Git shit done, the GitOps way

Frédéric Harper

Principal Developer Advocate - Kubefirst

fharper

Photo by Praveen Thirumurugan on Unsplash

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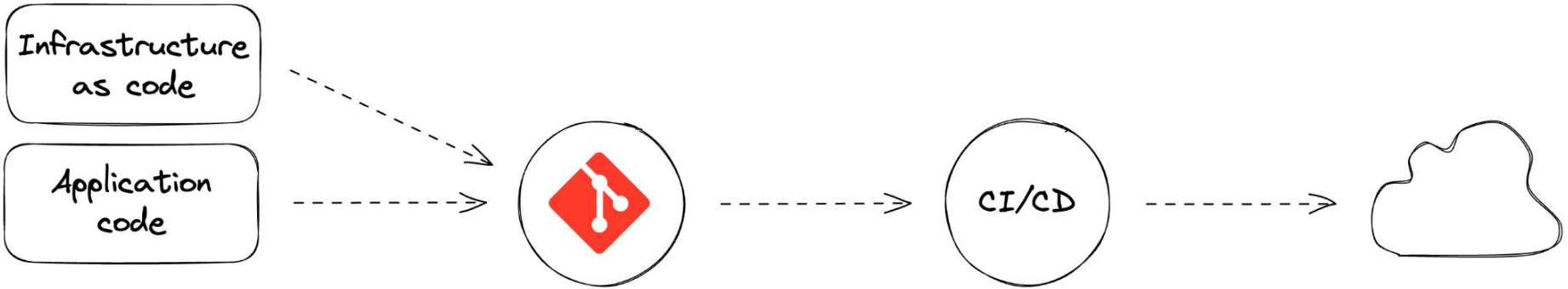
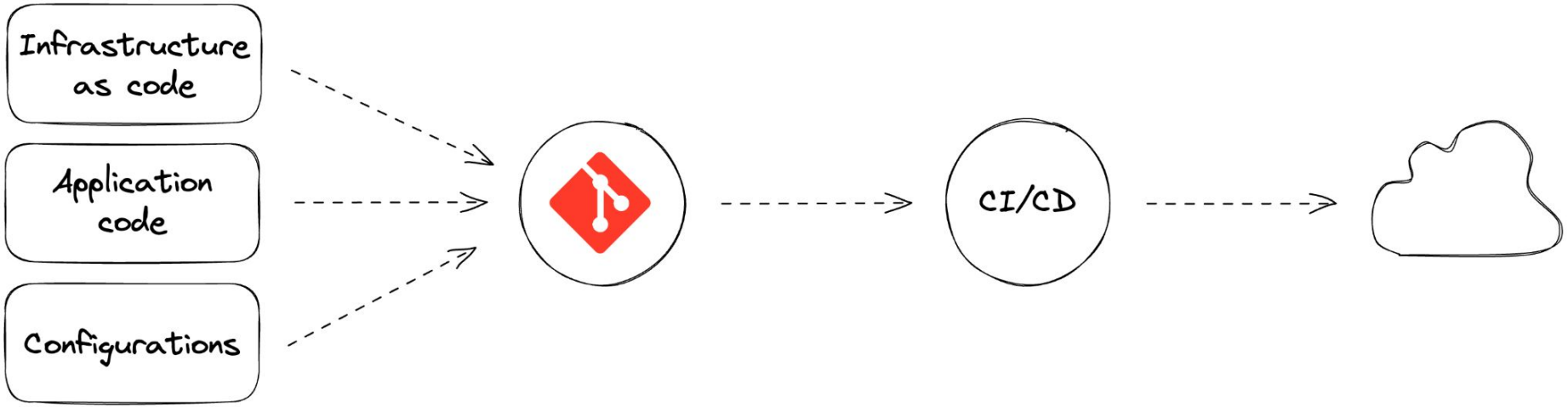
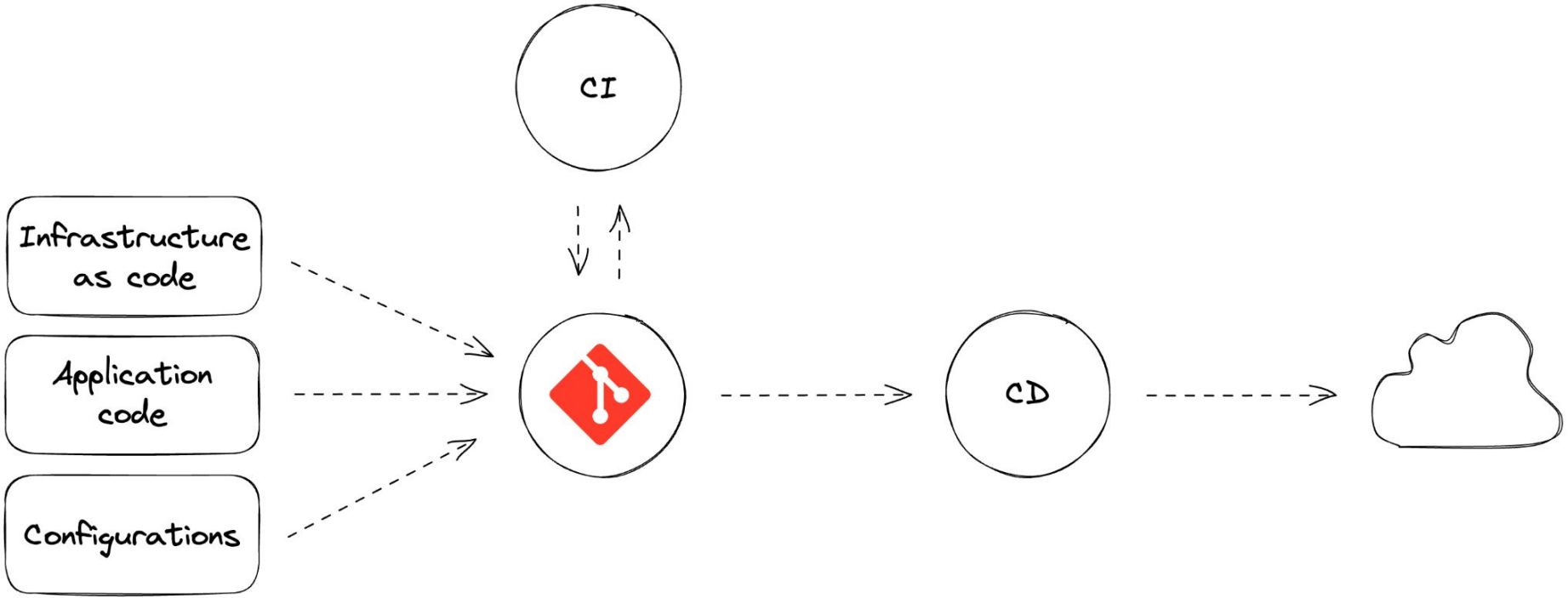
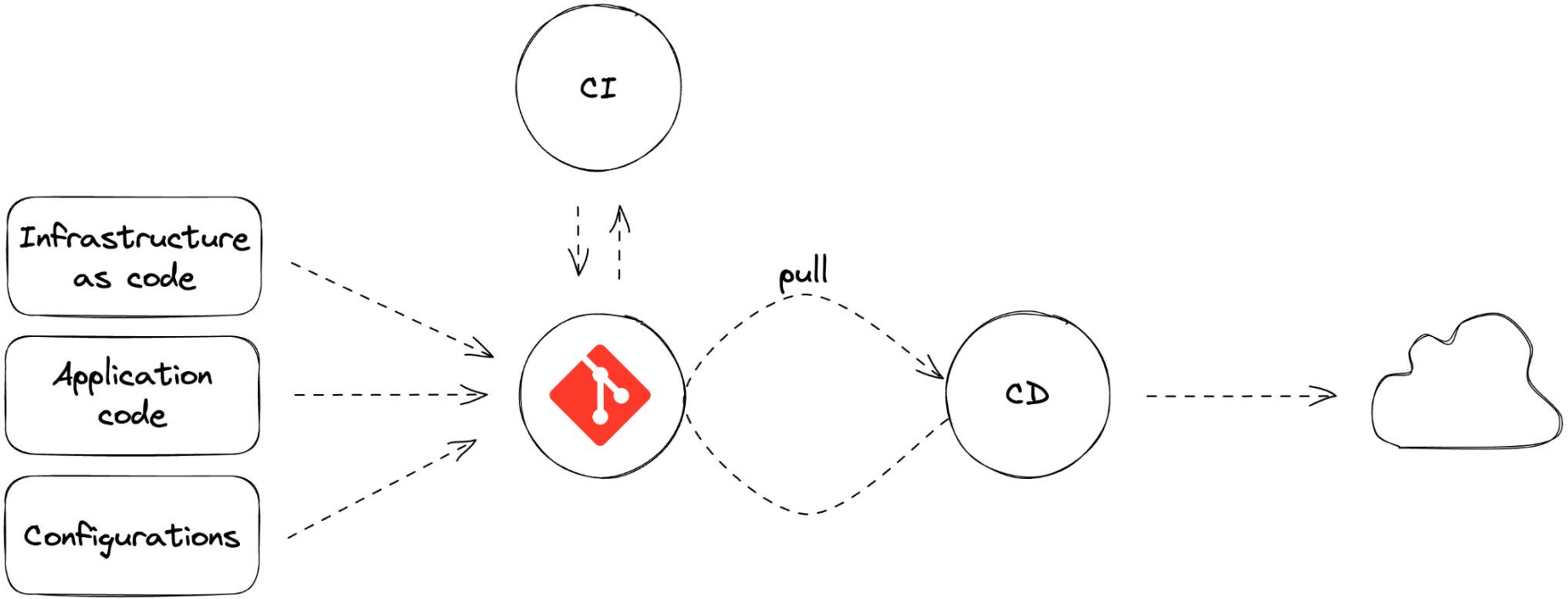
DevOps to GitOps

