

Terraform with Oracle Cloud Infrastructure and Jenkins Integration

Learn to provision and manage Oracle Cloud Infrastructure with Terraform, then automate deployments using Jenkins integration.

4 Days

8 HOURS A DAY

4

MODULES

12

TOPICS

30

HANDS-ON LABS

COURSE OVERVIEW

This course covers Infrastructure as Code concepts and Terraform fundamentals alongside Oracle Cloud Infrastructure authentication and setup. It then addresses building OCI resources such as identity, networking, compute instances, load balancers, object storage and auto scaling with Terraform, along with state file management, provider versioning, conditional expressions, data sources and dynamic blocks. Further topics include provisioners, modules, workspaces, remote state management, and an overview of Terraform Cloud and Enterprise. The course concludes with Jenkins installation and configuration, SSH integration, and automated deployment of infrastructure by integrating Jenkins with Terraform.

WHO THIS COURSE IS FOR

Cloud Engineers

DevOps Engineers

Infrastructure Administrators

Systems Administrators

Build and Release Engineers

PREREQUISITES

- Basic knowledge of Oracle Cloud Infrastructure.

TOOLS AND REQUIREMENTS

- Cloud Platform: Oracle Cloud Infrastructure
- Terraform Version: Latest
- Lab Requirement: Participant Oracle Cloud Infrastructure Account Required

LEARNING OBJECTIVES

- Explain Infrastructure as Code concepts and Terraform fundamentals
- Configure OCI authentication and provider settings for Terraform
- Build OCI resources including instances, load balancers and storage
- Describe Terraform state file behaviour and provider versioning
- Apply conditional expressions, locals and dynamic blocks in configurations
- Implement Terraform provisioners, modules and workspaces
- Configure remote state management on OCI Object Storage
- Integrate Jenkins with Terraform to automate VM deployments

4 Modules, 12 Topics

01

3 Labs

Getting Started & Setting Up Labs

TOPICS

- Introduction to Infrastructure as Code and Terraform
- Introduction to Oracle Cloud Infrastructure
- OCI Authentication with Terraform

02

9 Labs

Building Cloud Infrastructure with Terraform

TOPICS

- Understanding Terraform State file
- Understanding Working of State file – Desired State & Current State
- Terraform Provider Versioning

03

4 Labs

Read, Generate, Modify Configurations

TOPICS

- Understanding conditional expression and locals
- Understanding Data Sources & Dynamic Blocks

Terraform Provisioners

Lab

Terraform Modules & Workspaces

Lab

Remote State Management

Lab

Terraform Cloud and Enterprise Overview

Lab

Jenkins

TOPICS

- Introduction to CICD and Jenkins
- Install SSH Plugin in Jenkins and Add Node Credentials
- Integrate Node SSH Server with Jenkins
- Deploy Web Server Automatically through Jenkins

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	Getting Started & Setting Up Labs	■ Installation of Terraform on Windows ■ Setting Up Terraform on Windows and OCI Authentication ■ Defining Provider & Using Basic Terraform commands
02	Building Cloud Infrastructure with Terraform	■ OCI Identity – Create Users, Groups using Terraform ■ Create OCI Default Network resources using Terraform ■ Create OCI Linux Instance using Terraform ■ Create Windows Instance using Terraform ■ OCI – Create OCI Load Balancer using Terraform ■ Create an Object Bucket using Terraform & How to do file upload ■ OCI - Auto Scaling using Terraform ■ Create Streams using Terraform ■ Methods to define Terraform Provider Versions
03	Read, Generate, Modify Configurations	■ Using Conditional expression and Locals ■ Using Data Sources ■ Using terraform validate and terraform fmt ■ Replacing Resource in terraform manually – taint and replace
04	Terraform Provisioners	Implementing file, remote-exec and local-exec provisioners
05	Terraform Modules & Workspaces	Creating and Using local Modules
06	Remote State Management	Putting terraform state file on OCI Object Storage and OCI Resource Manager
07	Terraform Cloud and Enterprise Overview	Deploying Infrastructure with Terraform Cloud

#	MODULE	ACTIVITY
08	Jenkins	- Jenkins Installation - Jenkins User Interface - Install SSH Plugin in Jenkins and SSH Server Credentials for Authentication - Integration of SSH Server with Jenkins to Run Projects - Deploy Web Server by Using Jenkins and Access Web Server from Browser - Working with Jenkins Parameters - Create Users Manually in the Jenkins DB and Manage Roles for Jenkins Users - Store Terraform Files on GitHub - Integrating Jenkins and Terraform - Automatically Deploy VMs with the Help of Terraform and Jenkins

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Hands-on exercises throughout the course
- Delivery by certified instructors and subject matter experts
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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