Terraform

Course Outline: Terraform Azure 3 days

Day 1

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 Azure VM Machine
- **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 Azure VM creation
- **Hands-on:** Outputting variables during Terraform apply

State Management in Terraform

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

Day 2

Provisioning VNet using Terraform

- Understanding resources needed in Azure VNet creation
- **Hands-*on:*** Creating VNet, Subnets, Gateways, Routes and launching Azure VM

Configuring Auto Scaling for VMs

- Overview of Azure VM ScaleSet.
- **Hands-on:** Creating Azure VM ScaleSet and policies using Terraform

Provisioning Load Balancers in Azure

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

Configuring Relational Data Base Services in Azure

- Overview of Azure database for MYSQL.
- **Hands-on:** Provisioning Azure database for MySQL

Identity and Access Management configuration using Terraform

- Azure Identity: Users, Groups, Roles and Policies
- **Hands-on:** Creating Users, Groups, Roles and Policies Azure using Terraform

Day 3

Overview of Terraform Modules

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

Overview of Terraform usage in AWS

- **Demo:** Configure AWS CLI and provision an EC2 using Terraform
- **Demo:** Using Variables in EC2 Instance creation
- **Demo:** Outputting variables during Terraform apply
- **Demo:** Configuring RemoteState using AWS S3
- **Demo:** Creating VPC, Subnets, Gateways, Route tables and launching EC2 Instances

- **Demo:** Creating a two-tier architecture in AWS using modules
  - ***AWS Hands-on*** *needs to be performed on free tier AWS Accounts, participants need to create individual AWS accounts to perform the labs.*

Duration and Mode of delivery:

3 Days

- 3 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 free tier 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