TERRAFORM COURSE CONTENTS (5 DAYS)

By Dr. Vishwanath Rao

Introduction to Terraform
Introduction to terraform
Infrastructure Automation
Install Terraform
Providers
Resources
Basic Syntax
Exercise: Your First Script main.tf

Getting started with Terraform
Terraform Plan, show, Apply, Destroy
Exploring Terraform Registry
Interpolation
Tainting and Updating Resources
Terraform Console and Output
Terraform Variables
Breaking Out Our Variables and Outputs
Lab exercises: Breaking down main.tf into variables.tf, output.tf,

Terraform Modules
Introduction to Modules
Module repositories
First Basic Module
The Module code
Main Terraform Code
Using git repositories to save modules
Lab exercises: Modules for Docker
Lab exercises: The Docker Image Module
Lab exercises: Modules The Container Module
Lab exercises: Modules – The Root Module

Terraform: Writing in a more organized way
Maps and Lookups
Terraform Workspaces
Breaking Out Our Variable Definitions
Null Resources and Local-Exec
Terraform Console

Getting Started & Setting Up Labs
Choosing a right Infrastructure as Code tool
Installing Terraform - Windows Users
Installing Terraform - MacOS and Linux Users
Choosing Right IDE for Terraform IAC development
Setting up AWS account

Deploying Infrastructure with Terraform
Creating first EC2 instance with Terraform Understanding Resources & Providers
Understanding Resource & Providers - Part 2 Destroying Infrastructure with Terraform Understanding Terraform State files
Understanding Desired & Current States
Challenges with the current state on computed values Terraform Provider Versioning
Types of Terraform Providers

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

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

Terraform Modules & Workspaces
Understanding DRY principle Implementing EC2 module with Terraform
Variables and Terraform Modules Terraform Registry
Terraform Workspace
Implementing Terraform Workspace

Remote State Management
Integrating with GIT for team management
Security Challenges in Commiting TFState to GIT Remote State
Management with Terraform Implementing S3 Backend
Challenges with State File locking
Integrating DynamoDB with S3 for state locking Terraform State
Management
Importing Existing Resources with Terraform Import