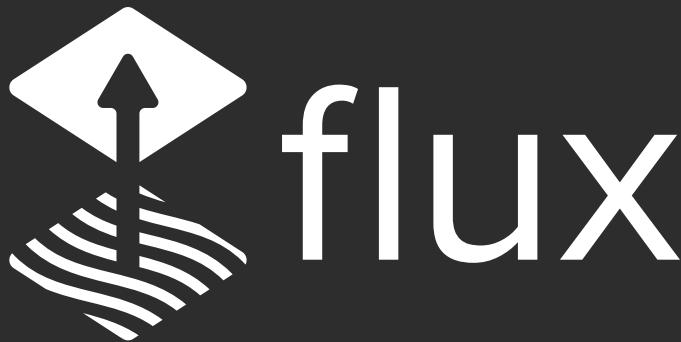


HELM RELEASE IMAGE AUTOMATION



FLUX V2 WALKTHROUGH

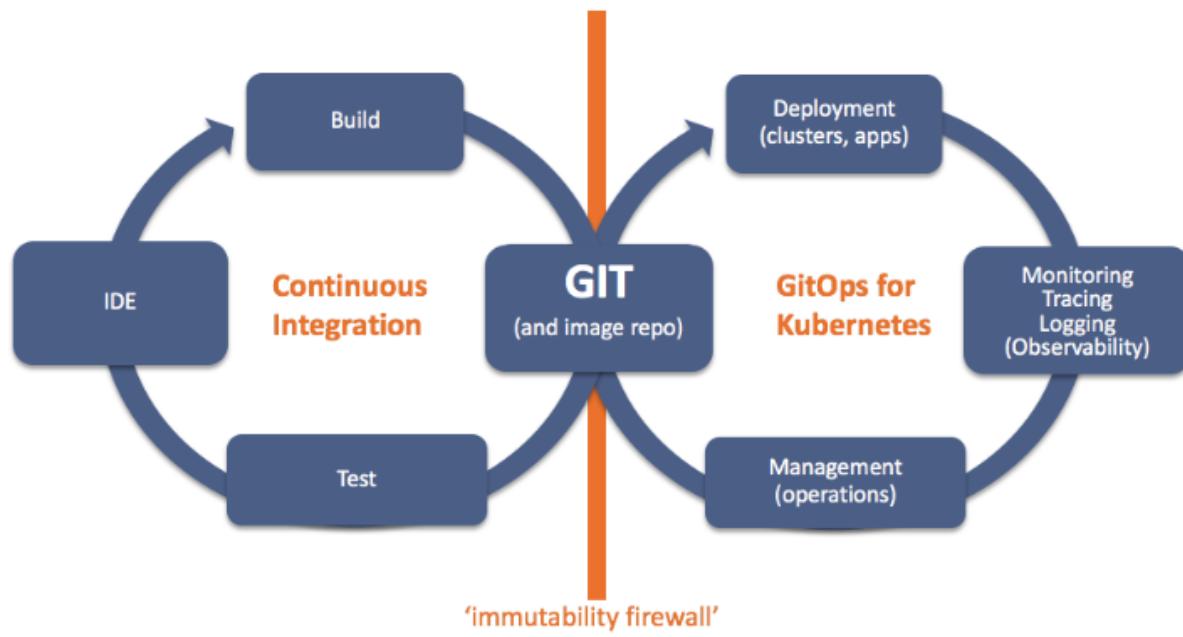
Jul 29th, 2021 Marco Amador

ANOVA

GITOPS

GitOps is a way of managing your infrastructure and applications so that whole system is described declaratively and version controlled (most likely in a Git repository), and having an automated process that ensures that the deployed environment matches the state specified in a repository.

GITOPS



Git as the single source of truth of a system's desired state

GitOps Diffs compare desired state with observed state (eg Kubediff, Terradiff, Canary..)

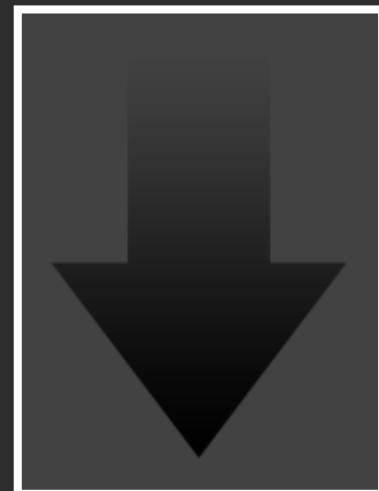
ALL intended operations are committed by pull request, for all environments

ALL diffs between GIT and observed state lead to (auto) convergence using tools like K8s

ALL changes are observable, verifiable and audited indisputably, with rollback & D/R

FLUX V2

Core Concepts



SOURCES

A Source defines the origin of a repository containing the desired state of the system and the requirements to obtain.

All sources are specified as Custom Resources in a Kubernetes cluster, examples of sources are *GitRepository*, *HelmRepository* and *Bucket* resources.

KUSTOMIZATION

The Kustomization custom resource represents a local set of Kubernetes resources (e.g. kustomize overlay) that Flux is supposed to reconcile in the cluster.

