Managing Azure with Terraform

- 3 Days
- Lecture and Hands-on Labs
- Includes all objectives found on HashiCorp's Terraform Associate Certification

Course Overview

As enterprises seek to deploy and maintain increasingly complex Azure cloud infrastructure, there is a necessity to use "Infrastructure as Code" (IaC) tools, like Terraform. An open-source, state management tool developed by HashiCorp, Terraform allows developers to use a common coding interface to work through their various clouds safely and efficiently. Attendees will leave being able to write and understand Terraform code (HCL), have a clear understanding of Terraform's various components and supporting tools, as well as when to reach for Terraform over another IaC tool, such as Ansible.

Review this course online at https://www.alta3.com/courses/terraform-azure

Students are responsible for ensuring all required accounts, software, licenses, and online resources are accessible and functioning prior to class. See the prerequisites section for more details.

Who Should Attend

- DevOps Engineers
- Software Developers
- Technical Managers and Leads
- System and Cloud Administrators
- Network Engineers and Developers

What You'll Learn

- Writing Terraform HCL code for managing Azure
- Deploying into Azure
- Where Terraform fits in the Enterprise CI/CD model
- Differences between Terraform and Ansible
- Best practices
- Prepare for HashiCorp's Terraform Associate Certification
- AI LLM prompt engineering for Terraform snippets and jumpstarting solutions

Outline

AI Lab Assistance

Introduction to Terraform

- Lecture: Terraform Course Map
- Lecture: Introduction to Terraform

Software Control Management

- Lecture + Lab: SCM Option #1 - GitHub

Overview of Terraform

- Lecture + Lab: Terraform Install
- Lecture + Lab: gitignore for Terraform
- Lecture + Lab: Azure Account Setup (Optional)

Terraform

- Lecture: Managing Azure with Terraform
- Lecture: Terraform HCL Syntax
- Lecture + Lab: Azure and Terraform Resources
- Lecture: Terraform Variables
- Lecture + Lab: Azure and Terraform Variables
- Lecture: Terraform Locals
- Lecture + Lab: Output Values

Azure

- Lecture: Exploring Terraform Azure Providers
- Lecture + Lab: Terraform and Azure
- Lecture + Lab: Building a Virtual Network
- Lecture + Lab: Dynamic Provisioning with tfvars Files
- Lecture + Lab: Creating A Windows VM
- Lecture: Microsoft Verified Modules
- Lecture + Lab: Azure Verified Modules for Terraform

Beyond Basics

- Lecture: Import pre-existing infrastructure
- Lecture + Lab: Data Sources and HTTP Provider
- Lecture + Lab: Dynamic Operations with Functions
- Lecture + Lab: Creating a Terraform Module
- Lecture + Lab: Terraform CLI Workspaces

Loops

- Lecture: for_each
- Lecture + Lab: Looping Constructs - for_each

Provisioning

- Lecture + Lab: local-exec Provisioner

Dynamic Blocks

- Lecture + Lab: Dynamic Blocks

Azure Management with Terraform

- Lecture + Lab: Store Terraform State in Azure
- Lecture: Understanding Azure Managed Identities
- Lecture + Lab: Managed Identities and Key Vault

Additional Activities

- Lecture + Lab: Troubleshooting Broken Module
- Lecture + Lab: Child Module Practice

Terraform Review

- Lecture: HashiCorp Terraform Study Guide

Certification

- Managing Azure with Terraform - Certification Project