

June Meetup

Continuous Delivery with Flux

May 6th, 2021



Today's Resources

- <https://github.com/jonpjenkins>
 - This slidedeck
 - Flux deployment examples
 - Go webserver w/github actions build/push
 - Registry

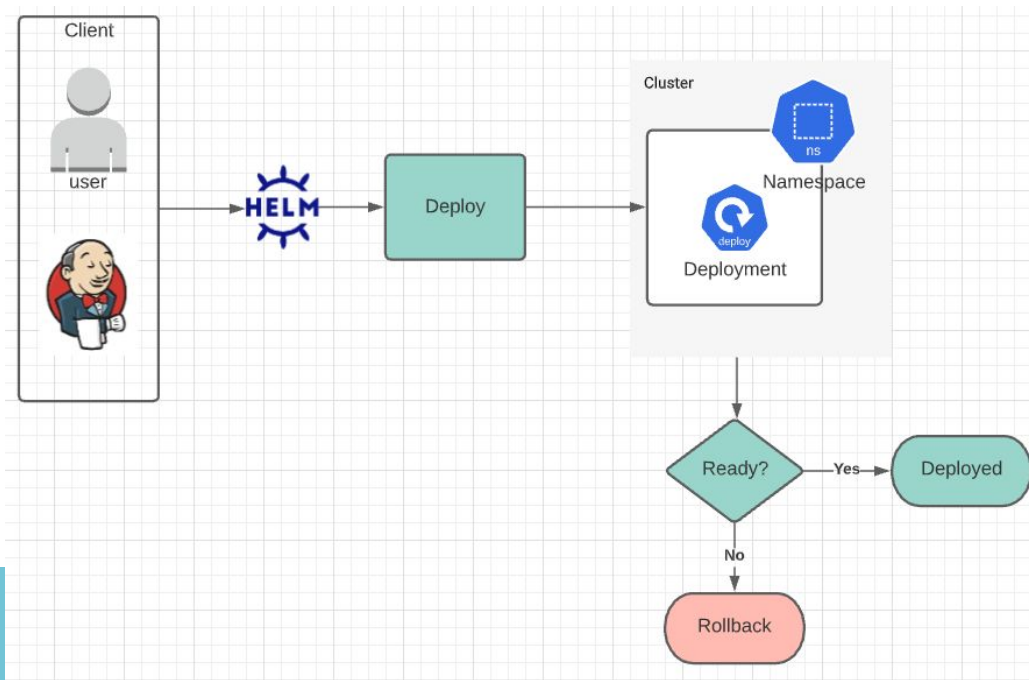


FluxCD

- <https://fluxcd.io/docs/> -> from the docs:
 - *Flux is a tool for keeping Kubernetes clusters in sync with sources of configuration (like Git repositories), and automating updates to configuration when there is new code to deploy.*
- Covered today:
 - General Flux Overview
 - Example 1 - Deploying a simple webserver w/continuous deployment
 - Example 2 - Multi tenancy Deployment
 - Quick explanation of Flux examples not covered
 - Comparison of existing products



Deploying with Helm



- Client calls API
- Helm combines charts / values, deploys
- Deploy succeeds or fails
- Helm's "work" is done until next called on to perform an action