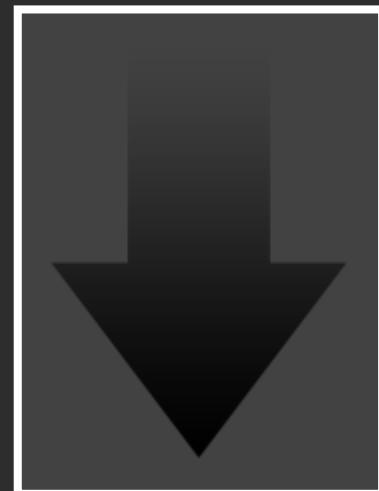
RECONCILIATION

Reconciliation refers to ensuring that a given state (e.g. application running in the cluster, infrastructure) matches a desired state declaratively defined somewhere (e.g. a Git repository).



FLUX V2

Core Components



SOURCE CONTROLLER

The main role of the source management component is to provide a common interface for artifacts acquisition. The source API defines a set of Kubernetes objects that cluster admins and various automated operators can interact with to offload the Git and Helm repositories operations to a dedicated controller.

KUSTOMIZE CONTROLLER

The kustomize-controller is a Kubernetes operator, specialized in running continuous delivery pipelines for infrastructure and workloads defined with Kubernetes manifests and assembled with Kustomize.

HELM CONTROLLER

The Helm Controller is a Kubernetes operator, allowing one to declaratively manage Helm chart releases with Kubernetes manifests.

IMAGE REFLECTOR AND IMAGE AUTOMATION CONTROLLERS

The image-reflector-controller and image-automation-controller work together to update a Git repository when new container images are available.

NOTIFICATION CONTROLLER

The Notification Controller is a Kubernetes operator, specialized in handling inbound and outbound events.

- Discord
- Microsoft Teams
- Rocket
- Google Chat
- Webex
- Sentry
- Azure Event Hub
- Generic webhook



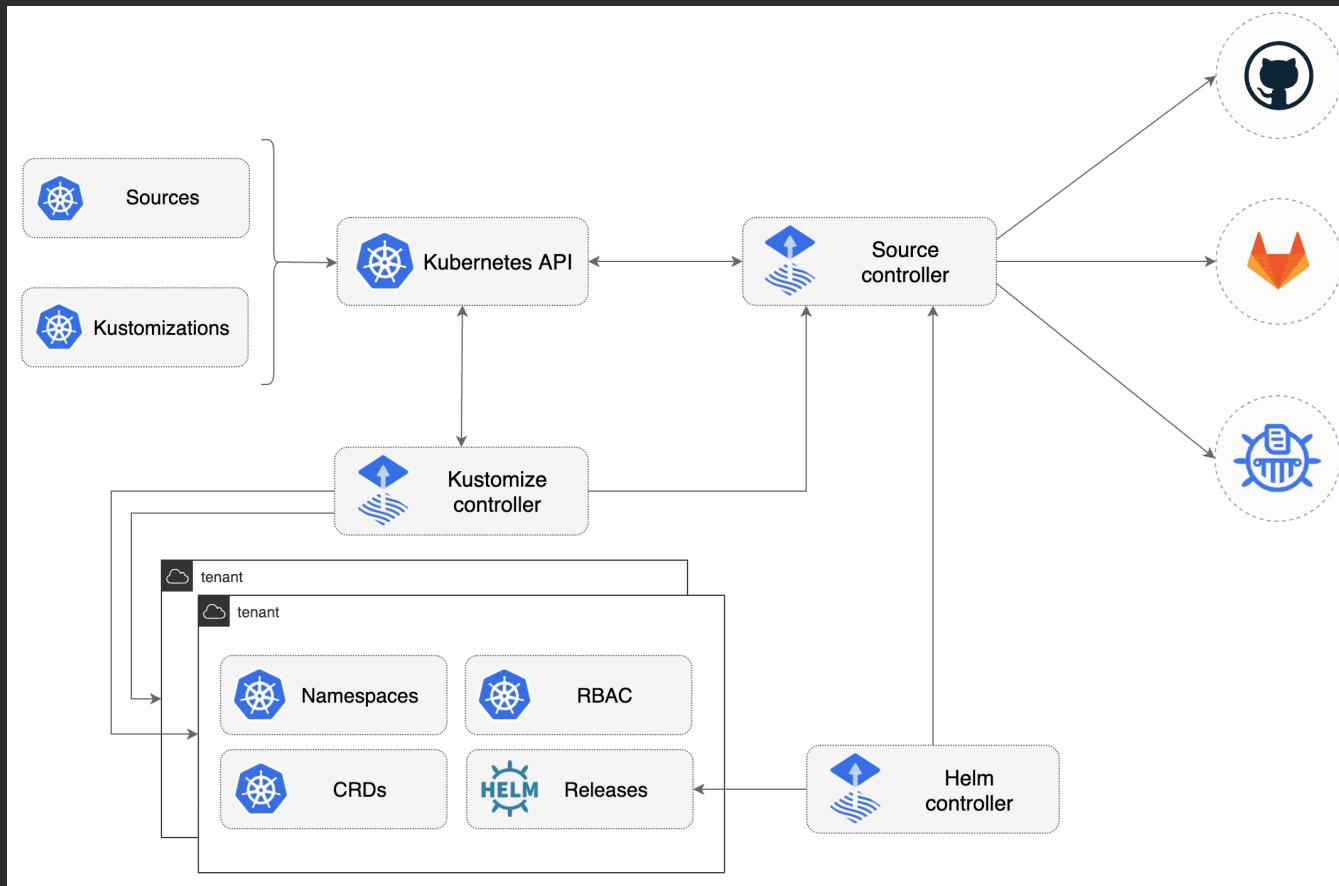
NOTIFICATION CONTROLLER

The Notification Controller is a Kubernetes operator, specialized in handling inbound and outbound events.

