ZENUS INFOTECH INDIA PVT. LTD.
CURRICULUM OF DEVOPS

Course Duration: 4/6 Weeks*

Linux Basics

- Introduction
- Unix/Linux Essentials
- User and group management
- Handling files
- Handling errors
- Log management
- Package management
- Linux performance troubleshooting

Bash

- Core Concepts
- Bash Files - .bash_profile
- Bash Files - .bashrc
- Bash Files - .bash_history
- Bash Files - .bash_logout
- What Makes a File a Shell Script?
- Displaying Environment Variables in a Script
- Using Variables on the Command Line
- Setting and Using Variables in Scripts
- Comment Types and Structure
- Command Substitution
- Exit Status
- Arithmetic Operations
- Global and Local Environment Variables
- Special Characters - Quotes and Escapes
- Using /dev/null
- The Read Statement
- Shell Expansion
- Types of Variables (Implicit vs. Explicit Definition)
- Arrays
- Conditional Statements
- Passing Variables to Scripts at the Command Line • The If Statement
- If/Then/Else
- For Loop
- Case Statement
- While Loop
- Execution Operators (&& and ||)
- Input and Output
- Reading Files
- File Descriptors and Handles

- IFS and Delimiting
- Traps and Signals
- Debugging Your Script
- Error Handling
- Functions
- Simple Functions
- Structure of Functions in a Script
- Variable Scope in Functions
- Functions with Parameters
- Nested Functions
- Function Return and Exit
- Samples/Use Cases

Ansible

- Introduction to Ansible
- Setup and Configuration
- Test Environment Setup
- Download and Installation
- Ansible Configuration File
- Ansible Python Dependencies
- The HOSTS File
- Overriding the Default HOSTS File
- Overriding the Default System Ansible.Cfg File
- Overriding the Default Roles Path
- Ansible Command Line
- System Facts
- System Facts: Common Values for Playbooks
- Our First Playbook
- Variables: Inclusion Types
- Target Section
- Variable Section
- Task Section
- Handler Section
- Outlining Your Playbook
- Create a Playbook from Our Outline
- Optimizing Your Playbook
- Taking Our Playbook for a Dry Run
- Asychronous Polling
- Simple Variable Substitution
- Lookups
- RunOnce
- Local Actions
- Loops
- Conditionals
- Until

- Notify
- Vault
- Prompt - Interactive Playbook
- Basic Include Statements
- Tags
- Basic Error Handling
- Includes - Breaking Your Playbook Into Discrete Plays
- Starting At Task or Stepping Through All Tasks
- Passing Variables Into Playbooks at the Command Line
- Using Jinja2 Templates
- LocalAction
- DelegateTo
- Roles - The Directory Structure
- Role Based Tasks
- Task Order - Pre and Post Tasks
- Roles - Conditional Execution
- Roles - Variable Substitution
- Roles - Handlers
- Roles - Using Notification
- Roles - Configuring Alternate Roles Paths
- Roles - Conditional Include Statements
- Roles - Waiting For Events
- Roles - Executing a Task Until
- Roles - Using Tags
- Roles - Breaking a Playbook Into a Role
- Roles - Passing Variables from Command Line
- Roles - Using Jinja2 Templates
- Roles - DelegateTo
- Roles - LocalAction
- Use Cases

Git

- GIT, GitHub/BitBucket:
- Introduction about Git
- Install and Configure Git
- Introduction to GitHub/BitBucket, Repository administration
- Branching/Tagging strategy
- Merging, handling conflicts
- Troubleshooting issues
- Git Commands
- Git GUI, Git Bash
- Working with Tortoise Git
- Working with Eclipse IDE
- Working with projects
- Best Practices

Maven

- Introduction to Maven
- Installing Maven, Running Maven
- Eclipse IDE Integration
- Understanding Archetypes and pom.xml
- Maven Build Lifecycle
- Maven Repositories
- Maven configuration files
- Maven Profiles
- Maven Plugins and Goals
- Packaging Types
- Maven Dependencies, Dependency Scope, Finding Dependencies
- Creating Java, Web, Java EE projects using Maven
- Build and Deployment Automation
- Introduction to Multi-Module Builds

Docker

- Learning the Basics of Docker
- Introduction to Docker
- Containers Vs. Virtual Machines Docker Architecture
- The Docker Hub
- Docker Installation
- Creating Our First Image
- Working With Multiple Images
- Packaging A Customized Container
- Running Container Commands With Docker
- The Dockerfile, Builds and Network Configuration
- Dockerfile Directives
- Container Volume Management
- Docker Network: List and Inspect
- Docker Network: Create and Remove
- Docker Network: Assign to Containers
- Docker Commands and Structures
- Inspect Container Processes
- Previous Container Management
- Controlling Port Exposure on Containers
- Naming Our Containers
- Docker Events
- Managing and Removing Base Images
- Saving and Loading Docker Images
- Image History
- Taking Control of Our Tags
- Pushing to Docker Hub
- Integration and Use Cases

Jenkins

- Introduction to Jenkins
- CI/CD Concepts
- Installing and Configuring Jenkins
- The Dashboard
- User Management and Security
- Adding a Jenkins Slave
- Setting Up Github
- Plugin Manager
- 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
- Views
- Pipelines
- The Jenkinsfile
- Configuring and Running a Pipeline
- Artifacts and Fingerprints
- Testing With Jenkins
- Unit Testing with JUnit and Ant
- Deploying to Apache
- Functional Testing
- Pipeline Enhancements
- Multibranch Pipelines and Code Promotion
- Tagging
- Notifications
- Shared Pipeline Librariesvanced Jenkins Administration
- The Jenkins CLI
- The Jenkins REST API
- Setting Up a Jenkins Master with Docker

AWS

- Identity & Access Management (IAM)
- IAM Initial Setup and Configuration
- IAM Users and Policies
- IAM Groups and Policies
- IAM Roles
- Virtual Private Cloud (VPC)
- VPC Basics
- Internet Gateways (IGW)
- Route Tables (RTs)
- Network Access Control List (NACLs)
- Subnets
- Availability Zones (VPC Specific)
- Simple Storage Service (S3)
- S3 Basics
- Buckets & Objects
- Storage Classes
- Object Lifecycles
- Permissions
- Object Versioning
- S3 Essentials
- Elastic Compute Cloud (EC2)
- EC2 Basics
- Amazon Machine Images (AMIs)
- Instance Types
- Elastic Block Store (EBS)
- Security Groups
- IP Addressing
- Launching and Using an EC2 Instance
- RDS and DynamoDB Basics
- Provisioning an RDS MySQL Database
- Simple Notification Service (SNS)
- CloudWatch
- Elastic Load Balancer (ELB)
- Auto Scaling
- Route 53
- Lambda