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# OpenNebula training

3 days (21 hours)

## Presentation

Attend our OpenNebula training to understand and use this popular open-source Cloud and [Edge Computing](#) solution.

We'll start with an introduction to the different solutions on the market and the key features of OpenNebula. We'll then guide you through the installation and configuration of OpenNebula. Our program focuses on learning about the lifecycle of the virtual machines you'll be administering.

On the administration side, you'll learn how to manage user groups and permissions. We'll advise you on best security practices. You'll also learn how to integrate third-party tools such as Terraform or Ansible to extend your system's capabilities.

This course will be based on the latest version of OpenNebula, [OpenNebula 6.8](#).

## Objectives

- Understanding the lifecycle of a virtual machine on OpenNebula
- Managing administration on OpenNebula
- Configuring Sunstone for administrators and users
- Setting up high availability and hybrid clouds

## Target audience

- Computer technicians
- Network administrators
- DevOps engineers
- Architects

- Cloud engineers

## Prerequisites

- Experience in system administration
- Knowledge of Linux
- Basic knowledge of IT services

## Software requirements

- An IDE
- **Virtual machine** access

# OUR OPENNEBULA TRAINING PROGRAM

## INTRODUCTION AND INSTALLATION

- Presentation of OpenNebula and comparison with other cloud computing solutions
- Features
- Architectural overview
- Installing OpenNebula as a standalone instance
- Initial configuration
- Practical work: Setting up the OpenNebula basic environment

## VIRTUAL MACHINE LIFE CYCLE

- Understanding the lifecycle of a virtual machine on OpenNebula
- Host management
- Cluster management
- Creating and managing virtual machine templates
- Practical work: Creating and deploying VMs
- Practical work: Configuring virtual networks and datastores

## INTEGRATION AND ADMINISTRATION

- Administration
  - Users
  - Groups
  - Permissions
  - Authentication
- Integration with external authentication systems
- Connecting OpenNebula to different storage backends
- Advanced network configuration
- Storage management

## WEB INTERFACES AND AUTOMATION

- Presentation of web interfaces
  - Cloud View
  - Sunstone
- Sunstone configuration for administrators and users
- Automation with the OpenNebula API
  - Terraform
  - Ansible
- Practical work: Task automation with the Terraform API

## HIGH AVAILABILITY, FEDERATION AND HYBRID CLOUDS

- High availability configuration
- Setting up a federation of data centers
- Hybrid and multi-cloud management
- Practical work: Implementing high availability and hybrid cloud scenarios
- Best safety practices

## TUNING AND TROUBLESHOOTING

- Common problems
- Optimizing OpenNebula performance
- Resource planning
- Practical work: Troubleshooting and optimizing an OpenNebula instance

## MONITORING

- Integrated and external monitoring tools
- Infrastructure health monitoring and alerts
- Configure your alerts
- Performance visualization
- Practical work: Setting up a dashboard

## MARKETPLACE

- Use of public and private marketplaces
- Appliance and VM image management

## Companies concerned

This training 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, 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.