DevOps Course Content

*Configuration Management Tools*

* **Ansible**
* **Chef**
* **Puppet**

*Virtualization platformsf*

* **Vagrant**
* **Docker**

*Build Tools*

* **ANT**
* **Maven**

*Version Controlling*

* **GIT**
* **SVN**

*Continuous Integration*

* **Jenkins**

*Monitoring*

* **Nagios**

*Cloud*

* **AWS**
* **Introduction of Devops**
* Devops for entire Business
* Devops for entire IT
* Devops for Developer
* Devops for Testing
* Devops for Operations Team
* Role of Devops in Agile Scrum

**Ansible**

* **Ansible Introduction & Setup**
* Configuration Management & Orchestration
* Environment Setup
* Installation
* **Foundation**
* Inventory
* Dynamic Inventory
* Host Selection
* Tasks
* Plays
* Playbook Execution
* Ansible.cfg
* **Modules and Ad hoc Commands**
* Firewalld
* Uri
* Get\_URL
* APT/YUM
* Service
* User
* Command
* Shell
* Copy
* Fetch
* Archive / Unarchive
* File
* Setup
* Etc
* **YML Scripting**
* Basics of YML
* How to write & test YML Scripts
* YML scripting for writing Play Book.
* **PlayBook for CM automation**
* Writing play books
* Execution of playbooks
* System facts and Custom facts
* Play book Notification
* Play book tags & handlers
* Exception handling
* **Roles**
* Roles Overview
* Converting to Roles:
* Site.yml: include
* Variables: facts
* External Roles & Galaxy
* **AdvancedExecution**
* Introduction
* Removing Unnecessary Steps
* Extracting Repetitive Tasks
* Limiting Execution by Hosts
* Limiting Execution by Tasks
* Idempotence: changed\_when, failed\_when
* Accelerated Mode and Pipelining
* **Troubleshooting, Testing, &Validation**
* Troubleshooting Ordering Problems
* Jumping to Specific Tasks: list-tasks, step, start-at-task
* Retrying Failed Hosts
* Syntax-Check & Dry-Run: syntax-check, check
* Debugging: debug

**Docker**

* **Docker Introduction**
* Installing Docker
* Code or Text Editor for Docker and Compose files
* Terminal Emulator and Shell for Docker
* **Creating and Using Containers**
* Starting a Nginx web server
* What Happens When We Run a Container
* Container VS. VM
* Manage Multiple Containers
* CLI Process Monitoring
* Getting a Shell Inside Containers: No Need for SSH
* Package Management Basics: apt, yum, dnf, pkg
* Docker Networks: Concepts for Private and Public
* Docker's --format option for filtering cli output
* **Container Images**
* What's In An Image
* Official Docker Image Specification
* The Mighty Hub: UsingDocker Hub Registry Images
* List of Official Docker Images
* Images and Their Layers: Discover the Image Cache
* Images and Containers From Docker Docs
* Image Tagging and Pushing to Docker Hub
* Building Images: The Dockerfile Basics
* Building Images: Running Docker Builds
* Building Images: Extending Official Images
* **Docker Compose: The Multi-Container Tool**
* Docker Compose and Thedocker-compose.yml File
* The YAML Format: Sample Generic YAML File
* Compose File Version Differences (Docker Docs)

**Vagrant**

* **Introduction to Vagrant**
* Introduction & Installing vagrant
* The Vagrant file & Boxes
* Communicating with Vagrant Box
* Network Access
* **Deploying your Vagrant Machine**
* Deploying a Complete Environment
* Setting Environment
* Finalizing the Environment
* **Network Configuration**
* Vagrant network configuration
* Private Network
* Public Network
* Using Multiple Network Options
* **High availability with Vagrant clustering**
* Clustering
* Multi Machine Deployments

**Jenkins**

* **Getting started with Jenkins**
* Getting started with Jenkins
* Introduction to Continuous Integration
* Install Jenkins
* Jenkins' Architecture and Terms of Jenkins of
* Jenkins UI : Dashboard and Menus
* Create Our First Jenkins Job
* **Continuous Integration with Jenkins**
* Continuous Integration with Jenkins
* Install Git and Jenkins GitHub Plugin
* Install Maven on Our Local Box
* Configure Jenkins to Work with Java, Git and Maven
* Text Direction: Create our First Maven-based Jenkins Project
* Create our First Maven-based Jenkins Project
* Trouble Shooting: Create our First Maven-based Jenkins Project
* Run our First Jenkins Build and Jenkins Workspace
* Source Control Polling in Jenkins
* Text Direction: Source Control Polling in Jenkins
* Other Build Triggers of Jenkins
* Text Direction: Other Build Triggers
* **Continuous Inspection with Jenkins**
* Code Quality and Code Coverage Metrics Report
* Jenkins' Support for Gradle, Ant and Shell Scripts
* **Continuous Delivery with Jenkins**
* Archive Build Artifacts
* Install and Configure Tomcat as the Staging Environment
* Deploy to Staging Environment
* Jenkins Build Pipeline
* Parallel Jenkins Build
* Deploy to Production
* Trouble Shooting: Deploy to Production
* **Distributed Builds**
* Introduction to Distributed Jenkins Build
* Install Jenkins Master Node in the Cloud
* Text Direction: Install Jenkins Master Node in the Cloud
* Install Jenkins Slave Agents in the Cloud
* Text Direction: Install Jenkins Slave Agents in the Cloud
* Concurrent Jenkins Build and Label Jenkins Build
* Continuous Delivery with Jenkins

**SVN**

* Creating account in Subversion
* Installing tortoiseSVN
* Checkin and checkout of SVN
* Branch and Trunck

**Git:**

* Installation
* Git local repo and GIT Hub
* Configuration
* Basic Commands
* Branches
* push and pull from GIT Hub

**Maven**

* Introduction
* Understanding build process
* CreatingMaven from command prompt
* Maven Dependencies
* Maven Stages
* Maven Repositories
* Maven Plugins
* Integrating maven with Jenkins

**ANT**

* Introduction
* Configuring ANT
* Using Build.xml
* ANT Build stages
* Run the code through Build.xml
* Integrating ANT with Jenkins

**Nagios**

* Installation of Nagios
* Configuring Nagios
* Monitoring with Nagios
* Triggering Alerts

**AWS**

* Environment setup in AWS
* Cloud Deployment Scenarios in AWS
* Continuous Delivery in AWS
* Using Vagrant in AWS
* Using Docker containers in AWS

**Linux**

* Basic Commands
* File Operations
* Redirection
* Piping
* Permissions
* User Controls
* Shell Scripting