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How BMW uses OpenStack to improve the scalability, flexibility of its cloud

November 3, 2014 Written by **Jonathan Brandon**

BMW is using OpenStack to stand up its private cloud platform in a bid to improve the scalability and flexibility of the company's IT infrastructure, but according to Dr. Stefan Lenz, the company's IT infrastructure, department manager datacentre, the open source project still needs to become more hardened in order to support a greater variety of workloads and use cases.

Lenz, who was speaking at the OpenStack Summit in Paris Monday, said that the company has between 60 and 80 per cent of its infrastructure virtualised, and about 98 per cent of the company's servers worldwide, which are spread over four datacentres, are centrally managed from its operations department in Munich.

BMW is using OpenStack to make its cloud platform run smoothly

"We standardised our infrastructure brutally, and because of this we are 25 per cent more cost-efficient than our competitors in delivering infrastructure services," Lenz said. "But three years ago, the path of standardisation of automation on a conventional level reached its peak. We could not become more cost-efficient with conventional methods. So in 2011, we thought of bringing all this automation under one framework."

The company initially developed its own platform internally, a modular private cloud platform to support its database environment, control systems and other mission-critical applications. But Lenz told BCN that the platform eventually ran into some issues – applications wouldn't always work as planned depending on the operating environment, and creating standards within the underlying framework was a challenge.

Lenz said that after sitting through numerous management meetings with internal staff who suggested OpenStack could be one way to solve some of these persistent issues (the company also considered Cloud Stack), he decided to try the platform out on a spare server kicking around one of its datacentres, which was a success.

"After the sandbox experiment we decided to build a semi-productive environment – we work with it in developing our own datacentre method, and we work with it to give certain user groups access to

the cloud environment so they can use it for developing their own applications and interfaces."

"We see two major advantages," he explained. "First, we have an API in the data model to describe cloud and virtual instances that are becoming industry standard. So when anyone develops on that it will be stable, we do not have to go through whole tool changes. That's a point where we failed with our internal cloud development."

"The second thing is, it's open source and free, no one earns money on the growth of our company, no one comes with unexpected license fees, and we have experienced that a lot in the past."

It also delivers on availability, which is crucial for BMW. Lenz said that every 60 seconds the infrastructure is down, a car doesn't get built. And while the company hasn't yet put highly productive workloads on it just yet, he says that's likely to change by early next year, with a view towards having most systems running on OpenStack in the next three years.

All of the company's SAP and database environments are built to work on Suse Linux running on top of Xen.

But Lenz also explained that more work needs to go into making OpenStack more stable in order to improve confidence in running the platform at scale, a theme that has become more prominent over the past few months.

Most OpenStack deployments are indeed fairly small, either experimental or limited to local clusters so deep experience with large scale deployments is sparse, though this is slowly changing.

He said one of the big challenges when using OpenStack is (still) identity federation, a gap CERN and Rackspace among others are working to plug, and DNS service integration is essential if BMW is going to shift more workloads onto OpenStack.

"The thing that bothers us most currently is the release cycles. And it has to be industry grade – we need more stability, but that doesn't prevent us from using it right now," he said.

"There's also a huge cultural shift internally which needs managing as well, because all of these methods have systems and processes that are fairly unique from how we manage our legacy infrastructure. So how we integrate management of both will be essential."

Jonathan Brandon Jonathan Brandon is editor of Business Cloud News where he covers anything and everything cloud. Follow him on Twitter at @jonathanbrandon.
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