



Information Technology

Terraform: Up & Running

Course Introduction

Welcome to "Terraform: Up & Running," a five-day course designed to equip professionals with the skills needed to manage infrastructure as code (IaC) using Terraform. As organizations increasingly adopt cloud-native technologies, managing infrastructure through code has become essential for scalability, consistency, and efficiency. This course dives deep into Terraform's architecture, syntax, and best practices, enabling you to design and deploy infrastructure across multiple cloud providers such as AWS, Azure, and Google Cloud.

Through hands-on labs and real-world scenarios, you will explore advanced topics such as modular design, state management, and multi-cloud deployments. You will also learn how to integrate Terraform with CI/CD pipelines, ensuring seamless collaboration between development and operations teams. The course emphasizes practical application, enabling you to design scalable, secure, and maintainable infrastructure that aligns with modern DevOps practices.

By the end of this course, you will have the expertise to manage infrastructure as code effectively, fostering a culture of automation, collaboration, and continuous improvement. Whether you are a DevOps engineer, cloud architect, or system administrator, this course provides the knowledge and skills necessary to excel in IaC implementation and optimization. With Terraform as your foundation, you will be prepared to tackle complex challenges in infrastructure management.

Target Audience

This course is ideal for DevOps engineers, cloud architects, and system administrators involved in infrastructure management. It is particularly beneficial for professionals looking to deepen their Terraform expertise or those preparing for roles in cloud infrastructure automation.

Learning Objectives

- Understand the principles of infrastructure as code (IaC) and its role in modern cloud environments.
- Design and deploy infrastructure using Terraform modules and configurations.
- Manage Terraform state files and implement remote state storage.
- Integrate Terraform with CI/CD pipelines for automated infrastructure provisioning.
- Troubleshoot common Terraform issues and optimize performance.

Course Outline

• Day 01

Foundations of Terraform

Introduction to Infrastructure as Code (IaC)

- Definition and importance of IaC in modern cloud environments.
- Benefits of implementing IaC with Terraform.
- Overview of Terraform's architecture and components.

Setting Up Terraform

- Installing Terraform on Linux, Windows, and macOS.
- Configuring Terraform CLI and connecting to cloud providers.

Interactive Session

- Hands-on exercise: Write and apply a basic Terraform configuration.

• Day 02

Building Infrastructure with Terraform

Understanding Terraform Syntax

- HCL (HashiCorp Configuration Language) basics.

- Writing and debugging Terraform configurations.

Managing Resources

- Creating and managing cloud resources (e.g., EC2 instances, S3 buckets).
- Using variables and outputs for dynamic configurations.

Practical Exercise

- Deploy a virtual machine and storage bucket using Terraform.

• Day 03

Modular Design and State Management

Modular Design

- Creating reusable Terraform modules.
- Organizing configurations for scalability.

State Management

- Understanding Terraform state files and their importance.
- Implementing remote state storage (e.g., S3, Azure Blob Storage).

Role Play

- Build a modular Terraform configuration and manage state files.

• Day 04

Integrating Terraform with CI/CD

Automating Infrastructure Provisioning

- Integrating Terraform with Jenkins, GitLab, and GitHub Actions.
- Automating resource creation and destruction.

Multi-Cloud Deployments

- Deploying infrastructure across AWS, Azure, and Google Cloud.
- Managing provider-specific configurations.

Group Activity

- Automate infrastructure provisioning using Terraform and a CI/CD pipeline.

• Day 05

Advanced Topics and Best Practices

Securing Terraform

- Protecting sensitive data with secrets management.
- Enforcing access controls for Terraform configurations.

Scaling Terraform

- Optimizing performance with parallel execution.
- Handling large-scale infrastructure deployments.

Best Practices and Real-World Examples

- Reviewing best practices for Terraform usage.
- Discussing real-world case studies and success stories.

Final Project Presentation: Comprehensive Terraform Deployment

- Closing Remarks

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 26, 2025	May 30, 2025	5 days	4250.00 \$	UAE - Abu Dhabi
July 14, 2025	July 18, 2025	5 days	2150.00 \$	Virtual - Online
Oct. 26, 2025	Oct. 30, 2025	5 days	4250.00 \$	KSA - Riyadh