



To discuss this course and customizations:  
Call: 434-509-5680 or Email: [sales@cloudcontraptions.com](mailto:sales@cloudcontraptions.com)

## Ansible Essentials

### Duration

3 days

### Description

This Ansible Essentials course provides an in-depth understanding of the open-source automation tool, covering its architecture, benefits, and setup. Students will learn inventory management, playbook writing, and the use of Ansible modules. The course also delves into defining and using variables, implementing conditional statements, loops, and roles, and handling errors effectively. Advanced topics like network automation, scaling strategies, and best practices for reusable code and performance optimization are also covered. By the end of the course, students will be proficient in using Ansible for automation tasks, ensuring efficient and streamlined operations.

### Objectives

- Understand the architecture and benefits of Ansible, along with its installation and configuration process.
- Learn to manage inventories by defining hosts and groups, working with inventory files, and utilizing dynamic inventory.
- Master the basics of writing Ansible playbooks, using variables and facts, tasks and handlers, and modules.
- Gain knowledge on Ansible variables and facts, and how to define and use them.
- Implement conditional statements, loops, and roles in Ansible for efficient task management.
- Learn error handling in Ansible, using blocks and rescue in playbooks.
- Understand Ansible roles for encapsulating complex automation tasks, ensuring reusability, and simplifying playbooks.
- Explore advanced topics like network automation with Ansible, strategies for scaling Ansible, and best practices for writing reusable code and performance optimization.

### Prerequisites

Students should have some Cloud Computing and Linux Administration experience, but it is not required.



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## Training Materials

All students receive comprehensive courseware covering all topics in the course. Students will access the courseware through GitHub. The courseware is a collection of documents and extensive code samples. Students practice the topics covered through challenging hands-on lab exercises.

## Software Requirements

Students will need a free, personal GitHub account to access the courseware. Virtual machines will be provided for the demonstrations and hands-on lab exercises.

## Outline

- Introduction to Ansible
  - Overview of Ansible
  - Ansible architecture
  - Benefits of using Ansible for automation
  - Declarative, Push-based Configuration
  - YAML Syntax Review
  - Command Line Tools
- Ansible Setup and Configuration
  - Installing Ansible
  - Configuring Ansible
  - Understanding Ansible configuration files
- Inventory Management
  - Defining hosts and groups
  - Working with inventory files
  - Dynamic inventory
- Ansible Playbooks
  - Basics of playbook writing
  - Variables and facts
  - Task and handlers
  - Using modules in tasks
- Working with Ansible Modules
  - Commonly used modules
  - Module documentation and usage
- Ansible Variables and Facts



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- Defining and using variables
- Gathering facts about hosts
- Conditional Statements, Loops, and Roles
  - Implementing conditionals
  - Using loops in tasks
  - Creating and using roles
- Error Handling in Ansible
  - Managing errors and failures
  - Using blocks and rescue in playbooks
- Ansible Roles
  - Encapsulate Complex Automation Tasks
  - Directory Structure
  - Reusability
  - Parameterization
  - Ansible Galaxy
  - Simplification of Playbooks
  - Modularity
- Ansible Vault
  - Securing sensitive data with Ansible Vault
  - Encrypting variables and files
- Working with Templates
  - Using Jinja2 templates in Ansible
  - Template modules and variables
- Ansible for Network Automation
  - Overview of network modules
  - Managing network devices with Ansible
- Advanced Topics
  - Strategies for scaling Ansible
  - Open-Source AWX Ansible Automation
  - Red Hat Ansible Automation Platform **optional**
  - Using Ansible Tower or AWX for orchestration
- Best Practices
  - Writing reusable code
  - Organizing playbooks and roles
  - Performance optimization



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- Ansible Tips and Tricks
- Conclusion