- Discord
- Microsoft Teams
- Rocket
- Google Chat
- Webex
- Sentry
- Azure Event Hub
- Generic webhook



FLUX V2 ARCHITECTURE



MAIN GIT SOURCE

```
1 apiVersion: source.toolkit.fluxcd.io/v1beta1
2 kind: GitRepository
3 metadata:
4   name: flux-system
5   namespace: flux-system
6 spec:
7   gitImplementation: libgit2
8   interval: 1m0s
9   ref:
10    branch: master
11   secretRef:
12    name: flux-system
13   url: ssh://git@ssh.dev.azure.com/v3/anovateam/Mapleleaf/c
```

MAIN GIT SOURCE

```
1 apiVersion: source.toolkit.fluxcd.io/v1beta1
2 kind: GitRepository
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4   name: flux-system
5   namespace: flux-system
6 spec:
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9   ref:
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12     name: flux-system
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MAIN GIT SOURCE

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7   gitImplementation: libgit2
8   interval: 1m0s
9   ref:
10     branch: master
11   secretRef:
12     name: flux-system
13   url: ssh://git@ssh.dev.azure.com/v3/anovateam/Mapleleaf/c
```

MAIN KUSTOMIZATION

```
1 apiVersion: kustomize.toolkit.fluxcd.io/v1beta1
2 kind: Kustomization
3 metadata:
4   name: flux-system
5   namespace: flux-system
6 spec:
7   interval: 10m0s
8   path: ./clusters/staging/northeurope
9   prune: true
10  sourceRef:
11    kind: GitRepository
12    name: flux-system
```

MAIN KUSTOMIZATION

```
1 apiVersion: kustomize.toolkit.fluxcd.io/v1beta1
2 kind: Kustomization
3 metadata:
4   name: flux-system
5   namespace: flux-system
6 spec:
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10  sourceRef:
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```

MAIN KUSTOMIZATION

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5   namespace: flux-system
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7   interval: 10m0s
8   path: ./clusters/staging/northeurope
9   prune: true
10  sourceRef:
11    kind: GitRepository
12    name: flux-system
```

FLUX RESOURCES

```
1 kubectl get kustomization --all-namespaces  
2  
3 kubectl get gitrepositories --all-namespaces  
4  
5 kubectl get helmrepository --all-namespaces
```

FLUX RESOURCES

```
1 kubectl get kustomization --all-namespaces  
2  
3 kubectl get gitrepositories --all-namespaces  
4  
5 kubectl get helmrepository --all-namespaces
```

FLUX RESOURCES

```
1 kubectl get kustomization --all-namespaces  
2  
3 kubectl get gitrepositories --all-namespaces  
4  
5 kubectl get helmrepository --all-namespaces
```

FLUX RESOURCES

```
1 kubectl get kustomization --all-namespaces  
2  
3 kubectl get gitrepositories --all-namespaces  
4  
5 kubectl get helmrepository --all-namespaces
```

INSTALL FLUX CLI

With Homebrew:

```
brew install fluxcd/tap/flux
```

With Bash:

```
curl -s https://toolkit.fluxcd.io/install.sh | sudo bash
```

Verify that your cluster satisfies the prerequisites with:

```
flux check --pre
```

FLUX CLI

```
1 flux get kustomizations --all-namespaces
2
3 flux get sources git --all-namespaces
4
5 flux get sources helm --all-namespaces
```

FLUX CLI

```
1 flux get kustomizations --all-namespaces
2
3 flux get sources git --all-namespaces
4
5 flux get sources helm --all-namespaces
```

FLUX CLI

```
1 flux get kustomizations --all-namespaces
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```

FLUX CLI

```
1 flux get kustomizations --all-namespaces
2
3 flux get sources git --all-namespaces
4
5 flux get sources helm --all-namespaces
```

FLUX RECONCILIATION

```
1 flux reconcile kustomization core -n core
2
3 flux reconcile source git core -n core
4
5 flux reconcile helmrelease identity -n core
```

FLUX RECONCILIATION

```
1 flux reconcile kustomization core -n core
2
3 flux reconcile source git core -n core
4
5 flux reconcile helmrelease identity -n core
```

FLUX RECONCILIATION

```
1 flux reconcile kustomization core -n core
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3 flux reconcile source git core -n core
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5 flux reconcile helmrelease identity -n core
```

FLUX RECONCILIATION

```
1 flux reconcile kustomization core -n core
2
3 flux reconcile source git core -n core
4
5 flux reconcile helmrelease identity -n core
```

GITOPS REPOS

- gitops-live
- gitops-core
- gitops-transform
- gitops-data

OWNERSHIP

Repo	Team	Project
gitops-live	Infra	Platform
gtiops-core	Core / SM	Core and SM
gitops-transform	Transform	Transform
gitops-data	Data	Data

GITOPS-LIVE

```
1 ┌── clusters
2   ├── production
3     └── eastus
4       ┌── norteurope
5       └── staging
6         ┌── eastus
7           ┌── northeurope
8 └── operations
9   ├── manifests
10    └── production
11      └── staging
12    └── releases
13      └── production
14        └── staging
15    └── policies
```

GITOPS-LIVE

```
1 ┌── clusters
2   ├── production
3     ├── eastus
4     └── norteurope
5   └── staging
6     ├── eastus
7     └── northeurope
8 └── operations
9   ├── manifests
10  └── production
11    ├── staging
12    └── releases
13      ├── production
14      └── staging
15 └── policies
```

GITOPS-LIVE

