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KAOPS Feature

CLOUD NATIVE COMPUTING FOUNDATION SILVER MEMBER

KAOPS Hosted Multi-Cluster ArgoCD GitOps

Deploy Applications to Any Kubernetes Clusters in Any Cloud

ArgoCD GitOps

As part of Nethopper KAOPS, a platform engineering framework for building internal developer platforms (IDPs), ArgoCD GitOps is an integrated and simple to use tool that:

- *Handles both application and its underlying infrastructure as code in a Git version control system*
- *Uses a software agent to ensure the deployed state of an application matches the desired state, as declared in the configuration files in Git*
- *Makes application deployment and lifecycle management automated, auditable, and easy to understand.*

ArgoCD GitOps is delivered as a hosted service, which enables platform, DevOps and application teams to eliminate the complexity of delivering hundreds or thousands of microservices distributed across one or many Kubernetes clusters - and rolling back failed deployment as needed.

> argo
>
> **A declarative, GitOps continuous delivery tool for Kubernetes. It is the best way to deploy and upgrade your applications.**

+1 (617) 819-8009 I info@nethopper.io

KEY CAPABILITIES

- Automated deployment of applications to specified target environments
- Support for multiple config management/ templating tools (Kustomize, Helm, Jsonnet, plain YAML)
- Ability to manage and deploy to multiple clusters
- Rollback/Roll-anywhere to any application configuration committed in Git repository
- Health status analysis of application resources
- Automated configuration drift detection and visualization
- Automated or manual syncing of applications to its desired state
- Web UI which provides real-time view of application activity
- PreSync, Sync, PostSync hooks to support complex application rollouts (e.g.blue/green & canary upgrades)
- Audit trails for application events and API calls
- Parameter overrides for overriding helm parameters in Git

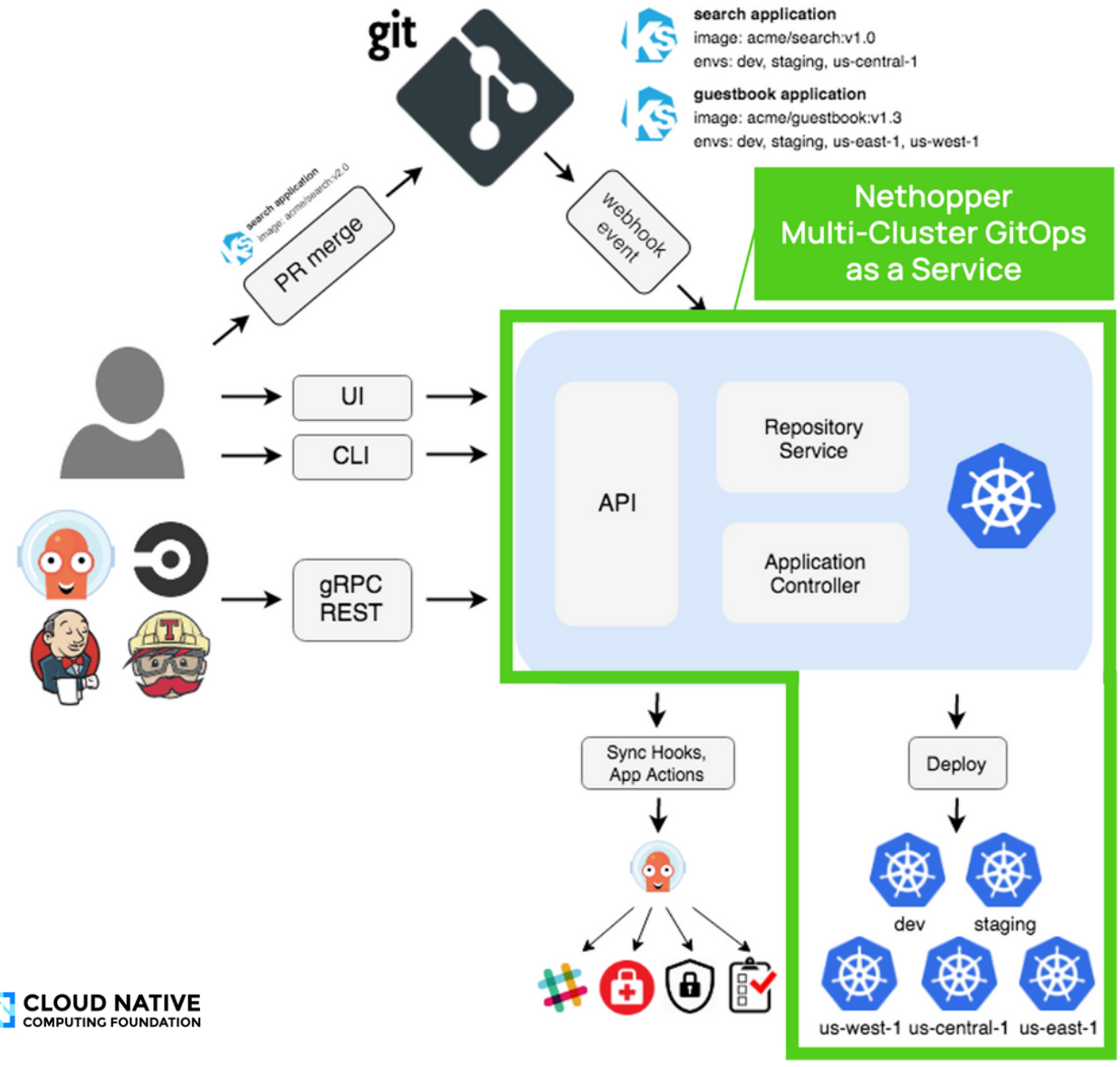
Continuous Delivery (CD)

