**DevOps Training-Course Contents**

Day-1

**INTRODUCTION TO DEVOPS**

* What is DevOps?
* History of DevOps
* Dev and Ops
* DevOps definitions
* DevOps and Software Development Life Cycle
* DevOps main objectives
* Infrastructure As A Code
  + IaaS Overview
  + Paas Overview
* DevOps on the Cloud
* Prerequisites for DevOps
* What is Continuous Integration/Continuous Deployment/Continuous delivery in Devops
* Continuous Testing and Integration
* Continuous Release and Deployment
* Continuous Application Monitoring

Devops Tools

• Types of Devops Build Tools

• Types of Devops Testing Frameworks/ Tools

• Devops Issue Management Tools

• Devops Configuration Management Tools

• Devops Code Analysis Tools

**DEVOPS ADOPTION**

* CRITERIA
  + Things to Look For and Avoid
  + IT Assets Ownership
  + Viewing Applications As Products, not Projects
  + DevOps in the Enterprise
  + IT Governance
  + Governance and Risk Mitigation
  + DevOps Adoption Steps
  + Select DevOps Techniques and Practices
  + Service Quality Metrics
* TOOLS
  + The Choice of Devops Tools
  + Types of Devops Build Tools
  + Types of Devops Testing Frameworks/ Tools
  + Devops Issue Management Tools
  + Devops Configuration Management Tools
  + Devops Code Analysis Tools
  + Types of Version Control System Tools
  + Devops SCM (Version Control System)Tools
  + Devops Repository Management Tools
  + System Configuration Automation and Management
  + Continuous Integration (CI) Systems
  + Build and Dependency Management Systems
  + Select DevOps Tools

**DEVOPS: SOURCE CODE MANAGEMENT**

* GIT REPOSITORY
  + What is a version control system?
  + What is a distributed version control system?
  + Installation
  + Different levels of Git configuration
  + The process of staging and committing
  + The details of the commit objects
* Maven
  + Maven prerequisites
  + Installing and Running Maven
  + Using the Mavencommandline Interface

**CONTINUOUS INTEGRATION-JENKINS**

* INTRODUCTION TO JENKINS-CI
  + Continuous Integration with Jenkins Overview
  + Installation
  + Configure Jenkins as stand-alone application
  + Configure Jenkins on an Application Server
  + Jenkins management
  + Support for the Git version control systems
  + Different types of Jenkins Jobs
  + Setting up a Jenkins job
  + Scheduling build Jobs
  + Maven Build Scripts
  + Securing Jenkins
    - Authentication
    - Authorization
    - Confidentiality
    - Creating users
  + Jenkins Plugin
    - Installing Jenkins Plugins
    - SCM plugin
    - Build and test
    - Analyzers
  + Distributed builds with Jenkins
  + Best Practices for Jenkins

**DEVOPS TOOLS: APACHE TOMCAT**

* Introduction to Apache Tomcat
* Installation and Configuration of Apache Tomcat
* Managing Apache Tomcat
* Creating and Managing Devopsmodules
* Tomcat with Jenkins

**Day-2**

**DEVOPS TOOLS: CHEF**

* Overview of Chef
  + Common Chef Terminology (Server, Workstation, Client, Repository etc.)
  + Servers and Nodes
  + Chef Configuration Concepts
* Workstation Setup
  + How to configure knife
  + Execute some commands to test connection between knife and workstation
* Test Node Setup
  + Create a server and add to organization
  + Check node details using knife

**DEVOPS: MONITORING**

* NAGIOS
  + How to monitor the Servers in Nagios
  + Trigger Alerts in Nagios
  + How to apply blackouts and remove blackouts

**CLOUD COMPUTING and VIRTUALIZATION**

* History and evolution of cloud
* Cloud computing concepts
* Grid Computing vs. Cloud Computing
* Characteristics and Benefits of Cloud
* Cloud service models
* IaaS, PaaS and SaaS
* Cloud Deployment
* Virtualization
* Virtual Machines
* Virtual bootable OS Images
* Cloud Storage
* Introduction to AWS and Google cloud

**DOCKER**

* Container Deployment
* Introduction to Docker
* Installation of Docker Engine
* Images, Containers and Docker Hub
* Dockerizing Applications
* Dockerizing Web Application

**Kubernetes**

* Understanding the Need of Kubernetes
* Understanding Kubernetes Architecture
* Understanding Kubernetes Masters and its Component
* Understanding Kubernetes Nodes and its Component
* Understand Kubernetes Concepts
* Understand Kubernetes Terminology

**MISCELLANEOUS /DIFFERENCE BETWEEN DEVOPS TOOLS**

* Other Tools used in DevOps.
* Docker (About Docker,Docker Compose,Docker Swarm)
* Devops Contarization Management Tools
* About Kubernetes,Docker Swarm, Mesos and their Difference
* Difference Between Ansible,Chef,Puppet,Salt Stack
* Difference Between Apache Ant,Apache Maven,Gradle
* Difference Between Jenkins,Bamboo,Teamcity