



Escaping Hurricane Sandy

Critical Media recovers from disaster with Rackspace Hybrid Cloud

Offering a growing portfolio of interconnected products, Critical Media is one of the world's largest media-listening platforms. Critical Media captures live TV and radio broadcasts through more than 200 geographically distributed points of presence, and leverages highly advanced speech-to-text capabilities to make live radio and television searchable in real-time.

Critical Media has over 1,500 SaaS clients and large PaaS partners, including many political campaigns and Fortune 1000 corporations. The company operates its own data center in New York City, and when Hurricane Sandy struck in late October 2012 they had to move their entire production environment to the Rackspace Open Cloud. Since then, Critical Media has evolved to a hybrid cloud solution by rebuilding their data center with Rackspace Private Cloud powered by OpenStack®. They continue to use Rackspace Open Cloud for their geographic diversity disaster recovery plan, on-demand production scale, and proof of concept work.

FROM HYPOTHETICAL TO MISSION-CRITICAL

The company began in 2005 on bare metal servers and, over time, transitioned to a manually configured mix of virtual machines. They

knew they needed a more scalable infrastructure to support future growth.

"Deploying virtual machine servers by hand is not a good practice, but it is more efficient than deploying bare metal servers. Virtualization provides efficiency gains in that multiple VMs take better advantage of available CPU, power, and space. But manually configuring and deploying these VMs doesn't scale," says Tom Gilley, executive-in-residence at Critical Media.

Critical Media was confident that a public cloud only option would not make economic sense given the low product cost basis requirements and the enormous processing load.

"We were on the phone with our account manager constantly and she was amazing. I think she just got the sentiment of the folks here, how rough it was for us, and she was really helpful."

Tom Gilley

Executive-in-residence at Critical Media

AT-A-GLANCE

CUSTOMER'S BUSINESS:

Critical Media is one of the world's largest media-listening platforms.

CHALLENGES:

Lacking geographic diversity in its disaster recovery plan, Critical Media recovered from Hurricane Sandy by rebuilding in the Rackspace public cloud.

RACKSPACE® SOLUTION:

Rackspace Cloud Servers, Rackspace Private Cloud.

BUSINESS OUTCOME:

Combining private and public cloud resources from Rackspace has given Critical Media a DR solution and an agile, reliable platform without the economic drawbacks of running a public cloud-only environment at scale.

"We process about 40 hours of video every minute," Gilley says. "That's huge, that's a Google YouTube-class ingest and distribution solution. We don't store it like YouTube does, but the scale of handling that amount of video and resulting meta data is huge for a company like ours."

"You hear the rhetoric about public cloud that's absolutely true," he says. "For venture capital startups, it's great, because you have no capital expenditure and you can trial and start something fast. However, what many companies learn is that as you scale, relatively higher per unit costs in the public cloud can eat into your profit margin."

Due to the public cloud costs, Critical Media elected to forgo public cloud for production. Instead, they built out their own data center, which they called the Mission Critical Data Center (MCDC).

Knowing that geographic diversity is necessary to reduce vulnerability due to natural disasters, Critical Media planned for public cloud as a supplement to their infrastructure. They evaluated several proprietary and open source cloud options. Gilley says, "We had experience and were involved with the community that was building around OpenStack, so we made a bet on OpenStack. We liked Rackspace because it

has a good legacy data center foundation and made major investments in public/private OpenStack technologies. I had built out in Rackspace in a past company, so I was comfortable with its business strength and its level of support.”

Critical Media had already gained experience with Rackspace Open Cloud for proof of concepts and began planning for production services in Rackspace Open Cloud. However, due to cost constraints and conflicting priorities, the engineering for deployment of production services to Rackspace Open Cloud was delayed. Critical Media, as many other top tier internet providers in the famous IT building, were betting on the available redundant systems — specifically the in-building generator for failover.

