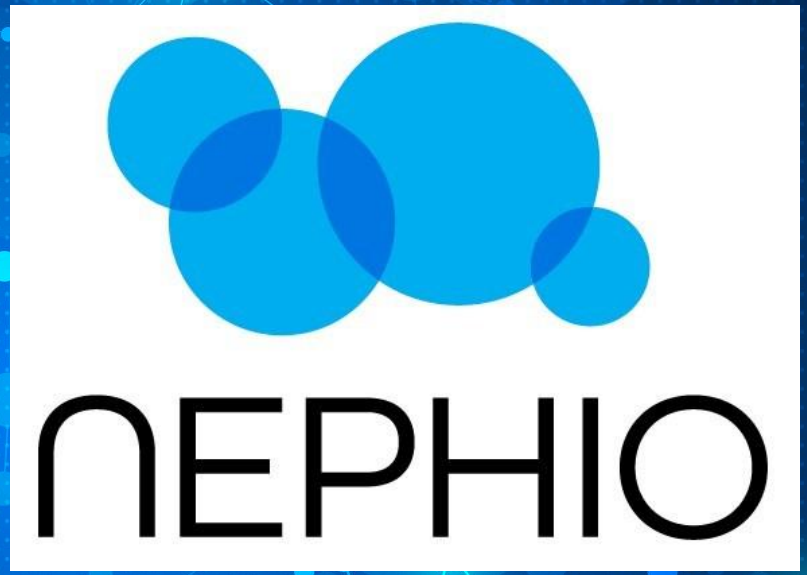
Deploying Helm with Flux CD

Nephio R1 Concepts and Tutorials
Episode 6
Sept 2023

Prerequisites:

- Episode 4 - Building a Demo Environment

https://nephio.org/learn



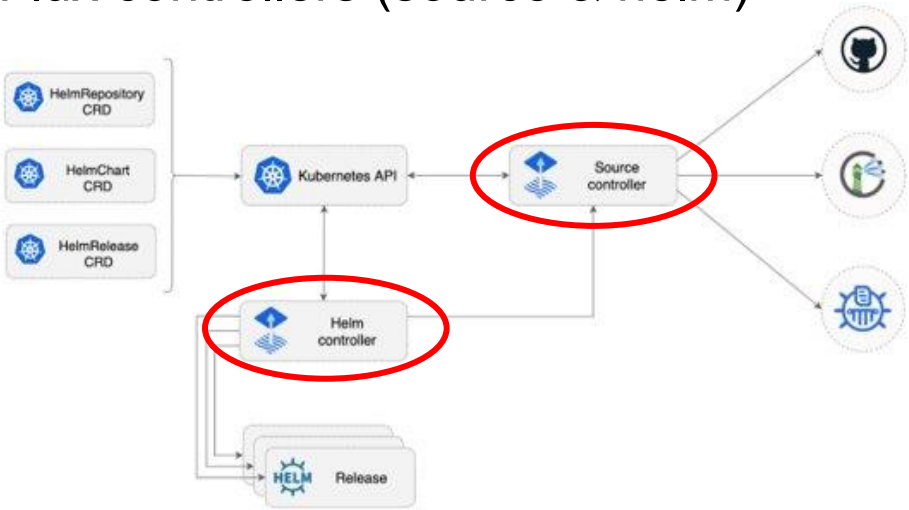
THE LINUX FOUNDATION

Why use Helm?

- Widely used as Kubernetes deployment method.
- Vendors have invested heavily in the technology.
- Ease of onboarding newcomers to the project.
- Allows mature micro-services packaged in helm to be used in the Nepio ecosystem.

Why use Flux CD?

- Actively supported Open Source CNCF project.
- GitOps model using declarative CRDs to generically handle helm chart deployment on Kubernetes.
- Only a subset of Flux controllers (source & helm) required.



Flux Controllers kpt package

- Predefined ktp package that can be deployed to any given workload cluster.
- Contains Kubernetes manifests to deploy the helm and source controllers.
- Deployed in to the flux-system NameSpace by default.

```
ubuntu@vm-nephio-ts-fiach-01:~$ kubectl get po --context edge02-admin@edge02 -n flux-system
NAME                                READY   STATUS    RESTARTS   AGE
helm-controller-cccc87cc-zqnd6      1/1     Running   0          44h
source-controller-5756bf7d48-hprkn  1/1     Running   0          44h
```

Flux helm Online Boutique kpt package

The chart being used is from the GCP microservices demo Online Boutique.

- A Flux source CR (Custom Resource) to pull the chart from.
  - Various source types and security mechanisms supported.
- A Flux HelmRelease CR to define the deployment config.
- A ConfigMap containing override values.yaml for the chart.
  - This can be customized accordingly to meet requirements.