

# GUIDE

## Training Services



Get the best out of your OpenNebula cloud with our standard and customized training courses. Our interactive hands-on training offerings are live and instructor-led, and designed to take you through all the dimensions of an OpenNebula solution, from installation, configuration and operation, to more complex administration and integration activities and best practices. We offer public, regularly scheduled courses, as well as private courses coordinated and delivered to your liking.

As core contributors to OpenNebula, our trainers are the authority on the cloud management platform. Learn from the experts and get squared away to get your solution running in high gear.

### Public and Private Training

We have a published schedule for public classes at OpenNebula Offices in Europe and USA, and available remotely over the internet.

We also provide private standard or customized courses are available on request to be given at your facility or remotely over the internet.

### Standard and Customized Courses

Our Training Services team offers **Beginner**, **Intermediate** and **Advanced** courses that provide you with the skills needed to install, configure, customize and skillfully operate OpenNebula. For customers or partners that require training to meet specific needs, we also offer **custom-designed** courses.

### Remote Training

Our OpenNebula courses are available remotely over the internet and are given by instructors in an interactive, virtual environment and feature exactly the same contents and hands-on labs as our on-site training. Our remote services provide:

- More **affordability** - eliminating travel expenses
- Improved **flexibility** - allowing partial work days, when necessary
- Enhanced **agility** - accommodating most scheduling requirements

### Private Training Pricing

- A remote 4-hour Introductory course is €3.000 (\$3,750) for up to 10 students, then €300 (\$375) per additional student.
- A remote 4-hour Administration course is €4.000 (\$5,000) for up to 10 students, then €400 (\$500) per additional student.
- A remote 4-hour Integration course is €5.000 (\$6,250) for up to 10 students, then €500 (\$625) per additional student.

Additional fees apply for customized training. There is a 10% discount on private training for active customers and partners, and for Education, Government and Non-Profit institutions or organizations working in research projects.

## OpenNebula Introductory Tutorial

### Overview

This is a beginner level course designed to introduce IT professionals to OpenNebula. The course covers the process of installing, configuring and operating enterprise clouds and virtualized data centers using OpenNebula. It is designed to help anyone who wants to set up a small scale test environment to gain experience working with OpenNebula. Students will learn cloud architecture design, planning and installation, and gain a general understanding of technical and business capabilities of an OpenNebula cloud, with basic configuration and usage of its main components.

### Methodology

This is an interactive course, where the attendees operate on their own labs with 3-node OpenNebula clouds provided during the course. In order for the attendees to get the best understanding possible of OpenNebula as a whole, the labs used during the course make use of the most common open source technologies that can be used to deploy an OpenNebula cloud. For example, the hypervisor technology used during the course will be KVM, shared file-system for storage, and regular linux bridges and Linux firewall for networking. Other technologies supported by OpenNebula will be addressed and discussed as well.

### Location

Private courses are available on-site at your facility or remotely over the internet. The remote courses are given by the same instructors in an interactive, virtual environment and feature exactly the same contents and hands-on labs as the on-site training.

### Audience

Specifically designed for IT Administrators, System Administrators, Systems Integrators and System Architects.

### Contents

- An introduction to cloud computing with OpenNebula
- The architecture of the cloud
- Planning and installing OpenNebula
- Virtualization hosts management
- Basic datastore, networking and user configuration
- VM Template creation & instantiation
- OpenNebula views

### Hands-on Labs

Each attendee, or group of two, receives a lab consisting of one OpenNebula frontend node and two hypervisors, accessible through SSH. Attendees are the owners and administrators of their labs. They are able to launch virtual machines, make any configuration changes, debug any problems, access the GUI and the CLI.

### Length

4 hours

### Skills Gained

- Describe the features and benefits of using virtualization and clouds
- Describe different architectures for a cloud that can be deployed with OpenNebula
- Installation of OpenNebula
- Basic configuration and use of main cloud components

### Prerequisites

No prior OpenNebula skills are required, but participants should have working knowledge of virtualization, networking and Unix/Linux systems.

### Materials

The instructor will rely on a set of PDF documents that will be explained throughout the course. These documents will be made available to the attendees right at the very beginning of the course. Attendees need a laptop to connect to their hands-on labs.