Then the natural disaster they worried about, Hurricane Sandy, hit. “Downtown took full frontal attack of Hurricane Sandy’s Atlantic Ocean surge. Our building, as many others, was literally under ocean water,” says Gilley. “Basement levels completely flooded to several feet of saltwater into the lobby. It was an epic event.”



Source: <http://status.squarespace.com/>

“Our operations team had evacuated,” he continued, “but we had friends in the building that stayed, and they gave us an assessment of the situation — it was dire. The fuel and electrical subsystems are in the basement, so that meant when it flooded, we had no fuel for our generator and basically had no power. When our battery backup dies we would be completely down: salt water and electrical subsystems do not mix. This was not going to be something that our building and data center would be able to soon recover from.”

ALL HANDS ON DECK TO GET BACK UP AND RUNNING

It was the week before the presidential election, and both the Romney and Obama campaigns were clients. Critical Media could not afford to stay dark. Those who could get to the company’s midtown headquarters did. “The team made the risk decision that we were going to have to do something really dramatic,” Gilley says. “We decided, let’s refactor the stack here, on this floor, and move it into Rackspace; let’s OpenStack it.”

He continues, “Just as the hurricane was passing and the streets were still flooded, Gilley dispatched his son, who was near and with car for the apocalyptic trip to pick up a few of the critical bare metal hypervisors. The daunting plan was to rebuild the virtual machines that we had at MCDC and deploy them into Rackspace Public Cloud. The Critical Media applications, systems and operations team that could make it into the office or log onto the internet worked around the clock, taking turns sleeping to spin up nearly 200 servers at Rackspace. “We were back in business. It was incredible, the teamwork was amazing. Half of Manhattan was still without power and the Mission Critical Data Center would not have power for many

weeks. We made the right decision.”

“We were on the phone with our Rackspace account manager often as we ran up against allocation limits and support was amazing,” he says. “They understood the sentiment of the folks here, how rough it was for us, and escalated our situation for rapid response.”

ADDING OPENSTACK ON-PREMISE FOR HYBRID CLOUD CAPABILITIES

As Critical Media engineers raced to spin up servers and keep production going, they got a crash course in OpenStack. “The application development team fell in love with the ability to spin up VMs easily,” says Gilley. “They became enamored with that opportunity. Perhaps too enamored, as it put pressure on the systems and operations team to come up to speed on the nuances of OpenStack, which they did.”

With major products operating out of Rackspace Open Cloud, the company now had an opportunity to create a hybrid cloud and to deploy OpenStack into the environment at MCDC. They planned to do it on their own in three months, but by month two they realized they needed some help. “We called Rackspace and they told us, ‘We’ve got a new group that will install and manage OpenStack in your facilities. We call it private cloud.’”

Due to Critical Media tight time constraints, the new Rackspace Private Cloud group flew in, installed OpenStack at MCDC, providing OpenStack training for Critical Media staff, all within a week of contact. Rackspace was and is on-call for escalations and training to assure all teams were aligned. “We’ve passed six months with the Rackspace managed Private Cloud,” says Gilley, “and I expect Critical will continue with Rackspace managing the private cloud.”

Once the private cloud was up and running, the company began the process of migrating some of their services back to MCDC. The team is also developing ways to use public cloud to burst excess load, which Gilley calls peaking. “We have some services, like video transcoding and speech-to-text, where we can’t predict the demand until it starts to trend up, or we have a new partner on boarding before the capital investment. Those are services we would peak to the cloud,” says Gilley. While they plan to operate their steady-state load primarily from their own private cloud, the public cloud will continue to be used as their disaster recovery solution, peaking and PoCs.

While Critical Media continues growing their business, they now have a geographically diverse disaster recovery plan in place and a path to scale their infrastructure as they take on new business. Combining private and public cloud resources from Rackspace gave them an agile and reliable platform with none of the economic drawbacks of running a public cloud-only environment at scale. Hopefully a disaster won’t strike them twice; but if it does, they’ll be prepared.

ALL BACKED BY FANATICAL SUPPORT.

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