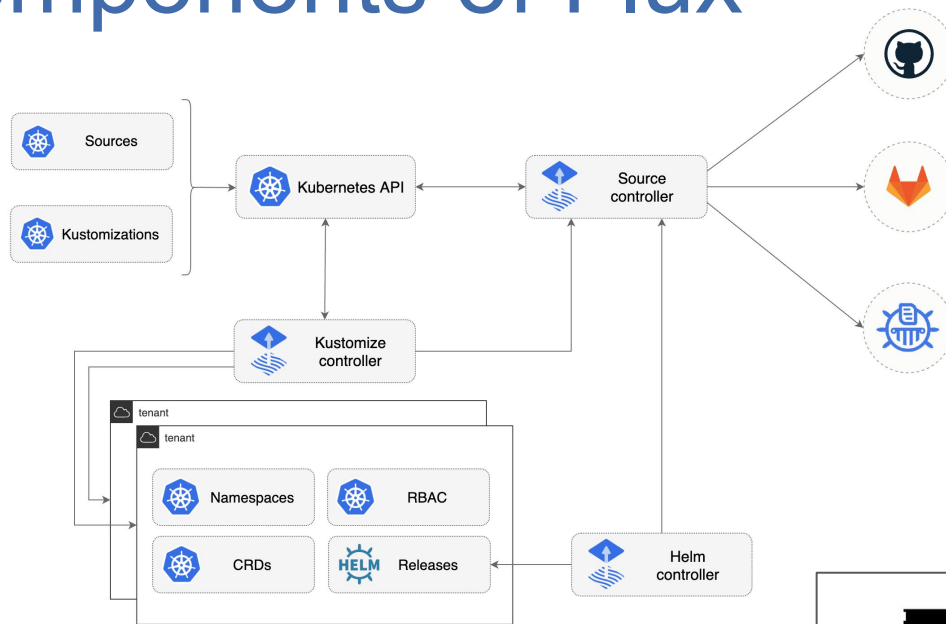
Continuous Deployment with Flux



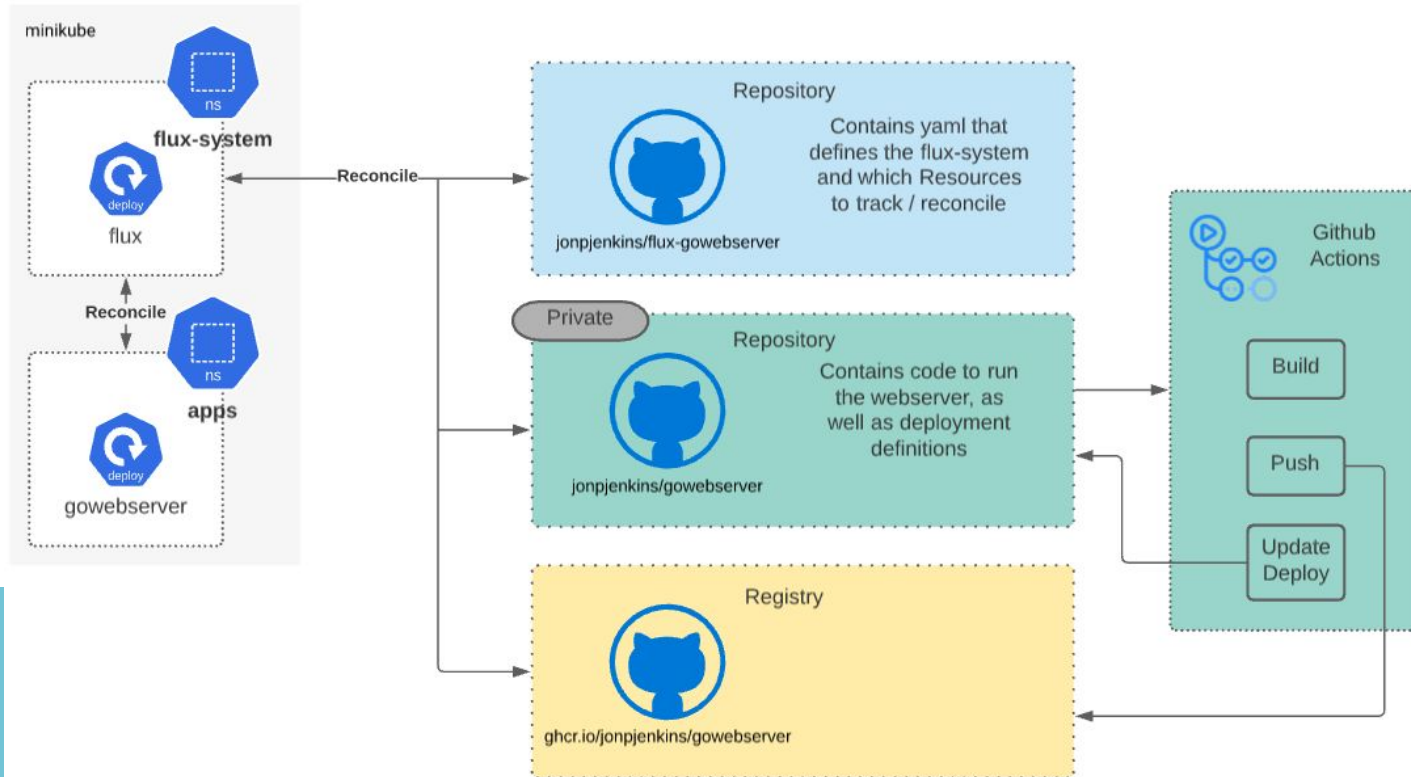
- Flux based on CRDs
- Add GitRepos sources to sync
- Add Cluster sources to sync
- Will continually poll both sources to ensure they are reconciled

