

Exoscale a Swiss Cloud Provider Expands its Cloud Services with Apache CloudStack

The global provider of swiss-based cloud services brings users automation, platform, and much needed services by integrating with Apache CloudStack

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*-Antoine Coetsier
Director Open Cloud, Exoscale*

Exoscale is a global provider of swiss-based cloud services. Exoscale offers local or international companies real technological and financial benefits while preserving top-level customer relationship. Its service catalog proposes IaaS products from compute to storage. Exoscale combines cloud computing advantages with the know-how and experience of Veltigroup, a major and local ICT player in Switzerland. This combination between Cloud agility and proximity of a trusted service provider makes Exoscale unique on the market.

Today, two datacenters physically hosts Exoscale's products. The datacenters are located in the Geneva area and separated by 10km. Due to the intuitive web based management console, provisioning of cloud servers is only a few clicks away. There is one console for all DC zones and it allows the user to access and deploy their servers from any DC zone available in Exoscale. Exoscale's services are strictly located in Switzerland and operated solely from there.

Key Solution Benefits

- Seamlessly integrated open source software with CloudStack
- Full and open native API
- Ease of implementation
- Flexible, mature and customizable

The Challenge: Offering Turn-Key IaaS Cloud Services with a Simple Cloud Interface for Developers

As the leading Swiss cloud provider, Exoscale decided to expand its services using CloudStack by creating their own UI and integrating it with a ticketing, monitoring and billing system that they developed.

Exoscale required an IaaS cloud computing platform with a rich API to allow for easy integration of software to automate the management of their cloud. The UI as mentioned is custom made, built with angular.js and bootstrap and aimed for developers. It allowed Exoscale to tighten the access to the various CloudStack functionalities and integrate with their ticketing and billing system. As a result, there was no need to log into multiple systems for billing or support. Developers are directed to a simple one-step instance creation form with a straightforward way of adding a new instance. They can get a direct high-level view of instances, credits, on-going tickets and instances are displayed directly on the console dashboard for a quick and easy access to actions.

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The Solution: Delivering IaaS Through an Apache CloudStack-Powered Cloud

With Apache CloudStack as the base orchestrator, Exoscale is able to integrate an advanced monitoring infrastructure. CloudStack logs from the management server and all the hypervisors are sent to a Redis based publish-subscribe queue and fed into an Elasticsearch cluster with Kibana serving as the UI frontend to mine the logs. This gives Exoscale engineers a clean web interface to all events in their cloud and easy access to logs. In addition they used JMX metrics for Java processes on the entire infrastructure, coupled with the Graphite monitoring system. CloudStack's maturity, ease of implementation, open APIs and ability to seamlessly integrate with existing systems allowed Exoscale to deliver value-added services to their users giving them control and flexibility that they needed.

The Benefit: Ease of Implementation, Flexibility and Maturity

"CloudStack maturity and ease of use allowed us to focus on the ecosystem around it. As an open source group, we easily integrated software like Logstash, Kibana, Puppet to automate the management of our cloud, this saved us a lot of time and allowed us to focus on the value add that we want to bring to our users: automation, platform, services on top of the core IaaS functionality," says Antoine Coetsier, Director Open Cloud, Exoscale. The open source nature of Apache CloudStack also means that a company like Exoscale can invest development time to enhance the platform with the features that it needs. The open source group set a great example by investing their time to integrate software with CloudStack enabling much-needed services for their users.

Technical Situation

Exoscale's cloud consists of two data centers in Geneva and Vernier, with hardware hosted by Equinix. They run Apache CloudStack 4.0.2 and use KVM hypervisors on Ubuntu based servers. One customization that was performed is that they patched CloudStack to output logs using logstash and use Kibana for visualization. Exoscale offers Debian 7.2, CentOS 6.5 and Ubuntu 12.04/13.10 64 bit templates with instance types from 512MB with 1 core to 32 GB with 8 cores. Fully licensed Windows instances are also available. All their nodes -management server and hypervisors- are setup with a puppet infrastructure. The development and operations team is relatively small for such an offering but they are backed by the Veltigroup a leading IT provider in Switzerland, which gives them a 20 person team for support. The developers are seasoned IT infrastructure enthusiasts who participate in the DevOps, openBSD, Clojure and Puppet community. The CTO, Pierre-Yves Ritschard, formerly with paper.li, recently participated in DevOps Days Paris and has contributed a Clojure client to CloudStack: clostack. Exoscale is embracing open source, not only by using it, but also by contributing to the various communities that make up the foundation of Cloud services.

Looking ahead

Exoscale envisioned an entirely public cloud, meaning that all their instances are on the public network. This vision is now in production thanks to CloudStack. They also have a premium service for the enterprise with secure VPN access. They use a CloudStack basic zone with security groups ala EC2. Users can get VNC access and ssh access to the instance using ssh keys created via the console. Snapshotting and Data Volumes are not yet available on their platform as Exoscale is waiting for improvements in the coming 4.3.* releases of Apache CloudStack. They are now planning their upgrade. In the meantime they are also working on high-level services like Jenkins continuous infrastructure services and big data services.

To learn more about Apache CloudStack, please visit <http://cloudstack.apache.org>.