https://slides.com/profiprog/argocd-praha

ArgoCD

practical usage

3rd Apr 2023 by Milan Skuhra

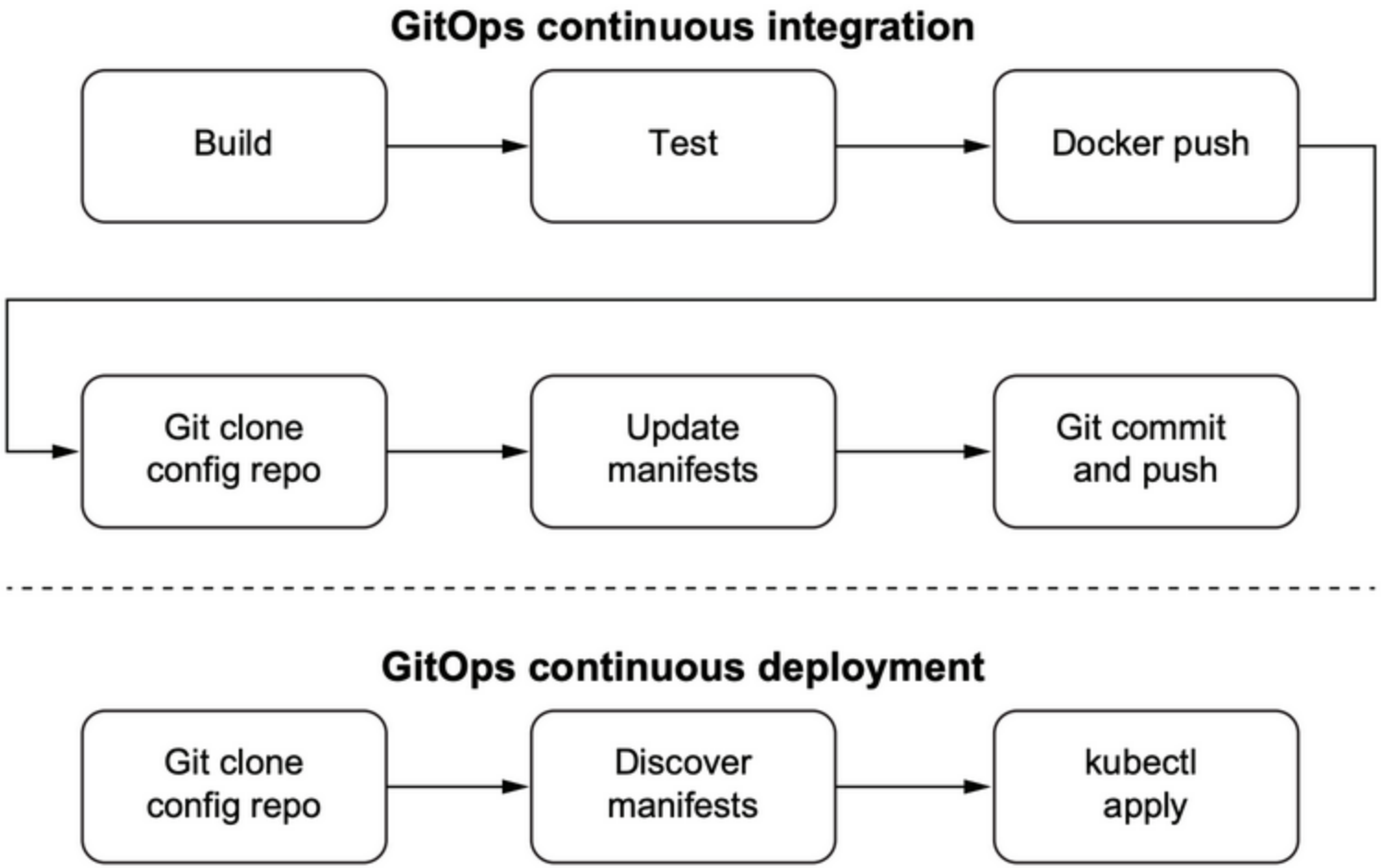
About Me

DevOps engineer @solargis