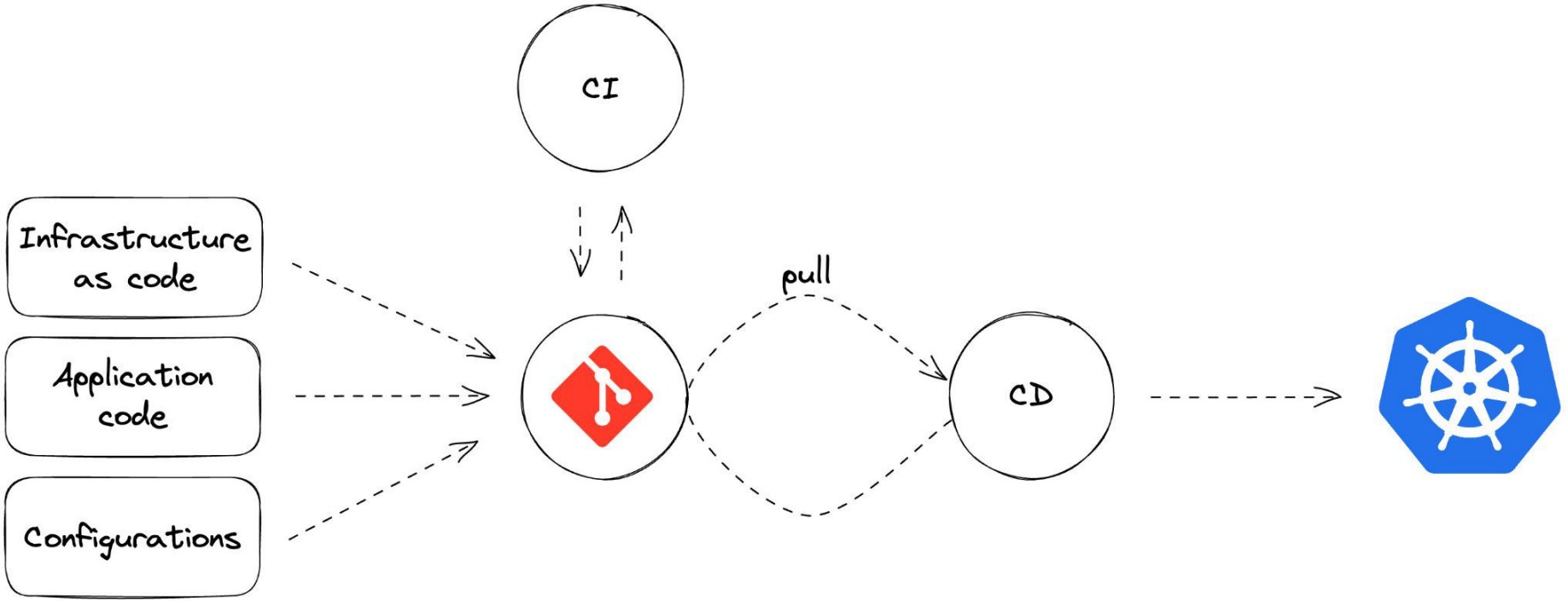
Application code
CI/CD

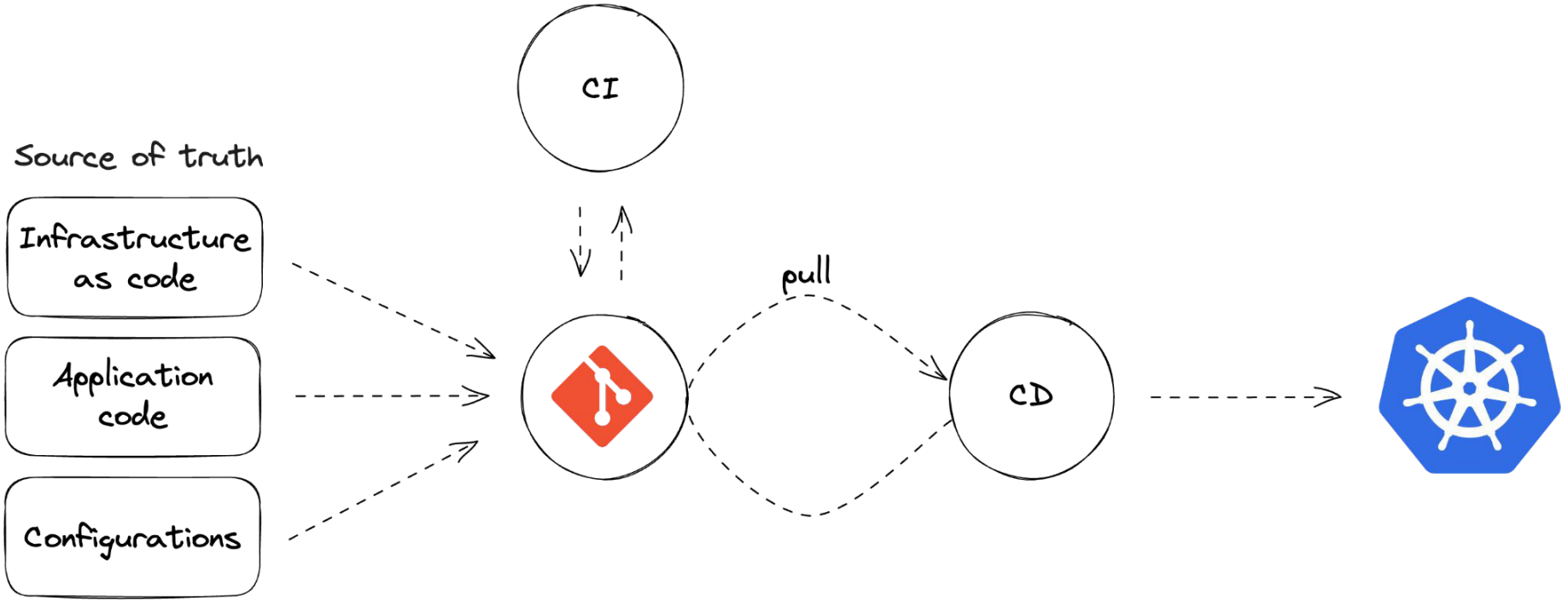

Infrastructure as code
Application code
CI/CD


Infrastructure as code
Application code
Configurations
CI/CD

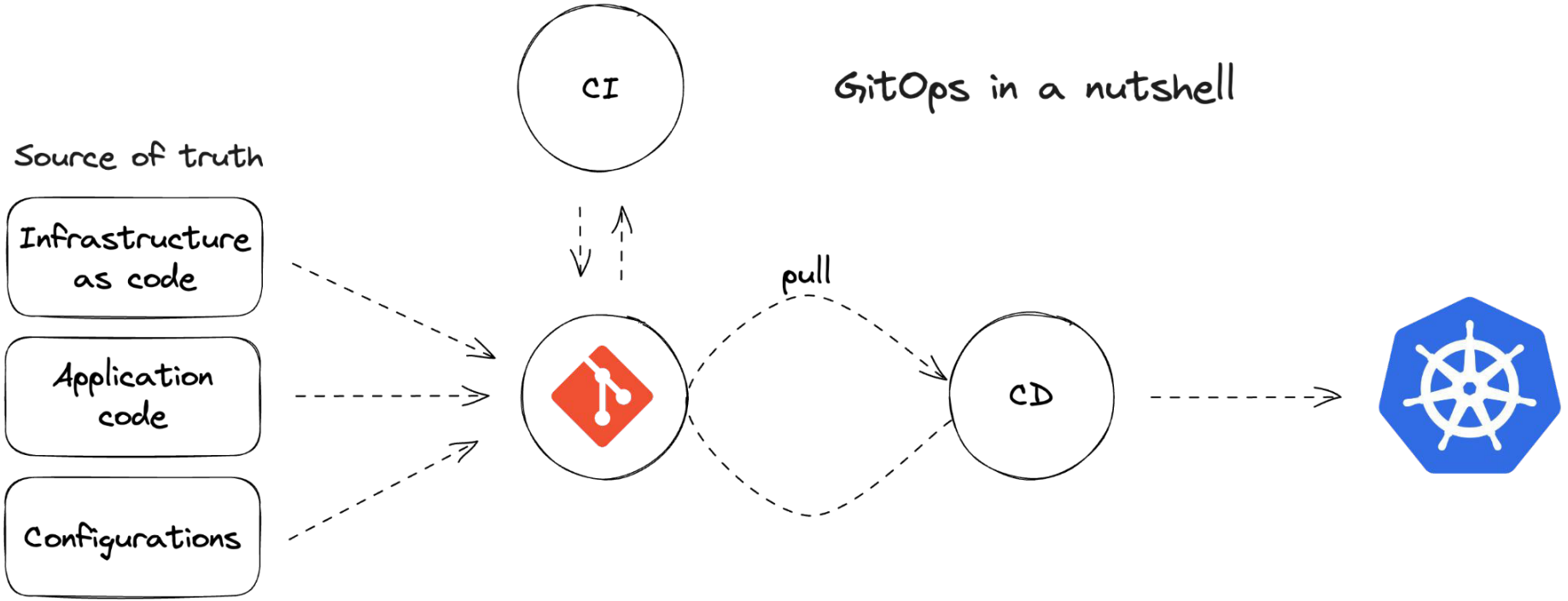

CI
Infrastructure as code
Application code
Configurations
CD


CI
Infrastructure as code
Application code
Configurations
pull
CD


CI
Infrastructure as code
Application code
Configurations
pull
CD


CI
Source of truth
Infrastructure as code
Application code
Configurations
pull
CD

GitOps in a nutshell



demo

GitOps

GitOps Principles

v1.0.0

GitOps Principles

v1.0.0

1 Declarative

GitOps Principles

v1.0.0

1 Declarative

2 Versioned and Immutable

GitOps Principles

v1.0.0

1 Declarative

2 Versioned and Immutable

3 Pulled Automatically

GitOps Principles

v1.0.0

1. Declarative
2. Versioned and Immutable
3. Pulled Automatically
4. Continuously Reconciled

Benefits

- Familiar tools and processes
- Faster deployment/iteration + easily reproducible
- No cluster drift
- Greater collaboration
- Auditability
- More secure & simplification of access controls
- Cost saving
- Easily revert/rollback changes
- Simple stateless disaster recovery model

