GitOps

Operations by
Pull Request

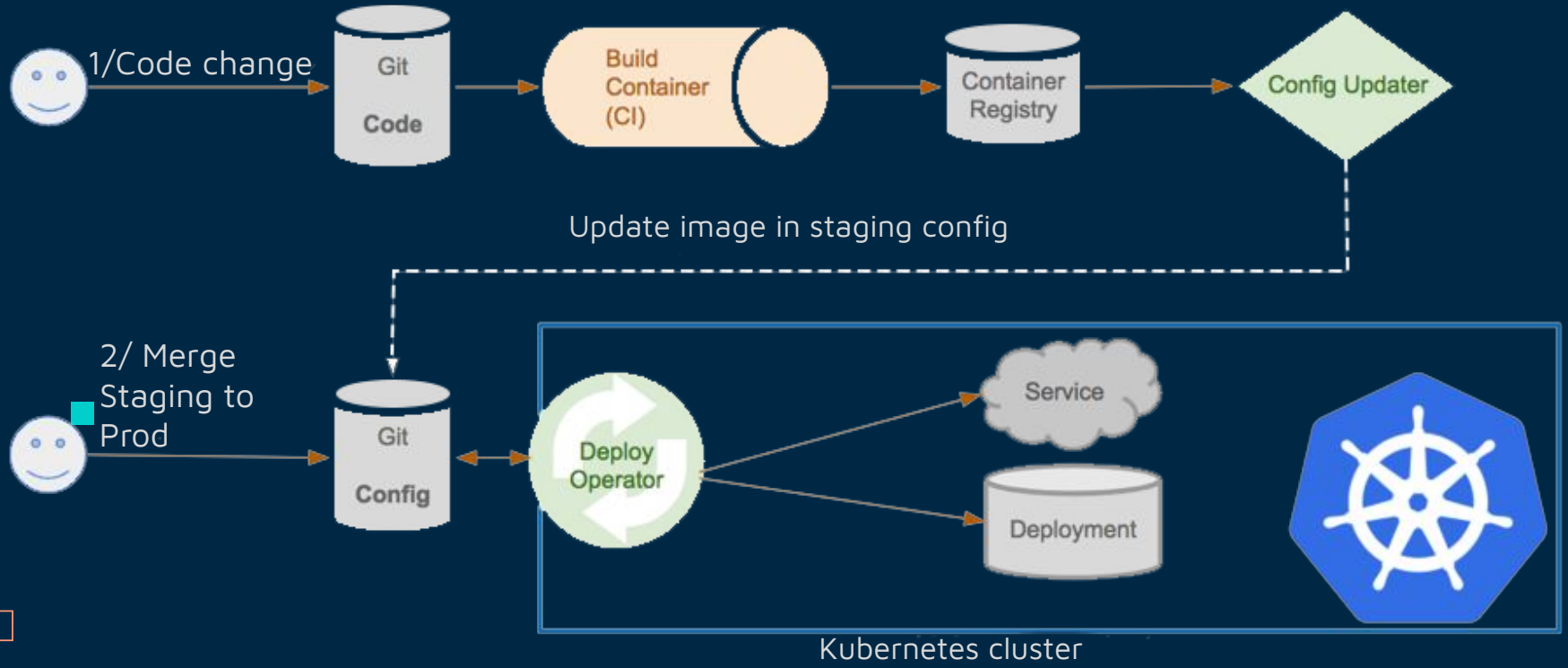
Overview

- What is GitOps?
- Deploying with the GitOps workflow
- Push vs Pull pipeline
- Advantages
- Reflection

What is GitOps?

- Best practices of DevOps
- Infrastructure as Code (IaC)
- Git as a single source of truth
- Declarative code
  - Kubernetes
- CI/CD

Deploying with the GitOps Workflow



Deploying with the GitOps Workflow

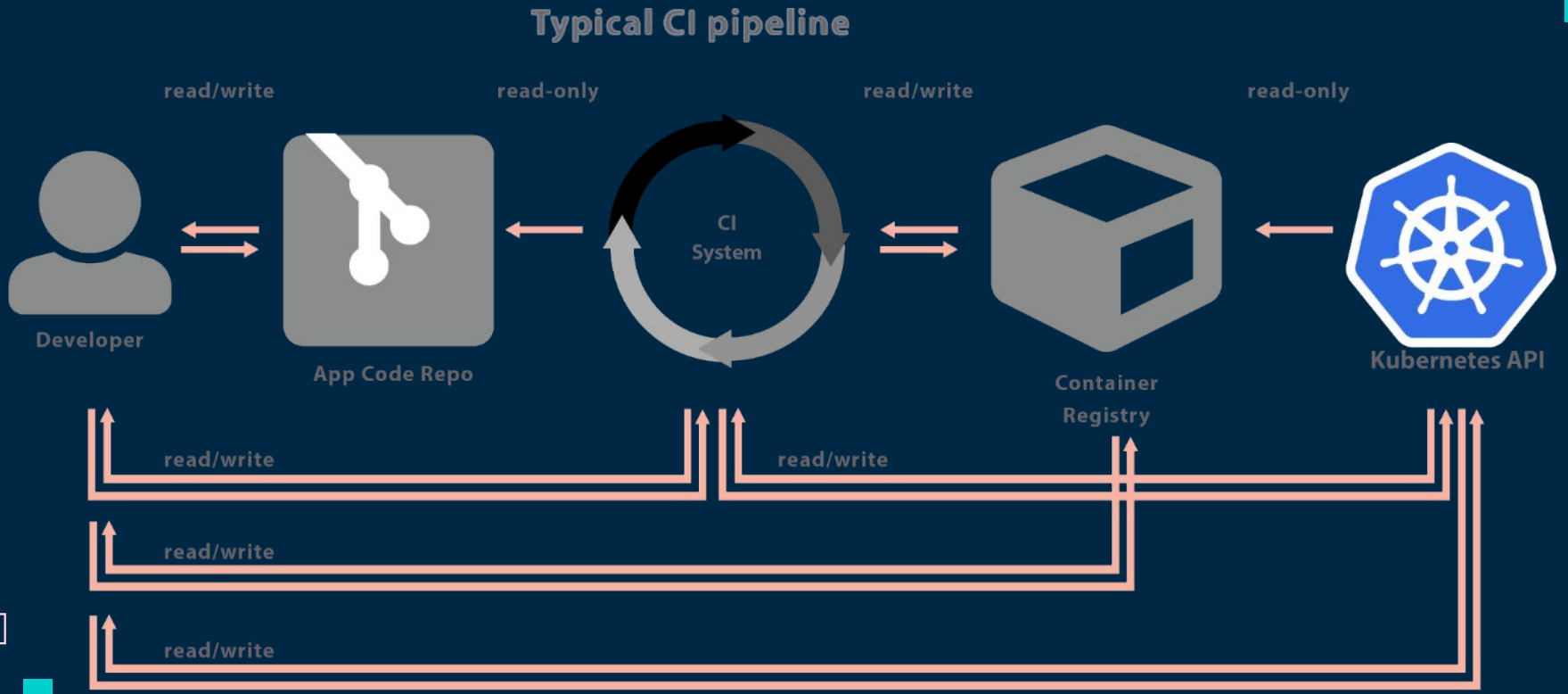
- CI
  - Build
  - Test
  - Registry
  - **Update config**

```
script:
 - git checkout -B master
 - git pull origin master
 - cd deployment/prod
 - kustomize edit set image $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA
 - cat kustomization.yaml
 - git commit -am '[skid ci] PROD image update'
 - git push origin master
```