```
1 └── clusters
2     ├── production
3         ├── eastus
4             ├── flux-system
5             ├── operations.yaml
6             ├── policies.yaml
7             └── tenants.yaml
8             └── northeurope
9     └── staging
10        └── eastus
11            └── northeurope
12 └── operations
13     ├── manifests
14     └── production
15         └── staging
```

GITOPS-LIVE

```
1 └── clusters
2     ├── production
3         ├── eastus
4             ├── flux-system
5             ├── operations.yaml
6             ├── policies.yaml
7             └── tenants.yaml
8             └── northeurope
9     └── staging
10        └── eastus
11            └── northeurope
12 └── operations
13     ├── manifests
14     └── production
15         └── staging
```

GITOPS-LIVE

```
1 ┌─── .gitops ┌─── .yaml ┌─── .yaml  
2   └─── operations.yaml  
3   └─── policies.yaml  
4   └─── tenants.yaml  
5   ┌─── norteurope  
6     └─── staging  
7       ┌─── eastus  
8       ┌─── norteurope  
9       └─── staging  
10      ┌─── eastus  
11      ┌─── norteurope  
12      └─── staging  
13   ┌─── operations  
14     ┌─── manifests  
15       ┌─── production  
16       ┌─── staging  
17       ┌─── releases  
18         ┌─── production  
19         ┌─── staging  
20         ┌─── policies
```

GITOPS-LIVE

```
7   └── tenants.yaml
8     └── norteurope
9       └── staging
10      └── eastus
11      └── northeurope
12   └── operations
13     └── manifests
14       └── production
15         └── staging
16     └── releases
17       └── production
18         └── staging
19   └── policies
20   └── tenants
21     └── base
```

GITOPS-LIVE

```
10   ┌── regions
11     └── eastus
11     └── northeurope
12 ┌── operations
13   ┌── manifests
14     ┌── production
15     └── staging
16   └── releases
17     ┌── production
18     └── staging
19 └── policies
20 └── tenants
21   ┌── base
22     ┌── core
23     └── data
24     └── transform
```

GITOPS-LIVE

```
++--> gitops
12  |   operations
13  |     |   manifests
14  |     |     |   production
15  |     |     |     |   staging
16  |     |     releases
17  |     |       |   production
18  |     |       |     |   staging
19  |     policies
20  |     tenants
21  |       |   base
22  |         |     core
23  |         |     data
24  |         |     transform
25  |         production
26  |           |   -----
```

GITOPS-LIVE

```
-- 13 ┌── manifests
14   ├── production
15   └── staging
16 └── releases
17   ├── production
18   └── staging
19 └── policies
20 └── tenants
21   ├── base
22   │   ├── core
23   │   ├── data
24   │   └── transform
25   └── production
26     ├── eastus
27     └── northeurope
```

GITOPS-LIVE

```
15 |     └── staging
16 |   └── releases
17 |     ├── production
18 |     └── staging
19 └── policies
20 └── tenants
21   ├── base
22   │   ├── core
23   │   ├── data
24   │   └── transform
25   ├── production
26   │   ├── eastus
27   │   └── northeurope
28   └── staging
29     └── eastus
```

GITOPS-LIVE

```
+-- .gitops
16 |   |-- releases
17 |   |   |-- production
18 |   |   |   |-- staging
19 |   |-- policies
20 |   |-- tenants
21 |       |-- base
22 |           |-- core
23 |           |-- data
24 |           |-- transform
25 |       |-- production
26 |           |-- eastus
27 |               |-- northeurope
28 |           |-- staging
29 |               |-- eastus
30 |                   |-- northamerica
```

TENANT GIT SOURCE

```
1 apiVersion: source.toolkit.fluxcd.io/v1beta1
2 kind: GitRepository
3 metadata:
4   name: core
5   namespace: core
6 spec:
7   gitImplementation: libgit2
8   interval: 5m0s
9   ref:
10     branch: master
11     url: ssh://git@ssh.dev.azure.com/v3/anovateam/Mapleleaf/c
```

TENANT GIT SOURCE

```
1 apiVersion: source.toolkit.fluxcd.io/v1beta1
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4   name: core
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6 spec:
7   gitImplementation: libgit2
8   interval: 5m0s
9   ref:
10     branch: master
11     url: ssh://git@ssh.dev.azure.com/v3/anovateam/Mapleleaf/c
```

TENANT KUSTOMIZATION

```
1 apiVersion: kustomize.toolkit.fluxcd.io/v1beta1
2 kind: Kustomization
3 metadata:
4   name: core
5   namespace: core
6 spec:
7   force: false
8   interval: 5m0s
9   path: ./staging/eastus
10  prune: true
11  serviceAccountName: core
12  sourceRef:
13    kind: GitRepository
14    name: core
```

TENANT KUSTOMIZATION

```
1 apiVersion: kustomize.toolkit.fluxcd.io/v1beta1
2 kind: Kustomization
3 metadata:
4   name: core
5   namespace: core
6 spec:
7   force: false
8   interval: 5m0s
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14    name: core
```

TENANT KUSTOMIZATION

```
1 apiVersion: kustomize.toolkit.fluxcd.io/v1beta1
2 kind: Kustomization
3 metadata:
4   name: core
5   namespace: core
6 spec:
7   force: false
8   interval: 5m0s
9   path: ./staging/eastus
10  prune: true
11  serviceAccountName: core
12  sourceRef:
13    kind: GitRepository
14    name: core
```

GITOPS-<tenant>

