Terraform Essentials

Duration: 2 days (8hrs/day)

Prerequisites: Basic knowledge of Cloud AWS.

Course Objective: The objective of this course is to equip learners with the skills to efficiently create, manage, and automate AWS cloud infrastructure using Terraform. Through theoretical lessons and hands-on labs, participants will gain proficiency in Terraform commands, providers, state management, and modules.

Cloud Platform: AWS, **Terraform Version:** Latest

Module 1 - Getting Started & Setting Up Labs (Day1)

Introduction to Infrastructure as Code and Terraform

Lab: Installation of Terraform on Windows

Comparison between Terraform and Ansible

Understanding Terraform Providers

Authenticate AWS with Terraform

Lab: Setting Up Terraform on Windows and AWS Authentication

Basic Terraform commands: init, plan, apply

Understanding Provider Block

Lab: Defining Provider & Using Basic Terraform commands

Module 2 – Building Cloud Infrastructure with Terraform (Day 1)

Lab: Creating EC2 instances in AWS

Lab: Provisioning Virtual Private Cloud, Subnets & Elastic IP, NIC

Lab: Deploying accessible Linux EC2s

Lab: Configuring S3 Buckets, Security Group, and Load Balancers, RDS Service

Understanding Terraform State file

Understanding Working of State file – Desired State & Current State

Challenges and security considerations in Terraform state

Lab: Remote state management with Terraform, including importing existing resources

Module 3 - Read, Generate, Modify Configurations (Day 2)

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

Module 4 - Terraform Provisioners (Day2)

Understanding provisioners in Terraform

Understanding Connection Block

Types of provisioners

Lab: Implementing file, remote-exec, and local-exec provisioners

Module 5 – Understanding Terraform Modules & Backend Configuration (Day2)

Applying the DRY (Don't Repeat Yourself) principle

Understanding Usage of Terraform Modules

Standard Structure of Terraform Modules

Terraform State Backend Configuration

Lab: Putting terraform state file on S3 Bucket