DevOps Training Syllabus

SECTION 1 – Introduction to DevOps Certification

- What is DevOps?
- Why DevOps?
- Benefits of DevOps
- Overview of DevOps

SECTION 2 – Linux and Shell Scripting

- Basics of Operating system
- Linux Versions
- Important Linux Operating Systems concept like kernel, Shell & File System structure
- Important Linux Commands for Administration
- Commands for User Management
- Commands for File Permissions

SECTION 3 – Version Control System - Git GitHub

- Installation of DevOps Tools
- Installing the required tools Git, Jenkins, Ansible, Puppet, Docker
- Installing the Chef, Nagios, Maven
- Basics of Software Version Control
- Complete concepts in Version Control Systems
- Study about SCM, Command Line, CI tool Jenkins, SVN, CVS, Clearcase
- Real time project study in Maven Project and Jenkins

Real-time Practicals

- All Devops tools setup
- Create a git project
- Checkout a branch
- Create a file and add to git, Edit file, Commit the code
- Set up Jenkins and integrate with Git

SECTION 4 – Docker Concepts

- Installing Docker
- Docker Image Layers
- Build Docker Images by using Docker commit Command
- Build Docker Images by Writing Dockerfile
- Push Docker Images to Docker Hub
- Docker Networking Links and Volumes
- Create Dockerized Web Applications

Real-time Practicals

- Configure a Docker
- Create an image in Docker and run it

SECTION 5 – Automating Build and Test

- Basics about the Automating Builds – Maven, Ant
- Overview of Jenkins Pipeline
- Setting up continuous Delivery Pipeline using Jenkins
- Building a continuous Delivery Pipeline Using Jenkins
- DevOps Test Automation tools and framework
- DevOps Testing Strategy

Real-time Practicals

- Create a Maven Project
- Edit pom.xml file
- Set up build delivery pipeline
- Set up notification alerts in Jenkins and Configure test plan in Jenkins

SECTION 6 – Continuous Integration(CI)

- Study about DevOps Continuous Integration
- DevOps Continuous Integration Tools Comparison
- DevOps Continuous Integration and Continuous Delivery
- DevOps Continuous Integration Pipeline, Jenkins, Testing

- Benefits of DevOps Continuous Integration

Real-time Practicals

- Commit code and check if Jenkins runs the build scripts and tests the code using automation script

SECTION 7 – Containerization with Kubernetes

- Introduction to Kubernetes, the cluster architecture of Kubernetes
- creating a Kubernetes cluster
- what is YAML, creating YAML with Kubernetes deployment
- Kubernetes service, dashboard installation
- Kubernetes rolling updates, using an app with the dashboard

SECTION 8 – Ansible

- Introduction to Ansible
- Configuration,Writing Ansible Playbooks
- Ansible based Configuration Management
- Different Roles
- Command Line usage.

Real-time Practicals

- Write Ansible playbook
- Assign different roles in configuration tool

SECTION 9 – Terraform

- Introduction to Terraform
- Terraform Architecture and Configuration
- Terraform common commands
- Managing Terraform Resources
- Terraform State
- Terraform Project

SECTION 10 – Nagios – Performance and Automated Monitoring

- Introduction of Nagios
- Nagios Setup
- Commands, Objects, notifications,
- Configure Nagios to monitor webserver, Load Balancer (HAProxy, NginX), + Project 1 & project 2

Real-time Practicals

- Perform Nagios and Netdata monitoring
- Setup Syslog and verify the logs are getting generated
- Configure HAProxy server