



'setup' course – difficulty ★★☆☆

**3 days** (21 hours)

**Recommended for**  
System administrators  
Solution architects

### TEACHING GOALS

At the end of the course:

- ✓ You **master the cloud computing concepts**
- ✓ You understand the **OpenStack components**
- ✓ You are able to **create and manage your own cloud with OpenStack**

#### Prerequisites

Linux knowledge (shell commands)  
Virtualisation basis

### DETAILED CONTENT

Day 1	Day 2	Day 3
<p><b>What is Cloud Computing?</b></p> <ul style="list-style-type: none"> <li>✓ Private Cloud/Public Cloud</li> <li>✓ Functionalities</li> <li>✓ Glossary</li> </ul> <p><b>OpenStack</b></p> <ul style="list-style-type: none"> <li>✓ Project background</li> <li>✓ Creation</li> <li>✓ Overall architecture and components</li> </ul> <p><b>Managing Identities: Keystone</b></p> <ul style="list-style-type: none"> <li>✓ Keystone concepts</li> <li>✓ About users, projects and roles</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Managing images: Glance</b></p> <ul style="list-style-type: none"> <li>✓ Glance concepts</li> <li>✓ Managing image storage and related file systems</li> <li>✓ Set-up and configuration</li> </ul>	<p><b>Managing the network: Neutron</b></p> <ul style="list-style-type: none"> <li>✓ Neutron concepts</li> <li>✓ The ML2/Open vSwitch plugin</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Managing computation: Nova</b></p> <ul style="list-style-type: none"> <li>✓ Nova and Nova-compute concepts</li> <li>✓ Managing instances</li> <li>✓ Managing multiple hypervisors (kvm, lxc)</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Managing data volumes: Cinder</b></p> <ul style="list-style-type: none"> <li>✓ Cinder concepts</li> <li>✓ Backends</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Storage infrastructure: Swift</b></p> <ul style="list-style-type: none"> <li>✓ Swift concepts</li> <li>✓ Managing storage</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Graphical dashboard: Horizon</b></p> <ul style="list-style-type: none"> <li>✓ Horizon concepts</li> <li>✓ Set-up and configuration</li> </ul>	<p><b>Managing metrics: Ceilometer</b></p> <ul style="list-style-type: none"> <li>✓ Ceilometer concepts (Metrics, Multi-Publisher, Alarming)</li> <li>✓ Types of collectors and agents</li> <li>✓ Coupling with Heat for adaptation depending on resource usage</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Heat</b></p> <ul style="list-style-type: none"> <li>✓ Heat concepts</li> <li>✓ HOT: the Heat template language</li> <li>✓ Set-up and configuration</li> </ul> <p><b>Tools to make optimum use of the cloud</b></p> <ul style="list-style-type: none"> <li>✓ cloud-init: automatic instance configuration (data, files)</li> <li>✓ Puppet: centralized configuration management</li> </ul>