## OpenNebula Administration Tutorial

### Overview

This is an intermediate level course designed to explain the configuration and management of the different subsystems of a cloud infrastructure. This course is for system Administrators who are primarily responsible for operating OpenNebula clouds.

### Methodology

This is an interactive course, where the attendees operate on their own labs with a 3-node OpenNebula cloud provided during the course. In order for the attendees to get the best understanding possible of OpenNebula as a whole, the labs used during the course make use of the most common open source technologies that can be used to deploy an OpenNebula cloud. For example, the hypervisor technology used during the course will be KVM, shared file-system for storage, and regular linux bridges and linux firewall for networking. Other technologies supported by OpenNebula will be addressed and discussed as well.

### Location

Private courses are available on-site at your facility or remotely over the internet. The remote courses are given by the same instructors in an interactive, virtual environment and feature exactly the same contents and hands-on labs as the on-site training.

### Audience

Specifically designed for IT Administrators, System Administrators, Systems Integrators and System Architects.

### Contents

- Host Subsystem: Monitoring configuration
- Storage Subsystem: Datastores configuration and image management
- Network Subsystem: Network configuration and virtual network management
- Virtualization Subsystem: Hypervisor configuration and VM management
- Cluster Subsystem: Cluster configuration and management
- Users Subsystem: Users and groups

### Hands-on Labs

Each attendee, or group of two, receives a lab consisting of one OpenNebula frontend node and two hypervisors, accessible through SSH. Attendees are the owners and administrators of their labs. They are able to launch virtual machines, make any configuration changes, debug any problems, access the GUI and the CLI.

### Length

4 hours

### Skills Gained

- Advanced configuration and operation of OpenNebula

### Prerequisites

OpenNebula Introductory Tutorial, or working knowledge in OpenNebula administration, Linux administration, and administration of network, storage and virtual systems.

### Materials

The instructor will rely on a set of PDF documents that will be explained throughout the course. These documents will be made available to the attendees right at the very beginning of the course. Attendees need a laptop to connect to their hands-on labs.

## OpenNebula Advanced Administration Tutorial

### Overview

This is an advanced level course that addresses the main advanced components and provides a brief introduction to integration of OpenNebula with other components in the data center. This course is for cloud architects and administrators, and for developers deploying applications and infrastructure on OpenNebula.

### Methodology

This is an interactive course, where the attendees operate on their own labs with a 3-node OpenNebula cloud provided during the course. In order for the attendees to get the best understanding possible of OpenNebula as a whole, the labs used during the course make use of the most common open source technologies that can be used to deploy an OpenNebula cloud. For example, the hypervisor technology used during the course will be KVM, shared file-system for storage, and regular linux bridges and linux firewall for networking. Other technologies supported by OpenNebula will be addressed and discussed as well.

### Location

Private courses are available on-site at your facility or remotely over the internet. The remote courses are given by the same instructors in an interactive, virtual environment and feature exactly the same contents and hands-on labs as the on-site training.

### Audience

Specifically designed for IT Administrators, System Administrators, Systems Integrators and System Architects.

### Contents

- VDCs, ACLs, quotas, accounting and showback
- Scheduler configuration and policies
- Sunstone advanced configuration
- Multi-VM applications and auto-scaling
- Hooks
- Front-end and VM high availability
- OpenNebula cloud APIs

### Hands-on Labs

Each attendee, or group of two, receives a lab consisting of one OpenNebula frontend node and two hypervisors, accessible through SSH. Attendees are the owners and administrators of their labs. They are able to launch virtual machines, make any configuration changes, debug any problems, access the GUI and the CLI.

### Length

4 hours

### Skills Gained

- Design and deploy advanced cloud environments
- Understand how to customize the Cloud by developing scripts using the API

### Prerequisites

OpenNebula Introductory and Administration Tutorials, or advanced working knowledge in OpenNebula administration, Linux administration, and administration of network, storage and virtual systems.

### Materials

The instructor will rely on a set of PDF documents that will be explained throughout the course. These documents will be made available to the attendees right at the very beginning of the course. Attendees need a laptop to connect to their hands-on labs.