

# Devops Training

Suresh IT's Coaching Training Center presents an intensive DevOps Training course, meticulously designed to equip participants with the essential skills and knowledge required to excel in DevOps practices. This comprehensive program covers a wide array of topics including continuous integration, continuous delivery, infrastructure automation, containerization, and configuration management. By mastering DevOps principles and practices, graduates are well-prepared to streamline software development processes, improve collaboration between development and operations teams, and accelerate the delivery of high-quality software products.

**Course Duration** : 2 Months

**Course Language** : English/Hindi/Telugu

**Classroom** : Offline/Online Training/Hybrid Training

## Description

The DevOps Training course is a comprehensive program designed to equip individuals with the knowledge and skills needed to thrive in the DevOps culture, which emphasises collaboration, automation, and integration between software development and IT operations teams. Geared towards IT professionals, developers, system administrators, and project managers, this course offers practical training in DevOps principles, practices, and tools.

Throughout the course, participants will explore various aspects of DevOps, including continuous integration (CI), continuous delivery (CD), infrastructure as code (IaC), configuration management, monitoring, and automation. They will learn how to implement DevOps practices and methodologies to streamline software development, accelerate delivery cycles, and improve software quality and reliability.

Moreover, the DevOps Training course covers essential DevOps tools and technologies such as Git, Jenkins, Docker, Kubernetes, Ansible, and Terraform, enabling participants to build and manage scalable, resilient, and agile infrastructure and applications.

By the end of the course, participants will be proficient in implementing DevOps practices and tools effectively, empowering them to drive organisational transformation, increase collaboration, and deliver value to customers faster and more efficiently. With their newfound expertise in DevOps, participants will be well-equipped to lead DevOps initiatives, foster a culture of innovation, and drive continuous improvement in their organisations.

## Skills you get

- Collaboration and Communication Tools
- Infrastructure as Code (IaC)
- Containerization and Orchestration
- Monitoring and Logging
- Version Control with Git

- Continuous Integration/Continuous Deployment (CI/CD)

# Course Contents

## Introduction to DevOps

- Understanding DevOps: Concepts and Principles
- Evolution of DevOps and its Importance
- Benefits of DevOps Adoption
- DevOps Culture and Collaboration

### Exercises:

- Discuss real-world examples of successful DevOps implementations
- Analyse case studies highlighting the benefits of DevOps adoption

## DevOps Tools and Technologies

- Overview of DevOps Toolchain
- Source code management (Git, SVN)
- Continuous integration (Jenkins, GitLab CI)
- Configuration management (Ansible, Puppet, Chef)
- Containerization (Docker, Kubernetes)
- Orchestration and automation tools

### Exercises:

- Set up a Git repository and perform basic version control operations
- Configure Jenkins for automated builds and deployments
- Write Ansible playbooks for server configuration management

## Continuous Delivery and Deployment

- Understanding Continuous Delivery vs. Continuous Deployment
- Pipeline orchestration and management
- Automated testing (Unit, Integration, and End-to-End)
- Deployment strategies (Blue-Green, Canary)
- Infrastructure as code (IaC)

## **Exercises:**

- Create a CI/CD pipeline using Jenkins
- Implement automated testing within the pipeline
- Set up blue-green deployment strategy using container orchestration tools

## **Monitoring and Logging**

- Importance of monitoring and logging in DevOps
- Metrics, monitoring tools, and alerting
- Log management and analysis (ELK Stack, Splunk)
- Application Performance Monitoring (APM)

## **Exercises:**

- Set up monitoring and alerting using Prometheus and Grafana
- Configure ELK stack for log management and analysis
- Implement application performance monitoring with tools like New Relic or AppDynamics

## **Cloud Infrastructure and DevOps**

- Cloud computing basics (IaaS, PaaS, SaaS)
- Infrastructure provisioning (AWS, Azure, Google Cloud)
- Infrastructure orchestration and management
- Scalability and high availability
- Security in the Cloud Environment

## **Exercises:**

- Deploy and manage infrastructure on a cloud platform (e.g., AWS EC2 instances)
- Configure auto-scaling and load balancing for high availability
- Implement security best practices for cloud-based environments

## **DevOps Best Practices**

- Agile and DevOps integration
- DevOps for microservices architecture
- DevSecOps: Integrating security into DevOps
- CI/CD pipeline optimization
- Collaboration and communication strategies

### **Exercises:**

- Integrate DevOps practices into Agile development methodologies
- Implement CI/CD pipelines for microservices-based applications
- Enhance CI/CD pipelines with security checks and tests (DevSecOps)

## **DevOps Culture and Organization**

- Building a DevOps Culture: People and Processes
- Organisational change management
- DevOps Team structure and roles
- Continuous improvement and learning culture

### **Exercises:**

- Discuss strategies for fostering a DevOps culture within organisations
- Analyse case studies of successful DevOps transformations
- Develop a plan for implementing DevOps practices in an organisation

## **Advanced DevOps Concepts**

- Site Reliability Engineering (SRE)
- Chaos Engineering
- GitOps
- Serverless Computing
- DevOps for Machine Learning (MLOps)

### **Exercises:**

- Conduct chaos engineering experiments to test system resilience
- Implement GitOps workflows for managing infrastructure as code
- Deploy serverless applications and automate the deployment process

This course structure provides a comprehensive understanding of DevOps principles, practices, and tools, along with hands-on experience through practical exercises and projects.