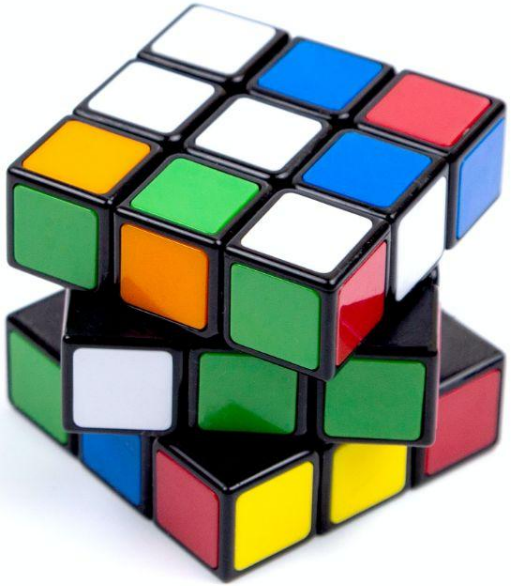


Photo by Volodymyr Hryshchenko on Unslash

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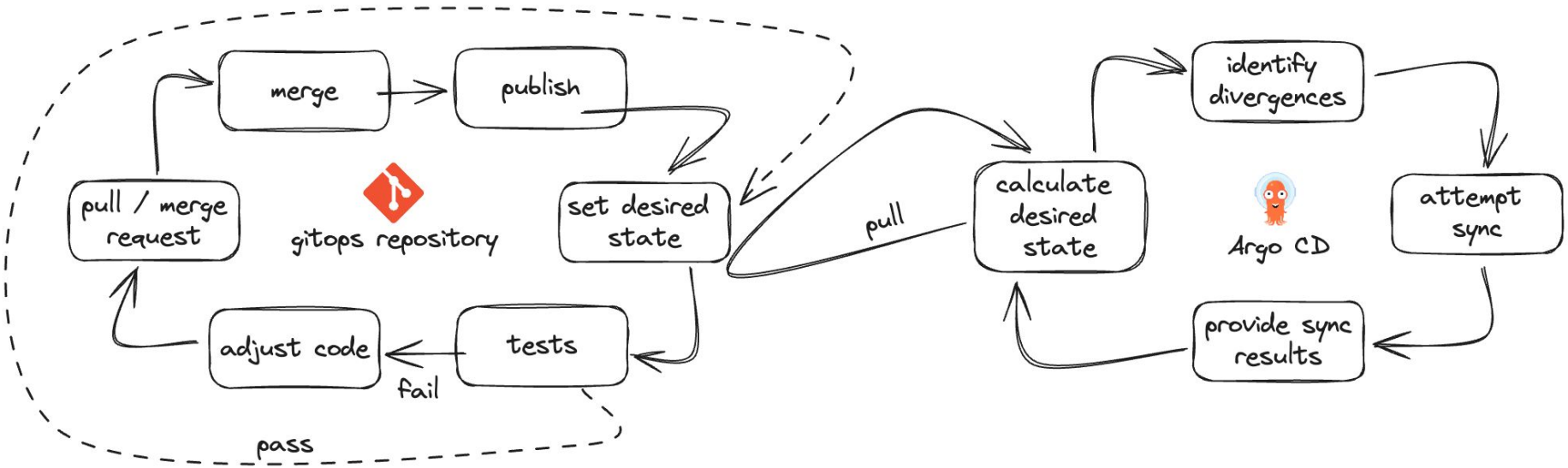
demo


merge
publish
pull / merge request
gitops repository
set desired state
adjust code
tests
fail
pass
pull
identify divergences
calculate desired state
Argo CD
attempt sync
provide sync results

Argo CD

Phases & Sync Waves

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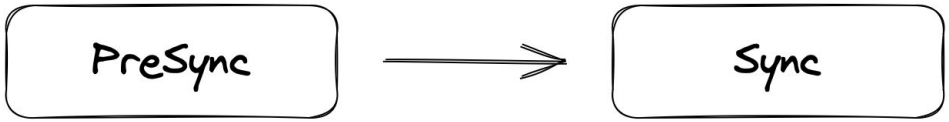

