

Terraform Certified Associate with Azure

Course Duration: 32 Hours (4 Days)

Overview

The Terraform Certified Associate with Azure course is designed for individuals aiming to master Infrastructure as Code (IaC) using Terraform on the Azure platform. This Azure Terraform training provides a comprehensive introduction to Terraform, starting with the basics and advancing through more complex cloud infrastructure elements. Learners will begin with choosing the right IaC tool, installing Terraform, and setting up an Azure account. The course delves into the creation and management of Azure resources such as Virtual networks, VMs, Storage, and Load balancers. Furthermore, it covers reading, generating, and modifying configurations, understanding Terraform's state management, and utilizing advanced features like Modules, Workspaces, and Provisioners. Remote state management, Integrating with Git, and securing Terraform state files are also key components. Overall, this Terraform Azure course equips learners with the skills needed to efficiently provision and manage Azure cloud infrastructure with Terraform.

Audience Profile

The Terraform Certified Associate with Azure course is designed for IT professionals seeking expertise in infrastructure automation and cloud services.

- Cloud Engineers
- DevOps Engineers
- Infrastructure Architects
- Systems Administrators
- Security Engineers
- Software Developers interested in DevOps practices
- IT Managers overseeing cloud infrastructure
- Technical Project Managers
- Professionals working on Azure environments
- Individuals aiming for the HashiCorp Certified: Terraform Associate certification

Course Syllabus

Module 1 - Getting Started & Setting Up Labs

- Introduction to Infrastructure as Code and Terraform
- Lab: Installation of Terraform on Windows
- Comparison between Terraform and Ansible
- Introduction to Azure CLI
- Understanding Terraform Providers
- Authenticate Azure with Terraform

- Lab: Setting Up Terraform on Windows and Azure Authentication
- Basic Terraform commands: init, plan, apply
- Lab: Defining Provider & Using Basic Terraform commands

Module 2 – Building Cloud Infrastructure with Terraform

- Lab: Creating Resource Groups in Azure
- Lab: Provisioning Virtual Networks, Subnets, Public IPs, and Network Interfaces
- Lab: Deploying Windows and Linux VMs
- Lab: Configuring Azure Storage, Security Groups, and Load Balancers
- Understanding Terraform State file
- Understanding Working of State file – Desired State & Current State
- Terraform Provider Versioning
- Lab: Methods to define Terraform Provider Versions

Module 3 - Read, Generate, Modify Configurations

- Understanding Attributes and Output Values in Terraform
- Lab: Handling Terraform attributes and output values
- Lab: Referencing attributes across resources
- Understanding Terraform Variables and Data Types – (String, Number, Boolean, List, Map)
- Lab: Methods to Define Variables & Variable Arguments
- Lab: Fetching Data from List & Map in Variables
- Understanding Meta-Arguments – (for_each & count)
- Lab: Using Meta-Arguments
- Understanding conditional expression and locals
- Lab: Using Conditional expression and Locals
- Understanding Expressions – for & Splat expression
- Lab: Using for and Splat expression
- Understanding Data Sources & Dynamic Blocks
- Lab: Using Data Sources
- Lab: Using Dynamic Blocks
- Lab: Exploring debugging techniques in Terraform
- Terraform Commands – validate, fmt
- Lab: Using terraform validate and terraform fmt
- Lab: Replacing Resource in terraform manually – taint and replace
- Lab: Using Terraform Graph utility
- Lab: Saving Terraform Plan to a file and apply from plan file

Module 4 - Terraform Provisioners

- Understanding provisioners in Terraform

- Understanding Connection Block
- Types of provisioners
- Lab: Implementing file, remote-exec and local-exec provisioners

Module 5 - Terraform Modules & Workspaces

- Applying the DRY (Don't Repeat Yourself) principle
- Understanding Usage of Terraform Modules
- Standard Structure of Terraform Modules
- Lab: Creating and Using local Modules
- Lab: Utilizing Modules from Terraform Registry
- Understanding and implementing Terraform workspaces
- Lab: Working with Terraform Workspaces

Module 6 - Remote State Management

- Integrating Terraform with Git for team collaboration
- Understanding Basic Working of Git
- Lab: Handling Git commands (initialize, commit, push, tagging, branching)
- Challenges and security considerations in Terraform state
- Lab: Remote state management with Terraform, including importing existing resources
- Terraform State Backend Configuration
- Lab: Putting terraform state file on Azure Blob Container

Module 7 – Terraform Cloud and Enterprise Overview

- Introduction to Terraform Cloud
- Creating infrastructure with Terraform Cloud
- Overview of Sentinel Security in Terraform
- Lab: Basic Deploying Infrastructure with Terraform Cloud and Sentinel Security