

CI/CD – Continuous Integration and Continuous Delivery

Course

Type:
Instructor
Led Training,
with Hands
on Lab

Course ID:
CICD

Duration:
1 Day

Why OneCloud?

OneCloud Consulting, a Cisco Learning Partner, is dedicated to providing exceptional technical education and professional services. Our team of experts combine skill, knowledge, and experience in implementing Data Center Architecture and Unified Computing technology. Our specializations include computer networking, technical training and IT consulting.

Course Description

This course provides strong foundation in implementing the Continuous Integration and Continuous Delivery pipeline. Pipeline will include the following tools and technologies:

- Git – Version control
- Github – Upstream source repository
- Gerrit – Code review system
- Jenkins – CI server
- Python and Node.js – Application code
- MySQL/equivalent – Relational database
- Docker – Containerization
- DockerHub – Docker image repository

After this course, you should be able to understand:

- The components of CI/CD and how it transforms your Software Delivery timelines.
- Development best practices and how it fits in to the overall scope of CI/CD.
- The different tools and processes which can be used to build a CI/CD pipeline.
- How to set up a basic CI/CD pipeline using a demo app.

Who Should Attend

- System Administrator
- Developers
- Testers
- Solution Architect
- Release Engineer
- Cloud Professionals

Prerequisites

- Basic understanding of Linux/ Unix system concepts
- Be comfortable using the command line in Linux
- Experience with managing systems/ applications/ infrastructure or with deployments/ automation
- A basic understanding of source control and agile software development process

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Course Content

Module 1: DevOps and CI/CD

- Module overview
- How DevOps disrupted software delivery
- Overview of software delivery pipeline
- Module review

Module 2: Continuous Integration

- Module overview
- Importance of continuous integration
- tools and frameworks
- Software quality assurance
 - Testing
 - Code Analysis
 - How QA can be baked into the CI process
- CI Lab
 - Setting up code repository
 - Running Gerrit
 - Running Jenkins
 - Setting up a code review in Gerrit and verification job in Jenkins
- Module review

Module 3: Continuous Delivery

- Module overview
- Software delivery practices
- Explain a basic delivery pipeline
- Continuous delivery Lab
 - Setting up build environment
 - Setup an artifacts repository
 - Define a build job to generate Docker image
 - Push Docker image to DockerHub
- Module review

Module 4: Continuous Deployment

- Module overview
- Explain differences between Continuous delivery and deployment
- Defining deployment environments for creating an immutable infrastructure
- Deployment types
- Continuous deployment lab
 - Setup a deployment environment for deploying Docker containers
 - Define a deployment job in Jenkins for deploying new version of the code
- Module review

Labs

- Lab 1: Setup gerrit.
- Lab 2: Setup docker runtime
- Lab 3: Setup jenkins
- Lab 4: Setup gerrit and jenkins integration
- Lab 5: Setup the code repository
- Lab 6: Setup CI job to verify the patch set
- Lab 7: Setup CD job to build and publish docker image
- Lab 8: Setup CD job to deploy the services