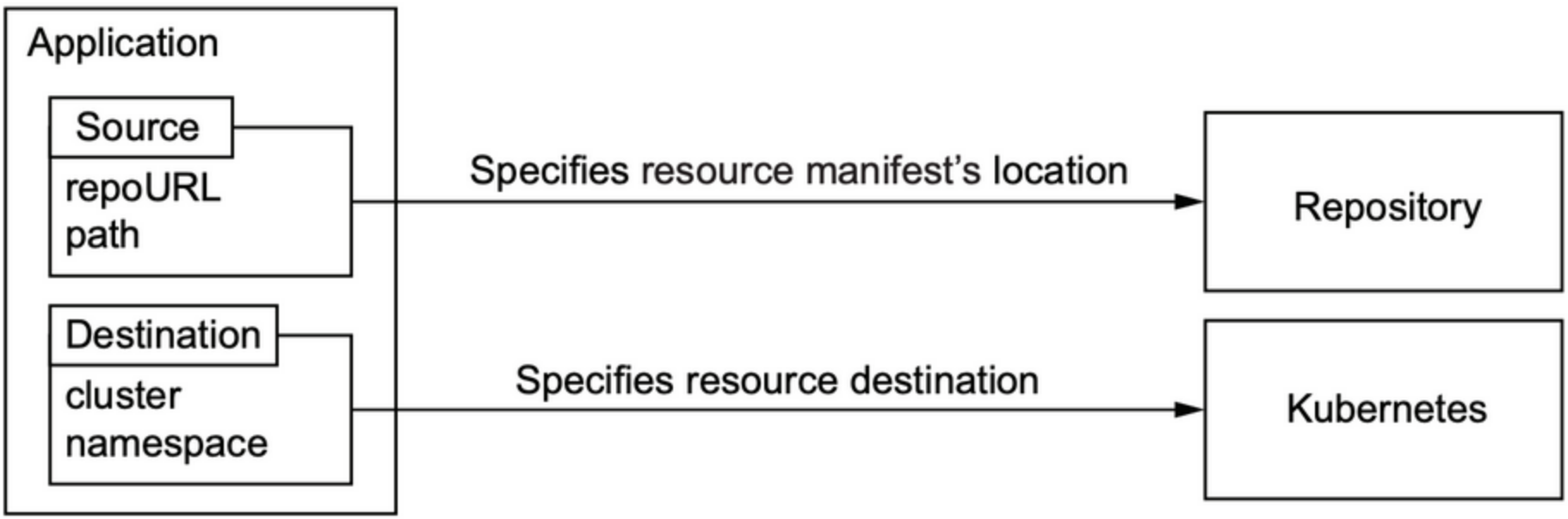
4 principles

- Declarative Configuration
- Version Controlled, Immutable Storage
- Automatic Pull Operations
- Continuous Reconciliation

