DevOps Engineering

Module 01: DevOps Fundamentals
1. Introduction of DevOps
2. Prepare Lab Environment

Module 02: Web Server
1. Basic Understanding of Web Servers with Real Examples.
2. Install and Configure Web Server Basic to Advance
3. Virtual Hosting (Apache, Nginx)
4. Reverse Proxy
5. Install SSL Certificate
6. HA proxy Installation and configuration.

Module 03: Ansible of Configuration Management
1. Automation concept for Linux server
2. Install and Configure Ansible
3. Run Ad Hoc Command
4. Write Ansible Playbook
5. Use Ansible Galaxy

Module 04: GIT Version Controlling
1. GIT Features
2. 3- Tire Architecture
3. GIT- Clone, Commit, Push, Pull
4. GIT Marge, Rebase, Stash, Reset, Checkout

Module 05: Jenkins CI/CD Pipeline
1. Install and Configure Jenkins
2. Different types of Jenkins Jobs
3. Jenkins Build Pipeline (Sequential Builds, Jenkinsfile)
4. Jenkins Master & Slave Node Configuration
5. Securing Jenkins (Authentication, Authorization, Confidentiality & Creating Users)
6. Jenkins Plugins (Installing Jenkins Plugins, SCM plugin, Build and test)

Module 06: Prometheus and Grafana Monitoring
1. Install Prometheus, Grafana on Linux server.
2. Collect the time series matrix from multiple nodes.
3. Visualize matrix data in the Grafana Dashboard

Module 07: Docker Containerization
1. Install and configure Docker in the Linux platform.
2. Learn about Docker Hub and Docker CLI
3. Docker Image creation and management
4. Dockized a sample application using docker-compose.

Module 08: Kubernetes Orchestration of Docker Container

1. Learn what Kubernetes is? Why will we use Kubernetes?
2. Install and configure the Kubernetes cluster.
3. Deploy a real project in the Kubernetes cluster.

Module 09: AWS Cloud Computing

1. Discuss cloud computing.
2. The architecture of the cloud environment
3. Create a custom VPC.
4. Lunching first Ec2 Instance
5. Learn about EBS, and S3 buckets.
6. Introduction of RDS
7. Introduction of Route53

Module: 10 AWS CI/CD Pipeline

1. AWS code pipeline basic
2. CI/CD Pipeline with CodeCommit, CodeBuild, and CodeDeploy
3. Creating a CI/CD pipeline with AWS CodePipeline

Module11: Infrastructure Design

1. Monolithic Architecture
2. Two-tier Architecture
3. Three-tier Architecture
4. Hardware Sizing

Module 12: Infrastructure as a Code (IaaC)

1. Introduction to Infrastructure as Code
2. Getting Started with Terraform
3. Working with Terraform
4. Terraform with AWS
5. Terraform Provisioners