

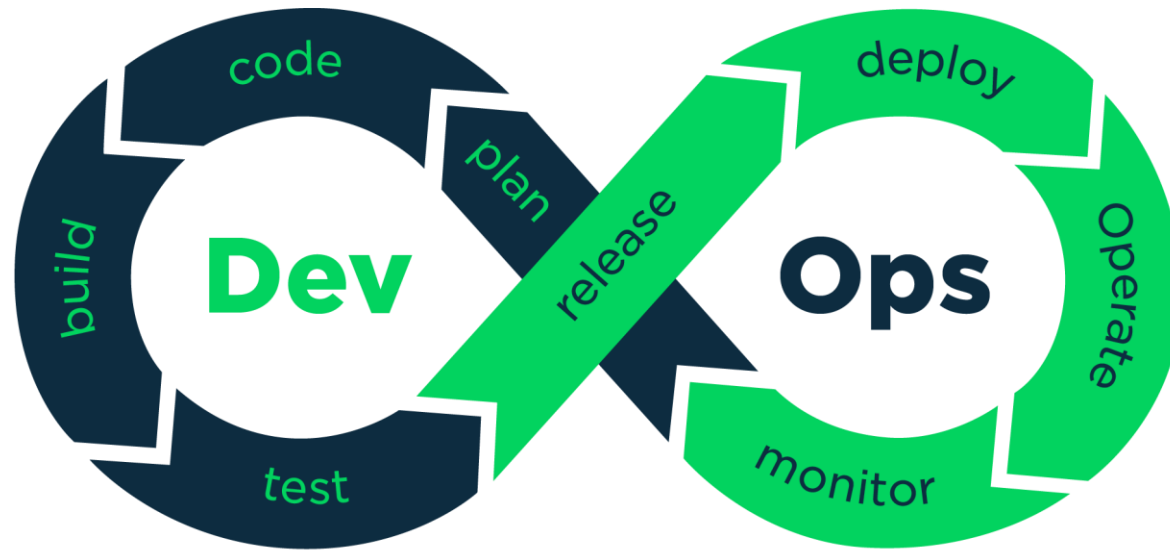


Module 4: DevOps Introduction

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Development Operations Diagram Overview





Module Objectives:

- **Module 4-1:** Understanding the Concept of DevOps
- **Module 4-2:** Understanding DevOps Terminologies
- **Module 4-3:** DevOps Toolkit



What is DevOps?

DevOps is a set of practices, principles, and cultural philosophies that aim to improve and streamline the collaboration between software development (Dev) and IT operations (Ops) teams. The goal of DevOps is to create a more agile, efficient, and reliable software development and deployment process, enabling organizations to deliver high-quality software more rapidly and reliably.



DevOps Terminologies

- Continuous Integration and Continuous Deployment (CI/CD): CI/CD practices involve automatically building, testing, and deploying code changes to production environments as frequently as possible.
- Containers: containerization treats each application as its own logically distinct server by virtualizing the operating system.
- Infrastructure as Code: IaC involves managing and storing your infrastructure in a repository as code

Further Reading: <https://www.plutora.com/devops-at-scale/terminology-glossary>



DevOps Terminologies

- Micro-services: A new software design architecture that breaks apart monolithic systems into loosely coupled services which can be developed, deployed, and maintained independently.
- Automation: Automation tools are used for testing, provisioning, deployment, and monitoring, among other tasks.
- Cloud Computing: Cloud computing is the delivery of compute power, database, storage, applications, and other IT resources via the internet.

Further Reading: <https://www.plutora.com/devops-at-scale/terminology-glossary>



DevOps Toolkits

Version Control System (VCS): Git

Continuous Integration/Continuous Deployment (CI/CD): Jenkins, GitLab CI/CD, Travis CI, CircleCI, or GitHub Actions

Infrastructure as Code (IaC): Terraform, Ansible, Chef, Puppet

Containerization and Orchestration: Docker, Kubernetes

Artifact Repository Management: Nexus Repository

Continuous Monitoring and Observability: Prometheus, Grafana, ELK Stack (Elasticsearch, Logstash, Kibana)