

Finalizers in Kubernetes

Scenario

Namespace won't terminate

```
$ kubectl describe ns flux-system
Name:          flux-system
Labels:        app.kubernetes.io/instance=flux-system
               app.kubernetes.io/part-of=flux
               app.kubernetes.io/version=v0.28.2
               kubernetes.io/metadata.name=flux-system
               kustomize.toolkit.fluxcd.io/name=flux-system
               kustomize.toolkit.fluxcd.io/namespace=flux-system
               pod-security.kubernetes.io/warn=restricted
               pod-security.kubernetes.io/warn-version=latest
Annotations:   <none>
Status:        Terminating
Conditions:
  Type              Status  LastTransitionTime          Reason
  Message
  ----
  -----
  -----
  NamespaceDeletionDiscoveryFailure      False    Mon, 30 Jan 2023 08:39:28 -0500  ResourcesDiscovered
All resources successfully discovered
  NamespaceDeletionGroupVersionParsingFailure  False    Fri, 27 Jan 2023 16:36:06 -0500  ParsedGroupVersions
All legacy kube types successfully parsed
  NamespaceDeletionContentFailure           False    Fri, 27 Jan 2023 16:36:06 -0500  ContentDeleted
All content successfully deleted, may be waiting on finalization
  NamespaceContentRemaining                 True     Fri, 27 Jan 2023 16:36:06 -0500  SomeResourcesRemain
Some resources are remaining: gitrepositories.source.toolkit.fluxcd.io has 1 resource instances, helmcharts.
source.toolkit.fluxcd.io has 3 resource instances
  NamespaceFinalizersRemaining              True     Fri, 27 Jan 2023 16:36:06 -0500  SomeFinalizersRemain
Some content in the namespace has finalizers remaining: finalizers.fluxcd.io in 4 resource instances

No resource quota.

No LimitRange resource.
```

Find the CRDS

```
$ kubectl get crds
NAME                                     CREATED AT
gitrepositories.source.toolkit.fluxcd.io 2022-09-01T22:08:23Z
helmcharts.source.toolkit.fluxcd.io      2022-09-01T22:08:22Z
volumesnapshotclasses.snapshot.storage.k8s.io 2022-09-01T21:38:23Z
volumesnapshotcontents.snapshot.storage.k8s.io 2022-09-01T21:38:23Z
volumesnapshots.snapshot.storage.k8s.io  2022-09-01T21:38:23Z
```

Get the instances of helm charts

```
$ kubectl -n flux-system get helmcharts
```

NAME	AGE	READY	STATUS	CHART	VERSION	SOURCE	KIND	SOURCE
flux-system-apiserver-subscription				apiserver-subscription	22.0.1-2506283	HelmRepository		
ncydacrandidates	103d	False	failed to get source: HelmRepository.source.toolkit.fluxcd.io					
"ncydacrcandidates"			not found					
flux-system-config-provider				config-provider	22.0.1-2506283	HelmRepository		
ncydacrcandidates	150d	False	failed to get source: HelmRepository.source.toolkit.fluxcd.io					
"ncydacrcandidates"			not found					
flux-system-dashboard-5g-security				dashboard-5g-security	22.0.1-2506283	HelmRepository		
ncydacrcandidates	150d	False	failed to get source: HelmRepository.source.toolkit.fluxcd.io					
"ncydacrcandidates"			not found					

Get the instances of gitrepositories

```
$ kubectl -n flux-system get gitrepositories
```

NAME	URL	AGE	READY	STATUS
flux-system	ssh://git@10.0.2.4/ncyd/ncyd_flux_ottawa_team1_integration_test.git	150d	True	stored

artifact for revision 'main/d4ffbcf4ade0a551a3f8b47637516e95d2e766b0'

Delete the instances

```
$ kubectl -n flux-system delete gitrepository flux-system  
gitrepository.source.toolkit.fluxcd.io "flux-system" deleted
```

...

Edit Finalizers of Instances

```
$ kubectl -n flux-system edit gitrepository flux-system
```

```
Name:          flux-system  
Namespace:     flux-system  
Labels:        <none>  
Annotations:   reconcile.fluxcd.io/requestedAt: 2023-01-27T16:37:26.4522483-05:00  
API Version:   source.toolkit.fluxcd.io/v1beta2  
Kind:          GitRepository  
Metadata:  
  Creation Timestamp:      2022-09-01T22:08:38Z  
  Deletion Grace Period Seconds: 0  
  Deletion Timestamp:      2023-01-27T21:36:00Z  
  Finalizers:  
    finalizers.fluxcd.io  
  Generation: 2
```

Delete LINE under Finalizers '**finalizers.fluxcd.io**' and save.

Repeat above for other Instances.

Verify that the Namespace is now Deleted

```
kubect1 describe ns flux-system  
Error from server (NotFound): namespaces "flux-system" not found
```