Phases & Sync Waves

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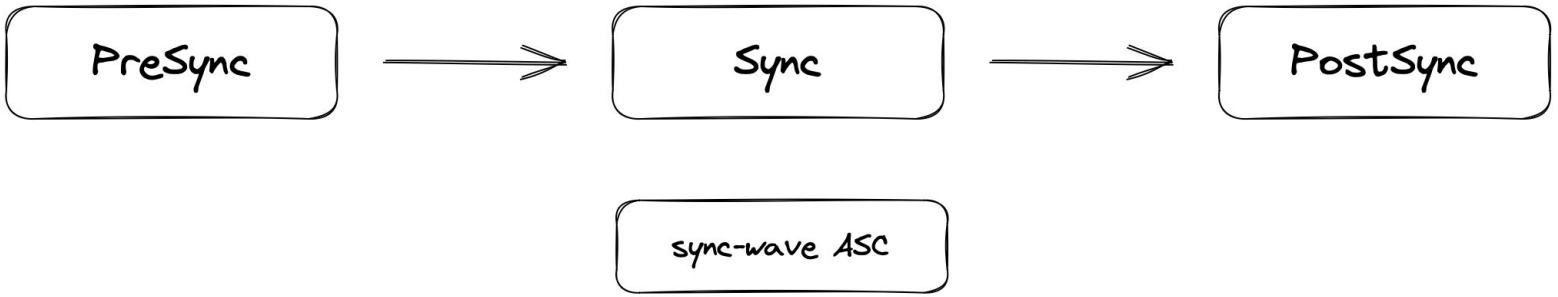

