



Managing AWS 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 AWS 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-aws>

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 AWS
- Deploying into AWS
- 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

-  Lecture + Lab: Meet VIRGIL: Your AI Lab Coach


Introduction to Terraform

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






Software Control Management

-  Lecture + Lab: SCM Option #1 - GitHub
-  Lecture + Lab: SCM Option #2 - GitLab








Overview of Terraform

-  Lecture + Lab: Terraform Install









Terraform Modules

-  Lecture: Terraform HCL Syntax
-  Lecture + Lab: Up and Running with Terraform
-  Lecture + Lab: Terraform Variables
-  Lecture + Lab: Output Values
-  Lecture: Avoid the :latest Tag

AWS

-  Lecture: Managing AWS with Terraform
-  Lecture + Lab: Terraform and AWS
-  Lecture: Exploring Terraform AWS modules
-  Lecture + Lab: Starting with VPC
-  Lecture + Lab: Creating EC2 Instances
-  Lecture + Lab: Tracking State with S3 and Databases
-  Lecture + Lab: Creating an AWS Module




Beyond Basics

-  Lecture + Lab: Terraform CLI Workspaces
-  Lecture + Lab: Terraform Expressions and Errors
-  Lecture + Lab: Resources - replace vs taint
-  Lecture + Lab: Dynamic Operations with Functions
-  Lecture + Lab: Creating a Terraform Module
-  Lecture + Lab: Moving State - terraform state mv
-  Lecture + Lab: Dynamic Provisioning with tfvars Files
-  Lecture + Lab: Data Sources and HTTP Provider


Loops

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


Provisioning

-  Lecture + Lab: local-exec Provisioner
-  Lecture + Lab: Creating Delays
-  Lecture + Lab: Terraform - templatefile Function

Terraform Cloud

-  Lecture + Lab: Terraform Cloud and Terraform Enterprise
-  Lecture + Lab: Triggering Cloud Builds via Git Commits

Dynamic Blocks

-  Lecture + Lab: Dynamic Blocks

Terraform and Enterprise

- 📺 Lecture + Lab: Deploy a Go RESTful API microservice with Terraform
- 🗨️ Lecture: Terraform vs. Ansible
- 📺 Lecture + Lab: Terraform and Ansible

Helpful DevOps Tools (OPTIONAL)

- 📺 Lecture + Lab: GitHub Actions - GitLeaks
- 📺 Lecture + Lab: GitHub Actions - Terraform

Terraform Review

- 🗨️ Lecture: HashiCorp Terraform Study Guide

Prerequisites

Although not required, students with some experience programming, or pre-existing knowledge of Azure or other cloud architecture, will most appreciate the technical nature of this hands-on course.

Next Courses

- Jenkins Automation Server Essentials (2 days)
- Ansible Essentials (5 days)
- Go Essentials (5 days)
- Git and GitHub (2 days)
- Git and GitLab (2 days)

Certification

- Managing AWS with Terraform - Certification Project