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Introduction to GitOps Basics

GitOps: Streamlining DevOps with Git as the Source of Truth

DEFINITION

> GitOps is a modern approach to managing infrastructure and applications using Git repositories. It enables automated deployment and monitoring of applications through Git workflows.

KEY CONCEPTS

Git as Source of Truth

In GitOps, all configurations and deployment instructions are stored in Git, ensuring consistency and version control.

Continuous Deployment

Changes made in the Git repository automatically trigger deployment processes, leading to faster and more reliable releases.

Infrastructure as Code

Infrastructure is managed through code, allowing for versioning, collaboration, and easier rollback of changes.

Observability

GitOps emphasizes monitoring and logging to ensure that the deployed state matches the desired state defined in Git.

Pull Requests

Changes to the infrastructure or applications are proposed through pull requests, enabling peer review and collaboration.

EXAMPLES

→ Deploying a new microservice by merging a pull request in Git.

→ Rolling back to a previous version by reverting a commit in the Git repository.

→ Automatically scaling an application based on performance metrics tracked in Git.

MEMORY TIPS

★ Remember 'Git' in GitOps stands for 'Get It Done' with automation.

★ Think of Git as the 'control center' for all deployments.

★ Use the acronym 'CIO' for GitOps: Continuous, Infrastructure, Observability.

COMMON MISTAKES

✗ Neglecting to test changes in a staging environment before merging.

✗ Failing to keep documentation up to date with Git changes.

✗ Overlooking security practices in Git repositories.

QUICK RECAP

GitOps leverages Git for managing deployments and infrastructure, ensuring automation and consistency. Key practices include using pull requests for changes and maintaining observability to track application states.