Module Title	:	DO410 - Automation with Ansible and Ansible Tower
Duration	**:**	**5 days**

Overview

Through hands-on labs, you will learn to automate system administration tasks on managed hosts with Ansible, learn how to write Ansible playbooks to standardize task execution, and manage encryption for Ansible with Ansible Vault. This course will also teach you how to deploy and use Red Hat® Ansible Tower to centrally manage existing Ansible projects, playbooks, and roles; perform basic maintenance and administration of the Ansible Tower installation; and configure users and teams and use them to control access to systems, projects, and other resources through role-based access controls. You will learn to use Ansible Tower's visual dashboard to launch, control, and monitor Ansible jobs; use the Ansible Tower application programming interface (API) to launch jobs from existing templates; automatically schedule Ansible jobs; and dynamically update host inventories.

Course Content Summary

- Install and troubleshoot Ansible on central nodes and managed hosts.
- Automate administration tasks with Ansible playbooks and ad hoc commands.
- Write effective Ansible playbooks.
- Protect sensitive data used by tasks with Ansible Vault.
- Install and configure Ansible Tower for enterprise Ansible management.
- Use Ansible Tower to control access to inventories and machine credentials by users and teams.
- Create job templates in Ansible Tower to standardize playbook execution.
- Centrally launch playbooks and monitor and review job results with Ansible Tower.

Audience

This course is designed for Linux system administrators, cloud administrators, and network administrators needing to automate configuration management, application deployment, and intraservice orchestration at an enterprise scale.

Prerequisites

Become a Red Hat Certified System Administrator, or demonstrate equivalent experience

Outline

Introduce Ansible

Describe the terminology and architecture of Ansible.

Deploy Ansible

Configure Ansible and run ad hoc commands.

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Implement playbooks

Write Ansible plays and execute a playbook.

Manage variables and inclusions

Describe variable scope and precedence, manage variables and facts in a play, and manage inclusions.

Implement task control

Manage task control, handlers, and tags in Ansible playbooks.

Implement Jinja2 templates

Employ a Jinja2 template.

Implement roles

Create and manage roles.

Configure complex playbooks

Learn and replicate how Ansible executes plays and tasks using host patterns, delegation, and parallelism.

Implement Ansible Vault

Manage encryption with Ansible Vault.

Troubleshoot Ansible

Troubleshoot the Ansible control machine and managed nodes.

Install Ansible Tower and describe Ansible Tower's architecture

Explain what Ansible Tower is and demonstrate a basic ability to navigate and use its web user interface.

Create users and teams for role-based access control

Create user accounts and organize them into teams that can be used in conjunction with role-based access control to manage administration and access to organizational resources in Ansible Tower.

Create and manage inventories and credentials

Build inventories of machines to manage and set up credentials that will allow Ansible Tower to run jobs on those systems.

Manage projects for provisioning with Ansible Tower

Create basic projects and job templates in Ansible Tower that can be used to run Ansible playbooks in order to provision and configure managed systems.

Construct advanced job workflows

Use additional features of job templates to improve workflows by creating simple job launch forms and templates to launch multiple jobs in sequence, and also to report job success or failure through external notification systems.

Update inventories dynamically and compare inventory members

Use advanced techniques to work with inventories, including dynamic generation of inventories from centralized information sources and monitoring of hosts in an inventory for configuration deviations or differences.

Maintenance and administration of Ansible Tower

Perform routine maintenance and administration on Ansible Tower and establish a basic familiarity with the command line tools and the Ansible Tower API.

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Course Outline :: DO410::

Recommended Next Exam or Course

Red Hat Certified Specialist in Ansible Automation exam (EX407): Covers the first 12 chapters of the course.

Impact of this training

Impact on the organization

This course is intended to develop the skills needed to use Ansible to standardize and automate the provisioning, management, configuration, and orchestration of systems and applications across operations or cloud computing environments in large enterprises. These skills are suitable for organizations seeking to increase cost savings and operational efficiency through implementing the DevOps methodology with Ansible, and through using Ansible Tower to facilitate wide adoption and centralized management of Ansible automation at scale in the enterprise.

Red Hat has created this course in a way intended to benefit our customers, but each company and infrastructure is unique, and actual results or benefits may vary.

Impact on the individual

As a result of attending this course, you should be able to write Ansible playbooks and launch them to manage hosts and deploy applications in a scalable way. You should be able to build and manage an Ansible Tower installation and use it to centrally manage Ansible job execution, monitoring, and access to projects, inventories, and credentials.

Students should be able to demonstrate the following skills:

- Automate system administration tasks on managed hosts with Ansible.
- Write Ansible Playbooks to standardize task execution.
- Deploy and perform basic maintenance and administration of an Ansible Tower installation.
- Control access to Ansible projects, credentials, and other resources through role-based access controls in Ansible Tower.