DevOps Detailed Course Content

This DevOps Training helps you understand Continuous Development, Continuous Testing, Continuous Integration, Continuous Deployment using DevOps tools - Git, GitHub, Maven, Jenkins, Dockers, Kubernetes, Chef, Ansible, Nagios and AWS DevOps Services.

Module 1 - DevOps Essentials

Learning Objectives: In this module, you will learn the reasons for the evolution of DevOps, what is DevOps, the various skills and market trends in DevOps, introduction to the delivery pipeline in DevOps and the DevOps ecosystem.

Topics:

- Why DevOps?
- What is DevOps?
- Agile and DevOps
- DevOps Lifecycle
- DevOps Market Trends
- DevOps Delivery Pipeline
- DevOps Ecosystem & Use Case
- Introduction to Virtualization
- Introduction to Cloud Computing

Practicals to be covered: Sample use-case for using DevOps practice, Free AWS account

Module 2 -Managing Source Code – Git and GitHub

Learning Objectives: In this module, you can learn about Version Controls, Source Code Management using git and GitHub.

Topics-

- Overview of Version Control systems

- Central vs Distributed Control systems
- Introduction to Git
- Git file workflow
- Important Git Commands
- Branching and Merging, Stashing, Rebasing, Reverting and Resetting
- Introduction to GitHub
- Using Git and GitHub together.

Practical's to be covered:

- Git Installation
- Branching and Merging, Stashing, Rebasing, Reverting and Resetting
- Show the various git commands to push and pull a repository, from GitHub.

Module 3 – Understanding and using Build tools

Learning Objectives: In this module, you can learn how to build an appropriate delivery pipeline and perform test automation on it.

Topics:

- Overview of Various Build tools
- What is Maven
- Maven Plugins
- Maven Archetypes
- Project Object Model (POM)
- Source Control Integration

Practical's to be covered: Creating simple Maven project and perform unit test and resolve dependencies

Module 4 - Containerization basics using Docker

Learning Objectives: This module will help you identify the difference between containers and VMs. You can learn about virtualization using Docker. You can also deep dive into image and containers concept in Docker.

Topics:

- What and Why of Containers
- Difference between VMs and Containers
- Docker Architecture and Components
- Image Distribution using Docker Hub
- Working with Containers and Docker Hub

Practical's to be covered: Installing Docker in EC2, Create First Image: Hello-World, Image Basics and Base Image Maintenance, Manage Containers, Create Images from Containers, Push images to Docker Hub

Module 5 - Continuous Integration using Jenkins

Learning Objectives: This module helps you understand Overview of Continuous Integration, Installing, Configuring and working with Continuous Integration tool Jenkins.

Topics:

- Overview of Continuous Integration
- Overview of Jenkins
- Jenkins architecture
- Installing and Configuring Jenkins
- Jenkins Management
- Jenkins Build Pipeline

Practical's to be covered:

- Installing and configuring Jenkins
- Creating a build using Jenkins
- Integrating with Jenkins
- Working with Jenkins Pipelines

Module 6 -Continuous Testing

Learning Objectives: This module covers concepts of Overview of Continuous Testing , Software Testing Life Cycle , Different types of Testing and performing Unit Testing.

Topics:

- Overview of Continuous Testing
- Software Testing Life cycle
- Different Types of Testing
- Test -Driven Development Approach using Junit
- Testing Web Applications using Selenium

Practical's & Demo to be covered: Test-Driven Development Approach using Junit, Working with Selenium

Module 7 - Docker Commands and Use-cases

Learning Objectives: This module deals with the various networking concepts in Docker, the best way to use the and creating a Docker file, working with Docker Compose. We will also learn about Docker Networking and Docker Orchestration

Topics:

- Docker Files
- Docker Compose
- Docker Networking
- Docker Swarm

Practical's to be covered:

- Building Images using Docker File
- Creating multi-containers using Docker Compose
- Creating User-Defined Networks
- Working with Docker Swarm

Module 8 – Introduction to Kubernetes

Learning Objectives:

Managing multiple Docker Hosts using Kubernetes Orchestration.

Topics:

- Basics of Kubernetes container orchestration

- Differences between Docker Swarm and Kubernetes
- Kubernetes Architecture
- Installing Kubernetes using Kubeadm
- Creating Pods and Deployments using YAML
- Selectors & Labels in Kubernetes
- Working with Jobs
- Using ReplicaSets & Rolling Updates
- Scheduling the applications on the container
- Services in Kubernetes

Hands-on workshop description:

- Installing Kubernetes
- Creating Pods and Deployments
- Working with Jobs
- Using ReplicaSets & Rolling Updates
- Scheduling the applications on the container
- Services in Kubernetes

Module 9 - Configuration Management using Chef:

Learning Objectives: This module has details the master-agent architecture and workstation configuration in Chef. You will also learn how to chef tools.

Topics:

- Chef Fundamentals
- Chef Architecture & Components – Server, Workstation and Nodes
- Chef Resources
- Recipes and Cookbooks
- Chef Resources
- Using AWS OpsWorks

Practical's to be covered:

Creating Stack using AWS OpsWorks

Module 10 - Configuration Management using Ansible

Learning Objectives: This module has details about Ansible, Architecture and working of Ansible. You will also learn how to Ansible tools.

Topics:

- Overview of Configuration Management
- Introduction to Ansible
- Ansible Architecture
- Ansible Components
- Installation & Configuration
- Writing Ansible Playbooks
- Working with Ansible Modules
- Creating Roles using Ansible Galaxy

Practicals to be covered: Write Ansible playbooks for Configuration Management Tasks.

Module 11 - Continuous Monitoring using Nagios

Learning Objectives: This module helps you integrate Jenkins, Docker and Puppet, and create an application using them. You can also learn about system monitoring using Nagios and its components.

Topics:

- Introduction to Nagios
- Nagios Plugins
- Nagios Objects
- Nagios Commands & Nagios Notifications

Practicals to be covered:

- Installing Nagios
- Monitoring different servers using Nagios

Module 12 - AWS DevOps Services

Learning Objectives: This module covers concepts of how companies can reliably build and deliver products using AWS and DevOps practices.

Topics:

- Why Cloud?
- Overview of AWS
- Overview of AWS DevOps
- Introduction to CodeCommit, CodeBuild, CodeDeploy and CodePipeline
- Working with CloudFormation & Terraform

Practicals & Demo to be covered:

- Working with Code Commit & Deploy an application using CodePipeline,
- Working with CloudFormation & Terraform

Any queries reach us at +91 70198 14290 or +91 89512 79687

Email ID: trainings@staragile.com / sales@staragile.com