

Terraform with Azure

Duration: 3 Days

Hands-On Format: This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Module 1 - Getting Started & Setting Up Labs

- Choosing a right Infrastructure as Code tool
- Terraform Overview
- Installing Terraform - Windows Users
- Installing Terraform - MacOS and Linux Users
- Choosing Right IDE for Terraform IAC development
- Setting up Azure Account
- Terraform init, plan and apply

Module 2 – Building Cloud Infrastructure with Terraform

- Introduction to Terraform with Azure
- Azure Resource Manager
- Azure Virtual Networks
- Authentication with Azure and Create a Resource Group
- Azure Virtual Network
- Azure VMs
- Azure Storage
- Security Groups
- Load Balancers
- Understanding Terraform State files
- Understanding Desired & Current States
- Terraform Provider Versioning
- Types of Terraform Providers
- Create template for azure web app
- Deploy storage account, container and blob

Module 3 - Read, Generate, Modify Configurations

- Understanding Attributes and Output Values in Terraform
- Referencing Cross-Account Resource Attributes
- Terraform Variables
- Approaches for Variable Assignment
- Data Types for Variables
- Fetching Data from Maps and List in Variable
- Count and Count Index
- Conditional Expressions
- Local Values
- Terraform Functions
- Data Sources
- Debugging in Terraform
- Terraform Format

- Validating Terraform Configuration Files
- Load Order & Semantics
- Dynamic Blocks
- Tainting Resources
- Splat Expressions
- Terraform Graph
- Saving Terraform Plan to File

Module 4 - Terraform Provisioners

- Understanding Provisioners in Terraform
- Types of Provisioners
- Implementing remote-exec provisioners
- Implementing local-exec provisioners

Module 5 - Terraform Modules & Workspaces

- Understanding DRY principle
- Variables and Terraform Modules
- Terraform Registry
- Terraform Workspace
- Implementing Terraform Workspace

Module 6 - Remote State Management

- Integrating with GIT for team management
- Security Challenges in Committing TFState to GIT
- Remote State Management with Terraform
- Terraform State Management
- Importing Existing Resources with Terraform Import