

GitLab CI/CD Training

7 Hours

DURATION

9

MODULES

36

TOPICS

COURSE OVERVIEW

This foundational class delves into the world of Continuous Integration, Continuous Delivery, and Continuous Deployment (CI/CD), empowering learners to streamline software development practices and deliver high-quality applications efficiently. Through hands-on labs and real-world scenarios, participants will gain end-to-end practice in the process of creating and running CI/CD pipelines within the GitLab. This one-day session covers the fundamental structure of implementing CI/CD with GitLab and applying these concepts participants will apply CI/CD principles through building, testing, and deploying a sample application. Participants will explore strategies for troubleshooting issues, evaluating pipeline configurations, and incorporating best practices to promote code reusability and maintainability. By the end of the session, participants should have the skills to design, implement, and manage CI/CD pipelines for common project requirements, enabling faster time-to-market, improved collaboration, and enhanced software quality. GitLab CI/CD Training covers some features that are available in all three GitLab pricing tiers (Free, Premium, and Ultimate), some features that are only available in Premium and Ultimate, and a small number of features that are only available in Ultimate.

WHO THIS COURSE IS FOR

- Development teams, quality assurance teams, release engineers

PREREQUISITES

- Topics covered in the GitLab Fundamentals course or equivalent experience with GitLab
- Knowledge of GitLab Duo and Duo Agent Platform (DAP) is beneficial to have for this course, but is not mandatory.
- This class is not appropriate for students with no Git or GitLab knowledge
- Computer with internet access and Git installed, per the requirements specified here.

9 Modules, 36 Topics

01

CI/CD Fundamentals

TOPICS

- What is CI/CD
- Implementing CI/CD with GitLab Flow
- Introduction to .gitlab-ci.yml and runners

02

Lab Setup

TOPICS

- GitLab demo environment overview
- Session authentication

03

Building a Simple Application

TOPICS

- Selecting the best image for your pipeline
- Producing an artifact of the binary
- Overview of artifacts
- Using before_script for build dependencies

04

Merging Changes

TOPICS

- Overview of branch, merge request, and merged results pipelines
- Enabling MR pipelines
- Configuring conditional merge request pipelines
- Differentiate between workflows and pipeline rules
- Viewing a merged results pipeline

05

Testing a Simple Application

TOPICS

- Define test jobs in merge requests
- Handling different test types (unit, integration, end to end)
- Using the Allow_failure, Dependencies / needs, and before_script / after_script keywords
- Including a code coverage job

06

CI/CD Components

TOPICS

- Overview of CI/CD components and the catalog
- Using the include keyword for pipeline configuration
- Introduction to security scanning
- Overview of creating and sharing components
- Discuss component versioning
- Add a CI/CD component from the CI/CD Catalog

07

Troubleshooting Strategies

TOPICS

- Common pipeline error messages
- Tips for syntax verification
- Reading job outputs
- Addressing job configuration issues
- Use GitLab Duo Agent Platform to remediate broken pipeline

08

Deploying a Simple Application

TOPICS

- Deployment rules
- Releases
- Managing an environment in the GitLab UI
- Tagging a build for a specific environment

09

Best Practices in CI/CD

TOPICS

- Applying DRY principles such as using YAML anchors
- Utilizing extends, templates, inheritance, caching
- Overview of secret management

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

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Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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