```
1 ┌── _automation
2 └── _sources
3 ┌── base
4   ├── kustomization.yaml
5   ├── my-release.yaml
6   └── my-other-release.yaml
7 ┌── production
8   ┌── eastus
9     ├── kustomization.yaml
10    ├── my-release-patch.yaml
11    ├── my-release-patch-generated.yaml
12    ├── my-other-release-patch.yaml
13    └── my-other-release-patch-generated.yaml
14 └── northeurope
15   └── kustomization.yaml
```

GITOPS-<tenant>

```
1 ┌── _automation
2 └── _sources
3 ┌── base
4   ├── kustomization.yaml
5   ├── my-release.yaml
6   └── my-other-release.yaml
7 └── production
8   ┌── eastus
9     ├── kustomization.yaml
10    ├── my-release-patch.yaml
11    ├── my-release-patch-generated.yaml
12    ├── my-other-release-patch.yaml
13    └── my-other-release-patch-generated.yaml
14   └── northeurope
15     └── kustomization.yaml
```

GITOPS-<TENANT>

```
1 └── _automation
2 └── _sources
3 └── base
4     ├── kustomization.yaml
5     ├── my-release.yaml
6     └── my-other-release.yaml
7 └── production
8     └── eastus
9         ├── kustomization.yaml
10        ├── my-release-patch.yaml
11        ├── my-release-patch-generated.yaml
12        ├── my-other-release-patch.yaml
13        └── my-other-release-patch-generated.yaml
14     └── northeurope
15         ├── kustomization.yaml
```

GITOPS-<TENANT>

```
3   └── base
4     ├── kustomization.yaml
5     ├── my-release.yaml
6     └── my-other-release.yaml
7   └── production
8     └── eastus
9       ├── kustomization.yaml
10      ├── my-release-patch.yaml
11      ├── my-release-patch-generated.yaml
12      ├── my-other-release-patch.yaml
13      └── my-other-release-patch-generated.yaml
14     └── northeurope
15       ├── kustomization.yaml
16       ├── my-release-patch.yaml
17       └── my-release-patch-generated.yaml
18
```

GITOPS-<tenant>

```
-->
13 |     └── my-other-release-patch-generated.yaml
14 | northeurope
15 |     ├── kustomization.yaml
16 |     ├── my-release-patch.yaml
17 |     ├── my-release-patch-generated.yaml
18 |     ├── my-other-release-patch.yaml
19 |     └── my-other-release-patch-generated.yaml
20 └── staging
21   └── eastus
22     ├── kustomization.yaml
23     ├── my-release-patch.yaml
24     ├── my-release-patch-generated.yaml
25     ├── my-other-release-patch.yaml
26     └── my-other-release-patch-generated.yaml
27
28 northamerica
```

GITOPS-<tenant>

```
16      └── my-release-patch.yaml
17      └── my-release-patch-generated.yaml
18      └── my-other-release-patch.yaml
19      └── my-other-release-patch-generated.yaml
20
21 └── staging
22   └── eastus
23     └── kustomization.yaml
24     └── my-release-patch.yaml
25     └── my-release-patch-generated.yaml
26     └── my-other-release-patch.yaml
27     └── my-other-release-patch-generated.yaml
28   └── northeurope
29     └── kustomization.yaml
30     └── my-release-patch.yaml
31     └── my-release-patch-generated.yaml
```

GITOPS-<tenant>

```
17 └── my-release-patch-generated.yaml
18     ├── my-other-release-patch.yaml
19     └── my-other-release-patch-generated.yaml
20
21 └── staging
22     └── eastus
23         ├── kustomization.yaml
24         ├── my-release-patch.yaml
25         ├── my-release-patch-generated.yaml
26         ├── my-other-release-patch.yaml
27         └── my-other-release-patch-generated.yaml
28
29     └── northeurope
30         ├── kustomization.yaml
31         ├── my-release-patch.yaml
32         ├── my-release-patch-generated.yaml
33         └── my-other-release-patch.yaml
```

app-base.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
7   serviceAccountName: my-tenant
8   chart:
9     spec:
10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15    install:
```

app-base.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
7   serviceAccountName: my-tenant
8   chart:
9     spec:
10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
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app-base.yaml

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13      name: anova-helm-chart-stable
14    interval: 5m
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```

app-base.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
7   serviceAccountName: my-tenant
8   chart:
9     spec:
10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15    install:
```

app-base.yaml

```
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
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8 chart:
9   spec:
10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15    install:
16      remediation:
17      retries: 3
18      ...
```

app-base.yaml

```
5
6     releaseName: my-app
7     serviceAccountName: my-tenant
8     chart:
9         spec:
10            chart: anova-k8s-deployment
11            sourceRef:
12                kind: GitRepository
13                name: anova-helm-chart-stable
14            interval: 5m
15            install:
16                remediation:
17                    retries: 3
18            values:
19                migrations:
```

app-patch.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   values:
7     environment: staging
8     region: ue
9     image:
10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
12     env:
13       - name: LOGLEVEL
14         value: DEBUG
```

app-patch.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   values:
7     environment: staging
8     region: ue
9     image:
10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
12     env:
13       - name: LOGLEVEL
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```

app-patch.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   values:
7     environment: staging
8     region: ue
9     image:
10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
12     env:
13     - name: LOGLEVEL
14       value: DEBUG
```

app-patch.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   values:
7     environment: staging
8     region: ue
9     image:
10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
12     env:
13     - name: LOGLEVEL
14       value: DEBUG
```

app-patch.yaml

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   values:
7     environment: staging
8     region: ue
9     image:
10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
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10       repository: acrmapleleafstag.azurecr.io/my-app
11       tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap"
12     env:
13     - name: LOGLEVEL
14       value: DEBUG
```

kustomization.yaml

