

# DevOps Certification Training

## About Pinnacledu

We are one of the world's leading certification training providers.

We provide online training in disciplines such as Cyber Security, Cloud Computing, Project Management, Digital Marketing, and Data Science among others, where technologies and best practices are changing rapidly and demand for qualified candidates significantly exceeds supply.

Our blended learning approach combines online classes, instructor-led live virtual classrooms, project work, and 24/7 teaching assistance. Our vibrant community of experts and certified professionals is a powerful resource pool of tips, tricks, and insightful advice. More than 40 global training organizations have recognized us as an official provider of certification training.

## About Course

This DevOps Certification Training Course will prepare you for a career in DevOps, the fast-growing field that bridges the gap between software developers and operations. You'll become an expert in the principles of continuous development and deployment, automation of configuration management, inter-team collaboration, and IT service agility, using modern DevOps tools such as Git, Docker, Jenkins, Cucumber, Ansible, TeamCity, and Nagios.

## Course Curriculum

### **Lesson 1 : Overview of DevOps**

In this module you will be introduced to DevOps environment.

#### **Topics:**

- Why DevOps?
- What is DevOps? DevOps Market Trends
- DevOps Engineer Skills
- DevOps Delivery Pipeline
- DevOps Ecosystem

**Hands-on:**

- Use Cases

**Lesson 2 : Version Control with Git**

In this module, you will gain the insights of the functionalities and version controlling using Git.

**Topics:**

- What is version control What is Git Why Git for your organization Install Git Common commands in Git Working with Remote Repositories.

**Hands-on-Demo:**

- GIT Installation, Version Control, Working with remote repository

**Lesson 3 : Git, Jenkins & Maven Integration**

In this module, you will learn about the different actions performed through git and will be introduced to Jenkins and maven.

**Topics:**

- Branching and Merging in Git
- Git workflows
- Git cheat sheet
- What is CI
- Why CI is Required
- Introduction to Jenkins (With Architecture)
- Introduction to Maven

**Hands-on-Demo:**

- Branching and merging, Stashing, rebasing, reverting and resetting
- Build and automation of Test using Jenkins and Maven

#### **Lesson 4 : Continuous Integration using Jenkins**

In this module, you will know how to perform Continuous Integration using Jenkins by building and automating test cases using Maven.

##### **Topics :**

- Jenkins Management
- Adding a slave node to Jenkins
- Building Delivery Pipeline
- Pipeline as a Code
- Implementation of Jenkins in the Project

##### **Hands-on-Demo :**

- Build the pipeline of jobs using Jenkins
- Create a pipeline script to deploy an application over the tomcat server

#### **Lesson 5 : Continuous Testing with Selenium**

In this module, you will learn about selenium and how to automate your test cases for testing web elements. You will also get introduced to X-Path, TestNG and integrate Selenium with Jenkins.

##### **Topics :**

- Introduction to Selenium
- Why Selenium?
- Selenium – Webdriver
- Creating Test Cases in Selenium WebDriver (Waits)
- What and why X-Path
- Handling different controls on Webpage
- Framework in Selenium Selenium
- Integration with Jenkins
- Implementation of Selenium in the Project

##### **Hands-on-Demo:**

- Installing Selenium
- Creating Test Cases in Selenium WebDriver
- Integrating Selenium with Jenkins

#### **Lesson 6 : Continuous Deployment: Containerization with Docker**

This module introduces Docker to readers, the core concepts and technology behind Docker. Learn in detail about container and various operations performed on it.

**Topics:**

- Shipping Transportation Challenges
- Introducing Docker
- Understanding images and containers
- Running Hello World in Docker
- Introduction to Container
- Container Life Cycle
- Sharing and Copying
- Base Image
- Docker File
- Working with containers
- Publishing Image on Docker Hub

**Hands-on-Demo :**

- Create and Implement docker images and containers

**Lesson 7 : Containerization with Docker: Ecosystem and Networking**

In this module, you will learn to integrate different containers using docker.

**Topics:**

- Introduction to Docker Ecosystem
- Docker Compose
- Docker Swarm
- Managing Containers
- Running Containers
- Introduction to Docker Networking
- Network Types
- Docker Container Networking
- Implementation of Docker in the Project

**Hands-on-Demo :**

- Use Docker Compose to create a WordPress site
- Start Containers on a Cluster with Docker Swarm

- Deploy a multi-tier application over a cluster
- Scale an application

## **Lesson 8 : Continuous Deployment: Configuration Management with Puppet**

In this module, you will learn to install and configure Puppet. Additionally, understand the master-agent architecture in Puppet.

### **Topics:**

- Introduction to Puppet
- Puppet Installation
- Puppet Configuration
- Puppet Master and Agent Setup
- Puppet Module
- Node Classification
- Puppet Environment
- Puppet Classes
- Automation & Reporting

### **Hands-on-Demo :**

- Install and configure Puppet
- Configure and implement servers using Puppet

## **Lesson 9 : Configuration Management with Ansible**

In this module, you will learn to install Ansible and configure ansible roles. You will also learn to write playbooks and finally execute ad-commands using Ansible.

### **Topics:**

- Introduction to Ansible
- Ansible Installation
- Configuring Ansible Roles
- Write Playbooks
- Executing adhoc command

### **Hands-on-Demo :**

- Installing Ansible
- Configuring Ansible
- Role Write Playbooks
- Execute adhoc commands

## **Lesson 10 : Containerization using Kubernetes**

In this module, you will learn the basics of Kubernetes and its integration with Docker.

### **Topics :**

- Revisiting Kubernetes Cluster Architecture
- Spinning up a Kubernetes Cluster on Ubuntu VMs
- Exploring your Cluster
- Understanding YAML
- Creating a Deployment in Kubernetes using YAML
- Creating a Service in Kubernetes
- Installing Kubernetes Dashboard
- Deploying an App using Dashboard
- Using Rolling Updates in Kubernetes
- Containers and Container Orchestration
- Introduction to Kubernetes

### **Hands-on-Demo :**

- Setting up the Kubernetes Cluster
- Accessing your application through service
- Deploying an app through Kubernetes Dashboard
- Rolling updates in Kubernetes

## **Lesson 11 : Continuous Monitoring with Nagios**

Learn how to continuously monitor your tasks using various plugins and implementing Nagios Commands.

### **Topics :**

- Introduction to Continuous Monitoring
- Introduction to Nagios

- Installing Nagios
- Nagios Plugins(NRPE) and Objects
- Nagios Commands and Notification

**Hands On :**

- Installing Nagios
- Monitoring of different servers using Nagios

**Lesson 12 : Introduction to DevOps on Cloud**

Learn about various cloud services and service providers, also get the brief idea of how to implement DevOps using AWS.

**Topics :**

- Why Cloud?
- Introduction to Cloud Computing
- Why DevOps on Cloud?
- Introduction to AWS
- Various AWS services
- DevOps using AWS