Introduction to Ansible: Automation with Ansible (TTDV7580)

Overview

This lab-intensive course is geared toward those responsible for automation of configuration management; consistent and repeatable application deployment; provisioning and deployment of development, testing, and production servers; and integration with DevOps CI/CD workflows. Throughout the course you will explore core Ansible features such as automatic provisioning, configuration management, service deployment and operational processes.

Prerequisite Comments

TTPS4824 Introduction to Python for Networking / SysAdmin – 4 days
TTLX2103 Introduction to Linux | Linux Essentials – 3 days

Target Audience

This is an Introductory level course for experienced Linux system administrators, DevOps engineers, infrastructure automation engineers, and systems design engineers. Ideally students should have familiarity with basic Python scripting. Attendees without programming skills can follow along with the scripting portion of the labs.

Course Objectives

This course is approximately 50% hands-on, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Working in a hands-on learning environment led by our expert practitioner attendees will explore how to:
Describe Ansible concepts and install Red Hat Ansible Engine (optional – we can pre-install is as well if desired, depending on the audience)
Deploy Ansible and Configure Ansible to manage hosts and run ad hoc Ansible commands.
Implement playbooks
Write a simple Ansible playbook and run it to automate tasks on multiple managed hosts.
Manage variables and facts
Write playbooks that use variables to simplify management of the playbook and facts to reference information about managed hosts.
Implement task control; Manage task control, handlers, and task errors in Ansible playbooks.
Deploy files to managed hosts
Deploy, manage, and adjust files on hosts managed by Ansible.
Manage large projects
Write playbooks that are optimized for larger, more complex projects.
Simplify playbooks with roles
Use Ansible roles to develop playbooks more quickly and to reuse Ansible code.
Troubleshoot Ansible
Troubleshoot playbooks and managed hosts.
Automate Linux administration tasks
Automate common Linux system administration tasks with Ansible

Course Outline

1 - Ansible Overview

Overview of Architecture
Overview of Deployments
Inventory

2 - Deploying Ansible

Installing
Configuration Files
Running Ad Hoc Commands
Dynamic Inventory

3 - Playbooks

Writing YAML Files
Modules

4 - Variables and Inclusions

Variables
Facts
Inclusions

5 - Task Control

Constructing Flow Control
Handlers
Tags
Handling Errors

6 - Jinja2 Templates

Jinja2 Templates
Jinja2 Templates

7 - Roles

Role Structure
Creating Roles
Deploying Roles with Ansible Galaxy

8 - Optimizing Ansible

Configuring Connection Types
Configuring Delegation
Configuring Parallelism

9 - Ansible Vault

Configuring Ansible Vault
Executing with Ansible Vault

10 - Troubleshooting Ansible

Troubleshooting Playbooks
Troubleshooting Managed Hosts

11 - Ansible Tower

Ansible Tower overview
Installing
Account management
Hosts
Jobs

12 - Optional: Ansible in a DevOps Environment

Provisioning Vagrant Machines
Deploying Vagrant in a DevOps Environment
Deploying Docker in a DevOps Environment