

Jenkins Automation Server

COURSE OVERVIEW

This course covers the fundamentals necessary to deploy and utilize the Jenkins automation server. Jenkins enables users to immediately begin automating both their individual and collaborative workflows. Jenkins is a proven solution for a wide variety of tasks ranging from the helpful automation of scripts (such as Python and Ansible) to creating complex pipelines that govern the technical parts of not only Continuous Integration but Continuous Delivery (CI/CD) as well. Jenkins is free, open source, and easily controlled with a simple web-based UI- it can be expanded by third-party plugins and is deployable on nearly any on-site (Linux, Windows, and Mac) or cloud platform.

WHO WILL BENEFIT FROM THIS COURSE?

- DevOps Engineers
- Software Developers
- Telecommunications Professionals
- Architects
- Quality Assurance & Site Reliability Professionals

COURSE OBJECTIVES

- Automate basic freestyle projects
- Jenkins Pipelines and Groovy Programming
- Software lifecycle management with Jenkins
- Popular plugins
- Scaling options
- Integrating Jenkins with Git and GitHub (as well as other Software Control Management platforms)
- Triggering Jenkins with Webhooks
- Deploying into Docker and Kubernetes
- CI / CD with Jenkins

COURSE OUTLINE

Day 1: Overview of Jenkins

- Overview of Continuous Integration and Continuous Deployment (CI/CD)
- Understanding Git and GitHub
- Git Branching
- Methods for Installing Jenkins
- Jenkins Dashboard
- Jenkins Jobs
- Getting Started with Freestyle Jobs



- Triggering builds
- HTTP WebHooks
- Augmenting Jenkins with Plugins
- Overview of Docker and Dockerfile for Building and Launching Images

Day 2: Pipeline Jobs for Continuous Integration and Continuous Deployment

- Pipeline Build Stage
- Pipeline Testing Stage
- Post Build actions
- SMTP and Other Notifications
- Programming Pipelines with Groovy
- More Groovy Programming Essentials
- Extracting Jenkins Data Analytics to Support Project Management
- Troubleshooting Failures
- Auditing stdout and stderr with Jenkins
- Jenkins REST API
- Controlling Jenkins API with Python
- Jenkins Security
- Scaling Jenkins
- Jenkins CLI
- Building a Kubernetes Cluster and Deploying Jenkins
- How to start successfully using Jenkins to automate aspects of your job the moment this course ends.

Hands-On Labs

- Git and GitHub
- Git Branching
- Dockerizing A Python Flask App or Creating A Container Image

Basics

- Deploying Jenkins with Docker
- Jenkins Dashboard
- Freestyle Projects and Workspaces
- Triggering Jenkins Builds with WebHooks
- Installing Jenkins Plugins

Scripting

- Docker Build Agents
- Python Builds
- Ansible Builds

CI / CD

- Continuous Integration
- Creating Jenkins Scripted Pipelines
- Declarative vs Scripted Pipelines
- Jenkins REST API



Administration

- Backing Up Jenkins
- Security and Credential Management
- Configuration as Code

Deploy and Configure

- Build Agents
- Freestyle Terraform and Ansible Builds

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