**Devops Course Syllabus** (Total Duration: 46 hrs)

**Introduction to Devops** (Duration:02:00:00 hrs)

* Define Devops
* What is Devops
* SDLC models,Lean,Agile
* Why Devops?
* History of Devops
* Devops Stakeholders
* Devops Goals
* Important terminology
* Devops perspective
* Devops and Agile
* Devops Tools
* Configuration management
* Continuous Integration, Continuous Deployment and Continuous Delivery

**Introduction to Cloud computing**(Duration:00:30:00 min)

* What is cloud computing
* Characteristics of cloud computing
* Cloud implementation models
* Cloud service models
* Advantages of cloud computing
* Concerns of cloud computing

**Introduction to Virtualization** (Duration:00:30:00 min)

* What is Virtualization?
* History of Virtualization
* What is Hypervisor?
* Types of Server Virtualization
* Benefits of Virtualization
* Important Virtualization products

**AWS Cloud Technical Essentials**(Duration:08:00:00 hrs)

* Amazon EC2
* Amazon Elastic Load Balancer
* Amazon Route 53
* Amazon VPC
* Amazon Simple Storage Service (Amazon S3)
* Amazon Elastic Block Store (Amazon EBS)
* Amazon Content Delivery Network (Amazon CloudFront)
* Amazon Relational Database Service (Amazon RDS)
* Amazon DynamoDB
* Amazon ElastiCache
* Amazon Simple Notification Service (SNS)
* Amazon CloudWatch
* Amazon CloudTrail
* Amazon Simple Email Service (Amazon SES)
* AWS Identity and Access Management (IAM)
* Amazon Command Line Interface API
* S3-Browser

**Linux Administration**(Duration:06:00:00 hrs)

* A Linux Introduction
* Open Source Philosophy
* Distributions
* Embedded Systems
* Command Line Basics
* Basic Shell
* Command Line Syntax – ls
* Command Line Syntax – $PATH, Case Sensitivity
* Command Line Syntax – Basic Commands
* Command Line Syntax – uname
* Command Line Syntax – Command History, Command Completion
* Command Line Syntax – cd and pwd
* Shell Configuration Files
* Variables – Environment / System Variables
* Variables – User Defined
* Globbing
* Quoting
* Formatting Commands
* Working with Options
* Using the Command Line to Get Help
* Man
* Info
* locate, find, whereis, and using /usr/share/doc/
* Exercise: Man Page Walkthrough
* Exercise: Basic Command Line
* Using Directories and Listing Files
* The Linux File System
* Files, Directories
* Hidden Files and Directories
* Home
* Absolute and Relative Paths
* Exercise: Maneuvering the Linux File System
* Creating, Moving and Deleting Files
* Files and Directories
* Case Sensitivity
* Simple Globbing and Quoting
* The Power of the Command Line
* Archiving Files on the Command Line
* Files, Directories
* Archives, Compression
* Searching and Extracting Data from Files
* Commands (Revisited)
* Command Line Pipes
* I/O Redirection
* Regular Expressions
* Exercise: Practicing with Pipes and Grep
* Turning Commands into a Script
* Basic Text Editing
* Basic Shell Scripting
* Basic Shell Scripting, Continued
* Exercise: Using the vi Text Editor
* Available
* The Linux Operating System
* Choosing an Operating System
* Windows, Mac, and Linux Differences
* Distribution Life Cycle Management
* Understanding Computer Hardware
* Hardware
* Where Data is Stored
* Kernel
* Processes
* syslog, klog, dmesg
* /lib, /usr/lib, /etc, /var/log
* Your Computer on the Network
* Internet, Network, Routers
* Domain Name Service and the Default Gateway (Network Router)
* Network Configuration
* Security and File Permissions
* Basic Security and Identifying User Types
* Root and Standard Users
* System Users
* Creating Users and Groups
* User IDs
* User Commands
* Group Commands
* Exercise: Managing User Accounts
* Exercise: Creating User Groups
* Managing File Permissions and Ownership
* File/Directory Permissions and Owners
* Special Directories and Files
* Symbolic Links
* System files, Special Files, and Sticky Bits

