Ansible,CloudFormation,Terraform") and
          (geko_facts['OS'] == "Linux Open Source Ninja") and
          (geko_facts['Development'] == "Bash,Python,PHP,Go,Java") and
          (geko_facts[Cloud] == "AWS, GC, Azure")

  - shell: echo "Geko wants you! send email to joinus@geko.cloud"
    when: goodpeople
    when: teammate
    when: self-management
    when: english
```

joinus@geko.cloud