Terraform Essentials

Course Overview

In the realm of cloud computing and infrastructure management, the ability to efficiently and reliably provision and manage resources is crucial. Terraform, an open-source Infrastructure as Code (IaC) tool developed by HashiCorp, enables developers to define and provision cloud infrastructure using a high-level configuration language

Course Description

This three-day course starts from the absolute basics and progressively covers advanced Terraform topics on different platforms like Linux, Windows, AWS, and Azure. Whether you're looking to manage bare-metal servers or cloud environments, this course will provide hands-on experience and foundational knowledge, making it fun and engaging through practical examples and interactive exercises

Learning Outcomes

By the end of this course, participants will be able to:

Understand the principles of Infrastructure as Code and the fundamentals of Terraform.
Install and configure Terraform on different operating systems including Linux and Windows.
Write basic to advanced Terraform configurations using HashiCorp Configuration Language (HCL).
Provision and manage infrastructure on AWS and Azure using Terraform.
Utilize various Terraform commands and operations to manage and update infrastructure.
Apply best practices for structuring and maintaining Terraform projects.

Learning Curriculum

Module 1

Introduction to Infrastructure as Code

Definition and importance in modern IT environments.
Overview of tools and technologies in IaC with a focus on Terraform

Module 2

Getting Started with Terraform

Installation and setup on Linux and Windows.
Terraform basics: Workflow (write, plan, create), providers, and Terraform Registry

Module 3

Basic Configuration with HashiCorp Configuration Language (HCL)

Syntax and structure of HCL.
Writing your first configuration: Initializing configurations and applying changes.
Resource management: Defining and provisioning resources

Module 4

Terraform on Bare Metal Infrastructure

Understanding the approach to managing bare metal resources.
Configuring Terraform to manage non-cloud, physical servers

Module 5

Terraform with AWS

Setting up AWS provider.
Managing AWS resources: VPC, EC2, S3, and more.
Security and network configurations using Terraform

Module 6

Terraform with Azure

Configuring the Azure provider.
Provisioning Azure resources: VMs, Azure Functions, and Azure Storage.
Managing resource groups and Azure Active Directory configurations

Module 7

Advanced Terraform Features

Modules and workspaces for managing larger scale deployments.
State management: Inspecting, modifying, and troubleshooting Terraform state.
Backends in Terraform for state storage and locking

Module 8

Terraform Operations and Functionality

Terraform commands: Plan, Apply, Destroy, and others.
Importing existing infrastructure into Terraform management.
Using Terraform Cloud for team collaboration

Module 9

Best Practices and Real-World Scenarios

Structuring Terraform code for multi-environment setups (development, staging, production).
Tips for maintaining and scaling Terraform configurations.
Integrating version control systems with Terraform workflows

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