**GIT: Version Control**(Duration:02:00:00 hrs)

Introduction

* Version control systems
* Local, Centralized and distributed

Installing Git

* Installing on Linux
* Installing on Windows
* Initial setup

Git Essentials

* Creating repository
* Cloning, check-in and committing
* Fetch pull and remote
* Branching

**Jenkins – Continuous Integration**(Duration:15:00:00 hrs)

* Introduction to Jenkins
* CI/CD Concepts
* Continuous Integration and Continuous Delivery
* Quiz: CI/CD Concepts
* Installing and Configuring Jenkins
* Prerequisites
* Jenkins Install
* The Dashboard
* User Management and Security
* Adding a Jenkins Slave
* Setting Up GitHub
* Plugin Manager
* Exercise: Install a Jenkins Master and Prerequisites
* Exercise: Configuring Matrix-Based Security
* Exercise: Add a Jenkins Slave
* Exercise: Working with the Plugin Manager
* Quiz: Installing and Configuring Jenkins
* Projects
* Freestyle Project Configuration
* Source Code Management and the Git Plugin
* Git Hooks and Other Build Triggers
* Workspace Environment Variables
* Parameterized Projects
* Upstream/Downstream Projects and the Parameterized Trigger Plugin
* Folders
* Views
* Exercise: Configure a Parameterized Freestyle Project?
* Hands-on Labs: Configure a Jenkins Freestyle Project
* Hands-on Labs: Jenkins Upstream and Downstream Projects with the Parameterized Trigger Plugin
* Quiz: Projects
* Pipelines
* Our Java Pipeline Project
* Docker Install
* Installing and Configuring Ant
* The Jenkinsfile
* Configuring and Running a Pipeline
* Artifacts and Fingerprints
* Exercise: Build a Simple Pipeline Without SCM
* Hands-on Labs: Configure a Jenkins Pipeline
* Quiz: Pipelines
* Testing With Jenkins
* About Testing
* Unit Testing with JUnit and Ant
* Deploying to Apache
* Functional Testing
* Quiz: Testing With Jenkins
* Pipeline Enhancements
* Multibranch Pipelines and Code Promotion
* Tagging
* Notifications
* Shared Pipeline Libraries
* Exercise: Configure Notifications in a Pipeline
* Hands-on Labs: Configure a Jenkins Multibranch Pipeline
* Quiz: Pipeline Enhancements
* Advanced Jenkins Administration
* The Jenkins CLI
* The Jenkins REST API
* Setting Up a Jenkins Master with Docker
* Exercise: Using the Jenkins CLI
* Exercise: Using the Jenkins REST API
* Quiz: Advanced Jenkins Administration

**Ansible**(Duration:10:00:00 hrs)

* Introduction to Ansible
* Ansible Agentless Architecture
* Installation
* Ansible Inventories
* Ansible Modules
* Ansible Playbooks

**Docker– Containers**(Duration:02:00:00 hrs)

Introduction

* What is a Docker
* Use case of Docker
* Platforms for Docker
* Dockers vs Virtualization

Architecture

* Docker Architecture.
* Important Docker components
* Understanding the Docker components

Installation

* Installing Docker on Linux.
* Understanding Installation of Docker on Windows.
* Some Docker commands.

Provisioning

* Docker Hub.
* Downloading Docker images.
* Running Docker images
* Running commands in container.
* Running multiple containers.

Custom images

* Creating a custom image.
* Running a container from the custom image.
* Publishing the custom image.

Docker Networking

* Accessing container
* Linking containers
* Exposing container ports
* Container Routing
* Our Training Institute Location: Devops Courses we run in our Besant technologies Bangalore Branches (BTM Layout, Marathahalli, Jayanagar , Rajaji Nagar, Kalyan Nagar, Indira Nagar, HSR Layout, koramangala and electronic city)