Components of Flux

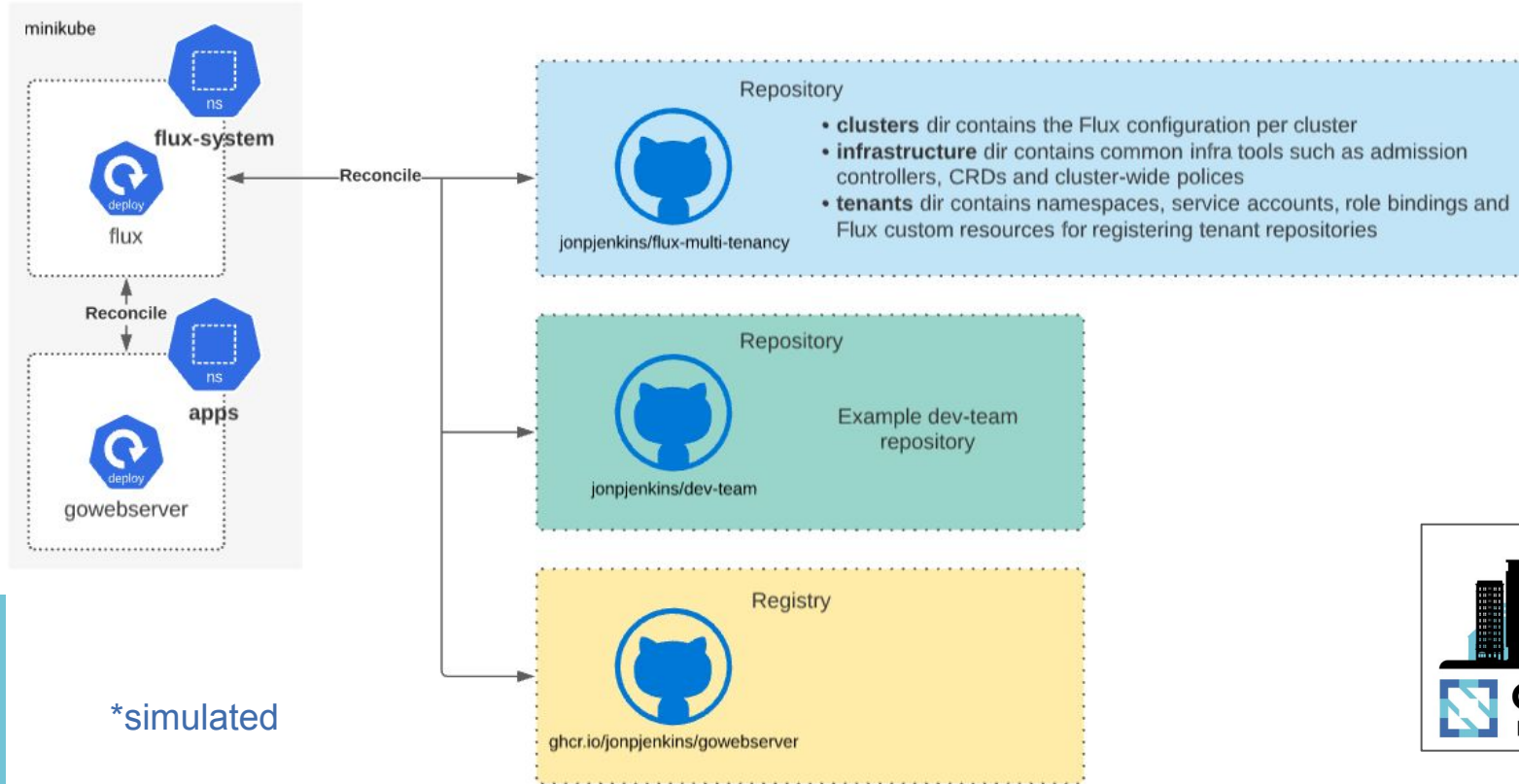
- Source Controller
 - GitRepository CRD
 - HelmRepository CRD
 - HelmChart CRD
 - Bucket CRD
- Kustomize Controller
 - Kustomization CRD
- Helm Controller
 - HelmRelease CRD
- Notification Controller
 - Provider CRD
 - Alert CRD
 - Receiver CRD
- Image Automation Controllers
 - ImageRepository CRD
 - ImagePolicy CRD
 - ImageUpdateAutomation CRD



Flux Example 1 - simple web server



Flux Example 2 - Multi Tenant*



Some other uses not covered today

- Continuous Image Update
 - <https://particule.io/en/blog/flux-auto-image-update/>
- Blue / Green or Canary progressive delivery
 - <https://ruzickap.github.io/k8s-flagger-istio-flux/part-05/>
 - <https://dev.to/stefanprodan/a-gitops-recipe-for-progressive-delivery-2pa3>
- Flux on Azure
 - <https://fluxcd.io/docs/use-cases/azure/>
- Flux notification
 - <https://fluxcd.io/docs/guides/notifications/>



Similar Projects

Argo

- Similar in architecture to FluxCD
 - Runs in k8s namespace
 - Set of CRDS
 - Native Helm
- Rolled out multi-tenancy sooner
- Web UI

Harness

- Agent runs in k8s
- Configuration via web ui
- Uses helm templates, customizes output
 - Deployments are not managed by helm

