

# Private Cloud : Implementation with OpenStack

Hands-on course of 3 days - 21h

Ref.: ENS - Price 2025: 2 580 (excl. taxes)

## EDUCATIONAL OBJECTIVES

At the end of the training, the trainee will be able to:

Design a private cloud with OpenStack

Proficiency in methods for installing a private cloud

Know how to administer a private cloud

Participants

## THE PROGRAMME

last updated: 01/2024

### 1) » Designing an OpenStack Cloud

- Benefits and features of a cloud. Types of clouds: SaaS, PaaS, IaaS, public, private.
- The OpenStack project. Organization and structure.
- Architecture of the platform. Overview of the various bricks.
- Installation methods.
- Hands-on work ▶ Comparing and selecting an installation method, and installing.

### 2) » Managing virtual machines

- Overview of the Nova brick. Implementation and configuration.
- Managing images and instances. Managing the virtual network.
- Managing multiple hypervisors (Hyper-V, ESXi, KVM).
- Hands-on work ▶ Creating a virtual machine from Nova.

### 3) » Storage management

- Overview of SWIFT.
- Implementation and configuration.
- Managing storage pools.
- Implementing storage in block mode with Cinder.
- Backends supported by Cinder.
- Hands-on work ▶ Managing storage with Cinder.

### 4) » Image management

- What is an image?
- The Glance image management brick.
- Creating the database. Implementation and configuration.
- Image storage management. EC2 image management (AMI).
- Hands-on work ▶ Creating and configuring images.

### 5) » Network management

- Overview of the Quantum brick.
- Virtual switches with Openvswitch.
- Cloud network topologies.
- Routing daemon (L3).
- Implementation and configuration.
- Hands-on work ▶ Creating and configuring a virtual network.

## TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

## ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more. Participants also complete a placement test before and after the course to measure the skills they've developed.

## TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

## TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

## ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at [psh-accueil@ORSYS.fr](mailto:psh-accueil@ORSYS.fr) to review your request and its feasibility.

#### 6) » Authentication and authorizations

- Overview of the Keystone brick.
- Preparng the SQL base.
- User creation, projects, and roles.
- Implementation and configuration.
- User configuration, projects, and roles.
- Hands-on work «Managing users and services.

#### 7) » Administering the cloud

- Overview of the Web Horizon client.
- Automation with the REST API.
- Overview of the Amazon EC2 and S3 APIs.
- Automating the cloud with Cloud-init and Puppet.
- Hands-on work «OpenStack administration from Horizon. Using Cloud-init and Puppet.

## DATES

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### REMOTE CLASS

2025 : 22 sept., 03 nov.