```
1 apiVersion: kustomize.config.k8s.io/v1beta1
2 kind: Kustomization
3 namespace: data
4 resources:
5 - app-base.yaml
6 patchesStrategicMerge:
7 - app-patch.yaml
8 - app-patch-generated.yaml
```

kustomization.yaml

```
1 apiVersion: kustomize.config.k8s.io/v1beta1
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4 resources:
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6 patchesStrategicMerge:
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8 - app-patch-generated.yaml
```

```
kustomize build .
```

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
7   serviceAccountName: my-tenant
8   chart:
9     spec:
10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15    install:
```

```
kustomize build .
```

```
1 apiVersion: helm.toolkit.fluxcd.io/v2beta1
2 kind: HelmRelease
3 metadata:
4   name: my-app
5 spec:
6   releaseName: my-app
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10    chart: anova-k8s-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15    install:
```

```
kustomize build .

+0      chart: anova-helm-deployment
11    sourceRef:
12      kind: GitRepository
13      name: anova-helm-chart-stable
14    interval: 5m
15  install:
16    remediation:
17    retries: 3
18  values:
19    migrations:

20      enabled: true
21  environment: staging
22  region: ue
23  image:
24    repository: acrmapleleafstaq.azurecr.io/mv-app
```

```
kustomize build .

12      kind: GitRepository
13      name: anova-helm-chart-stable
14  interval: 5m
15  install:
16      remediation:
17      retries: 3
18  values:
19      migrations:

20      enabled: true
21  environment: staging
22  region: ue
23  image:
24      repository: acrmapleleafstag.azurecr.io/my-app
25      tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap
~6
```

```
kustomize build .

 13      name: ariova-remediation-c-scan
14    interval: 5m
15    install:
16      remediation:
17        retries: 3
18    values:
19      migrations:

20        enabled: true
21    environment: staging
22    region: ue
23    image:
24      repository: acrmapleleafstag.azurecr.io/my-app
25      tag: 0.1.82 # {"$imagepolicy": "data:staging-ue-my-ap
26    env:
27      - name: LOGLEVEL
```

IMAGE AUTOMATION

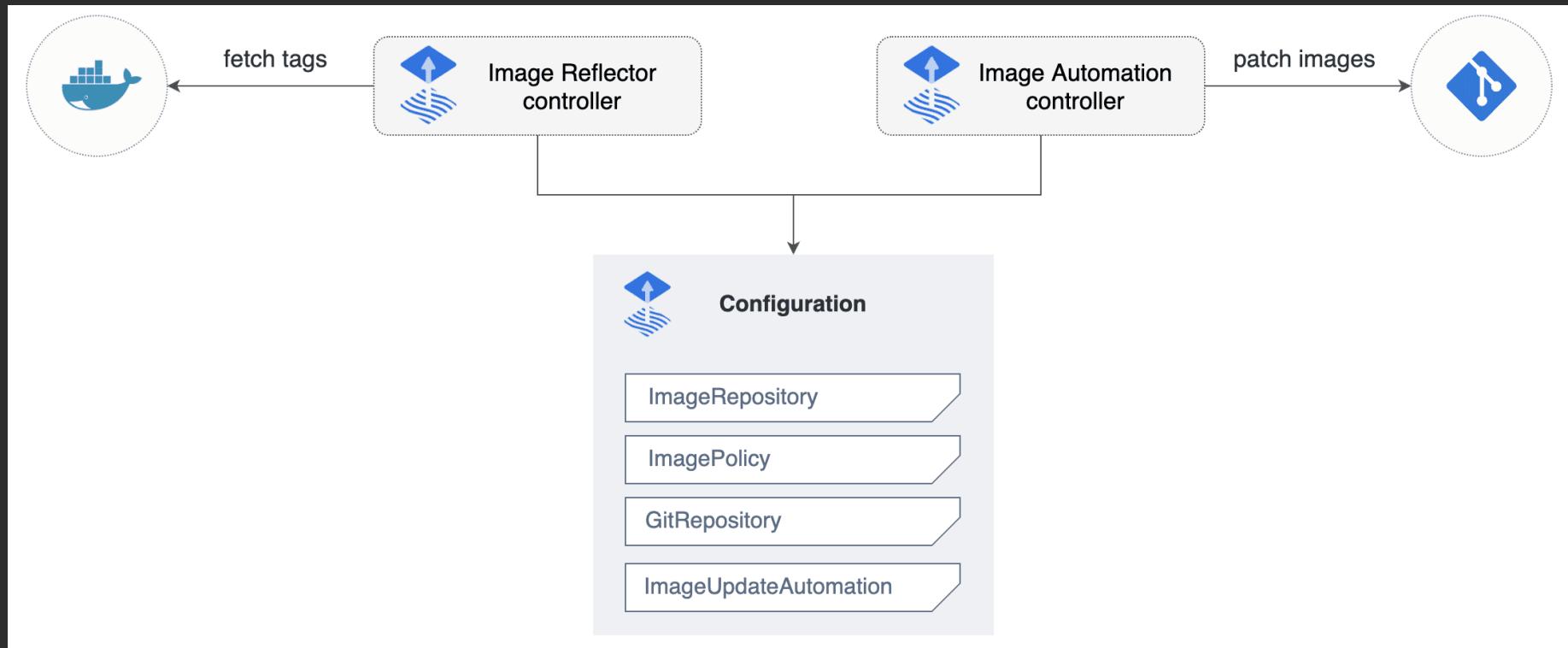




IMAGE POLICY

The ImagePolicy type gives rules for selecting a “latest” image from a scanned ImageRepository. This can be used to drive automation, as with the image-automation-controller; or more generally, to inform other processes of the state of an image repository.