- CD is the concept that after you deploy your application, you will shortly thereafter need to re-deploy for an upgrade, then upgrade it again, forever.
- Gone are the days of deploying by hand using 'kubectl apply' or even Helm or Kustomize.
- GitOps uses a Git source code repository to declare how you want to deploy and operate (hence Ops) your application. Change the Git source, and your application updates.
- ArgoCD is the #1 GitOps tool, and has recently been adopted by the CNCF. Many large DevOps organizations use ArgoCD to deliver their apps. Nethopper offers ArgoCD as a Service.

KEY BENEFITS

- **Immediately detects and remediates** out-of-sync version controlled Kubernetes application state
- **Eliminates the complexity** of deploying to Kubernetes clusters
- **Accelerates deployment** of Kubernetes and lifecycle management without compromising security
- **Minimizes downtime and recovery time** with easy and fast deployment and rollback of application features.

KAOPS: HOSTED ARGOCD GITOPS



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KEY ADVANTAGES: HOSTED ARGOCD GITOPS (OR GITOPS-AS-A-SERVICE)

- ✓ Enterprise support
- ✓ Improved cluster security (no Kubernetes API exposed)
- ✓ Simple application-to-cluster policy engine
- ✓ Works with all clouds and Kubernetes
- ✓ Multi-cluster application networking
- ✓ Multi-cluster application sets built-in
- ✓ Your ArgoCD server in 30 seconds
- ✓ Proactive fault alerts/emails
- ✓ Single pane of glass
- ✓ Free-tier available

WHAT IS GIT?

Git is an open source tool used by software developers for source code management that tracks changes to application source code, enabling development teams to collaborate on branched (forked) application development.

WHAT IS GITOPS?

GitOps is a declarative framework centered around a Git repository that stretches (extends) development best practices (i.e., version control, Cl/CD) to infrastructure automation and application deployment. With GitOps, you can automate changes to the infrastructure and application deployment via Git source control, making Kubernetes deployments more manageable, with:

- **Increased agility.** Manage updates and new feature releases without knowing the details of containers or Kubernetes
- **Frequent deployments.** Ensure continuous deployment of new features and updates across Kubernetes clusters
- **Reduced downtime.** Recover from application failure with reduced downtime by quickly reverting a failed release or application update.
- **Reliable deployments.** Leverage built-in history/audit trail to ensure consistent feature/ application deployments
- **Enhanced security.** Improve security of deployed applications by tracking and verifying authorship

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