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# Ansible Advanced Training

3 days (21 hours)

## Ansible Advanced presentation

Our Ansible training course will enable you to automate cloud infrastructure provisioning, configuration management, application deployment, intraservice orchestration and many other IT needs.

By the end of this course, you'll know how to use Ansible to model your IT infrastructure, describing the link between all your systems. Easy to deploy, it requires no agents or additional security infrastructure. One of the advantages is the simplicity of the syntax (YAML, in the form of Ansible Playbooks), which is close to everyday English.

In this training course, you'll discover the flexibility and power of the Ansible configuration system. You'll learn how to scale a highly reliable infrastructure for your own environments and projects. Whether you're a network engineer or a software developer, advanced training in Ansible is crucial to the successful scalability of your IT environments.

Our Ansible Advanced training course will teach you, through practical exercises, how to master a unique syntax and manage not only environments made up of a few servers, but also a massively distributed international infrastructure.

By the end of this Ansible Advanced course, you'll have a solid understanding and practical experience of how to build a reliable and easily reproducible infrastructure. You'll also be able to run Ad-Hoc commands, playbooks and Mezzanine. You'll have the knowledge you need to integrate Ansible into your operational workflow.

As with all our training courses, this one will introduce you to the latest version of Ansible ([Ansible 2.16](#)).

## Objectives

- Learn to work with Ansible modules and understand how they can be used to control system resources
- Know how to automate tasks using Ansible to execute Ad-Hoc commands as well as than playbooks
- Set up a centralized DevOps management system using Ansible project functionalities
- How to use dynamic inventory

## Target audience

- Developers
- Architects
- System administrators

## Prerequisites

- Have taken our [Ansible training course](#)

## Our Ansible Advanced training program

### Advanced Ansible concepts

- Basic modules
- Module architecture and behavior
- Ansible-Galaxy
- Practical work: Handling external modules

### Ad Hoc parameterization and control

- SSH settings
- Inventory preparation
- Ad-hoc" commands
- Module presentation
- Practical: Using Ansible: file transfer and commands on nodes.

### Server description

- Inventory/Hosts files
- Multiple Vagrant machines

- Inventory behavioral parameters
  - ansible\_connection
  - ansible\_shell\_type
  - ansible\_python\_interpreter
  - ansible\_\*\_interpreter
- Modifying default values for behavioral parameters
- Dynamic inventory
- Dynamic inventory script interface
- Writing a dynamic inventory script
- Breakdown of inventory into several files

## Deployment and organization: Playbooks

- Introducing Git
- Introducing Playbooks
- Introducing YAML
- Loops and conditions
- Roles and inclusions
- Best practices for writing Playbooks
- Writing Playbooks for application deployment, managing a complete environment with Ansible

## Complex playbooks

- Changed\_when and failed-when command management
- Filters
  - Default filter
  - Filters for recorded variables
  - File path filters
  - Create your own filter
- Searches (file, pipe, env, csv, dnstxt)
- Write the search plugin
- Complex loops
- Output labelling
- Imports and inclusions

## Variables and facts

- Defining variables in Playbooks
  - Viewing variable values
  - Save variables
- Facts
  - Display all facts associated with a server
  - Display the subset of facts
- Local facts
  - Define a new set\_fact variable
  - Built-in variables: hostvars, inventory\_hostname

## Mezzanine

- Introducing Mezzanine
- PostgreSQL : Database
- Unicorn application server
- Nginx web server
- Activate Nginx configuration
- Process Manager Supervisor

## Mezzanine with Ansible

- Organization of deployed files
- Variables and secret variables
- Adding the Become clause to a task
- Apt cache update
- Project verification with Git
- Installing Mezzanine in a virtual environment
- Database configuration
- Executing django-manage commands

## Host, handler and runtime customization

- Different templates for specifying hosts
- Limit host execution
- Run tasks on the Control Machine
- Host IP retrieval
- Executing tags
- Execution strategies
  - Linear
  - Free
  - Mitogen
- Advanced manipulator
- Listen manipulator

## Complementary module

- Amazon Web services
- Jenkins
- SaltStack
- Bash scripting
- Virtualization

## Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire enabling us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives with regard to the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.