GitOps Pipeline



Application



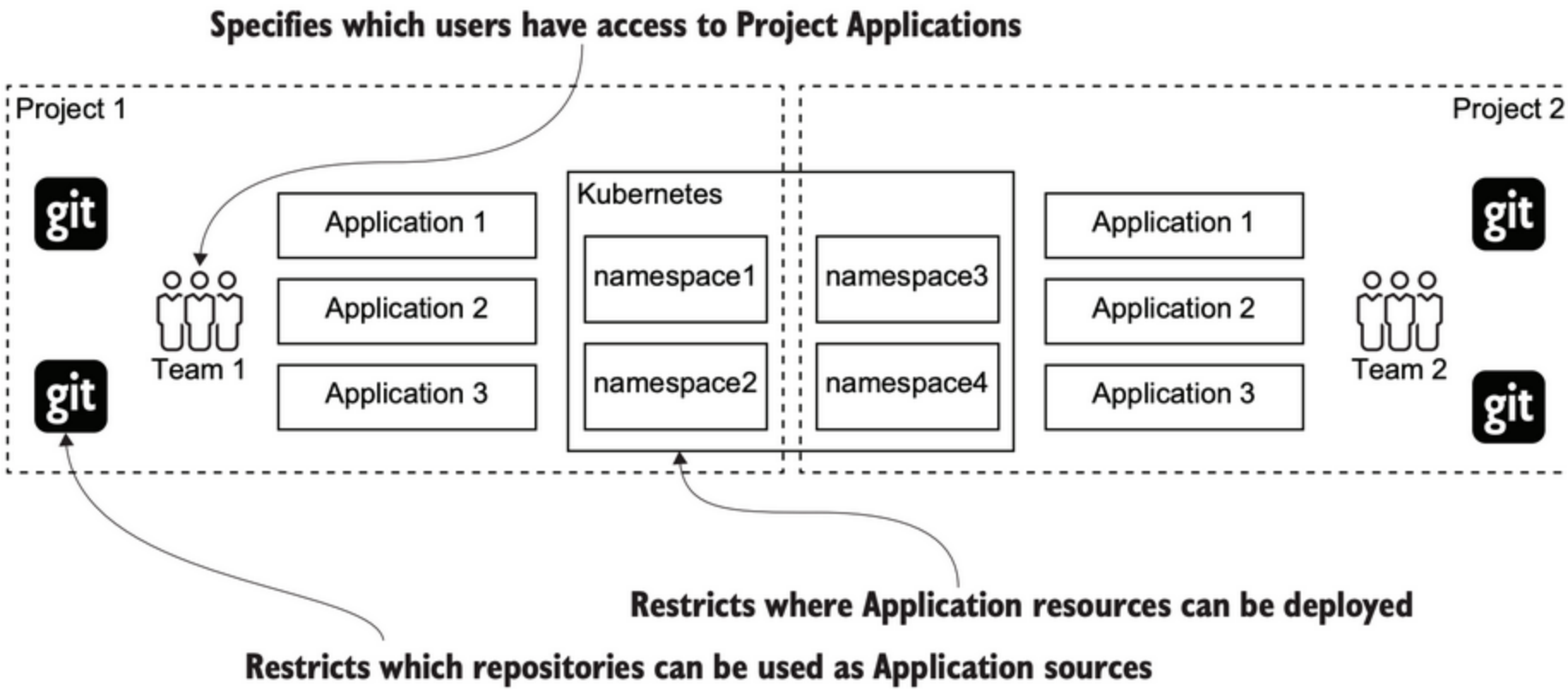
Sync Policy

```yaml
apiVersion: argoproj.io/v1alpha1
kind: Application

spec:
  syncPolicy:
    automated:
      # Specifies if resources should be pruned during auto-syncing
      prune: true
      # Specifies if partial app sync should be executed when resources
      # are changed only in target Kubernetes cluster and no git change detected
      selfHeal: true
      # Allows deleting all application resources during automatic syncing
      allowEmpty: true
```

Ignore Direrences

```yaml
apiVersion: argoproj.io/v1alpha1
kind: Application

spec:
  ignoreDifferences:
  - group: argoproj.io
    kind: Application
    jsonPointers:
    - /spec/syncPolicy/automated
```

Project


Specifies which users have access to Project Applications
Project 1
Project 2
git
git
git
git
Team 1
Team 2
Application 1
Application 2
Application 3
Kubernetes
namespace1
namespace2
namespace3
namespace4
Application 1
Application 2
Application 3
Restricts where Application resources can be deployed
Restricts which repositories can be used as Application sources

Install ArgoCD

Prerequisites:

