Terraform (AWS & Azure)

Course Outline:

Introduction to DevOps and Terraform

- ➤ What is DevOps?
- ➤ Infrastructure Provisioning and Configuration Management
- ➤ Infrastructure as Code using Terraform
- ➤ Terraform vs other tools
- ➤ HashiCorp Configuration Language

Setup and Configuration

- ➤ Installation of Terraform in Linux
- ➤ **Hands-on:** Installation of Terraform in Ubuntu EC2 Machine
- ➤ **Hands-on:** Configure AWS CLI and provision an EC2 using Terraform
- ➤ **Hands-on**: Configure Azure CLI & Provision Azure VM using terraform

Getting started with Terraform

- ➤ Terraform commands and usage
- ➤ Providers in Terraform
- ➤ Understanding Terraform variables
- ➤ Using provisioners in Terraform
- ➤ **Hands-on:** Using Variables in EC2 Instance creation
- ➤ **Hands-on:** Outputting variables during Terraform apply
- ➤ **Hands-**on: Using Variables in Azure VM creation

State Management in Terraform

- ➤ Understanding Terraform State
- ➤ Configuring a Remote State
- ➤ **Hands-on:** Configuring RemoteState using AWS S3
- ➤ **Hands-on:** Configuring RemoteState using Azure Storage

Provisioning VNET & Virtual Private Cloud using Terraform

- ➤ Understanding resources needed in VPC creation

- ➢ Understanding resource needed in Azure VNET creation
- ➢ **Hands-on:** Creating VPC, Subnets, Gateways, Route tables and launching EC2 Instances
- ➢ **Hands-*on:*** Creating VPC, Subnets, Gateways, Route tables and launching Azure VM

Configuring Auto Scaling for VMs

- ➢ Overview of EC2 AutoScaling
- ➢ Overview of Azure VM ScaleSet.
- ➢ **Hands-on:** Creating Auto Scaling groups and policies using Terraform
- ➢ **Hands-on:** Creating Azure VM ScaleSet and policies using Terraform

Provisioning Load Balancers in AWS & Azure

- ➢ Overview of Load Balancers
- ➢ **Hands-on:** Creating Elastic Load Balancers in AWS using Terraform
- ➢ **Hands-on:** Creating Load Balancers in Azure using Terraform

Configuring Relational Data Base Services in AWS & Azure

- ➢ Overview of Relational Database Service in AWS
- ➢ Overview of Azure database for MYSQL.
- ➢ **Hands-on:** Provisioning RDS using Terraform
- ➢ **Hands-on:** Provisioning Azure database for MySQL

Identity and Access Management configuration using Terraform

- ➢ Overview of AWS IAM
- ➢ Overview Azure IAM
- ➢ Users, Groups, Roles and Policies
- ➢ **Hands-on:** Creating IAM users, roles and policies on AWS & Azure using Terraform

Overview of Terraform Modules

- ➢ Reusability of IaC
- ➢ Overview Terraform modules
- ➢ **Hands-on:** Creating a two-tier architecture in AWS using modules
- ➢ **Hands-**on: Creating a two-tier architecture in Azure using modules

Duration and Mode of delivery:

5 Days
- ➢ 5 days of 9 hours each
- ➢ Instructor led training sessions that are use case driven
- ➢ 70% of the session will be hands on labs and all participants are required to complete all the labs.

Pre-requisites:

- ➢ Knowledge of basic unix / linux commands must have.
- ➢ Valid AWS account.
- ➢ Participants should have prior experience with basic AWS services like S3, EC2, ELB, RDS, Auto-Scaling, VPC and IAM.
- ➢ Participants should have prior experience with basic Azure services like Storage, Azure VM, Azure Load balancer, Azure database for MySQL, VM Scale Set, VNet and Azure IAM
- ➢ Overview of the mentioned AWS and Azure services will be covered during the training.

Software / Tools Dependency:

- ➢ Full internet connectivity, with SSH port (22) and HTTP ports (80 and 443) should be open, without any restrictions on url's, domains etc.
- ➢ AWS Management Console
- ➢ On Windows platform: Putty, Puttygen
- ➢ On Mac: Terminal