



Course Name : Java Stream

Duration : 140-hours

S. No.	Course	Duration	Trainer
1			
2			
3	DevOps - Jenkins - Dockers and Kubernetes	20 hours	
4	Cloud Basics - AWS and Azure	25 hours	
5			
6			
7			

Calendar

Mon	Tue	Wed	Thur	Fri
	28 th Sept	29 th Sept	30 th Sept	1 st Oct
Adv Java	DevOps - Jenkins - Dockers and Kubernetes			
4 th Oct	5 th Oct	6 th Oct	7 th Oct	8 th Oct
Cloud - AWS and Azure				

Day - 12

DEVOPS - JENKINS - DOCKERS AND KUBERNETES

Introduction to DevOps and its Necessity

- History of DevOps
- Configuration management
- What is DevOps
- Dev and Ops problem
- DevOps as a solution and Advantages
- Continuous Integration & Continuous Testing
- Continuous Deployment & Continuous Delivery
- DevOps Skills

Virtualization

- Virtualization and Vagrant Concepts
- Hypervisors - Type 1 and Type 2 hypervisors
- Configuring VM using Oracle Virtual box and Vagrant.

Version Control Tools

- Version Control tools - GIT
- Basics GIT commands
- Setting up github account.

Day - 13

Continuous Integration using Jenkins

- Basic of Jenkins.
- Installation of Jenkins.
- Running Jenkins.
- Authentication and Authorization with Jenkins.
- Configuring github with Jenkins.
- Setting up Jenkins Pipeline.

Containerization using Docker

- Containerization concepts
- Difference between Virtualization and containerization
- Introducing Docker
- Understanding images and containers
- Docker SDK and Installation
- Docker Engine
- Container Life Cycle

Day - 14

Dockerfile and Docker - compose

- Docker File
- Docker Compose
- Working with containers - installing and running apps.

Docker Hub and Docker Swarm

- Docker Hub repository
- Publishing Image on Docker Hub
- Introduction to Docker Swarm

CI/CD with Docker

- Integrating Docker with Jenkins
- Implementing CI/CD using Docker

Day - 15

Basics of Kubernetes

- Kubernetes Core components
- Kubernetes architecture
- Docker Swarm vs Kubernetes
- Understanding Pods, nodes, services

Single server Kubernetes setup using Mini-kube

- Installation and configuration of Kubernetes on single server (mini-kube)
- Kubernetes common commands
- Container orchestration using mini-kube
- Install and configure Kubernetes master and nodes
- Setting up Kubernetes cluster

Day - 16

Basics of Cloud Computing and AWS Concepts

- What is Cloud computing Advantages of Cloud Computing Introduction to virtualization
- Types of Cloud computing based on service and deployment models
- Overview of AWS
- Region and Availability zones Global Infrastructure
- Recognize the shared responsibility model Creation of AWS Account
- Introduction to Amazon EC2
- Amazon EC2 console demonstration (Lab)

Day - 17

AWS Services

- Introduction of EBS (Elastic Block Store) Benefits of EBS volumes
- EBS Product Demonstration (LAB) Introduction to EFS (Elastic File System) Comparison between EBS and EFS
- EFS Product Demonstration (LAB) Introduction to S3 (Simple Storage Service) Bucket and Object
- Object Versioning Storage classes
- Types of Storage classes Life cycle management
- Static Website Hosting

Day - 18

AWS Services

- S3 Product Demonstration (LAB) Understanding IAM
- Introduction to VPC (Virtual Private Cloud)
- Understanding CIDR VPC and Subnet sizing
- VPC Flow logs Security groups
- Network Access Control Lists (NACL)
- Route Tables Internet Gateway
- Network Address Translation

VPC Product Demonstration (LAB)



Day - 19

MS Azure

- Introduction to Azure
- Comparison between Azure and AWS
- Azure regions
- Creating Azure Account
- What is a resource group
- Azure subscriptions
- Deploy a virtual machine (Lab)
- Azure storage
- Creating storage account (Lab)

Day - 20

MS Azure

- Azure virtual network
- Creating an Azure virtual network (Lab)
- Network security groups
- Application security groups