Introduction to CircleCI

Course Number: WA3632

Duration: 1 days

Course Description

This CircleCI training course gives developers a foundational understanding of CircleCI, enabling them to create Continuous Integration (CI) and Continuous Deployment (CD) workflows. Participants learn to configure CircleCI pipelines, optimize build and deployment processes, and leverage advanced features for secure and scalable automation.

Skills Gained

- Understand the fundamentals of CircleCI and its role in CI/CD pipelines
- Navigate the CircleCI interface and features
- Configure and optimize CircleCI pipelines
- Integrate CircleCI with GitHub to automate builds and tests
- Leverage advanced features such as orbs, caching, and matrix builds
- Secure pipelines using environment variables and context-based configurations
- Monitor, debug, and troubleshoot workflows in CircleCI

Prerequisites

All learners must have Git and GitHub experience.

Course Details

Introduction to CircleCI

- What is CircleCI? Overview and key features.

- The role of CircleCI in CI/CD pipelines.

CircleCI Overview

- Key components: Projects, Pipelines, Jobs, and Steps.
- Configuring basic project settings.

Connecting Repositories to CircleCI

- Linking GitHub to CircleCI.

CircleCI Configuration

- Understanding config.yml structure.
- Key elements: Jobs, Steps, Workflows, and Executors.
- Creating your first pipeline configuration.

Pipeline Fundamentals

- Configuring jobs to run tests, builds, and deployments.
- Using Executors (Docker, Linux, macOS, and Windows environments).
- Setting up workflows to define execution order and dependencies.

Advanced Configuration

- Using orbs for reusable configurations
- Implementing matrix jobs to test across multiple environments
- Caching dependencies and workflows to speed up builds
- Artifacts: Saving and accessing build results

Environment Variables and Secrets

- Managing environment variables in CircleCI
- Securing sensitive information with CircleCI contexts

Debugging and Troubleshooting

- Viewing logs and insights to diagnose issues

Monitoring and Optimization

- Using CircleCI Insights to analyze pipeline performance

Conclusion