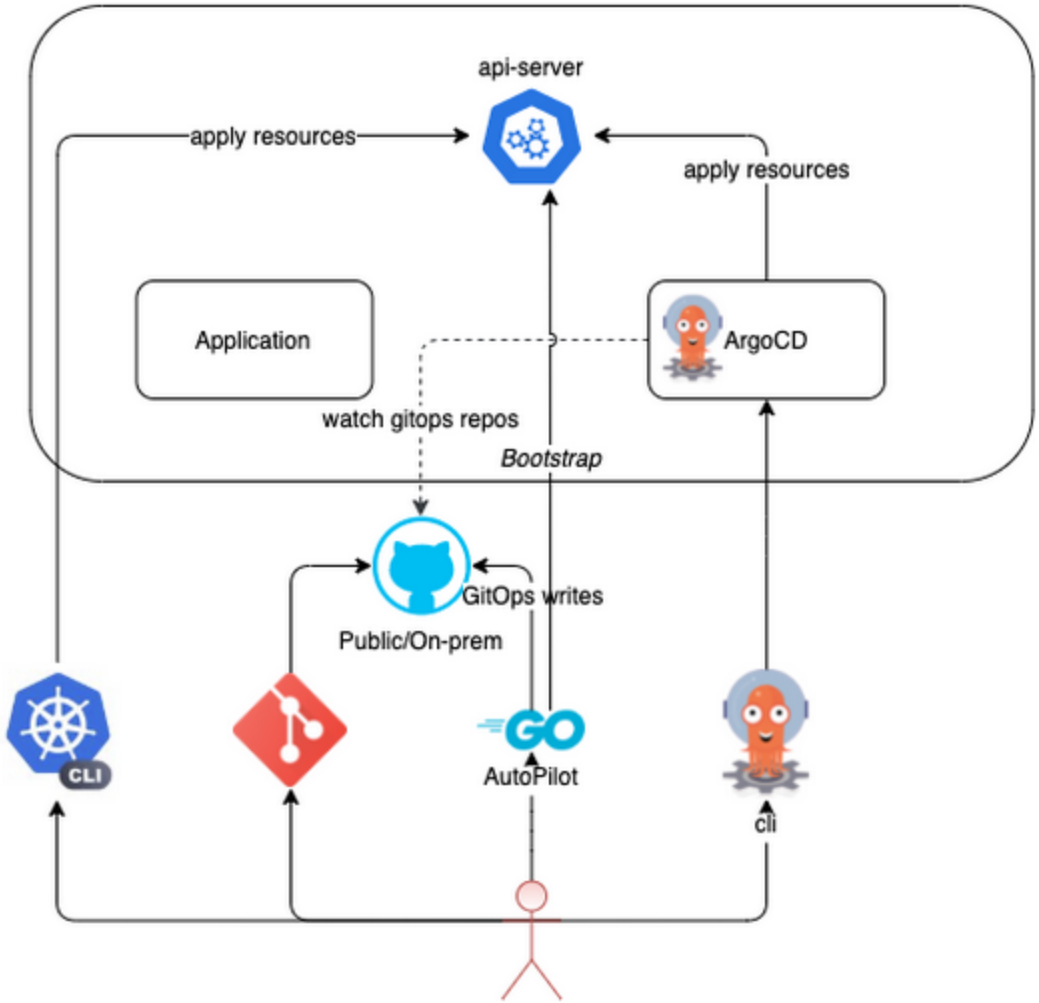
- Access to kubernetes
- Access token and url to git repository

```
export GIT_REPO=https://github.com/owner/name
export GIT_TOKEN=ghp_PcZ...IP0
argocd-autopilot repo bootstrap
```

Demo

https://gitlab.com/profiprog/argocd-bootstrap

Architecture of ArgoCD Autopilot



argo autopilot

Secret Management

- documentation
- argocd-vault-plugin

```yaml
apiVersion: v1
kind: Secret
metadata:
  name: example-database
  annotations:
    avp.kubernetes.io/path: "apps/data/database"
    avp.kubernetes.io/secret-version: "2"
stringData:
  username: <username>
  password: <password>
  inlined: <path:kv/data/mysql#user>:<path:kv/data/mysql#user#2>
```

Argo CD Vault Plugin

- Full List of Supported Annotation
- Modifiers

Generating Applications with ApplicationSet

- What is an ApplicationSet?
- When is it best to use the ApplicationSet controller?
- How does an ApplicationSet work and what are the benefits it provides?
- Why do I need a Generator and what types are there?

Generators

Primary generators

- List Generator
- Cluster Generator
- Git Generator
  - Directory Generator
  - File Generator
- SCM provider generator
- Pull Request Generator
- Cluster Decision Resource Generator

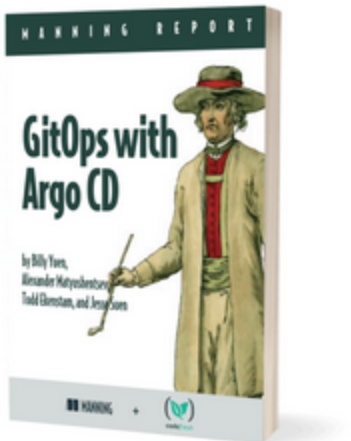
Combining generators

- Matrix/Merge generator

Other features

- User Management, Auth0, RBAC
- Sync Phases and Waves
- Ignoring Resources That Are Extraneous
  useful for Config Syncer (previously kubed)

Where to start



- https://codefresh.io/ebooks/implement-gitops-scale-today/
- https://learning.codefresh.io/ - course