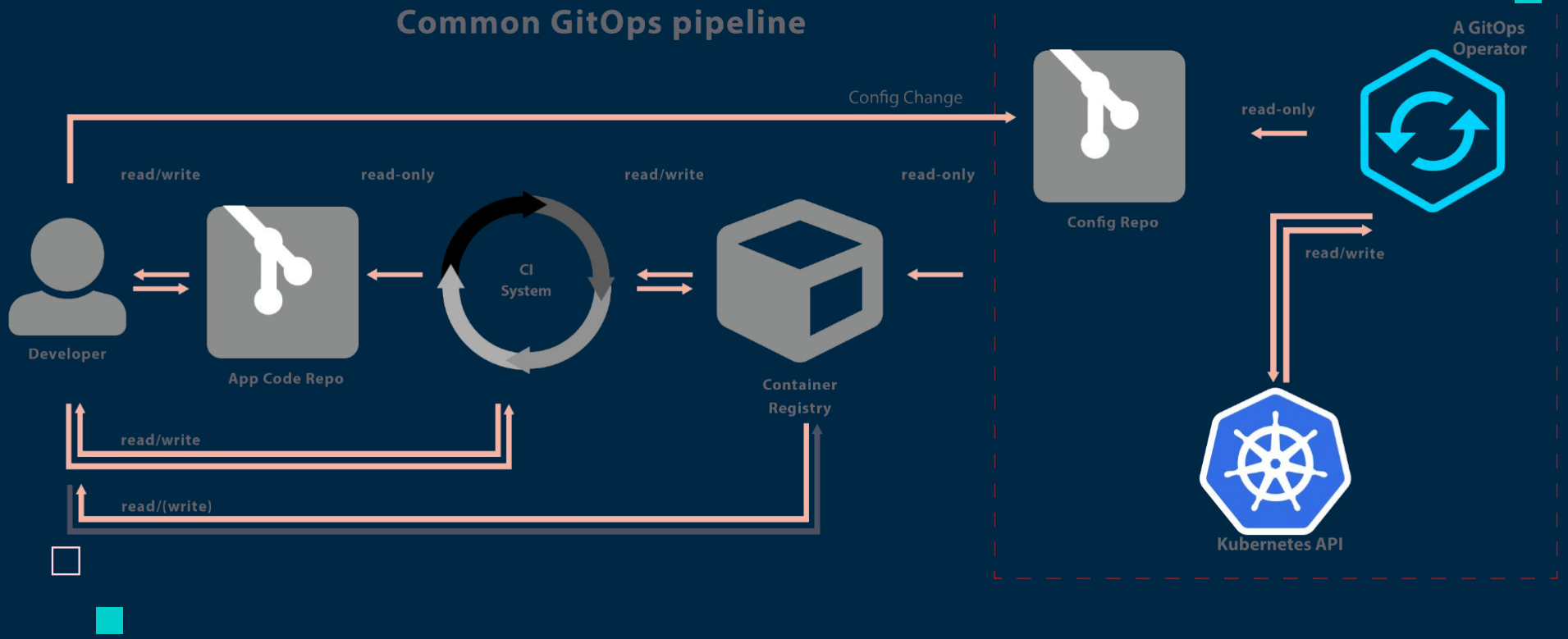
- CD
  - Monitor
  - Pull changes

```
source:
  repoURL: https://gitlab.com/andrew.kaczynski/gitops-webapp.git
  targetRevision: HEAD
  path: deployment/prod
destination:
  server: https://kubernetes.default.svc
  namespace: prod
```

Push vs Pull Pipeline



Push vs Pull Pipeline



Advantages

- Fast/accessible deployments
- The entire system observable through git
- Complete audit trail of changes
- Simple rollbacks - git revert

Reflection

Is GitOps a useful term?

- Not a new revolutionizing idea
- A strict framework
- Synthesizes recent progress in DevOps

Take-home

CI/CD + git + IaC = GitOps