Flux CLI GitOps for Kubernetes

CONCEPTS

Flux pulls: a Source (Git, OCI, Helm repo, bucket) is fetched, then a Kustomization or HelmRelease applies it. The CLI mostly inspects and nudges; Git stays the source of truth.

Source GitRepository, OCI, HelmRepository
↓ artifact
Kustomization / HelmRelease what to apply, how often
↓ apply
Cluster live objects, drift corrected

Commands default to the flux-system namespace. Add -n <ns> or -A, or --ns-follows-kube-context to use the kubeconfig context's namespace.

Anything that changes the cluster directly is overwritten by the next sync of the Kustomization that owns it. Change Git instead, and use create --export to generate the YAML.

INSTALL & BOOTSTRAP

`flux check --pre`
Check cluster meets prerequisites

`flux bootstrap github --owner=<org> --repository=<repo> --path=<dir>`
Install Flux and sync from GitHub

`flux check`
Verify controllers are healthy

Bootstrap commits the controller manifests and a sync config under --path, so Flux then manages its own upgrades from Git.

INSPECT

`flux get all`
Everything in one namespace

`flux get all -A`
Everything in all namespaces

INSPECT (cont.)

`flux get kustomizations`
List Kustomizations and readiness

`flux get helmreleases -A`
List Helm releases

`flux get all -A --status-selector ready=false`
Only the broken ones

RECONCILE & SUSPEND

`flux reconcile kustomization <name>`
Apply now, skip the interval

`flux reconcile kustomization <name> --with-source`
Refetch source, then apply

`flux reconcile helmrelease <name>`
Re-run a Helm release

`flux suspend kustomization <name>`
Pause one Kustomization

`flux resume kustomization <name>`
Resume and reconcile

`flux suspend helmrelease <name>`
Pause a Helm release

`flux resume helmrelease <name>`
Resume a Helm release

CREATE RESOURCES

`flux create source git <name> --url=<url> --branch=<b>`
Define a Git source

`flux create kustomization <name> --source=<src> --path=<dir> --prune`
Apply a path from a source

`flux create helmrelease <name> --source=HelmRepository/<repo> --chart=<chart>`
Install a chart

`flux create helmrelease <name> ... --values=<file>`
Pass local values files

CREATE RESOURCES (cont.)

`flux create helmrelease <name> ... --create-target-namespace`
Install into a new namespace

`flux create secret git <name> --url=ssh://git@<host>/<repo>`
Generate an SSH deploy key secret

`flux create source git <name> ... --export > <file>.yaml`
Write YAML instead of applying

`flux export kustomization --all`
Dump all Kustomizations as YAML

DEBUG

`flux logs -A`
Controller logs, all namespaces

`flux logs -A --level=error`
Only errors

`flux logs --kind=Kustomization --name=<name>`
Logs for one object

`flux events`
Events for Flux objects

`flux events --for Kustomization/<name>`
Events for one object

`flux trace <kind> <name> -n <ns>`
Which source manages an object

BUILD & DIFF

`flux diff kustomization <name> --path <dir>`
Local changes vs the cluster

GLOBAL FLAGS

`--context <name>` / `--kubeconfig <file>`
Choose cluster or kubeconfig

`-n <ns>` / `-A`
Namespace or all namespaces

`--timeout <dur>`
Operation timeout (default 5m)

`--export`
Print YAML instead of applying