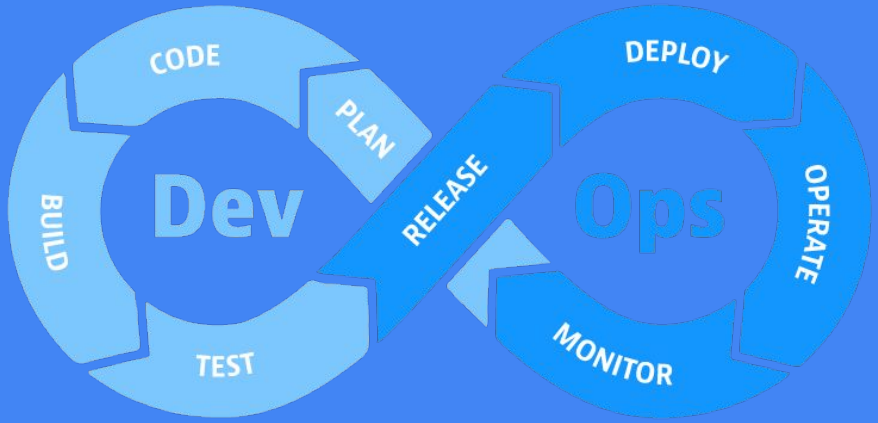
DEVOPS


CODE
PLAN
BUILD
TEST
Dev
RELEASE
DEPLOY
OPERATE
MONITOR
Ops

DEVOPS VS AGILE

DevOps is a software development method which focuses on communication, integration, and collaboration among IT professionals to enables rapid deployment of products.

Agile Methodology involves continuous iteration of development and testing in the SDLC process. This software development method emphasizes on iterative, incremental, and evolutionary development.

WHAT IS DEVOPS ?

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization’s ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

ACTIVITIES

• **Continuous Integration**: is a software development practice where developers regularly merge their code changes into a central repository, after which automated builds and tests are run.

• **Continuous Delivery**: is a software development practice where code changes are automatically built, tested, and prepared for a release to production.

• **Infrastructure as Code**: is a practice in which infrastructure is provisioned and managed using code and software development techniques, such as version control, and continuous integration.

• **Monitoring and Logging**: enables organizations to see how application and infrastructure performance impacts the experience of their product's end user.

• **Communication and Collaboration**: practices are established to bring the teams closer and by building workflows and distributing the responsibilities for DevOps. • Security: should be a cross cutting concern. Your continuous integration and continuous delivery (CI/CD) pipelines and related services should be safeguarded and proper access control permissions should be setup.

WHY DO WE NEED DEVOPS?

It is the platform that identifies the relationship between various tools, ideas and themes of software development and IT operations, using rapid iterations and continuous improvement.

So in broader sense, DevOps is a cultural change towards accepting the norms of Agile Software development, paving way for continuous development cycle, keeping in mind the cross functions, responsibilities and goals shared with IT operations.

TOOLS USED IN DEVOPS

1. Version Control tools

    GitHub

    Bitbucket

    GitLab

2. Container Management tools

    Docker

    Kubernetes

    Mesos

3. Application Performance Monitoring tools

- **Prometheus**
- **Dynatrace**
- **AppDynamics**

4. Deployment & Server Monitoring tools

- **Splunk**
- **Datadog**
- **Sensu**

5. Configuration Management tools

- **Chef**
- **Puppet**
- **Ansible**

6. CI / Deployment Automation tools

Bamboo

Jenkins

IBM UrbanCode

7. Test Automation tools

Test.ai

Ranorex

Selenium

ADVANTAGES OF DEVOPS

Technical Benefits

- Continuous software delivery
- Less complexity to manage
- Faster resolution of problems

Cultural Benefits

- Happier, more productive teams
- Higher employee engagement
- Greater professional development opportunities

Business Benefits

- Faster delivery of features
- More stable operating environments
- Improved communication and collaboration
- More time to innovate (rather than fix/maintain)

DEVOPS PRACTICES

The following are DevOps best practices:

- Continuous Integration
- Continuous Delivery
- Microservices
- Infrastructure as Code
- Monitoring and Logging
- Communication and Collaboration

THE END