BLACKBIRD FOR TRAINING

# DevOps Foundation and Automation Tools (Docker, Kubernetes, Jenkins)

*Barcelona (Spain)*

*27 - 31 July 2026*

# DevOps Foundation and Automation Tools (Docker, Kubernetes, Jenkins)

Code: IT32 From: 27 - 31 July 2026 City: Barcelona (Spain) Fees: 5900 Pound

## Introduction

In today's digital era, DevOps has become the cornerstone of organizational transformation, bridging the gap between development and operations teams to enhance collaboration, efficiency, and innovation.

The DevOps Foundation and Automation Tools Docker, Kubernetes, Jenkins program equips participants with the knowledge and skills to implement automation and continuous improvement practices that accelerate software delivery, enhance quality, and reduce operational risks.

This training provides a balanced blend of theory and practical application, enabling participants to design and manage modern development environments using industry-leading tools for automation, containerization, and continuous integration and delivery.

It is a strategic step for professionals seeking to boost operational performance and drive digital excellence within their organizations.

## Course Objectives

- Understand the core principles and lifecycle of DevOps.
- Explore the strategic importance of integrating development and operations.
- Apply automation practices using Docker, Kubernetes, and Jenkins.
- Build integrated development and deployment environments using containers.
- Create automated continuous integration and delivery pipelines.
- Manage and scale applications effectively using container orchestration tools.
- Analyze performance and optimize deployment processes.
- Design and implement scalable, automated infrastructure.

## Course Outlines

### Day 1: DevOps Concepts and the Foundation of Automation

- Introduction to DevOps and its strategic value.
- Bridging the gap between development and operations teams.
- Principles of continuous integration and continuous delivery.
- The role of automation in improving software quality.
- Overview of key DevOps tools and ecosystems.
- Practical exercises for identifying automation opportunities.

### Day 2: Introduction to Docker and Containerization

- Understanding containers and how they differ from virtual machines.
- Installing Docker and setting up the working environment.


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- Creating and managing Docker images and containers.
- Using Docker Compose to manage multi-service applications.
- Best practices for container security and efficiency.
- Hands-on exercise: building and deploying a simple application using Docker.

## Day 3: Container Management with Kubernetes

- Overview of Kubernetes and its architecture.
- Core components: Pods, Nodes, Clusters, and Services.
- Deploying and managing applications in a Kubernetes environment.
- Scaling applications and enabling self-healing capabilities.
- Configuring services and ingress for traffic management.
- Practical exercise: deploying a containerized application using Kubernetes.

## Day 4: Continuous Integration and Delivery with Jenkins

- Introduction to Jenkins and its role in DevOps automation.
- Setting up Jenkins and building CI/CD pipelines.
- Integrating Jenkins with version control and container tools.
- Automating tests and ensuring code quality.
- Managing builds, releases, and deployments.
- Hands-on exercise: creating a complete CI/CD pipeline from build to deployment.

## Day 5: Integrated Implementation and Advanced Optimization

- Combining Docker, Kubernetes, and Jenkins into a unified ecosystem.
- Designing scalable and resilient DevOps architectures.
- Monitoring and analyzing performance through automation tools.
- Troubleshooting and improving operational reliability.
- Implementing backup and disaster recovery strategies.
- Capstone project: full practical assessment to apply learned skills.

## Why Attend this Course: Wins & Losses!

- Gain a comprehensive understanding of DevOps foundations and automation tools.
- Develop hands-on, practical skills applicable to real-world environments.
- Enhance operational efficiency and reduce human errors through automation.
- Accelerate delivery cycles while maintaining high software quality.
- Build scalable and flexible development ecosystems.
- Learn to deploy and manage cloud-based applications efficiently.
- Acquire experience in creating fully automated CI/CD pipelines.
- Strengthen your professional growth with in-demand technical skills.

## Conclusion

The DevOps Foundation and Automation Tools Docker, Kubernetes, Jenkins course serves as a crucial gateway to mastering modern automation and continuous integration practices.It combines conceptual learning with real-world


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implementation, providing participants with the expertise to build and manage automated, scalable development environments.

By leveraging tools such as Docker for containerization, Kubernetes for orchestration, and Jenkins for continuous integration, professionals can significantly improve operational agility, reliability, and performance. Applying these practices within the workplace translates into measurable improvements in productivity, quality, and innovation.Ultimately, this course represents a strategic investment for anyone aiming to lead digital transformation and operational excellence in the technology-driven future.


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