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## Ansible training

2 days (14 hours)

### Introducing Ansible

Thanks to its ease of use, Ansible will help you automate the setup of complex infrastructures and the deployment of configurations and applications.

In this training course, designed for administrators and developers who want to get up and running straight away, you'll learn how to make intensive use of Ansible technology.

This 2-day training course will introduce you to the Ansible platform and its features. You'll learn how to simplify your environment by automating tasks in all your DevOps infrastructure projects. You'll also learn how to use best practices to master this technology.

As with all our training courses, this one will introduce you to the latest version of Ansible (at the time of writing: [Ansible 2.18](#)).

### Objectives

- End-to-end control of your automation chain with Ansible
- All the concepts and key words of the language are covered and explained with concrete case studies.
- Understand how to optimize server management and application deployment

### Target audience

- Developers
- Architects
- System administrators

### Prerequisites

- Knowledge of Linux systems administration

## Software prerequisites (for in-house training)

- Latest OS updates (Linux, macOS or Windows under a subsystem for the Linux distribution: [WSL](#))
- Python installed and updated
- Minimum configuration
  - 2GB RAM
  - 20GB hard disk
  - 64-bit processor

## Pre-course reading recommendations

- We recommend Stéphane Robert's blog on [Ansible](#), where you can learn the basics of this management tool.
- The [Cherry Servers blog](#), where the main concepts of Ansible and DevOps are discussed
- [Ansible documentation](#) to review ;)
- The [official glossary](#) to avoid misunderstandings

## Ansible Training Program

### Introduction to Ansible and its ecosystem

- Ansible in the DevOps world: Integration with DevOps practices
- DevOps & infrastructure as Code (IaC): Infrastructure as source code
- Comparison of IaC tools: Puppet, Chef, SaltStalk, and Ansible.
- Ansible architecture: inventories, modules, playbooks, tasks and roles.

### Installing and configuring Ansible

- Installing Ansible: Preparing the environment
- Basic commands: Discover the main Ansible commands.
- Node configuration: SSH key management and privilege escalation with sudo
- The configuration file: Structure and customization
- Inventory creation and efficient use
- Practical workshop: installing Ansible, configuring several client nodes, creating an inventory and running the first commands.

### Using Ad Hoc commands

- Shell commands
- File transfer: File management between master and nodes

- Package management: Use package managers (yum, apt).
- User and group administration
- Service management: Controlling system services
- Practical workshop: Applying Ad Hoc commands to one or more nodes

## Introduction to Playbooks

- What is a playbook? Fundamental concepts
- Task and play structure: Workflow organization
- YAML syntax: Basic language for writing playbooks
- Using module variables
- Execution and testing :
  - *Dry-run* mode for application-free testing
  - Step-by-step execution and job skipping
  - Error management in workflows
- Practical workshop: Writing and executing a simple multi-task playbook

## Writing modular code with Ansible

- Notifications and Handlers: Responding to change
- Roles and includes: Code modularity and reusability
- Tag management: Targeted execution of specific tasks
- Community modules: Exploring and integrating Ansible modules
- Ansible Galaxy: Sharing and downloading roles and modules
- Practical workshop: Explaining Ansible Galaxy, adding tags to a playbook, and community roles

## Advanced Playbook creation

- Variables and templates : Advanced management of dynamic configurations
- Control structure: Conditions, loops and blocks
- Prompt and facts: User interaction and information gathering
- Writing advanced playbooks : Complete approach
- Practical workshop: Creating a complete playbook for service configuration and deployment

## Advanced Controls and Concepts

- Vault: Encrypting and protecting sensitive data
- Lookups: Dynamic data search and retrieval
- **Custom module development** :
  - Write and debug custom modules.
  - Creation of custom plugins.
- Custom filters : Development and use
- Practical workshop: applying advanced concepts to real-life cases

## 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 which enables 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 for 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, 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.

