

Ansible – Advanced

Description

The Advanced Ansible training is designed for IT professionals seeking to fully leverage Ansible's automation capabilities. After mastering the basics, it's time to deepen your skills. This course enables you to manage complex infrastructures efficiently. You will learn to create dynamic inventories tailored to your cloud environments. Jinja2 filters will hold no secrets for you. Securing your configurations becomes an absolute priority.

Master automation at an expert level

This ansible training also covers the development of custom modules in Python. You will discover how to integrate your playbooks into CI/CD pipelines. Performance optimization constitutes a major focus of the program. Each module offers practical exercises that are immediately applicable. You will work on real use cases drawn from concrete professional situations.

Course Content

Module 1: Dynamic inventories and advanced management

- Built-in dynamic inventories (AWS, Azure, VMware, etc.)
- Creating custom inventories (API, databases, scripts)
- Multi-environment optimization (dev/staging/prod) and variable management

Module 2: Complex loops and control structures

- Mastering advanced loops (loop, with_*, until, async/poll)
- Nested conditionals and task delegation (delegate_to, local_action)
- Controlled execution (error handling, block/rescue/always, throttle)

Module 3: Jinja2 filters and data transformations

- Transformation filters (e.g., map, select, regex, json_query)
- Infrastructure filters (e.g., cloud/network data manipulation)
- Creating custom filters and Jinja2 extensions

Module 4: Security and secrets management

- Advanced Ansible Vault: hierarchical encryption, secret rotation
- Integration with secret managers (HashiCorp Vault, AWS Secrets Manager)
- Best practices (RBAC, privilege minimization, auditing)

Module 5: Developing custom modules and plugins

- Anatomy of an Ansible module (structure, arguments, return values)
- Developing a simple module in Python (practical example)
- Custom plugins (e.g., lookup, action, cache)

Module 6: Testing, CI/CD and best practices

- Testing with Molecule: scenarios, drivers (Docker, podman), idempotence verification
- Integration into CI/CD pipelines (GitLab CI, GitHub Actions, Jenkins)
- Architectural best practices (reusable roles, documentation, tagging)

Module 7: Performance optimization

- Performance configuration (forks, strategy, batch_size)
- Playbook optimizations (caching, include vs import, parallelism)
- Profiling and debugging (ansible-lint, ansible-navigator tools, advanced logging)

Lab / Exercises

- This course includes hands-on exercises designed to reinforce your knowledge and apply your skills in real-world professional scenarios.

Documentation

- Digital course materials included

Participant profiles

- System and network administrators
- DevOps and SRE engineers
- Infrastructure architects
- Developers involved in automation
- Digital transformation consultants
- Technical team leaders

Prerequisites

- Have completed the [Ansible – Fundamentals](#) course
- Know the basic concepts of Linux system administration
- Understand the principles of infrastructure as code

Objectives

- Create and manage multi-cloud dynamic inventories
- Master complex loops and advanced control structures
- Apply Jinja2 filters to transform data
- Secure configurations with Ansible Vault and secret managers
- Develop custom modules and plugins in Python
- Integrate Ansible into CI/CD pipelines
- Optimize playbook and infrastructure performance
- Test configurations with Molecule and automate validation

Description

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Niveau

Avancé

Classroom Registration Price (CHF)

2400

Virtual Classroom Registration Price (CHF)

2250

Duration (in Days)

