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Inkiru

Predictive Modeling in the Private Cloud
Inkiru uses Rackspace Private Cloud powered by OpenStack® to provide secure sandboxes for data scientists.

Based in Palo Alto, Inkiru is a technology company offeringthe Inkiru Predictive Intelligence™ platform, a real-time analytics platform that allows Inkiru customers to host a variety of predictive models. The models can address many consumer interaction challenges—how to increase new customer activation, improve targeting and conversions, optimize email campaigns, reduce chargebacks and increase approvals. The models run in real-time, utilizing up-to-the-minute information from the Inkiru Predictive Graph blended with transactional, internal and external data. The holistic view of each consumer results in extremely accurate scores and individual recommendations that adapt in real-time as patterns and trends change.

Interested in supporting the full life cycle of predictive modeling, Inkiru wanted to build a secure sandbox environment for their customers' data exploration and build stages. With help from Rackspace specialists for OpenStack, Inkiru provisioned a Rackspace Private Cloud powered by OpenStack where they could move their own data and services without recoding, and where they can replicate services and customer data from production, and where data scientists can securely build new predictive models before seamlessly pushing them back to production.

AN AUDIT-READY ENVIRONMENT

Inkiru's relationship with Rackspace began a year and a half ago, when they added dedicated servers at Rackspace as a more secure alternative to their AWS environment. "The dedicated servers were for our customers in the financial space," says Inkiru CTO Vijay Raghavendra. Those customers were looking for single-tenant servers that would pass strict security audits. While the dedicated machines sufficed for production environments, Inkiru decided to bring the scalability of the cloud to these customers for the purpose of spinning up temporary sandbox environments for the data scientists building the predictive models, provisioning a Rackspace Private Cloud powered by OpenStack specifically for this purpose in November.

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> **Vijay Raghavendra**
> CTO, Inkiru

> "The ability to build these sandboxes in a secure environment that will pass whatever information security audits a bank or a financial institution puts on us was an important factor in choosing Rackspace Private Cloud. Rackspace Private Cloud gave me the power of the cloud — elasticity, the ability to scale up and scale down — and also gave me an environment where a replica of all of our services and data could seamlessly move over."

Vijay Raghavendra
CTO, Inkiru

Inkiru wanted their platform to support all stages of predictive modeling. Raghavendra says, "The predictive modeling life cycle typically starts with a data scientist exploring data, and the data could be in any form — large data from data warehouses, small data, flat files, database dumps, MySQL, NoSQL and so on. The data scientists typically explore the data and build their predictive models offline using any number of tools such as SAS, R, Python or MATLAB. The problem then is deploying the models into production. This process typically involves a software engineer taking the models and variables from the data scientists and recoding in Java, C/C++, PHP, Python, et cetera, and then mapping the variables to productiondatabase systems such as SQL and NoSQL databases."

Inkiru's platform enables data scientists to deploy models to production without anyrecoding. They needed an environment for the data scientists to build and test these models prior to production deployment, and they conceived of a secure sandbox environment that was a replica of the services and data available in production. This environment is identical to production and enables experimentation and testing without affecting the production environment. Raghavendra says, "We needed an environment where I could safely put data from all of my production systems — whether the production data was coming from AWS or from the dedicated servers in Rackspace — and make it available to the data scientists without having to worry about whether or not this environment would pass information audits. Rackspace Private Cloud gave me the power of the cloud — elasticity, the ability to scale up and scale down — and also gave me an environment where a replica of all of our services and data could seamlessly move over."

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Private Cloud," Raghavendra continues. "We could have built something very similar in AWS or in Rackspace public cloud, but those wouldn't pass the strict information security audits required by a financial institution."

OUTSOURCING EXPERTISE

Inkiru worked extensively with Rackspace to set up their cloud, utilizing Rackspace's expertise in OpenStack and cloud and offering their own feedback and feature requests. "Together, we figured out the configuration of what was needed and what the evaluation criteria were," Raghavendra says. "During the evaluation process, we were doing at least weekly phone sync-ups with the engineers on the Rackspace Private Cloud Support team, the customer service folks, and my team here. It was a really close collaborative process."

"We set up a test environment within Rackspace to see if OpenStack would work for us, and if it was stable and mature enough. Once we were satisfied that is was, we decided to pull the trigger on building out our real Private Cloud environment. While we had an idea about what we wanted in terms of the specific configuration, the size, the number of controller nodes and compute nodes and the number of hypervisors and so on, the input from the Rackspace team was critical in helping us figure out the architecture."

Now that they've moved out of the evaluation stage, Inkiru uses Software Escalation support from Rackspace to handle any glitches they encounter. "Once we went into production, the support has been primarily through tickets," he says. "We reach out to the Rackspace team quite often. Fanatical Support provides us with a team that I know is going to be available and eager to work with me when I need them. So far, I've been extremely happy with it."

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