

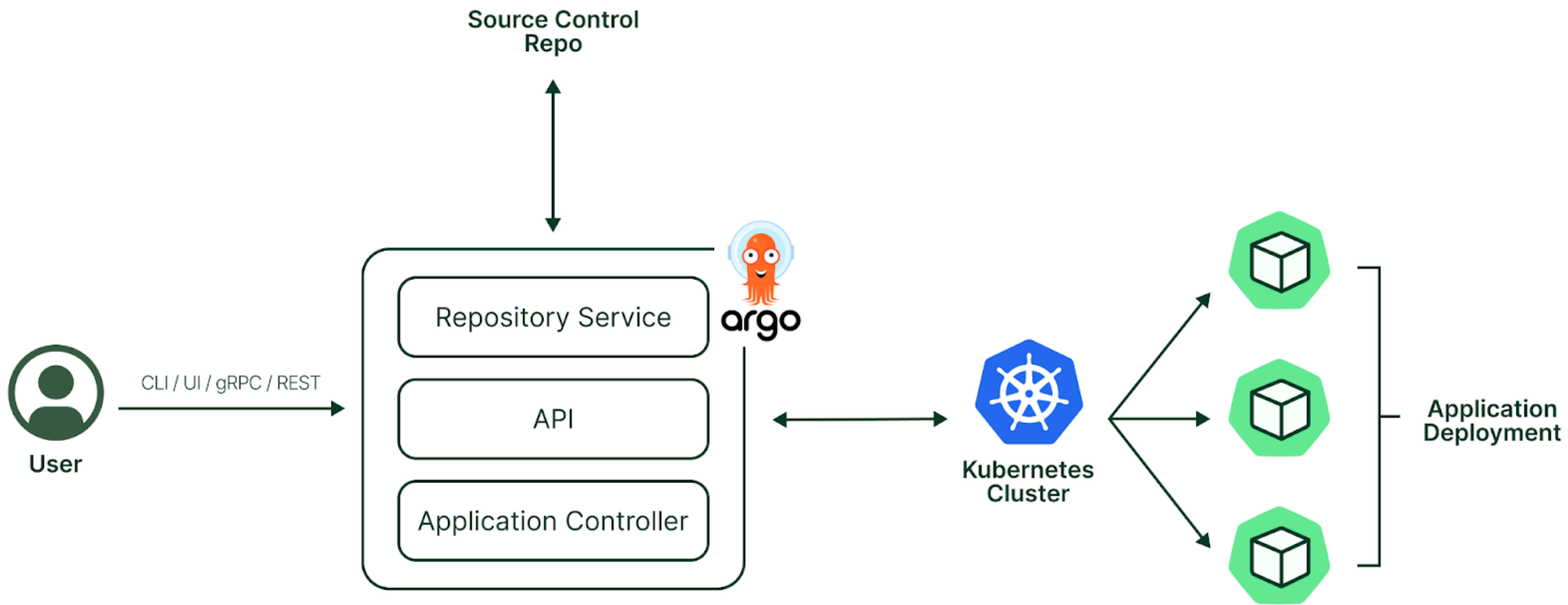


Argo CD - GitOps



What is ArgoCD?

- **Argo CD** is an open-source, declarative, GitOps continuous delivery tool for Kubernetes. It is designed to help developers and DevOps teams automate the deployment and management of applications on Kubernetes clusters.
- **Argo CD** allows you to define the desired state of your applications and their resources in a Git repository, and it continuously monitors the cluster to ensure that the actual state matches the desired state.
- **ArgoCD** follows the principles of GitOps, where the desired state of the application is defined in a Git repository and a continuous delivery system automatically synchronizes the actual state with the desired state.



Components



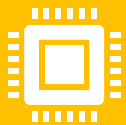
API server

This gRPC/REST server exposes the API consumed by ArgoCD UI, CLI, and CI/CD systems. The API server is responsible for application management and status reporting, application operations, credential management, authentication, RBAC management and so on.



repository server

This is an internal repository server that keeps a local cache of the git repository YAML manifests. It ensures that the configurations are always available and is responsible for fetching the manifests when requested.



application controller

This is a Kubernetes controller that continuously monitors running applications. It is responsible for comparing the application state with the desired state in the target repo. Application Controller enables corrective action if the state is out of sync, and is also responsible for invoking user-defined hooks.

Key Features

automated application development across clusters and environments

integration with multiple configuration and templating tools, such as Kustomize, Helm, Ksonnet, Jsonnet, and YAML

multi-tenancy and RBAC policy support

automatic drift detection and visualization

easy rollback via storage of version-controlled configuration

complete application monitoring capabilities including health status analysis and Prometheus metrics integration

SSO support, WebHook integrations, and custom PreSync, Sync, and PostSync hooks for custom actions