

# **Configuration Management with Ansible**

**Course Duration: 32 Hours (4 Days)**

## **Overview**

The "Configuration Management with Ansible" course offers a comprehensive guide to mastering Ansible for configuration management, a powerful tool that automates the deployment, scaling, and management of applications and infrastructure. By delving into this course, learners will understand the fundamentals of Ansible, its history, and how it streamlines IT Automation and infrastructure as code (IaC). Starting with an introduction to the Ansible framework, the course moves on to practical aspects like Ansible Deployment, Ad-hoc Command Execution, Playbook Writing, and Implementing Variables. Advanced topics include Using Conditionals, Loops, Handlers, Ansible Roles, and Ansible Vault for secure data management. Additionally, the course covers Ansible Galaxy, a hub for sharing Ansible content, and Playbook Optimization techniques. For those interested in automating systems configuration, Ansible SCCM provides a structured, manageable approach that scales with your needs. By the end of the course, learners will confidently use Ansible for configuration management, leveraging its simplicity and repeatability to manage complex deployments efficiently.

## **Audience Profile**

Koenig Solutions' Ansible course teaches efficient IT automation and configuration management for tech professionals. Target Audience:

- System Administrators
- DevOps Engineers
- IT Automation Engineers
- Infrastructure Automation Professionals
- Software Developers with an interest in deployment automation
- Technical Project Managers overseeing IT environments
- Security Professionals looking to automate security compliance
- Cloud Engineers working with scalable infrastructures
- Network Administrators interested in automating network configurations
- Release Engineers coordinating environment configurations and deployment
- Site Reliability Engineers (SREs) managing application stability and automation

## **Course Syllabus**

### **Chapter 1 – Introduction to Configuration Management with Ansible**

- Introduction to Infrastructure as Code
- Current IT Automation State
- Configuration Management
- Ansible History
- Introducing Ansible
- How Ansible Works

### **Chapter 2 – Understanding of Ansible Framework**

- Case Study
- Ansible Way of Configuration Management
- Infrastructure as a Code (IaC)
- Idempotency
- Ansible Terminology

## **Chapter 3 – Ansible Deployment**

- Pre-Requisites for Controller Node
- Lab: Installation and Configuration
- Understanding Ansible Configuration File
- Lab: Creating Ansible Configuration File
- Pre-Requisites for Managed Node
- Understanding Ansible Inventory
- Lab: Creating Ansible Inventory
- Ansible Communication
- Ansible Architecture

## **Chapter 4 – Ad-Hoc Execution with Ansible**

- Understanding Ansible Modules
- Lab: Ad-Hoc Remote Execution
- Lab: Ansible Commands
- Connections and Privilege Escalations

## **Chapter 5 – Ansible Playbooks**

- YAML Structure
- Creating Ansible Playbooks
- Understanding Playbooks Structure
- Lab: Playbooks Syntax Checks
- Lab: Playbooks Smoke Test
- Lab: Playbooks Real-Time Run
- Lab: Playbook Examples

## **Chapter 6 – Variables in Ansible**

- Ansible Variables: An Introduction
- Lab: Defining Variable in Ansible Code
- Use Cases
- Lab: Methods of Defining Variables
- Understanding Variable Precedence
- Understanding and Reading Ansible Facts
- Lab: Using Facts in Playbooks
- Disabling Facts Gathering

## **Chapter 7 – Conditionals Loops, Error Handling & Handlers,**

- Understanding Conditions, Loops, Error Handling & Handlers
- Lab: Using Conditions in Ansible
- Lab: Using Loops in Ansible
- Lab: Using ignore errors
- Lab: Using Handlers in Ansible

## Chapter 8 – Ansible Roles

- Introduction to Ansible Roles
- Understanding Directory Structure of Roles
- Lab: Manually Creating a Role
- Understanding Include and Dependency Management
- Lab: Using Roles in Playbooks

## Chapter 9 – Ansible Vault

- Introduction to Ansible Vault
- Lab: Ansible Vault CLI Commands
- Lab: Using Ansible-Vault with playbook

## Chapter 10 – Ansible Galaxy

- Ansible Galaxy: An Overview
- Lab: Using Roles from Ansible Galaxy
- Lab: Download Roles using requirements.yml

## Chapter 11 – Ansible Playbook Optimization

- Lab: Difference in Copy and Fetch Modules
- Understanding Forks
- Understanding Serial
- Lab: Using Forks and Serial in playbooks
- Tags
- Jinja2 Templates
- Lab: Using Jinja2 to create hosts file