

Cloud Computing and Virtualization Technologies Certifications

This report covers the cloud computing and the virtualization technologies subject, before talking about the different certifications delivered by several well-known companies, we will quickly define what cloud computing is as well as virtualisation.

There are three main services proposed in cloud computing:

- Software as a Service (SaaS): service allowing the user to access a certain OS on a distant server, it allows companies to completely outsource one part of their network.
- Platform as a Service (PaaS): mainly designed for developers or development companies, provides a remote access to hardware as well as network connection or backup for example.
- Infrastructure as a Service (IaaS): the cloud provider only deals with the hardware, virtualisation layers and network. The company deals the application, databases itself.
- Mobile Backend as a Service (MBaaS): providing a server backup for mobile apps.

It is usually separated with three levels, the public cloud, the private cloud or enterprise cloud and the intermediary cloud which is a mix of public and private cloud.

For many companies, cloud is a way to use top of the line software and hardware where they couldn't afford it directly, the prices are lower, and they don't suffer of the devaluation of the hardware.

The virtualisation concept is similar to the cloud computing principle. Even though there are several types of virtualization, the server virtualization remains the most popular. There are three principles of virtualization:

- Strict partitioning: each OS instance works completely independently.
- Transparent: the fact that the OS is virtualized must not affect anything
- Compatibility: between all the applications used for the instance

Alibaba

These concepts are today very important for each other because most of the cloud services in fact use virtualisation to provide an instance for each user.

As a cloud provider, Alibaba proposes three levels of certifications in cloud, the first one attests that the holder knows the foundation principles and is a beginner in the cloud world, this is the Alibaba Cloud Certified Associate (ACA). This level of certification includes two certifications in cloud: Security and Computing. For the cloud computing certification, Alibaba proposes a 440 minutes exam preparation course in English priced today at \$1 instead of \$199, the certification itself costs \$120.

The second level is called Alibaba Cloud Certified Professional (ACP), and again contains a cloud computing certificate: ACP Cloud Computing Professional. They describe this certification as being addressed to anyone familiar with cloud computing; we can then assume it requires some experience in cloud computing, such as the first certification Alibaba proposes for example. This certification covers Alibaba Cloud's core services (Architecture, Networking, Cloud Security, Best Practices). The preparation course proposed for ACA is also the same for ACP. The price is also \$120.

The next and last level of certification proposed by Alibaba is the ACE Cloud Security Expert contained in the Alibaba Cloud Certified Expert (ACE) range of certifications. This certification is designed for highly experienced users in cloud computing and proves their remarkable skills on the Alibaba Cloud tools. The price is higher than the other ones but still quite low: \$168.

VMware

VMware propose four different levels of certifications: VMware Certified Associate (VCA) as an entry level certification for new IT professionals or executives. The next level of certification is the VMware Certified Professional (VCP) designed for administrators and engineers and mainly for those who install and setup VMware solutions. The next one is VMware Certified Advanced Professional (VCAP) and is designed for administrators' architects and engineers. It is designed to attest of skills covering design and development of VMware solutions. The fourth and last level is the VMware Certified Design Expert (VCDX) design for cloud architects. They propose besides that a large variety of courses to help applicants do learn more about Cloud Computing.