

# Infrastructure as Code Using Ansible

## Course Description

In today's competitive business landscape, Information Technology is no longer just about maintaining stable systems. To truly gain an edge, accuracy and speed are paramount.

For those responsible for system infrastructure, adapting to rapid change is essential. This is where Infrastructure as Code (IaC) comes in. IaC empowers System Administrators to transition from manual system management to defining infrastructure using "Machine-readable definition files." These files then allow an Automation Engine to seamlessly handle provisioning, configuration management, and application deployment.

System developers must also evolve. The DevOps era emphasizes efficient Application Release Orchestration, which significantly reduces repetitive tasks and minimizes errors during system installations. This is especially critical given the need to deploy across diverse systems and environments, from on-premises setups to various public cloud platforms.

Ansible is the perfect Automation Engine to help both administrators and developers navigate this shift. It acts as a powerful bridge, enabling them to collaborate effectively through its unique "Machine-readable definition files," known as Ansible Playbooks.

## Course Objectives

Upon completion of this course, you will be able to:

- Understand the basic principles of the Ansible Engine
- Successfully install Ansible Engine and AWX.
- Write Ansible Playbooks and Roles to automate desired tasks.
- Understand how to implement conditional logic within Ansible Playbooks.
- Execute Ansible Playbooks using AWX.

## Prerequisites

- Basic familiarity with the Linux operating system.
- Fundamental knowledge of scripting, such as shell script or PowerShell.
- Proficiency in using a Linux text editor, like Vi or Nano.

## Course Contents

### Day 1

- Introduction
  - What is Ansible?
  - Ansible Key Component

- Getting setup on Controller node on Linux
- Working with Inventory
  - Host, Group and Group of Group
  - Variable
  - Inventory Parameter
  - Non SSH connection
- Modules
- Ad-Hoc Commands
- Introduction to Playbooks
  - Apply Ansible: Deployment Software

## Day 2

- Overview of Ansible Galaxy and Role
  - Converting Playbook to Role
- Templating (Jinja2)
- Conditional, Loop and Block
  - when statement
  - loop and condition
  - do-until loop
  - with\_X loop
  - block and error handling
- Ansible Vault
- Ansible Plugin

## Day 3

- Using Ansible and Windows
  - Setting up a Windows Host and WinRM setup
  - Use case: Installing Software
  - Use case: Installing Update
  - Use case: Running Commands
- AWX

## Course Length:

3 Days