

DevOps Engineer – GitHub, Docker, Ansible and Terraform

Duration: 60 Hours

Git and GitHub – 4 Hours

Module 1 – Git

Introduction to Version Control System
History of Git
Git Basics
States in Git
Installing Git
Configuration of Git
Working with Repositories
Basic Git Commands
Working with Remotes
Tagging
Git Branching

Docker – 8 Hours

Introduction to Containers
Introduction to Docker
Downloading and Installing Docker
Docker Essential Commands
Docker Engine
Running your First Container
Docker Image
Build Image with Docker file
Private Registry
Storing and Retrieving Docker Images from Docker Hub
Networking Docker Containers
Data Persistence with Volumes

Ansible – 32 Hours

Module 1 – Introduce Ansible

Introduction to Ansible
Current IT Automation State
Configuration Management
Ansible History
How Ansible Works?

Module 2 – Understanding of Ansible Framework

Case Study
Ansible way of Configuration Management
Infrastructure as a Code (IaC)
Idempotency
Ansible Terminologies

Module 3 – Ansible Deployment

Pre-requisites for Controller Node
Installation and Configuration
Ansible Configuration File
Pre-requisites for Managed Node
Ansible Inventory
Ansible Communication
Ansible Architecture

Module 4 – Ad-hoc Commands

Introduction to Ansible Module
Ad-hoc Remote Executions
Ansible Commands
Privilege Escalation

Module 5 – Managing Playbooks

YAML Structure
Ansible Playbooks
Structure of Playbook
Syntax Check of Playbook
Run Playbook

Module 6 – Variables in Ansible

Introduction to Ansible Variables
Defining Ansible Variable in Ansible Code
Use Variable File
Host Vars and Group Vars
Ansible Facts
Facts in Playbooks
Use Cases of Facts
Disabling Facts

Module 7 – Conditionals, Loops, Handlers and Error Handling

Conditionals in Ansible
Loops in Ansible
Loops with Variables
Notify and Handlers in Ansible
Register and Debug
Ignore Errors
Block and Rescue

Module 8 – Ansible Roles and Galaxy

Introduction to Role
Understanding Role Structure
Managing Roles
Introduction to Ansible Galaxy
Download and Use Roles from Ansible Galaxy

Module 9 – Ansible Vault

Introduction to Ansible Vault
Encrypt and Decrypt Playbooks

Use File as Password for Ansible Playbooks
Ansible Vault Commands

Module 10 – Jinja 2 Templates

Introduction to Jinja2 Template
Create Jinja2 Template
Template with Looping
Template with Conditions

Module 11 – Linux Administration

Managing Packages
Managing Users and Groups
Managing Partition
Starting and Stopping Services
Managing SSH Keys

Terraform with Azure - 16 Hours

Module 1 – Introduction to Terraform

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

Module 2 – Getting Started with Terraform

Terraform Plan, Show, Apply and Destroy
Exploring Terraform Registry
Interpolation
Tainting and Updating Resources
Terraform Console and Output
Terraform Variables
Breaking Out Our Variable and Outputs
Lab Exercise: Breaking Down main.tf into variables.tf, output.tf

Module 3 – Terraform Modules

Introduction to Modules
Module Repositories
First Basic Module
The Module Codes
Main Terraform Code
Using Git Repositories to Save Modules

Module 4 – Terraform Troubleshooting and Testing

Terraform Plan Revisited
Debugging the Script
Terraform Testing
Lab: Writing Test Scripts for Terraform