IMAGE REPOSITORY

The ImageRepository API specifies how to scan OCI image repositories. A repository is a collection of images – e.g., alpine, as opposed to a specific image, e.g., alpine:3.1. ImagePolicy objects can then refer to an ImageRepository in order to select a specific image from those scanned.

IMAGE UPDATE AUTOMATION

The `ImageUpdateAutomation` type defines an automation process that will update a git repository, based on image policy objects in the same namespace.


```
1 > kubectl get imagerepository my-app
2 NAME                      LAST SCAN          TAGS
3 my-app                    2021-07-14T18:42:53Z  20
```

```
1 > kubectl get imagerepository my-app
2 NAME                               LAST SCAN          TAGS
3 my-app                            2021-07-14T18:42:53Z  20
```

```
1 > kubectl get imagerepository my-app -oyaml
2 apiVersion: image.toolkit.fluxcd.io/v1beta1
3 kind: ImageRepository
4 metadata:
5   name: my-app
6   namespace: data
7 spec:
8   image: myacr.azurecr.io/my-app
9   interval: 5m0s
```

```
1 > k get imageupdateautomation tenant -n tenant -oyaml
2 piVersion: image.toolkit.fluxcd.io/v1beta1
3 kind: ImageUpdateAutomation
4 metadata:
5   name: tenant
6   namespace: tenant
7 spec:
8   git:
9     checkout:
10    ref:
11      branch: master
12    commit:
13    author:
14      email: fluxcdbot@users.noreply.github.com
15      name: fluxcdbot
```

```
'  spec:
8    git:
9      checkout:
10     ref:
11       branch: master
12     commit:
13     author:
14       email: fluxcdbot@users.noreply.github.com
15       name: fluxcdbot
16     messageTemplate: |
17       An automated update from FluxBot
18       [ci skip]
19   interval: 5m
20   sourceRef:
21     kind: GitRepository
```

```
1 > git log
2 commit bcb890b12f623a901295fad68a92f899d7a1279d (HEAD -> ma
3 Author: fluxcdbot <fluxcdbot@users.noreply.github.com>
4 Date:   Thu Jul 15 07:39:26 2021 +0000
5
6     An automated update from FluxBot
7     [ci skip]
8
9 > git whatchanged -m -n 1 -p bcb890b12f623a901295fad68a92f8
10 commit bcb890b12f623a901295fad68a92f899d7a1279d (HEAD -> ma
11 Author: fluxcdbot <fluxcdbot@users.noreply.github.com>
12 Date:   Thu Jul 15 07:39:26 2021 +0000
13
14     An automated update from FluxBot
15     [ci skip]
```

```
1  Date: 2021-07-15T07:39:26Z +0000
2
3
4
5
6      An automated update from FluxBot
7      [ci skip]
8
9  > git whatchanged -m -n 1 -p bcb890b12f623a901295fad68a92f8
10 commit bcb890b12f623a901295fad68a92f899d7a1279d (HEAD -> ma
11 Author: fluxcdbcbot <fluxcdbcbot@users.noreply.github.com>
12 Date:   Thu Jul 15 07:39:26 2021 +0000
13
14      An automated update from FluxBot
15      [ci skip]
16
17 diff --git a/production/eastus/entities-digestor-patch.yaml
18 index f36aefde..63dc20e 100644
19 --- a/production/eastus/entities-digestor-patch.yaml
```

```
13
14     An automated update from FluxBot
15     [ci skip]
16
17 diff --git a/production/eastus/entities-digestor-patch.yaml
18 index f36aefd..63dc20e 100644
19 --- a/production/eastus/entities-digestor-patch.yaml
20 +++ b/production/eastus/entities-digestor-patch.yaml
21 @@ -8,7 +8,7 @@
22     spec:
23         region: ue
24         image:
25             repository: acrmapleleafprod.azurecr.io/entities-digestor
26             - tag: 0.1.18 # {"$imagepolicy": "data:production-ue-e
27             + tag: 0.1.19 # {"$imagepolicy": "data:production-ue-e
```

IMAGE AUTOMATION

IMAGE AUTOMATION

```
1 > flux get image repository -n core apistatus
2 NAME          READY MESSAGE                      LAST SCAN
3 apistatus True  successful scan, found 1 tags 2021-07-26T12:
```

IMAGE AUTOMATION

```
1 > flux get image repository -n core apistatus
2 NAME          READY MESSAGE           LAST SCAN
3 apistatus  True   successful scan, found 1 tags 2021-07-26T12:
```

```
1 > flux get image policy -n core staging-ue-apistatus
2 NAME          READY MESSAGE
3 staging-ue-apistatus  True   Latest image tag for 'acrmapple'
```

IMAGE AUTOMATION

```
1 > flux get image repository -n core apistatus
2 NAME          READY MESSAGE           LAST SCAN
3 apistatus  True   successful scan, found 1 tags 2021-07-26T12:
```

```
1 > flux get image policy -n core staging-ue-apistatus
2 NAME          READY MESSAGE
3 staging-ue-apistatus  True   Latest image tag for 'acrmapple'
```

```
1 > flux get image update -n core
2 NAME          READY MESSAGE
3 core  True   no updates made; last commit 69ac834 at 2021-07-
```

