

Terraform Collaborative Infrastructure Automation Training

Course Description

Terraform is a configuration orchestration tool employed for the construction and management of infrastructure across cloud platforms and data centers. This instructor-led, live training program (available on-site or remotely) is specifically designed for engineers with limited or no prior experience in infrastructure management. The curriculum provides an in-depth exploration of Terraform syntax and the methodologies utilized to automate infrastructure setup and deployment processes.

Who Should Attend

An understanding of cloud infrastructure concepts

- DevOps Engineers
- System Administrators
- System Architects

Course Objective

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

- Install and configure Terraform
- Understand the principles of infrastructure as code
- Set up and automate infrastructure using Terraform
- Write and share configuration file with team members

Course Outline

DAY 1

- **Introduction**
 - Understanding Cloud Orchestration code and Terraform
 - Why Terraform?
 - Terraform Vs. Other Orchestration Tools - Why Terraform is the right choice
 - Core Terraform Components
 - Fundamental Concepts
- **Programming Structure**
 - Terraform Syntax: Providers
 - Terraform Syntax: Resources
 - Terraform Syntax: Variables
 - Terraform Syntax: Data sources
 - Terraform Syntax: Outputs
 - Connecting to Cloud using Providers
 - Terraform Coding Examples
 - Resources

- **Provisioning resources with Terraform**
 - Types of Provisioners
 - Implementing remote-exec provisioners
 - Remote Exec Provisioners (Code)
 - Implementing local-exec provisioners
 - Integrating Ansible with Terraform
 - Implementing File provisioners
 - Creating and accessing compute instances
- **Script Executions**
 - Obtaining variables from Terraform into external scripts
 - Using shell script remote executor from Terraform to configure platform on launched VMs

DAY 2

- **Deployment Automation using Terraform**
 - Deploying Java application on VMs launched through terraform
 - Use of elastic ip in Terraform
 - Automation through Hosts entry modification
 - Using tomcat API to provision application
- **Managing RDS using Terraform**
 - Understanding RDS
 - Launching RDS DB Instance using Terraform
 - Launching Aurora DB Instance using Terraform
- **Terraform Modules**
 - Understanding the use case for modules
 - Understanding DRY principle
 - Create and use a module
 - Module Variables
 - Remote State
- **Integrating with GIT for team management**
 - Security Challenges in Committing TFState to GIT
 - Understanding the use case for Remote State
 - Managing Remote State using S3
 - Challenges with State File locking

DAY 3

- **Data Sources**
 - Understanding Data Sources
 - Using Data Source
- **Templates**
 - Understanding Templates
 - Using Templates
- **Integration with Configuration Management Tools**
 - Understanding configuration management
 - Integration with puppet configuration management
- **Jenkins Integrations**
 - Understanding integration points between Jenkins and Terraform

- **Conclusions**

- Understanding alternatives to Terraform
- Where terraform succeeds

Course Length:

3 days

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