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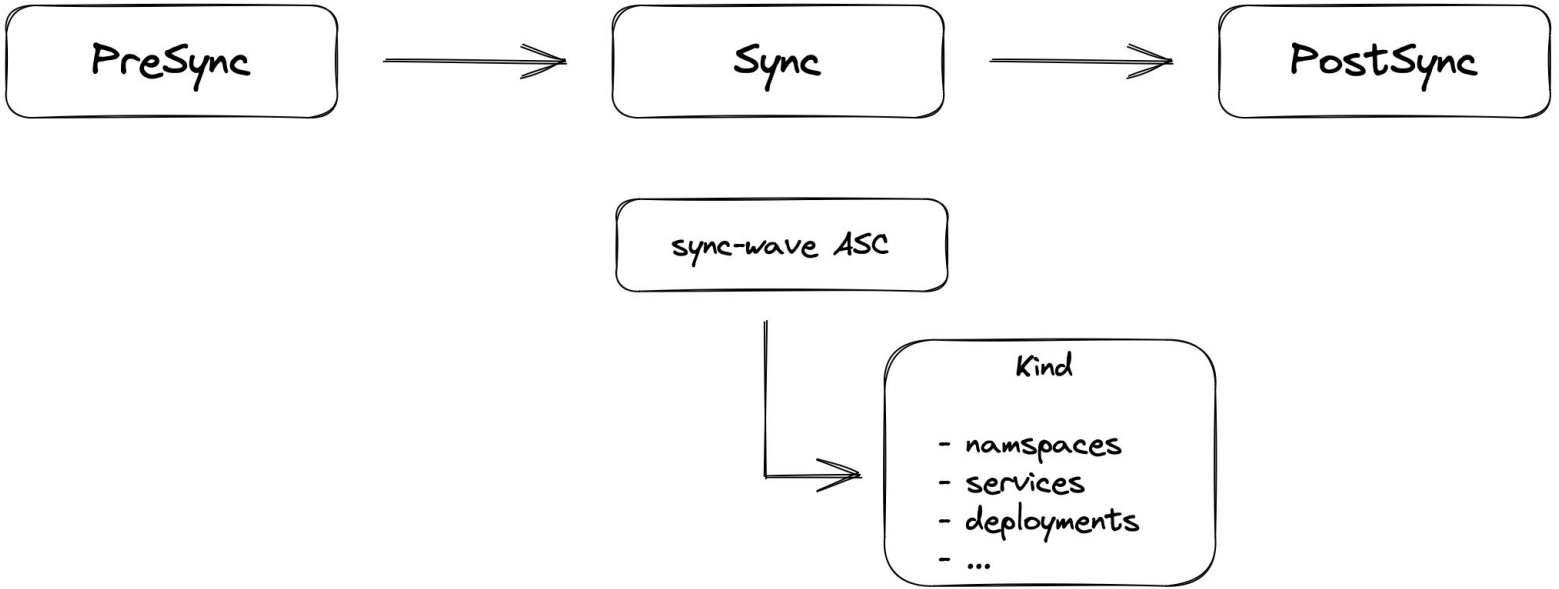
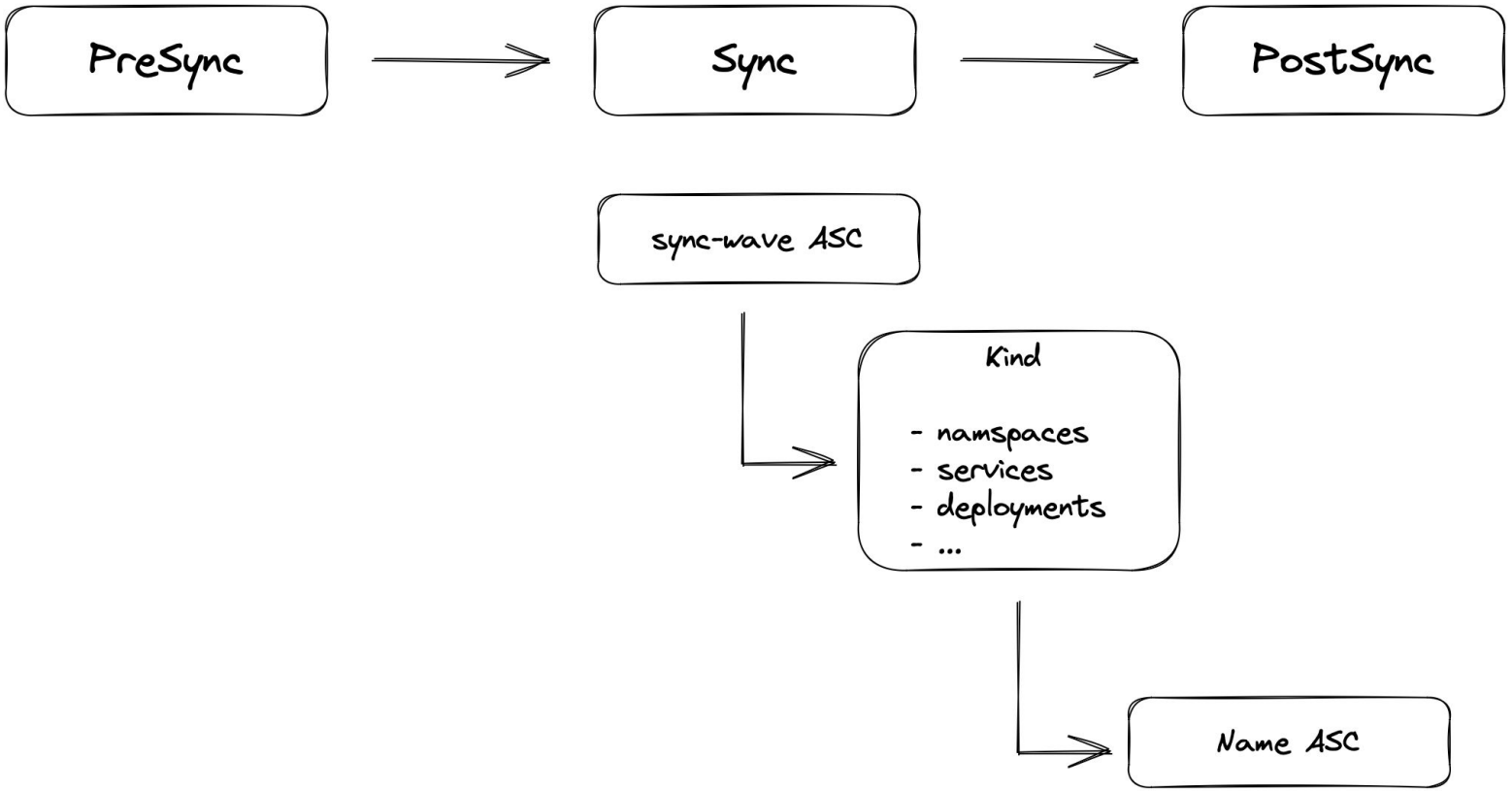


Phases & Sync Waves



resources

github.com/open-gitops/project

github.com/weaveworks/awesome-gitops

github.com/kubefirst/kubefirst

kubefirst.io/slack

#GitOps

Frédéric Harper

Principal Developer Advocate
Kubefirst

fred@kubefirst.io
fharper

fred.dev/coffee