IMAGE ROLLBACK

IMAGE ROLLBACK

Base

```
1 image:  
2   automation:  
3     enabled: true  
4     semver:  
5       expr: x.x.x
```

IMAGE ROLLBACK

Base

```
1 image:
2   automation:
3     enabled: true
4     semver:
5       expr: x.x.x
```

Patch in environment

```
1 image:
2   repository: acrmapleleafstag.azurecr.io/assetsreports
3   tag: 0.1.8 # {"$imagepolicy": "core:staging-ue-assetsrepor
4   automation:
5     semver:
6       expr: 0.1.8 # temporarily fixing this tag
```



flux

Community

The Flux project aspires to be the vendor-neutral home for GitOps in a Cloud Native world. What we achieved up until today is only possible because of our community.



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Join the conversation in GitHub Discussions. Everything Flux v2 related ranging from specifications and feature planning to Show & Tell happens here.



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If you want to talk to the Flux team and community in real-time, join us on Slack. This is a great way to get to know everyone. Get a Slack invite, or go to the #flux channel.



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Join our (low-traffic) mailing list to stay up to day on announcements and sporadic discussions.

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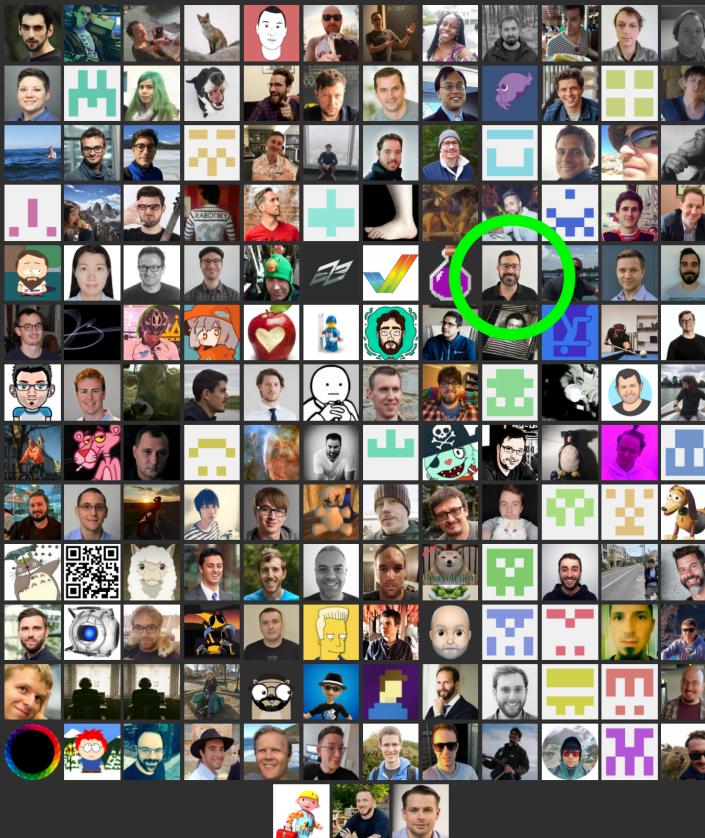


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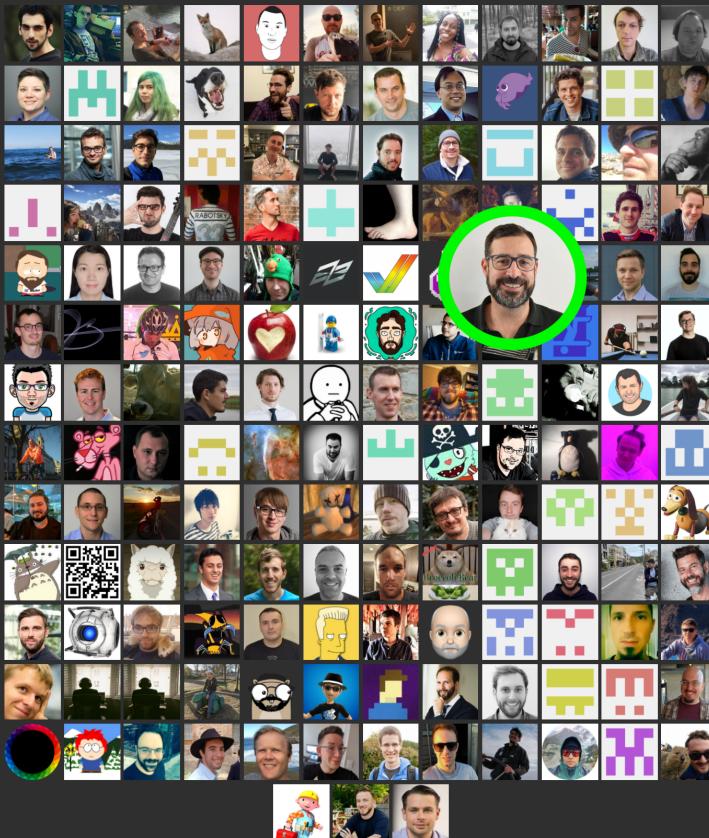


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*“Give GitOps and Kubernetes and I'll
scale the World.”*

MArchimedes



*“Give GitOps and Kubernetes and I'll
scale the World.”*

MArchimedes

OVER AND OUT