

€ TRAINING

DevOps





DevOps

Introduction:

This training program provides participants with essential knowledge and skills in DevOps practices and principles. It empowers them to understand the collaboration between development and operations teams, automate processes, and improve software delivery pipelines.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the fundamentals and benefits of DevOps.
- Implement continuous integration, continuous delivery CI/CD, and continuous deployment CD pipelines.
- Utilize infrastructure as code IaC tools for automation.
- Apply monitoring, logging, and incident response practices in DevOps environments.

Targeted Audience:

- Software Developers.
- System Administrators.
- Operations Engineers.
- IT Professionals involved in deployment and management of IT infrastructure.

Program Outline:

Unit 1:

Introduction to DevOps:

- Definition and principles of DevOps.
- Evolution of DevOps and its importance in modern IT.
- DevOps culture and collaboration between teams.
- Tools and technologies used in DevOps practices.
- DevOps in Agile and Lean methodologies.

Unit 2:

Continuous Integration and Continuous Delivery CI/CD:

- Implementing CI/CD pipelines.
- Version control systems e.g., Git and branching strategies.
- Automated testing and code quality practices.
- Configuration management with tools like Ansible, Chef, or Puppet.
- Building and deploying artifacts with Jenkins or other CI/CD tools.

Unit 3:

Infrastructure as Code IaC:

- Introduction to Infrastructure as Code IaC.
- Tools for IaC: Terraform, CloudFormation, or Ansible.
- Designing and managing cloud infrastructure.
- Automating provisioning and scaling of infrastructure.
- Versioning and testing infrastructure changes.

Unit 4:

Monitoring and Logging in DevOps:

- Importance of monitoring and logging in DevOps.
- Metrics, monitoring tools, and dashboards Prometheus, Grafana.
- Application performance monitoring APM and distributed tracing.
- Log management and analysis ELK stack.
- Implementing proactive monitoring and alerting practices.

Unit 5:

DevOps Security and Incident Response:

- Security principles in DevOps pipelines.



- Implementing security controls in CI/CD pipelines.
- Vulnerability scanning and static code analysis.
- Incident response and handling in DevOps environments.
- Approaches for: DevSecOps: Integrating security practices into DevOps workflows.