# Course : Private Cloud, approach and tools for successful implementation

*Synthesis course - 2d - 14h00 - Ref. IVA*
*Price : 2020 CHF E.T.*

★★★★★  **5 / 5**

This course will help you decipher the issues inherent in setting up a private Cloud. It will show you the technical solutions and best practices likely to ensure success. It will also show you how to deploy part of your information system in the Cloud.

## Teaching objectives

**At the end of the training, the participant will be able to:**

- Discover the basics of the Cloud and its various deployment modes
- Understand the main issues involved in setting up a private cloud
- Evaluate technical solutions and best practices for setting up a private cloud
- Master the key stages of a private cloud implementation project
- Understand the principles of securing a private cloud

## Intended audience

Architects, project managers and technical leaders.

## Prerequisites

General knowledge of corporate technical architectures.

## Course schedule

### 1 Introduction

- Cloud Computing. SaaS versus Cloud Computing.
- The relationship with virtualization and automation.
- Cloud Computing revolutionizes the way IT is used in companies.
- Needs covered. Aligning costs and needs.
- Advantages. Resource outsourcing. Dynamic allocation. Logical isolation. Automation.
- Offerings: Amazon AWS, Google Cloud, Microsoft Azure...
- French clouds: Numergy, Orange Flexible Computing, SFR Cloud.

## 2 ) Private cloud computing

- Definition. Uses.
- Advantages (latency...) and limitations (elasticity...).
- The relationship between private cloud technologies and virtualization (Cloud Manager concept).
- Hypervisor usage distribution.
- The economic equation.

## 3 ) Market offers

- Openstack. VMWare/Tanzu. Components of the VMWare VCloud and Microsoft offerings.
- Use in "public" or "private outsourced" Clouds.
- OpenStack (HPCloud, OVH Public Cloud...). CloudStack (Ikoula...).
- VMware (OVH Private Cloud, Orange Flexible Computing, SFR Business team...).

## 4 ) Securing a private Cloud deployment

- Securing outsourced and in-house private clouds.
- Securing hypervisors and network access.
- The Secure Virtual Cloud project. Traffic separation methods.
- Creation of VPNs between internal premises and outsourced private clouds.

## 5 ) Hybrid Cloud/Cloud Management solutions

- Implementation with solutions: RightScale, Scalr.net, Enstratius...
- Deployment solutions: Chef, Puppet, Heat (CloudFormation OpenStack).

## 6 ) Private PaaS solutions

- Definition. Advantages and disadvantages.
- Competition with application servers.
- VMWare vFabric, AppScale, OpenShift solutions...

## 7 ) BigData in the private cloud, solutions

- Implement a BigData solution in a private cloud.
- NoSQL databases and private clouds. Hadoop. MapReduce.
- Private Cloud NoSQL solutions (Cassandra, MongoDB, HBase...).
- Public Cloud NoSQL solutions: Google Datastore/CloudSQL, Amazon DynamoDB/SimpleDB.